CORVALLIS
CITY COUNCIL AGENDA

July 21, 2014
6:30 pm
[Executive Session follows regular meeting]

Downtown Fire Station
400 NW Harrison Boulevard

[Note: The order of business may be revised at the Mayor's discretion. Due to time constraints, items on the agenda not considered will be continued to the next regularly scheduled Council meeting.]

COUNCIL ACTION

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. ROLL CALL

IV. PROCLAMATION / PRESENTATION / RECOGNITION

V. VISITORS' PROPOSITIONS – This is an opportunity for visitors to address the City Council on subjects not related to a public hearing before the Council. Each speaker is limited to three minutes unless otherwise granted by the Mayor. Visitors' Propositions will continue following any scheduled public hearings, if necessary.

VI. CONSENT AGENDA – The following items are considered to be routine and will be enacted by one motion. There will be no separate discussion of these items unless a Council member (or a citizen through a Council member) so requests, in which case the item will be removed from the Consent Agenda and considered separately. If any item involves a potential conflict of interest, Council members should so note before adoption of the Consent Agenda.

A. Reading of Minutes
   1. City Council Meeting – July 7, 2014
   2. For Information and Filing (Draft minutes may return if changes are made by the Board or Commission)
      a. Citizens Advisory Commission on Transit – May 13, 2014
      b. Commission for Martin Luther King, Jr. – June 24, 2014
      c. Watershed Management Advisory Commission – June 25, 2014

B. Announcement of Vacancies on Board of Appeals (Ruttan) and Citizens Advisory Commission on Civic Beautification and Urban Forestry (Kreft)

C. Announcement of Appointments to various Advisory Boards, Commissions, and Committees

D. Confirmation of Appointments to various Advisory Boards, Commissions, and Committees

E. Acknowledgement of receipt of updated Advisory Boards, Commissions, and Committees directory

F. Confirmation of an Executive Session following the July 21, 2014 regular meeting under ORS 192.660(2)(d)(status of labor negotiations)

VII. ITEMS REMOVED FROM CONSENT AGENDA

VIII. UNFINISHED BUSINESS

A. Selection of Historic Resources Commissioner [direction]

B. Washington Park [direction]

C. Package #1 Land Development Code Text Amendments (LDT13-00002 and LDT13-00003) Deliberations [direction]

IX. STANDING COMMITTEE REPORTS, ORDINANCES, RESOLUTIONS, AND MOTIONS

A. Human Services Committee – July 8, 2014
   1. Corvallis Farmers' Market Annual Report [direction]
   2. Open Carry of Firearms [information]

B. Urban Services Committee – July 8, 2014
   1. Municipal Code Review: Chapter 7.08, "Corvallis Fire Code" [direction]
   2. Greenhouse Gas Inventory Follow-up [information]

C. Administrative Services Committee – July 9, 2014
   1. Enterprise Zone Application: Block 15 Brewing Company, Inc. [direction]
   2. Council Policy Review and Recommendation: 96-6.03, "Economic Development Policies" [direction]

X. MAYOR, COUNCIL, AND STAFF REPORTS

A. Mayor's Reports

B. Council Reports

C. Staff Reports
   1. City Manager's Report – June 2014 [information]
   2. Residential Parking Districts Referendum update [information]
   3. Fourth Street Parking Controls [information]

XI. NEW BUSINESS

A. Corvallis Police Officers Association Contract [direction]

XII. PUBLIC HEARINGS – None

XIII. ADJOURNMENT

For the hearing impaired, a sign language interpreter can be provided with 48 hours' notice prior to the meeting. Please call 541-766-6901 or the Oregon Communications Relay Service at 7-1-1 to arrange for TTY services. A large print agenda can be available by calling 541-766-6901.

A Community That Honors Diversity

CITY OF CORVALLIS

ACTIVITY CALENDAR

JULY 21 – AUGUST 2, 2014

MONDAY – JULY 21

City Council Work Session – 6:00 p.m. – Downtown Fire Station, 400 NW Harrison Boulevard (Historic Resources Commission interview)

City Council – 6:30 p.m. – Downtown Fire Station, 400 NW Harrison Boulevard

TUESDAY – JULY 22

Human Services Committee – Canceled

Urban Services Committee – 5:00 pm – Madison Avenue Meeting Room, 500 SW Madison Avenue

Commission for Martin Luther King, Jr. – 5:15 pm – Osborn Aquatic Center, 1940 NW Highland Drive

WEDNESDAY – JULY 23

Administrative Services Committee – Canceled

SATURDAY – JULY 26

Government Comment Corner – Canceled

FRIDAY – AUGUST 1

Bicycle and Pedestrian Advisory Commission – 7:00 a.m. – Madison Avenue Meeting Room, 500 SW Madison Avenue

SATURDAY – AUGUST 2

Government Comment Corner – Canceled

Linn-Benton
COMMUNITY COLLEGE

President's Office
6500 Pacific Boulevard SW
Albany, OR 97321
(541) 917-4200
http://www.linnbenton.edu

July 17, 2014

Dear Mayor Manning and Councilors:

At LBCC, we deeply appreciate the consideration that you have given to our inquiry regarding Washington Park. The idea has sparked a lively conversation in the Corvallis community, and after listening to what Corvallis citizens have said, we are withdrawing our interest in purchasing a portion of the park.

Our commitment to serve the educational needs of Corvallis and Benton County remains as strong as ever. While the idea to purchase a portion of the park was a cost effective way of fulfilling that commitment, it is clear that it conflicts with other values that the Corvallis community holds dear. We pledge to develop other options that allow us to serve the educational need in your community, and to strengthen our long and positive relationship with Corvallis and its citizens. We are grateful to the citizens and leaders who are helping to guide our path forward in a different direction.

With the benefit of additional community feedback, we are beginning work on a number of exciting concepts that do not include Washington Park. Structured parking, either alone or in collaboration with Samaritan Health Services, as well as other good parking options are being researched and developed.

The Mission of Linn-Benton Community College is focused on helping to make our communities better places to live and to work, and our commitment to the expansion of the Benton Center is a key expression of this mission in Corvallis.

Sincerely,

Dr. Greg Hamann
President, Linn-Benton Community College

CITY OF CORVALLIS
COUNCIL ACTION MINUTES

July 7, 2014

SUMMARY OF DISCUSSION

Agenda Item	Information Only	Held for Further Review	Decisions/Recommendations
Executive Session 1. Labor Negotiations CPOA 2. Litigation Likely to be Filed Page 244	 Yes Yes		
Proclamation/Presentation/Recognition 1. Independents Week – July 1-7, 2014 2. Sister Cities International Award 3. Climate Showcase Communities Grant Pages 244-245	 Yes Yes		• Proclaimed
Visitors' Propositions 1. Downtown Hotel and Parking Structure (several) 2. Downtown traffic (Levine) 3. Washington Park (Morré, Mace) 4. Development Services Division (Cruz) 5. PPTF Recommendation/WMAC (Schreck) Pages 245-247	 Yes Yes Yes Yes Yes		
Consent Agenda Page 247			
Items Removed from Consent Agenda 1. Confirmation of Re-appointments Page 248			• Approved confirmations (without EDC re-appointments) passed U • Approved EDC re-appointments passed 7-1
Unfinished Business 1. PPTF Recommendations 2. Downtown Hotel/Parking Structure 3. LDC Text Amendments Package #1 Pages 248-251		 deliberations July 21	• Revised Council Policy 91-2.02, "Council Process" passed U • Authorized Mayor forming task force – Community Involvement and Diversity Advisory Board passed U • Resolution – earnest money failed 4-5 • Resolution – lease parking spaces failed 1-7 • Delayed deliberations passed U
Items of HSC Meeting of June 17, 2014 1. Council Policy Review and Recommendation: 92-5.04, "Hate/Bias Violence" Pages 251-252			• Amended Policy passed U

Agenda Item	Information Only	Held for Further Review	Decisions/Recommendations
Items of ASC Meeting of June 18, 2014 1. Visit Corvallis Third Quarter Report 2. DCA EID Third Quarter Report 3. Republic Services Annual Report 4. Casco Telecommunications Franchise 5. Third Quarter Operating Report Page 252	Yes		• Accepted Report passed U • Accepted Report passed U • ORDINANCE 2014-06 passed U • Accepted Report passed U
Other Related Matters 1. Ordinance – Sunset Reviews 2. Fire Drill Tower (Official Intent to Reimburse) 3. Fire Drill Tower (Full Faith and Credit) 4. Public Works Vehicle Purchases 5. FAA Grant – Airport Improvements Cargo Access Pages 252-253			• ORDINANCE 2014-07 passed 7-1 • RESOLUTION 2014-21 passed U • RESOLUTION 2014-22 passed U • RESOLUTION 2014-23 passed U • RESOLUTION 2014-24 passed U
Mayor's Reports 1. LOC Legislative Priorities 2. RPD Referendum 3. Moody's Report Page 253	Yes Yes Yes		
Council Reports 1. On-Street Bicycle Corral (Beilstein) 2. Fundraiser (Beilstein) 3. Absence – Annual Trip to Cuba (Beilstein) 4. July 4 Parade (Traber) 5. Red, White, and Blue Festival (Hirsch) 6. Bee Friendly Designation (Hirsch) 7. Suicide Prevention and Awareness (Hirsch) 8. Annual South Corvallis Summer Solstice Celebration (Hervey) 9. Moody's Report (York) Pages 253-254	Yes Yes Yes Yes Yes Yes Yes Yes Yes		
Staff Reports 1. Moody's Report 2. Watershed Meadow Management 3. Economic Development Monthly Business Activity Report - June Page 254	Yes Yes Yes		

Glossary of Terms

ASC Administrative Services Committee
CM City Manager
CPOA Corvallis Police Officers Association
DCA Downtown Corvallis Association
EDC Economic Development Commission
EID Economic Improvement District
FAA Federal Aviation Administration
HSC Human Services Committee
LDC Land Development Code
LOC League of Oregon Cities
PPTF Public Participation Task Force
RPD Residential Parking District
U Unanimous
WMAC Watershed Management Advisory Commission

CITY OF CORVALLIS
COUNCIL ACTION MINUTES
July 7, 2014

Mayor Manning read a statement based upon Oregon laws regarding executive sessions. Only representatives of the news media, designated staff, and other Council-designated persons were allowed to attend the executive session. News media representatives were directed not to report on any executive session discussions, except to state the general subject of the discussion. Mayor Manning noted that no decisions would be made during the executive session. Council and staff members were reminded that the confidential executive session discussions belonged to the Council as a body and should only be disclosed if the Council, as a body, approved such a disclosure. Council or staff members not able to maintain the Council's confidences were asked to leave the meeting room.

Council entered executive session at 5:30 pm (Councilor Brauner was absent; Councilor Brown arrived at 5:35 pm). Human Resources Director Altmann Hughes and Police Chief Sassaman briefed the Council on the status of labor negotiations for the Corvallis Police Officers Association, and Deputy City Attorneys Brewer and Coulombe briefed the Council on the status of litigation likely to be filed.

Mayor Manning recessed the meeting at 6:23 pm.

I. CALL TO ORDER

The regular meeting of the City Council of the City of Corvallis, Oregon was called to order at 6:30 pm on July 7, 2014, in the Downtown Fire Station, 400 NW Harrison Boulevard, Corvallis, Oregon, with Mayor Manning presiding.

II. PLEDGE OF ALLEGIANCE

III. ROLL CALL

PRESENT: Mayor Manning; Councilors Beilstein, Brown, Hervey, Hirsch, Hogg, Sorte, Traber, York

ABSENT: Councilor Brauner

Mayor Manning directed Councilors' attention to items at their places, including a copy of the Climate Showcase Communities Grant presentation (Attachment A), a revised resolution concerning the proposed Downtown hotel/parking structure project (Attachment B), a League of Oregon Cities legislative priorities survey (Attachment C), a handout from Kathryn Phillips concerning Land Development Code text amendments (Attachment D), a handout from Councilor York concerning density rounding (Attachment E), and letters from Dave Eckert (Attachment F) and Richard Bryant (Attachment G) concerning the Downtown hotel/parking structure project.

IV. PROCLAMATION/PRESENTATION/RECOGNITION

A. Proclamation of Independents Week – July 1-7, 2014

Mayor Manning read the proclamation. Cindy Lolik, General Manager of First Alternative Cooperative and Board President of the Corvallis Independent Business Alliance (CIBA), said CIBA's goals are to take the lead in Buy Local First activities; to increase awareness of the valuable role independent local businesses have in creating and

maintaining a thriving, sustainable local economy; and to influence local government to encourage a pro-independent local business environment. Ms. Lolik said CIBA seeks to promote the success of all local independent businesses and she thanked Mayor Manning for the recognition.

B. Sister Cities International Award

Don Prickel, outgoing Vice President of the Corvallis-Gondar Sister Cities Association (CGSCA), introduced board member Dr. Larry Vidrine and thanked the community for its support. At the end of July, CGSCA members will travel to San Jose, California to accept the award of the Best Overall Sister City Program for a city with a population of 50,000. Mr. Prickel outlined CGSCA's work to bring wells and clean water to rural parts of the Gondar community, and he noted the Walk for Water event on July 12.

C. Climate Showcase Communities Grant

Sustainability Program Specialist Scott Dybvad introduced Carly Lettero from the Corvallis Environmental Center and Jody Einerson from Oregon State University's Benton County Extension Service and gave a PowerPoint presentation (Attachment A). The presenters spoke from prepared statements (Attachment H), highlighting how the grant helped Corvallis develop innovative, cost-effective, and replicable community-based greenhouse gas reduction projects. Corvallis was one of only fifty communities that received the grant.

V. VISITORS' PROPOSITIONS

Mary Pat Parker, Visit Corvallis (VC), read from a prepared statement (Attachment I) concerning the proposed Downtown hotel and parking structure (DHPS) project. In response to Councilor Hirsch's inquiry, Ms. Parker said the purpose of the VC Board's offer to use transient room tax (TRT) revenue to cover debt service shortfalls was to support the DHPS project as a tourist-related facility.

Courtney Cloyd urged the Council to vote no on the DHPS. Mr. Cloyd opposed use of City bonding authority toward the project, but he did not oppose a new hotel on the Riverfront.

Kent Daniels asked the Council to reject the DHPS and expressed concern about the processes thus far regarding the proposed DHPS and the possible sale of Washington Park. He opined that the approach had created a divisive atmosphere in the community.

Vern McDonald, a local hotelier, cited points from a letter he sent to Council on June 30 that outlined the reasons he did not support the DHPS project (Attachment J).

David Eckert read from a prepared statement concerning his opposition to the DHPS (Attachment F).

Dan Whitaker, one of the DHPS developers, noted that a local competitor who voiced opposition to the DHPS was already collecting more in TRT revenue than what was projected to be received by the DHPS project three years into the future. Mr. Whitaker referred to revised renderings of the proposed hotel, which he said are more congruent with the look of nearby downtown properties. In response to Councilor Hirsch's inquiry, Mr. Whitaker said the flat rate cited in the

proposed lease was based on give-and-take negotiations on multiple items and he confirmed that language regarding an audit was already included in the proposed lease.

Patricia Benner opposed City funds being used for the DHPS. She said if Washington Park was underutilized, it could be used as a dog park.

Ruby Moon has owed several businesses and real estate in Downtown Corvallis over the past 40 years. She randomly monitors parking during the day and regularly finds 20 to 30 free and paid spaces available each day. Ms. Moon opposed the City's involvement in the DHPS, but she did not oppose the hotel itself.

Martha Levine did not want more cars downtown and asked the Council to think creatively about ways to encourage people to walk or use bicycles on the Riverfront.

Betty Griffiths supported development on the proposed DHPS site, but did not support the City's involvement in the project. She said parking is needed at the core of the City, not at the south end of the Riverfront, and she added that parking is needed during evening hours. Ms. Griffiths opined that the consultant's analysis was flawed and she encouraged the Council to vote no on the DHPS. She said Washington Park was not underutilized, but she acknowledged the ball fields are sometimes not used in the early spring due to wet weather.

Jeff Hess cautioned against acting too quickly on the DHPS project, opposed the City's involvement in the project, and urged the Council to reject the proposal.

Susan Morre distributed a copy of Resolution 94-13 (Attachment K) which states Washington Park cannot be sold. She said more park land is needed, not less, and acquiring parks in the City center becomes more expensive over time. Ms. Morre supported a new hotel, but not the City's involvement in the DHPS project.

Cindy Dahl supported the DHPS, noting the hotel and parking would be widely used. She viewed the project it as an investment, not a risk.

Barbara Bull believed parking was needed downtown, supported economic development, and was not against the DHPS concept. However, she did have an issue with the process. She said the City could better leverage its funds and there are many projects that could benefit the community. Ms. Bull noted the Transportation Plan update could address where parking might best be located.

Richard Boyles, President of Insight Hotel Management Group, said he had developed and managed hotels for over 20 years. He said the appraisal would ultimately show whether the project had merit, but those who were involved with the project were confident the proposal was structured in a way that would provide TRT for the parking garage obligation and meet the needs of the hotel.

Shannon Cruz spoke from a prepared statement regarding her concerns with the City's Development Services Division (Attachment L).

Jacque Schreck, a citizen volunteer on the City's Watershed Management Advisory Commission (WMAC) expressed concern about a recommendation from the Public Participation Task Force to make the WMAC part of a larger water-related board. She said the WMAC acts as a steward of the forest, fish, wildlife, and water; and their focus was very different from wastewater and storm water. In response to Councilor Beilstein's inquiry, Ms. Schreck said WMAC's work was more

complex than water systems in general and she believed it was appropriately located with the Public Works Department. Councilors Hirsch and Hervey both supported retaining WMAC in its current form.

Mariana Mace opposed the sale of Washington Park. She noted the Parks, Natural Areas, and Recreation Board voted against selling it and she said the Park and the Linn-Benton Community College Benton Center have historic overlays. Ms. Mace said the addition of pavement would increase heat, run off to Dixon Creek, and traffic volume, impacting the neighborhood. She suggested considering other locations for parking.

VI. CONSENT AGENDA

Councilor Beilstein requested the Confirmation of Re-appointments to Various Advisory Boards, Commissions, and Committees be removed from the Consent Agenda (Item B.)

Councilors Sorte and Hirsch, respectively, moved and seconded to adopt the Consent Agenda as follows:

A. Reading of Minutes
   1. City Council Meeting – June 16, 2014
   2. For Information and Filing (Draft minutes may return if changes are made by the Board or Commission)
      a. Arts and Culture Commission – May 21 and June 18, 2014
      b. Bicycle and Pedestrian Advisory Commission – June 6, 2014
      c. Citizens Advisory Commission on Civic Beautification and Urban Forestry – June 12, 2014
      d. Downtown Commission – June 11, 2014
      e. Historic Resources Commission – June 10, 2014
      f. Parks, Natural Areas, and Recreation Board – June 19, 2014
      g. Public Art Selection Commission – May 21, 2014

C. Appointments to Boards, Commissions, and Committees

D. Vacancies on Advisory Commissions

E. Confirmation of an Executive Session for July 7, 2014 at 5:30 pm under ORS 192.660(2)(d)(h)(status of labor negotiations)(status of pending litigation or litigation likely to be filed)

F. Schedule an Executive Session for July 21 following the regular meeting under ORS 192.660(2)(d)(e)(status of labor negotiations)(status of real property transaction)

Councilor Hervey clarified language on page 231 of the June 16, 2014 minutes. He intended to communicate that he was trying to make sure there was not a scenario in which the City had a greater risk than the private developers.

The motion passed unanimously.

VII. ITEMS REMOVED FROM CONSENT AGENDA

B. Confirmation of re-appointments to various Advisory Boards, Commissions, and Committees

Councilor Beilstein objected to the Economic Development Commission (EDC) re-appointments. He did not object to the people being confirmed for appointment. Rather, he did not want the EDC to continue until Council could re-establish what was meant by economic development. Councilor Beilstein requested removing only the EDC appointments so Council could vote on the other re-appointments.

Councilors Sorte and Hirsch, respectively, moved and seconded to approve the re-appointments to various Advisory Boards, Commissions, and Committees.

Councilors Beilstein and Sorte, respectively, moved and seconded to amend the motion to remove Elizabeth French and Skip Rung from the reappointments.

Councilor Sorte said Councilor Beilstein had good points about the vagueness of economic development goals and how broadly they can be interpreted. However, Councilor Sorte said not appointing capable people who have shown or could show dedication to the issue was not the appropriate approach. He preferred that Councilor Beilstein would instead request a review of economic development goals by the Administrative Services Committee (ASC).

In response to Councilor Hervey's inquiry, Councilor Traber said Council Policy 96-6.03, "Economic Development" was scheduled for discussion at the July 9 ASC meeting.

The amendment passed five to three on the following roll call vote:
Ayes: York, Traber, Hervey, Hirsch, Beilstein
Nays: Sorte, Brown, Hogg

The motion passed unanimously.

Councilors Traber and Hirsch, respectively, moved and seconded to approve the reappointment of Elizabeth French and Skip Rung to the Economic Development Commission.

The motion passed seven to one, with Councilor Beilstein voting no.

VIII. UNFINISHED BUSINESS

A. Public Participation Task Force Recommendations

Mayor Manning reviewed her memorandum included in the Council packet.

Councilors Hervey and Traber, respectively, moved and seconded to revise Council Policy 91-2.02, "Council Process," as recommended by Council leadership.

In response to Councilor Sorte's inquiry, Mayor Manning said the City Legislative Committee's recommendations come to the full Council, so aligning it with a standing committee was not necessary.

The motion passed unanimously.

Councilors Hervey and Sorte, respectively, moved and seconded to authorize the Mayor to form a task force concerning the responsibilities of a new Community Involvement and Diversity Advisory Board.

The motion passed unanimously.

In response to Councilor York's inquiry, Councilor Hervey said Council Leadership discussed addressing additional PPTF recommendations at future Council Work Sessions.

B. Downtown Hotel/Parking Structure

Mayor Manning noted that at the June 16, 2014 meeting, Councilors voted to table the earnest money resolution until the July 7, 2014 meeting to receive more information from staff and as an opportunity for additional public comment.

City Attorney Fewel read a resolution authorizing a condominium earnest money agreement.

Councilors Hirsch and Traber, respectively, moved and seconded adopt the resolution.

Councilor Sorte distributed an amended resolution and read through each of his proposed changes (Attachment M).

Councilors Sorte and Hervey, respectively, moved and seconded to amend the earnest money resolution as proposed by Councilor Sorte.

Mayor Manning clarified that the five items at the end of the amended resolution were added by Councilor Sorte.

Councilor Sorte said he was trying to address the issues of concern raised by his constituents.

Councilor Hirsch said the changes in the first part of the amended resolution were reasonable; however, he was concerned that the added language at the end amounted to the City telling the investors what to do with the parking spaces, and that did not make sense to him.

Councilor Beilstein said as he understood it, the amended resolution would be authorizing the City Manager to re-negotiate a contract, rather than authorizing him to enter into an agreement. Councilor Beilstein said he was not opposed to the conditions, but it changed the direction from making a decision to making improvements to the deal.

In response to Councilor Brown's inquiry, Councilor Sorte confirmed that the amended resolution would address his concerns and those of his constituents.

Mayor Manning recessed the meeting from 8:31 pm to 8:36 pm.

Councilor York thanked Councilor Sorte for his work on the amended resolution and for listening to his constituents, but it was difficult for her to process the last-minute changes.

Councilor Sorte said his letter from two weeks ago spoke to the same points as his amended resolution, so the information was not new; he was merely capturing the information in the form of an amended resolution. He added that the language in item 2 regarding re-purchasing the garage was clarified to be an option, not a requirement. Regarding item 3, Councilor Sorte said the minimum of 30 parking spaces would be needed in the evening for citizens and that would be the same time hotel guests would need the parking spaces. He believed the City was not being offered an adequate number of spaces.

In response to Councilor Traber's inquiry, Councilor Sorte said he believed item 4 of the amended resolution was necessary to ensure the City would at least receive enough from the lease to offset the amount of property taxes it would have to pay on its portion of the garage.

The amendment failed four to five on the following roll call vote, with Mayor Manning casting the tie-breaking vote:
Ayes: Hervey, Sorte, Brown, Beilstein
Nays: York, Traber, Hirsch, Hogg, Manning

Councilor Hirsch said he hoped the revised look of the hotel would satisfy those who were concerned about compatibility with other buildings on the Riverfront. He noted the investors indicated a commitment to sustainability and he suggested that they also talk with the Corvallis Sustainability Coalition. Councilor Hirsch noted after the hotel was built, it would not be required to pay a living wage under the City's ordinance.

Councilor York said she would like to have a hotel on the Riverfront, but she did not support the City's involvement in the project because she believed it was too risky for the use of public funds.

Councilor Traber saw the project as an opportunity for the City. It would add to the vitality of Downtown and while he believed parking was needed more immediately at the north end of the Riverfront, it would be needed at the south end over time. He noted the City could not afford to build a parking structure without a revenue stream to pay for it. The proposal provided a revenue stream and enabled the City to gain a permanent asset. He acknowledged there was a financial risk, but he believed it was outweighed by the benefit.

Councilor Hervey agreed with Councilor Traber's points; however, Ward 3 residents were clearly against it and he intended to honor his constituents' wishes.

Councilor Brown said the proposal was good and creative, but he did not believe the data was sufficient to warrant the City's financial commitment to the project.

Councilor Beilstein spoke from a prepared statement which outlined his opposition to the proposal (Attachment N).

Councilor Hogg said the Downtown Corvallis Association (DCA) and the Downtown Commission supported having a Downtown hotel, and the DCA indicated that the parking model met the needs of Downtown businesses. In addition, representatives from the Benton County Museum supported the hotel and parking garage, as the new museum was planned to be built on the adjacent lot. Councilor Hogg agreed with the DCA's

assessment and said the additional parking would also be used by Downtown employees, as well as citizens impacted by nearby residential parking districts. He approved of the revised design of the hotel's exterior, noting it would give the building a sense of place and it would fit within the historic context of the area. Councilor Hogg acknowledged that residents expressed legitimate concerns about the process, the financial risks, and the height of the hotel; however, after carefully weighing all of the factors, he supported the project.

Councilor Sorte said he did not believe the proposal was the best deal for the City and he encouraged Councilors to consider what drives a high-value economy.

The motion failed 3 to 5, based on the following roll call vote:
Ayes: Traber, Hirsch, Hogg
Nays: York, Hervey, Sorte, Brown, Beilstein

City Attorney Fewel read a resolution leasing condominium parking spaces.

Councilors Hirsch and Traber, respectively, moved and seconded to adopt the resolution leasing condominium parking spaces.

The motion failed 1 to 7, with Councilor Hirsch supporting.

C. Package #1 Land Development Code Text Amendments (LDT13-00002 and LDT 13-00003) Deliberations

Councilors Hervey and Sorte, respectively, moved and seconded to delay deliberations on Package #1 Land Development Code Text Amendments to the July 21, 2014 Council meeting to allow notice to be provided to all interested parties who participated in the Planning Commission's public hearing regarding the Code amendments.

The motion passed unanimously.

Councilor York referenced her handout (Attachment E) regarding residential development density. She encouraged Council to move quickly to address the issue. Councilors Hogg, Sorte and Brown agreed.

In response to Councilor Traber's inquiry, Mr. Gibb said both the simple density rounding fix proposed by Tony Howell and an optional solution drafted by staff would require a Measure 56 notice per State law, due to the potential effect on property values and development on lots.

IX. STANDING COMMITTEE REPORTS AND ORDINANCES, RESOLUTIONS, AND MOTIONS

A. Human Services Committee (HSC) – June 17, 2014

1. Council Policy Review and Recommendation: 92-5.04, "Hate/Bias Violence"

Councilor York reported the Policy was reviewed by HSC, but after the meeting, staff discovered an acronym was incorrectly used. The corrected version of the policy was included in the Council packet.

Councilors York and Sorte, respectively, moved and seconded to amend Council Policy 92-5.04, "Hate/Bias Violence," as recommended by staff. The motion passed unanimously.

B. Urban Services Committee – None.

C. Administrative Services Committee – June 18, 2014

1. Visit Corvallis Third Quarter Report

Councilors Hirsch and Traber, respectively, moved and seconded to accept the Visit Corvallis Third Quarter Report. The motion passed unanimously.

2. Downtown Corvallis Association (DCA) Economic Improvement District Third Quarter Report

Councilors Hirsch and Traber, respectively, moved and seconded to accept the DCA Economic Improvement District Third Quarter Report. The motion passed unanimously.

3. Republic Services Annual Report

Councilor Hirsch reported that Republic Services converted fifteen collection trucks to run on compressed natural gas and the company planned to convert three more this year. The item was for information only.

4. Casco Telecommunications Franchise

City Attorney Fewel read an ordinance for a non-exclusive telecommunications franchise with Casco, fixing terms, conditions, and compensation.

ORDINANCE 2014-06 passed unanimously.

5. Third Quarter Operating Report

Councilors Hirsch and Traber, respectively, moved and seconded to accept the Third Quarter Operating Report. The motion passed unanimously.

D. Other Related Matters

1. Mr. Fewel provided the second reading of an ordinance relating to sunset reviews, amending Corvallis Municipal Code Chapter 1.16, "Boards and Commissions," as amended.

ORDINANCE 2014-07 passed seven to one, with Councilor Beilstein opposing.

2. Mr. Fewel read a resolution relating to a fire drill tower, adopting a statement of official intent to reimburse capital expenditures from the proceeds of a borrowing reasonably expected to be entered into by the City.

Councilors Hirsch and Traber, respectively, moved and seconded to adopt the resolution.

RESOLUTION 2014-21 passed unanimously.

3. Mr. Fewel read a resolution relating to a fire drill tower, authorizing the execution and delivery of a full faith and credit financing agreement to finance real and personal property of the City and related matters.

   Councilors Hirsch and Traber, respectively, moved and seconded to adopt the resolution.

RESOLUTION 2014-22 passed unanimously.

4. Mr. Fewel read a resolution authorizing a FY 14-15 supplemental budget for Public Works vehicle purchases.

   Councilors Hirsch and Traber, respectively, moved and seconded to adopt the resolution.

RESOLUTION 2014-23 passed unanimously.

5. Mr. Fewel read a resolution authorizing acceptance of a Federal Aviation Administration Grant relating to the Airport Improvements Cargo Access.

   Councilors Traber and Hirsch, respectively, moved and seconded to adopt the resolution.

RESOLUTION 2014-24 passed unanimously.

X. MAYOR, COUNCIL, AND STAFF REPORTS

A. Mayor's Reports

Mayor Manning noted the League of Oregon Cities legislative priorities handout (Attachment C). She asked Councilors to submit their top four choices to City Recorder Holzworth by July 25.

Mayor Manning said signature sheets for the potential Residential Parking Districts referendum were submitted to the Benton County Elections Division for signature verification. The deadline for verification is July 16.

Mayor Manning referenced the Moody's Investor Service report in the Council packet, which affirmed the City's Aa2 rating for general obligation bonds, affirmed an Aa3 rating on the City's full faith and credit obligations in the amount of $11.5 million, and removed the negative outlook.

B. Council Reports

Councilor Beilstein said he used Corvallis' first on-street bike corral, which was installed at the corner of NW Second Street and NW Jackson Avenue in a spot not suitable for

vehicle parking. He encouraged everyone to attend the Pastors for Peace fundraiser lunch on July 10 and noted his absence over the next month due to his annual trip to Cuba.

Councilor Traber said he enjoyed participating in the Fourth of July parade.

Councilor Hirsch congratulated the DCA on its Red, White, and Blue festival. He noted Eugene received a Bee Friendly award and asked for a Council Request Follow Up on how Corvallis could become a Bee Friendly community. In response to Councilor Hirsch's inquiry about how the City might bring more awareness about suicide and prevention, Mayor Manning said it was a possible discussion item for the next City/County joint work session. She added there had also been interest in having the Mental Health Coalition provide a presentation to Council.

Councilor Hervey thanked the hosts of the Annual South Corvallis Summer Solstice Celebration, who offered their backyard for the event; approximately 200 people attended.

In response to Councilor York's inquiry, Mr. Patterson said he believed the Moody's report's mention of ways to raise new revenues, such as considering a local income tax or a sales tax, was likely a hold-over from Council discussions several years ago. He confirmed that staff was not pursing those items.

C. Staff Reports

1. Moody's Report
2. Watershed Meadow Management
3. Economic Development Monthly Business Activity Report – June

XI. NEW BUSINESS

A. American Federation of State, County, and Municipal Employees (AFSCME) Agreement

Councilors Traber and Sorte, respectively, moved and seconded to approve the AFSCEME labor agreement with the City. The motion passed unanimously.

XII. PUBLIC HEARINGS – None.

XIII. ADJOURNMENT

The meeting adjourned at 9:52 pm.

APPROVED:

_____

MAYOR

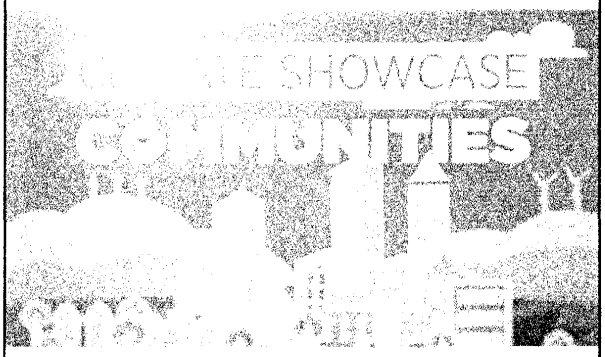
ATTEST:

_____

CITY RECORDER

CORVALLIS

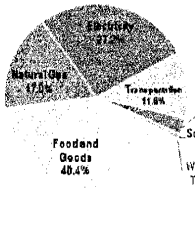
Environmental Protection Agency Climate Showcase Community 2010-2014



Corvallis Community GHG Emissions 2012

1,257,115 MT CO_2e (Metric Tons Carbon Dioxide Equivalent)

- Food and Goods — Estimated emissions: 507,270 MT CO2e
- Electricity — Estimated emissions: 341,865 MT CO2e
- Natural Gas — Estimated emissions: 215,453 MT CO2e
- Transportation — Estimated emissions: 146,273 MT CO2e
- Air Travel — Estimated emissions: 35,603 MT CO2e
- Solid Waste — Estimated emissions: 11,924 MT CO2e
- Wastewater Treatment — Estimated emissions: 698 MT CO2e



CORVALLIS

Energize Corvallis is dedicated to helping Corvallis become one of the most energy efficient, climate-friendly communities in the nation.

Corvallis Sustainability Center

Oregon State OSU

Multiple Levels of Engagement

High Level of Engagement

Corvallis Sustainability Center

Oregon State OSU

Energize Corvallis Programs

Neighborhood Sustainability Stewards

Energize Corvallis Programs

Neighborhood Sustainability Stewards

Communities Take Charge

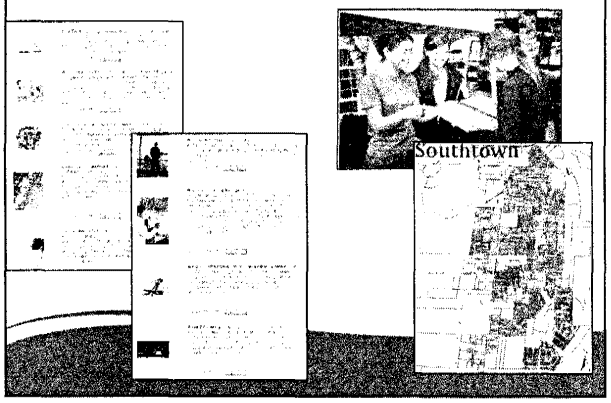
Choose

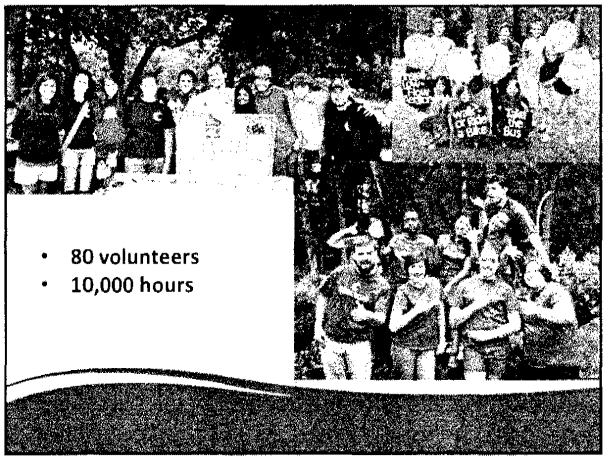
tell us

Win!

Join Online

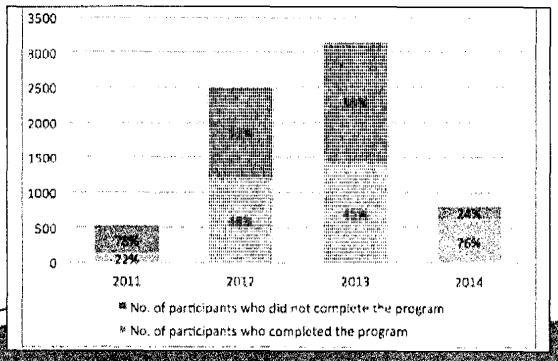
Join in Person





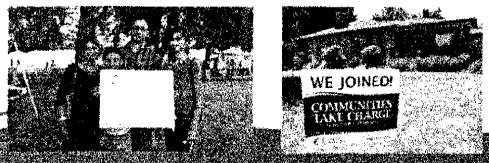
- 80 volunteers
- 10,000 hours

6,269 Corvallis Residents Joined

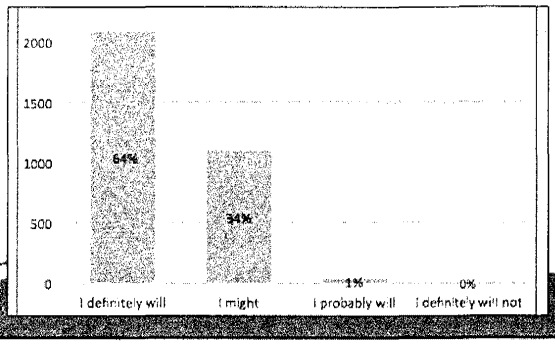


Reducing Greenhouse Gas Emissions.

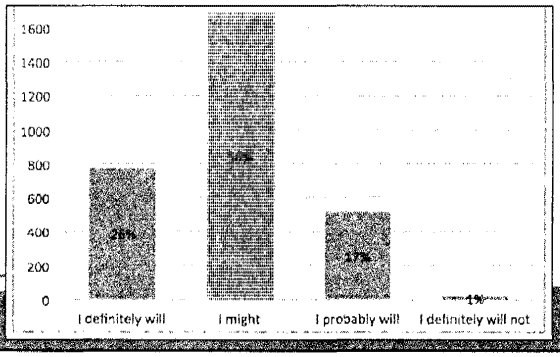
Participants saved an average of 4,055 pounds of CO_2e per year.



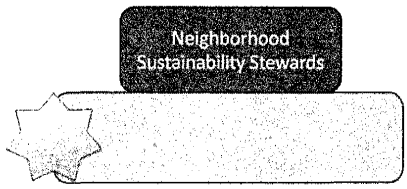
Increasing long-term behavior change.



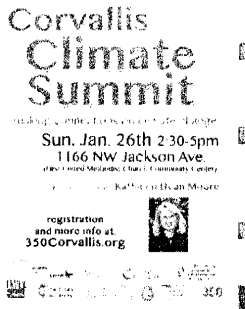
Increasing involvement in other sustainability efforts.



Energize Corvallis Programs

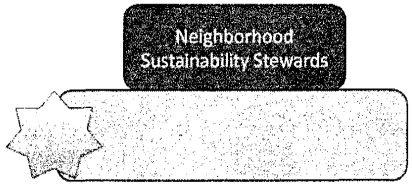


Energizers



- 250 people from 30+ organizations
- Corvallis Climate Network
- Georgetown University Energy Prize Competition

Energize Corvallis Programs



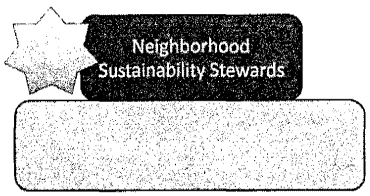
Green Share Results

Green Shares Program

Increased capacity for:

1. Property managers to improve efficiency of properties
2. Contractors to sell efficiency measures
3. More ductless heat pump installations

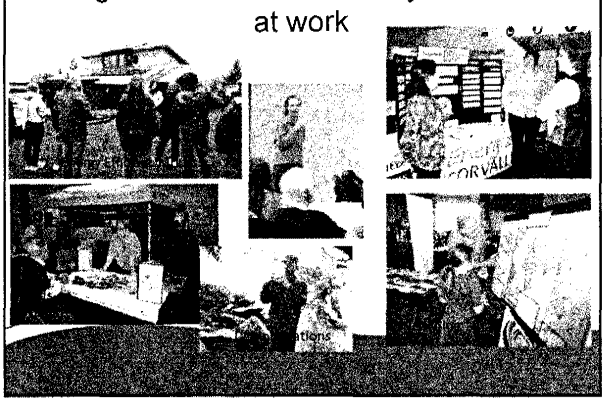
Energize Corvallis Programs

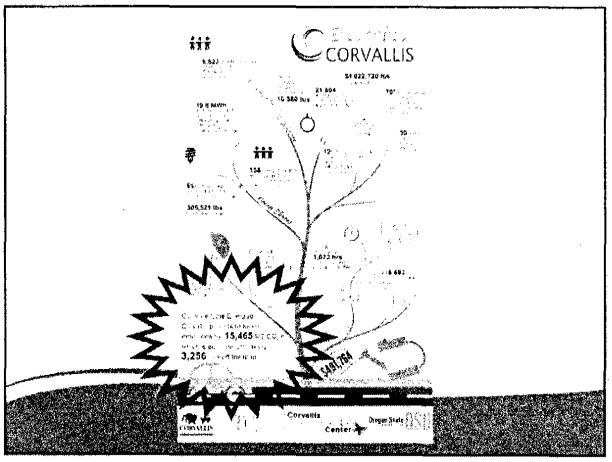


Neighborhood Sustainability Steward Program

- 35 Trained volunteers
- 1,072 volunteer hours
- 6,693 community contacts

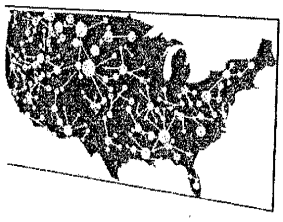
Neighborhood Sustainability Stewards at work



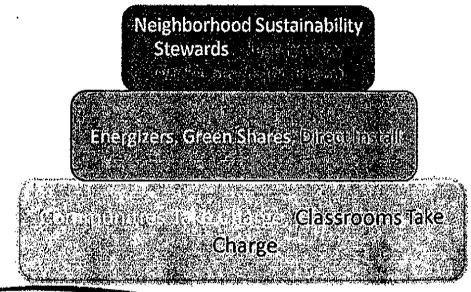


As a Climate Showcase Community, the EPA asked us to:

- Sustain
- Expand
- Replicate



Energize Corvallis Programs



Classrooms Take Charge

- 16 high schools in Oregon and Washington
- 2 years
- $267,000 Environmental Education – EPA
- 4 part-time jobs in Corvallis

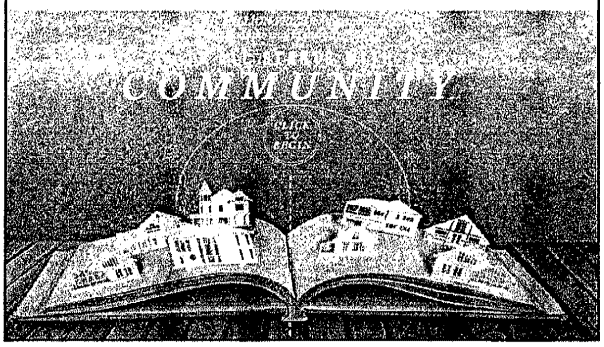
Energize CORVALLIS

Corvallis Environmental Center

Oregon Green Schools

SEATTLE PUBLIC SCHOOLS

Georgetown University Energy Prize



Letters of Support

From the Community

- 350Corvallis
- Citizens Climate Lobby
- Corvallis Climate Action Task Force
- Corvallis Environmental Center
- Corvallis Independent Business Alliance
- Corvallis Sustainability Coalition
- Extension Service Benton County, Oregon State University
- Farmland LP
- First United Methodist Church
- League of Women Voters
- Marys Peak Group of Sierra Club
- Public Works, City of Corvallis
- Sustainability Office, Oregon State University
- Student Sustainability Initiative, Oregon State University
- Unitarian Universalist Fellowship

From the Utilities

- Northwest Natural Gas
- Consumers Power, Inc.
- Pacific Power

Georgetown University Energy Prize Timeline

- **Stage 1**: Application Submitted (June 30)
- **Stage 2**: Application with a comprehensive Program Plan (November, 2014)
- **Stage 3**: Two-year Competition (January 2015 to December 2016)
- **Stage 4**: Finalists, Judging, and Awards (January to June 2017)

Energize CORVALLIS

6,523 people participat (over 10% of Corvallis' population).

Tomorrow's climate leaders volunteered **10,380 hrs**

34,022,720 lbs CO_2e saved.

21,604 energy-saving actions taken by the community.

70% of participants "definitely will" maintain energy-saving changes they made.

19.8 MWh electricity saved annually by renters after installing efficient lighting and water fixtures.

Communities Take Charge

30 people attended Energizers training.

12 faith communities sharing information about energy efficiency and conservation.

138 contractors and employees trained to promote energy efficient options.

51 ductless heat pumps installed through Going Ductless! save **305,521 lbs** CO_2e every year.

Green Shares

Energizers

35 volunteers trained

Stewards volunteered **1,072 hrs** of energy saving education to the community.

Convened community partners to develop residential energy saving projects.

Conducted community greenhouse gas inventory.

Engaged **6,693** community members in energy saving conversations.

City of Corvallis

Neighborhood Sustainability Stewards

Combined, the Energize Corvallis projects reduced emissions by **15,465** MT CO_2e, which is equivalent to taking **3,256** cars off the road.

$491,764

CORVALLIS ENHANCING COMMUNITY LIVABILITY

The Resource Innovation Group

Corvallis Environmental Center

Oregon State University OSU

RESOLUTION 2014 - _____

A RESOLUTION DIRECTING THE CORVALLIS CITY MANAGER TO ENTER INTO AN EARNEST MONEY AGREEMENT FOR $4.2 MILLION TO PURCHASE A CONDOMINIUM SHARE OF A PARKING GARAGE TO BE BUILT ON SW FIRST STREET AND SW WASHINGTON AVENUE IN CORVALLIS, OREGON.

Minutes of the _____, Corvallis City Council meeting, continued.

A resolution submitted by Councilor _____.

WHEREAS, a parcel of property on SW First Street in Corvallis, which has been underutilized and undeveloped for over two decades has been purchased by local developers who plan to build a hotel at this location; and

WHEREAS, the hotel developers have proposed a public / private partnership to develop a parking garage associated with the hotel; and

WHEREAS, in their commitment to develop sustainable budgets, the City Council has directed staff to investigate and bring forward new revenue sources; and

WHEREAS, the proposed downtown redevelopment project will provide General Fund revenue in future years, assisting the City with meeting the commitment to develop sustainable budgets; and

WHEREAS, the City Council's Economic Development Policy (96-06.03) is to (a) provide a diverse local economy, (b) attract private and public capital investment, and (c) provide facilities, services and programs that attract visitors to the Corvallis community; and

WHEREAS, this project provides for a diverse local economy, attracts private capital investment, and provides facilities that will attract visitors; and

WHEREAS, the City Council's Economic Development Policy (96-06.03) (6.03.51) calls for the City Council to set an example by adopting an active role in furthering Economic Development, and making resources available to enhance this effort, and (6.03.052) invest in public infrastructure that serves the needs of current and prospective employers; and

WHEREAS, this project depends on the leadership of the City Council in furthering Economic Development, and providing resources to enhance this effort, and invests in public infrastructure that will serve the needs of current and prospective employers; and

WHEREAS, the City Council's Economic Development Policy (96-06.03) (6.03.058) directs that the City will support activities to enhance Economic Development mission and goals by (a) increasing the proportion of spending by residents and visitors, and (b) strengthening the role of Downtown Corvallis as the vital economic, social and cultural heart of the community; and

WHEREAS, this project will increase visitor spending, and strengthen Downtown Corvallis; and

WHEREAS, the City Council's Economic Development Policy (96-06.03 (6.03.059) directs that the City may use incentives to achieve Economic Development goals; and

WHEREAS, this project provides incentives for development that would not happen but for this action; and

WHEREAS, the proposed garage will offer additional parking spaces available for public use; and

WHEREAS, the City has found that additional parking is needed in downtown Corvallis currently and in the future; and

WHEREAS, the transient room tax, property tax and lease revenues generated by this project should provide debt coverage for this project over the life of the loan; and

WHEREAS, Visit Corvallis, in their letter dated June 19, 2014 offered and agreed to underwrite the City's debt service payment for this project with new transient room tax revenues generated by this project, should there be a projected shortfall in the project's debt service reserve to be repaid with future transient room tax collections; and

WHEREAS, the City finds that there are additional economic development advantages as a result of this project including more transient room tax to support tourism, more property taxes for overlapping jurisdictions, more spending in local businesses by visitors, and more spending for overnight stays in Corvallis; and

WHEREAS, based upon the above findings, the City Council finds that it furthers the public interest for the City to purchase the condominium parking spaces for $4,200,000;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CORVALLIS resolves to direct the Corvallis City Manager to enter into an earnest money agreement to purchase a condominium share of a parking garage to be built at SW First Street and SW Washington Avenue in Corvallis, Oregon.

_____

Councilor

Upon motion duly made and seconded, the foregoing resolution was adopted, and the Mayor thereupon declared said resolution to be adopted.

LEAGUE of Oregon CITIES

P.O. Box 928 • Salem, Oregon 97308
(503) 588-6550 • (800) 452-0338 • Fax: (503) 399-4863
www.orcities.org

RECEIVED
JUN 04 2014
CITY MANAGERS OFFICE
CITY OF CORVALLIS

June 2, 2014

Dear Chief Administrative Official:

For the past three months, eight policy committees have worked very diligently to identify and propose specific actions as part of the League's effort to develop a pro-active legislative agenda for the 2015 session. They have identified 22 legislative objectives as set forth in the enclosed ballot and legislative recommendation materials. These objectives span a variety of issues and differ in the potential resources required to seek their achievement. Therefore, it is desirable to prioritize them in order to ensure that efforts are focused where they are most needed.

The LOC Board of Directors has made long-term commitments to two issues critical to cities: revenue and land use reform. **As a result of their designation as top legislative priorities on an ongoing basis neither of these issues appear on the enclosed ballot.**

The League will continue to advocate for a constitutional amendment that gives local voters the opportunity to pass local option levies outside of compression. Currently, statewide property tax limitations can prevent local voters from supporting the services they demand via local option levy. This amendment would enable voters to determine the level of services they desire and the associated level of taxation. The League will also advocate for a constitutional amendment that will improve the fairness of the property tax system by recalibrating taxes at the time a property is sold. Oregon's property tax system created a new assessed, or taxable, value based on 1995-96 real market values and capped annual growth. As property values have grown at different rates since that time, huge disparities in tax bills have emerged. The League will also continue to engage in legislative efforts to reform land use processes to reduce the burden on cities as they make local decisions about urban growth. Land use requirements have become increasingly difficult for cities to implement – with increased costs, time, and frequency of appeals – and the League will build on recent efforts to reform the urban growth boundary process to ensure that reforms streamline the land use process.

Each city is being asked to review the recommendations of the policy committees and provide input to the LOC Board of Directors as it prepares to adopt the League's 2015 legislative agenda. After your city council has had the opportunity to review the 22 proposals and discuss them with your staff, please return the enclosed ballot indicating the top four issues that your city council would like to see the League focus on in the 2015 session. **The deadline for response is July 25, 2014.** The board of directors will then review the results of this survey of member cities, along with the recommendations of the policy committees, and determine the League's 2015 legislative agenda.

(over, please)

Your city's participation and input will assist the board in creating a focused set of specific legislative targets that reflect the issues of greatest importance for cities. Thank you for your involvement, and thanks to those among you who gave many hours of time and expertise in developing these proposals.

Do not hesitate to contact me or Craig Honeyman, Legislative Director, with questions.

Sincerely,

Michael J. McCauley
Executive Director

cc: Oregon Mayors

INSTRUCTIONS

1. Each city should submit one form that reflects the consensus opinion of its city council on the **top four** legislative priorities for 2015.

2. Simply place an X in the space to the left of the city's top four legislative proposals.

3. The top four do not need to be prioritized.

4. Return by **July 25th** via mail, fax or e-mail to:

   Angela Carey
   League of Oregon Cities
   1201 Court St. NE, Suite 200
   Salem, Oregon 97301
   Fax – (503) 399-4863
   acarey@orcities.org

Thank you for your participation.

City: _____

Please mark 4 boxes with an X that reflects the top 4 issues that your city recommends be added to the priorities for the League's 2015 legislative agenda.

Community Development

☐ A. Provide tools for brownfield remediation including $10 million in recapitalization of the redevelopment fund, new incentives such as tax credits, or regulatory modifications.

☐ B. Support capitalization of the industrial site readiness loan program at $10 million and the industrial site readiness assessment program at $200,000.

☐ C. Prioritize grants providing assistance for natural disaster planning and updating comprehensive plans to address likely natural disasters in a community, and increase the grant funds available to cities through the DLCD's general grant funds to $2 million.

☐ D. Reform the Post Acknowledgment Plan Amendment process to require appellants to raise issues before the local government before raising the issue on appeal.

Energy

☐ E. Modify the existing "1.5% green energy technology for public buildings" requirement to allow for offsite solar investments.

☐ F. Support efforts to eliminate the sunset on the Low Carbon Fuel Standard program.

Finance & Taxation

☐ G. Phase out the 3% discount for the early payment of property taxes.

☐ H. Improve the fairness of how new and improved property is added to the tax roll.

☐ I. Improve clarity and certainty around transient lodging tax statute.

General Government

☐ J. Reform Oregon's recall procedures to encourage a greater participation of the electorate and ensure that it is used for reasons involving misconduct.

☐ K. Allow for price comparison when procuring architects and engineers.

☐ L. Clarify and enhance medical marijuana dispensary regulations.

☐ M. Enhance mental health services.

Human Resources

☐ N. Ensure that arbitrator awards are in compliance with state, as well as local policies.

☐ O. Ensure that collective bargaining agreements trump state mandates on police investigations.

☐ P. Require earlier submission of last best offer.

Telecommunications

☐ Q. Support the reintroduction of legislation that repeals ORS 221.515.

☐ R. Oppose legislation preempting the ability of cities to manage and receive compensation for the use of a public ROW.

Transportation

☐ S. Pass a comprehensive transportation funding and policy package.

☐ T. Continued or enhanced funding for *Connect*Oregon.

Water/Wastewater

☐ U. Support efforts and program funding to address Oregon's long term water supply needs including recapitalization of the Water Conservation, Reuse and Storage Grant Program and implementation of a place-based pilot program for local water resources planning.

☐ V. Support efforts to establish a program that would provide low-interest loan opportunities to address failing residential onsite septic systems. The new loan program would support repair and replacement of failing systems or conversion to a municipal wastewater system, if the conversion is at the request of the impacted municipality.

Note: As indicated, property tax and land use reform will remain as priority efforts.

LOC Policy Committees' Legislative Recommendations

Priority	Description
Community Development	
A. Provide tools for brownfield remediation including $10 million in recapitalization of the redevelopment fund, new incentives such as tax credits, or regulatory modifications.	Supports finding funding sources and cost reductions for cleaning up brownfields to support economic development. The Brownfield Redevelopment Fund Program provides gap financing to clean-up industrial sites but has not been recapitalized to address the increasing need for clean-up of brownfield sites. However, the fund is not large enough to address this need on a statewide basis, so further support for efforts to determine alternative means to incentivize brownfield redevelopment will increase available industrial sites and help drive economic development. Overall, increasing tools to redevelop brownfields provides more options to cities looking to redevelop current brownfields into a better use.
B. Support capitalization of the industrial site readiness loan program at $10 million and the industrial site readiness assessment program at $200,000.	Provides funding for two programs created in 2013 for addressing lands that are zoned industrial but are not being used for industrial purposes: the industrial site readiness program and the industrial site readiness assessment program. The first provides forgivable loans to local governments that bring industrial sites to shovel ready status, such as by placing infrastructure or cleaning up a brownfield. The second allows regions to determine what is preventing land designated for industrial use from being built for industrial use. However, no money was provided to fund either program in the 2013-2015 budget.
C. Prioritize grants providing assistance for natural disaster planning and updating comprehensive plans to address likely natural disasters in a community, and increase the grant funds available to cities through the DLCD's general grant funds to $2 million.	In the last two biennia, the Oregon Department of Land Conservation and Development general fund grant program has seen a significant drop in the money allocated to it with increasing need from local governments to address technical planning issues and update pursuant to periodic review. In addition, the Oregon Seismic Safety Policy Advisory Commission, has released a report related to ongoing need for upgrading resilience in response to a major earthquake and recent natural disasters have raised awareness relating to land use planning. Raising the general fund grant program back to the 2009-2011 budget levels will help more cities address their planning needs and seek technical assistance. This would also alter the uses for these funds to include planning that increases resilience to natural disasters and meet their Goal 7 requirements.
D. Reform the Post Acknowledgment Plan Amendment process to require appellants to raise issues before the local government before raising the issue on appeal.	Changing the appeals requirements for post-acknowledgement plan amendments (PAPAs) will keep decision making for land use policy at the local level first, allowing city official to determine the scope of legislative changes they make to their plans without trying to fight a new issue on appeal. This "raise it or waive it" standard currently exists for quasi-judicial decisions at the local level and insures that local decisions are not attacked on appeal on an issue that a city could have resolved in finalizing its decision. Modifying the PAPA appeal insures more land use decisions start with addressing all issues at the local level first.
Energy	
E. Modify the existing "1.5% green energy technology for public buildings" requirement to allow for offsite solar investments.	Oregon statute currently requires public contracting agencies to invest 1.5% of the total contract price for new construction or major renovation of certain public buildings on solar or geothermal technology. The requirement allows for offsite technology, but only if the energy is directly transmitted back to the public building site and is more cost-effective than onsite installation. Removing the requirement that an offsite project be directly connected to the public building project could result in increased flexibility for local governments to invest in solar projects that are more cost-effective and that could provide for increased solar energy production.

F. Support efforts to eliminate the sunset on the Low Carbon Fuel Standard program.	Oregon's low carbon fuel standard, also known as the Clean Fuels Program, was initially adopted by the 2009 legislature. The standard would require fuel producers and importers to cut the carbon intensity of gasoline and diesel fuels by ten percent over a 10-year period in order to reduce greenhouse house gas emissions, reduce dependence on imported oil, and expand upon Oregon's renewable fuel industry. Fuel producers and importers can meet the standard through providing additional biofuels, natural gas or electricity, or by purchasing clean fuel credits. The program includes several consumer protection mechanisms to help ensure an adequate fuel supply and competitive fuel pricing. The program, as initially adopted is scheduled to expire, or sunset, on December 31, 2015. The League will work to support efforts to eliminate the sunset on the program.
Finance & Taxation	
G. Phase out the 3% discount for the early payment of property taxes.	Oregon law offers a 3% discount for property owners who pay the full amount due by November 15th. A 2% discount is offered for those that pay two-thirds of the amount due by November 15th. The League will phase out the discount over a period of time and adopt a penalty for failing to pay by November 15th to mitigate any cash flow issues for local governments.
H. Improve the fairness of how new and improved property is added to the tax roll.	New and improved property is brought on the tax rolls by applying an annual county-wide ratio of assessed values (AV) to real market values (RMV) to the new or added value of a property, in an attempt to replicate the property tax discount given to properties via Measure 50. However, significant variation between AV and RMV exist within a county, resulting in the discount often being inequitable compared to neighboring properties, as well as being out of line with the discount originally offered to properties when Measure 50 passed in 1997. As a result, similarly situated and valued properties can have significantly different property tax liabilities. The League will work to modify the property tax system to improve the fairness of how new property is added to the tax roll.
I. Improve clarity and certainty around transient lodging tax statute.	State law limits how transient lodging taxes increased or adopted after July 2003 can be spent, with statute requiring that 70 percent of increased or new transient lodging tax revenues be expended on tourism promotion or tourism-related facilities. There is uncertainty, however, as to what qualifies as a tourism-related facility and the timeline in which such expenditures can be legally challenged. The League will seek to improve the certainty around what qualifies as a tourism-related facility and reasonably limit the timeframe in which such expenditures can be legally challenged.
General Government	
J. Reform Oregon's recall procedures to encourage a greater participation of the electorate and ensure that it is used for reasons involving misconduct.	Under Oregon law, an elected official may be recalled by an initiative petition for any reason after the first six months of their term. Limiting recalls to cases where there has been demonstrated wrong doing by a court or regulatory body (such as the Oregon Government Ethics Commission) would prevent the misuse of recalls without limiting the power of the electorate to reverse a decision. Recalls should be limited to acts of malfeasance or offenses involving moral turpitude.

K. Allow for price comparison when procuring architects and engineers.	In 2011 the Oregon Legislature required cities to use a qualifications based selection (QBS) process that prohibits the consideration of price until an initial selection has been made when hiring architects, engineers and photogrammetrists. This requirement prevents local governments form comparing pricing and effectively eliminates price competition when procuring these services.
L. Clarify and enhance medical marijuana dispensary regulations.	Existing restrictions on the placement of medical marijuana dispensaries (MMD) are inconsistent with land use regulations and should be clarified. Additionally, background checks are not required on people who work in MMD and there is no regulation on the manufacture of oils and other liquid marijuana products that use flammable/explosive substances in their processing.
M. Enhance mental health services.	Oregon's police departments have marked an increase in interactions with the mentally ill in recent years. Crisis intervention teams (CIT) have proven effective and deescalating interactions with the mentally ill, but this service model is not available in all parts of the state. Additionally, there is a demonstrated need for "drop-in" mental health services that allow for treatment before a person enters a state of crisis. There should be statewide access of CITs, and emergency access to mental health services to promote patient and community safety. Additionally, mental health services should be examined holistically to ensure that Oregon is providing the best possible care to the mentally ill.
Human Resources	
N. Ensure that arbitrator awards are in compliance with state, as well as local policies.	Currently, an arbitrator's award overturning an employer's disciplinary decision must comply with state policies on issues including, but not limited to: use of force, sexual harassment, or misconduct. Precedent has established that only state policies apply to the enforceability to an arbitrator's award.
O. Ensure that collective bargaining agreements trump state mandates on police investigations.	"The Police Officer's Bill of Rights" was intended to offer protections for officers who were under investigation if there was no collective bargaining contract or the contract was silent on how investigations were to be conducted. Changes made in 2009 have resulted in confusion and manipulation of the bargaining process. The statute needs to be amended to bring it back to the original intent of the bill.
P. Require earlier submission of last best offer.	Under current law, last best offers (LBOs) must be submitted 14 days prior to opening of arbitration in the event parties have declared an impasse, and binding arbitration is being used to settle the contract. Most arbitrators use a 30-day cancellation policy that requires payment even if parties settle prior to the commencement of arbitration. Requiring LBOs to be submitted 35 days prior to the opening of arbitration would provide an opportunity to settle without paying unnecessary fees.
Telecommunications	
Q. Support the reintroduction of legislation that repeals ORS 221.515 (HB 2455 -7 in 2013) removing the franchise fee rate and revenue restrictions which currently apply to incumbent local exchange carriers, or other legislation that: • Does not preempt local authority to manage the public ROW and be compensated for its use; • Maintains or increases the opportunity for revenue growth; and • Is technology neutral.	Protection of local authority to manage public rights of way (ROW) and receive compensation for any use of those facilities continues to be at the forefront of the League's telecommunications agenda. The League's "Oregon Municipal Policy" generally asserts local government Home Rule authority and specifically refers to the telecom management and compensation authority of Oregon cities. Since 1989 state statute has caused a disparity between certain types of telecommunications providers with regard to how franchise fees are collected. The League's preference is equity between all providers using the ROW, but with continued local ability to negotiate individual franchise agreements with individual service providers. During the 2013 legislative session the League supported efforts by Comcast to enact legislation doing away with the disparity. HB 2455 would have repealed ORS 221.515, thus allowing cities to charge all telecommunications in the same manner. The proposal received a hearing but was not approved in committee. The committee chair may be interested in re-introducing the proposal in 2015. However the telecom industry, this time including Comcast, is likely to introduce legislation

	dealing with the disparity in a manner that cities may find objectionable, including rate caps on an overly narrow revenue base and other policies that could infringe upon both management and compensation authority and negatively impact city revenues.
R. Oppose legislation preempting the ability of cities to manage and receive compensation for the use of a public ROW including: • Establishment of a "one-size-fits all," state-wide franchise fee policy and collection system. • Prohibition of a city's authority to levy franchise fees on other local government entities.	*Same as above.*
Transportation	
S. Pass a comprehensive transportation funding and policy package containing the following elements: • A gas tax increase of up to 5 cents/gallon. • Index the gas tax either to the consumer price index or some other accepted and relevant economic index. • Continued development and expansion of the state's commitment to a transportation user fee based on vehicle miles traveled (VMT). • License plate fee increases to include lightweight trailers. • No change in the constitutional dedication of State Highway Trust Fund dollars to highway, road and street projects (Article 9, Section 3a, Oregon Constitution). • New revenues coming to the State Highway Trust Fund should continue to be split between the state, counties and cities 50%-30%-20% respectively. • Increase in the statutory (ORS 366.805) "Small City Allotment" fund from $1 million to $5 million annually, split evenly between the Oregon Department of	The League of Oregon Cities agrees that the state's transportation system and the policy and funding programs that support it must be multimodal in scope. The League will therefore support and work to achieve passage of legislation in 2015 that seeks to address funding and policy initiatives relating to all modes (streets, bike/ped, transit, rail, aviation and marine) and in so doing addresses such issues as: • Connectivity • Safety • Jobs and economic development • Transportation impact on climate change • Active transportation and public health Given the fact that maintenance and preservation needs have outpaced the resources available for streets, roads and highways, and given the threat that represents to investments already made in the transportation system, the League will insist on a transportation package that increases and makes more sustainable the ability of all government jurisdictions to preserve and maintain these assets. Note: The Small City Allotment has not been increased since its inception in the early 1990's. The additional revenue to cities from the 2009 Jobs and Transportation Act did not increase road funding for small cities.

Transportation (ODOT) and the cities' share of the trust fund. • No restriction, moratorium or preemption of local government ability to generate their own revenues for transportation funding. • Adequate funding for the maintenance and preservation of "orphan highways" in Oregon as part of a more robust jurisdictional transfer program.	
T. Continued or enhanced funding for *Connect*Oregon	*Connect*Oregon is the state's premier multi-modal funding program, and is funded out of lottery revenues.
Water/Wastewater	
U. Support efforts and program funding to address Oregon's long term water supply needs including recapitalization of the Water Conservation, Reuse and Storage Grant Program and implementation of a place-based pilot program for local water resources planning	According to the Oregon Water Resources Department, 2013 marked the fourth driest year on record for Oregon, with some areas experiencing their driest year on record yet. Oregon experienced below average precipitation in 2013 and continuing into 2014. As of May 2014, snow measurement sites in many part of Oregon show record lows for snowpack levels. As a result, summer streamflows are expected to be below average and water shortages are likely for many part of Oregon. The League will work in conjunction with the Oregon Water Resources Department to fund programs to address water supply shortages. These efforts will include support for ongoing funding of the Water Conservation, Reuse and Storage Grant program which provides grant funding for water supply project feasibility studies. The League will also support efforts for the Oregon Water Resources Department to establish a place-based planning pilot program to facilitate local collaboration among interested stakeholders and the creation of a blueprint for long-term integrated water resources planning and implementation.
V. Support efforts to establish a program that would provide low-interest loan opportunities to address failing residential onsite septic systems. The new loan program would support repair and replacement of failing systems or conversion to a municipal wastewater system, if the conversion is at the request of the impacted municipality.	According to the Oregon Department of Environmental Quality, over 30 percent of Oregonians rely on septic systems to treat wastewater from their homes and businesses. Many of these systems are within the boundaries of a municipal wastewater system, and a number of these systems are in need of repair or replacement. Failing septic systems, especially those within proximity to groundwater resources, create a significant human health hazard. However, significant costs to address failing septic systems often create a burden for homeowners who are unable to pay for costs associated with repair, replacement or conversion over to a public sewer system. The League will work with the Oregon Department of Environmental Quality to establish a revolving loan program that private residents can access in order to address failing septic systems. The League will further advocate that the program include mechanisms to encourage participants to convert over to a municipal wastewater system if conversion is at the request of the impacted municipality.

From the desk of
Kathryn J. Phillips
P.O. Box 1465 Corvallis, OR 97339
Ph/Fax (541) 758-4247

6-3-2014

RE: TA LOT 13-000 2
LOT 13-000 3

RECEIVED
JUN 30 2014
Community Development
Planning Division

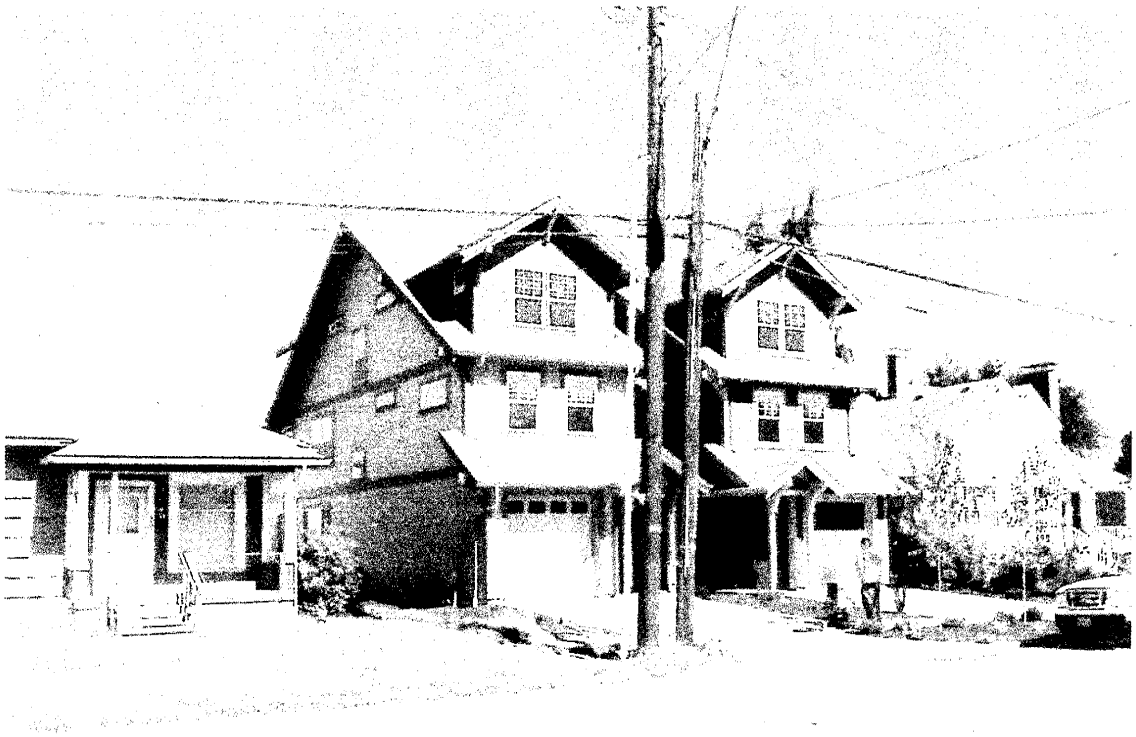
This is a request city council

DO NOT ADOPT * TA that eliminates the owner's gifted "half-street homes", as recent over-builds of apartments will diminish "large house on small lot" development, and, adoptions will stop beautiful in-fill residential developments as my 8-lot Rosewest provided to renters wanting to become homeowners.

Drive this cozy 8-home housing project that transitioned between big apartment buildings (RS-20) and existing neighborhood RS-6 with new SFD homes close to shopping & transportation.

Please do not adopt TA and hinder affordable housing projects by hometown bystanders

K.J. Phillips



Duplexes at 335 and 337 NW 17th.

This development fundamentally changes the character of this residential neighborhood. This area is zoned RS 9. LDC 3.4.10: "Purpose: This zone is the primary zone that implements the Medium Density Residential Comprehensive Plan designation which allows from **six to 12** dwelling units per acre." **These two properties are actually developed at 16.7 units per acre.**

Each lot has two units. If we were enforcing our 9-12 unit zoning requirement, only one unit would be allowed on each.

Let's stop allowing the rounding amendment to misrepresent the purpose of the LDC and alter our neighborhoods.

Besides the suggestions from staff, another possible action:

> Add the following language immediately following the purpose statement, which reiterates the stated purpose of the zone: **" The number of units on one parcel may not exceed the maximum number of units permissible in the range for this zone (9-12)."**

Penny York, July 7, 2014

July 7, 2014

To: City Council
From: David Eckert, , Corvallis, Oregon
Subject: Resolutions regarding Downtown Hotel/Parking Garage

The definition of an **Entrepreneur:** a person who organizes and manages any enterprise, especially a business, usually with considerable initiative and risk.

Entrepreneurialism is not a good word to use when practicing good government or to inspire the trust of local citizens. I, and essentially everyone I have talked with about this proposed public spending plan, agree with Councilor Hirsh's use of the term "entrepreneurial spirit" at the last Council Meeting. We agree that the public funding proposal is entrepreneurial and carries considerable risk for our public funds. Entrepreneurial spirit is great for those who can afford to take the risk. The City cannot. I suggest that those who want our public funds for this entrepreneurial project invest their own entrepreneurial money and enjoy both the rewards and the risks.

While I support the mission of Visit Corvallis, their offer of financial support is but the latest episode in this accounting shuffleboard game in which money is passed in a blur across many accounting lines to make it appear that this is a financial benefit for our public funds. Using public funds over the next 10 years that will purportedly be granted to Visit Corvallis by City Council and then given back to the City if the parking garage loses money for the City could annually reach into the 6 figures.

This offer troubles me in ways beyond the obviously flawed shell game it represents:

1. Does Visit Corvallis have too few current projects and expenditures that are critical to its operation and to the expectations set by City Council as its funding agent?
2. Will Visit Corvallis provide fewer promotional services and projects in the future to fulfill their mission for the City because of this offer?
3. Did Visit Corvallis improperly commit and sequester funding for a non-specific payment amount over the terms of future Visit Corvallis Board of Directors?
4. Can the Visit Corvallis Board of Directors legally commit a non-specific amount of funding for future expenditures beyond the current fiscal agreement with the City?
5. Did Visit Corvallis's offer represent an exceptional and unfair bias of Visit Corvallis' expenditures benefitting only one hotel over the many other hotels they serve?
6. Did Visit Corvallis' funding promise commit future City Councils to continue to fund Visit Corvallis from hospitality tax revenue even if Visit Corvallis fails to meet its other commitments?

Please don't insult the financial wisdom of our citizens by approving public funding for this entrepreneurial investment. Leave it to the risk-takers. We have bigger problems to deal with.

I urge you to vote no on these two resolutions. We cannot afford the risk.

Alta Vista Design Architecture & Planning LLC
2422 NW Molly Court, Corvallis, OR 97330-9260
Phone: (541) 754-7540 e-mail: altavistadesign1@gmail.com

July 4, 2014

Mayor Manning and Corvallis City Council:
You are faced with a monumental decision that will have a very long-lasting impact upon the visual character of the River District. Your decision will also impact the economic prosperity of Downtown Corvallis and the greater community.

You have been bombarded with hotel development related claims and counter-claims. Through the turmoil, you have made the wise initial decision to let the dust settle while you evaluate the current hotel proposal and other options.

If more time is needed to seek and evaluate win-win concepts, then take the additional time to consider such concepts.

While I strongly support the redevelopment of the Adams / Washington Block, I also urge you to reject the developer's current proposal. Seek a solution that is more in keeping with the long-range vision and development approaches recommended by the Riverfront Commission during ten years of rigorous community involvement.

This letter outlines a modified re-development and parking concept that was originally crafted by the Riverfront Commission. The commentary starts with a Summary Recommendation. An Appendix follows with supporting historic documents, contemporary data, and graphics that may help with your decision.

Summary Recommendation:
There are better parking solutions than the hotel garage design that is currently being offered to the City. We need to move from the developer's current "win-lose" request and follow the path to a "win-win" solution.

If the hotel developer is serious about finding a partnership approach that works well for all parties involved, then they should start by offering the "underground development rights" to the City for the sole purpose of constructing a City owned single-level underground public parking garage. All property owners of the Adams / Washington Block who are willing to enter into a shared-development agreement with the City would retain full ownership to the "air-rights" above the City parking garage to develop as they see fit, i.e. hotel, museum, mixed-use building, etc.

How will an "underground development rights" + "air-rights development" approach benefit all parties? The answer is all directly connected to our property tax structure, land development code parking requirements, and access to a valuable parking resource that is in very short supply. Just follow the key points below to see how the "development-rights sharing" is the path to a win-win partnership for the land owners, the City, and the tax payers of Corvallis and Benton County.

- **The land below the first floor structure of new buildings will become exempt from property taxes because the ground occupied by the City underground parking garage is tax-exempt.** (WIN for the developers)
- **The City will not need to purchase land to construct a parking garage and private land in the downtown area will be retained for future re-development.** (WIN for the City, Downtown, Corvallis tax-payers and all property tax dependent entities, i.e. City, Benton County, 509J & LBCC)
- **The Museum will not need to purchase land or pay into the "parking fund" to solve their parking requirements. Convenient parking will be available for Museum visitors.** (WIN for Museum and Community)
- **Convenient access to public parking.** (WIN for Downtown Merchants, Customers, and Tourism)
- **The height of the proposed hotel can be reduced by 2-3 floors.** (WIN for hotel developer, Riverfront Park, Downtown, and the Greater Corvallis Community)

The time is now for a smart Riverfront re-development approach where everyone wins!

Richard Bryant, AIA
Principal Architect – Alta Vista Design Architecture & Planning LLC + 10-year Riverfront Commission Member

THE FOLLOWING WAS PROVIDED BY SCOTT DYBVAD, SUSTAINABILITY PROGRAM SPECIALIST

Years ago a seed was planted when the Corvallis City Council agreed to allocate funds from the Energy Efficiency Community Block Grant program to support some very diverse programs. Most communities used those funds for efficiency improvements to their infrastructure, but our community was ahead of the ball. Instead, Council seeded with funding a few programs that have led us to this point today. The Corvallis Weatherization Incentive Program, the Revolving Loan Fund for residential home energy efficiency improvements, and a Volunteer Coordinator position focused on energy efficiency at the Corvallis Environmental Center all started from those funds. And that support led directly to a pilot of the Communities Take Charge program, which is one of the programs we're here to discuss this evening. As the EECBG money was winding down, the people involved sensed the potential in these young programs and grant funding was identified, applied for and awarded to continue their development.

Now, here we are, 7 years after that first seed was planted, to fill you in on the accomplishments and lessons from the past three years working on the Environmental Protection Agency's prestigious Climate Showcase Communities grant program.

The Climate Showcase Communities grants aimed to help local governments and tribal nations to pilot innovative, cost-effective and replicable community-based greenhouse gas reduction projects. As a community with achievements that reflect strategic planning and strong, collaborative efforts between City government, residents, non-profits, businesses, and educational institutions, we thought we had a good chance. In the end, we were one of only fifty communities awarded. We received nearly a half a million dollars that supported four distinct projects over the three years.

The City's main role was to serve as a connection with EPA and to manage grant funds and cost share. The City also contributed by conducting a community greenhouse gas inventory, the result of which I provided to you at the last Council meeting. This slide provides a brief recap of the inventory. The City also has a website with more details and the full report.

With me tonight are the key individuals from two of the three organizations that participated in the grant. These are the people who devised and developed the programs. Unable to attend tonight's meeting is Sarah Mazze from the Resource Innovation Group in Eugene. Sarah developed and managed the Green Shares program. Here at the table with me are:

- Jody Einerson from OSU Extension Benton County who was the Project Manager and Volunteer Coordinator for the Neighborhood Sustainability Stewards Program.
- And Carly Lettero, Director of Energize Corvallis with the Corvallis Environmental Center.

THE FOLLOWING WAS PROVIDED BY JODY EINERSON OSU BENTON COUNTY EXTENSION,

The goal of **Green Shares**, also a medium-level program, was to increase the number of contractors focused on energy efficiency and improve the ability of those contractors to sell these measures to their customers.

Two highlights of this program were the "Going Ductless! Heat Pump Campaign" and outreach to rental property owners and managers. We focused on the rental market because it makes up more than half of Corvallis housing and is a challenging market for efficiency upgrades. A workshop for property managers and owners presented the benefits of efficiency upgrades and available financial incentives. The "Going Ductless!" campaign paired broad community outreach with a limited time installer and manufacturer's rebates. This offer was publicized by mailers to over 12,000 households.

Over the three-year project, Green Shares trained 138 contractors, enrolled 26 businesses with 336 Full Time employees and reached more than 18,000 households. Green Shares increased capacity within Corvallis for: landlords and property managers to increase the efficiency of their properties, building contractors to more effectively sell efficiency measures, and ductless heat pumps to be installed on a more widespread basis.

Next the **Neighborhood Sustainability Stewards** Program includes a high level of commitment for the trained volunteer.

This program starts with a 10 session in-depth training in energy savings and sustainable living on a household level. Individuals pay a fee to take part in the training, and in addition pledge to give back 30 hours of volunteer service in the community sharing what they have learned. We graduated 35 Sustainability Stewards over the three years who returned over a 1,000 volunteer hours and engaging close to 7,000 people in their outreach.

We were really excited about the community sharing that came out of this program. Stewards provided educational outreach to the community in many ways: staffing informational booths at events, peer to peer sharing, writing articles, creating informational materials, group presentations, and teaching youth, are just a few examples.

Stewards reported that this project enhanced their knowledge, or supported their continuing efforts in "living more sustainably." Stewards have reported that the program has given them more confidence to engage in conversations with peers, and the general public about climate change issues. And, many of the Stewards have gone on to take leadership roles in our community with climate action & sustainability organizations and on related projects.

THE FOLLOWING WAS PROVIDED BY MR.DYBVAD AS THE SECOND PART OF HIS PRESENTATION:

This infographic summarizes the last 3.5 years of Energize Corvallis program achievements. In total, we saved 15,465 metric tones, which is equivalent to taking 3,256 passenger vehicles off the road for a year.

As a Climate Showcase Community, the EPA asked us to expand, sustain, and replicate our programs, and we are doing that in a number of ways.

Since receiving the EPA funding, we have added 4 more Energize Corvallis programs (noted in black).

We are especially excited about the Classrooms Take Charge program, which will allow us to expand the Take Charge program into 16 high schools in Oregon and Washington over the next 2 years with a $267,000 Environmental Education Award from the EPA, which will fund 4 part-time jobs at the Corvallis Environmental Center.

We are also expanding our programs by competing in the GUEP. As many of you know, this is a 2-year, national competition to reduce residential and municipal energy use, and the community that wins will receive a 5 million dollar prize.

We want to thank you, Councilors, for your unanimous support of our Georgetown application. We also received letters of support from 15 community organizations and from all three of our utility providers.

Energize Corvallis and the Energy Action Team of the Corvallis Sustainability Coalition partnered to submit our Stage 1 application on June 30th. The Georgetown selection committee will announce which communities will enter the Stage 2 competition at the end of July. If Corvallis is selected, our comprehensive Program Plan will be due in November, and we'd start the competition in January.

Councilors, the seeds that you planted 7 years ago with the EECBG money have grown into thriving programs that are reducing GHG emissions in Corvallis and beyond. We, at Energize Corvallis, look forward to a continued partnership with the City and to continuing to lead the way in energy conservation and climate action.

We'd be happy to answer any questions.

Good Evening Mayor Manning, Councilors

My name is Mary Pat Parker and I am here representing Visit Corvallis, the destination marketing organization for the City of Corvallis.

It looks like you have a very busy agenda this evening, so I won't take up much of time- but I felt that it was important to come and comment on an item you have before you tonight. That would be the proposed downtown parking structure and the hotel. The Visit Corvallis Board of Director's voted at our June meeting to underwrite any shortfall in the City's ability to cover the debt service, after exhausting the $200,000 set aside in the parking fund- up to the amount of Visit Corvallis' portion of the TRT generated by the proposed **downtown hotel project only.**

Hopefully you all received a copy of that letter and have seen the article written in Gazette Times by Bennett Hall. We felt that it was important to share our position with the community to allay some of the fear expressed by the community that this project would somehow impact their property taxes. There seems to be a disconnect about who pays into the Transient Occupancy Tax. It is the visitor that come to our community and stay overnight in our hotels that pay that tax. The chances that this would ever affect the City's general fund or essential public services have been pretty well mitigated at this point.

Furthermore, this model of public/private partnership has been highly successful in other communities throughout the country. We know this project has generated plenty of criticism- just like the riverfront development project did. But because our elected officials at that time chose to move forward, we now have a beautiful waterfront park with all the amenities a small city could ask for. So we urge you this evening to consider the risks but focus on the benefits that this project would bring to area restaurants, shops and other small businesses in our amazing downtown core.

Thank you!

June 28, 2014

To: Corvallis City Council Members

From: Owners: Corvallis Hilton Garden Inn, Holiday Inn Express, and recently approved Fairfield Inn and Suites Hotels

Re: Riverfront Hotel Parking Garage Proposal

We would like to voice a number of concerns about the parking garage proposal. We'll stipulate that we can be accused of self-interest regarding our concerns. Nonetheless, we believe our concerns to be well-grounded and fully valid regarding the best interests of the entire community.

Our members are not only in the hotel business locally, but throughout the Pacific Northwest; from Fairbanks, Alaska, to downtown Seattle, to Ashland, Oregon, and many other markets as well. Our members not only develop hotels, but also multi-family and other types of commercial properties. And one of our members is an active Commercial Real Estate Broker regionally. We believe we would be remiss if we did not bring our concerns to your attention.

This list of concerns is certainly not exhaustive, but it is representative. We respectively request that you carefully read and consider the entire list.

1) *The Corvallis Benton County Economic Development Office* provided a powerpoint presentation for your May 19, 2014 Executive Session that is replicated on the City web-site. Page 9 includes the parenthetical statement that "Top Hotels in Corvallis Average 80% Occupancy".

That statement is simply wrong. It is inaccurate. It is incorrect. It is misleading. It is insulting to know that operating revenues that make their round-about way to Economic Development via our hotels are being used to disseminate inaccurate information that assists a private competitor.

No hotel in Corvallis, "Top" or otherwise, has averaged 80% occupancy annually – at least in modern times. Since the 80% occupancy mark seems to be the target for annual break-even of the entire proposal for the City, we are very concerned that Economic Development has allowed its support for the project to prejudice how it presents information. And since that piece of information is so obviously incorrect, how reliable is any other information presented?

2) *Stabilization Period*. City web-site information assumes 60% minimum occupancy immediately, and a top end 80%. The developer information on the City web-site does indicate perhaps three years are required to reach 75% occupancy, with a notation that 75% "is consistent with a feasibility study we commissioned". But there appears to be no true analysis of the market absorption period necessary to achieve either of those percentages.

Although we can dispense with the 80% number as fabrication, the proponents should provide credible feasibility information regarding the number of years required to reach at least the 60% number, and also to reach a reasonable stabilized occupancy. There is no other way for you to accurately evaluate the economics of the proposal.

The proponents' web-site does contain a May, 2011 feasibility study for a 125 room hotel at the subject site. That study is quite brief by industry standards. We do not consider it credible for this purpose. It does not contain an absorption period pro-forma of any sort. It does suggest stabilized occupancy of 70-73% (not 80%!,or 75%). But there is no indication of an estimated time-frame to achieve that stabilized occupancy by the consultant.

Further, the May, 2011 feasibility study on which the developer relies does not consider our own recently approved 86 room Fairfield Inn and Suites by Marriott that will certainly impact the absorption period and ultimate operations of a downtown Hyatt Place hotel.

3) *Room Tax Impact*. The City web-site information assumes room nights are moved around town for a time due to the Subject, but no negative impact on room taxes, even in the short run. That assumption ignores the results of new supply entering any market without new demand. Rates go down. Occupancy percentages affect room rates. A typical operator response to abundant new supply is to lower rates to try to retain market share.

Occupancy may at some point recover, but that is complete conjecture apart from in-depth market analysis by qualified parties. And neither the City nor developer web-site provide empirical support for the idea that occupancy and rate will recover. It is an unfortunate leap of faith for the City to assume that room tax collections will resume at the same pace after the opening of two new hotels in our community. The result is as likely to be reduced room tax collections.

Perhaps Oregon State University and various special events can fill the void over time, perhaps not. It is for the market and the future to decide. We must take the position that the City is taking inordinate risk based on the assumption that the market will soon absorb the new supply. One cannot assume TOT receipts will be unaffected, and we think the City should not be participating in a project based on such assumptions. We are willing to assume that risk as private individuals. As private individuals we are unwilling for our City to assume that risk in the form of this proposal.

Finally regarding the TOT issue. We object to redirecting TOT receipts to support the parking structure proposal. Frankly, to the extent our room night base is eroded by the downtown hotel, those monies come from us, from lost room sales. You will use our lost revenue base to assist a competitor to complete his project. We do not oppose the previously approved hotel use for that site. We oppose this proposal.

4) *The Executive Session issue*. We'll confess that we were shocked to learn in May, 2014 that this proposal had been considered in several closed Executive Sessions since September, 2013. We were not shocked that a hotel was proposed and approved at the site. That has been public record for years. We know who the developers are. We are willing to accept the market risk of that private competition if it comes to fruition.

But all the while that this proposal was being advanced in secret we were involved in a public process seeking approval for our Fairfield Inn and Suites by Marriott project. Many tens of thousands of dollars are required to provide the engineering and other reports necessary simply

to have what City Planning considers a complete land use application. That is separate and distinct from the application fee itself, and from investment in land acquisition.

What was shocking was the knowledge that the City was taking our money in application fees and requiring us to make a significant investment in various necessary reports to make application, while the Council was secretly cutting deals to aid a potential competitor. Fortunately the proposal was leaked so the Council was unable to pass it before the public got involved.

It is a matter of public record that our Hilton Garden Inn leases its site from the State of Oregon via Oregon State University. Some may say that we are not being consistent in our objection to the secrecy with which this proposal has been handled by the Council. But you will recall that OSU put the campus hotel project through a very public Request For Proposal process. Unfortunately that RFP process was followed by several years of land use appeals and litigation. Even with a very public process, several years were lost in the litigation process. This current public/private partnership proposal has been advanced not in a public process but behind closed doors for nine months, while we private developers advanced our concurrent project in the full light of day, without asking for economic assistance from the City. We think we are being consistent, and have a responsibility to our community to make our objections known.

5) *Alternatives.* This site is not the best location for a garage serving Whiteside, Majestic, County Courthouse, Book Bin, and any number of downtown merchants. We understand the City owns the land at the parking lot/transit stop next to City Hall; land that is in fact now largely surface parking. That is a much better location for a parking garage to serve the needs of downtown visitors. There may be other good locations under City control.

Your Rick Williams Consulting report on the City web-site suggests that the most expensive garage structure in the region, the Washington Park Visitor Garage, cost $39,241 fully loaded. Since the existing transit stop must be accommodated we'll assume average per stall cost of $42,500 per stall in order to be conservative. The same investment, $4,2 million, that is being considered to enable the proposed project would provide 100 stalls in a much better location for downtown visitors; with none of the complications and risks inherent in the proposal advanced in secret Executive Session.

6) *Property Taxes*. Much seems to be made of the idea that if the City does not engage in this project the hotel will not be built and future property tax receipts will be lost. We simply do not agree with that view. We are actively involved in the real estate development industry generally, and more particular to this situation, we are involved in hotel development. As with our Fairfield Inn and Suites by Marriott work, we are confident there is enough private enterprise interest in Corvallis to cause development to occur on the Subject site in the near future without City investment. It may or may not be this or any hotel design, but it may be. In any case, we can confidently say that development is going to occur on that site reasonably soon, and property tax coffers will begin to benefit. Development is happening throughout Corvallis wherever the City will allow it. This site is no different.

7) *Reciprocal Parking.* As hotel operators we are very familiar with reciprocal parking agreements, and benefit from such agreements in various of our markets. They are meant to wed two types of users whose parking needs do not conflict. Such as an office building, with peak

parking needs during the Monday-Friday business day, and a hotel, with peak needs in the early morning and evening, and on the weekend.

This proposal, however, turns reciprocal parking on its head. If there is any demand for these parking spaces at the far South end of downtown, it will occur at precisely the times that the hotel has its greatest need; special events, evenings, weekends. And presumably the Elements Building spaces will also be occupied during those same peak demand times. Assuming there is a market need for public parking in or near downtown, at the times of most critical need this proposal fails. We frankly think this is a waste of City bonding capacity. It will not meet the felt need for parking. The parking public will be very disappointed.

8) *Complexity*. It's a very difficult arrangement. The hotel leases and operates. The City has rights to spaces at certain, but not all, times. The Elements Buildings has rights to 27 stalls, etc. While similar arrangements may have been successful elsewhere, we are not familiar with projects of this type that have been successful for the municipality in communities similar in size and nature to Corvallis.

For example, your Rick Williams Consulting report cites five parking garage cost comparable projects. All are from Seattle or Portland. Before this proposal is even considered for approval we think the City must do significantly more due diligence into the feasibility of such arrangements for a municipality like Corvallis. Regionally at least, and nationally if comparable projects in communities comparable to Corvallis are lacking regionally.

In summary, this is a representative but not exhaustive list of concerns. We are quite concerned that the City is basing its consideration to participate on flawed ("top hotels average 80% occupancy"), and incomplete (stale dated and truncated feasibility study). We do not oppose a hotel at the 1st and Washington site. But for these reasons and more, we do oppose this public/private partnership proposal.

Thank you for taking the time to consider our concerns.

Jack Cooper – Corvallis, Oregon
Rand Cooper – Corvallis, Oregon
Vern McDonald – Corvallis, Oregon
Jackson Cooper – Donnelly, Idaho
Bill Lawson – Spokane, Washington

RESOLUTION 94-13

Minutes of the meeting of March 21, 1994, continued.

A resolution submitted by Council person Helen Berg.

WHEREAS, the City Council has established a Systems Development Charge for Parks, a policy for naming parks, a land acquisition strategy for parks, and a Trails Master Plan for the community of Corvallis; and

WHEREAS, the City Council has endorsed the acquisition and development of land for parks of all types and sizes and the Council wishes to ensure that these areas will be kept and developed as parks and open space; and

NOW, THEREFORE, the City Council of the City of Corvallis resolves that the following properties owned by the City of Corvallis in fee simple shall be dedicated:

Land Dedicated for Parks:

Land dedicated for parks will have a restriction as follows: it cannot be sold. It can be used, in addition to a park, for public squares, memorials, monuments, campgrounds, and contain amenities which may include, but are not limited to: comfort stations, tennis courts, playgrounds, sports fields, fountains, trails, and recreational buildings, such as community recreation centers. The following are lands dedicated for parks:

- Arnold
- Avery
- Brandis
- Bruce Starker Arts Park
- Central
- Chintimini
- Chip Ross
- Cloverland
- Franklin Square
- Lilly
- Martin Luther King, Jr. City Park
- Pioneer
- Pioneer Boat Basin
- Porter
- Kermit E. Roth Gateway Park

City of Corvallis

109 (d)

C

- Timberhill
- Tunison
- Village Green
- Washington
- Woodland Meadow

The following are dedicated for parks and public purposes:

Land dedicated for park and public purposes may accommodate not only park and a variety of recreational uses but other appropriate public uses, such as fire substations or water reservoirs, as long as it does not dominate, restrict access or use, and/or development of the park for public recreational purposes. Such other appropriate public uses may only occur after the City Council conducts a public hearing on the proposed use. The following are lands dedicated for parks and public purposes.

- Bald Hill
- Alan B. Berg Regional Park
- Oak Creek
- Sunset
- Walnut
- Willamette

The areas designated as parks are:

These areas are not dedicated but are designated as parks. Use for other than public uses may only occur after the City Council conducts a public hearing on the proposed use.

- Riverfront Commemorative Park
- Rock Creek
- Shawala Point

THE CITY COUNCIL FURTHER RESOLVES that the City Manager is authorized to enter as a matter of record, the dedication of these facilities.

Helen M. Berg

City of Corvallis

Shannon Cruz
July 7, 2014

Development Services Division and Silence of Leadership

1) Development Services Division

- Currently there is no oversight of Development Services Division besides an annual Financial Audit.

2) No oversight = No accountablilty

- Every other city in Oregon that I am aware of has their City Council or the Planning Commission directly oversee their Development Services Division.

3) Silence of Leadership in the City of Corvallis

- City Council does not hold Development Services accountable for actions.

  Every decision of every official of the City is subject to review by appeal to Council except those decisions relating to Building Code made by Building Code Official or Board of Appeals.
  Corvallis Municipal Code - 1.11.010 Appeal to Council

- Where do citizens turn to voice concerns?

  Any reviewable decision of the Building Official relating to the Building Code may be appealed to the Board of Appeals or the appropriate State agency.
  Corvallis Municipal Code – 1.11.011 Higher Appeals

4) My experience with silence of Leadership in the City of Corvallis

- I have a situation where Leadership and oversight of Development Services has been requested and ignored since September 2013.
- Have attempted to resolve this issue at the lowest levels and have been met with retaliation and silence.
- Since September 2013, Development Services Staff referred me to a portal with inaccurate information, refuse to review and update inaccurate information, refuse to work with the homeowner and stopped working on the case once a Employee Behavior Complaint was filed.
- Since October 2013, Development Services Managers and Director become aware of my concerns and have done nothing to stop this behavior except assign the case to another employee who is then directed not to work with the homeowner or review and update inaccurate information.
- Since March 2014, I have attempted to contact the Mayor and City Manager. To date, neither one has returned a phone call, answered an email or scheduled a time to meet per my request.
- Since June 2014, I have attempted to contact City Council by email. To date, only Mrs. York has answered an email. The City IT staff has disabled my email from sending a response to Mrs. York or any email to the Mayor or City Council.
- Currently, I am working to resolve this issue with Leaders outside the City of Corvallis.
- My hope is that my situation and action will be a wake up call for the established Leaders of Corvallis to create an atmosphere where change can occur.

Section 1.11.010 Appeal to Council.

Every decision of every board, commission, committee, hearings officer and official of the City is subject to review by appeal to Council except those decisions relating to the Building Code and Fire Code made by the Building Official, Fire Chief, or Board of Appeals.

Section 1.11.011 Higher appeals.

Any reviewable decision of the Fire Chief relating to the Fire Code or the Building Official relating to the Building Code may be appealed to the Board of Appeals or to the appropriate State agency. Any decision of the Board of Appeals may be appealed to the appropriate State agency.

BOARD OF APPEALS

The Board of Appeals hears appeals relating to building and fire codes as they are being interpreted and enforced by building officials and the Fire Chief. (6 members and 1 Council representative*)

Contact: Dan Carlson - 541-766-6539

NAME	TERM EXPIRATION
Phil Ermer	6/30/13
John Evans	6/30/13
Shawn Stoneberg	6/30/14
Charles Fletcher	6/30/14
David Sillars	6/30/15
Vacant	6/30/15
Penny York (Council Liason)	12/31/14

Meeting Schedule

View Past Meetings

No meetings in this view.

Gmail

Delivery Status Notification (Failure)

Mail Delivery Subsystem <mailer-daemon@ > Fri, Jul 4, 2014 at 6:12 PM
To: shannon@

Delivery to the following recipient failed permanently:

mayor@council.corvallisoregon.gov

Technical details of permanent failure:
The recipient server did not accept our requests to connect. Learn more at http://support.google.com/mail/bin/answer.py?answer=7720
[(0) council.corvallisoregon.gov. [198.68.22.1]:25: Connection timed out]

---- Original message ----

X-Google-DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed;
d=1e100.net; s=20130820;
h=x-gm-message-state:subject:references:from:content-type:in-reply-to
:message-id:date:to:content-transfer-encoding:mime-version;
bh=PFeRLZCOg+rDJZvoCzdaznM4lsWMKLcVAmSduG/ikkw=;
b=T3H2RC+Vmf2Oc7W7HJfcKlkTdtMj7SalBb3AF/1Jtf1WKF+mgzgynYuubDTwuFUPaR
xxxkpw9MQdrTXpCyl7QfBRwScSdviO9C3ans+EPkeleV7UKFXRPYu/Y8hqYI6HaoYbQP
G7kI47tNJAlcuRbTVSP6/Jsrtxrxv4rD0TlcNac3tAHGpSqp9qEB9AjzcXZGqqwHd74q
azEo1rrDiB7JqeO0QxJXqziBVXDj9g7ycvnEKTkJpTZNAhtDCCLpTB1QTOPNI8tH8SoR
A1dE6PJSAkAEgv/CyFszn0iaGEI6FdFSg8BsYbZ7YPt0JyCNhefIHnxLqpoSkWNg0lle
wlbg==
X-Gm-Message-State: ALoCoQmGcp14IFLspsK6OvBwrgUv1907/iV1eXjPayTbjsL+
DvhyPWrpo3wAuRs8j9bb5tKVWgYP
X-Received: by 10.70.101.234 with SMTP id fj10mr323401pdb.61.1404255115244;
Tue, 01 Jul 2014 15:51:55 -0700 (PDT)
Return-Path: <shannon@ >
Received: from [10.0.0.22] (c-98-246-223-253.hsd1.or.comcast.net. [98.246.223.253])
by mx.google.com with ESMTPSA id su8sm34230191pbc.72.2014.07.01.15.51.53
for <multiple recipients>
(version=TLSv1 cipher=ECDHE-RSA-RC4-SHA bits=128/128);
Tue, 01 Jul 2014 15:51:53 -0700 (PDT)
Subject: Re: 2337 NW Maser St.
References: <D84495190F7F9E4284E9673936ECE2AE31E8023C@CVOEXDAG1.ci.corvallis.or.us>
From: Shannon <shannon@ >
Content-Type: multipart/alternative;
boundary=Apple-Mail-D5B76FC0-2BE8-4AFB-9C92-6F71E93F3025
X-Mailer: iPhone Mail (11D257)
In-Reply-To: <D84495190F7F9E4284E9673936ECE2AE31E8023C@CVOEXDAG1.ci.corvallis.or.us>
Message-Id: <10C645FE-8E77-4624-8023-9FB9CBE3D0C9@bluesiska.com>
Date: Tue, 1 Jul 2014 15:51:52 -0700
To: Dan Carlson <Dan.Carlson@corvallisoregon.gov>,
"mayor@council.corvallisoregon.gov" <mayor@council.corvallisoregon.gov>,

RESOLUTION 2014 - _____

A RESOLUTION DIRECTING THE CORVALLIS CITY MANAGER TO ENTER INTO AN EARNEST MONEY AGREEMENT FOR $4.2 MILLION TO PURCHASE A CONDOMINIUM SHARE OF A PARKING GARAGE TO BE BUILT ON SW FIRST STREET AND SW WASHINGTON AVENUE IN CORVALLIS, OREGON.

Minutes of the _____, Corvallis City Council meeting, continued.

A resolution submitted by Councilor _____.

WHEREAS, a parcel of property on SW First Street in Corvallis, which has been vacant and undeveloped for over two decades has been purchased by local developers who plan to build a hotel at this location; and

WHEREAS, the hotel developers (Majority Owners) have proposed a public / private partnership to develop a parking garage associated with the hotel; and

WHEREAS, in their commitment to develop sustainable budgets, the City Council has directed staff to investigate and bring forward new revenue sources; and

WHEREAS, the proposed downtown redevelopment project ****may**** provide General Fund revenue in future years, assisting the City with meeting the commitment to develop sustainable budgets; and

WHEREAS, the City Council's Economic Development Policy (96-06.03) is to (a) provide a diverse local economy, (b) attract private and public capital investment, and (c) provide facilities, services and programs that attract visitors to the Corvallis community; and

WHEREAS, this project ****may**** indirectly**** provide for a diverse local economy, attracts private capital investment, and provides facilities that will attract visitors; and

WHEREAS, the City Council's Economic Development Policy (96-06.03) (6.03.51) calls for the City Council to set an example by adopting an active role in furthering Economic Development, and making resources available to enhance this effort, and (6.03.052) invest in public infrastructure that serves the needs of current and prospective employers; and

WHEREAS, this project depends on the leadership of the City Council in furthering Economic Development, and providing resources to enhance this effort, and invests in public infrastructure that will serve the needs of current and prospective employers; and

WHEREAS, the City Council's Economic Development Policy (96-06.03) (6.03.058) directs that the City will support activities to enhance Economic Development mission and goals by (a) increasing the proportion of spending by residents and visitors, and (b) strengthening the role of Downtown Corvallis as the vital economic, social and cultural heart of the community; and

WHEREAS, this project ****may*** increase visitor spending, and strengthen Downtown Corvallis; and

WHEREAS, the City Council's Economic Development Policy (96-06.03 (6.03.059) directs that the City may use incentives to achieve Economic Development goals; and

WHEREAS, this project provides incentives for development that would not happen but for this ****or a similar***action; and

WHEREAS, the proposed garage will offer additional parking spaces available for public use ***and resources from this project will be recovered in ten years to allow the City to reconsider parking needs and address those needs***; and

WHEREAS, the City has found that additional parking is needed in downtown Corvallis currently and in the future *****to which this project may contribute***; and

WHEREAS, the transient room tax, property tax and lease revenues generated by this project *****are expected**** to provide debt coverage for this project over the life of the loan; and

WHEREAS, Visit Corvallis, in their letter dated June 19, 2014 offered and agreed to underwrite the City's debt service payment for this project with new transient room tax revenues generated by this project ****and for this resolution to take effect Visit Corvallis amend its current commitment to require the City to first utilize $200,000 in reserves****, should there be a projected shortfall in the project's debt service reserve to be repaid with future transient room tax collections; and

WHEREAS, the City ****estimates**** that there are additional economic development advantages as a result of this project including more transient room tax to support tourism, more property taxes for overlapping jurisdictions, more spending in local businesses by visitors, and more spending for overnight stays in Corvallis; and

WHEREAS, based upon the above findings, the City Council finds that it furthers the public interest for the City to purchase the condominium parking spaces for $4,200,000;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CORVALLIS resolves to direct the Corvallis City Manager to enter into an earnest money agreement to purchase a condominium share of a parking garage to be built at SW First Street and SW Washington Avenue in Corvallis, Oregon. ****At a minimum the earnest money agreement and the subsequent lease will include the following:

1) the earnest money will be fully refundable by the Majority Owners if agreement to the following items cannot be achieved
2) a requirement that the Majority Owners or developers of the hotel/garage purchase the City's ownership portion of the garage at the fair market value ten years after the lease commences, if the City decides to exercise that option

3) at least 30 parking spaces in the garage be reserved at all times for public use at a price no higher than the current parking meter price, in spaces adjacent to the hotel
4) the lease rate for the City's portion of the garage be renegotiated in five years and that the lease rate after five years at least exceed the amount the City would receive in property taxes for the assessed value of the City's portion of the garage, and
5) City shall audit the Majority Owners' financials for the hotel/garage on an annual basis and that audit will be made public

_____
Councilor

Upon motion duly made and seconded, the foregoing resolution was adopted, and the Mayor thereupon declared said resolution to be adopted.

