

Environmental Stewardship Initiative City Council Update



Presenters: Dan Stroh, Jennifer Ewing, Emma Johnson
September 26, 2016

Presentation Outline

1. ESI Strategic Plan Progress Report
2. ESI Program KPI Update
3. Buildings and Energy Initiatives Update
4. Municipal Building Energy Benchmarking
5. Potential Living Building Challenge Pilot Program
6. Greenhouse Gas Emissions Analysis and Target Setting



Direction Requested from Council

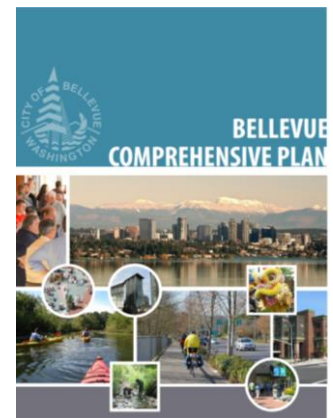
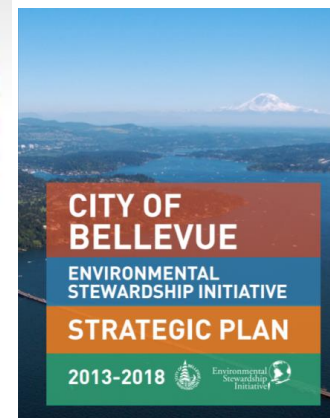
1. Should the City formally adopt, by way of Resolution, a municipal building energy benchmarking and reporting policy?
2. Should the City pursue a Living Building Challenge pilot program with the objective of encouraging the development of advanced green buildings in Bellevue?
3. U.S. Department of Energy grant acceptance – OK on consent, 10/3?



ESI Policy Drivers

- Council Vision – regional leadership and high quality built and natural environment
- Comprehensive Plan Environmental Element:
 - Reduce countywide GHG emissions, 25% by 2020, 50% by 2030, and 80% by 2050
 - Establish a GHG emissions inventory and measurement framework
 - Citywide GHG reduction target
 - Restore tree canopy coverage to 40%
 - Climate change adaptation strategies
 - Regional leadership
 - Public education
 - Minimize/eliminate release of harmful substances into the air, water, and soil
 - Promote and invest in energy efficiency and renewable energy

- ESI Strategic Plan
- Mayor's Climate Protection Agreement
- King-County Cities Climate Collaboration Joint Commitments



**Policy directives referenced on this slide, refer to EN-4, 6, 7, 8, 9, 12, and 54 in the Comprehensive Plan.*

ESI Strategic Plan Progress

Greenhouse Gas Emissions

Mobility & Land Use

Energy & Water

Materials Management & Waste

Ecosystems & Open Spaces

Plan includes:

- 17 Sustainability Indicators
- 57 Actions to meet indicator targets



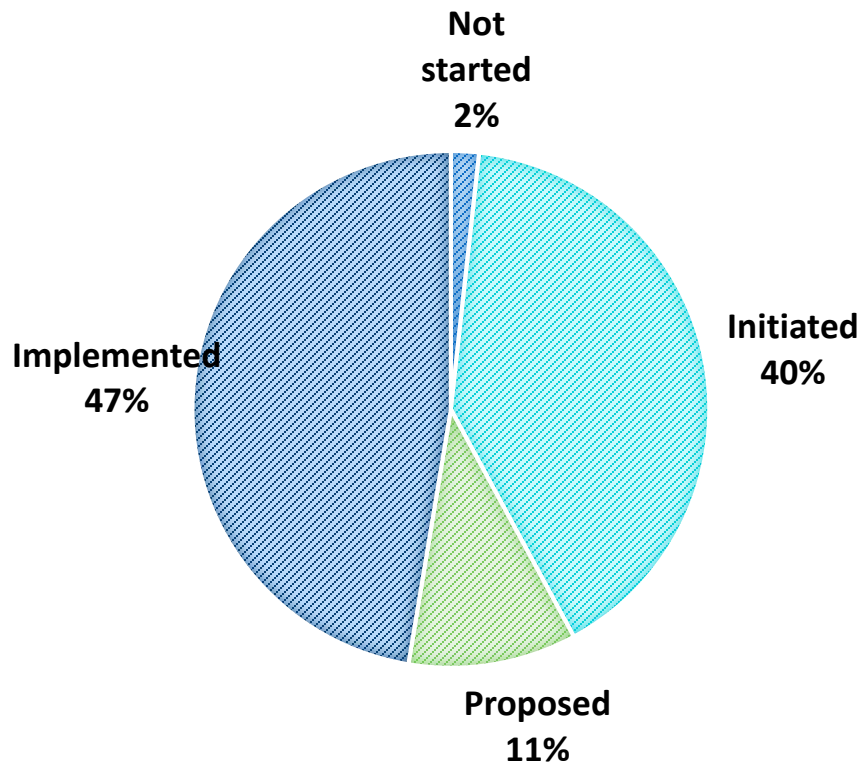
KEY PERFORMANCE INDICATORS
A Snapshot of Current Conditions

