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MEETING MINUTES

PROJECT NUMBER:	2120180.00	ISSUE DATE:	7.24.2012
PROJECT NAME:	West Linn Police Facility		

RECORDED BY:	Caitlin Cranley
TO:	FILE
PRESENT: ***Bold** indicates attendees	**Elissa Preston, Bob Galante, Chris Jordan, Dennis Richey, Mike Gabriel, Khoi Le, Steve Arndt, David Davies** – City of West Linn (CWL) **Terry Timeus, Vic Lancaster** – West Linn Police Department (WLPD) Thomas Frank**, Troy Bowers, Jim Milne, Grant Oakes, Karen Hensley, Glen Friedman** – Citizen Steering Committee (CSC) **Lisa Clifton, Nicole Alexander** –Sustainability Advisory Board (SAB) **Cheryl Snow, Elizabeth Klein** – Clackamas County Arts Alliance (CCAA) Jeff Humphreys, **Brett Hanson**, **Caitlin Cranley, Tommy King, Bob Frentress** – Group Mackenzie **Steve Dacus, Shem Heiple, Chris Larson** – Interface Engineering (IE) **Elin Shepard** – Energy Trust

SUBJECT: Meeting Minutes #2 - Sustainability Workshop (July 18, 2012)

ACTION ITEMS

1.1 E. Shepard (Energy Trust), by 8.3.12 will provide details on incentive programs for the mechanical systems, based on systems discussed as most suitable for the project requirements.

1.2 Group Mackenzie will determine site percolation rates for water infiltration.

INFORMATION ITEMS

1. The purpose of the meeting was to discuss sustainability goals, initiatives and measures for the West Linn Police Facility with the City of West Linn, the Police Department, the Citizen Steering Committee, the West Linn Sustainability Committee, the Clackamas County Arts Alliance, and Interface Engineering. See attached agenda for reference of discussed topics. The following items were discussed:

   a. The Team made introductions

   b. B. Hanson (Group Mackenzie) introduced the format of the workshop, emphasizing that it was intended to be an open forum discussion. This discussion was aimed at focusing on larger picture sustainability strategies that are identified as suitable and desirable to the city. As strategies are defined they will be applied to LEED credits. The specifics of LEED certification and points will be discussed at a follow-up meeting.

   c. B. Hanson (Group Mackenzie) gave a brief overview of the site, neighborhood context and topography, and indicated that these factors will help influence the sustainability strategies

discussed later in the workshop. When choosing sustainable strategies, the team will focus on balancing long-term maintenance and operations costs with the initial design and installation costs, determining the payback period and overall cost benefit to the City.

d. G. Friedman (CSC/SAB) provided a brief overview of the Sustainable West Linn Strategic Plan (attached). Emphasis was placed on the ability to maintain building functions during a power outage, use of natural ventilation and daylighting systems, and pursuing the goals of the 2030 challenge, as budget allows. The team will use the Strategic Plan to help inform sustainable design strategies throughout the design process.

e. B. Hanson (Group Mackenzie) briefly reviewed various measurement and certification programs, including LEED certification, EnergyStar certification and the 2030 Challenge, which aims to achieve carbon neutrality in buildings by 2030. Through this process the City will define to what degree these certifications will be pursued beyond the current target goals established for LEED silver certification.

f. E. Shepard (Energy Trust) briefly discussed the role of Energy Trust in providing incentives for development of sustainable strategies and design. Energy Trust provides design assistance incentives as an opportunity for the City to bring key people into the discussion at the beginning of the project to define the goals and direction of sustainable strategies. On August 1st, a new program will be rolled-out that will provide incentives for the selection of sustainable mechanical systems. The systems still need to be approved through the public utilities, and specifics of the program will not be available until that time. See action item 1.1

2. The team discussed Community and Design Strategies:

a. B. Hanson (Group Mackenzie) reviewed some of the unique requirements of a Police Station, including parking and security access and the nature of protection, while emphasizing their impact on site utilization.

b. B. Galante (CWL) conveyed City Councils desire that the building and site should project a strong sustainability concept that is visual evidence of the LEED Silver certification, is welcoming to the public, utilizes local resources and integrates Percent for Art.

- C. Snow (CCAA) suggested Percent for Art could be used as a catalyst to educate and engage the public with the sustainable concepts used throughout the site and how they are projected from the building; and that the Artist should be engaged early as a functioning member of the design team.

- B. Hanson (Group Mackenzie) gave as example the concrete salvaged from the existing building and reused to create sculptures at RiverEast Center.

c. Further discussion included:

- Neighborhood connections to adjacent Residential and Commercial areas; Using the building to encourage a more pedestrian oriented streetscape; building position used as a hub to establish the next layer of retail development; integration of way-finding signage on Willamette Falls Dr; providing amenities for event and community use, including the

Farmers Market; plaza seating as an opportunity for Percent for Art; the effect of building orientation to 8th vs. 13th on the neighborhood and the Departments connection to the community; and the opportunity to use street frontage improvements for sustainable landscaping strategies.

- Jim Milne (CSC) suggested promoting a strong connection to the Fire Department, and taking advantage of the benefits derived from a tree-lined street.

- The SAB emphasized alternative transportation parking, including an EV station (noting that West Linn has the highest percentage of EV owners in the state), hybrid parking, bicycle parking (noting that the Willamette neighborhood is the main bicycle area in West Linn), designated carpooling and car sharing service parking. The SAB indicated a desire to emphasize carpooling over alternative vehicles. Group Mackenzie indicated there may be opportunities for overlap of these spaces, to avoid special designation of all public parking spaces.

3. The team discussed Water:

a. B. Frentress (Group Mackenzie) addressed the two main strategies for dealing with site water: Removal and Use. Removal typically involves connection to the city's stormwater systems, and can have a negative effect on the infrastructure's ability to handle excess water in a storm event. Use can involve swales, retention, treatment, irrigation and limited applications within the building, which helps remove the burden from the city infrastructure and can provide a savings to building operations.

- The site yields approximately 1.5 million gallons of water a year.

- Discussion of strategies for using the water included rain garden sculptures with possible integration of Percent for Art (i.e. New Seasons kinetic sculpture on Division; 'Drains to River' signage); celebrating the history of West Linn and it's connection to the Willamette River; using detention and water quality treatment as an educational tool in conjunction with Willamette Primary School to show how and where the water goes.

- The use of pervious paving (dependant on further confirmation of percolation rates, see action item 1.2) and high albedo (reflectivity rating) surface materials could also be used to keep water from leaving the site and reduce the heat island effect of asphalt in parking lots.

- The team unanimously agreed that water should remain and be utilized onsite as much as possible.

b. T. King (Group Mackenzie) addressed landscaping and irrigation.

- Oregon receives most of its rain during the non-growing season, making detention and reuse for irrigation generally cost prohibitive, with a longer payback periods. If the goal is to use all native plantings, and eliminate the need for irrigation, detention for irrigation may not be an appropriate solution. The team felt a zero irrigation strategy was an important route to pursue for the new facility.

- Discussion of landscaping and irrigation strategies included reducing irrigation needs with native plantings; public space used as a community garden, in partnership with West Linn Food Pantry; integrating a raingarden into the public plaza; using landscaping in the right-of-way to treat street run-off, positively impacting the community with sustainable measures the extend beyond the boundaries of the site..

c. S. Dacus (IE) suggested the use of low flow fixtures throughout the building to reduce building water use by 40%. Greywater from the site may be used to flush toilets, but will still need to be treated, which has an impact on the budget.

d. The team agreed that that goal should be to express and use the water on site, while reducing the water use in the building, to the greatest extent possible.

4. The team discussed Energy:

a. S. Dacus (IE) explained that Police facilities tend to consume about 20% more energy than typical commercial buildings due to 24/7 operations and intensive miscellaneous functions (i.e. forensics, etc). The 2030 challenge uses 2003 CEBCS as its baseline measurement for energy consumption.

- IE will perform a lifecycle cost analysis of MEP systems prior to design, once MEP system strategies have been narrowed down.

b. S. Heiple (IE) illustrated the percentage of building energy use, using Vancouver West Precinct as an example (see PowerPoint, attached). The areas of greatest consumption are space heating, fans and lighting. Emphasis should be placed on reduction of the largest areas of energy consumption, to maximize payback. The space planning of the building can address energy consumption by placing functions with similar energy requirements adjacent to one another.

- Oregon already has stringent building envelope requirements, making it easier to achieve LEED points (LEED is based on the less stringent ASHRAE 90.1).

- The team agreed that the HVAC system should be chosen to meet the reduction goals of the city. Typical systems are based on a VAV (Variable Air Volume) system. IE suggests using a VRV (Variable Refrigerant Volume) system, which is a single outdoor unit that serves multiple indoor units, reducing maintenance and visual impact, and has the ability to exchange heated or cooled air by zone. Group Mackenzie emphasized that typically greater energy efficiency equals greater variability in the comfort range (typically between 68º & 72º). WLPD pointed out that Officers and office staff will have different definitions of comfort level, due to uniform requirements. IE will assess systems based on this information, and focus on those that have the capability for exchanging air and split the building into zones that accommodate these variations in comfort level. Air exchange systems will lead to greater overall efficiency and reduction of energy consumption. Group Mackenzie and IE will work with the Department to define the ranges of comfort for each function.

- B. Galante (CWL) expressed concern with any system that will need to be replaced and/or frequently maintained.

- The SAB expressed a desire to reserve as much of the roof as possible for PV panels. It was also suggested that a green roof could be installed to help treat stormwater and as an educational tool. Green roofs tend to have a long payback period.

- CWL suggested exploring the possibility of a raised floor system. Typically this option is more costly, and the benefits derived from the flexibility of the system may not be utilized to the greatest degree, given the fixed function of the building.

c. C. Larson (IE) discussed building and site lighting.

- Concern was expressed about having a 24/7 operation adjacent to residential properties. The team will be cognoscente of the impact of ambient site and building lighting on those properties. This may drive the location of site lighting fixtures, as well as the overall site layout to prevent light trespass.

- Discussion included using daylighting up to 15' into the building floor plate; dimming lights between 11pm and 5am, and placing select fixtures on occupancy sensors (modification to system settings is possible post-occupancy); and solar tube within the floor plate of the buildings.

- A discussion of LED vs. florescent bulbs followed: LED tends to be 2x the cost of a normal fixture, but up to 70% more efficient, can last up to 20 years and the color can be chosen to imitate more conventional types of lighting; LED allows greater control over dimming, and is useful to help minimize light trespass into adjacent sites.

- The city code requires high pressure sodium fixtures for site lighting. Group Mackenzie and IE will work with the City to determine the possibility of requesting an exception from this requirement. The SAB suggested that this project could be used as a test to begin phasing out these types of outdated technologies from the code. The team agreed that this would be beneficial to not only this project, but all future development within West Linn.

- Group Mackenzie & IE will work with the Department to define lighting requirements that are acceptable to the functions of the department, including security in the parking lots, afterhours operations, office staff and field officers, and is sensitive to the adjacent residential properties.

d. The team discussed the mandated solar requirements for the building. Solar requirements can be fulfilled using multiple systems including PV, integrated solar shades, solar heating and passive strategies, including daylighting.

- The site is ideal to orient the building to take advantage of southern exposure for PV.

- The SAB is receptive to using more than 1% for solar power, if budget allows.

5. The team discussed emergency power generation

a. The police department will include a back-up server room and an EOC, which will each need their own dedicated emergency generator

- IE will work with the Department to define essential power needs to reduce the size of the emergency system (i.e. HVAC, single outlet in each office, etc.). Typical facilities of this size require a 200-250kW generator.

- IE will with CWL to define the power needs of the back-up server room.

- Further discussion included using a dispatch generator through the power company; utilizing solar power for the emergency generator; hybrid system (i.e. solar battery).

6. The team did not have time to discuss strategies for Materials selection. This discussion will be held at a later date.

7. B. Hanson (Group Mackenzie) summarized the key points and strategies discussed during the workshop. Group Mackenzie, IE and the CWL will bear in mind and further investigate the following main points:

a. Neighborhood context is important to the design

b. Pursuing the 2030 Challenge is of interest to the team. The team will need to hold further discussions to determine the impact to design and budget, prior to a final decision.

c. Community Context

- Building and site should visually embody the sustainable strategies; use local resources; incorporate Percent for Art to express sustainability strategies and educate the community; address residential and historic context; be a catalyst for making 8th Ave a pedestrian friendly corridor; provide electric vehicle, alternative transportation and carpool parking; promote and reinforce bicycle commuting.

d. Water

- Building and site should keep the water visible and celebrate the community's connection to the Willamette river; use sustainable strategies to educate the community about use, treatment and conservation of water; use pervious paving for infiltration; limit or eliminate irrigation on site; integrate the public plaza into the landscaping; aim to reduce domestic water use by at least 40%.

e. Energy

- Building and site should be 'Passively Resistant', remaining fully functional as an EOC during a power outage; MEP systems should be low maintenance, with long life spans; provide separate heating and cooling zones depending on the function of the space and comfort level of regular occupants; use LED fixtures with occupancy sensors and dimmers; utilize daylighting and solar tubes; provide dedicated generators for the EOC and the back-up server.

8. The team discussed Next Steps. A programming validation meeting will be held next Thursday, July 26th, 10 am at Group Mackenzie.

Every effort has been made to accurately record this meeting. If any errors or omissions are noted, please provide written response within five days of receipt.

Attachments: Meeting Agenda
PowerPoint Presentation
Sustainable West Linn Strategic Plan
Sign-in Sheet

cc:
Josh McDowell, Nabil Kasual-Hayes, Caitlin Reed, Jason Havelka, Lynne Ingram, Nicole Bekken, Emily Phillips, Dan Jenkins, Rhys Konrad, Brent Ahrend, Bill Bezio – Group Mackenzie
Robert Dishman, Darcy Tucker, Nick Marcyan – Interface Engineering

GROUP MACKENZIE

SUSTAINABILITY WORKSHOP

PROJECT NUMBER: 2120180.00
PROJECT NAME: West Linn Police Department

MEETING DATE: July 18th, 2012 TIME: 9:00 am
PLACE: West Linn City Hall - Council Chambers
SUBJECT: Eco-Charette (July 18th, 2012)

MEETING AGENDA

Introduction GM- Brett 9:00-9:20
- Team / stakeholder introductions
- Intent
- Format Overview

Project Summary
- Contextual information
- Physical site conditions: Utilities, Topography
- Program Description
- Discussion and client confirmation of project assumptions-West Linn Sustainability Goals

Performance and Measurement Criteria
- LEED; Energy Star; 2030 Challenge
- Energy Trust: Economic-Lifecycle & Payback costs; Incentive Opportunities

Community and Design Strategies – LEED (SS) GM- Jeff 9:20-9:40
- Response to community context
- Site Development: Open Space; Neighborhood Integration; Site Lighting; Alternative Transportation
- Overall measurement criteria

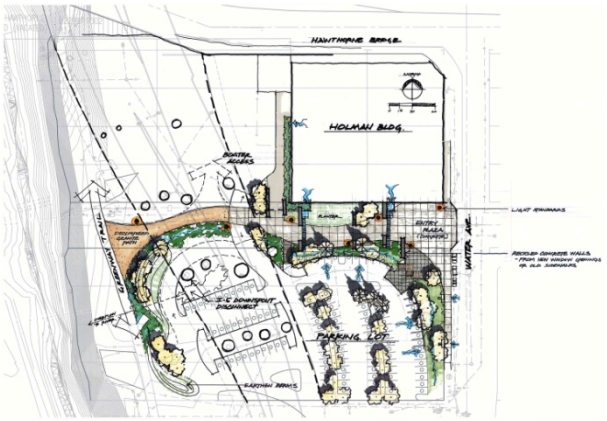
Water – LEED (SS/WE) GM- Tommy / Bob 9:40-10:00
- Baseline assumptions and site conditions
- Landscape and irrigation; Stormwater
- Domestic water; Waste water
- Overall measurement criteria

Energy – LEED (EA/IEQ) Interface 10:05-10:35
- Baseline assumptions and site conditions
- Operating information / Comparable building operation costs
- Active systems: HVAC, Lighting
- Passive systems: Daylighting; Natural Ventilation;
- Renewable systems: Solar; Geo Thermal
- Commissioning / Monitoring and Verification
- Overall measurement criteria

Materials – LEED (IEQ/MR) GM- Caitlin 10:35-10:45
- Baseline assumptions
- Building Materials: VOC; Recycled; Regional
- Site Materials
- Overall measurement criteria

Conclusion and Next Steps GM- Brett 10:45-11:00
- Summary of subsystem strategies
- Update preliminary goals and objectives
- Next steps
- Questions

Community | Water | Energy | Materials | Economic



City of West Linn
Police Department Facility

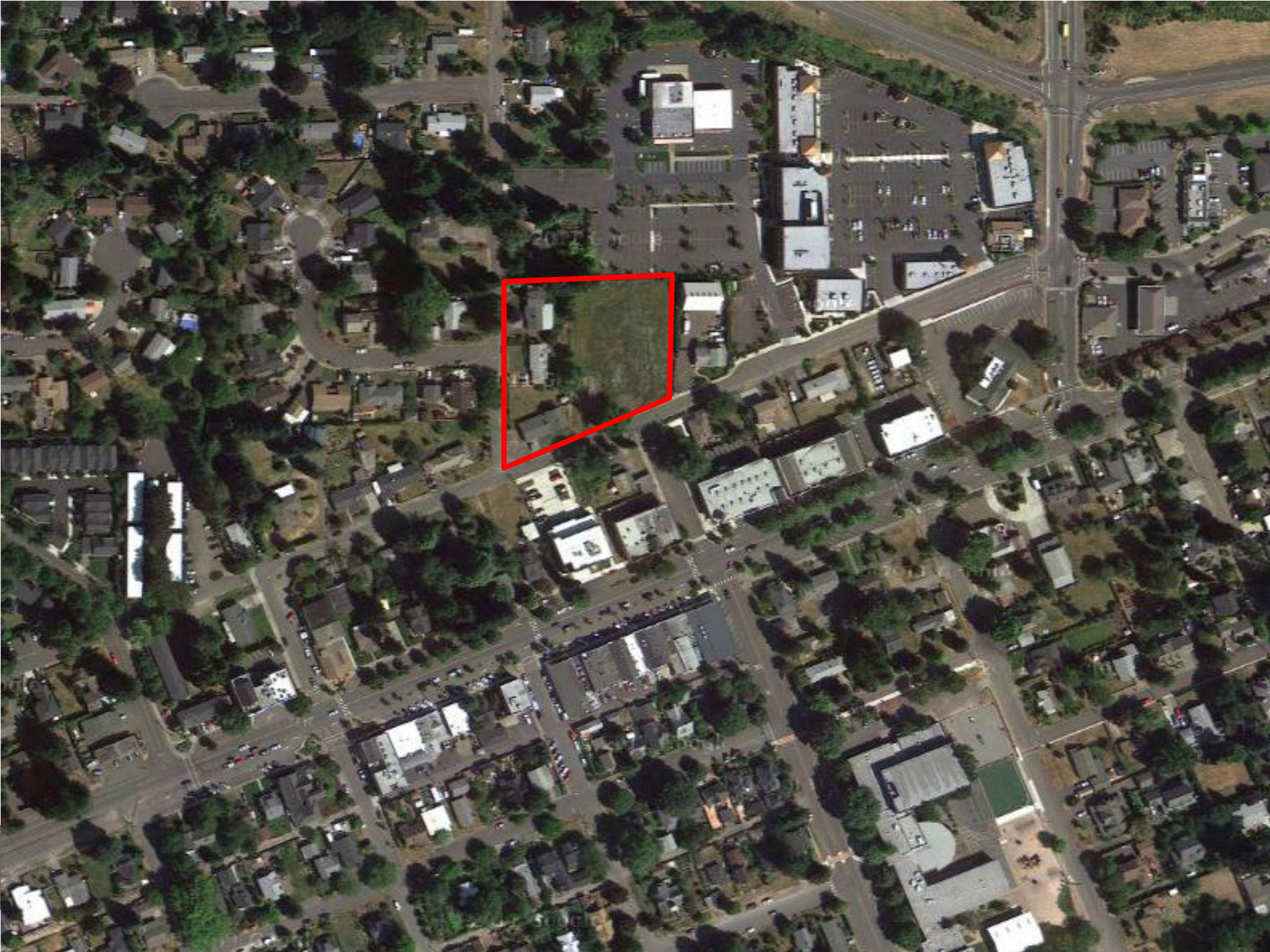
SUSTAINABILITY WORKSHOP

WORKSHOP PURPOSE:

•Align goals and objectives with stakeholders using key subsystems

•Establish an integrated and co-learning environment

•Explore potential strategies to achieve the project goals and objectives

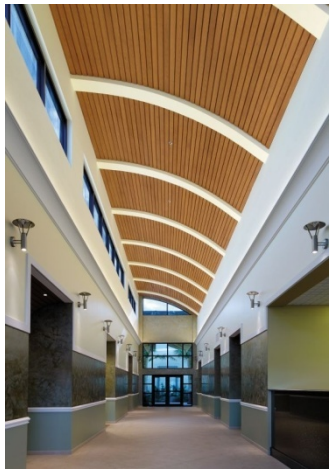


Preliminary Program Detail - Site

Building Footprint	15,300 SF (Proposed 2-Story Building)
Building Square Footage	23,500 SF (Preliminary total)
Parking	17,820 SF
Landscaping	34,106 SF
Total Site Area	**67,226 SF (1.54 acres)**

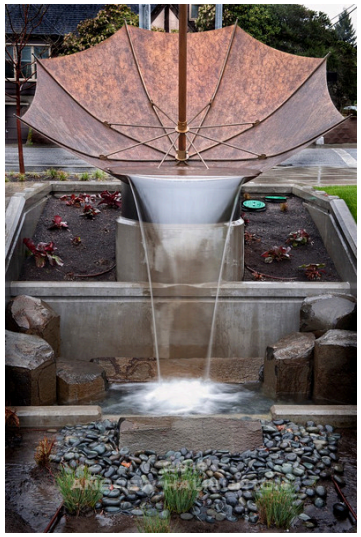
PERFORMANCE AND MEASUREMENT CRITERIA :

- Sustainable West Linn Strategic Plan
- LEED
- Energy Star
- 2030 Challenge
- Specific Metrics Associated with Each Subsystem









GOALS AND OBJECTIVES:

01 – Community

02 – Water

03 – Energy

04 – Materials

05 – Economic (included in each discussion)

01 | Community

- Response to community context
- Public programs and site utilization
- Transportation
- Neighborhood Integration
- Open Space
- Site Lighting


LEGEND
I-205
Trimet Bus Routes
Residential
Commercial
SITE
8th Avenue
10th Street
12th Street
Dollar Street
Willamette Falls Drive
6th Avenue
WILLAMETTE PRIMARY SCHOOL
N
City of West Linn
Police Department Facility
GROUP MACKENZIE


Retaining Wall
Police Parking
Fitness
Women's Locker
Men's Locker
Business Office
Community Room
Detectives
Patrol
Briefing
Administration Work Areas Public Interview Room
Womens
Mens
Reception
13th Street
Retaining Wall
Public Parking
Main Entry
8th Avenue
NORTH