From Councilor Mike Beilstein
Statement on the hotel-parking garage proposal for the July 7, 2014 City Council deliberations.

This is a prepared statement to express help myself clearly and completely and to be certain I don't leave things out when we discuss it in deliberations. I have talked to a lot of residents, elected officials and City staff about the proposal and I have changed my mind more than once. I am still open to arguments from councilors, but I believe I have identified the key principals and made my final decision to oppose the project.

My first concern was the fiscal risk to the City. The question is, "Could proceeding with the project put the general fund at risk?" It became clear as I learned about it that there is not a substantial risk. The expected revenue from transient occupancy tax, property tax and the lease agreement would cover the debt service within a few years, if not immediately. The offer of Visit Corvallis to surrender a portion of their increased TOT as a loan until other revenues equal the debt service provides a cushion against even short term losses.

The increased TOT in the first years is not all new money. Some of the business of the new hotel will arise from lost business at existing hotels. Market research indicates that there is demand for more transient accommodation. Some of the project TOT would be new and the loss to other hotels would be made up in a few years as the demand for accommodations rises.

Another risk to city finances is the lost opportunity of a different project in the same location. If a similar project went in the same location without City participation, we would reap the benefits of new TOT and new property tax revenue, without the cost of buying a parking garage. Return to the City would be substantial and immediate, rather than the increasing trickle envisioned for the participatory project. I would prefer that, but there is no certainty about when or if it would happen. I believe it is best to go with a known project with expected positive results, rather than wait for something that might or might not be coming.

Aside from the fiscal risk to the City, my primary concern is whether it is good for Corvallis residents. Do we really need it or even want it? Corvallis has had a long commitment to a healthy downtown business environment. A large, high-end hotel downtown would be a boon to downtown businesses. The increased traffic in the area would increase business for merchants, restaurants, and service providers. The economic activity of the hotel would multiply by bringing other economic activity into the area. Similarly we see an economic impact of the Wednesday and Saturday Farmers' Market that goes beyond the business conducted in the market itself.

The hotel project would give a boost to downtown businesses. However, I question whether downtown businesses need a boost. Are we in danger of losing a lot of businesses because they can't afford the location? Are businesses failing because they lack of customers? Are there dozens of boarded up shop fronts because our downtown is an unhealthy economic area? The answer is "no." We already have a healthy downtown business environment. Trying to make it healthier with a shot of "City investment" vitamins is an example of the outdated thinking that says more, bigger, richer is better.

Tom Nelson has said several times that the project is not about parking, it is about economic development. I have said repeatedly that we have the wrong attitude about economic development. We have defined economic development as increasing jobs and wealth. Increasing jobs and wealth is code for wasting resources at an increasing rate. The environmental crisis created by unrestrained growth of economic activity requires us to start thinking about economic development in terms of efficient use of resources and creating greater equity, not more, bigger and richer.

The jobs created by the hotel project, and the associated expansion of the downtown economy, would be service sector jobs. They would be retail clerks, restaurant wait staff, hair stylists and house keepers. These jobs do not pay wages which would allow workers to live in Corvallis. Even engineers, physicians and university professors have difficulty finding housing in Corvallis. Therefore the increased economic activity would create more commuting, causing low wage workers to waste more of their time and resources on driving cars to Corvallis. The "new wealth" of the project would go to investors and owners, not to workers.

It is difficult for me to turn away from a project that I believe would give a boost to downtown businesses. I appreciate the atmosphere of our downtown. I go there every day. I use restaurants and retail shops and places of entertainment and I want them to be successful, stay in business and, in some cases, expand. Most of the businesses I patronize are healthy. Some will certainly fail and be replaced by different entrepreneurs.

I was on the City Council in 1999-2000 when we finalized the Riverfront Park plan. This was clearly a boost to downtown businesses and has helped to maintain a strong downtown economy. Our primary consideration on that Council was not economic development. We wanted to create an amenity that would be used and appreciated by Corvallis residents. I believe that is the appropriate spirit that should enliven "economic development." If we provide a good environment, people will want to do business here.

If the City stays out of the hotel investment business, a hotel will develop, or not, based on the market demand for it and the creativity and courage of investors. The City partnering as owner of parking needed primarily by the hotel and not by residents, seems like an artificial stimulation of the economy in the direction of more, bigger, richer. I advise that we stay out of it.

I realize that other Councilors could decide that a boost to downtown businesses with minimal risk and long term benefit to general fund revenue is too good to pass up. I have seen the proposal in that light, as well. If we stick with the traditional view of economic development – more jobs, more wealth, a bigger economy - it makes perfect sense.

Draft
Subject to review &
CACOT approval

CORVALLIS CITIZENS ADVISORY COMMISSION ON TRANSIT
MINUTES
May 13, 2014

Present
Stephan Friedt, Chair
Steve Harder, Vice Chair
Steven Black
Eric Cornelius
Kriste York
Bruce Sorte, Council Liaison

Absent
Cassie Huber
John Oliver
Brandon Trelstad

Staff
Tim Bates, Public Works
Brie Caffey, Public Works

Visitors
Robert Wilson, citizen
Meredith Williams, OSU Transportation Services

SUMMARY OF DISCUSSION

Agenda Item	Information Only	Held for Further Review	Recommendations
I. Introductions	X		
II. Approval of April 8, 2014 Minutes			Approved
III. CACOT/Visitor Comments			N/A
IV. Old Business			N/A
V. New Business			N/A
VI. Information Sharing	X		
VII. Commission Requests and Reports	X		
VIII. Pending Items			N/A
IX. Adjournment			Adjourned at 9:20 am

CONTENT OF DISCUSSION

I. Introductions

The meeting was called to order at 8:20 am by Chair Friedt. Introductions were made of Commission members, staff and visitors.

II. Approval of Minutes

Commissioners Black and Cornelius, respectively, moved and seconded to approve the April 8, 2014 minutes. The motion passed unanimously.

III. CACOT/Visitor Comments

None.

IV. Old Business

None.

V. New Business

None.

VI. Information Sharing

Mr. Bates reviewed the written Information Sharing Report. Comments provided in addition to the report included:

Mr. Bates said CTS has agreed to relinquish name "Beaver Bus" and the "Beaver" symbol to OSU for use on its campus shuttle. CTS will begin using a new owl icon for the late night service when service resumes in the fall. The service's name will be CTS Late Night and the schedule and routes are expected to remain the same.

Mr. Bates reported that City of Philomath is offering free rides aboard the Philomath Connection (PC) to all passengers from May 5th through May 16th as part of the "Get There" campaign. He also said the PC will again sponsor a Summer Youth Transit program, offering kids 18 years old and younger free rides from June 16th through August 29th. Commissioner Black asked if the 99 Express Adair service would be participating in a Summer Youth Transit program. Mr. Bates said he would ask Benton County's Transit Coordinator and report back.

Mr. Bates said the apps created in the OSU student appathon are in the beta testing phase and should be released through the app store soon. Connexionz, the City's Vehicle Information System (VIS) contractor, is working to make CTS's real-time data available publicly, allowing others to use it for development of such apps.

Mr. Bates reported that Connexionz will be on site soon for adjustments and final acceptance testing of the VIS system. Chair Friedt noted that the audio announcements on some buses were still not working correctly as of last week. Mr. Bates said he is aware and modifications have been and are being made.

Chair Friedt acknowledged Mr. Bates for covering First Student's dispatch and phone duties during a recent power outage which left First Student without power. The Public Works building was operational because of their back-up generator. Mr. Bates said he is working with First Student to ensure that they provide back-up services for any future events, noting that radio contact with the buses is an essential safety component.

Mr. Bates said CTS will once again offer fareless transit service to the Benton County

Fair, scheduled for July 30th to August 2nd. The CTS trolley will be the vehicle used. Route C3 also provides direct service to the Fairgrounds Monday through Saturday as part of its regular service.

VII. Commission Requests and Reports

Councilor Sorte said there is still time for Commissioners to offer opinions on the recommendations of the Public Participation Task Force, which includes the proposal to combine CACOT with BPAC and the Downtown Parking Commission. He also reported that there will be a public meeting about the proposed City budget on June 2nd. Councilor Sorte said he believes that the new parking districts will create an increase in transit use but the rides will be shorter, with passengers using transit from parking spaces outside the districts to get to campus. Commissioner Cornelius said he supports the idea of park-and-rides. Ms. Willams said OSU has considered remote parking options and feels that students living on campus who use their vehicles only once or twice a week would be the best candidates for those lots.

Commissioner Harder reported that Dial-A-Bus is currently meeting with the Corvallis School District to discuss prividing rides to school for homeless students.

VIII. Pending Items

None.

IX. Adjournment

Commissioners Harder and Black, respectively, moved and seconded that the meeting be adjourned. The motion passed unanimously.

The meeting was adjourned at 9:15 am.

NEXT MEETING: June 10, 2014, 8:20 am, Madison Avenue Meeting Room

THE COMMISSION FOR MARTIN LUTHER KING, JR
MINUTES
June 24, 2014

Present

Jasper Smith
Megha Shyam
Joseph Orosco
Bruce Sorte

Absent

Esmeralda Reyes
Luis Rosa
Chareane Wimbley-Gouveia
Roni Sue

Staff

None

Visitors

None

SUMMARY OF DISCUSSION

Agenda Item	Action Recommendation
I. Finalize Council recommendations	Jasper will draft a report based upon discussions and minutes for review and approval at the July meeting.
II. Review of Corvallis Police Policy on Unbiased Law Enforcement	Commissioners supported the policy. We were interested in more information on the training components and how it would be implemented and monitored. There was also a question about what the CPD's policy on cooperation with Immigration was.
III. Other	Megha will talk with the city clerk about archiving materials and information. Discussed need to fill vacancies on the commission.
IV. Announcements	Photo exhibit at the Corvallis-Benton County Library of people with developmental disabilities in Corvallis and in our sister city in Ukraine.

WATERSHED MANAGEMENT ADVISORY COMMISSION
MINUTES
June 25, 2014

DRAFT

Present
Charlie Bruce, Chair
Jessica McDonald, Vice-Chair
Sheryl Stuart
David Zahler
Jacque Schreck
David Hibbs

Staff
Mary Steckel, Public Works
Jennifer Ward, Public Works
Mike Hinton, Public Works
Jon Boyd, Public works
Mark Miller, Trout Mountain Forestry
Jennifer Hanchett, Trout Mountain Forestry

Absent
Creed Eckert
Richard Hervey, City Council Liaison

Visitors
Frank Davis, Siuslaw National Forest

SUMMARY OF DISCUSSION

Agenda Item	Information Only	Held for Further Review	Recommendations
I. Call Meeting to Order/Introductions	X		
II. Review of Agenda	N/A		
III. Review of April 23, 2014 Minutes			Approved
IV. Visitor Propositions	N/A		
V. City Council Report	N/A		
VI. New Business • 2013 Stream Temperature Report Follow-up • Fiscal Year 2014-15 Report • 2014-15 Harvest Plan • Old Peak Prescribed Burn	 X X		WMAC unanimously voted to approve the recommended temperature plan Approved
VII. Old Business • Review of Annual Tour • Update on O&C Legislation	 X X		
VIII. Staff reports	X		
IX. Commission Requests and Reports • Update on Public Participation Task Force • Commission Leadership for Fiscal Year 2014-15	X		Commissioners McDonald and Hibbs elected Chair and Vice-Chair, respectively
X. Adjourn			

CONTENT OF DISCUSSION

I. Call Meeting to Order/Introductions

Chair Bruce called the meeting to order and those present introduced themselves.

II. Review of Agenda

No changes were made.

III. Review of Minutes

Commissioner Schreck moved to approve the April 23 minutes. The motion was seconded and the minutes were approved unanimously.

IV. Visitor Propositions

None.

V. City Council Report

None.

VI. New Business

2013 Stream Temperature Report Follow-up

Ms. Ward reported that the City recommendation is to not make any alterations to water operations within the watershed at this time. Instead, staff would like to continue the in-stream monitoring, with annual data being included in the yearly Forest Activities report and a comprehensive stream temperature report being generated every five years. **Commissioner Schreck moved to recommend following this plan. The motion was seconded and passed unanimously.** Commissioner McDonald recommended informing the Marys River Watershed Council of the course of action and Ms. Ward said she would do so.

Fiscal Year 2014-15 Report

Ms. Ward presented the approved budget for the 2014-2015 fiscal year. She pointed out that funding had been made available to support an intern at Trout Mountain Forestry, Jennifer Hanchett, who will be performing many of the watershed monitoring and resource inventory tasks this year. Ms. Ward also noted that actual harvest costs and revenue are projected to be less than initially budgeted for.

2014-15 Harvest Plan

Mr. Miller presented the 2014-2015 harvest plan. A total of 45 acres of 75 year-old Douglas fir is scheduled to be thinned this fall to build wind-firmness, improve growth rates, and enhance forest structure. The stand (#206) will be cable yarded and expected yield is 700 million board feet.

Old Peak Prescribed Burn

Ms. Ward reported that the City has received a grant for restoration at Old Peak Meadow. Initial surveys show a great deal of thatch in the meadow, which creates an issue for planting new, native plants. Staff has been advised that a prescribed burn in the fall would be the most effective and least-damaging method for dealing with the thatch. Mr. Miller noted that this burn would be done with the Oregon Department of Forestry and could be used as a training exercise for area fire departments. The Commission unanimously agreed to proceed with the burn.

VII. Old Business

Review of Annual Tour

Ms. Ward reported that the “snack packs” were a hit with the citizens who participated in the tour. She also noted that having the Commissioners act as guides on the buses was very helpful.

Ms. Ward received a number of requests to visit old growth stands and will include those areas on the next annual tour. She provided an overview of the survey results from citizens and the Commissioners discussed the tour.

Update on O&C Legislation
Ms. Ward reported that the Wyden Bill is the bill that is moving forward and that the controverted lands that this Commission are concerned about are not included.

VIII. Staff Reports

Mr. Miller reported the following:

- There have been 23 Marbled murrelet surveys with only one detection.
- He provided tours to two silviculture classes.
- He, along with Frank Davis (US Forest Service) and Ms. Ward, led a tour of the watershed for four international fellows (Ireland, Australia, Indonesia, Taiwan) and an international intern (China) from the World Forestry Institute.

Ms. Hanchett reported that this is her second week interning with Trout Mountain and provided information on her activities so far.

Ms. Steckel began a discussion regarding the Commission's agendas.

Ms. Steckel reported that Tom Hubbard will be starting next week as the new Utilities Division Manager.

IX. Commission Requests and Reports

Update on Public Participation Task Force
Chair Bruce reported that the PPTF presented their findings to the City Council. He reported that Council has taken the recommendation under advisement and passed it on to a reconstituted Commission for Citizen Involvement. Commissioner Schreck expressed disappointment in the PPTF's choice to continue to recommend creating an overall water board, which could include the WMAC.

Commission Leadership for Fiscal Year 14-15
Commissioner Bruce was re-nominated for the position of Chair, but declined. He, in turn, nominated Commissioner McDonald for Chair and she was elected unanimously.

Commissioner Hibbs was nominated for Vice-Chair. Commissioner Zahler nominated Commissioner Stuart for Vice-Chair, who declined. Commissioner Zahler was nominated for Vice-Chair, but also declined. Commissioner Hibbs was unanimously elected Vice-Chair.

X. Adjourn

The meeting was adjourned at 7:02p.m.

NEXT MEETING: September 25, 5:15pm, Madison Avenue Meeting Room

MEMORANDUM

To: City Council Members

From: Julie Jones Manning, Mayor CR for JJM

Date: July 17, 2014

Subject: Vacancies on Advisory Boards, Commissions, and Committees

---

Denise Ruttan has resigned from the Board of Appeals. Her term expires June 30, 2017

Brian Kreft resigned from the Citizens Advisory Commission on Civic Beautification and Urban Forestry. Brian represented citizens at large with interests in civic beautification and/or urban forestry and/or a connection to educational systems. His term on the commission expires June 30, 2015.

I have contacted potential appointees and would appreciate your nominations for these vacancies.

1031

MEMORANDUM

To: City Council Members

From: Julie Jones Manning, Mayor

Date: July 14, 2014

Subject: Appointments to Advisory Boards, Commissions, and Committees

---

I am appointing the following persons to the advisory boards, commissions, and committees indicated for the terms of office stated:

Board of Appeals

John D. Faulconer
Term expires June 30, 2017

John, a contractor and Realtor, is a member of the Corvallis Chamber of Commerce and a recent Leadership Corvallis class.

Citizens Advisory Commission on Civic Beautification and Urban Forestry

Christine Hackenbruck
Term expires June 30, 2017

Christine is a member of Downtown Corvallis Association and is Director of Corvallis Fall Festival.

Commission for Martin Luther King, Jr.

Jennifer Almquist
Term expires June 30, 2017

Jennifer is Associate Director of Equity and Inclusion at Oregon State University. OSU's Office of Equity and Inclusion provides leadership to the University's annual Dr. Martin Luther King, Jr., celebration and seeks to be associated with efforts in the broader Corvallis community.

Parks, Natural Areas, and Recreation Board

Simone Frei
Term expires June 30, 2015

Simone enjoys outdoor environments and our local parks. Her children participated in many Parks and Recreation Department classes in the past. She wants to ensure that everyone in Corvallis has access to the outdoors and recreational opportunities available through the City.

I will ask for confirmation of these appointments at our next Council meeting, August 4, 2014.

MEMORANDUM

To: City Council Members

From: Julie Jones Manning, Mayor CH for JJM

Date: July 14 2014

Subject: Confirmation of Appointments to Advisory Boards, Commissions, and Committees

---

At our last regular meeting, I appointed the following persons to the advisory boards, commissions, and committees indicated for the terms of office stated:

Airport Commission

Rajeev Pandey
Term expires June 30, 2017

Brad Smith
Term expires June 30, 2017

Arts and Culture Commission

Cynthia Spencer
Term expires June 30, 2017

Budget Commission

Mark Kalmar
Term expires June 30, 2017

Corvallis-Benton County Public Library Board

Rob Welsh
Term expires June 30, 2017

Downtown Commission

Joseph Elwood
Term expires June 30, 2017

John Morris
Term expires June 30, 2017

Economic Development Commission

Brian Wall
Term expires June 30, 2017

Parks, Natural Areas, and Recreation Board

Anthony Stumbo
Term expires June 30, 2017

Public Art Selection Commission

Kirsi Peltomaki
Term expires June 30, 2017

Barbara B. Weber
Term expires June 30, 2017

I ask that you confirm these appointments at our next Council meeting, July 21, 2014.

1030

Information regarding the Boards, Commissions, and Committees Directory may be obtained by calling the City Manager's Office (541-766-6901).

MEMORANDUM

To:	**Mayor and City Council**
From:	**Ken Gibb, Community Development Director**
Date:	**July 2, 2014**
Subject:	**Public Notice Issue for Package #1 Land Development Code Amendments (LDT13-00002, LDT13-00003)**

Issue

Recently, the concern has been raised that specific notice of the June 16, 2014, City Council Public Hearing was not provided to interested parties who spoke or submitted written testimony to the Planning Commission regarding the Package #1 Land Development Code (LDC) Amendments. A review of LDC notice requirements for this type of legislative decision process reveals that there is no requirement for specific notice to interested parties in these circumstances (LDC Section 2.0.40 – Legislative Hearings). Additionally, State law regarding legislative land use decisions does not contain a requirement for notice to interested parties in these circumstances. However, State public meetings law does include a provision that would suggest that such notice is advisable. Staff review of past practice for providing public notice for these types of legislative decisions indicates a mixed record. In one recent case, specific notice was mailed to interested parties, in another case, such notice was not provided.

Discussion

Although it is not perfectly clear that individual notice is required in these circumstances, providing notice to individuals who have shown a clear interest in the issues discussed in a legislative hearing promotes public involvement, consistent with goals articulated in the Comprehensive Plan and other City documents and policies. In this case, in addition to the notice that was published in the local newspaper for both the Planning Commission and City Council Public Hearings, "Measure 56" notices were mailed to all property owners on record in the City. Staff also note that through the City's on-line subscription service, persons interested in land use applications or City Council agenda items, such as the case in question, may be easily informed of upcoming agenda items.

Given this notice question, the City Council may decide to provide individual notice to all persons who testified, in writing or in person, to the Planning Commission. The subject application, a legislative change to the Land Development Code, is not subject to the State's 120-Day Rule, and so a delay in deliberations to allow for additional comment would not be a problem in that regard. If the Council decides to instruct staff to provide individual notice to these interested parties, staff propose the following approach:

1. Prepare individual notices to be mailed or emailed to interested parties on July 8, 2014.
2. Allow submittal of additional written testimony for one additional week, through July 15, 2014. (In consultation with the City Attorney's Office it was determined that it would not be necessary to re-open the public hearing.) Any additional written testimony would be accepted, not limited to the interested parties on record for the Planning Commission's decision.
3. Additional testimony would be forwarded to the City Council in packet materials for the July 21, City Council meeting.
4. The City Council would deliberate on the code amendments at the July 21, 2014, meeting, with adoption of formal findings to follow at a subsequent City Council meeting.

Recommendation/Requested Action

Given the considerations outlined above, staff recommend that the City Council postpone deliberations until July 21, 2014, allowing Community Development staff to provide notice to the interested parties who participated in the Planning Commission's decision regarding the code amendments.

Recommended Motion

> **I move to delay City Council deliberations on the Package #1 Land Development Code Amendments to July 21, 2014, to allow notice to be provided to all interested parties who participated in the Planning Commission's public hearing regarding the code amendments.**

Review and Concur:

Jim Brewer, Deputy City Attorney

Review and Concur:

AIC

Jim Patterson, Corvallis City Manager

MEMORANDUM

To:	Mayor and City Council
From:	Ken Gibb, Community Development Director
Date:	July 16, 2014
Subject:	Written Testimony Regarding the Package #1 Land Development Code Amendments (LDT13-00002 / LDT13-00003)

At the July 7, 2014, City Council meeting regarding the Package #1 Land Development Code Amendments, the City Council voted to send individual notice to individuals who provided testimony to the Planning Commission, and to re-open the record to allow an opportunity to submit additional testimony to be submitted until 5 pm on July 15, 2014. Attached to this memorandum is the written testimony submitted after the initial close of record at 5 pm on June 30, 2014, until 5 pm on July 15, 2014.

Young, Kevin

From: Jim Moorefield [Jim.Moorefield@w-nhs.org]
Sent: Monday, June 30, 2014 5:07 PM
To: Young, Kevin
Cc: Karen Rockwell; Weiss, Kent; 'Kirk Bailey (bailey@peak.org)'
Subject: FW: proposed LDC affordable housing definition

Hi Kevin –

I've been away for a few days attending the wedding of my daughter, so Habitat for Humanity folks and I have not really been able to fully coordinate our submittal regarding the definition of "affordable housing" to be used for the 4-5 bedroom parking code exemption for affordable housing. This mean you will likely get one thing from HfH and another from me. Sorry about that. HfH folks tried their best to reach out to me but I was way too distracted!

Here's my suggested language. I'm copying Kent Weiss as well in case he sees any flaws. The last sentence was the tricky one. Basically I was trying to account for the fact that rental projects don't all have the same income restrictions. They will all fall into the 60% or less median income, but some may target 50% median, 30% median, or a mix – thus my reference to "...will specify the method for calculating affordability that is to be applied to the property."

Eligible Affordable Housing Units

Housing units that are affordable to and restricted to occupancy by low-income residents with a gross household income of:

- **80% or below the Corvallis median income, adjusted by family size, in the case of owner-occupied housing; or**
- **60% or below the Corvallis median income, adjusted by family size, in the case of renter-occupied housing.**

"Affordable" means that low-income households within a specified range pay no more than 30% of gross monthly income on mortgage payments (principle, interest, property taxes, and insurance), or monthly rent plus utilities. The applicable income and affordability restrictions shall be recorded by the City of Corvallis and/or State of Oregon in the form of deed restrictions or such other mechanism acceptable to the City of Corvallis and/or State of Oregon. These restrictions shall be for a minimum of 20 years, and will specify the method for calculating affordability that is to be applied to the property.

Jim

Jim Moorefield
Executive Director
Willamette Neighborhood Housing Services
257 SW Madison Avenue, Suite 113
Corvallis OR 97333

541.752.7220 ext. 301 | toll-free 800.403.0957 | fax 541.752.5037
Jim.Moorefield@w-nhs.org | www.w-nhs.org

Young, Kevin

From: Karen Rockwell [karen@bentonhabitat.org]
Sent: Tuesday, July 01, 2014 9:16 AM
To: Young, Kevin
Subject: RE: Final Testimony on LDC Phase 1

Hi Kevin:

Kirk just noticed that my PDF translation of the side yard setback I submitted changed the <= signs with ? signs. Should be <= ...

Thank you!

Karen

Karen Rockwell, Executive Director
Benton Habitat for Humanity
Phone: 541.752.3354

From: Young, Kevin [mailto:Kevin.Young@corvallisoregon.gov]
Sent: Monday, June 30, 2014 11:58 AM
To: 'Karen Rockwell'
Subject: RE: Final Testimony on LDC Phase 1

Looks like it came through just fine. Thanks!

- kevin

From: Karen Rockwell [mailto:karen@bentonhabitat.org]
Sent: Monday, June 30, 2014 10:43 AM
To: Young, Kevin
Cc: 'Kirk Bailey'; Jen Costa; Don Abbott
Subject: Final Testimony on LDC Phase 1
Importance: High

Hi Kevin:

Attached is our final testimony for the City Council on the proposed LDC Phase 1 changes. Please let me know if you have any problems with the attachment.

Thank you -

Karen

Karen Rockwell, MANP
Executive Director
Benton Habitat for Humanity
Phone: 541.752.3354
www.bentonhabitat.org

RECEIVED

JUL 14 2014

Community Development
Planning Division

July 14, 2014

The Honorable Julie Manning
Members of the City Council
City of Corvallis
501 SW Madison Ave.
Corvallis, OR 97330

Dear Mayor Manning and Members of City Council,

The Willamette Association of REALTORS® and Benton Habitat for Humanity® write jointly to you today to encourage you to consider the overall impact that the Package #1 Land Development Code Text Amendments will have on the ability to provide smaller and more affordable housing in Corvallis in the future.

The amendments proposed in Package #1 are a collection of ideas from several different workgroups, all of which have varying goals. However, the discussions on the amendments thus far have focused on each individual amendment, rather than how the compiled amendments in total will affect housing in Corvallis. We urge the City Council to analyze the amendments collectively in order to determine what the cumulative affect could be on the ability to develop land and build affordable housing in Corvallis.

It is our understanding that the results of the Corvallis Housing Study are due to be available soon. An in-depth review of the Housing Study and how the proposed amendments in Package #1 will affect affordable housing would be a worthwhile effort before moving forward. We would like to encourage the City Council to take the time to conduct this analysis prior to taking further action on the amendments.

Thank you for your consideration of our comments.

Sincerely,

Holly Sears, Government Affairs
Willamette Association of REALTORS®
503-931-0876
willamettevalleygad@gmail.com

Karen Rockwell, Executive Director
Benton Habitat for Humanity®
541-752-3354
karen@bentonhabitat.org

RECEIVED

JUL 15 2014

Community Development
Planning Division

15 July 2014

Honorable Mayor Julie Manning and Corvallis City Council
501 SW Madison
Corvallis, OR 97333

Dear Mayor Manning and Councilors,

I was dismayed to note this morning that Benton Habitat for Humanity and the Willamette Association of Realtors have submitted a last-minute request that you delay further consideration of the current proposed changes to the Land Development Code (LDC). As the Chair of the Collaboration Corvallis Neighborhood Planning Workgroup, where these proposed changes originated, I strongly urge you to deny that request and proceed with your decision-making.

I was especially disappointed that Habitat chose to pursue this approach. Over six weeks ago, I and another workgroup member met with Habitat representatives, at their request. A member of the Infill Task Force was also present. The Habitat representatives were concerned about the potential for some of the LDC changes to negatively affect their ability to build homes affordable to lower-income community members. Over the course of several hours, we discussed each proposed change about which they were concerned. We explained why each had been proposed, and worked with them to find solutions that they could then propose to the City. The meeting was cordial and seemed productive, and we left under the impression that we had met all their objections and come up with solutions amenable to them. At no time was there any mention whatsoever of opposing or delaying the LDC changes altogether. It was quite a shock, to say the least, to see this letter from them in the Council email today.

As the originators of the Collaborate Corvallis project, you directly charged our workgroup to study the LDC for specific ways it could be changed to help remediate or minimize the negative effects of demolition and new infill construction on our community's older neighborhoods, particularly around OSU. Dozens of community members testified over many months at regular public meetings, which were widely publicized.

The proposed LDC changes that came out of that citizen-driven process were approved unanimously by the Planning Commission. They represent hundreds of person-hours of work by the Neighborhood Planning workgroup members, Collaboration and City staff, Planning Commissioners, and yourselves. They also represent the deeply felt concerns and needs of many of your constituents, who took the time over a year ago to participate and have been waiting patiently for these changes to work their way through the system ever since. **They deserve a decision, not a delay.**

Sincerely,

Trish Daniels, Chair
Collaborate Corvallis Neighborhood Planning Workgroup

July 15, 2014

RECEIVED

JUL 15 2014

Community Development
Planning Division

Honorable Mayor and City Councilors of Corvallis
501 SW Madison Ave.
Corvallis, OR 97330

Dear Mayor Manning and City Councilors:

We are writing to urge your support for the proposed LDC Phase 1 changes as unanimously passed by the Corvallis Planning Commission. We also request your support in implementing these changes as soon as possible.

We are aware that other parties are urging a "go-slow, further-study-needed" approach, but we feel that doing so could allow unnecessary further damage to the Corvallis neighborhoods for which the proposed changes could be a lifeline. We also note that the more complex/controversial proposed LDC changes have **already** been separated out for further study as part of the LDC Phase 2 effort - the Phase 1 changes in front of you encompass the "low hanging fruit" of the proposed changes, developed after several years of intensive public process.

While an argument has been made that the proposed LDC Phase 1 changes could damage the availability of affordable housing in Corvallis, we would instead argue that the ongoing rash of demolitions of our existing stock of small/affordable housing is **already** having this effect. The Phase 1 proposed changes won't completely stop this trend, of course, but they will fix at least some of the unintended consequences of LDC changes Corvallis has made over the last decade.

Sincerely,

BRUCE OSEN

KIRK BAILEY

LORI STEPHENS

Young, Kevin

From: Planning
Sent: Tuesday, July 15, 2014 4:35 PM
To: Yaich, Jason; Young, Kevin
Subject: FW: Land Development Code Text Amendments (LDT 13-00002 / LDT 13-00003)

Does the comment period end today?

Marci

From: ASSETREAL@aol.com [mailto:ASSETREAL@aol.com]
Sent: Tuesday, July 15, 2014 3:19 PM
To: Planning
Cc: dweaver@proaxis.com
Subject: Land Development Code Text Amendments (LDT 13-00002 / LDT 13-00003)

City Counsel consideration of above referenced Text Amendments:
The City's present Zoning address incompatible infill development. In the older parts of town this may allow improvements grand father there, prior to zoning by the City. Each zone is clear as to what otherwise is allowed. A consumer has access to zone description allowed in RS-5 zone as well as RS-12. If you want to be assured not to have infill of multi family neighbors to buy or own in RS-12 zone. It is clear one could have higher density neighbors.

The City has changed zones to lessen density and alter infill possible in the past. This is more site specific timely impact. Done in a specific part of town and at point in time. To increase side-yard setback for single attached dwellings units, from 8 to 10 feet in zones RS-5 through RS-12 U. Decrease highest and best use of a restricted supply of serviced City located land. Lot coverage ratios are already clear in these zones.

Development costs continue to increase due to: scarcity of land , material cost, engineering, energy efficient design, labor, property taxes, insurance, and fuel expenses. To reduce size and decrease utility of building in all these zones is counter to livability and affordability. If one's choice is lower density that is likely helped by larger lot size. And maybe a little longer ride or walk to work, shopping, study or visiting.

Stanley A. Rich, CCIM
Asset Realty
456 SW Monroe Ave. #105
Corvallis, OR 97333
Oregon Licensed Real Estate Principal Broker

Young, Kevin

From: K.J.Phillips [rrconstdev@comcast.net]
Sent: Tuesday, July 15, 2014 4:55 PM
To: Young, Kevin; Bell, Amber
Subject: 7/15/14 SUBMITTAL: Additional Testimony Period LDT13-0003

City Council & City Planning Dept.:
To help maintain a BALANCE OF AFFORDABLE DEVELOPMENT in this,...increasingly expensive city, I urge you to
reject adoption of above, proposed text amendment related to City density calculations, as your approval for adoption, will
UNFAIRLY ELIMINATE use of 1/2 of that very valuable development land, now required as a DONATION for public right-of-ways, platted during a City development project.
Sincerely,
Kathy Phillips
[Corvallis resident since 1996,
licensed builder, 1994- present,
local developer, and, member
Oregon Pioneer family-Myer since 1847]

This email is free from viruses and malware because avast! Antivirus protection is active.

HUMAN SERVICES COMMITTEE
MINUTES
July 8, 2014

Present
Councilor Penny York, Chair
Councilor Mike Beilstein
Councilor Bruce Sorte

Staff
Jim Patterson, City Manager
Jim Brewer, Deputy City Attorney
Jon Sassaman, Police Chief
Carrie Mullens, City Manager's Office

Visitors
Jim Day, *Corvallis Gazette-Times*
Stewart Wershow
Carl Price
Christy Anderson Brekken
Rebecca Landis, Corvallis Farmers Market Director

SUMMARY OF DISCUSSION

	Agenda Item	Info Only	Held for Further Review	Recommendations
I.	Visitors' Propositions • Open Carry of Weapons (Price, Anderson Brekken)	Yes		
II.	Corvallis Farmers' Market Annual Report			Accept the 2013 Corvallis Farmers' Market annual report
III.	Open Carry of Weapons		Sept	
IV.	Other Business • Pending agenda items	Yes		

Chair York called the meeting to order at 2:00 pm.

CONTENT OF DISCUSSION

I. Visitors' Propositions

Carl Price testified in support of open carry as an inherent civil and constitutional right. He quoted from the Corvallis City Charter, "Corvallis is a community that honors diversity and diverse interests and aspires to be free of prejudice, bigotry and hate." He opined that recent information in local news media about banning open carry is similar to tactics used in an attempt to ban other civil rights, such as gay and interracial marriage. He said many of the arguments have been about the safety of children; however, Corvallis does not have a violence problem. During research, he could not locate any case in Corvallis that resulted in violence from an individual legally and openly carrying a weapon.

Mr. Price said banning open carry is against the City Charter and the oath Councilors took to uphold the Oregon and US Constitutions. In the *District of Columbia v. Heller* case, the US Supreme Court said the protective right to bear is

to open carry. Infringing on that right without pressing interest from the government is abridging an individual's civil rights by the government. The City should never attempt to infringe on any civil right.

Regarding safety, Mr. Price referred to Federal Bureau of Investigation (FBI) statistics that indicate violence in the US has decreased by more than 50% since 1993 as gun ownership has increased.

Mr. Price noted that citizens are suing cities who have banned open carry, and those cities are financially settling those lawsuits out-of-court. He inquired how Corvallis would pay for that type of settlement and encouraged Council to address the financial burden before any action is taken.

In response to Chair York's inquiry, Mr. Price said a number of states have prohibitions against open carry including California, New York, and the District of Columbia. Texas bans open carry of pistols but not rifles. Chicago's ban was recently challenged and failed.

Christy Anderson Brekken testified on behalf of the families who signed a letter submitted to Council requesting an open carry ban. She said there have been several open carry incidents in Corvallis that have alarmed families, especially when small children are nearby. In one specific issue, an off-duty Officer spoke casually with the individual who was openly carrying and that person left the area. This is an issue, even if it does not result in violence. Allowing open carry interferes with the feeling of safety in the community and the right to conduct business in a civil and dignified way without feeling there are people nearby who are either expecting violence or who may be inclined to violence. She noted that several cities in Oregon ban open carry in the same way that has been proposed. The Portland ban was challenged and found to be constitutional by the Oregon Supreme Court.

Regarding safety, Ms. Anderson Brekken said the presentation slides included in the meeting materials point out to officers that there is an increased risk of violence and bodily harm when firearms are present in public.

Ms. Anderson Brekken explained that if Corvallis adopts the proposed open carry ban, concealed handgun license (CHL) holders would still be allowed to open carry. That means when citizens see individuals openly carrying, they know those individuals have passed CHL requirements, including safety training and background check. She noted that concern has been mentioned about whether a ban will provide Officers with additional power to stop and talk to those people who openly carry. She referred to the presentation slide titled CHL Holders that states the Police Department's position that it is lawful to stop a person if an Officer has reasonable suspicion to believe a person is carrying a firearm (open or concealed) in a public building without knowing if the person is a CHL holder. She opined that

if an open carry ban is adopted in Corvallis, "public building" could be replaced with "public place."

Ms. Anderson Brekken added that Corvallis is a wonderful city to live in and raise children. Observing an increase of people openly carrying would disrupt that feeling. Citizens perceive that someone who is openly carrying is anticipating or considering violence. It is reasonable to maintain a civil, open, warm feeling of Corvallis where citizens feel safe to have children around without the children asking why someone else has a gun. The families of Corvallis strongly encourage Council to adopt an open carry ban.

Councilor Beilstein inquired whether Ms. Andersen Brekken believes the current protections are adequate when the Police Department has determined that it is lawful to stop someone who is openly carrying a firearm to inquire whether they have a CHL.

Ms. Anderson Brekken responded that the City settled a lawsuit related to an Officer approaching someone who was openly carrying a firearm. The person sued on the premise that the Officer did not have reasonable suspicion to stop and ask whether they had a CHL. Under current law, an Officer cannot ask whether the person has a CHL because open carry is not banned in Corvallis. If open carry was banned, an Officer would have the right to stop and ask a person who is openly carrying if they have a CHL.

II. Corvallis Farmers' Market Annual Report

In regards to the previous testimony, Ms. Landis said in 2008 the Market had an incident related to open carry. Several customers were very alarmed by the behavior and requested she do something as the Market Director.

Ms. Landis referred to the annual report and asked the Committee to recommend Council acceptance.

Ms. Landis reported that this year the Market was granted an extension to the permit to cross over the alley between 1st and 2nd Streets on Monroe Avenue. The Market was already able to occupy the area to the east of the alley and with the extension, the Market can block off space to the west. There is a pending parking elimination permit for reconstruction at the Julian Hotel. The Market is working with Public Works to keep at least a portion of this area that was previously granted to the Market so services promised to local farmers can be upheld. The space extension allows the Market to accept additional vendors and assist other organizations with publicity, such as providing space for a kinetic sculpture to promote the local kinetic event and offer space for a blood drive.

Ms. Landis said the Market continues to struggle with raising funds for the Supplemental Nutrition Assistance Program (SNAP) incentive. A monthly raffle is held at the Market and a summer picnic in Willamette Park will be held on August 3 to raise funds to supplement the Oregon Trail Card.

In response to Councilor Beilstein's inquiry related to the supplement to the SNAP program, Ms. Landis said fundraising amounts vary and are minimal. The most expeditious way for this program to work would be if an outside funder gave the Market a few thousand dollars. Additionally, the Market is not designed for, nor does it have the capacity for major fundraising. She noted that one of the local churches is holding a breakfast for members as a fundraising activity for the SNAP program and will raise a few hundred dollars. Benton County occasionally provides funds when they receive grants that match the purpose of the program.

Councilor Beisltein said he does not believe farmers' markets should be responsible for fundraising SNAP funds. He inquired about the utilization of the supplemental monies. Ms. Landis said the Corvallis Market could easily utilize $15,000 to $20,000 in supplemental funds.

Chair York thanked Ms. Landis for her stable leadership.

The Committee unanimously recommended Council accept the 2013 Corvallis Farmers' Market Annual Report.

III. Open Carry of Weapons

Chief Sassaman reported that several citizens expressed their concern to Council about an open carry incident that occurred in a park. Staff prepared a brief follow-up report and Council referred the issue to this Committee to begin discussions about open carry issues and concepts. The staff report highlights the 2nd Amendment of the US Constitution and Article 1, Section 27 of Oregon's Constitution related to the right to bear arms; Corvallis Municipal Code regarding concealed weapons and discharging weapons; the 4th Amendment of the US Constitution related to search and seizure; and a brief description of reasonable suspicion. Chief Sassaman reviewed portions of a PowerPoint presentation that the Department uses to train staff on laws related to open carry.

Chief Sassaman said primary Departmental training objectives focus on how to protect the community; legal boundaries Officers must work within to ensure stops, detentions, and arrests are founded on sound, legal guidance; safety of staff; protecting the rights of all citizens; and education of the public. An issue Officers must contend with is citizens openly carrying to create a police encounter to test Officer response and/or create a lawsuit. A few years ago, someone was walking downtown with an assault rifle while videotaping Department staff and uploading

the videos to the internet. Staff is well trained in how to respond to these types of encounters and they followed legal protocol without infringing on rights.

Chief Sassaman clarified that the 2008 *Heller* case was about the District of Columbia attempting to completely ban handguns. The US Supreme Court ruled the ban unconstitutional and that possessing a handgun was an individual right. Since the District of Columbia is not a state, the ruling does not necessarily apply to other states; however, it does provide guidance for other jurisdictions. The 2010 *McDonald v. Chicago* case was related to prohibiting handguns in private homes. The US Supreme Court ruled against Chicago and said gun ownership is an individual right that cannot be taken away by individual states. However, government has the right to regulate time, place, and manner. Although it is a fundamental right to possess a firearm and/or open carry, limits can be placed on those rights. The Oregon Constitution provides for …"the right to bear arms for the defense of themselves...." Oregon Revised Statute 166.170 preempts local jurisdictions from creating laws that would further restrict weapon possession. There are areas where local jurisdictions can enact narrow laws, including the discharge of weapons and possessing loaded firearms in public places. Exemptions to the latter include Police Officers, military personnel, and CHL holders. Corvallis Municipal Code regulates the discharge of weapons, but not the possession of loaded firearms in public places.

Mr. Brewer noted that a law prohibiting the possession of a loaded firearm in a public place would not prohibit open carry of an unloaded firearm in a public place. The City cannot prohibit open carry of unloaded firearms.

Councilor Beilstein noted that adopting a law prohibiting open carry in public places would provide Officers with the legal authority to stop someone who is openly carrying to ask whether they hold a CHL.

Mr. Brewer explained that, for law enforcement purposes, a stop is a show and use of force. An Officer must have reasonable suspicion or probable cause based on articulable subjective and objective facts to stop someone. An Officer can have encounters or conversations with people; however, many factors are considered when determining whether it is a "stop," such as where the Officer's car is parked, or any other show of force where a reasonable person would believe they were not free to leave.

Mr. Brewer said the issue is whether the City can, under the narrow authority to prohibit loaded weapons in public places, inquire whether someone openly carrying has their weapon loaded. Other jurisdictions with similar language do not inquire about this due to the reasonable suspicion law. Chief Sassaman added that without an inquiry, an Officer is not going to know who has a CHL permitting them to carry a loaded weapon versus someone without a CHL who can legally carry an unloaded weapon.

Mr. Brewer explained that Portland's ordinance prohibits knowingly carrying a recklessly loaded weapon. The Portland ordinance was upheld by the Oregon Supreme Court (*State v. Christian; 2013)*. If Corvallis moves forward with an ordinance, the Portland ordinance would be used as a starting point.

Chief Sassaman added that Oregon is a "shall issue" State regarding CHL. The Sheriff's Department is required to issue any CHL applied for as long as the applicant meets all criteria. A CHL holder is allowed to open carry a loaded weapon; it does not need to be concealed. A CHL holder is also allowed to open carry a loaded weapon in public buildings and on public property. A CHL holder cannot open carry a loaded weapon in courts and federal buildings. The table following the CHL Holders slide is utilized by Department staff as a guide for CHL rules.

In response to Councilor Beilstein's inquiry related to Officers carrying a concealed weapon, Chief Sassaman said there are exemptions for off-duty law enforcement personnel. The standard officers must comply with at the State level requires additional certifications and annual testing.

Chair York referred to table following the CHL Holders slide and said it appears there is a very narrow section of the law where the City could potentially do something more than current law by addressing the first and fourth items (public property and ground adjacent to public buildings). Mr. Brewer agreed.

Chair York noted that these discussions do not include regulations related to CHL holders.

Chief Sassaman reviewed information received from other jurisdictions (Agency Comparisons slide) who were asked: 1) how many times has your department charged someone with violating their ordinance related to openly carrying a loaded firearm in a public place, and 2) what changes were made in the respective departments when their ordinance was enacted? Of the eight responses, five departments answered zero to question #1 and none of the eight departments made any changes in relation to question #2.

Chief Sassaman responded to several inquiries posed by Chair York:

- The important things to consider when someone begins to feel they are not free to leave during an Officer encounter are who approached first, where the Officer stands, where the Officer's vehicle is parked, who else is present, among others.
- The procedure in approaching anyone openly carrying a firearm remains the same.
- When discussing guns, the conversation must also consider:
  - 1st Amendment – Right to free speech

- 2nd Amendment – Right to bear arms
- 4th Amendment – Free from search and seizure
- 5th Amendment – Right to not self-incriminate (Miranda)
- 14th Amendment – Life, liberty, property and equal protection (use of force)

Chair York referred to the 14th Amendment and inquired about the right to liberty and a feeling of safety for a person who is not carrying a firearm and is walking through a park with their family. Chief Sassaman said everyone wants to feel safe. Levels of comfort vary depending on personal experiences and history. It is difficult to legislate how one feels about something. Laws are geared toward prohibiting something and whether there is a legal foundation to do so. There is no study that quantifies a degree of fear that led to any form of legislation.

In response to Chair York's inquiry, Mr. Brewer confirmed that "life and liberty" could be interpreted to include the right to move about safely in public; however, it is mutual for all parties. He said the question is, when does someone else's constitutional right end and the other person's right begin? Fear is subjective. For safety purposes, everyone should assume that every firearm is loaded.

Chair York said sometimes it is difficult to draw the line between the individual rights of different people. Mr. Brewer said the Police Department would rather have people who are afraid call them instead of being afraid and not making the call. Chief Sassaman agreed and added that Officers are well trained but cannot predict everything. The public needs to be comfortable contacting the Department and expressing their concern.

Chief Sassaman referred to the final slide that identified the number of:

- Firearm arrests cases in 2011, 2012, 2013, and 2014 year-to-date.
- Open carry calls for service in 2011, 2012, 2013, and 2014 year-to-date.
- CHL holders in Benton County.

Chief Sassaman referred to the last item in the CHL Holders slide and clarified that Oregon law specifically identifies "public buildings." The City would not be able to replace "buildings" with "property" as was suggested.

In response to Councilor Beilstein's inquiry about a legal decision involving one of the City's Police Officer's, Mr. Brewer said the person asked if they were free to go and the Officer said no. The person then asked if they were under arrest and the Officer asked the person to identify themselves. When the person refused to identify himself, the Officer arrested him. This incident rapidly progressed from an encounter to at least a stop and an arrest. The facts of the case and the things that brought the Officer to a point of arresting the individual were understandable. It is difficult to second guess an Officer's concern for his own safety.

Councilor Beilstein said, according to the judge, the behavior of the Officer was incorrect. He inquired whether staff agreed. Mr. Brewer said from a legal point of view, judges are correct because they are judges.

Chief Sassaman said the case resulted in many of the training slides included in the meeting materials. He added that Officers must make split-second decisions in difficult circumstances. These will always be second-guessed by a multitude of people on multiple layers who were not present during the incident. The Officer must also use their best judgment at the time. Chief Sassaman opined that this Officer used his best judgment at the time.

Councilor Beilstein inquired whether there was anything Council should consider to provide a clearer path for Officers. Mr. Brewer responded that Council does not have the ability to adopt a local ordinance that would give Officers the right to violate any constitutional standard.

Chief Sassaman said staff is not expecting a recommendation at this time. He anticipated additional discussions and/or direction from this Committee and the full Council for more information and/or the development of a draft ordinance. He cautioned that an adopted law does not necessarily provide additional rights for Officers.

Councilor Sorte said he prefers a "soft touch" approach. He contacted a rural community about how they approach open carry. Law enforcement personnel in rural counties have the luxury of knowing most of their citizens, but they also use a casual approach when inquiring about why someone is openly carrying. He opined that the general public and Parks staff may need some guidance in when and how to contact the Police Department.

Chief Sassaman said 9-1-1 dispatchers are well trained and know what questions to ask that can be translated to Officers in the field. Citizens should call 9-1-1, be observant (good witness), and not engage. Councilor Sorte agreed and added that the City has a responsibility to manage the interaction between the public and the Police Department.

Councilor Sorte said an ordinance banning open carry of a loaded firearm does not preclude anyone from carrying an unloaded firearm and keeping shells or handgun clips easily accessible in a pocket.

Councilor Sorte noted that the Citizens Advisory Commission on Transit recently reviewed a pamphlet for the new Night Owl bus (formally Beaver Bus). He referred the responsible staff members to Mr. Brewer and Chief Sassaman after reading a statement in the pamphlet about riders not being allowed to carry weapons.

Councilor Sorte said he agrees that the City would spend a great deal of money defending any ordinance banning open carry. Adopting this type of ordinance may encourage activists to engage with Officers as a means of protest. The no carry statement in the Night Owl brochure may also encourage people to test the law.

Chair York inquired about next steps. She said she has no interest in challenging constitutional or State law. She would prefer a clearer understanding of the narrow scope of what Council could do differently and what the potential consequences might be if action was taken. She has an interest in the feeling of safety by members of the community. She needs a clearer understanding of the rights of someone who is openly carrying and the rights of someone who may feel a sense of fear or potential loss of life or liberty due to someone else exercising their right to open carry.

Councilor Beisltein said adopting an ordinance similar to Portland would not achieve a greater quality of service already provided by the Police Department nor would it empower Officers to do anything different. He opined that it would be a waste of time for the City Attorney to draft an ordinance if adoption will not change Police procedures. However, if an ordinance made the community feel more safe and secure, he would support it. If Council considered an ordinance, he would prefer it be modeled after Portland.

Mr. Brewer confirmed for Councilor Sorte that the only legislation Council can amend is to ban open carry of a loaded firearm. Councilor Sorte said this information needs to be thoroughly articulated to the public along with the practicality of what is gained by adopting that type of legislation. If staff can present what the City currently has and what decision(s) Council can make, then the public can testify or lobby for their preference. He opined that Corvallis could set a good, thoughtful example or precedent for other jurisdictions. Providing education and direction to those people who fear open carry would be beneficial. He noted that the people who support open carry have a clearer view of their options than those who are concerned.

The Committee directed staff to return with potential legislation, clear information about what additional legislation would and would not allow, and options to inform the public about keeping safe.

Councilor Beilstein suggested that the Community Policing Forum might be a good venue for public education.

Chief Sassaman said staff will return with draft legislation that they believe will sustain a legal challenge and create an educational strategy and implementation plan. He anticipated returning with the information in September.

Chair York encouraged the public to provide suggestions and comments at future meetings.

IV. Other Business

Chair York reviewed the pending Committee agenda items (Attachment 1).

Councilor Beilstein announced that he will be absent for the July 22 and August 5 meetings. He requested that the Parks and Recreation presentation about relocating the Senior Center be postponed until August 19.

Chair York suggested that the Council Policy review regarding the City Hall Plaza and Kiosk be rescheduled to that date also.

Mr. Patterson agreed to move the July 22 pending agenda items and cancel the July 22 meeting.

In regards to the Senior Center relocation information, Councilor Sorte requested maps or other information about the location of current Senior Center users. He opined that the Senior Center is a social cushion in that neighborhood, and said if it is relocated, he would prefer the facility continue to provide some of the same attributes. He clarified that the information can be provided in the meeting materials or during the presentation.

The next Human Services Committee meeting is scheduled for 2:00 pm on Tuesday, August 5 in the Madison Avenue Meeting Room.

The meeting adjourned at 3:29 pm.

Respectfully submitted,

Penny York, Chair

Attachment 1

HUMAN SERVICES COMMITTEE SCHEDULED ITEMS

July 3, 2014

MEETING DATE	AGENDA ITEM
July 8	• Corvallis Farmers' Market Annual Report • Open Carry of Weapons
July 22	• Parks and Recreation Draft Master Plan Recommendation to Relocate Senior Center • Council Policy Review and Recommendation: • 99-4.14, "Use of City Hall Plaza and Kiosk"
August 5	
August 19	
September 2	• Social Services Semi-Annual Report
September 16	• Council Policy Review and Recommendation: • 93-4.11, "Public Library Policy for Selecting and Discarding Materials" • Rental Housing Program Annual Report
October 7	
October 21	
November 4	• Council Policy Review and Recommendation: • 95-4.08, "Code of Conduct on Library Premises"
November 18	

December 2	• 2015-2016 Social Services Priorities and Calendar
	• Council Policy Reviews and Recommendations:
	  • 91-1.03, "Naming of Public Facilities and Lands"
	  • 91-4.01, "Guidelines for Selling in Parks"

December 16	

HSC PENDING ITEMS

- Municipal Code Review: Chapter 5.01, "City Park Regulations" (Alcoholic Beverages in Parks) — Parks & Recreation
- Municipal Code Review: Chapter 9.02, "Rental Housing Code" — Community Development
- OSU/City Collaboration Project Recommendations (Action Items 4-1, 4-3, 4-4, 5-1) — Community Development

Regular Meeting Date and Location:
Tuesday of Council week, 2:00 pm – Madison Avenue Meeting Room

MEMORANDUM

CORVALLIS
ENHANCING COMMUNITY LIVABILITY
PARKS & RECREATION

To: Human Services Committee
From: Karen Emery, Parks and Recreation Director
Jude Geist, Parks Operations Supervisor
Date: June 19, 2014
Subject: Corvallis-Albany Farmer's Market (CAFM) 2013 Annual Report

---

Issue:
The CAFM Report is scheduled for its annual review before Human Services Committee.

Background:
The 2013 CAFM operated from mid-April to mid-November at three locations in Albany and Corvallis. In Albany, the CAFM operated a Saturday Market at 4th Avenue and Ellsworth Street. In Corvallis, the CAFM operated a Wednesday and Saturday Market on 1st Street in Riverfront Commemorative Park.

Discussion:
Director Rebecca Landis continues to work with a community volunteer board to help oversee the market activities. The Market operates as a state-chartered nonprofit mutual benefit corporation.

The Market continues to bolster economic and community activity by bringing growers and participants into the downtown area. CAFM continues to accept Oregon Trail and debit cards at all three sites, which represents the majority of both dollars and transactions in their wireless system. Additionally, farmers accept "Farm Direct Nutrition Program" (FDNP) coupons, which puts fruits and vegetables in the hands of young parents and seniors who might not be able to afford them; the WIC (Women, Infants and Children) fruit and veggie voucher program; and Supplemental Nutrition Assistance Program (SNAP). Lastly, CAFM invites gleaning groups to pick up surplus produce from vendors to distribute among low-income persons in our communities.

The Corvallis Saturday market opened April 20 and ran through November 23, 2013, from 9am to 1pm. The market averaged 53 vendors per market, up 2 from 2012. The highest daily vendor count was 62. A total of 137 vendors paid membership dues, and nearly all attended at least one market day.

The Corvallis Wednesday market is also located on 1st Street in Riverfront Commemorative Park. The Wednesday marked opened April 24 and ran through

November 27, 2013, also from 9am-1pm. The market averaged 23 vendors per market, a slight decline from 2012. The highest daily vendor count was 33.

The Saturday market operated as a street closure from the north end of 1st Street south to one half of the Monroe Avenue block. Market music and special events utilized portions of the Helen M. Berg Plaza's front apron. CAFM and Parks and Recreation have a formal lease agreement, where CAFM provides "weekly area cleanup" and nearby park restroom "incidental custodial services" in exchange for leasing the front apron of Jackson Plaza. The lease agreement also sets up an annual payment of $1,500. The current lease agreement meets and exceeds the minimums for cost recovery guidelines (90% cost recovery).

The CAFM volunteer coordinator programmed over 100 free events for the 2013 market season by recruiting organizations and individuals who assisted with educational displays, cooking demonstrations, and children's activities. City and County governments are among the organizations using the markets for outreach activities.

Recommendation:
Staff recommends HSC recommend to City Council to accept the 2013 annual CAFM report.

Review and Concur:

James A. Patterson, City Manager

Nancy Brewer, Finance Director

Attachment: CAFM 2013 Annual Report

CORVALLIS - ALBANY FARMERS' MARKETS
2013 Season Annual Report

Introduction

Corvallis-Albany Farmers' Markets (CAFM) is a state-chartered non-profit mutual benefit corporation and is recognized as a 501(c)(6) organization on the federal level. Our mission is to provide highly visible centralized locations in Corvallis and Albany for mid-Willamette and Coast Range agricultural producers and gardeners to market high quality agricultural products directly to consumers.

CAFM operates three farmers' markets in Corvallis and Albany: Corvallis (Saturday & Wednesday) and Albany (Saturday only). Our research indicates that the Albany market, founded in 1978, is possibly the oldest continuing open-air farmers' market in the state. The Wednesday market was founded in 1981. Ten years later the downtown Saturday market in Corvallis was founded.

Although CAFM's membership is largely made up of farmers and gardeners, our activities provide benefits generally to the two communities we serve. The markets we operate are not just places for buying and selling. Each market day is a community event to which everyone is welcome. We consciously strive to create community gathering places, where people come expecting to see friends and family, enjoy free live music and learn about where their food comes from.

All of our markets are located downtown (since 2009), with the intent and result of bolstering economic and community activity downtown. Internationally recognized research methods developed by the Oregon State University Extension Service at our farmers' markets demonstrate that most market attendees come downtown because of the market and end up spending significant amounts of money both with market vendors and at nearby businesses. Most attendees are local, but the markets also have a significant tourism benefit to their communities.

Food assistance programs

CAFM began service for Oregon Trail and debit cards in 2007 and expanded to at all three sites in 2008, using wireless card readers and wooden tokens. Oregon Trail use continued to grow, and in recent years SNAP exceeded debit transactions. The 2014 season will reveal whether eased economic conditions will begin to reverse these observed trends. One fact of the modern economy that is unlikely to change: The monetary value of token programs (SNAP, SNAP incentives and debit cards) now exceeds the revenues we collect from vendors to operate our markets.

Starting late in 2010 we launched incentives for SNAP customers to encourage healthy choices. SNAP incentives must come from outside funding sources. These have included Ten Rivers Food Web and private funds granted to Benton County Health Department. In 2014 the market is struggling to run raffles and fund-raising dinners to make incentives available. Federal funds may be available in future seasons, but they will require a match and a regional or statewide sponsor.

Farmers accept Farm Direct Nutrition Program coupons, which put fruits and vegetables in the hands of young parents and seniors who otherwise might not be able to afford them. In 2010 CAFM and other farmers' markets were added to the WIC fruit and veggie voucher program, which is also a grocery store program. The market association also invites gleaning groups to pick up surplus produce from vendors to distribute among low-income persons in our communities.

Events and statistics

Our events coordinator programs 100+ free events at markets by recruiting organizations and individuals who assisted with educational displays, cooking demonstrations and children's activities. City and county governments are among the organizations using our markets for outreach activities.

A total of 137 vendors paid membership dues, and nearly all attended at least one market day. Some participated at all three locations, while others attended one or two of the sites. Several home gardeners and small farms sold exclusively through consignment operations (called Community Tables) designated at each Saturday site.

In Corvallis, the Saturday market began on April 20 and ran each Saturday through Nov. 23 from 9 a.m. to 1 p.m. The market averaged 53 vendors per market, up almost 2 from 2012. The highest daily vendor count was 62. We were been able to fit a few more vendors in 2013 through new signs, resulting in better management of stray cars left in our permit area. For 2014 our permit has been extended a bit westward on Monroe Ave. so we need not turn away qualified farmers.

The Saturday market in Corvallis operated as a street closing on the north end of 1st Street, plus an adjacent ½ block of Monroe Ave. Market music and special events used portions of the Jackson Plaza's front apron (the area in line with east side parking stalls).

The market continues to use some city street closing signs, some of which include the Riverfront logo and the words "Riverfront Event." Many of these signs are city property that is stored, transported and placed by CAFM and made available to other entities holding Riverfront events requiring street closings.

Wednesday markets in 2009 moved to the city parking lot at the intersection of 2nd Street and B Avenue after more than two decades at the Benton County Fairgrounds. When the Wednesday market moved downtown, this market's hours were changed to 3 to 7 p.m. to attract after school and after work customers.

A city sewer project scheduled for 2011 required that the market relocate for that season. We re-examined some of the sites considered before the last move and found that a portion of the Saturday site (eliminating the northern section and using Monroe Ave as overflow) was the only viable option. It did require us to switch back to mornings (9 a.m. to 1 p.m.), since nearly half of the spaces face west. The organization decided that parking near 2nd & B was no longer adequate, and the Wednesday market needed to stop moving in order to lessen customer confusion.

In 2013 Wednesday markets began on April 24 and ran through Nov. 27 – a much longer season than most midweek markets. The market averaged almost 23 vendors per market, a slight decline from 2012. The highest daily vendor count was 33.

Albany markets began on April 20 and ran each Saturday through Nov. 23 from 9 a.m. to 1 p.m. The market averaged almost 22 vendors per market, down from 2012. The highest daily vendor count was 35.

In Albany, the market continues to benefit from a relatively new and highly visible downtown location at 4th & Ellsworth in the City Hall parking lot and an adjacent block of 4th Ave. that is shaded by the heritage trees on the east courthouse lawn. The Albany Farmers' Market caters to new and small farm operations that might have a difficult time finding a foothold at larger markets. The Community Table (also available in Corvallis) provides an additional way for backyard gardeners and very small farming operations to try selling at a farmers' market.

The market also benefits from sharing crowds with other events that use the courthouse steps and the terminus of Broadalbin. Proximity to Ellsworth (Hwy. 20) results in customers making unscheduled stops at the market because they saw it while traveling to other destinations. Hours were shifted to 9 a.m. to 1 p.m. for 2007 and have continued in that pattern for succeeding seasons.

In partnership with Ten Rivers Food Web and Samaritan's InReach clinic, we piloted a small prescription produce program at the Albany Farmers' Market. In 2014 a similar program with Samaritan's Cancer Resource Center is under way in Albany.

Rebecca Landis, Market Director
9 June 2014

Memorandum
Corvallis Police Department
July 1, 2014

To: Human Services Committee

From: Jonathan M. Sassaman, Chief ~~of Police~~
Jim Brewer, Deputy City Attorney

Subject: "Open Carry" of firearms in public

Issue:

City Council, at the June 2, 2014 Council meeting referred to Human Services Committee the issue of "open carry" of firearms in the public. This staff report addresses legal issues and local authority relative to "open carry" of firearms. (Information for council)

Background:

At the May 19, 2014 City Council meeting, a group of citizens expressed concern about a person carrying a firearm openly in Cloverland Park, possibly within 1000 feet of a school, in possible violation of a federal statute. This group of citizens asked for the City to consider appropriate steps to prohibit "open carry" of firearms. City Council was provided an informational memorandum (attachment 1), containing information about "open carry" and the authority of the Corvallis Police Department to enforce federal law.

Discussion:

The 2nd Amendment of the United States of America Constitution grants the right to people to keep and bear arms which shall not be infringed upon. In 2010, the United States Supreme Court (McDonald v. Chicago) ruled a ban on ownership of handguns within a private home was unconstitutional, affirming the 2nd Amendment applies to States and therefore gun ownership is an individual right and it cannot be taken away by the individual States.

Article l, Section 27 of the State of Oregon Constitution echo's in part the 2nd Amendment and grants the people of Oregon the right to bear arms. The State of Oregon enacted ORS 166.170 which preempts local governments from regulating firearms or enacting civil or criminal ordinances relating to firearms. Any ordinances contrary to ORS 166.170 are void, however the Oregon Legislature did carve out for local governments the authority to enact very narrow laws governing the discharge of firearms and the possession of a loaded firearm in public places with exceptions for public safety officials, those with concealed handgun licenses, military members,

employees of the US Department of Agriculture and other lawful purposes in defense of person and property.

Corvallis Municipal Code 5.03.120.020 restricts the possession of concealed weapons and Corvallis Municipal Code 5.03.120.030 restricts the discharge of weapons within the City of Corvallis. The City does not have an ordinance restricting the possession of a loaded firearm in public.

The 4th Amendment of the United States of America Constitution grants the right of the people to be secure from unreasonable searches and seizures. Police officers who respond to unknown situations with people who "open-carry" a firearm, do not have the unilateral authority to stop, detain and question or search any person because they have a firearm which the general public can observe. A Police officer must have "reasonable suspicion" that a crime or violation of law is about to occur, is occurring or just occurred in order to stop a person. A person who openly carries a firearm, in and of its self, is insufficient cause to stop a person.

Attached are excerpts from a training "power point" (Attachment 2) utilized by the Corvallis Police Department to train staff of laws related to "open-carry" which will be discussed during the meeting.

Attachments:

1. Council request follow-up, dated May 28, 2014
2. Training slides

Review and concur: AIC CM

James A. Patterson, City Manager

Review and concur:

Jim Brewer, City Attorney

1

****

COUNCIL REQUESTS

FOLLOW-UP REPORT

MAY 29, 2014

****

1. Open Carry of Guns in Parks (Possible City-Wide Ban) (Hirsch)

The attached memorandum from Police Chief Sassaman addresses Councilor Hirsch's inquiry concerning open carry of firearms in City parks.

James A. Patterson
City Manager

To: Mayor and City Council

From: Jon Sassaman, Police Chief

Jim Brewer, Deputy City Attorney JB

Date: May 28, 2014

Subject: Council Follow-up/ "Open- carry" of firearms in public places

Issue:

At the May 19, City Council meeting, a group of citizens expressed concern about a person carrying a firearm openly in Cloverland Park, possibly within 1000 of a school, in possible violation of a federal statute. This group of citizens asked for the City to consider appropriate steps to prohibit "open carry" of firearms. This memorandum is intended to provide some information about "open carry" and the authority of the Corvallis Police Department to enforce federal law.

Background:

In Oregon, any City's ability to regulate firearms is greatly limited by a state law that preempts most regulations:

ORS 166.170 is the State Preemption law. It states:

> 1). Except as expressly authorized by state statute, the authority to regulate in any matter whatsoever the sale, acquisition, transfer, ownership, possession, storage, transportation or use of firearms or any element relating to firearms and components thereof, including ammunition, is vested solely in the Legislative Assembly.
>
> 2). Except as expressly authorized by state statute, no county, city or other municipal corporation or district may enact civil or criminal ordinances, including but not limited to zoning ordinances, to regulate, restrict or prohibit the sale, acquisition, transfer, ownership, possession, storage, transportation or use of firearms or any element relating to firearms and complements thereof, including ammunition. Ordinances that are contrary to this subsection are void.

There are also specific Oregon Revised Statutes where the Legislature grants narrow authority to local jurisdictions:

ORS 166.172 authorizes a City to regulate the discharge of firearms. As such, we have a local ordinance to this effect.

ORS 166.173 authorizes a City to regulate the possession of a **loaded** firearm in public places. A local municipality may regulate, restrict or prohibit the possession of a loaded firearm in public places, with some exceptions. Exceptions include public safety officials and those with concealed handgun licenses.

Under the state law, if someone has a concealed handgun license, they are free to carry a loaded firearm concealed or to "open-carry" it. There is no authority granted to local jurisdictions to prohibit open-carry for someone with a concealed handgun license. The laws grant limited authority to local jurisdictions who desire to regulate loaded firearms in public for people without a concealed handgun license or are

otherwise exempt (e.g. police officer). Even if additional laws are passed, I suspect legal challenges may result and any new law does not grant a greater degree of safety for our officers who are put in the position to engage these situations.

When we receive a call for service about someone openly carrying a firearm, there is currently no specific law in Corvallis granting police officers the unilateral authority to stop, detain, question or search an individual merely because they have a firearm on their hip where people can see it. At this point, there's no reasonable suspicion that a crime or violation of law has occurred. There are many people who have a CHL and choose to open-carry. We do have local ordinances dealing with weapons:

Municipal Code: Section 5.03.120.020 Concealed weapons.

> 1) No person, other than, with regard to firearms, a person described by ORS 166.260 or licensed pursuant to ORS 166.291 through 166.293, shall carry concealed on or about the person, or carry concealed and readily accessible about the person within any vehicle, any firearm; any gun; any knife having a blade that projects or swings into position by force of a spring, commonly known as a switchblade; any dirk or dagger; any metal knuckles; any nunchaku sticks; any sling shot; or any similar instrument by the use of which injury could be inflicted upon the person or property of any other person.
>
> 2) A violation of this Section is a Class B Misdemeanor.
>
> (Ord. 90-10 § 2, 1990; Ord. 82-77 § 111.02, 1982)

Municipal Code: Section 5.03.120.030 Discharge of weapons.

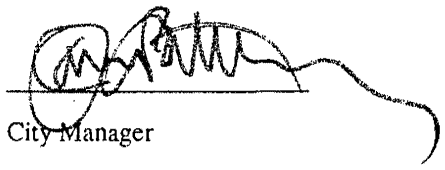
> 1) No person, other than a police officer or animal control officer, shall fire or discharge within the City any bow and arrow, firearm, or gun.
>
> 2) A violation of this Section is a Class A Misdemeanor.
>
> (Ord. 2010-21 § 2, 10/18/2010; Ord. 82-77 § 111.03, 1982) (Ord. 2002-19 § 3, 06/17/2002)

The City Attorney's Office has reviewed local ordinances in the jurisdictions listed in the citizens' letter (Astoria, Beaverton, Multnomah County, Newport, Oregon City, Portland, Salem, Tigard, and Bend). Each of them has carefully followed the state statutory scheme and only banned the open carrying of a loaded firearm, with the statutory exceptions including people with concealed carry permits (who may therefore carry a loaded weapon openly).

Police officers in Oregon do not have jurisdiction or authority to directly enforce federal law. Federal agencies (DEA, ATF, FBI, etc.) with law enforcement authority may do so. Under Oregon's statutory scheme, local governments may not independently create a regulation that echoes the 1000 foot rule. The state has not chosen to do so.

Both the Police Chief and City Attorney are available to answer any questions.

Review and Concur:



City Manager

Council Follow-up
"open-carry"

2

Carrying Firearms

Legal Issues

Developed By:

- The Corvallis Police Department
- The Benton County District Attorney, John Haroldson
- The Corvallis City Attorney, Jim Brewer

Sources

- Oregon Revised Statutes
- DA Haroldson and CA Brewer, CPD Capt. Hendrickson, Lt. Brewer and Sgt. Mann
- Annual legal update in-service training, DDA Amesbury
- Memorandum: Benton County Sheriff's Office "Notice to Concealed Handgun License Holders",
- Syllabus DISTRICT OF COLUMBIA ET AL. *v.* HELLER: http://www.supremecourt.gov/opinions/07pdf/07-290.pdf
- Syllabus MCDONALD ET AL. *v.* CITY OF CHICAGO, ILLINOIS, ET AL: http://www.supremecourt.gov/opinions/09pdf/08-1521.pdf
- Constitution of the United States of America: http://www.usconstitution.net/const.html#Am2
- Oregon Court of Appeals Ruling: OREGON FIREARMS EDUCATIONAL FOUNDATION, v. BOARD OF HIGHER EDUCATION and OREGON UNIVERSITY SYSTEM
- H.R. 218 The Law Enforcement Officers Safety Act of 2004
- S.R. 1132 The Law Enforcement Officers Safety Improvements Act of 2010

Training Objectives

- Protection of the community.
- Ensure stops and arrests for firearms laws are based on sound legal guidance and principles.
- Increase officer safety through awareness and contact procedures.
- Protection of the rights of citizens to carry firearms legally.
- When the opportunity arises, education of citizens regarding carrying firearms.

Firearms are a Tool

- Everyday you work, you are around many other people who are armed.
- You also pass many citizens on the street who are legally armed:
  - Citizens with Concealed Handgun Licenses (CHL).
  - Some people carry firearms openly in public legally; this may cause some people alarm.
- It's the person and actions that can be dangerous; a firearm is a tool that can increase the person's capacity for violence, whether for crime or legal defense.

Issue

- Most citizens just want to exercise their rights peacefully and without calling attention to themselves.
- There is a movement of becoming more educated in firearms carry laws and exercising the ability to carry firearms.
- Some activists are trying to bring this cause to light by engaging in "open carry" of firearms.
- Locally and across the country, these individuals are encountering law enforcement to test our knowledge of the law.
- Being aware of the presence of a firearm is important - remain alert.

The Issues Are Complex

- **Possession of firearms is a legal and a political issue**

Areas Where Firearms <u>are</u> or <u>may</u> be Restricted

- Court Facilities
- Public Buildings
- The grounds adjacent to Public Buildings
- Federal Facilities, including the Post Office and some BLM land
- Tribal Land and Facilities
- Private property where posted

2nd Amendment of the Constitution of th United States

"A well regulated Militia,
being necessary to the security of a free State,
the right of the people to keep and bear Arms,
shall not be infringed."

2nd Amendment of the Constitution of the United States

- Ratified in 1791. Until recently, it was undecided if the 2nd Amendment meant that individuals (without militia membership) have a right to own firearms.
- The issue of individual ownership of firearms was not resolved until 2008 and 2010.
- There will likely still be challenges to any law that restricts possession of firearms and LE will likely be involved.
- Some people may push the issue to get into court.

US Supreme Court 2008: Washington DC v. Heller

- Washington DC had a complete ban on handgun ownership
- The US Supreme Court ruled in this case that the 2nd amendment <u>is an individual right</u>
- "The Second Amendment protects an individual right to possess a firearm unconnected with service in a militia, and to use that arm for traditionally lawful purposes, such as self-defense within the home."
- This ruling <u>only</u> applied to the Federal Government; not to the States.

US Supreme Court 2010: McDonald v. Chicago

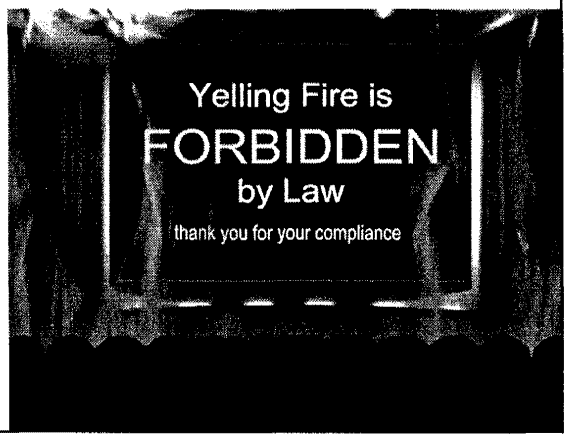
- In June 2010, the U.S. Supreme Court ruled that a Chicago ban on ownership of handguns within a private home was unconstitutional.

- This ruling means the 2nd Amendment applies to the States (via the "Due Process Clause"); gun ownership is an individual right and it cannot be taken away by the individual States.

2nd Amendment of the Constitution of the United States

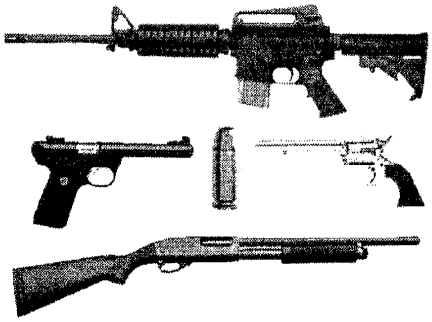
- **HOWEVER....Just like freedom of speech, government has the ability to regulate "time, place and manner" issues**

Example: the freedom of speech does not allow a citizen to yell "FIRE!" in a crowded theater when there is not a fire.



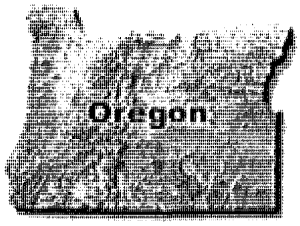
2nd Amendment of the Constitution of the United States

- **<u>Final Assessment on 2nd Amendment:</u> Gun ownership is a fundamental right, BUT some restrictions / limits can be placed on firearms by government.**



State of Oregon Constitution

- **Article I, Section 27. Right to bear arms; military subordinate to civil power.** The people shall have the right to bear arms for the defense of themselves, and the State, but the Military shall be kept in strict subordination to the civil power.



Oregon Statutes

- **166.170 State preemption (summarized). Except where specifically authorized by state statute, only the state legislature may regulate (in any manner) firearms, components and ammunition.** (affirmed by Western Oregon University case of Sept, 2011).

- **166.171-166.276 Allows for some <u>very</u> limited regulation of firearms by cities and counties**

Authority of City to regulate discharge of firearm (ORS 166.172)

- A City may adopt ordinances to regulate, restrict or prohibit the discharge of firearms within the city's boundaries.
  - CMO 5.03.120.030 Discharge of Weapons, regulates, restricts and prohibits the discharge of weapons within the City of Corvallis with exemptions for Police Officers and the Animal Control Officer. Violation of the CMO is a Class A Misdemeanor

Authority of City or County to regulate possession of loaded firearms in public (ORS 166.173)

- A city or county may adopt ordinances to regulate, restrict or prohibit the possession of loaded firearms in public places, as narrowly defined by state law.
  - The City of Corvallis does not have a law to this effect.

State v. Christian

- Portland ordinance (PCC 14A.60.010(A)):
- "It is unlawful for any person to knowingly possess or carry a firearm, in or upon a public place, including while in a vehicle in a public place, recklessly having failed to remove all the ammunition from the firearm."
- 14 exceptions including concealed handgun license

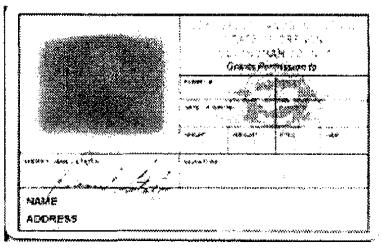
State v. Christian

354 OR 22, 307 P3d 429 (2013)

- Ordinance challenged as violating face of US 2nd Amendment and Oregon Article I, Section 27
- Oregon Supreme Court rules that Portland Ordinance does not violate US or Oregon Constitution.
- Different facts could lead to different result
- No appeal taken to US Supreme Court
- 2013 decision, follows *Heller* and *McDonald*

Concealed Handgun License

- If an applicant meets the legislated requirements and pays the required fees, ORS 166.291 requires a sheriff to issue a person a concealed handgun license.
- The applicant must be: (summarized)
  - 21 years old
  - A resident of that county
  - Trained in firearms safety
  - Not mentally ill
  - Not a "criminal" (see ORS for specifics; many including the person is not free on any form of pretrial release)



Can a CHL Holder "Open Carry"?

- **Someone with a CHL <u>CAN</u> OPEN CARRY; there is no requirement a CHL holder carry concealed.**

CHL holders are allowed to carry firearms in <u>some</u> places that non-holders are prohibited from carrying. *<u>(Example: CHL holders can carry in most public buildings, but NOT in courts or federal buildings!)</u>*

An Important Definition to Know

- 166.360 (4) "Public building" means a hospital, a capitol building, a public or private school, as defined in ORS...,a college or university, a city hall or the residence of any state official elected by the state at large, and the grounds adjacent to each such building. The term also includes that portion of any other building occupied by an agency of the state or a municipal corporation, as defined in ORS..., <u>other than a court facility</u>." (As an example, the Corvallis/Benton County Library is a "Public Building")

Officer May Examine Firearms in Public Buildings

- **166.380 Examination of firearm by peace officer; arrest for failure to allow examination. (1) A peace officer may examine a firearm possessed by anyone on the person <u>while in or on a public building</u> to determine whether the firearm is a loaded firearm.**
- **(2) <u>Refusal by a person to allow the examination authorized by subsection (1) of this section constitutes reason to believe that the person has committed a crime and the peace officer may make an arrest</u> pursuant to ORS 133.310.**

CHL Exemptions

- **166.262 Limitation on peace officer's authority to arrest for violating ORS 166.250 or 166.370. A peace officer may not arrest or charge a person for violating ORS 166.250 (1)(a) or (b) or 166.370 (1) if the person has <u>in the person's immediate possession</u> a valid license to carry a firearm as provided in ORS 166.291 and 166.292. [1999 c.1040 §5]**

Tactics when Dealing with Firearms
General Guidelines

- Caution and reasonableness are key.
- Your reason for contact must be legally sound; anonymous reports will not/do not justify a stop.
- We don't want to conduct a high-risk custody on everyone who has a gun; the totality of the circumstances will determine the tactics.
- Consider the setting and try not to cause greater alarm than necessary.
- There is no perfect tactic for these situations; Tactics will be suggested, but ultimately the officer on the scene needs to decide the best course of action and be able to justify it

Open Carry in General Public

- Open carry in a public place (but NOT IN A PUBLIC BUILDING, a COURT or a FEDERAL FACILITY) is generally LEGAL. – *Do not stop anyone just for carrying a firearm!*

- Totality of the circumstances MIGHT justify a stop if you have reasonable suspicion of a crime. You don't need "probable cause", just reasonable suspicion. Examples may include specific actions, such as the manner the person is carrying the gun, the person trying to evade being detected, threatening words – but this will be for you to justify and articulate!

- Generalities ("officer safety", "in an area where crime has occurred") will NOT suffice.

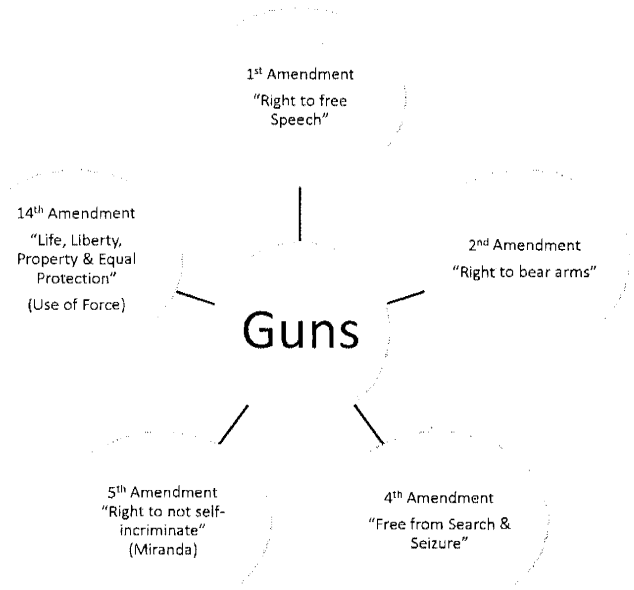
CHL Holders

- There is no law that overtly states that a CHL holder has to present it when carrying under that license. You cannot arrest someone for the crime of "Failure to Carry and Present" a CHL (the crime does not exist)
- However, the exemptions from arrest from the carrying crimes only apply if the CHL holder has the CHL in his possession
- Whether or not the person has a CHL is something you may investigate; if the person does not want to show you a CHL, you can only act on what you know
- It is lawful to stop a person if you have reasonable suspicion to believe he is (1) carrying concealed anywhere in public but you don't know he is a CHL holder or (2) carrying a firearm (open or concealed) in a public building and you don't know he is a CHL holder

	No CHL, open carry	Possess CHL, concealed carry	Possess CHL, open carry	On-duty Officer	Off-duty Officer
Public Property (sidewalks, streets, etc)	Yes	Yes	Yes	Yes	Yes
Court Facilities (crts are not public bldgs)	No	No	No	Yes, unless judge says no	No
Public Buildings (specific list) *Officer may inspect firearm per 166.380*	No	Yes	Yes	Yes	Yes
Ground adjacent to public buildings	No	Yes	Yes	Yes	Yes
Federal Facilities (Post Office, Buildings)	No	No	No	Yes	No
Natl Forest Service/BLM Land – *normally okay, but could be restricted, so check postings and with a ranger*	Yes	Yes	Yes	Yes	Yes
Tribal Land and Facilities – Written permission to carry may be obtained from tribal judge	Not without written permission	Not without written permission	Not without written permission	Yes	Not without written permission
Private Property	Yes, unless otherwise posted	Yes, unless otherwise posted	Yes, unless otherwise posted	Yes	Yes, unless otherwise posted

Agency Comparisons

	2013 & 2014 YTD Charges	Procedural Changes based on Ordinance
Astoria Police Dept.	0	No Change
Beaverton Police Dept.	No response	No response
Bend Police Dept.	0	No Change
Multnomah County S.O.	0	No Change
Newport Police Dept.	0	No Change
Oregon City Police Dept.	0	No Change
Portland Police Bureau	153	No Change
Salem Police Dept.	1	No Change
Tigard Police Dept.	2	"Stop" people w/guns



	2011	2012	2013	2014 ytd
# of Firearm Arrest cases	15	11	6	6
# of Open-Carry calls for service	4	1	3	2

# of CHL's in Benton County	2,921

URBAN SERVICES COMMITTEE
MINUTES
July 8, 2014

Present
Councilor Richard Hervey, Chair (5:06 pm)
Councilor Dan Brown
Councilor Roen Hogg, Acting Chair

Visitors
John Friedlander
Debra Higbee-Sudyka
Leonard Higgins
Linda Lovett
Robert Wilson

Staff
Roy Emery, Fire Chief
Mary Steckel, Public Works Director
Jeff Prechel, Fire Marshal
Kris De Jong, Public Works Administration Division Manager
Scott Dybvad, Sustainability Program Specialist
Emely Day, City Manager's Office

SUMMARY OF DISCUSSION

Agenda Item	Information Only	Held for Further Review	Recommendations
I. Municipal Code Review: Chapter 7.08, "Corvallis Fire Code"			• Adopt the revisions to the Fire Code for the City of Corvallis, based upon the 2012 International Fire Code, with State amendments adopted July 1, 2014, as presented by staff • Repeal the existing Fire Code of Corvallis upon full and complete adoption of the new Fire Code
II. Greenhouse Gas Inventory Follow-up	Yes		
III. Other Business			
1. Residential Parking Districts	Yes		
2. Public Participation Task Force Recommendations	Yes		
3. Storm Water Fees	Yes		

CONTENT OF DISCUSSION

Acting Chair Hogg called the meeting to order at 5:02 pm.

I. Municipal Code Review: Chapter 7.08, "Corvallis Fire Code"

Fire Chief Emery explained that the State adopted Fire Codes every two to three years. Within 90 days of that adoption, the City must adopt the Fire Code with any local

amendments. The report reflected the amendments necessary to adapt the State's 2014 Fire Code to local regulations.

Fire Marshal Prechel explained that the International Code Council prepared the current International Fire Code in 2012. During 2013, the State amended the International Fire Code to meet State regulations and distributed the amended code to cities July 1, 2014, with a 90-day timeframe for local adoption.

Chief Emery elaborated that Corvallis had some special regulations that required amendments to the State Fire Code to meet previous City Council directions.

John Friedlander inquired about the proposed City Fire Code amendments. Marshal Prechel confirmed that Corvallis' amendments to the State Fire Code could only be more restrictive than the State's Code. Most Code amendments involved numbering, as the State re-structured almost all of the State Code.

(Chair Hervey arrived at this time.)

Marshal Prechel continued, explaining that local amendments involved issues such as appeals, which the City handled locally, rather than following the State Fire Marshal's appeals process. The City adopted International Fire Code sections the State did not adopt in previous Fire Codes, such as fire records, fire investigations, and Fire Code permits and added a section regarding fire permit fees. The Corvallis Municipal Code outlined the Fire Code violation process. The Aerial Access Provision in the 2010 Oregon Fire Code Appendix D defined building height, and staff proposed including that definition as an amendment in the 2014 City Fire Code. The 2014 Oregon Fire Code included a building height change, which local fire apparatus could not accommodate; the local amendment would be more restrictive and be consistent with the 2010 International Fire Code.

Based upon a motion moved and seconded by Councilors Brown and Hervey, respectively, the Committee unanimously recommends that Council adopt the revisions to the Fire Code for the City of Corvallis, based upon the 2012 International Fire Code, with State amendments adopted July 1, 2014, as presented by staff.

Based upon a motion moved and seconded by Councilors Brown and Hervey, respectively, the Committee unanimously recommends that Council repeal the existing Fire Code of Corvallis upon the full and complete adoption of the new Fire Code.

Councilor Hervey assumed the role of Committee Chair.

II. Greenhouse Gas Inventory Follow-up

Staff did not have a report on this topic.

Linda Lovett said she recently spoke to the City Council and requested follow-up action to the greenhouse gas inventory. She was working with the Corvallis Climate Action Task Force and the Corvallis Sustainability Coalition Steering Committee. She distributed and reviewed a print of a PowerPoint presentation (Attachment A).

Ms. Lovett recalled that the current City Council invited citizen suggestions for Council term goals. The Steering Committee proposed a goal involving a greenhouse gas inventory and a climate action plan regarding municipal operations. The City's greenhouse gas inventory had not been updated. The Steering Committee believed the community's greenhouse gas inventory should be pursued. The Council did not accept the Steering Committee's suggestion as a formal goal. The Steering Committee asked its Council Liaison, Councilor Traber, how it could continue its work without waiting for the next Council goal-setting session. Councilor Traber suggested that the Steering Committee continue working, similar to the Coalition's Action Team format, with citizen involvement, using the Infill Task Force's format as a model.

Ms. Lovett noted that the Steering Committee had adopted a restrictive advocacy policy. Therefore, the Sierra Club Marys Peak Group and 350 Corvallis sought ways to advocate for more climate action by the City and Benton County. The three citizen groups discussed collaborating on the efforts and offered to perform preliminary work toward a climate action plan. The groups reviewed climate action plans for Portland and Eugene, Oregon. Oregon State University's climate research center could provide experts as resources. Many local groups involved in climate issues were interested in the proposed plan work. The groups' collective objectives and actions were targeted toward the greenhouse gas inventory and emissions. The groups believed that Eugene's climate action plan was a good sample for Corvallis, as the communities were in close proximity, and began drafting a plan for Corvallis, drawing goals from the Corvallis Sustainability Coalition's Action Plan. The groups were not ready to present a plan for public review but wanted to use goals that had already been evaluated. The community's greenhouse gas inventory was conducted, so other issues could be considered for greenhouse gas emission reduction. The groups wanted to integrate greenhouse gas emission reductions into the City's various planning documents, while basing a climate action plan on those planning documents. The groups believed that a climate action plan would likely be utilized for many years and that local governmental entities should take responsibility for incorporating greenhouse gas emission reductions into planning guidelines.

Councilor Brown noted that the City would be revising its planning documents. He suggested that Ms. Lovett check the plan update schedule and prepare suggestions for timely submission.

Leonard Higgins commented that climate change impact mitigation would involve all aspects of City operations. The groups met to pursue developing a climate action plan, as City staff resources for the work were unavailable.

Mr. Higgins noted that many members of the collective group were involved with various community organizations. County staff involved in development of a climate action plan acknowledged the need for coordination among the County and its municipalities.

Mr. Higgins distributed for informational purposes his July 8, 2014, e-mail regarding Notes from the Climate Action Plan Task Force (Attachment B), the Climate-Smart Development report from World Bank Group (Attachment C), and the STAR Community Rating System report (Attachment D). He referenced the broad scope and application of the reports regarding climate change considerations. He noted serious future economic impacts – both positive and negative – related to climate change. He believed the Corvallis community's amenities that would attract more residents should be considered in conjunction with economic development and other aspects of City planning. He noted that both of the reports he distributed addressed a broad range of community issues. He urged the City to consider a holistic approach to planning in updating the City's planning documents. He reviewed from Attachment B the suggestion of a partnership with Urban Services Committee (USC) and the City Council and suggested that the group update USC monthly concerning progress toward developing a climate action plan. The group hoped that public hearings and citizen input could be completed in time for development of a climate action plan for use in updating the City's planning documents.

Chair Hervey opined that the Infill Task Force was effective in judiciously using City resources and following City review processes. He suggested that a similar format could be productive in developing a climate action program and submitting draft documents for City staff's review and City Council's possible adoption.

Ms. Lovett responded that, people's expertise and previous task force experience should be considered when recruiting more people to work on the climate action plan issue. Group members considered the option of an advisory committee and seeking review and input from people in other communities with climate action plan experience.

Councilor Brown said the Infill Task Force was perceived to have credibility, expertise, and the ability to complete its work. Task Force members had personal experience with, and adapted to, the City Council's processes. Reiterating his suggestion regarding City planning document updates, he suggested that the group participate in the 2015-2016 City Council's goal-setting session during early-2015 and submit to the session a very specific proposal.

Chair Hervey explained for Councilor Hogg that the Public Participation Task Force (PPTF) recommended a process for the City to establish task forces for issues that should not involve Council Standing Committees for extensive periods of time. He noted that the City did not have funding for staff support of a task force.

Councilor Brown noted that the City Council gave USC responsibility for the climate change issue. He expected that the collective group would report to USC, which was the typical process if a task force was not established.

Chair Hervey asked staff to provide information regarding how the Infill Task Force' work aligned with City processes.

Debra Higbee-Sudyka, representing the Sierra Club Marys Peak Group, reviewed a letter with attachments (Attachment E). She said Benton County was considering incorporating its Climate Change Adaptation Plan into all County departments. The County wanted to engage the public in climate change responses.

Councilor Brown said the County's Plan essentially reflected the actions the City would take. The agencies cited in the County's plan would correlate with the City's operating departments which had ways of conducting business. He recommended that groups like the Sierra Club ask the City's advisory bodies to speak to their oversight departments about a climate action plan. He opined that, with a few exceptions, the City was not accustomed to setting standards and monitoring them over time. The proposed climate action response was a new concept that would not occur automatically.

Chair Hervey noted that the County's Plan was drafted fairly recently. He surmised that the Plan would be integrated into all County Departments, and Ms. Higbee-Sudyka would like the City Council to take similar action.

Ms. Higbee-Sudyka noted that an adaptation plan differed from a mitigation plan. Most of the County's Plan involved adaptation, with a few mitigation recommendations. Five County departments participated in developing the Plan, including identifying how the Plan would impact their departments. County staff recognized that the Plan would adversely affect departmental operations and that staff could take actions. County staff also acknowledged that funding was a crucial element of the Plan.

Ms. Higbee-Sudyka explained for Chair Hervey that Eugene's climate action plan included background information about how the plan was developed. Several City of Eugene employees were involved in developing the plan, which the Eugene City Council did not adopt.

Chair Hervey suggested that Ms. Higbee-Sudyka attend Administrative Services Committee's upcoming meeting and offer suggestions regarding updating the City Council's economic development policy.

Councilor Brown opined that the Corvallis Climate Action Task Force had done a lot of work, developed a good draft climate action plan, and established an aggressive timeline; however, it would be alright if the City Council did not adopt a climate action plan this fall. He thanked the Task Force and anticipated its future contributions via periodic reports to USC.

Councilor Hogg questioned whether the Task Force should report to USC or another group as it developed its proposal for presentation to the City Council.

Chair Hervey liked the Task Force's aggressive approach. It would be necessary to get a draft climate action plan to the City Council before the next Council goal-setting session in order to assure City funding and staff support for the project. He believed monthly updates by the Task Force may be more often than was necessary. Staff's information to the group about how the Infill Task Force functioned may indicate appropriate means for updating staff and USC.

Councilor Hogg concurred, noting that the Infill Task Force's process may be more effective than the group working directly with USC.

Chair Hervey suggested that the group get more information from staff about task force formats. At the July 22 USC meeting, the group and USC could work on procedures. Then USC could present a procedural proposal to the City Council. Councilors Hogg and Brown concurred.

Councilor Brown suggested that the group contact the City's advisory bodies to "spread the word" regarding the concept of a climate change plan so that a community meeting would solicit information from more citizens. Chair Hervey concurred.

Chair Hervey clarified that USC, at its July 22 meeting, would discuss how the Infill Task Force functioned and updated the City Council. He noted that citizens could attend any USC meeting and offer updates. He and Councilor Hogg agreed that updates to USC every six or eight weeks should be sufficient. Councilor Hogg added that USC would initially define the process for developing a climate action plan, review and possibly modify the draft plan, and forward a recommendation to the City Council. Chair Hervey noted that, at the July 22 USC meeting, the group should explain the task force's proposed scope of work and responsibilities.

Councilor Brown suggested that the group speak with members of the Infill Task Force to understand why it was successful.

This topic was presented for information only.

III. Other Business

A. Robert Wilson commented on multiple issues:
   1. He thanked the Committee for its work developing the new residential parking districts.
   2. The PPTF had a goal of increasing public participation but recommended consolidating three distinct committees, which he considered a bad idea, as it would reduce public participation. He believed public participation involved people being well informed on issues.
   3. The City's monthly storm water fee of approximately $6 generated a significant increase in revenue. He was unable to find in the City's budget

where the fee revenue was allocated. *(Public Works Director Steckel offered to speak with Mr. Wilson later about this issue.)*

B. The next regular Urban Services Committee meeting is scheduled for July 22, 2014, at 5:00 pm, in the Madison Avenue Meeting Room.

Chair Hervey adjourned the meeting at 6:12 pm.

Respectfully submitted,

Richard Hervey, Chair

Coalition Proposal for Council Goal-Setting: Greenhouse Gas Reduction

January 4, 2012

PROPOSAL: Adopt a City Council goal to assess the status of the City's greenhouse gas reduction efforts, set significant greenhouse gas reduction goals, and identify action items that will help move the City toward those goals.

Suggested tools:

- *Sustainability Dashboard*
- *2011 Sustainability Report*
- *Community Energy Strategy: A 2020 Framework* (2010)
- *Greenhouse Gas Inventory for Municipal Operations (2010)*

Coalition Goal, cont.

Why is it needed?

City inventory not up to date

- Should have been updated in 2011 with 2010 data (every two years)

Original inventory did not set targets

After years of decline, key emissions rising

Greenhouse Gas Inventory for Municipal Operations, October 2010 http://archive.corvallisoregon.gov/ElectronicFile.aspx?docid=285255&dbid=0

What can we build on?

2000 – Cities for Climate Protection campaign

2005 – US Mayors Climate Protection Agreement

2007 – City partners with Corvallis Sustainability Coalition on Community Sustainability Action Plan

2008 – City joins ICLEI-Local Governments for Sustainability

2009 – Community Energy Strategy: A 2020 Framework

2010 – Greenhouse gas inventory for municipal operations

2010 – Council Policy - Community Sustainability

2010 – EPA Climate Showcase Communities grant

2000 - Cities for Climate Protection

April 17, 2000 - A Resolution Relating to Participation in the *Cities for Climate Protection* Campaign

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of Corvallis, Oregon, pledges to join with jurisdictions from all over the world in the Cities for Climate Protection Campaign to:

Take a leadership role in increasing energy efficiency and reducing greenhouse gas emissions from municipal operations;

Develop and implement a local climate action plan which describes the steps the community will take to reduce both greenhouse gas and air pollution emissions. the plan will include:

A greenhouse gas emissions analysis and forecast using software provided by Cities for Climate Protection to determine the source and quantity of greenhouse gas emissions within the jurisdiction;

A carbon dioxide or greenhouse gas emissions reduction target as determined by City staff;

A strategy for meeting the greenhouse gas reduction target, e.g., an outline of the programs and measures that will be implemented to achieve the target.

http://archive.corvallisoregon.gov/DocView.aspx?id=71747&searchid=1880f7ea-09d6-42e2-b57c-a33a9c1a2938&dbid=0

2005 – US Mayors' Climate Protection Agreement

Participating cities commit to take the following three actions:

- Strive to meet or beat the Kyoto Protocol targets in their own communities through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns;
- Urge their state governments, and the federal government, to enact policies and programs to meet or beat the GhG emission reduction target suggested for the US in the Kyoto Protocol—7% reduction from 1990 levels by 2012; and
- Urge the US Congress to pass the bipartisan GhG reduction legislation establishing a national emissions trading system.

2008 – City Joins ICLEI

Five Milestones for Climate Mitigation

- Conduct a baseline emissions inventory and forecast
- Adopt an emissions reduction target for the forecast year
- Develop a Local Climate Action Plan
- Implement policies and measures
- Monitor and verify results

Community Sustainability Policy

Council Policy 2010-1.12

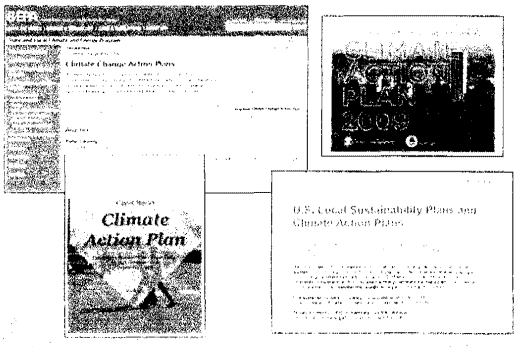
Adopted April 19, 2010
Revised April 16, 2012

1.12.050 Implementation

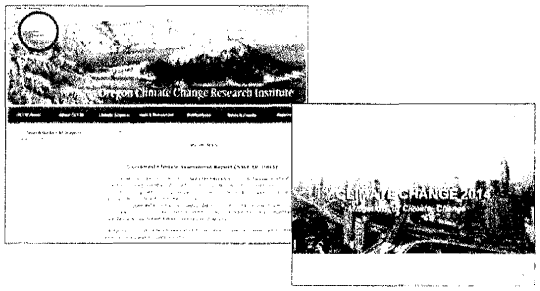
"This Policy anticipates that current and future City Councils will prioritize one or more sustainability-related topic areas for which to develop community policy guidance and implementation direction each Council term."

http://www.corvallisoregon.gov/modules/showdocument.aspx?documentid=24

Examples of CAPs abound...



...as does research...



Corvallis climate activists

350.org

Sierra Club

Citizen's Climate Lobby

Climate Reality Leadership Corps

Energize Corvallis

League of Women Voters, faith communities, OSU, etc., etc., etc.

Status of CAP

Background research conducted

Objectives and actions selected
- Buildings and Energy
- Land Use and Transportation
- Consumption and Waste
- Urban Natural Resources
- Food and Agriculture
- Health and Social Services

Drafting started and website created

Sources of carbon emissions known (Community Inventory complete)

Next steps on CAP

Set greenhouse gas emissions reduction target

Determine strategies for meeting GhG reduction target (e.g., programs and measures to achieve target)

Community/stakeholder meetings

Begin integrating into City/County planning: e.g., Vision 2020, Comprehensive Plan

ATTACHMENT B

Subject: FWD: GHG Inventory Follow Up - Notes from the Climate Action Plan Task Force
From: leonard.higgins@
Date: Tue, 08 Jul 2014 15:08:37 -0700
To: usa1002@fedex.com

-------- Original Message --------
Subject: GHG Inventory Follow Up - Notes from the Climate Action Plan Task Force
From: leonard.higgins@
Date: Tue, July 8, 2014 3:07 pm
To: "Richard Hervey" <ward3@council.corvallisoregon.gov>,"Dan Brown" <ward4@council.corvallisoregon.gov>."Roen Hogg" <ward2@council.corvallisoregon.gov>
CC: "Gentile, John" <jag4biz@ ,"Keith, Claudia" <ca.keith@ >,"Miller, Charlie" <charlie@ >,"Rankin, Jim" <jim.rankin@ ,"Mills, Annette" <amills@ ,"Geiser, Linda" <lgeiser2003@ >,"Blaustein-Rejto, Dan" <danrejto@ >,"Borradaile, Glencora" <cora@ >,"Saksa, Tom" <tsaksa@ "Baker, Zach" <zachariah.baker@ ,"Stebbins, Adam" <adam.stebbins@ ,"Rao, Nandan" <nandanmarkrao@ >,"Kris Paul" <tokrispaul@ "Linda Lovett" <linlov@ >,dwhigbes@

Councilors Hervey, Brown and Hogg,

A few of us will be attending this evening's Urban Services Committee meeting to give input about next steps to the Greenhouse Gas Inventory presented by Scott Dybvad. We will be sharing information about the plans and commitments of other cities and previous plans and commitments by the City of Corvallis. Our task force, the Climate Action Plan Task Force (CAPTF) would like to partner with you and City Council in planning and taking the steps taken by other cities after they have completed a Green House Gas Inventory. CAPTF is made up of Corvallis community members affilitated with many groups including the Sierra Club, 350 Corvallis, the League of Women Voters, the Sustainability Coalition, faith groups and several others.

I will bring a copy of this email to the meeting this evening along with two documents that I think will be helpful as you consider how a Climate Action Plan would inform upcoming updates to the 2020 Plan, the Comprehensive Plan, and City Council Goals (priorities). The two documents are listed below. My purpose in providing these documents is to show the kind of holistic approach that world class organizations are taking to integrate climate change considerations into their planning and operations.