KEY PERFORMANCE INDICATOR	TARGET	2011	% REDUCTION NEEDED	TRENDS SINCE 2005
GREENHOUSE GAS EMISSIONS				
Greenhouse gas emissions (metric tons CO ₂ e)	11,285	14,311	22%	Improving
Greenhouse gas emissions (metric tons CO ₂ e per capita)	1,138,203	1,377,500	22%	Steady state
MOBILITY & LAND USE				
Per Capita emissions (metric tons CO ₂ e per capita)	2,498	3,119	20%	Improving
Emissions from vehicle miles traveled (metric tons CO ₂ e)	683,836	772,400	11%	Steady state
Commuter trip reduction - Drive-Along Rate (%) at large employers	56.9%	63.9%	11%	Mixed (not meeting, also not increasing)
ENERGY & WATER				
Emissions from kWh and therms consumed (metric tons CO ₂ e)	5,444	9,969	45%	Improving
Emissions from kWh and therms consumed (metric tons CO ₂ e per capita)	618,736	873,600	30%	Mixed (meeting trend, decreasing per capita)
Gallons of water used (million gallons per day)	Decrease	106,498		Mixed
Gallons of water saved per day	355,000	566,433	37%	Improving
Renewable energy installed in Bellevue	Increase	123		Improving
MATERIALS MANAGEMENT & WASTE				
Emissions from landfilled solid waste (metric tons CO ₂ e)	117	96	22%	Steady state
Emissions from landfilled solid waste (metric tons CO ₂ e per capita)	7,578	8,100	7%	Improving
% of total waste recycled and composted	50.8%	42.3%	16%	Improving
ECOSYSTEMS & OPEN SPACES				
Citywide tree cover (%)	40%	36%	11%	Declining (not meeting, also not increasing)
Stream habitat	Improve			Mixed
Acres of open space and parks	Increase	2,551		Improving
Public urban forests in class 1 and 2 condition (Class 1 is healthiest)	Transition 10 acres per year from Class 3 and 4 to Class 1 and 2 condition	77% of forest in Class 1 or 2 condition		Improving

*Percentage increase from 2011. Actual needed to reach target.
% Reductions are based on Mayor Climate Reduction Agreement and other City adopted targets.

ESI Strategic Plan Implementation Progress

87% of Actions Implemented or Initiated



Key Next Steps:

- Update GHG Reduction Target
- Climate Resiliency Planning
- Green Building Incentives
- Tree Canopy Action Plan
- Right-size EV charging network
- Process for analyzing GHG impacts in the development process (e.g. SEPA)

ESI Program KPI Update: Greenhouse Gas Emissions Trends

Figure 1: Bellevue Municipal GHG Emission Trends

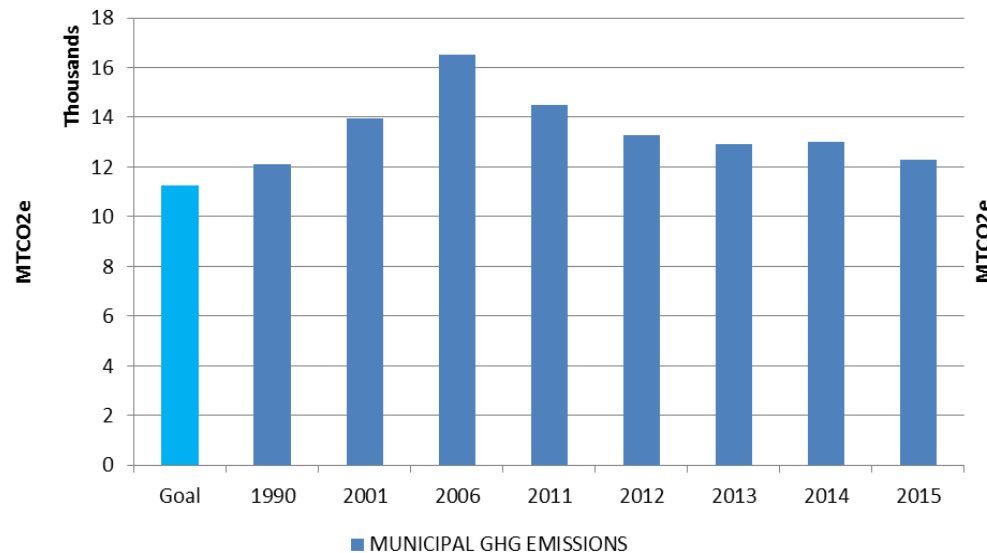
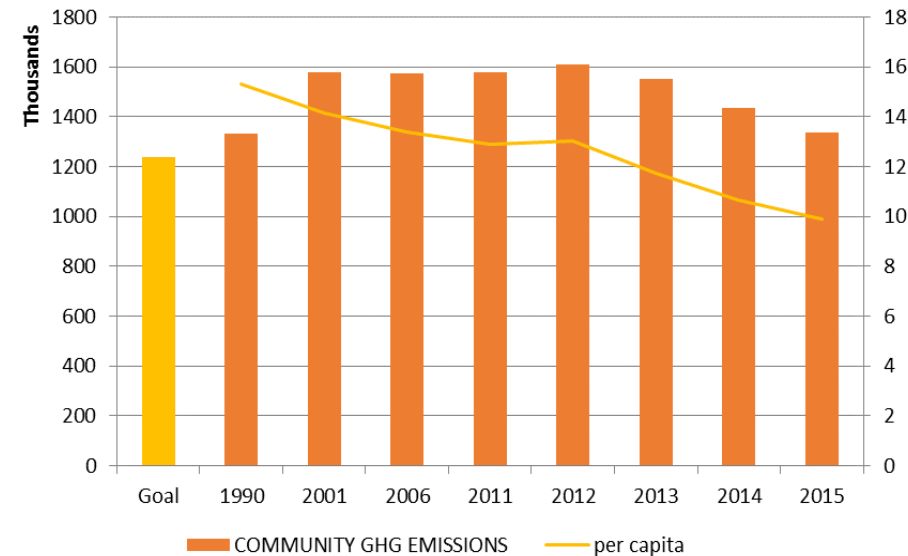


Figure 2: Bellevue Community GHG Emission Trends



2006-2015 Community GHG Trends:

- Population +15%
- Employment +13%
- Community emissions -15%
- Average annual reduction: -1.7%/year
- Per Capita emissions -26%

ESI Program KPI Update: 2015 Greenhouse Gas Emissions

Figure 3: 2015 Municipal GHG Emissions

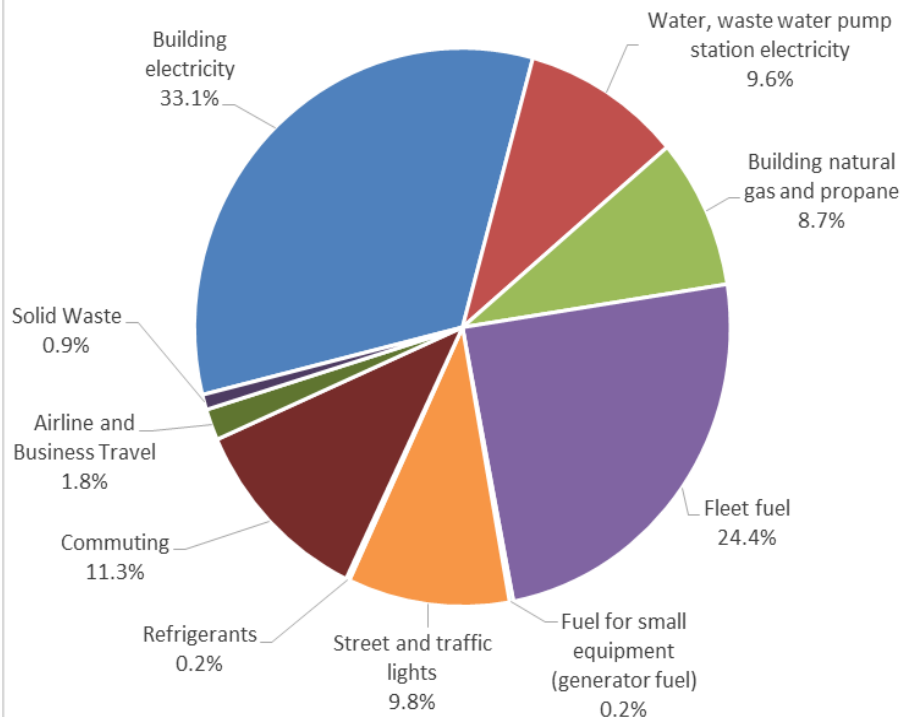
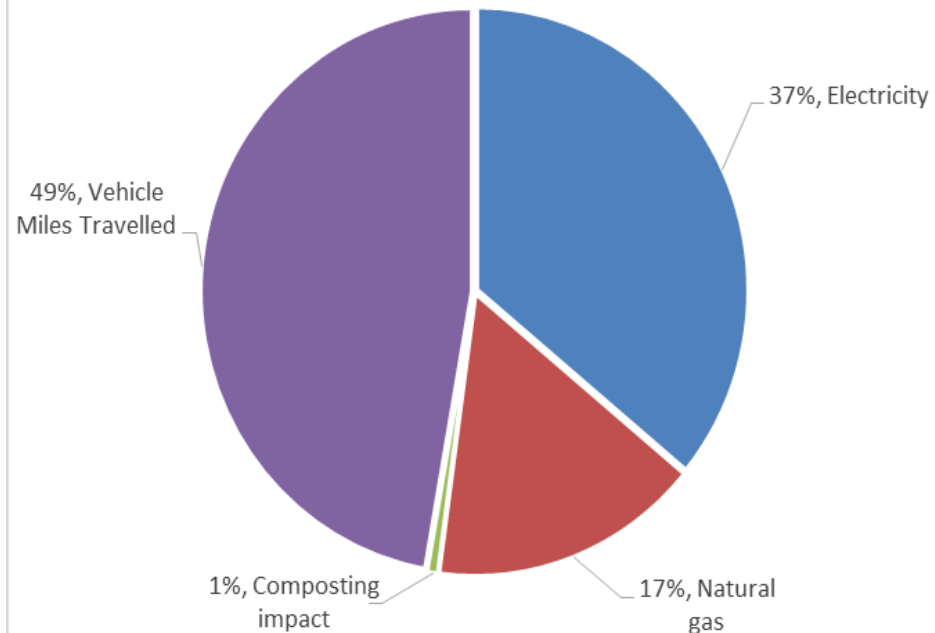


Figure 4: 2015 Community GHG Emissions



Example Comparisons with other Cities using Scope 5 Software

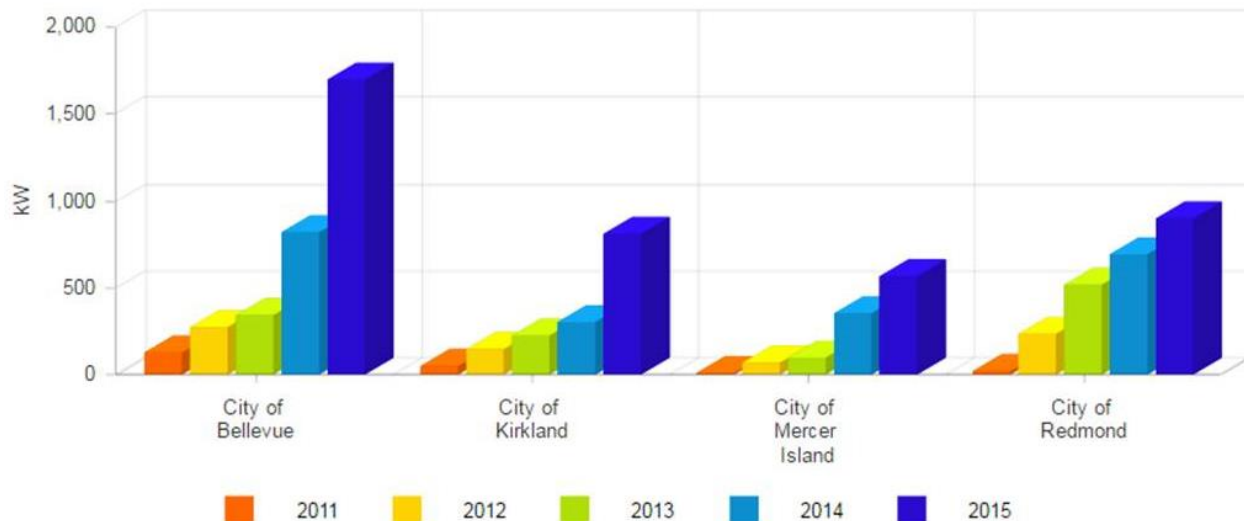
Residential Electricity Emissions per Person