Site Plan

02 | Water

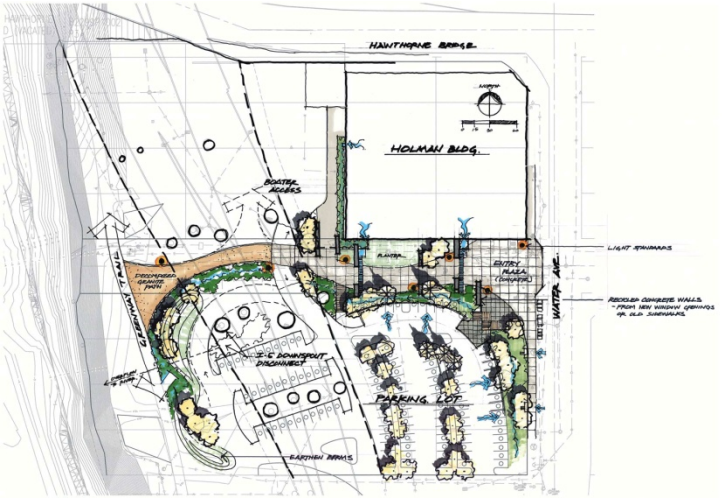
- Baseline assumptions and site conditions
- Stormwater
- Sustainable landscapes
- Domestic water
- Waste water

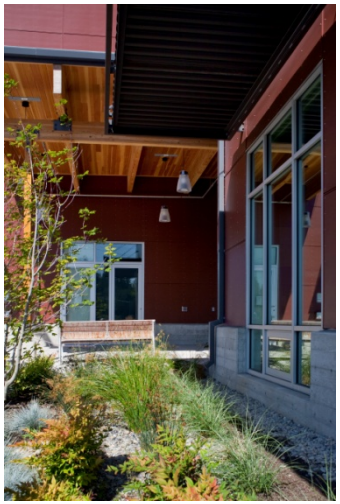
Site Conditions

Annual Rainfall: 36.3”/yr
Site Water Budget: 1,521,122 gal/yr
Rainwater Available from Roof: 319,000 gal/yr

Stormwater

02 | Water





Sustainable Landscapes

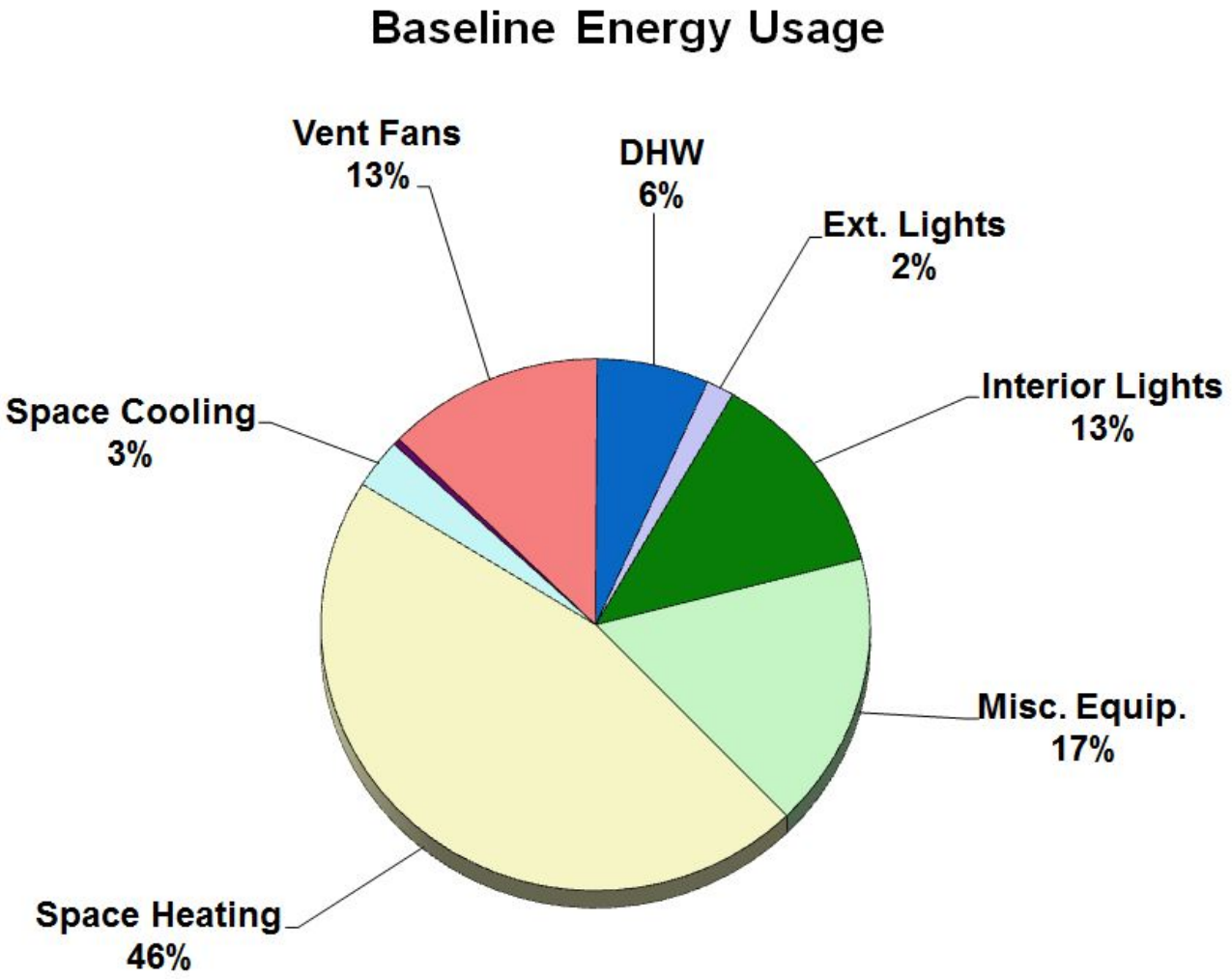
Domestic Water and Waste Water

03 | Energy

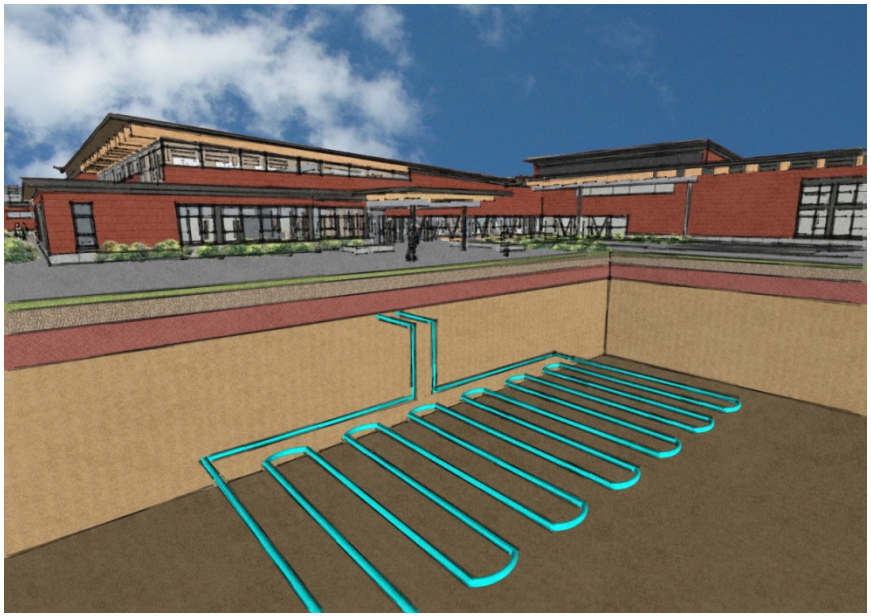
- Baseline assumptions and site conditions
- Active systems
- Passive systems
- Renewable systems

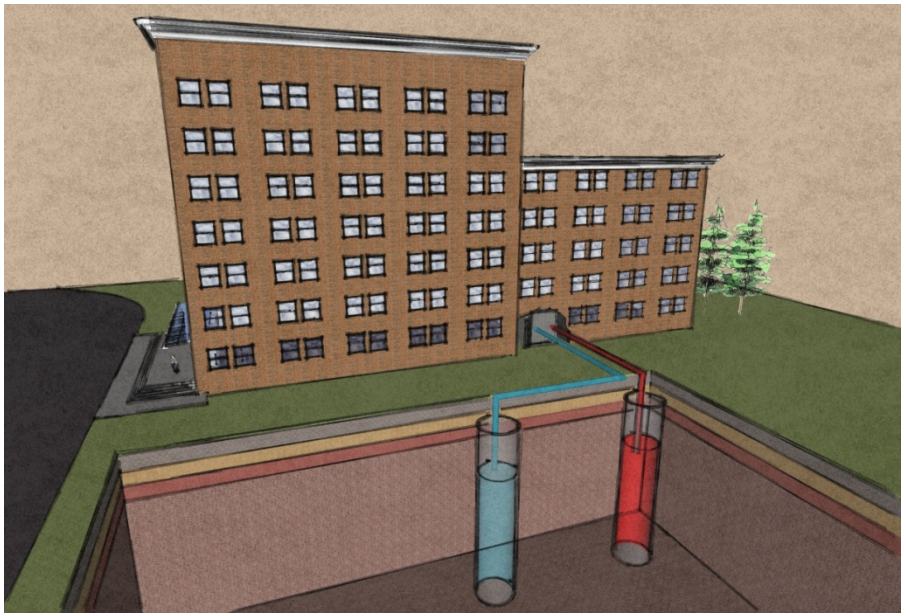

WIND ROSE: PDX
DEC. 1 - DEC. 31
MAR. 1 - MAR. 31
JUN. 1 - JUN. 30
SEP. 1 - SEP. 30
PREVAILING SUMMER WIND
SUMMER SOLSTICE SUNSET
SUMMER SOLSTICE SUNRISE
WINTER GORGE WINDS
HOT SUMMER SUN
EQUINOX
EQUINOX
WINTER SOLSTICE SUNSET
WINTER SOLSTICE SUNRISE
WINTER STORMS
TRUE SOUTH

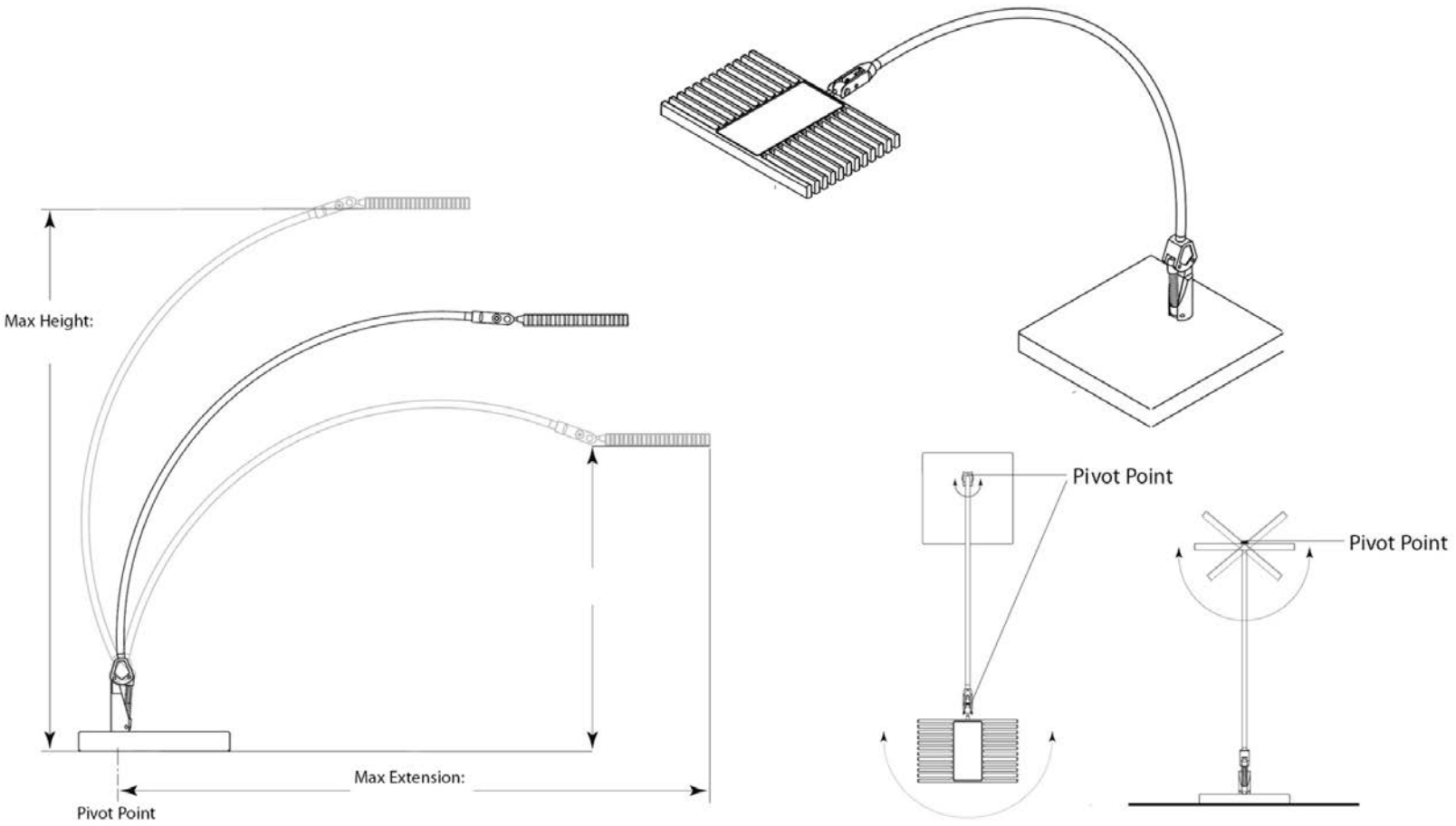
2003 CBECS[1] National Median Source Energy Use and Performance Comparisons by Building Type			
Building Use Description[2]	Median Source EUI[3] (kBtu/Sqft)	Average Percent (%) Electric Use	Median Site EUI (kBtu/Sqft)
Education	144	63%	58
K-12 School	*Use EPA's Target Finder / Portfolio Manager*		
College/University (campus level)	244	63%	104
Food Sales	570	86%	193
Grocery Store/Food Market	*Use EPA's Target Finder / Portfolio Manager*		
Convenience store (with or without gas station)	657	90%	228
Food Service	575	59%	267
Restaurant/Cafeteria	434	53%	207
Fast Food	1170	64%	418
Inpatient Health Care (Hospital)	*Use EPA's Target Finder / Portfolio Manager*		
Lodging	163	61%	72
Dormitory/Fraternity/Sorority	*Use EPA's Target Finder / Portfolio Manager*		
Hotel/Motel/Inn	*Use EPA's Target Finder / Portfolio Manager*		
Mall (Strip and Enclosed)	247	71%	94
Nursing/Assisted Living	*Use EPA's Target Finder / Portfolio Manager*		
Office	*Use EPA's Target Finder / Portfolio Manager*		
Outpatient and Health Care	163	72%	62
Clinic/Other Outpatient Health	194	76%	67
Medical Office	*Use EPA's Target Finder / Portfolio Manager*		
Public Assembly	89	57%	42
Entertainment/Culture	94	63%	46
Library	246	59%	92
Recreation	100	55%	39
Social/Meeting	71	57%	43
Public Order and Safety	161	57%	82
Fire/Police Station	146	56%	82
Service (Vehicle Repair/Service, Postal Service)	96	63%	45
Storage/Shipping/Non-Refrigerated Warehouse	28	56%	10
Non-Refrigerated Warehouse/Distribution Center	*Use EPA's Target Finder / Portfolio Manager*		
Refrigerated Warehouse	*Use EPA's Target Finder / Portfolio Manager*		
Religious Worship	*Use EPA's Target Finder / Portfolio Manager*		
Retail (non-Mall Stores, Vehicle Dealerships)	139	67%	53
Other[4]	127	56%	70


Baseline Energy Usage
Vent Fans
13%
DHW
6%
Ext. Lights
2%
Interior Lights
13%
Space Cooling
3%
Misc. Equip.
17%
Space Heating
46%