1. World Bank Smart Development Report (see Page 1)
   Considerations:
   - Lives Saved
   - Jobs Created
   - Crops Protected
   - Energy Saved
   - Economic Growth
   - Emissions Reduced

2. Star Community Rating System (See Page 10)
   Consideration Areas:
   - Built Environment
   - Climate & Energy
   - Economy & Jobs

- Education, Arts & Community
- Equity and Empowerment
- Health & Safety
- Natural Systems

Here's my very rough draft idea of how CAPTF and City Council might partner on the next steps over the next months. This is only to give an idea of how we might work together. I am expecting that CAPTF will be working with you in the next couple of meetings to agree on a plan and schedule.

July 8 - Urban Services Committee (USC) meeting
Objective: Begin partnering with USC and City Council for purposes of follow up to the recent Greenhouse Gas Inventory Report by Scott Dybvad.

August 5th - CAPTF representatives attend first USC meeting of each month to provide status on development of a Corvallis Climate Action Plan and receive input from the Committee

September/October: Possible community meeting(s) to provide information about climate action plan to the public and to receive public input

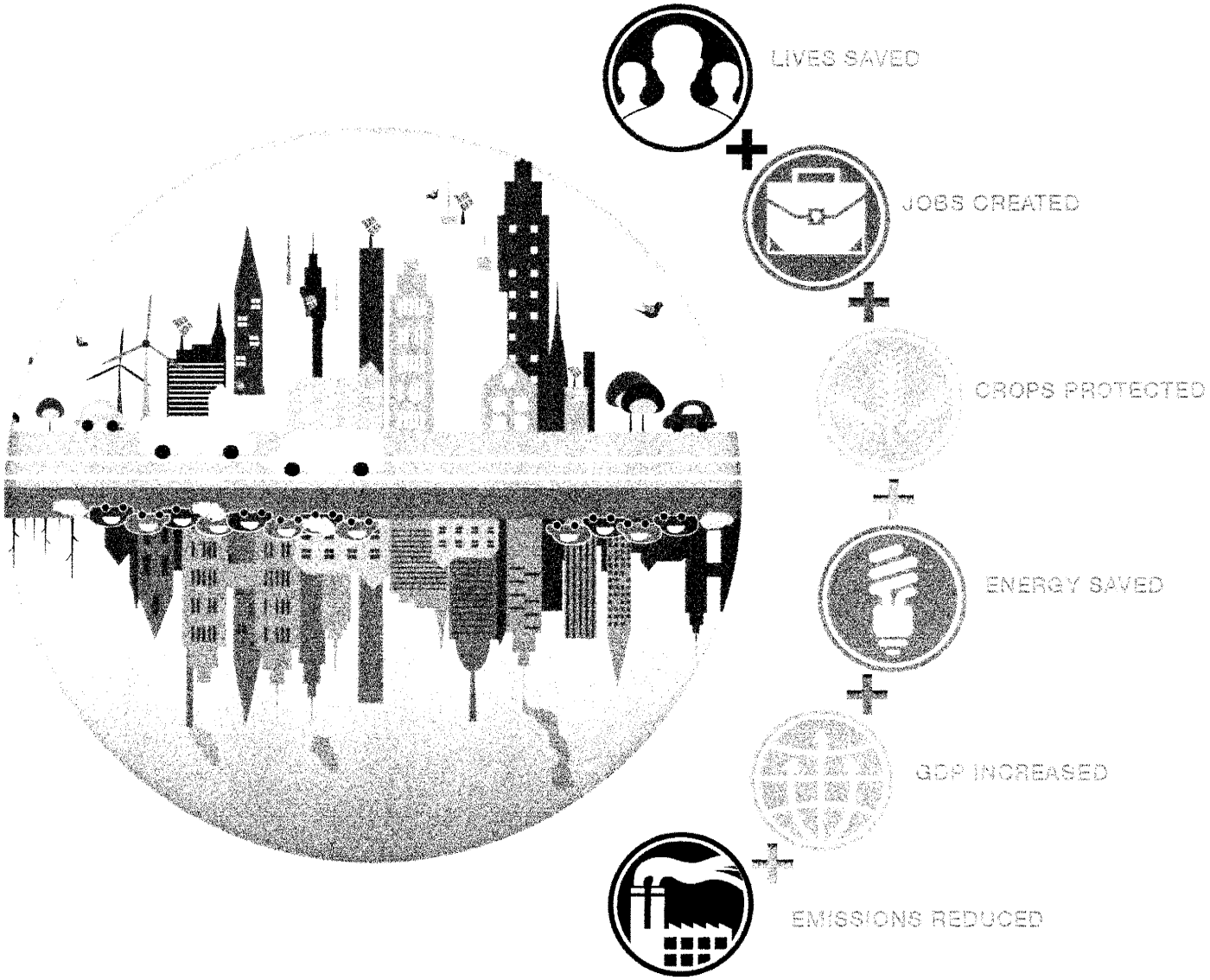
October/November: Possible submission of Climate Action Plan to City Council for adoption and integration into updates to 2020 Plan, Comprehensive Plan, and Council Goals/Priorities.

See you this evening.

Thanks
-Leonard Higgins

Climate-Smart Development

Adding up the benefits of actions that help build prosperity, end poverty and combat climate change



ClimateWorks FOUNDATION

WORLD BANK GROUP

Climate-Smart Development

Adding up the benefits of actions that help build prosperity, end poverty and combat climate change

©2014 International Bank for Reconstruction and Development/The World Bank and ClimateWorks Foundation

The World Bank
1818 H St NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

ClimateWorks Foundation
235 Montgomery Street, Suite 1300
San Francisco, CA 94104
USA
Internet: www.climateworks.org

This work is a joint product of the World Bank and the ClimateWorks Foundation. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of the World Bank, its Board of Executive Directors, or the governments they represent.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of the World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries

Rights and Permissions

The material in this work is subject to copyright. Because the World Bank and ClimateWorks encourage dissemination of their knowledge, this work may be reproduced, in whole or in part, for noncommercial purposes as long as full attribution to this work is given.

Any queries on rights and licenses, including subsidiary rights, should be addressed to World Bank Publications, The World Bank Group, 1818 H St. NW, Washington, DC 20433, USA; fax: 202-522-2422; email: pubrights@worldbank.org.

Cover image courtesy of Shutterstock.com.

Contents

Acknowledgements ix

Glossary of Keywords and Phrases xi

Acronyms and Abbreviations xiii

Foreword xv

Executive Summary xvii

Why emissions matter xvii
Achieving development and climate goals simultaneously xviii
A framework to assess benefits xviii
Case studies demonstrate sizeable benefits xix
Conclusions and next steps xx

Chapter 1: Introduction 1

Background 1
SLCPs Damage Health and Crops 1
Emissions: Sources, Impacts, and Reduction Methods 2
Win-win Opportunities 2
New Modeling Tools Enable More Holistic Planning 3
Objectives of this Report 3
Report Structure 4

Chapter 2: New Framework to Estimate Benefits 5

Benefits Framework 5
Step 1: Identify the Full Range of Benefits 6
Step 2: Identify Appropriate Benefits Assessment Tools 6
Tools Used for Sector Policy Benefits Assessment 7
Tools Used for Development Project Benefits Assessment 7
Step 3: Identify an Appropriate Macroeconomic Tool 7
Limitations of Bottom-up and Macroeconomic Modeling 8
Step 4: Estimate and Present Significant Benefits 8

Chapter 3: Multiple Benefits Assessment—Case Studies **9**
Valuation Methods Used in this Report 9
Sector Policy Case Studies 10
Sector Policy Case Study 1: Shift to Clean Transport *11*
Case Study Interventions *11*
Case Study Benefits *11*
Summary and Conclusions *12*
Sector Policy Case Study 2: Energy-efficient Industry *12*
Case Study Interventions *12*
Case Study Benefits *13*
Summary and Conclusions *14*
Sector Policy Case Study 3: Energy-efficient Buildings *15*
Case Study Interventions *15*
Case Study Benefits *15*
Summary and Conclusions *15*
Development Project Case Studies 16
Development Project Case Study 1: Sustainable Transportation in India *17*
Case Study Interventions *17*
Case Study Benefits *17*
Summary and Conclusions *18*
Development Project Case Study 2: Integrated Solid Waste Management in Brazil *18*
Case Study Interventions *18*
Case Study Benefits *19*
Summary and Conclusions *19*
Development Project Case Study 3: Cleaner Cookstoves in Rural China *20*
Case Study Interventions *20*
Case Study Benefits *21*
Summary and Conclusions *21*
Development Project Case Study 4: Biogas Digesters and Photovoltaic Systems in Mexican Agriculture *22*
Case Study Interventions *22*
Case Study Benefits *22*
Summary and Conclusions *22*
Lessons and Conclusions from the Case Studies 23
Chapter4: Conclusions and Next Steps **27**
References **29**
Annex A: Summary of Health, Agricultural, and Climate Benefits from Emissions Reduction **33**
Annex B: Detailed Description of the Models **35**
McKinsey's MACC Model 36
TM5-FASST Model 37
Oxford Economics' GEIM 37
Annex C: Details and Data for Sector Policy Case Studies **41**
"Policy Consensus" Scenario 41
Sector Policy Case Study 1: Shift to Clean Transport 42
Key Assumptions *42*
Case Study Impacts *44*
Sector Policy Case Study 2: Energy-efficient Industry 45
Key Assumptions *45*
Iron and Steel *45*
Cement *45*
Chemicals *46*
Case Study Impacts *47*
Sector Policy Case Study 3: Energy-efficient Buildings 48

Key Assumptions *48*
Case Study Impacts *49*
Summary Tables for the Sector Policy Case Studies 50
Conclusions from the Sector Policy Case Studies 52

Annex D: Detailed Development Project Case Studies 53

Development Project Case Study 1: Sustainable Transportation in India 53
Background: Pimpri-Chinchwad BRT *53*
Nationwide Scale-up Analysis *54*
Air Quality and Agricultural Analysis *55*
Macroeconomic Analysis *55*
Monetization of Benefits and Comparison with Stated Project Benefits *55*
Summary and Conclusions *56*
Development Project Case Study 2: Integrated Solid Waste Management in Brazil 56
Background: Benefits of Integrated Solid Waste Management *56*
Nationwide Scale-up Analysis *57*
Public Health and Agricultural Benefits *58*
Macroeconomic Benefits *58*
Monetization of Benefits and Comparison to Stated Project Benefits *59*
Summary and Conclusions *59*
Development Project Case Study 3: Cleaner Cookstoves in Rural China 59
Background: Domestic Energy and Solid Fuels *59*
Nationwide Analysis: Clean Cookstoves for the Rural Poor *60*
Public Health and Agricultural Benefits *61*
Macroeconomic Benefits *61*
Monetization of Benefits and Comparison to Stated Project Benefits *61*
Summary and Conclusions *62*
Development Project Case Study 4: Biogas Digesters and Photovoltaics in Mexican Agriculture 62
Background: Mexican Agriculture *62*
Nationwide Scale-up Analysis: Biodigesters and PV Systems for Pig and Dairy Farms *63*
Public Health and Agricultural Benefits *64*
Macroeconomic Benefits *64*
Monetization of Benefits and Comparison to Stated Project Benefits *64*
Summary and Conclusions *65*

FIGURES

Figure E.1: Total annual benefits in 2030 of key sector policies in six regions xix
Figure E.2: Aggregate benefits over 20 years of four development projects xix
Figure 2.1: Analytical Framework Used for the Policy and Project Case Studies 7
Figure 3.1: Climate Benefits of Sustainable Transport Policies in 2030 12
Figure 3.2: Socioeconomic and Climate Benefits of Sustainable Transport Policies in 2030 by Region 12
Figure 3.3: Climate Benefits of Energy Efficient Industry Policies in 2030 14
Figure 3.4: Socioeconomic and Climate Benefits of Energy-efficient Industry Policies in 2030 by Region 14
Figure 3.5: Climate Benefits of Energy-efficient Building Policies in 2030 15
Figure 3.6: Socioeconomic and Climate Benefits of Energy-efficient Building Policies in 2030 by Region 16
Figure 3.7: Socioeconomic and Climate Benefits of Sustainable Transportation in India 18
Figure 3.8: Socioeconomic and Climate Benefits of Integrated Solid Waste Management in Brazil 20
Figure 3.9: Socioeconomic and Climate Benefits of Cleaner Cookstoves in Rural China 21
Figure 3.10: Socioeconomic and Climate Benefits of Biodigesters and PV in Mexican Agriculture 23

Figure B.1: Global Carbon Abatement Cost Curve, 2030 36
Figure B.2: Main Transmission Channels in Oxford Economics' GEIM Model 38
Figure C.1: Oil Prices in 2010 Dollars for Baseline, Policy Consensus and All Policy Case Study Scenarios 42
Figure C.2: Road Transport Marginal Abatement Cost Curve, 2030 (six focus regions) 43
Figure C.3: Conventional Passenger Vehicle Efficiency by Region, BAU vs. Case Study 44
Figure C.4: Underlying Global Scenario Power Mix (2030) 44
Figure C.5: Chemicals: Energy Intensity vs. BAU, 2030 (%) 47
Figure C.6: Industry Marginal Abatement Cost Curve, 2030 (Six Focus Regions) 47
Figure C.7: Buildings Marginal Abatement Cost Curve, 2030 (Six Focus Regions) 49
Figure C.8: Energy Intensity vs. BAU, Commercial Buildings (%, 2030) 49
Figure C.9: Energy Intensity vs. BAU, Residential Buildings (%, 2030) 50
Figure D.1: Lifecycle GHG Emissions ($MtCO_2e/yr$) for All Scenarios 58

TABLES

Table 1.1: CO_2, Methane, and Black Carbon Emissions Sources, Impacts, and Reduction Methods. 2
Table 3.1: Sector Policy Case Studies: Comparison of Costs and Benefits per Metric Ton of CO_2e Abated 24
Table 3.2: Sector Policy Case Studies: Monetized Health, Agricultural, and Energy Benefits in 2030 24
Table 3.3: Development Project Case Studies Summary 25
Table 3.4: Development Project Case Studies: Summary of Global and Local Benefits 26
Table C.1: Policy Consensus Around Climate Change 42
Table C.2: Transportation: Changes in CapEx and OpEx 43
Table C.3: Underlying Scenario Fuel Price Assumptions by Region 44
Table C.4: Underlying Assumptions on Incremental Costs of Plug-in Hybrid and Electric Vehicles 44
Table C.5: Iron and Steel: Changes in CapEx and OpEx, BAU vs. Case Study 46
Table C.6: Cement: Changes in CapEx and OpEx, BAU vs. Case Study 46
Table C.7: Chemicals: Changes in CapEx and OpEx, BAU vs. Case Study 47
Table C.8: Buildings: Commercial and Residential CapEx Changes, BAU vs. Case Study 49
Table C.9: Changes in Non-CO_2 Emissions for the Three Sector Policy Case Studies 50
Table C.10: Avoided Premature Mortality for the Three Sector Policy Case Studies 51
Table C.11: Increase in Crop Yields from a Shift to Energy-efficient Industry 51
Table C.12: Monetized Health and Agricultural Benefits of the Sector Policy Case Studies 51
Table C.13: Energy Savings from Sector Policy Case Studies for the Six Focus Regions for 2030 51
Table C.14: Annual Avoided Premature Mortalities from the Sector Policy Case Studies for 2020 51
Table C.15: Annual Increase in Crop Yields from the Sector Policy Case Studies for 2020. 52
Table C.16: Social Cost of Carbon (SCC) for 2030 for the Three Sectors 52
Table D.1: Multiple Benefits Potential of Sustainable Transportation (BRT) Initiatives in India 56
Table D.2: Multiple Benefits Potential of Integrated Solid Waste Management in Brazil 60
Table D.3: Multiple Benefits Potential of Clean Cooking Solutions in China 62
Table D.4: Multiple Benefits Potential of Sustainable Agriculture in Mexico 65

BOXES

Box 3.1: Sector Policy Case Study 1 Benefits: Shift to Clean Transport 13
Box 3.2: Sector Policy Case Study 2 Benefits: Energy-efficient Industry 14
Box 3.3: Sector Policy Case Study 3 Benefits: Energy-efficient Buildings 16
Box 3.4: Development Project Case Study 1 Benefits: Sustainable Transportation in India 17
Box 3.5: Development Project Case Study 2 Benefits: Integrated Solid Waste Management in Brazil 19
Box 3.6: Development Project Case Study 3 Benefits: Clean Cookstoves in Rural China 21
Box 3.7: Development Project Case Study 4 Benefits: Biogas Digestion and PV in Mexican Agriculture 23
Box B.1: Two Integrated Planning Approaches That Paved the Way 35

Acknowledgements

The ClimateWorks Foundation and the World Bank would like to thank the modeling teams, the reviewers, and the project task teams for their contributions to the development of this report.

The modeling work for the report was conducted by Rita Van Dingenen (Joint Research Centre, European Commission), Sarah Hunter (Oxford Economics), and Sudhir Gota (Clean Air Asia).

The ClimateWorks task team included Surabi Menon and Laura Segafredo (co-Task Team Leaders). Ruoting Jiang, formerly at ClimateWorks, provided analysis support for the modeling work; Seth Monteith designed the graphics and Debra Jones edited the report. Management oversight was provided by Charlotte Pera.

The task team from the World Bank included Sameer Akbar and Gary Kleiman (co-Task Team Leaders), Samuel Oguah, Robert Bisset, Fionna Douglas, Stacy Morford, Venkat Gopalakrishnan, Karin Rives, and Samrawit Beyene. Management oversight was provided by Karin Kemper and Jane Ebinger. Advice on the macroeconomic analysis was provided by Kirk Hamilton, Erika Jorgenson, and Stéphane Hallegatte. The report was peer-reviewed by Masami Kojima, Andreas Kopp, Muthukumar Mani, Tijen Arin, and Carter Brandon. Inputs were also gratefully received from the following World Bank staff: Nupur Gupta, Om Prakash Agarwal, Gaurav Joshi, Sintana Vergara, Marcus Lee, Farouk Banna, Stephen Hammer, Yabei Zhang, Yun Wu, Charles Feinstein, Svetlana Edmeades, Tim Valentiner, Guillermo Hernández, Onno Ruhl, Gloria Grandolini, Klaus Rohland, and Deborah Wetzel.

Glossary of Keywords and Phrases

Anthropogenic: Human-caused.

Black Carbon (BC): A small, dark particle that warms the earth's climate. Although black carbon is a particle rather than a greenhouse gas, it is the second-largest climate warmer after carbon dioxide. Unlike carbon dioxide, black carbon is quickly washed out and can be eliminated from the atmosphere if emissions stop. Reductions would also improve human health.

Carbon Dioxide (CO_2): The greenhouse gas that contributes the most to global warming. While more than half of the CO_2 emitted is removed from the atmosphere within a century, some fraction (about 20 percent) of emitted CO_2 remains in the atmosphere for many thousands of years.

Global Burdens of Disease: A study to estimate the number of worldwide deaths annually from different diseases or environmental causes; can also be divided into different regions and groups. See http://www.healthmetricsandevaluation.org/gbd.

Global Public Goods Benefits: Benefits such as protection of ecosystem services, reduced acid deposition and infrastructure loss, and reduced climate change impacts that are realized beyond the jurisdiction where a policy is implemented or a project carried out.

Hydrofluorocarbons (HFCs): Chemical replacements for ozone-depleting substances being phased out by the Montreal Protocol. These substances are used in heating and cooling systems and as aerosols. Although less damaging to the ozone layer than what they replace, they can have very large global warming potentials.

Local Socioeconomic Benefits: Benefits such as GDP growth, employment gains, reduced energy and fuel costs, time savings, improved water and air quality, higher crop yields, improved public health, and reduced mortality that are realized in the jurisdiction that enacts the policy or project.

Methane (CH_4): A greenhouse gas that only lasts an average of 12 years in the atmosphere; it is an extremely powerful warmer during that period. One molecule of methane warms about 25 times more than CO_2 over 100 years (and 72 times as much over 20 years).

Mitigation: Actions to address climate change by decreasing greenhouse gases and other climate-forcing agents.

Ozone (O_3): A harmful pollutant and greenhouse gas that only forms though complex chemical reactions with other substances in the atmosphere (e.g., methane); it can harm human health and crops.

Radiative Forcing: A measure of the net change in the energy balance of the earth with space; that is, the incoming solar radiation minus outgoing terrestrial radiation. At the global scale, the annual average radiative forcing is measured at the top of the atmosphere, or tropopause. Expressed in units of warming rate (watts, W) per unit of area (meters squared, m^2).

Short-lived Forcers or Short-lived Climate Pollutants (SLCPs): Substances such as methane, black carbon, tropospheric ozone, and some hydrofluorocarbons that have a significant impact on near-term climate change and a relatively short

lifespan in the atmosphere compared to carbon dioxide and other longer-lived gases.

Synergistic Economic Benefits: Macroeconomic benefits from multiplier effects, forward linkage of investment, and potential cross-sector interactions; for example, indirect health and agriculture benefits that would result from the electrification of the transport sector if the power sector simultaneously reduced its carbon intensity and co-pollutant emissions due to a performance standard or a renewable energy mandate.

Systems Approach: An approach capturing the direct and indirect benefits of policies and projects and quantifying their macroeconomic impacts; it is meant to capture the interconnectedness between identified benefits.

Tropospheric Ozone: Sometimes called ground-level ozone, this refers to ozone that is formed or resides in the portion of the atmosphere from the earth's surface up to the tropopause (the lowest 10–20 km of the atmosphere).

Acronyms and Abbreviations

Ag	Agriculture
BAU	Business-as-usual scenario
BenMAP	Environmental Benefits Mapping and Analysis Program of the U.S. EPA
BC	Black carbon
BRT	Bus rapid transit system
CapEx	Capital expenditures
CCAC	Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants
CCS	Carbon capture and storage
CGE	Computable General Equilibrium model
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CW	ClimateWorks Foundation
EU	European Union (refers to EU27)
EV	Electric vehicle
EPA	U.S. Environmental Protection Agency
FASST	Fast Scenario Screening Tool for Global Air Quality and Instantaneous Radiative Forcing
GAINS	Greenhouse Gas and Air Pollution Interactions and Synergies: a model that provides a framework for the analysis of co-benefits reduction strategies from air pollution and greenhouse gas sources
GBD	Global burden of disease
GDP	Gross domestic product
GHG	Greenhouse gas
GEIM	Global Energy and Industry Model of Oxford Economics
GEF	Global Environment Facility
GNI	Gross national income
GOM	Government of Mexico
Gt	Gigaton (billion metric tons)
IBRD	International Bank for Reconstruction and Development
IIASA	International Institute for Applied Systems Analysis
ICE	Internal combustion engine
KCAL	Kilocalories
LFG	Landfill gas
LPG	Liquefied petroleum gas
MACC	Marginal Abatement Cost Curve
MOUD	Ministry of Urban Development (of the Government of India)
Mt	Megaton (million metric tons)
MSW	Municipal solid waste
NMVOC	Non-methane volatile organic compounds
NPV	Net present value
N_2O	Nitrous oxide
O_3	Ozone
OC	Organic carbon
OpEx	Operational costs or expenditures
PAD	Project Appraisal Document
PM	Particulate matter
$PM_{2.5}$	Particulate matter with an aerodynamic diameter less than 2.5 microns
PPP	Purchasing power parity
PV	Photovoltaic
RoW	Rest of world
SLCP	Short-lived climate pollutants
SRC	Source receptor coefficient
TM5	Chemical Transport Model (maintained by the European Commission's Joint Research Center and the model on which the FASST tool is based)
TEEMP	Transportation Emissions Evaluation Models for Projects
TSP	Total suspended particulates
U.S.	United States
UNEP	United Nations Environment Programme
WAVES	Wealth Accounting and the Valuation of Ecosystem Services
WB	World Bank

Foreword

The evidence is clear that climate change is already hurting the poor. It is damaging infrastructure, threatening coastal cities, and depressing crop yields, as well as changing our oceans, jeopardizing fish stocks, and endangering species.

The UN Intergovernmental Panel on Climate Change (IPCC) has shown more clearly than ever before that climate change is real, and that it has impacted every continent and all oceans. Consecutive IPCC reports make clear that we are ill-prepared to manage the risks of climate change and the impact it brings, and that global emissions of greenhouse gases are rising faster than ever before, despite reduction efforts.

No one will escape the impact. Climate change poses a severe risk to global economic stability. Without urgent mitigation action, ending extreme poverty by 2030 will not be possible.

At the World Bank Group, we know it doesn't have to be like this. We believe it is possible to reduce emissions and deliver jobs and economic opportunity, while also cutting health care and energy costs. This report provides powerful evidence in support of that view.

This publication, *Climate-Smart Development*, highlights scalable development solutions and builds on research to quantify the social benefits of climate action. The report simulates case studies of policies that could lead to emissions reductions in three sectors: transportation, industry, and the energy efficiency of buildings.

It also describes the national-level impact that scaling-up development solutions could have in five large countries and the European Union. If enacted together, these policies could reduce greenhouse gas emissions by the same amount as taking two billion cars off the streets.

The report also looks at four country-specific projects and the impact they would have if scaled-up nationwide. For example, if India built 1,000 kilometers of new bus rapid transit lanes in about twenty large cities, the benefits over 20 years would include more than 27,000 lives saved from reduced accidents and air pollution, and 128,000 long-term jobs created. It would also have large, positive effects on India's GDP, its agriculture, and the global climate.

Climate-Smart Development is a collaboration with the Climate-Works Foundation, and provides a framework to better understand the climate risks and benefits in everything we do. The report's findings show clearly that development done well can deliver significant climate benefits.

I recommend this publication to policy makers and development practitioners alike.

Dr. Jim Yong Kim
President, World Bank Group

Executive Summary

Officials responsible for a nation's economy have been primarily concerned with delivering jobs, stimulating growth, and promoting competitiveness. They are also becoming worried about the effects climate change will inflict on their country's economic future. Increasingly, these officials want to know if there are investments and efforts that can advance urgent development priorities and, at the same time address the challenges of our rapidly warming world.

Thanks to a growing body of research, it is now clear that climate-smart development can boost employment and can save millions of lives. Smart development policies and projects can also slow the pace of adverse climate changes. Based on this new scientific understanding, and with the development of new economic modeling tools to quantify these benefits, it is clear that the objectives of economic development and climate protection can be complementary.

This report uses new modeling tools to examine the full range of benefits ambitious climate mitigation policies can produce across the transportation, industry and building sectors in the United States, China, the European Union, India, Mexico and Brazil. This report also describes the multiple benefits of four development project simulations scaled up to the national level.

The report builds on recent efforts to estimate the development benefits[1] that come with a reduction in climate pollutants. These include economic growth, new jobs, improved crop yields, enhanced energy security, healthier people, and millions of lives saved. In many cases these benefits accrue quickly, and they accrue locally, primarily in the nation where action is taken.

Why emissions matter

Climate change impacts impose undeniable burdens on economic development by causing significant damage to agriculture, water resources, ecosystems, infrastructure, and human health. These impacts are proving to be devastating for the world's most vulnerable populations.

Emissions of carbon dioxide and other greenhouse gases must be substantially reduced to keep the world from exceeding the 2°Celsius threshold of global warming.[2] While efforts to reduce these climate pollutants, despite some progress, have been slow, recent scientific evidence suggests that cutting so-called "short-lived climate pollutants," which are responsible for up to 40 percent of the current warming, can have immediate climate impacts.[3] Complementary actions on greenhouse gases and short-lived climate pollutants can slow the rate of near-term warming, push back dangerous tipping points[4] and provide time to allow the world's poorest people to adapt to the changing climate.

Among the short-lived climate pollutants, black carbon and methane are climate forcers but they are also air pollutants that injure human health and diminish agriculture production. By reducing them, it is possible to prevent the deaths of 2.4 million people and boost crop production by 32 million tons of crops that would have been lost each year.[5] In rural areas, millions of people can be saved from premature death by switching to clean

1 Note that the term co-benefit is not used in this report as it implies a primary benefit whereas this work seeks to demonstrate the many reasons for undertaking emission reductions without assigning a preference for one benefit over another.

2 "Turn Down the Heat: Why a 4°C Warmer World Must Be Avoided," World Bank, 2012a.

3 Short-lived Climate Pollutants (SLCPs) such as methane, black carbon, tropospheric ozone, and some hydrofluorocarbons have a significant impact on near-term climate change and a relatively short lifespan in the atmosphere compared to carbon dioxide and other longer-lived gases.

4 With warming beyond 2°C, the risk of crossing activation thresholds for nonlinear tipping elements in the Earth System and irreversible climate change impacts increases. These include Amazon rain forest die-back, ocean ecosystem impacts, and ice sheet destabilization, "Turn Down the Heat: Why a 4°C Warmer World Must Be Avoided," World Bank, 2012a.

5 "Integration of Short-Lived Climate Pollutants in World Bank Activities," World Bank, 2013a.

cooking solutions. In cities, commuters can save time, and many thousands of asthma and heart attacks can be alleviated, through improved transit systems. Limiting these pollutants through smart development enhances economies, stimulates production, leaves populations healthier and slows the rate of climate change.

Achieving development and climate goals simultaneously

Policies that reduce GHG emissions and other short-lived climate pollutants can have clear economic, health, and other social benefits. For example, a policy that encourages more efficient transportation—including fuel efficient vehicles, and effective public transit—will save fuel and time which improves energy security and labor productivity. These policies can also reduce smog-related respiratory problems, thus saving lives, and improve visibility, benefiting local investment in sectors such as tourism and recreation. Similarly, a project to improve solid waste management may initially be pursued for its sanitation and health benefits; it can also reduce methane emissions that may boost crop yields and save energy. All these gains directly contribute to economic growth.

At the project level, these benefits have often been left out of economic analyses because many health and environmental benefits were not easily quantifiable. This has left decision makers with analyses that are incomplete. Recent efforts to better estimate the full impacts of proposed development projects have produced several new analytical tools and models. With these new tools, economists can more fully assess the multiple impacts of pollutants and estimate the value of emission reductions. Today's tools can also model the synergistic impacts of harms and benefits as they flow through the economy.

A framework to assess benefits

This report attempts to quantify investments that represent a true economic gain in terms of increased economic productivity.[6] It does so by applying new modeling tools that give a fuller accounting of the benefits of near-term and long-term climate and development interventions. The report:

- Introduces a holistic, adaptable framework to capture and measure the multiple benefits of reducing emissions of several pollutants
- Demonstrates how local and national policymakers, members of the international development community, and others can use this framework to design and analyze policies and projects
- Contributes a compelling rationale for effectively combining climate action with sustainable development and green growth worldwide

The report responds to demand from countries that are striving to advance local development priorities and needs for resilient, low carbon growth. By looking at policies and projects more holistically, one can better assess the overall value of actions that reduce emissions of GHGs and short-lived climate pollutants, and provide a more compelling case for coordinated development and climate action.

The report proposes the following framework to analyze policies and projects:

1. **Identify the full range of benefits** that result from a project or policy, including improved health, crop yields, energy savings, job growth, labor productivity, and economic growth
2. **Select appropriate assessment tools** that provide insight on each measurable benefit
3. **Choose the appropriate macroeconomic tool** to analyze direct and synergistic economic benefits
4. **Estimate the full range of benefits** and present results using metrics relevant to the audience

Several simulated case studies are used in this study to demonstrate how to apply this analytical framework. The case studies cover multiple pollutants (particulate matter, primarily black carbon; and GHGs, including methane, a precursor to ozone, and CO_2) and multiple sectors (transportation, industry, buildings, waste, and agriculture). They demonstrate the frameworks' benefits from two perspectives: sector policies applied at the national or regional level, and projects implemented at the sub-national level. By applying the framework to analyze both types of interventions, the report demonstrates the value of this approach for national and local policymakers, international finance organizations, and others.

The report focuses on assessing the multiple benefits of simulated policy and project case studies. These analyses should be viewed as "full implementation simulations"[7] relative to a business-as-usual scenario. The benefits quantified have an optimistic bias because they do not necessarily include transaction costs, risks, market distortions, and other factors that would be included in a policy implementation evaluation. Nonetheless, they offer an important building block to refine the approaches, methods, and tools for multiple-benefit analysis. The results also

[6] Work has already been undertaken to expand consideration of some hidden costs of mitigation, such as Paltsev, S. and Capros, P. (2013). A similar effort on benefits is needed.

[7] Here "full implementation" means that it is assumed that policies and programs achieve their full technical potential. Additional education and outreach or other program costs may be required to achieve this full potential.

highlight the need to fine-tune the modeling tools to represent real-world conditions more accurately.

Case studies demonstrate sizeable benefits

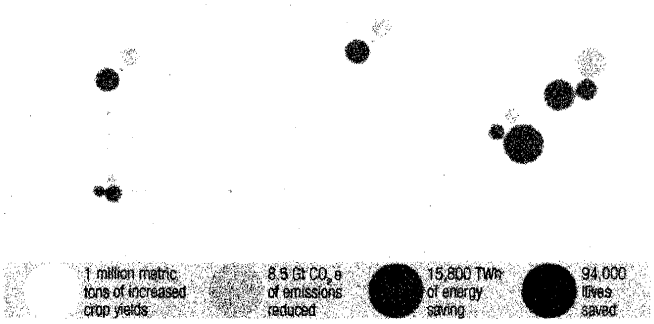
Three simulated case studies analyzed the effects of key sector policies to determine the benefits realized in six regions[8] (the United States, China, the European Union, India, Mexico, and Brazil) and the impact on global GDP. The sector policies include regulations, taxes, and incentives to stimulate a shift to clean transport, improved industrial energy efficiency, and more energy efficient buildings and appliances.

The annual benefits[9] of just these policies in 2030 include an estimated GDP growth of between $1.8 trillion and $2.6 trillion. Approximately 94,000 premature pollution-related deaths could be avoided. Additionally, the policies would avoid production of 8.5 billion metric tons of carbon dioxide equivalent (CO_2e)[10] emissions and almost 16 billion kilowatt-hours of energy saved, a savings roughly equivalent to taking 2 billion cars off the road. These policies alone would account for 30 percent of the total reduction needed in 2030 to limit global warming to 2°C.[11] Figure E.1 illustrates annual benefits for three case studies in 2030 for key sectors.

This report also presents results of four simulated case studies that analyzed several sub-national development projects, scaled up to the national level, to determine the additional benefits (beyond the economic net present value typically calculated in project financial analysis) over the life of each project, generally 20 years. Four project simulations were studied: expanded bus rapid transit in India, integrated solid waste management in Brazil, cleaner cookstoves in rural China, and biogas digestion and solar photovoltaics in Mexican agriculture.

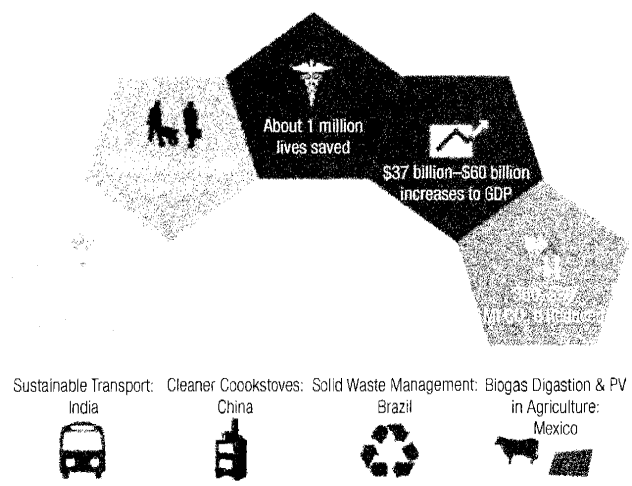
The aggregate benefits over the life of the projects are estimated to include more than 1 million lives saved, about 1 million–1.5 million tons of crop losses avoided, and some 200,000 jobs created. These projects could reduce CO_2e emissions by 355 million–520 million metric tons, roughly equivalent to shutting down 100–150 coal-fired power plants. This equates to about $100 billion–$134 billion in additional value for just three of these projects in India, Brazil, and Mexico when accounting for health benefits, avoided crop losses, GDP benefits, and the social benefits of carbon mitigation (beyond direct project benefits such as the value of carbon finance assets, reduced operating costs and other project-related economic benefits). In China, the estimated value of avoided premature death alone would come to more than $1 trillion. Figure E.2 illustrates potential benefits for four project simulations scaled to the national level.

Figure E.1: Total annual benefits in 2030 of key sector policies in six regions



Note: (Results for Mexico are combined with Brazil's.).

Figure E.2: Aggregate benefits over 20 years of four development projects



Source: Authors.

8 These five large countries and the European Union are referred to as "six regions" throughout the report for simplicity.

9 Since the sector policy case studies covered a limited number of pollutants (methane and BC, but not other co-pollutants), the health and agricultural benefits are underestimated. However, even with the limited emissions data included in this study, the resulting benefits can be significant.

10 CO_2 equivalents (CO_2e) as used in this report include only CO_2, BC, methane (CH_4), HFCs, and nitrous oxide (N_2O).

11 To limit the average global temperature increase to 2°C, 2030 emissions must be limited to approximately 35 Gt CO_2e (UNEP, 2013; Spiegel and Bresch, 2013); business-as-usual emissions are estimated at 63 Gt CO_2e in 2030.

Conclusions and next steps

This analysis shows that by using the proposed framework, actions can be identified that secure growth, increase jobs and competitiveness, save lives and slow the rate of climate changes.

Many development efforts—across a range of sectors—hold the promise of economic growth as borne out by economic analysis. Activities that also reduce emissions—across a range of pollutants—deliver health, agriculture and other socioeconomic benefits that are integral to a broader development agenda. Quantifying and including these benefits, where possible, can reveal the broader socioeconomic value of projects while enhancing the case for climate mitigation. Given the rising cost of inaction on climate change, it is imperative that the broad benefits of smart development be included in economic analyses.

As a result of limitations in the framework and available modeling tools, this report does not provide project-level evaluation for decision making nor does it focus on policy implementation issues or costs, which are required for comprehensive policy evaluation.[12] The report does however highlight areas where additional research could improve limitations with the framework. For example, improved tools are needed to account for behavioral changes such as shifting to public transit and advanced cookstoves, and to explicitly account for the full climate change costs of emissions.[13] The framework also needs additional work to tailor its application at the individual project level. Areas for research include:

- Further benefits assessments based on more comprehensive emissions data
- Multi-sector macroeconomic analysis that better illustrates the synergistic benefits (for example, using cleaner energy sources to supply the increased power demand for electric cars could yield greater benefits than clean transport or clean power in isolation)
- Additional macroeconomic analysis to reflect the additional benefits of green versus non-green investment options

As scientists continue to clarify the many ways that local air pollution, short-lived climate pollutants, and greenhouse gases harm health, welfare, and the environment, the framework presented in this report can be honed to better account for these costs by providing more complete economic analyses.

Ultimately, climate change is an issue for the whole economy and all facets of development. All policy makers, whether in government cabinets or corporate boardrooms, need to understand where they can get development and climate benefits from the decisions they make. Similarly, those charged with informing decisions from a climate perspective need to able to present more complete analysis and evidence of the broad impacts of their projects and policies.

---

12 The policy case studies use data from a marginal abatement cost curve model that only considers project costs to implement a technology for a transition and thus is limited in use for full-scale analysis of implementation costs for policies. As a result, the outcomes presented have no prescriptive value in terms of policy evaluation. Rather, due to the limitations of existing information and assumptions, they provide illustrative simulations of how additional benefits could be quantified and integrated into policy evaluation in the future.

13 The social cost of carbon (SCC) is used to monetize the climate change damage avoided when CO_2 is reduced. Lacking specific World Bank guidance on the social cost of carbon, values developed by the US Interagency Working Group on Social Cost of Carbon (2013) are used. The SCC accounts for changes in agricultural productivity, human health, and property damage from increased flood risks (US EPA, 2013, http://www.epa.gov/climatechange/EPAactivities/economics/scc.html); however, it does not include all the damage caused by increased CO_2 and may evolve as scientific understanding develops further. This does not constitute a World Bank endorsement of these values. The SCC is very sensitive to the discount rate used. In addition, the climate change costs of black carbon emissions are not accounted for.

Chapter 1

Introduction

Background

Climate change is a fundamental threat to sustainable economic development, with devastating impacts on agriculture, water resources, ecosystems, and human health. Immediate, substantial reductions in CO_2 and other long-lived GHGs are needed to avoid a 4°C warmer world (UNEP 2011a). While every region will be affected, those least able to adapt—the poor and most vulnerable—will be hit hardest.

The large and dominant role of CO_2 emissions in raising global average temperature remains unchanged; understanding of the effects of greenhouse gases and other pollutants on the climate system, however, is improving. Other pollutants—namely methane (CH_4), ozone (O_3), black carbon (BC), and some hydrofluorocarbons (HFCs), collectively referred to as short-lived climate pollutants (SLCPs)—are now recognized for their potency and as a significant cause of global warming (Methane and HFCs are included in the Kyoto protocol). Although these pollutants have a much shorter lifetime[14] in the atmosphere than CO_2, recent estimates indicate that SLCPs may be responsible for 30–40 percent of overall present-day global warming (Molina et al. 2009; Bond et al. 2013). Reducing emissions of SLCPs now could reduce warming by up to 0.6°C by 2050 (Hu et al. 2013; UNEP 2011a and b; Shindell et al. 2012) and avoid or delay potentially dangerous "tipping points" in important climatic systems (Molina et al. 2009).

To avoid the long-term threat of climate change, the world must still reduce CO_2 emissions. But reducing SLCP emissions could slow the rate of warming over the next two to four decades, providing time for the poor and vulnerable to adapt to a changing climate.

SLCPs Damage Health and Crops

The opportunity to mitigate near-term warming is only one reason to reduce SLCP emissions. In addition, air pollution[15] imposes an undeniable burden on development and threatens many emerging economies (World Bank 2013d). The United Nations Environment Programme (UNEP) estimates that fast action to reduce emissions of SLCPs could avoid an estimated 2.4 million premature deaths from outdoor air pollution annually by 2030 and about 32 million tons of crop losses per year.[16]

A growing body of scientific literature analyzing the effects of air pollution on health and agricultural activities is rapidly emerging. Observational and modeling studies indicate that outdoor air pollution results in more than 3 million deaths annually, with another 3.5 million or more deaths attributed to household-related air pollution (Lim et al. 2012; Silva et al. 2013; Fang et al. 2013; Avnery et al. 2013). In addition, these and other studies have documented that hundreds of millions of metric tons of crop losses could be avoided each year by reducing emissions. Reducing emissions of BC and methane (which aids in the formation of tropospheric ozone) can provide significant development benefits, including improved health and increased agricultural yields (UNEP/WMO 2011). Annex A explores this literature more fully.

[14] Compared with hundreds of years or more for CO_2, the average lifetime of methane and many HFCs is less than 15 years; BC persists for less than two weeks.
[15] SLCPs and air pollution are directly linked through black carbon, which is one component of the air pollutant $PM_{2.5}$ (particulate matter with a diameter of 2.5 microns or less), and methane, which is a precursor to ground-level ozone pollution.
[16] "Integration of Short-Lived Climate Pollutants in World Bank Activities," World Bank (June 2013).

Crucially, the health benefits of reducing black carbon emissions (especially from biomass cookstoves and transport in Asia and Africa) would be realized immediately and almost entirely in the regions that reduce their emissions. China and India especially will reap the benefits of some reductions, such as reduced background ozone, because of their large populations and agricultural sectors.

Emissions: Sources, Impacts, and Reduction Methods

Emissions are often categorized by how long they persist in the atmosphere.

Long-lived greenhouse gases include carbon dioxide, nitrous oxide, and some HFCs. CO_2 is naturally present in the atmosphere; it is also emitted from burning fossil fuels and biomass, and by certain chemical reactions (e.g., cement manufacturing). Nitrous oxide (N_2O) is emitted from agricultural, transportation, and industrial sources; its impact on health and agriculture is limited in the examples in this report. Hydrofluorocarbons are used in heating and cooling systems and aerosols; because HFCs do not contribute to health or crop damage, their emissions are not covered in this report.[17]

SLCPs include methane, black carbon, and some other HFCs. Methane is released as a fugitive emission from oil and gas production and distribution, agriculture (including livestock and rice farming), decomposition of municipal solid waste, and other sources. In addition to its warming effect, methane leads to the formation of ground-level ozone, a component of smog, which can cause significant crop damage, respiratory illnesses, and other harmful impacts. BC comes from incomplete combustion of carbon-rich fuel; it is a component of particulate matter and is a risk factor for cardiopulmonary disease and can trigger asthma, heart attacks, and strokes.

Greenhouse gas emissions are usually measured as carbon dioxide equivalents (CO_2e).

Win-win Opportunities

Many projects and policies offer the opportunity to control CO_2 and SLCP emissions simultaneously; doing so can deliver both local socioeconomic benefits and global climate benefits, and reduce the net cost of action to mitigate climate change.[18]

Several studies indicate the multiple possible synergies that can be achieved by combining measures that address climate change with efforts to improve air quality or energy security (West et al. 2013; Bollen et al. 2009; Shindell et al. 2012). These studies

[17] Although N_2O and HFC emissions have not been considered from the perspective of potential health or agriculture benefits, their impact in terms of carbon dioxide equivalent radiative forcing reduction has been included in the calculations of the policy intervention scenarios in this report.

[18] The term co-benefits generally refers to additional benefits, such as reduced outdoor pollution, that may be associated with a global climate policy. The benefits described here include climate and socioeconomic benefits associated with both CO_2 and SLCP reductions and may be considered as multiple or comprehensive benefits.

Table 1.1: CO_2, Methane, and Black Carbon Emissions Sources, Impacts, and Reduction Methods.

Pollutant	Sources	Impacts	Reduction methods
Carbon dioxide (CO_2) – Atmospheric lifetime: hundreds of years or more	Emitted from burning fossil fuels and biomass, and by certain chemical reactions (e.g., cement manufacturing).	• Global warming	• More-efficient buildings, appliances, equipment, industrial processes, transport systems, and vehicles • Cleaner sources of energy • Improved forest and land management
Methane (CH_4) – Atmospheric lifetime: 12 years	Released as a fugitive emission from oil and gas production and distribution, agriculture (including livestock and rice farming), decomposition of municipal solid waste, and other sources.	• Global warming • Precursor to ground-level ozone (smog) • Significant crop damage • Respiratory illness and other health problems	• Recovery and use from coal mines and oil production; reduced leaks from natural gas production and pipelines • Improved management of municipal waste and wastewater, including recycling, composting, and gas capture and use • Anaerobic digestion of livestock manure • Improved rice irrigation
Black carbon (BC) – Atmospheric lifetime: days to weeks	A component of particulate matter emitted by incomplete combustion of carbon-rich fuel, including open burning, residential heating and cooking, diesel-powered vehicles and equipment, and old industrial sources.	• Short-lived climate forcer, especially in northern latitudes • Reduced visibility • Cardiopulmonary disease, asthma, heart attacks, and strokes	• Standards to reduce vehicle emissions, including diesel particle filters and elimination of high-emitting vehicles • More-efficient cookstoves, heaters, brick kilns, and coke ovens • Cleaner fuels

conclude that the multiple benefits of a package of controls are often greater than the individual benefits considered separately; these benefits can reduce the marginal cost when controls are implemented together. They also demonstrate that efforts to reduce SLCP emissions can improve public health, reduce crop losses, and slow the rate of near-term climate change, thereby aiding sustainable development. Recent studies indicate that reducing emissions of BC and methane may also help reduce sea-level rise (Hu et al. 2013).

Recent work by the World Bank (2013b) in India finds that the combined cost of outdoor and indoor air pollution is more than $40 billion annually, or more than three percent of India's 2009 GDP. When other environmental degradation is factored in, including crop, water, pasture, and forest damage, the total is closer to 5.7 percent of India's GDP. This mostly affects the poorest members of society.

The growing recognition of SLCPs' deleterious effects on climate, health, agriculture, and the environment suggests that capturing many of these "externalities" can strengthen the economic rationale for projects or policies that reduce SLCPs.

New Modeling Tools Enable More Holistic Planning

New methods and tools for capturing multi-pollutant health, agricultural, and environmental benefits allow for expanded economic analysis that more fully accounts for their monetary value. These tools translate the estimated emissions reductions from interventions in various energy systems (using engineering systems models) into changes in atmospheric concentrations (using chemical transport models) and estimate health and agricultural benefits (via concentration-response models and valuation tools).

Two innovative programs helped usher in these modern, synergistic, multi-pollutant air quality and energy planning tools: the European Convention on Long-Range Transboundary Air Pollution and the U.S. market-based approach to controlling acid rain under the Clean Air Act, where advanced economic efficiency is a major driver of the design of air quality management programs (see Box B-1 in Annex B).

The continued integration of energy, economic, and air quality planning has resulted in a new breed of tools[19] that, when linked together, provide comprehensive benefits calculations, often with monetized value as an output. The advent of these tools enables broader economic analysis of emissions-reduction programs, including improved internalization of externalities than was previously feasible. This report explicitly focuses on expanding benefits analysis, as others (for example, Paltsev and Capros 2013) have already explored the subject from the cost perspective.

Objectives of this Report

This report describes efforts by the ClimateWorks Foundation and the World Bank to quantify the multiple economic, social, and environmental benefits associated with policies and projects to reduce emissions in select sectors and regions. The report has three objectives:

- To develop a holistic, adaptable framework to capture and measure the multiple benefits of reducing emissions of several pollutants.
- To demonstrate how local and national policymakers, members of the international development community, and others can use this framework to design and analyze policies and projects.
- To contribute a compelling rationale for effectively combining climate action with sustainable development and green growth worldwide.

By using a systems approach[20] to analyze policies and projects, this work illustrates ways to capitalize on synergies between efforts to reduce emissions and spur development, minimize costs, and maximize societal benefits.

This report uses several case studies to demonstrate how to apply the analytical framework. The case studies approach this analysis from two perspectives: sector policies applied at the national or regional level and development projects implemented at the sub-national level. The sector policy case studies are based on ClimateWorks' portfolio analysis. The development project case studies are based on World Bank–financed projects, scaled up to the national level. By applying the framework to analyze both types of interventions, this report demonstrates the efficacy of this approach for national and local policymakers, international finance organizations, and others.

These case studies show that climate change mitigation and air quality protection can be integral to effective development efforts and can provide a net economic benefit. Quantifying the benefits of climate action can facilitate support from constituencies interested in public health and food and energy security; it

[19] These include the U.S. EPA's Environmental Benefits Mapping and Analysis Program (BenMAP), the European Commission Joint Research Centre's Fast Scenario Screening Tool (TM5-FASST), and a new rapid assessment tool being developed by the Climate and Clean Air Coalition to Reduce Short-lived Climate Pollutants (CCAC).

[20] The systems approach refers to the incorporation of sector-specific tools to analyze direct benefits and the use of a macroeconomic tool to expand the scope of the indirect benefits included. It is meant to indicate the interconnectedness between identified benefits.

can also advance the international discussion of effective ways to address climate change while pursuing green growth.

Report Structure

The current chapter provides background information on the pollutants covered in this report and identifies opportunities to achieve both (local) socioeconomic and (global) climate objectives by reducing emissions. It also introduces new modeling tools that enable broader economic analysis of emissions-reduction programs. Chapter 2 explains how these tools can be combined to develop an effective framework to analyze policies and projects. Chapter 3 demonstrates the framework, using several policy- and project-based case studies to estimate the multiple benefits of emissions reductions from a regional or national level. Finally, Chapter 4 explores the challenges to operationalizing the framework and presents conclusions from the study.

Chapter 2

New Framework to Estimate Benefits

The analysis presented in this report uses recently developed emissions modeling and assessment tools and an integrated macroeconomic model. Prior analyses added some environmental externalities into cost-benefit analyses by quantifying and monetizing specific benefits and adding them individually to the benefits side of the ledger. The framework proposed here advances this work by taking a systems approach, integrating multiple benefits into a macroeconomic model to demonstrate the additional benefits that can accrue—in terms of GDP and employment—as the benefits flow through the economy. All of these benefits are not routinely captured in cost-benefit approaches; new tools make it possible, however, to include many of them in project and policy analyses where emissions can be quantified.

Benefits Framework

The framework to assess the multiple benefits of projects and policies to reduce emissions of GHGs and SLCPs follows these steps:

1. **Identify the full range of benefits:** These should include all potential benefits that result from a project or policy, including:
   a. **Local socioeconomic benefits**—such as GDP growth, employment gains, reduced energy and fuel costs, time savings, improved water and air quality, higher crop yields, improved public health, and reduced mortality—that are realized in the jurisdiction that enacts the policy or undertakes the project.
   b. **Global public goods benefits**—such as protection of ecosystem services, reduced acid deposition and infrastructure loss, and reduced climate change impacts—that are realized beyond the jurisdiction that carries out the policy or project. For example, reduced sulfate and methane emissions can have large downwind benefits (i.e., beyond the locality that reduced the emissions).
   c. **Combined benefits** that can be realized both locally and globally. While it is important for nations to realize the local benefits of emissions control, it is equally important for them to recognize the shared benefits that accrue to them when their neighbors and other global actors reduce their emissions.
2. **Identify appropriate benefits assessment tools:** These should include available tools that provide insight on each measurable benefit at the scale or resolution appropriate to the analysis. Selection (or development) of suitable analytical tools is critical. For example, several slightly different tools are used in this report for individual case studies, but entirely different tools may be used as long as they adequately assess the relevant benefits. Those benefits that cannot be quantitatively assessed should be qualitatively described and included in economic analysis.
3. **Identify an appropriate macroeconomic tool:** This model should enable analysis of economic benefits across sectors and types of benefits. For example, health or agricultural benefits may have a positive effect on other areas of the economy (e.g. labor productivity, household disposable income); energy savings in one sector might benefit another sector (e.g. by reducing energy costs and the investment needed to supply energy).

4. **Estimate significant benefits:** Appropriate metrics should be used to measure significant benefits, and the results should be presented so that they are meaningful to the audience they affect. For example, while economic effects might best be presented in monetary terms for policymakers, talking about the impact on cardiovascular health might be more relevant to health officials. Similarly, presenting benefits in terms of crop yields is likely to resonate more with farmers.

This framework is consistent with the World Bank's paradigm of "inclusive green growth" (World Bank 2012b) in that it recognizes the limitations of traditional cost-benefit analysis and attempts to supplement it by quantifying additional benefits to more completely demonstrate the value of green growth strategies. Because different benefits resonate with different audiences at the regional, national, and sub-national levels, it is worthwhile to acknowledge all the benefits in economic analysis, even if not all can be monetized.

Step 1: Identify the Full Range of Benefits

The first step in applying the framework requires consideration of all potential economic, social, and environmental benefits that a project or policy may yield at the local and global levels. Many common interventions in the energy, transportation, and building sectors are likely to have similar benefits.

For World Bank–financed development projects, socioeconomic benefits are likely to be among the primary motivations, and they should be assessed as part of routine project appraisal. All indirect economic impacts should be considered, such as multiplier and flow-through effects that result from linkages in the economy (for example, whether project investment results in greater manufacturing or construction services) or the effects of complementary economic policies (such as changes in structural relationships due to incentives for local purchases). Studies have shown that reduced traffic congestion enhances economic development (UNEP 2011c; ESCAP 2007) and improved health leads to greater labor force productivity (Sanderson et al. 2013). These economic benefits should be included in analyses; this involves reviewing potentially significant effects and ensuring they are represented appropriately in available modeling tools.

Some socioeconomic benefits are difficult to include in an economic analysis because they are not easily quantified or their assessment relies on contingent valuation methodologies (such as willingness to pay for various benefits). For emissions reduction activities, these benefits can include improved public health and higher crop yields; reduced infrastructure losses from acid rain; improved visibility (which has its own intrinsic value and reduces economic losses in the tourism, aviation, and recreation industries); and time savings due to new public transit. These less tangible benefits can have spillover effects on the macro-economy; for example, good urban environmental quality is important to attract and retain the talented professionals who drive wealth creation in knowledge-based economies (Florida 2000).

Environmental benefits are similarly treated as an externality in most economic analyses. As the WAVES partnership[21] for Natural Capital Accounting demonstrates, however, many countries are beginning to reflect the costs of reduced ecosystems services on their national ledgers. Environmental benefits include biodiversity, ecosystem services, and reduced climate change impacts.

Step 2: Identify Appropriate Benefits Assessment Tools

Many types of integrated assessment models are widely used to estimate the benefits or impacts associated with emissions reductions. For example, the partial-equilibrium Global Change Assessment Model (GCAM) models the impacts of climate change policies and technologies on GHG emissions, energy consumption, production, and the economy linked to the energy sector (Clarke et al. 2008). The Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS) model is used in co-benefits studies to assess the health and ecosystem impacts of particulate pollution, acidification, eutrophication, and tropospheric ozone (Amman et al. 2008). Several other technology models also simulate anthropogenic systems and their linkage to the atmosphere, quantifying several benefits. These include top-down and bottom-up approaches, and they have evolved significantly as a result of regulatory programs that have emphasized economic efficiency (See Box B-1 in Annex B).

Key features of these models include their ability to estimate the regional costs and a range of benefits of alternative emissions control strategies, and to identify cost-effective measures to achieve specified emissions reduction targets. This study used a variety of models to determine changes in emissions, in costs, and in health, agricultural, and other economic benefits.

The particular tools chosen for this study should be viewed as examples only. The World Bank's low-carbon growth studies (ESMAP 2012) provide many other examples of methods to assess long-term mitigation potential and benefits even though the overarching goal of those studies was to reduce the emissions trajectory of growth at the country level.

[21] Wealth Accounting and the Valuation of Ecosystem Services: http://www.wavespartnership.org/waves/.

Tools Used for Sector Policy Benefits Assessment

This report relied on two models to analyze the benefits of the policy-based case studies (See Figure 2.1 and Annex B):

- **Marginal abatement cost curve model (MACC).** Developed by McKinsey & Co. (Enkvist et al. 2009) with ClimateWorks support, this model estimates potential emissions reductions and associated costs. Although not as detailed as sector-specific models, it represents a unified view of the available technical measures to reduce GHG emissions or SLCPs, their emissions reduction potential ($MtCO_2e$), and the associated cost ($\$/tCO_2e$) in a specific year for different regions and countries. The abatement potential and corresponding costs are calculated relative to a business-as-usual scenario (BAU) in a given year.[22] In this study, impacts in 2030 are considered.
- **Fast Scenario Screening Tool (TM5-FASST).** Developed by the European Commission Joint Research Centre (Van Dingenen et al. 2009), this model estimates health and agricultural impacts. This model links emissions of pollutants in a given source region to downwind pollutant levels (at the national level and globally) using meteorology and atmospheric chemistry. Pollutant levels are then used to calculate impacts by applying specific dose-response functions from scientific literature. The outputs include lives saved per year from avoided cardiopulmonary, respiratory, and lung-cancer-related causes, as well as changes in agricultural yields for maize, rice, wheat, and soybean.

Tools Used for Development Project Benefits Assessment

The four development project case studies used several sector-specific tools and bottom-up analyses to estimate the benefits of the interventions, including TM5-FASST and:

- **Transportation Emissions Evaluation Models for Projects (TEEMP)** (GEF 2010). Developed by Clean Air Asia (ADB 2013), this model quantifies emissions and multiple benefits (such as reduced accidents and travel time), and uses simplified analysis to determine the economic feasibility of a project. As a technology-oriented model, it relies on projected demand as an input rather than independently assessing the future demand for new technologies.[23]
- **Environmental Assessment of Solid Waste Systems and Technologies (EASEWASTE).** Developed by the Technical University of Denmark (Kirkeby et al. 2008), this life-cycle assessment model follows waste management from generation through collection, transportation, and treatment, and calculates the environmental emissions and impacts of alternative treatment scenarios.

Two development project case studies, on biogas digesters and improved cookstoves, relied on project experience and expert judgment to estimate emissions reductions and benefits. The focus of the analysis in all cases is to demonstrate an adaptable framework to assess benefits.

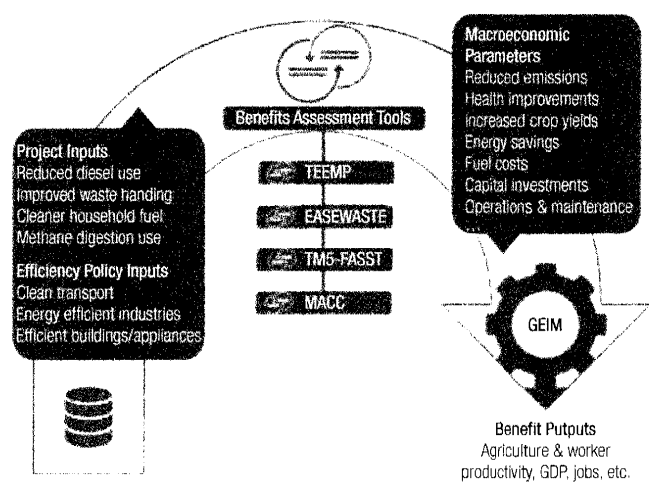
Step 3: Identify an Appropriate Macroeconomic Tool

For all of the case studies in this report, the outputs from the MACC, FASST, and other tools are fed into the Global Energy Industry

[22] The identification of least-cost CO_2e abatement opportunities does not equate to an endorsement of the proposed interventions or actions in all cases. Rather this tool is utilized as one possible basis for collectively assessing the additional benefits of a given set of emissions reduction measures. Individual abatement measures and opportunities should be carefully selected on the basis of individual country context and development appropriateness.

[23] TEEMP does not address the analytical need for tools that account for consumer preference, behavior change, and structural relationships that reinforce existing transportation patterns (such as zoning regulations and infrastructure deployment). These tools require further research and development. In the absence of tools to do this enhanced analysis, however, TEEMP can provide basic estimates of benefits that could come from the most common transportation systems.

Figure 2.1: Analytical framework used for the policy and project case studies



Note: Health and agricultural benefits were included in the macroeconomic model only when they were large enough to have a significant impact on the variables included in the GEIM. The specific changes that result from sector policies and development projects are analyzed to determine their emissions reductions. Specific data—such as changes in transportation modes, waste handling, building regulations, and pollutant levels—are fed into appropriate benefits assessment tools to quantify the multiple benefits. These benefits are then fed into a macroeconomic model to demonstrate the additional economic benefits that can accrue.

Model (GEIM) from Oxford Economics, which calculates the macroeconomic implications of climate and air quality interventions. Macroeconomic models are quantitative tools routinely used to evaluate the impact of economic and policy shocks—particularly policy reforms—on the economy as a whole. These models reproduce (in a stylized manner) the structure of the whole economy, including the economic transactions among diverse agents (productive sectors, households, the government, and others). This approach is especially useful when the expected effects of policy implementation are complex and materialize through different transmission channels, as is the case with climate and energy policies. Details about the GEIM can be found in Annex B.

Limitations of Bottom-up and Macroeconomic Modeling

Combining bottom-up (MACC) and top-down (macroeconomic modeling) approaches has advantages and disadvantages. Bottom-up models disaggregate energy consumption across sectors and consider specific energy technologies with technical and economic parameters, but they often neglect to account for feedbacks in the economy and the effects of international energy markets. Top-down models are good at identifying complex and dynamic interactions among macroeconomic variables, but they are very aggregated and lack the level of resolution necessary to inform policymaking. Additionally, top-down macroeconomic models show only how real resources are reallocated among economic activities after the economy has "equilibrated" following a shock to the system (e.g., an oil price change); they generally cannot easily model the gradual uptake of new technologies. Both kinds of models depend crucially on some simplifying assumptions that do not reflect real-world conditions. This can be remedied to a certain extent by tailoring the scenarios to specific needs, but uncertainties remain that must be recognized and highlighted when presenting the results.[24]

Another concern with respect to economic analysis of capital investment relates to the Keynesian effects of some projects. For example, disaster reconstruction aid might generate significant economic activity with GDP benefits, but it does not improve productivity; rather it simply replaces productive capacity that was lost in a disaster. Assuming some slack in the economy, all spending will produce multiplier effects on GDP, or "Keynesian benefits." Thus analysis must carefully distinguish any productivity benefits that result from green investment.

In this analysis, the GEIM model deals with Keynesian effects to some extent by recognizing the long-term drag on the economy caused by capital investment. Any additional investment that does not improve efficiency or expand productive capacity puts a drag on the economy in the long term. The transmission channel for this is essentially crowding out: the additional investment increases demand and, as a result, GDP and the rate of inflation; in response, the central bank raises interest rates, which causes demand (in particular investment) to fall and GDP to move back toward baseline levels. If the additional investment is large enough, it will crowd out a significant portion of capacity-expanding investment, which will in turn result in lower potential and actual output in the long run.[25]

To the extent that GDP rises above baseline levels in the case studies in this report, it reflects an increase in productivity or energy efficiency that results in sustainable economic development. In future analyses, it may be appropriate to compare GDP growth for a proposed intervention with the Keynesian effects associated with a default alternative project, such as the average distribution of historic public investment. The net effect would represent the benefit or cost of the proposed intervention.

Step 4: Estimate and Present Significant Benefits

The fourth step in the framework requires that the benefits are measured and presented appropriately for various audiences. This involves selecting metrics that are meaningful to the audience, and not all benefits can or should be monetized and aggregated. Economic effects should be presented in monetary terms, such as net present value or change in GDP. Specific health benefits may be more relevant to public health officials than the statistical monetized value of avoided mortalities. Tons of avoided crop losses will likely resonate most with farmers and agricultural policymakers.

The next chapter shows how this framework can be applied, and the benefits of a variety of case studies are estimated using a range of metrics. For policymakers, information on mitigation costs and benefits help identify policies that can optimize development or welfare benefits while also attaining environmental goals. For international finance and development organizations, the results of different scenarios indicate which sectors and regions stand to benefit most from financial interventions. For non-climate philanthropists and analysts, the economic, social, and environmental benefits provide insights on how emissions mitigation measures can also improve public health and food and energy security.

---

[24] At least one round of iteration between macroeconomic models and technology models should be conducted to allow the fixed parameters of technology models to be updated based on macroeconomic responses. The iteration process will likely produce only minor changes, relative to the initial estimate and was not conducted here given the preliminary nature of this analysis.

[25] In some cases, additional investment also expands a country's capital stock (e.g., building new power plants, adding new public transit systems); in other cases, green capital investments may not do so if they strand assets before their normal retirement age. This effect is not included to a significant degree in the case studies that follow.

Chapter 3

Multiple Benefits Assessment—Case Studies

The framework described in the preceding chapter was applied to two types of case studies to demonstrate the estimation of benefits from two perspectives: (1) sector policies applied at the national or regional level, and (2) development projects implemented at the sub-national level. By applying the framework to analyze both types of interventions, this report demonstrates the efficacy of this approach for national and local policymakers, international finance organizations, and others. A summary of the case studies is presented in this chapter, and more detailed descriptions are contained in Annex C (for sector policies) and Annex D (for development projects).

Valuation Methods Used in this Report

This report uses the following methods to monetize the benefits of climate and development action:

- **Value of statistical life (VSL):** Adjusting for differences in income and purchasing power, the following values of statistical lives saved were established (all reported in 2010 purchasing power parity in U.S. dollars).Using methods recommended by the OECD (2011), values for OECD member countries were based on a U.S. value of $7,887,511 (U.S. EPA Guidance 2000);[26] EU, $5,713,388 and Mexico, $3,055,289. Values for non-OECD countries were derived by averaging available estimates of locally determined VSLs:[27] Brazil, $1,555,802; China, $700,635; and India, $967,998.
- **Crop values:** For agricultural sectors, this report uses the 2010 World Bank average grain crop price of $171.80[28] per ton for the crops considered (maize, wheat, rice, and soybeans) and further estimates that each metric ton of cereal contains three million kilocalories (kcal) of energy. Assuming a daily calorie need of 3,000 kilocalories of energy (kcal), this translates into about one million kcal per person per year. Hence one metric ton of cereal can feed three people for one year (Cassidy et al. 2013; Nellemann et al. 2009).
- **Social cost of carbon:** CO_2 emissions reductions are valued in this report based on U.S. government estimates of the social cost of carbon, which project changes in agricultural productivity, human health, and property damage from increased flood risks.[29] Due to limited data availability and uncertainty, however, this social cost of carbon does not account for all the damage caused by increased CO_2, and it does not explicitly account for the health and agriculture benefits of reduced SLCP emissions. This report uses the average values ($34 per ton in 2010, rising due to increased damages over time to approximately $55 per ton in 2030) obtained using discount rates of 2.5, 3, and 5 percent in 2010 dollars (U.S. Interagency Working Group on Social Cost of Carbon 2013). Benefits derived using the 3 percent discount rate are presented in the main text for illustration, but sensitivity to other social discount rates is presented in the annexes.

[26] Following OECD (2011), an income elasticity of 0.8 was used for inter-country transfer within the OECD. All 2010 VSLs were indexed over time based on projected national income (GDP) growth, assuming income elasticity of 1 (assumes current value will hold the same relationship to income as in the future).

[27] China: Wang and He (2010), Hammit and Zhou (2006), Qin et al. (2000), Zhang (1999), Liu and Zhao (2011); India: Shanmugam (1997), Alberani et al. (1999), Bussolo & O'Connor (2001), Madheswaran (2007); Brazil: Markandya (1998), Serôa Da Motta et al. (1997), Ortiz et al. (2009).

[28] data.worldbank.org.

[29] US EPA (2013): http://www.epa.gov/climatechange/EPAactivities/economics/scc.html. Note that these damages are largely based on modeled climate impacts due to increased extreme weather such as hurricanes, floods, and droughts. These do not overlap with the benefits from avoided air pollution and agricultural losses.

- **Carbon finance value:** GHG reductions can help finance certain projects through the sale of certified emissions reductions in various carbon markets, such as the Clean Development Mechanism (CDM) and the EU Emissions Trading System. The value of the emissions reduction is determined by individual market conditions and does not reflect the full value to society.
- **CO_2 mitigation cost:** The cost per ton of avoided CO_2 emissions is determined by the MACC model.
- **Effect on GDP:** The macroeconomic impacts of the multiple benefits as they flow through the economy are calculated using the GEIM model. A discount rate of 10 percent is used (consistent with Belli et al. 1998) within the GEIM macroeconomic calculations. However, social discount rates of 2.5, 3, and 5 percent were used to calculate the net present value of GDP and other socioeconomic benefits. Again, the central value of 3 percent was used for illustrative purposes in the main text, but sensitivity to the other social discount rates is presented in the annexes.
- **Project benefits**: The stated benefits of World Bank-financed development projects are calculated as the net present value of the stream of annual benefits less costs over the life of a project (scaled to the national level for the case studies presented). These stated benefits might include new revenue streams (such as fees collected) and cost savings (such as reduced energy or transit costs).
- **Energy savings:** The monetized values for energy savings are obtained by assuming a price of oil of $80/barrel in 2010 dollars, in accordance with the scenario assumptions of MACC 3.0 (see Annex C) and applying the following equivalences: 1 GWh = $8.6e^{-5}$ Mtoe and 1 Mtoe = 7.33 Mboe (IEA, BP). This is a rather crude, imprecise estimate, but it is nonetheless useful in providing an order of magnitude of the monetary savings associated with the emission reductions in each case study.

Sector Policy Case Studies

The case studies presented below analyze three key sector policy interventions needed to address the mitigation gap identified by UNEP (2013). They describe policy changes, including regulations, incentives, and taxes, to stimulate specific measures[30] to cut emissions from three sectors: transportation, industry, and buildings relative to a "no new policy" baseline scenario.[31] The analysis includes impacts in five countries and one region—China, India, the EU, the U.S., Mexico, and Brazil (subsequently, for simplicity, referred to in this report as "six regions")—plus the impact on global GDP. This analysis refers to the U.S. and the E.U. as developed countries and to China, India, Mexico, and Brazil as emerging economies. The case studies use the MACC model to identify all quantified opportunities to reduce emissions of CO_2e[32] with a mitigation cost below $80/t$CO_2e$[33] (Spiegel and Bresch 2013; Dinkel et al. 2011).

These mitigation costs are defined as the incremental cost of a low-emission technology compared with the reference case, measured in $/t$CO_2$e. These costs include two key components: (1) the annualized repayments for capital expenditure (CapEx), or the additional investments in new technology or replacement infrastructure necessary to achieve the GHG emission reductions, and (2) the operational costs or savings (OpEx), fuel- and non-fuel-related, associated with each abatement opportunity. The abatement costs can therefore be interpreted as pure project costs incurred to install and operate each low-emitting technology. Other key elements—transaction costs, communication/information costs, subsidies or explicit CO_2 costs, taxes, and the economic impacts of investing significantly in low-emitting technology (such as advantages from technology leadership)—are deliberately excluded from the cost calculations.

Since data is only available for black carbon and methane, the health and agricultural benefits estimated here are conservative.[34] They therefore have a negligible impact on the economy relative to the size of the economy and the labor force. A future study (see footnote 51 in Annex C) will examine similar benefits for mitigating a larger suite of pollutants.

As described in the prior chapter, the quantified SLCP emission reductions from the MACC model are fed into the TM5-FASST tool to model the resulting health and agricultural impacts in 2030 (see Annex C for the 2020 values). Although the impacts are mostly seen in the regions where emissions are reduced, downwind impacts in other regions are also observed. These emissions reductions and impacts, including reduced mortality and decreased crop damage,

30 The selection of certain lowest-cost SLCP interventions in each sector does not constitute an explicit endorsement. Rather these interventions were selected as a reasonable basis to demonstrate how to quantify multiple development benefits. In practice, each potential measure should be considered in the context of local development circumstances and appropriateness.

31 The power sector was not analyzed in this study because a similar breakdown for non-CO_2 emissions was not available from the cost-curve model.

32 CO_2e includes CO_2, BC, methane (CH_4), HFCs, and nitrous oxide (N_2O). HFCs are not considered in this analysis because they have no quantifiable impact on health and crops. The impact of N_2O on health and agriculture is limited in the cases considered here. Because other ozone precursors are not considered, agricultural yields are mainly affected by methane controls (Avnery et al. 2011).

33 This value was selected because higher-cost measures tend to be early-stage technologies whose development is difficult to project. Choosing this threshold limits the mitigation potential to roughly 76 percent of the total potential identified in the cost curve. That figure drops to 68.5 percent at $66/t$CO_2$e (€50/t$CO_2$e) and 67.5 percent at $53/t$CO_2$e (€40/t$CO_2$e). See Annex C for a detailed representation of all mitigation opportunities in the road transport, industry, and building sectors considered in the sector policy case studies, including those above $80/t$CO_2$e.

34 Agricultural impacts are only shown for the industry sector mainly due to methane emissions; agricultural impacts for transport and buildings are not available since only BC emissions are available in these sectors (and these have a negligible impact on agriculture).

are fed into the GEIM. The resulting outputs include changes in GDP and employment. The "transmission channels"[35] and results are summarized below.

Each sector policy case study analyzes the macroeconomic results of two scenarios in order to estimate the lower and upper bounds of possible effects of the policy interventions.

Scenario 1 makes two key assumptions:

a. Self-financed transition: Each country pays for the full costs of the transformations required to reduce GHG emissions.
b. No technology transfer: Developed countries produce all the new (cleaner, more efficient) technology needed to transform each sector, which boosts their exports and emerging markets import the necessary technology.

Scenario 2 is similar to Scenario 1 but makes different assumptions:

a. International climate finance: Developed countries pay for 60 percent of the capital expenditures incurred by emerging economies to reduce GHG emissions on a pro-rata basis depending on their GDP.
b. Accelerated technology transfer: Emerging economies produce 80–100 percent of the new (cleaner, more efficient) technology needed to transform each sector, while developed countries produce 100 percent of their own technology.

Results are categorized as global or local benefits. As explained in Chapter 2, global public goods benefits include reduced climate change impacts and the transboundary benefits of reduced emissions; local socioeconomic benefits include health and other benefits realized within the five focus countries and one region that reduce emissions. Changes to GDP are presented on a global basis. The social value of carbon is based on the social cost of carbon explained above, using a 3 percent discount rate. Values for different discount rates are shown in Annex C. For monetizing global value of lives saved, the VSL for India is used as most of the global total is found in the South Asian region.

Sector Policy Case Study 1: Shift to Clean Transport

GHG emissions from the transportation sector account for about 13 percent of global total; of that, emissions from road transport account for about 80 percent of total transport emissions. These numbers highlight the opportunity for governments and the private sector to work together to reduce the carbon intensity of transportation.

Sector Policy Case Study 1: Shift to Clean Transport

This case study assumes policy interventions that achieve a 30–45 percent improvement in the fuel efficiency of conventional vehicles and aggressive penetration of alternative fuel vehicles by 2030, with hybrid vehicles representing up to 60 percent of new vehicle sales and fully electric vehicles making up 8–12 percent of new vehicle sales in 2030. A mode shift of passengers to public transit is assumed to be two percent metro, eight percent buses, and 10 percent BRT in 2030. Twenty percent of freight traffic is assumed to shift from rubber to rail and five percent from rubber to sea in 2030.

Case Study Interventions

This case study includes the following changes:

- Improving the fuel efficiency of internal combustion engine vehicles.
- Shifting to hybrid and electric vehicles.
- Transitioning to low-carbon fuels such as bio-ethanol for medium- and heavy-duty vehicles.
- Increasing government investment in transport infrastructure to support the new vehicle types.
- Shifting from cars to public transit (rail, bus, and BRT).
- Shifting freight from trucks to trains (rubber to rail) and ships (rubber to sea).

This case study places greater emphasis on technology change and less on mode shift, in part because it is based on a MACC model that does not fully account for behavior changes such as a shift to mass transit. Thus this model may unfairly compare marginal changes to a carbon-intensive transport mode with the major infrastructure changes needed for an innovative, low-emissions mode. For instance, because recharging networks for electric cars require high fixed investment, the cheapest option would appear to be smaller changes to conventional vehicles. However, climate change uncertainty and inertia argue for early mitigation that requires system-level changes. Despite this drawback of the MACC model, this case study illustrates the economic benefits of such a transition.

Case Study Benefits

The benefits of a shift to cleaner transportation include substantial fuel savings and reduced air-quality-related complications and deaths resulting from respiratory illnesses. Since households and

[35] See Figure B2 in Annex B for an overview of the transmission channels included in this analysis.

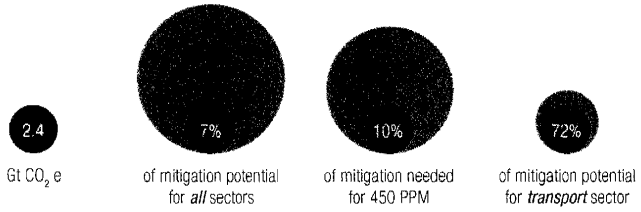
firms would have to buy less fuel, they would have more money to spend on other goods and services; in addition, the reduced demand for oil would lower oil prices, providing a boost to the economy.[36] The power sector would, however, need to make investments to meet the increased electricity demand from electric vehicles; the costs of this investment would ultimately be paid by consumers. Other benefits, such as time savings and reduced fatalities from improved public transportation systems, are not quantified here.

Global GDP would be about 0.5 percent and 0.8 percent higher than baseline levels in 2030 for Scenarios 1 and 2 (equivalent to $600 billion and $1 trillion in 2010 dollars, respectively). The impact across countries is, however, heterogeneous. Developed economies would perform best, even in the scenario least favorable to them. For emerging markets, the combination of higher electricity prices and the long-run drag from paying for capital investments (See description of Keynesian effects on Pg. 8), even in the scenario that assumes a significant role for international climate finance, would result in GDP growth being dampened relative to baseline levels in 2030.

By 2030, the mitigation measures undertaken in the five countries and one region are estimated to save more than 21,000 lives globally each year from avoided premature deaths. Within the focus countries and region, the emissions reductions would reduce air-quality-related mortality by about 20,000 lives per year; in monetary terms, the reduced deaths would be equivalent to $87 billion (2010 dollars). India and China account for over 90 percent of the total (see Figure 3.1).

Results of the case study are summarized in Box 3.1.

Figure 3.1: Climate benefits of sustainable transport policies in 2030



Note: A shift to cleaner transportation would avoid 2.4 Gt of CO_2e emissions at an average mitigation cost of $169/t$CO_2$e.[a] This represents 7 percent of the total global technical mitigation potential (for all sectors), 10 percent of the energy-related emission reductions necessary to stabilize CO_2e concentration at 450 ppm, and 72 percent of the available global technical potential in the road transport sector.

[a] In other words, these emissions reductions would save money. The abatement cost for society is negative for many of the transportation changes (such as improvements in conventional vehicles) because the payback over the lifetime of the vehicle is assumed to be positive (the fuel cost savings more than offset the initial additional investment in improved technology). Only fuel cost savings are considered; no other benefits are included.

Summary and Conclusions

As shown in Figure 3.2, a transformation of the transport sector toward more-efficient vehicles and freight and greater use of advanced biofuels and public transit, would have significant economic and health benefits in the six focus regions. These changes would *save* about $170 per ton of avoided CO_2 emissions. At the global level, GDP would be about 0.5–0.8 percent higher than baseline levels in 2030, but the impact across countries would be mixed. Developed economies would perform best, even in the scenario least favorable to them. However, emerging economies, particularly India and China, would reap the greatest benefits in lives saved from reduced air pollution. As noted above, because of limited emissions data, the mortality savings and resulting economic impacts are conservative.

Sector Policy Case Study 2: Energy-efficient Industry

Direct and indirect[37] CO_2e emissions from the industrial sector are the single biggest contributor to global emissions. Direct emissions alone account for about 20 percent of global emissions. The cement, chemicals, and iron and steel sectors are the three largest emitters; government policies to reduce their emissions would have a significant impact on the global fight to contain climate change.

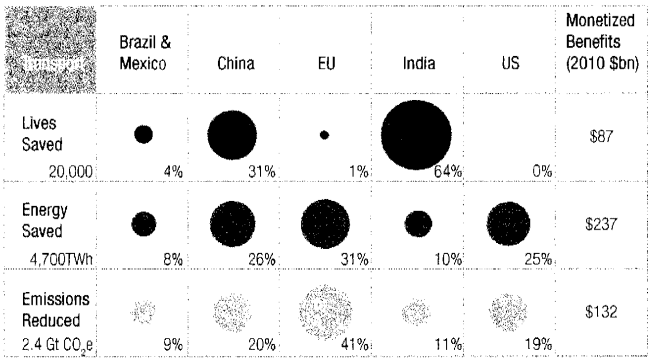
Case Study Interventions

This case study considers the impact of a government-led transformation of industry, including a shift to clean fuels and reduced

[36] The transmission channels in this macroeconomic analysis would benefit from better modeling of inter-sector effects. For example, lower oil prices may result in more oil being used in other sectors, reducing the net gain.

[37] Indirect emissions in the industrial sector are from electricity consumption.

Figure 3.2: Socioeconomic and climate benefits of sustainable transport policies in 2030 by region



Box 3.1: Sector Policy Case Study 1 Benefits: Shift to Clean Transport

A transformation of the transport sector in the six focus regions, through more fuel-efficient internal-combustion vehicles, more widespread adoption of electric and hybrid vehicles, greater use of public transport and advanced biofuels, and a shift to more efficient freight, would generate substantial benefits (all values are annual results in 2030 for the six focus regions, unless noted), including:

Local* Socioeconomic Benefits

- Lives saved: roughly 20,000 premature mortalities from air pollution avoided per year, with a monetized value of about $87 billion.
- Energy saved: about 4,700 TWh, roughly equivalent to 12.5 percent of projected energy consumption in the transport sector and 2.3 percent of projected total global energy demand (cf. IEA WEO 2013).
- Effect on global GDP**: increase of about 0.5–0.8 percent above the baseline, or $600 billion–$1 trillion, equivalent to $250–400/t$CO_2$e, with uneven effects among countries.

Global Public Goods

- CO_2e emissions reduction: roughly 2 4 Gt per year.
- Average mitigation cost: –$169/t$CO_2$e (MACC).
- Estimated social value of CO_2e reductions: $132 billion.
- Additional lives saved: roughly 1,300 premature deaths from air pollution avoided per year outside the six focus regions, with a monetized value of about $6 billion.

* Local here refers to the six focus regions.
** Although these are global GDP values, the results are driven entirely by shocks inflicted on the economies of the six focus regions.

energy consumption. Specific changes include a switch from coal to natural gas, biomass, and electricity; more-efficient motors, kilns, and coke ovens; and carbon capture and storage.

Case Study Benefits

The shift to a more energy-efficient industrial sector would have significant impacts on the economy, health, and agricultural productivity. The TM5-FASST model shows that the fuel switch would reduce emissions-related mortalities by about 52,000 lives per year for the six focus regions; the majority of these are in India (see Figure 3.2). In monetary terms, the mortality savings are equivalent to about $240 billion (2010 dollars). In addition, because of reduced crop damage from ozone emissions, yields for four crops (maize, wheat, rice, and soybeans) would increase by about 1.3 million metric tons in the six regions. The EU and China would reap the most agricultural benefits. The global impact of these mitigation measures (including benefits that accrue outside the six focus regions) would result in a total of about 58,000 lives saved per year in 2030, and in an increase in crop yields of 1.72 million tons per year in 2030.

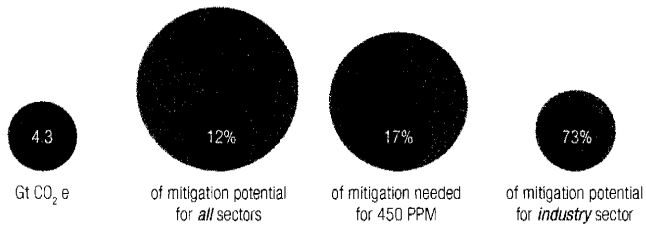
Based on the GEIM model, global GDP would be about 1–1.2 percent above baseline levels in 2030 in Scenarios 1 and 2 (equivalent to $1.2 trillion and $1.4 trillion respectively), with heterogeneous impacts across countries. Because developed countries have already made substantial improvements to their industrial energy efficiency, the average gains available from lower energy consumption are limited. In Scenario 1 (which assumes that developed countries produce most of the high-tech infrastructure needed to transform the sector), however, developed countries do gain from an increase in exports of capital goods to emerging economies. For the emerging economies, the potential gains from lower energy use are more significant and, as a result, these countries improve their global competitiveness in both scenarios. While the impact on GDP and jobs is positive everywhere, in Scenario 1 developed countries experience slower growth in GDP and employment than in Scenario 2. In both scenarios, emerging economies see significant employment gains. The results of the case study are summarized in Box 3.2.

Sector Policy Case Study 2: Energy Efficient Industry

This case study considers the impact of policies to shift all industrial sectors away from the dirtiest fuels and to reduce their energy consumption by 8–53 percent depending on the sector:

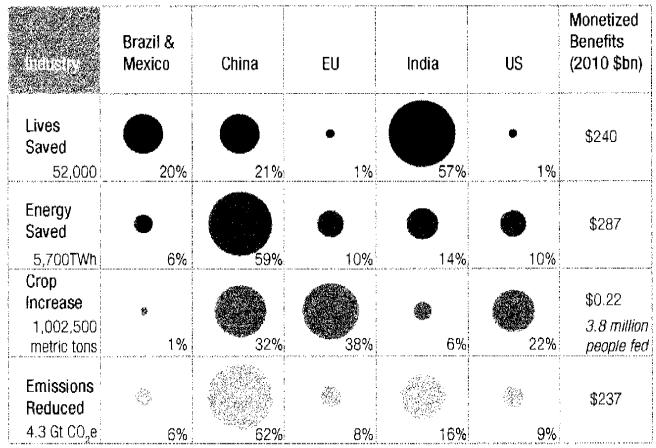
- Chemicals: 21–53 percent (about one-third of abatement potential).
- Cement: 8–14 percent (about one-quarter of abatement potential).
- Iron and steel: 8–14 percent (about one-seventh of abatement potential).

Figure 3.3: Climate benefits of energy efficient industry policies in 2030



Note: A shift to a more efficient industrial sector would avoid 4.3 Gt CO_2e at an average mitigation cost of \$7/tCO_2e. This represents 12 percent of the total global technical mitigation potential (for all sectors), 17 percent of the energy-related emission reductions necessary to stabilize CO_2e concentration at 450 ppm, and 73 percent of the available global technical potential in the industry sector.

Figure 3.4: Socioeconomic and climate benefits of energy efficient industry policies in 2030 by region



Summary and Conclusions

A more energy-efficient industrial sector would be a key step in the global effort to contain climate change. As shown in Figure 3.4, such a transition would also have significant global economic, health, and agricultural benefits. Global GDP would be about 1–1.2% above baseline levels in 2030, with uneven impacts across countries. Potential gains from lower energy use are limited for developed countries, because they have already greatly improved their industrial energy efficiency. They could benefit, however, by increasing their exports of high-tech, low-emission capital goods. Emerging economies could reap significant gains from lower energy consumption. These countries have the most to gain from new capital investments; by reducing their production costs more on average than developed countries, they improve their competitiveness and gain market share and jobs in both scenarios.

The vast majority of health benefits from reduced air pollution are estimated to occur in emerging economies, particularly in

Box 3.2: Sector Policy Case Study 2 Benefits: Energy Efficient Industry

A transformation of the industrial sector, through policies that spur a shift to clean fuels and reduced energy consumption, would generate substantial societal benefits (all values are annual results in 2030 for the six focus regions, unless noted), including:

Local* Socioeconomic Benefits

- Lives saved: 52,000 avoided premature mortalities from air pollution, with a monetized value of \$240 billion.
- Crops saved: roughly 1.26 million metric tons, enough to feed 3.8 million people for one year and valued at \$216 million.
- Energy saved: more than 5,700 TWh in 2030, equivalent to more than 14 percent of projected energy consumption in the industrial sector and about 3 percent of projected total global energy demand (cf. IEA WEO 2012).
- Effect on global GDP**: increase of about 1–1.2 percent above the baseline, or \$1.2–\$1.4 trillion, equivalent to \$280-\$336/tCO_2e, with uneven effects among countries.

Global Public Goods

- CO_2e emissions reduction: roughly 4.3 Gt per year.
- Average mitigation cost: \$7/tCO_2e (MACC).
- Estimated social value of CO_2e reductions: \$237 billion.
- Additional lives saved: roughly 5,880 premature deaths from air pollution avoided per year outside the six focus regions, with a monetized value of about \$28 billion.
- Additional crops saved: roughly 460,000 metric tons per year outside the six focus regions, with a monetized value of about \$79 million.

* Local here refers to the six focus regions.
** Although these are global GDP values, the results are driven entirely by shocks inflicted on the economies of the six focus regions.

India, Brazil, and China. Crop yields would also rise significantly, especially in the EU, China, and the U.S. As noted above, the health and agriculture benefits are likely understated because of limited emissions data (see Annex C).

Sector Policy Case Study 3: Energy-efficient Buildings

Although residential and commercial buildings account for a relatively small proportion of global emissions (just under 10 percent), relatively simple and cost-effective improvements in energy efficiency could significantly reduce energy consumption—and therefore energy-related emissions—worldwide.

Case Study Interventions

This case study presents the impacts of government policies to reduce energy use in residential and commercial buildings through more efficient appliances, electronics, and equipment; better insulation, including retrofits and new construction; and improved heating, cooling, and refrigeration systems.

Case Study Benefits

Reducing the energy used by buildings would have significant impacts on the economy and human health. The TM5-FASST model estimates that the accompanying reductions in emissions of air pollutants would reduce mortality by about 22,000 lives per year in the focus regions. The vast majority of the avoided deaths are in India (as shown in Figure 3.6), primarily due to the large reduction in black carbon emissions when traditional residential cookstoves are replaced with more fuel-efficient ones (see Table C.1 in Annex C) and dirty fuels are replaced with liquid petroleum gas and other cleaner fuels (Dinkel et al. 2011). In monetary terms, the lives saved would be equivalent to $102 billion (2010 dollars) for the six regions considered. The global impact of mitigation measures undertaken in the six focus regions is estimated to result in a total of about 24,000 lives saved per year in 2030 from avoided premature mortality. Because of limited data availability, however, this analysis includes only a small subset of pollutants (primarily BC) and an underestimate of emissions mitigated in the buildings sector (Wagner et al. 2013); the estimated health benefits, therefore, are conservative.

From a macroeconomic perspective, the efficiency improvements raise global GDP by 0–0.2 percent in Scenario 1 and 2, respectively (up to $240 billion, in 2010 dollars) from the baseline scenario in 2030. As in other sectors, the key transmission channels are the effects of the changes in capital investment and energy consumption; the impacts are heterogeneous across countries. In Mexico, for example, households can achieve greater energy savings, at lower cost, than households in the other countries.[38] Because the cost of household efficiency improvements is more than recouped through lower energy bills, household incomes in Mexico would rise, boosting consumption and GDP. (In contrast, households in Brazil would make the smallest gains in Scenario 1, where efficiency improvements are relatively limited but carry a significant investment cost.)

The heterogeneous impact on GDP is also reflected in employment. Most countries see some growth in jobs; China and India gain the most in absolute numbers, but the increase in Mexico's GDP means it gains the most jobs relative to its labor force (a 1.3 percent rise in employment above the 2030 baseline). The results of the case study are summarized in Box 3.3 below.

Summary and Conclusions

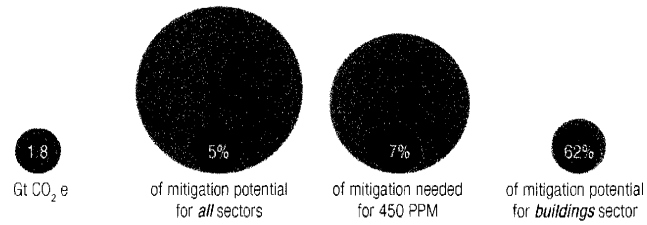
Improving the energy efficiency of commercial and residential buildings—including appliances, small equipment, and heating and cooling systems—would support climate change mitigation

Sector Policy Case Study 3: Energy Efficient Buildings

This case study assumes significant improvements in energy intensity: 15–28 percent in residential buildings and 4–47 percent in commercial buildings. The biggest reductions can be achieved from new construction (about 21 percent of abatement potential), electronics and appliances (about 20 percent), and building retrofits (about 12 percent); the remainder is achieved via reduced HFCs, highly efficient lighting, and water heater and HVAC retrofits.

[38] Most of the emissions in the residential and commercial buildings sector in Mexico are from gas use; thus this sector already has a carbon-efficient baseline. Additionally, with limited use of heating and cooling in buildings, capital costs for an energy-efficient transition is relatively low compared to other countries. As a result, the GDP and efficiency gains are the highest in Mexico compared to the other regions.

Figure 3.5: Climate benefits of energy efficient buildings policies in 2030



Note: A shift to more energy-efficient buildings would avoid 1.8 Gt CO_2e at an average mitigation cost of $36/t$CO_2$e. This represents 5 percent of the total global technical mitigation potential (all sectors), 7 percent of the energy-related emissions reductions necessary to stabilize CO_2e concentration at 450 ppm, and 62 percent of the available global technical potential in the buildings sector.

Box 3.3: Sector Policy Case Study 3 Benefits: Energy Efficient Buildings

Dramatic reductions in the energy used by residential and commercial buildings—through government policies that drive more efficient appliances, equipment, insulation, and heating and cooling systems—would generate substantial societal benefits (all values are annual results in 2030 for the six focus regions, unless noted), including:

Local* Socioeconomic Benefits

- Lives saved: 22,000 premature mortalities from air pollution avoided per year, with a monetized value of $102 billion.
- Energy saved: about 5,400 TWh, roughly equivalent to 13 percent of projected energy consumption in the buildings sector and three percent of projected global energy demand (cf. IEA WEO 2012).
- Effect on global GDP**: increase of about 0–0.2 percent above the baseline, or up to $240 billion, equivalent to $134/t$CO_2$e, with uneven effects among countries.

Global Public Goods

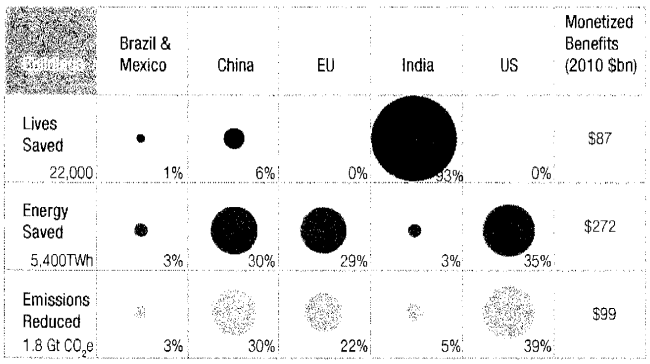
- CO_2e emissions reduction: Roughly 1.8 Gt per year.
- Average mitigation cost: $36/t$CO_2$e (MACC).
- Estimated social value of CO_2e reductions: $99 billion.
- Additional lives saved: roughly 1,800 premature deaths from air pollution avoided per year outside the six focus regions, with a monetized value of about $9 billion.

* Local here refers to the six focus regions.
** Although these are global GDP values, the results are driven entirely by shocks inflicted on the economies of the six focus regions.

efforts and benefit human health and the global economy. Global GDP would be about 0–0.2 percent above baseline levels in 2030, but the impact across countries is uneven and largely independent of their income levels. Mexico performs relatively strongly, as its households are able to save significant energy at relatively little cost, which in turn boosts real incomes, consumption, and GDP.

As in other sectors, the vast majority of health benefits from reduced air pollution would occur in emerging economies, particularly India and China. Although not quantified here, impacts on agricultural productivity would also be significant if data were available for a fuller set of emissions (see Annex C).

Figure 3.6: Socioeconomic and climate benefits of energy efficient buildings policies in 2030 by region.



Development Project Case Studies

The case studies below are based on World Bank–financed, subnational development projects, scaled up to estimate their impacts at the national level. Using the analytical framework described above, these projects are analyzed relative to a "no project" baseline to determine the additional benefits (beyond the net present economic value typically calculated in project financial analysis) that would accrue over the life of each project (generally 20 years).

This presentation differs from the results shown in the sector policy case studies. It is intended to present an aggregated view of each project's value over the planning horizon in deciding whether to proceed with a project. While these case studies focus on demonstrating a broader range of benefits during the implementation and analysis phases of development initiatives, it is important to consider these issues during the planning stages so that project designers can adjust plans to optimize a comprehensive range of benefits.

All these case studies should be viewed as simulations that, while based on realistic projects and data, require assumptions for scaling that may or may not be feasible to implement. These simulations are meant to demonstrate the potential for additional benefits beyond what is derived from current project-level economic

analysis.[39] (The analytical tools used for these simulations are described in Steps 2 and 3 of the framework (see Chapter 2); the valuation methods are explained at the beginning of this chapter. Finally, see Annex D for more details on these case studies.)

Development Project Case Study 1: Sustainable Transportation in India

Affordable, low-emissions transport is crucial for development. People need effective transit options for access to jobs, education, and health services; economic activity requires the transport of goods. Well-designed and -enforced bus rapid transit (BRT) is a relatively inexpensive way to get people out of high-emitting vehicles and to reduce traffic congestion and pollution. In 2009, the World Bank approved a sustainable urban transport project for India that included BRT in three pilot cities. The Pimpri-Chinchwad BRT may serve as a model for replication across India; it was analyzed in depth in this case study to establish realistic benefits that can be expected under real-world conditions.

Case Study Interventions

The results of the Pimpri-Chinchwad BRT analysis and a Ministry of Urban Development (MOUD) study of more than 87 cities across India were used to estimate the length of viable BRT routes that could realistically be developed across India, as well as the per-kilometer costs and benefits of such development. For this case study, the length was estimated at approximately 1,000 km, including more than 422 km that is already included in government plans. This was contrasted against a "no BRT" scenario. The analysis estimates that investment of $3–4 billion would be needed to develop 1,000 km of BRT corridors in about 20 cities across India within 6–12 years.

Case Study Benefits

Analysis using the TEEMP model shows that large reductions in time, emissions, fuel use, and traffic fatalities can be achieved by shifting passenger traffic away from current transportation patterns to a modern BRT system. The emissions reduction benefits were further analyzed using the TM5-FASST tool, which shows that reductions in black carbon and co-pollutant emissions from the expanded BRT would reduce crop losses and deaths from respiratory illnesses. Capital investments, operation and maintenance costs, fuel savings, and productivity benefits were fed into the Oxford Economics GEIM, which shows further benefits: Investment in India's infrastructure will boost its economy and create jobs, and the switch to mass transit will reduce the overall cost of transport, raising firms' profit margins and households' real incomes.

Results are summarized in Figure 3.7; in Box 3.4 they are compared with the net present value of the project as estimated by current project analysis methods. Here the reduced cost of transport per passenger kilometer was scaled up (less project costs). Annual financial flows of all benefits are aggregated through 2033 and discounted at three percent. (See Annex D for a sensitivity analysis to alternative values of the social discount rate.

Development Project Case Study 1: Sustainable Transportation in India

This case study includes construction of more than 1,000 km of new bus rapid transit lines deployed in about 20 large Indian cities to displace more than seven percent of current traffic along the selected routes.

[39] The results of these simulations have not been endorsed by the in-country project counterparts.

Box 3.4: Development Project Case Study 1 Benefits: Sustainable Transportation in India

Deployment of 1,000 km of new bus rapid transit lanes in about 20 Indian cities could lead to:

Stated Project Benefits (scaled to the national level)

NPV of project development objectives: $9.7 billion (mostly time savings and reduced operating costs).

Additional Local* Socioeconomic Benefits**

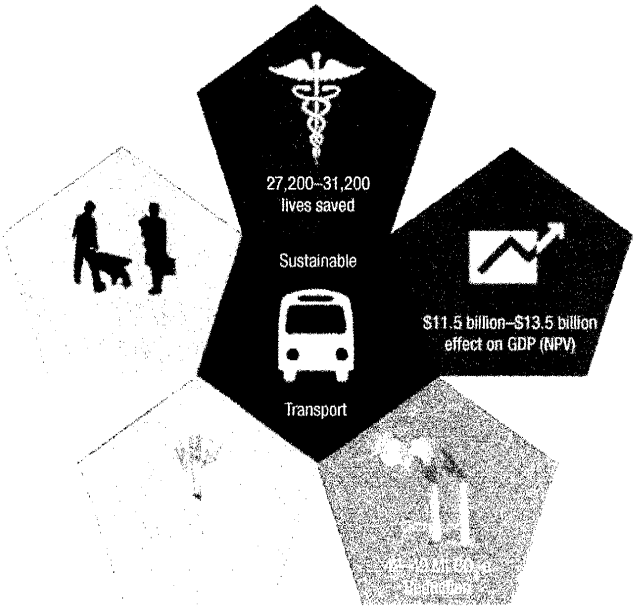
- BC reduced: 5,000–6,000 tons.
- Lives saved: 27,200–31,200 (from reduced accidents and air pollution), with a value of $49-$54 billion.
- Crops saved: more than 28,000 tons, with a value of $3 million.
- Jobs created: 44,000–91,000 short-term; more than 128,000 long-term.
- Effect on India's GDP: $11.5–$13.5 billion increase between 2013 and 2032.

Global Public Goods**

CO_2e emissions reduced: 42–49 Mt, valued at $1.3–$1.5 billion based on the social cost of carbon.

* Local here refers to the national level.
** Net present value of aggregate benefits over 20 years, in 2010 dollars discounted at three percent.

Figure 3.7: Socioeconomic and climate benefits of sustainable transportation in India



Note: Benefits are scaled to national level and aggregated over project period.

Summary and Conclusions

A comprehensive value of the project was established by exploring the multiple benefits of expanded BRT systems. As shown above, the benefits include time and fuel savings, reduced environmental impact, and fewer deaths from traffic accidents and air-quality-related respiratory illnesses. There would also be significant macroeconomic benefits. In addition to the $9.7 billion in NPV that might typically be used to justify such a project, this study has identified more than $62 billion in added value, including the social cost of carbon and the welfare benefits of lives saved, crops protected, and GDP growth. In addition, more than 5,000 tons of black carbon emissions would be eliminated, with potentially strong climate benefits. While not all of these benefits can be directly included in the project's financial analysis, they could be part of the discussion of broader economic benefits that accrue to a country as a result of such a transportation program.

Development Project Case Study 2: Integrated Solid Waste Management in Brazil

National expansion of an existing World Bank integrated solid waste management project with innovative finance mechanisms would enable sanitary disposal of all of Brazil's solid waste through sanitary landfills, composting, and biogas digestion—significantly reducing methane emissions.

Development Project Case Study 2: Integrated Solid Waste Management in Brazil

Effective management of municipal solid waste poses "one of the biggest challenges [to] the urban world" (UN-Habitat 2010). In low-income countries, most cities collect less than half of the waste generated, and only half of the collected waste is processed to minimum acceptable environmental and health standards. Properly managing waste to minimize methane emissions offers a variety of local and global benefits. Locally, improper waste management, especially open dumping and open burning, contaminates water, air, and land; attracts disease vectors; and clogs drains, contributing to flooding. At the global scale, burning waste without proper air pollution controls creates toxic pollutants; improper disposal also pollutes the oceans, threatening ecosystems, fisheries, and tourism. Waste is an emerging contributor to climate change, emitting 5 percent of global GHGs and 12 percent of methane (Bogner et al. 2007). Waste has the potential, however, to be a net sink of GHGs when used as a resource, through recycling and reuse (Bogner et al. 2007).

Case Study Interventions

This case study estimates the emissions reductions from integrated solid waste management in Brazil by a simulated scale-up of one project to the national level. The model project selected is an integrated solid waste management project with an innovative carbon finance platform. The registered carbon finance methodology integrates a seamless payment structure within solid waste management investments, greatly facilitating the sale of credits and the additional benefits that can be captured from those resources. It is a $50 million financial intermediary loan for on-lending to borrowers with solid waste subprojects. The project aims to improve the treatment and disposal of municipal solid waste; its success is measured by the number of open dumps closed and the increased volume of waste disposed in sanitary landfills, composted, or recycled. Brazil was selected for scale-up due to the existing strong regulatory structure and finance instruments available in this sector.

Four different policy scenarios for managing Brazil's waste were compared with a reference baseline:

- **Baseline**: The current state of solid waste management in Brazil, with 58 percent of waste going to sanitary landfills, most of which flare the methane produced; the remainder of the waste is going to open dumps, which simply vent the methane produced.