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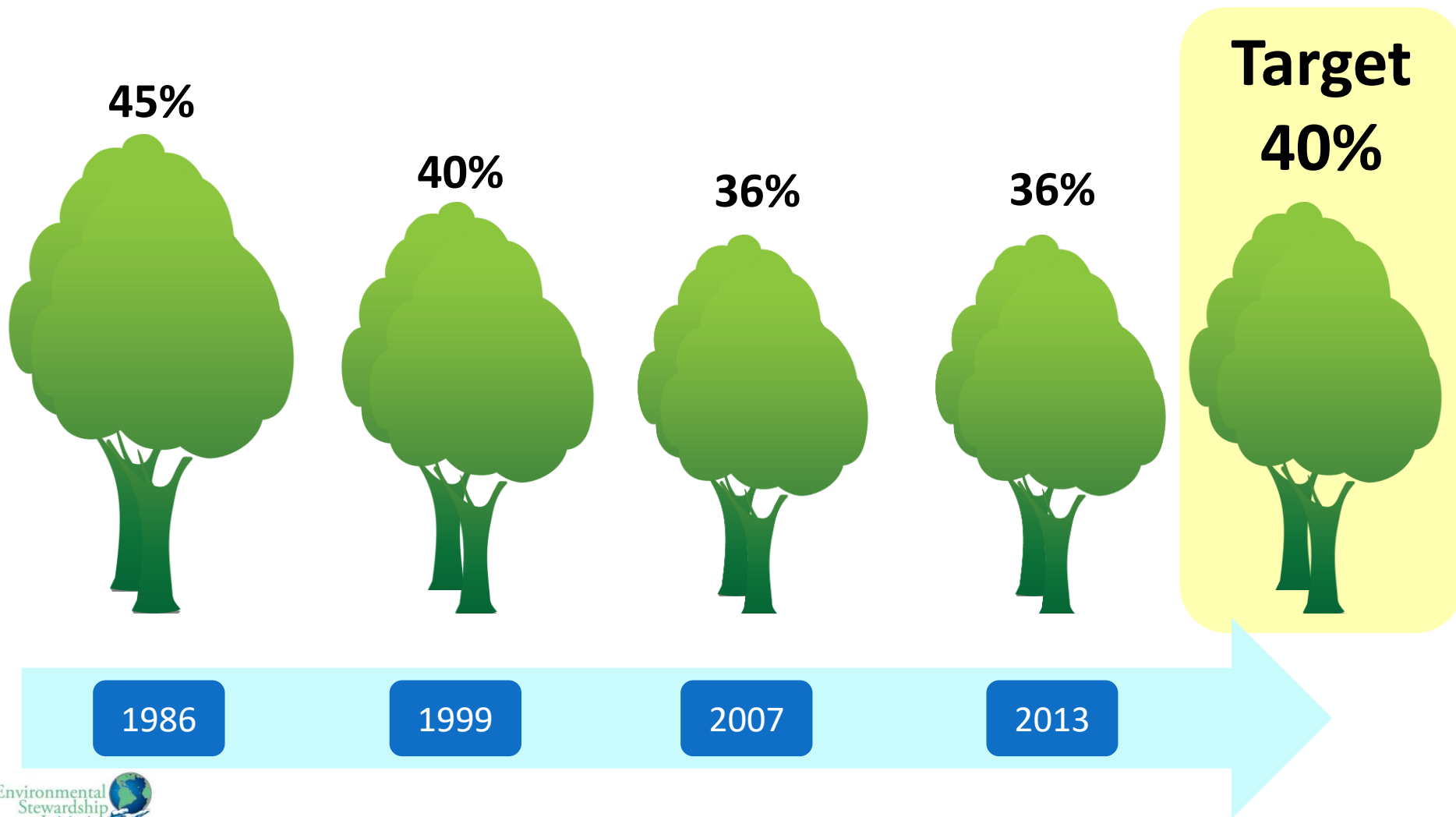
Total renewable energy installed (kW) cumulative, by City

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ESI Program KPI Update: Tree Canopy Percentage

Tree Canopy Percentage Trends



Buildings and Energy Initiatives Update

- Georgetown University Energy Prize – 4th Place
- Launched Urban Smart Bellevue
- Solar array at Crossroads

Be **energy smart**

- ☐ Turn off lights, computer, and TV when leaving your house
- ☐ Turn on lights only in rooms you are in
- ☐ Wash clothes in cold water
- ☐ Shower for 5-7 minutes with a high efficiency shower head
- ☐ Practice thermostat efficiency! Turn your heat down to 65° at bedtime.
- ☐ Evaluate your home's energy use with a HomePrint Assessment! Ask a Puget Sound Energy Advisor 1-800-562-1482.