Active Systems: Geothermal



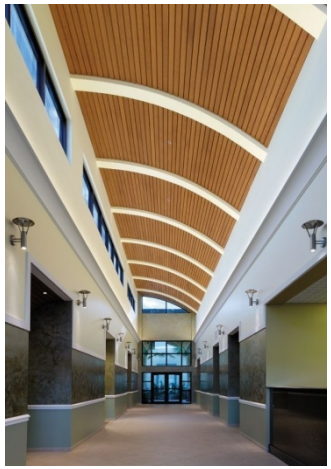


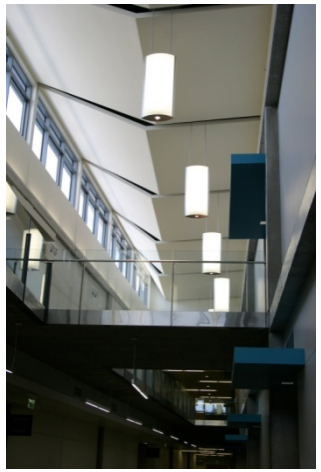


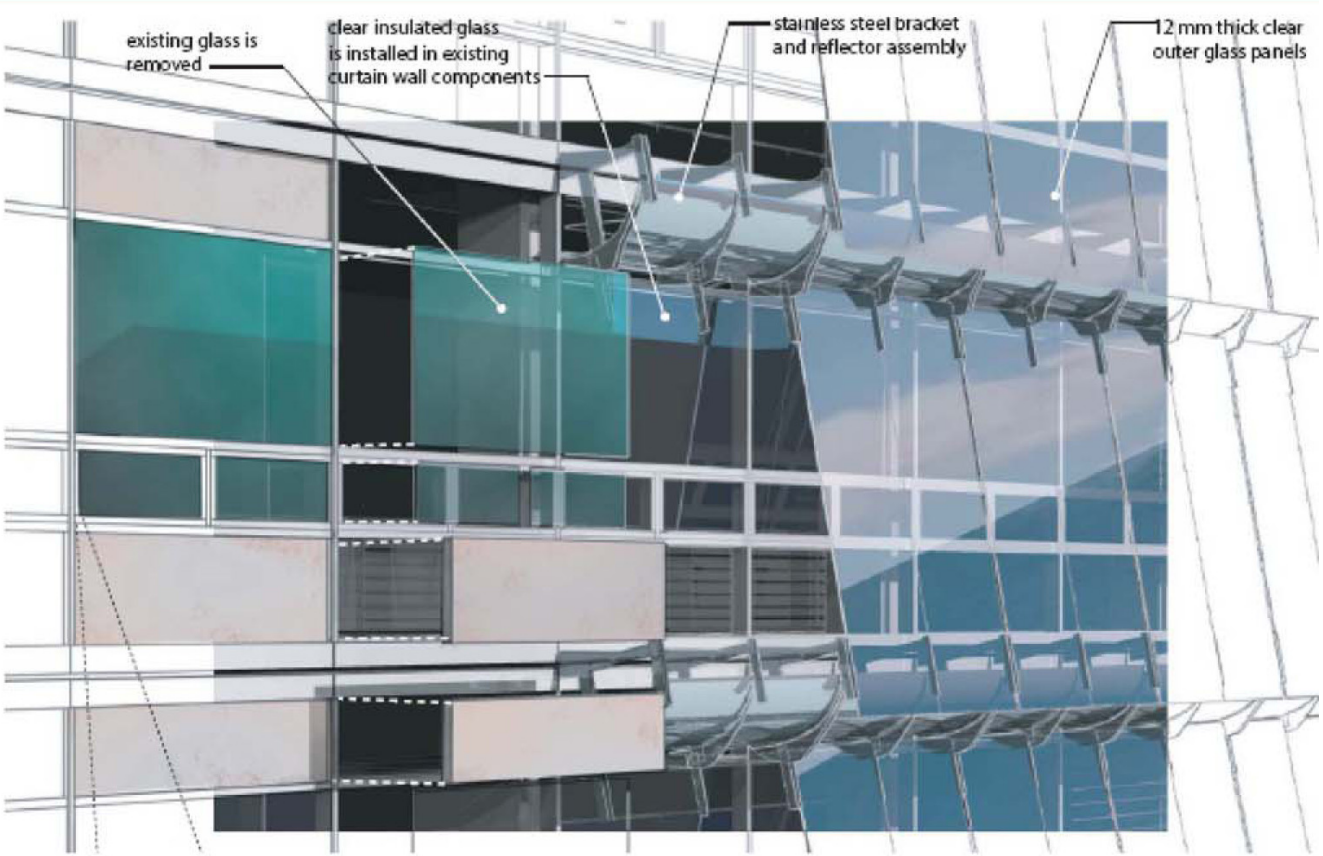
Lighting Tasks Flexibility with LED

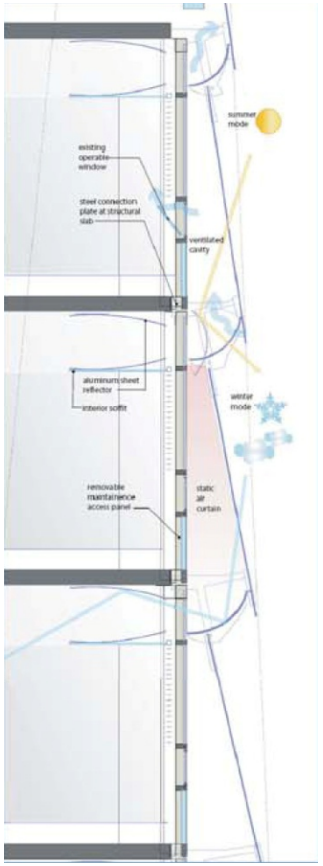
Active Systems: Lighting

Passive Systems: Daylighting



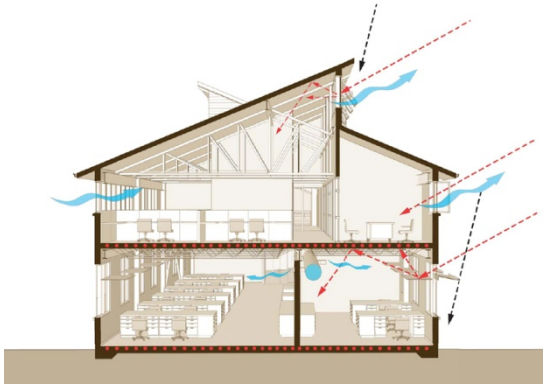





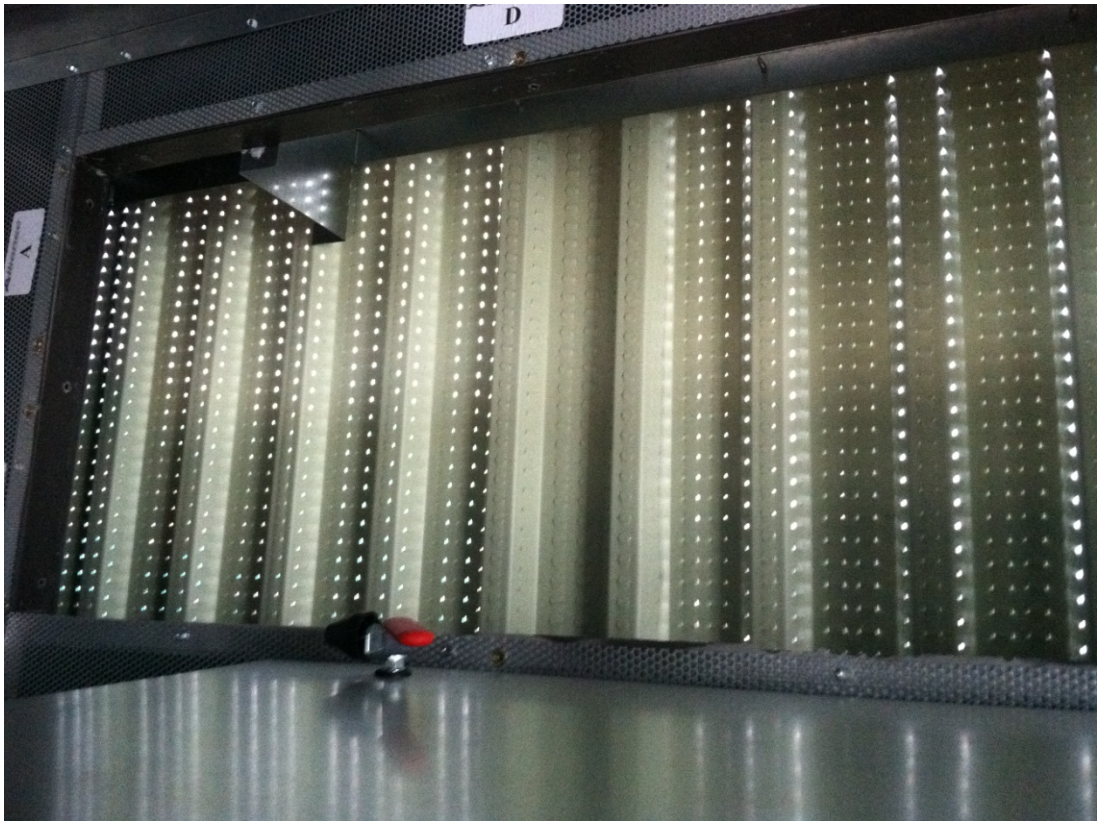


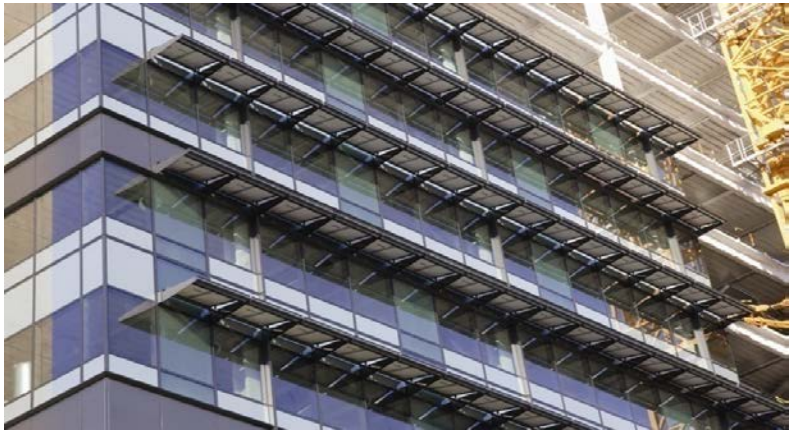
Reflection and Diffusion

Passive Systems: Natural Ventilation



Passive Systems: Solar Wall





Building Integrated Solar Shades and PV

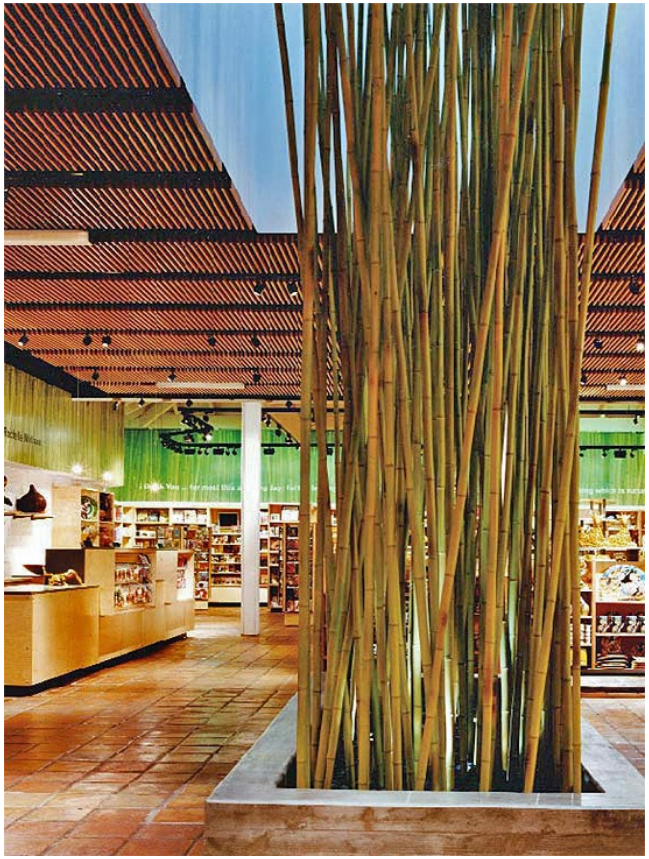
Site-integrated photovoltaic (SIPV) panels can be used for protection from the elements, social benefit and renewable power generation.

Site-Integrated Photovoltaics / Renewable (SIPV)

Renewable Systems: Solar Heating

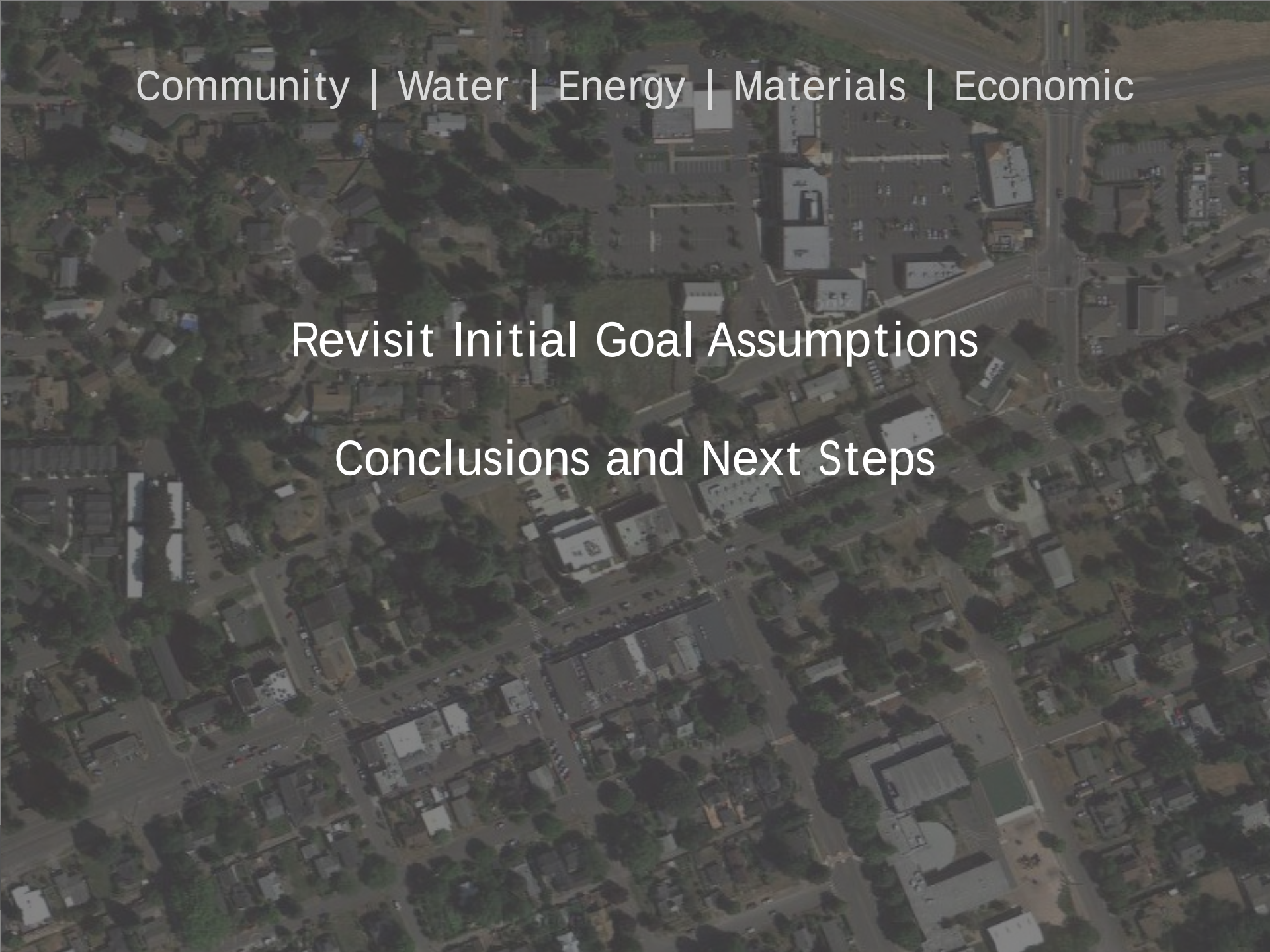
Solar Combined Heat and Power

04 | Materials



- Baseline assumptions
- Materials
- Recycling

04 | Materials


Community | Water | Energy | Materials | Economic
Revisit Initial Goal Assumptions
Conclusions and Next Steps

Sustainable West Linn Strategic Plan

July 2006

Making life better for all living things, ourselves, and our children.

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ACKNOWLEDGEMENTS

Sustainability Task Force would like to acknowledge

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Council President and Task Force Liaison

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Community Services / Public Information and Staff Liaison

Darcy Hitchcock
Axis Performance Advisors- Task Force Facilitator

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We offer special thanks to Mayor Norm King and the City Council for their leadership passing Resolution No. 05-23 forming an ad-hoc task force to develop this strategic plan recommending actions to promote and achieve sustainability. We wish to acknowledge the following people for their support and contributions to this document: Chris Jordan, Ken Worcester, Terry Timeus, Mary Ann Whitney-Hall and the many others who participated in its development.

SUSTAINABLE WEST LINN TASK FORCE

Kenneth Hall, Architect	**Chair**
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CONTENT

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If Nothing Else, Read This Section

For too long, our society has operated in an 'either-or' mode: jobs or the environment, growth or livability; economic health or human health. Sustainability is about 'and.' We can make decisions that simultaneously enhance our environment as well as our economy and our community. These three elements should not be viewed as trade-offs; these are interdependent elements of our community's well-being. This report provides recommendations that will make life better for all living things, ourselves, and our children.

Sustainable West Linn

West Linn will have achieved a sustainable future when . . .

- Greenhouse gases generated by its population are equal to or less than the amount removed by plants and other natural processes.
- It produces zero emissions of toxic materials to air, soil and water.
- It has preserved all remaining important natural habitats.
- All citizens understand and contribute to a sustainable future.
- Multiple alternative transportation, housing and employment options are available to all.
- City government has a sustainable revenue stream to ensure the delivery of urban services and maintain public infrastructure.
- Locally grown food is readily available for residents.
- Strong local business meets the majority of resident needs.
- Strong local health care meets the majority of resident health needs.

Actions to Take This Year

The following are easy-to-do but powerful steps people in West Linn can take to improve our livability right now.

Stakeholder	Top 3 Actions
City Government	• Adopt a green building standard for all new City facilities. • Conduct an energy audit of all facilities and act on the findings. • Implement a green purchasing policy that includes environmental criteria along with such traditional criteria as quantity, price, performance, and convenience.
Local Businesses	• Save energy (see the "12 Easy First Steps for Businesses/ Offices" in Appendix E for ideas to reduce energy associated with buildings and transportation). • Assess the sustainability of your practices, inventory your existing green practices and promote your successes in the community; identify at least one sustainability area to improve. • Integrate sustainability elements into your business plan to improve your competitiveness and foresight.
Neighborhoods, Schools and other Civic Organizations	• Make sustainability a standing agenda item when you meet. • Schools become more involved in the Oregon Green Schools program www.oregongreenschools.org and purchase local, organic food. • Neighborhood associations incorporate sustainability into your neighborhood plans; create a vision for a sustainable neighborhood and identify goals to act on. • Chamber of Commerce: Promote West Linn as a "green marketplace," i.e. create a niche market.
Citizens and Households	• Save energy (see the 'Top 10 Things Citizens Can Do" in the Appendix for ideas to reduce energy consumption in buildings and driving your car). • Use the power of purchases; buy local whenever possible, give preference to certified 'green' or organic products with minimal packaging. • Learn about sustainability (e.g., by attending community events, participating in Northwest Earth Institute discussion classes, reading, etc.)

Executive Summary

In July 2005, the City Council formed a task force of citizens with knowledge and expertise in different aspects of sustainability. Its purpose was to make recommendations to the Council on what would be necessary to make serious progress toward a sustainable community, including:

- A specific council goal to " protect and enhance the integrity, stability, and beauty of the natural environment', and
- A community desire to reduce the negative impacts of growth and development on the City, and
- A need to provide a healthy, productive, and meaningful life for all community residents, present and future for the economic, social, and environmental systems that make up our community of West Linn.

The City of West Linn through its government and its citizens has already implemented a number of sustainability actions; however, for the City to be considered sustainable, much more remains to be accomplished. This Sustainability Strategic Plan for the City establishes a beginning framework for which sustainability can be implemented. This document should be thought of as the first step in the pursuit of sustainability, and by no means should be considered a final product.

Some of the recommendations may not be easy to implement in the wake of Measure 37, budget constraints and other factors. However, the Task Force on Sustainability believes that making these changes is crucial to the continued viability and livability of the community. With the stress of growth on our community, uncertain economies with depleted energy sources, and global warming impacting our region and world markets, it is likely that the future will be quite different from today. The Task Force developed a strategy that will help us prepare for an uncertain future globally while also improving our quality of life locally now.

"What's the use of a house if you haven't got a tolerable planet to put it on?"

–Henry David Thoreau

"We must recognize the earths limited capacity to provide for us. We must recognize its fragility. We must no longer allow it to be ravaged. This ethic must motivate a great movement, convincing reluctant leaders and reluctant governments and reluctant peoples themselves to effect the needed changes."

–Plea made in 1993 by over 1500 of the worlds top scientists, many Nobel Laureates

The Case for Change

Depleting Nature's Bounty

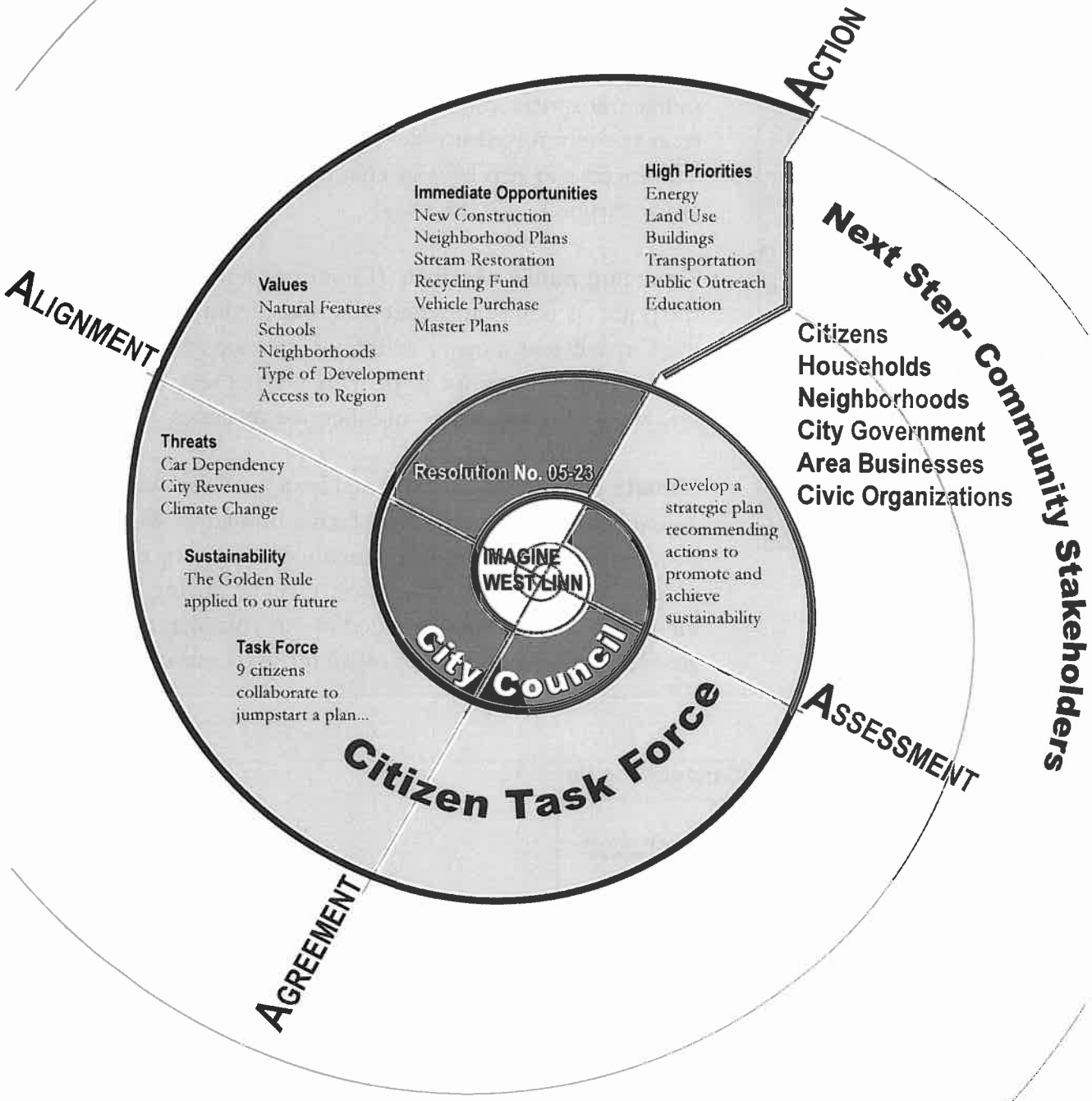
The United Nations pulled together thousands of the world's leading scientists to assess the state of the world. They looked at both environmental problems and socio-economic ones. Here are just a few of their findings from the Millennium Ecosystem Assessment Report.

- At least one-quarter of the marine fisheries are over-harvested and catches are declining.
- Water withdrawls from rivers and lakes for irrigation, household and industrial uses doubled in the last 40 years, and humans now use between 40-50% of the freshwater running off land.
- Humans now add more nitrogen to Nature (e.g., as synthetic fertilizer) than all of Nature would normally create.
- Extinction rates of plants and animals is much faster than the average rate, up to 1000 times the fossil record.

At some level, most people are aware of the many problems in this world. While some things have gotten better in the last few hundred years—lifestyles, life spans, medicine, food supplies—these have come at a cost to the environment. Our 'addiction' to fossil fuels changes our climate and threatens our national security as well as our economy. Worldwide, forests, fisheries and topsoil have been depleted. And now with over 6.5 billion people on Earth, seven times the number alive when Lewis and Clark arrived on our land only 200 years ago, these effects are now threatening the positive gains we have made. Nature is like a bank account, where our withdrawals are far exceeding Nature's deposits. This situation is not sustainable. We can't continue to draw down Nature's assets. Our society must evolve into a sustainable civilization where everyone can live well within the limits of nature.

While West Linn often feels like a serene oasis, the things we cherish most about our community could be threatened by these worldwide changes. The uncertainty of oil and energy prices, driven by increasing worldwide demand and increasingly stressed production, is already pinching our wallets in our car-dependent community. What's next? The purpose of the West Linn Task Force on Sustainability was to examine these long-term trends and make recommendations for action, for the community, our government, businesses and citizens.

West Linn is not alone in this investigation. The current and past governors of Oregon have both issued executive orders related to sustainability. Most of the state agencies have a sustainability plan in place. Many municipalities in Oregon, including Bend, Corvallis, and Portland, are pursuing sustainability goals. All of us in West Linn needs to do our part to secure a positive future for ourselves and future generations.



SUSTAINABLE WEST LINN

STRATEGIC PLAN & PROCESS AT A GLANCE - JULY 2006

Major Issues

These issues are interconnected

To save fuel, people may walk or bike more, improving their health, finances and air quality.

By assessing our commercial areas, we may be able to provide for more of our needs locally, improving the economic health of our local businesses and also providing more jobs.

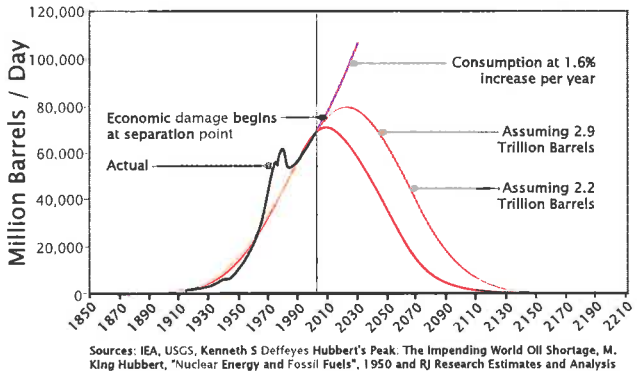
By addressing climate change, we can save money on energy costs, enhance our local economy, and preserve our wonderful vistas.

- **Car dependency** (Social issue) - With rising gas prices and peaking oil supplies, West Linn needs to make it easier for people to get around without automobiles. This includes completing the bike trails and sidewalks, encouraging the use of public transportation, and emphasizing transit-friendly, pedestrian-friendly, mixed-use developments along major arterials. Employers can also help by encouraging telecommuting, facilitating carpools, and the like.

- **Financing public services** (Economic issue) - As we reach the point of build-out where all buildable lots are developed, the City will lose a major source of revenue growth. In order for the City to continue to provide needed services, it must find ways to reduce costs and increase revenues.

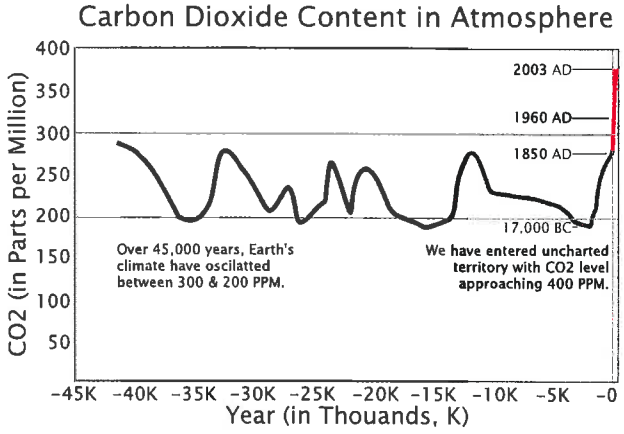
- **Climate change** (Environmental issue)- Global warming is arguably the biggest challenge facing humanity. West Linn should do its part to reduce greenhouse gases by reducing energy usage. We need to reduce travel by buying locally and increasing the services provided in our commercial areas. We also see opportunities to produce more of our own energy.

Oil Production Growth Cannot Keep Up



Sources: IEA, USGS, Kenneth S Deffeyes Hubbert's Peak. The Impending World Oil Shortage, M. King Hubbert, "Nuclear Energy and Fossil Fuels", 1950 and RJ Research Estimates and Analysis

Carbon Dioxide Content in Atmosphere



Action Categories

The Task Force further identified five action categories, with recommendations in each category for local government, business, organizations and individuals.