- **All landfill scale-up**: All generated waste ends up in a sanitary landfill (no more open dumping), and 50 percent of landfill gas is collected and flared.
- **All landfill with electricity generation**: Similar to the previous scenario, but 50 percent of landfill gas is flared and 50 percent is used to generate electricity, displacing natural gas on the electricity grid.
- **Anaerobic digestion of organic waste with electricity generation**: Seventy-five percent of organic waste is sorted and routed to anaerobic digesters to produce electricity, displacing natural gas on the grid; the resulting compost is used as fertilizer (but no market value is assessed for fertilizer substitutions).
- **Composting for organic waste**: Seventy-five percent of organic waste is sorted and composted. Again, this compost is not assumed to displace any fertilizer; this underestimates the environmental benefits.

For all of the Brazilian waste scenarios explored, the most relevant result is the difference between the policy scenario at the baseline and at "full implementation." The required investment is estimated at $1–2 billion per year through 2030.

Case Study Benefits

The project will result in reduced methane emissions as well as a variety of other benefits, including improved water quality, improved soil quality, improved public health, and decreased mining of natural resources. The methane reductions were estimated using the EASEWASTE solid waste lifecycle assessment model, using data specific to Brazil for generation rates, composition, electricity grid, and landfill behavior. Generic data was used to model the composting facilities and the anaerobic digesters.

Improved organic waste treatment, through anaerobic digestion and composting, with electricity production offers the greatest potential for methane reduction from solid waste for Brazil (on the order of 15–30 million metric tons of CO_2e per year). These emissions reductions were input into the FASST tool to estimate additional health and crop benefits from reduced ground-level ozone formation. Each year, these could result in 246 to 468 avoided deaths from respiratory illnesses and 53,000–101,000 tons of avoided crop losses (with a value of $9.1–17.4 million globally).

These scenarios also yield significant macroeconomic benefits over the 20-year analysis period, including increased GDP in Brazil of $13.3–$35.2 billion (net present value in 2010 dollars, using a 3 percent discount rate), with a corresponding growth in jobs of 44,000–110,000 depending on the scenario. In addition, 0.5–1.1 percent of national power demand is satisfied as an additional benefit in two of the scenarios. Summaries of the results are shown in Box 3.5 and Figure 3.8.

Box 3.5: Development Project Case Study 2 Benefits: Integrated Solid Waste Management in Brazil

A project simulation to enable sanitary disposal of all of Brazil's solid waste, through improved collection and sorting, sanitary landfills, composting, and biogas digestion, is estimated to have the following direct benefits:

Stated Project Benefits (scaled to national level)

NPV of project development objectives: more than $100 billion (inclusive of $1.6–$3.2 billion carbon finance value).

Additional Local* Socioeconomic Benefits**

- Jobs created: 44,000–110,000.
- Energy saved: 0.5–1.1 percent of Brazil's electricity demand.
- Effect on Brazil's GDP: $13.3–$35.2 billion increase between 2012 and 2032.

Global Public Goods**

- CO_2e emissions reduced: 158–315 Mt, valued at $4.8–$9.7 billion based on the social cost of carbon (a social value increment of $3.2–$6.5 billion beyond the carbon finance value).
- Lives saved: 2,500–4,900 avoided premature deaths from air pollution, with a monetized value of $5.5–$10.6 billion.
- Crops saved: 550,000–1.1 million tons, worth $61–$120 million.

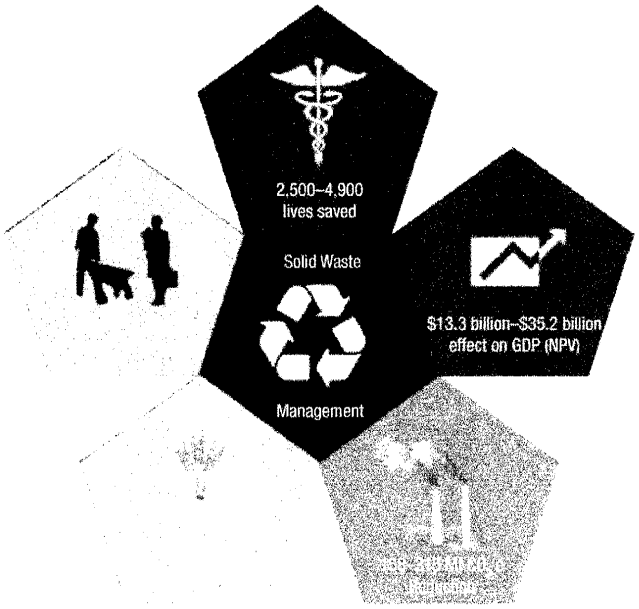
* Local here refers to the national level.
** Net present value of aggregate benefits over 20 years, in 2010 USD discounted at three percent.

The net present value of the project is based on the estimated fees generated if all of Brazil's solid waste is treated in sanitary landfills, less costs drawn from the recent report *What a Waste* (Hoornweg and Bhada-Tata 2012)—including purchasing, operations, maintenance, and debt service for each of the options explored. Potential program costs have not been considered here.

Summary and Conclusions

This case study shows that greater emissions reductions can be achieved using an integrated solid waste approach, which considers every step in the waste value chain, than by targeting only one technology (e.g., sanitary landfills). Although methane is emitted only at the point of waste treatment and disposal, efforts to reduce these emissions and manage waste as a resource can occur at every stage: planning, waste generation, collection, treatment, and disposal. Upstream efforts are especially valuable. For example, incentive schemes to reduce waste generation and increase source separation yield two types of SLCP reductions.

Figure 3.8: Socioeconomic and climate benefits of integrated solid waste management in Brazil



Note: Benefits are scaled to national levels and aggregated over project analysis period.

First, they directly reduce landfill methane (and other downstream GHG) emissions; second, they displace other sources of SLCP (and GHG) emissions (i.e., fertilizers and natural gas).

Large-scale use of these waste-to-resource technologies requires major investments of $1–$2 billion per year in upstream waste reduction and source separation. Without separation of waste at the household level, neither composting nor anaerobic digestion is economically feasible. Making these investments, however, would lead to significant economic returns. The NPV of such a project is estimated at approximately $100 billion. In addition, between $22–$52 billion in additional value stems from increased GDP, the social value of carbon (beyond carbon finance), reduced mortality, and improved crop yields. All these benefits should be considered in the economic analysis of such a project.

Development Project Case Study 3: Cleaner Cookstoves in Rural China

China has made great strides in expanding energy access and providing cleaner cooking fuels and improved stoves throughout the country. However, about half of China's population still relies on solid fuels (coal and biomass) for cooking and heating, and the International Energy Agency estimates 241 million people in China will continue to do so by 2030 (World Energy Outlook 2013). Household air pollution from solid fuel use is estimated to cause

Development Project Case Study 3: Cleaner Cookstoves in Rural China

A 20-percent public subsidy in China between 2015 and 2020 for fuel-efficient, lower-emitting cookstoves and solar cookers is assumed to establish a robust, self-sustaining market for these advanced technologies; this would enable all rural poor households that currently use solid fuels for residential cooking to switch to the cleaner stoves by 2030.

more than one million premature deaths each year in China (Lim et al. 2012). Switching to modern fuels would be the most effective way to reduce this pollution and health damage; these fuels are more expensive, however, and require more costly stoves and delivery infrastructure. As a result, poorer rural households without access to affordable modern fuels such as liquid petroleum gas and natural gas are unlikely to transition on a large scale. Effective interventions to scale up the dissemination of clean-burning, fuel-efficient stoves for household cooking and heating can mitigate the health hazards of burning solid fuels (World Bank 2013c).

Case Study Interventions

While heating systems and combined cooking and heating stoves also represent important sources of indoor and outdoor air pollution, in order to simplify the analysis, the focus here is only on cleaner cookstoves.

This case study, based on a universal access to clean cooking scenario developed under the China Clean Stove Initiative (World Bank 2013c), assumes[40] a publicly supported plan to encourage rural households to switch to more fuel-efficient and environmentally friendly cookstoves starting in 2015. For the first five years, the public sector would support a 20 percent subsidy to rural households for the cost of the clean cookstoves in addition to substantial technical assistance funding. This temporary support is assumed to encourage a robust private market that would propel further deployment of cleaner stoves through 2030, with households bearing the full cost. The 20 percent subsidy and program and technical assistance will cost $400 million over the program timeframe (2015–2020), supplemented by $1.2 billion in private sector investment, which takes into account reduced household spending in other areas in response to increases spending on cookstoves.

This case study assumes that 40 percent of rural poor households relying primarily on solid fuels for cooking will have switched to cleaner stoves by 2020, and all households will have switched by 2030. This is against a backdrop of increasing urbanization

40 Unlike the other case studies based on past investment projects, this analysis is based on a hypothetical scenario.

and rising household incomes, which have already established a trend toward modern fuels and cleaner stoves.

Based on these assumptions, more than 20 million subsidized stoves (improved biomass and clean-fuel cookstoves and solar cookers) would be deployed between 2015 and 2020, and more than 50 million unsubsidized stoves would be sold between 2020 and 2030, significantly speeding up the naturally occurring transition to cleaner stoves.

Case Study Benefits

Deploying clean cooking solutions in China would reap many benefits, including improved health, energy savings, and private sector development opportunities. As estimated by the FASST tool, emissions reductions by the year 2030 of more than 480,000 tons of $PM_{2.5}$ would have very significant public health benefits. These include avoiding an estimated 87,900 premature deaths in that year from lung cancer and heart attacks, the majority (more than 85,000) in China. By 2030, $250 billion (85,000 lives times the estimated $3 million VSL) in avoided mortality could be realized in that year. These benefits are underestimated, however, because they only account for improvements in outdoor air quality; greater health benefits are expected due to improved household air quality, but tools to quantify these benefits are not available.[41]

The large energy savings, especially from reduced coal use, would add more than $10 billion to the Chinese economy over the 20-year analysis period ending in 2033. The combined energy savings from biomass and coal builds by 2030 to nearly 490 million gigajoules (GJ) annually, or about three percent of residential energy use. The increased consumer spending also yields job gains. A summary of the benefits is presented in Box 3.6 and Figure 3.9.

Summary and Conclusions

A plan to encourage rural households to switch to more fuel-efficient and environmentally friendly cookstoves, by subsidizing and supporting deployment of more than 20 million cookstoves between

Box 3.6: Development Project Case Study 3 Benefits: Clean Cookstoves in Rural China

A 20-percent public subsidy in China between 2015 and 2020 for fuel-efficient, lower-emitting cookstoves and solar cookers, and subsequent unsubsidized sales through 2030, are estimated to have the following benefits:

Stated Project Benefits

Because this case study is not based on an actual project, but was developed based on the universal access to clean cooking scenario developed under the China Clean Stove Initiative (World Bank, 2013b), the net present value of the project development objectives has not been calculated.

Additional Global Public Goods*

CO_2e emissions reduced: 49 Mt, valued at $1.5 billion based on the social cost of carbon of $34/t$CO_2e$ in 2010, rising to $55/t$CO_2e$ in 2030.

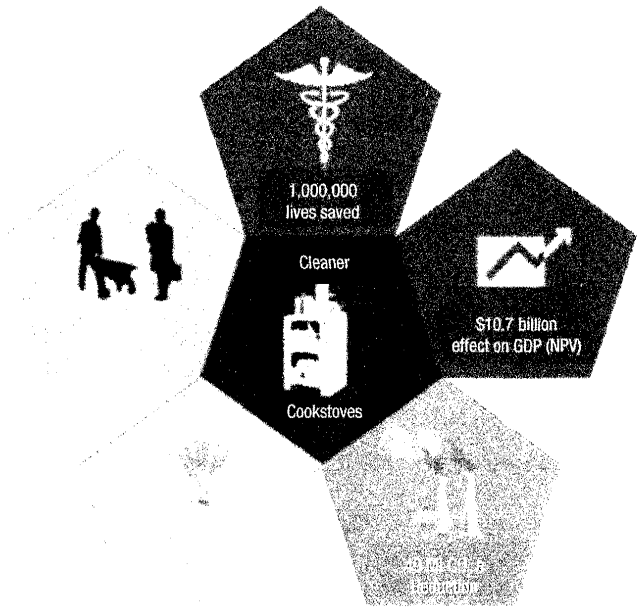
Additional Local Socioeconomic Benefits*

- Lives saved: more than one million from avoided premature deaths due to *outdoor* air pollution, with a value of $1.5 trillion (within China); even more lives would be saved if considering the health impacts from reductions in indoor emissions.
- Jobs created: about 22,000 (near term).
- Energy saved: 545 million gigajoules (GJ) reduced coal use and 5,400 million GJ biomass use
- Macroeconomic benefits of $10.7 billion between 2015–2030 (largely due to the economic impact of fuel savings).

* Net present value of aggregate benefits over 20 years, in 2010 dollars discounted at three percent.

[41] Tools to estimate the benefits from improvements in household air quality are under development by the University of California Berkeley for the Climate and Clean Air Coalition partner countries; no such tools exist for China at this time.

Figure 3.9: Socioeconomic and climate benefits of cleaner cookstoves in rural China



Note: Benefits are aggregated over the project analysis period.

Development Project Case Study 4: Biogas Digestion and Photovoltaic Systems in Mexican Agriculture

Given high and increasing demand for co-funding of biodigesters at pig and dairy farms, and PV systems to provide power for chilling systems at dairy farms, this case study assumes additional co-funding to equip 90 percent of Mexico's pig and dairy herds with biodigesters, and 90 percent of dairy farms, with PV systems by 2031.

2015 and 2020, would have large health and energy benefits. It is estimated that more than 85,000 premature deaths from outdoor air pollution could be avoided annually in 2030 (more than one million lives over 20 years) in China alone. The net present value of these health benefits is more than $1.5 trillion in 2010 dollars. Recent studies suggest that more than one million premature deaths are attributed to household air pollution each year (Lim et al. 2012); thus the potential health benefits could be higher if household exposure were included. Large energy savings could also reduce energy costs nationwide, resulting in broad economic benefits of more than $10 billion over the analysis period. Finally, more than 20,000 new jobs could be created.

Development Project Case Study 4: Biogas Digesters and Photovoltaic Systems in Mexican Agriculture

According to Mexico's Fifth National Communication to the UN Framework Convention on Climate Change, agriculture continues to be an important source of the country's emissions (12% of its GHG emissions in 2010 including both methane and nitrous oxide), primarily from land-use changes, tillage, synthetic fertilizers, and anaerobic decomposition of organic materials. To reduce these emissions and improve the agricultural sector's contribution to the overall economy, the government of Mexico has prioritized improvements in the sector's energy efficiency, renewable energy, and biomass practices.

Case Study Interventions

This case study builds on the successful Mexico Sustainable Rural Development Project, a $100 million World Bank loan blended with a $10.5 million Global Environment Facility grant, with additional contributions from the Government of Mexico and project beneficiaries. The project supported a number of technologies, including biodigesters at pig and dairy farms. As of May 2013, 303 biodigesters had been installed, half at pig farms and half at dairy farms. These installations are driven by farmer demand, which is expected to grow as biodigester technology becomes more cost-effective and better adapted to different production scales.

While the original project supports a range of energy-efficiency technologies, this case study focuses exclusively on continued deployment of biodigesters at pig and dairy farms, plus motogenerators and photovoltaic systems on dairy farms, where milk-cooling systems favor the added expense of electrical generation add-ons. The case study assumes that public funding is available to continue leveraging private sector investment in these technologies through 2031, when 90 percent of pig and dairy herds (estimated at 15 million head of pig and 3.2 million head of dairy cattle) would have added manure biodigestion capacity, with generators and PV systems included on the dairy farms.

Case Study Benefits

The project benefits include reduced methane emissions, which lower global background ground-level ozone and related health and agricultural damage. By recovering methane from biodigesters and flaring it or using it to generate electricity, CO_2e emissions are reduced by 9.4 million tons per year in 2030. Estimated annual benefits include 180 avoided premature deaths from air pollution (but relatively few within Mexico) and 39,000 tons of avoided crop losses worth more than $6 million (mostly outside Mexico). Other benefits include new job creation and improved sanitary conditions due to manure treatment.

The net present value of the project is based on the carbon finance value of the reduced methane emissions, equivalent to nine million tons of annual CO_2e reductions by 2030 (103 $MtCO_2e$ cumulatively) and worth more than $1 billion over the 20-year program (less costs of about $600 million). Based on the social cost of carbon, however, this project's emissions reductions are worth $3.2 billion ($2.2 billion higher than the carbon finance value). The results are summarized in Box 3.7 and shown in Figure 3.10.

Summary and Conclusions

Sustained investment that achieves 90 percent penetration of manure biodigesters across all the pig and dairy farms and 90 percent penetration of photovoltaic systems across all dairy farms in Mexico would derive significant economic, public health, agricultural, and environmental benefits. In addition, policy reforms to allow farmers to sell excess electricity generated to the power company could produce even larger benefits.

While the project economic analysis assumes a carbon finance value of more than $1 billion, these emissions reductions are more completely represented by the social cost of carbon, which values the reductions at $3.2 billion—in other words, an extra $2.2 billion in welfare value above the finance value. Increased productivity from energy savings adds an additional $1.1 billion in economic benefit; global health and agricultural benefits are monetized

Box 3.7: Development Project Case Study 4 Benefits: Biogas Digestion and PV in Mexican Agriculture

Co-funding to equip 90 percent of pig and dairy farms with biodigesters and 90 percent of dairy farms with PV systems by 2031 would have the following benefits:

Stated Project Benefits

NPV of project development objectives: $424 million.

Additional Local* Socioeconomic Benefits**

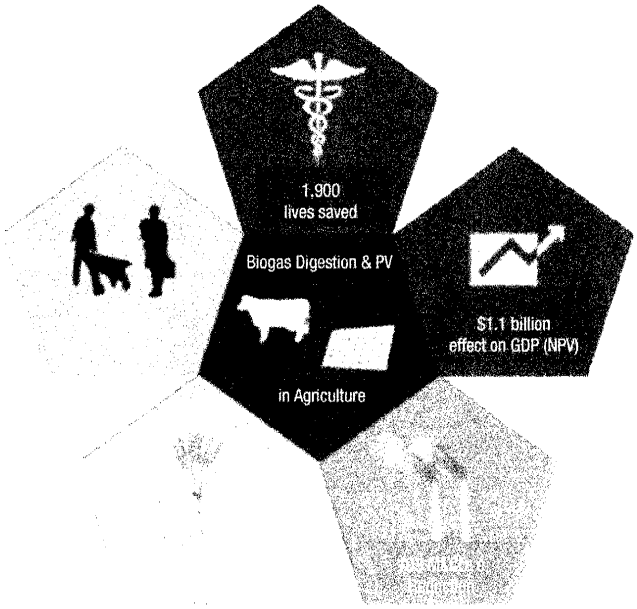
- Lives saved in Mexico: relatively few (approximately 15), with a monetized value of $50 million.
- Jobs created: 1,400.
- Energy saved: 11 percent of national agricultural electricity demand.
- Effect on Mexico's GDP: increase of $1.1 billion between 2013 and 2031.

Global public goods**

- CO_2e emissions reduced: 103 Mt (as methane), valued at $3.2 billion based on the social cost of carbon (a social value increment of $2.2 billion beyond the carbon finance value).
- Lives saved outside Mexico: more than 1,900 avoided premature mortalities from air pollution, with a monetized value of $4.1 billion.
- Crops saved: more than 410,000 tons, worth $45 million (mostly outside Mexico).

* Local here refers to the national level.
** Net present value of aggregate benefits over 20 years in 2010 dollars discounted at three percent.

Figure 3.10: Socioeconomic and climate benefits of biodigesters and PV in Mexican agriculture



Note: Benefits of manure management and renewable energy deployment are scaled to national levels and aggregated over the project analysis period.

at about $4.2 billion. This suggests that more than 17 times the stated project value is not recognized through current practices.

Lessons and Conclusions from the Case Studies

This chapter demonstrates the use of an integrated framework to analyze the multiple development benefits of efforts to mitigate climate change and protect air quality. Both regional policy changes and national development projects are analyzed using the framework; the aim is to demonstrate its efficacy as a tool for local and national policymakers, development organizations, philanthropies, analysts, and others.

Since the policy-based case studies and the project-based case studies cover different regions and use slightly different metrics, direct comparisons and a summation of benefits are not possible. For instance, the policy interventions are presented in terms of their annual impact in 2030; the project interventions are presented as the aggregate impact over a 20-year assumed life of the project. Either way, a snapshot summary of each case study shows that significant benefits can be realized.

The first three case studies demonstrate the effects of key sector policy interventions and determine the benefits[42] realized in six regions (the U.S., China, the EU, India, Mexico, and Brazil) and the impact on global GDP. A useful way to view these benefits is to compare them against a similar metric, in this case a metric ton of CO_2e abated in 2030 (see Table 3.1). For example, the transport sector would realize a net return on mitigation of $169 per ton of CO_2e, even without accounting for the health or GDP benefits. In the buildings sector, where the interventions have the highest costs among the three sectors, the health and GDP benefits are substantial enough to cover the costs. The industrial sector is the most promising in terms of benefits compared with abatement

[42] Since the policy case studies covered a limited number of pollutants (methane and BC, and no co-pollutants), the health and agricultural benefits are underestimated. Even with the limited emissions data included in this study, the resulting benefits can be significant.

Table 3.1: Sector policy case studies: Comparison of costs and benefits per metric ton of CO_2e abated[a]

2030 Costs	Transportation	Industry	Buildings
CO_2e mitigated	2.4 Gt/yr	4.3 Gt/yr	1.8 Gt/yr
Mitigation Costs	–\$169/tCO_2e	\$7/tCO_2e	\$36/tCO_2e
Health Benefit	\$36/tCO_2e	\$56/tCO_2e	\$56/tCO_2e
Crop Benefit	NA	3.8 million additional people fed	NA
Global GDP increase	\$250–\$400/ tCO_2e	\$280–336/tCO_2e	\$0–134/tCO_2e

Note: Values shown are for the six focus regions unless otherwise indicated.
[a] Short-lived climate pollutants are not accurately gauged in terms of equivalence to CO_2 based on their 100-year global warming potential. New metrics are needed that account for the fact that many SLCPs are thousands of times more potent than CO_2 for a short time, yet compare more modestly to the 100-year global warming potential of CO_2 because it continues to warm during the entire 100 years.

costs. Although crop benefits are not included for transportation or buildings, these benefits would be substantial if a wider suite of emissions data were available (see footnote 51 in Annex C).

Translating the aggregated health, agriculture, and energy benefits for all sector policies into monetary values yields the results shown in Table 3.2.

The project-based case studies examine several sub-national development projects, scaled up to the national level. A sampling of the benefits of these projects is shown in Table 3.3. A striking result of this analysis is that these projects have significant additional value well beyond the already significant stated project benefits.

Table 3.2: Sector policy case studies: Monetized health, agricultural, and energy benefits in 2030

Regions	Health	Agriculture	Energy Savings
China	\$ 66 billion	\$ 69 million	\$ 311 billion
India	\$ 293 billion	\$ 14 million	\$ 75 billion
US	\$ 8 billion	\$ 48 million	\$ 186 billion
EU	\$ 8 billion	\$ 82 million	\$ 181 billion
Brazil & Mexico	\$ 53 billion	\$ 3 million	\$ 45 billion
Total	\$ 429 billion	\$ 216 million	\$ 798 billion

Note: Estimated avoided premature mortality and increased crop yields from abatement measures undertaken in each sector (transport, industry, and buildings) are monetized and aggregated by region. The values[a] of energy savings are also shown. Figures are denoted in 2010 dollars.
[a] The monetized values for energy savings are obtained by assuming a price of oil at \$80/barrel in 2010 dollars in accordance with the scenario assumptions of MACC 3.0 (see Appendix C) and applying the following equivalences: 1 GWh = $8.6e^{-5}$ Mtoe, and 1 Mtoe = 7.33 Mboe (source: IEA, BP). This is a rather crude, imprecise estimate, but nonetheless useful to provide an order of magnitude of the monetary savings associated with the emissions reductions specified in each case study.

Added value provides a useful rationale for improving economic analysis, but it may not be the most important way to view the multiple benefits derived by the project-based case studies. Table 3.4 provides an alternative view of the same benefits, categorized as global public goods or local socioeconomic benefits. As the table shows, interventions that reduce methane lead to large global public goods with respect to CO_2e reductions, health, and agriculture, whereas measures that reduce particulate matter and black carbon have larger local health benefits. All lead to positive economic benefits over the 20-year investment period examined in this analysis.

Grouping the multiple benefits this way makes it easier to recognize the contributions countries can make to greening their own growth in addition to benefits that accrue to the rest of the World.

None of the case studies includes the value of reduced climate change impacts, such as damage caused by more-intense storms, higher storm surges and sea levels, and damaged ecosystems.

While these results may indicate significant costs or benefits in one sector or region versus another, they do not show the integrated impact of all the emissions reduction measures available across sectors and the corresponding inter-sectoral interactions. A more integrated analysis would allow a better understanding of how savings in one sector can be reinvested to cover costs in other sectors to yield overall economic growth. Such synergistic benefits could be greater than the sum of the individual benefits.[43]

In addition, the full benefits of reduced emissions are not captured in this study due to the limited data in the MACC model (see Annex C for a discussion of the significantly underestimated benefits, based on recent research). As a result, the labor and agricultural productivity benefits (from greater longevity, fewer work days lost to illness, and reduced crop damage) were not included in the macroeconomic analyses because of their small size relative to the impact across the overall workforce. A recent analysis by Sanderson et al. (2013) demonstrates that such effects can be large enough to recoup the entire cost of mitigation. These types of integrated scenarios using a systems approach with additional macroeconomic linkages should be investigated in future work.

[43] This has been demonstrated in prior multi-pollutant, multi-sector analyses in the U.S., where simultaneous implementation of seven major mitigation actions resulted in greater economic benefits than the sum of assessed benefits from the individual measures (MDE 2013).

Table 3.3: Development project case studies summary

Projects Pro	Reduced Op Cost	Income Generated	Carbon Finance Benefit (CO_2)	Social Cost Of CO_2e	Lives Saved	Crop Loss Avoided	Jobs Created	Effect on GDP (NPV)
	Estimated NPV of scaled project based on stated project benefits			Additional added value aggregated over 20 years				
P1	$9.7 bn	—	—	42–49 Mt value of $1.3–1.5 bn	27,200–31,200 ($49–54 bn)	28,000 tons ($3 mn)	44,0000–91,000 temp, 128,000 long-term	$11.5–13.5 bn
P2	—	$97–98 bn	158–315 Mt (@ $16/ton = $1.6–3.2 bn)	158–315 Mt additional value of $3.2–6.5 bn	2,500–4,900 ($5.5–10.6 bn)	550,000–1.1 mn tons ($61–120 mn)	44,000–110,000	$13.3–35.2 bn
P3	—	—	—	49 Mt value of $1.5 bn	>1,000,000 (>$1.5 tn)	—	22,000	$10.7 bn
P4	—	NPV:* $424 mn	103 Mt (@ $16/ton = $1 bn)	103 Mt additional value of $2.2 bn	1,900 ($4.1 bn)	410,000 tons ($45 mn)	1,400	$1.1 bn

Notes:

1. P1–P4 = Development Project Case Studies 1–4: P1 = Sustainable Transport: India, P2 = Solid Waste Management: Brazil, P3 = Cleaner Cookstoves: China, and P4 = Biogas Digestion and PV in Agriculture: Mexico; mn = million, bn =billion, and tn = trillion.
2. CO_2 emissions reductions are valued based on U.S. government estimates of the social cost of carbon, which estimates changes in agricultural productivity, human health, and property damage from increased flood risks.
3. Using methods recommended by the OECD (2011) for OECD countries and published estimates of the value of statistical life (VSL) for non-OECD countries and adjusting for differences in income and purchasing power, the following VSLs for avoided mortality were established (all reported in 2010 dollars). China: $700,635; India: $997,093; Mexico: $1,379,804; Brazil: $1,555,800; the EU: $6,375,400; and the U.S.: $7,887,510.
4. Crops are valued at $171/ton based on 2010 grain prices from data.worldbank.org.
5. Unlike other case studies, P3 is not based on an actual project, but was developed based on the recently announced joint World Bank/Chinese government China Clean Stove Initiative (World Bank 2013b). As a result, there are no stated project benefits.
6. Net present values (NPVs) are calculated using a 3-percent social discount rate; results have also been calculated using 2.5 and five percent discount rates. All values are provided in Annex D.

* $622 million in costs are subtracted from the $1 billion in carbon finance value to arrive at a net present value of $424 million in 2010 dollars.

Table 3.4: Development project case studies: summary of global and local benefits

	Local Socioeconomic Benefits				Global Public Goods		
Projects	Lives saved	Crop loss avoided	Jobs created	GDP	Reduced CO_2e emissions	Lives saved	Crop loss avoided
P1	27,000–31,000	28,000 tons	44,000–91,000 shot-term; 128,000 long-term	N/A	42–49 Mt	~350	7,000 tons
P2	—	3,500–6,800 tons	44,000–110,000	N/A	158–315 Mt	2,500–4,900	550,000–1.1million tons
P3	1 million	—	22,000	N/A	49 Mt	—	—
P4	15	1,500 tons	1,400	N/A	103 Mt	1,900	410,000 tons
	Monetized NPV of Benefits (using 3% social discount rate [2010 USD] and social cost of carbon)						
P1	$49–$54 billion	$3 million	N/A	$11.5–$13.5 billion	$1.3–$1.5 billion	~$490 million	$750,000
P2	—	$400,000–$700,00	N/A	$13.3–$35.2 billion	$4.8–$9.7 billion	$5.5–$10.6 billion	$61–$120 million
P3	$1.5 trillion	—	N/A	$10.7 billion	$1.5 billion	—	—
P4	$50 million	$160,000	N/A	$1.1 billion	$3.2 billion	$4.1 billion	$45 million

Notes:

1. P1–P4 = Development Project Case Studies 1–4: P1 = Sustainable Transport: India, P2 = Solid Waste Management: Brazil, P3 = Cleaner Cookstoves: China, and P4 = Biogas Digestion and PV in Agriculture: Mexico; mn = million, bn =billion, and tn = trillion.
2. CO_2 emissions reductions are valued based on U.S. government estimates of the social cost of carbon, which estimates changes in agricultural productivity, human health, and property damage from increased flood risks.
3. Using methods recommended by the OECD (2011) for OECD countries and published estimates of the value of statistical life (VSL) for non-OECD countries and adjusting for differences in income and purchasing power, the following VSLs for avoided mortality were established (all reported in 2010 dollars). China: $700,635; India: $997,093; Mexico: $1,379,804; Brazil: $1,555,800; the EU: $6,375,400; and the U.S.: $7,887,510.
4. Crops are valued at $171/ton based on 2010 grain prices from data.worldbank.org.
5. Unlike other case studies, P3 is not based on an actual project, but was developed based on the recently announced joint World Bank/Chinese government China Clean Stove Initiative (World Bank 2013b). As a result, there are no stated project benefits.
6. Net present values (NPVs) are calculated using a 3-percent social discount rate; results have also been calculated using 2.5 and five percent discount rates. All values are provided in Annex D.

Chapter 4

Conclusions and Next Steps

The growing cost of environmental degradation in many developing countries is impeding progress toward achieving the World Bank's twin goals of reducing poverty and boosting shared prosperity. According to a recent study, 5.7 percent of India's GDP in 2009 was lost to environmental degradation, with almost 3.3 percent attributed to air pollution emissions (World Bank 2013b). In China, serious air pollution has become a restricting bottleneck for regional socioeconomic development (CAAC 2013). Developing countries like India and China recognize the concurrent need to reduce air pollution, improve access to affordable energy and convenient transportation, address climate change, and grow their economies. China's "12th Five-Year Plan on Air Pollution Prevention and Control in Key Regions" places economic development at the center of its air quality management plans; India's 12th Five-Year Plan (Planning Commission, Government of India, 2013) acknowledges a need to establish "green national accounts" to measure the true costs of environmental degradation and to acknowledge the full benefits of reduced emissions.

As international development organizations, philanthropies, and others support developing countries in prioritizing climate project and policy interventions to close the greenhouse gas "emissions gap," improved analysis is needed to identify ways to leverage synergies among interventions, reduce costs, and maximize local socioeconomic benefits.

This report puts forth a holistic framework to estimate the multiple benefits of reduced emissions of several pollutants. Including the value of these benefits in economic analysis provides a fuller accounting of the true value of policies and programs and makes a stronger case for coordinated climate and development action. Further, it demonstrates the application of the framework using sectoral case studies at the policy and project level and at national and regional scales. By doing so, the report shows that national and international policymakers, finance organizations, and others can strengthen their estimation of the multiple benefits of such policies and projects. Furthermore, quantifying the benefits can facilitate support from different constituencies, including those interested in public health and food and energy security. Such improved analyses can also advance international discussions on the most effective ways to avoid the risks of a 4°C warmer world.

The framework presented in this report, like most first time efforts, has some limitations: the framework uses a patchwork of tools that were not designed to seamlessly integrate with one another; it does not account for behavioral issues, such as modal choice in public transit; and it does not explicitly account for the costs of the climate change impacts of these emissions. In addition to addressing these limitations, the framework could be strengthened through additional work:

- Further benefits assessments based on more comprehensive emissions data.
- Macroeconomic analysis to reflect the benefits of green versus non-green investment options.
- Better assessment of tradeoffs, such as between higher costs and productivity gains.
- Better assessment of risks to avoid locking-in development on the wrong path.
- Inclusion of welfare gains and other non-quantifiable benefits (such as equity and inclusion) in macroeconomic analysis.

Making the framework functional at the sub-national project level faces additional challenges. For example, integrating health

and agriculture benefits into the economic analysis of individual projects (rather than using the global macroeconomic model as has been done in this report) may require a more tailored approach. Local benefits—such as time savings, gender equality, and social inclusion—may also need to be incorporated. Because not all these benefits are quantifiable, a hybrid approach may be needed. These challenges can be overcome if sub-national project teams start testing this framework in partnership with local counterparts to refine it.

Finally, the preparation of this report included consultative workshops in China and India where the demand for such a framework was strongly articulated by local policy makers and other stakeholders. The consultations identified the need for decision makers at the national and sub-national level to be sensitized to the idea of a framework that can help quantify multiple benefits so that they can consider using it as part of their economic rationale for policies and projects.

References

Alberani, Cropper, Simon, and Arora (1999). *Valuing Mortality Reductions in India: A Study of Compensating Wage Differentials*. Policy Research Working Papers, The World Bank: http://dx.doi.org/10.1596/1813-9450-2078.

Amann, M. et al. (2011). "Cost-effective Control of Air Quality and Greenhouse Gases in Europe: Modeling and Policy Applications." *Environmental Modelling & Software*, 26 (2011) 1489–1501.

Avnery S, D. Mauzerall, J. Liu, and L.W. Horowitz (2011). "Global Crop Yield Reductions due to Surface Ozone Exposure" and "Year 2030 Potential Crop Production Losses and Economic Damage under Two Scenarios of O_3 Pollution." *Atmospheric Environment*, 45, 2297–2309.

Avnery S, D. Mauzerall, and A.M. Fiore (2013). "Increasing Global Agricultural Production by Reducing Ozone Damages via Methane Emission Controls and Ozone-resistant Cultivar Selection." *Global Change Biology*, 19, 1285-1299, doi:10.1111/gcb.12118.

Belli, P. et al. (1998). *Handbook on Economic Analysis of Investment Operations*. The World Bank, January 1998.

Bollen, J.C., C.J. Brink, H.C. Eerens, A.J.G. Manders (2009). "Co-benefits of climate policy" PBL Report no. 500116005, February 2009 (available online at: http://www.unep.org/transport/gfei/autotool/understanding_the_problem/Netherlands%20Environment%20Agency.pdf

Bollen, Johannes, Sebastiaan Hers, Bobvander Zwaan (2010). "An integrated assessment of climate change, air pollution and energy security policy", *Energy Policy* 38 (2010) 4021–4030.

Bogner, J. et al. (2007). Waste Management. In: Metz B, Davidson OR, Bosch PR, Dave R, Meyer LA, editors. Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, 2007.

Bond, T. et al. (2013). "Bounding the Role of Black Carbon in the Climate System: A Scientific Assessment," Journal of Geophysical Research, Atmospheres, doi: 10.1002/jgrd.50171, January.

Bussolo, M. and O'Connor, D. (2001). Clearing the Air in India: The Economics of Climate Policy with Ancillary Benefits. Int. Development Centre Working Paper 182, CD/DOC 14, OECD.

CAAC (2013). China Clean Air Policy Briefing No. 1, "Twelfth Five-Year Plan" on Air Pollution Prevention and Control in Key Regions. English Translation of original document issued by the Ministry of Environmental Protection (MEP), National Development and Reform Commission (NDRC), and Ministry of Finance, December 2012. Clean Air Alliance of China, April, 2013.

Cassidy, Emily S., Paul C. West, James S. Gerber, and Jonathan A. Foley (2013). Redefining Agricultural Yields: From Tonnes to People Nourished per Hectare. Environ. Res. Lett. 8 (2013) 034015 (8pp).

Chen, Y., A. Abestein, and M. Greenstone and H. Li (2013). "Evidence on the Impact of Sustained Exposure to Air Pollution on Life Expectancy from China's Huai River Policy", *Proceedings of the National Academy of Sciences of the United States, vol. 110 no. 32 (2013), 12936–12941.*

Clarke, L. et al. (2008). *CO_2 Emissions Mitigation and Technological Advance: An Updated Analysis of Advanced Technology Scenarios*. Pacific Northwest National Laboratory, Richland, WA.

Dinkel, J. et al. 2011: Abatement Opportunities for Non-CO_2 Climate Forcers. Report for ClimateWorks Foundation and European Climate Foundation.

Enkvist, P. A., J. Dinkel, and C. Lin (2009). *Impact of the Financial Crisis on Carbon Economics: Version 2.1 of the Global Greenhouse Gas Abatement Cost Curve*. McKinsey and Company.

ESCAP (United Nations Economic and Social Commission for Asia and the Pacific) (2007). Sustainable Infrastructure in Asia: Overview and Proceedings. Seoul, Korea: Seoul Initiative Policy Forum on Sustainable Infrastructure. September 6–8, 2006.

Fang, Y., V. Naik, L.W. Horowitz, and D. L. Mauzerall (2013). "Air pollution and associated human mortality: the role of air pollutant emissions, climate change and methane concentration increases from the preindustrial period to present", *Atmospheric Chemistry and Physics*, 13, 1377–1394, 2013.

Florida, R. (2000). Competing in the Age of Talent: Quality of Place and the New Economy. Report prepared for the R.K. Mellon Foundation (Heinz Endowments and Sustainable Pittsburgh).

GEF (Michael Repogle). Manual for Calculating Greenhouse Gas Benefits for Global Environment Facility Transportation Projects. GEF/C.39/Inf.16. October 2010, pp. 20 ff.

Giusti., L. (2009). "A Review of Waste Management Practices and their Impact on Human Health." Waste Management 29 (8) (August): 2227–2239. doi:10.1016/j.wasman.2009.03.028.

Hammit and Zhou (2006) "The Economic Value of Air Pollution Related Health Risks in China: A Contingent Valuation Study." *Environ. & Resource Econ.* 33: 399–423.

Hoornweg and Bhada-Tata (2012). "What a Waste: Waste Management around the World." The World Bank, Washington DC.

Hu, A., Y. Xu, C. Tebaldi, W. M. Washington, and V. Ramanathan (2013). "Mitigation of Short-lived Climate Pollutants Slows Sea-level Rise." *Nature Climate Change*, doi:10.1038/nclimate1869.

IDB (2013). *Mitigation Strategies and Accounting Methods for Greenhouse Gas Emissions for Transportation*. Inter-American Development Bank, Washington DC, June, 2013.

IPCC (2007). *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.

Kirkeby, J. et al. (2008). "Environmental Assessment of Waste Incineration in a Life-cycle-perspective (EASEWASTE)," *Waste Manag. Res.*, February 1, 2008 26: 96–103.

Law et al. (2010). Plastic Accumulation in the North Atlantic Subtropical Gyre. Science, 329(5966): 1185-1188. DOI: 10.1126/science.1192321.

Liu, W. G. and S. C. Zhao (2011). The Value of a Statistical Life in Road Safety: Findings from a Contingent Valuation Study in Dalian, China. *ICTIS* 2011: pp. 1061–1067.doi: 10.1061/41177(415)134. First International Conference on Transportation Information and Safety (ICTIS) Wuhan, China, June 30-July 2, 2011.

Lim, S. S., et al. (2012). "A Comparative Risk Assessment of Burden of Disease and Injury Attributable to 67 Risk Factors and Risk Factor Clusters in 21 Regions, 1990–2010: A Systematic Analysis for the Global Burden of Disease Study 2010." Lancet 380 (9859): 2224–60.

Madheswaran, S. (2007). "Measuring the Value of Statistical Life: Estimating Compensating Wage Differentials among Workers in India." *Social Indicators Research*, 84:83-96, Oct. 2007.

Markandya (1998). The Valuation of Health Impacts in Developing Countries. Institute of Applied Economic Research, Brazil.

MDE (2013). *Maryland's Greenhouse Gas Reduction Plan*. Maryland Department of the Environment, Baltimore, Maryland, July, 2013. Available at: http://www.climatechangemaryland.org/plan/.

Molina et al. (2009). "Reducing Abrupt Climate Change Risk Using the Montreal Protocol and Other Regulatory Actions to Complement Cuts in CO_2 Emissions." *Proceedings of the National Academy of Science*, 10.1073/pnas.0902568106.

Naucler, T. and Enkvist, P. A. (2009). Pathways to a Low Carbon Economy. Version 2 of the Global Greenhouse Gas Abatement Cost Curve. McKinsey and Company.

Nellemann, C., M. MacDevette, T. Manders, B. Eickhout, B. Svihus, A.G. Prins, and B.P. Kaltenborn, (Eds) (2009). The Environmental Food Crisis – The Environment's Role in Averting Future Food Crises. A UNEP Rapid Response Assessment. United Nations Environment Programme, GRID-Arendal, www.grida.no (ISBN: 978-82-7701-054-0).

NYSERDA (2012). *Applying the Multi-Pollutant Policy Analysis Framework to New York: An Integrated Approach to Future Air Quality Management*, Prepared by Gary Kleiman and Leah Weiss for the New York State Energy Research and Development Authority, Report 12–10, Albany, NY, May, 2012.

OECD (2011). "Valuing Mortality Risk Reductions in Regulatory Analysis of Environmental, Health, and Transport Policies: Policy Implications." OECD, Paris: www.oecd.org/env/policies/vsl.

Ortiz, Ramon Arigoni, Anil Markandya, and Alistair Hunt (2009). "Willingness to Pay for Mortality Risk Reduction Associated with Air Pollution in São Paulo." *Rev. Bras. Econ.* vol.63, no.1, Rio de Janeiro Jan./Mar. 2009.

Paltsev and Capros (2013). "Cost Concepts for Climate Change Mitigation." *Climate Change Economics*, 4, S1, 1340003–1.

Planning Commission, Government of India (2013). *12th Five Year Plan (2012–2017): Faster, More Inclusive, and Sustainable Growth*. Planning Commission, Government of India, SAGE Publishing, New Delhi, India.

Qin, X., L. Li, and Y. Liu (2000). The Value of Life and Its Regional Difference in China.

Sanderson, W. et al. (2013). "Effects on Well-Being of Investing in Cleaner Air in India." *Environ. Sci. Technol.*, accepted Oct. 21, 2013: dx.doi.org/10.1021/es402867r.

Serôa Da Motta, Ronaldo, Ramon Arigoni Ortiz, and Sandro De Freitas Ferreira (1997). Health and Economic Values for Mortality and Morbidity Cases Associated With Air Pollution in Brazil. OECD Working Paper.

Shanmugam K.R. (1997). The Value of Life: Estimates From Indian Labour Market. *The Indian Economic Journal*, 105–114.

Shindell et al. (2012). "Simultaneously Mitigating Near-term Climate Change and Improving Human Health and Food Security." *Science*, 335, pg. 183.

Spiegel, A., Bresch, D (2013). *Building a Sustainable Energy Future: Risks and Opportunities*. Swiss Re: http://www.swissre.com/rethinking/sustainable_energy/Building_a_sustainable_energy_future_risks_and_opportunities.html.

UNEP (2011a). *Near-term Climate Protection and Clean Air Benefits: Actions for Controlling Short-Lived Climate Forcers*. Nairobi, Kenya: United Nations Environment Programme (UNEP).

——— (2011b). *HFCs: A Critical Link in Protecting Climate and the Ozone Layer*. Nairobi: United Nations Environment Programme (UNEP).

——— (2011c). Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. Nairobi: UNEP.

——— (2013). The Emissions Gap Report 2013. United Nations Environment Programme (UNEP), Nairobi.

UNEP/WMO (2011). *Integrated Assessment of Black Carbon and Tropospheric Ozone: Summary for Decision Makers*. UNON/Publishing Services Section/Nairobi, ISO 14001:2004.

UN-Habitat(2010). Solid Waste Management In the World's Cities. United Nations Human Settlements Programme. London.

U.S. Environmental Protection Agency Guidance (2000): http://yosemite1.epa.gov/ee/epa/eed.nsf/pages/MortalityRiskValuation.html#top.

U.S. Interagency Working Group on Social Cost of Carbon (2013). Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866.

Van Dingenen, R. et al. (2009). "The Global Impact of Ozone on Agricultural Crop Yields under Current and Future Air Quality Legislation," *Atmos. Environ.*43, 604–618.

Wagner, F. et al. (2013). *GHG Mitigation Potentials for China and India from the GAINS Model for 2020*. IIASA report to ClimateWorks, ClimateWorks Foundation, San Francisco, CA.

Wang and He (2010). The Value of a Statistical Life: A Contingent Investigation in China. World Bank Policy Research Working Paper 5421, September 2010.

Weiss, L. et al. (2007). "Building Momentum for Integrated Multi-pollutant Planning: A Northeast States' Perspective." *EM magazine*, Air and Waste Management Association, pp. 25–29, May, 2007.

World Bank (2011). *Black Carbon and Climate Change, Considerations for International Development Agencies*. Washington, DC: World Bank Environment Department.

——— (2012a). *Turn Down The Heat: Why a 4°C Warmer World Must be Avoided*. The World Bank, Washington DC, November, 2012.

——— (2012b). Inclusive Green Growth: The Pathway to Sustainable Development. The World Bank, Washington, DC.

———(2013a). *Integration of Short-lived Climate Pollutants in World Bank Activities*. Climate Policy and Finance Department, The World Bank, Washington, DC.

——— (2013b). India: A Diagnostic Assessment of Select Environmental Challenges; An Analysis of Physical and Monetary Losses of Environmental Health and Natural Resources. South Asia Disaster Management and Climate Change Unit, The World Bank, Washington, DC.

——— (2013c). China: Accelerating Household Access to Clean Cooking and Heating. Asia Sustainable and Alternative Energy Program, The World Bank

——— (2013d). On Thin Ice: How Cutting Pollution Can Slow Warming and Save Lives. The World Bank, Washington, DC, and the International Cryosphere Climate Initiative, Charlotte, VT.

World Energy Outlook (2013). Available at http://www.worldenergyoutlook.org/resources/energydevelopment/energyaccessprojectionsto2030/.

Zhang, X. (1999). Valuing Mortality Risk Reductions Using the Contingent Valuation Method: Evidence from a Survey of Beijing Residents in 1999. Paper for the Second World Congress of Environmental Economics.

Annex A: Summary of Health, Agricultural, and Climate Benefits from Emissions Reduction

In a development context, the local benefits of reducing incomplete combustion of biomass and fossil fuels and eliminating other air pollutants are clear. In many cases, the development benefits of improved local environmental quality far exceed the potential climate benefits of reducing these emissions. For example, BC from incomplete combustion of diesel in vehicles is a toxic air pollutant. Diesel exhaust is a risk factor for cardiopulmonary disease and can trigger asthma and heart attacks, leading to hospital visits and premature deaths (World Bank 2011). Methane is released as a fugitive emission from oil and gas production and distribution, biogas production, agricultural production (including livestock and rice farming), decomposition of municipal solid waste, and other activities (e.g., coal mining). In the atmosphere, methane leads to the formation of tropospheric ozone, a component of smog. These pollutants can cause significant crop damage, lowering agricultural yields (UNEP 2011a).

The last global burden of disease report (Lim et al. 2012) estimated that in 2010 there were 3.5 million premature deaths from indoor smoke from solid fuels and another three million deaths from urban air pollution. Both forms of air pollution include black carbon. These statistics provide a strong impetus for taking quick action to reduce BC emissions.

Fang et al (2013) studied the human health effects of air pollution, climate change, and increased methane concentrations from the pre-industrial period to the present. They found that global changes in $PM_{2.5}$ are associated with 1.5 million cardiopulmonary deaths and 95,000 lung cancer deaths annually, and ozone changes are associated with 375,000 respiratory deaths annually. Most air pollution mortality is driven by increased emissions of fine particles and smog (95 percent and 85 percent of mortalities from $PM_{2.5}$ and ozone, respectively). These include BC and tropospheric ozone formed from methane. Changing climate and increasing methane concentrations also contribute to global premature mortality (by up to 5 and 15 percent, respectively). This study also found that, in some regions, climate change and increased methane together are responsible for more than 20 percent of the respiratory mortality associated with ozone exposure.

Chen et al. (2013) analyzed the impact on life expectancy of sustained exposure to air pollution, using a wide range of data sources generated by a central government policy to provide free winter heating to homes and offices in the period of 1950–1980 in cities north of the Huai River. The researchers found air pollution was 55 percent higher in the north between 1981–2000, resulting in life expectancies about 5.5 years lower than in the south, where heating was not legally required and promoted. In other words, air pollution had resulted in 500 million residents of Northern China to lose more than 2.5 billion life years of life expectancy. More generally, the analysis suggests that long-term exposure to an additional 100 $\mu g/m^3$ [44] of TSPs is associated with a reduction in life expectancy of about three years.

In a recent paper, Avnery et al. (2013) examined the potential benefits of a strategy to mitigate surface ozone by gradually reducing emissions of methane, an important greenhouse gas and tropospheric ozone precursor. Because ozone has a significant negative impact on crop yields, reducing ozone-induced agricultural losses would allow the world to meet the projected 50 percent increase in global grain demand by 2030 without further environmental

[44] Micrograms (one-millionth of a gram) per cubic meter of air.

degradation. The study finds that a specific set of methane emissions reduction strategies—if fully implemented—would increase global production of soybean, maize, and wheat by 23–102 Mt in 2030, equivalent to an approximately 2–8 percent increase relative to year 2000 production and worth $3.5–15 billion worldwide (in 2000 dollars), increasing the cost effectiveness of this methane mitigation policy.

Bollen et al. (2010) went a step further and demonstrated multiple possible synergies that can be exploited by combining climate change, air pollution, and energy security policies. The benefits of coordinated policies can be large: in Europe, for example, the achievable reductions in CO_2 emissions and oil consumption are significantly deeper for integrated policies than when one of the policies is omitted. Integrated optimal energy policy can reduce the number of premature deaths from air pollution by about 14,000 annually in Europe and over three million per year globally by lowering people's chronic exposure to ambient particulate matter.

Along the same lines, Shindell et al. (2012) considered a large number of emissions control measures to reduce emissions of tropospheric ozone and black carbon, pollutants that contribute to degraded air quality and global warming. The study identifies a subset of specific measures targeting methane and BC emissions that could reduce projected global mean warming by approximately 0.5°C by 2050, avoid 700,000–4.7 million annual premature deaths from outdoor air pollution, and increase annual crop yields by 30–135 million metric tons due to ozone reductions in 2030 and beyond. The study also quantifies the net benefits of methane emissions reductions, estimated at $700–5,000 per metric ton, well above average marginal abatement costs (about $250/t).

Other reports published by multilateral institutions arrive at the same conclusion. A study commissioned by the OECD and conducted by the Netherlands Environmental Assessment Agency (Bollen et al., 2009) found that a stringent global climate policy will lead to considerable improvements in local air quality and, consequently, improved health. The analysis showed that measures to reduce emissions of greenhouse gases to 50 percent of 2005 levels by 2050 can reduce the number of premature deaths from chronic exposure to air pollution by 20–40 percent. The policy implications are, however, different for emerging economies and developed countries. Whereas climate policy will generate air quality improvements in the OECD countries (particularly in the U.S.) in the mid-term, in emerging economies these benefits will only become significant in the longer run.

In China, for example, the Bollen (2009) analysis suggests that the costs of reducing greenhouse gas emissions by 80 percent from the baseline would amount to 6.5 percent of the country's GDP, while the benefits would be equivalent to 4.5 percent of GDP. These same benefits could also be achieved, however, through a more targeted air quality policy at a cost of 1.8 percent of GDP. On the flip side, stringent air quality policy can lead to significant reductions in greenhouse gas emissions. Again using China as an example, the authors find that stringent air policy to reduce the number of premature deaths from chronic exposure to outdoor air pollution by 70 percent by 2050 (compared with the baseline) would lower GDP in 2050 by 7 percent; the air quality benefits would be equivalent to 7.5 percent of GDP and greenhouse gas emissions would be 40 percent lower.

A 2011 synthesis report published by UNEP found that reducing atmospheric concentrations of short-lived climate pollutants, specifically black carbon, tropospheric ozone, and methane, offers a real opportunity to improve public health, reduce crop yield losses, and slow the rate of near-term climate change, thereby aiding sustainable development. Crucially, the health benefits from implementing black carbon mitigation measures (especially by controlling emissions from biomass cookstoves and transport in Asia and Africa) would be realized immediately and almost entirely in the regions that reduce their emissions. More specifically, the reductions in outdoor particulate air pollution (from black carbon measures) would avoid an estimated 2.4 million premature deaths annually by 2030 while also greatly reducing the health impacts from indoor exposure. Controlling emissions of methane and other ozone precursors by implementing black carbon measures (by reducing emissions from coal mines in Northeast Asia, South East Asia, and the Pacific; oil and gas production in all regions; and long-distance natural gas transmission pipelines in North America and Europe; and by implementing Euro VI standards more widely) would avoid annual losses from four major crops of about 32 Mt each year after 2030. Finally, reducing these short-lived climate pollutants offers a realistic opportunity to significantly reduce the rate of global warming (by about 0.4°C) between 2010–2040.

In addition to the impacts described here, SLCPs cause serious damage to non-crop flora and fauna (wild forests and wildlife); this has not as yet been as rigorously studied. It is clear that the ecosystem services supported by biodiversity, watersheds, and climate-regulating systems have significant economic value (World Bank 2012b), including nature-based tourism. Efforts to properly value these aspects of natural capital will be integrated into future analyses on the multiple benefits of reducing emissions.

Annex B: Detailed Description of the Models

This report uses recently developed emissions modeling and assessment tools and an integrated macroeconomic model. Two innovative programs helped usher in these modern, synergistic, multi-pollutant air quality and energy planning tools. The programs, the European Convention on Long-Range Transboundary Air Pollution and the U.S. market-based approach to control acid rain under the Clean Air Act, advanced economic efficiency as a major driver of the design of air quality management programs.

Box B.1: Examples of Integrated Planning Approaches

Europe: The Convention on Long-Range Transboundary Air Pollution

The innovative Regional Air Pollution Information and Simulation (RAINS) model was the predecessor to today's Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS) model. Maintained by the International Institute for Applied Systems Analysis, RAINS informed national emission caps that employed cost-effectiveness as the rationale for differentiated obligations. The model had to quantify the costs of the entire range of emissions reduction possibilities and ensure that the desired environmental outcomes were achieved across an entire geographic area. By putting all measures into a broader context, RAINS helped decisionmakers identify strategies that maximize synergies between different measures, ensure attainment of all environmental goals, and minimize costs (Amann et al. 2011).

United States: Multi-pollutant Planning under the Clean Air Act

Implementation of air quality protection under the Clean Air Act is complicated by the act's pollutant-by-pollutant approach; the many challenges that followed spurred development of tools that attempt to deal with multiple air quality issues simultaneously.Integrated multi-pollutant planning has been shown to be a more economical way to address environmental and public health issues than traditional single-pollutant approaches (Weiss et al. 2007; NYSERDA 2012). By concurrently looking at multiple air quality goals and potential controls and their environmental, public health, energy, and economic impacts, a more complex set of policy questions emerges that can then be addressed. Multi-pollutant approaches identify the tradeoffs of implementing one strategy over another, help set priorities and appropriate planning horizons, and identify the optimal mix of policies and controls that will result in greater synergistic benefits than discrete policies covering individual pollutants.

McKinsey's MACC Model

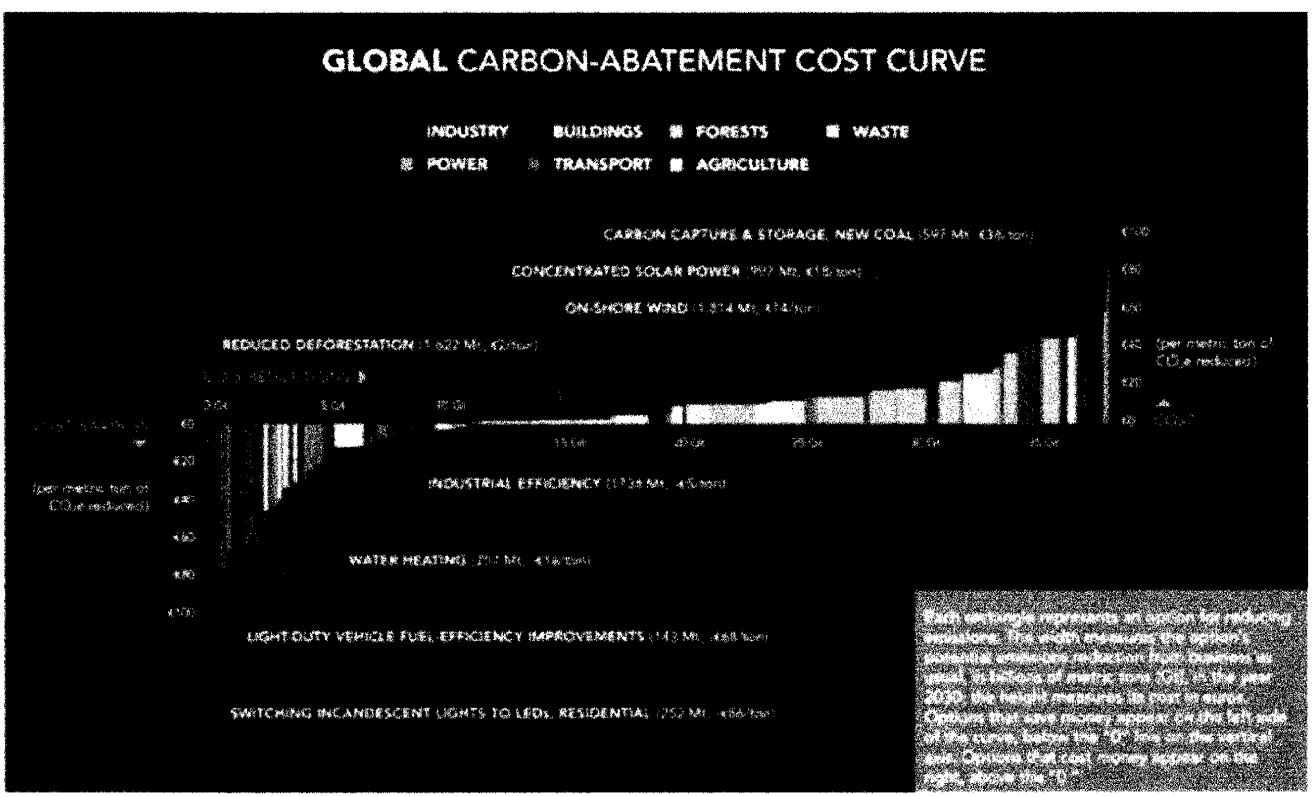
The marginal abatement cost curve (MACC) model used in this report to analyze several sector-wide policies was developed by McKinsey & Co. in 2011–2012. This version, v.3.0, builds on previous modeling and simulation exercises McKinsey conducted for several clients, including the ClimateWorks Foundation, starting in 2007. Subsequent updates took into account changing economic circumstances (such as the 2008–2009 financial crisis) and technology costs (such as the rapidly declining cost of renewable technology and the stalled development of carbon capture and storage).

In graphic representations of MACCs (Figure B.1), policy levers are typically sorted by increasing cost of emissions reduction opportunities in a given year (merit order). The width of each bar represents the potential GHG emissions reduction from that specific intervention (such as a suite of fuel efficiency improvements to the internal combustion engine). This abatement potential is defined as the volume difference between the emissions baseline and the emissions after the lever is applied. To ensure comparability across different sectors and emissions sources, all emissions and sinks (storage) are measured in metric tons of CO_2e. The height of each bar represents the average annual cost for each abatement opportunity of avoiding one metric ton of CO_2.

Abatement costs are defined as the incremental cost of a low-emissions technology compared with the reference case, measured on $/t$CO_2e$. These costs include two key components: the annualized repayments for capital expenditure (CapEx)—in other words, the additional investments in new technology or replacement infrastructure necessary to achieve those GHG emission reductions—and the operational costs or savings (OpEx), fuel- and non-fuel-related, associated with each specific abatement opportunity. The repayment period is the functional life of the equipment, and the interest rate is the long-term government bond rate. The abatement costs can therefore be interpreted as pure project costs incurred to install and operate each specific low-emitting technology. Capital availability is not considered a constraint. Other key elements are deliberately excluded from cost calculations: transaction costs, communication/information costs, subsidies or explicit CO_2 costs, taxes, and the consequential economic impacts of significantly investing in low-emitting technology (such as advantages from technology leadership).

MACCs can be interpreted as a supply curve of abatement opportunities, independent of abatement targets, which could in

Figure B.1: Global carbon abatement cost curve, 2030



turn be interpreted as a demand curve for abatement. The cost curve representation used for this study takes a societal perspective, rather than that of an individual investor or consumer, to illustrate the cost requirements to the society as a whole. This is clearly an abstraction; policy options are not selected by a single worldwide decision maker. This representation is useful for comparison, however, and to provide a globally consistent indication of available abatement opportunities and associated costs. Given the long time horizon of the analysis, all the results are subject to significant uncertainties. In addition, as mentioned earlier, some key assumptions may significantly affect the analysis, particularly the exclusion of transaction costs (all costs above and beyond the technical project costs incurred in making an economic exchange) and behavioral changes driven by price and non-price factors (including those addressed by specific policies). The MACC model "merit order" typically starts with energy efficiency measures in the industry and building sectors, moves on to address measures in the transport and forests/land use sectors, and ends with the power sector. The model is based on a split of 21 regions (G8 + 5, and other major geopolitical regions).

TM5-FASST Model

The TM5-FASST model is a reduced-form air quality source-receptor matrix (AQ-SRM) developed by the European Commission's Joint Research Center in Ispra, Italy. It covers 56 source regions, including major countries and aggregations of several smaller nations. TM5-FASST can analyze emissions of SO_2, NOx, NH_3, CO, NMVOC, elemental carbon, primary organic matter, $PM_{2.5}$, and CH_4.[45] The relation between the emissions of compound i from source x and resulting pollutant j concentration (where $j = i$ in case of a primary component) at receptor y is expressed by a simple functional relation that mimics the underlying meteorological and chemical processes (Van Dingenen et al. 2009). In the current version of TM5-FASST, the function is a simple linear relation:

$$C_{i\rightarrow j,y,x}=C_0+A_{i\rightarrow j,x,y}E_{i,x}$$

where $C_{i\rightarrow j,y,x}$ is the concentration of species j at receptor y formed from precursor i emitted at source x, C_0 is a constant, $A_{i\rightarrow j,x,y}$ is the so-called source-receptor coefficient (SRC) between x and y for ($i\rightarrow j$), and $E_{i,x}$ is the emission rate (kg/yr) of precursor i at source x. The SRCs are stored as matrices with dimension [x,y] at the 1° x 1° resolution of the native TM5-CTM model (in other words, there is one 1° x 1° SRC map for each of the 56 source regions and for each precursor component) and, in principle, can be aggregated into any customized receptor region.

One particularly useful aggregation scheme is to combine the receptor grids into the 56 defined source regions; hence the SRCs are stored into 56x56 matrices between identical source and receptor regions. On the other hand, the 1°x1° resolution SRC maps allow for calculation of the resulting concentration in each individual grid point and are therefore useful in creating global concentration and impact maps or in constructing customized receptor regions for studies with specific targets.

The resulting air pollutant concentrations, and their specific spatial distribution, are then further processed into impacts, such as the effect of PM on human health (e.g., mortalities, reduction of statistical life expectancy), the impact of O_3 on vegetation and crop damage, and damage caused by deposition of eutrophying or acidifying components in sensitive ecosystems. Most of these calculations are based on simple empirical dose-response functions, but they require that additional data be overlaid with the pollutant concentration (or derived metric) in order to properly calculate the exposure (using maps of populations, crops and vegetation, sensitive ecosystems, and so forth).

Oxford Economics' GEIM

Economic analyses of climate policies are often based on partial equilibrium models, which are typically used to assess the impact of an economic or policy shock affecting two or more interconnected markets, assuming the rest of the economy remains fixed (*ceteris-paribus* condition). This is a very effective approach when the effects of the policy shock are expected to be limited to specific sectors/markets. However, when the economic or policy shock to be evaluated is complex, expected to be transmitted through different channels and have significant impacts throughout the economy, and may take place in several stages, economists consider general equilibrium models to be the best choice. General equilibrium analysis performs well when evaluating fiscal policies, trade policies, climate change shocks, shocks in international prices, and other shocks.

Oxford Economics' Global Energy Industry Model (GEIM) is a structural, econometric, general equilibrium model of the global economy. McKinsey used GEIM to develop and quantify integrated climate, energy, and economic scenarios for the most recent version of its global GHG abatement cost curve (the MACC v.3.0 described above), linking emissions scenarios with global and regional macroeconomic performance. One of the reasons Oxford Economics' model was chosen to perform the scenario analysis in this report is that its energy module is more detailed and sophisticated than other similar tools.

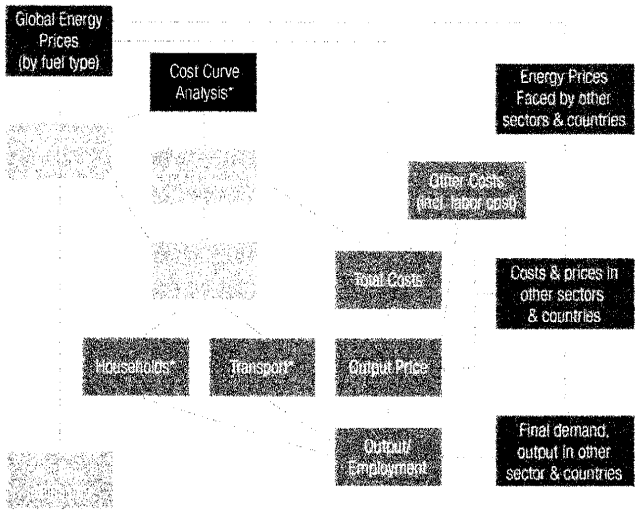
[45] Sulfur dioxide, nitrogen oxides, ammonia, carbon monoxide, non-methane volatile organic compounds, elemental carbon, primary organic matter, particulate matter with a diameter of 2.5 microns or less, and methane.

GEIM country coverage

- Developed economies: The U.S., Japan, the Eurozone, Germany, France, Italy, the UK, Canada, Austria, Australia, Spain, Denmark, Finland, Norway, Netherlands, Belgium, Portugal, Ireland, Sweden, Austria, Switzerland.
- Emerging markets: China, Taiwan, China, South Korea, Hong Kong SAR, China, Thailand, Malaysia, Philippines, Indonesia, Singapore, Mexico, Brazil, Argentina, Chile, Poland, Czech Rep., Hungary, Russia, Bulgaria, Croatia, Slovakia, Romania, South Africa, Turkey, India, UAE.
- Six trading blocs: OPEC, Eastern Europe, Africa, Latin America, rest of OECD, rest of world.

As in all general equilibrium models, GEIM's individual country models are fully linked through global assumptions about trade, exchange rates, competitiveness, capital markets, interest rates, commodity prices, and internationally traded goods and services. The level of detail in the model varies depending on availability of reliable data. GEIM examines 46 economies in detail. G7 country models include over 400 variables; other OECD countries' models typically include about 300 variables; and models for emerging markets include about 200. The rest of world is covered by six trading blocs, with headline indicators for 30 countries, so that global GDP and trade are fully modeled. This geographical resolution was ideal for the purpose of this study given the close connection between the size of a country's economy and its relative importance as a GHG emitter.

Figure B.2: Main transmission channels in oxford economics' GEIM model



* Cost curve analysis also feeds into households' income and transport energy consumption.

GEIM could be defined as Keynesian in the short run and monetarist in the long run. This means that, while increased demand will initially lead to higher output and employment, shock will feed through into higher wages and prices. Given an inflation target, interest rates will have to rise, reducing demand (known as "crowding out"). In the long run, output and employment are determined by supply-side factors. Figure B.2 presents an overview of the model's main transmission channels.

GEIM operates on the following assumptions:

- Consumption is a function of real income, wealth, and interest rates.
- Investment follows a "q" formulation with accelerator terms.
- Exports depend on world demand and relative unit labor costs.
- Imports depend on total final expenditure and competitiveness.
- Real wages depend on productivity and unemployment relative to the non-accelerating inflation rate of unemployment (NAIRU).
- Prices are a mark-up of unit costs, with profit margins a function of the output gap.
- Monetary policy is endogenized.
- Exchange rates are determined by uncovered interest parity (UIP).
- Expectations are adaptive.

GEIM can model several linkages between different country models, including:

- Trade: World trade for each country is a weighted average of the growth in total goods imports (excluding oil) of all other countries. The weights are thus the relevant coefficients in the trade matrix.
- Competitiveness: Where available, the model uses relative unit labor cost data provided by the IMF (and relative prices elsewhere).
- Interest rates and exchange rates: These are endogenous and are constructed using a Taylor Rule formulation that approximates central banks' response to shifts in the economy and relates movements in interest rates (the standard tool used in monetary policy) to the rate of inflation relative to a predefined target and the level of actual output relative to potential output.
- Commodity prices: The price of oil depends on supply/demand balance, while metal prices depend on industrial growth.
- World price of manufactured goods: These include sectoral outputs such as fuel extraction, iron and steel, transport equipment, computers and office equipment, and so on; prices are determined by change in competiveness, trade environment, and domestic final demand.
- Capital flows: Bilateral capital flows for major blocs are taken into account.

Oil prices are determined by the interaction of supply and demand in the global market. In the model, oil demand is linked to economic growth, and relative oil prices are fully integrated with the rest of the model. Gas and coal prices are modeled in a similar way.

Despite the relatively strong performance of the model, the global financial crisis highlighted areas where it could be improved:

- Interest rates: Expand coverage to include key corporate and consumer lending rates as well as interbank rates and bond yields.
- Credit conditions: Introduce levers to account for the tightness/looseness of bank lending that is not reflected in interest rates (analysis based on research by John Muellbauer of Oxford University).
- Balance sheet coverage: Expand to cover financial and non-financial corporations as well as households and governments.
- Credit ratings: Reflect the impact of sovereign debt ratings on interest rate spreads for government bonds.
- Feedback effects: Include the impacts of unemployment/insolvencies on credit conditions.

Annex C: Details and Data for Sector Policy Case Studies

The first three case studies presented in Chapter 3 analyzed the impacts of key sector policy interventions—including regulations, incentives, and taxes—to stimulate specific measures to cut emissions from three sectors: transportation, industry, and buildings. The ClimateWorks Foundation analyzed the impacts in six regions—China, India, the EU, the U.S., Mexico, and Brazil—plus the impact on global GDP.

"Policy Consensus" Scenario

The sector policy case studies presented in Chapter 3 are based on certain carbon mitigation assumptions derived from McKinsey's MACCv.3.0. More specifically, they use McKinsey's "Policy Consensus" scenario, in which policy is the main driver of a transition to a clean economy. Amongst the six scenarios considered in MACC v 3.0, this is the most optimistic scenario. In this scenario, total emissions for all sectors and all regions of the world result in about 45 $GtCO_2e$ emitted per year in 2030. At the other end of the spectrum is the most pessimistic scenario where GHG emission reductions are not pursued. In this scenario, total global emissions result in about 60 $GtCO_2e$ emitted per year in 2030. To limit emissions to 45 $GtCO_2e$ per year for the policy consensus scenario, the energy system would require a global capital expenditure of about $6.1 trillion per year in 2030 (Spiegel and Bresch 2013). This is about $1.5 trillion more than in the scenario where GHG reductions are not pursued. In 2010, the global capital expenditure for similar investments was about $4.3 trillion.

The policy consensus scenario assumes a recovering economy and a strong greenhouse gas policy agreement among the major economies of the world (strict policies agreed to by 2015 and effective by 2020, as laid out at the COP17 meeting in Durban); this clear policy signal also spurs major investment in clean, efficient technologies well before 2020. In addition, non-energy-related forestry and agriculture CO_2 emissions, non-CO_2 greenhouse gases, and CCS are addressed forcefully. This is also reflected in fossil-fuel prices, which are an important driver for economic growth projections considered in the scenarios. Figure C.1 shows the difference in oil prices between the policy consensus scenario and a baseline scenario in which GHG emissions reductions are not pursued. As a consequence of the dramatic decrease in fossil fuel use in the policy consensus scenario, demand for oil decreases and prices remain relatively stable over the 2010–2050 period, as opposed to a scenario in which fossil fuel use remains dominant and GHG emissions continue to grow as does the demand and price of oil. This is consistent with most other energy models' forecasted trajectories through 2030.[46] The figure also shows the oil price trajectories for all policy case study simulations.

More details on the assumptions used for the policy consensus scenario is described below. For details on assumptions behind other scenarios, refer to Spiegel and Bresch (2013).

46 See, for example, http://www.eia.gov/pressroom/presentations/howard_04162012.pdf, page 6.

Table C.1. Policy Consensus Around Climate Change

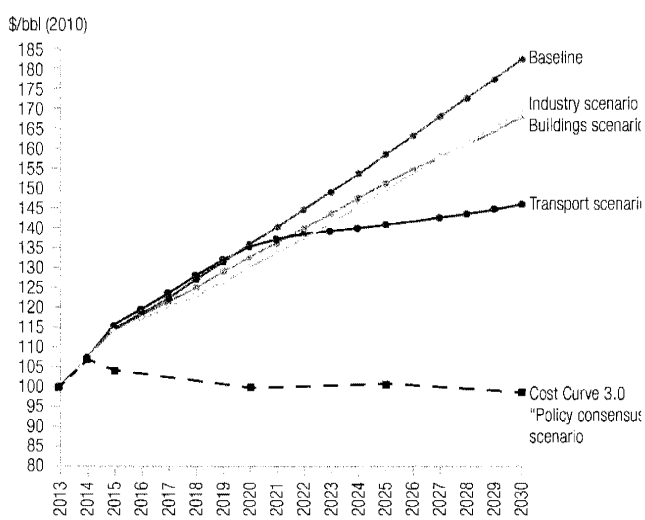
2010–20: Real climate change policy	2020–30: Global deal reached	2030–50: Long-term reductions
• The economy recovers and grows strongly at the end of the decade (2–3% OECD, 7–8% BRIC, 3–4% RoW) • More extreme weather events and successful communication campaigns increases public awareness, "clean" consumption and put pressure on politicians. Green voting becomes mainstream and bipartisan • Increasing consensus in 2015 among policy makers result in national and regional abatement policies (a high implicit CO_2 price) on most OECD and BRIC countries by 2020 (not necessarily in the form of a "global deal") • A clear policy debate makes future international agreement on GHG emissions more likely • Clean tech roll-out quick with support from a strong economy and policies, with cost trajectory following expectations • Fossil fuel supplies keep up with demand due to widespread shale gas exploration in US and China	• The economy grows at high growth rates (~2% OECD, 6–7% BRIC, 3–4% RoW), especially in countries that are early adopters of green tech benefitting on green wave • Global deal on climate is reached and agreed in 2022 • International cooperation on GHG emissions (high CO_2 prices) • Comprehensive targets on EE • Non-energy climate forcers also addressed, e.g. Forestry and Agriculture • Oil demand growth slows significantly. • Resource holders respond by cutting back production • Countries that have not diversified energy supply suffer. This also pushes unconventional gas further • A few countries take the lead in clean tech development, others are followers—green growth benefits early adopters • Tech driven by private sector and high competition reduces prices more quickly than expected. In parallel, electrification of transport and industrial processes is rolled out in the US and EU	• Green growth benefits of new industrial revolution underpin continued growth (~2% OECD, 4–6% BRIC, 3–4% RoW) • Demand for oil & coal, less so for gas, gradually decreases leading to reduced prices. But the technology shift means clean energy infrastructure is solidly in place • Strict ETS system with mandates in non- ETS sectors (high CO_2 price and widespread mandates and targets on EE and non-energy climate forcers) • Thanks to global cooperation and strong growth, an adequate adaptation fund covers risk management for poorer countries • Impact of climate change not as severe as expected, but clear effects are visible

Note: The global economy recovers (e.g. driven by strong Asian demand), and through a series of observable climate events/trends and scientific advancements until 2020, the broad public starts to agree that global warming is for real. As a result, strong mitigation legislation is established in the major economies between 2020 and 2025.

Sector Policy Case Study 1: Shift to Clean Transport

Road transport accounted for 6.6 Gt of CO_2e or approximately 80 percent of all global transport emissions in 2010 (15 percent is from oil production and refining). About 50 percent of global road transport emissions originate from North America and Western Europe; all emissions currently originate from combustion of liquid fuels (largely fossil), and there is no significant use of indirect energy (i.e., electricity).

Figure C.1: Oil prices in 2010 USD for Baseline, Policy Consensus and all policy case study scenarios



Key Assumptions

This case study assumes a business-as-usual (BAU) growth of global distances traveled of 106 percent for light-duty vehicles (LDVs) from 2010–2030, 57 percent for medium-duty vehicles (MDVs), and 60 percent for heavy-duty vehicles (HDVs). This implies that global emissions will grow by approximately 100 percent until 2030 without reference case efficiency improvements, largely driven by increased vehicle sales in China and other emerging economies. Including reference case efficiency improvements, emissions will grow by about 29 percent to 2030 (to approximately 8.5 Gt CO_2e).

The abatement opportunities in the case study include a 30–45 percent improvement in the fuel efficiency of internal combustion engine (ICE) vehicles; aggressive penetration of alternative vehicles, with hybrid vehicles representing up to 60 percent and fully electric vehicles making up 8–12 percent of new vehicle sales; a mode shift of passengers to public transit (2 percent metro, 8 percent buses, and 10 percent BRT); and a shift of freight traffic from trucks to trains (20 percent) and ships (5 percent) in 2030. These improvements could bring down emissions by approximately 35 percent in 2030 compared with the BAU. If all measures at a

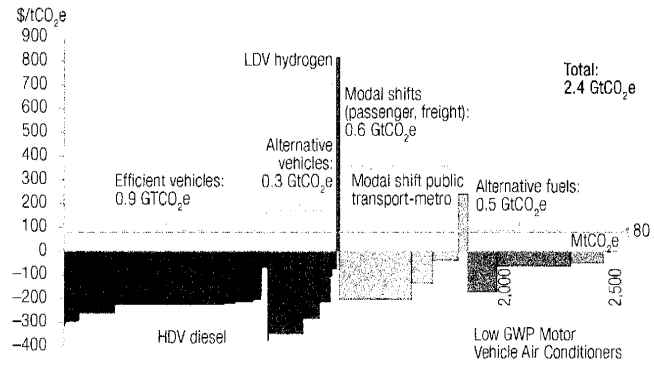
cost of <$330 (€250)/t$CO_2$e were implemented, 2030 emissions would drop to 2010 levels. In this study, the potential from biofuels is limited to gasoline replacement by bioethanol from sugarcane and second-generation lignocellulosic feedstock, with an 11 percent compound annual growth rate (CAGR) in ethanol production required to meet 2030 demand.[47] Finally, this scenario assumes very limited technical potential for commercial vehicles (due to their higher relative efficiencies and BAU improvements).

The abatement cost for society, in particular for conventional ICE improvements, is negative for many levers; in other words, these improvements have a positive payback over the lifetime of the vehicle because the fuel cost savings are greater than the initial additional investment for the advanced vehicle technology. The marginal abatement cost curve for the six focus regions (China, India, the U.S., EU, Mexico, and Brazil) is presented in Figure C.2.

For implementation of the policy levers in the MACC model, the cumulative investment (CapEx) is $447 billion from 2011–2030, offset by cumulative OpEx savings of approximately $305 billion. These are pure project costs as defined in Annex B. The capital and operating expenditures by region are shown in Table C.2.

Fuel savings would be substantial in the transport scenario modeled. The two key drivers of reduced fuel consumption are the transition from ICE vehicles to electric vehicles and hybrids (hybrids are assumed to run on electricity 75 percent of the time) and the improvement in fuel efficiency of the remaining ICE vehicles. Since the MACC model tends to be skewed toward underestimating the penetration of hybrids and overestimating the penetration of EVs in the BAU scenario, this results in a slight overstatement of both CapEx and OpEx for the abatement scenario considered in the simulation (Table C.2). This in turn means that both the mitigation potential and abatement costs for the transport sector presented in Figure C.2 may be slightly overestimated (specifically, the levers grouped under the "alternative vehicles" label). The total effect on simulated outcomes in terms of GDP, however, is likely to be negligible. For this analysis, both fuel savings and mode shift toward non-motorized transport, included in the form of avoided trips, were considered when evaluating technology choices.

Figure C.2: Road transport marginal abatement cost curve, 2030 (six focus regions)



This case study assumes that the ICE transition is dramatic and relatively rapid in all countries (see Figure C.3). In this scenario electric vehicles will reduce tailpipe emissions but will increase emissions from power plants by approximately 80 gCO_2e/km of distance traveled; this is assumed to be high-emitting electricity. The CO_2 emissions reductions included in the analysis already account for these effects, but the full breakdown of other pollutants (including black carbon) is not available and hence is not included (as is the case for all other scenarios). The underlying assumptions on fuel and costs are presented in Tables C.3 and C.4. The analysis does not use a demand model to examine modal

[47] The MACC model builds on an analysis of land availability/land use in 2030 that arrives at a potential production volume of 160 billion gallons of biofuel. This analysis only considered the availability of land as constraint for biofuels production and did not take into account other (environmental) factors like water availability or impact on water resources. The model also assumes that the biofuel needed for consumption need not be produced locally. In addition, the cost of abatement through biofuels reflects the cost of production, not an opportunity cost of alternative land uses (for example, the model does not consider the impact of higher sugar prices on the abatement potential and cost of bioethanol).

Table C.2: Transportation: Changes in CapEx and OpEx

Change in capital expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	$12,876	$21,483
China	$35,176	$75,019
EU	$49,973	$63,793
India	$13,833	$22,738
Mexico	$5,649	$9,303
United States	$46,984	$64,556

Change in operating expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	–$616	–$1,738
China	–$1,896	–$6,232
EU	–$4,371	–$11,565
India	–$749	–$2,232
Mexico	–$190	–$549
United States	–$1,800	–$4,109

Figure C3: Conventional passenger vehicle efficiency by region, BAU vs. case study

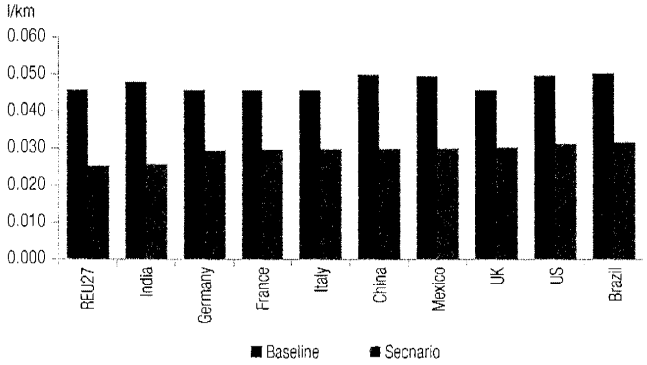
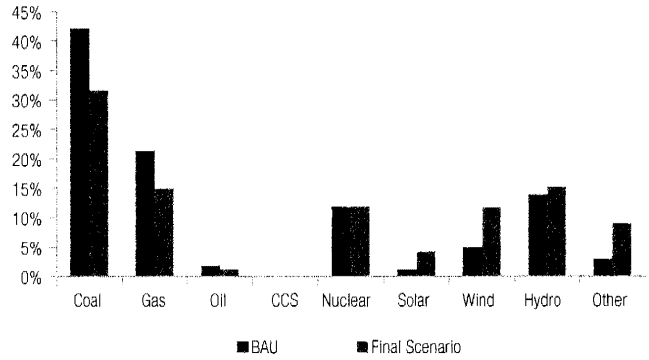


Figure C4: Underlying global scenario power mix (2030)



shifts and consumer choices; rather, it presents a supply model mandating change through policy interventions that yield a predetermined amount of emissions reductions. This could lead to a neglect of fixed costs of technology adoption and the risks of a lock-in into high-emissions transport systems.

Case Study Impacts

The MACC model shows that the interventions described above require significant increases in capital expenditures and result in significant reductions in operating expenditures. The FASST tool shows that the reductions in emissions considered here (primarily BC) result in reduced deaths from respiratory illnesses. The GEIM analysis provides the multiple economic impacts. For example, because households and firms would have to buy less fuel, they would have more money to spend on other goods and services; in addition, the reduced demand for oil would lower oil prices, providing a boost to the economy. The power sector, however, would need to make investments to meet the increased electricity demand from electric vehicles; the cost of this investment would ultimately be paid by consumers.

Overall, the two clean transport scenarios increase global GDP by 0.5–0.8 percent ($600 billion–$1.0 trillion in 2010 dollars)

Table C.3: Underlying scenario fuel price assumptions by region

	Region	2020	2030
Price of Electricity	Brazil	0.09	0.10
(USD/KWh)	China	0.12	0.13
	France	0.05	0.05
	Germany	0.05	0.05
	India	0.11	0.12
	Italy	0.05	0.05
	Mexico	0.09	0.10
	Rest of EU27	0.05	0.06
	United States	0.08	0.09
Price of Crude Oil (USD/bbl)	Global	109.45	123.48
Price of Gasoline (USD/liter)	Global	0.81	0.90
Price of Diesel (USD/liter)	Global	0.80	0.88

Table C.4: Underlying assumptions on incremental costs of plug-in hybrid and electric vehicles

Incremental cost of plug-in hybrid/electric vehicles in 2030 (USD)	Region	2030
LDV diesel plug-in hybrid	Brazil	3,977.18
	China	3,471.52
	India	3,471.52
	Mexico	3,716.16
	EU	4,222.85
	US	4,222.91
LDV gasoline plug-in hybrid	Brazil	3,527.40
	China	3,079.98
	India	3,079.98
	Mexico	3,297.30
	EU	3,746.94
	US	3,746.93
LDV electric	Brazil	3,420.11
	China	2,999.43
	India	2,999.43
	Mexico	3,203.76
	EU	3,641.31
	US	3,640.64

from the baseline scenario in 2030. However, the impact of the scenarios is not homogenous across countries. Scenario 1, which assumes that developed countries produce most of the high-tech vehicles and infrastructure needed to transform the sector, results in a boost to developed countries' exports and increases GDP by 1–2.2 percent relative to the 2030 baseline. In contrast, emerging markets must import some of the necessary machinery; this acts to dampen GDP by 1–3 percent relative to the 2030 baseline. Scenario 2 assumes that developed countries would shoulder the majority of the costs incurred by emerging economies to transform their transportation sector while also foregoing the net benefit deriving from increased capital exports, at a cost to the GDP of less than one percent compared with Scenario 1. In Scenario 2, the emerging economies see a boost in GDP of 0.1–0.9 percent relative to Scenario 1.

The impact on GDP is also reflected in employment, which in the emerging markets drops by 0–1.8 percent relative to the baseline in 2030 for Scenario 2. In Scenario 1, for emerging economies the drop in employment is 0.35–1.84 percent relative to the baseline. For countries that have a boost in GDP, employment increases of 0.5–1.1 percent relative to the 2030 baseline are possible for Scenario 2 and increases of 1–1.75 percent are found for Scenario 1. The changes for each country are affected by that nation's relative competitiveness (this is one of the transmission channels included in the macroeconomic model), which leads to differential economic impacts across the global economy.

The emissions reductions are estimated to reduce air quality-related mortality by about 20,000 lives per year in the six regions considered in 2030; India and China would account for about 90 percent of the total. In monetary terms, the reduced air-quality-related mortality would be equivalent to a total of $87 billion (2010 dollars). The global impact from mitigation measures undertaken in the six focus regions results in a global net total of 21,040 lives saved per year in 2030 from avoided premature mortality.[48] Ideally, to assess health impacts from urban transport, air pollution exposure measurements at the street level would be needed. This would be a daunting task; because this analysis relies on downscaled models to examine health impacts, it does not fully capture the expected impacts.

Sector Policy Case Study 2: Energy-efficient Industry

This case study includes three primary industrial sectors—iron and steel, cement, and chemicals—plus a mixed category labeled "other industry" (which includes most other industrial production activities except those related to oil and gas).

Key Assumptions

Iron and Steel

The iron and steel industry emitted 2.5 Gt CO_2e in 2010 (approximately five percent of total global emissions), of which about 2.2 Gt were process-related and 0.3 Gt were emitted in the power sector through the consumption of ~777 TWh of electricity.

In the BAU case, global iron and steel production is expected to grow by three percent per annum, while global emissions will grow by two percent per year, increasing emissions to 3.7 Gt in 2030. The 0.7 percentage point difference is due to BAU decarbonization, ongoing industrial energy efficiency programs, and a 10 percent shift from basic oxygen furnace (BOF) to electric arc furnace (EAF) production.

The pursuit of available mitigation opportunities could reduce 2030 emissions to about 24 percent lower than 2010 levels, abating 1.8 Gt CO_2e or 49 percent annually compared with the BAU scenario. More than half (about 56 percent) of the abatement potential comes from China and India. The opportunities can be divided into four types:

- CCS (42 percent of total potential)
- Energy efficiency measures (39 percent of total potential)
- Process change (9 percent of total potential)
- Fuel shift measures (10 percent of total potential)

Breakthrough technologies for smelting and top gas recycling are expected within the 2030 timeframe. Fuel shift shows very limited capacity, because coke can be substituted only in small plants.

The average cost for all iron and steel abatement measures is –$65 per ton of CO_2e in 2020. This cost is expected to increase to $17 per ton in 2030, due to implementation of CCS, despite the effects of capital cost reductions (learning rate improvements) and higher energy costs. Approximately 700 Mt of the total abatement potential can be achieved at a negative cost. Total cumulative investment (CapEx) is approximately $64 billion, offset by cumulative OpEx savings of approximately $28 billion—from 2011–2030. The geographical breakdown is shown in Table C.5.

Cement

Cement is the main ingredient in concrete, which is, after water, the second-most-used substance. The cement industry accounted for 2.6 Gt of CO_2 emissions in 2010 (including indirect emissions); China represented the largest source of emissions (approximately

[48] In general, only if a significant number of lives were saved in the multi-country scenarios were the impacts included as productivity gains in the macroeconomic model. There was no iteration between the health and macroeconomic model to reach equilibrium; in other words, lives saved were calculated based on static estimates of the energy and emissions energy savings. The iteration process would only produce minor changes relative to the initial estimates of lives saved, and these changes are unlikely to be significant from a macroeconomic perspective.

Table C.5: Iron and steel: Changes in CapEx and OpEx, BAU vs. case study

Change in iron & steel capital expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	$2,059	$9,379
China	$9,637	$20,892
EU	$13,521	$309
India	$1,652	$18,351
Mexico	$175	$329
United States	$1,041	$1,648

Change in iron & steel operating expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	–$88	–$89
China	–$1,006	–$1,387
EU	–$121	–$16
India	–$161	–$413
Mexico	–$17	–$30
United States	–$64	–$94

Table C.6: Cement: Changes in CapEx and OpEx, BAU vs. case study

Change in cement capital expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	–$10	$217
China	$4,059	$6,794
EU	$5,418	$186
India	–$702	$2,001
Mexico	$75	$177
United States	–$77	$778

Change in cement operating expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	–$19	–$30
China	–$548	–$484
EU	–$37	–$39
India	–$71	–$87
Mexico	–$10	–$17
United States	–$9	–$8

55 percent). More than half of cement emissions are from the clinker calcination process; these emissions can be abated only by reducing clinker production or applying CCS technology.

In the business-as-usual case, cement production will grow by 2.1 percent per year and direct emissions are projected to grow at approximately 1.9 percent per annum due to production growth (notably in Asia), increasing to 3.7 Gt in 2030 (including indirect emissions).

The total abatement potential amounts to approximately 0.83 Gt CO_2 in 2030, which would cut emissions by 23 percent and keep emissions approximately 10 percent above 2010 levels. Almost 90 percent of the abatement potential is based on conventional technologies, such as clinker substitution and alternative fuels. No breakthrough technology to greatly improve energy efficiency or carbon intensity is foreseen in the near term, and significant abatement potential from CCS is unlikely until after 2030.

Carbon capture and storage requires capital investments to build out capture capacity.[49] The average cost for all abatement measures is –$32/tCO$_2$e in 2020 and is expected to increase, due to the relatively higher cost of CCS, to –$15/tCO$_2$e in 2030. From a societal perspective, the implementation of conventional levers can largely be achieved at a negative cost and negative cash flow, due to avoiding build-outs of clinker production capacity. Not all of the levers will carry a negative cost at the individual cement producer's level, however, due to non-marginal pricing by suppliers, taxes, and higher discount rates. The geographical breakdown of CapEx and OpEx is shown in Table C.6.

Chemicals

The chemical industry accounts for 16 percent of total industrial GHG emissions. Chemical production resulted in 2.9 Gt of CO_2e emissions in 2010, of which about 2 Gt were process-related and 0.9 Gt were emitted in the power sector through the consumption of ~1,300 TWh of electricity.

In the business-as-usual case, global chemical production is expected to grow by approximately 4 percent per annum and global emissions to grow by 3.5 percent per year, increasing current emissions to 5.7 Gt in 2030. The approximately 0.5 percentage point difference is due to BAU decarbonization via ongoing industrial energy efficiency programs.

[49] Because CCS development has been slower than expected, the updated cost curve reflects a reduced abatement potential (compared with the 2009 version) of about 0.9 Gt CO_2e for 2030 for the industrial sector.

Table C.7: Chemicals: Changes in CapEx and OpEx, BAU vs. case study

Change in chemicals capital expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	$851	$1,309
China	$14,144	$22,060
EU	$18,704	$748
India	$1,966	$3,025
Mexico	$276	$360
United States	$5,911	$7,203

Change in chemicals operating expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	–$16	–$86
China	–$254	–$627
EU	–$109	–$60
India	–$94	–$291
Mexico	–$11	–$15
United States	–$139	–$252

With a global CO_2 abatement cost of up to $133/t$CO_2$, abatement could hold 2030 emissions to 2015 levels, abating 2.0 Gt annually compared with the BAU, of which approximately 42 percent could be achieved at a negative cost. Almost half of the abatement potential comes from China.

The abatement opportunities can be grouped in four categories:

- Energy efficiency
- Fuel shift
- Decomposition of non-CO_2 GHG gases
- Carbon capture and storage

The average cost for all abatement measures is –$20 per t$CO_2$e in 2020. This cost is expected to increase to –$10 per t$CO_2$e in 2030, due to the introduction of CCS, despite capital cost reductions (learning rate improvements) and higher energy prices. The chemical sector requires high up-front capital investments of approximately $978 billion in 2010–2030. However, cumulative operational savings of approximately $778 billion, mostly due to lower energy expenditures, will offset the negative cash flow. The geographical breakdown of CapEx and OpEx is shown in the table above.

Case Study Results

Economically, the large capital investment is relatively balanced out by significant fuel savings and accompanying fossil fuel price impacts. In Scenario 1 the increase in capital expenditure provides a boost to developed countries, which are assumed to supply the bulk of the capital goods to all countries. Emerging markets also gain via improved competitiveness as a result of their larger potential reduction in energy consumption. When this potential is realized, the cost of production for iron and steel, cement, and chemicals falls more than in developed countries, allowing the emerging markets to gain global market share. In Scenario 2, these results are amplified by the fact that developed countries shoulder a large fraction of the costs of the transition for emerging economies.

Figure C.5: Chemicals: Energy intensity vs. BAU, 2030 (%)

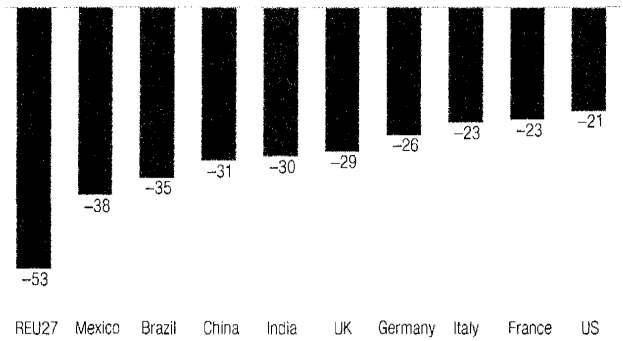
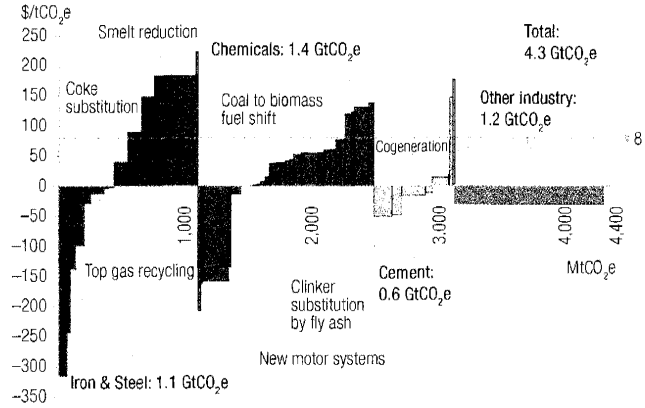


Figure C.6: Industry marginal abatement cost curve, 2030 (six focus regions)



Overall, global GDP in the scenarios modeled is about 1–1.2 percent higher ($1.2 trillion-$1.4 trillion, 2010 USD) in 2030 than in the baseline scenario. The key drivers of the increase in GDP are the additional capital expenditures and the reduction in energy consumption in the industrial sector, although this positive impact would be offset by having to pay for the capital in the long run. All the focus regions analyzed here see a relative increase of 0.1–2.4 percent in their GDP in Scenario 1; in Scenario 2, only the EU countries have a cost to GDP of 0.8–0.2 percent relative to the 2030 baseline, because their relative competitive advantage decreases.

The fuel switch assumed in the case study is estimated to reduce emissions-related mortalities by about 52,000 lives per year for the six focus regions, of which the vast majority are in India. The mitigation measures undertaken in the six focus regions are estimated to result in a global net total of 58,240 lives saved per year in 2030 from avoided premature mortality. The reduction in SLCPs in this sector is mainly from abatement of black carbon emissions by replacing traditional brick kilns with more energy-efficient kilns, such as vertical shaft and simple tunnel brick kilns, and installation of electrostatic precipitators on coke ovens to capture process emissions (Dinkel et al. 2011). A majority of the drop in BC emissions occurs in India, which in turn realizes the highest savings in lives from reduced cardiopulmonary diseases. China, on the other hand, could see a larger reduction in methane emissions than the other countries analyzed, through degasification and gas capture in coalmines and oxidation of ventilation air methane[50] (Dinkel et al. 2011). This saves more lives from respiratory-related causes (a reduction in methane emissions lowers formation of ozone). However, the health benefits indicated here are conservative due to the limited emissions data available in the MACC model.

In monetary terms, the estimated mortality savings from reduced SLCPs is equivalent to about $240 billion (2010 dollars) for the six regions. In addition, agricultural productivity for the four crops (maize, wheat, rice, and soybeans) would increase by more than 1,255,000 metric tons in the six regions considered as a result of reduced ozone damage to soils and crops. The mitigation measures undertaken in the six focus regions would result in a global net increase in crop yields of 1.72 million tons per year in 2030. Although China has the highest reduction in CH_4 emissions, most of the increase in crop yields is in the EU (followed by China). This is because of the EU's higher base crop production, which leads to greater benefits, and the downwind impacts of CH_4 emissions in China (sensitivity tests with the FASST model indicate that without any CH_4 abatement in China, European crop yields would be more than a third lower). The increase in crop yields is valued at $216 million for the six regions. Again, this value is an underestimated because of the limited emissions data in the MACC model.

As previously outlined, Scenario 1 assumes that developed countries produce most of the high-tech infrastructure needed to transform the sector. As a result, these countries see a boost to their exports, which adds to the increase in domestic demand. Although this channel acts as a drag on emerging markets, they gain as a result of an improvement in their relative competitiveness. With much higher energy intensity levels in the baseline, these countries have the most to gain from investing in the new technologies; in addition, by reducing their production costs more than developed countries (on average), they gain global market share. Scenario 2 results in a redistribution of gains, with developed economies losing their edge. The shift in GDP is also reflected in employment in the emerging markets. In both scenarios, emerging economies experience significant job gains. In China, the number of people employed is 1.5–1.8 percent higher than the 2030 baseline for Scenarios 1 and 2, respectively; in India and Brazil the increases are 0.6–2 percent and 0.8–1.5 percent, respectively.

Sector Policy Case Study 3: Energy-efficient Buildings

The buildings sector emitted an estimated 3.4 Gt CO_2e in 2010, of which 2.1 Gt (63 percent) was indirect emissions from energy use from the power sector.

Key Assumptions

In the business-as-usual scenario, new building construction, along with increased ownership of appliances and lighting, is projected to grow rapidly from 2010–30. Global emissions are expected to grow by 1.4 percent per year, increasing to 4.5Gt of CO_2e in 2030 in the absence of abatement measures.

About three Gt of low-cost carbon abatement opportunities have been identified in the buildings sector—half in the residential sector and half in commercial buildings. The majority (approximately 2.7 Gt) can be achieved at a negative lifecycle cost, or net savings. The biggest reductions can be achieved in efficient new construction (0.7 Gt CO_2e of abatement potential), electronics and appliances (0.6 Gt CO_2e), and building envelope retrofits (0.4 Gt), with the remainder achievable through F-gas reductions (0.3 Gt), high-efficiency lighting and lighting controls (0.2 Gt), and water heater and HVAC retrofits (0.3 Gt).

Many of the negative-cost abatement opportunities are not realized under the BAU because of misaligned incentives and high perceived consumer discount rates and transaction costs. All

[50] To prevent explosions, coal mines are constantly ventilated to blow in fresh air and suck out air containing methane. This ventilation air methane is the largest source of methane from coal mines. The concentration is too low to be sold as natural gas, but ventilation air methane can be oxidized to produce heat and electricity.

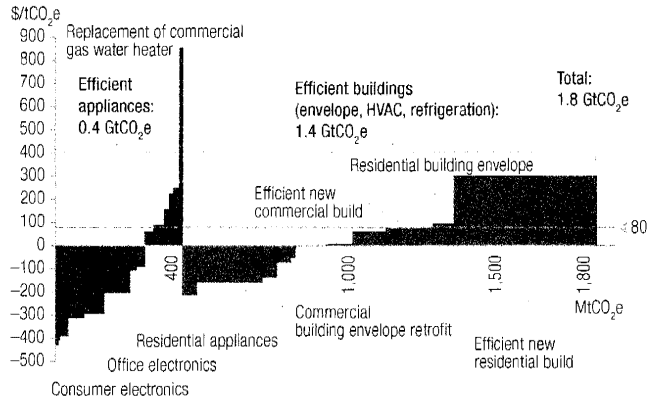
abatement measures considered in this sector assume no impact on end-user comfort; behavioral changes could yield significantly higher emissions reductions. The marginal abatement cost curve for the six regions of interest is presented in Figure C.7.

The case study assumes significant increases in capital expenditure for service firms and households. The relevant figures for each of the regions considered are indicated in Table C.8.

The entire change in operational expenditures is assumed to derive from fuel savings, implying that there are no non-fuel OpEx savings in this scenario.

Developed economies and emerging markets are both assumed to implement these policies. As a result, energy consumption in buildings is lower across all countries (although at a higher cost of capital), and the impact of the combined capital expense and fuel savings feeds through the whole economy. The other key assumption is the change in energy efficiency across sectors. The shift in equilibrium energy intensity for residential and commercial buildings, shown in Figures C.8 and C.9, indicates the different gains across countries.

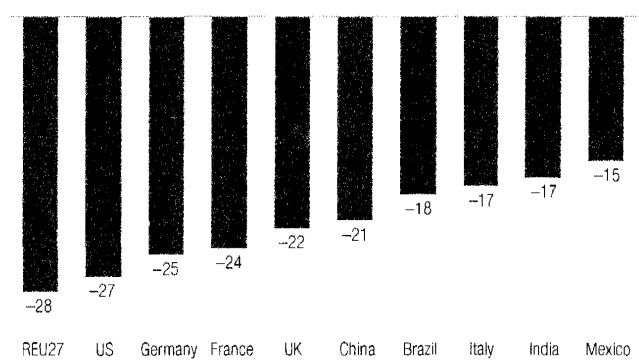
Figure C.7: Buildings marginal abatement cost curve, 2030 (six focus regions)



Case Study Impacts

As in other sectors, the key transmission channels are the impact of the change in capital expenditures and reduced energy consumption. In the short run, capital expenditure is generally higher than in the baseline; as a result, GDP is increased as a result of the rise in expenditure. Over the long term (after the spending has taken place), however, the positive boost fades as firms must increase prices to cover their higher operating cost and households must adjust their spending to a lower level of disposable income. These new factors are a drag on GDP, which pulls output back down to (or even below) baseline levels. These effects are balanced by declining fuel prices as efficiency measures reduce global demand. At the country level, the net outcome of the scenario depends on a number of additional factors.