A little effort can **save** a lot of **energy**!

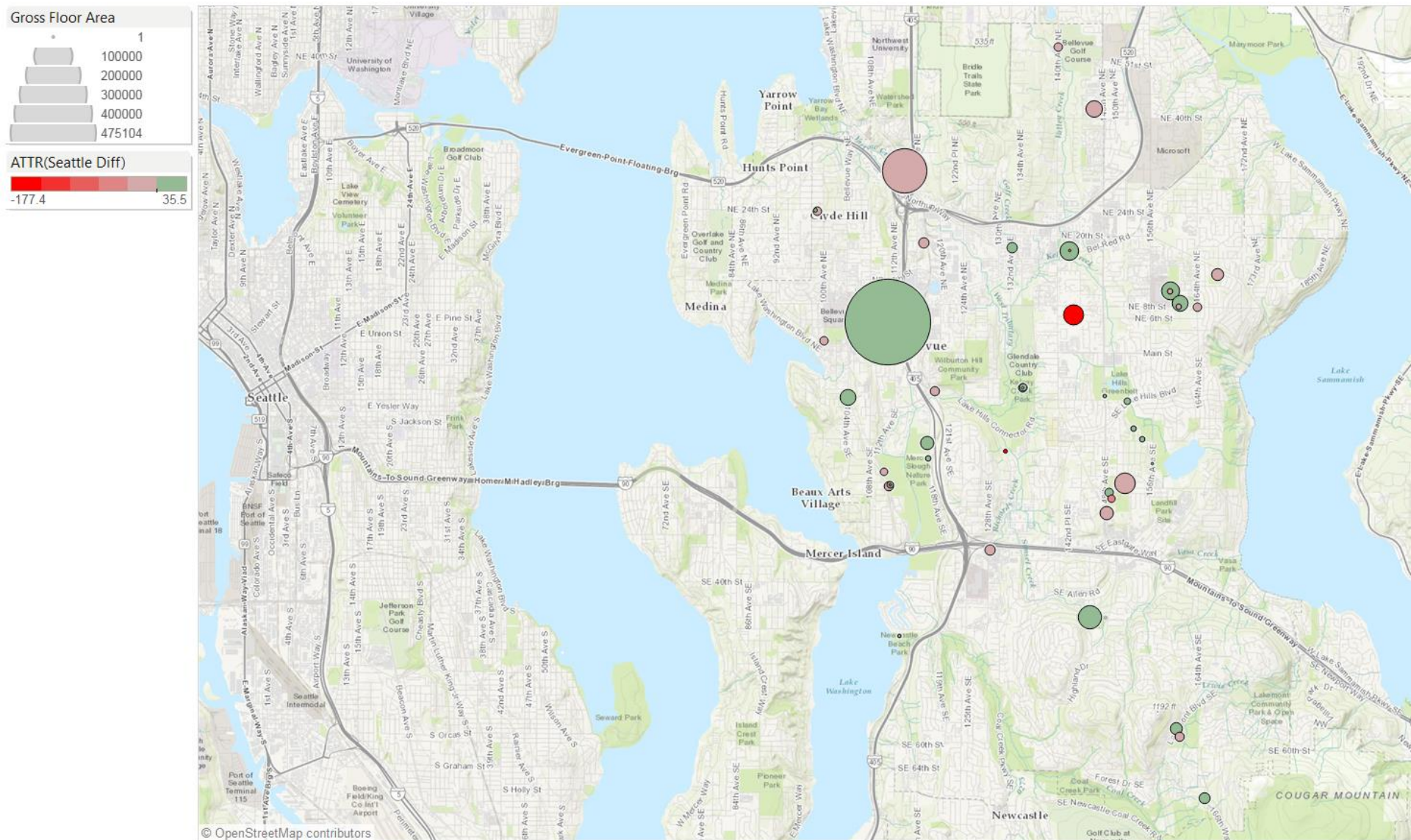


Municipal Energy Benchmarking

- Energy and cost savings:
 - 2.4% energy savings on average per year, each year, for a total of 7% savings for buildings that benchmark
- Improved management of energy data leads to energy efficiency and conservation improvements
- No additional costs to implement
- Support for our pursuit of the Georgetown University Energy Prize
- Regional and national leadership
- Supports Smart City and Open Data goals



Example Benchmarking Analysis



Potential Living Building Challenge Pilot

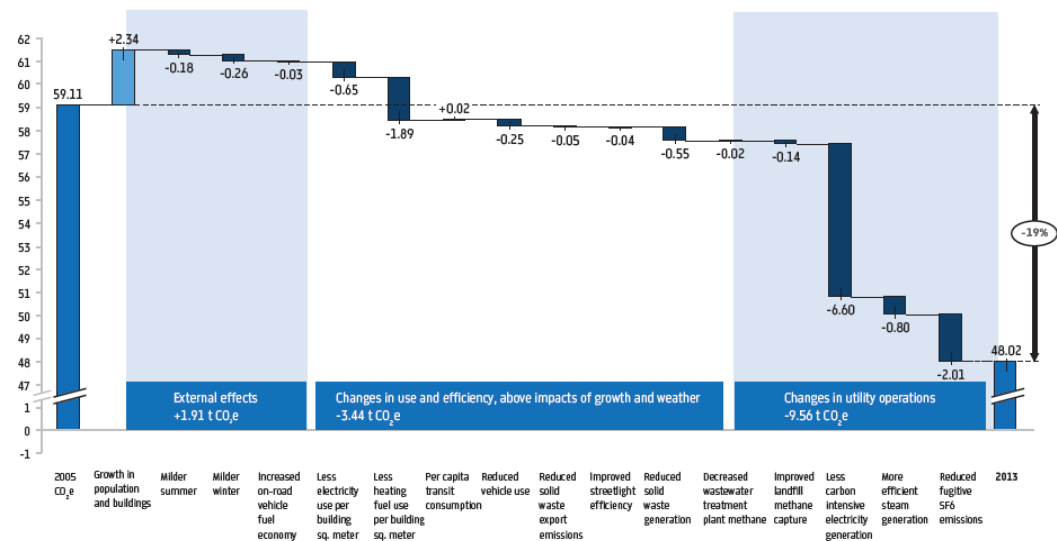
- Remove barriers to advanced green building
- Support market for green building in Bellevue
- Facilitate permitting process
- Understand about potential impacts to codes, permits, and fees for net zero energy and water buildings