Category	Actions
Energy	Within this report, energy is considered predominately for the operations of buildings and facilities such as lightening and climate control (HVAC, etc.). Energy consumption for vehicles are considered under the category of Transportation.
Buildings	Throughout, we recommend various "green building" practices. These are building design and construction techniques, as well as materials and maintenance procedures that reduce the negative environmental impacts of the building and surrounding area.
Transportation	Fossil fuel consumption from moving people and products around is a significant contributor to our climate change, energy use, and air quality.
Land Use	The report also includes a number of recommendations related to land use and management that positively affect the other areas and preserve and enhance our natural systems.
Education and Outreach	Education and outreach was identified as an important area requiring attention for the pursuit of a sustainable community.

"All of humanity is in peril, if each one of us does not dare, now and henceforth, always to tell only the truth and all the truth, and do so promptly- right now."

–R. Buckminster Fuller, Critical Path, 1981

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Strategic Context

Vision and Values

What We Value-

Cherished Features of West Linn

The following were considered the most important features of West Linn to maintain and preserve, in rough order of priority. These are consistent with the findings of the recent Community Survey:

- Natural Features- Landscapes, wildlife, trees, relationship to rivers, views of Mt Hood, parks.
- Quality of schools
- Distinct and safe neighborhoods
- Type of Development- no strip malls or big box stores, variety of housing types
- Convenient access to regional destinations- e.g., to Portland, Mt. Hood, the coast etc.

Definition of Sustainability for West Linn

Sustainability means using, developing and protecting resources at a rate and in a manner that enables people to meet their current needs and also ensures that future generations can meet their own needs. A sustainable community of West Linn will balance the needs of individuals and organizations with the resources and benefits of the natural and economic environments to create a livable community for future generations.

Principles of Sustainability

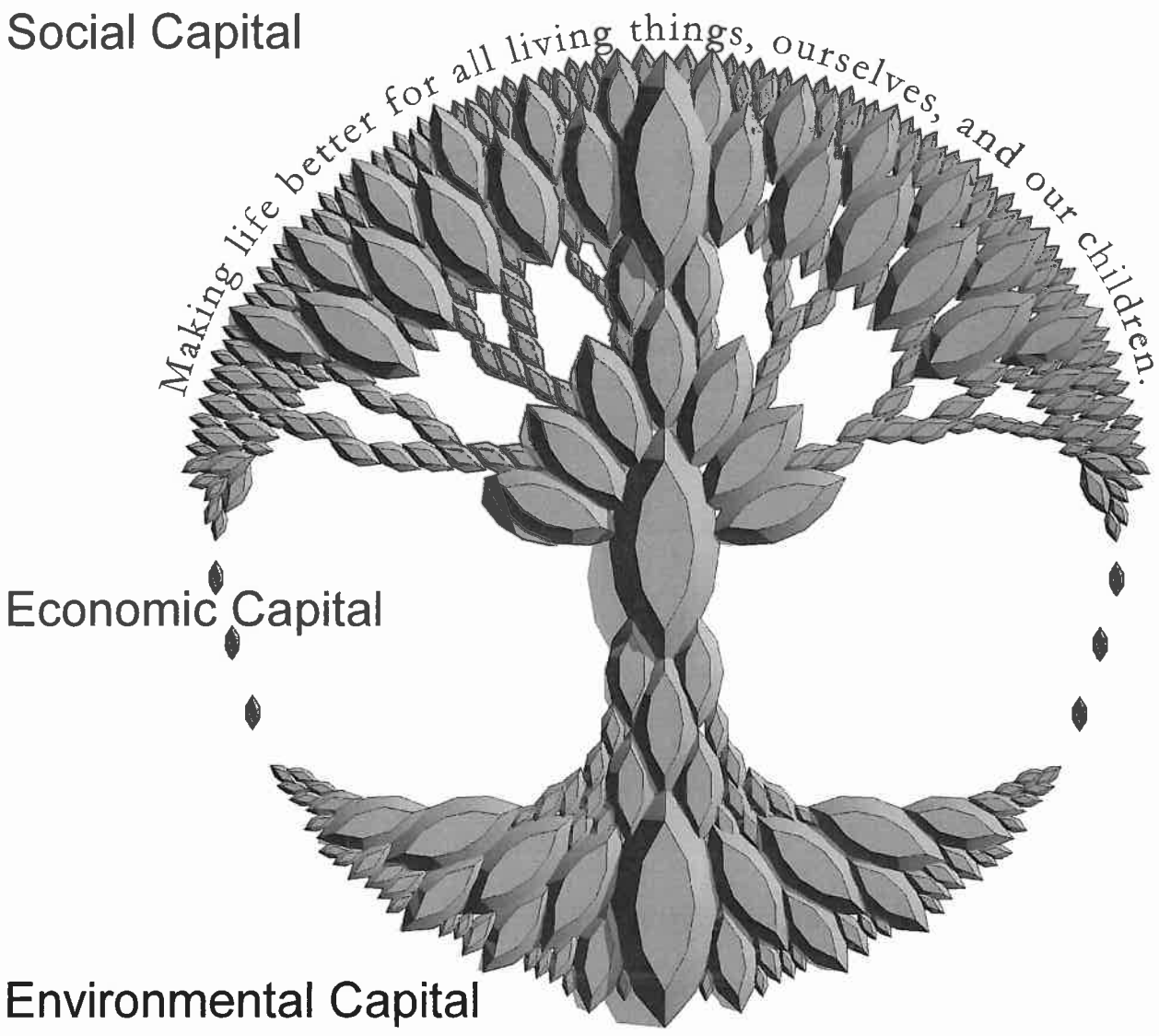
The Task Force grappled with the comprehensive and interconnected nature of sustainability and looked for ways to make sense of the wide range of issues and principles. After reviewing a number of the existing sustainability frameworks that help people understand sustainability, the Task Force blended the best elements of a couple frameworks.

Cross-Reference to Citizen Survey

In the 2006 Citizen Survey, the citizens indicated that they most wanted the following areas improved:

58% Land use planning
40% Traffic management
31% Affordability of housing

These are consistent with the Task Force priorities.



Sustainable West Linn Strategic Framework

This framework is based on the following principles:

- We have three types of capital to manage- social, economic and environmental. These three assets are interdependent.
- We must protect the rights of future generations.
- The economy is a means to an end: quality of life.
- We acknowledge the rights of all species, not just mankind, to survive and prosper.
- Nature is the foundation upon which our community and economy are built. As some like to say, the economy is a wholly owned subsidiary of the environment.
- We must look for solutions that improve the health of all three, not trade one off for another.

Toward a Sustainable West Linn

The Indicators and Measures for the Environmental, Social, and Economic capital include the following:

Social Capital

- Education, including public school curricula and community outreach in all its forms by institutions and organizations, on sustainability.
- Sense of Community
- Civic Engagement
- Transportation
- Living Arrangements

Economic Capital

- City Revenues
- Economic Development
- Built Environment

Environmental Capital

- Greenhouse gases: The immediate threat is from fossil fuels that produce Carbon Dioxide (CO_2). Other greenhouse gasses include Methane (CH_4,) Nitrous Oxide (N_2O,) and various compounds (PFCs and HFCs).
- Toxics: Both airborne and waterborne toxics which are generated and/or emitted by man made activities. Toxics are typically considered a poison, "unsafe" to humans, wildlife, or natural processes, and may be persistent.
- Natural Resources: Natural resources considered include wildlife corridors, natural streams and drainage ways, and isolated or connected habitat areas.

Sustainability Framework

Building on the Imagine West Linn report of 1994, the Task Force identified a current state or 'baseline' of the City (eg. Where the current community of West Linn lies with sustainability). The Task Force then developed specific, measurable targets, based on a sustainability framework for Environmental Capital, Social Capital, and Economic Capital. The Task Force then developed indicators by imagining a fully sustainable West Linn. These indicators do not represent everything that should be considered but do capture the most important aspects, especially as they relate to our primary threats and priorities.

Environmental Capital

Current State	5 Year Goal	Sustainable Future
Indicator: Fossil Fuels and Greenhouse Gases		
Based on a cursory greenhouse gas inventory (a measure of the climate-changing gases we are emitting) West Linn would have to plant an area equivalent to almost seven Forest Parks to offset its greenhouse gas emissions. West Linn is responsible for over 544,000 metric tons of CO2 equivalent per year: 28% electricity 26% natural gas 19% gasoline 19% air travel 7% diesel 1% waste	Build a tracking system to update greenhouse gas calculations. Reduce the community's greenhouse gas emissions by 25% in real terms (not per capita). Participate in Portland's wind power contract may prove to be more economical while supporting rural Oregon communities.	Be climate neutral (i.e., don't add more greenhouse gases to the atmosphere faster than they are taken out by plants and other natural processes.
Indicator: Toxics		
Toxic emissions. The City of West Linn's current goals are the EPA standards, but are not considered stringent enough to be sustainable.	Adopt the Precautionary Principle as policy. Educate citizens about safer alternatives to artificial landscaping and electronic waste. Investigate and develop a plan for reducing emerging pollutants in our rivers.	Zero emissions of toxic materials to air, soil or water. All brownfields and toxic mixing zones are restored to their natural state. 100% of electronic waste is reused/recycled with none going to landfills Landscaping emphasizes native plants that do not need water or synthetic chemicals/fertilizers. Natural fertilizers are taken up by the plants in the area applied so that none runs off into the storm water system. We have a closed loop sanitary wastewater system constructed wetlands to treat the City's wastewater. (Note: This implies not participating in Clackamas County's regional system.)

Environmental Capital

Current State	5 Year Goal	Sustainable Future
Indicator: Natural Resources		
Recycling: Residences recycled 59% of their waste; commercial recycling is 18% (2004/5) No way exists to track consumption or source of natural resources	The City develops a sustainable purchasing policy, collaborating with other governments and organizations.	Significant increases in resource efficiency. All materials come from sustainable sources (e.g., certified forests, recycled content, etc.)
West Linn has 582 acres of public parkland and open space, six ecologically significant natural areas (Maddax Woods, Burnside Park, Cedar Island, Mary S Young Park, Camassia, Goat Island, Wilderness Park), and has adopted protective zoning for riparian areas and wetlands. The total number of acres with some form of protection from development is 1650 (parks, open space, wetlands, drainage setbacks), which represents 31 percent of the total land area within the City's urban growth boundary, including county inholdings. A comprehensive inventory of natural lands has been completed and is being refined and updated.	Within one year, priority lands within areas zoned for development will be protected through interim measures. The City will evaluate the 758 acres in the upland wildlife habitat inventory (approximately 500 acres of which are currently unprotected) and determine the most effective strategy to maintain their natural values, on both public and private land. 5 year goal: Within five years, the City will have identified all important natural resource lands and developed a comprehensive strategy to protect them from harmful development and improper management, including wetlands, riparian, natural areas, upland wildlife habitat, parklands, open space and scenic landscapes.	Sustainable end point: When West Linn reaches build-out, all remaining important habitats (see above) will be protected from development, restored if necessary, and managed to conserve ecological values. 35 percent of the land area within the City (1758 of the City's 5079 acres) will be included in a network of public and private conservation areas that provide suitable habitat for native fish and wildlife.
Measure 37 makes protection of lands more difficult.	The strategy will include a broad set of approaches including acquisition, easements, regulation, landowner incentives and technical assistance.	
Invasive species: There is growing recognition of the ecological problems caused by invasive plants, and many projects are underway to control them. The City has serious problems with scotch broom, ivy, and Himalayan blackberries choking native vegetation.	City has a program that includes education, technical assistance, and volunteers to control invasive plants on public and private lands, focused on preventing their spread into relatively unaffected areas, and removing them from ecologically sensitive lands.	Private landowners voluntarily control invasive plants on their lands, and City properties are relatively free of invasive plants. Landscaping with non-invasive plants including native plants is the standard for new homes and businesses.

Social Capital

Current State	5 Year Goal	Sustainable Future
Indicator: Education		
K-12 schools are considered excellent compared to other school districts. No formal curriculum on sustainability	Provide sustainability-related education in K-12 and also in the community.	The educational system is transformed into lifelong learning. Every citizen understands sustainability and what they need to do to contribute toward a sustainable future.
Indicator: Sense of Community		
West Linn residents almost uniformly revere their city's attributes, possess a strong sense of community identity and are participants in the cultural and civic life of West Linn.	Build a minimum of one additional meeting place	Neighbors know and trust one another such that networks for mutual support and barter exist. We have a diverse community more in keeping with the demographics of our society. Community facilities, including parks and the library, have high levels of use. Every place in West Linn is within walking distance to nature, gathering places, and commercial districts.
Indicator: Civic Engagement		
City government is accessible with fairly high degree of citizen participation.	Increased volunteerism as measured by volunteer coordinator. Find a way to measure this. Increase as a percent of population. Perhaps build into Citizen Survey.	High levels of voting on elections High levels of citizen participation and awareness in civic issues (e.g., participation on Task Forces, volunteerism, civic organizations, neighbor interactions).
Indicator: Transportation		
The City has a number of bike/walking paths but the topography limits the practicality of these modes. West Linn is largely car-dependent	Ensure that practical alternative transportation modes are available to common destinations	Multiple alternative transportation options are available to destinations.
Indicator: Living Arrangements		
	Assess housing types, size and affordability in light of future needs.	Adequate housing is available for all age groups, income levels, family needs and changing demographics, Housing contributes to community interaction, safety and well-being.

Economic Capital

Current State	5 Year Goal	Sustainable Future
Indicator: City Revenues		
City has limited tax revenue and is approaching build-out which has impacted City services and infrastructure improvements, respectively. The aging infrastructure will place further financial burden on the City.	Investigate alternatives for providing and funding valued services to the community	A sustainable revenue stream exists to provide a high quality level of services by the City and maintain excellent condition of the City's infrastructure through innovative technology, aggressive maintenance programs, and sufficient funding .
Indicator: Economic Development		
The City of West Linn is primarily residential and does not support a strong commercial and industrial economic base for City revenue. Approximately 70% of the City's businesses are considered home based businesses.	Through the economic development plan, recruit sustainable enterprises that help West Linn provide local jobs, reduce the need for transportation, provide valued products and services to our own residents, and enhance City revenues. Examine obstacles and take action to remove them.	Have a larger number of employment opportunities in or adjacent to West Linn so that a large percentage of our population can live, shop, play and work in West Linn. Needed products and services are available locally and the businesses operate in a sustainable manner.
Indicator: Built Environment		
Hardscapes (such as parking lots, roads, sidewalks, etc.) contribute to storm water run-off. New development is required to provide treatment and detention for the stormwater runoff. Homes are not necessarily oriented to take advantage of the sun's energy for passive and active solar energy. There is no green building standard to conserve resources and protect indoor air quality.	Implement green building standards. Create public/private partnerships to remodel and upgrade existing homes and neighborhoods.	The built environment is fully ecological, generating the energy it uses, sustains wildlife, retains and uses rainwater on site, and restores degraded sites.

Situation Assessment

"This crisis is bringing us an opportunity to experience what few generations in history ever have the privilege of knowing: a generational mission; the exhilaration of a compelling moral purpose; a shared and unifying cause; the thrill of being forced by circumstances to put aside the pettiness and conflict that so often stifle the restless human need for transcendence; the opportunity to rise."

–Vanity Fair, Special Green Issue, May 2006

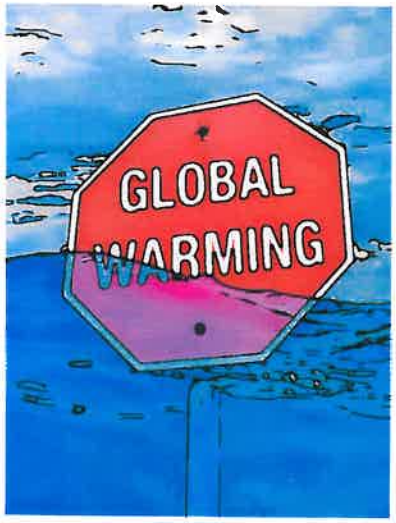
Long-Term Trends and Threats

The Task Force examined a number of social, economic and environmental trends to understand how these might threaten the cherished features of West Linn. Three threats seemed particularly important to address:

- **Car dependency** (social issue)—It is likely that gasoline prices and energy prices in general will stay high and go higher. This is in part because of peaking oil supplies globally coupled with increasing demand from such developing countries as China and India. It is conceivable that our quiet but car-dependent oasis could become a liability. Given the United State's current diplomatic conflicts with Iran and Venezuela, coupled with the instability in Nigeria and Iraq, all significant sources of oil, an oil shortage could come prematurely and artificially. The City's four commercial centers are within a reasonable walking or biking distance from most residences, even given our topography. However, the aging population may mean that we will not be able to depend on these modes of transportation entirely. Beefing up public transportation should be a priority. We should try to develop the commercial districts with mixed uses, such that they could provide a majority of needed services and supplies locally, including more office space, so that car travel, or at least long-distance car travel is less necessary. As fuel becomes more precious, it may also affect our ability to provide basic services. In particular, transporting waste hundreds of miles will seem a low-value use of this resource. New technologies are emerging that can transform waste into fuel. The City might plan for such a facility. Furthermore, the City should protect farmland around the City, and specifically the Stafford Triangle, to grow food and fuel stocks. To make matters worse, the current transportation study that Lake Oswego and Metro are undertaking could reduce the convenience of public transportation while exacerbating automobile traffic on Highway 43.

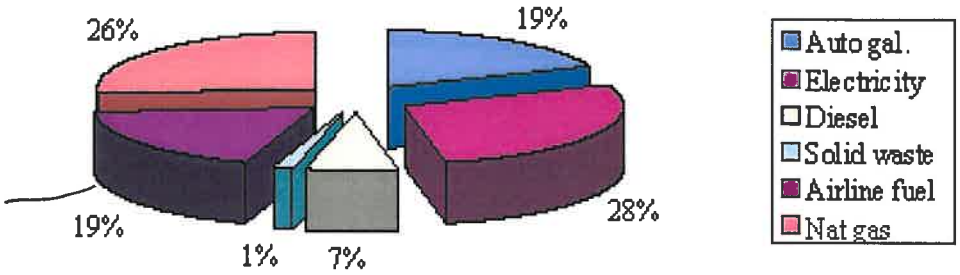
- **City revenues not keeping pace with expenses after build-out** (economic issue)—Tax revenues are constrained at a 3% growth rate but the cost of providing services often exceeds that. The City has been able to off-set the shortfall in part through the development of buildable lots and also through creative collaboration with other municipalities. Once West Linn is built out, expenses associated with that development will decrease. However, the cost of providing a high quality of service already exceeds revenues in some areas, such as road maintenance. City postponing of maintenance results in higher expenses when road surfaces fail. Finding a sustainable solution to this funding dilemma is critical to maintaining our quality of life.

- **Climate change** (environmental issue)—Global climate change is perhaps the most serious environmental challenge facing the world. The models are not able to reliably predict its impact on the West Linn area but the world's climatologists warn that climate change is already happening and accelerating. West Linn has a duty to itself and the world to do all it can to reduce its own production of greenhouse gases and also to prepare itself for likely changes in climate. Some scientists forecast that Oregon is likely to have wetter winters but less snow pack, so both flooding and water shortages are possible effects we should anticipate. The Portland area is expected to move toward a more Mediterranean climate, with warmer summers as well.



Sources of West Linn's Greenhouse Gases

Climate change, coupled with diminishing availability of traditional energy sources, will have a direct effect on every citizen of West Linn. Furthermore, most of the world seems to be moving toward efforts to curb greenhouse gases. The Task Force conducted a rough estimate of West Linn's greenhouse gases, based on available sources of data. The chart



Almost half of the greenhouse gas emissions are related to buildings (electricity and natural gas) and the other major component is transportation fuels (gasoline, aircraft and diesel vehicles). The Task Force believes that through a combination of measures, West Linn should be able to reduce its greenhouse gases by 25% in 5 years, despite projected growth in population. The following measures should be undertaken:

- Energy conservation: Use less energy by driving less, buying local, turning down the thermostat, etc.
- Energy efficiencies: Purchase more fuel-efficient vehicles and energy efficient appliances to can get the same benefits with less energy. Since buildings are such a large energy user, we should take full advantage of energy audits offered through the Energy Trust.
- Renewables: Switch to renewable sources. Green Power is available through PGE. Diesel vehicles can run on biodiesel. Some cars can run on ethanol. With these actions, West Linn can reduce the impacts of the energy it does purchase.
- Offsets: Purchase 'carbon offsets' to compensate for the carbon emissions we do cause. Through the Climate Trust or through Bonneville Environmental Foundation's Green Tags, West Linn citizens and businesses can offset the climate impacts of their use of air travel, gasoline and natural gas.
- The Task Force believes a combination of these measures can help West Linn meet this challenging goal of eliminating or at least significantly reducing its greenhouse gas emissions.

High-Priority Mission-Related Government Functions

The Task Force completed a SCORE assessment (Appendix B: Sustainability Competency and Opportunity Rating and Evaluation tool developed by AXIS Performance Advisors and the Zero Waste Alliance). This assessment identified major governmental practices and rated the West Linn's current performance and also established a goal for 5 years. See the chart below. Of these areas, the Task Force felt that the following five areas should be given the highest priority:

- Buildings
- Energy
- Land use
- Education & outreach
- Transportation

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Recommendations for the Community

The following section evaluates the community of West Linn in how it stands with the goals of the five high priorities identified by the Task Force. These items include Land Use, Energy, Transportation, Buildings and Education/Outreach. The Task Force provided recommendations for the community for obtaining the five high priority goals. From these recommendations, the Task Force was able to develop Recommended Actions for implementing these goals on a short term (1-2 years), intermediate term (3-5 years), and long term (6 to 10 years) basis.

"You must be the change you wish to see in the world"
–Mahatma Gandhi

"I believe that this contest between industrialism and agrarianism now defines the most fundamental human difference, for it divides not just two nearly opposite concepts of agriculture and land use, but also two nearly opposite ways of understanding ourselves, our fellow creatures, and our world."

"THE WAY OF INDUSTRIALISM is the way of the machine. To the industrial mind, a machine is not merely an instrument for doing work or amusing ourselves or making war; it is an explanation of the world and of life. Because industrialism cannot understand living things except as machines, and can grant them no value that is not utilitarian, it conceives of farming and forestry as forms of mining; it cannot use the land without abusing it."

–Wendell Berry,
The Agrarian Standard

Land Use

Kudos

West Linn has invested in park lands, controlled sprawl by promoting compact growth and mixed use development, has a storm water system that uses natural open drainage ways, completed a natural areas inventory, and adopted protective ordinances for riparian and wetland habitats. Citizens have undertaken restoration projects with help from the City, and there is a growing awareness of the ecological values and their importance in the area. City leaders have opposed inappropriate development in the Stafford Basin.

Recommendations

Our vistas and natural areas in many ways define West Linn. We must protect these natural areas, containing development. The following recommendations will help us toward that goal.