Figure C.8: Energy intensity vs. BAU, commercial buildings (%, 2030)



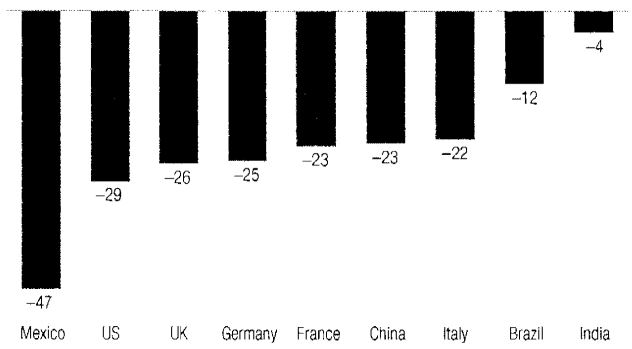
Note: (REU27 = rest of EU27).

Table C.8: Buildings: Commercial and residential CapEx changes, BAU vs. case study

Change in commercial buildings capital expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	$668	$1,011
China	$6,816	$12,925
EU	$10,021	$10,668
India	$1,063	$2,330
Mexico	$301	$502
United States	$15,332	$18,255

Change in residential buildings capital expenditure vs. BAU (in millions, 2010 USD)		
	2020	2030
Brazil	$2,085	$2,743
China	$61,450	$73,263
EU	$24,375	$20,662
India	$4,301	$5,596
Mexico	$1,604	$2,243
United States	$20,064	$16,719

Figure C.9: Energy intensity vs. BAU, residential buildings (%, 2030)



Overall, the scenarios modeled produce global GDP that is 0–0.2 percent higher (up to $240 billion in 2010 dollars) in 2030 than in the baseline scenario. Again, the impacts are heterogeneous across countries due to a number of drivers. For households, the size of any gain/loss is determined by the amount of energy savings generated relative to the cost of the additional capital. For Mexico, households are able to improve their energy efficiency by more than any other country at a relatively low cost. As a result, household incomes in Mexico rise relative to the baseline (the cost in terms of additional capital spending is more than covered by the gains from lower energy bills), which increases consumption; as a result, GDP is 1–1.8 percent higher relative to the 2030 baseline for the two scenarios considered.

The heterogeneous impact on GDP is also reflected in employment. Depending on the scenario, most countries see a small rise as a result of the increase in GDP. China and India gain the most in absolute numbers due to their size, but the dramatic increase in Mexico's GDP means it sees the greatest gain in employment relative to its labor force, with 1.3 percent more jobs created above the 2030 baseline.

The reduction in greenhouse gas emissions and air pollutants due to these energy efficiency improvements are estimated to lower air-pollution-related mortality by about 22,000 lives per year in the six focus regions. The vast majority of this impact occurs in India. Worldwide (including areas outside the six focus regions), the mitigation measures are estimated to save 23,855 per year in 2030 from avoided premature mortality. These health benefits result primarily from the large reduction in black carbon emissions in India (see Table C.9) when traditional residential cookstoves are replaced with more fuel-efficient ones or by a shift to liquid petroleum gas and other cleaner fuels (Dinkel et al. 2011). In monetary terms, the mortality savings are equivalent to $102 billion (in 2010 dollars) for the six regions considered. However, the health benefits indicated here are underestimated due to the limited emissions data available in the MACC model (the model does not include $PM_{2.5}$).

Summary Tables for the Sector Policy Case Studies

The following tables summarize the findings from ClimateWorks' analysis of the three sector policy case studies.

Reductions in non-CO_2 emissions associated with technical abatement in the transport, industry, and buildings (including appliances) sectors for the years 2020 and 2030, as obtained from the MACC model (Enkvist et al. 2009; Dinkel et al. 2011), are shown in units of $MtCO_2e$. Although N_2O emissions are listed, their health and agricultural impacts are not considered.

Table C.9: Changes in non-CO_2 emissions for the three sector policy case studies

Abatement ($MtCO_2e$)		Transport		Industry		Buildings	
		2020	2030	2020	2030	2020	2030
China	N_2O	0	0	16	30	0	0
	CH_4	0	0	17	93	0	0
	BC	33	44	25	64	12	10
India	N_2O	0	0	2	3	0	0
	CH_4	0	0	3	19	0	0
	BC	22	55	57	121	55	89
US	N_2O	0	0	16	22	0	0
	CH_4	0	0	4	19	0	0
	BC	5	0	0	0	0	0
EU	N_2O	0	0	31	42	0	0
	CH_4	0	0	3	13	0	0
	BC	19	2	0	0	0	0
Brazil & Mexico	N_2O	0	0	4	6	0	0
	CH_4	0	0	1	5	0	0
	BC	24	41	14	22	4	9

Note: Reductions in non-CO_2 emissions associated with technical abatement in the transport, industry, and buildings (including appliances) sectors for the years 2020 and 2030, as obtained from the MACC model (Enkvist et al., 2009; Dinkel et al., 2011), are shown in units of Mt CO_2e. Although N_2O emissions are listed, their health and agriculture impacts are not considered.

Table C.10: Avoided premature mortality for the three sector policy case studies

Premature adult mortality(>30 years old) /year	Industry		Transport		Buildings	
	2020	2030	2020	2030	2020	2030
China	–3,580	–10,968	–4,596	–6,126	–1,658	–1,397
India	–13,154	–29,483	–5,027	–12,576	–12,613	–20,452
US	–113	–523	–411	–11	Negligible	
EU	–47	–686	–2,518	–277	Negligible	
Brazil & Mexico	–6,145	–10,699	–443	–752	–81	–162

Note: Annual reductions in cardiopulmonary and respiratory disease and lung cancer associated with BC and CH_4 emission changes in 2020 and 2030, as obtained from the FASST model (Van Dingenen et al. 2009) for the six focus regions.

Table C.11: Increase in crop yields from a shift to energy efficient industry

Increase in crop yields (metric tons/year)	Industry	
	2020	2030
China	27,400	402,000
India	5,520	80,900
US	19,200	281,000
EU	32,300	475,000
Brazil & Mexico	1,129	16,510

Note: Reduced emissions of BC and CH_4 improve yields of maize, wheat, rice, and soybean in 2020 and 2030, as obtained from the FASST model (Van Dingenen et al. 2009) for the six focus regions.

Table C.12: Monetized health and agricultural benefits of the sector policy case studies

Monetized Value (2010 USD)		Industry	Transport	Buildings	Total
China	Health	$39 B	$22 B	$5 B	$66 B
	Agriculture	$69.1 M	n/a	n/a	$69.1 M
India	Health	$138 B	$59 B	$96 B	$293 B
	Agriculture	$13.9 M	n/a	n/a	$13.9 M
US	Health	$ 8 B	$164 M	0	$8 B
	Agriculture	$48.3 M	n/a	n/a	$48.3 M
EU	Health	$ 6 B	$2 B	0	$8 B
	Agriculture	$81.6 M	n/a	n/a	$81.6M
Brazil & Mexico	Health	$ 49 B	$3 B	$738 M	$53 B
	Agriculture	$2.84 M	n/a	n/a	$2.84 M

Note: Based on the statistical value of life and a crop value of $171.80 for the regions for 2030, using data shown in Tables C.10 and C.11.

Table C.13: Energy savings from sector policy case studies for the six focus regions, 2030

Energy Savings (GWh)	Industry	Transport	Buildings
China	3,338,338	1,215,979	1,622,171
India	861,857	447,377	174,920
US	602,326	1,193,521	1,885,038
EU	545,069	1,476,108	1,574,906
Brazil & Mexico	393,588	363,249	142,162

Note: (All fuels included.)

Table C.14: Annual avoided premature mortalities from the sector policy case studies, 2020*

Premature mortality (>30 years old) /year	Industry	Transport	Buildings
China	–113,182	–11,869	–25,571
India	–162,207	–6,899	–39,842

Note: Reduced cardiopulmonary and respiratory disease and lung cancer from the FASST model (Van Dingenen et al. 2009) associated with emission changes in 2020 as obtained from the GAINS model from Wagner et al. (2013) for China and India (see footnote 51).
* From alternate modeling scenario.

Table C.15: Annual increase in crop yields from the sector policy case studies, 2020*

Increase in crop yields (metric tons/year)	Industry	Transport	Buildings
China	921,000	172,000	198,000
India	564,000	98,600	125,000

Note: Reduced cardiopulmonary and respiratory disease and lung cancer from the FASST model (Van Dingenen et al. 2009) associated with emission changes in 2020 as obtained from the GAINS model from Wagner et al. (2013) for China and India (see footnote 51).
* From alternate modeling scenario.

Table C.16: Social cost of carbon (SCC) for 2030 for the three sectors, using the values associated with the different discount rates (US Interagency Working Group on Social Cost of Carbon, 2013) described in Chapter 3

Sectors	Gt CO_2e abated	SCC (in billions)		
		5% discount, $17/t$CO_2e$	3% discount, $55/t$CO_2e$	2.5% discount, $80/t$CO_2e$
Industry	4.3	$73	$237	$344
Transport	2.4	$41	$132	$192
Buildings	1.8	$31	$99	$144

Note: Monetized values (in 2010 USD) are calculated for the emissions mitigated in each of the sectors for the six regions considered. The main text uses the central 3% discount rate.

Conclusions from the Sector Policy Case Studies

Aggregating the results of the three sector policy case studies results in significant multiple benefits. The annual benefits of these policies in the six focus regions in 2030 include 8.5 billion metric tons of avoided CO_2e emissions and almost 16 billion kilowatt-hours of energy saved. This is worth almost $800 billion. Approximately 94,000 premature deaths could be avoided each year, with a monetized value of $429 billion. Reduced crop damage increases yields by 1.3 million metric tons, valued at $216 million. Globally, GDP would grow by $1.8–$2.6 trillion per year.

Again, the full benefits of reduced emissions are not captured in this study because of the limited availability of data in the MACC model.[51] As a result, the labor productivity benefits of fewer lost work days and greater longevity, and the GDP impacts from increased agricultural productivity, were not included in the macroeconomic analyses due to their small size relative to the overall workforce. A recent analysis by Sanderson et al. (2013) demonstrates that when such effects are included, they can be large enough to offset the entire cost of mitigation. These types of integrated scenarios with additional macroeconomic linkages should be investigated in future work.

[51] Wagner et al. (2013) used the GAINS model to estimate emissions reductions for SO_2, NOx, $PM_{2.5}$, BC, OC, CO, NMVOC, and NH_3 from GHG mitigation measures that cost less than $80/t$CO_2e$ for China and India for 2020 for the industry, transport, and buildings sectors. The 2020 health benefits of these emissions reductions were estimated at 150,622 and 208,948 avoided premature mortalities per year for China and India, respectively. The MACC model used in the sector policy case studies in this report estimates 9,834 and 30,794 avoided premature mortalities per year for China and India, respectively. The Wagner et al. (2013) study estimated crop yield increases at 1.3 million and 0.8 million metric tons for China and India, respectively, whereas the MACC data indicated increases of 27,400 and 5,520 metric tons. (The majority of the benefits are in the industrial sector; see Tables C-14 and C-15.) If these estimates were included in the GEIM analysis, the expected impacts would include increased worker and agricultural productivity that would boost GDP. A secondary effect of increased crop yields would be reduced food prices, which increase disposable household income and hence GDP in the long-term. These larger benefits estimates from the detailed data set in the Wagner et al. (2013) study clearly need to be considered in an updated study that would also include the other focus regions.

Annex D: Detailed Development Project Case Studies

Development Project Case Study 1: Sustainable Transportation in India

Background: Pimpri-Chinchwad BRT

In order to develop the information to conduct a national-scale analysis of expanded sustainable bus rapid transit (BRT) in India, the Pimpri-Chinchwad BRT project was analyzed in some depth to establish the benefits that can be expected under real-world conditions. Currently 68 percent of urban transportation demand in this city is satisfied by individual two-wheelers; public transportation accounts for less than four percent. Of the total investment for this project (roughly $345 million), about $147 million ($44 million in IBRD lending) is dedicated to the Pimpri-Chinchwad sustainable transport plan that was used as the model project.

Major components of the model project include:

- Construction of two new road-cum-BRT corridors (19 km).
- Passenger access to BRT stations on two previously built BRT corridors, such as overpasses and underpasses and improved at-grade crossings using GPS system to control BRT operation.
- Three bus terminals to serve the previously built BRT corridors.
- Technical assistance and capacity building, including transport planning; BRT service plan, fare structure, and fare collection; assistance to build up the proposed BRT management structure; and capacity building and training for BRT staff.

An analysis of these and other details as a standalone project was conducted using the Transportation Emissions Evaluation Models for Projects (TEEMP) framework developed by Clean Air Asia. TEEMP quantifies emissions from the proposed project, as well as other benefits (e.g., reduced accidents and travel time, and rough, or "sketch", economics) to determine the feasibility of the project.

Some key assumptions for the analysis, such as ridership data for the base year, 2008, were taken from the project appraisal document. Ridership growth rate was derived from data within the project appraisal document. In addition, data on total BRT ridership within the municipality (taken from the municipal transportation plan) were used to develop a projection of ridership along the BRT corridor. These ridership assumptions suggest that about 200,000 trips/day, or 68 million/year in 2014 (rising to more than a half million per day, or 170 million/year by 2033) are shifted to BRT. This represents about seven percent of total city passenger trips in 2014. Other key assumptions had to be estimated using expert judgment or exogenous empirical available data.

Some of the key assumptions include:

- 20-year timeframe, with BRT operational in 2014 and economic lifetime running through 2033.
- Construction materials and emissions taken from *Reducing Carbon Emissions from Transport Projects.*[52]
- Mode shifts assumed to follow existing transportation mode share (23 percent car, 17 percent two-wheeler, 16 percent

[52] http://www.adb.org/documents/reducing-carbon-emissions-transport-projects.

three-wheeler, 42 percent bus), based on the Pimpri-Chinchwad Comprehensive Mobility Plan.[53]

- Average speed and trip length (25 km/hr declining to 15 km/hr by 2033) for the non-BRT traffic in both the counterfactual and BRT scenario derived from the India Ministry of Urban Development study, *Traffic and Transportation Strategies and Policies in Urban Areas.*
- Occupancy for the counterfactual and BRT scenarios (1.4 for cars, 1.1 for two-wheelers, 1.9 for three-wheelers, and 35 for bus) taken from the Comprehensive Mobility Plan.
- Complete implementation of existing standards (Euro 3/4 for cars; Euro III/IV for all diesels; Euro 1 for gasoline two- and three-wheeler four-stroke engines) but no strengthening of these standards.
- BRT development follows typical development patterns established for India, including closed-system BRTs with central lanes, no multiple lane stations, and medium demand.

Using the assumptions listed above, the TEEMP framework found that large reductions of time, emissions, fuel use, and traffic fatalities can be achieved by shifting passenger traffic away from current transportation patterns and onto a modern BRT system consistent with project documentation and historic Indian BRT development patterns.

Over the 20-year analysis timeframe, benefits include:

- 5,761 billion vehicle kilometers traveled (VKT) saved.
- 201 million hours of travel time saved (about 5 minutes per trip).
- 691 traffic-related fatalities avoided.
- 10,368 traffic-related injuries avoided.
- Approximately $1 billion in fuel savings.
- 1,300 tons of NOx emissions avoided.
- 1.1 million tons of CO_2 emissions avoided.
- 300 tons per year of PM_{10} avoided (145 tons per year emitted as BC).

These results are in line with CO_2 and PM savings from other BRT projects in Asia (on a per-km basis).

Nationwide Scale-up Analysis

The results of the Pimpri-Chinchwad BRT analysis and a Ministry of Urban Development (MOUD) study of more than 87 cities across India were used to estimate the length of viable BRT routes that could realistically be developed across India (approximately 1,000 km in the scale-up scenario, including more than 422 km that is already included in government plans), as well as the per-kilometer costs and benefits of such development. This is contrasted against a "no BRT" case that consists of no new BRT development.

In order to scale up the benefits of the single Pimpri-Chinchwad BRT system to the assumed nationwide BRT scenario (1,000 km), additional key assumptions were made:

- National statistics and traffic demographics derived from a 2007–2008 Ministry of Urban Development survey[54] of 30 cities in India.
- Key data that included the distribution of cities by population range, transportation demand, and trip mode-share by city population.
- Occupancy values, emission factors, fuel split, and technology data taken from the Pimpri-Chinchwad analysis.
- New investments of $3–$4 billion.

Two development timelines were explored for the national scale-up scenario: an optimal case, which completes 1,000 km of new BRT in six years, and a somewhat more realistic (based on recent BRT experience) 12-year case that deploys the same length of BRT, but over a longer period. Both timelines are subject to economic analysis for the period 2013–2032.

Six-year timeline: Based on the analysis, development of 1,000 km of BRT lines in 15–20 cities across India within six years and would result in the following benefits between 2013 and 2032:

- 380 tons per year of BC reduction relative to the reference case starting in 2019 (6,000 tons in aggregate).
- 1,975 reduced fatalities per year (from reduced traffic accidents and improved air quality) starting in 2019 (31,000 in aggregate).
- $2.6 billion/year in fuel savings starting in 2019.
- Three million tons/year of CO_2 emissions reductions starting in 2019 (49 Mt in aggregate).

Twelve-year timeline: Under a somewhat delayed implementation, the following benefits would occur during the same 2013–2032 analysis period:

- 380 tons per year of BC reduction relative to the reference case starting in 2024 (5,200 tons in aggregate).
- 1,975 reduced fatalities per year (from reduced traffic accidents and improved air quality) starting in 2024 (27,000 in aggregate).
- $2.6 billion/year in fuel savings starting in 2024.

[53] https://www.pcmcindia.gov.in/CMP.pdf. Sensitivity simulations were conducted using a 47-percent mode shift from buses and a 6-percent shift from cars based on actual mode-shift data from the Ahmedabad BRT project (52 percent buses, 30 percent rickshaws, 14 percent 2-wheelers, two percent cars, and 2 percent bicycles).The sensitivity resulted in greater BC reductions (65-percent higher, leading to greater health benefits) but lower fuel savings (a 38-percent lower CO_2 benefit).

[54] http://urbanindia.nic.in/programme/ut/final_report.pdf.

- Three million tons/year of CO_2 emissions reduction starting in 2024 (42 Mt in aggregate).

Additional savings include reductions in vehicle-km traveled, travel time, other injuries, and NOx; these were not quantified for the national analysis.

Air Quality and Agricultural Analysis

As described in Chapter 3, the FASST tool can directly and rapidly assess the approximate public health and agricultural benefits of air quality improvements. The tool also monetizes these benefits using health valuation functions and prevailing crop values.

The FASST tool estimates for 2030 that reducing emissions of CO_2 by three million tons per year and BC by nearly 380 tons per year (approximately 800 tons/year of $PM_{2.5}$) leads to significant local and global benefits, including at least 200 avoided deaths (approximately 175 in India) from respiratory illnesses in the 15–20 cities with new BRTs.[55] In addition, crop losses are reduced by 3,400 tons of grain, worth about $490,000 (most of the avoided losses—2,700 tons of grain worth about $460,000—occur in India).

The avoided premature mortality is probably very conservative because the atmospheric model used here assumed uniform emissions reductions across India, rather than concentrating the reductions in the 15–20 cities with new BRT systems (where the population would have greater than average exposure and higher median wages).

Macroeconomic Analysis

From a macroeconomic perspective, the direct and indirect impact of the BRT project will be felt through four channels. The most important of these is the impact on India's economy from capital spending from the project. The short-run investment in the transport network is expected to provide a boost to domestic demand and, as a result, GDP and employment. In addition to the boost to domestic demand, the improvement in the country's infrastructure increases India's capital stock and, as a result, potential output. This means that the increase in GDP is sustained over the long term because the improvement in the country's infrastructure increases the amount of output India can produce. Although this channel is partially offset by the additional cost to the government/operator associated with operating the BRT, the net impact is overwhelmingly positive.

In addition to these direct impacts, the BRT project offers a number of indirect benefits. Despite the additional operating costs, the switch to a mass transit system reduces the overall cost of transport per passenger kilometer as passengers switch from cars and motorbikes to the BRT system. The reduction in the cost of transport feeds through to the rest of the economy, boosting firms' profit margins and households' real incomes. These indirect benefits are in addition to others identified previously by the TEEMP analysis (reduced traffic fatalities and injuries) and FASST analysis (reduced premature mortality and increased agriculture productivity).

The faster, six-year BRT implementation results in higher benefits over the project's forecast horizon (2013–2032), as India's economy enjoys the benefits over a longer period. In this case, the net present value of the project (discounted using a 3 percent social discount rate) is $13.5 billion (in 2010 dollars). In the more realistic 12-year implementation case, the delayed timetable reduces the net present value of the project to $11.5 billion.

The economic benefits are also felt in the labor market. In the short run (2013–17), faster implementation creates approximately 91,000 new jobs, while the more realistic implementation scenario increases employment by an average of 48,000 jobs. The two timelines have the same long-run impact on employment, with about 128,000 jobs created by the early 2030s.

Monetization of Benefits and Comparison with Stated Project Benefits

The macroeconomic analysis does not reflect the monetary value of the avoided deaths. However, the additional benefits can be estimated using the 2010 value of a statistical life (VSL) in India. The VSL is listed in the literature at about $375,000. After adjusting for income and purchasing power, this is equal to $967,998 in 2010 (See Chapter 3).

Based on this future stream of welfare benefits, the net present value of the avoided mortalities (as a result of air quality improvements and reduced traffic fatalities) is calculated at $39–54 billion (assuming a 3 percent discount rate). Given that the avoided mortality occurs predominantly in higher-wage cities, the value would likely be even higher. Time savings (approximately five minutes per trip, or about 500 million hours per year) also occur predominantly in higher-wage cities. These productivity gains were not included in the macroeconomic analysis, but they could have an effect if they occur on a large enough scale.

Agricultural benefits and CO_2 reductions have also been quantified as net present value, following the same procedure of interpolating benefits streams between 2011–2031 and then aggregating and discounting at three percent. The results indicate nearly $3 million in agricultural benefits; using a social cost of carbon, more than $1.3 billion in value can be ascribed to CO_2 reductions.

[55] The specific number of cities would depend on the distribution of length of BRT lanes among the largest Indian cities. Based on 20 km of BRT track for a city the size of Pimpri-Chinchwad, it is likely that 15–20 cities would receive new BRT lanes.

Project appraisal documents were reviewed to compare the multiple development benefits of this case study with current evaluation practices. The project economic analysis included the following economic benefits from construction of the new BRT corridors: (i) a reduction in unit road-user costs in all types of vehicles for use of the new improved road (gasoline and time savings), (ii) reductions in unit road user costs from trips transferred from two-wheelers to public transportation (gasoline and time savings), and (iii) reductions in GHG emissions from trips transferred from two-wheelers to public transportation. Because the large time and fuel savings are included in the project's stated benefits, they have not been monetized as additional benefits in this case study. Because the (negligible) CO_2 benefits estimated by the project documentation seem too small relative to the true potential, the case study includes instead the large CO_2 benefits identified by TEEMP. The $185 million in net present value for 19 km of BRT in Pimpri has been scaled up to $9.7 billion, based on the 1,000 km of BRT lines to be constructed under this case study.

Summary and Conclusions

By exploring the multiple benefits of effective BRT systems (beyond the traditional measures of successful transportation initiatives and the economic net present value typically calculated in project financial analysis), it is possible to provide a more comprehensive picture and a greater monetized value of the project being examined. These benefits include time and fuel savings, reduced environmental impacts, reduced traffic and air-quality-related mortality and morbidity, and significant macroeconomic gains. Table D.1 categorizes these results as global public goods versus local socioeconomic benefits and presents a sensitivity analysis to the value of the social discount rate used (including 2.5 percent and five percent for comparison).

Development Project Case Study 2: Integrated Solid Waste Management in Brazil

Background: Benefits of Integrated Solid Waste Management

Effective management of municipal solid waste (MSW) poses "one of the biggest challenges [to] the urban world" (UN-Habitat 2010)—and the challenge is growing. In low-income countries, most cities collect less than half of the waste generated, and only half of the collected waste is processed to minimum acceptable environmental and health standards. Along with rapid urbanization and population growth, MSW generation from the world's cities is increasing at unprecedented and alarming rates—from 1.3 billion tons (in 2006) to 2.2 billion tons (by 2025)—and this growth is centered in developing countries. These cities lack funding for proper waste management; the annual municipal budgetary shortfall in World Bank client countries is $40 billion (Hoornweg and Bhada-Tata 2012). World Bank solid waste activities aim to improve waste management where the need is most pressing.

Table D.1: Multiple benefits potential of sustainable transportation (BRT) initiatives in India

Global Public Goods			Local Socioeconomic Benefits			
$MtCO_2e$	Global Lives Saved	Global Crop Losses Avoided (thousand tons)	Local Lives Saved	Local Crop Losses Avoided (thousand tons)	Local Jobs (thousands)	Local GDP
42–49	~360	7	27,000–31,000	28	44–91 short-term; 128 long-term	N/A
Monetized NPV of Benefits Using 2.5% Social Disount Rate (million 2010 USD)						
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Lives Saved	Local Crop Losses Avoided	Local Jobs	Local GDP
$2,000–2,400	~$535	$0.80	$53,000–59,000	$3.2	N/A	$12,400–14,500
Monetized NPV of Benefits Using 3% Social Disount Rate (million 2010 USD)						
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Lives Saved	Local Crop Losses Avoided	Local Jobs	Local GDP
$1,300–1,500	~$490	$0.75	$49,000–54,000	$3	N/A	$11,500–13,500
Monetized NPV of Benefits Using 5% Social Disount Rate (million 2010 USD)						
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Lives Saved	Local Crop Losses Avoided	Local Jobs	Local GDP
$280–340	~$360	$0.55	$35,000–40,000	$2.2	N/A	$8,600–10,200

Though more visibly a local problem, MSW affects public health and the environment on a global scale—most notably by emitting methane (primarily from landfills). Properly managing waste to minimize methane emissions offers a variety of local and global benefits. Locally, improper waste management, especially open dumping and burning, pollutes water bodies, contaminates air and land, attracts disease vectors, and clogs drains, contributing to flooding. People who live near or work with solid waste have increased disease burdens (Giusti 2009). At the global scale, post-consumer waste is an emerging contributor to climate change, emitting five percent of global GHGs and 12 percent of methane (Bogner et al. 2007). Most methane from solid waste is emitted from landfills, and these emissions are growing fastest in emerging economies. However, waste has the potential to be a net sink of GHGs when used as a resource, through recycling and reuse (Bogner et al. 2007). Burning waste without proper air pollution controls also affects the environment on a global scale by creating dioxins and furans, globally mixed persistent organic pollutants (POPs) that are toxic to humans and the environment. Improper disposal is also polluting the oceans at a global scale, threatening ecosystem functions, fisheries, and tourism (Law et al. 2010). Properly managing waste to minimize methane emissions also leads to improved water, air, and soil quality.

Though methane emissions only occur at the point of treatment and disposal, efforts to reduce these emissions can occur at every stage in the value chain: planning, waste generation, collection, treatment, and disposal. Moreover, the more efforts are focused upstream, the bigger the reductions that can be realized. For example, incentive plans to reduce waste generation and increase source separation yield two types of SLCP reductions. First, they directly reduce the amount of methane produced in a landfill (and other GHGs downstream in the value chain); second, they prevent other sources of SLCP (and GHG) emissions by displacing fertilizers for agriculture and natural gas for electricity.

Nationwide Scale-up Analysis

This case study estimates the emissions reductions from an integrated solid waste management approach in Brazil by simulating a scale-up of a model project to the national level. It shows that greater emission reductions can be achieved using an integrated solid waste approach than by targeting only one technology.

The model project selected is an integrated solid waste management project with an innovative carbon finance platform. The registered carbon finance methodology integrates a seamless payment structure within solid waste management investments greatly facilitating the sale of credits and the additional benefits that can be captured from those resources. It is a $50 million financial intermediary loan for on-lending to borrowers with solid waste subprojects. The project aims to improve the treatment and disposal of municipal solid waste; its success is measured by the number of open dumps closed and the increased volume of waste disposed in sanitary landfills, composted, or recycled. Brazil was selected for scale-up due to the existing strong regulatory structure and finance instruments available in this sector.

In this analysis, methane reductions from improved solid waste management across Brazil are estimated by the EASEWASTE solid waste lifecycle assessment model, developed by the Technical University of Denmark (Kirkeby et al. 2008). This model follows waste through its lifecycle, from generation through collection, transportation, and treatment, and calculates the environmental emissions and impacts from alternative treatment scenarios. Data specific to Brazil are used for generation rates, composition, the electricity grid, landfill behavior, cost data (including purchase, operations, maintenance) and debt service for each option (Hoornweg and Bhada-Tata 2012). Potential program costs have not been considered here. Generic data are used to model the composting facilities and anaerobic digesters.

Four different policy scenarios for managing Brazil's waste were assessed with respect to a reference baseline case:

1. **Baseline**: The current state of solid waste management in Brazil, with 58 percent of waste going to sanitary landfills and the remainder to dumps. The majority of sanitary landfills flare the methane produced in the landfill; open dumps simply vent the methane produced.
2. **All landfill scale-up**: All generated waste ends up in a sanitary landfill (no more open dumping); 50 percent of landfill gas (LFG) is collected and flared.
3. **All landfill with electricity generation**: Similar to the previous scenario, but 50 percent of LFG collected is flared, and 50 percent is used to generate electricity (displacing natural gas on the electrical grid). An engine efficiency of 30 percent is assumed.
4. **Anaerobic digestion (with electricity generation) for organic waste**: Organic waste is sorted and 75 percent is routed to anaerobic digesters, producing electricity (displacing natural gas on the grid); the resulting compost is used on land (but no market value or fertilizer substitutions are made). Again, an engine efficiency of 30 percent is assumed.
5. **Composting for organic waste**: Organic waste is sorted and 75 percent is composted. Again, the compost is not assumed to displace any fertilizer (though if it did, greater environmental benefits would be seen).

For all the scenarios explored, the most relevant result is the difference between a given scenario and the baseline. Implementing these organic waste treatment technologies on a large scale could reduce methane emissions by up to 29 million metric tons

of CO_2e per year.[56] Lifecycle GHG emissions are shown for each scenario in Figure D.1.

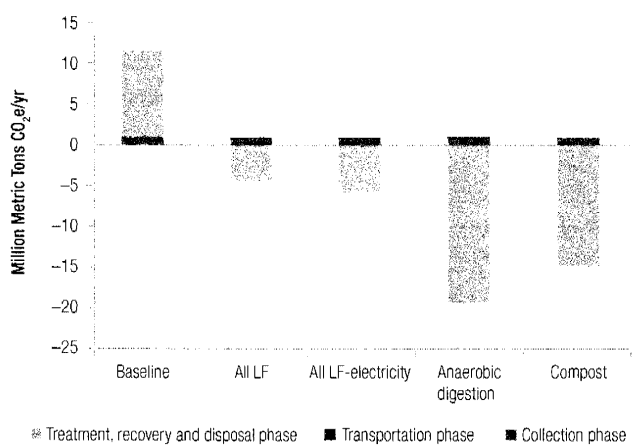
The baseline scenario results in about 11 million metric tons of CO_2e emissions each year (on a lifecycle basis). In the "all landfill scale-up" scenario, emissions are reduced relative to the baseline and are actually negative because the landfill is able to sequester more than it emits; this results in about −3.6 million metric tons of CO_2e or a reduction of nearly 15 million metric tons relative to the reference case. The "all landfill with electricity generation" scenario is similar to the all landfill scale-up, but instead of flaring the collected gas, roughly half of it is used to offset some natural gas power generation, further reducing CO_2e emissions.

Emissions are lowest in the "anaerobic digestion" scenario because organic waste is diverted from the landfill to an anaerobic digester, where methane emissions are maximized, captured, and used for energy. This results in the largest reduction of methane emissions—about 29 million metric tons—and the largest displacement of fossil fuels. The composting scenario leads to the second-lowest emissions (about 20 million metric tons) because diversion of organic waste from landfills reduces methane emissions, but it does not displace fossil fuel emissions through electric generation.

Public Health and Agricultural Benefits

The reduced methane emissions (15–29 million metric tons of CO_2e avoided per year by 2030 relative to the reference case) are input to the FASST tool to estimate the additional annual public health and crop benefits from reduced ground-level ozone formation. These could result in 246–468 avoided deaths around the world annually by 2030 from respiratory illnesses and 53,000–101,000 tons of avoided crop losses each year.

Figure D.1: Life-cycle GHG emissions ($MtCO_2/yr$) for all scenarios



Note: Anaerobic digestion and composting offer the greatest emission reductions, 20 million–29 million metric tons annually.

Macroeconomic Benefits

The direct economic impacts of improved waste disposal are assessed through four main channels. The additional capital and operating expenditures needed to run the sanitary landfill, anaerobic digestion, or composting facilities will provide a significant boost to GDP in the short run. This effect will fade over the medium term as the cost of investment is paid through higher prices (which depress real incomes and profitability). With a significant amount of international finance providing the up-front capital investment, however, the full crowding-out effect generated by the short-term rise in demand would not be felt by the economy. As a result, some of the short-run boost to investment is retained, which allows GDP to rise in the long run.

A number of other benefits are also associated with the investment in waste management. Agricultural productivity is increased via improved soil and water quality (in addition to the increases in agricultural yield discussed above). Electricity costs are lowered as a result of burning methane instead of natural gas to produce power.

Based on these effects, a publicly financed and leveraged investment of $1-$2 billion/year in collection, transportation, and sanitary waste disposal alternatives (e.g. sanitary landfill, composting, and anaerobic digestion) yields a range of macroeconomic benefits over the 20-year analysis period (using a 10 percent economic discount rate within the GEIM model, but a 3 percent social discount rate to calculate the NPV of the GDP benefits). In all three cases, the impact was found to be significant and positive. The composting alternative provided the smallest positive boost, with the net present value of the increase in GDP estimated to be $13.3 billion; the sanitary landfill alternative provided a $18.6 billion boost; and the anaerobic digestion alternative $35.2 billion (all in 2010 dollars).

The increase in GDP is also reflected in the labor market. By the end of the forecast horizon (2032), the number of people employed increases by 44,000 (in the maximum composting alternative), 58,000 (in the sanitary landfill alternative), and 110,000 (in the anaerobic digestion alternative). Finally, between 0.5–1.1 percent of national power demand is satisfied as an additional benefit of two of these scenarios.

[56] Assumes effective source separation of organic waste, no market for compost (no substitution for fertilizer), and that the electricity produced displaces natural gas on the grid.

Monetization of Benefits and Comparison to Stated Project Benefits

As in the India case study, the present value of avoided mortality can be estimated over the 20-year analysis period. Given that the health benefits from methane reductions are global in nature and do not necessarily accrue to Brazil, this benefit has not been monetized for Brazil specifically. Rather, benefits have been estimated for the six focus regions for which data is available, and all other avoided mortalities have been ascribed to a conservative estimate of VSL (in this case, India). The aggregate 2,500–4,900 avoided deaths over 20 years have an estimated net present monetized value of $5.5-$10.6 billion (2010 dollars).

Using a 2010 market price of approximately $170/ton, the avoided crop losses have been interpolated over the analysis period, monetized, and discounted at three percent to estimate their net present value at more than $60 million, or $120 million if the larger emissions reductions are achieved. In addition, applying the social cost of carbon (U.S. Interagency Working Group on Social Cost of Carbon 2013) to projected CO_2 reductions over the analysis period provides significant value in excess of the carbon finance value—a total value of $4.8-$9.7 billion, or an additional increment of $3.2-$6.5 billion.

These benefits should be compared with the project benefits stated in the model project documentation, which include: (i) population surpluses resulting from the closing of open-air dumps and construction (and adequate operation) of regional landfills; (ii) health and environmental improvements (although these were not quantified); and (iii) distribution of project benefits and impacts among stakeholders. The documentation further states that the "economic benefits are assumed to be represented by the financial income (fees) generated by the project. Due to lack of data, this proxy is assumed to represent the totality of benefits." Using simple cost-benefit analysis, the net present value of the financial income for a sanitary landfill for a municipality of approximately 200,000 people ($100 million) was scaled up to the national population of Brazil; this estimates the net present value of the stated project benefits at roughly $100 billion.

Summary and Conclusions

Improved organic waste treatment, through anaerobic digestion and composting, offers the greatest potential for methane reduction from solid waste in Brazil, on the order of 30 million metric tons of CO_2 equivalent per year. In order for these waste-to-resource technologies to be used on a large scale, major annual investments of $1-$2 billion are required in upstream waste reduction and source separation. (Without separation of waste at the household level, neither composting nor anaerobic digestion is economically feasible.) An integrated approach that considers every step in the waste value chain, from generation in the household through final disposal, is needed to effectively manage waste as a resource.

In summary, annual deployment of $1-$2 billion of leveraged public and private sector investment in sanitary landfills, anaerobic digestion, or composting programs, with increased emphasis on waste collection, could result in 20-year aggregate benefits of:

- 158–315 million metric tons of CO_2e reduction of methane worth $4.8-$9.7 billion (an increment of $3.2-$6.5 billion in added value over scaled-up stated project estimates).
- More than 2,500–4,900 avoided instances of premature mortality from air pollution globally, with a value of more than $5.5-$10.6 billion.
- $61-$120 million in avoided crop losses (but only $390,000-$735,000 in Brazil).
- Between 44,000 and 110,000 jobs created.
- Between 0.5–1.1 percent of national electricity demand offset.
- $13.3-$35.2 billion in GDP benefit from 2012–2031.

Table D.2 categorizes these results as global public goods or local socioeconomic benefits and presents a sensitivity analysis to the value of social discount rate used (including 2.5 percent and five percent for comparison).

Development Project Case Study 3: Cleaner Cookstoves in Rural China

Strategy and Domestic Energy and Solid Fuels

China has made great strides in expanding energy access and providing cleaner cooking fuels and improved stoves throughout the country. However, more than half of China's population, located mainly in rural areas, still relies on solid fuels (coal and biomass) for cooking and heating, and many are likely to continue to do so in the near future. Switching to modern energy alternatives would be the most effective way to reduce cooking and heating emissions and should be encouraged; however, such fuels are more expensive than solid fuels and require more costly stoves and delivery infrastructure. Poorer rural households without access to affordable modern fuels such as LPG and natural gas are unlikely to transition up the energy ladder on a large scale. The International Energy Agency estimates some 241 million people in China will still rely on solid fuels for cooking and heating in 2030 (World Energy Outlook 2013). This analysis builds on the World Bank engagement with the government of China for the China Clean Stoves Initiative (World Bank 2013c).

Table D.2: Multiple benefits potential of integrated solid waste management in Brazil

Global Public Goods			Local Socioeconomic Benefits		
Multiple Benefits					
$MtCO_2e$	Global Lives Saved	Global Crop Losses Avoided (thousand tons)	Local Crop Losses Avoided (thousand tons)	Local Jobs (thousands)	Local GDP
158–315	2,500–4,900	550–1,100	3.5–6.8	44–110	N/A
Monetized NPV of Benefits Using 2.5% Social Disount Rate (million 2010 USD)					
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Crop Losses Avoided	Local Jobs	Local GDP
$7,700–15,400	$6,000–11,400	$65–129	$0.4–0.8	N/A	$14,100–37,300
Monetized NPV of Benefits Using 3% Social Disount Rate (million 2010 USD)					
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Crop Losses Avoided	Local Jobs	Local GDP
$4,800–9,700	$5,500–10,600	$61–120	$0.4–0.7	N/A	$13,300–35,200
Monetized NPV of Benefits Using 5% Social Disount Rate (million 2010 USD)					
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Crop Losses Avoided	Local Jobs	Local GDP
$1,100–2,200	$4,100–7,800	$46–92	$0.3–0.5	N/A	$10,800–28,200

Effective interventions to scale up the dissemination of clean-burning, fuel-efficient stoves for household cooking and heating can mitigate the health hazards of burning solid fuels. In China, household burning of solid fuels ranks fourth among all risk factors for poor health. It is estimated that household air pollution from solid fuel use results in more than one million premature deaths each year in China (Lim et al. 2012).

Nationwide Analysis: Clean Cookstoves for the Rural Poor

While heating systems or combined cooking and heating stoves also represent important opportunities to reduce indoor and outdoor air pollution, to simplify this analysis this case study focuses on cleaner cookstoves.

The case study assumes a publicly supported plan to encourage rural households to switch to more fuel-efficient and environmentally friendly cookstoves starting in 2015. For the first five years, the public sector would support clean cookstove market transformation by subsidizing the cost of the clean cookstoves in addition to providing technical assistance (such as awareness campaign and support to private sector development) under a national clean stove program. By 2020, 40 percent of rural, poor households relying primarily on solid fuel for cooking are assumed to have switched, and by 2030 all households are assumed to use a clean stove. This is against a backdrop of increasing urbanization and rising household incomes, which has already established a trend toward the use of modern fuels and cleaner stoves. This program is expected to help establish a robust private sector market for cleaner stoves.

Key assumptions used for this analysis include the following:

- The baseline assumes natural penetration of cleaner cookstoves and modern fuel cookstoves, which also takes into consideration population growth and urbanization rates. Under the baseline scenario, there are over 49 million rural households relying on traditional stoves and 10 million rural households relying on cleaner cookstoves in 2030.
- Subsidies offered from 2015–2020 increase deployment of three types of clean cookstoves: about 10 million improved biomass cookstoves costing $85 each (efficiency of 30 percent in 2013, rising to 40 percent by 2030); more than 6.75 million advanced clean-fuel cookstoves costing $100 each (efficiency of 35 percent in 2013, rising to 49 percent by 2030); and 3.5 million solar cookers costing $25 each (efficiency of 40 percent in 2013, rising to 55 percent in 2030).
- Deployment rates rise from 1.3 million per year in 2015 (500,000 improved, 500,000 advanced, and 300,000 solar cookers) to about 5.5 million per year in 2020 when the subsidy program ends (three million improved, 1.75 million advanced, and 750,000 solar cookers).
- Deployment between 2020–2030 dips somewhat after the subsidy ends but largely holds steady through the end of 2030, when more than 72 million cleaner stoves will have been deployed and 100 percent of rural poor households will have switched to cleaner cookstoves and modern fuel cookstoves.
- These deployments include replacements after five years and use empirical data to estimate the replacement rate at 90 percent (the percentage of clean stove users who purchase another clean

stove when replacement was needed) and an acceptance rate of 78 percent (the number of clean stove users who accept the new stoves). These rates are assumed to rise to 100 percent by 2030.
- After 2020, a robust market will have been established and private investment will continue throughout the analysis timeframe.

Based on these assumptions, the fuel and energy savings and emissions reductions in $PM_{2.5}$ and CO each year throughout 2033 are estimated by the EAP CSI team, along with the air quality and agricultural impacts, and the broader macroeconomic effects have been further estimated through macroeconomic modeling in the GEIM model.

Public Health and Agricultural Benefits

The emission rate per megajoule (MJ) of heat content was used to estimate $PM_{2.5}$ and CO emissions reductions from the calculated solid fuel reductions in the case study. These emissions reductions were input into the FASST tool to estimate the public health and crop benefits. Based on the estimated emissions reductions in 2030, premature mortalities from outdoor air pollution were estimated to be reduced by approximately 87,900 annually; the majority of these (85,700) will occur in China. This has a significant economic value, given the Chinese value of a statistical life of $700,635 in 2010. Given that more than a million lives are lost annually due to household air pollution in China as per the Global Burden of Disease (Lim et al. 2012), the estimate of lives saved is clearly underestimated as indoor exposure was not assessed.

Macroeconomic Benefits

The direct and indirect impacts of the cookstoves project are felt through three key transmission channels. In the short run, the most important channel is the impact of the additional expenditure (to buy the cookstoves) on private consumption and, as a result, on GDP. The increase in spending boosts GDP in the short run. This channel is maintained until 2033 (the last year of cookstove purchases in the case study); over the medium term, however, the positive boost is offset by the negative impact of the additional cost on households' real income, crowding out some portion of other household spending and returning the economy to baseline levels. The composition of private sector spending does change over the scenario's horizon: spending on cookstoves is higher, while spending in other areas is lower. As a result, the long-term impact of this channel in isolation would be negative, although the impact would be smaller because the cost of clean stoves is subsidized by the public sector for the first five years.

In addition to the extra spending needed to purchase clean cookstoves, the project would also generate small administrative costs to run the subsidy program for five years. As with consumer spending, these costs would provide both a positive boost and a negative shock to GDP. The positive boost would come from the additional goods and services demanded by the public sector to run the program initially, although these would be broadly offset by the negative impact on inflation.

The switch to more fuel-efficient cookstoves would also have a small but significant impact on energy consumption in China's economy. Most rural, poor households currently use non-commercial biomass fuel for cooking (though a significant fraction use coal). All households would consume considerably less energy than in the baseline and, as a result, aggregate energy consumption and energy prices would be lower. The effect on energy prices is only from the reduction in coal use. This has a positive impact on households, which have to spend less of their income on energy, and this helps to offset the higher cost of the cookstoves. More importantly, lower fuel prices would have a significant positive impact on the wider economy. The cheaper cost of electricity lowers firms' production costs and increases the economy's productive potential and, as a result, long-run output is higher. This channel therefore has an unambiguously positive impact on the economy which builds over time as the number of fuel-efficient stoves increases.

The economic impact has been assessed using a number of metrics: the additional employment generated over the short term (2013–2017), the cumulative increase in GDP over the short term (2013–2017), and the net present value of the cumulative increase in GDP over the case study horizon (20 years).[57] The general finding is that the plan would have a positive impact on China's economy in both the short term and the long run.

In the near-to-medium term (2015–19), the increase in consumer spending ($1.2 billion spent by households on the switch to cleaner cookstoves) results in GDP rising by a cumulative $1.6 billion (2010 USD). This in turn generates 22,000 new jobs.

Over the medium-to-long term, the positive boost from the increase in consumption diminishes as spending is completed and the negative shock to households' real income comes through. However, the positive shock from households' reduced energy consumption and the impact this has on fuel prices increases China's potential output. As a result, GDP is increased in the long run; the net present value of this increase is around $10.7 billion (2010 dollars).

Monetization of Benefits and Comparison to Stated Project Benefits

This project is not based on an actual investment program; rather, it is a simulation based on the stocktaking exercise for various

[57] The net present value (in 2010 dollars) of the cumulative increase in GDP was calculated using a social discount rate of 2.5, three, and five percent in Table D.3.

clean stove options identified under the China Clean Stove Initiative (World Bank, 2013c). Thus there are no stated project benefits to scale up and compare.

However, the value of the benefits identified above can be estimated as net present values by interpolating the estimated 85,700 premature mortalities avoided annually in 2030 over the 2014–2030 time period and extrapolating the declining avoided mortality between 2030–2033 (as baseline rates of clean stove adoption rise to meet the policy scenario) and monetizing based on the estimated VSL for China now and in the future as national income grows. Based on this future stream of welfare benefits, the net present value is calculated, assuming a social 3 percent discount rate, at more than $1.5 trillion from avoided mortality. Given that the reduced emissions in this case study affect the rural poor, rather than the urban populations, it may overstate the monetized benefit. However, because the estimate of lives saved only reflects reduced exposure to outdoor pollution and does not account for the indoor exposure, it is more likely to underestimate the true value.

Summary and Conclusions

Deployment of more than 72 million cleaner stoves between 2014–2033 would require a public investment of $400 million in the near term (through 2020) to establish a robust private market. The annual benefits in 2030 of such a scenario are estimated to include:

- 87,900 avoided instances of premature mortality from outdoor air pollution globally, of which 85,700 would be within China (corresponding to an aggregate benefit of more than one million lives saved through 2033 and a monetized net present value of more than $1.5 trillion).
- Reduced energy use of 450 GJ per year in 2030.
- Near-term employment gains of about 22,000 jobs.
- $10.7 billion in net present value from GDP increases between 2014–2033.

Table D.3 categorizes these results as global public goods or local socioeconomic benefits and presents a sensitivity analysis to the value of social discount rate used (including 2.5 percent and five percent for comparison).

Development Project Case Study 4: Biogas Digesters and Photovoltaics in Mexican Agriculture

Background: Mexican Agriculture

Over the past 15 years,Mexico's rural sector has experienced substantial reforms, which have led to a largely liberalized, market-oriented, and private sector-driven rural economy. Agriculture remains an important part of the Mexican economy and an employer of a large share of the rural population. A number of second-generation reforms are needed, however, to diversify the country's productive pattern and respond to the challenges of an increasingly integrated global market. According to Mexico's Fifth

Table D.3: Multiple benefits potential of clean cooking solutions in China

	Global Public Goods		Local Socioeconomic Benefits			
$MtCO_2e$	Global Lives Saved	Global Crop Losses Avoided (thousand tons)	Local Lives Saved	Local Crop Losses Avoided (thousand tons)	Local Jobs (thousands)	Local GDP
49	—	—	1 million	—	22	N/A
Monetized NPV of Benefits Using 2.5% Social Disount Rate (million 2010 USD)						
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Lives Saved	Local Crop Losses Avoided	Local Jobs	Local GDP
$2,500.0	—	—	$1,700,000	—	N/A	$11,500
Monetized NPV of Benefits Using 3% Social Disount Rate (million 2010 USD)						
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Lives Saved	Local Crop Losses Avoided	Local Jobs	Local GDP
$1,500	—	—	$1,500,000	—	N/A	$10,700
Monetized NPV of Benefits Using 5% Social Disount Rate (million 2010 USD)						
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Lives Saved	Local Crop Losses Avoided	Local Jobs	Local GDP
$350	—	—	$1,100,000	—	N/A	$8,200

National Communication to the UN Framework Convention on Climate Change, agriculture continues to be an important source of the country's emissions (12 percent of its GHG emissions in 2010 including both methane and nitrous oxide), primarily through land-use change, tillage, synthetic fertilizers, and anaerobic decomposition of organic materials. To partially address these emissions and to improve the agricultural sector's contribution to the overall economy, the Government of Mexico has prioritized increasing the competitiveness and environmental sustainability of agriculture and agri-businesses by promoting energy efficiency (including renewable energy) and biomass practices.

The successful Mexico Sustainable Rural Development Project—$100 million in World Bank loans blended with a $10.5 million GEF grant and additional contributions from the Government of Mexico and project beneficiaries—promotes investments to reduce GHG emissions from agribusiness, primarily from livestock production and value-added agro-processing. The project was based on four pillars: (i) the proportion of Mexico's GHG emissions contributed by the agricultural sector; (ii) the Mexican government's prioritization of climate change adaptation and mitigation; (iii) the strong demand from Mexican producers and agro-processors for technologies to save energy and reduce pollutants; and (iv) the World Bank's comprehensive engagement to support the Mexican government's Climate Change Agenda, including the promotion of renewable energy and energy efficiency in rural areas, as well as sustainable, climate-smart agriculture.

Since January 2010, the project has supported a number of emissions reducing and energy-efficient technologies. A majority of the funds have supported the fixed cost of installation of biodigesters in pig and dairy farms, based on demand from farmers. As of May 2013, 303 biodigesters were installed—half in pig farms and the other half in dairy farms. By the end of 2012, the entire original $50 million loan had been fully committed, and a further $50 million loan had been sought and approved. This indicates the steadily increasing demand for biodigesters, which is expected to continue as biodigester technology becomes more widespread, more cost-effective, and better adapted to the different production scales in Mexico.

Not provided: Scenarios Analysis: Biodigesters and PV Systems on Pig and Dairy Farms

While the original project has many components that support a range of energy-efficient technologies, this case study focused exclusively on continued deployment of biodigesters on pig farms and a combination of biodigesters with motogenerators and PV systems on dairy farms, where the higher electrical demand for milk cooling systems favors the added expense of electrical generation add-ons.

The case study assumes that public funding is available to continue leveraging the private sector investment in these technologies through 2031, when 90 percent of pig and dairy farms would have added manure biodigestion capacity and 90 percent of dairy farms would have installed motogenerators and PV systems.

Key assumptions in this analysis include:

- Emissions reductions, technology costs, and energy savings will scale according to data gathered from initial deployments under this program. Total dairy cattle herd was estimated at 3.2 million head and pig herd is estimated at 15 million head based on USDA production forecasts.[58]
- Project co-financing factors will remain, on average, about 1.61 for biodigesters (in other words, for every $1.00 invested by the project, $1.61 is invested by the project beneficiary), 1.35 for generators, and 1.15 for PV systems. This level of beneficiary contribution indicates important buy-in by farmers and supports the assumption of full coverage of operation and maintenance (O&M) variable costs by farmers and producers during the lifespan of the biodigester and renewable energy systems.
- One-third of the biodigesters funded under the project currently include an accompanying biogas generator for on-site energy generation. This proportion is expected to grow to one-half as generators become more cost-effective and the number of suppliers in Mexico increases (currently there were only two generator suppliers in the country in early 2013).
- The amount of electricity generation from biogas generators presented in the case study is conservative. The farms currently generate sufficient energy for their own operation (which reduces electricity costs and improves the continuity of their electricity supply). Current policy restricts small-scale producers from uploading excess energy (or net metering) to the national grid. This could change, however, allowing for the sale of excess energy to the grid.
- Given consistently high (and increasing) private sector demand for project activities and the Mexican government's region-leading, committed role to climate change adaptation and mitigation strategies, public investment for this program will scale linearly to achieve 30 percent of the national sector potential for biodigester and PV systems in 2016–2021, 60 percent in 2021–2026, and 90 percent in 2026–2031. Potential for biodigester installation was estimated based on national statistics of pig and dairy-cow herds, with all calculations broken down on a per-head basis and scaled accordingly. Private sector versus public sector investment leverage ratios (by sector) in initial fixed capital costs, as well ongoing O&M costs, were assumed and projected over time based on actual project data. An underlying assumption is that the Government

[58] http://www.thefarmsite.com/reports/contents/MexicoLivestock6March2014.pdf

of Mexico will continue to support the uptake of the new technologies, with this financial support decreasing (in real terms) over time as the technologies become more widespread and cheaper. Hence the linear projection of this full implementation simulation is based on the assumed technology uptake, with important underlying dynamics related to tradeoffs in costs (public and private), scale, number of beneficiaries, and regulatory changes (related to energy policy and climate change targets).

The project benefits include the reduction of nearly 10 Mt/year of CO_2e (mostly as methane recovered from the biodigesters and either flared as CO_2 or utilized to generate electricity). In addition, the project generates new jobs (with specific benefits for women and indigenous populations) and improved sanitary conditions due to manure treatment. While these benefits may have significant value, the current analysis focuses on those benefits that can be quantified and valued.

Public Health and Agricultural Benefits

The methane reductions, estimated as 9.4 Mt of CO_2e per year in 2030, can significantly lower the health and agricultural damages from global background ozone. Estimated benefits include 180 avoided instances of premature mortality from air pollution annually (but relatively few within Mexico) and 39,000 tons of avoided crop losses per year (again, mostly outside Mexico).

Macroeconomic Benefits

The direct and indirect impacts of this case study have been assessed to be realized through two key channels. In the short term, the most important channel is the impact of changes in spending as a result of investment. The increase in spending provides a positive boost to GDP in the short term, although some of the increase is offset by the need to import capital goods. In the short term (2013–2021), the increase in investment results in GDP rising by a cumulative $450 million (2010 dollars) as a result of the $270 million spent by farming operations and public bodies on the new capital stock. This in turn would generate approximately 1,400 new jobs.

The second key transmission channel is the impact of the reduction in energy (specifically electricity) consumption in the agriculture sector. A significant reduction in electricity use would have a positive impact on the sector, via a reduction in output prices, which would trigger an increase in demand. In isolation, this channel would have an unambiguously positive impact (in both the short term and the long term) on Mexico's agriculture sector and the wider macroeconomy.

Over the medium-to-long term, the positive boost from the increase in consumption would diminish as agricultural production costs go up and these costs are ultimately passed on to other sectors. But the positive impact of lower energy consumption in the agriculture sector, coupled with the partial offsetting of crowding out from the public subsidy, would result in a net positive impact on the economy as a whole. As a result, the net present value of the case study project through 2026 is $600 million, which rises to $1 billion by 2031.

While this project has significant benefits for the environment, the agricultural sector, and the broader Mexican economy, its true potential benefits are far larger. For instance, policy reforms that would enable excess electricity generated to be sold back to utilities could lead to significantly greater benefits to farmers who generate electricity. This would enable the Mexican agricultural sector to supply a significantly larger fraction of its own electrical demand and provide additional carbon-free electricity generation to the grid. A detailed economic analysis of such a scenario is recommended.

Monetization of Benefits and Comparison to Stated Project Benefits

As with the Brazil case study, the health benefits from methane reductions are global in nature and do not necessarily accrue to Mexico (only about 1–2 of the 180 annual avoided instances of premature mortality would occur in Mexico).This aggregates to more than 1,900 premature mortalities avoided between 2012–2031, monetized here at more than $4.1 billion. Using a 2010 global commodity market price of approximately $170/ton, the avoided crop losses have been interpolated over the analysis period, monetized, and discounted at three percent to estimate the net present value of this benefit at about $45 million. In addition, applying the social cost of carbon (U.S. Interagency Working Group on Social Cost of Carbon 2013) to projected CO_2 reductions over the analysis period provides a significant present value of $3.2 billion—or $2.2 billion in excess of the carbon finance value (approximately $16/ton based on project documentation).

These benefits should be compared with the stated benefits in the project documentation. Project documentation estimated that "about 1.5 million tons of CO_2 equivalent of possible emissions reductions (ERs) would be generated through biodigesters under the project over a period of five years. This would translate into some $24.0 million of carbon credits." Interpolating the reduction potential between current estimates from Mexico's Shared Risk Trust (FIRCO) and this report's scaled estimates of full implementation at the 9.4 Mt CO_2e national potential in 2031 results in a 20-year cumulative reduction of 103 Mt. Using the $16/ton value listed in project documentation, a carbon finance value of $1.047 billion is derived—less than one-third the value based on the social cost of carbon. Subtracting present value costs (public and private sector investment over the period 2012–2031) of $623

Table D.4: Multiple benefits potential of sustainable agriculture in Mexico

Global Public Goods			Local Socioeconomic Benefits			
$MtCO_2e$	Global Lives Saved	Global Crop Losses Avoided (thousand tons)	Local Lives Saved	Local Crop Losses Avoided (thousand tons)	Local Jobs (thousands)	Local GDP
103	1,900	410	15	1.5	1.4	N/A
Monetized NPV of Benefits Using 2.5% Social Disount Rate (million 2010 USD)						
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Lives Saved	Local Crop Losses Avoided	Local Jobs	Local GDP
$5,000	$4,500	$48	$54	$0.18	N/A	$1,140
Monetized NPV of Benefits Using 3% Social Disount Rate (million 2010 USD)						
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Lives Saved	Local Crop Losses Avoided	Local Jobs	Local GDP
$3,200	$4,100	$45.0	$50	$0.16	N/A	$1,070
Monetized NPV of Benefits Using 5% Social Disount Rate (million 2010 USD)						
Social value of carbon	Global Lives Saved	Global Crop Losses Avoided	Local Lives Saved	Local Crop Losses Avoided	Local Jobs	Local GDP
$700	$3,000	$34	$37	$0.12	N/A	$820

million yields a net present value of $424 million for the project's stated benefits.

Summary and Conclusions

The Mexican government's commitment to greater competitiveness and environmental sustainability in agribusinesses and the agricultural sector can be demonstrated through sustained investment in manure biodigesters and photovoltaics. A sustained investment that achieves 90 percent penetration in Mexican farms of anaerobic digestion of pig and dairy cattle manure, and motogenerators and PV electricity generation at dairy farms, would derive significant economic, public health, agricultural, and environmental benefits. These benefits include:

- More than 9.4 million Mt of CO_2e reduction in methane per year in 2030 (103 million tons over 20 years) with a net present value of $3.2 billion based on the social cost of carbon (an additional $2.2 billion in carbon value beyond the stated benefits).
- More than 1,900 avoided instances of premature deaths from air pollution, with a NPV of more than $4.1 billion (mostly outside Mexico).
- Nearly 410,000 tons of avoided crop losses worth $45 million (mostly outside Mexico).
- A gain of 1,400 jobs.
- An 11 percent offset in national electricity demand.
- Increase of $1.1 billion in GDP between 2012–2031.

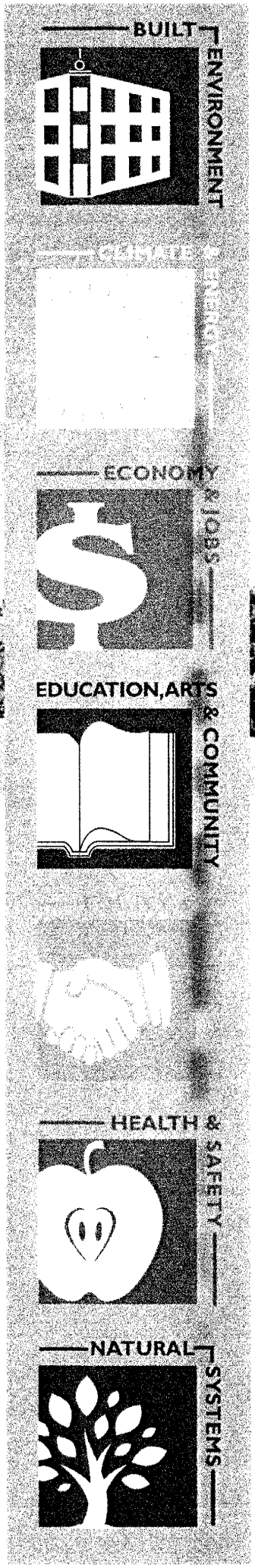
Table D.4 categorizes these results as global public goods or local socioeconomic benefits and presents a sensitivity analysis to the value of the social discount rate used (including 2.5 percent and five percent for comparison).

WORLD BANK GROUP
1818 H Street, N.W.
Washington, DC 20433

ATTACHMENT D

STAR Community Rating System

Version 1.1 January 2014



STAR COMMUNITIES | SUSTAINABILITY TOOLS FOR ASSESSING & RATING COMMUNITIES

COPYRIGHT

© 2014 by STAR Communities. All rights reserved.

DISCLAIMER

Although the information provided herein is believed to be accurate and reliable, none of the parties involved in development of the STAR Community Rating System, including STAR Communities, or its partners, assume any liability or responsibility for the accuracy, completeness, or usefulness of any information contained in the Rating System or for any injuries, losses, costs, or damages arising from use of the publication. As a condition of use, the user covenants not to sue and agrees to waive and release STAR Communities and all persons and entities in interest with STAR Communities of and from any and all claims, demands, and causes of action for any injuries, losses, or damages.

TRADEMARK

STAR Community™ and STAR Community Rating System™ is a registered trademark of STAR Communities.

STAR COMMUNITIES

SUSTAINABILITY TOOLS FOR ASSESSING & RATING COMMUNITIES

Incorporated in the District of Columbia in April 2012, STAR Communities advances a national framework for sustainable communities through delivery of standards and tools built by and for local governments and the communities they serve.

STAR LEADERSHIP

Board of Directors

Shannon Parry, Chair, City of Santa Monica, CA
Jason Hartke, Vice Chair, U.S. Green Building Council
Monica Gilchrist, Secretary, ICLEI-Local Governments for Sustainability
Sadhu Johnston, City of Vancouver, BC
Dylan Siegler, Green Mountain Energy
Raksha Vasudevan, National League of Cities

Staff

Hilari Varnadore, Executive Director
Andrea Peet, Senior Program Manager
Kristi Wamstad-Evans, Technical Manager
Daniella Hirschfield, Innovation & Technology Manager
Lacey Shaver, Program Coordinator
Aaron Lande, Education Coordinator

Graphic Design: Down to Earth Design

STAR Steering Committee

Suzanne Burnes ..... Sustainable Atlanta
Michael Connors ..... St. Petersburg, FL
Radcliffe Dacanay ..... Portland, OR
Eric W. Faisst ..... Madison County, NY
Wayne Feiden..... Northampton, MA
Rob Fernandez ..... Breckinridge Capital Advisors
Deeohn Ferris..... Sustainable Community Development Group
Hilary Franz..... Futurewise
Nancy Gassman ..... Fort Lauderdale, FL
Richard Gelb ..... King County, WA
Josh Geyer..... U.S. Department of Housing and Urban Development
Jen Horton ..... National Association of Counties
Catherine Hurley ..... Evanston, IL
Chris Kochtitzky ..... U.S. Centers for Disease Control and Prevention
Tessa LeSage ..... Lee County, FL
Kristin Lynett..... Tacoma, WA
Andrea Fox ..... International City/County Management Association
Amy Meese..... Sarasota County, FL
Doug Melnick ..... San Antonio, TX
Dennis Murphey..... Kansas City, MO
Steve Nicholas ..... Institute for Sustainable Communities
Melanie Nutter..... Consultant
Melody Park ..... Indianapolis, IN
Brooks Rainwater..... National League of Cities
Brendan Shane ..... District of Columbia
Lilly Shoup..... U.S. Department of Transportation
Randy Solomon ..... The College of New Jersey and Sustainable Jersey
Michael Steinhoff ..... ICLEI-Local Governments for Sustainability
Alison Taylor ..... Siemens Corporation
John Thomas ..... U.S. Environmental Protection Agency, Office of Sustainable Communities
Catherine Werner ..... St. Louis, MO
Jess Zimbabwe ..... Urban Land Institute

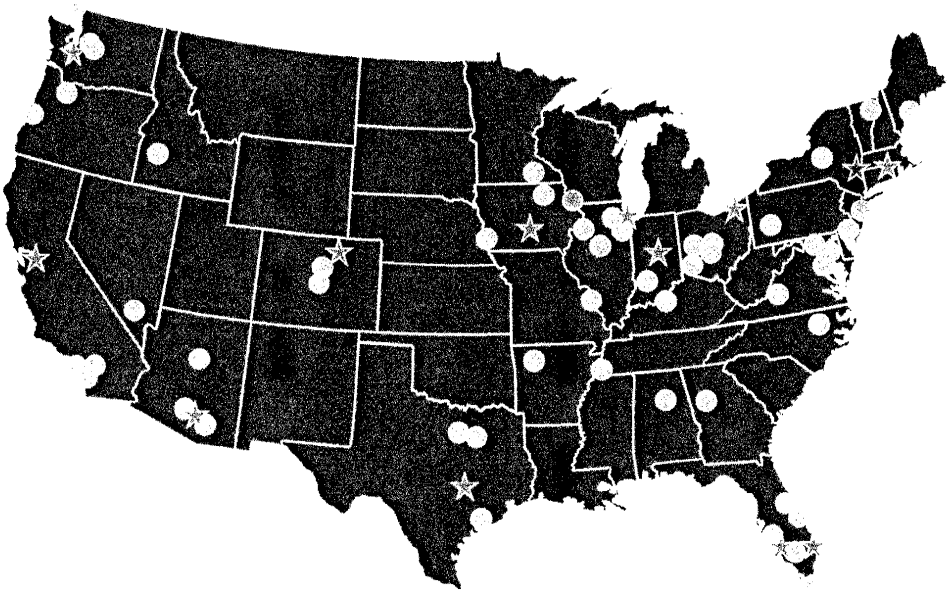
STAR Technical Advisory Group

Ed Antczak..... Burlington, VT
Rochelle Bell ..... Monroe County, NY
Kaye Bender ..... Public Health Accreditation Board
Chris Bird..... Alachua County, FL
Vickie Boothe ..... U.S. Centers for Disease Control and Prevention
Jonathan Brewer..... Carbon Solutions America, Inc
Cal Broomhead..... San Francisco, CA
Robert Goff ..... Chandler, AZ
Amelia Greiner..... Johns Hopkins School of Medicine
Jocelyn Hittle..... PlaceMatters
Rebecca Kihslinger ..... Environmental Law Institute
Steve Lautze ..... Oakland, CA
Carrie Makarewicz..... University of Colorado, Denver
Kevin Nelson..... U.S. Environmental Protection Agency
Leslie Oberholtzer ..... CodaMetrics

Curt Paddock . . . . . Will County, IL
Andre Pettigrew . . . . . Clean Economy Solutions
Pamela Sparr . . . . . Private consultant
Cindy Steinhauser . . . . . City of Dubuque, IA
Walker Wells . . . . . Global Green USA

Communities & STAR

The STAR Community Rating System is built by and for local governments and the communities they serve. Our program's success relies on the engagement of and evaluation by U.S. cities, towns and counties.



Certified STAR Communities (As of June 5, 2014)

Northampton, MA

Austin, TX
Broward County, FL
Evanston, IL
Tacoma, WA

Albany, NY
Chandler, AZ
Cleveland, OH
Des Moines, IA
El Cerrito, CA
Fort Collins, CO
Indianapolis, IN
Lee County, FL

Pilot STAR Communities (2013)

Albany, NY
Atlanta, GA
Austin, TX
Broward County, FL
Calgary, AB
Chandler, AZ
Chattanooga, TN
Cleveland, OH
Davenport, IA
Des Moines, IA
El Cerrito, CA
Evanston, IL
Fort Collins, CO
Indianapolis, IN
King County, WA
Lee County, FL
Montreal, QC
Northampton, MA
Portland, OR
Riverside, CA
Rockingham County, NC
Santa Fe, NM
Santa Monica, CA
St. Louis, MO
Seattle, WA
Tacoma, WA
Toronto, ON
Tucson, AZ
Victoria, BC
Washington, DC
Woodbridge, NJ

Some Pilots started out as Beta Communities who helped shape the STAR Community Rating System before its release. Other Beta Communities include: Boulder, CO, Cranberry Township, PA, and New York, NY

Leadership STAR Communities (Spring 2014)

Baltimore, MD
Birmingham, AL
Burlington/Chittenden County, VT
Charles City, IA
Denton, TX
Dubuque, IA
Fayetteville, AR
Frederick, MD
Houston, TX
Louisville/Jefferson County, KY
Memphis/Shelby County, TN
Nederland, CO
Palm Bay, FL
Park Forest, IL
Phoenix, AZ
Plano, TX
Portland, ME
Raleigh, NC
Redlands, CA
Rosemount, MN

Reporting STAR Communities (As of June 5, 2014)

Allegheny County, PA
Sarasota County, FL

Participating STAR Communities (As of June 5, 2014)

Blacksburg, VA
Bloomington, IN
Boise, ID
Bonita Springs, FL
Columbus, OH
Coos Bay Watershed, OR
Dayton, OH
Elgin, IL
Flagstaff, AZ
Grove City, OH
Hamilton, OH
Henderson, NV
Islamorada, FL
Lakewood, CO
Madison County, NY
Omaha, NE
Orange County, FL
Peoria County, IL
Philadelphia, PA
Vancouver, BC

Funders and Affiliates

STAR Communities would like to acknowledge the commitment and support of our philanthropic partners, sponsors and STAR Affiliates.

The Kresge Foundation
Summit Foundation
Surdna Foundation
Arizona State University
Breckinridge Capital Advisors
City of Portland, OR
City of Santa Monica, CA
City of Vancouver, BC
District of Columbia
National League of Cities
Siemens Corporation
U.S. Department of Energy
U.S. Green Building Council
Urban Land Institute
University of North Texas

TABLE OF CONTENTS

Acknowledgements 3
Introduction 7
Achieving Certification and Recognition 8
Framework of the Rating System 9
Understanding Points and Scores 11
Submittal Requirements: Evaluation Measures 13

Built Environment 14
BE-1: Ambient Noise & Light 15
BE-2: Community Water Systems 17
BE-3: Compact & Complete Communities 20
BE-4: Housing Affordability 24
BE-5: Infill & Redevelopment 26
BE-6: Public Spaces 28
BE-7: Transportation Choices 31

CE-1: Climate Adaptation 35
CE-2: Greenhouse Gas Mitigation 37
CE-3: Greening the Energy Supply 39
CE-4: Industrial Sector Resource Efficiency 41
CE-5: Resource Efficient Buildings 43
CE-6: Resource Efficient Public Infrastructure 45
CE-7: Waste Minimization 47

Economy & Jobs 49
EJ-1: Business Retention & Development 50
EJ-2: Green Market Development 52
EJ-3: Local Economy 55
EJ-4: Quality Jobs & Living Wages 57
EJ-5: Targeted Industry Development 59
EJ-6: Workforce Readiness 61

Education, Arts & Community 63
EAC-1: Arts & Culture 64
EAC-2: Community Cohesion 66
EAC-3: Educational Opportunity & Attainment 69
EAC-4: Historic Preservation 72
EAC-5: Social & Cultural Diversity 74

Equity & Empowerment 76
EE-1: Civic Engagement 77
EE-2: Civil & Human Rights 79
EE-3: Environmental Justice 81
EE-4: Equitable Services & Access 83
EE-5: Human Services 85
EE-6: Poverty Prevention & Alleviation 87

Health & Safety 89
HS-1: Active Living 90
HS-2: Community Health & Health System 92
HS-3: Emergency Prevention & Response 95
HS-4: Food Access & Nutrition 97
HS-5: Indoor Air Quality 100
HS-6: Natural & Human Hazards 102
HS-7: Safe Communities 104

Natural Systems 107
NS-1: Green Infrastructure 108
NS-2: Invasive Species 110
NS-3: Natural Resource Protection 112
NS-4: Outdoor Air Quality 114
NS-5: Water in the Environment 117
NS-6: Working Lands 119

Innovation & Process 121
IP-1 Best Practices & Processes 122
IP-2: Exemplary Performance 126
IP-3: Local Innovation 127
IP-4: Regional Priority & Collaboration 128

Points Appendix 129

INTRODUCTION

The STAR Community Rating System (STAR) is the first national certification program to recognize sustainable communities. Local leaders use STAR to assess their sustainability, set targets for moving forward, and measure progress along the way.

Released in October 2012, STAR represents a milestone in the national movement to create more livable communities for all. The rating system's evaluation measures collectively define community-scale sustainability, and present a vision of how communities can become more healthy, inclusive, and prosperous across seven goal areas. The system's goals and objectives provide a much-needed vocabulary that local governments and their communities can use to more effectively strategize and define their sustainability planning efforts.

The intent of the rating system is to help communities identify, validate, and support implementation of best practices to improve sustainable community conditions. Built on the guiding principle of continuous improvement, STAR will evolve to remain the leading framework for local sustainability. There is recognition that the content of the rating system may change over time to embrace innovation, apply new research, or adapt to changing conditions in the field of community sustainability. All updates to the rating system will strive to create a consistent system that is both rigorous and accessible to local government applicants and their partners.

Over time, the program will build a research model that includes spatial, temporal, and level of effort details to expand the evidence base about the degree to which various actions advance sustainability conditions community-wide. This rigor and differentiation will allow STAR to expand national learning and drive ongoing improvements to sustainable community governance.

Oversight and Evolution

The rating system was developed between 2008-2012 using an open, consensus-based process. Technical Advisory Committees comprised of experts from across the country determined scientifically valid, cost-effective ways of evaluating local government progress with oversight and guidance from a Steering Committee. After the rating system was released in 2012, the eight Technical Advisory Committees were consolidated into a 21-member Technical Advisory Group. In order to maintain the rating system's credibility, all substantive changes to STAR are approved by the Technical Advisory Group then sent to the Steering Committee for acceptance.

- **Steering Committee:** The governing body responsible for guiding the development of the STAR Community Rating System. The committee is charged with maintaining the rating system as a leadership tool, preserving its integrity, and evolving STAR using the consensus process in accordance with the mission, guiding principles, and strategic plan of STAR Communities.
- **Technical Advisory Group (TAG):** The purpose of the TAG is to enhance and, where necessary, clarify the STAR Community Rating System. The group maintains and advances the technical aspects of the existing STAR Community Rating System; continuously builds, improves and advances credit intents, requirements and guidance; upholds the technical rigor, fairness and transparency in the STAR Community Rating System development process; and holistically oversees, integrates, manages and envisions the technical aspects of the STAR Community Rating System.

STAR Subscriptions

STAR was built by and for local governments and the communities they serve. While partnerships are encouraged, the governmental entity (e.g. town, city, or county) is the primary applicant in the rating system. Local governments access tools, publications and support by registering for one of three annual subscription packages. The subscriptions were developed with the needs of different types of communities in mind: from those who are just getting started to those who are ready to pursue certification.

Annual Subscription Packages	
Leadership STAR Community	Supports a cohort of communities as they get organized around the rating system and then collect and report their data in order to receive a certified STAR Community Rating. Leadership STAR Communities receive extensive access to staff and on-call experts, online tools, training programs, technical assistance, and other services associated with the rating system.
Reporting STAR Community	Designed for the community that is ready to have their sustainability efforts nationally recognized through a certification program. The Reporting STAR Community is organized and motivated and has been tracking sustainability metrics for some time. They also have a strong team of agency leaders and partners willing to help, and supportive elected leadership.
Participating STAR Community	Designed for the community who wants to assess their current conditions, set goals and priorities, and share a sustainability framework across agencies or with stakeholders. It is an introductory subscription developed to help communities get organized around STAR and determine whether certification is right for them.

The path to sustainability is different for every community and each unique place will approach the STAR Community Rating System in a different manner. Communities engage in STAR for a variety of reasons including to:

- **Demonstrate commitment** to local sustainability
- **Receive national recognition** for leadership and achievements
- **Gain competitive advantage** and attract funding
- **Improve transparency** and accountability and showcase results
- **Communicate resilience** and risk management to municipal bond agencies
- **Build and strengthen partnerships** within government and with community

ACHIEVING CERTIFICATION AND RECOGNITION

Once a community has documented their progress in the STAR Online Reporting Tool, they may submit for verification of their application. The verification team at STAR Communities reviews all applications for accuracy within 60 days of submission and issues an official STAR Community Rating based upon points achieved.

The number of points achieved in the rating system determines a community's certification or recognition level. There are three certification levels: 5-STAR Community, 4-STAR Community and 3-STAR Community and one recognition category: Reporting STAR Community.

Once certified, an official STAR Community Rating lasts three years. Applicants may re-submit an application at any time prior to the three-year mark to receive a new STAR Community Rating Level.

[illegible]	[illegible]
5-STAR Community *Recognized as a top tier achiever in national sustainability*	600+
4-STAR Community *Recognized for sustainability leadership*	400-599
3-STAR Community *Recognized for sustainability leadership*	200-399
Reporting STAR Community *Currently pursuing certification*	<200

For ideas on how to leverage your STAR certification, align local plans with STAR, or integrate the rating system's metrics into annual reports or implementations plans, go to www.STARcommunities.org/communities. This page provides case studies and examples of how communities are leading the way and improving sustainability conditions using STAR.

FRAMEWORK OF THE RATING SYSTEM

The STAR framework, which integrates economic, environmental, and social aspects of sustainability, provides communities with a menu-based system to customize their approach based on local conditions and priorities. Communities can pursue the most important or relevant objectives, addressing regional variability and differing priorities along the way.

The rating system is organized by goals, objectives, and evaluation measures; this design is intended to align with local government processes and standard practice. The structure features a set of components that reflect public sector mechanisms that are proven effective in advancing change. Terms are those commonly used by local governments and their community partners to communicate strategic objectives and desired outcomes.

Within each goal area is a series of objectives aimed at achieving community-level aspirations. Objectives are measured in two ways: through attainment of community level outcomes and/or completion of local actions that are essential to reaching the outcomes. These evaluation measures provide the avenue for communities to achieve credit in the rating system.

Below are terms and definitions associated with the STAR framework.

Goal	Desired state or condition that a jurisdiction intends to achieve
Objective	A clear, desired outcome intended to move the community toward the broader goal
Purpose	Statement to clarify relevance, to provide context, and communicate the desired Outcome(s)
Evaluation Measure	Qualitative or quantitative, using relative or absolute metrics
Community Level Outcome	Measurable, condition-level indicators that depict a community's progress toward a preferred state or condition as suggested by the STAR Objective
Local Action	Range of decisions and investments that a community can make, or the activities that they can engage in, that are essential to achieving the desired Outcome(s)

STAR's Goal Areas

Built Environment: *Achieve livability, choice, and access for all where people live, work, and play*

Climate: *Reduce climate impacts through adaptation and mitigation efforts and increase resource efficiency*

Economy & Jobs: *Create equitably shared prosperity and access to quality jobs*

Education, Arts & Community: *Empower vibrant, educated, connected, and diverse communities*

Equity & Empowerment: *Ensure equity, inclusion, and access to opportunity for all citizens*

Health & Safety: *Strengthen communities to be healthy, resilient and safe places for residents and businesses*

Natural Systems: *Protect and restore the natural resource base upon which life depends*

An eighth category, **Innovation & Process**, supports the evolution of sustainability practice by recognizing best practices and processes, exemplary performance, innovation, and collaboration in areas of regional priority.

STAR's Objectives

Each of the rating system's 7 goal areas is supported by 5-7 Objectives. Objectives are the clear and desired outcome intended to move the community toward the broader sustainability goal. Below are the system's 44 Objectives, organized by Goal Area.

Table of STAR Goals and Objectives

Built Environment	[illegible]	Economy & Jobs	Education, Arts & Community	Equity & Environment	Health & Safety	Natural Systems
Ambient Noise & Light	Climate Adaptation	Business Retention & Development	Arts & Culture	Civic Engagement	Active Living	Green Infrastructure
Community Water Systems	Greenhouse Gas Mitigation	Green Market Development	Community Cohesion	Civil & Human Rights	Community Health & Health System	Invasive Species
Compact & Complete Communities	Greening the Energy Supply	Local Economy	Educational Opportunity & Attainment	Environmental Justice	Emergency Prevention & Response	Natural Resource Protection
Housing Affordability	Industrial Sector Resource Efficiency	Quality Jobs & Living Wages	Historic Preservation	Equitable Services & Access	Food Access & Nutrition	Outdoor Air Quality
Infill & Redevelopment	Resource Efficient Buildings	Targeted Industry Development	Social & Cultural Diversity	Human Services	Indoor Air Quality	Water in the Environment
Public Spaces	Resource Efficient Public Infrastructure	Workforce Readiness		Poverty Prevention & Alleviation	Natural & Human Hazards	Working Lands
Transportation Choices	Waste Minimization				Safe Communities	

Evaluation Measures

As noted, STAR Objectives are achieved through attainment of two types of evaluation measures: Community Level Outcomes and Local Actions. Outcomes are measurable condition-level indicators that depict a community's progress toward a preferred state or condition within the STAR Objective it supports. Outcomes are represented as trend lines, targets, or thresholds in the rating system.

Generally, STAR awards credit to county applicants if they are achieving Outcome measures at the county-scale. However, recognizing the challenges faced by county applicants as a result of having multiple municipalities within their boundaries, there are two exceptions to this rule. The first exception is based on the understanding that data collection would be unreasonably burdensome. The second exception is when the Technical Guide provides explicit instructions that reporting at the county scale is not required.

Local Actions describe the range of decisions and investments that a local government or community can make, or the activities that they can engage in, that are essential to achieving desired Outcomes. Local Actions in the rating system focus on the key interventions that move the needle towards STAR's identified Outcomes.

Since many public, private, and non-profit organizations within the community contribute towards advancing sustainability goals, the rating system recognizes these efforts, not only those of the local government. The rating system awards credit for Local Actions performed by community actors other than the applicant local government, provided that the applicant demonstrates that the activities have had a significant, positive impact on progress towards achieving the desired Outcome(s) for the community as a whole.

Education and Outreach	*Preparatory*
Plan Development	
Policy and Code Adjustment	
Partnerships and Collaboration	
Practice Improvements	
Inventory, Assessment or Survey	
Enforcement and Incentives	*Implementation*
Programs and Services	
Facilities and Infrastructure Improvements	

There are nine defined Action Types in the rating system. Preparatory Actions are foundational steps that a community should take first to assess the community's needs and trends, identify and execute policy and regulatory changes, and strengthen partnerships and collaborations in order to effectively deploy resources and investments.

Implementation Actions are the programs and services, enforcement and incentive mechanisms, and infrastructure investments a community makes in order to efficiently and equitably move the needle towards the desired Outcomes.

Technical advisors, staff, and other stakeholders regularly review evaluation measures to determine whether they are relevant, feasible, systemic, timely, reliable and valid. Other criteria for inclusion in the rating system include alignment with the STAR Guiding Principles.

Understanding Points and Scores

The methodology behind STAR's points and scores acknowledges the integrated nature of the system's sustainability Goal Areas and Objectives and the complex relationship between Local Actions and Community Level Outcomes. While this section aims to provide an overview of points and scores, refer to the Technical Guide's Points Appendix for a more complete description of the design assumptions, point allocations and weightings.

It is recommended that applicants utilize the STAR Self-Assessment Checklist to estimate their preliminary score and certification level before beginning to enter data; the checklist provides an interactive score based on the selection of individual evaluation measures.

Weighting of Goal Areas

STAR's seven Goal Areas serve as the foundation of the system's interconnected, triple bottom line approach to sustainability. There are currently no universally accepted standards for rating one sustainability goal as of greater importance or value than any other; therefore, with one exception, STAR's Goal Areas are equally weighted at 100 points each. Education, Arts & Community is valued at 70 points because it has a fewer number of STAR Objectives overall.

Goal Area	Total Available
Built Environment	100
Climate & Energy	100
Economy & Jobs	100
Education, Arts & Community	70
Equity & Empowerment	100
Health & Safety	100
Natural Systems	100

Achieving Points within STAR Objectives

Within each Goal Area are between 5 and 7 Objectives; each has a total point value between 5 and 20 points. Objectives are assigned a total point value based on their impact on achieving community sustainability as well as impact towards meeting the STAR Goal Area that it is situated beneath.

Applicants accumulate points in the rating system through achievement of Objectives. Within each Objective, there are three paths to achieving the total points available: communities can complete Community Level Outcomes, Local Actions or a combination of the two types of evaluation measures.

Communities that meet the Outcome's threshold, target, or trend line requirement or, in some cases, demonstrate incremental progress will achieve a proportion of the total points available. Partial credit is available where indicated. Point values for Outcomes are determined by the supporting STAR Objective, the Outcome's strength as a standard (e.g. national standard threshold, standard target for trend, STAR set threshold, locally set threshold, locally set trend, or general trend) and its data sources and data quality (e.g. outside data set, standardized collection, or locally collected).

In each Objective, the Technical Guide distinguishes whether 100% or 70% of points are available through Outcomes. In Objectives where the Outcomes represent national or leadership standards, communities can achieve 100% of the points available without submitting documentation on Local Actions. In other Objectives where the Outcomes reflect a local or general threshold or trend; a community can achieve up to 70% of an Objective's total points available and must supplement the remaining points with Actions.

Finally, communities have the opportunity to accumulate points for the Local Actions that they complete. The rating system assigns higher point values to implementation-based actions than those that are preparatory in nature due to dedication of resources and impact on sustainability conditions. Actions will be evaluated over time and may be replaced or adjusted to align with the program's growing evidence base about which actions have the strongest influence.

Innovation & Process Category

Local government applicants may find that certain areas of the rating system are more difficult to achieve or may not apply given differences in geography, climate, jurisdictional control or other factors. The Innovation & Process credit category is a place to look for "extra credit" to supplement those areas of the system that were unattainable, difficult, or not a local priority.

Community Level Outcomes

In order to receive credit for STAR Outcomes, the community must submit the required documentation described in the guidance section of the relevant Objective. In many cases, the documentation is a STAR-provided Excel spreadsheet, which can be downloaded from the respective entry page in the Online Reporting Tool.

Local Actions

All Local Actions in STAR fit into one of nine Action Types. The submittal requirements for each Action Type are consistent throughout the system and are described below:

- **Education and Outreach**: For verification, identify 3 different types of education and outreach efforts conducted over the past 3 years, which can include events, classes, or workshops; a website; print materials; electronic media; social media; or other. For each, provide the title (and date for events, classes, or workshops), a brief description, and a link or copy if applicable.
- **Plan Development**: For verification, provide the plan title; a link to or copy of the plan; the year adopted or last updated with a description of how the plan is still used if more than 3 years old; a description of the development process and stakeholders involved; vision statement; key recommendations; strategy for implementation; and whether the plan has quantifiable targets (yes/no).
- **Policy and Code Adjustment**: For verification, provide the title and a link to or copy of the policy or code requirement; a description of the compelling characteristics that advance progress towards the desired Outcome(s); whether there was public engagement (yes/no); and the year adopted or last updated. *Note: Policy statements that appear in long-range plans (e.g. comprehensive plans) do NOT count for credit under the Policy and Code Adjustment Action Type.*
- **Partnerships and Collaboration**: For verification, identify the type of collaboration (formal partnership, appointed committee, or community collaboration); the name of the partnership or committee and a description of each partner's contribution or the committee's criteria for selection; a link to or documentation of the partnership or committee's work; year established; key accomplishments in the past 3 years; and a description of the local government's financial contribution and/or elected official/staff time dedicated in the past 3 years.
- **Practice Improvements**: For verification, describe the practice improvement; key accomplishments in the past 3 years; and provide a link to or copy of the annual report if applicable.
- **Inventory, Assessment or Survey**: For verification, identify the type of analysis (map, database, report, survey, or other) and provide the title; a description of key findings, and a link to or copy of the inventory, assessment, or survey.
- **Enforcement and Incentives:** (1) Enforcement: For verification, provide the unique verification specified in the Technical Guide and Online Reporting Tool; a description of the enforcement action and parties responsible; a description of the enforcement mechanism and process; a description of the compelling characteristics that advance progress towards the desired Outcome(s); and the year created or implemented. (2) Incentives: For verification, provide the unique verification; a link to or copy of the incentive; a description of the compelling characteristics that advance progress towards the desired Outcome(s); and the year created or implemented.
- **Programs and Services**: For verification, provide the name and a brief description of the program or service; the unique verification specified in the Technical Guide and Online Reporting Tool; a description of the compelling characteristics that advance progress towards the desired Outcome(s); and the year created or implemented.
- **Facility and Infrastructure Improvements:** For verification, provide the unique verification specified in the Technical Guide and Online Reporting Tool; a description of the compelling characteristics that advance progress towards the desired Outcome(s); and the funding invested in the past 3 years.

GOAL AREA: Built Environment

Achieve livability, choice, and access for all where people live, work, and play

Introduction

The 7 Objectives in the Built Environment Goal Area evaluate community development patterns, livability, and design characteristics, with emphasis on access and choice for all residents regardless of income. **BE-3: Compact & Complete Communities** promotes pedestrian-scaled, mixed-use development in high-density areas that support transit. **BE-4: Housing Affordability** measures location efficiency through the combined costs of housing and transportation and encourages affordable housing in areas where transportation costs are already low due to transit accessibility. **BE-7: Transportation Choices** provides the direct measure of transportation alternatives, affordability, and safety for pedestrians and bicyclists.

The Built Environment Goal Area addresses other types of infrastructure, such the provision of clean drinking water, wastewater, and stormwater in **BE-2: Community Water Systems**. **BE-5: Infill & Redevelopment** analyzes the distribution of water and sewer infrastructure to encourage efficient use and reuse of land. **BE-6: Public Spaces** promotes accessibility to abundant, well-designed parks, greenways, and other public spaces. Finally, **BE-1: Ambient Noise & Light** encourages community lighting systems to protect viewing of the night sky and residents from excessive noise.

Objective Number	Objective Title and Purpose	Available Points
BE-1	**Ambient Noise & Light:** Minimize and manage ambient noise and light levels to protect public health and integrity of ecological systems	5
BE-2	**Community Water Systems:** Provide a clean and secure water supply for all local users through the management of potable water, wastewater, stormwater, and other piped infrastructure	15
BE-3	**Compact & Complete Communities:** Concentrate development in compact, human-scaled, walkable centers and neighborhoods that connect to transit, offer diverse uses and services, and provide housing options for families of all income levels	20
BE-4	**Housing Affordability:** Construct, preserve, and maintain an adequate and diverse supply of location-efficient and affordable housing options for all residents	15
BE-5	**Infill & Redevelopment:** Focus new growth in infill areas and on redevelopment that does not require the extension of water, sewer, and road infrastructure or facilitate sprawl	10
BE-6	**Public Spaces:** Create a network of well-used and enjoyable parks and public spaces that feature equitable, convenient access for residents throughout the community	15
BE-7	**Transportation Choices:** Promote diverse transportation modes, including walking, bicycling, and transit, that are safe, low-cost, and reduce vehicle miles traveled	20
Total Credit, Goal Area		**100**

BE-1: Ambient Noise & Light

5 available points

PURPOSE

Minimize and manage ambient noise and light levels to protect public health and the integrity of ecological systems

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Preliminary Step:

Identify commercial, residential, and natural areas for evaluation in this Objective

Note that the Preliminary Step is required if the community is applying for credit in the Outcomes. If the community is applying for credit through Actions only, the Preliminary Step need not be completed.

Outcome 1: Noise

1.4 Points

Option A: Demonstrate that daytime ambient noise levels do not exceed 70 dBa in commercial areas
--OR--
Option B: Show progress toward locally identified key ambient noise targets

Outcome 2: Light in the Community

1.4 points

Show progress toward locally identified key light targets for light glare and/or light trespass

Outcome 3: Light in the Night Sky

0.7 points

Achieve a sky glow at or below 4 in the Bortle Dark-Sky Scale where the Milky Way is still visible in residential areas

Local Actions

70% of points available through Actions

Action 1:

Policy and Code Adjustment

Adopt a community noise policy, ordinance, or regulations as needed based upon a local assessment

Action 2:

Policy and Code Adjustment

Adopt a community light policy, ordinance, or regulations as needed based upon a local assessment

Action 3:
Education and Outreach

Educate the public about standards, effects of excessive exposure, and mitigation techniques for ambient noise or ambient light

Action 4:
Partnerships and Collaboration

Create partnerships to address sources of noise and/or light pollution not subject to the local authority

Action 5:
Practice Improvements

Develop a database of noise complaints and noise measurements (e.g. roads, industrial, outdoor music venues) or of light issues and neighborhoods targeted for improvements

Action 6:
Enforcement and Incentives

Establish clear lines of authority for enforcement of nuisance noise violations relative to different noise sources

Action 7:
Enforcement and Incentives

Enforce noise standards during the permitting, design, and construction of new large-scale developments that can significantly increase ambient noise levels

Action 8:
Enforcement and Incentives

Enforce light standards during the permitting, design, and construction of new large-scale developments that can significantly increase ambient light levels

Action 9:
Programs and Services

Establish programs that eliminate existing sources of light pollution coming from municipally owned entities

BE-2: Community Water Systems

15 available points

PURPOSE

Provide a clean and secure water supply for all local users through the management of potable water, wastewater, stormwater, and other piped infrastructure

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Drinking Water Quality

3 points; 0.8 points for Bonus

Part 1: Demonstrate that the community is not in violation of EPA's 5% standard for coliform bacteria in water pipes
--AND--
Part 2:
Option A: Demonstrate that the water supplied to residents is not in violation of EPA standards for turbidity and water pathogens
--OR--
Option B: Decrease the amount of all regulated contaminants over time [Partial credit applies]

Bonus: Jurisdiction or water provider participates in EPA water quality research on emerging contaminants

Outcome 2: Secure Water Supply

3.8 points

Part 1: Demonstrate that the height of the water table for subsurface aquifers has been stable or rising
--AND--
Part 2: Demonstrate that the height of surface waters is within the range to meet expected demand for the next 5 years or is rising

Outcome 3: Safe Wastewater Management

3.8 points

Part 1: Demonstrate that all publicly owned treatment works (POTWs) are in compliance with EPA effluent guidelines permits
--AND--
Part 2: Demonstrate that existing industrial dischargers are in compliance with EPA permits

Outcome 4: Safe Stormwater Management

3.8 points

National Pollutant Discharge Elimination System (NPDES) permit(s) have been obtained prior to discharging stormwater

Local Actions

70% of points available through Actions

Action 1:
Plan Development

Adopt a jurisdiction-wide management plan for both water consumption and disposal that provides a clean and secure water supply for all local uses

Action 2:
Policy and Code Adjustment

Adopt policies to ensure that the jurisdiction has authority to enact water conservation measures during periods of drought

Action 3:
Partnerships and Collaboration

Collaborate with a regional water management group that includes other jurisdictions that share the same water sources

Action 4:
Practice Improvements

Establish water quality monitoring and public reporting systems

Action 5:
Enforcement and Incentives

Shift towards a full cost pricing system to ensure that users are paying for the true cost of water

Action 6:
Programs and Services

Create programs to guarantee the provision of water to low-income residents

Action 7:
Programs and Services

Develop and provide water conservation programs to residents, businesses, and agricultural water users in order to help ensure that the community is not depleting its water supply

Note that this Action is shared with NS-5: Water in the Environment, Action 7.

Action 8:
Facility and Infrastructure Improvements

Manage and upgrade infrastructure to reduce leaks in the system, eliminate contaminants, and achieve other local conservation goals

Action 9:
Facility and Infrastructure Improvements

Implement at least 3 innovative water infrastructure and facility programs

Action 10:
Facility and Infrastructure Improvements

Upgrade and improve stormwater and wastewater treatment facilities to meet current and foreseeable needs

Action 11:
Facility and Infrastructure Improvements

Engage in restoration projects for critical water bodies that provide usable water for the jurisdiction or stormwater management assistance

Note that this Action is shared with NS-5: Water in the Environment, Action 6.

BE-3: Compact & Complete Communities

20 available points

PURPOSE

Concentrate development in compact, human-scaled, walkable centers and neighborhoods that connect to transit, offer diverse uses and services, and provide housing options for families of all income levels

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Preliminary Step:

Identify the Compact & Complete Centers (CCCs) that will be analyzed under this Objective

Note that the Preliminary Step is only required if the community is applying for credit in the Outcomes. If the community is applying for credit through Actions only, the Preliminary Step need not be completed.

Note that communities can receive a maximum score of 100 in this Objective (Outcome 1=50, Outcome 2=15, Outcome 3=15, and Outcome 4=20). Each CCC is evaluated separately for each of the components within the Outcome. Points accumulated for each CCC will be averaged resulting in the score for the Outcome.

Outcome 1: Density, Destinations, and Transit

10 points

Demonstrate that each CCC achieves the following thresholds:

Residential Density:

- Average of at least 12 dwelling units per acre within a ¼-mile walk distance of bus or streetcar stops, and within ½-mile walk distance of bus rapid transit stops, light or heavy rail stations, or ferry terminals
- Average of at least 7 dwelling units per acre within the rest of the CCC boundary

Employment Density: At least 25 jobs per acre

Diverse Uses: At least 7 diverse uses present

Transit Availability: At least 60 weekday trips and 40 weekend trips

[Graduated credit available]

Outcome 2: Walkability

3 points

Demonstrate that each CCC achieves the following thresholds:

- 90% of roadways contain sidewalks on both sides
- 100% of crosswalks are ADA accessible
- 60% of block faces contain street trees at no more than 40 feet intervals
- 70% of roadways are designed for a travel speed of no more than 25 mph
- Minimum intersection density of 90 intersections per square mile

[Partial credit available]

Outcome 3: Design
3 points

Demonstrate that each CCC achieves the following thresholds:

- 80% of front building setbacks along primarily single-family residential blocks are not more than 25 feet from the property line
- 80% of front building setbacks along primarily commercial blocks are not more than 10 feet from the property line
- 40% of primarily commercial blocks have ground floor street frontages free from blank walls and loading docks, and do not have structured or surface parking as the principal land use along the street

[Partial credit available]

Outcome 4: Affordable Housing
4 points

Demonstrate that each CCC achieves the following thresholds:

- 10% of total residential units are affordable
- 10% of residential units built or substantially rehabilitated within the last 3 years are dedicated as subsidized affordable housing
- Some of the dedicated long-term affordable housing units are deeply subsidized or deeply affordable for very- and extremely-low income households

[Partial credit available]

Note that the second standard in this Outcome is shared with BE-4: Housing Affordability, Outcome 2, Option B.

Local Actions
70% of points available through Actions

Action 1:
Plan Development

Demonstrate that the comprehensive plan supports compact, mixed-use development

Action 2:
Inventory, Assessment or Survey

Identify areas appropriate for compact, mixed-use development on the community's official future land use map

Note that the areas, nodes, activity centers, and/or corridors identified in Action 2 as appropriate for compact, mixed-use development are the areas that should be evaluated for Actions 3-7. If the applicant does not submit Action 2 for credit, the areas evaluated for Actions 3-7 should be the zoning categories that permit the highest residential and mixed-use development. Policies and regulations that apply community-wide, not just in compact, mixed-use areas, are also acceptable for credit.

Action 3:
Policy and Code Adjustment

Adopt regulatory strategies that permit or incentivize increased residential and employment densities and diverse uses in transit-served areas and areas identified for compact, mixed-use development

Note that this Action is shared with NS-4: Outdoor Air Quality, Action 1.

Action 4:
Policy and Code Adjustment

Require walkability standards for new development that include sidewalks on both sides of roadways, street trees, ADA accessible crosswalks, roadways designed for maximum travel speeds of 25 mph, and maximum block lengths in transit-served areas and areas identified for compact, mixed-use development

Note that this Action is similar to BE-7: Transportation Choices, Action 3 except that it only addresses transit-served and compact, mixed-use areas. Communities may apply for credit in both Local Actions, if applicable.

Action 5:
Policy and Code Adjustment

Require build-to lines for commercial and residential structures in transit-served areas and areas identified for compact, mixed-use development

Action 6:
Policy and Code Adjustment

Adopt advanced parking strategies in transit-served areas and areas identified for compact, mixed-use development

Note that this Action is shared with NS-4: Outdoor Air Quality, Action 2.

Action 7:
Policy and Code Adjustment

Require, incentivize, or subsidize creation of affordable housing in transit-served areas and areas identified for compact, mixed-use development

Note that this Action is shared with BE-4: Housing Affordability, Action 5.

Action 8:
Partnerships and Collaboration

Establish a design review board, neighborhood commission, or similar appointed citizen body that provides comments on proposed development projects

Action 9:
Programs and Services

Implement programs to preserve and maintain existing subsidized and unsubsidized affordable housing in transit-served areas, compact and mixed-use areas, and areas with rapidly-rising housing costs

Note that this Action is shared with BE-4: Housing Affordability, Action 8.

Action 10:
Facility and Infrastructure Improvements

Increase the percentage of households with access to transit

Note that this Action is shared with BE-7: Transportation Choices, Action 6.

BE-4: Housing Affordability

15 available points

PURPOSE

Construct, preserve, and maintain an adequate and diverse supply of location-efficient and affordable housing options for all residents

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Housing and Transportation Costs

6 points

Part 1: Demonstrate that there are at least 80% of Census block groups where a household earning the Area Median Income (AMI) would spend less than 45% on housing and transportation combined [Partial credit available]
--AND--
Part 2: Demonstrate that there are at least 60% of Census block groups where a household earning 80% AMI would spend less than 45% on housing and transportation combined [Partial credit available]

Outcome 2: Affordable Housing Production

4.5 points

Option A: Achieve targets for creation of new affordable housing units identified in a locally adopted comprehensive housing strategy
--OR--
Option B: Demonstrate that 10% of residential units built or substantially rehabilitated in the past 3 years in the community's Compact & Complete Centers (CCCs) are dedicated as subsidized affordable housing

Outcome 3: Affordable Housing Preservation

4.5 points

Demonstrate no loss of subsidized affordable housing units due to expiring subsidies in the past 3 years

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Develop a comprehensive housing strategy

Action 2:

Inventory, Assessment or Survey

Analyze transit access and transportation costs for neighborhoods with housing affordable to low- and moderate-income households

Action 3:
Inventory, Assessment or Survey

When new transit or other major infrastructure investments are planned, analyze the likelihood and extent to which housing costs are anticipated to increase in low- and moderate-income neighborhoods so that appropriate strategies can be developed to preserve and create long-term affordable housing

Action 4:
Policy and Code Adjustment

Use regulatory and design strategies to encourage compatible infill and redevelopment with a mix of housing types in neighborhoods close to employment centers, commercial areas, and where transit or transportation alternatives exist

Note that this Action is shared with BE-5: Infill & Redevelopment, Action 3.

Action 5:
Policy and Code Adjustment

Require, incentivize, or subsidize creation of subsidized affordable housing, including deeply subsidized or deeply affordable housing, in transit-served areas and areas identified for compact, mixed-use development

Note that this Action is shared with BE-3: Compact & Complete Communities, Action 7.

Action 6:
Partnerships and Collaboration

Collaborate with other jurisdictions to address affordable housing and location efficiency needs in the region

Action 7:
Partnerships and Collaboration

Partner with nonprofit organizations to provide education, counseling, and financial assistance to homebuyers or renters

Note that some of these activities may overlap with programs and services identified in EE-6: Poverty Prevention & Alleviation, Action 2. If so, consider applying for credit under more than one Objective.

Action 8:
Programs and Services

Implement programs to preserve and maintain existing subsidized and unsubsidized affordable housing in transit-served areas, compact and mixed-use areas, and areas with rapidly-rising housing costs

Note that this Action is shared with BE-3: Compact & Complete Communities, Action 9.

Action 9:
Enforcement and Incentives

Work with private employers to provide live-near-your-work or employer-assisted housing financial incentives

BE-5: Infill & Redevelopment

10 available points

PURPOSE

Focus new growth in infill areas and encourage redevelopment that does not facilitate sprawl or require the extension of water, sewer, or road infrastructure

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Infill Development

3.5 points

Option A: Increase the percentage of new development in locally designated infill and redevelopment areas
--OR--
Option B: Increase the percentage of new development located on infill, previously developed, brownfield, and greyfield sites

Outcome 2: Existing Infrastructure

3.5 points

Demonstrate that at least 75% of new housing units in the past 3 years utilized existing water and sewer mains and did not require extending or widening public roadways [Partial credit available]

Local Actions

70% of points available through Actions

Action 1:

Inventory, Assessment or Survey

Develop an inventory of infill, previously developed, brownfield, or greyfield sites of greatest priority and potential for development or redevelopment

Action 2:

Policy and Code Adjustment

Adopt a policy commitment to limited or no expansion of physical jurisdiction boundaries or extension of urban services

Action 3:
Policy and Code Adjustment

Use regulatory and design strategies to encourage compatible infill and redevelopment with a mix of housing types in neighborhoods close to employment centers, commercial areas, and where transit or transportation alternatives exist

Note that this Action is shared with BE-4: Housing Affordability, Action 4.