U.S. Department of Energy Grant: Cities Leading Through Energy Analysis & Planning

- Bellevue lead agency (\$90k for City; \$450k total)
- Project will evaluate the effectiveness and impact of City policies and programs and external factors
- Supports effort to update our greenhouse gas emissions reduction target
- Regional leadership

Example Analysis: New York City GHG Trends



GHG Reduction Target Update Approach

- Establish Targets for:

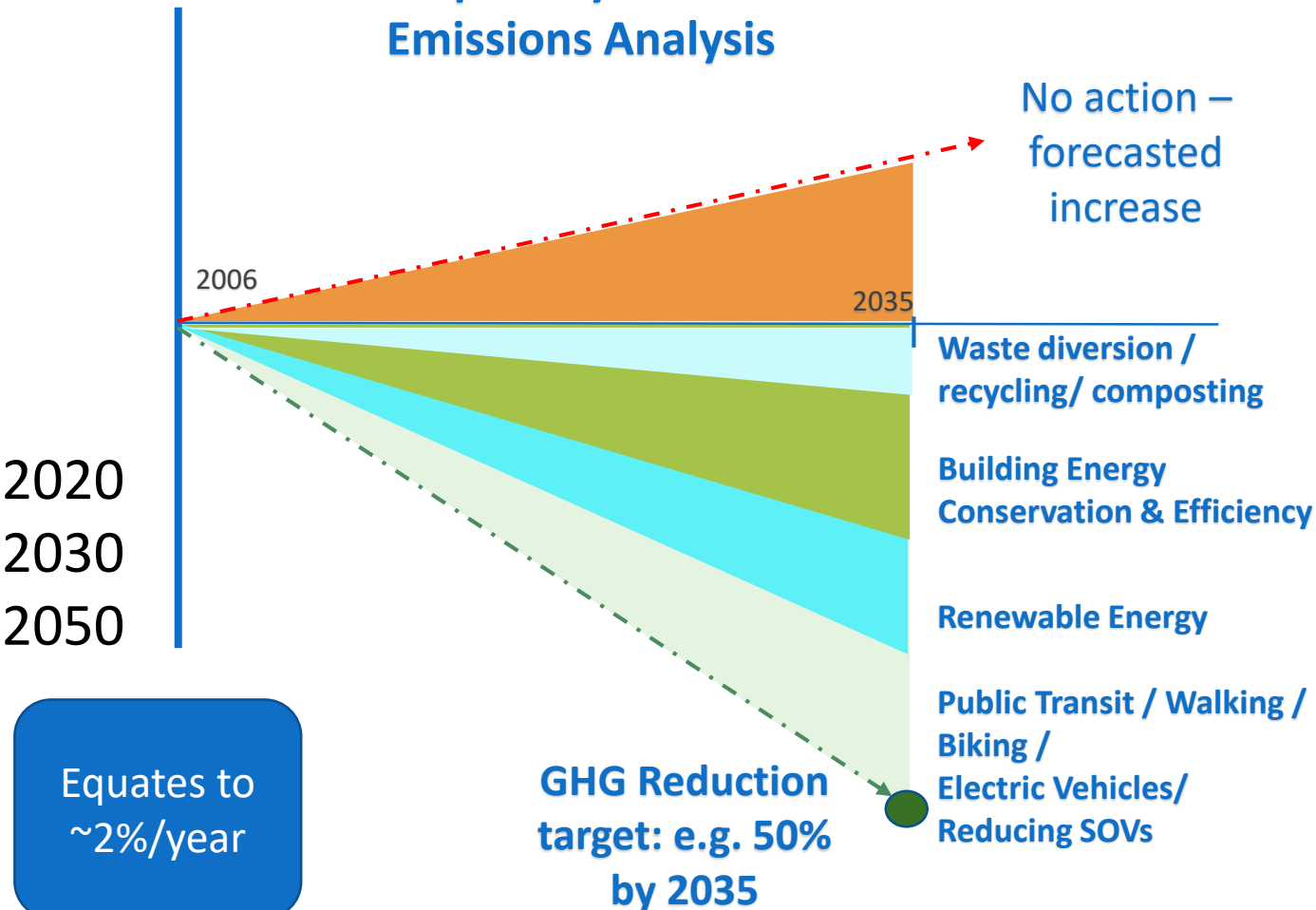
- Municipal Operations
- Citywide

- K4C and GMPC

Targets:

- 25% by 2020
- 50% by 2030
- 80% by 2050

Example Citywide GHG Emissions Analysis



Direction Requested from Council

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Discussion



EnviroStars Regional Green Business Recognition Program

- Program in development with regional group
- Bellevue working on plans for implementation
- Launch at GoGreen Conference in Seattle, March 16, 2017