- **Conserve natural landscapes:** Given the development pressure in West Linn, and its impact on natural landscapes, it is critical to take immediate steps to conserve remaining wetland, riparian, upland wildlife habitat, open space, and scenic vistas before they are fragmented beyond the point that they are able to provide ecosystem services. This will involve rapid updating of the inventory and taking additional steps to comply with, and exceed, the requirements of goal 5, and applying innovative strategies to address public expectations while accommodating private property rights. To provide food security, it is important to preserve farmland in and around West Linn, and in particular the Stafford Triangle.
- **Preserve the pattern of development:** Future development and redevelopment patterns should result in attractive, nature-friendly neighborhoods that facilitate safe and comfortable walking, biking, and use of public transit. A variety of housing densities and creative new arrangements like conservation subdivisions, stacked commercial and residential villages, more parks and natural areas, and community gardens will be pleasing and make efficient use of city revenue for development, through SDCs and maintenance funds. Storm water is managed using low impact development with soft engineering approaches including bioswales, porous pavements, and green streets.

- **Make it easier for people to work in West Linn:** Existing barriers to the creation of home businesses that are compatible with residential uses should be examined and modified. Revisit the code for home-based businesses and make more efficient use of commercial areas. Encourage businesses that provide jobs for residents, supply products and services to be consumed locally, especially those with negligible environmental impact. More efficient use and modest expansion of existing commercial areas will provide jobs and services without fundamentally changing the character of the community. Big box stores are not allowed.
- **Protect Stafford Basin:** The future sustainability of West Linn is linked to the future of the Stafford Basin, Protecting the Stafford Basin should be a priority of the Council. Further development in the Stafford Basin will degrade the open space buffer between West Linn and adjoining communities. A variety of approaches to maintain the buffer include acquisition, intergovernmental agreements, citizen involvement and if necessary, litigation. We recommend a study be done to determine a sustainable vision for the Stafford Basin consistent with adjoining community goals before any development is undertaken.

Defenders of Wildlife has a webtool to help in the design of conservation networks.

http://www.biodiversitypartners.org/habconser/cnd/index.shtml

Energy

Kudos

The community of West Linn ranks third among cities in the metro area (PGE service area) for green power purchases, buying almost 7% of its electricity from wind power and other renewable sources.

West Linn's water provider, South Fork Water Board, has performed an energy audit and has made improvements to reduce energy usage both in the supply and treatment of water and administration.

West Linn has four commercial areas servicing nearby neighborhoods. These local commercial areas reduce the need to travel longer distances for basic services. The City has implemented energy conservation measures in City Hall and other facilities.

West Linn has several potential energy resources at its disposal, including micro-hydro, solar, wind, and geothermal.

Citizens in West Linn also tend to be well-educated. This will be an important factor in raising awareness about the complexity of depleting conventional energy resources.

Recommendations

To reduce climate change as well as mitigate the impacts of declining fossil fuel supplies, it is important to transition away from fossil fuels. In the future, living within the solar budget will be a prerequisite for sustainable living. The City of Portland created a Peak Oil task force on May 10, 2006. West Linn may need to consider a similar effort. The following recommendations will help us toward this goal.

- **Promote green power and solar:** West Linn should begin an educational campaign to raise awareness about the need for individuals and businesses to integrate renewable energy in to their lives to the greatest extent possible. Adopting 'green' power plans through the local power company is one way, but investing in solar panels is even more progressive because the individual is taking responsibility for their own power production. West Linn should reexamine their commitment to solar access consistent with maintaining the natural landscape.

  Solar panels also offer the potential for 'net-metering', where power is supplied to the grid during peak demand, and returned

Every home should be thought of as a potential power plant, provided solar access is adequate. As one of the most affluent communities in Oregon, West Linn is in a better position than most to capitalize on tax credits available for the development of solar power. Passive solar and ground source heat pumps should be considered during the design of buildings.

Using solar hot water is quite cost-competitive, more so than photovoltaics (using solar energy to create electricity). Significant Federal and State incentives exist for both systems.

- **Promote alternative fuels for City vehicles:** West Linn should switch the City truck fleet and machinery to biodiesel, and contract with a firm such as Sequential Biofuels to supply City trucks with biodiesel. Any diesel vehicle currently owned by the City is capable of running biodiesel and it is also cleaner burning than regular diesel. This fuel could also be used for stand-by generators. Encourage local service stations to carry biofuels—perhaps through property tax abatement incentives. We may be able to collaborate with Lake Oswego, which has similar goals.
- **Negotiate Long-Term Power Contracts:** Negotiate with the City of Portland for inclusion of city owned buildings in their contract for wind power. Explore opportunities to generate more renewable power locally. Consult with West Linn Paper Co. and any other industrial companies in West Linn to develop co-generation capabilities and waste heat recycling. Advocate with the Public Utilities Commission for private Investor Owned Utilities to keep rates as low as possible. Consult with the Oregon Dept. of Energy to perform a resource assessment in West Linn for opportunities to develop solar, geothermal, microhydro, etc. solar, geothermal, microhydro, etc.
- **Educate citizens about energy efficiency and conservation:** Raise awareness about the difference and benefits of both efficiency and conservation. Efficiency means getting more 'bang for your buck,' for example, using compact fluorescents, increased insulation and fuel-efficient vehicles; while conservation means finding ways to do the same thing using human or no energy (e.g., turning off lights, lowering the thermostat or using alternative transportation). Encourage citizens to use both energy efficiency and conservation techniques.

Americans continue to own more cars and drive more miles in them: the average American car driver travels almost 20,000 kilometers (about 12,4000 miles) a year, whereas the European one does only 14,000 kilometers. This does not have much to do with the size of the country: most trips are urban, with an average length of about 14 kilometers, the same as in Britain and somewhat less than in Germany. Part of the answer is that buses and trains in America account for barely 3 percent of travel mileage, whereas in Europe the figure is over 15 percent. The rest of the answer lies in the sprawling low-density structure of American suburbs, which involve greater distances between homes and shops, schools and other amenities.

--Economist, 1996

Transportation

Kudos

West Linn has several distinct neighborhoods with shopping areas close by. There are a number of parks and pathways within and near these neighborhoods. The business areas are established in several locations and are generally convenient for bike and pedestrian access from the neighborhoods. The City is also connected by public transportation to regional destinations such as downtown Portland and Oregon City.

Recommendations

Given the rise of fuel prices and the likelihood of increasingly tight supplies, we must enhance alternative transportation options for both our citizens as well as products and services. The following specific recommendations will help us toward that goal.

- **Develop Safe Pedestrian and Bike Pathways:** To reduce car-dependency, provide safe sidewalks and bike pathways connecting neighborhoods with local business districts and other attractors, e.g., schools, parks and bus routes. Reduce the emphasis on car travel by developing landscaping schemes and vehicle barriers to protect and promote pedestrian use of walkways. Discourage cul-de-sacs and encourage connected neighborhoods with pathways for bikes and pedestrians. Develop a trail connectivity program with neighbor cities to improve access to business services and enhance the pedestrian travel from one end of West Linn to the other. Promote appropriate business development adjacent to neighborhoods that allows the community to meet the majority of needed services and supplies locally. Keep posted speed limits low to provide a safer environment for pedestrians. Make pedestrian crosswalks safe to use through proper lighting and signage. Oppose expansion of automobile capacity (wider, more or faster roads),and invest in practical alternatives instead. The new Bolton Center could serve as a transit center to facilitate information from Tri-Met.
- **Promote Shared Vehicles and Alternative Fuels:** More local advertising should be done to focus on and promote fuel savings. Local merchants should offer delivery using alternative fuel vehicles. The City of West Linn must migrate the fleet to alternative fuel vehicles.

Develop FlexCar programs for use by City employees as well as community members. There may be opportunities to collaborate with Lake Oswego, which is also investigating this option. Neighborhood Associations and adjacent cities should develop transportation co-ops, for example RideShare and bike share, to reduce single driver trips. Encourage local fuel stations to provide alternative fuels as they become available.

- **Promote Use of Public Transportation:** Retain and improve direct non-transfer service to downtown Portland. Lake Oswego and Metro are doing a transportation corridor study, which may result in the elimination or reduced convenience (e,g, no express service to downtown Portland) of bus service on Hwy 43 north of Lake Oswego. Identify the feasibility of shuttle services to expand bus service in the City and to link the business areas within the City and between nearby cities. Encourage use of Tri-Met for short hop trips to high school or longer trips for shopping along Highway 43. Build bus shelters to call attention to availability of public transportation along frequently traveled roads and make the wait more tolerable. Ask students to take the school bus instead of driving personal vehicles to school. Expand park and ride for public transit.

Top Ten Items to consider for a Green Remodel

1. Reduce Energy consumption- have an energy audit done, use a programmable thermostat, insulate, use compact fluorescent light bulbs, occupancy sensors.
2. Replace old windows with windows that have a U value of 0.35 or better.
3. Utilize Solar Energy- install solar hot water panels and/or a solar electric system. Use state and federal tax credits to help lessen the costs.
4. Use non-toxic materials low VOC paints, FSC wood, Formaldehyde free materials such as cabinets, insulation, carpeting, etc.
5. Replace old appliances with energy star products, including heating /cooling system, computers and monitors.
6. Landscape using drought resistant native planes. Reduce the amount of hard surfaces to reduce water runoff.
7. Save water- use water efficient shower heads, landscape with drought resistant plants, compost, use low flush toilets.
8. Seal ducts using low toxic materials and have a duct test perform to reduce air leaks.
9. Recycle and reduce construction waste.
10. Reference existing local green programs such as PGE's Earth Advantage program or the City of Portland's G-Rated program.

Buildings

Kudos

Some green building practices have been incorporated into several of West Linn's recent City buildings, (Adult Community Center and Library remodel) with less toxic materials, energy efficient lighting and use of natural light.

West Linn has embarked on a neighborhood planning process that can easily incorporate a majority of the recommendations that follow. Also, several existing neighborhoods (e.g., Willamette and Tanner Basin) provide a good example for the rest of the neighborhoods. The City has had the foresight to encourage a constructive dialogue about how to improve the City's built and natural environment.

Recommendations

Buildings are a major consumer of energy and natural materials. The following recommendations will move us toward the goal of reducing their impacts.

- **Adopt and implement green building standards for all new and renovated West Linn municipal and other public buildings**, including but not limited to, schools, fire and police stations, and park facilities. Use solar energy, daylighting and rainwater collection. A building built to these green standards would save on natural resources, create a healthier work environment, and save at least 30% of current operating costs compared to a comparable "standard construction" building.
- **Promote and support the incorporation of green building practices for all new construction and renovations.** This includes, but is not limited to, the construction of individual homes, commercial buildings, townhouses and apartments. This can be achieved by educating the public and professionals about green building techniques and their benefits of cost savings, healthier environments, etc. The City should review the current building codes and development standards to identify any conflicts to implementing green building practices. Also the City is encouraged to investigate the possibility of offering incentives for constructing green projects. City staff should help facilitate innovative energy efficient and green building practices by removing barriers in existing codes and practices, as well as creating incentives.

- **Encourage pedestrian and environment-friendly developments.** Create mixed-use neighborhoods where residents can live, work and play in a physical environment that respects West Linn's character and natural attributes. Encourage smaller homes. Evaluate current land use/zoning codes to determine what methods would be appropriate to encourage more mixed land use that would not detract from the quality of life for the community. Provide incentives for these new developments to use green building practices.
- **Promote water conservation** and educate residents, developers and other professionals about the benefits of water conservation in all developments and building types. Identify the existing restrictions within the building and development codes, which do not allow the homeowners or business owner to implement water conservation/reuse items such as rainwater harvesting for irrigation, laundry, etc. Provide homeowners and businesses storm water credit when they reduce water use. Also review the current fee structure for water consumption so that it will encourage water conservation. All methods of water conservation should be encouraged, such as but not limited to, the use of pervious pavements, green roofs, low flush toilets, rainwater harvesting and naturescaping.
- **Protect large areas of undeveloped land**. Concurrent to using strategies that limit development (see natural resource recommendations), develop a planning process that includes all the stakeholders in the future of any large parcel of land. The goal is to protect wildlife habitat, open space buffers, river and stream corridors, farms and any other natural and historic areas identified as precious before any new buildings are developed. Encourage any new development to use principles such as transportation-oriented development, smart growth, new urbanism, while also incorporating renewable energy and green building practices. One key planning strategy that has been used successfully to plan for areas as large parcels of land is to use the eco-charette process (where multiple design disciplines develop integrated designs that optimize the performance of the building). To get all stakeholders on the same page and have buy-in, the City is encouraged to use the skills of a professional to lead the eco-charette process.

The principal objective currently facing humanity is to allow a continued growth in living standards world-wide within diminishing resources. Architects have an important part to play, as they influence up to 75% of total energy use (50% in buildings, 25% in transport). What is emerging is a range of new tools and techniques which are influencing the form and operation of the buildings themselves, alongside a more holistic view of the design process integrating the key issues of transport, energy, water, waste, and materials.

–David Orr, HOPES Conference, 1999

"We clasp the hands of those that go before us,
And the hands of those who come after us.
We enter the little circle of each other's arms
And the larger circle of lovers,
Whose hands are joined in a dance,
And the larger circle of all creatures,
Passing in and out of life,
Who move also in a dance,
To a music so subtle and vast that no ear hears it
Except in fragments"

-Wendell Berry

Education and Outreach

Kudos

West Linn is served by a daily and a weekly newspaper, both of which focus on community issues and activities, with particular attention to news of local government and public schools. Several Portland-based television and radio stations also provide news coverage of West Linn on a selective basis. The City of West Linn publishes and mails a newsletter monthly to every deliverable address in the City. It also maintains an extensive website with ready access to official government records, actions, proceedings, activities and documents. The City maintains five public access cable channels, including one channel devoted entirely to local government meetings and hearings, which are videotaped and cablecast daily in all timeslots.

Recommendations

Regularly use commercial and public media outlets to educate residents about sustainability issues and to promote interest in sustainable practices. The City should develop a Sustainability Outreach and Education Plan Recommendations for City Government—Internal Operations

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Recommendations for City Government

Implementation Advice

There are many viable actions the City can implement at no or a minimal cost that will help the City towards its sustainability goal. The Task Force believes the following actions fit these criteria:

- Hold a working session with the Task Force members, Council, City Manager and departmental managers in the fall to discuss how best to carry out these recommendations.
- Put in place a mechanism for implementing, monitoring and reporting on progress. This might include assigning someone the sustainability coordinator role or reforming a citizen group similar to the Task Force to support the implementation and create accountability for carrying out these recommendations. Develop sustainability performance metrics (based on the Vision section of this report) and report progress to the community at least once every two years.
- For the next year, focus on educating staff and community members about sustainability and the related issues. These may take the form of brownbag lunch speakers series, Northwest Earth Institute discussion courses, a public lecture series, a Sustainability Fair for Earth Day, incorporating an Ecological Footprint calculator on the City web site (http://www.earthday.net/Footprint/index.asp)and features in City materials (website, newsletters, etc.).

Top 4 Actions For City Government

Adopt a green building standard for all new City facilities.

Conduct an energy audit of all facilities and act on the findings.

Implement a green purchasing policy that includes environmental criteria along with such traditional criteria as price, performance and convenience.

Identify and protect remaining natural areas before it's too late.

Recommendations for City Government Internal Operations

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Land Use		
Evaluate Parks management to identify opportunities to further improve sustainable operations regarding natural areas, invasive species, impervious surfaces, etc.	Implement the best opportunities.	
Energy (Overlaps with Transportation and Buildings)		
Conduct energy audits of all existing facilities and take appropriate action. These actions may include capital improvements and operational practices. Investigate becoming part of Portland's long-term wind power contract. Demo solar at City Hall. Use an educational display monitoring system to educate the public. Solar application in park.	Develop a tracking system for greenhouse gas calculations Have every school qualify as a DOE Energy Star Building. Investigate the feasibility of local renewable energy sources (e.g., wind, small hydro systems, etc.)	Investigate feasibility of waste-to-energy systems Develop appropriate open space and City buildings to produce renewable energy.
Transportation		
Increase the use of shared vehicles (e.g., FlexCar), alternative fuel vehicles, and fuel-efficient vehicles. Develop strong alternative transportation programs for employee commuting, including education, incentives, pre-tax transportation funds, etc.	When new vehicles are purchased, convert the fleet to all hybrids and/or alternative fuel vehicles. Promote telecommuting.	
Buildings		
Implement green building standards (LEED Silver or equivalent) for all future buildings and use LEED-EB standards for existing buildings		

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Business Systems		
Create a sustainability coordinator position (half or full time) and create a carefully designed steering committee to manage the sustainability effort. Promote and complement policies to achieve sustainability in City government and the community at large. Educate staff about sustainability Collaborate with other municipalities to form a sustainable purchasing coalition. Conduct a review of existing funding sources. Identify revenue impact of build-out and identify potential future revenue sources and cost-savings to preserve the quality of services	Conduct a formal sustainability assessment (most likely by a third party) of internal City operations (energy, toxics, etc.) Also evaluate progress against this plan. Conduct City planning processes in an integrated fashion (similar to eco-charettes) to coordinate sustainable practices across departmental boundaries. Implement alternative funding sources and cost-saving measures to provide sustainable funding for valued City services.	

Recommendations for City Government External/Mission-Related

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Land Use		
Complete Goal 5 inventories and implementing measures. Cluster highest density housing zones near public transportation services Update natural areas inventory and develop a strategy for conserving each high-priority parcel (e.g., through acquisition, easement, landowner agreement, etc.) Review the Community Development Code and amend as appropriate to remove barriers to sustainable development and include requirements and incentives to encourage sustainable development. Examples include solar access, increased density or height to encourage more compact development or structured parking, rainwater harvesting, encourage open drainage in lieu of piping, encourage porous pavements, etc. Increase economic development of local businesses using sustainable practices in the commercial areas.Develop policies that will attract these 'green' businesses and incentives to help local businesses improve their sustainability performance. (Eg., consider a tax break for privately owned buildings that meet certain standards.	Expand sidewalk infill program. Fund walkable, bikable community programs. Implement the strategy for conserving priority parcels and adopt ordinances to restrict or limit development on priority lands. Adopt ordinances for 'conservation subdivisions' for lands that are developed. Examine codes for barriers to home-based businesses and amend if needed (while protecting the residential feel of the community). Retrofit existing storm water management systems to keep dirty storm water out of creeks. Float a local bond measure to finance parks and habitat protection. Adopt ordinances preventing stores and malls with extensive impervious footprints.	

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Land Use (Cont.)		
Identify any barriers preventing desirable businesses from locating in the City. Work with adjoining communities to develop a sustainable vision for the Stafford Basin. Identify needs for low-income housing and develop strategies to encourage development near commercial and transportation centers. Provide neighborhood library drop boxes and lending branches.		
Energy (Overlaps with Transportation and Buildings)		
Consider involving students in energy audits of the schools. Encourage households to have energy audits conducted. Retrofit stop lights with LED ones	Investigate energy efficient streetlights and work with PGE to encourage their use.	Encourage school district to be top 10 in DOEs Energy Star program.
Transportation		
Work with FlexCar to provide a fleet of shared vehicles for both employees and the community. Work with Tri-Met to develop better public transportation options within West Linn and to other destinations. Work with Lake Oswego to develop fueling stations for alternative fuel vehicles. Encourage businesses to promote alternative commuting. This may include bus passes, bike storage and showers for employees.	Designate a transit center along Highway 43. Assuming a streetcar is the locally preferred option, work with Metro to ensure the resulting proposals from the Lake Oswego to Portland Transit Alternative Analysis (Hwy 43/ Trolley corridor) provide logical extensions of multi modal alternatives through West Linn to Oregon City, but do not provide service to the Stafford Basin for urbanization of the Stafford Triangle.	Fund a local shuttle to provide transportation between the neighborhoods and commercial centers in West Linn and connect to regional bus lines. Complete the trail and bike path system and sidewalk in-fill program.

Recommendations for City Government External/Mission-Related (cont.)

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Buildings		
Promote water conservation and educate residents, developers, and other professionals about the benefits of water conservation in all developments and building types. Look at current fee structure and basic charge to encourage conservation. Encourage the School District to increase the use of schools as community centers.	Develop a strategy to strengthen a citizen's right to have access to sunlight (i.e., for solar energy systems). Implement some green streets for development. Adopt a green building rating system and reward innovation and efficiency. Consider incentives (e.g., feebates (rebates for environmentally preferable items paid for by charges against the most polluting or energy intensive options), streamlined permitting, etc.) Identify and change building codes that restrict homeowners and businesses from rainwater harvesting and other reuse applications. Sponsor promotional and educational events about green building practices, including give-away programs for toilets, light bulbs, etc. Provide collection sites for recyclable items that are not currently picked up by the waste hauler (e.g., batteries).	Investigate adopting the new American Institute of Architects (AIA) 2030 Challenge (see Appendix) goals for building energy efficiency. Investigate a sustainable aquatic center.
Education and Outreach		
Develop and implement a sustainability curriculum based around the four goals (energy, buildings, land use and transportation).	Develop a process for tracking volunteerism and civic engagement in West Linn. Work with Chamber to develop guidelines and incentives for sustainable business.	

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Education and Outreach (Cont.)		
Develop a communication strategy, including the web. Educate businesses and citizens about sustainability and what it means to them. Develop demonstration projects around the four goals that include schools, businesses and citizens. Education the citizens through green fairs, Earth Day events, etc. This may include West Linn specific elements, Freecycle, banners, etc. Get more involved with Green Schools.		

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Recommendations for Area Businesses

First and foremost,
Learn about sustainability.
- What does it mean to your business?
- Why has it recently become such an issue?
- How does it impact my community?
- What does it mean to our future?

A range of recommended actions follow. These are intended as starting points on the road to sustainability. Each and every business in the community of West Linn is invited to help connect the dots and participate in creating a roadmap to a sustainable West Linn. The journey is just beginning and your help is needed.

Top 3 Actions For Local Businesses

Save energy in your facilities and transportation choices. Consider an audit of your facility to identify opportunities to save cost. Support your employees using alternative transportation.

Assess the sustainability of your practices, inventory your existing green practices and promote your successes in the community; identify at least one sustainability area to improve upon this year.

Integrate sustainability elements into your business plan to improve your competitiveness and profitability.

Implementation Advice

Learn about sustainability and integrate the concepts and practices to remain competitive and profitable in a rapidly changin world. Here are ideas the Task Force had about how to catalyze action in the business community.

- The Chamber can play a key role by inviting the Task Force to present their report and then have follow-up presentations on specific sustainability topics. The Task Force recommends highlighting local businesses that are already adopting sustainable practices and speakers should emphasize the business benefits they have gained.
- The Chamber may also want to consider using the 'Tree Diagram' as a local green certification logo.
- Businesses can help educate their own staff about sustainability through brownbags, attendance of local events, by sponsoring Northwest Earth Institute discussion courses, and internal training.
- Businesses should promote their sustainable practices to their customers and the public.

The following charts show priority actions for area businesses. They should be interpreted as ideas for action, not edicts. It will be important to engage the area businesses in a discussion about sustainability and these ideas in order to develop meaningful initiatives. Please also see the Top 10 Things Businesses Can Do Right Now in the appendix for actions you can take immediately that make good business sense.

10 Easy First Steps For Businesses/Offices

Courtesy of Shorebank Pacific

1. Turn lights down/off when rooms and spaces are not used.

2. Replace incandescent light bulbs with fluorescent or halogen bulbs.

3. Turn computers OFF when not in use.

4. Heat to lower temperatures in winter (67-70 F) – allow staff to dress appropriately for this with insulated shoes, boots, lap blankets, jackets. Cool to higher temperatures (72-75F) in summer; also allow staff to dress appropriately for warmer temperatures.