Action 4:
Education and Outreach

Educate residents and community groups about the importance of infill and redevelopment, brownfield assessment findings, and design strategies for compatible neighborhood development

Action 5:
Partnerships and Collaboration

Collaborate with state and federal authorities to advance brownfields cleanup

Action 6:
Programs and Services

Establish a program to provide information and assistance to owners, potential buyers, and developers regarding brownfield assessments, redevelopment strategies, and available resources

Action 7:
Programs and Services

Support temporary creative neighborhood uses for vacant properties and greyfields

Action 8:
Enforcement and Incentives

Provide financial incentives to encourage infill and redevelopment

Action 9:
Enforcement and Incentives

Perform proactive zoning enforcement and vacant lot cleanup or maintenance to improve the attractiveness of a redevelopment or blighted area and to deter crime

Action 10:
Facility and Infrastructure Improvements

Target local infrastructure improvements to revitalize redevelopment or blighted areas and catalyze private reinvestment

BE-6: Public Spaces

15 available points

PURPOSE

Create a network of well-used and enjoyable parks and public spaces that feature equitable, convenient access for residents throughout the community

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Note that applicant counties that contain cities or towns within their borders should include data on city parks in the evaluation of the Outcomes.

Outcome 1: Acreage

4.5 points

Provide ample parkland based on population density as follows:

- High: 6.8 acres per 1,000 residents
- Intermediate-High: 7.3 acres per 1,000 residents
- Intermediate-Low: 13.5 acres per 1,000 residents
- Low: 20.3 acres per 1,000 residents

Outcome 2: Proximity

4.5 points

Demonstrate that housing units in the community are located within a ½-mile walk distance of a public space or park based on population density as follows:

- High or Intermediate-High: 85%
- Intermediate-Low or Low: 70%

Outcome 3: Connectivity

4.5 points

Demonstrate that 90% of households are located within 3 miles of an off-road trail [Partial credit available]

Outcome 4: Use and Satisfaction

1.5 points

Option A: Demonstrate that 66% or more of surveyed residents visit a park at least once a year
--OR--
Option B: Demonstrate that 66% or more of surveyed residents respond favorably regarding the quality of the community's public space and park system

Local Actions

70% of points available through Actions

Action 1:
Plan Development

Adopt a parks and/or open space plan that promotes a community-wide network of public spaces that provide recreational, transportation, and environmental benefits

Action 2:
Inventory, Assessment or Survey

Conduct a study regarding the economic impact of parks and public spaces on the local economy to understand their contributions to community satisfaction and tourism

Action 3:
Policy and Code Adjustment

Adopt regulatory strategies or development incentives to create, maintain, and connect parks and public spaces

Action 4:
Policy and Code Adjustment

Adopt design guidelines for new public spaces and improvements to existing facilities to strengthen environmental benefits and provide visitor amenities

Action 5:
Partnerships and Collaboration

Participate in a local or regional alliance working to improve and expand the community-based or regional park system

Note that some organizations may overlap may have shared functions with groups identified in BE-6, Action 5. If so, consider applying for credit under more than one Objective.

Action 6:
Partnerships and Collaboration

Create an advisory board to regularly receive feedback from residents and organizations regarding planning, decision-making, and other issues affecting the quality and availability of parks and public spaces

Action 7:
Programs and Services

Host or partner with a volunteer program to support parks and public space maintenance

Action 8:
Programs and Services

Provide assistance for low-income users to access and use parks and public spaces through subsidy, scholarships, and discounts

Action 9:
Programs and Services

Host programs and events in parks and public spaces that bring the community together and encourage physical activity

Action 10:
Facility and Infrastructure Improvements

Consistently invest sufficient capital and operational funding to create and maintain parks and public spaces

BE-7: Transportation Choices

20 available points

PURPOSE

Promote diverse transportation modes, including walking, bicycling, and transit, that are safe, low-cost, and reduce vehicle miles traveled

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Mode Split

10 points

Achieve the following thresholds for journey-to-work trips:

- Drive alone maximum: 60%
- Bike + Walk + Transit minimum: 25%
- Bike + Walk minimum: 5%

Outcome 2: Transportation Affordability

5 points

Show that at least 50% of households in the jurisdiction are estimated to spend less than 15% of income on transportation costs

Outcome 3: Transportation Safety

5 points

Demonstrate that pedestrian and bicyclist fatalities are making incremental progress towards zero fatalities by 2040 [Partial credit available]

Outcome 4: Vehicle Miles Traveled [Future Measure]

5 points (suggested)

Demonstrate an annual decrease in vehicle miles traveled measured from a baseline year

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Adopt a bicycle and/or pedestrian master plan that prioritizes future projects to improve safety and access to non-motorized transportation

Note that an advisory board, such as a bicycle or pedestrian advisory committee may also assist in preparation of the master plan. If so, apply for credit under HS-1: Active Living, Action 5.

Action 2:
Policy and Code Adjustment

Adopt a complete streets policy that addresses all users, applies to all projects with limited exceptions, and includes specific next steps for implementation

Action 3:
Policy and Code Adjustment

Subdivision and other development regulations require walkability standards that encourage walking and enhance safety

Note that this Action is similar to BE-3: Compact & Complete Communities, Action 4 except that it addresses community-wide policies and codes, not just higher density, mixed-use areas. Communities may apply for credit in both Local Actions, if applicable.

Action 4:
Practice Improvements

Local government offers employee incentives to encourage commuting by modes other than single-occupancy vehicles

Action 5:
Enforcement and Incentives

Implement at least 2 types of focused enforcement programs to ensure pedestrian, bicycle, and motorist safety

Action 6:
Facility and Infrastructure Improvements

Increase the percentage of households with access to transit

Note that this Action is shared with BE-3: Compact & Complete Communities, Action 10.

Action 7:
Facility and Infrastructure Improvements

Increase the mileage of sidewalks, particularly on arterial or collector roads that connect people with destinations

Note that this Action is shared with NS-4: Outdoor Air Quality, Action 9.

Action 8:
Facility and Infrastructure Improvements

Increase the mileage of striped or buffered bicycle lanes, cycle-tracks, parallel off-street paths and/or other dedicated facilities

Action 9:
Facility and Infrastructure Improvements

Establish or support a community-wide public bike share program

Action 10:
Facility and Infrastructure Improvements

Construct or retrofit transportation infrastructure to meet standards in the Americans with Disabilities Act (ADA)

Goal Area: Climate & Energy

Reduce climate impacts through adaptation and mitigation efforts and increase resource efficiency

Why is Important

The 7 Objectives in STAR's Climate & Energy Goal Area aim to reduce climate impacts and increase resource efficiency in order to create safer and healthier communities. **CE-1: Climate Adaptation** and **CE-2: Greenhouse Gas Mitigation** are both critical to achieving reductions in harmful climate impacts and promote monetary and resource savings through decreased energy, water, and materials use.

Most of the Objectives in Climate & Energy focus on achieving incremental increases in resource efficiency. Through its ambitious waste reduction targets, **CE-7: Waste Minimization** rewards communities for efforts to reduce, reuse, and recycle materials. **CE-4: Industrial Sector Resource Efficiency, CE-5: Resource Efficient Buildings**, and **CE-6: Resource Efficient Public Infrastructure** encourage communities to reduce energy and water consumption over time. **CE-5: Resource Efficient Buildings** also provides credit to communities that demonstrate increases in the number of certified green buildings.

CE-3: Greening the Energy Supply complements the other Objectives in the Goal Area by addressing the energy sources for the transportation sector and the community's electrical power supply.

CE-1	**Climate Adaptation:** Strengthen the resilience of communities to climate change impacts on built, natural, economic, and social systems	15
CE-2	**Greenhouse Gas Mitigation:** Achieve greenhouse gas emissions reductions throughout the community	20
CE-3	**Greening the Energy Supply:** Transition the local energy supply for both transportation and non-mobile sources toward the use of renewable, less carbon-intensive, and less toxic alternatives	15
CE-4	**Industrial Sector Resource Efficiency:** Minimize resource use and demand in the industrial sector as a means to mitigate greenhouse gas emissions and conserve water	10
CE-5	**Resource Efficient Buildings:** Improve the energy and water efficiency of the community's residential, commercial, and institutional building stock	15
CE-6	**Resource Efficient Public Infrastructure:** Minimize resource use and demand in local public infrastructure as a means to mitigate greenhouse gas emissions and conserve water	10
CE-7	**Waste Minimization:** Reduce and reuse material waste produced in the community	15

CE-1: Climate Adaptation

15 available points

Strengthen the resilience of communities to climate change impacts on the built, natural, economic, and social systems

Community Level Outcomes

70% of points available through Outcomes

Identify 4 core areas of local climate change adaptation concerns. Core areas must apply to at least 3 of 4 general groupings: Built Environment, Economic Environment, Natural Environment, Social Environment

Note that the Preliminary Step is required if the applicant is pursuing any credit in the Objective

10.5 points

Demonstrate a measurable reduction in vulnerability in each of the 4 core areas identified locally [Partial credit available]

Local Actions

70% of points available through Actions

Note that Actions 1-5 are preparatory in nature and are intended to guide the implementation-based Actions 6-8. Applicants may substitute similar actions articulated in the community's climate adaptation plan for Actions 6-8.

Plan Development

Adopt a climate change adaptation plan

Policy and Code Adjustment

Require that internal decisions by local government departments use the most current climate science and that staff monitor climate change impacts

Partnerships and Collaboration

Develop a committee that includes climate scientists, adjacent jurisdictions, regional coalitions, state and federal agencies, and/or non-governmental organizations for the purpose of understanding and addressing shared vulnerabilities

CE-1: Climate Adaptation

Education and Outreach

Create an education and outreach campaign to engage citizens and businesses in climate change vulnerability reduction efforts

Policy and Code Adjustment

Adopt zoning code, building code, or other legally binding regulations that address future climate change threats

Programs and Services

Create or enhance programs and services that specifically help address climate change threats

Enforcement and Incentives

Enforce regulations or offer incentives to encourage residents and businesses to shift behaviors to prepare for future climate change impacts

Facility and Infrastructure Improvements

Improve facilities throughout the community to be better prepared for climate change threats

CE-2: Greenhouse Gas Mitigation

20 available points

Achieve greenhouse gas emissions reductions throughout the community

Community Level Outcomes

100% of points available through Outcomes

20 points

Demonstrate incremental progress towards achieving an 80% reduction in community-wide greenhouse gas (GHG) emissions by 2050 [Partial credit available]

Local Actions

70% of points available through Actions

Plan Development

Adopt a climate action plan designed to reduce GHG emissions throughout the jurisdiction

Policy and Code Adjustment

Require GHG emissions to be considered in broader local government planning processes and decision-making

Education and Outreach

Create an education and outreach campaign to engage citizens and businesses in GHG reduction efforts

Partnerships and Collaboration

Establish a climate change advisory group to engage diverse community stakeholders in identifying and implementing GHG reduction strategies

Practice Improvements

Modify local government operations and facilities in order to reduce GHG emissions and serve as a leader in the community

CE-2: Greenhouse Gas Mitigation

Policy and Code Adjustment

Adopt energy efficiency regulations for buildings within the jurisdiction

Note that this Action is similar to CE-5 Resource Efficient Buildings, Action 2. Consider applying for credit under more than one Objective, if relevant.

Enforcement and Incentives

Create incentives to improve opportunities for distributed generation of energy

Programs and Services

Implement specific programs and services or create facility upgrades that transition the community towards the use of alternatives modes of transportation and low-emissions vehicles

Programs and Services

Implement specific programs and services or create facility upgrades that reduce waste in the community

CE-3: Greening the Energy Supply

15 available points

Transition the local energy supply for both transportation and non-mobile sources toward the use of renewable, less carbon-intensive, and less toxic alternatives

Community Level Outcomes

70% of points available through Outcomes

5.3 points total including the bonus

Part 1: Demonstrate increased ownership of alternative fuel vehicles by residents over time
--AND--
Part 2: Demonstrate increased ownership of fuel-efficient vehicles by residents over time

Bonus: Demonstrate a decreased percentage of residents who own motor vehicles

This Outcome is repeated in EJ-2: Green Market Development, Outcome 4, with the exception of the bonus.

5.3 points

Demonstrate that the community receives a portion of its overall energy supply from renewable energy sources [Graduated credit available]

Local Actions

70% of points available through Actions

Plan Development

Adopt a community-wide plan that includes a comprehensive programmatic and policy approach to shift the community towards alternative fuels and renewable energy sources, especially for non-transportation uses

Policy and Code Adjustment

Create a policy to ensure that the local government's transportation and non-transportation energy supplies increasingly come from renewable and alternative sources

Note that this Action is shared with EJ-2: Green Market Development, Action 4.

CE-3: Greening the Energy Supply

Policy and Code Adjustment

Remove zoning, height, and other regulatory restrictions on the development of small- and medium-scale renewable energy installations and alternative fueling systems

Partnerships and Collaboration

Establish partnerships with critical energy providers and consumers to match renewable energy sources with community energy needs

Policy or Code Development

Adopt a renewable energy or alternative fuel targets for locally owned facilities and vehicles

Enforcement and Incentives

Create incentive programs to support the development of renewable and alternative fuel infrastructure

Enforcement and Incentives

Use a feed-in tariff or other financial mechanisms to increase the mix of renewable energy sources supplied to residents

Programs and Services

Run a net-metering program that encourages the development of small-scale renewable energy sources

Facility and Infrastructure Improvements

Work with state and regional partners to electrify truck stops to reduce idling and unnecessary emissions

Facility and Infrastructure Improvements

Install electrical vehicle charging stations

Note that this Action is shared with EJ-2: Green Market Development, Action 10.

Facility and Infrastructure Improvements

Build the necessary distribution infrastructure to support further investment in renewable energy sources

CE-4: Industrial Sector Resource Efficiency

10 available points

Minimize resource use and demand in the industrial sector as a means to mitigate greenhouse gas emissions and conserve water

Community Level Outcomes

100% of points available through Outcomes

7 points

Demonstrate incremental progress towards achieving an 80% reduction by 2050 in the energy use of industrial sector operations [Partial credit available]

3 points

Demonstrate incremental progress towards achieving an 80% reduction by 2050 in the water use of industrial sector operations [Partial credit available]

Local Actions

70% of points available through Actions

Applicants are encouraged to provide documentation for both energy and water in each Local Action; however, submissions that focus specifically on energy or water will be considered for credit.

Plan Development

Adopt a plan designed to improve the resource efficiency of the community's industrial sector

Policy and Code Adjustment

Adopt policies that promote shifts to improved data collection

Policy and Code Adjustment

Adopt regulations or codes that promote the industrial sector to reduce energy and water use

CE-4: Industrial Sector Resource Efficiency

Partnerships and Collaboration

Partner with organizations to encourage the collection and reporting of energy and water use data from the industrial sector

Partnerships and Collaboration

Work collaboratively with industrial sector leaders to set local targets and strategies to reduce energy and water use

Education and Outreach

Create training and educational opportunities for industrial sector employees to learn about current best practices and techniques for reducing energy and water use

Programs and Services

Administer programs that support the industrial sector's transition to less energy and water intensive practices

Enforcement and Incentives

Create financial incentives or industry-focused challenges to encourage companies to reduce the intensity of their resource consumption

Facility and Infrastructure Improvements

Develop the necessary infrastructure for the industrial sector to transition to less resource intensive practices

CE-5: Resource Efficient Buildings

15 available points

Improve the energy and water efficiency of the community's residential, commercial and institutional building stock

Community Level Outcomes

100% of points available through Outcomes

6 points

Demonstrate incremental progress towards achieving an 80% reduction by 2050 in the energy use intensity of the community's building stock [Partial credit available]

6 points

Demonstrate incremental progress towards achieving an 80% reduction by 2050 in the water use intensity of the community's building stock [Partial credit available]

3 points

Part 1: Increase over time the percentage of non-residential buildings achieving certification in STAR-qualifying energy efficiency and green construction programs
--AND--
Part 2: Increase over time the percentage of residential units achieving certification in STAR-qualifying energy efficiency and green construction programs

Note that this Outcome is repeated in EJ-2: Green Market Development, Outcome 2.

Local Actions

70% of points available through Actions

Applicants are encouraged to provide documentation for both energy and water in each Local Action; however, submissions that focus specifically on energy or water will be considered for credit.

Plan Development

Adopt a building energy efficiency plan to improve the energy and water efficiency of commercial, residential, and institutional buildings in the community

CE-5: Resource Efficient Buildings

Policy and Code Adjustment

Adopt or upgrade building codes to ensure that new and renovated buildings are more water and energy efficient

Note that this Action is similar to CE-2 Greenhouse Gas Mitigation, Action 6. Consider applying for credit under more than one Objective, if relevant.

Policy and Code Adjustment

Adopt an energy and water use information disclosure ordinance requiring energy and water users to disclose consumption levels

Education and Outreach

Create an education and outreach campaign or challenge to engage citizens and businesses in energy and water efficiency efforts

Partnerships and Collaboration

Establish a committee to provide recommendations on policies related to resource efficiency in buildings OR integrate this role into the work of existing committees

Partnerships and Collaboration

Work with the local utilities to improve energy efficiency programs and increase sub-metering throughout the community

Practice Improvements

Train inspectors to enforce water and energy efficiency standards in adopted building codes

Enforcement and Incentives

Create incentives to encourage the construction of energy and water efficient certified buildings

Programs and Services

Create a program to help homeowners and renters upgrade to more energy and water efficient homes

Facility and Infrastructure Improvements

Renovate local government buildings to improve energy and water use efficiency

CE-6: Resource Efficient Public Infrastructure

10 available points

Minimize resource use in local infrastructure as a means to mitigate greenhouse gas emissions and conserve water

Community Level Outcomes

100% of points available through Outcomes

1. For Outcome 1: Select public infrastructure which comprises an estimated 50% of the community's infrastructure-based energy consumption
2. For Outcome 2: Select public infrastructure which comprises an estimated 50% of the community's infrastructure-based water consumption

Note that the Preliminary Step is required if the applicant is pursuing any credit in the Objective.

Energy

7 points

Demonstrate incremental progress towards achieving an 80% reduction by 2050 in energy use by selected public infrastructure [Partial credit available]

Water

3 points

Demonstrate incremental progress towards achieving an 80% reduction by 2050 in water use by selected public infrastructure [Partial credit available]

Local Actions

70% of points available through Actions

Applicants are encouraged to provide documentation for both energy and water in each Local Action; however, submissions that focus specifically on energy or water will be considered for credit.

Energy

Policy and Code Adjustment

Develop targeted strategies to improve the resource efficiency of public infrastructure systems

Water

Practice Improvements

Require public infrastructure managers to consider thorough energy and water consumption implications when designing and installing new infrastructure components

CE-6: Resource Efficient Public Infrastructure

Policy and Code Adjustment

Adopt codes or design standards for new public infrastructure that will increase energy and water efficiency

Partnerships and Collaboration

Partner with state or regional entities that own or operate infrastructure within the jurisdiction to develop strategies to reduce energy and water usage

Partnerships and Collaboration

Engage public works and infrastructure managers in voluntary GHG reporting

Practice Improvements

Develop training programs for infrastructure operators on energy and water efficiency techniques

Facility and Infrastructure Investments

Make specific upgrades to infrastructure systems that will increase energy and water efficiency

Facility and Infrastructure Investments

Increase sub-metering from specific infrastructure systems to collect better information on energy and water use

CE-7: Waste Minimization

15 available points

Reduce and reuse material waste produced in the community

Community Level Outcomes

100% of points available through Outcomes

15 points

Demonstrate incremental progress towards achieving a 100% reduction by 2050 in total solid waste generated within the jurisdiction that is disposed of via landfill or incinerator [Partial credit available]

Local Actions

70% of the points available through Actions

Plan Development

Adopt a waste management plan that identifies the community's greatest sources of waste, sets formal waste reduction targets and establishes actions to help reach the community's waste reduction aims

Policy and Code Adjustment

Adopt specific product bans that will significantly advance progress towards waste reduction goals

Note that some of these activities may overlap EJ-2: Green Market Development, Action 8. If so, consider applying for credit under more than one Objective.

Education and Outreach

Create a public education campaign or a focused outreach effort to inform residents and businesses of their roles in achieving waste reduction targets

Partnerships and Collaboration

Develop or participate in a regional coalition that enhances the community's ability to address waste management targets

CE-7: Waste Minimization

Enforcement and Incentives

Implement incentives or enforce regulations ensuring that residents and businesses are working toward community waste reduction targets

Note that some of these activities may overlap with Actions identified in EJ-2: Green Market Development. If so, consider applying for credit under more than one Objective.

Programs and Services

Provide services to enable residents and businesses to recycle and reduce their waste footprint

Programs and Services

Collaboratively create and run at least 2 targeted recycling programs at key locations throughout the community

Programs and Services

Operate at least 2 specific waste management programs for critical waste stream types found in the community, such as: organic waste, hazardous waste, electronic waste, and construction and demolition waste

Facility and Infrastructure Improvements

Create a waste-to-energy conversion system for the community

GOAL AREA: Economy & Jobs

Create equitably shared prosperity and access to quality jobs

Introduction

The 6 Objectives of STAR's Economy & Jobs Goal Area work together to promote equitably shared prosperity and access to quality jobs. For example, **EJ-1: Business Retention & Development** and **EJ-3: Local Economy** both focus on supporting existing businesses within the community to retain workers and drive expansion to create a self-reliant local economy.

Recognizing that a robust local economy also needs to attract and incubate new businesses, **EJ-5: Targeted Industry Development** and **EJ-2: Green Market Development** seek to fortify existing industry clusters and promote emerging green industries that protect the environment while strengthening and diversifying the local economy.

EJ-6: Workforce Readiness recognizes the importance of a skilled workforce to fulfill local business needs and take advantage of available job opportunities, while **EJ-4: Quality Jobs & Living Wages** evaluates workers' quality of life through increased household income and living wages.

Objective Number	Objective Title and Purpose	Available Points
EJ-1	**Business Retention & Development:** Foster economic prosperity and stability by retaining and expanding businesses with support from the business community	20
EJ-2	**Green Market Development:** Increase overall market demand for products and services that protect the environment	15
EJ-3	**Local Economy:** Create an increasingly self-reliant community through a robust local economy with benefits shared by all	15
EJ-4	**Quality Jobs & Living Wages:** Expand job opportunities that support upward economic mobility and provide sufficient wages so that working people and their families can afford a decent standard of living	20
EJ-5	**Targeted Industry Development:** Increase local competitiveness by strengthening networks of businesses, suppliers, and associated institutions	15
EJ-6	**Workforce Readiness:** Prepare the workforce for successful employment through increasing attainment of post-secondary education and improving outcomes of workforce development programs	15
Total Credit, Goal Area		**100**

EJ-1: Business Retention & Development

20 available points

PURPOSE

Foster economic prosperity and stability by retaining and expanding businesses with support from the business community

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Businesses

6.7 points

Option A: Demonstrate an increased number of business establishments in the county over time
--OR--
Option B: Demonstrate an increased number of business establishments in the municipality over time

Outcome 2: Annual Sales

6.7 points

Demonstrate an increase in annual sales from businesses located in the jurisdiction over time

Outcome 3: Employment

6.7 points

Part 1: Demonstrate an increase in the percentage of residents employed over time
--AND--
Part 2: Demonstrate a decrease in the unemployment rate of residents over time

Local Actions

70% of points available through Actions

Action 1:

Policy and Code Adjustment

Negotiate project labor agreements, community benefit agreements, and local hiring agreements

Action 2:

Partnerships and Collaboration

Formally engage with the business community on a regular basis to improve conditions and address specific needs

Action 3:

Partnerships and Collaboration

Appoint an advisory body to provide recommendations and represent the business community in local decision-making

Action 4:
Partnerships and Collaboration

Engage in regional coordination with other governmental, public, private, and non-governmental entities to attract and retain businesses in the region

Action 5:
Enforcement and Incentives

Utilize tax incentives to retain or expand businesses, including property tax abatement, local sales tax rebates, and/or tax increment financing (TIF)

Action 6:
Enforcement and Incentives

Provide direct financial assistance to businesses in the form of municipal bonds, grants, or loans

Action 7:
Enforcement and Incentives

Support business development activities in special investment zones, such as Business Improvement Districts, Enterprise Zones, or other similar districts

Action 8:
Programs and Services

Provide direct services and trainings tailored to the needs of the business community

Action 9:
Programs and Services

Provide focused support, resources, and services to young entrepreneurial companies through business incubators

EJ-2: Green Market Development

15 available points

PURPOSE

Increase overall market demand for products and services that protect the environment

EVALUATION MEASURES

70% of points available through Outcomes

Community Level Outcomes

Outcome 1: Community Resource Efficiency
2.6 points

Demonstrate decreased greenhouse gas (GHG) intensity over time

Outcome 2: Green-Certified Building Stock
2.6 points

Part 1: Increase over time the percentage of non-residential buildings achieving certification in STAR-qualifying energy efficiency and green construction programs
--AND--
Part 2: Increase over time the percentage of residential units achieving certification in STAR-qualifying energy efficiency and green construction programs

Note that this Outcome is repeated in CE-5: Resource Efficient Buildings, Outcome 1.

Outcome 3: Renewable Energy Use
2.6 points

Demonstrate an increased number of renewable energy certificates (RECs) purchased by residents annually

Outcome 4: Green Vehicles
2.6 points

Part 1: Demonstrate increased ownership of alternative fuel vehicles by residents over time
--AND--
Part 2: Demonstrate increased ownership of fuel-efficient vehicles by residents over time

Note this Outcome is repeated in CE-3: Greening the Energy Supply, Outcome 1.

Local Actions

70% of points available through Actions

Action 1:
Policy and Code Adjustment

Amend existing local economic policies and strategies to increase market demand for green products and services

EJ-2: Green Market Development

Action 2:
Policy and Code Adjustment

Adopt policies and regulations that increase overall market demand for green buildings and associated materials, renewable energy products and infrastructure, and recyclable products

Note that some of these activities may overlap with Actions identified in CE-5: Resource Efficient Buildings or CE-7: Waste Minimization. If so, consider applying for credit under more than one Objective.

Action 3:
Policy and Code Adjustment

Review and amend zoning regulations to remove barriers or provide flexibility for green businesses

Action 4:
Policy and Code Adjustment

Create a green purchase policy to ensure that the local government's transportation and non-transportation energy supplies increasingly come from renewable and alternative sources

Note that this Action is shared with CE-3: Greening the Energy Supply, Action 2.

Action 5:
Partnerships and Collaboration

Partner with other local governments, community groups, and private entities in the region to articulate an overarching sustainable economic development strategy and work collaboratively to increase demand for green products and services

Action 6:
Education and Outreach

Create educational materials to define the larger vision of economic sustainability as one that proactively fosters green businesses, green jobs, and green practices

Action 7:
Practice Improvements

Create an environmentally preferable purchasing program for local government procurement of safe, healthy, and environmentally responsible products

Action 8:
Programs and Services

Create programs to help businesses transition to new green practices

EJ-2: Green Market Development

Action 9:
Programs and Services

Implement a green business promotion program

Action 10:
Facility and Infrastructure Improvements

Install electrical vehicle charging stations

Note that this Action is shared with CE-3: Greening the Energy Supply, Action 10.

EJ-3: Local Economy

15 available points

PURPOSE

Create an increasingly self-reliant community through a robust local economy with benefits shared by all

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Community Self-Reliance

5.3 points

Demonstrate that 50% of import sectors have increasing location quotients over the past 3 years

Outcome 2: Local Financial Institution Deposits

5.3 points

Increase the total funds deposited in locally owned and operated financial institutions over time

Local Actions

70% of points available through Actions

Action 1:

Inventory, Assessment or Survey

Conduct an assessment of local economic conditions, including economic leakage and targeted sectors for future investment

Action 2:

Plan Development

Adopt an economic localization plan to increase local production for local consumption and export

Action 3:

Policy and Code Adjustment

Promote purchasing preferences for locally-produced goods and services in anchor institutions, including the local government

Note that this Action is similar to the environmental purchasing policies identified in CE-3: Greening the Energy Supply, Action 2 (same as EJ-2: Green Market Development, Action 4). If any of these policies also have a provision for local purchasing, consider applying for credit under more than one Objective.

Action 4:
Education and Outreach

Create or support promotional campaigns to bank locally, buy locally, or buy from small and independent businesses and retailers

Action 5:
Enforcement and Incentives

Provide incentives for businesses that use materials produced within the region and sell their products within the region

Action 6:
Programs and Services

Provide support services to targeted sectors to strengthen value chain infrastructure and develop market channels

Action 7:
Programs and Services

Connect entrepreneurs and business owners with lenders and investors to facilitate investment in the local economy

Action 8:
Programs and Services

Support import substitution strategies that positively impact key sectors of the local economy

EJ-4: Quality Jobs & Living Wages

20 available points

PURPOSE

Expand job opportunities that support upward economic mobility and provide sufficient wages so that working people and their families can afford a decent standard of living

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Median Household Income
10 points

Increase real median household income over time

Outcome 2: Living Wages
10 points

Demonstrate that 90% of household incomes in the jurisdiction meet or exceed the living wage standard

Local Actions

70% of points available through Actions

Action 1:
Policy and Code Adjustment

Enact a living wage policy for local government employees and contractors

Action 2:
Policy and Code Adjustment

Enact family-friendly workplace policies for all local government employees that include at least 2 of the following benefits: paid sick days, paid family leave, flexible scheduling, job sharing, and easily available childcare

Action 3:
Policy and Code Adjustment

Require that local government contractors provide at least 2 of the following benefits to their employees: paid sick days, paid family leave, flexible scheduling, job sharing, and easily accessible childcare

Action 4:
Policy and Code Adjustment

Align local economic development policy strategies with workforce development programs

Note that this Action is shared with EJ-6: Quality Jobs and Living Wages, Action 2.

Action 5:
Education and Outreach

Support living wage campaigns in the community

Action 6:
Education and Outreach

Support a Best Places to Work campaign to recognize local businesses that support employees and their families

Action 7:
Partnerships and Collaboration

Maintain collective bargaining relationships with public employee labor organizations that represent local government workers

Action 8:
Programs and Services

Provide training programs and assistance to local businesses to encourage them to provide family-friendly workplace policies and extended benefits

Note that some of these activities may overlap with programs and services identified in EE-6: Poverty Prevention, Action 5. If so, consider applying for credit under more than one Objective.

Action 9:
Programs and Services

Provide job training and assistance programs for employees and employers in professions or sectors where wages are below the living wage

Note that some of these activities may overlap with programs and services identified in EE-6: Poverty Prevention, Action 6. If so, consider applying for credit under more than one Objective.

Action 10:
Enforcement and Incentives

Enforce the living wage policy with a living wage officer or equivalent function

Note this Action is only available to communities that have adopted a living wage policy, as described in Action 1.

EJ-5: Targeted Industry Development

15 available points

PURPOSE

Increase local competitiveness by strengthening networks of businesses, suppliers, and associated institutions

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Preliminary Step:

Locally define at least 3 targeted industry sectors for evaluation

Note that the Preliminary Step is required if the applicant is pursuing credit in the Outcomes or Actions 2-7.

Outcome 1: Targeted Industry Businesses
3.5 points

Increase the total number of new businesses in targeted industry sectors over time

Outcome 2: Targeted Industry Sales
3.5 points

Increase the annual sales or total value of businesses in targeted industry sectors over time

Outcome 3: Targeted Industry Employment
3.5 points

Increase total employment in targeted industry sectors over time

Local Actions

70% of points available through Actions

Where indicated, Local Actions should refer to the targeted industry sectors identified in the Preliminary Step.

Action 1:
Inventory, Assessment or Survey

Conduct a local economic analysis or participate in the development of a regional analysis of existing industry sectors to understand current needs and opportunities

Action 2:
Inventory, Assessment or Survey

Invest in market studies and research to support the continued growth and expansion of targeted industry sectors

Action 3:
Partnerships and Collaboration

Coordinate or support local and regional associations or formal networks of related businesses in the targeted industry sectors

Action 4:
Partnerships and Collaboration

Coordinate with universities, community colleges, the local Workforce Investment Board, private firms, and other community stakeholders to align research, workforce development, and resources to support targeted industry sectors

Action 5:
Education and Outreach

Educate residents about the economic impact of targeted industry sectors in the community

Action 6:
Enforcement and Incentives

Use tax incentives to attract, retain, or expand businesses in targeted industry sectors

Action 7:
Enforcement and Incentives

Provide direct financial assistance, such as local bonds, grants, or loans, to attract, retain, or expand businesses in targeted industry sectors

Action 8:
Programs and Services

Provide capacity building services and support for professionals in emerging and existing targeted industry sectors

EJ-6: Workforce Readiness

15 available points

PURPOSE

Prepare the workforce for successful employment through increasing attainment of post-secondary education and improving outcomes of workforce development programs

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Trained Workforce
5.3 points

Demonstrate improvements in workforce training outcomes for participants over the past 3 years

Outcome 2: Workforce Mobility
5.3 points

Demonstrate increased post-secondary educational attainment in the community over time

Local Actions

70% of points available through Actions

Action 1:
Plan Development

Adopt a workforce development plan or comprehensive strategy to educate, train, and prepare residents for local employment opportunities

Action 2:
Policy and Code Adjustment

Align local economic development policy strategies with workforce development programs

Note that this Action is shared with EJ-4: Quality Jobs and Living Wages, Action 4.

Action 3:
Policy and Code Adjustment

Require local government contractors and entities receiving financial incentives to prioritize hiring local residents

Action 4:
Policy and Code Adjustment

Participate in and promote community workforce agreements or project labor agreements

EJ-6: Workforce Readiness

Action 5:
Partnerships and Collaboration

Create a workforce development committee to align post-secondary education, workforce development training programs, and economic development strategies

Action 6:
Partnerships and Collaboration

Create data sharing agreements between the local government and private sector employers to maximize the availability and use of data in economic and workforce development planning

Action 7:
Practice Improvements

Produce an annual report that tracks workforce readiness performance measures

Action 8:
Programs and Services

Provide support services and training tailored to the needs of the local workforce

Note that some of these activities may overlap with programs and services identified in EE-6: Poverty Prevention, Action 6. If so, consider applying for credit under more than one Objective.

Action 9:
Programs and Services

Support expansion of community college programs to address the educational and training needs of the local workforce

Note that some of these activities may overlap with programs and services identified in EE-6: Poverty Prevention, Action 6. If so, consider applying for credit under more than one Objective.

Action 10:
Facility and Infrastructure Improvements

Invest in community college facilities and capital improvements to accommodate residents and members of the local workforce

GOAL AREA: Education, Arts & Community

Empower vibrant, educated, connected, and diverse communities

Introduction

The 5 Objectives of STAR's Education, Arts & Community Goal Area promote an educated, cohesive, and socially connected community. **EAC-3: Educational Opportunity & Attainment** evaluates achievement and equitable access to a quality education so that all students may realize their full potential. **EAC-1: Arts & Culture** and **EAC-5: Social & Cultural Diversity** respect and celebrate the contributions that the arts and diversity bring to vibrant neighborhoods and communities.

Recognizing the importance of social connections within the community, **EAC-4: Historic Preservation** seeks to preserve the historical buildings and cultural resources that link the community to its past, while **EAC-2: Community Cohesion** encourages positive social interaction amongst neighbors.

Objective Number	Objective Title and Purpose	Available Points
EAC-1	**Arts & Culture:** Provide a broad range of arts and cultural resources and activities that encourage participation and creative self-expression	15
EAC-2	**Community Cohesion:** Ensure a cohesive, connected community through adequate venues for community interaction, community building activities and events, and the sharing of information about community issues and services	15
EAC-3	**Educational Opportunity & Attainment:** Achieve equitable attainment of a quality education for individuals from birth to adulthood	20
EAC-4	**Historic Preservation:** Preserve and reuse historic structures and sites to retain local, regional, and national history and heritage, reinforce community character, and conserve resources	10
EAC-5	**Social & Cultural Diversity:** Celebrate and respect diversity and represent diverse perspectives in community decision-making	10
Total Credit, Goal Area		**70**

EDUCATION, ARTS & COMMUNITY

EAC-1: Arts & Culture

15 available points

PURPOSE

Provide a broad range of arts and cultural resources and activities that encourage participation and creative self-expression

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Creative Industries

7.5 points

Demonstrate that creative industries represent at least a 5% share of all businesses in the county

Outcome 2: Attendance and Participation

7.5 points

Part 1: Demonstrate that at least 35% of adult residents in the county attend a live performing arts event annually
--AND--
Part 2: Demonstrate that at least 20% of adult residents in the county visit an art museum annually
[Partial Credit Available]

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Adopt a strategic plan to protect, enhance, and expand the community's arts and cultural resources and strengthen creative industries

Action 2:

Policy and Code Adjustment

Adopt a percent-for-art ordinance requiring public art to be installed as part of new major public development projects

Action 3:

Enforcement and Incentives

Establish enterprise zones, arts or cultural districts, or overlay zoning that encourages businesses in the creative industries to cluster together and integrate with surrounding neighborhoods

Action 4:
Partnerships and Collaboration

Collaborate with private, nonprofit, or regional organizations to increase access to and participation in the arts

Action 5:
Practice Improvements

Track participation and attendance at major community arts and cultural events, performances, festivals, and programs

Action 6:
Programs and Services

Provide financial or logistical support to local arts, festivals, performances, or cultural tourism

Action 7:
Programs and Services

Hire local artists to create artwork, sculptures, or perform in public spaces

Action 8:
Programs and Services

Develop special programs to advance arts education that is aligned with core curriculum in all public schools, especially early elementary grades

Action 9:
Programs and Services

Provide entrepreneurial and workforce development training programs that serve artists, writers, designers, and other creative industries professionals

Action 10:
Facility and Infrastructure Improvements

Ensure that major arts and cultural facilities are accessible to people with disabilities

Action 11:
Facility and Infrastructure Improvements

Protect and maintain local public artworks and cultural resources for future generations

EDUCATION, ARTS & COMMUNITY

EAC-2: Community Cohesion

15 available points

PURPOSE

Ensure a cohesive, connected community through adequate venues for community interaction, community building activities and events, and the sharing of information about community issues and services

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Community Venues

7.4 points

Demonstrate that at least 75% of residents live within 1 mile of a community venue that is open to the public and offers free services and/or events for residents

Outcome 2: Neighborhood Cohesion

3.2 points

Demonstrate an increased percentage of neighborhoods reporting positive levels of neighborhood cohesion through community surveys

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Adopt neighborhood plans that guide future development, recommend strategies to create or preserve community venues, and address neighborhood-specific issues

Action 2:

Policy and Code Adjustment

Adopt zoning and development regulations that support or incentivize farmers markets, community gardens, and urban agriculture

Note that this action is shared with HS-4: Food Access and Nutrition, Action 2. Specific zoning and development incentives for healthy food are addressed in HS-4: Food Access & Nutrition, Action 11.

Action 3:
Education and Outreach

Provide access to information about community issues, programs, services, and activities that is also accessible to non-English speaking residents

Note that EE-2: Civil & Human Rights, Action 7 also references translation services. Applicants may apply for credit under both Actions if they meet the relevant requirements.

Action 4:
Partnerships and Collaboration

Partner with neighborhood associations, community organizations, and local service providers to identify and address neighborhood-specific needs

Note that some of these activities may overlap with programs and services identified in BE-1: Ambient Noise & Light, BE-7: Transportation Choices, and EAC-5: Social & Cultural Diversity. If so, consider applying for credit under more than one Objective.

Action 5:
Partnerships and Collaboration

Support neighborhood advisory councils to encourage dialogue on community issues and build the social capital of neighborhoods

Action 6:
Practice Improvements

Establish a department with staff assigned to work as liaisons with specific neighborhoods

Action 7:
Programs and Services

Provide direct funding and management of at least 2 types of community and neighborhood venues

Action 8:
Programs and Services

Provide capacity-building programs to enable community leaders and groups to self-organize, resolve issues, and cultivate leadership

Note that some activities may overlap with violence prevention programs and services identified in HS-7: Safe Communities, Action 7. If so, consider applying for credit under more than one Objective.

Action 9:
Programs and Services

Provide programs that support the development of positive, strong youth leaders, particularly in low-income and/or minority neighborhoods

Note that this Action is shared with EAC-5: Social & Cultural Diversity, Action 8. Also, some activities may overlap with school-based violence prevention programs and services identified in HS-7: Safe Communities, Action 8. If so, consider applying for credit under more than one Objective.

Action 10:
Programs and Services

Provide financial or logistical support for publicly accessible neighborhood events, activities, and programming, particularly in low-income and/or minority neighborhoods

EDUCATION, ARTS & COMMUNITY

EAC-3: Educational Opportunity & Attainment

20 available points

PURPOSE

Ensure a cohesive, connected community through adequate venues for community interaction, community building activities and events, and the sharing of information about community issues and services

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Community Venues

7.4 points

Demonstrate that at least 75% of residents live within 1 mile of a community venue that is open to the public and offers free services and/or events for residents

Outcome 2: Neighborhood Cohesion

3.2 points

Demonstrate an increased percentage of neighborhoods reporting positive levels of neighborhood cohesion through community surveys

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Adopt neighborhood plans that guide future development, recommend strategies to create or preserve community venues, and address neighborhood-specific issues

Action 2:

Policy and Code Adjustment

Adopt zoning and development regulations that support or incentivize farmers markets, community gardens, and urban agriculture

Note that this action is shared with HS-4: Food Access and Nutrition, Action 2. Specific zoning and development incentives for healthy food are addressed in HS-4: Food Access & Nutrition, Action 11.

Action 3:
Education and Outreach

Provide access to information about community issues, programs, services, and activities that is also accessible to non-English speaking residents

Note that EE-2: Civil & Human Rights, Action 7 also references translation services. Applicants may apply for credit under both Actions if they meet the relevant requirements.

Action 4:
Partnerships and Collaboration

Partner with neighborhood associations, community organizations, and local service providers to identify and address neighborhood-specific needs

Note that some of these activities may overlap with programs and services identified in BE-1: Ambient Noise & Light, BE-7: Transportation Choices, and EAC-5: Social & Cultural Diversity. If so, consider applying for credit under more than one Objective.

Action 5:
Partnerships and Collaboration

Support neighborhood advisory councils to encourage dialogue on community issues and build the social capital of neighborhoods

Action 6:
Practice Improvements

Establish a department with staff assigned to work as liaisons with specific neighborhoods

Action 7:
Programs and Services

Provide direct funding and management of at least 2 types of community and neighborhood venues

Action 8:
Programs and Services

Provide capacity-building programs to enable community leaders and groups to self-organize, resolve issues, and cultivate leadership

Note that some activities may overlap with violence prevention programs and services identified in HS-7: Safe Communities, Action 7. If so, consider applying for credit under more than one Objective.

Action 9:
Programs and Services

Provide programs that support the development of positive, strong youth leaders, particularly in low-income and/or minority neighborhoods

Note that this Action is shared with EAC-5: Social & Cultural Diversity, Action 8. Also, some activities may overlap with school-based violence prevention programs and services identified in HS-7: Safe Communities, Action 8. If so, consider applying for credit under more than one Objective.

Action 10:
Programs and Services

Provide financial or logistical support for publicly accessible neighborhood events, activities, and programming, particularly in low-income and/or minority neighborhoods

EAC-4: Historic Preservation

10 available points

PURPOSE

Preserve and reuse historic structures and sites to retain local, regional, and national history and heritage, reinforce community character, and conserve resources

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Local Historic District(s)

1.4 points

Designate at least one local historic district with specific design standards and a process for reviewing new projects

Outcome 2: Preserved Structures and Sites

2.1 points

Increase over time the annual number of eligible structures and sites designated as local historic landmarks, added to local historic districts, and/or rehabilitated, restored, or converted through adaptive reuse

Outcome 3: Green Retrofits

2.1 points

Increase over time the annual number of historic structures retrofitted or rehabilitated with energy efficiency or clean energy technologies

Outcome 4: Economic Impact

1.4 points

Demonstrate that historic preservation efforts have had a positive, measurable impact on the local economy

Local Actions

70% of points available through Actions

Action 1:

Inventory, Assessment or Survey

Create an inventory of designated and eligible historic structures and sites in the community

Bonus: Inventory includes archeological resources

Action 2:

Plan Development

Adopt a historic preservation plan that establishes community priorities for preservation

Action 3:
Policy and Code Adjustment

Adopt a historic preservation ordinance that establishes procedures for designation of local historic districts and landmarks and authorizes establishment of a historic preservation commission

Action 4:
Policy and Code Adjustment

Adopt land use, zoning, and design regulations that support and reinforce existing community character in older and historic neighborhoods and commercial areas, and promote development of sensitive, compatible infill

Action 5:
Partnerships and Collaboration

Collaborate with local nonprofit or for-profit entities to support local events, recognition programs, and tourism efforts that celebrate and leverage the economic value of local historic resources

Action 6:
Practice Improvements

Achieve Certified Local Government status, as recognized by the National Park Service

Action 7:
Enforcement and Incentives

Establish a demolition by neglect ordinance

Action 8:
Enforcement and Incentives

Provide incentives to encourage the rehabilitation of historic buildings and reinvestment in older and historic neighborhoods and commercial areas

Action 9:
Programs and Services

Provide local financial assistance to low- and moderate-income homeowners, residents, seniors, and/or businesses vulnerable to rising real estate values and maintenance costs associated with historic preservation

Action 10:
Programs and Services

Provide technical assistance to property owners or nonprofit organizations seeking to add properties or historic districts to the National Register of Historic Places or the comparable state register

EDUCATION, ARTS & COMMUNITY

EAC-5: Social & Cultural Diversity

10 available points

PURPOSE

Celebrate and respect diversity and represent diverse perspectives in community decision-making

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Diverse Community Representation

3.5 points

Demonstrate that appointments to local advisory boards and commissions reflect the racial and ethnic diversity of the community

Outcome 2: Social and Cultural Activities

3.5 points

Demonstrate that public events celebrating social and cultural diversity are held in the community

Local Actions

70% of points available through Actions

Action 1:

Inventory, Assessment or Survey

Conduct an assessment of the community's social and cultural diversity to inform local government actions

Action 2:

Inventory, Assessment or Survey

Use the Diversity Index to analyze the effectiveness of policies, programs, service delivery, and infrastructure investments

Action 3:

Policy and Code Adjustment

Adopt a policy to encourage diversity in local government appointments to advisory boards and commissions

Note that this Action is shared with EE-1: Civic Engagement, Action 1.

Action 4:
Education and Outreach

Promote events and programs that recognize and celebrate social and cultural diversity in the community

Note that this Action is shared with EE-4: Equitable Services & Access, Action 3.

Action 5:
Practice Improvements

Provide equity and diversity training for local government staff

Note that this Action is shared with EE-4: Equitable Services & Access, Action 6.

Action 6:
Practice Improvements

Establish an office within the jurisdiction to ensure access, equity, and inclusion in policies, programs, procedures, and service delivery

Note that this office may fulfill some of the activities identified in EE-5: Human Services, Action 2. If so, consider applying for credit under more than one Objective.

Action 7:
Programs and Services

Provide leadership and training programs that encourage and support diverse representation on local boards and commissions

Action 8:
Programs and Services

Provide programs that support the development of positive, strong youth leaders, particularly in low-income and/or minority neighborhoods

Note that this Action is shared with EAC-2: Community Cohesion, Action 9. Also, some activities may overlap with school-based violence prevention programs and services identified in HS-7: Safe Communities, Action 8. If so, consider applying for credit under more than one Objective.

Action 9:
Programs and Services

Provide financial or logistical support to programs, activities, or events that celebrate and deepen understanding and respect for the community's diversity

GOAL AREA: Equity & Empowerment

Ensure equity, inclusion, and access to opportunity for all residents

Introduction

The 6 Objectives in STAR's Equity & Empowerment Goal Area promote equity, inclusion, and access to opportunity for all residents. **EE-1: Civic Engagement** measures citizen participation in civic affairs through voting and volunteerism, as well as their feelings of empowerment in influencing local decision-making.

Other Objectives ensure that benefits and burdens of development are equitably distributed across the community. **EE-2: Civil & Human Rights** promotes the full enjoyment of civil and human rights by all residents in the community. **EE-4: Equitable Services & Access** evaluates the distribution of foundational community assets, such as tree canopy, schools, and transit, and rewards communities for reducing disparities in access. **EE-3: Environmental Justice** seeks relief for low-income persons and minorities from unfair environmental, economic, and health impacts.

Finally, Objectives in the Equity & Empowerment Goal Area enable all residents to lead lives of dignity. **EE-5: Human Services** assures that local programs are in place to meet basic human needs, and that priority populations are receiving assistance with the end goal of increasing self-sufficiency. **EE-6: Poverty Prevention & Alleviation** measures the decrease in poverty over time and the ability of people living in poverty to obtain greater economic stability.

Objective Reference	Objective Title and Purpose	Available Points
EE-1	**Civic Engagement:** Improve community well-being through participation in local decision-making and volunteering with community organizations	15
EE-2	**Civil & Human Rights:** Promote the full enjoyment of civil and human rights for all residents in the community	10
EE-3	**Environmental Justice:** Reduce polluted and toxic environments with an emphasis on alleviating disproportionate health hazards in areas where low-income residents and persons of color live	15
EE-4	**Equitable Services & Access:** Ensure equitable access to foundational community assets within and between neighborhoods and populations	20
EE-5	**Human Services:** Ensure high quality human services programs are available and utilized to guarantee basic human needs so that all residents lead lives of dignity	20
EE-6	**Poverty Prevention & Alleviation:** Prevent people from falling into poverty and proactively enable those who are living in poverty to obtain greater, lasting economic stability and security	20
Total Possible Goal Area		**100**

EE-1: Civic Engagement

15 available points

PURPOSE

Improve community well-being through participation in local decision-making and volunteering with community organizations

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Voting
4.2 points

Part 1: Increase the percentage of registered voters over time
--AND--
Part 2: Increase the percentage of voters participating in local elections over time

Outcome 2: Volunteerism
3.2 points

Option A: Demonstrate that at least 30% of residents in large jurisdictions or 35% of residents in small or mid-sized jurisdictions volunteered in the past year
--OR--
Option B: Demonstrate an increase in the percentage of residents who volunteered over the past 3 years [Partial credit applies]

Outcome 3: Sense of Empowerment
3.2 points

Option A: Demonstrate that at least 50% of residents believe they are able to have a positive impact on their community based on a local survey
--OR--
Option B: Increase over time the percentage of residents who believe they are able to have a positive impact on their community based on local surveys [Partial credit applies]

Local Actions

70% of points available through Actions

Action 1:
Policy and Code Adjustment

Adopt a policy to encourage diversity in local government appointments to advisory boards and commissions

Note that this Action is shared with EAC-5: Social & Cultural Diversity, Action 3.

EE-1: Civic Engagement

Action 2:
Policy and Code Adjustment

Adopt guidelines to instruct local government agencies or departments about how to successfully engage residents

Action 3:
Education and Outreach

Conduct education campaigns about the electoral process, voter registration and participation, and other issues related to civic literacy

Action 4:
Partnerships and Collaboration

Partner with business, civic, and neighborhood organizations to increase voter registration and turnout OR volunteer opportunities and participation OR ongoing civic engagement in local decision-making

Action 5:
Practice Improvements

Provide training to local government agencies or departments on successful public engagement techniques

Action 6:
Practice Improvements

Establish regular, ongoing opportunities for elected officials and/or senior government staff to meet with residents to answer questions and listen to concerns

Action 7:
Programs and Services

Create a volunteer program for residents to assist the local government with special events, services, and operations

Action 8:
Programs and Services

Provide support and resources to local community groups to help them achieve their missions

Action 9:
Programs and Services

Create a mock youth voting program to teach children about democracy, elections, and the importance of voting

EE-2: Civil & Human Rights

10 available points

PURPOSE

Promote the full enjoyment of civil and human rights for all residents in the community

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Redressal of Complaints
7 points

Demonstrate that all civil and human rights complaints in the past 3 years have been investigated and violations redressed in a timely manner

Local Actions

70% of points available through Actions

Action 1:
Policy and Code Adjustment

Adopt specific policies or amend the jurisdiction's charter to specifically protect the civil and human rights of all community residents

Action 2:
Practice Improvements

Establish an office within the jurisdiction with the authority and capacity to investigate civil and human rights complaints

Note that this office may fulfill some of the activities identified in EAC-5, Action 6. If so, consider applying for credit under more than one Objective.

Action 3:
Education and Outreach

Conduct local public education campaigns regarding civil and human rights, such as the process for filing complaints

Action 4:
Partnerships and Collaboration

Establish an independent civil and/or human rights commission to ensure access, equity, and inclusion

EE-2: Civil & Human Rights

Action 5:
Practice Improvements

Provide training for police officers focused on non-discrimination and conflict prevention

Action 6:
Programs and Services

Operationalize the local government's civil and human rights policies in programs, services, and operations

Action 7:
Programs and Services

Provide language translation or interpretation services to ensure that residents have access to information about local government programs, services, and operations

Note that EAC-2: Community Cohesion, Action 3 also references translation services. Applicants may apply for credit under both Objectives if they meet the requirements of both.

EE-3: Environmental Justice

15 available points

PURPOSE

Reduce polluted and toxic environments with an emphasis on alleviating disproportionate health hazards in areas where low-income residents and persons of color live

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Preliminary Step:

Identify the community's prioritized environmental justice sites for evaluation in this Objective

Outcome 1: Reduce Risk and Exposure
10.5 points

Demonstrate progress towards achieving targets for prioritized environmental justice sites identified in a locally adopted plan [Partial credit available]

Local Actions

70% of points available through Actions

Action 1:
Partnerships and Collaboration

Create an Environmental Justice Collaborative Group (EJCG) composed of residents, stakeholders, and environmental professionals to assess risk and exposure, set targets, implement projects, and monitor improvements

Action 2:
Inventory, Assessment or Survey

Assess the risk and exposure to toxins related to the community's prioritized environmental justice sites

Action 3:
Plan Development

Adopt an environmental justice plan aimed at reducing polluted and toxic environments in the jurisdiction

Action 4:
Policy and Code Adjustment

Establish targets for each of the prioritized environmental justice sites related to air or water improvements

EE-3: Environmental Justice

Action 5:
Policy and Code Adjustment

Incorporate environmental justice criteria and priorities into zoning, land use planning, permitting policies, and development of new projects

Action 6:
Policy and Code Adjustment

Create community benefit agreements (CBAs) for projects associated with prioritized environmental justice sites and proposed development projects with environmental justice concerns

Action 7:
Practice Improvements

Create an interdepartmental working committee within the local government to guide and support environmental justice activities

Action 8:
Enforcement and Incentives

Monitor and enforce environmental regulations for existing facilities that impact environmental justice sites

Action 9:
Facility and Infrastructure Improvements

Implement projects to reduce acute exposure to contaminants and risks associated with environmental justice sites

EE-4: Equitable Services & Access

20 available points

PURPOSE

Ensure equitable access to foundational community assets within and between neighborhoods and populations

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Equitable Access and Proximity

14 points

Demonstrate increased access and proximity by residents of diverse income levels and race/ethnicity to the following community facilities, services, and infrastructure:

- Public transit facilities and service levels
- Public libraries
- Public schools
- Public spaces
- Healthful food
- Health and human services
- Digital access or high speed internet
- Urban tree canopy
- Emergency response times

[Partial credit available]

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Adopt an equity plan that evaluates current conditions in the community and establishes targets to improve equitable access and proximity in at least the categories identified in the Outcome measure

Action 2:

Policy and Code Adjustment

Adopt an equity or social justice policy that establishes a clear commitment to equity in local government decision-making, activities, and investments

Action 3:

Education and Outreach

Promote events and programs that recognize and celebrate social and cultural diversity in the community

Note that this Action is shared with EAC-5: Social & Cultural Diversity, Action 4.

EE-4: Equitable Services & Access

Action 4:
Education and Outreach

Publicize efforts to improve equitable access and proximity to community facilities, services, and infrastructure

Action 5:
Partnerships and Collaboration

Establish partnerships that engage key community groups and stakeholders in activities to advance equitable access and proximity to facilities, services, and infrastructure

Action 6:
Practice Improvements

Provide equity and diversity training for local government staff

Note that this Action is shared with EAC-5: Social & Cultural Diversity, Action 5.

Action 7:
Programs and Services

Modify the deployment of local programs and services to reduce disparities within the categories identified in the Outcome measure

Action 8:
Facility and Infrastructure Improvements

Construct new facilities and infrastructure in locations that reduce existing disparities within the categories identified in the Outcome measure

EE-5: Human Services

20 available points

PURPOSE

Ensure high quality human services programs are available and utilized to guarantee basic human needs so that all residents lead lives of dignity

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Preliminary Step:

Select at least 3 priority populations and up to 5 priority human services for evaluation in this Objective

Note that the Preliminary Step is required if the applicant is pursuing any credit in the Objective.

Outcome 1: Human Services Assistance
14 points

Reduce the percentage of people in selected priority populations who need assistance obtaining selected priority human services [Partial credit available]

Local Actions

70% of points available through Actions

Local governments and non-profit organizations provide a broad range of human services to the community. For purposes of STAR reporting, applicants should narrow the focus of their responses to address the priority populations and priority human services identified in the Preliminary Step.

Action 1:
Inventory, Assessment or Survey

Conduct a community needs assessment to identify priority service needs and resources, including the needs of priority populations

Note that the analysis in EE-4: Equitable Services and Access may provide data to inform this needs assessment.

Action 2:
Plan Development

Adopt a human services plan designed to guarantee that basic human needs are met in the community

EE-5: Human Services

Action 3:
Partnerships and Collaboration

Establish an advisory committee that provides ongoing consultation to local departments and agencies responsible for providing priority human services

Action 4:
Education and Outreach

Develop public education campaigns to inform residents about available service programs to help meet basic needs

Note that this Action is shared with EE-6: Poverty Prevention & Alleviation, Action 3.

Action 5:
Practice Improvements

Implement information technology solutions to improve client support services and management

Action 6:
Practice Improvements

Monitor and evaluate the quality, comprehensiveness, and effectiveness of priority human services for selected priority populations

Action 7:
Practice Improvements

Equip human services personnel with the skills and training needed to effectively improve the well being of the community's priority populations

Action 8:
Programs and Services

Support the provision of high quality, priority human services in coordination with non-governmental service providers

Note that some of these activities may overlap with the partnerships and collaboration identified in EE-6: Poverty Prevention & Alleviation, Action 2. If so, consider applying for credit under more than one Objective.

Action 9:
Facility and Infrastructure Improvements

Upgrade existing facilities or build new facilities to better provide needed human services

EE-6: Poverty Prevention & Alleviation

20 available points

PURPOSE

Prevent people from falling into poverty and proactively enable those who are living in poverty to obtain greater, lasting economic stability and security

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Poverty Reduction
12 points

Demonstrate progress towards a target of no residents living below the poverty line by 2025 [Partial credit available]

Outcome 2: Equitable Poverty Reduction
8 points

Demonstrate a decrease over time in the percentage of residents living below the poverty line from at least 3 population subgroups

Local Actions

70% of points available through Actions

Action 1:
Plan Development

Adopt a community-wide plan to reduce poverty

Action 2:
Partnerships and Collaboration

Create a team of local government staff to work collaboratively and coordinate with non-governmental organizations to provide high-quality services and reduce poverty

Note that some of these activities may overlap with programs and services identified in EE-5: Human Services, Action 8 or BE-4: Housing Affordability, Action 7. If so, consider applying for credit under more than one Objective.

Action 3:
Education and Outreach

Develop public education campaigns to inform residents about how to enroll in available service programs to help meet basic needs

Note that this Action is shared with EE-5: Human Services, Action 4.

EE-6: Poverty Prevention & Alleviation

Action 4:
Programs and Services

Establish or support programs that reduce the costs of basic needs for low-income households

Action 5:
Programs and Services

Implement supportive workplace programs for people living at or near the poverty line

Note that some of these activities may overlap with programs and services identified in EJ-4: Quality Jobs & Living Wages, Local Actions 2, 3, and 8. If so, consider applying for credit under more than one Objective.

Action 6:
Programs and Services

Create programs to improve employment opportunities for low-income individuals by strengthening hard and soft work skills

Note that some of these activities may overlap with workforce development programs and services identified in EJ-4: Quality Jobs & Living Wages, Action 9 and EJ-6: Workforce Readiness, Actions 8 and 9. If so, consider applying for credit under more than one Objective.

Action 7:
Programs and Services

Provide child development programs for children living at or near the local poverty line

GOAL AREA: Health & Safety

Strengthen communities to be healthy, resilient and safe places for residents and businesses

Introduction

The 7 Objectives in STAR's Health & Safety Goal Area recognize that the development of healthy, safe, and resilient communities requires proactive efforts to prevent disease, injury, and premature death by fortifying protective factors and reducing risk factors that undermine healthy outcomes.

In this Goal Area, **HS-2: Community Health & Health System** serves as the overall, composite measure of public health, public health services, and integration of health considerations into local decision-making. The other Objectives address more specific health issues, such as **HS-7: Safe Communities**, which seeks to reduce violence through proven prevention strategies, and **HS-5: Indoor Air Quality**, which addresses the design and maintenance of schools, public buildings, and housing in relation to indoor air quality.

Two Objectives are closely focused on reducing obesity and preventing related illnesses like diabetes and heart disease. **HS-1: Active Living** encourages physical activity for adults and kids through community design improvements and activities that promote walking, bicycling, and other forms of recreation. **HS-4: Food Access & Nutrition** measures the accessibility to fresh, healthful food and recognizes efforts to encourage healthy eating.

Finally, 2 Objectives address planning efforts to prevent and alleviate the impacts of hazardous events and emergency situations. **HS-6: Natural & Human Hazards** focuses on reducing vulnerability to identified community risk areas. **HS-3: Emergency Prevention & Response** evaluates the preparedness of emergency responders to efficiently and effectively respond to emergencies.

Objective Number	Objective Title and Purpose	Available Points
HS-1	**Active Living:** Enable adults and kids to maintain healthy, active lifestyles by integrating physical activity into their daily routines	15
HS-2	**Community Health & Health System:** Achieve positive health outcomes and minimize health risk factors through a high quality local health system that is accessible and responsive to community needs	20
HS-3	**Emergency Prevention & Response:** Reduce harm to humans and property by utilizing long-term preventative and collaborative approaches to avoid emergency incidents and minimize their impacts	15
HS-4	**Food Access & Nutrition:** Ensure that adults and children of all income levels have opportunities to learn about nutritious eating and have physical and economic access to fresh, healthful food	15
HS-5	**Indoor Air Quality:** Ensure that indoor air quality is healthy for all people	5
HS-6	**Natural & Human Hazards:** Reduce vulnerability to all hazards, secure critical infrastructure, and ensure that communities are prepared to effectively respond to and recover from crisis	15
HS-7	**Safe Communities:** Prevent and reduce violent crime and increase perceptions of safety through interagency collaboration and with residents as empowered partners	15
Total Credit, Goal Area		**100**

HS-1: Active Living

15 available points

PURPOSE

Enable adults and kids to maintain healthy, active lifestyles by integrating physical activity into their daily routines

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Active Adults

5.3 points

Demonstrate that 21% or less of adults aged 20+ report no leisure time physical activity within the past month

Outcome 2: Active Kids

5.3 points

Option A: Increase the percentage of high school students that are physically active for 60 minutes per day on 5 or more days

--OR--

Option B: Increase the percentage of public schools that require some form of physical activity daily, such as physical education classes or recess [Partial credit applies]

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Include a chapter, section, or plan element focused on active living or active transportation in the comprehensive plan or transportation plan

Action 2:

Policy and Code Adjustment

Require or incentivize bicycle and pedestrian amenities in new major development projects in high-density, mixed-use areas or near transit stations

Action 3:

Policy and Code Adjustment

Create guidelines to encourage incorporation of active building design features in new public, commercial, office, and multi-family residential buildings

Action 4:
Policy and Code Adjustment

Establish school siting guidelines that give preferential considerations to locations that maximize the number of students who can walk or bicycle safely to school

Action 5:
Partnerships and Collaboration

Create an advisory board to advise the local government on issues related to planning, policies, code requirements, and other actions affecting active living in the community

Note that development of a bicycle or pedestrian master plan appears in BE-7: Transportation Choices, Action 1. If applicable, consider applying for credit under both Objectives.

Action 6:
Practice Improvements

Achieve recognition as a Bicycle Friendly Community or Walk Friendly Community

Action 7:
Practice Improvements

Appoint a physical activity specialist within the local health department to serve as a liaison with relevant local government departments or agencies

Action 8:
Programs and Services

Host or partner with community groups to support at least 2 programs that encourage active living for adults and kids

Action 9:
Facility and Infrastructure Improvements

Implement a local program that systematically improves bicycle and pedestrian amenities community-wide

Action 10:
Facility and Infrastructure Improvements

Provide at least 3 types of active recreation facilities that are available for community use

Note that recreation centers qualify for credit as community venues under EAC-2: Community Cohesion, Action 7. Communities may apply for credit under both Objectives, if applicable.

Action 11:
Facility and Infrastructure Improvements

Enable joint use of school-based recreation facilities during non-school hours

Note that joint use facilities also qualify for credit under EAC-2: Community Cohesion, Action 7. Communities may apply for credit under both Objectives, if applicable.

HS-2: Community Health & Health System

20 available points

PURPOSE

Achieve positive health outcomes and minimize health risk factors through a high quality local health system that is accessible and responsive to community needs

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Health Outcomes

5 points

Demonstrate that the county is ranked in the top 15% in the state in regards to morbidity and mortality [Partial credit available]

Outcome 2: Health Behaviors

5 points

Demonstrate that the county is ranked in the top 15% in the state in regards to key behaviors that impact health [Partial credit available]

Outcome 3: Clinical Care

5 points

Demonstrate that the county is ranked in the top 15% in regards to quality of clinical care, including access to health care [Partial credit available]

Outcome 4: Quality of Local Health System

5 points

Option A: Demonstrate that at least one hospital in the county is recognized as a top performer by the Joint Commission
--OR--
Option B: Demonstrate that the local public health department is accredited by the Public Health Accreditation Board (PHAB)
--OR--
Option C: Demonstrate that at least 30% of public health clinicians are board certified in their specialty areas and ancillary staff holds professional certification in their respective fields [Partial credit available]

Local Actions

70% of points available through Actions

Local Actions 1, 2, 4, 6, and 8 are based on the principles set by PHAB standards for local health department accreditation. Communities in which the local health department is PHAB-accredited will therefore automatically receive credit for that Action. Communities currently pursuing PHAB accreditation may submit applicable information from their PHAB application for STAR credit.

Action 1:
Inventory, Assessment or Survey

Conduct a comprehensive community health assessment, which includes data collection and analysis of public health conditions, trends, and problems affecting the community

Action 2:
Plan Development

Develop a community health improvement plan to strengthen the delivery of health services and improve community health

Action 3:
Policy and Code Adjustment

Adopt a health in all policies statement or policy commitment for local decision-making

Action 4:
Partnerships and Collaboration

Collaboratively engage the public in the assessment of community health problems and developing strategies to improve the delivery of health services

Action 5:
Partnerships and Collaboration

Collaboratively engage the local public health department and relevant local government departments or agencies to integrate health considerations into local plans and policies that affect the built environment, physical activity, and access to fresh food

If the activities overlap with Actions in other Objectives, consider applying for credit under more than one Objective.

Action 6:
Education and Outreach

Provide information and education to the public regarding health issues and available local programs and services that support prevention and wellness

Action 7:
Practice Improvements

Demonstrate that the local public health department, local government, or major hospital has received HealthLead workplace accreditation

Action 8:
Programs and Services

Use a performance management system to monitor and improve health services and programs that promote positive health outcomes and expand access to health care

Action 9:
Facility and Infrastructure Improvements

Conduct health impact assessments (HIAs) on proposed infrastructure investments and development projects to increase positive health outcomes and minimize adverse impacts

HS-3: Emergency Prevention & Response

15 available points

PURPOSE

Reduce harm to humans and property by utilizing long-term preventative and collaborative approaches to avoid emergency incidents and minimize their impact

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Superior Fire Protection

6 points

Achieve a Class 4 ISO rating or better

Outcome 2: Emergency Response Times

6 points

Demonstrate that 90% of response times are in compliance with standards set by the National Fire Protection Association (NFPA)

Outcome 3: National Incident Management System

3 points

Demonstrate that the community is in compliance with the National Incident Management System (NIMS)

Local Actions

70% of points available through Actions

Action 1:

Inventory, Assessment or Survey

Develop a NIMS-compliant local inventory of assets and resources available for emergency response and mutual aid requests

Action 2:

Education and Outreach

Publish information to encourage residents to develop emergency kits and evacuation plans and encourage businesses to develop emergency procedures and shelter-in-place plans

Note that some educational materials may also be appropriate for HS-6: Natural & Human Hazards, Action 3. If so, consider applying for credit under more than one Objective.

HS-3: Emergency Prevention & Response

Action 3:
Partnerships and Collaboration

Participate in interstate, statewide, regional, or inter-jurisdictional mutual aid response systems

Action 4:
Partnerships and Collaboration

Participate in a regional emergency planning commission

Action 5:
Plan Development

Adopt a local comprehensive plan for emergency response that include provisions for evacuating low-income, disabled, and other persons likely to need assistance

Action 6:
Practice Improvements

Participate in training drills that involve the public and emergency management personnel from multiple departments and/or multiple jurisdictions

Action 7:
Practice Improvements

Perform an annual review or assessment of plans, procedures, resources, and trainings based on emergency response incidents and demands

Action 8:
Practice Improvements

Achieve accreditation by the Emergency Management Accreditation Program (EMAP)

Action 9:
Programs and Services

Host an active Community Emergency Response Team (CERT) or Medical Reserve Corps (MRC)

Action 10:
Programs and Services

Distribute emergency kits or supplies to residents, particularly low-income and vulnerable populations

HS-4: Food Access & Nutrition

20 available points

PURPOSE

Ensure that adults and children of all income levels have opportunities to learn about nutritious eating and have physical and economic access to fresh, healthful food

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Local Fresh Food

2.6 points

Option A: Demonstrate an increase over the past 3 years in the amount of fresh food produced through local urban agriculture
--OR--
Option B: Demonstrate an increase over the past 3 years in the amount of fresh food sold locally at farmers markets or other direct farm-to-consumer activities

Outcome 2: Food Security and Assistance

2.6 points

Demonstrate an increase over the past 3 years in the ability of low-income families to access low cost, healthful food

Outcome 3: Access to Healthful Food

2.6 points

Option A: Demonstrate an increase over the past 3 years in the percentage of residents within a walkable 1/4-mile of a healthful retail food outlet
--OR--
Option B: Demonstrate a decrease over the past 3 years in the percentage of residents living in a urban or rural food desert

Outcome 4: School Nutrition

2.6 points

Demonstrate an increase over the past 3 years in the food service sales of fresh fruits and vegetables in the largest public school district

Local Actions

70% of points available through Actions

Action 1:
Inventory, Assessment or Survey

Conduct an assessment of the local food system, including existing policies and programs that increase access to healthful food and nutrition education

This assessment may complement or be incorporated into a broader analysis of the local economy described in EJ-3: Local Economy, Action 1.

Action 2:
Policy and Code Adjustment

Adopt zoning and development regulations that allow farmers markets, community gardens, and urban agriculture

Action 3:
Policy and Code Adjustment

Adopt zoning and development regulations that limit or prohibit the sale of unhealthful foods

Action 4:
Policy and Code Adjustment

Adopt menu-labeling requirements or regulations that discourage, tax, or prohibit the sale of unhealthful foods or beverages

Action 5:
Policy and Code Adjustment

Demonstrate that the local public school district has adopted a model school wellness policy

Action 6:
Partnerships and Collaboration

Establish a local or regional food policy council that includes health professionals, community organizations, schools, farmers, and/or related businesses

Action 7:
Education and Outreach

Develop public outreach materials, classes, or workshops for residents to learn about food, nutrition, and gardening OR develop public outreach materials to promote food assistance programs

Action 8:
Practice Improvements

Demonstrate that local schools or the public school district has received certification from the USDA HealthierUS Schools Challenge or an award from the Alliance for a Healthier Generation in the past 3 years

Action 9:
Practice Improvements

Purchase and sell healthful food at facilities owned, leased, and operated by the local government

Action 10:
Programs and Services

Implement an "Increase Your Food Bucks" program for farmers markets

Action 11:
Enforcement and Incentives

Provide incentives for healthful retail food outlets to locate in underserved areas or mobile vendors that only sell fresh food

For added benefits, these incentives could be paired with incentives for infill, redevelopment, and revitalization described in BE-5: Infill & Redevelopment, Action 8. If so, consider applying for credit under more than one Objective.

HS-5: Indoor Air Quality

5 available points

PURPOSE

Ensure that indoor air quality is healthy for all people

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: IAQ Complaints to School District

1.8 points

Decrease the number of student, parent, and staff complaints to the public school district regarding indoor air quality (IAQ) over time

Outcome 2: IAQ Complaints to Enforcement Agency

1.8 points

Decrease the number of tenant complaints regarding IAQ over time

Local Actions

70% of points available through Actions

Action 1:

Policy and Code Adjustment

Prohibit smoking in all enclosed public places, including restaurants, bars, and workplaces

Action 2:

Policy and Code Adjustment

Prohibit smoking in multi-family buildings community-wide OR residential buildings controlled by the local housing authority OR affirm by local ordinance the right for landlords to legally establish smoke-free rental units

Action 3:

Policy and Code Adjustment

Require all new or substantially renovated local government and school buildings to incorporate advanced ventilation standards

Action 4:

Education and Outreach

Conduct local public education campaigns regarding prevention and safe remediation of common indoor air pollutants

HS-5: Indoor Air Quality

Action 5:
Practice Improvements

Reduce or eliminate toxic pesticide use in locally owned or managed buildings through the use of integrated pest management (IPM) techniques

Action 6:
Enforcement and Incentives

Address residential IAQ problems related to mold, pests, and other hazards through inspections and enforcement using authority from the state or local housing code or public health code

Action 7:
Programs and Services

School district implements a system-wide IAQ management program to monitor and address IAQ problems

Bonus: School district has received an EPA Tools for Schools award or has been recognized as an IAQ Champion in the past 3 years

Action 8:
Programs and Services

Provide free, subsidized, or at-cost supplies to test and monitor IAQ to prevent harm from common pollutants

Action 9:
Programs and Services

Provide grants or loans to remediate indoor air pollution problems in low-income homes or affordable rental units

HS-6: Natural & Human Hazards

15 available points

PURPOSE

Protect the community by reducing vulnerability to all hazards, securing critical infrastructure, and ensuring that communities are prepared to effectively respond to and recover from crisis

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Location-Specific Hazards

5.3 points

Part 1:
Option A: Reduce over time the number of homes below code standards that are located in designated high risk areas
--OR--
Option B: Reduce over time the percentage of residents living in designated high risk areas
--AND--
Part 2: Reduce over time the critical infrastructure below code standards that is located in designated high risk areas

Outcome 2: Full Community Hazards

5.3 points

Demonstrate increased resilience to community-wide hazard threats over time

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Develop a hazard mitigation action plan that includes an all-hazard vulnerability assessment of the community's primary hazard threats

Action 2:

Plan Development

Develop a post-disaster plan that addresses long-range redevelopment issues such as land use, economic development, housing, infrastructure, public services, and environmental restoration

Action 3:
Education and Outreach

Increase community awareness of natural hazards through education and outreach materials

Note that some educational materials may also be appropriate for HS-3: Emergency Prevention & Response, Action 2. If so, consider applying for credit under more than one Objective.

Action 4:
Plan Development

Integrate an all-hazard vulnerability assessment or other key local hazards information into the community's comprehensive plan

Action 5:
Policy and Code Adjustment

Adopt zoning regulations that limit development in areas of high hazard vulnerability

Action 6:
Policy and Code Adjustment

Enact building codes with heightened standards for buildings in areas of high hazard vulnerability

Action 7:
Enforcement and Incentives

Create insurance or incentive structures to help equitably remove residents from hazardous situations

Action 8:
Facility and Infrastructure Improvements

Build or renovate locally owned public facilities to meet higher building code standards to be used as shelters, command centers, and to set an example for the community

Action 9:
Facility and Infrastructure Improvements

Implement highest priority utility improvements listed in the hazard mitigation plan

HS-7: Safe Communities

15 available points

PURPOSE

Prevent and reduce violent crime and increase perceptions of safety through interagency collaboration and with residents as empowered partners

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Violent Crime Rate

7.5 points

Option A: Demonstrate that the average violent crime rate for the past 3 years is below the following thresholds:

- 5.5 homicides per 100,000 residents
- 70 incidents of rape or attempted rape per 100,000 residents
- 462.7 aggravated assaults per 100,000 residents

--OR--

Option B: Achieve targets for a percentage decrease in violent crime identified in a locally adopted safe communities strategic plan [Partial credit applies]

Outcome 2: School Violence

7.5 points

Demonstrate that the average number of incidents of school violence is less than 10 per 1,000 students for all public schools in the jurisdiction

Local Actions

70% of points available through Actions

Action 1:

Inventory, Assessment or Survey

Conduct a survey of community perceptions of safety recognizing that some crimes are not reported and to illuminate safety issues that need to be addressed

Note that these survey questions may be similar to questions asked in EE-1: Civic Engagement, Outcome 3 or EAC-2: Community Cohesion, Outcome 2. If so, consider applying for credit under more than one Objective if the questions address the content described therein.

Action 2:

Plan Development

Adopt a safe communities strategic plan (plan) with a comprehensive, balanced approach that includes violence prevention, intervention, suppression and enforcement, and reentry strategies

HS-7: Safe Communities

Action 3:
Education and Outreach

Educate the public and the media about the plan, its implementation, and successful programs and strategies

Action 4:
Partnerships and Collaboration

Develop partnerships with local agencies, nonprofit organizations, schools, and residents to implement the strategies and programs recommended in the plan

Action 5:
Practice Improvements

Establish cross-agency coordination and procedures to support balanced implementation of the plan

Action 6:
Practice Improvements

Perform ongoing data collection, evaluation, and monitoring from multiple agencies to track trends and identify emerging community needs

Action 7:
Programs and Services

Implement violence prevention programs and strategies to address community-identified risk and protective factors

Note that some activities may overlap with programs and services identified in EAC-2: Community Cohesion, Action 8. If so, consider applying for credit under more than one Objective.

Action 8:
Programs and Services

Implement school-based violence prevention programs and strategies, particularly in highly impacted, urban, and at-risk neighborhoods

Note that some of these activities may overlap with programs and services identified in EAC-2: Community Cohesion, Action 9 (same as EAC-5: Social & Cultural Diversity, Action 8) or Safe Routes to Schools programs addressed in HS-1: Active Living, Action 8. If so, consider applying for credit under more than one Objective.

Action 9:
Programs and Services

Develop violence intervention programs and strategies to support at-risk families and youth and to prevent the escalation of violence

HS-7: Safe Communities

Action 10:
Programs and Services

Adopt violence suppression and enforcement programs and strategies that support and build trust within the community

Action 11:
Programs and Services

Create or support a multi-faceted, monitored reentry program for ex-offenders that includes training, education, mentoring, and employment opportunities and other support services to reduce recidivism

GOAL AREA: Natural Systems

Protect and restore the natural resource base upon which life depends

Introduction

The 6 Objectives in the Natural Systems Goal Area help communities protect and restore the places that provide resources to support life. The Goal Area takes an *ecosystem services* approach and recognizes the wide range of benefits natural systems provide, such as food, water, and natural regulating processes affecting climate and floods. Natural systems services also extend to cultural benefits like aesthetic value and recreation.

NS-5: Water in the Environment and **NS-4: Outdoor Air Quality** bring attention to the reality that clean water and air are vital for humans and other species to thrive. **NS-2: Invasive Species** recognizes that achieving biodiversity requires communities to prohibit and control the spread of threatening non-native species.

With an emphasis on connectivity and collaboration, **NS-3: Natural Resource Protection** focuses on issues at a broad ecosystem and ecoregional scale. This Objective is complemented by **NS-1: Green Infrastructure**, which aims to integrate natural design with the built environment and emphasizes benefits that extend beyond stormwater harvesting to include temperature control, air quality, and opportunities for physical activity. **NS-6: Working Lands** recognize the environmental contributions of land management to the Natural Systems Goal Area.

Objective Number	Objective Title and Purpose	Available Points
NS-1	**Green Infrastructure:** Design and maintain a network of green infrastructure features that integrate with the built environment to conserve ecosystem functions and provide associated benefits to human populations	20
NS-2	**Invasive Species:** Prevent and manage invasive species in order to restore and protect natural ecosystems and the benefits they provide	10
NS-3	**Natural Resource Protection:** Protect, enhance and restore natural ecosystems and cultural landscapes to confer resilience and support clean water and air, food supply, and public safety	20
NS-4	**Outdoor Air Quality:** Ensure that outdoor air quality is healthy for all people and protects the welfare of the community	15
NS-5	**Water in the Environment:** Protect and restore the biological, chemical, and hydrological integrity of water in the natural environment	20
NS-6	**Working Lands:** Conserve and maintain lands that provide raw materials in ways that allow for sustained harvests and preserves ecosystem integrity	15
Total Credit, Goal Area		**100**

NS-1: Green Infrastructure

20 available points

PURPOSE

Design and maintain a network of green infrastructure features that integrate with the built environment to conserve ecosystem functions and provide associated benefits to human populations

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Designated Green Infrastructure

8.4 points

Option A: Demonstrate that 35% of the jurisdiction's land area has protected vegetated surfaces performing a minimum of 2 of the following functions:

- Localized cooling through tree canopy cover, green roofs, or green walls
- Water management through wetlands, stream buffers, and permeable surfaces
- Recreation through parks and/or greenways

--OR--

Option B: Demonstrate a 2-5% increase in land area with protected vegetated surfaces over time

Outcome 2: Green Infrastructure Distribution

5.6 points

Demonstrate that 85% of the population lives within a 1/2-mile walk distance from green infrastructure features that are performing a minimum of 2 of the following functions:

- Localized cooling through tree canopy cover, green roofs or green walls
- Water management through wetlands, stream buffers, and permeable surfaces
- Recreation through parks and/or greenways

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Create a community-wide green infrastructure plan that is integrated with other relevant local plans

Note that if the land conservation or open space plan also meets criteria for NS-3: Natural Resource Protection, Action 1, consider applying for credit under both Objectives.

Action 2:

Policy and Code Adjustment

Adopt local design criteria and associated codes that require proactive green infrastructure practices for new developments

Action 3:
Policy and Code Adjustment

Adopt a policy requiring relevant departments be engaged during early reviews of proposed developments to ensure that project sites are evaluated for green infrastructure potential and environmental protections are put in place prior to construction

Action 4:
Partnerships and Collaboration

Partner with key community groups and other stakeholders to ensure that green infrastructure practices are used in appropriate settings

Note that some organizations may overlap may have shared functions with groups identified in BE-6, Action 5. If so, consider applying for credit under more than one Objective.

Action 5:
Enforcement and Incentives

Create incentive programs to encourage land owners to adopt green infrastructure practices that link to broader green infrastructure systems

Action 6:
Programs and Services

Establish a green infrastructure monitoring program and regularly report on status of desired outcomes

Action 7:
Facility and Infrastructure Improvements

Increase the percentage of funding invested in green infrastructure

Action 8:
Facility and Infrastructure Improvements

Upgrade public spaces and public buildings based upon locally adopted or recognized best practices in green infrastructure. Where possible, create demonstration projects to enhance public support

Action 9:
Facility and Infrastructure Improvements

Provide for ongoing maintenance of green infrastructure at levels required to maintain evapotranspiring functions

NS-2: Invasive Species

10 available points

PURPOSE

Prevent and manage invasive species in order to restore and protect natural ecosystems and the benefits they provide

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Preliminary Step:

Use a species-led or site-led approach to identify the invasive species of greatest threat, priority areas for protection, and critical entry points

Note that the Preliminary Step is required if the applicant is pursuing credit in the Objective.

Outcome 1: Invasive Species Prevention

2.3 points

Show that no new invasive species have established themselves in the last 5 years in priority natural systems areas and critical entry points

Outcome 2: Invasive Species Containment

2.3 points

Show that existing invasive species have not moved into priority natural systems areas and critical entry points

Outcome 3: Invasive Species Eradication

2.3 points

Option A: Eradicate existing invasive species from priority natural systems areas and critical entry points
--OR--
Option B: Demonstrate progress towards targets identified in the community's local integrated pest management plan [Partial credit applies]

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Develop a community-wide invasive species integrated pest management plan

Action 2:
Policy and Code Adjustment

Adopt a local ordinance requiring control of listed priority invasive species or enact a native plant ordinance for private and public landscaping

Action 3:
Partnerships and Collaboration

Partner with local volunteer groups or neighborhood associations to restore priority natural systems areas by planting native plants or improving local wildlife habitat

Action 4:
Partnerships and Collaboration

Partner with local volunteer groups to monitor vector zones or areas at greatest risk of invasive species invasion, and organize "weed pulls" and other invasive management actions

Action 5:
Education and Outreach

Create a public education campaign or targeted outreach effort to inform residents and/or plant or animal sellers about the hazards of invasive species

Action 6:
Enforcement and Incentives

Use incentive programs to encourage local businesses and private owners to grow and sell native or desirable plants and animals and not sell invasive species or other harmful plants and animals

Action 7:
Enforcement and Incentives

Enforce regulations to control the use and sale of invasive species

Action 8:
Facility and Infrastructure Improvements

Ensure that all local government-owned buildings use native plants or non-invasive species in landscaping

Action 9:
Programs and Services

Take actions to prevent the spread of invasive species, especially in priority natural systems areas, such as monitoring, eradication, or other control programs

NS-3: Natural Resource Protection

20 available points

PURPOSE

Protect, enhance and restore natural ecosystems and cultural landscapes to confer resilience and support clean water and air, food supply, and public safety

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Priority Natural Systems Areas

3.5 points

Option A: Achieve targets for acres of land conserved in priority natural systems areas identified in a locally adopted natural systems or land conservation plan
--OR—
Option B: Demonstrate incremental progress towards achievement of targets for acres of land conserved identified in a locally-adopted natural systems or land conservation plan

Outcome 2: Wetlands, Streams, and Shoreline Buffers

3.5 points

Achieve no-net-loss of wetlands, streams, and shoreline buffers

Outcome 3: Connectivity

3.5 points

Increase the area of land directly connected to regional natural systems in order to improve ecosystem services

Outcome 4: Restoration

3.5 points

Reduce the difference between the actual acreage restored and targeted acreage established in the natural systems plan or land conservation plan

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Develop a plan to protect and restore natural resources through land conservation, corridor connectivity, and restoration of biological integrity and function

If the plan also meets criteria for NS-1: Green Infrastructure, Action 1, consider applying for credit under both Objectives.

Action 2:
Policy and Code Adjustment

Adopt land use regulations that establish appropriate wetland, stream, and shoreline buffer widths and adjacent land uses

Action 3:
Partnerships and Collaboration

Create an advisory board to inform land conservation and restoration activities

Action 4:
Partnerships and Collaboration

Partner with adjacent jurisdictions, state and federal agencies, and local or regional non-profit organizations to advance land conservation and restoration efforts

Action 5:
Education and Outreach

Sponsor educational and outreach activities to increase ecological literacy and knowledge about natural resource protection

Action 6:
Enforcement and Incentives

Adopt land use strategies to incentivize permanent land conservation

Action 7:
Enforcement and Incentives

Implement local and market-based financing strategies to acquire land or development easements, or fund restoration and maintenance activities

Action 8:
Facility and Infrastructure Improvements

Restore, maintain, and monitor conserved natural lands to increase natural resource resilience, adaptability, and biological integrity

Note that in some special cases where restoration efforts are focused on water resources, this Action could be shared with both NS-5: Water in the Environment, Action 6 and BE-2: Community Water Systems, Action 11. If so, consider applying for credit in multiple Objectives.

NS-4: Outdoor Air Quality

15 available points

PURPOSE

Ensure that outdoor air quality is healthy for all segments of the human population and protects the welfare of the community

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Concentration and Emissions

15 points

Option A: Achieve attainment or maintenance status for all measured criteria pollutants
--OR--
Option B:
Part 1: Demonstrate a decrease in the annual concentration of the non-attainment criteria pollutant(s) that have the greatest impacts on public health, specifically $PM_{2.5}$, PM_{10}, and ozone
--AND--
Part 2: Demonstrate a decrease in the annual number of days in which the Air Quality Index (AQI) exceeds 100 over the past 5 years [Partial credit applies]

Local Actions

70% of points available through Actions

Action 1:

Policy and Code Adjustment

Adopt regulatory strategies that permit or incentivize increased residential and employment densities and diverse uses in transit-served areas and areas identified for compact, mixed-use development

Note that this Action is shared with BE-3: Compact & Complete Communities, Action 3.

Action 2:

Policy and Code Adjustment

Adopt advanced parking strategies in transit-served areas and areas identified for compact, mixed-use development

Note that this Action is shared with BE-3: Compact & Complete Communities, Action 6.

Action 3:
Inventory, Assessment or Survey

In collaboration with a local university or health department, conduct a study to evaluate the health impacts of acute exposure to outdoor air pollutants, particularly in consideration of environmental justice and equity impacts

Note that this Action may correspond to environmental justice work in the community, which is addressed in EE-3: Environmental Justice. If so, consider applying for credit in both Objectives.

Action 4:
Partnerships and Collaboration

Collaborate with local industrial operations to reduce and minimize the release of noxious odors in the community

Action 5:
Partnerships and Collaboration

Partner with a local or regional organization to support one or more transportation management association(s) that promote rideshare programs and incentives for commuters to use alternative modes of transportation to work other than single-occupancy vehicles

Action 6:
Education and Outreach

Educate the public about the impacts of poor air quality on human health and the natural environment and the efforts they can take to reduce pollution and exposure

Action 7:
Enforcement and Incentives

Enforce anti-idling regulations or burning restrictions to prevent emission of excess pollution, particularly on Air Quality Action Days

Action 8:
Facility and Infrastructure Improvements

Improve traffic signal timing or upgrade intersections to relieve congestion

Action 9:
Facility and Infrastructure Improvements

Increase the mileage of sidewalks and dedicated bicycle infrastructure that connect people with destinations

Note that this Action is shared with BE-7 Transportation Choices, Action 7 (sidewalks) or Action 8 (bicycle infrastructure).

Action 10:
Programs and Services

Create or enhance programs aimed at increasing tree canopy through active planting or direct tree protections

Action 11:
Programs and Services

Implement targeted programs to encourage residents to transition to cleaner products

Note that some activities may overlap with programs and services identified in CE-3: Greening the Energy Supply, CE-7: Waste Minimization, or EJ-2: Green Market Development. If so, consider applying for credit under more than one Objective.

NS-5: Water in the Environment

20 available points

PURPOSE

Protect and restore the biological, chemical, and hydrological integrity of water in the natural environment

EVALUATION MEASURES

Community Level Outcomes

100% of points available through Outcomes

Outcome 1: Hydrological Integrity

5 points

Demonstrate that the amount of water withdrawn from the system for human uses does not exceed the amount of freshwater entering the system through precipitation, river flow, and other sources

Outcome 2: Biological Integrity

5 points

Achieve a biological integrity rating of 'Very Good' or 'Good' based on EPA's 305(b) reporting requirements for all water bodies with appropriate designated uses

Outcome 3: Chemical Integrity – Pollutants

5 points

Option A: Demonstrate pollutant loadings below Total Maximum Daily Load (TMDL) levels
--OR--
Option B: Demonstrate a steady decrease in pollutant levels towards a long-term goal of below TMDL levels [Partial credit applies]

Outcome 4: Chemical Integrity – Usability

5 points

Option A: Demonstrate that all non-industrial water bodies are swimmable and fishable during 90% of days in the past year
--OR--
Option B: Demonstrate a steady reduction in water closures of at least 2% annually towards achieving 90% of days being swimmable and fishable [Partial credit applies]

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Adopt a watershed management plan that integrates natural water bodies with human water use and addresses inputs and outputs of the water systems

NS-5: Water in the Environment

Note that since the quality of water in natural systems is intimately linked to pipe water, this plan may encompass the requirements for BE-2: Community Water Systems, Action 1, but would need to be highly comprehensive and integrated to receive credit for both Actions.

Action 2:
Policy and Code Adjustment

Adopt community regulations that protect water quality OR participate in a regional pollutant trading program that reduces watershed pollution levels

Action 3:
Partnerships and Collaboration

Create partnerships to address sources of non-point source water pollution not directly covered by local authority or control

Action 4:
Education and Outreach

Create an education campaign about ambient water quality, pollution prevention, mitigation, and restoration techniques

Action 5:
Enforcement and Incentives

Provide incentives to residents and developers to protect and restore critical watershed protection areas

Action 6:
Facility and Infrastructure Improvements

Engage in restoration projects for critical water bodies and buffer zones that protect those water bodies

Note that this Action is shared with BE-2: Community Water Systems, Action 11.

Action 7:
Programs and Services

Develop and provide water conservation programs to residents, businesses and agricultural water users in order to help ensure that the community is not depleting its water supply

Note that this Action is shared with BE-2: Community Water Systems, Action 7.

Action 8:
Programs and Services

Establish or partner with a group that routinely inventories and monitors natural water bodies for biological, chemical, and hydrological integrity

NS-6: Working Lands

15 available points

PURPOSE

Conserve and maintain lands that provide raw materials in ways that allow for sustained harvests and preserves ecosystem integrity

EVALUATION MEASURES

Community Level Outcomes

70% of points available through Outcomes

Outcome 1: Land Management

6.3 points

Option A: Use best management practices (BMPs) on 100% of working lands in the jurisdiction
--OR--
Option B: Demonstrate a 2-5% increase in working lands utilizing BMPs over time [Partial credit applies]

Outcome 2: Certified Sustainable Harvests

4.2 points

Increase the number of certified sustainable harvesters for a locally selected industry over time

Local Actions

70% of points available through Actions

Action 1:

Plan Development

Include considerations for protecting working lands and identifying areas where BMPs are necessary in the community's land conservation or natural resource plan

Action 2:

Partnerships and Collaboration

Convene owners and operators of working lands to promote sustainable harvesting practices

Action 3:

Education and Outreach

Educate owners and operators of working lands about current best management practices

Action 4:

Education and Outreach

Promote the value of locally produced, certified sustainable harvests and products to the public

Action 5:
Education and Outreach

Work with youth groups and community organizations to implement BMPs on local working lands

Action 6:
Programs and Services

Provide conservation programs and services tailored to the needs of the working lands community

Action 7:
Programs and Services

Encourage owners of working lands to conserve their properties in perpetuity

Action 8:
Enforcement and Incentives

Implement financing strategies to conserve working lands and support ongoing restoration efforts

Innovation & Process

Recognize important local government practices and processes that underpin the implementation of sustainability measures and accelerate community-scale achievement across STAR Goal Areas

Introduction

The Innovation & Process category is an avenue for discovering emerging and leading edge practices that communities are implementing to improve sustainability outcomes. There are 4 sections in this category: Best Practices & Processes; Exemplary Performance; Local Innovation; and Regional Priorities.

Section	Title and Purpose	Available Points
IP-1	**Best Practices & Processes:** Recognize important local government practices and processes that underpin the implementation of sustainability measures and accelerate community-scale achievement across STAR Goal Areas	10
IP-2	**Exemplary Performance:** To reward performance in Community Level Outcome measures that significantly exceeds the evaluation criteria established by the existing STAR Community Rating System	10
IP-3	**Local Innovation:** To encourage and reward creative, effective approaches to enhancing a community's environmental, social and/or economic sustainability not reflected in existing STAR Objectives or evaluation measures	25
IP-4	**Regional Priorities:** To encourage coordinated regional action on the sustainability issues of greatest importance to the region in which the jurisdiction resides	5
Total Points Available		**50**

IP-1: Best Practices & Processes

10 available points

PURPOSE

Recognize important local government practices and processes that underpin the implementation of sustainability measures and accelerate community-scale achievement across STAR Goal Areas

DESCRIPTION

Local governments continually make decisions, expenditures, and investments that affect community sustainability. The strength of local decision-making is informed by community input, public planning efforts, regulations, and internal coordination across government departments and agencies. Effective practices and processes are therefore critical to ensure that local decisions lead to sustainable outcomes and do not unfairly burden particular constituencies.

IP-1: Best Practices & Processes rewards applicants that demonstrate leadership in their efforts to effectively and innovatively engage the public, plan for their community's future, leverage public resources, establish rules and regulations that advance sustainability and equity, and institutionalize transparency and sustainability.

There are 3 Best Practices & Processes for which credit is available:

a. Comprehensive Planning;
b. Public Engagement; and
c. Codes & Ordinances.

Applicants may pursue credit in up to 2 of the 3 Best Practices & Processes to receive the maximum 10 points (5 points each). If there is another specific best practice or process that the applicant believes is worthy of points, apply for credit under IP-3: Local Innovation.

For each Best Practice & Process:

- explain how the community is meeting each of the required best practices;
- explain how implementation has positively impacted at least 4 STAR Objectives (e.g. Cross STAR Application); and
- link to or upload additional submittal requirements.

Submissions will be evaluated as to whether the local efforts achieve the criteria described, incorporate innovative strategies, advance equity in decision-making, and positively impact STAR Objectives.

IP-1a: Comprehensive Planning

5 available points

PURPOSE

Develop a systems-based comprehensive plan that establishes a clear vision for the future, identifies innovative policies with measurable targets to enable the community to achieve its goals, and provides a clear process for implementation

EVALUATION CRITERIA

Part 1: Required Best Practices

For each for the following required best practices, applicants must provide a 2-4 paragraph describing how the community's comprehensive plan:

- achieves the best practice(s) described;
- ncorporates innovative strategies; and
- advances equity in the decision-making process.

IP-1a: Comprehensive Planning		
	Required Best Practice	**Description**
✓	Public Engagement	The comprehensive plan meaningfully engages all interested stakeholders throughout the process to ensure that the plan and its implementation accurately and authentically reflect the community's vision, values, and priorities
✓	Community Vision Statement	The comprehensive plan articulates the community's vision for its future.
✓	Data Collection and Analysis	The comprehensive plan should be informed by an understanding of existing trends and current conditions; and set measurable targets to ensure progress towards achievement of the community's vision and goals
✓	Systems-based Approach	The comprehensive plan employs a "systems-based approach" that aligns interconnected elements across geographic scales and plan functions to more effectively utilize resources and advance sustainability
✓	Implementation	Implementation of the comprehensive plan involves clear, robust actions and commitment of resources to execute the plan's recommended strategies; requires ongoing work with the public and community stakeholders to ensure appropriate implementation, report progress, and adjust strategies and targets as necessary

IP-1b: Public Engagement

5 available points

PURPOSE

Enable the public to shape the future of their community through inclusive, context-sensitive, and transparent decision-making processes

EVALUATION CRITERIA

Part 1: Required Best Practices

For each for the following required best practices, applicants must provide a 2-4 paragraph describing how the community's public engagement processes:

- achieves the best practice(s) described;
- incorporates innovative strategies; and
- advances equity in the decision-making process.

IP-1b: Public Engagement		
	Required Best Practices	**Description**
✓	Inclusiveness	Community decision-making processes are as inclusive as possible with deliberate, substantial effort focused on engaging community members who are typically underrepresented in decision-making and those who are likely to be significantly impacted by the outcome
✓	Context-Sensitive Processes	Use creative and effective outreach, collaboration, and engagement tools, exercises, and technologies tailored to the context of the process to engage community members in ways that meaningfully shape the outcome
✓	Transparency	Set clear, authentic expectations about how decisions will occur and how community engagement will influence the outcome
✓	Accountability and Implementation	Community decision-making processes lead to action, keep decision-makers accountable, and continue to engage the public in implementation
✓	Capacity Building and Empowerment	Support development of community leaders and groups empowered to take action and shape future decision-making with increased public input

IP-1c: Codes & Ordinances

5 available points

PURPOSE

Ensure that local codes have clear, consistent regulations and processes that reflect community goals and promote sustainability, equity, and innovation

EVALUATION CRITERIA

Part 1: Required Best Practices

For each for the following required best practices, applicants must provide a 2-4 paragraph describing how the community's codes and ordinances:

- achieve the best practice(s) described;
- incorporate innovative strategies; and
- advance equity in the decision-making process.

IP-1c: Codes & Ordinances		
	Required Best Practices	**Description**
✓	Alignment between Plans and Codes	Regularly update codes and regulations to reflect the goals and objectives articulated in the comprehensive and other community plans
✓	Internal Consistency and Readability	Regularly review local codes to eliminate conflicts between them and improve their ease of use
✓	Innovative Codes	Adopt innovative codes that advance sustainable practices and raise environmental standards
✓	Clear Processes	Establish processes with clear steps and expectations and that advance sustainability and innovation without undermining regulatory intent or the desires and concerns of the community

IP-2: Exemplary Performance

10 available points

PURPOSE

Reward performance in Community Level Outcome measures that significantly exceeds the evaluation criteria established by the existing STAR Community Rating System

DESCRIPTION

IP-2: Exemplary Performance recognizes communities that are demonstrating performance levels that exceed the leadership standards of STAR's existing Community Level Outcome measures. Applicants are encouraged to submit a proposal for additional points if performance in one or more Outcome measures represents significant above and beyond STAR's standards for credit. Determination of significance varies by Outcome; applicants must provide analysis supporting their claim of exemplary performance.

Exemplary Performance points are only available for Outcome measures within existing STAR Objectives. Local Actions are not eligible for Exemplary Performance points. For communities showing exceptional sustainability performance in areas not currently represented in the rating system's Outcome measures, consider applying for credit under IP-3: Local Innovation.

Applicants can submit up to 4 Outcomes for Exemplary Performance credit; however, there are only 10 points total available in IP-2 with a maximum of 3 points per Outcome.

IP-3: Local Innovation

25 available points

PURPOSE

Encourage and reward creative, effective approaches to enhancing a community's environmental, social, and/or economic sustainability not reflected in existing STAR Objectives or evaluation measures

DESCRIPTION

IP-3: Local Innovation serves as the mechanism to recognize communities for approaching and measuring sustainability in creative, effective ways. While the Rating System attempts to be comprehensive in its approach, sustainability is a continuously evolving discipline. Local Innovation points can be achieved by proposing new evaluation measures (Outcomes or Actions) and even new STAR Objectives.

Evaluation measures that have a history of success within a community that are not present within the existing Rating System may be submitted for additional credit. Similarly, if a community has identified an Objective-level sustainability issue and has developed a comprehensive strategy for addressing that issue, including both Outcome and Action evaluation measures, STAR welcomes proposals for consideration.

Applicants may pursue any combination of up to 6 Local Innovation Objectives, Outcomes, and/or Actions; however, there is a maximum of 25 total points available in IP-3. Applicants may propose the number of points they should receive within the maximum number of points allowed, but must explain why the level of points is justified given the existing point structure in STAR. Maximum point values are as follows:

Local Innovation Type	Maximum Points Available
New Objective	15
New Community Level Outcome	10
New Local Action • Preparatory Action • Implementation Action	 2 4

IP-4: REGIONAL PRIORITIES

5 available points

PURPOSE

Encourage coordinated regional action on the sustainability issues of greatest importance to the region in which the jurisdiction resides

DESCRIPTION

IP-4: Regional Priorities recognizes that sustainability is inherently contextual, with priority issues varying from region to region. Applicant jurisdictions may identify up to 2 sustainability issues of paramount importance to their region, and show evidence of collaborative action with neighboring jurisdictions, businesses, and/or non-governmental entities to address these issues.

Selected Regional Priorities must relate to existing STAR Objectives. If a regional priority issue is not represented in the Rating System, jurisdictions are invited to submit a proposal for recognition under IP-3: Local Innovation.

Applicants can submit up to 2 Regional Priorities; however, there are only 5 total points available.

Overview

The Points Appendix is designed to help applicants understand how the rating system's Online Reporting Tool calculates a community's score. The Reporting Tool is designed to automatically provide applicants with a preliminary score as they enter information into the system. This allows applicants to explore how different submission approaches will impact their score. The final score is not calculated until a full application has been submitted and verified by STAR Communities. Once submissions are verified, the applicant will receive formal notification of their STAR Community Rating.

The STAR Community Rating System's team of experts aimed to create a points system that balances scientific integrity with ease of use. Sustainability is a complex and evolving science. The scoring system and methodology reflect a commitment to continuous improvement in response to emerging data and evidence about the efficacy of local actions and their impact on desirable sustainability outcomes.

The methodology for calculating points was designed to reflect the interrelated nature of sustainability. The 7 Goal Areas are weighted equally, at 100 points apiece, with the exception of the Education, Arts & Community Goal, which has 70 points due to a lower number of Objectives. All STAR Objectives are worth 20, 15, 10, or 5 points and are weighted against each other in terms of their overall importance to sustainability and to the other Objectives. Objectives that were deemed to be either of high importance to sustainability, or that have many connections to other Objectives within the rating system, have higher point values.

An applicant's final score is calculated by summing the total scores of all Objectives and points awarded for Innovation & Process. One of the most important and unique features of the STAR Community Rating System is the fact that it awards credit for both Community Level Outcomes and Local Actions. An Objective score is the sum of the Outcome score and the Action score. The Outcome score is calculated first, followed by the Action score. In some cases, 100% of credit in an Objective can be obtained solely by achieving Outcomes. Because Outcomes show the measurable, condition-level indicators of community progress towards sustainability within an Objective, they are weighted more heavily than Actions.

By offering communities the opportunity to achieve points for Actions, the methodology is calibrated to reward community effort. Achievement of points within Outcomes determines the amount of points available through Actions. Because many communities are not yet meeting the high thresholds of the Outcomes, the STAR methodology allows communities that have not met the Outcomes to achieve up to 70% of an Objective's points through Actions. Higher Outcome achievement results in more points awarded up front, leaving fewer points for Actions. However, an applicant that achieves no Outcome credit may still apply for up to 70% of the Objective's points by completing all Actions. This helps all communities achieve a score that they can be proud of and celebrate.