PIER 2 MARKETING OF CALIFORNIA

93/124 measures completed

STATUS
Certified
12-30-2015

TIER
Tier Two
12-21-2015

BUSINESS INFO
38 Keyes Ave, Ste. 119
San Francisco, CA 94129
415-992-5501
pier2marketing.com

BUSINESS TYPE
Media & Communications

BUSINESS CATEGORY
Marketing, Advertising & Public Relation

AUDITS
In Progress

COMPLIANCE
In Progress

CERTIFICATION DATE
08-08-2014

APPLICATION
Passed
08-08-2014

TEST BUSINESS

76/124 measures completed

STATUS
Verifying

TIER
None

BUSINESS INFO
1234 Broadway Street
San Francisco, CA 94110
555-333-4444
testbiz.com

BUSINESS TYPE
Business Support Services

BUSINESS CATEGORY
Delivery Services & Couriers

AUDITS
In Progress

COMPLIANCE
In Progress

CERTIFICATION DATE

APPLICATION
Action Required
08-08-2014

Save Money.

Protect Employees.

Be More Efficient.

Attract More Customers.

Be A Star.

EnviroStars.org

**Good For Business.
Good For Washington.**

EnviroStars businesses help Washington's economy grow and preserve the quality of life we all enjoy.

With EnviroStars, your business will:

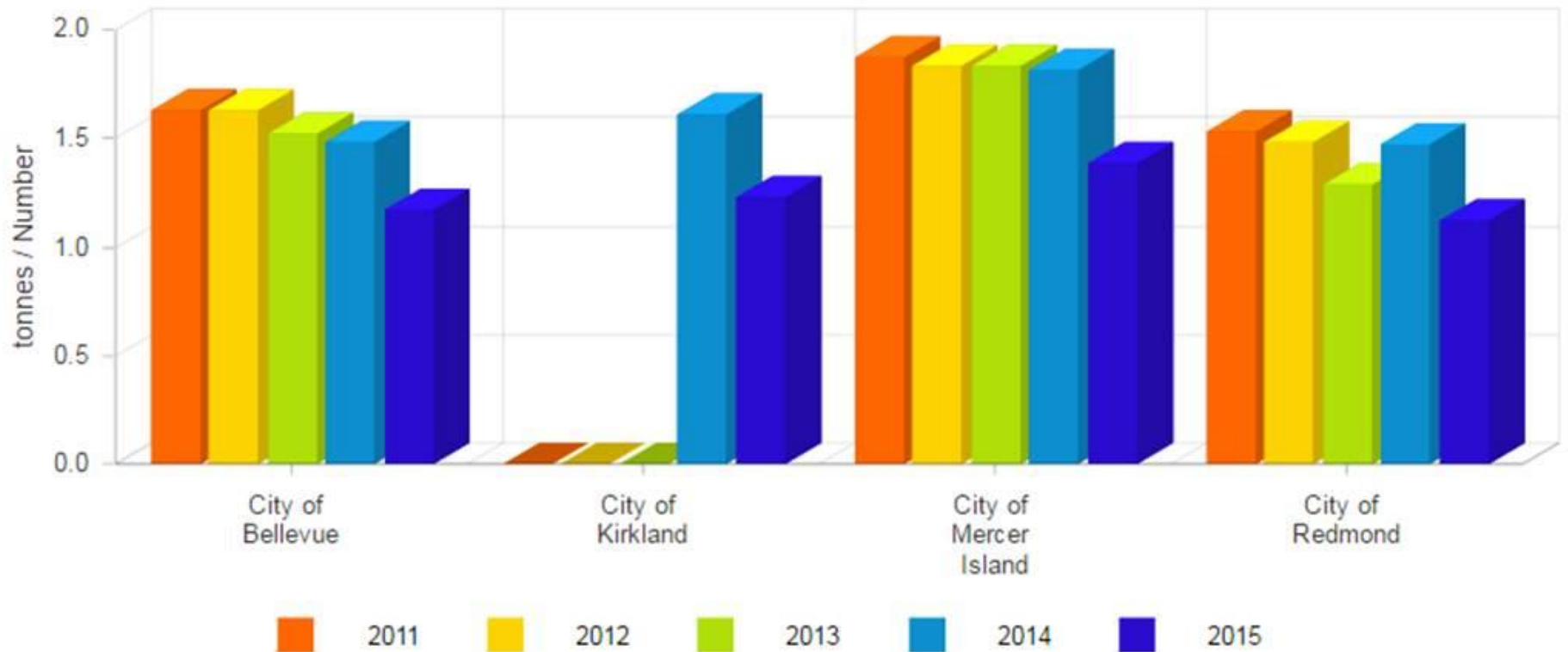
- > Cut water, energy and disposal costs with utility and government assistance programs
- > Reach new customers through the EnviroStars online directory and regional marketing promotions
- > Boost productivity and protect the health and safety of employees
- > Align with and learn from like-minded businesses
- > Find resources, rebates and green practices to stay economically competitive

Get started today!
Register at EnviroStars.org and take the first step to stardom! Questions?
Call us at 800-XXX-XXXX.