5. Recycle the easy stuff: paper, beverage containers, plastics, glass, cardboard, magazines.

6. Use safe cleaning compounds. This includes sink and bathroom cleaners, bleaching compounds, carpet cleaners, dusting products, window cleaning products and other cleaning products.

7. Encourage local purchasing instead of using geographically remote but easy-to-access vendors.

8. Clean carpet spots when needed to prolong life; use walk-off mats at doors.

9. Maintain landscapes with organic compost, mulch, and compost teas to promote soil and plant health.

10. Encourage staff to bike, walk, ride transit to work; encourage carpools; let highly efficient cars park closer to entry doors than low efficiency vehicles.

Recommendations for Area Businesses

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Land Use		
Reduce water use, waste, and effluent output by a certain percentage each year. Convert landscaping into xeriscaping, using native plants that require little watering. Where appropriate, increase the number of native trees to reduce the heat island effect (where hard surfaces retain heat). Use previously disturbed land for new buildings (e.g., redevelop brownfields). Build up instead of out to the degree allowed by the City, favoring mixed use, transit-friendly design, and requiring less parking.	Replace impervious surfaces with pervious materials	Cover asphalt areas with solar panels to generate electricity and reduce the heat-island effect.
Energy (Overlaps with Transportation and Buildings)		
Conduct an energy audit and act on the results. Participate in the Green Power program. Actively promote the use of green power by other businesses and our citizens. Retrofit stop lights with LED ones	Investigate opportunities to collaborate with adjacent commercial facilities for cogeneration/heat recovery/water reuse, etc. Increase green power purchases to 100%. Maximize the use of solar for water heating, passive solar design, etc. Reduce your energy needs by 50%.	Generate renewable energy.
Transportation		
Promote fuel savings through trip reduction and other measures. Actively encourage the use of public transportation.	Convert the fleet to hybrids and/or alternative fuels Participate in FlexCar program.	Fund a local shuttle to provide transportation between the neighborhoods and commercial centers in West Linn and connect to regional bus lines.

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Transportation (Cont.)		
Promote telecommuting where practical. Collaborate with other businesses or through the Chamber to have ride-share programs and education about alternative transportation. Provide incentives to employees who arrive by alternative transportation (walk, bike, bus) Chamber promote a buy-local campaign to limit transportation and shipping while enhancing economic development. Conduct an assessment of needs that cannot be met locally to uncover potential business opportunities. Have the Future West Linn Sustainability Commission work with Chamber to incorporate sustainability features into the West Linn Economic Development Plan now underway.	Investigate adding healthcare and adult education services to our commercial areas. Assess the ability of the local commercial areas to meet daily needs for their surrounding communities and look for opportunities to provide these services within walking/biking distance of all residents. (e.g., a grocer in each commercial area) Provide incentives to customers who arrive by alternative transportation (walk, bike, bus)	
Buildings		
Employ green building practices for all new construction Radically improve recycling rates.	Adopt green building practices for all remodels. Provide convenient bike parking and shower facilities for employees.	Adopt the American Institute of Architects (AIA) 2030 challenge goals for energy reduction.
Education		
Educate management and employees about sustainable business practices. Assess the business opportunities.	Have the City/Chamber sponsor a 'sustainable business of the year' award and award it at the Chamber's annual dinner.	

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Recommendations for Neighborhoods, Schools & Civic Organizations

Implementation Advice

Existing local organizations can serve an important role in the dissemination of sustainable practices. The Task Force suggests the following actions as appropriate next steps to reach out to these organizations to engage them in an exploration about their role in creating a sustainable West Linn.

- Host a summit of all the 11 neighborhood associations to discuss the report and explore ideas for action.• The Chamber may also want to consider using the 'Tree Diagram' as a local green certification logo.
- Convene a meeting with school sustainability coordinators to compare notes and discuss how the schools can help educate the community, leveraging the many sustainable actions they have already taken.
- Engage other civic and religious organizations in a discussion about the role they would like to play in creating a sustainable West Linn.

Top 3 Actions For Neighborhoods, Schools & Civic Organizations

Make sustainability a standing agenda item when you meet.

Schools become more involved in the Green Schools program and purchase local, organic food.

Neighborhood associations incorporate sustainability into your neighborhood plans; create a vision for a sustainable neighborhood and identify a couple goals to act on.

Recommendations for Neighborhoods, Schools & Civic Organizations

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Land Use		
Develop neighborhood plans with strong sustainability elements. Support pedestrian- and environmentally-friendly development and maintenance in new and existing neighborhoods Resist over-developing areas; leave natural areas natural. Support higher-density, mixed-use development to protect our natural areas. Encourage development of community gardens within the neighborhoods.	'Adopt' a park or natural area to maintain (e.g., invasive plant removal, trash clean up, etc.) Sponsor tree planting events (e.g., with Friends of Trees) to plant more native, but increasingly rare trees; use more deciduous trees for summer shade and winter solar heating. Reduce pavement area and reduce run-off with 'water gardens.' Lobby for 'green streets' where the streets are redesigned to contain storm water in water gardens and bioswales. Site a community garden.	
Energy (Overlaps with Transportation and Buildings)		
Consider having a contest for green power purchases. Consider having an energy fair in your neighborhood to educate people on what they can do to save money and energy. Promote solar heating systems for neighborhood pools. Encourage timers on seasonal lights.	Consider collaborative purchasing of renewable power systems. For example, in some communities, neighbors collaborated to buy solar panels to put on the school and then they used the power from it.	Investigate opportunities for shared distributed power facilities. (The emerging technology of small, neighborhood-scale power facilities will let neighbors take advantage of waste heat and in some cases, pure water, that come from these systems, vastly increasing the efficiency of the power generation.)

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Transportation		
Educate people about ride-share services that Tri-Met offers. Evaluate what services you'd like to have in the commercial area Identify priority projects for pedestrian/bike paths.	Provide a central FlexCar parking area. Develop a bike share program within each neighborhood.	
Buildings		
Consider offering a green building home tour to highlight residents with sustainable features in and around their homes.	Add appropriate green building standards for new construction and remodels to CCRs. Reduce light pollution from excessive or improperly shielded lighting systems	
Education		
Use neighborhood meetings as a way to disseminate information about the Task Force recommendations. Develop creative ways of educating the neighborhood about sustainability issues and what they can do (including events, a space in the newsletter, etc.) These may include bike maintenance workshops, stream restoration projects, etc.		Provide education on sustainability to the neighbors and provide a sustainability scorecard.

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Recommendations for Citizens & Households

First and foremost,
Learn about sustainability.
- What does it mean to us?
- Why has it recently become such an issue?
- How does it impact my community?
- What does it mean to children?

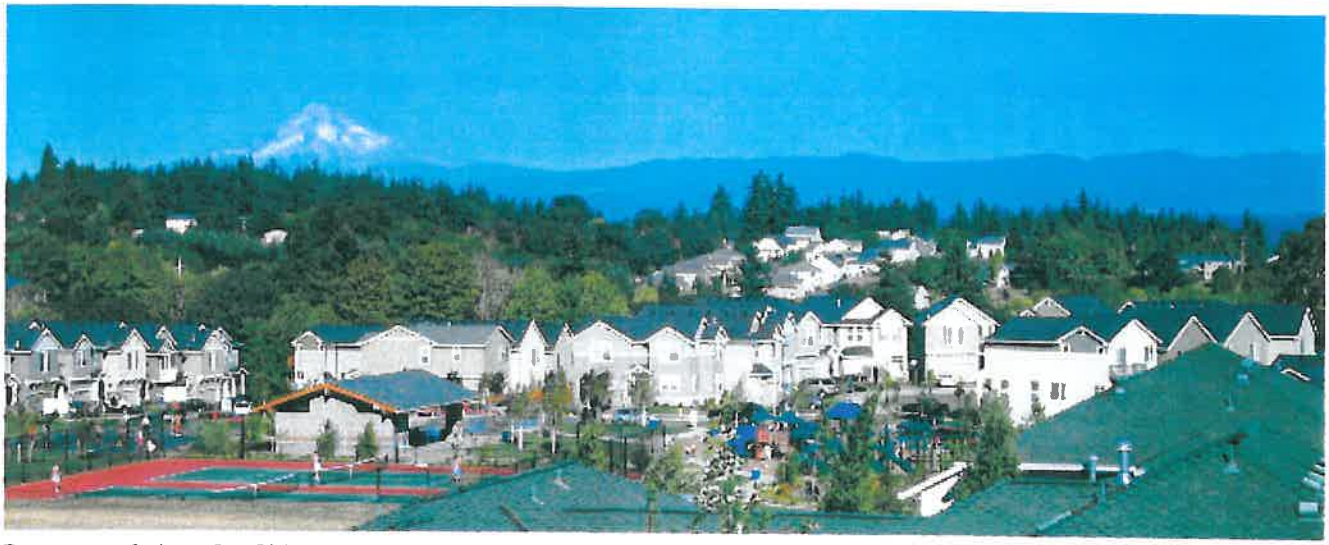
A range of recommended actions follow. These are intended as starting points on the road to sustainability. Each and every citizen in the community of West Linn is invited to help connect the dots and participate in creating a roadmap to a sustainable West Linn. The journey is just beginning and your help is needed.

Top 3 Actions For Citizens & Households

Save energy in your home and transportation choices. Consider Energy Star appliances, remodeling and public transportation.

Use your power of purchasing; buy local whenever possible, give preference to certified 'green' or organic products with minimal packaging.

Educate yourself about sustainability (e.g., by attending community events, participating in Northwest Earth Institute discussion classes, reading, etc.)



Implementation Advice

Citizens need opportunities to become more educated about sustainability and to learn about specific actions they can take to move in that direction. To that end, the Task Force suggests the following as logical first steps:

- Consider forming a discussion group based on the Northwest Earth Institute program.
- Invite the Library to set aside a special section for sustainability materials and displays.
- Ask the Library to host a public lecture series on sustainability topics.
- Support a Sustainability Fair for Earth Day, 2007 in collaboration with the schools, the Chamber and the City.
- Invite appropriate resource providers to staff booths at local events (e.g., the Farmer's Market, Old Time Fair, etc.) to hand out information, samples, and free gizmos (e.g., water flow restrictors, etc.)

Top 10 Things Households Can Do

Promote Sustainability at Home

1. Reduce Energy consumption - begin with compact fluorescent light bulbs, use a programmable thermostat, insulate your home, use Energy Star appliances.
2. Clean your home with less toxic or non-toxic products.
3. Reduce, Reuse, Recycle
4. Buy organic products, shop at the local farmers market, create a home garden.
5. Save water - install low (dual) flush toilets. use water efficient shower heads, landscape with drought resistant plants, compost, harvest rainwater for irrigation, allow lawns to go dormant in dry season.
6. Replace old appliances with energy star products, including computers and monitors. Turn off all electonic devices when not in use.
7. Walk, bike, or skip as often as possible to get around town.
8. Buy local foods and other items from local merchants.
9. When buying a new vehicle consider gas mileage as a top criteria and look at a hybrids or alternative fuels.
10. Use less pesticides, leave grass clippings on lawn with a multhinc mower, reduce lawn area and consider an ecoLawn.

Recommendations for Citizens & Households

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Land Use		
Disconnect roof drains and use onsite drainage and plants to keep most of the storm water on your property. (Note: you can reduce storm water utility fees if you do this.) Learn about invasive plant species. Control (remove or prevent) invasive species on your property (e.g., English ivy, Himalayan blackberry, scotch broom). Use more native plants and edible plants in your landscaping. Stop watering lawns and replace lawn areas with pervious but low-maintenance landscaping. Check out EcoLawns such as "Fleur de Lawn" available with other ecology seed mixes (which require less mowing) from Hobbs & Hopkins in SE Portland. See: http://www.protimelawnseed.com/fleur_de_lawn.htm Stop using synthetic pesticides and instead use safer alternatives (e.g., ladybugs, inter-cropping, mild soap solutions, etc. Learn about permaculture practices that help you get more edible foods from your property with less effort by mimicking nature.	Minimize or remove impervious surfaces to allow rain to infiltrate into the ground. Investigate mulching lawn mowers that reduce the need for fertilizer and switch to electric or manual lawnmowers that pollute much less.	
Energy (Overlaps with Transportation and Buildings)		
Conduct a quick greenhouse gas inventory for your household on www.carboncalculator.org.	Investigate renewable power options Upgrade old appliances to more energy-efficient models.	

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Energy (cont.)		
Donate to the Climate Trust to offset your emissions. And/or calculate your Ecological Footprint (www.myfootprint.org) Have an energy audit done on your house and act on the results. Take advantage of the state and federal tax incentives. Do the easy things now: compact fluorescent bulbs, programmable thermostats, water heater timers, etc. Sign up for green power. Move away from polluting 2-cycle engines in favor of manual or electric models. For example, give up your leaf blower for a rake. Move toward a Mediterranean diet (more fruits and vegetables) that is healthier, but also has fewer environmental impacts than the high animal protein diet most Americans eat.	Provide a central FlexCar parking area. Develop a bike share program within each neighborhood.	
Transportation		
Bike, walk and use public transportation more. Pool errands. Switch to higher-mileage and/or alternative fuel vehicles. Educate children about the drawbacks of our 'car society' Buy locally. Shop at the Farmer's Market and/or support Community Supported Agriculture (CSAs).	If possible, find work closer to home. Telecommute more.	

Short Term (1-2 years)	Intermediate Term (3-5 years)	Long Term (6-10 years)
Buildings		
Promote water conservation through the use of native plants, fewer annuals, mulch, fewer potted plants, etc. Investigate rainwater harvesting, daylighting, and passive solar techniques. Save about $100 per year by switching to one-can-a-month garbage service and challenge your family to reduce waste. Consider a compost pile or worm bin. Purchase 'green' products, preferably certified (e.g., Green Seal, Forest Stewardship Council, etc.) Green cleaning products, household items, personal care items, and building materials can reduce your exposure to toxics.	When remodeling, use green materials and construction techniques	

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Background

The City of West Linn's efforts to incorporate sustainability thinking and practices into its corporate and community culture began in the early 1990s with the appointment of the West Linn Visioning Committee, which produced the "Imagine West Linn" report in 1993. Succeeding City Councils have embraced sustainability as a community value. Upon the election of a new City Council in 2004, interest in sustainability became more explicit.

"Now is the right time to act. But the government acting by itself is insufficient. Government policies that are not owned by the people will not sustain themselves as governments change".

The Council adopted a resolution establishing an ad hoc Task Force on Sustainability on July 25, 2005. The Task Force was to be composed of seven members and two alternates. A Task Force was preferred by the Council over a standing committee or board as a way of focusing the work of the Task Force on a specific product to be delivered by a specific deadline.

The resolution directed the Task Force to develop a strategic plan recommending actions to be taken by the City, the local businesses, community organizations and individuals to promote and achieve sustainability. The resolution identified several areas of interest:

- Land use and development requirements to encourage sustainable development. Increased recycling.
- Encouraging energy conservation.
- Encouraging the use of environmentally safe pesticides and herbicides.
- Reducing auto trips.
- Increasing services, jobs and stores to meet the needs of West Linn residents locally..
- Encouraging buying locally.
- Increasing transit options.
- Increasing bicycle and pedestrian use.
- Protecting riparian areas and natural spaces.

A Task Force is Formed

The Council directed the Task Force to conduct its research, community discussion, and present its plan to the City Council by July 31, 2006, unless extended by the City Council.
In July and August, City staff advertised for volunteers to serve on the Task Force. Fourteen applications were received and reviewed by the City Council in September. On Sept. 12, 2005 seven Task Force members and two alternates were appointed by the Mayor and approved by the Council:

SUSTAINABLE WEST LINN TASK FORCE

Kenneth Hall, Architect	**Chair**
Sara Vickerman, Sr. Dir., Defenders of Wildlife	**Vice Chair**
Susan Day, Banker	**Member**
Glen Friedman, Architect	**Member**
Mary Cook Swanson, Urban Planner	**Member**
Rich Wilhelmi, Financial Advisor	**Member**
Michelle Wittenbrink, Civil Engineer	**Member**
Bob Adams, Physician (ret,)	**Alternate**
Curt Sommer, Energy Research Analyst	**Alternate**

With Council President Burgess as the initial facilitator and Community Services Coordinator John Atkins as staff, an organizational meeting of the Task Force was held on November 3, 2005, in City Hall. In subsequent, semi-monthly meetings, the Task Force discussed definitions of sustainability, the structure of the project, procedural questions, outcomes and assignments. Members of the Task Force divided into two-person interview teams and interviewed City department heads on existing sustainability practices, desired practices, challenges and recommendations. The Task Force brainstormed and compiled sustainability steps that could be recommended to the City. Members of the Task Force also interviewed sustainability practitioners and managers in other units of government and organizations to gain insight into structuring West Linn's project.

The Task Force reached an early consensus that its processes, tasks and work product would benefit greatly if facilitated by an experienced consultant well versed in sustainability practices. With authorization to proceed from the City Manager, staff solicited consultant nominations from members of the Task Force and invited proposals from three. The proposals were reviewed by Task Force chair, vice chair, and staff. There was consensus that the proposal submitted by Darcy Hitchcock of Axis Performance Advisors, Inc., best fit the needs and timeline of the Task Force. Axis has experience in assisting communities and organizations in developing sustainability plans. After a scoping discussion with the Task Force, Ms. Hitchcock began facilitating the Task Force's work on Jan. 19, 2006.

The Task Force met through July, 2006 to analyze West Linn's opportunities and make specific recommendations. This report is the result of their work.

Appendix A

Glossary of Terms and Abbreviations

Alternative fuels and alternative fueled vehicles—Alternative fuels are ones not from traditional fossil fuel sources. (See biofuels.) Alternative fuel vehicles may run on natural gas, biodiesel, ethanol, or hydrogen. Some vehicles can easily switch from one source to another (for example, the E-85 models that can run on gasoline or 85% ethanol blends.)

Backcasting—A planning process that involves working backward from a sustainable state rather than forecasting which begins from your current state.

Biodiesel—Diesel made from plant rather than fossil fuel sources.

Biofuels—Fuels like biodiesel and ethanol, made from plants instead of fossil fuels.

Bubble diagram—A form of a process diagram used to identify sustainability impacts and actions.

Building Operator Certification (BOC)—Training for people who operate buildings.

Business case—Justification for taking a particular action that makes common business sense. Usually involves assessment of financial benefits, risk avoidance and intangible benefits.

Climate neutral—Acting in a way that on a net basis, you are not adding greenhouse gases to the atmosphere.

Conservation subdivision – A development that incorporates ecological principles in the initial siting (not located in sensitive area), design (enhances natural features and minimizes adverse environmental effects) and construction (uses sustainable building materials and techniques).

Daylighting—Designing buildings to make the best use of natural light.

Bioswale—Open swale for collection and treatment of stormwater.

EMS—Environmental Management System, a method for creating continuous improvement in environmental performance.

FlexCar—A service in Portland that let's you rent a vehicle by the hour. This service may reduce the need to have multiple cars and can provide you access to a special type of vehicle (e.g., van, pick up, sports car) when you need it.

Green Building—The practice of constructing and remodeling buildings to reduce their environmental impacts through such practices as daylighting (letting natural light into the building), energy-efficiency, materials with low toxic content, etc.

Glossary of Terms and Abbreviations (cont.)

Invasive plants—Certain species of plants spread quickly in nature, choking out native vegetation. These include Scotch broom, Himalayan blackberry, and English ivy.

IPM—Integrated Pest Management, a set of methods that minimizes but does not completely eliminate the use of synthetic pesticides.

LEED—Leadership in Energy and Environmental Design, an internationally accepted scoring system for buildings to assess their environmental features. Usually refers to new construction.

LEED-EB—LEED for Existing Buildings, a process and scoring system for operating and remodeling existing buildings.

Native plants-- Plants that are indigenous to our location. These are adapted to our conditions and so are usually low-maintenance.

Peak Oil (Hubbert's Curve) — Based on the work of geophysicist Dr. M. King Hubbert, the theory that any oil reserve, whether it be a field, nation, or the earth, will ultimately reach the mid-point of production after which it will begin a protracted and irreversible decline.

Permaculture—"Consciously designed landscapes which mimic the patters and relationships found in nature, while yielding an abundance of food, fibre and energy for provision of local needs." (Source: Permaculture, by David Holmgren.)

Sustainability—The practice of working toward a society where humans live well within the limits of nature, simultaneously providing for a healthy society, economy and environment.

The Natural Step—A sustainability framework based on science.

Triple bottom line—A sustainability framework based on United Nations sustainable development models (e.g., Agenda 21); sometimes referred to as social, economic, environment or people, planet, profits.

Xeriscaping—The practice of landscaping that requires little additional water.

Appendix B

Kulongoski's Executive Order

Executive Order E0-00-07

Development of a State Strategy Promoting Sustainability in Internal State Government Operations

WHEREAS the unique natural qualities of the Pacific Northwest are unparalleled in the world and state government, as a large employer and facilities manager, impacts these qualities through its internal state government operations;

WHEREAS the people of the State of Oregon have a long history of finding innovative solutions to the most challenging and complex problems;

WHEREAS the State of Oregon strategic plan, Oregon Shines, reflects values that balance community, environmental and economic aspects of life in Oregon;

WHEREAS analysis of current trends described by the Oregon Benchmarks and by the Oregon State of the Environment Report shows significant threats to quality of life and environmental and economic sustainability;

WHEREAS the State of Oregon aspires to learn from the leadership of private industry, business, labor, educational institutions and other governments in addressing the goal of sustainable development;

WHEREAS it is the goal of the State of Oregon to increase efficiency in state government, cut long-term costs associated with state programs and save taxpayer dollars; and

WHEREAS this complex challenge is evolving, it is believed there are important steps the State of Oregon can take now to amend internal government operations to meet important goals.

THEREFORE, IT IS HEREBY ORDERED AND DIRECTED:

The State of Oregon shall develop and promote policies and programs that will assist Oregon to meet a goal of sustainability within one generation - - by 2025.

A number of significant steps will be necessary to achieve a sustainable future and will require the participation of all Oregonians. As an initial effort under this executive order, the State of Oregon shall focus on improving its internal operations as state government's first step toward meeting the goal of sustainability. This step is the first of many to be taken as we advance the state toward a sustainable future.

Kulongoski's Executive Order- (cont.)

The State of Oregon adopts the following definition, goals and guidelines to promote sustainability.

Definition

Sustainability means using, developing and protecting resources at a rate and in a manner that enables people to meet their current needs and also provides that future generations can meet their own needs. Sustainability requires simultaneously meeting environmental, economic and community needs.

Goals

- Increase the economic viability of all Oregon communities and citizens;
- Increase the efficiency with which energy, water, material resources and land are used;
- Reduce releases to air, water and land of substances harmful to human health and the environment.
- Reduce adverse impacts on natural habitats and species.

Guidelines

As the State of Oregon works toward sustainability, the state shall:

- Employ the knowledge, expertise and creativity of Oregon's citizens in developing solutions
- Build upon existing private and public efforts throughout the state to ensure efficient and complementary results
- Integrate efforts in ways that enhance the effectiveness of new and existing efforts
- Collaborate and cooperate to remove barriers and find solutions
- Emphasize on-going learning and adaptive management as techniques needed to inform and improve the process continually
- Develop voluntary, incentive-based and performance-oriented systems to supplement traditional regulatory approaches
- Seek to understand the full costs and benefits of possible actions to ensure that decisions are fully informed
- Using good science, measure resource use, environmental health and costs to determine progress in achieving desired outcomes
- Establish clear, measurable goals and targets to guide state efforts toward sustainability.