How to calculate an Objective score:

1. Calculate the Outcome score. Outcomes are either worth 100% or 70% of the total points available for the Objective. Each Outcome is worth a set number of points, based upon the number and relative weighting of Outcomes and the total number of points available for the Objective. The number of points per Outcome is listed throughout the Technical Guide and can also be found in the tables at the end of the Points Appendix.
2. Use the Outcome score to determine how many points within the Objective are left over for Action credit. If no Outcome credit was achieved, up to 70% of the total points available for the Objective can be earned through Actions.
3. Determine Action scores. Each Action is worth a certain percentage of total available Action points, relative to the Action Type and the number of other Actions.
4. Sum the Outcome and Action score to obtain the Objective score.

Tips on points:

- ***Let the Self Assessment or Online Reporting Tool do the calculations for you.*** If you attempt to replicate the points in Excel, you will most likely not be able to calculate your exact score.
- Outcomes are worth more than Actions. By completing the Outcomes, you may not need to complete any or all Actions to get full points.
- Action points are dependent upon Outcome points.

SCORE CALCULATION EXAMPLE

Calculate an Objective Score for CE-3: Greening the Energy Supply

Step 1: Calculate the Outcome Score

Outcome Score = Total Objective Points x Outcome Factor (%) x Outcome Achievement (%)

CE-3: Greening the Energy Supply is worth a total of 15 points (Total Objective Points), 70% of which can be earned through the Outcomes (Outcome Factor).

Because the Total Objective Points and the Outcome Factor are both set values, the only number to calculate based upon the community's submissions is the Outcome Achievement. In this example, the applicant achieved full credit for Outcome 1 and partial credit for Outcome 2:

Outcome Measure	Weighted Outcome Value	Achievement Status	Achieved Outcome Value
Outcome 1: Green Vehicles	45%	100%	45%
Outcome 1: Green Vehicles - Bonus	5%	0	0%
Outcome 2: Electrical Energy Supply	50%	30%	15%
Outcome Achievement			**60%**

Outcome Score = 15 Total Objective Points x 70% Outcome Factor x 60% Outcome Achievement
= 15 x 0.7 x 0.6
= 6.3 points

Step 2: Calculate the Action Score

Action Score = Total Objective Points x Action Factor (%) x Action Achievement (%)

Using the Outcome score calculated in Step 1, determine how many points within the Objective are left over for Action credit. Remember that if no Outcome credit was achieved, up to 70% of the total points available for the Objective can be earned through Actions.

While the Total Objective Points are a set value, the Action Factor and Action Achievement must both be calculated based upon the community's submissions.

$$\text{Action Factor} = 100\% - \left(\frac{\text{\# of points achieved for Outcomes}}{\text{\# of available points in Objective}}\right)$$

= 100% - (6.3 / 15)
= 58% of the Total Objective Points remain for Actions

Then calculate the Action Achievement. In this example, the applicant submitted Actions 1, 4, 8, 10, and 11.

Action Achievement (%) = Total Achieved Action Points / Total Available Action Points			
Action Measure & Type	**Weighted Action Values**	**Achieved Action Values**	**Action Achievement**
Action 1: Plan Development	2	2	
Action 2: Policy and Code Adjustment	2	0	
Action 3: Policy and Code Adjustment	2	0	
Action 4: Partnerships and Collaboration	1	1	
Action 5: Partnerships and Collaboration	1	0	
Action 6: Enforcement and Incentives	4	0	
Action 7: Enforcement and Incentives	4	0	
Action 8: Programs and Services	4	4	
Action 9: Facility and Infrastructure Improvements	6	0	
Action 10: Facility and Infrastructure Improvements	6	6	
Action 11: Facility and Infrastructure Improvements	6	6	
Totals	**38**	**19**	**50%**

$$\text{Action Achievement (\%)} = \frac{\text{Total Achieved Action Points}}{\text{Total Available Action Points}} = \frac{19}{38} = 50\%$$

Use the calculated Action Factor and Action Achievement to determine the Action Score:

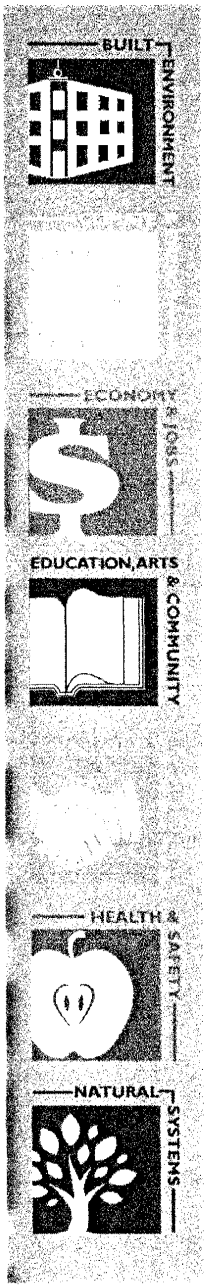
Action Score = 15 Total Objective Points x 58% Action Factor x 50% Action Achievement
= 15 x 0.58 x 0.5
= 4.35 points

[illegible]

[illegible] Score = [illegible] Action Score

The Objective Score is the sum of the Outcome and Action Scores calculated in the steps above.

Objective Score = Outcome Score + Action Score
= 6.3 + 4.35
= 10.65 points



STAR COMMUNITIES

SUSTAINABILITY TOOLS FOR ASSESSING & RATING COMMUNITIES

c/o District Department of Environment
1200 First Street, NE, 5th floor • Washington, DC 20002

ATTACHMENT E

SIERRA CLUB

July 8, 2014

Urban Services Committee
Councilors Dan Brown, Roen Hogg, and Richard Hervey
501 SW Madison Avenue
Corvallis, Oregon 97333

Subject: **Greenhouse Gas Inventory and Next Steps**

Dear Councilors,

We would like to thank the City for completing a greenhouse gas inventory and the opportunity to comment. In that regard we would like to respectfully request that the City take the next step and reduce heat-trapping Green House Gas (GHS) emissions in Corvallis by using the following guidelines:

- **Adopt** a Corvallis Climate Action Plan and establish climate change priorities[1];
- **Integrate** within all City departments: planning, problem-solving and decision making regarding climate change;
- **Inform** the Corvallis Community regarding why addressing climate change is important;
- **Set a GHG emission goal** (including benchmarks and interim mileage markers) and measure the City's progress toward meeting it; and
- **Create Synergy.** Encourage innovation, entrepreneurial actions, and creative collaboration with public and private organizations to work on climate change mitigation and adaptation.

Adopt a CAP

An Action Plan to reduce GHG emissions has been created by many cities and counties across the U.S. Indeed, the Corvallis City Council passed Resolution 2000-15, on April 17, 2000 pledging to "Develop and implement a local action plan which describes the steps the community will take to reduce both greenhouse gas and air pollution emissions."[2] Corvallis is also a signatory to the US Conference of Mayors Climate Protection Agreement. Through this agreement, the City of Corvallis was given the US Mayors Climate Protection Agreement Handbook[3] that offers 5 milestones:

---

[1] The MPG Sierra Club has been a member of the Climate Action Plan Task Force that has been actively working on a CAP for Corvallis.

[2] See attached Resolution 2000-15.

[3] The Climate Action Handbook is a resource guide on climate protection created by ICLEI - Local Governments for Sustainability. (http://www.icleiusa.org/action-center/planning/climate-action-handbook)

1) Conduct a baseline inventory of global warming pollutants;
2) Establish a target to lower emissions;
3) Develop a local Climate Action Plan (CAP) to implement actions that reduce global warming pollution;
4) Implement the local Climate Action Plan; and
5) Measure, verify and report performance.

The City has now met one of these milestones, but to abide by Resolution 2000-15, and the Mayor's Climate Protection Agreement, it is time to accelerate our efforts and move forward with adopting a Climate Action Plan. To facilitate this process, a coalition of groups formed the Corvallis Action Plan Task Force, which the Marys Peak Group—Sierra Club is a member. We would like to suggest that the City partner with this group to create a Corvallis Climate Action Plan.

Integrate within all City Departments and Plans.

To lessen greenhouse gases, it's also important to require GHG emissions to be considered in the City's broader planning and decision-making processes.[4] Climate change challenges us to overcome short-term vision to ensure our children's future. The City will be updating its 2020 Vision and Comprehensive plans. These Plans provide a framework, offering direction and focus on issues that are "critical to improving the city," therefore climate change should be included in them.

These Plans set priorities and determine a course for progress. In particular, the 2020 Vision Plan provides an approach to achieve the vision and goals developed by the City Council, and each department's overarching Core Responsibilities, which influence and direct projects, development, and budgetary concerns. Therefore if the City and its departments take climate change seriously, mitigation and adaptation should be integrated within all City Departments and Plans.

Inform and Involve the Corvallis Community.

Some community members see climate change as a distant threat, if they see it as a threat at all. But the scientific evidence is overwhelming: climate change is here, and unless we curb behaviors that contribute to it, it will get worse, putting our food, air, water and security at risk. Benton County's Climate Adaptation Plan, clearly shows that we need to plan for the effects of climate change. A recent White House report[5] confirms the findings of this year's Intergovernmental Panel on Climate Change Fifth Assessment report[6] and concludes global warming is a clear and present danger to the U.S.[7] That

---

[4] See the attached Draft Benton County Climate Change Adaptation Plan, and the STAR Communities (Sustainability Tools for Assessing and Rating communities) Tool. The STAR Communities "Local Actions 1-9" are the proposed actions a community takes following a GHG inventory. http://www.starcommunities.org/

[5] http://www.whitehouse.gov/climate-change

[6] http://www.ipcc.ch/

[7] The IPCC report involved hundreds of scientists and experts worldwide who analyzed the latest peer-reviewed scientific literature and other relevant materials on climate change. The White House report was overseen by 13 government agencies, including the U.S. Environmental Protection Agency, NASA, Department of the Interior, Department of Defense and National Oceanic and Atmospheric Administration. It was written by close to 300 scientists and experts and reviewed by

the Corvallis Community will be facing climate change disruption, makes it imperative that all citizens are informed about the issue and how the City will both *mitigate* and *adapt* to it. We would like to propose that the City partner with local groups, such as the Corvallis Climate Action Plan Task Force[8] and the Corvallis Sustainability Coalition to inform and involve the Corvallis community regarding Climate Change mitigation and adaptation.

Set GHG Emission Goals

Now that Corvallis has completed a greenhouse gas emissions survey, we must now set *measurable benchmarks, mileage markers, and goals* to cut back on GHG pollution. World-wide observations make it clear that climate change is occurring, and rigorous scientific research[9] demonstrates that the greenhouse gases emitted by human activities are the primary drivers. Indeed, it is not an overstatement to say that the need for action is critical.

It is predicted that Corvallis will experience some of the impacts of climate change that will happen in the Pacific Northwest in the coming decade, including:[10]

- increased risk of regional water scarcity;
- greater threats of extreme weather events;
- increase in number and severity of wildfires; and
- disturbance of agricultural and natural forest systems.

To avoid the most severe impacts of climate change, we need to act at all levels of U.S. and municipal government to dramatically reduce emissions of greenhouse gases.[11] The Corvallis community must be part of this effort and the City Council and City Government must lead this effort by **setting a GHG emissions goal**.

Communities employ a variety of approaches to address climate change issues including encouraging denser land use development, building transit-oriented development, reducing vehicle miles traveled, designing more open space, and planning more pedestrian and bicycle-friendly environments. In this context, climate change and sustainability issues are often grouped together. But let's be very clear about what we want, a Climate Action Plan that contains the following:

---

numerous others, including the National Academy of Sciences. It was also vetted by groups ranging from oil companies to environmental organizations.

[8] This Task Force is a coalition of groups, which the Marys Peak Group—Sierra Club is a member.

[9] https://www.ipcc.ch/report/ar5/wg1/

[10] See attached Benton County's Draft 2014Adaptation Plan. For further information see Dalton, M.M., P.W. Mote, and A.K. Snover [Eds.]. 2013. Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities. Washington, DC: Island Press.

[11] Climate Scientist James Hanson asserts that the United States must commence effective action before it is too late, including efforts to reduce CO2 emissions by at least 6% annually. That prescription remains consistent with the scientific understanding of what minimally must be done by the United States and other nations to restore planetary energy balance. For additional information: "Assessing ''Dangerous Climate Change'': Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature. By James Hansen et al. http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0081648

1) **Clear and rigorous definitions.** Scientific methods and agreed upon standards must be the definition used to measure and monitor whether current trends are heading toward or away from GHG emission goals.
2) **Metrics.** The metrics must be derived from clear and rigorous definitions. To develop practical measures, look at practices and patterns that, if we don't stop them, they will stop us.
3) **Mileage markers.** Continue to measure, verify and report performance.

If Corvallis's approach to reducing GHG emissions is to have meaning, and get beyond green washing, it must be tied to goals (such as GHG emission goals), which are continually measured to determine if we're meeting them.

Create Synergy

The good news is that preparing for climate change is achievable and can lead to community prosperity. To understand this we must use a different lens. Presently, economic development departments currently look to attract and retain global business (i.e. the proposed downtown Hyatt Hotel). This implies that local business is irrelevant. However prosperity can happen using three alternative economic development principles that prioritize local business.

- **Maximize local jobs.** Increase the percentage of jobs in locally owned or locally controlled enterprise.
- **Encourage local self-reliance**, (not to disengage from the world, but to engage with the world from a position of greater strength); and
- **Identify, celebrate, and spread great models.** Such as high labor and environmental standards or the value of social, capital and natural resources in local businesses.

There are many other examples of how cities can prepare for climate change and prosper. Further, a diversified economy with many kinds of locally owned businesses is proven recipe for prosperity, which is necessary to address all kinds of other challenges—whether environmental restoration or insecurity. Two studies to support this were published in 2010. One in the Harvard Business Review was an analysis of more than a hundred municipalities that showed that per capita job growth was positively related to the presence of small businesses.[12] Another study from Penn State a few months later showed that per capita income growth was correlated not just to small but also to locally owned businesses.[13]

Prosperity also means developing a more complex viewpoint that redefines "development" for these times of global changes. To face climate change, cities and states must take seriously the fossil fuels use problem. They have to think how to stop and change "fossilized" economies and societies. For

[12] http://hbr.org/2010/07/the-secret-to-job-growth-think-small/ar/1
[13] http://www.ilsr.org/study-finds-local-businesses-key-income-growth/

example, it's far more financially sound to invest in renewable energy,[14] alternative transportation, and diversification than in an industry on its way out.[15]

Now that the City has completed it GHG inventory, and the severity of climate change impacts is expected to increase substantially in the coming decades,[16] it is imperative that the City act now to prepare a plan to lessen its contribution to increasing climate change.

Sincerely,

Debra Higbee-Sudyka
Executive Committee Vice Chair
Marys Peak Group – Sierra Club
PO Box 863
Corvallis, OR 97339
541-554-6979
dwhigbes@gmail.com
http://oregon.sierraclub.org/groups/marys_peak/

[14] http://ecowatch.com/business/renewables/

[15] http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/ottawa-risking-oil-investment-conference-hears/article18332861/

[16] This conclusion reflects the scientific consensus represented by, for example, the Intergovernmental Panel on Climate Change and U.S. Global Change Research Program. Many scientific societies have endorsed this finding including the American Association for the Advancement of Science, American Chemical Society, American Geophysical Union, American Meteorological Society, and American Statistical Association.

The STAR Community Rating System
Greenhouse Gas Mitigation

CE-2: Greenhouse Gas Mitigation

Greenhouse Gas Emissions Reductions

Demonstrate incremental progress towards achieving an 80% reduction by 2050 in community-wide greenhouse gas (GHG) emissions.

Local Action 1
Adopt a climate action plan designed to reduce GHG emissions throughout the jurisdiction

Local Action 2
Require GHG emissions to be considered in broader local government planning processes and decision-making

Local Action 3
Create an education and outreach campaign to engage citizens and businesses in GHG reduction efforts

Local Action 4
Establish a climate change advisory group to engage diverse community stakeholders in identifying and implementing GHG reduction strategies

Local Action 5
Modify local government operations and facilities in order to reduce GHG emissions and serve as a leader in the community

Local Action 6
Adopt energy efficiency regulations for buildings within the jurisdiction

Local Action 7
Create incentives to improve reliance on distributed generation of renewable energy sources

Local Action 8
Implement specific programs and services or create facility upgrades that transition the community towards the use of alternatives modes of transportation and low-emissions vehicles

Local Action 9
Implement specific programs and services or create facility upgrades that reduce waste in the community

Attachment 1

Benton County
Climate Change Adaptation Plan

Last Update: 05/08/2014

Attachment 1

Contents

Acknowledgement....4

Purpose of Plan....5

Current Planning in Benton County....5

Benton County Geography....6

Climate Change in Benton County....7

- Temperature & Precipitation....7
- Extreme Heat....9
- Extreme Precipitation and Flooding....10
- Wildfire....10
- Air Quality....11
- Drought & Summer Streamflow....11
- Growing Season....12
- Summary of Expected Climate Changes....13

Agencies....13

- Board of Commissioners....13
- Community Developement....13
  - Reducing the Drivers of Climate Change....15
  - Implementation....15
- Benton County Health Services....16
  - 10 Essentials Public Health Services....16
  - Current Efforts....17
  - Reducing the Drivers of Climate Change....17
  - Implementation....18
- Public Works....18

Attachment 1

Reducing the Drivers of Climate Change 19

Implementation 19

Sheriff's Office 20

Responsibilities 20

Implementation 21

Planning 21

Agency Climate Adaptation Planning 21

Funding 21

Plan Maintenance 22

Resources 23

Attachment 1

Acknowledgement

The following departments/agencies were integral to helping create the Benton County Health Department Climate Change Health Adaptation Plan:

- Community Development
- Public Works
- Emergency Management
- Environmental Health
- Oregon Climate Change Research Institute
- Oregon Health Authority
- Public Health
- Oregon State University

The Art of Childhood

http://theartofchildhood.files.wordpress.com/2013/08/working-together-to-change-our-planet.jpg

Attachment 1

Purpose of the Plan

The Earth's climate is warming largely due to humankind's emissions of greenhouse gases, namely carbon dioxide, into the atmosphere. Continued emissions will cause further warming, changes in precipitation patterns, and more extreme weather (IPCC, 2013). Such climate changes are already having an impact on local communities and will increasingly impact the health of community members, the maintenance of infrastructure, and management of natural resources. Benton County has an important part to play in helping to reduce the impact of climate change through local community collaborative adaptation planning efforts.

This Climate Change Adaptation Plan is intended to describe the impacts of climate change that Benton County is likely to experience and will be working to minimize over the next 40 years-100 years. To help lessen the impact of climate change on Benton County communities, this plan:

1. Evaluates impacts of climate change on the community.
2. Develops possible strategies to prepare the county for climate change.

The above steps will help to ensure that Benton County will be able plan for and adapt to climate change.

The focus of this plan is adaptation to the impacts of climate change that will be experienced by the county. Reducing the drivers of climate change, thus limiting how much the climate will warm in the future (i.e., mitigation); will require substantial reductions in greenhouse gas emissions globally. However, there are measures and behaviors that can be implemented locally (i.e. walk to work, ride a bike, carpool, etc.) and this plan also touches on some mitigation opportunities.

This plan will be reviewed and updated at least every five years or as changes in science or potential impacts occur. The plan will support other county agency's climate change adaptation planning efforts. Involvement of all agencies in lessening the impact of climate change will help to ensure a brighter future for all Benton County residents.

Current Planning in Benton County

Climate change adaptation is an iterative cycle (Figure 1) that begins with identifying and "understanding" the problems posed by climate change. Once the problems are clearly identified, adaptation moves into the "planning" process of developing potential options that can lessen the impacts of climate change. Of the many adaptation efforts underway in the Northwest, few have yet to move beyond these stages into "managing" the adaptation options through implementation and evaluation.

Benton County Health Department was one of five counties in Oregon to participate in the development of a Climate Change Health Adaptation Plan; the culmination of the "understanding" and "planning" stages of climate change adaptation. Funding was provided through grants from the Oregon Health Authority with funding from the Climate Ready States and Cities Initiative at the US Centers for Disease

Control and Prevention (CDC) to pilot the Building Resilience Against Climate Effects (BRACE) Framework, a step-by-step process Health Departments can use to create adaptation plans for climate-related public health risks.

The Climate Change Health Adaptation Plan describes how the different climate change impacts were chosen and how Benton County Health Department plans to gather data in order to help inform policy decisions aimed at lessening the future health impacts of climate change. The Benton County Climate Change Adaptation Plan relies on the Health Department's previous efforts in "understanding" to define the problems facing the county departments and to begin identifying potential adaptation options and how they might be implemented.

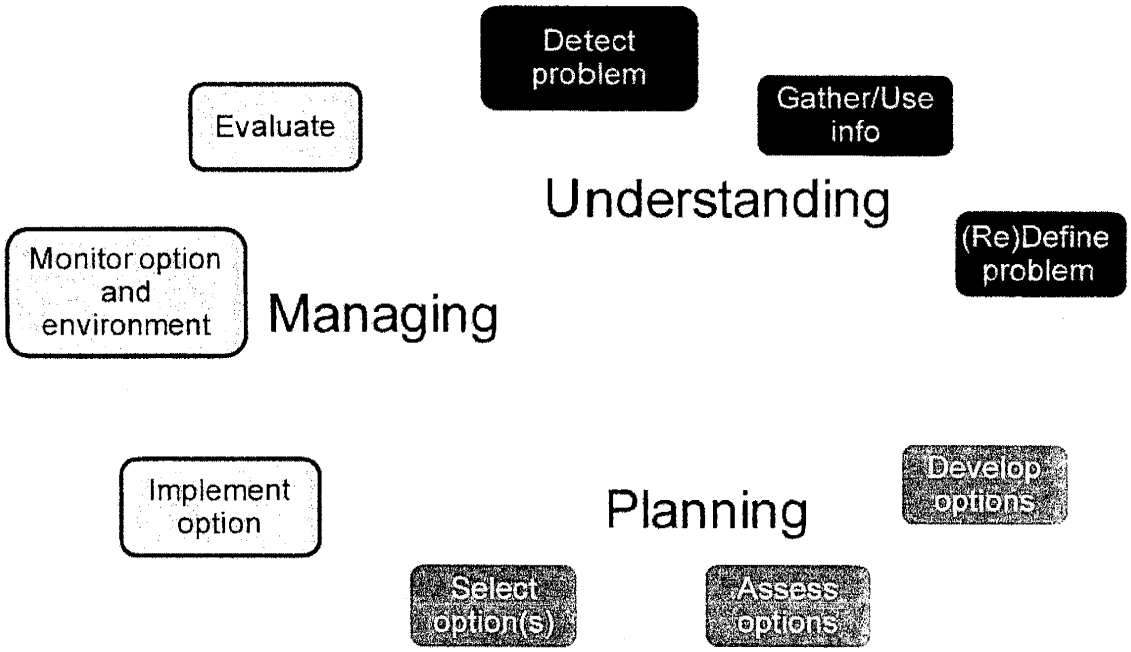


Figure 1. The phases and associated components of climate change adaptation, as an iterative cycle. Reprinted from NWCAR, 2013, Fig. 1.4.

Benton County Geography

Benton County occupies approximately 676 square miles in the heart of the Willamette Valley, in the mid-western part of Oregon. The Willamette Valley region begins east of the Oregon Coast Range and extends east to the Cascade Mountain Range and south to the Calapooya Mountains. In general, this region's geographical position results in a climate characterized by relatively mild temperatures, seasonal precipitation, mild winters, and dry summers. The Cascades serve as an effective moisture retainer for the majority of the Willamette Valley, causing storms to concentrate much of their moisture west of the peaks and leaving areas to the west fertile for agriculture.

Attachment 1

Benton County is bordered on its north side by Polk County and on its south side by Lane County. To the west, Lincoln County separates Benton from the coast, and to the east are Linn County and the Willamette River. The 187-mile Willamette River connects to the Columbia River north of metropolitan Portland, which is the only fresh-water corridor for ocean-going commerce on the West Coast of North America, and the only water-grade route through the Cascade Range between Canada and California.

The Willamette, Luckiamute, and Marys Rivers, and several small streams are subject to slow-rise flooding. The Willamette Valley is home to more than two-thirds of the Oregon population. Land elevations rise from 150 feet on the Willamette River and floodplains to greater than 3,000 feet in the Northern Oregon Coast Range. The western half of Benton County is known for its timber production, and once down from the mountains, the county is comprised of rolling hills and valleys that boast the largest concentration of wineries and vineyards in the State. Three major highways traverse the county: Highway 99W extends north and south through the county, and Highways 20 and 34 are oriented generally east and west from the Willamette River to the coast. The Willamette and Pacific Railroad also pass through the county.

Climate Change in Benton County

Understanding how climate change could impact Benton County's people and resources is a critical component in adaptation planning. As a result of warmer temperatures and altered seasonal precipitation predicted by the IPCC and NWCAR research, Benton County is likely to experience:

1. more extreme heat events
2. more extreme precipitation events and flooding
3. larger and more frequent wildfires
4. reduced air quality
5. increased occurrence of droughts and reduced summer water supply
6. longer growing season

The Benton County Health Department identified the first three to have the greatest impacts on public health consistent with a recent report on climate change in the Northwest which concluded that heat waves, flooding, and wildfires are the key health-related climate change risks facing the entire region (NWCAR, 2013). These outcomes, and others, already have a history of occurrence in Benton County. Climate change is expected to exacerbate many of the hazards that the county already faces potentially bringing new problems. The following information provides some background on the climate changes most likely to affect Benton County in the coming decades.

Temperature & Precipitation

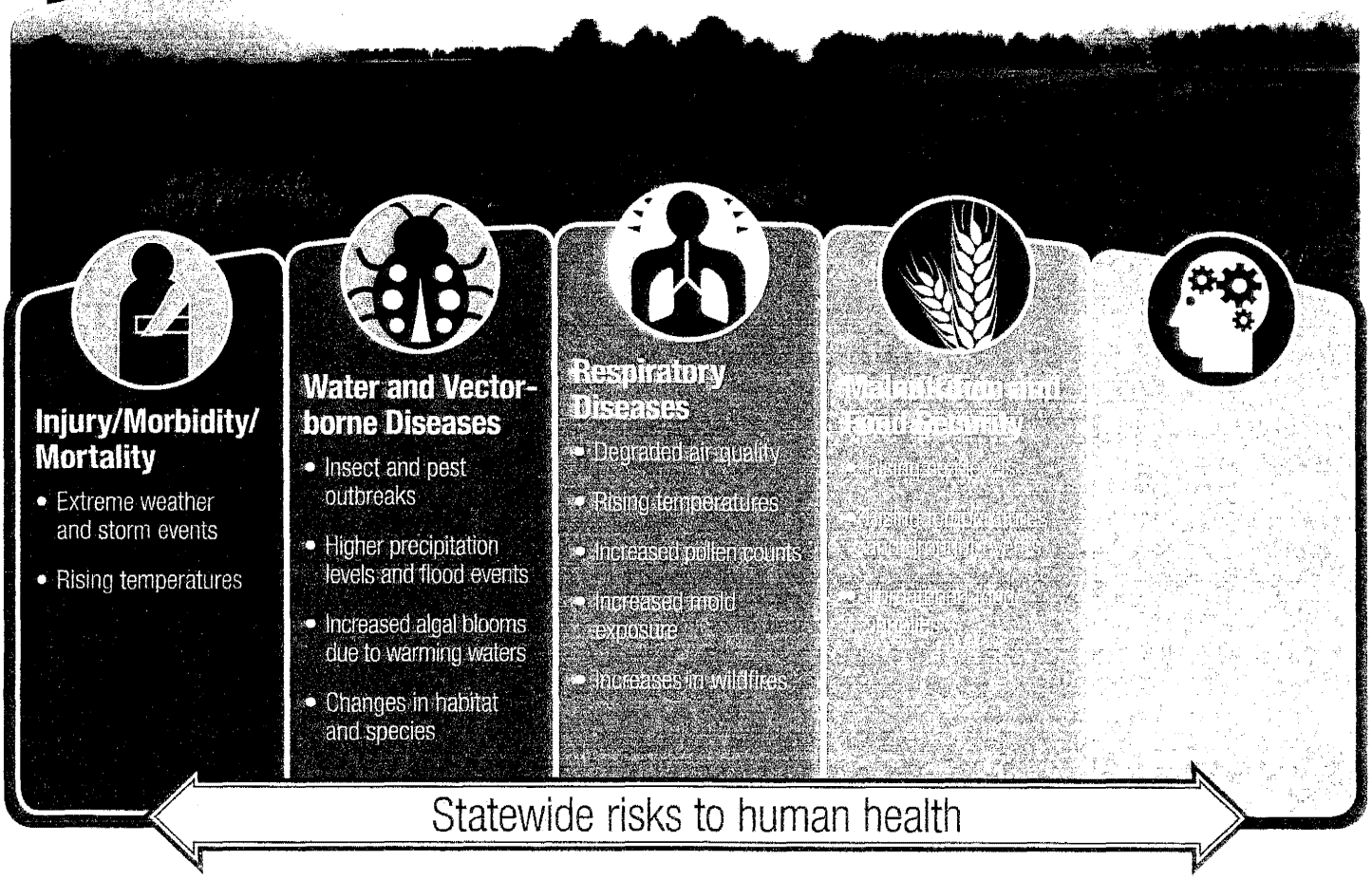
During the last century, the Northwest warmed by a little more than 1 degree Fahrenheit. Total rainfall amounts vary considerably from year to year and during the last century, there has been no clear significant trend in average rainfall over the Northwest. The Hyssop field station near Corvallis recorded warming by a similar amount as the NW average and no clear trend in precipitation (Figure 2).

Climate and Health Adaptation Plan

The effects of climate change already can be seen in Oregon's marine environments, forestlands, agriculture, and transportation infrastructure. It is likely that more severe impacts from climate change will begin to affect the state, including the overall health of its residents. ***As part of a two-year collaboration, Benton County Health Department worked with the Oregon Health Authority Public Health Division to develop a climate change adaptation plan to protect the health of its community.*** *The Centers for Disease Control's five-step Building Resilience Against Climate Effects (BRACE) framework was implemented, which allowed Benton County to provide an overview of local climate change and health projections, and for the development of possible interventions that would allow communities and identified vulnerable populations to adapt to predicted changes.*

Role of public health

The Benton County Health Department protects the health and well-being of everyone who lives, works, learns, and plays in Benton County, with a particular focus on preventing health problems before they occur. Much of what the county health department does contributes to the monitoring and assessment of health impacts related to climate change. The County health department is therefore ideally suited to engage, coordinate and plan adaptation strategies that address our local climate vulnerabilities.



Climate risks and mitigation strategies

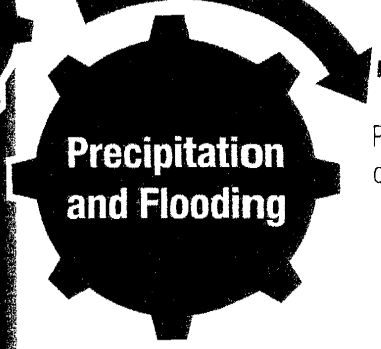
A central component of our planning process was the development of a Climate Change Health Risk Model. Local experts and stakeholders used the model to prioritize three main climate change risks, identify vulnerable populations, and draft potential mitigation strategies. The climate change risks most likely to impact Benton County include:

Populations most affected by an increase in wildfires:

- Individuals with pre-existing respiratory conditions
- Homeless persons
- Rural residents
- Firefighters and forestry workers

Populations most affected by the health impacts of extreme heat events:

- Elderly and young persons
- Low-income individuals
- Homeless persons
- Recreationists



Populations most affected by the health impacts of increases in precipitation and flooding:

- Low-income individuals
- Residents with well water
- Residents in low-lying areas
- Recreationalists
- Elderly and young persons
- Homeless persons

STEP 1

Analyze trends to determine frequency, causation, and intensity of outbreaks and climate change events.

STEP 2

Identify targeted measures to protect those at highest risk of climate change events.

STEP 3

Communicate about how climate change can affect everyone through outreach events, news media releases, and social media.

For more information and/or the full report, phone Benton County Health Department at 541-766-6835.

The Oregon Health Authority (OHA) is one of nine agencies across the country that received a grant from the Centers for Disease Control and Prevention's National Center for Environmental Health (CDC-NCEH) as part of the Climate-Ready States and Cities Initiative. This program is intended to help agencies address the public health effects of climate change related events. The Climate and Public Health Program is part of the Public Health Division of the Oregon Health Authority.

PUBLIC HEALTH DIVISION
Climate and Health

This document can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request this publication in another format or language, contact: Climate and Health Program 971-673-0977 or TTY 971-673-0372.

OHA 8592 (12/2013)

CORVALLIS FIRE DEPARTMENT
MEMORANDUM

541 766-6961
541 766-6938 (fax)

400 NW Harrison Blvd.
Corvallis, OR 97330

To: Urban Services Committee and City Council

From: Roy Emery, Fire Chief
Jeff Prechel, Fire Marshal

Subject: Ordinance to Adopt Revisions to the City Fire Code

Date: June 27th, 2014

BACKGROUND

Historically, the State of Oregon has adopted a new Fire Code every three years, based on the most recent edition of the International Fire Code, which was promulgated by the International Code Council and adopted by most of the Western states. The International Fire Code (IFC) is a companion document to the International Building Code, Mechanical Code, and Plumbing Code which are also adopted by the State on a three-year cycle. The IFC, with State amendments, was adopted through a public hearing process managed by the State Fire Marshal's Office in July of 2014, and is enforced state-wide; it is known as the Oregon Fire Code (OFC). That public hearing process included representatives from various business and industry sectors that were impacted by the code.

State law allows for a municipality or a fire district to adopt a local fire code, with local amendments to reflect administrative procedures and community fire-safety standards, as long as the local fire code was not less restrictive than the OFC. Corvallis has adopted a City fire code based on the model State code for over 50 years; it is known as the Corvallis Fire Code (CFC). Adoption of the CFC has a provision for a local appeals board, in lieu of a regional appeals board, and has facilitated local application of the fire code based on CFD resources and community priorities.

HISTORY

The Corvallis Fire Code contains requirements pertaining to a broad range of fire safety issues such as operational permits, open burning, fire alarm and sprinkler systems, flammable liquids, hazardous materials, hazardous processes, fire access roads, and required water supplies. In October, 2004, the State adopted the 2003 edition of the International Fire Code (IFC), as amended for the State of Oregon. The City then adopted the local amendments to the Oregon Fire Code, and identified them as the Corvallis Fire Code. The IFC was drafted by the International Code Council (ICC) with the goal of developing and maintaining a document that would serve the widely varied needs of all communities.

The ICC was established in 1994 as a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national model codes. The founders of the ICC are Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), and Southern Building Code Congress International, Inc. (SBCCI). Since the early part of the last century, these nonprofit organizations developed the three separate sets of model codes used throughout the United States. Although regional code development has been effective and responsive to our country's needs, the time came for a single set of codes. The nation's three model code groups responded by creating the International Code Council and by developing codes without regional limitations, the International Codes.

There are substantial advantages in combining the efforts of the existing code organizations to produce a single set of codes. Code enforcement officials, architects, engineers, designers and contractors may now work with a consistent set of requirements throughout the United States. Manufacturers can put their efforts into research and development rather than designing to three different sets of standards, and can focus on being more competitive in worldwide markets. Uniform education and certification programs can be used internationally. A single set of codes has encouraged states and localities that currently write their own codes or amend the model codes to begin adopting the International Codes without technical amendments. This uniform adoption has lead to consistent code enforcement. Whether the concern is disaster mitigation, energy conservation, accessibility, innovative technology or fire protection, the ICC provides a single forum for national and international attention and focus to address these concerns.

DISCUSSION

The Corvallis Fire Department has twenty local amendments to the 2014 Oregon Fire Code (Appendix A). The majority of local amendments serve to clarify or reinforce the provisions in the OFC that have been considered of particular interest to the citizens of Corvallis. Nineteen of the amendments are legacy adoptions, and have been updated (2014) to reflect the current OFC reference and code language.

One addition in 2014 is the twentieth amendment, *CMC Section 7.08.200 - Aerial Apparatus Access,* which is intended to clarify CFD's interpretation of the State adopted *OFC Appendix D, Section D105 Aerial Apparatus Access Roads*. This language is of particular interest to CFD due to the increase in residential redevelopment, or "infill", of multi-family units near the OSU campus. There is a critical need to ensure that the fire protection requirements of these new developments do not exceed the resources of the fire department. In short, the twentieth amendment ensures that either prescriptive aerial apparatus access is provided, or an alternative method of fire protection is provided such as the installation of an automatic fire sprinkler system. This amendment serves to memorialize the best-practices that have been in place since 2010.

The local amendments to the OFC have been jointly reviewed by the Corvallis Fire Department, Development Services, and Community Development. The amendments have been crafted to maintain consistency and predictability in application of the Fire Code, and serve to deconflict provisions within the local Land Development Code, and the adopted Building and Fire Codes.

CONCLUSION

The Corvallis Fire Code revisions have been reviewed and approved by the City Attorney's Office. Copies of the Corvallis Fire Code will be available for the public through the Fire Administrative offices, on the Fire Department Website, and at the Corvallis-Benton County Public Library.

As has been our practice in the past, we will work with owners of occupancies or properties who might be impacted by new requirements to ensure they understand the regulations. Existing occupancies are not required to make financially-impacting procedural or structural changes to meet the newly-adopted code unless it is determined that there is a distinct hazard to life and property.

RECOMMENDATIONS:

Staff recommends the adoption of revisions to the Fire Code for the City of Corvallis, based on the 2012 International Fire Code, with State amendments adopted July 1st, 2014 as presented in the attached.

Staff recommends the repeal of the existing Fire Code of Corvallis upon the full and complete adoption of the new fire code.

REVIEWED AND CONCUR:

Roy Emery, Fire Chief

City Attorney

Carolyn Rawles AIC CM

Jim Patterson, City Manager

Appendix A

Corvallis Municipal Code Amendments to the Oregon Fire Code

CMC	CFC Title	2014 OFC Reference
CMC Section 7.08.010	Adoption of the State Fire Code	
CMC Section 7.08.020	Change of Use or Occupancy	amends OFC Section 102
CMC Section 7.08.030	Authority of Fire Code Official(s)	amends OFC Section 104.1
CMC Section 7.08.040	Fire Records	amends OFC Section 104.6.3
CMC Section 7.08.050	Fire Investigations	amends OFC Section 104.10
CMC Section 7.08.060	Fire Code Permits	amends OFC Section 105.6 & 105.7
CMC Section 7.08.070	Appeals	amends OFC Section 108
CMC Section 7.08.080	Violations	amends OFC Section 109
CMC Section 7.08.090	Stop Work Order	amends OFC Section 111
CMC Section 7.08.100	Cost Recovery Procedures	amends OFC Section 113
CMC Section 7.08.110	Definitions	amends OFC Section 202
CMC Section 7.08.120	Waste Material	amends OFC Section 304
CMC Section 7.08.130	Combustible Vegetation	amends OFC Section 304
CMC Section 7.08.140	Explosives and Fireworks	amends OFC Section 5601
CMC Section 7.08.150	Cleanup or abatement of hazardous material; liability for costs	amends OFC Section 5001
CMC Section 7.08.160	Establishment of limits in which storage of liquefied petroleum gases is to be restricted	amends OFC Section 6104
CMC Section 7.08.170	Establishment of limits in which storage of flammable or combustible liquids in outside above ground tanks is prohibited	amends OFC Sections 5704 and 5706
CMC Section 7.08.180	Non-liability of the City for damages	amends OFC Section 103.4
CMC Section 7.08.190	Defined and Expanded Extinguishment Authority	amends OFC Section 307
CMC Section 7.08.200	Aerial Apparatus Access	amends OFC Appendix D Section 105
CMC Section 8.03.500.010	Fire Permit Fees	amends OFC Section 105

Fire Prevention Division
2014 Corvallis Fire Code Amendments

CMC Section 7.08.010 Adoption of State Fire Code

1) The State of Oregon Fire Code (OFC) effective ~~October 1, 2004~~ July 1, 2014 including the Table of Contents Appendices B, C, D, H, I, K, L, M, and N and the Index together which prescribe regulations safeguarding life health property and public welfare to a reasonable degree from the hazards of fire explosion and panic save and except such other portions thereof are herein after deleted herein modified or amended is hereby adopted and by this reference made apart here of with the same force and effect as though set forth herein in full. The foregoing is referred to as the "Fire Code" and is composed of the ~~2003~~ 2012 edition of the International Fire Code as published by the International Code Council and amended by the Oregon State Fire Marshal said Fire Code is on file and open to public inspection in the City Library. All referenced standards in OFC Chapter ~~45~~ 80 are hereby adopted and are on file and open to public inspection at the Fire Prevention Office of the Fire Department

(Ord. 2004-23 1 and 2, 11/01/2004 98-40 & 41, Repealed Replaced, 11/02/1998)
(98-40 & 41, Repealed Replaced, 11/02/1998)

Intent:

The Oregon State Fire Marshal mandates that local jurisdictions coordinate the minimum interpretation of state fire laws to assure uniformity in the application of the Oregon Fire Code. Jurisdictions are permitted to establish more restrictive interpretations of the provisions within the OFC based on the needs of the community.

CMC Section 7.08.020 Change of Use or Occupancy

1) OFC Section 102 adopted by this Chapter is amended, and Section 102.11.1 is added, to read in its entirety as follows:

102.1 Construction and design provisions. The construction and design provisions of this code shall apply to:

1. Structures, facilities and conditions arising after the adoption of this code.
2. Existing structures, facilities and conditions not legally in existence at the time of adoption of this code.
3. Existing structures, facilities and conditions when required in Chapter ~~46~~ 11.
4. Existing structures, facilities and conditions which, in the opinion of the *fire code official,* constitute a distinct hazard to life or property.

102.2 Administrative, operational and maintenance provisions. The administrative, operational and maintenance provisions of this code shall apply to:

1. Conditions and operations arising after the adoption of this code.
2. Existing conditions and operations

Also see Section 110.1.1, ORS 476.030(c) and OAR Chapter 837, Division 41.

ORS 476.030(c) is not a part of this code but is paraphrased here for the reader's convenience.

ORS 476.030(c) defines the rules for maintenance and regulations of structural fire safety features in occupied structures and overseeing the safety and directing the means and adequacy of exits in case of fire except that structural changes shall not be required in buildings built, occupied and maintained in conformity with the state building code regulations applicable at the time of construction.

OAR Chapter 837, Division 41 defines the fire protection regulations relating to existing facilities. Also see Section 110.1.1, ORS 476.030(c) and OAR Chapter 837, Division 41.

102.3 Change of use or occupancy. The provisions of the Building Codes as adopted by the City of Corvallis shall apply to all buildings undergoing a change of occupancy.

102.4 Application of building code. The design and construction of new structures shall comply with the building codes as adopted by the City of Corvallis. Repairs, alterations, and additions to existing structures shall comply with these building codes as adopted by the City of Corvallis.

102.5 Application of residential code. The design and construction of new residential structures shall comply with the residential building codes as adopted by the City of Corvallis. Repairs, alterations, and additions to existing structures shall comply with these residential building codes as adopted by the City of Corvallis.

102.6 Historic buildings. The construction, alteration, repair, enlargement, restoration, relocation, or movement of existing buildings or structures that are designated as historic buildings when such buildings or structures do not constitute a distinct hazard of life or property shall be in accordance with the provisions of the building codes as adopted by the City of Corvallis.

102.7 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter ~~47~~ 80 and such codes and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between the provisions of this code and the referenced standards, the provisions of this code shall apply.

102.8 Subjects not regulated by this code. Where no applicable standards or requirements are

set forth in this code, or are contained within statutes or administrative rules adopted by the jurisdiction, compliance with applicable standards of the National Fire Protection Association or other nationally recognized fire safety standards, as *approved,* shall be deemed as prima facie evidence of compliance with the intent of this code. Nothing herein shall derogate from the authority of the *fire code official* to determine compliance with codes or standards for those activities or installations within the *fire code official's* jurisdiction or responsibility.

102.9 Matters not provided for. Requirements that are essential for the public safety of an existing or proposed activity, building or structure, or for the safety of the occupants thereof, which are not specifically provided for by this code shall be determined by the *fire code official.*

102.10 Conflicting provisions. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in a specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

102.11 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

> ~~OFC 102.7.1~~ **OFC 102.11.1 Local interpretation.** Corvallis Fire Department Fire Prevention Operating Guidelines (DOG) have been developed with the intent to detail and clarify the city application of this Fire Code as adopted by the City of Corvallis these guidelines are available for public review at the administrative Offices of the Fire Department and on the city's website.

102.12 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998)
(98-40 & 41, Repealed Replaced, 11/02/1998)

Intent:

The purpose of the Oregon Fire Code is to establish the minimum requirements required to provide a reasonable level of life safety and property protection from hazards of fire, explosion, or dangerous conditions in new or existing buildings, structures, or premises, and to provide safety to firefighters and emergency responders during emergency operations.

Fire Prevention Division
2014 Corvallis Fire Code Amendments

CMC Section 7.08.030 Authority, Fire Code Official(s)

OFC 104.1.1 The fire chief and members of the fire prevention bureau shall have the power of a police officer in performing their duties under this code.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.040 Fire records

1) OFC Section 104.6.3 adopted by this Chapter is ~~reinstated~~ restated to read in its entirety as Follows:

104.6.3 Fire records The Fire department shall keep a record of fires occurring within its jurisdiction and off acts concerning the same, including statistics as to the extent of such fires and the damage caused thereby, together with other information as required by the fire code official.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.050 Fire investigation

1) OFC Section 104.10 adopted by this Chapter is ~~reinstated~~ restated to read in its entirety as Follows:

104.10 Fire Investigations The fire code official, the fire department or other responsible authority shall have the authority to investigate the cause origin and circumstances of any fire, explosion or other hazardous condition. Information that could be related to trade secrets of processes shall not be made part of the public record, except as directed by a court of law.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.060 Fire Code permits

1) OFC Section 105.6 and 105.7 are adopted by this Chapter in their entirety with the intent that the City of Corvallis issue Fire Code Permits for all operations and installations listed in the Oregon Fire Code Sections 105.6.A through ~~105.7.12~~ 105.7.16

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.070 Appeals

1) OFC Section 108 is adopted by this Chapter and amended to read in its entirety as Follows:

108. 1 Board of Appeals.

1) In order to hear and decide appeals of orders decisions or determinations made by the fire chief relative to the application and interpretation of this code there shall be and is hereby created aboard of appeals consisting of members who are qualified by experience and training to pass on matters pertaining to building construction and who are not employees of the jurisdiction. The fire chief shall be an ex officio member of and shall act as secretary to the board but shall have no vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the fire chief.

2) The board of appeals shall have no authority relative to interpretation of the administrative provisions of this code nor shall the board be empowered to waive requirements of this code.

108. 2 Appeal procedure. Any decision relating to the suitability of alternate materials and methods of construction or interpretation by the fire chief with regard to the Fire Code may be appealed to the board of appeals in conformance with procedures provided herein.

108.3 Filing parties

1) Appeals may only be filed by the following parties affected by a decision:
a) The owner or authorized agent;
b) Any resident or property owner within150 feet of a parcel of land that is the subject of the decision;
c) Any agency officer or department of the City which has the responsibility for providing City facilities and/or services to the parcel of land; or
d) Ten adult residents of the City

108.4 Filing date. Appeals must be filed within ten (10) calendar days from the date of the decision of the fire chief.

108.5 Requirements for filing appeal. Appeals shall be filed in writing with the City Recorder and shall include:

a) The name and address of the appellant
b) The address of the parcel that is the subject of the decision
c) The date of the decision
d) The nature of the fire chiefs decision
e) A statement of the applicable code section and the specific grounds for the appeal; and,
f) A filing fee as specified in the Fees Chapter 803

108.6 Board meeting. The fire chief shall schedule a meeting of the board within 30 days of the filing of the appeal. The board of appeals shall grant a hearing or dismiss the appeal. The appeal shall be dismissed if the board finds that the appeal does not meet the criteria in Subsection 108.5. If the appeal is dismissed the fire chiefs decision is final. The hearing shall be held not later than 30 days after filing the appeal.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996; Ord. 92-40 10, 1992; Ord. 89-54 11 and 49, 1989)
(98-40 & 41, Repealed Replaced, 11/02/1998)

Intent:

To provide a local appeals process that is in conformance with the contested case proceedings under ORS Chapter 183.

CMC Section 7.08.080 Violations

1) OFC Section109 is adopted by his Chapter with Sections ~~109.2.3~~ 109.3.3 and ~~109.3~~ 109.4 reinstated to read in their entirety as follows:

~~109.2.3~~ **109.3.3 Prosecution of violations.** If the notice of violation is not complied with promptly the fire code official is authorized to request the legal counsel of the jurisdiction to institute the appropriate legal proceedings at law or in equity to restrain correct or abate such violation or to require removal or termination of the unlawful occupancy of the structure in violation of the provisions of this code or of the order or direction made pursuant hereto.

~~109.3~~ **109.4 Violation penalties.** Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be subject to the provisions of 109.4.1.1 - 109.4.1.8.12.

~~109.3.1~~ **109.4.1 Misdemeanor citation.** Any person who shall violate any of the provisions herein or fail to comply therewith or who shall violate or fail to comply with any order made there under or who shall build in violation of any detailed statement of specifications or plans submitted and approved there under or any certificate or permit issued there under and from which no appeal has been taken or who shall fail to comply with such an order as affirmed or modified by the Board of Appeals or by a court of competent jurisdiction within the time fixed here in shall severally for each and every such violation and noncompliance respectively be guilty of a misdemeanor punishable by a fine not exceeding $500, or by imprisonment not exceeding 30 days, or by both such fine and imprisonment as outlined in Corvallis Municipal Code Chapter 5. All such persons shall be required to correct or remedy such violations or defects within a

reasonable time and when not otherwise specified each day that prohibited conditions are maintained shall constitute a separate offense.

~~109.3.2~~ **109.4.2 Declaration of infraction.** Notwithstanding ~~109.3.1~~ 109.4.1 any violation of the provisions herein may be declared to be an infraction pursuant to the procedure provided in Article 5.03.160

~~109.3.3~~ **109.4.3 Removal of prohibited condition.** The application of the above penalty shall not prevent the enforced removal of prohibited conditions.

~~109.3.4~~ **109.4.4 Liability for costs of fire extinguishment.** In case of fire resulting directly or indirectly from failure or neglect to promptly comply with a notice issued by the fire chief to abate a hazard within the time stipulated on the notice the person or persons so notified shall be liable to a civil action for payment of all expenses incurred by the City in and about the use of the apparatus materials and work force in extinguishing any fire resulting from such cause.

~~109.3.5~~ **109.4.5 Dangerous buildings.**

~~109.3.5.1~~ **109.4.5.1 General.** Buildings or structures which are structurally unsafe or not provided with adequate egress, or which constitute a fire hazard, or are otherwise dangerous to human life, or which in relation to existing use constitute a hazard to safety or health or public welfare by reason of inadequate maintenance dilapidation obsolescence fire hazard disaster damage, or abandonment as specified in this code or any other ordinance are for the purpose of Section 109.3.5.1 dangerous buildings. Such dangerous buildings are hereby declared to be public nuisances and shall be abated by repair rehabilitation demolition or removal in accordance with the procedures specified in Corvallis Municipal Code Section 9.01.170.020.

~~109.3.5.2~~ **109.4.5.2 Emergency procedures for abatement of dangerous buildings.** Whenever the fire chief with the concurrence of the City Manager deems a building an immediate hazard to life and property due to inadequate measures taken by the owner to secure repair or maintain the building and due to the incidence of intentionally set fires and or fires of suspicious origin in the jurisdiction the fire chief may take immediate action to abate the hazard. The owner shall be liable for the cost of abatement of the hazard as provided in Corvallis Fire Code Section ~~112~~ 113. Nothing in this subsection shall relieve the owner of responsibility to take action to abate the condition.

~~109.3.6~~ **109.4.1.6 Appeals.** For appeals see Section 108.1

~~109.3.7~~ **109.4.7 Cleanup or abatement.** If a condition has not been eliminated within the time set forth in an order or notice to abate the condition, the fire chief may cleanup or abate the condition. The owner shall be liable for the cost of cleanup or abatement as provided in OFC Section 108. Nothing in this subsection shall relieve the owner of responsibility to take action to abate the condition.

~~109.3.8~~ **109.4.8 Civil penalties.**

~~109.3.8.1~~ **109.4.8.1 General.** In addition to any other penalty provided by law the owner of any unsafe building or owner of property upon which a fire hazard exists may incur a civil penalty in an amount as specified in ~~109.3.8.2~~ 109.4.8.2 plus any cost of service or recording costs

~~109.3.8.2~~ **109.8.4.2 Authorized civil penalties and fees.** The fire chief is authorized to impose civil penalties as follows:

a) Unsafe or dangerous building, ~~$500/$200~~ **$1,000/$400** (maximum/minimum);
b) Blocking or obstructing an exit way, ~~$500/$200~~ **$1,000/$400** (maximum/minimum);
c) Overcrowding beyond the approved capacity for a building ~~$500/$200~~ **$1,000/$400** (maximum/minimum);
d) Failure to immediately restore fire sprinkler standpipe alarm or other fire protective or extinguishing systems or appliances to operational condition ~~$450/$150~~ **$900/$300** (maximum/minimum);
e) Failure to maintain exit signs or illumination ~~$450/$150~~ **$900/$300** (maximum/minimum);
f) Possession or use of illegal fireworks ~~$450/$150~~ **$900/$300** (maximum/minimum);
g) Tampering with fire equipment appliances ~~$450/$150~~ **$900/$300** (maximum/minimum);
h) Failure to provide alarm supervision for an automatic sprinkler system with over 100 heads ~~$300/$100~~ **$600/$200** (maximum/minimum);
i) Failure to provide cleaning of kitchen ventilating hood and duct systems ~~$300/$100~~ **$600/$200** (maximum/minimum);
j) Failure to abate an electrical hazard ~~$300/$100~~ **$600/$200** (maximum/minimum);
k) Storage use dispensing and/or mixing of flammable and combustible liquids not in accordance with ~~Article 34~~ OFC Chapter 57 ~~$300/$100~~ **$600/$200** (maximum/minimum);
l) Illegal storage of hazardous equipment in buildings ~~$300/$100~~ **$600/$200** (maximum/minimum);
m) Failure to remove combustible decorative material from a public assembly ~~$300/$100~~ **$600/$200** (maximum/minimum);
n) Failure to provide or maintain a fire extinguisher ~~$200/$75~~ **$400/$150** (maximum/minimum);
o) Using a building or portion thereof rooms in an unsafe manner beyond the scope of its designed use and or occupancy classification ~~$500/$200~~ **$1,000/$400** (maximum/minimum);
p) Open burning in violation of ~~Uniform Fire Code Section 1102~~ Section 307, ~~$200/$75~~ **$400/$150** (maximum/minimum);
q) Failure to obtain a fire permit in accordance with ~~this Chapter~~ Section 105 ~~$100/$35~~ **$200/$75** (maximum/minimum);
r) Failure to provide premises identification ~~$100/$35~~ **$200/$75** (maximum/minimum);
s) Permitting accumulation of waste material in violation of Corvallis Fire Code ~~$100/$35~~ **$200/$75** (maximum/minimum);
t) Failure to perform required inspections and maintenance of fire protection systems in accordance with Corvallis Fire Code ~~$100/$35~~ **$200/$75** (maximum/minimum);
u) Failure to perform required fire drills and or to mail in certification ~~$100/$35~~ **$200/$75** (maximum/minimum);
v) Parking in a marked Fire Lane ~~$100/$35~~ **$200/$75** (maximum/minimum);
w) Obstructing a fire hydrant ~~$100/$35~~ **$200/$75** (maximum/minimum);

~~109.3.8.3~~ **109.4.8.3 Considerations for Imposing Penalty Amount.** In imposing a penalty amount pursuant to the schedule authorized in ~~109.3.8.2~~ 109.4.8.2 the fire chief shall consider the following factors:

a) The past history of the person incurring a penalty in taking all feasible steps or procedures necessary or appropriate to correct any violation;
b) Any prior violations of statutes rules orders and permits pertaining to fire code regulations;
c) The economic and financial conditions of the person incurring a penalty
d) The gravity and magnitude of the violation
e) Whether the violation was repeated or continuous
f) Whether the cause of the violation was an unavoidable accident negligence or an intentional act
g) The violators cooperativeness and efforts to correct the violation

~~109.3.8.4~~ **109.4.8.4 Imposition of other penalties.** Imposition or payment of a civil penalty under this Section shall not be a bar to any criminal proceeding imposed hereunder

~~109.3.8.5~~ **109.4.8.5.Procedure for issuing civil penalty.** A civil penalty shall be imposed under this section by issuance of a notice of penalty. A civil penalty may be imposed for each day the unsafe building condition or fire hazard continues beyond the tenth (10th) day following issuance of the civil penalty. The notice of penalty shall be provided in the manner as described in ~~109.3.8.6~~ 109.4.8.6.

~~109.3.8.6~~ **109.4.8.6 Serving notice.** Any civil penalty imposed under this section shall become due and payable when the notice of penalty is served upon the person incurring the penalty. The notice of penalty shall be served personally or shall be served by depositing with the United States Postal Service addressed to the owner at the last known address as shown in the Benton County Assessors records sent certified mail return-receipt requested or by other means that allows assigned receipt via the United States Postal Service. The notice of penalty shall include:

a) A reference to the particular provision or law violated;
b) A statement of the matters asserted or charged;
c) A statement of the amount of the penalty or penalties imposed;
d) A statement of the owners right to appeal the penalty; and,
e) A statement that if the penalty is not paid within the time required in the penalty and any costs of service and recording fees will be recorded in the City Lien Docket and shall become a lien on the owners property.

~~109.3.8.7~~ **109.4.8.7 Posting notice.** If the notice of penalty is returned to the City without service upon the named person the fire chief shall post a notice of penalty on the premises where the violation has occurred. The notice shall be posted so as to be visible from the public right of way and shall be delivered to a person if any occupying the premises. The posted notice shall be affixed to the premises and shall also indicate that tampering or removal of the notice shall constitute a misdemeanor.

~~109.3.8.8~~ **109.4.8.8 Time limitations for filing and hearing and appeal.** The person to whom the notice of penalty is issued shall have ten (10) days from the date of the notice in which to

appeal the penalty before the Municipal Judge, after which time the notice of penalty becomes a final order. In no case shall an appeal be held more than forty-five (45) days from the date of the personal service or mailing of the notice of penalty. The appeal shall be as provided for in ~~109.3.8.8, 109.3.8.9, and 109.3.8.10~~ 109.4.8.8, 109.4.8.9, 109.4.8.10.

~~109.3.8.9~~ **109.4.8.9 Requirements for filing appeal.** The appeal shall be in writing and signed by the owner or attorney for the owner. The appeal shall state the grounds of the appeal. The appeal shall be accompanied by a deposit in the amount of the civil penalty assessed and an appeal fee of $50.00. The appeal shall be filed with the Municipal Court and served upon the City Attorney. Failure to comply with these provisions shall result in the dismissal of the appeal.

~~109.3.8.10~~ **109.4.10 Rules of conduct for hearing and final order.** The Municipal Judge shall develop any rules or regulations that may be necessary for the proper conduct of the appeal. The only issue to be decided by the Municipal Judge is determination of whether or not the condition of the property was as alleged in the notice of penalty. If the Judge finds that the alleged condition existed at the time and date specified on the notice of penalty the Municipal Judge shall issue an order affirming the penalty. The order shall contain a provision for court costs to be paid by the violator in the amount of $100.00. If the Judge finds that the condition alleged in the notice of penalty did not exist at the time and date specified on the notice, the Municipal Judge shall void the notice of penalty. The order voiding the notice of penalty shall provide for return of the deposit including the appeal fee. The Judges order is final and not subject to appeal. It shall not be a defense that the owner did not receive the notice of penalty if mailed to the owners address listed in the then current Benton County Assessors records.

~~109.3.8.11~~ **109.4.11 Failure to pay penalty.** Unless the amount of penalty imposed under this section is paid within ten (10) days after notice of penalty or the order becomes final by operation of law or after appeal, the order shall constitute a lien on the owner's property and shall be recorded in the City Lien Docket. Where the service has been made by certified mail or other means providing a receipt, the returned receipt shall be attached to and made a part of the order recorded. The penalty provided in the order, and added costs so recorded become a lien upon the real property. That lien shall have priority over all other liens and encumbrances of any character. The lien shall accrue interest at the rate applicable for municipal assessment liens from the date of docketing until clearance. The lien may be foreclosed on and the property sold as may be necessary to discharge the lien in the manner specified in ORS 223.505 through 223.595.

~~109.3.8.12~~ **109.4.12 Release from lien.** Any lien for a civil penalty may be released when the full amount determined to be due has been paid to the City; and the owner or person making such payment shall receive a receipt therefore, stating that the full amount of penalties, interest, recording fees, and service costs have been paid and that the lien is thereby released and the record of the lien satisfied.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996; Ord. 92-40 66, 1992; Ord. 91-24 2, 1991; Ord. 90-34 7, 1990)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.090 Stop work order

1) OFC Section 111 is adopted by this Chapter, and amended by adding Section 111.1, Section 111.2, Section 111.3, and Section 111.4 as follows:

111.1 Order. Whenever the fire code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the fire code official is authorized to issue a stop work order.

111.2 Issuance. A stop work order shall be in writing and shall be given to the owner of the property, to the owner's agent, or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.

111.3 Emergencies. Where an emergency exists, the fire code official shall not be required to give a written notice prior to stopping the work.

111.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation nor unsafe condition shall be liable to a fine of not less than $100.00, or more than $500.00.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.100 Cost recovery procedures

1) OFC Section ~~112~~ 113 is amended by adding Section ~~112.6~~ 113.6, Section ~~112.6.1~~ 113.6.1, Section ~~112.6.2~~ 113.6.2, Section ~~112.6.3~~ 113.6.3, Section ~~112.6.4~~ 113.6.4, and Section ~~112.6.5~~ 113.6.5, as follows:

~~112.1~~ **113.6 Cost Recovery Procedures.** Whenever the fire chief has taken action to abate or cleanup a hazardous condition under the OFC Section 109, the owner of the property shall be liable for the cost of cleanup or, abatement of the condition in the manner provided in this Section.

~~112.2~~ **113.6.1 Costs.** The fire chief shall keep an accurate record of the expenses incurred by the City in abating or cleaning up the condition. Costs shall include, but not be limited to actual labor cost of City personnel, including workers compensation benefits and fringe benefits, cost of equipment operation, cost of materials obtained directly by the City, and cost of any contract labor and materials; plus administrative overhead in the amount of 20 percent of the sum of the foregoing costs.

~~112.3~~ **113.6.2 Assessment of costs.** The fire chief shall either post on the property, or serve on the owner or occupant of the property, and mail by certified mail to the owner of the property at the last known address as shown on the County tax records, a notice stating:

1) The fire chiefs total costs of abatement, under Section 113.6.1 herein;
2) That the costs as indicated will be assessed to and become a lien against the property unless paid within 30 days from the date of the notice;
3) That, if the owner or person in charge of the property objects to the costs of abatement, he or she may file a written notice of objection with the City Manager not later than 10 days after the date of the notice.

~~112.4~~ **113.6.3 Hearing.** Upon receipt of written notice of objection within 10 days after the date of the notice, the City Manager shall appoint a hearings officer to hear and determine the objections to the costs to be assessed. The hearing shall be held within 30 days after the date of the notice.

~~112.5~~ **113.6.4 Lien.** If the costs of the abatement are not paid within 30 days after the date of the notice an assessment of the costs as stated in the notice or as determined by the hearings officer shall there upon be entered in the docket of City liens. Upon such entry being made, the assessment shall constitute a lien upon the property upon which the condition was cleaned up or abated.

~~112.6~~ **113.6.5 Enforcement.** The lien shall be enforced in the same manner as liens for street improvements are enforced and shall bear interest at the rate of 10 percent per annum; such interest shall commence to run from the date of the entry of the lien in the lien docket. That lien herein shall have priority over all other liens and encumbrances of any character.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996; Ord. 92-40 9, 1992; Ord. 89-54 10, 1989)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.110 Definitions

1) OFC Section 202 adopted by this Chapter is amended to add the following:
"1 City – City of Corvallis"

(Ord. 2004-23 1 and 2, 11/01/2004, 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.120 Waste Material

1) OFC Section 304.1.1 as adopted by this Chapter is amended to read in its entirety as Follows:

304.1.1 Waste material. Accumulation of waste paper, wood, hay, straw, weeds, litter, or combustible or flammable waste or rubbish of any type shall not be permitted to remain on a roof or in any court, yard, vacant lot, alley, parking lot, open space, or beneath a grandstand, bleacher, pier, wharf, or other similar structure. If a condition described in this Section has not been eliminated within the time limit for compliance set forth in an order or notice to abate the condition and presents a fire hazard, the fire chief may cleanup or abate the condition. The owner shall be liable for the cost of cleanup or abatement as provided in Section ~~109.3.7~~ 109.4.7. Nothing in this subsection shall relieve the owner of responsibility to take action to abate the condition.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996; Ord. 92-40 22, 1992; Ord. 89-54 20, 1989)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.130 Combustible Vegetation

1) OFC Section 304.1.2 as adopted by this Chapter is amended to add Section 304.1.2.1 as follows:

304.1.2.1 Combustible vegetation on city parcels. The person owning, possessing, or having the care or custody of any lot or parcel of land shall cut, as close to the ground as is reasonably practical, and shall remove or destroy all brush, grass, weeds, thistles, vines, and other vegetation growing at a height of 10" or more between the months of June 1 and September 30 of each year, or when determined by the fire chief to be a fire hazard. When the fire chief determines that total removal of growth is impractical due to size or environmental factors, approved fuel breaks shall be established. Minimum width of a fuel break adjacent to public sidewalks, streets, bikeways, and trails shall be 10 feet. Minimum width of fuel breaks along property lines and around combustible structures shall be 25 feet unless determined to be impractical by the fire chief.

> EXCEPTION: Vegetation along drainage ways in wildland and wildflower areas under public ownership, and on private lands designated as protected under federal or state legislation, can exceed the 10" limitation so long as it is not determined to be a fire hazard by the fire chief.
>
> Parcels in the urban wildland interface areas shall also be subject to OFC Section 304.1.2.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.140 Explosives and Fireworks

1) OFC Chapter ~~33~~ 56 as adopted by this Chapter is amended to add Sections ~~3301.2~~ 5601.2 and ~~3301.7~~ 5601.7 as follows:

~~3301.2~~ **5601.2 Permits and regulations.** Permits shall be required as set forth in Section 105.6 and regulated in accordance with this section.

~~3301.2.1~~ **5601.2.1 General Fireworks** wholesale sales and storage of pyrotechnics retail sales and storage of pyrotechnics use and handling of pyrotechnical special effects material use in motion pictures, television, and theatrical and group entertainment productions shall be in accordance with this article and OAR Chapter 837, Division 12.

~~3301.2.2~~ **5601.2.2 Requirements.** All persons, municipalities, associations, organizations, or groups of individuals desiring to sell, discharge, fire off, explode, or display fireworks for a public display shall meet the following requirements:

1) Obtain a permit from the office of the State Fire Marshal, and comply with the applicable requirements of OAR 837, Div 12.
2) Obtain a permit from the fire chief, and comply with all reasonable rules and regulations as adopted and enforced by the fire chief for the granting of a permit for supervised public displays or sales of fireworks or items described in OAR 837, Div 12.
3) Provide a bond in the sum of not less than $10,000 conditioned on the compliance of the provisions in this article and the laws, rules, and regulations of the State Fire Marshal for all public displays.
4) Furnish proof of financial responsibility to satisfy the claims for damage to property or personal injuries arising out of any act or omission of the part of such person, firm, or corporation or any agent or employee associated with conduct of a public display in such amount, character and form as the fire chief determines to be necessary for the protection of the public.
5) Every public display held within the boundaries of the jurisdiction shall be under the supervision of the Chiefs of the Police and Fire Departments and shall be of such character and so located, discharged, or fired as in the opinion of the Chief of the Fire Department, after proper inspection shall not be hazardous to property or endanger any person.
6) No permit shall be issued under the provisions of this Article to a nonresident, person, firm, or corporation for the conduct of a pyrotechnic display in this jurisdiction until such person, firm, or corporation shall have appointed in writing a member of the Oregon State Bar whose major office is located in Corvallis upon whom all process in any action or proceedings against her or him maybe served.
7) All persons, municipalities, associations, organizations, or groups of individuals desiring to sell articles described in ORS 480.127 shall obtain a permit from the fire chief and comply with all reasonable rules and regulations ad adopted and enforced by the fire chief for the granting of permits for sale of such items.
8) The fire chief may revoke permits for public display, display or sale of fireworks and other items described under the provisions of ORS 480.127 when in the fire chiefs

opinion, public display, display or sale of fireworks or items is not in compliance with the applicable rules and regulations governing such sale or display or is in violation of the Oregon Revised Statutes, and Administrative Rules. Permit fees shall not be refunded in the event such permits are revoked.

9) The City shall levy and collect from each person, organization, or entity sponsoring, owning, or operating an approved stand for the sale of exempt fireworks a fee in the amount of $100.00 for each booth, stand, or other location where exempt fireworks are to be sold. The fee shall be paid to the City prior to and as a condition for the approval of such stand by the fire chief. The funds collected in accordance with this subsection may be used for community fireworks displays, educational, programs for fireworks safety, and the administration of this fee. The fee imposed herein shall be levied and collected on all stands now approved or to be approved by the fire chief for sales of exempt fireworks commencing in1989.

~~3301.7~~ 5601.7 Seizure

~~3301.7.1~~ 5601.7.1 General. The fire chief shall seize, take, removed, or cause to be removed at the expense of the owner all stocks of fireworks or pyrotechnics special effects material offered to expose for sale, stored, or held in violation of this Article.

~~3301.7.2~~ 5601.7.2 Post seizure notices. After items or materials which are prohibited by the terms herein have been taken into custody by the fire chief notice must be provided to the person who was in possession of the contraband. The notice must describe the nature and number of the items seized and the rights the person has to a hearing described further herein.

~~3301.7.3~~ 5601.7.3 Requests for hearing. A person claiming ownership of the contraband must request a hearing within five days after receipt of the notice. The request may be made in person or in writing and the failure to appear in person or deliver a letter within five days after receipt of the notice by the person claiming possession, shall act as a waiver of the right to a hearing. The request for a hearing must be delivered to the fire chief within the time specified above.

~~3301.7.4~~ 5601.7.4 Hearing. Upon request of the person claiming rights of possession of the contraband a hearing shall be held before a hearings officer appointed by the City Manager. The hearing shall be set and conducted within 48 hours of the receipt of the request, holidays, and Saturdays and Sundays not to be included. The hearing can be set for a later date if the person claiming possession so requests. At the hearing the person claiming possession may contest whether the materials or items seized constitute contraband prohibited by the Code of the City.

~~3301.7.5~~ 5601.7.5 Findings of hearing officer. If the hearings officer finds that the action of the fire chief was valid the hearings officer shall order that the contraband shall be destroyed. If the hearings officer finds that the action of the fire chief in taking the contraband into custody was improper, the hearings officer shall order the material released to the person claiming possession. If the owner does not appear at the scheduled hearing the hearings officer shall deem that the request has been withdrawn and order that the contraband shall be destroyed.

~~3301.8~~ **5601.7.6 Manufacturing.** The manufacturing of fireworks is prohibited except under special permit as required by local and state regulations. See Section 105.6.15

~~3301.9~~ **5601.7.7 Pyrotechnic special effects material.** A permit is required to manufacture, compound, store, or use pyrotechnic special effects material. A permit for use shall be granted only to a pyrotechnic operator. See Section 105.6.37

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996; Ord. 93-40 33, 1992; Ord. 89-54 28, 1989)
(98-40 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.150 Cleanup or abatement of hazardous materials; liability for costs.

1) OFC Section ~~2701~~ 5001 is amended to add Sections ~~2701.7~~ 5001.7, 5001.7.1, 5001.7.2, 5001.7.3, and 5001.7.4 as follows:

~~2701.7~~ **5001.7 Responsibility for cleanup and liability for costs**

~~2701.7.1~~ **5001.7.1 General.** The fire chief is authorized to cleanup or abate the effects of any hazardous material deposited upon or into property or facilities of the City and any person or persons who caused such deposit shall be liable for the payment of all costs incurred by the City as a result of such cleanup or abatement activity. The remedy provided by this Section shall be in addition to any other remedies provided by law.

~~2701.7.2~~ **5001.7.2 Definitions of hazardous materials for purposes of this section.** For purposes of this Section, hazardous materials shall be defined as any substances or materials in a quantity or form which in the determination of the fire chief or authorized representative, poses an unreasonable and imminent risk to the life, health, or safety of persons or property or to the ecological balance of the environment, and shall include, but not be limited to, such substances as explosives, radioactive materials, petroleum or petroleum products or gases, poisons, etiologic (biologic) agents, flammables, and corrosives.

~~2701.7.3~~ **5001.7.3 Description of costs**. For purposes of this Section costs incurred by the City shall include, but shall not necessarily be limited to, the following actual labor costs of City personnel, including workers' compensation benefits, fringe benefits, administrative overhead, cost of equipment operation, cost of materials obtained directly by the City, and cost of any contract labor and materials.

~~2701.7.4~~ **5001.7.4 Limitation.** The authority to recover costs under this Section shall not include actual fire suppression services which are normally or usually provided by the Fire Department.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996; Ord. 92-40 61, 1992; Ord. 89-54 46, 1989)

(98-40 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.160 Establishment of limits in which storage of liquefied petroleum gases is to be restricted.

1) OFC Section ~~3804~~ 6104 as adopted by this Chapter is amended to add Section ~~3804.2.1~~ 6104.2.1 as follows:

   ~~3804.2.1~~ **6104.2.1 LPG Storage Limits.** The limits as referenced in OFC Section ~~3804.2~~ 6104.2 apply to all properties in the city except for those sites in General Industrial and Intensive Industrial districts which will be reviewed for quantities in excess of 2000 gallons of liquefied petroleum gas. Upon completion of the Plan Compatibility Review procedures of the Land Development Code, approval for storage of such additional quantities may be granted by the fire chief.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996; Ord. 92-40 4, 1992; Ord. 89-54 5, 1989)
(98-40 & 41, Repealed Replaced, 11/02/1998)

CMC Section 7.08.170 Establishment of limits in which storage of flammable or combustible liquids in outside above ground tanks is prohibited.

1) OFC Chapter ~~34~~ 57 as adopted by this Chapter is amended to add Sections ~~3404.2.9.5.1~~ 5704.2.9.6.1.7 and ~~3406.2.4.4.1~~ 5706.2.4.4.1 as follows:

~~3404.2.9.5.1~~ **5704.2.9.6.1.7 Locations where above ground tanks are prohibited.** Storage of Class I and II liquids in above ground tanks outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited. The limits referred to above, in which storage of Class I and II liquids in outside above ground tanks is prohibited, include all areas of the City except those sites in General Industrial and Intensive Industrial districts which may hereafter be given specific approval for such use by the fire chief after review through the Plan Compatibility Review procedure of the Land Development Code

~~3406.2.4.4.1~~ **5706.2.4.4.1 General industrial and intensive industrial districts.** The limits referred to in OFC Section ~~3406.2.4.4~~ 5706.2.4.4 in which storage of Class I and II liquids in outside above ground tanks is prohibited, include all areas of the City except those sites in General Industrial and Intensive Industrial districts which are hereafter given specific approval for such use by the fire chief after review through the Plan Compatibility Review procedure of the Land Development Code.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996; Ord. 89-54 4, 1989)

CMC Section 7.08.180 Non-liability of the City for damage.

1) OFC Section 103.4 as adopted by this Chapter is amended to add Section 103.4.1 as follows:

103.4.1 Non-liability of the City for damage. This Chapter shall not be construed to relieve from or lessen the responsibility of any person for damage to anyone injured or damaged by any hazards therein, nor shall the City or any agent thereof be held as assuming any such liability by reason of inspection authorized here under or by issuing a certificate of inspection or for failure to inspect or for failure to find a defect.

(Ord. 2004-23 1 and 2, 11/01/2004; 98-40 & 41, Repealed Replaced, 11/02/1998; Ord. 96-10 1, 1996; Ord. 98-54 48, 1989)

CMC Section 7.08.190 Defined and Expanded Extinguishment Authority.

1) OFC Section 307.3 as adopted by this Chapter is amended to add Section 307.3.1 as follows:

307.3.1 Expanded extinguishment authority. In addition to those controlled fire activities identified within the fire code definition of open burning and recreational fires, the fire code official is authorized to order cessation of those burning activities which generate offensive or objectionable smoke or odor emissions, including those activities regulated by Section 308 - Open Flames. Examples of controlled smoke/odor activities include, but are not limited to: use of barbecue grill or pit, chimney, open flame cooking device, incinerator, outdoor fireplace, and similar warming fires.

(Ord. 2008-01 1, 01/07/2008)

CMC Section 7.08.200 Aerial Apparatus Access

1) OFC Section D105 as adopted by this Chapter is amended to add Sections D105.1, D105.1.1, D105.4, D105.5, and D105.5.1 as follows:

D105.1 Where required. Building or portions of buildings or facilities exceeding 30 feet in height above the lowest level of fire department vehicle access shall be provided with approved

fire apparatus access roads capable of accommodating fire department aerial apparatus. Overhead utility and power lines shall not be located within the aerial fire apparatus access roadway.

D105.1.1 Building height definition. For the purposes of Section D105.1 building height is measured from the lowest level of approved fire department vehicle access to the highest peak on the roof line.

D105.2 Width. Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 feet, exclusive of shoulders, in the immediate vicinity of the building or portion thereof.

D105.3 Proximity to Building. At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the Fire Marshal.

D105.4 Obstructions. Overhead utility and power lines shall not be located over aerial fire apparatus access road or between the aerial fire apparatus road and the building. Other obstructions shall be permitted to be placed with the approval of the Fire Marshal.

D105.5 Modifications. For residential structures up to and including 40 feet in height as defined by Appendix D105.1.1, fire aerial apparatus access roads and specifications are allowed to be modified by the Fire Marshal where the following condition applies:

D105.5.1 Automatic fire sprinkler system. A building has been equipped with an automatic fire sprinkler system that was not prescriptively required by the 2014 OFC, OSSC, or ORSC. The system shall be installed in accordance with the provisions of NFPA 13, NFPA 13R, or NFPA 13D.

Intent:

The intent of this section is to ensure that minimum fire protection can be provided to new or modified structures exceeding 30 feet and up to 4 stories in height.

The D105.1 and D105.1.1 amendments are legacy codes from the 2010 OFC. CFD has used Appendix D in this capacity to ensure aerial access since the codes were adopted by the State in 2010. The amendments serve as a continuation of the locally adopted Departmental Operating Guidelines (DOG) that are crafted to match the capacity of the current Corvallis Fire Department resources with the rapidly changing needs of the community.

Historically the Corvallis Land Development Code has been in conflict with the Fire Department access provisions within Appendix D of the OFC; this CMC amendment offers an Alternative Method of compliance (AM&M) when the prescriptive requirements of the OFC cannot be met due to existing infrastructure or site design parameters.

Fire Prevention Division
2014 Corvallis Fire Code Amendments

CMC Section 8.03.500 Fire permit fees.

Section 8.03.500.010 Fire permits and fees.
The fire permits and fees identified in this section of the Municipal Code are committed to fund the operations of the Fire Department. The fire permit fees shall be no less than the amount listed in this Chapter. The Fire Chief may increase fire permit fees through an annual adjustment of Departmental Operating Guideline 1.2.4 to reflect the actual costs of administration of the permitting and inspection process. The permits and fees applicable under Chapter 8.03 shall be:

1) Aerosol Products, Level 2 or 3 > 500 lbs. - $80
2) Ambulance Fees for Transportation - Fees shall be reviewed annually and set by Council motion.
3) Amusement Buildings - $80
4) Aviation Facilities, Group H or S used for repair or fuel-servicing - $80
5) Battery Systems, Stationary Lead-Acid > 50 gal. - $80
6) Carnivals and Fairs - $80
7) Cellulose Nitrate Film, in Group A Occupancies - $80
8) Combustible Dust-Producing Operations - $80
9) Combustible Fiber Storage or Handling > 100 cf (Chapter 29) - $80
10) Combustible Storage > 2,500 cf (Chapter 3) - $80
11) Compressed Gas (CFC Table 105.6.9) - $80
12) Covered Mall Buildings; Use for Displays, Gas-fueled Equipment, Open Flame or Flame-Producing Equipment - $80
13) Cryogenic Fluids (CFC Table 105.6.11) - $80
14) Dry Cleaning Plants - $80
15) Exhibits/Trade Shows - $80
16) Explosives, Manufacture, Storage, Handling, Sale or Use - $80
17) Fire Hydrants and Valves - $80
18) Fireworks, agricultural - $80
19) Fireworks
    a. Public display - $80
    b. Sales - $40
20) Fireworks, wholesale - $80
21) Flammable/Combustible Liquids (Chapter 34) - $80
    a. Storage or Use of Class I > 5 gal inside or > 10 gal outside - $80
    b. Storage, Handling or Use of Class II or III-A > 25 gal inside or 60 gal outside (except fuel oil) - $80
    c. Removal of Class I or II liquids from underground tanks (other than approved, onsite pumps) - $80
    d. Operation of tank vehicles, equipment, plants, fuel-dispensing stations, refineries, distilleries - $80
    e. Place tanks (above- or below-ground) temporarily out of service
    f. Change of contents in tank - $80
    g. Manufacture, process, blend or refine flammable/combustible liquids - $80
    h. Fuel dispensing of any kind in any location - $80
22) Floor Finishing > 350 sf using Class I or II Liquids - $80

23) Fruit/Crop Ripening - $80
24) Fumigation/Thermal Insecticidal Fogging (commercial) - $80
25) Hazardous materials (CFC Table 105.6.21) - $80
26) Hazardous Production Materials, use or handling - $80
27) High-Piled Combustible Storage, > 500 sf (Chapter 23) - $80
28) Hot Work Operations (Chapter 26) - $80
29) Industrial Ovens (Chapter 21) - $80
30) Institutions - $80
    a. Congregate Residences/Greek Housing - $100
31) Lumber Yards/Woodworking Plants > 100,000 bd ft - $80
32) Liquid- or Gas-Fueled Vehicles/Equipment in Assembly Buildings - $80
33) LPG Storage & Use - $80
34) Magnesium Working - $80
35) Open Burning (does not include recreational fires) - $80
36) Open Flames and Torches - $80
37) Open Flames and Candles in Assembly, Dining, or Drinking areas - $20 / $80
38) Organic Coatings, Manufacture > 1 gal per day - $80
39) Places of Assembly - $80
40) Private Fire Hydrants, Use or Removal – Notify
41) Pyrotechnic Special Effects Materials - $80
42) Pyroxylin Plastics, storage or handling > 25 lbs - $80
43) Refrigeration Equipment (Chapter 6) - $80
44) Repair Garages/Motor Fuel-Dispensing - $80
45) Rooftop Heliports - $80
46) Spraying/Dipping Operations (Chapter 15) - $80
47) Tire Storage (Scrap) > 2,500 cf - $80
48) Tents > 200 sf, Canopies > 400 sf, Temporary Membrane Structures - $80
49) Tire Rebuilding Plants - $80
50) Waste Handling Facilities - $80
51) Welding/Cutting Operation (in any occupancy) - $80
52) Wood Products > 200 cf - $80
53) Auto Fire Extinguishing System Installation or Modification - $80
54) Compressed Gas System Installation, Repair, Removal or Modification (CFC Table 105.6.9) - $80
55) Fire Alarm Installation or Modification - $80
56) Fire Pump Installation or Modification - $80
57) Flammable/Combustible Liquids, Installation, Repair or Modification - $80
58) Haz. Materials Installation, Repair or Modification (CFC Table 105.6.21) - $80
59) Industrial Oven Installation - $80
60) LP Gas Installation or Modification - $80
61) Private Fire Hydrant Installation or Modification - $80
62) Spray Booth/Room, Dip Tank Installation or Modification - $80
63) Standpipe Installation, Modification or Removal - $80
64) Tents > 200 sf, Canopies > 400 sf, Temporary Membrane Structures - $80

* Base Fee. If processing/inspection(s) involve more than two hours of staff time or multiple field inspections, that time shall be added to the base fee and charged at an additional ~~$40.00~~ $75.00 per hour or fraction thereof.

(Ord. 2011-06 § 1, 04/18/2011; 2006-27 § 1, 11/20/2006; Ord. 98-27 § 2, 1998)

ADMINISTRATIVE SERVICES COMMITTEE
MINUTES
July 9, 2014

Present	Staff
Councilor Joel Hirsch, Chair	Tom Nelson, Economic Development Manager
Councilor Biff Traber	Amy Jauron, Economic Development Officer
Councilor Hal Brauner	Carrie Mullens, City Manager's Office

Visitors
Chris Heuchert, Block 15 Brewing Company General Manager
Elizabeth French, Economic Development Commission member
Kent Daniels
Leonard Higgins

SUMMARY OF DISCUSSION

	Agenda Item	Info Only	Held for Further Review	Recommendations
I.	Enterprise Zone Application: Block 15 Brewing Company, Inc.			Approve the Enterprise Zone application for Block 15 Brewing Company, Inc.
II.	Council Policy Review and Recommendation: 96-6.03, "Economic Development Policies"			Amend Council Policy 96-6.03, "Economic Development Policies" as recommended by staff and amended to continue the two-year review period
III.	Other Business	Yes		

Chair Hirsch called the meeting to order at 3:30 pm.

CONTENT OF DISCUSSION

I. Enterprise Zone Application: Block 15 Brewing Company, Inc.

Mr. Nelson reported that the Block 15 Enterprise Zone application was reviewed and recommended for approval by the Enterprise Zone Committee and Benton County Assessor's Office staff. Staff request Council approval.

Mr. Heuchert said the application is to build a production brewing facility and relocate the Block 15 bakery operations from the downtown restaurant prep kitchen. Ancillary services would include a taproom with packaged goods (cans, bottles, kegs) for distribution throughout the State and to obtain a greater presence in Corvallis.

In response to Councilor Brauner's inquiry about anticipated new employees, Mr. Heuchert explained that the employee definition on the application is for new full-time employees only. Block 15 anticipates eight FTE at the new facility, including new employees and by moving some current employees to the new facility.

Councilor Brauner noted that the application meets the local food production/processing and green goals.

Councilor Traber said Block 15's current business practices fit many of the enterprise zone requirements.

Chair Hirsch referred to the abatement goals of the application and encouraged Block 15 to incorporate into the business some of the items that were not checked, such as conducting employee satisfaction surveys followed by action and implementation plans.

Mr. Heuchert said their goal is to have controlled growth to maintain quality. He noted that he did not check the box for energy audits because, although they have completed energy audits in the past, it is not done on a regular basis. Block 15 measures and analyzes energy use and waste and uses the information to change practices as needed.

The Committee unanimously recommended Council approve the enterprise zone application for Block 15 Brewing Company, Inc.

II. Council Policy Review and Recommendation: 96-6.03, "Economic Development Policies"

Mr. Nelson said the Policy was last reviewed in December 2010. The Economic Development Commission (EDC) recently reviewed the Policy and recommended amendments. Staff recommended formatting changes for consistency. Mr. Nelson announced that the Oregon Business Plan Steering Committee (he is a member) is touring every region this summer and conducting forums as noted on the South Valley Region handout (Attachment 1). The goal is to observe how Business Oregon's goals are reflected in economic development strategies in each region.

Visitors' Propositions

Leonard Higgins read from his prepared testimony (Attachment 2) in opposition to amending the review to a four-year cycle. He clarified for Chair Hirsch that he supports a two-year review of the Policy.

Chair Hirsch noted that stating a review period in a Council Policy does not limit Council to that review period. Council can review any policy and any time.

Kent Daniels said Councilor Sorte recently described the economic development goals as mushy. Mr. Daniels admitted that he is not familiar with the goals and objections of EDC. He supports traded-sector and the Regional Accelerator and Innovation Network (RAIN) program. The Planning Commissioners are appointed by and work for Council. EDC members are appointed by the Mayor, ratified by Council, and report to Council. Mr. Daniels desires improvement in how advisory boards work together. He provided several examples:

- Without any prior discussion with the Planning Commission (PC), the EDC proposed to Council eliminating hearings from PC's work. The Planning Commission took offense and felt the EDC was being critical of their work.

- The proposal to eliminate oversight and development work completed by the South Corvallis Plan in regards to industrial land had a similar offensive impact with residents in South Corvallis. Former Councilor and Planning Commissioner Tony Howell sent a lengthy letter to Council in opposition of the proposal. If the EDC had worked with South Corvallis residents prior to their proposal to Council, the outcome may have been different.
- An unfortunate incident between EDC and the Public Participation Task Force (PPTF) occurred over a draft PPTF document. EDC felt PPTF was being critical of their work, which was not the intent of PPTF. During the incidence a member of PPTF felt verbally attacked by an EDC member.

Mr. Daniels expressed concern in how the hotel/parking garage project was developed. He supports a hotel in downtown and is not opposed to City involvement; however, when a proposal is presented as a *fait accompli*, it causes people who do not agree with the project to oppose Council publicly. A more public process that included existing advisory groups and members of the community may have resulted in a proposal that worked for the City and developers. He opined that the controversy surrounding this development could have been avoided. The end result is that five Councilors were castigated in the local newspaper for their vote. The City needs to do what it can to avoid these types of situations that are developing between parts of the community and/or advisory boards to improve the collaborative atmosphere.

In response to the hotel/parking garage project, Chair Hirsch explained that during an executive session Council was presented with a potential proposal. Council said they were not interested. A second potential proposal was brought back during another executive session and Council said they were not interested. A third potential proposal came forward during an executive session and Council agreed to consider it and request public input. The newspaper mischaracterized the process and citizens jumped to the assumption that Councilors were being nefarious, dishonest, and secret. He said it is hard not to be angry when citizens characterize Council's action as devious and dishonest.

Chair Hirsch acknowledged that the exchange between PPTF and EDC was completely inappropriate. He assumed that it was most likely citizens acting on their own and not representing boards and commissions. He opined that Mr. Daniels' comments about the hotel/parking structure project were mischaracterized and inappropriate.

Mr. Daniels responded that the City was proposing something in the public sector. When PPTF began their work, *The Process is the Decision* article was adopted by PPTF and all PPTF recommendations were made on the basis of that article. It states that if there is an issue, project, or problem, the first task is to identify the problem and then obtain input about next steps. The hotel/parking garage project is very similar to what happened with the total maximum daily load (TMDL) project. Something was developed, approved, and presented. *The Process is the Decision* speaks to involving the public at the beginning of a project, not after details have been developed and Council is taking action. Requesting input after agreeing to a project will always result in opposition.

Councilor Brauner said most of these comments have nothing to do with the Economic Development Policies. He agrees that the Policies need to be clear. Councilor Brauner

said TMDL is a public program and not similar to the hotel/parking garage proposal that was brought forward to Council by a private developer for a potential project.

Councilor Traber noted that Mr. Daniels' examples are all related to communication being negative and antagonistic by all parties. He is not clear how policy can address how to trust upfront. There needs to be a way to have civil conversations. The hotel/parking garage proposal was published as *fait accompli* without any questions being asked.

Mr. Daniels announced that he apologized to Chair Hirsch for how he was treated by the audience during the recent Council meeting.

Chair Hirsch referred to written comments submitted by Councilor Hervey (Attachment 3).

Elizabeth French said one of the challenges the City faces is how to work more collaboratively. It was never EDC's intention to disparage the work of PPTF, nor does she believe that it was the intention of PPTF to be critical of EDC work. It is hard to figure out how to have a conversation in a public way before having the conversation. All City volunteers have the best intentions and bring lots of heart and soul to their duties. Her work on EDC has been very rewarding and time consuming. She acknowledged that she was angry when she gave heated testimony to PPTF. Volunteers need to continue to work on the commitment to improving civil discourse and find ways to connect together without duplicating efforts.

Ms. French said the Economic Development Policies were substantially rewritten during the last review, including establishing broad policy initiatives that serve as guidelines. Some of the initiatives were known when the Policy was rewritten and some were not, such as RAIN. She opined that some of Councilor Hervey's recommendations micro-manage the program. Narrowing down focus can sometimes exclude conversations without any intention to do so. She encouraged the Committee to consider whether proposed changes will add value and provide necessary clarification or only reflect the opinion of one or two people.

Ms. French referred to Councilor Hervey's suggestion about amending EDC representation to specify the community-at-large member be selected by candidates provided by the Corvallis Sustainability Coalition (CSC). She said EDC has worked with CSC and their economic development task force in the past. She opined that it is not appropriate to allow a third party organization appoint a member to a City board or commission. The Mayor and Council are always looking for a broad representative group of people with diverse interests and experiences. Including too much detail about who will represent a group does not always result in the best candidates. In choosing EDC members, the current and former Mayors have had strong commitments to appoint people with different experiences operating small and large business, and involving the education community and non-profit sector. She encouraged the Committee to consider whether Councilor Hervey's suggestion about the representatives of EDC is positive or has unintended consequences.

Councilor Traber clarified that Councilor Hervey's suggestions about commission make-up relate to changes to Ordinance 2010-28, not the Policy.

Ms. French added that Councilor Hervey comments made her wonder if EDC is doing what Council expects and whether EDC actions should continue, discontinue, or be amended. EDC would appreciate more clarity from the Council as a collective body.

Councilor Traber said a recommendation from PPTF for more disciplined interaction between commissions and standing committees will provide an opportunity for better clarity and additional feedback.

Chair Hirsch agreed that EDC needs to know what Council expects. When other advisory groups have a stated mission toward economic vitality, the EDC should interact with those groups. Council needs to indicate that without micro-managing each commission. Council should provide EDC with a clear mission and coherent guidelines.

Councilor Traber said Council provided guidance through the Policy and endorsement of the Economic Development Strategy. It is appropriate to refresh the Policy at this time.

Councilor Brauner said many items suggested by this Committee and other Councilors are addressed during strategy and work plan reviews. Developing strategies allows a group to move forward as circumstances change. A policy needs to be an overall guiding document with specifics included in the strategy.

Chair Hirsch said not identifying specific items in a policy does not exclude the items. Ms. French agreed and said when the EDC strategy was being developed there was confusion that because some items were not specifically stated, they were not important. That was never the intent. An intensive selection process was used during strategy development to collect data from past efforts of organizations that had been funded under previous policy. It was clear during this process that when specific itemization was included, the results were not good. A careful balance is required to provide enough direction without excluding things that are opportunistically growing. The economy changes so rapidly it would be easy to leave something out.

In response to Chair Hirsch's inquiry, Ms. French said she did not have an opinion about policy review periods. EDC serves on behalf of City Council who can review the Policy, disband EDC, accept or not accept recommendations, etc., at any time. Council has a multitude of items to work on during their two-year term. She questioned whether it is necessary to place a two-year timeline on a broad policy that can be revised at any time.

Mr. Nelson said he works at the pleasure of the City Manager who works at the pleasure of City Council. He conducts business because he is directed to do so. In regards to the hotel/parking garage project, Council requested information and staff brought it forward. Staff will continue to do what Council directs.

Regarding the policy review term, Mr. Nelson explained that the recommendation to four years is comparable and consistent with many other boards and commissions.

Councilor Traber said within the last two months, this Commission completed a sunset review of EDC. He suggested that the EDC sunset review and Policy review be coordinated together.

Mr. Nelson responded to several statements from Councilor Hervey's testimony (Attachment 3):

- It is assumed that the reference to "moderate growth" in the mission statement was inserted due to the limiting nature; e.g., Corvallis does not want rapid growth.
- Under goals (a), Councilor Hervey refers to increasing the supply of family-wage jobs and expanding the property tax base. A highlight of traded-sector is that family-wage jobs tend to create the need for lower wage jobs. This will naturally occur if the focus is on traded-sector jobs.
- Regarding 6.03.067, Regulatory System, the Oregon Economic Development Association (OEDA) has a legislative committee and lobbies for economic development issues. Mr. Nelson serves on the OEDA Government Affairs Committee and Ms. Jauron serves on the Corvallis Chamber Government Affairs Committee.
- In relation to economic development services, there is an ongoing nationwide debate about whether to focus on business clusters. Smaller communities do not want to limit themselves to smaller clusters or sectors. Corvallis must be able to address retention/expansion development of any sector that meets the economic development strategy filtered by the Prosperity That Fits guidelines.
- Regarding supporting documents, the EDC recommended noting the Council endorsed Economic Development Strategy and Council adopted Ordinance in the Policy.
- The EDC currently has a mixture of corporate, non-profit, education, small business, and government interest as members. It appears that the Commissioners appointed are from the diverse population as requested by Councilor Hervey. There are twelve representative categories and nine commissioners; some of whom overlap the categories. Additionally, Commissioner Bradford addresses "community value of social and environmental sustainability" via his sustainable farming practices.

Councilor Traber opined that changing the ordinance should be addressed separately.

Councilor Brauner said he interpreted Councilor Hervey's recommendation for the "community-at-large" member to be a representative of the CSC. There are a few boards and commissions that identify appointments based on specific interests. The City obtains a broader, better range of expertise without requiring specific interests. Council ratifies the Mayor's appointments to ensure the City is obtaining representatives from a diverse group. He questions why the community-at-large position would need to be appointed from the CSC and not another local group. He does not support a more narrow appointment list.

Councilor Brauner noted that, other than formatting changes, the recommendations include adding supporting documents and increasing the review period. The PPTF made recommendations regarding boards and commissions reporting to appropriate Council Standing Committees. If the recommendation is adopted, the EDC would make a presentation about their activities for a specific period of time. In that case, it makes sense to lengthen the Policy review period since periodic activity reports are being

presented. He agreed that the Policy review could coincide with the sunset review. Until Council makes a decision about the PPTF recommendations, Councilor Brauner opined that it is reasonable to keep the review period at two-years.

Councilor Traber agreed that waiting until PPTF recommendations are addressed before changing the review period of the Economic Development Policies is appropriate.

Councilor Brauner and Chair Hirsch agreed that the supporting documents should be identified in the Policy, but not included as part of the Policy. Councilor Brauner added that the supporting documents are reviewed separately.

In response to Councilor Hervey's comments about "Policies" versus "Policy" in the title, Councilor Traber noted that section 6.03.06 refers to the nine "policies."

The Committee discussed Councilor Hervey's intent related to suggested language changes for the goals section. They concluded that the suggested change is ambiguous and could be interpreted in different ways.

Regarding Councilor Hervey's comments about attracting tourism, Councilor Traber confirmed that there is a related section in the Comprehensive Plan.

Councilor Brauner said the City chooses various ways to monitor, evaluate, and take an active role in federal and state legislative requirements. Examples are the League of Oregon Cities, Oregon City/County Management Association, and others. The language, as written, does not limit the evaluation to any one resource. Councilor Traber agreed.

In response to Chair Hirsch's inquiry about ordinance language related to EDC membership, Mr. Nelson reiterated that membership includes representatives from two local corporations, two small business owners, OSU, LBCC, Benton County, and a non-profit. The EDC is a good balance of local small and large businesses, and the education community.

Councilor Brauner opined that this is not an ordinance issue. The new Mayor will do a good job of appointing EDC members and Council can monitor those appointments.

Chair Hirsch noted that if a member of the public wants to be part of a specific board or commission, they apply to the Mayor. He understands Councilor Hervey's desire to encourage citizens to apply who have diverse backgrounds.

Councilor Brauner responded that if the appointment language needs to be changed, it should be done through the Mayor's duties. It is not appropriate to change appointment language for one board or commission; however, it can be appropriate that some boards and commissions require expertise representation.

Chair Hirsch inquired whether it is appropriate to request a discussion about the Economic Development Policies and Strategy at an upcoming Council work session to provide EDC with a clear mission of Council expectations.

Councilor Brauner said Council will be discussing PPTF recommendations including review periods, sunset reviews, and policy standards. Council adopted the Economic Development Strategy and the next Council will review that strategy and Action Plan.

Councilor Traber said it is reasonable to have a discussion at a work session to clarify whether the EDC is doing what Council requested; however, it is not as useful to hold that discussion at the end of a Council term as it is in the beginning of a term. The PPTF recommended next steps have a higher priority for work session topics. He suggested it would be more appropriate to discuss EDC during the fourth quarter.

Mr. Daniels said some boards and commissions report directly to Council, others do not report to Council even though they develop goals and objections. The PPTF recommendation was to make reporting an ongoing consistent process. The sunset review is not a good time to discuss recent and/or current activities.

Ms. French noted that the EDC recently changed leadership and presenting an annual report during the fourth quarter would be more appropriate. EDC would expect Council feedback at that time. She agreed that a work session to discuss economic development issues would be beneficial for the new Council and EDC. She also suggested a collaborative session with all boards and commissions following Council goal setting.

The Committee unanimously recommended Council amend Council Policy 96-6.03, "Economic Development Policies," as recommended by staff and amended to continue the two-year review period.

III. Other Business

The July 23, 2014 Administrative Services Committee meeting has been canceled. The next meeting is scheduled for 3:30 pm on Wednesday, August 6 in the Madison Avenue Meeting Room.

The meeting adjourned at 4:51 pm.

Respectfully submitted,

Joel Hirsch, Chair

Attachment 1

REGION: South Valley

Business/Cluster Development

Regional Goal: Active support of regional industry clusters in advanced manufacturing, food processing, software, high technology, wood and construction products, distribution and logistics

Regional Initiatives
- Business retention and expansion
- Regional recruitment
- Regional food consortium

Innovation & Entrepreneurship

Regional Goal: Develop the South Willamette Valley Research Corridor; Support an active entrepreneurial climate and growth of emerging businesses

Regional Initiatives:
RAIN accelerators and mentoring network *
Tech transfer and commercialization efforts and innovation centers, including Signature Research Centers
Regional seed funding and angel investment

Infrastructure:

Regional Goal: Ensure the region has the transportation, industrial land and community infrastructure to support economic growth;

Regional Initiatives:

- Certified industrial sites and land readiness projects
- Rapid rail route selection
- Community infrastructure assessments and projects
- Wetlands permit streamlining
- Downtown revitalization
- Transportation connections to key sites

Talent:

Regional Goal: Strengthen workforce development programs and infrastructure

Regional Initiatives:
- Recruit entrepreneurial, management and technical talent needed to scale companies
(From OED/LWIB forums)
- Support of incumbent worker and OJT programs
- Concierge service for employers connecting workforce & economic programs
- Enhanced vocational, career technical education tied to regional industries

Economic Policy and Regulatory Environment

Regional Goal: Create a business climate that allows businesses to innovate, grow and thrive

Regional Initiatives:
- Business incubation at university facilities
- Regional general permit for wetlands

Mullens, Carrie

From: Day, Emely
Sent: Thursday, July 10, 2014 8:15 AM
To: Mullens, Carrie
Subject: FW: Administrative Services Committee

-----Original Message-----
From: Leonard Higgins [mailto:Leonard.Higgins@
Sent: Wednesday, July 09, 2014 5:31 PM
To: Day, Emely
Subject: Administrative Services Committee

Hi Emely, here's a copy of my comments made at today's ASC meeting.

Thanks,
-Leonard
503-

==========
Administrative Services Committee

Councilors Brauner, Hirsch and Traber

My name is Leonard Higgins? I am here to oppose the suggested change to the Review and Update section for the following reasons:

The proposed 4 year review cycle would cause the Economic Development Policy and corresponding City Council guidance and oversight of Economic Development staff to lag behind changes during the 4 year cycle such as:
- changes in the general economy (economic downturns are happening more frequently than in the past
- turnover in City Councilor positions - a new Councilor joining City Council in the next term would not have input into or review of the policy during the entire two year term they serve
- changes in the guidance documents for Economic Development, such as the 2020 Vision Statement, the Comprehensive Plan, and the Prosperity That Fits Plan may require updates to the Economic Development Policy
- the Pacific Northwest is projected to have very large growth as populations from other states experiencing an increasing number of droughts, wildfires, extreme weather events, and clean water shortages are drawn to the moderate climate, abundant water and high livability index of Oregon and Washington state.

In my opinion, the the proposed edit is going in the wrong direction. I think the City Council will need to be frequently updated and nimble in their guidance of Economic Development Policy as we enter a more volatile period of regional growth and change.

Sent from my iPad

Attachment 3

Input to Administrative Services Committee on their review of
CP 96-6.03 - Economic Development Policies and
Ordinance 2010 – 28
By Richard Hervey, Ward 3 Corvallis City Councilor

Background – As you may be aware, I have been a supporter of our Economic Development Policy since its current origin. You may also be aware that my support has been more narrowly focused that many of my fellow councilors. My goals for economic development in Corvallis have been:

1) To make it possible for current residents wanting to work in Corvallis to do so.
2) To strengthen the following business sectors:
    a. Food Growing, Processing and Storage.
    b. Energy generation
    c. Energy conservation
    d. Local investment by non-accredited investors in local businesses
3) Maintain the value of our sustainable community branding.

Those goals are derived by my understanding of the direction of our economy based upon the impacts of global warming and resource depletion, creating a need to be more food and energy independent locally.
When I first began espousing this viewpoint, it might have been considered counterculture or "Green". Now, major conservative organizations are beginning to make similar calls. Those include the US Department of Defense {http://www.defense.gov/news/newsarticle.aspx?id=121237} and the World Bank {http://www.worldbank.org/en/news/feature/2014/06/23/study-adds-up-benefits-climate-smart-development-lives-jobs-gdp},
{http://documents.worldbank.org/curated/en/2014/06/19703432/climate-smart-development-adding-up-benefits-actions-help-build-prosperity-end-poverty-combat-climate-change-vol-1-2-main-report}

Comments / Amendments to CP 96-6.03 - Economic Development Policies

Title – Why is this policy called "Policies"?

6.03.020 Mission – I am not recommending a change to this policy, as I am certain that the majority of council agrees with the call for "moderate economic growth". I would like to note, however, that property values are likely to rise in the not too distant future as people relocate to our moist, lower risk climate from the south and Midwest. Thus we are likely to achieve moderate economic growth without direct action.