Kulongoski's Executive Order- (cont.)

THEREFORE, IT IS HEREBY ORDERED AND DIRECTED:

All state agencies and employees are expected to take actions to promote sustainable practices within state government. As an initial step, the Department of Administrative Services, with its central role in state buildings, procurement and communication, shall lead efforts focused on internal government operations. The following specific actions shall be taken under this executive order:

1. Adopt Sustainability Practices within State Government Operations to Demonstrate how to Reduce Waste

The Governor designates the Department of Administrative Services as the leader in implementing early sustainability measures in such areas as: facilities construction and operations; purchasing; energy usage; vehicle use and maintenance; information systems operations; and publishing and distribution.

The Department of Administrative Services, in collaboration with other state agencies, shall implement the following objectives:

a. Within six months following the date of this order, the Department of Administrative Services shall adopt sustainable facilities standards and guidelines. These shall guide the siting, design, construction, deconstruction, operation and maintenance of state buildings and landscapes, and the selection, terms and conditions for state leaseholds. The department shall:

i. Review and consider sustainable facilities standards, practices and principles employed by businesses, educational institutions and other governments;
ii. Obtain input from the existing Central Facilities Planning Committee and the existing Capital Projects Advisory Board, organized for state facilities coordination under ORS 276.227;
iii. Review and update state sustainable facilities standards and guidelines at least biennially; and
iv. Track and report key sustainable facilities performance elements through the existing State Facilities Coordination Program.

b. The Department of Administrative Services shall use the North Mall Complex design, construction and maintenance as a pilot project to employ and evaluate sustainability methods and programs. The facility design shall employ a wide range of compatible, reliable sustainability actions. Where feasible, it shall test such programs and standards as the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program.

c. The Department of Administrative Services shall expand state government purchasing power by aggressively entering into joint bidding agreements with other state and local governments and with multi-government purchasing alliances, and by encouraging local governments

Kulongoski's Executive Order- (cont.)

to access resulting low-price, high-value purchase agreements that promote sustainability. This will make sustainable products and services more widely available to local governments.

d. To the extent that it is effective and practical to do so, the Department of Administrative Services shall take immediate action to purchase electrical energy from renewable resources such as wind, solar, geothermal and biomass. In the immediate future, this shall involve purchasing green power from private utilities as appropriate; beginning October 2001, this shall involve purchasing green power through direct access to the power generation market.

e. The Department of Administrative Services shall appoint a Sustainable Supplier Council. In consultation with the council, the department, by June 2001, shall develop sustainability purchasing policies, targets and benchmarks for each of the following areas: paper products; building construction; cleaning products and coatings; general purpose motor vehicles and office furniture. In determining benchmarks, the council shall consider benefits and costs that could arise as a result of purchasing sustainable alternatives.

The Department of Administrative Services shall develop, based on its experience in implementing the preceding objectives, appropriate mechanisms to assist other state agencies in efficiently achieving sustainable internal operations. Mechanisms may include replication of department procedures or collaboration on the development of alternative approaches. In this effort, the department shall consult with the sustainability work group.

The Department of Administrative Services shall report biennially to the Governor and the Legislative Assembly on actions taken to promote sustainability. The first such report shall be submitted by December 15, 2000 and shall address actions taken by the Department of Administrative Services and other state agencies to implement this executive order.

2. Create a Sustainability Work Group

To improve the efficiency and effectiveness of efforts related to the sustainability of state operations, the Governor shall assemble a Sustainability Work Group comprising representatives of the Legislative Assembly, state agencies, business, natural resources industry and environmental interests, labor, education and local government for the purpose of providing evaluations, recommendations and feedback on state efforts. The work group shall also be asked to develop options for additional steps the state can take to promote sustainability. Staffing for the work group shall be coordinated by the Governor's office. The work group shall present a first report to the Governor and the Legislative Assembly by December 15, 2000, with a final report due by June 1, 2001.

Kulongoski's Executive Order- (cont.)

3. Assess Options for Sustainability Indicators and Targets

The Oregon Progress Board shall evaluate potential measures, including Oregon Benchmarks and the State of the Environment Report, for their effectiveness in measuring progress toward sustainability. In this evaluation, the Progress Board shall consult with the Sustainability Work Group and with the Department of Administrative Services. The Progress Board shall report to the Governor and Legislative Assembly on their findings as part of the board's biennial reporting process.

4. Conduct Business, Community and Public Outreach

Business and Community Outreach

In order for state government to develop sustainable internal operations and assist local organizations to do the same, the Economic and Community Development Department, after consultation with the Economic and Community Development Commission, other Community Solutions Team agencies and other appropriate state agencies, shall develop and implement strategies to accomplish the following actions:

a. Develop partnerships among state and local governments, businesses and communities that support and promote sustainability;

b. Coordinate efforts to better market sustainable products, industries and services from Oregon and encourage development of environmental technologies;

c. Develop a range of resources to support organizations adopting sustainable practices. These resources may include training and educational opportunities, electronically available information, case studies and other services of greatest value to businesses, communities and other organizations;

d. Intensify efforts to increase the economic stability of communities designated as "economically distressed;"and

e. Evaluate a range of incentives that would make investments in sustainably-oriented businesses and practices more attractive.

By September 30, 2000, the Economic and Community Development Department shall prepare and submit to the Sustainability Work Group for its review a plan to encourage businesses and communities throughout the state to learn about and voluntarily adopt sustainable practices.

Kulongoski's Executive Order- (cont.)

By December 15, 2000, the Economic and Community Development Department shall prepare and submit to the Governor and the Legislative Assembly a report on the actions taken to implement this executive order.

Public Outreach

The Governor's office, the Department of Administrative Services and the Economic and Community Development Department shall, after consultation with the Sustainability Work Group, develop and maintain Internet web sites describing the plans, actions and accomplishments of state agencies and highlighting examples of successful sustainability practices from the public and private sectors. In addition, these entities, in collaboration with the Sustainability Work Group, shall develop and implement short-term plans to communicate with the general public about the state's efforts to promote sustainability.

5. Pursue Further Efforts

The State of Oregon, in cooperation with businesses, non-profit organizations, local governments and other citizens, will pursue further actions in an on-going effort to meet the goals and principles outlined in this executive order. The Governor, in subsequent orders and directives, may announce additional objectives to be pursued by agencies. Directives may also identify steps to ensure broad public participation in this sustainability effort.?

Done before me at Salem, Oregon, this 17th day of May, 2000.

John A. Kitzhaber, M.D.
GOVERNOR

ATTEST:

Bill Bradbury
SECRETARY OF STATE

Appendix C

The 2030 Challenge

Cities across America have just taken an historic step in addressing the issue of global warming. **The US Conference of Mayors has made a commitment to reduce global warming pollution from buildings in order to protect the world for future generations.**

On Monday, June 5, 2006, the US Conference of Mayors adopted the "2030 Challenge" (Resolution #50) for ALL buildings. The resolution was put forward by the mayors' of cities from the 4 corners of the continental U.S. - Chicago Mayor Richard Daley and Albuquerque Mayor Martin Chavez, Miami Mayor Manuel Diaz and Seattle Mayor Greg Nickels.

U.S. CONFERENCE OF MAYORS
ADOPTING THE "2030 CHALLENGE" FOR ALL BUILDINGS

WHEREAS, the U.S. Conference of Mayors has previously adopted strong policy resolutions for cities, communities, and the federal government to take actions to reduce fossil fuel consumption and global warming pollution; and

WHEREAS, the Inter-Governmental Panel on Climate Change (IPCC), the international community's most respected assemblage of scientists, has found that climate disruption is a reality and that human activities are largely responsible for increasing
concentrations of global warming pollution; and

WHEREAS, the U.S. Building Sector has been shown to be the major consumer of fossil fuel and producer of global warming causing greenhouse gases; and

WHEREAS, the federal government through programs fostered within many of its key agencies and numerous state governments as well as municipalities across the U.S. have adopted high performance green building principles; and

WHEREAS, a recent study completed by Lawrence Berkeley National Laboratory, the most definitive cost-benefit analysis of green buildings ever conducted, concluded that the financial benefits of green design are between $50 and $70 per square foot, more than 10 times the additional cost associated with building green; and

WHEREAS, the large positive impact on employee productivity and health gains suggests that green building has a cost-effective impact beyond just the utility bill savings; and

WHEREAS, studies have indicated that student attendance and performance is higher in high performance school buildings; and

The 2030 Challenge (cont.)

WHEREAS, recognizing that a building's initial construction costs represent only 20-30 percent of the building's entire costs over its 30 to 40 year life, emphasis should be placed on the "life cycle costs" of a public building rather than on solely its initial capital costs; and

WHEREAS, the construction industry in the U.S. represents a significant portion of our economy and a significant portion of the building industry is represented by small business and an increase in sustainable building practices will encourage and promote new and innovative small business development throughout the nation; and

WHEREAS, the American Institute of Architects (AIA), the national professional organization representing architects has adopted a position statement calling for the immediate energy reduction of all new and renovated buildings to one-half the national average for that building type, with increased reductions of 10% every five years so that by the year 2030 all buildings designed will be carbon neutral, meaning they will use no fossil fuel energy.

NOW, THEREFORE, BE IT RESOLVED that the U.S. Conference of Mayors will encourage its members to adopt the following "2030 Challenge" for building performance targets: New construction of all buildings shall be designed to and achieve
a minimum delivered fossil-fuel energy consumption performance standard of one half the U.S. average for that building type as defined by the U.S. Department of Energy. Renovation projects of all buildings shall be designed to and achieve a minimum delivered fossil-fuel energy consumption performance standard of one half the U.S. average for that building type as defined by the U.S. Department of Energy. All other new construction, renovations, repairs, and replacements of all buildings shall employ cost-effective, energy-efficient, green building practices to the maximum extent possible; and

NOW, THEREFORE, BE IT FURTHER RESOLVED that the U.S. Conference of Mayors will work to increase the fossil-fuel reduction standard for all new buildings to carbon neutral by 2030, in the following increments:
60% in 2010
70% in 2015
80% in 2020
90% in 2025
Carbon-neutral by 2030 (meaning new buildings will use no fossilfuel GHG emitting energy to operate); and

The 2030 Challenge (cont.)

BE IT FURTHER RESOLVED that the U.S. Conference of Mayors will urge mayors from around the nation to join this effort by developing plans to fully implement the above mentioned targets as part of their procurement process and by establishing policies to insure compliance and measure results; and

BE IT FURTHER RESOLVED that the U.S. Conference of Mayors will urge mayors from around the nation to develop plans to fully implement the above mentioned targets for all new and renovated buildings within the City; and

BE IT FINALLY RESOLVED that the U.S. Conference of Mayors will work in conjunction with ICLEI Local Governments for Sustainability and other appropriate organizations to join this effort to develop plans to fully implement similar targets as mentioned above.

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Appendix D

SCORE Government

SCORE (Sustainability Competency & Opportunity Rating & Assessment) is a proprietary assessment, developed by AXIS Performance Advisors, Zero Waste Alliance and the International Sustainable Development Foundation. It includes both sector-specific assessments like the one below and organizational function assessments (e.g., senior management, purchasing, facilities, finance) As part of this project, the Task Force completed the Government SCORE. The practices have three benchmarks for performance, with associated points.

Mission-Related Government Practices

Current Score	Goal	Practice	Pilot 1 pt	Initiative 3 pt	Systemic 9 pt
0	3	Energy: Promote energy efficiency, conservation and renewables.	Offer and promote free energy audits to constituency	Have a system of incentives that encourage organizations and individuals to conserve energy and switch to renewables	Have set a renewable standard of at least 30% renewables by 2020.
2	6	Land Use: Promote sustainable land use practices	Use sustainable land use principles and policies in new development and redevelopment projects. Provide outreach and education.	Have in place long-term land use plans that protect important natural services (clean water, carbon sequestration, etc.) and natural resources (agriculture/ forests/ fisheries)	Base the long-term land use planning on an estimate of population growth and carrying capacity such that if needed, the community could provide for 80% of its critical needs (food, water, fiber, etc.)
1	4	Transportation: Actively promote the reduction of climate, air-quality and congestion impacts associated with transportation	Transportation planning is integrated with land use plans. All public transportation vehicles use clean fuels. Provide outreach and education to the community.	Give preference and support to public and alternative transportation through investments, incentives, and regulations	Require major employers to reduce one-person-per-car commuting through a variety of incentives

SCORE Government (cont.)

Mission-Related Government Practices

Current Score	Goal	Practice	Pilot 1 pt	Initiative 3 pt	Systemic 9 pt
0	3	Contract services: Use purchasing power to influence the market place	Include sustainability as a selection criterion in all requests for proposals.	Write sustainability criteria and requirements into contract language for all contractors hired.	Develop systems to help others identify vendors/ suppliers with effective sustainable practices (e.g., award programs, database of sustainable organizations, etc.)
0	4	Buildings: Promote green building practices	Set a better-than-code standard for all new government buildings (LEED-silver or equivalent); use green building principles when remodeling existing facilities	Actively promote green building practices in the community through education, incentives, technical assistance, etc.	Increase building code requirements to LEED-Silver or equivalent
2	4	Waste management: Move toward a "zero waste" society	Provide convenient recycling services for organizations and the public for all recyclable/ compostable materials	Build markets for recyclable materials through economic development incentives, technical assistance, and purchasing practices; provide convenient hazardous waste collection systems for all toxic products including electronics, batteries, pharmaceuticals, paints, pesticides, etc.	Implement product stewardship/ EPR legislation for all toxic materials, requiring some form of product take-back such that it creates incentives to the manufacturers to create more sustainable alternatives.

SCORE Government (cont.)

Mission-Related Government Practices

Current Score	Goal	Practice	Pilot 1 pt	Initiative 3 pt	Systemic 9 pt
0	3	Global Peace and Prosperity: Promote practices that avoid war, de-escalate tensions, and prevent mass migrations due to famine, natural disasters, or political strife	Provide outreach and education to help local citizens understand global sustainability challenges and the impacts their decisions can have on other peoples.	Screen purchases and investments so as not to support regimes or organizations that contribute to world problems. Give preference to organizations that actively work to prevent world problems.	Actively support sustainable economic development throughout the world through education, exchange programs, participation in sustainability-related organizations, technical assistance, aid, and trade
0.5	5	Education: Ensure all citizens have the knowledge and skills necessary to participate in a sustainable societies	Include some sustainability content in K-12 educational materials, including systems thinking. Assess schools on their sustainability performance and act on the results	Embed sustainability into the curriculum of K-12 education and create sustainability demonstration and community service projects. In higher education, develop strong academic and research programs.	Sustainability education is required in high school and higher education, linked to social, economic and environmental subject matter. Ensure that every citizen (children and adults) receives regular messages about how to be more sustainable and gets meaningful feedback on the overall performance of their community.

SCORE Government (cont.)

Mission-Related Government Practices

Current Score	Goal	Practice	Pilot 1 pt	Initiative 3 pt	Systemic 9 pt
1	3	Economic Development: Encourage sustainable development	Use sustainability as a criteria for selecting targeted industries	Educate existing businesses about sustainability and provide services to develop effective business clusters	Create legislation, regulations and other mechanisms to eliminate unsustainable practices in the community
2	9	Human Health: Promote human health and well-being for all citizens	Ensure all citizens have access to basic health care and basic services (shelter, food, drug/alcohol prevention, mental health services, etc.)	Actively promote healthy lifestyle choices (diet, exercise, stress management, etc.) through education, events, labeling and incentives	Adopt the precautionary principle as policy
0	5	Human Capa: Promote practices that enable all citizens to reach their potential	Actively recruit and hire from disadvantaged populations. Provide job and literacy training.	Have programs that teach tolerance and conflict resolution. Provide mediation and arbitration services.	At least every 5 years, systematically evaluate the community's well-being and have effective systems in place to increase social capital and civic engagement (e.g., neighborhood associations, citizen advisory committees, community mixers, etc.)

SCORE Government (cont.)

Mission-Related Government Practices

Current Score	Goal	Practice	Pilot 1 pt	Initiative 3 pt	Systemic 9 pt
1	4	Emergency preparedness: Have effective plans in place to protect citizens, property and the environment in the case of natural or man-made disasters	Regularly educate the community about potential threats and what to do to protect themselves. Have programs that help them put together an emergency preparedness plan and kit.	Have an effective network of trained disaster relief workers spread throughout the community and a robust communication system; have a well-tested plan for foreseeable disasters.	Have systems for handling sewage and containing hazardous materials without electricity or other major infrastructure elements such that there will be no harmful releases into the environment
9.5	53	TOTAL SCORE			
0.7	4.1	AVERAGE			

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Appendix E

Interim recommendations submitted by March 2006.

West Linn Task Force on Sustainability

Interim Recommendations

1. Create Green Building Task Force **$7,500**

Many people are aware of recent articles in the paper reporting on problems with mold and sick building syndrome in public buildings and our homes. Fewer people are aware of the related issues of overall energy usage in buildings (over 1/3 of all U.S. energy use), contribution to greenhouse gases (30%) and use of raw materials (30%). Even fewer people know of recent alarms bells regarding the effects of volatile organic compounds (VOCs) on human health--and that many new building materials emit these VOCs--which are not well regulated or understood.

However, new tools are available to municipalities and homeowners to help them achieve a healthy indoor environment that is good for the economy and long term health of society. One of these tools is use of Green Building Rating Systems, and they are proving successful in changing commercial real estate markets to encourage 'green' buildings that conserve energy and materials, while creating healthy environments for people to live in. Oregon is a leader in the movement to adopt green building rating systems and a small but growing number of built examples are available that demonstrate the results.

The best known green rating system is the LEED Certification System (Leadership in Energy and Environmental Design) created by the USGBC (United States Green Building Council). LEED is one of several competing green building rating systems that provide guidelines and standards for organizations and municipalities to ensure they are working and living in more energy efficient and healthy buildings that are good for the local economy and easier on the land. The early efforts focused on new commercial construction and attention is now being turned towards residential, remodel and community development.

Many benefits are already accruing because of green building rating systems. The commercial market is changing to reflect new market realities of increasing energy and material costs. Green design and building know-how is growing with educational opportunities and certification for building professionals and craftsman. Manufacturers and materials suppliers are responding with alternative materials

at lower life cycle costs, and can result in lower first costs if a fully integrated multi-disciplinary design process is used.

Recommendation: Given that the City of West Linn is considering new facilities (Parks and Police) and that the community is approaching build-out in the context of an energy environment where the price of fuel is extremely volatile, the West Linn Task Force on Sustainability (TFS) recommends that the City Council put a high priority on adoption of green building practices within the community. The Task Force recommends creation of a Green Building Task Force whose mission will be to make recommendations to the City Council as follows:

- Selection and application of green building rating systems for new and remodeled commercial and residential construction
- Review existing legal and regulatory framework and recommend appropriate changes that support green building initiatives
- Review city facility and recommend physical changes and processes that will bring city facilities into alignment with green building practices
- Review city staff and processes and recommend education and process changes that will encourage green building practices in the community

TFS further recommends that the Green Building Task Force be comprised of a few planning commission and sustainability task force members that represent the community, together with a few city employees representing appropriate departments within the city. The Task Force needs to act quickly and a facilitator should be provided to help with meeting agenda, record keeping and writing the proposal. Some legal advice may be required. The proposed budget is $7,500 and the timeline for delivery of a recommendation to the city council is one year.

2. Adopt Goal 5 Inventory

We suggest that the council adopt the entire Goal 5 inventory as presented by consultants at a December meeting. The City has spent several hundred thousand dollars on the inventory over the past few years, and will be adopting portions of it now. There is some additional work to be done by the consultants before the process is complete, but our understanding is that the work could be completed in a short time if the funding is available. Adopting the entire inventory, including wetlands, riparian protection, and wildlife habitat (uplands) is necessary before the council can realistically develop a protection strategy that includes a range of strategies including, but not limited to zoning, acquisition, easements, and landowner incentives.

3. Follow-Up to Sustainability Plan

It is recommended that funds be budgeted for continuing activities and tasks that will be identified in the project plan. The goal of the task force is to create a sustainability plan for West Linn and deliver the plan no later than July 31, 2006. In order to engage the City of West Linn, local businesses, organizations, and West Linn citizens in the processes needed to establish and maintain sustainable practices, an ongoing effort by the City and its designated or voluntary members will be required. At a minimum, the following tasks will need funds budgeted:

- Facilitator/consultant/staff to guide additional groups/steps to meet goals identified in the original plan. Estimated amount $
- Education for staff
- Sustainability coordinator
- Questions - What are the tasks that require funds? What are the estimated amounts required to fund those tasks?

4. Funds to support change process in the City $7,250

Governor Ted Kulongoski issued Executive Order No. 06-02 on January 19, 2006 continuing the Oregon Sustainability Board. In his findings, the governor said "Sustainability enables state and local government to operate in a more efficient and effective manner." The executive order also finds that sustainability represents a "significant economic opportunity" and states "The Oregon Business Plan has identified Sustainable Industries as a key development cluster for the State."

TFS recommends that the City Council budget resources to begin a multi-year change process seeking the broadest possible political anchoring of long-term sustainability goals. The Task Force believes this should begin with the City Council and city employees at all levels to become independent innovators and forces of change. This will enable a network of interconnected actions that work together toward common objectives. Subsequent steps will reach out to the citizens and businesses of West Linn.

Sustainability must be understood by city employees. The first step is to raise awareness and introduce fundamental (and advanced) concepts of sustainability. If a plan is intended to guide municipal government (and subsequently its community), then their perspectives need to be involved from the beginning and throughout the process. City employees must find the particular path to sustainability for West Linn with a change approach that respects and evokes

community wisdom.

It is important to start with education for political leaders and city employees (and subsequently with opinion leaders and the community at large.) Carefully designed training sessions can give the decisive kick to move a municipality forward—especially when professional sustainability trainers and process leaders conduct these initial education sessions. Official resource allocation can galvanize municipal change toward sustainable practice.

TFS will recommend a framework for educating municipal employees, and as a guide to identify sustainable practices in its report to the City Council by July 31, 2006. During the present budgeting cycle, we recommend that sufficient funds be set aside for the following purpose:

- Basic education about sustainability for all city employees. This should last at least one full day but can also occur as two or three shorter training sessions.
- Set aside funds to pay for educational materials and encourage the formation lunchtime and after hour discussion groups based on the Northwest Earth Institute (NWEI) coursework.
- It is recommended that the City Council demonstrate their commitment to this initiative by being the first to participate in a training session and NWEI discussion group (if at all possible.)

It is recommended that these educational opportunities purposely mix up all departments and levels of city government to enhance cross-linked social networks within the city.

For the purpose of these educational efforts, we recommend a total budget of $7,250.

5. Staff for West Linn Sustainability efforts .5 FTE

Sustainability is a city wide effort that will affect all departments, city activities and citizens. The position would at least affect work on the parks master plan, transportation system master plan, neighborhood plans development, planning and building requirements and more. Therefore, we recommend a position dedicated to a comprehensive yet focused work program across departments and throughout segments of the community. The effect on citywide interests will require extensive coordination so the position would likely report directly to the City Manager or

Community Services Director. The position would initially write an overview of the city's sustainability practices and clarify recommendations and implementation strategies to continue the work of the task force. They would work closely with consultants hired for specific work projects.

Additional staff

A survey of governments and universities indicates a growing number of organizations have at least a part time staff person focusing their efforts on sustainability practices throughout the organization. At a minimum it appears that a staff person whose focus is to guide implementation of the sustainability effort of the city is worthwhile and necessary for expectation of success over the long term.

Existing staff

Existing staff should receive support to integrate their expertise and experience into future work methods and plans that incorporate the newly articulated vision of sustainability. This will require extra work and effort of already busy city staff.

To supplement the work of existing staff, TFS recommends a staff person dedicated to further development and implementation of the goals set forth in the recommendation to be made to the council this summer.

Internal coordination

Goal is to develop the organizational structure and capacity to carry through the work necessary to achieve the sustainability goals of the City Council. The current work load of existing staff, as indicated by interviews by task force members with department heads, indicates successful implementation of sustainability efforts will require additional staff assistance. Existing staff will guide and implement many of the goals but a dedicated individual to focus on the new efforts focus is recommended

External Coordination

To ensure consistent organized and quality information is available to the community services department for web site, newsletter etc.

To serve as a liaison or partner with the existing liaisons to city advisory boards, committees, task forces and neighborhood associations.

Support the work of community groups such as the Chamber of Commerce, schools, scouts, fairs, camps etc.

Refinement

We recommend further development of the position include discussion among the various departments, city manager and city council. We recommend attention to skills such as communication (both verbal and non-verbal), working with organizational managers and groups as well as community leaders and groups, experience with coordination of complex projects, ability to organize complex information, familiarity with local government operations and sustainability concepts, etc. We recommend an individual with a college degree or higher. Hiring a coordinator is key to achieve the objectives in the long term. Compensation would likely be at a level commensurate with senior level (non-management) planning and policy analysis type positions (pro rated for part time or full time).

6. Hybrid Automobiles +$7,000

The Task Force recommends the establishment of funds for the purchase of 2 hybrid automobiles for the year 2007. Specifically the purchase of 2 Toyota Prius vehicles which can replace the vehicle upgrades anticipated for non-maintenance type service vehicles. It is anticipated that the additional funding for this action will be approximately $3,500 per vehicle for a total of $7,000.

As the City moves towards sustainability, this action of purchasing hybrid automobiles is not only effortless but it will also serve well as an example to the citizens of the City's genuine intent of becoming sustainable. Hybrid vehicles get approximately 3 times the mileage of typical automobiles. The extra cost to purchase these vehicles will be made up by the end of 2 to 3 years.

7. Stream Restoration $5,000

The Task Force recommends the establishment of funds for continuation of the stream restoration work along Trillium Creek. This project has already obtained several grants for restoration or enhancement along several segments of the creek. The additional City allocated funds for this project will ensure the continuation of the restoration of Trillium Creek to a fish friendly passage through the focused efforts of obtaining additional funding, and establishing this project as a 'Community Highlight Project'. It is anticipated that the staff/consultant effort to secure additional grants and oversee the completion of the project would be an

additional $5,000. The Task Force recommends the conversion of this existing project into a public educational project related to sustainability. The efforts would include the creation of a new project web page, signage, public notices, educational articles in the local paper, etc. It is anticipated that the additional cost of this educational component would be $5,000.

The educational component of sustainability is an important step in being able to achieve sustainability for the City. This existing project can be refocused as a first exposure of the City's sustainability efforts. Additionally, with sustainability being a fairly intangible term, a stream restoration project is an ideal project which "everyone" can grasp and understand -fish friendly, potential salmon bearing, stormwater treatment, enhancing/restoring nature, etc.

8. Parks and Recreation Facilities.

Several new Park restrooms and shelters are to be built in this current fiscal year (05-06). The Task Force recommends that these new facilities incorporate green building techniques into the construction of every new park facility.

The Task Force understands that the restrooms will be built out of concrete masonry units (CMU) with green roofs. We applaud this effort and would like to recommend that several other green techniques be included in these projects:

- CMUs - be manufactured within a 300 mile radius of West Linn. The closer to home the better.

- Rainwater Harvesting - collect excess rainwater from the roof runoff. This water could then be used for the irrigation of plants during the dry season. One way this can be accomplished is by using rain barrels and then connecting them back into the irrigation system.

  Costs for a 550 gallon system = $1,200

- Solar Electric Panels - incorporate the use of a Photovoltaic (PV) system into the design of these buildings. The use of these panels could cover 50% of the energy use for each building per year at current electrically rates.

  - 50% = 4.5kwh PV system at a cost of around $16, 312

- 30% = 2.7kwh PV system at a cost of around $9,787

This is based on the same energy usage as the meter at the Skateboard Park at Tanner Creek. The cost shown also assumes the use of all PGE, Federal & State energy incentive programs.

For the shelters we recommend all the above mentioned green elements plus:

- The use of either or both reclaimed lumber or certified sustainable harvested lumber.

We would also like to propose that PV panels be used to generate electricity for the pumps at the Tanner Creek Parks fountain. The two fundamental reasons for this proposal are:

1. To save energy costs to run the fountain each summer. It is estimated that a 11.5kw system would provide 50% of the energy required each year to run this facility. The cost of this size system would be around $40,250. A 6.9kwh PV system would provide 30% of the energy required each year to run this facility. The cost of this size system would be around $24,150.

The costs shown assume the use of all PGE, Federal & State energy incentive programs.

As an educational learning tool. One of the main questions residents have about solar energy is "can solar energy techniques work in Oregon?" The simple answer is yes. Oregon has one of the highest numbers of PV units installed in the United States. Several good examples of PV installations are in the Portland Metro area. For example in West Linn one task force member is using both PV and Solar Hot Water panels on their new house. This has resulted in a reduced energy bill of 25% from their previous smaller home in West Linn.

To have a working PV system on display at such a visible location as Tanner Creek Park would be a great opportunity to educate the whole community about the positive aspects of renewable energy. The potential educational opportunities are excellent including topics such as: energy savings, greenhouse gases mitigated, the physics of a solar cell, the sizing of a system, how does it work, what is renewable energy, etc.

Appendix F
Relevant Sustainability Frameworks & Principles

The Task Force examined a number of different sustainability frameworks in use. The following covers the ones we found most influential.

Triple bottom line

The triple bottom line shows that social, economic and environmental realms are interconnected. These are often shown as interlocking circles, like a Venn diagram. We can't have a healthy society without a healthy economy or environment. Similarly, we can't have a healthy environment if people are in desperate need. We must simultaneously meet the needs of all three, not trade one off for another.

Daly's triangle

Daly's triangle shows these three elements in a hierarchy, showing the environment as the base, what he calls the ultimate means. The economy is in the middle, providing the technology, politics, and ethics for the ultimate end, human well-being.

The Natural Step

The Natural Step best describes the relationship between human interactions and the natural world. Teams of scientists have boiled sustainability down to four rules or 'system conditions' that define a sustainable society:

The Natural Step Framework

For society to be sustainable, nature must not be subject to increasing...

- concentrations of substances from the earth's crust
- concentrations of substances made by society
- degradation by physical means;

and in that society, people are not subject to conditions that systematically undermine their capacity to meet their needs.

The first three system conditions describe what societies must do to live within the limits of nature. The fourth system condition is a socio/economic one that enables the other three to happen.

The Precautionary Principle

Where the possibility exists of serious or irreversible harm, lack of scientific certainty should not preclude cautious action by decision-makers to prevent such harm. Management needs to anticipate the possibility of ecological damage, rather than react to it as it occurs.

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Appendix G

Web Resources & Links

Land Use

- Defenders of Wildlife (for advice on habitat restoration and land conservation) go to www.biodiversitypartners.org. They also have a web tool to help in the design of conservation networks: http://www.biodiversitypartners.org/habconser/cnd/index.shtml
- National Charrette Institute (facilitate charrettes, charrette facilitator training workshops) www.charretteinstitute.org
- New Urbanism (good source for creating livable sustainable communities) www.newurbanism.org

Energy

- American Council for Energy Efficient Economy (produces many publications on the topic of energy efficiency: http://www.aceee.org
- American Solar Energy Society (national education resource for renewable energy. National Solar Building Tour, National Solar Conference: http://www.ase.org
- Association for the Study of Peak Oil and Gas: http://www.peakoil.net/
- Oil Crash: A crude awakening: http://www.oilcrashmovie.com/ (not yet available for sale)
- The Power of Community: How Cuba survived peak oil: http://www.communitysolution.org/cuba.html
- The End of Suburbia: Oil depletion and the collapse of the American dream: http://endofsuburbia.com/ (LINAS)
- Portland Peak Oil - community, preparation and outreach: http://www.portlandpeakoil.org/
- Energy Trust of Oregon (free energy audits): http://www.energytrust.org, 1-866-ENTRUST (368-7878)
- Oregon Department of Energy (for tax credits, financing and technical support): http://www.energy.state.or.us
- Northwest Energy Efficiency Alliance (for technical assistance) http://www.nwalliance.org
- Solar Energy Association of Oregon (local newsletter, workshops, educational resources, tours): http://www.solaror.org

Transportation

- Tri-Met (for trip planning, routes and ride-share) http://www.trimet.org/go/cgi-bin/plantrip.cgi
- FlexCar (for membership in rent-by-the-hour car service): http://www.flexcar.com.

Buildings

- American Institute of Architects-Committee of the Environment (best practices, costs issues, find Architects): http://www.aia.org/cote
- Build It Green (resource for green guidelines for renovations, developments and new construction): http://www.builditgreen.org
- Portland Green Building Resource (workshops, guidelines, tours): http://www.green-rated.org
- US Green Building Council (for LEED criteria): http://www.usgbc.org
- What's Working (excellent resource for good 'green" links.) http://www.whatsworking.org
- Tri-Met (for trip planning, routes and ride-share) http://www.trimet.org/go/cgi-bin/plantrip.cgi
- FlexCar (for membership in rent-by-the-hour car service): http:// www.flexcar.com.

Education & Outreach

- The Relocalization Network - local communities, global connections. http://www.relocalize.net/

Appendix H

Recommended Reading List

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Diamond, Jared. Collapse: How Societies Choose to Fail or Succeed. Viking, 2005.

Geller, Howard. Energy Revolution: Policies for a Sustainable Future. Washington: Island Press, 2002.

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James, Sara, Torbjorn Lahti. The Natural Step for Communities: How Cities and Towns can Change to Sustainable Practices. New Society Publishers, 2004

Kemp, William. The Renewable Energy Handbook: A Guide to Rural Energy Independence, Off-Grid and Sustainable Living. Aztext Press, 2006.

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Meadows,Donella, Jorgen Rangers, Dennis Meadows. Limits To Growth: The 30 Year Update. Chelsea Green Publishing Company, 2004.

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Steward, Amy. The Earth Moved – On the Remarkable Achievement of Earth Worms. Alonquin. Books of Chapel Hill, 2004.

Thomas, Pat. Under the Weather – How the Weather and Climate Affect Our Health. Vision, 2004.

Corbet, Michael, Judy Corbett, Robert Thayer. Designing Sustainable Communities: Learning From Village Homes. Island Press, 1999.

Sucher, David. City Comforts: How to Build an Urban Village. Revised edition. City Comforts Inc., 2003.

Ryan, John, Alan Thein Durning. Stuff: The Secret Lives of Everyday Things. Northwest Environment Watch, 1997.

Schmitz-Gunther, Thomas. Living Spaces: Sustainable Building and Design. Ed. Loren Abraham. Könemann, 2000.

Appendix J

Credible 'Green' Eco-Labels

Lots of businesses may claim to have 'green' products, but how do you know if their claims are valid or just 'greenwashing'? There are a number of third-party certification programs where an independent party verifies the company's claims. The Task Force considers the following eco-labels as credible. This is not an an exhaustive list.

Appliances—Energy Star

Auto repair—EcoLogical

Buildings—Leadership in Energy & Environmental Design (LEED), Energy Star, G-Rated, Earth Advantage, Build It Green

Cleaning products—Green Seal

Coffee—Organic, shade-grown, fair-trade

Electronics—EPEAT (a new program of EPA, soon to be released); Energy Star

Fish—Marine Stewardship Council, Monterey Bay Aquarium, Audobon

Food—Organic, Food Alliance

Hotels—Green Seal

Wood products—Forest Stewardship Council (FSC)

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Appendix K

Reducing Waste

Source: Getting it Right with Trash, (The Oregonian, Saturday, May 13,2006)

Recycling is great. But it's even better if you don't throw it away in the first place. Here are a few tips from Metro to eliminate waste:

- Avoid disposable items whenever possible.
- Choose durable products that can be used again and again.
- Use the blank sides of scrap paper for notes and lists before recycling the paper.
- Save plastic produce bags or plastic grocery bags for reuse.
- Carry a cloth or string bag to use when you shop.
- Buy in bulk whenever possible; take our own bag or container when possible.
- Pack lunches in reusable containers to reduce waste and save money.
- Choose products with minimal packaging or packaging that can be reused or recycled easily.
- Carry a reusable cup or mug for beverages to avoid disposable cups.
- Borrow books from the library or buy used rather than purchasing them new.
- Repair broken or damaged items rather than replacing them.
- Donate items you can no longer use to a nonprofit group or thrift store.
- Purchase quality used items such as furniture, clothing, sports equipment, toys and books at secondhand stores, garage sales and through classified ads.
- Compost leaves and grass clippings in a home compost pile and kitchen scraps in a worm bin. Use the compost to improve your garden or feed houseplants.
- For more advice, including how to stop the flow of junk mail, call Metro Recycling Information, 503-234-3000. The hearing impaired can call TDD 503-797-1804.

For information online go to:
Metro: www.metro-region.org or call their Recycling Hot Line at 503 234-3000.
Environmental Protection Agency Office of Solid Waste: www.epa.gov/osw

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Appendix L

Native Plants

From the Audubon Society of Portland

Alpine Monkey Flower	*Mimulus tilingii*	Cardwell's Penstemon	*Penstemon cardwellii*
Alumroot	*Heuchera glabra*	Cascade Oregon Grape	*Mahonia nervosa*
Baldhip Rose	*Rosa gymnocarpa*	Cascade Penstemon	*Penstemon serrulatus*
Barrett's Penstemon	*Penstemon barrettiae*	Cascara	*Rhamnus purshiana*
Beach Fleabane	*Erigeron glaucus*	Checkermallow	*Sidalcea spp.*
Bigleaf Lupine	*Lupinus polyphyllus*	Cliff Penstemon	*Penstemon rupicola*
Big-Leaf Maple	*Acer macrophyllum*	Clustered Wild Rose	*Rosa pisocarpa*
Big-Leaved Avens	*Geum macrophyllum*	Coast Black Gooseberry	*Ribes divaricatum*
Birch	*Betula spp.*	Coast Pine	*Pinus var. contorta*
Bitter Cherry	*Prunus emarginata*	Coastal Strawberry	*Fragaria chiloensis*
Bitterroot	*Lewisii redivida*	Coltsfoot	*Petasites frigidus var. palmatus*
Black Cottonwood	*Populus trichocarpa*	Common Camas	*Camassia quamash*
Black Hawthorn	*Crataegus douglasii*	Common Cat-tail	*Typha latifolia*
Black Twinberry	*Lonicera involucrata*	Common Monkey Flower	*Mimulus guttatus*
Blanket Flower	*Gaillardia aristata*	Confert Penstemon	*Penstemon conferta*
Blue Columbine	*Aquilegia coerulea*	Cow's Parsnip	*Heracleum lanatum*
Blue Elderberry	*Sambucus caerulea*	Creeping Oregon Grape	*Mahonia repens*
Blue Eyed Grass	*S. angustifolium (bellum)*	Creeping Snowberry	*Symphoricarpus mollis*
Blue-blossom	*Ceanothus thrysiflorus*	Davidson's Penstemon	*Penstemon davidsonii*
Boykinia	*Boykinia elata*	Deer Fern	*Blechnum spicant*
Broad-Leaf Penstemon	*Penstemon ovatus*	Devil's Club	*Oplopanax horridum*
Broad-leaf Sedum	*Sedum spathulifolium*	Douglas' Aster	*Aster subspicatus*
"Broken Top' Penstemon	*Penstemon proceris "Brokentop"*	Douglas Fir	*Pseudotsuga menziesii*
Bunchberry	*Cornus canadensis*	Douglas Iris	*Iris douglasiana*
California Poppy	*Eschscholzia californica*	Early Blue Violet	*Viola adunca (non-native)*

Native Plants (cont.)

From the Audubon Society of Portland

Evergreen Huckleberry	*Vaccinium ovatum*	Indian Plum	*Oemleria (Osmaronia) cerasiformis*
Fairy Bells	*Disporum hookeri*	Inside-Out Flower	*Vancouveria hexandra*
Fairy Slipper	*Calypso bulbosa*	Kinnikinnick	*Arctostaphylos uva-ursi*
Fairy-Lantern	*Disporum smithii*	Labrador Tea	*Ledum groenlandicum*
False Lily of the Valley	*Maianthemum dilatatum*	Lady Fern	*Athyrium filix-femina*
False Solomon's Seal	*Smilacina racemosa*	Lewis' Monkey Flower	*Mimulus lewisii*
Fawn Lily	*Erythronium oregonum*	Licorice Fern	*Polypodium glycyrrhiza*
Fine-tooth Penstemon	*Penstemon subserratus*	Lingonberry	*Vaccinium vitis-idaea minus*
Foam Flower	*Tiarella trifoliata*	Littleleaf Montia	*Montia parviflorum*
Fringe Cup	*Tellima grandiflora*	Littleleaf Montia	*M. parvifolia flagellaris*
Giant Purple Trillium	*Trillium kurabayashi*	Loose Penstemon	*Penstemon laxus*
Giant Trillium	*Trillium chloropetalum*	Lupine	*Lupinus spp.*
Glacier Lily	*Erythronium grandiflorum*	Madrone	*Arbutus menziesii*
Glaucous Penstemon	*Penstemon euglaucus*	Maidenhair Fern	*Adiantum pedatum*
Goat's Beard	*Aruncus sylvester*	Matted Saxifrage	*Saxifraga bronchialis*
Golden Currant	*Ribes aureum*	Meadow-Foam	*Limnanthes douglasii*
Grass-widows	*Sisyrinchium douglasii*	Mitrewort	*Mitella breweri*
Great Camas	*Camassia leichtlinii*	Mock-orange	*Philadelphus lewisii*
Great Northern Aster	*Aster modestus*	Mountain Avens	*Dryas octipetala*
Green-flowered Heuchera	*Heuchera chlorantha*	Narrow-leaved Skullcap	*Scuttelaria angustifolia*
Hardhack	*Spiraea douglasii*	Nodding Onion	*Allium cernuum*
Hazel	*Corylus cornuta*	Nootka Rose	*Rosa nutkana*
Hooker's Willow	*Salix hookeriana*	Oceanspray	*Holodiscus discolor*
Hyacinth Brodiaea	*Brodiaea hyacinthia*	Orange Honeysuckle	*Lonicera ciliosa*
Indian Paintbrush	*Castilleja spp.*	Oregon Ash	*Fraxinus latifolia*

Native Plants (cont.)

From the Audubon Society of Portland

Oregon Box	*Pachystima myrsinites*
Oregon Grape	*Mahonia aquifolium*
Oregon Iris	*Iris tenax*
Oregon Oak	*Quercus garryana*
Oregon Sunshine	*Eriophyllum lanatum*
Oregon Sunshine	*E. lanatum var. achillaeoides*
Pacific Ninebark	*Physocarpus capitatus*
Pacific Rhododendron	*Rhododendron macrophyllum*
Pacific Silverweed	*Potentilla pacifica*
Pacific Waterleaf	*Hydrophyllum tenuipes*
Pacific Willow	*Salix lasiandra*
Pacific Yew	*Taxus brevifolia*
Pearly Everlasting	*Anaphalis margaritacea*
Proceris Penstemon	*Penstemon proceris*
Pyramid Spirea	*Spiraea pyramidata*
Quaking Aspen	*Populus tremuloides*
Rattlesnake Plantain	*Goodyera oblongifolia*
Red Alder	*Alnus rubra*
Red Elderberry	*Sambucus racemosa*
Red Flowering Currant	*Ribes sanguineum*
Red Huckleberry	*Vaccinium parvifolium*
Red Monkey Flower	*Mimulus cardinalis*
Red-twig Dogwood	*Cornus stolonifera*
Richardson's Penstemon	*Penstemon richardsonii*
Riverbank Lupine	*Lupinus rivularis*
Salal	*Gaultheria shallon*
Salmonberry	*Rubus spectabilis*
Scoulers Corydalis	*Corydalis scouleri*
Self-heal	*Prunella vulgaris var. lanceolata*
Serviceberry	*Amelanchier alnifolia*
Shiny-leaved Spirea	*Spiraea betulifolia var. lucida*
Shooting Stars	*Dodecatheon spp.*
Shrubby Penstemon	*Penstemon fruticosus*
Silk-Tassel Bush	*Garrya elliptica*
Skunk Cabbage	*Lysichitum americanum*
Slender Tubed Iris	*Iris chrysophylla*
Small Flowered Alumroot	*Heuchera micrantha*
Snowberry	*Symphoricarpus albus*
Soft Rush	*Juncus effusus*
Sourgrass	*Oxalis oregana*
Spring Queen	*Synthyris reniformis*
Star Flowered Solomon's Seal	*Smilacina stellata*
Stinging Nettle	*Urtica dioica*
Streambank Globemallow	*Iliamna rivularis*
Subalpine Spirea	*Spiraea densiflora*
Sumac	*Rhus spp.*
Sword Fern	*Polystichum munitum*
Taper-tip Onion	*Allium acuminatum*
Thimbleberry	*Rubus parviflorus*
Tiger Lily	*Lilium columbianum*

Native Plants (cont.)

From the Audubon Society of Portland

Trollius Leaved Larkspur	*Delphinium trollifollium*
Tufted Hairgrass	*Deschampsia caespitosa*
Twinflower	*Linnaea borealis*
Vanilla Leaf	*Achlys triphylla*
Vine Maple	*Acer circinatum*
Wake Robin	*Trillium ovatum*
Wapato	*Sagittaria latifolia*
Wax Myrtle	*Myrica californica*
Western Bleeding Heart	*Dicentra formosa*
Western Bluebells	*Mertensia platyphylla*
Western Columbine	*Aquilegia formosa*
Western Crabapple	*Pyrus (Malus) fusca*
Western Dogwood	*Cornus nuttallii*
Western Hemlock	*Tsuga heterophylla*
Western Meadowrue	*Thalictrum occidentale*
Western Red Cedar	*Thuja plicata*
Western Starflower	*Trientalis latifolia*
Western Wahoo	*Euonymus occidentalis*
White False Hellebore	*Veratrum californicum var caudatum*
Wild Blue Flax	*Linum perenne var. lewisii*
Wild Ginger	*Asarum caudatum*
Wild Hyssop	*Verbena hastata*
Wood Fern	*Dryopteris austriaca*
Woodland Strawberry	*Fragaria vesca*
Wood's Rosee	*Rosa woodsii*
Yarrow	*Achillea millefolium*
Yellow Eyed Grass	*Sisyrinchium californicum*
Yellow Monkey Flower	*Mimulus dentatus*
Yellow Wood Violet	*Viola glabella*
Youth-on-Age	*Tolmiea menziesii*

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