6.03.030a Goals – In general, I support the goal phrase "increase the supply of family-wage jobs and expand the property tax base". My concern is that this can be construed to mean that we would not encourage businesses that do not do both of these, or ones that provide a mix of family wage jobs and lesser jobs. Many of my constituents would be happy to have a job that does not meet the "family-wage job" definition in this policy. Likewise many software companies do not have traditional facilities that significantly expand the property tax base. I recommend amending "a" to read:

> "Provide for a diverse local economy through programs which start, develop, retain, and expand enterprises. Emphasis is to be placed on enterprises which increase the supply of family-wage jobs and expand the property tax base."

6.03.030c Goals – Our definition section defines "goal" (section 6.03.042) as "A statement of intention expressing community values intended to provide a guide for action by the community." I'm not clear that we have a basis for determining that attracting visitors to the Corvallis community is a community value. Do we have 2020 vision statements or comprehensive plan statements to that effect?

6.03.046 Economic Sustainability (definition) – Having taken some time to find a better definition for Economic Sustainability, I have some appreciation for why we settled for this awkwardly worded sentence. However, the inclusion of the phrase "will not diminish the prospects of future persons to enjoy levels of consumption … comparable to those enjoyed by present persons" does not fit for my understanding of any kind of sustainability. I support economic development that works to provide the same quality of life as we currently experience, but reject the idea that to do so requires the very unsustainable current "levels of consumption".
I suggest this alternate definition provided from http://www.wisegeek.org/what-is-economic-sustainability.htm
"Economic sustainability is the term used to identify various strategies that make it possible to use available resources to their best advantage. The idea is to promote the use of those resources in a way that is both efficient and responsible, and likely to provide long-term benefits. In the case of a business operation, it calls for using resources so that the business continues to function over a number of years, while consistently returning a profit."
The proposed definition aligns much better with CP 04-1.08 Organizational Sustainability. I'll provide excerpts from CP 04-1.08 as an attachment.

6.03.067 Regulatory System – I recommend deleting the second sentence. As a practical matter we perform the state level of this monitoring and evaluation via our association with the League of Oregon Cities and follow up through our Legislative Committee. I do not see that the City has the resources to do this monitoring on its own for Federal requirements, or dedicating staff to do active monitoring outside of the LOC framework.

6.03.068 Economic Development Services (section e) – I do not see where Council has provided guidance in this document as to the industry sectors that we are targeting. That may now appear in the ED Strategy prepared by the EDC. A word search of that the ED Strategy did not pull up similar phrases. I would welcome a Council discussion on which targeted sectors we feel recruitment from outside of the local area is appropriate. Failing providing that guidance, I recommend deleting this section.

6.03.070 Sustainability – This section is far from the spirit of CP 04-1.08 Organizational Sustainability as well as my perception of the original 2003 council goal on sustainability and the branding we have done (as in the Airport Enterprise Zone) for being a city that emphasizes sustainable businesses. Rather than debate changes to the section, I recommend deletion. We have dealt with "Economic Sustainability" elsewhere in the policy.

6.03.080 Supporting Documents – I did not anticipate the inclusion of the Economic Development Strategy into this policy by reference, and have not had time to do a thorough re-review of that document. Also, I believe that pushing for an immediate review of that document at this time would not be productive. However, assuming that many of my recommendations are included as revisions to the policy and that Council chooses to provide direction regarding "targeted sectors", I would welcome the EDC reviewing the EDS in light of those changes.

Ordinance 2010 -28

My concern with the ordinance establishing the Economic Development Commission is that in my view it has not provided the diverse set of commissioners we intended when we enacted it. I completely agree with our direction that "Appointments to the Commission should reflect expertise and experience in business, technology, strategic planning and public policy development." However, my perception is that these criteria have resulting in the recruitment of a commission consisting primarily of corporate and corporate like non-profit executives. I believe that we would be better served with more diversity by including members from businesses differing in size and form, more sole proprietors and partners and more technical people. I am not clear how best to incorporate that into the Ordinance, as making such changes are well within the Mayor's purview in the Ordinance is currently written.

Section 1.16.337 Economic Development Commission, item 3)

One way to address my interests in targeted sectors might be to revise item 3) Membership. I am no expert in the technical meanings of the "interests" identified, but taking them at face value, I suggest

1) Replacing General Business with Energy Production / Conservation

2) Replacing Retail with a small business educator (assuming that the Higher Education spot is likely to stay with an OSU representative, I'd like to see a LBCC or some such small business educator on the Commission.){I realize that this to some extent goes against my call for a greater variety in size of businesses represented. So adding the small business educator in addition to the Retail may be appropriate.}

3) Specifying that the community-at-large member be selected from candidates provided by the Corvallis Sustainability Coalition. I believe that the strongly held community value of social and environmental sustainability is not addressed by the current list of the "interests".

Attachment to
Input to Administrative Services Committee on their review of
CP 96-6.03 - Economic Development Policies and
Ordinance 2010 – 28
By Richard Hervey, Ward 3 Corvallis City Councilor

Excerpts from CP 04-1.08 Organizational Sustainability
1.08.030 Goals
1.08.031 Encourage, develop and support connections between environmental quality, economic vitality and social equity.

1.08.043 ' 'Triple bottom line' is a framework for measuring and reporting organizational performance against environmental, economic, and social parameters. The term is used to capture the set of values, issues and processes that organizations must address to minimize harm and create environmental, economic, and social value

1.08.052 Economic sustainability
The City values wise use of public funds and considers the full cost or life-cycle cost implications of its efforts.

1.08.052 Economic sustainability
The City values wise use of public funds and considers the full cost or life-cycle cost implications of its efforts. The organization seeks to enhance economic sustainability through purchasing parameters and guidelines that ensure an analysis of sustainably preferable options occurs with each purchase. Decisions take into consideration the time frame within which any incremental initial costs will be paid back from the benefits achieved by environmental or social investments and the need to maintain a healthy financial situation to ensure continued services to the community.

1.08.050 Policy
The City uses a triple-bottom-line framework to enhance sustainability in all aspects of the organization's activities. City departments, through changes in daily operations, ongoing programs and long-range planning are able to simultaneously have a significant positive impact on the environment, the economic efficiency of municipal government and the social character of the workplace. Departments promote actions which are environmentally and socially beneficial while also being economically intelligent.

Memorandum

CORVALLIS
ENHANCING COMMUNITY LIVABILITY

To: City of Corvallis Administrative Services Committee
From: Tom Nelson, Economic Development Manager
Date: July 2, 2014
RE: Enterprise Zone Application from Block 15 Brewing Company, Inc.

Background:
An Enterprise Zone application was received by the Corvallis / Benton County Economic Development office on June 23, 2014 from Block 15 Brewing Company, Inc. This company is known by most from its restaurant in Downtown Corvallis. The company plans to expand its operations and develop a production facility in Corvallis Industrial Park on Deschutes St. in South Corvallis. A preauthorization meeting was held on July 2, 2014 with staff from the assessor's office, the applicant, and the Enterprise Zone Advisory Committee. The application and sustainability requirements are attached.

The purpose of the meeting was to review and consider recommendation of approval of the application for Enterprise Zone Tax Abatement to assure the applicant could meet the jobs, investment, and sustainability criteria. Staff and the committee were unanimous in their consensus that the applicant could successfully meet the criteria, and recommends approval.

Next Steps:
The process calls for the city of Corvallis to place consideration of approval for the extended tax abatement for 5 years on the agenda of the Administrative Services Committee (ASC) for their screening and recommendation to the full city council. If approved, the matter will be forwarded to the Corvallis City Council, and with their approval, forwarded to the Assessor to include as an agenda item for the standard 3 year exemption approval from the Benton County Board of Commissioners.

Staff Recommendation
Staff recommends approval of the application.

Review and Concur:

James A. Patterson
City Manager

OREGON ENTERPRISE ZONE AUTHORIZATION APPLICATION

• Complete form and submit to the local enterprise zone manager **before** breaking ground or beginning work at the site. • Please type or print neatly.

APPLICANT

Enterprise Zone or Rural Renewal Energy Development Zone (where business firm **and** property will be located): South Corvallis Enterprise Zone		County: Benton	
Name of Business Firm: Block 15 Brewing Company, INC		Telephone Number: (503) 804-8772	
Mailing Address: 300 SW Jefferson Ave	City: Corvallis	State: OR	ZIP Code: 97333
Location of Property (street address if different from above): 3415 SW Deschutes St	City: Corvallis	State: OR	ZIP Code: 97333
Map and Tax Lot Number of Site: 12514bc00600	Contact Person: Chris Heuchert	Title: General Manager	

My firm expects to first claim the standard property tax exemption in the following year(s): 2015

☐ Check here if your firm has or has had another exemption in this enterprise zone. Note the first year of such exemption: _____

☒ Check here that your firm commits to renew this authorization application. Renew this application on or before April 1 every two calendar years, until the tax exemption on qualified property is claimed.

☒ Check here if you are requesting an **extended abatement** of one or two additional years of exemption. This is subject to minimum average annual "compensation" for employees and written agreement with local zone sponsor. Sponsor may request additional requirements.

Zone Manager Use Only (after written agreement but before authorizing firm):
County Average Annual Wage: $ _____ For Year _____ Total Exemption Period: ☐ 4 or ☐ 5 Consecutive Years (check one)

BUSINESS ELIGIBILITY

Eligible Activity—Check all activities that apply to proposed investment within the enterprise zone:

☒ Manufacturing ☐ Fabrication ☐ Bulk Printing ☐ Shipping ☐ Agricultural Production ☐ Energy Generation
☐ Assembly ☐ Processing ☐ Software Publishing ☐ Storage ☐ Back-office Systems

☐ Other—describe the activities that provide goods, products, or services to other businesses (or to other operations of your firm):

☒ Check here if your business firm does or will engage in **ineligible activities** within the enterprise zone (such as retail sales, health care, professional services, or construction). Describe below (or in an attachment) these activities and their physical separation from "eligible activities" checked above: Ancillary Tap room for retail sales of bottled and draft beer

Special Cases—Check all that apply:

☐ Check here if a **hotel, motel, or destination resort** in an applicable enterprise zone.

☐ Check here if a **retail/financial call center.** Indicate expected percent of customers in local calling area: _____%.

☐ Check here if a **"headquarters" facility.** (Zone sponsor must find that operations are statewide or regional in scope and locally significant.)

☐ Check here if an **electronic commerce investment** in an e-commerce enterprise zone. (This also provides for an income tax credit.)

EMPLOYMENT IN THE ENTERPRISE ZONE (see worksheets on last page)

Do **not** count temporary, seasonal, construction, FTE, part-time jobs (32 hours or less per week), or employees working at ineligible operations.

Existing Employment—My business firm's average employment in the zone over the past 12 months is 0 jobs.

New Employees— • Hiring is expected to begin on (date or month and year): 12/2014
• Hiring is expected to be completed by (month and year): 3/2015
• Estimated total number of new employees to be hired with this investment is: 2

Commitments—By checking all boxes below, you agree to the following commitments as required by law for authorization:

☒ By April 1 of the first year of exemption on the proposed investment in qualified property, I will increase existing employment within the zone by one new employee or by 10 percent, whichever is greater.

☒ My firm will maintain at least the above minimum level as an annual average employment during the exemption period.

☒ When the exemption claim is also filed by April 1 following each calendar year of exemption, total employment in the zone will not have shrunk by 85 percent at one time or by 50 percent twice in a row, compared to any previous year's figure.

☒ My firm will comply with local additional requirements as contained in: (1) a written agreement for an extended agreement, (2) zone sponsor resolution(s) waiving required employment increase, or (3) an **urban** enterprise zone's adopted policy, if applicable.

☒ My firm will verify compliance with these commitments, as requested by the local zone sponsor, the county assessor or their representative, or as directed by state forms or administrative rules.

☒ My firm will enter into a **first-source hiring agreement** before hiring new eligible employees. (This **mandatory** agreement entails an obligation to consider referrals from local job training providers for eligible job openings within the zone during at least the exemption period.)

OREGON EMPLOYMENT OUTSIDE THE ENTERPRISE ZONE

Check only those that apply:

☐ Check here if your firm or a commonly controlled firm is, or will be, closing or curtailing operations in the state **beyond 30 miles of the zone's boundary.** Indicate timing, location, number of any job losses, and relationship to the proposed enterprise zone investment:

☒ Check here if you are transferring any operations into the zone from site(s) **within 30 miles of the zone boundary** (existing businesses only): My firm's average employment at the site(s) over the past 12 months is 50 jobs.

☐ Check here if your firm commits to increase the combined employment at the site(s) (within 30 miles) and in the zone to 110 percent of the existing combined level by April 1 and on average during the first year of exemption.

PROPOSED INVESTMENT IN QUALIFIED PROPERTY

Anticipated Timing—Enter dates or months/years

Action	Site and Building & Structures			Machinery and Equipment		
	Preparation	Construction*	Placed in Service	Procurement**	Installation	Placed in Service
To commence or begin on	9/2014	11/2014	4/2015	8/2014	2/2015	4/2015
To be completed on	11/2014	3/2015		3/2015	3/2015	

* And/or new reconstruction, additions to, or modifications of existing building(s) or structure(s).
** May precede application by up to three months.

Special Issues:

☐ Check here for building/structure acquired/leased for which construction, reconstruction, additions, or modifications began prior to this application (attach executed lease or closing documents).

☐ Check here for **Work-in-Progress** tax exemption for qualified property that is not yet placed in service and is located on site as of January 1. (Attach description and list of such probable property. See "Special Issues Worksheet," on the last page.)

Qualifying Property: Estimates of cost (please attach a preliminary list of machinery and equipment).

Type of Property		Number of Each/Item	Expected Estimated Value	Check if any Item will be Leased
Real Property	Building or structure to be newly constructed	1	$ 1,000,000	☒
	New addition to or modification of an existing building/structure	1	$ 400,000	☐
	Heavy or affixed machinery and equipment	3	$ 82,000	☐
Personal Property Item(s) Costing:	$50,000 or more	1	$ 145,000	☐
	$1,000 or more (E-commerce zone or used exclusively for tangible production)	30	$ 251,400	☐
		Total Estimated Value of Investment	$ 1,878,400	

Additional Description: In addition to what is explained elsewhere, briefly comment below (or in an attachment) on the scope of your investment, the particular operations and output that are planned, and the intended uses of the qualifying property.

This property will serve as a production brewing & bakery facility for Block 15. The additional beer will be turned into offsite sales through packaged products (bottles & cans) as well as kegs distributed throughout the state. Through our baking program we plan to increase what is made in house as well as have bread available for bulk purchasing to our customers.

DECLARATION

I declare under penalties of false swearing [ORS 305.990(4)] that I have examined this document and attachments, and to the best of my knowledge, they are true, correct, and complete. If any information changes, I will notify the zone manager and the county assessor and submit appropriate written amendments. I understand that my business firm will receive the tax exemption for property in the enterprise zone, only if my firm satisfies statutory requirements (ORS Chapter 285C) and complies with all local, Oregon, and federal laws that are applicable to my business.

MUST BE SIGNED BY AN OWNER, COMPANY EXECUTIVE, OR AUTHORIZED REPRESENTATIVE OF THE BUSINESS FIRM

Signature X [signature] | Date June 23, 2014

Title (if not an owner or executive, attach letter attesting to appropriate contractual authority)

General Manager

Local enterprise zone manager and county assessor must approve this application (with *Enterprise Zone Authorization Approval*, form 150-303-082)

Benton County Enterprise Zone Tax Abatement Goals

Applicant Information
Date: 06/23/2014
Business Name: Block 15 Brewing Company, INC
Contact Person: Chris Heuchert
Phone: 503.804.8772 Email: chris@block15.com

Overarching goal: Businesses are desired that encourage or demonstrate using resources in a manner that protects the environment while providing for a vigorous economy and meeting community needs now and in the future.

New Businesses:

To receive a tax abatement for years 1-3 a business must fit into one of the categories in Section I and have (3) Yes's in Section II, III or IV. If a business does not fit into one of the categories in section I it must have (5) Yes's in Section II, III or IV. The Year 4 and 5 optional tax credit would be awarded to those companies that have made progress over years 1-3 in meeting the goals listed below.

Existing or Start-up Business:

If a business already in the Enterprise Zone or a startup with no operational history does not meet the new business requirements to receive the tax abatement for years 1-3, it may submit a plan to move its organization toward becoming more sustainable based on items in the criteria. The plan will need approval and the business must report annually on its progress toward that plan. The Year 4 and 5 optional tax credit would be awarded to those companies that have made progress over years 1-3 in meeting the goals below.

Section I: Product / Services: Our company offers products or services that fit in the following business clusters. Please check one that applies:

- ☐ Green Building: (e.g. businesses that provide products or services to the green building market - insulated concrete forms, non-toxic building products, consulting services that support green building, etc.).
- ☐ Energy: Alternative energy and/or efficiency (e.g. wind, wave, solar, hydro, biofuels, energy conservation services. software/hardware to reduce energy usage, etc).
- ☒ Local Food production and processing. (using sustainable agricultural practices to reduce chemicals, water and non-renewal energy).
- ☐ Green technology: (manufacturing processes that create no hazardous substances while reducing resource use - computerized controls that reduce resource use, such as for wood processing, soil remediation, environmental sensors).
- ☐ Recycled and/or Replacement Products: (e.g. flower pots made from waste paper pulp, plastic lumber, twine made from recycled plastics).
- ☐ Sustainable Forest and Wood Products
- ☐ Other sustainable business cluster

Section II: Business Practices: Our company focuses on protecting resources and meeting community needs while enhancing the economy. Check all those that apply.

- ☒ We train our personnel to meet these goals in all business aspects.
- ☒ These goals are integrated into our business planning.
- ☐ We track our business performance with a sustainability management system. Please Identify (_____).
- ☐ We measure energy use and waste per unit of production
- ☒ Other sustainable business practices Composting waste, and sending grain to local animal

Section III: Operations (Check all those that apply)

Design

Our company:

- ☐ Redesigns products so that they meet enterprise zone goals.
- ☐ Conducts Life Cycle Analyses on our product(s)/services
- ☐ Has reduced our product packaging by at least 20%
- ☐ Encouraged and engaged suppliers to redesign their products and services to meet enterprise zone goals.
- ☐ Other sustainable design practices: _____

Operations

Our company:

- ☒ Is locally owned.
- ☐ Routinely conducts process or facilities energy audits.
- ☐ Has reduced energy 10% per unit of production. (e.g. watts/widget).
- ☐ Has reduced green house gases to 1990 levels.
- ☒ Routinely/periodically conducts resource efficiency audits to reduce waste and raw materials.
- ☒ Routinely/periodically conducts efficiency audits for water usage.
- ☐ Routinely/periodically conducts employee satisfaction surveys with an action and implementation plan that follows.
- ☐ Has completed a chemical inventory that ranks toxic and hazardous materials and developed a plan to eliminate all persistent bio toxins (PBT's).
- ☒ Takes responsibly for our product at end of its useful life (e.g. takes back a computer to dissemble, recycle and or reuse components for a new product).
- ☐ Other sustainable operational strategies:_____

Section IV: Facilities

Our company:

- ☐ Intends to build to LEED (Leadership in Energy and Environmental Design) U.S. Green Building Standards or other "green" building standards.
- ☐ Will retrofit existing facilities to LEED or LEED Existing Building standards or equivalent.

Memorandum

CORVALLIS
ENHANCING COMMUNITY LIVABILITY

To: Administrative Services Committee
From: Tom Nelson, Economic Development Manager
Date: July 1, 2014
RE: Review of the Council Economic Development Policy

I. ISSUE

Council Policy 96-6.03, Economic Development Policies, is scheduled for review every two years. The Policy was last reviewed in December 2010.

II. DISCUSSION

The Corvallis City Council reviewed and revised the Economic Development Policies on December 6, 2010. Much of the work dictated by the Policy has been accomplished, but most is on-going. The Economic Development Commission reviewed the Policy on May 27, 2014, and recommended amendments to Section 6.03.80 (attached). Staff also included formatting changes for consistency purposes.

III. ACTION REQUESTED

Staff requests that the Administrative Services Committee review the current Policy, include any additional changes, and recommend the City Council amend Council Policy 96-6.03, Economic Development Policies.

Review and Concur:

James A. Patterson
City Manager

CITY OF CORVALLIS

COUNCIL POLICY MANUAL

POLICY AREA 6 - COMMUNITY DEVELOPMENT

CP 96-6.03 **Economic Development Policies**

Adopted	**July 19, 1989**
Amended	June 4, 1990
Affirmed	October 7, 1991
Revised	April 17, 1995
Revised	December 16, 1996
Reviewed	November 5, 2001
Revised	November 18, 2002
Revised	May 5, 2003 (funding section only)
Revised	December 17, 2007
Revised	December 15, 2008
Revised	December 21, 2009
Revised	December 6, 2010

6.03.010 Purpose

To establish comprehensive policies directing the Economic Development function of the City of Corvallis and to support the creation of long-term Economic Development strategies for the Corvallis community.

6.03.020 Mission

To preserve and enhance community livability, and thus improve the quality of citizens' lives~~,~~ through active City participation in Economic Development actions which address~~:~~ economic stability; moderate economic growth; and economic, social, and environmental sustainability.

6.03.030 Goals

Success in achieving focused goals concerning the creation of new economic activity will enhance the economic vitality of the local

community. The **City** ~~c~~**C**ouncil should provide prioritized support to activities and programs which:

a. Provide for a diverse local economy through programs which start, develop, retain, and expand enterprises which will, in turn, increase the supply of family-wage jobs and expand the property tax base;

b. Attract private and public capital investment to create, enhance, and maintain local infrastructure;

c. Provide facilities, services, and programs that attract visitors to the Corvallis community.

Note: The Economic Development Commission may identify other goals to recommend to the City Council for inclusion in the ~~p~~**P**olicy.

6.03.040 Definitions

The following definitions are supplied here to provide a common basis of understanding when discussing Economic Development policy.

~~a.~~
6.03.041 Economic Development. The addition of economic activity; new activity may replace what has been lost~~;~~.

~~b.~~
6.03.042 Goal. A statement of intention expressing community values intended to provide a guide for action by the community~~;~~.

~~c.~~
6.03.043 Policy. A decision-making guideline for actions to be taken in achieving goals and the community's vision~~;~~.

~~d.~~
6.03.044 Infrastructure. Structures that support an economy such as roads, water, sewers, buildings, power grids, and telecommunications~~;~~.

~~e.~~
6.03.045 Visitor. A person who visits for reasons of friendship, business, duty, travel, or the like~~;~~.

~~f.~~
6.03.046 Economic Sustainability. A dynamic concerning specification of a set of actions to be taken by present persons that will not diminish the prospects of future persons to enjoy levels of consumption, wealth, utility, or welfare comparable to those enjoyed by present persons~~;~~.

~~g.~~

6.03.047 Economic ~~s~~**S**tability. A preferable state owing to an absence of excessive fluctuations in the local economy as measured against state and national benchmarks~~;~~.

~~h.~~

6.03.048 Economic Indicators. A set of measured statistics about the economy allowing analysis of economic performance and predictions of future performance~~;~~.

~~i.~~

6.03.049 Baselines. Beginning points of reference used as a basis of comparison for subsequent measurements of economic data~~;~~.

~~j.~~

6.03.050 Benchmarking. The process used by organizations to evaluate various aspects of their processes in relation to best practices within their own sector.

~~k.~~

6.03.051 Plan. An officially adopted document used to focus long-range planning efforts.

~~l.~~

6.03.052 Family-Wage Job. A job paying a wage sufficient to support a family in Benton County.

6.03.0~~5~~**6**0 Policy

The following policies are intended to assist and direct the City Council in making decisions designed to fulfill both mission and goals as stated in ~~CP~~ **Sections** ~~96~~ 6.03.20 and ~~96~~ 6.03.30.

6.03.0~~5~~**6**1 City Council Leadership

The City Council, in its leadership position, sets an example by adopting an active role in furthering Economic Development and by attempting to make resources available to enhance this effort.

6.03.0~~5~~**6**2 Infrastructure

The City shall plan for and invest in public infrastructure that serves the needs of current and prospective employers.

6.03.0~~5~~**6**3 Land Resources

The City shall designate sufficient amounts and appropriate locations of commercial and industrial land through the land use planning process.

6.03. 0~~5~~6~~4~~ Public Partners

The City shall maximize the effectiveness of Economic Development resources through partnerships with local and regional government agencies~~,~~ and not-for-profit groups. The City shall also seek cooperation with local educational institutions in areas such as technology transfers.

6.03. 0~~5~~6~~5~~ Economic Development Commission

An Economic Development Commission shall be appointed and shall advise the City Council on all matters pertaining to Economic Development.

6.03. 0~~5~~6~~6~~ Measurement

The City shall develop and refine methods using benchmarks, baselines, and measurable indicators by which the success of the Economic Development program in achieving community economic goals will be measured and reported.

6.03. 0~~5~~6~~7~~ Regulatory System

The City shall consider the impact on existing and prospective businesses~~,~~ and citizens of Corvallis in developing and implementing policies, regulations~~,~~ and programs, such as fees, land use standards~~,~~ and environmental requirements. The City shall take an active role in monitoring and evaluating the impacts of ~~f~~Federal and ~~s~~State requirements on local business and take action as appropriate.

6.03. 0~~5~~6~~8~~ Economic Development Services

The City shall support activities that enhance the Economic Development mission and goals. Examples of such activities include:

a. Increasing the proportion of spending in the local community by residents and visitors;

b. Strengthening the role of Downtown Corvallis as the vital economic, social~~,~~ and cultural heart of the community;

c. Providing facilities and services that support business start-ups;

d. Providing local companies with business-critical information that will assist in achieving success;

e. Recruiting companies from outside the local area within targeted industry sectors;

f. Providing technical and financial assistance to support the retention and expansion of existing businesses;

6.03. 0~~5~~**6**9 Incentives

The City may use incentives to achieve Economic Development goals.

6.03.0~~6~~**7**0 Sustainability

The City recognizes that sustainability includes environmental, social, and economic factors and acknowledges that economic strength is required to finance the community's social and environmental programs. This ~~p~~**P**olicy directly addresses economic sustainability.

6.03.0~~6~~**7**1 Funding Policy

The City of Corvallis shall continue to invest in Council-identified strategic initiatives which produce measurable, strategic outcomes.

6.03.0~~7~~**8**0 Supporting Documents

The Corvallis community has developed guidance documents providing direction for Economic Development as noted below. These documents are cited herein to provide guidance on the intent of Council ~~as regards~~ **regarding** Economic Development.

a. Corvallis **2020** Vision ~~2020~~ **Statement**

b. Corvallis Comprehensive Plan

c. Prosperity That Fits Plan

d. Economic Development Ordinance 2010-28

d. Economic Development Strategy

6.03.0~~8~~**9**0 Review and Update

~~These policies shall be reviewed every two years upon adoption or sooner, by Council request, in the event of significant change in the~~

~~general economic well being of the community. Goals and policies may be amended or suspended by the City Council at any time after following existing procedural rules for public notice and participation.~~

The Economic Development Manager will prepare the Council Policy review every four years for Council approval.

****

CITY MANAGER'S REPORT

JULY 17, 2014

****

 # 2014-06

REPORTING PERIOD: JUNE 2014

I. ORGANIZATIONAL HIGHLIGHTS

- The City Council adopted a resolution designating the Benton/Corvallis Enterprise Zone for e-commerce.
- The City Council received the Public Participation Task Force's recommendations.

II. MAYOR'S DIARY

I have engaged in the following activities, in addition to meeting and corresponding with constituents and presiding at the twice-monthly City Council meetings and meetings with Council leadership:

Speaking engagements

- Opening reception for "Celebrating Life, Fostering Hope" photograph exhibit featuring individuals with disabilities
- Orientation for new members of the Corvallis Chamber of Commerce Board of Directors
- Corvallis Pride event

Special meetings

- Read to Mountain View Elementary School students as part of Rotary literacy event
- Met with local residents and with local business owners/managers to discuss issues related to homelessness
- Meetings related to Regional Accelerator and Innovation Network (RAIN): Attended Board of Directors meeting, met twice with Public Relations/ Marketing Committee and the Eugene firm hired to assist with these efforts
- With Benton County Commissioner Dixon, co-chaired monthly Oversight Committee meeting for Benton County's 10-Year Plan to End Homelessness

- Participated in planning meeting for the League of Oregon Cities' annual conference
- Attended meeting of the League of Oregon Cities Board of Directors
- Attended meetings of the Cascades West Council of Governments (COG) Finance and Executive Committees
- Attended presentation on Oregon's land trusts, hosted by Greenbelt Land Trust
- Attended Leadership Corvallis graduation event
- Attended memorial service for Oregon State University (OSU) First Lady Beth Ray
- At the invitation of Portland Mayor Charlie Hales, participated with other Oregon mayors in Portland's Grand Floral Parade

Proclamations
- Corvallis Pride Day
- OSU Black Graduation Day

Appointments
- Arts and Culture Commission

III. POLICE

A. Department Highlights

Officers investigated 2,442 incidents this month. Following are the highlights:

- Detectives have a fictitious online persona as a 15-year-old girl for investigative purposes who was contacted by a 30-year-old male. He asked her to meet him in Corvallis; when the man arrived, he was arrested and charged with Online Sexual Corruption of a Child I.
- Detectives investigated a theft report of over $3,000 worth of property. Laboratory results identified the suspect, who is currently serving a prison term. The suspect was charged with Theft I and Unlawful Entry to a Motor Vehicle.
- A woman reported she was stabbed in the back with a pair of scissors, bitten, and punched by her sister during an argument. The suspect was arrested for Assault II and taken to Benton County Jail. She was also in possession of a baggie with methamphetamine residue.
- Two officers on bicycles had a glass bottle thrown in their direction from a fire escape where a large fraternity party was occurring. A sound permit had been issued for a function of 400-500 people, and officers responded to loud music earlier in the night. Officers contacted the fraternity, which was told to close the party, at which time an unknown person set off a fire extinguisher, causing a commercial fire alarm. Intoxicated minors were identified leaving the party, and the fraternity was cited for Hosting a Party for Minors and was issued an Second Response Notice. The person who threw the bottle was never identified.

- An officer patrolling Pioneer Park encountered a man with a machete. The male threatened to kill the officer and fled on foot. He was located the next day by Benton County Sheriff's Office for an unrelated matter and was arrested for this case.
- An intoxicated man broke into a house while the resident was home. The resident locked himself in the basement and called 9-1-1. Officers found a hole punched in the front door, a broken window screen, and an open window. The suspect was found undressed and sleeping on the sofa. The suspect had an arrest warrant and was taken to Benton County Jail.
- Officers responded to Pioneer Park after a caller reported a transient male was assaulted with a large tree branch. The victim was located and was bleeding profusely from several head wounds. He was transported to Good Samaritan Hospital to be treated for his injuries. The victim identified his assailant, who was later located and arrested for Assault I, Unlawful Use of a Weapon, and Disorderly Conduct II.
- Records staff processed 1,135 police reports, entered 483 traffic citations, and performed 324 background checks. Staff generated 102 incident reports – 16 percent of the total reports taken during this reporting period.

9-1-1 Center Calls for Service

- The Corvallis Regional Communications Center dispatched 3,684 calls for police, fire, and medical assistance this month as follows:

POLICE		**FIRE AND MEDICAL**	
Corvallis Police	2,442	Corvallis Fire/Ambulance	561
Benton County Sheriff	548	Other Fire/Medical	37
Philomath Police	96		
TOTAL	3,086	**TOTAL**	598

B. Other

- Corvallis Police Auxiliary staffed a Department booth at the OSU Federal Credit Union Shred Day Event. Officers also assisted with the event.
- The Cops & Robbers Citizen Academy was completed with 26 graduates.
- Evidence Technician Debra Joy Hales retired June 30.
- Emily Schroff began work June 16 as a Parking Enforcement Officer.
- A new Evidence Management System was selected and purchased.
- Officer Gilder conducted a presentation at the Corvallis Sports Park Safety Fair.
- Sergeant Goodwin met with the OSU Greek Life Coordinator to review the past school year and plan for the upcoming year.
- Officers conducted area checks during National Walk and Bike to School Day.
- Officers participated in the Click it or Ticket seat belt awareness campaign.
- Officer Kantola attended the annual Drug Recognition Expert conference.

IV. PUBLIC WORKS

A. Department Highlights

Administration Division

- Negotiated terms with Casco for a new ten-year telecommunications franchise agreement. Casco will pay the City a franchise fee of seven percent of gross revenues earned within the Corvallis City Limits.
- Completed the necessary recruitment process and paperwork to hire 15 seasonal staff members for various work groups within Public Works.
- Revised the ordinance associated with the approved utility rate structure change, effective July 1.

Engineering Division

- All construction projects scheduled for summer construction have been advertised for bids.

Transportation Division

- Nine ADA ramp installations and retrofits funded by the New Freedom Grant were completed. This completes the work for this multi-year project.
- Pavement Services was selected to perform a pavement condition assessment for about 75 miles of local streets. The street surface will be inspected for indications of failure such as cracking and settlement.
- The Corvallis Municipal Airport had one runway, the apron, and all taxiways re-painted. Hay cutting and baling was also completed.
- The Corvallis Municipal Airport hosted the Collings Foundation Wings of Freedom tour over three days. The Wings of Freedom tour stops in Corvallis every two to three years to bring historic aviation to our community. This year the tour included a B-17 Flying Fortress, a B-24 Liberator bomber, and a P-51 Mustang fighter.
- Corvallis Transit System (CTS) finalized new branding for the CTS regular and late-night services. The late-night service will now be called the "Night Owl," instead of the "Beaver Bus," which will be the name of the OSU on-campus shuttle. New system branding will be implemented over time as funding allows, beginning with the website, printed materials, and signage at the Downtown Transit Center.
- Staffed a booth at the Lincoln School Carnival on June 6 for Transportation Options information in both English and Spanish. Bilingual support was provided by staff from the Benton County Health Department.
- Staff is working with Oregon Department of Transportation (ODOT) and Cascades West Rideshare staff on a transportation options marketing program in South Corvallis. Corvallis was selected as a test site by ODOT for a pilot of ODOT's Individualized Marketing (IM) Program, which is intended to educate residents on, and encourage them to use, alternative transportation options (walking, bicycling, transit, and carpooling). The

program will run from July through September. A pre-kickoff survey on how South Corvallis residents currently travel was sent to more than 1,600 residents in June; more than 300 responses were received.

- The five-county Northwest Connector Alliance received approval of a planning grant of $60,000 for developing strategic expansion of the Connector network, which includes the Coast To Valley service between Corvallis and Newport.
- The existing kiosk in the City Hall plaza was re-located to the Benton County fairgrounds in conjunction with the Madison Avenue Task Force and Benton County. A new wayfinding kiosk and information center for City wide activities will be installed in the plaza location.

Utilities Division

- The City maintains a Leak Detection Program where a specialized piece of equipment is used to listen to valves, fire hydrants, or meters and detect sounds of leaking water (usually a high pitched squeal). When leak sounds are detected, a leak correlator is used to get an accurate location to the source of the sound. The Water crew listens to the entire water system (245 miles of pipe) in this manner once every year. When a leak is found, it is either remedied by the leak detection crew or referred to other water distribution staff to effect repairs. The leak detection program takes two staff members about three months to complete. Corvallis currently experiences about a five-percent water-loss ratio. The industry standard for an exceptional system is ten percent.

B. Other

- Traffic Order 14-01 was signed by the City Manager, authorizing staff to establish two two-hour-parking signed spaces on NW Fillmore Avenue between NW Fourth and NW Fifth Streets and, contingent upon approval from the ODOT Region 2 Traffic office, to establish six two-hour-parking signed spaces on NW Fourth Street between NW Fillmore and NW Polk Avenues.
- Traffic Order 14-02 was signed by the City Manager, authorizing staff to remove parking from the north side of NW Grant Avenue between NW Ninth Street and NW Highland Drive in order to establish bicycle lanes on this section in conjunction with a grind-inlay project in August.

V. CITY MANAGER'S OFFICE

A. Department Highlights

- Received one Notice of a Tort Claim; information is available for review in the City Recorder's office.
- A citizen filed a prospective referendum on the new residential parking districts and began gathering signatures.

- The Economic Development Office responded to two start-up leads, two expansion leads, and one recruitment lead.
- The Economic Development Officer made five first-time visits to traded-sector businesses and followed up with 16 repeat clients.
- The Economic Development Manager followed up with 12 start-up leads.
- The Economic Development Manager followed up with 13 retention and expansion leads.
- The Economic Development Manager followed up with 16 recruitment leads.
- The Economic Development Office is coordinating logistics for the following events:
  - Monthly Willamette Innovators Network Board Meetings
  - Willamette Angel Conference event planning and due diligence meetings
  - Leadership Corvallis planning meetings

VI. COMMUNITY DEVELOPMENT

A. Department Highlights

- Development Services Division staff processed 42 residential and 65 non-residential plan reviews for proposed construction projects and conducted 1,127 construction inspections during June.
- Created 27 new Code Enforcement cases as a result of citizen complaints received.
- Of the 311 plumbing, mechanical, and electrical permits issued during June, 143 (or 46 percent) were issued online.
- Planning Division staff received seven land use applications during June, including three Minor Replat, one Minor Land Partition, one Property Line Adjustment, one Residential Subdivision, and one Zone Change application.
- Planning Division staff issued decisions on three land use applications, including two Historic Preservation Permits and one Plan Compatibility Review.
- On June 11, Planning Division staff bid a fond farewell to Associate Planner Bob Richardson, who left the City of Corvallis after ten years of service to become the Planning Manager for the City of Albany. We wish Bob all the best in his new role!
- The City Council held a public hearing June 16 to consider the Package #1 Land Development Code Amendments. The Council held the record open and is expected to deliberate July 21.
- At the end of June, two significant City HOME Investment Partnerships Program-funded projects reached completion. Both projects were carried out by Willamette Neighborhood Housing Services. The first project – Lancaster Bridge Apartments – resulted in the rehabilitation of 50

affordable, northeast Corvallis rental units. The second project – Seavey Meadows Community Land Trust – created six new homeownership units for low income, first-time home buyers. All six of those units were sold to qualified buyers for prices between $150,000 and $172,000.

- During June, Housing Division staff provided one down-payment assistance loan of $15,000 to help a low-income household purchase their first home.
- Housing Division staff received 27 Rental Housing Program-related contacts during June outlining 57 separate issues, with 13 issues related to habitability and 44 of a non-habitability nature. Five of the habitability issues reported are or may be subject to the Rental Housing Code, so Housing Division staff is working with complainants to confirm violations and, as applicable, achieve resolution or move to enforcement.
- Department staff continued assisting the City Council committee working on the Fiscal Year 2013-2014 housing goal. During June, an online housing preferences survey was provided to many Corvallis employers for distribution to their employees; the survey closed June 13, and consultant ECONorthwest will discuss its results with the committee in early-July.

B. Other

- Development Services Division rolled out a new interactive mapping tool called Corvallis Buildingeye that is linked to the City's permit system. This new service is offered as part of larger program efforts to provide more tools and convenience to customers while encouraging community participation. Users can sign up to receive periodic notice of new building permit activity in their neighborhood or can perform generalized searches. In addition, users can click on any identified permit shown on the map and further view building permit descriptions and other permit information.

VII. FINANCE

A. Department Highlights

- City Council adopted the Fiscal Year 2013-2014 Budget. Staff provided legal notifications of the Council's revenue sharing resolution and property tax levies provided to State of Oregon and Benton County, respectively.
- Financial Planning staff finalized a cost-effective five-year contract for investment advisory services with Government Portfolio Advisors (GPA) through cooperative purchasing language in a City of Albany request for proposals.
- The Financial Planning Manager began work with Bond Council and our Financial Advisor on probable debt issuance for the Fire Department drill tower construction project.

- Administrative staff completed the liquor and tobacco license renewal process and notified local establishments.
- The Risk Manager reviewed insurance proposals related to property, automobile, general liability, and other areas of coverage and forwarded a recommendation to the City Manager.
- MIS Division staff continued working with the vendor for an electronic parking citation solution.

VIII. FIRE

A. Department Highlights

Operational

Response Activity – June 2014	City	Non-City	Total
Fires	21	2	23
Overpressure/Rupture	0	0	0
Requests for Ambulance	281	98	379
Rescue (Quick Response Team)	89	23	112
Hazardous Condition	9	2	11
Service Requests	56	13	69
Good Intent	34	22	56
False Calls	25	1	26
Other	0	0	0
TOTAL RESPONSES OVERALL	**515**	**161**	**676**

B. Other

- Three engines, staffed by nine career firefighters and one volunteer firefighter, were mobilized for the Two Bulls conflagration in Deschutes County from June 7 - 10. One battalion chief was also called to serve on the State's overhead team. The Department and Corvallis Rural Fire Protection District will be reimbursed for the responses; some of the District's fire apparatus were used in fighting the fire.
- Station 1's generator was replaced, and replacement generators for Stations 3 and 4 were ordered and will be installed soon.
- A volunteer academy for 11 new volunteer personnel was held during the week of June 16.
- Planning is underway for this year's Department Open House, scheduled for Saturday, October 11.

IX. LIBRARY

A. Department Highlights

- June 22, marked the return of Sunday open hours at the Corvallis Public Library, funded by the levy passed in November 2013. Members of the Corvallis-Benton County Public Library Board hosted music, activities for youth, and refreshments. Patrons of all ages enjoyed the celebration.
- Library Specialist III Sally Price retired after 27 years at the Library. Recruitments wrapped up for her position and for three new Community Library Specialist positions.
- Summer Reading programs started with several well attended programs, including the Teddy Bear Picnic, Dragon Theater Puppets, children's concerts by Chintimini Chamber Music, and a science program about bees and flowers. Attendance at the programs in Monroe and Philomath averaged more than 100 people. As of June 26, more than 1,200 Summer Reading bags and packets had been distributed to children throughout the Library system.
- The Corvallis School District 509J free lunch program for children has averaged 60 participants each day in Corvallis. Philomath Community Library is also hosting the daily program.

B. Other

- Public Works Building Maintenance staff and various contractors rushed to finish interior painting, landscaping, and annual cleaning projects.
- The Friends of the Library raised $2,750 at their Sizzling Summer Reading Book Sale at the Library June on.

X. PARKS AND RECREATION

A. Department Highlights

Administration/Planning

- Began accepting Family Assistance applications for Fiscal Year 2014-2015.
- Completed year-end budget activities.
- Completed agreements for three interpretive signs for Dr. Martin Luther King, Jr., Park and bringing electricity through the Suncrest development for Walnut Barn.
- Contracted for design work for the Marys River Boardwalk.
- Completed the construction of the school house bell tower at the Knotts-Owen Farmstead.
- Completed quotes for the resurfacing of the Pickleball Courts.

Aquatic Center

- Swim Lessons: 849 participants
- Bilingual/Saturday Swim Lessons: 39 participants
- School's Out Luau was held June 13, with lots of very happy and enthusiastic students enjoying swimming, games, food, and prizes.

Parks and Natural Areas

- Youth Parks Corps began for another year! Youth will be working on various projects throughout the park system.
- Various volunteer projects have included landscape clean-up in Arnold Park, Riverfront Commemorative Park, Sunset Park, and Tunison Park.
- Completed repairs to the Riverfront Commemorative Park Fountain.

Recreation

- Summer Day Camps began. Held a great week of Playground Imagination the week of June 16, and the full camps began June 23.

Senior Center

- Senior and Community Center volunteers worked 1,512.75 hours during the fourth quarter of the fiscal year, or 126 hours of volunteer time each week. Volunteers help facilitate programs, greet newcomers, help at special events, lead trips/hikes, mail our publications, and much more. They are so impressive and integral to the function of the facility. We could not provide all the services we do without them.
- Offered a new three-part Affordable Health Care Act class that taught registrants about the new Act and how it pertains to them. This program was well attended, and more of its kind will be coming soon.

XI. MISCELLANEOUS

- Attached is the City Attorney's Office Report to the City Council for June.

James A. Patterson
City Manager

CORVALLIS
ENHANCING COMMUNITY LIVABILITY

CORVALLIS CITY ATTORNEY
456 SW Monroe, #101
Corvallis, OR 97333
Telephone: (541) 766-6906
Fax: (541) 752-7532

CITY ATTORNEY'S OFFICE
REPORT TO CITY COUNCIL: HIGHLIGHTS

June 2014

The following are highlights of the City Attorney's Office activities in June 2014:

1. Assistance to Community Development/Development Services regarding public records request related to building code violation case.

3. Discussions with City staff & meeting with opposing counsel regarding objection to the record filed in Campus Crest LUBA appeal.

4. Assistance to Human Resources Department regarding internal investigation.

5. Meeting with Planning Department regarding Arnold Way planned development nullification.

6. Meeting regarding Economic Development and process for Willamette Angels Conference.

Ongoing/**Future Matters:**

1. Representation of the City before LUBA in *Hess & Goodmanson v. City* (Campus Crest consolidated LUBA appeal)

2. Assistance to Public Works Department regarding title issues for SW 26th Street/Morris Avenue Bridge.

3. Enforcement actions re: code violations (building, rental housing, land development code).

4. Continued work on public records requests.

5. Continued assistance on internal investigations, employee grievances and other employment matters.

6. Assistance in preparing findings for land use decisions.

7. Enforcement of City ordinances and prosecution of offenses in Corvallis Municipal Court.

8. Representation of City in the Court of Appeals regarding *Hunking v. City* Municipal Court Appeal.

9. Continued work on revisions to CMC 5.03 and other policy matters.

10. Assistance to City Council on OSU Campus Master Plan update.

MEMORANDUM
JULY 17, 2014

TO: **Mayor and City Council**

FROM: **Carla Holzworth, City Recorder** CH

SUBJECT: **Referendum regarding Residential Parking Districts**

A referendum on the new residential parking districts (Ordinance 2014-05) has qualified for the November 4, 2014, General Election. Benton County Elections completed their review of submitted signature sheets and valid signatures totaled 1,891; a minimum of 1,749 valid signatures are required.

Staff will bring a draft Explanatory Statement to the August 5 Urban Services Committee meeting for the Committee's review. Council review of the Committee's recommendation is scheduled for the August 18 Council meeting. The deadline to file the Explanatory Statement with Benton County Elections is Thursday, September 4.

I have the original signature sheets and the Petition Processing Statistics Report from Benton County Elections if you are interested in reviewing them. Please feel free to call if you have questions.

c: City Manager Jim Patterson
Public Works Director Mary Steckel
Deputy City Attorney Jim Brewer

MEMORANDUM

July 1, 2014

TO: Mayor and City Council

FROM: Mary Steckel, Public Works Director

SUBJECT: Parking on NW 4th Street between Fillmore and Polk Avenues

Issue

A number of business owners on NW 4th Street between Fillmore and Polk Avenues have requested a review of parking controls in this section due to increased parking congestion.

Background

At the January 21, 2014 City Council meeting, eight individuals operating businesses in the 600 block of the west side of NW 4th Street expressed concern about the relatively recent influx of vehicles occupying parking spaces in this area and remaining all day, negatively impacting these businesses. The Council suggested that the Downtown Parking Committee (DPC) would be an appropriate body for a discussion regarding the parking controls in this area.

Discussion

At the April 1, 2014 DPC meeting, eight individuals addressed the Committee with their concerns about parking. Subsequent to the meeting, staff conducted a parking utilization/duration study and collected feedback from residents and business owners in the area. The results were summarized in a staff report to the DPC for their June 3, 2014 meeting.

At the June 3, 2014 DPC meeting, the Committee reviewed and discussed staff's report and heard from five individuals. Staff presented the results of the parking study for Fillmore Avenue between 4th and 5th Streets, 4th Street between Fillmore and Tyler Avenues, and Polk Avenue between 3rd and 5th Streets (Attachment A, Map of Study Area). The data was collected hourly on one day, mid-week in mid-April, from 7 am to 6 pm. The number of parking spaces varies by block and since spaces aren't marked, the number can fluctuate based on the manner in which people park. Generally, the number of parking spaces per block face is as follows:

Fillmore Avenue (4th to 5th): north side = 6, south side = 7
4th Street (Fillmore to Polk): west side = 23, east side = 0
Polk Avenue (4th to 5th): north side = 11, south side = 15

Staff also presented a summary of feedback from both property owners and tenants, some of whom are residents but most of whom are business owners. This feedback was collected via an online survey with six questions. A web address for the survey was sent via postcards both mailed and hand delivered to both tenants and property owners at each address in the subject area. The survey area was expanded beyond the parking study area to include Tyler Avenue between 3rd and 5th Streets, to provide opportunity for input to adjacent properties that could be affected by a

change in parking control. In all, approximately 100 postcards were distributed and 31 responses were received. The questions in the survey, a summary of responses, and a transcription of the comments submitted with the survey responses is provided in Attachment B. Lastly, staff shared information about utilization of off-street parking for properties off the alley between 4th and 5th Streets.

The on-street parking utilization data collected shows that:

- Fillmore Avenue between 4th and 5th Streets - Between 8 am and 5 pm, 94% of spaces were occupied by vehicles parking longer than two hours. Ten of the thirteen spaces were occupied by vehicles parked in the same space for 7 hours or longer.
- 4th Street between Fillmore and the middle of the long block between Fillmore and Polk Avenues - Between 8 am and 5 pm, 81% of spaces were occupied by vehicles parking longer than two hours. Seven of the eleven spaces were occupied by vehicles parked in the same space for 7 hours or longer.
- 4th Street between the middle of the block and Polk Avenue - Between 8 am and 5 pm, 66% of spaces were occupied by vehicles parking longer than two hours between 8 am and 5 pm. Four of the twelve spaces were occupied by vehicles parked in the same space for 7 hours or longer.
- Polk Avenue between 4th and 5th Streets - Between 8 am and 5 pm, 50% of spaces were occupied by vehicles parking longer than two hours. Three of the thirteen spaces were occupied by vehicles parked in the same space for 7 hours or longer.

The data from the survey of off-street parking accessed from the alley shows that parking on some of the properties is highly utilized while parking on other properties is underutilized. Generally, it appeared that when this parking was used, it was as long-term parking for tenants and employees rather than short-term parking for clients. One residential property on the east side of 4th Street has no off-street parking.

The results of the web survey are summarized in Attachment B. Highlights include:

- 65% of total respondents say a change is needed.
- 70% of businesses, whether they own the building or are tenants, say a change is needed.
- Given the choice of a 2 or 3 hour time limit, a little more than half (54%) prefer 2 hour.
- Given the choice of parking restrictions Monday through Friday or Monday through Saturday, 86% prefer Monday through Friday.

Based on the utilization data and considering the feedback provided by the web survey and visitors to the meetings, and recommendations by staff, the DPC made the following recommendations:

1. Establish one 2-hour signed space on both the north and south sides of Fillmore at the east end, just west of 4th St/Hwy 99W (total of two).
2. Establish two 2-hour signed spaces on 4th Street just south of Fillmore.
3. Establish two 2-hour spaces on 4th Street, near the middle of the study area.
4. Establish two 2-hour spaces on 4th Street, near the south end of the study area.

5. Re-establish unrestricted parking in three spaces on the east side of 4th, just south of the driveway to Integrity Floors. These were inadvertently included in the No Parking This Side of Street restriction that was established in the mid-1990s for the two spaces on the north side of the driveway.

Changes were not proposed for Polk Avenue.

Any changes in parking controls in this area will require consideration of parking enforcement capabilities. Staff discussed the results of the utilization and web surveys with Parking Enforcement staff. Staff also spoke with ODOT staff, who indicated that any proposed parking control changes would need the approval of Region Traffic staff. However, ODOT staff does not anticipate any issues with approving the recommended changes.

Traffic Order 14-1 in the City Manager's Report for July 21, 2014 will implement the changes recommended by the DPC. However, the change on 4th Street is contingent on approval by the ODOT Region 2 Traffic Engineer.

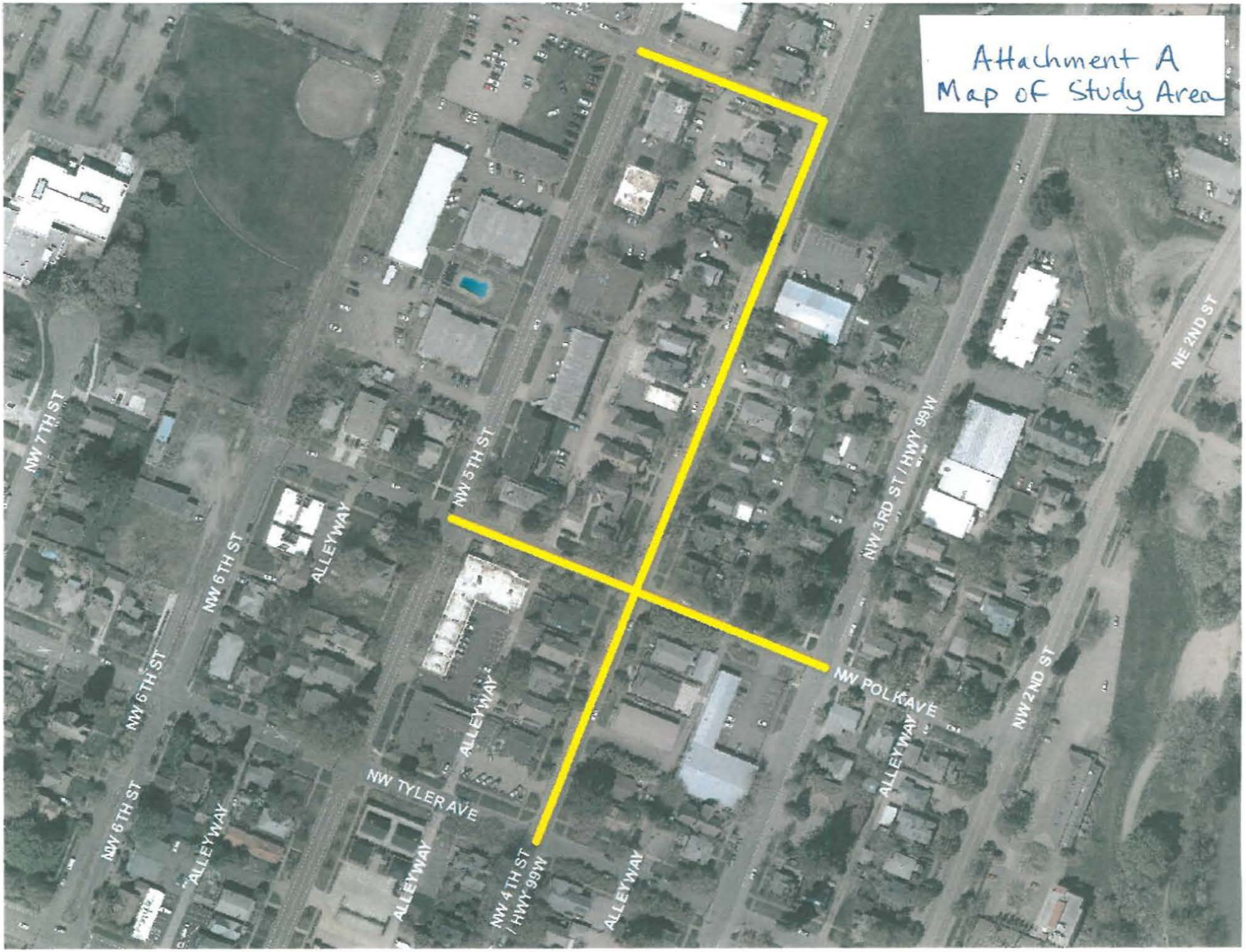
Review and Concur:

James A. Patterson, City Manager

Jon Sassaman, Police Chief

Attachments:
Map of Study Area – Attachment A
Web Survey Results – Attachment B

Attachment A
Map of Study Area



4th Street Study Area Parking Survey
Web Survey Results
April, 2014

Survey Questions

1) What is the address of your business, property, or residence within the subject area?

_____

2) Please indicate which category best describes you:

- ☐ Resident of rented property
- ☐ Resident of owned property
- ☐ Business Owner in rented property
- ☐ Business Owner in owned property
- ☐ Property Owner not living or working in subject area

3) Do you believe there is a need for a change to time-limited parking in portions of the area shown on the map? Note that specific locations have not been identified yet.

- ☐ Yes
- ☐ No

4) IF the parking control is changed, should the parking restrictions be in effect (**choose just one**):

- ☐ Mon – Fri, 8am – 5pm
- ☐ Mon – Sat, 8am – 5pm

5) IF the parking control is changed, should the parking time limit be restricted to (**choose just one**):

- ☐ 2 hours
- ☐ 3 hours

6) Comments?

Survey Results Summary

		Need for change?		Time Limit		Days		% of Total
Respondent Type	#	Yes	No	2hr	3hr	M-F	M-S	Respondents
Resident/owner	2	2	0	0	2	2	0	6%
Resident/tenant	2	0	2	0	1	1	0	6%
Business /owner	11	7	4	5	4	7	2	35%
Business /tenant	12	9	3	8	4	11	1	39%
Property Owner not in area	4	2	2	2	2	3	1	13%
Total Responses	→	20	11	15	13	24	4	
% of Responses	→	65%	35%	54%	46%	86%	14%	

Summary of Comments

Resident of Rented Property

It doesn't really sound like anything needs to be changed about the current parking. What the testimony leads toward is that the car dealerships need to provide parking for their employees. Simple fix and everyone's quality of life goes back to the point it was when the dealership's employees parked at the dealership. Parking time limits and zone permits are annoying and cumbersome to residents. (800 block 4th)

I do not think it should change. It is more of a residential area than business, so if changed to timed parking, it will limit when and where the actual residents can park. Additionally, typically there is plenty of parking for the businesses during the day. (600 block 4th)

Resident of Owned Property

I and my household need to park on Polk Street as we do not have a driveway or carport and were told we cant use part of our backyard to create such. There are times when we cant find a place to park our own cars near our house. Walking a few blocks with groceries is not ideal when needing to cross 4th or third streets or when it is pouring rain. I am concerned that we will not be able to park our own cars near our home which is on the corner of 4th and Polk. I am in favor of the limited parking times as our 4th Street Frontage does not allow parking (east side of 4th) but I am concerned that the overflow from the Corvalla Apartments will impact us. We already have students from LBCC parking outside our house and then walking over the rail tracks to the campus. Their cars are there all day. Thank you for offering this survey and for attending to this problem. (600 block 4th)

Business Owner in Rented Property

The reason I chose 3 hours for Q5 is then it is consistent with downtown area and would be less confusing for customers etc. like downtown employees of businesses should not be allowed to park on the street and a list should be maintained of employee license plates (600 block 4th)

My clients can't find parking along 4th St anymore because the employees from the Toyota dealership are parking there during work days. Would be really appreciated if the city could limit the time allowed there. Thanks so much for your help with this. (700 block 4th)

I think that the parking on the street should remain the same as they currently are. (900 block 4th)

I am a child, adult and family counselor. People come to see me with real needs, sometimes life-concerning. I often arrive at my office at 8:00am and the entire block's parking is taken. I have spoken with several people parking who appear to be commuting to work. I have requested they not park in front of my place of business and discussed the challenges it creates for my clients. They inform me that their employer (car lots) will not allow them to park at their place of employment. Before my day even starts clients have no place close to park. Approximately 1/3 of my clients discuss challenges with parking weekly. Additionally, I have witnessed other counselors from down the block park in front of our office as parking in front of their office is full as well. I often see people who live in the rentals across the street park in front of our office as well, people who have a driveway they could park in. Thank you for doing something about this! (700 block 4th)

Business Owner in Owned Property

Sometimes clients can't park in front of our business. I would like a time limit but also a parking permit for my use. (500 block 4th)

We do not agree that there is any need to change the current parking situation. My employees only park on 4th Street directly in front of my address. This is a policy that we adopted several years ago. If we are overruled then i

would only be in favor of a parking district, or special permits to exceed the 2 or 3 hour limit; if that is the way it goes. Or establish controlled parking areas in front of the businesses that have the problems. Also as I said at the April 1st meeting, I purchased my building after thorough analysis of the on street parking that was available. I would assume that my neighbors would have done the same. To now have to inconvenience my business operation because these other businesses did not anticipate the problem is unfair. I feel that customer/client parking should be on site and that employees should find parking elsewhere nearby. It appears that my neighbors think the other way. (700 block 4th)

The auto dealerships should have their employees park there. I have worked here for 20 years and not had a problem until both OSU and the auto dealers have increased their size. (700 block 4th)

On our street there is no need. I cannot speak for other streets. (300 block Tyler)

We do NOT support a permit system!! (600 block 4th)

Our appts can go over 2 hrs. (600 block 4th)

I don't feel strongly about 2 hr. vs. 3 hr. limit. I am strongly in support of time-limits. (700 block 4th)

Parking should not be restricted. Did not want to answer question 4 and 5. (400 block Tyler)

The new owners of the Toyota/Subaru and Nissan/Volvo dealerships have significantly increased their inventories, reduced their on-site parking and, it appears, required their employees to park on City streets. The streets most affected in proximity to the dealerships and our office building where their employees park include Fillmore between 4th and 5th plus 4th St. South between Fillmore, Polk and Tyler. The parking situation for our patients/clients has been seriously compromised since the dealerships took the above noted actions. Our patients/clients have consistently reported to us that few to no parking spaces are available when they arrive at our building for their appointment, requiring them to park two to four blocks away. (700 block 4th)

Property Owner Not Living or Working in Subject Area

I own a triplex at the listed location. I contacted all the tenants to get information on their parking habits. The main unit park both vehicles in the driveway of the property, while the upstairs apartment park their vehicle in the back alley. The basement unit does not own or drive a car. No occupant parks on the street. It is interesting to note that parking in the described area is readily available on weekends. It would appear that employees of the offended businesses are the problem, if there is a problem. It is sad that the businesses could not work out the problems more directly than trying to involve the government to solve their problems. (600 block 4th)

Good ideas--high time to do something about this. (600 block 4th)

I checked with the tenants at my rental property. There are four gentlemen living in this 4 bedroom, 3 bath home. Each has a car. They park two to three cars in the driveway and have been parking one to two cars on the street. I contacted them about the problem and they said they would refrain from parking on the street in that affected areas. It should be noted that none of them had been contacted in any way about a perceived parking problem. Also, it should be noted that the street is nearly vacant of parked cars on the weekend, suggesting much of the parking is being taken by employees of the complaining businesses. It is sad the complaining individuals could not deal more directly with the problem, rather that immediately bring their complaint to the government for more governmental regulation. It should also be noted that when I did live there, employees were parking in the street, even when their business had off street parking. (700 4th)

ADMINISTRATIVE SERVICES COMMITTEE
SCHEDULED ITEMS

July 17, 2014

MEETING DATE	AGENDA ITEM
July 23	No meeting
August 6	•
August 20	• Transportation Maintenance Fee Rate Structure Review
September 3	• Visit Corvallis Fourth Quarter Report • Downtown Corvallis Association Economic Improvement District Fourth Quarter Report
September 17	•

October 8	• Fourth Quarter Operating Report
	• Council Policy Reviews and Recommendations:
	  • 91-2.01, "Meeting Procedures"
	  • 94-2.08, "Council Liaison Roles"

October 22	• Utility Rate Annual Review
November 5	•
November 19	• FY 2013-14 Parks and Recreation Department Cost Recovery Review • da Vinci Days Financial Status Update
December 3	• Visit Corvallis First Quarter Report • Downtown Corvallis Association Economic Improvement District First Quarter Report • Comprehensive Annual Financial Report • First Quarter Operating Report
December 17	•

ASC PENDING ITEMS

- Comcast Franchise Renewal Update — Public Works
- Council Policy Review and Recommendation:
  - 98-2.10, "Use of E-Mail by Mayor and City Council" (Jan 15) — CMO
- Economic Development Policy on Tourism — CMO
- Municipal Code Review: Chapter 4.01, "Solid Waste Regulations" — Community Development
- Neighborhood Property Maintenance Code Review (continued) — Community Development
- Tax Incentive Program for Downtown Area — Community Development

Regular Meeting Date and Location:

Wednesday of Council week, 3:30 pm – Madison Avenue Meeting Room

HUMAN SERVICES COMMITTEE
SCHEDULED ITEMS

July 17, 2014

MEETING DATE	AGENDA ITEM
July 22	No meeting
August 5	•
August 19	• Council Policy Review and Recommendation: • 99-4.14, "Use of City Hall Plaza and Kiosk" • Parks and Recreation Draft Master Plan Recommendation to Relocate Senior Center
September 2	• Social Services Semi-Annual Report
September 16	• Council Policy Review and Recommendation: • 93-4.11, "Public Library Policy for Selecting and Discarding Materials" • Rental Housing Program Annual Report
October 7	•
October 21	•
November 4	• Council Policy Review and Recommendation: • 95-4.08, "Code of Conduct on Library Premises"
November 18	•

December 2	• 2015-2016 Social Services Priorities and Calendar
	• Council Policy Reviews and Recommendations:
	  • 91-1.03, "Naming of Public Facilities and Lands"
	  • 91-4.01, "Guidelines for Selling in Parks"

December 16	•

HSC PENDING ITEMS

- Municipal Code Review: Chapter 5.01, "City Park Regulations" (Alcoholic Beverages in Parks) — Parks & Recreation
- Municipal Code Review: Chapter 9.02, "Rental Housing Code" — Community Development
- Open Carry of Firearms — Police
- OSU/City Collaboration Project Recommendations (Action Items 4-1, 4-3, 4-4, 5-1) — Community Development

Regular Meeting Date and Location:
Tuesday of Council week, 2:00 pm – Madison Avenue Meeting Room

URBAN SERVICES COMMITTEE
SCHEDULED ITEMS

July 17, 2014

MEETING DATE	AGENDA ITEM
July 22	• Demolition Permit Changes - Collaboration Recommendation • Climate Action Planning
August 5	• Explanatory Statement: Residential Parking Districts
August 19	•
September 2	No meeting
September 16	• Council Policy Review and Recommendation: • 02-7.15, "Fee-in-Lieu Parking Program"
October 7	• Council Policy Review and Recommendation: • 08-9.07, "Traffic Calming Program"
October 21	•
November 4	• Council Policy Review and Recommendation: • 98-9.06, "Transportation Corridor Plans"
November 18	•
December 2	•
December 16	•

USC PENDING ITEMS

- Council Policy Review and Recommendation:
  - 91-9.03, "Parking Permit Fees" — Public Works
- Municipal Code Review: Chapter 8.13, "Mobile Food Units" — Community Development, Public Works

Regular Meeting Date and Location:
Tuesday of Council week, 5:00 pm – Madison Avenue Meeting Room

UPCOMING MEETINGS OF INTEREST

City of Corvallis

JULY – OCTOBER 2014
(Updated July 17, 2014)

JULY 2014

Date	Time	Group	Location	Subject/Note
17	6:30 pm	Parks, Natural Areas, and Rec Brd	Downtown Fire Station	
~~18~~	~~7:00 pm~~	~~Planning Commission~~	~~Downtown Fire Station~~	
19		No Government Comment Corner		
21	**6:00 pm**	**City Council Work Session**	**Downtown Fire Station**	**HRC interview**
21	**6:30 pm**	**City Council**	**Downtown Fire Station**	
22		*No* Human Services Committee		
22	5:00 pm	Urban Services Committee	Madison Avenue Mtg Rm	
22	5:15 pm	Cmsn for Martin Luther King, Jr.	Osborn Aquatic Center	
23		*No* Administrative Services Cmte		
~~23~~	~~5:15 pm~~	~~Watershed Management Adv Cmsn~~	~~Madison Avenue Mtg Rm~~	
26		No Government Comment Corner		

AUGUST 2014

Date	Time	Group	Location	Subject/Note
1	7:00 am	Bicycle and Pedestrian Adv Cmsn	Madison Avenue Mtg Rm	
2		No Government Comment Corner		
4	**6:30 pm**	**City Council**	**Downtown Fire Station**	
5	7:00 am	Airport Commission	Madison Avenue Mtg Rm	
5	2:00 pm	Human Services Committee	Madison Avenue Mtg Rm	
5	4:00 pm	Downtown Parking Committee	Downtown Fire Station	
5	5:00 pm	Urban Services Committee	Madison Avenue Mtg Rm	
6	3:30 pm	Administrative Services Committee	Madison Avenue Mtg Rm	
6	7:00 pm	Planning Commission	Downtown Fire Station	
6	7:30 pm	Library Board	Library Board Room	
9		No Government Comment Corner		
11	3:00 pm	Economic Development Cmsn	Madison Avenue Mtg Rm	
11	***6:30 pm***	***City Council/County Board of Commissioners Work Session***	***Madison Avenue Mtg Rm***	
11	***7:30 pm***	***City Council Work Session***	***Madison Avenue Mtg Rm***	
12	8:20 am	Citizens Advisory Cmsn on Transit	Madison Avenue Mtg Rm	
12	6:30 pm	Historic Resources Commission	Downtown Fire Station	
13	5:30 pm	Downtown Commission	Madison Avenue Mtg Rm	
14	8:30 am	Citizens Advisory Cmsn on Civic Beautification and Urban Forestry	Parks and Rec Conf Room	
16	10:00 am	Government Comment Corner	Library Lobby - Mike Beilstein	
18	**6:30 pm**	**City Council**	**Downtown Fire Station**	
19	2:00 pm	Human Services Committee	Madison Avenue Mtg Rm	
19	5:00 pm	Urban Services Committee	Madison Avenue Mtg Rm	
20	12:00 pm	Housing and Comm Dev Cmsn	Madison Avenue Mtg Rm	
20	3:30 pm	Administrative Services Committee	Madison Avenue Mtg Rm	
~~20~~	~~5:30 pm~~	~~Arts and Culture Commission~~	~~Parks and Rec Conf Room~~	
20	7:00 pm	Planning Commission	Downtown Fire Station	
20	*7:00 pm*	*Ward 3 Meeting*	*Tunison Community Room*	
21	6:30 pm	Parks, Natural Areas and Rec Brd	Downtown Fire Station	
23	10:00 am	Government Comment Corner	Library Lobby - Julie Manning	

26	5:15 pm	Cmsn for Martin Luther King, Jr.	Osborn Aquatic Center
~~27~~	~~5:15 pm~~	~~Watershed Management Adv Cmsn~~	~~Madison Avenue Mtg Rm~~
30		No Government Comment Corner	

SEPTEMBER 2014

Date	Time	Group	Location	Subject/Note
1		City holiday - all offices closed		
2	7:00 am	Airport Commission	Madison Avenue Mtg Rm	
2	2:00 pm	Human Services Committee	Madison Avenue Mtg Rm	
2	4:00 pm	Downtown Parking Committee	Downtown Fire Station	
2		No Urban Services Committee		
2	**6:30 pm**	**City Council**	**Downtown Fire Station**	
3	3:30 pm	Administrative Services Committee	Madison Avenue Mtg Rm	
3	7:00 pm	Planning Commission	Downtown Fire Station	
3	7:30 pm	Library Board	Library Board Room	
5	7:00 am	Bicycle and Pedestrian Adv Cmsn	Madison Avenue Mtg Rm	
6		No Government Comment Corner		
8	3:00 pm	Economic Development Cmsn	Madison Avenue Mtg Rm	
9	8:20 am	Citizens Advisory Cmsn on Transit	Madison Avenue Mtg Rm	
9	6:30 pm	Historic Resources Commission	Downtown Fire Station	
10	5:30 pm	Downtown Commission	Madison Avenue Mtg Rm	
11	8:30 am	Citizens Advisory Cmsn on Civic Beautification and Urban Forestry	Parks and Rec Conf Room	
13		No Government Comment Corner		
15	**6:30 pm**	**City Council**	**Downtown Fire Station**	
16	2:00 pm	Human Services Committee	Madison Avenue Mtg Rm	
16	5:00 pm	Urban Services Committee	Madison Avenue Mtg Rm	
17	12:00 pm	Housing and Comm Dev Cmsn	Madison Avenue Mtg Rm	
17	3:30 pm	Administrative Services Committee	Madison Avenue Mtg Rm	
17	*4:00 pm*	*Public Art Selection Commission*	*Parks and Rec Conf Room*	
17	~~5:30 pm~~ *5:00 pm*	Arts and Culture Commission	Parks and Rec Conf Room	
17	7:00 pm	Planning Commission	Downtown Fire Station	
18	6:30 pm	Parks, Natural Areas, and Rec Brd	Downtown Fire Station	
20		No Government Comment Corner		
23	5:15 pm	Cmsn for Martin Luther King, Jr.	Osborn Aquatic Center	
24	5:15 pm	Watershed Management Adv Cmsn	Madison Avenue Mtg Rm	
27		No Government Comment Corner		

OCTOBER 2014

Date	Time	Group	Location	Subject/Note
1	7:00 pm	Planning Commission	Downtown Fire Station	
1	7:30 pm	Library Board	Library Board Room	
3	7:00 am	Bicycle and Pedestrian Adv Cmsn	Madison Avenue Mtg Rm	
4	10:00 am	Government Comment Corner	Library Lobby - Penny York	
6	**6:30 pm**	**City Council**	**Downtown Fire Station**	
7	7:00 am	Airport Commission	Madison Avenue Mtg Rm	
7	2:00 pm	Human Services Committee	Madison Avenue Mtg Rm	
7	4:00 pm	Downtown Parking Committee	Downtown Fire Station	
7	5:00 pm	Urban Services Committee	Madison Avenue Mtg Rm	
8	3:30 pm	Administrative Services Committee	Madison Avenue Mtg Rm	
8	5:30 pm	Downtown Commission	Madison Avenue Mtg Rm	
8	7:00 pm	Budget Commission	Madison Avenue Mtg Rm	

9	8:30 am	Citizens Advisory Cmsn on Civic Beautification and Urban Forestry	Parks and Rec Conf Room
11		No Government Comment Corner	
13	3:00 pm	Economic Development Cmsn	Madison Avenue Mtg Rm
14	8:20 am	Citizens Advisory Cmsn on Transit	Madison Avenue Mtg Rm
14	6:30 pm	Historic Resources Commission	Downtown Fire Station
15	12:00 pm	Housing and Comm Dev Cmsn	Madison Avenue Mtg Rm
15	4:00 pm	Public Art Selection Commission	Parks and Rec Conf Room
15	5:30 pm	Arts and Culture Commission	Parks and Rec Conf Room
16	6:30 pm	Parks, Natural Areas, and Rec Brd	Downtown Fire Station
16	7:00 pm	Planning Commission	Downtown Fire Station
18		No Government Comment Corner	
20	**6:30 pm**	**City Council**	**Downtown Fire Station**
21	2:00 pm	Human Services Committee	Madison Avenue Mtg Rm
21	5:00 pm	Urban Services Committee	Madison Avenue Mtg Rm
22	3:30 pm	Administrative Services Committee	Madison Avenue Mtg Rm
22	5:15 pm	Watershed Management Adv Cmsn	Madison Avenue Mtg Rm
25	10:00 am	Government Comment Corner	Library Lobby - Mike Beilstein
28	5:15 pm	Cmsn for Martin Luther King, Jr.	Osborn Aquatic Center

Bold type – involves the Council

~~Strikeout~~ type – meeting canceled

Italics type – new meeting

CIP – Capital Improvement Program

HRC – Historic Resources Commission

PC – Planning Commission

TBD – To be Determined

James R. McWilliams
Prop/Liab Manager
Eugene, OR
(503) 763-3886

citycounty insurance services
www.cisoregon.org

Interoffice Communication

To: **Steve Uerlings** **Date:** **7/21/14**

Subject: **Corvallis Water Main Break Claims**

This will confirm our phone conversation regarding the planned handling of claims that may result from the July 14, 2014 water main break.

1. CIS will pay all reasonable remediations expenses related to this loss.

2. CIS will pay costs to restore or repair real property directly caused by the current loss. (subject to the ACV or depreciation of those items items that require replacement)

3. CIS will pay for the ACV (used value) of those personal property items that could not be cleaned or restored.

4. The payments will be made after an agreement on the damages has been agreed upon and a release has been signed by the property owner.

WATER MAIN BREAK
NW TYLER BETWEEN 35TH & 36TH STREETS
JULY 10, 2014
INCIDENT REPORT

System information:

- **About 250 miles of water mains in City**
- **Approx. 16,500 service pipe connections**
- **7,000 valves**
- **2,000 fire hydrants**
- **Pipe sizes range from 2 to 42 inches in diameter**
- **Ages range from 1920's to 2012**
- **In 2010 dollars, the City's water, waste water, and stormwater infrastructure has a replacement value of about $1.1 billion, of which the water pipes total about $300M of that amount.**

Water Break information:

Thursday, July 10, 2014:

- **Emergency Dispatch received a call at 10:57 am**
- **Water Distribution crew dispatched to site immediately**
- **Crews identified system valves that needed to be turned down to control flow from the break. Three valves were closed. Water was basically turned off at 11:16 am.**
- **12 water services were without water (8 on 36th Street,2 on Tyler, 2 on Polk)**
- **10 employees from the Water Distribution Crew began excavating the street in vicinity of the break under the direction of the Water Distribution Supervisor**
- **Water main was approx. 6 feet deep**
- **Excavation revealed a large break in the bell housing of one section of pipe which is about 15 feet in length.**
- **The watermain was a 1947 vintage cast iron pipe installed in 1951 as part of a larger project that extended from 35th and Tyler, west to 36th street, then north to 36th and Grant Avenue.**
- **Water reservoir records indicated about 200,000 gallons of water left the system in about 20 minutes.**
- **Wastewater collection and stormwater system field crews diverted to assist with the repairs.**
- **Numerous resources were brought on site including backhoes, dump trucks, hydro-excavator trucks, boom trucks and a host of service trucks.**
- **In addition to field staff, and other supervisors, the City Engineer, Risk Manager, Public Works Director, PW Administrative Manager, City Manager, were all onsite.**
- **Dumpsters were ordered and delivered to assist affected residents.**
- **Bottled water was delivered to customers whose water service was shutoff while the repair took place.**

- **Three portable toilets were delivered to the site.**
- **Adjacent streets were swept to remove all debris from street surfaces.**
- **Benton County Environmental Services also made their services available if needed.**
- **Risk Manager knocked on virtually every door in the neighborhood to make contact with homeowners and to provide a packet of information explaining how to manage the clean up, mitigation and insurance process, general information related to contaminated water, contact information for disaster restoration companies, insurance claim form, and contact information for questions**
- **Repair work to the pipe was completed at 7:30 pm.**
- **System then flushed and disinfected.**
- **Bacteriological sample taken and delivered to City water lab for analysis (holding time on sample to incubate)**
- **Excavation filled, and then cleanup work done, including street sweeping, removal of debris from adjacent homeowner yards and parkstrips**
- **Service was completely restored by 8:00 pm on Friday, July 11th.**

****

At this time, we have about 20 properties with water damage with 13 homeowners submitting a claim.

On Monday July 14th, Jim McWilliams, PL Claims Manager at CIS said that after a meeting of their leadership they will be covering all damages including personal property for those property owners that sustained damages to their homes as a result of the water line break last week. It was their opinion that the circumstances in this case were highly unusual and that it would be the right thing to do in light of two other water lines breaks in recent years at the same location.

CIS assigned two claims consultants (Jeff Sweet and Pat LeRoy) to assist residents and they were both on site on Monday (14th) and Tuesday (15th). They contacted each of the affected homeowners.

CIS will work closely with the affected property owners to deal with replacement of damaged personal property and how to compensate (replacement value vs. real market value) for that, the clean-up and restoration for the properties.

****

The replacement *ductile iron waterline is currently being installed on Tyler between 36th and 35th.

*The ductile iron used to manufacture the pipe is characterized by the spheroidal or nodular nature of the graphite within the iron. The standard internal lining is cement mortar and standard external coatings include bonded zinc, asphalt or water-based paint. The lifespan in excess of 100 years has been estimated for ductile iron pipelines.

July 21, 2014

To: Corvallis City Council
From: David Eckert, , Corvallis, OR 97330
Subject: Selling Public Parks

I am here tonight to request all information the City government has related to any interests or initiatives to sell any City-owned parkland or natural areas. I am also requesting that this Council, this year, create a City document that will strengthen our protection of parkland.

I am submitting to you **City Resolution 94-13** so you are fully aware that a past City Council was interested in inhibiting future Councils from giving away or selling City Parks. While this is only a resolution and there are inherent weaknesses in the resolution, the intent of this document is clear. Note that Washington Park is one of 20 parks listed under *"It cannot be sold."*

I am also submitting to you **Comprehensive Plan Policy 5.6.4.** It reads:
"Land that has been acquired for park purposes shall not be used for any other purposes unless the use is strictly temporary in nature and is compatible with park use. These temporary uses shall be sensitive to, and compatible with, the environment and abutting uses."

While past City Councils voted in strongly worded documents to protect our parks, I submit to you a paragraph from page 13 of the recently approved City budget that appears to contradict the cautionary words and laudable goals of past Councils.

"5) EXAMINE THE INVENTORY OF ASSETS
Staff has examined the City's current inventory of assets. The largest share of assets the City owns are not available for sale and consist of the infrastructure systems citizens rely on (e.g., pipes, streets, treatment plants). Each department has examined its fleet of vehicles to ensure that all vehicles are needed and used; in some departments replacements have been deferred to a future year. All City-owned buildings are currently in use by the City or are leased to a non-profit that uses the facility for community purposes (e.g., Majestic Theatre, Arts Center). The City's park land is generally well used for park and public green space access. Staff continues to evaluate opportunities to improve parks, and ***will consider selling park land that is underutilized*** *in favor of using the sale proceeds to expand capacity and/or enhance amenities in existing City parks where the potential for additional use by the public is likely."*

So, I have two requests:

1. Release to the public any documents or communications related to the potential sale of parkland or natural areas.
2. Create a City document that provides greater protection against the sale or gifting of City parks and natural areas than is currently afforded by Resolution 94-13 or Comprehensive Plan Policy 5.6.4. Thank you.

RESOLUTION 94-13

Minutes of the meeting of March 21, 1994, continued.

A resolution submitted by Council person Helen Berg.

WHEREAS, the City Council has established a Systems Development Charge for Parks, a policy for naming parks, a land acquisition strategy for parks, and a Trails Master Plan for the community of Corvallis; and

WHEREAS, the City Council has endorsed the acquisition and development of land for parks of all types and sizes and the Council wishes to ensure that these areas will be kept and developed as parks and open space; and

NOW, THEREFORE, the City Council of the City of Corvallis resolves that the following properties owned by the City of Corvallis in fee simple shall be dedicated:

Land Dedicated for Parks:

Land dedicated for parks will have a restriction as follows: it cannot be sold. It can be used, in addition to a park, for public squares, memorials, monuments, campgrounds, and contain amenities which may include, but are not limited to: comfort stations, tennis courts, playgrounds, sports fields, fountains, trails, and recreational buildings, such as community recreation centers. The following are lands dedicated for parks:

- Arnold
- Avery
- Brandis
- Bruce Starker Arts Park
- Central
- Chintimini
- Chip Ross
- Cloverland
- Franklin Square
- Lilly
- Martin Luther King, Jr. City Park
- Pioneer
- Pioneer Boat Basin
- Porter
- Kermit E. Roth Gateway Park

- Timberhill
- Tunison
- Village Green
- Washington
- Woodland Meadow

The following are dedicated for parks and public purposes:

Land dedicated for park and public purposes may accommodate not only park and a variety of recreational uses but other appropriate public uses, such as fire substations or water reservoirs, as long as it does not dominate, restrict access or use, and/or development of the park for public recreational purposes. Such other appropriate public uses may only occur after the City Council conducts a public hearing on the proposed use. The following are lands dedicated for parks and public purposes.

- Bald Hill
- Alan B. Berg Regional Park
- Oak Creek
- Sunset
- Walnut
- Willamette

The areas designated as parks are:

These areas are not dedicated but are designated as parks. Use for other than public uses may only occur after the City Council conducts a public hearing on the proposed use.

- Riverfront Commemorative Park
- Rock Creek
- Shawala Point

THE CITY COUNCIL FURTHER RESOLVES that the City Manager is authorized to enter as a matter of record, the dedication of these facilities.

Helen M. Berg

MEMORANDUM

To:	**Mayor and City Council**
From:	**Ken Gibb, Community Development Director**
Date:	**July 21, 2014**
Subject:	**Recommended Motion to Approve Package #1 Land Development Code Amendments (LDT13-00002, LDT13-00003) AND Direction on Additional Changes to the Density Calculation Definition and Methodology**

1) **Motions on Package # 1 Land Development Code Text Amendments:** The June 9, 2014, Staff Memorandum to City Council includes two motions, recommended by Staff, to approve the Package # 1 Land Development Code text amendments. Here are the recommended motions:

MOTION 1: Recommendations from the Historic Resources Commission (LDT13-00002)

I move to approve the Land Development Code Text Amendments associated with the recommendations of the Historic Resources Commission, as presented in the March 12, 2014, Planning Commission Staff Report, as modified by the Planning Commission and City Staff, and as described in the June 9, 2014, City Council Staff Report, subject to the approval of formal findings and an ordinance.

MOTION 2: Change Schedule for Land Use Application Fee Reviews, adopt amendments proposed by the Neighborhood Planning Workgroup, and adopt amendments proposed by the Economic Development Commission (LDT13-00003)

I move to approve the Staff-recommended changes to the Land Development Code associated with the timeline for annual review of land use application fees, as presented in the March 12, 2014, Planning Commission Staff Report; with the recommendations of the Neighborhood Planning Workgroup, as presented in the March 12, 2014, Planning Commission Staff Report, and as modified by the Planning Commission and described in the June 9, 2014, City Council Staff Report; and with the recommendations of the Economic Development Commission, as presented in the March 12, 2014, Planning Commission Staff Report, and as modified by the Planning Commission and described in the June 9, 2014, City Council Staff Report; subject to the approval of formal findings and an ordinance.

2) **Density Calculation**: At the City Council's June 16, 2014, public hearing regarding Package # 1, the Council asked staff to provide additional analysis regarding Tony Howell's proposal for density rounding, as well as additional information on Staff's proposed approach to density calculation issues. Staff provided a detailed, follow-up discussion on this topic, in a July 2, 2014, memorandum to City Council, including the pros and cons of different approaches to the density calculation methodology. Staff also provided four options for the Council to consider, in moving forward with any additional changes to the Density Calculation definition in the Land Development Code. The four options outlined in the July 2, 2014, memo are as follows:

1) **Instruct staff to develop a new approach to density calculations to be included in the Package #1 LDC Amendments, which will be considered by the City Council at an upcoming public hearing (yet to be scheduled).**

   Pro: Would provide the most expeditious path to adoption of a new approach to density calculations.

   Con: Would delay the adoption of the other items in Package #1. Staff cannot say precisely how long it would take to develop a new density methodology, but it would likely take at least an additional month, and perhaps longer. It is likely that incorporation of a new density methodology into the LDC would require state-required Measure 56 notices to be mailed to all owners of residential property in the City prior to the public hearing on this item {20 days prior to the hearing). The Measure 56 notices that were mailed regarding the Planning Commission's consideration of the Package #1 Code Amendments were sent to every property owner in the City and cost approximately $14,000.

   If the new density methodology proves to be controversial, time spent revising and refining this proposal, and potential appeals, could significantly delay adoption of the other measures in Package #1. Conversely, appeal of the other items in Package #1 could delay implementation of a new density methodology.

2) **Instruct staff to develop a new approach to density calculations as a "stand-alone" Land Development Code Amendment item, to be considered and adopted on a separate schedule from other code amendment packages.**

   Pro: Would not complicate the adoption of other code amendment items. Work could begin soon on this item.

   Con: Without a specific timeline, it would be complicated to schedule and consider this item outside the schedules for Packages #1 and #2. A separate Measure 56 notice would likely be required, which would add to City costs for this approach (estimated to be in the range of $10,000}.

3) **Instruct staff to develop a new approach to density calculations to be considered concurrently with the Package #2 LDC Amendments, which are tentatively anticipated to be considered beginning in September of 2014. A separate land use case number, staff report, and process could be used to consider the revised density provisions separate from, but concurrent with, the Package #2 code amendments.**

Pro: Would allow timely development and consideration of new density standards, but would be separated from the Package #2 items such that Package #2 would not be vulnerable on appeal if the density standards were appealed, or vice versa.

Would allow for cost savings, because one "Measure 56" notice could be sent regarding Package #2 and density items. Concurrent timelines would allow the development of a new density approach and design standards to be coordinated and informed by one another.

Con: Would delay consideration of new density provisions until September of 2014.

4) **Instruct the Technical Advisory Team to develop a new approach to density calculations as part of their work on Package #2.**

Pro: Would allow for advisory team involvement in the development of a new approach for density calculations.

Con: Technical Advisory Team members were not expecting to be tasked with this complex topic. Adding this item to their work program could result in significant delays and may require a longer commitment than TAT members initially signed on for.

Adding this item into the Package #2 code amendments could result in delayed implementation of the other items, particularly if one or the other is appealed. However, the TAT could work on this item separately, in a separate, but concurrent package to reduce the likelihood of delay by appeal.

Staff notes that as described in the April 29, 2014, Memorandum to the City Council, <u>if either Option # 2 or # 3 above is chosen, Staff proposes working with the Planning Commission through a Work Session format, to review the proposal prior to finalizing the proposal and conducting the formal adoption process.</u>

Requested Action:

Staff request that the City Council consider the above information and provide direction regarding how to proceed.

The proposed text amendments as recommended by staff are as follows:

Chapter 1.6 – Definitions

Affordable Housing - Housing for which ownership costs (mortgage loan principal, interest property taxes, and insurance), or rental costs (unit rent and utilities) require no more than 30 percent of the gross monthly income of a household that has income at or below 80 percent of the Corvallis area median. The Corvallis area median is calculated annually by the U. S. Department of Housing and Urban Development (HUD) and applied based on household size. These numbers are updated annually by HUD and are on file in the City's Housing Division. See also; Qualified Affordable Housing Development.

Qualified Affordable Housing Development - Housing development that is designed to serve residents through ownership or rental costs that comprise no more than 30 percent of the gross monthly income of a household that has income at or below 60% of the Corvallis area median. Qualified Affordable Housing Development shall demonstrate commitment to providing affordable housing through deed restrictions, restrictive covenants, or other acceptable form of assurance, for a period of not less than 20 years.

Section 4.1.30 - OFF-STREET PARKING REQUIREMENTS
Minimum parking requirements for Use Types in all areas of the City, with the exception of the Central Business (CB) Zone and the Riverfront (RF) Zone, are described in Sections 4.1.30.a through 4.1.30.f. Minimum parking requirements for the Central Business (CB) Zone are described in Section 4.1.30.g.

a. Residential Uses Per Building Type –

1. Single Detached and Manufactured Homes -
- ***a) Vehicles - Two spaces per dwelling unit.***
- ***b) Bicycles - None required.***

2. Single Attached - Zero Lot Line

a)	Vehicles -		
	1) One, Two, or Three-bedroom Unit		- Two spaces per unit.
	2) Four-bedroom Unit	-	3.5 spaces per unit.[1]
	3) Five-bedroom Unit	-	4.5 spaces per unit.[1]
b)	Bicycles -		
	1) Studio or Efficiency Unit	-	One space per unit.
	2) One-bedroom Unit	-	One space per unit.
	3) Two-bedroom Unit	-	1.5 spaces per unit.
	4) Three-bedroom Unit -		Two spaces per unit.
	5) Four-bedroom Unit	-	Three spaces per unit.
	6) Five-bedroom Unit	-	Four spaces per unit.

3. Single Detached with more than one dwelling unit on a single lot, Duplex, Attached, and Multi-dwelling -

a)	Vehicles -		
	1) Studio or Efficiency Unit	-	One space per unit.
	2) One-bedroom Unit	-	One space per unit.
	3) Two-bedroom Unit	-	1.5 spaces per unit.
	4) Three-bedroom Unit -	-	2.5 spaces per unit.

---

[1] *Minimum parking requirements for four- and five-bedroom units in Sections 4.1.30.a.2., and 3., above shall be 2.5 spaces per unit for development that meets the requirements of Qualified Affordable Housing Development, as defined in Chapter 1.6 – Definitions.*

5)	Four-bedroom Unit	-	3.5 spaces per unit.[1]
6)	Five-bedroom Unit	-	4.5 spaces per unit.[1]

b) Bicycles -

1)	Studio or Efficiency Unit	-	One space per unit.
2)	One-bedroom Unit	-	One space per unit.
3)	Two-bedroom Unit	-	1.5 spaces per unit.
4)	Three-bedroom Unit	-	Two spaces per unit.
5)	Four-bedroom Unit	-	Three spaces per unit.
6)	Five-bedroom Unit	-	Four spaces per unit.

The required bicycle parking may be located within a structure, in accordance with the provisions of Section 4.1.70.

The proposed text amendments as recommended by **Willamette Neighborhood Housing Services** are as follows:

Chapter 1.6 – Definitions

Affordable Housing - Housing for which ownership costs (mortgage loan principal, interest property taxes, and insurance), or rental costs (unit rent and utilities) require no more than 30 percent of the gross monthly income of a household that has income at or below 80 percent of the Corvallis area median. The Corvallis area median is calculated annually by the U. S. Department of Housing and Urban Development (HUD) and applied based on household size. These numbers are updated annually by HUD and are on file in the City's Housing Division. See also; Eligible Affordable Housing Units.

Eligible Affordable Housing Units – Housing units that are affordable to and restricted to occupancy by low-income residents with a gross income of:

- **80% or below the Corvallis median income, adjusted by family size, in the case of owner-occupied housing; or**
- **60% or below the Corvallis median income, adjusted by family size in the case of renter-occupied housing.**

"Affordable" mean that low-income households within a specified range pay no more than 30% of gross monthly income on mortgage payments (principle, interest, property taxes, and insurance), or rent plus utilities. The applicable income and affordability restrictions shall be recorded by the City of Corvallis and/or State of Oregon in the form of deed restrictions or such other mechanism acceptable to the City of Corvallis and/or State of Oregon. These restrictions shall be for a minimum of 20 years, and will specify the method for calculating affordability that is to be applied to the property.

Section 4.1.30 - OFF-STREET PARKING REQUIREMENTS
Minimum parking requirements for Use Types in all areas of the City, with the exception of the Central Business (CB) Zone and the Riverfront (RF) Zone, are described in Sections 4.1.30.a through 4.1.30.f. Minimum parking requirements for the Central Business (CB) Zone are described in Section 4.1.30.g.

a. Residential Uses Per Building Type –

1. Single Detached and Manufactured Homes -
a) Vehicles - Two spaces per dwelling unit.

b) ***Bicycles*** - ***None required.***

2. **Single Attached - Zero Lot Line**

a)	**Vehicles -**		
	1)	**One, Two, or Three-bedroom Unit**	**- Two spaces per unit.**
	2)	**Four-bedroom Unit**	**- 3.5 spaces per unit.**[2]
	3)	**Five-bedroom Unit**	**- 4.5 spaces per unit.**[1]
b)	**Bicycles -**		
	1)	**Studio or Efficiency Unit**	**- One space per unit.**
	2)	**One-bedroom Unit**	**- One space per unit.**
	3)	**Two-bedroom Unit**	**- 1.5 spaces per unit.**
	4)	**Three-bedroom Unit**	**- Two spaces per unit.**
	5)	**Four-bedroom Unit**	**- Three spaces per unit.**
	6)	**Five-bedroom Unit**	**- Four spaces per unit.**

3. **Single Detached with more than one dwelling unit on a single lot, Duplex, Attached, and Multi-dwelling -**

a)	**Vehicles -**		
	1)	**Studio or Efficiency Unit**	**- One space per unit.**
	2)	**One-bedroom Unit**	**- One space per unit.**
	3)	**Two-bedroom Unit**	**- 1.5 spaces per unit.**
	4)	**Three-bedroom Unit**	**- 2.5 spaces per unit.**
	5)	**Four-bedroom Unit**	**- 3.5 spaces per unit.**[1]
	6)	**Five-bedroom Unit**	**- 4.5 spaces per unit.**[1]
b)	**Bicycles -**		
	1)	**Studio or Efficiency Unit**	**- One space per unit.**
	2)	**One-bedroom Unit**	**- One space per unit.**
	3)	**Two-bedroom Unit**	**- 1.5 spaces per unit.**
	4)	**Three-bedroom Unit**	**- Two spaces per unit.**
	5)	**Four-bedroom Unit**	**- Three spaces per unit.**
	6)	**Five-bedroom Unit**	**- Four spaces per unit.**

The required bicycle parking may be located within a structure, in accordance with the provisions of Section 4.1.70.

---

[2] *Minimum parking requirements for four- and five-bedroom units in Sections 4.1.30.a.2., and 3., above shall be 2.5 spaces per unit for development that meets the requirements of Eligible Affordable Housing Units, as defined in Chapter 1.6 – Definitions.*

Testimony and Motions related to Council Policy 96.06.03 Economic Development Policies by Richard Hervey, Councilor Ward 3

I'd like to thank the Administrative Services Committee, staff and the Elizabeth French for considering and discussing my comments on the Economic Development Policies. And I apologize for the late date at which they were delivered. At the time that I wrote those comments I had not had time to re-review the Economic Development Strategy that the EDC developed.

Since the EDC Strategy is included by attachment in this policy under discussion and since the policy is the primary vehicle by which we provide direction to the EDC on what we want done, I reviewed the strategy as well. I remember having objections to the introduction in particular and a few other items during my initial review. I came away from this review with much more positive feelings.

That said, I do believe that the next edition would benefit from:

- Given Benton County's financial stake in the EDC, more inclusive language regarding Benton County's involvement, with goals specifically designed to benefit Benton County in general, not just inside the City boundaries.
- Acknowledgement of OSU expertise in Agriculture as well as "tech based businesses" in the sections on Economic Landscape and Goals.

Follow up on my comments to ASC

6.03.046 Economic Sustainability (definition) – currently reads:
"Economic Sustainability. A dynamic concerning specification of a set of actions to be taken by present persons that will not diminish the prospects of future persons to enjoy levels of consumption, wealth, utility, or welfare comparable to those enjoyed by present persons."

My letter to the ASC noted – "Having taken some time to find a better definition for Economic Sustainability, I have some appreciation for why we settled for this awkwardly worded sentence. However, the inclusion of the phrase 'will not diminish the prospects of future persons to enjoy levels of consumption ... comparable to those enjoyed by present persons' does not fit for my understanding of any kind of sustainability. I support economic development that works to provide the same quality of life as we currently experience, but reject the idea that to do so requires the very unsustainable current 'levels of consumption' ". I went on to propose what I believe to be a much better definition, which I believe the majority of council would not support.

However, my concern remains and I now have a better compromise. **I move that we amend Council Policy 96.06.03.046 to read:**
"Economic Sustainability. A dynamic concerning specification of a set of actions to be taken by present persons that will not diminish the prospects of future persons to enjoy ~~levels of consumption, wealth, utility, or welfare~~ *a quality of life* comparable to those enjoyed by present persons."

6.03.070 Sustainability – currently reads

"The City recognizes that sustainability includes environmental, social, and economic factors and acknowledges that economic strength is required to finance the community's social and environmental programs. This Policy directly addresses economic sustainability."

My letter to ASC noted: "This section is far from the spirit of CP 04-1.08 Organizational Sustainability as well as my perception of the original 2003 council goal on sustainability and the branding we have done (as in the Airport Enterprise Zone) for being a city that emphasizes sustainable businesses. Rather than debate changes to the section, I recommend deletion. We have dealt with "Economic Sustainability" elsewhere in the policy."

The ASC minutes reflect no discussion of this topic. **I move that we amend Council Policy 96.06.03 to delete section 6.03.070.**

<u>6.03.068 Economic Development Services</u> (section e) – currently reads
"The City shall support activities that enhance the Economic Development mission and goals.
... Examples of such activities include:

e) Recruiting companies from outside the local area within targeted industry sectors;"

In my letter to ASC, I wrote "I do not see where Council has provided guidance in this document as to the industry sectors that we are targeting. I would welcome a Council discussion on which targeted sectors we feel recruitment from outside of the local area is appropriate. Failing providing that guidance, I recommend deleting this section."
I raised this issue as I do not believe that the community supports unlimited recruitment of outside industry sectors. According to the ASC minutes, Director Nelson is noted to have responded "Smaller communities do not want to limit themselves to smaller clusters or sectors. Corvallis must be able to address retention /expansion / development of any sector that meets the economic development strategy filtered by the Prosperity That Fits guidelines." I'm not excited about the PTF filter as I believe that process was flawed due to underrepresentation of the sustainability community. But at least the inclusion of Director's Nelsons suggested filter did pass through a public process.

According to the minutes, neither of my recommendation of providing guidance to the EDC nor my secondary recommendation of deleting this section has been addressed. The notes reflect a general discussion about the value in holding discussions at the beginning of a term rather at the end. Yet the recommended next review remains at the end of a term.

I therefore move to amend policy 96.06.03 to read:

"e) Recruiting companies from outside the local area within targeted industry sectors *<u>that meet the economic development strategy filtered by the Prosperity That Fits guidelines</u>*;"

To: City Council July 21, 2014
From: Dan Brown, Ward 4

SUBJECT: RENEGOTIATION OF DOWNTOWN HOTEL PROPOSAL

<u>Motion</u>: I move that the Council direct staff to reopen discussions with the developers of the proposed downtown hotel to see if a mutually agreeable proposal is possible.

Based on input from the public, I recommend that the Council provide the following guidelines for future discussions:

1. The city should not be subject to downside risk and should not risk having to dip into the general fund.
2. The City should not be advancing any cash into this public/private partnership.
3. The City should not use its borrowing capability or issue any bonds to help this project.
4. The hotel/garage project should pay its property taxes and should not restrict those taxes to helping pay for the project. Property taxes from the hotel/garage should be available for all public uses like anyone else's property taxes.
5. The share of TRT tax that goes to the visitor's bureau should benefit all tourism in this town, not just this hotel.
6. There needs to be a guarantee of more public parking spaces available in the garage, with penalties if it is not made available.
7. The City could apply the increase in TRT revenue it receives from the hotel in exchange for public access to the new downtown parking garage associated with the hotel.
8. Since a real estate transaction would no longer be involved, it will not be necessary for the City to discuss this matter in executive session.

From Rick Hangartner
7-21-14 Council
mtg.

RESOLUTION 2014-_____

A resolution submitted by Councilor _____

WHEREAS OSU serves a significant non-urban regional commuting full-time and part-time student population and has a non-urban regional commuting employee population; and

WHEREAS, in the last decade OSU has significantly reduced the amount of on-campus parking by erecting new buildings on several on-campus parking lots and built other new classroom and office buildings on open-space without building new parking; and

WHEREAS, as stated in the June 2, 2014 City Council meeting, after nearly three years of deliberations, the Corvallis City Council unanimously passed Ordinance 2014-05, as stated in the June 2, 2014 City Council meeting "to deal with the inherent imbalance between the available parking spaces around the Oregon State University (OSU) campus and the number of people wanting to park in them;" and

WHEREAS, the voters of Corvallis have placed a referendum to repeal Ordinance 2014-05 on the November 4, 2014 General Election ballot; and

WHEREAS, City staff reported to the City Council in the June 20, 2014 meeting that even if the referendum fails, "the earliest the program could begin is February 2015, though a more realistic date would be several months later", and therefore that "it might be prudent to wait until September 2015;" and

WHEREAS, City staff informed the City Council in the June 20, 2014 meeting that due to the voters placing a referendum to repeal Ordinance 2014-05 on the ballot, implementation of the strategy jointly devised by City leadership and the OSU administration to enact "parking changes on the OSU campus and in the surrounding neighborhoods will not be possible", so that "(a)s a result, on-street parking pressures likely will rise in the fall, after the price increases for parking in the OSU lots on the north side of campus;" and

WHEREAS, the new OSU parking and traffic plan OSU has communicated to City Council proposes to move a large amount of OSU parking traffic from the north and east area of the OSU campus to the south central and west areas of campus through differential pricing; and

WHEREAS, in suspending implementation of the Ordinance 2014-05, the voters have afforded City Council a unique opportunity to independently evaluate whether the strategies of differential pricing and an on-campus shuttle system implemented by the OSU plan are effective, or how these strategies should be adjusted to be effective.

NOW, THEREFORE, THE CITY COUNCIL OF CORVALLIS RESOLVES THAT Council finds assuring affordable access by students to university education, and by the public to jobs at OSU is a high priority and essential to the economic sustainability of Corvallis, Benton County, and the State of Oregon.

BE IT FURTHER RESOLVED THAT Council finds that as OSU serves a non-urban regional commuting student and employee population, free and low-cost on-campus parking is essential to facilitating student access to affordable education and employee access to jobs at OSU.

BE IT FURTHER RESOLVED THAT Council finds that due to the successful effort by voters to place the referendum to repeal Ordinance 2014-05 on the November 4, 2014 General Election ballot, Council must immediately pursue short-term and long-term alternatives to expanding parking districts to mitigate the traffic and parking issues generated by the growth of OSU and OSU's failure to preserve and adequately increase the supply of affordable on-campus parking.

BE IT FURTHER RESOLVED THAT Council finds it is a City priority that a short term alternative to parking districts created by Ordinance 2014-05 for mitigating the traffic and parking issues generated by the growth of OSU, and the resulting inherent imbalance between the available parking spaces around the OSU campus and the number of people wanting to park in them, be in effect by September 2014.

BE IT FURTHER RESOLVED THAT as one short term strategy for mitigating the parking and traffic problems in the area around OSU by September 2014, Council requests that the OSU Administration and the OSU Board of Trustees immediately convert the Reser Stadium parking lot to a free parking lot for all campus users and revert the paid permit parking lot on the SE corner of SW 11th St. and SW Washington Ave. back to a free parking as it was until fall 2013, and encourages the OSU Administration and the OSU Board of Trustees to make other underutilized and remote parking lots free, so that the City can study the net outcome on traffic and parking around OSU during the 2014-2015 academic year of increased free on-campus parking and OSU's strategy for moving parking demand from the north side to the south side of campus through differential pricing and on-campus shuttle services.

_____

Councilor

Upon motion duly made and seconded, the foregoing resolution was adopted, and the Mayor thereupon declared said resolution to be adopted.