Residential Energy Use per Capita Using Scope 5

Residential Electricity Emissions per Person

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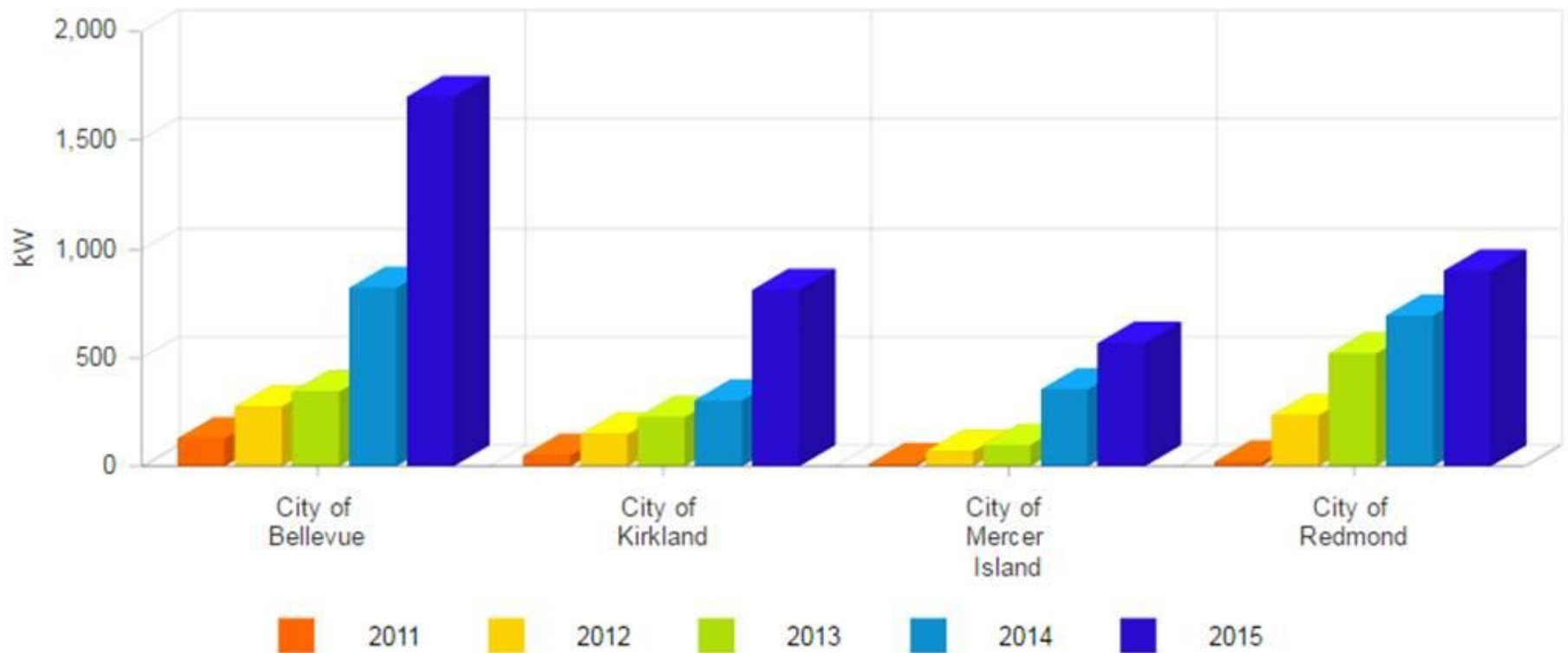
VMT Comparison using Scope 5



Total Renewable Energy Installed by City, using Scope 5

Total renewable energy installed (kW) cumulative, by City

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ESI Strategic Plan Progress: Greenhouse Gas Emissions

Implemented
Actions:
1 of 3 (33%)

Goal: Measure, communicate, plan, and act to reduce citywide greenhouse gas emissions

Strategy	Next Steps
Mitigate Greenhouse Gas Emissions	<ol style="list-style-type: none">1. GHG Reduction Target<ul style="list-style-type: none">• Consider signing the Compact of Mayors2. Climate Resiliency Planning<ul style="list-style-type: none">• Conduct a vulnerability assessment• Integrate the climate change aspects of King County Hazard Mitigation Plan into our emergency management policies and procedures

ESI Strategic Plan Progress: Mobility and Land Use

Implemented
Actions:
8 of 15 (53%)

Goal: Significantly expand the use of convenient low- or zero emission transportation for commutes in and through Bellevue.

Strategy	Next Steps
Reduce municipal fleet fuel consumption	<ol style="list-style-type: none">1. Conduct gap analysis of requirements for 100 Best Fleets and identify areas for improvement2. Develop Green Fleet Strategic Plan and adopt green fleet policies3. Expand usage of Idle Right
Expand convenient, low emissions transportation options	<ol style="list-style-type: none">1. Study issues related to minimum and maximum parking requirements2. Multi-Modal Level of Service analysis and planning3. Explore opportunities for transit priority on roadways

ESI Strategic Plan Progress: Mobility and Land Use

Goal: Significantly expand the use of convenient low- or zero emission transportation for commutes in and through Bellevue.

Strategy	Next Steps
Create a walkable and bikeable city	<ol style="list-style-type: none">1. Pilot a green rating system (e.g. LEED ND, Greenroads, or Envision)2. Continue work on 2 North-South, and 2 East-West priority bike corridors3. Implement the education and advocacy component of the Ped/Bike plan
Reduce vehicle emissions	<ol style="list-style-type: none">1. Identify priority sites for EV stations2. Update the ITS plan3. Identify opportunities in the development process, to analyze the GHG impacts in development projects (e.g. incorporating into SEPA)

ESI Strategic Plan Progress: Energy and Water

Implemented
Actions:
4 of 12 (33%)

Goal: Ensure long-term access to clean energy and water while reducing the fiscal and environmental impacts of consumption

Strategy	Next Steps
Improve performance of municipal buildings and sites	<ol style="list-style-type: none">1. Evaluate options for establishing green building policies for new and existing municipal facilities2. Pursue a green rating system certification for a site facility or site3. Municipal building energy benchmarking
Improve performance of community buildings and sites	<ol style="list-style-type: none">1. Evaluate impacts of Urban Smart Bellevue and potential for commercial building benchmarking2. Evaluate opportunities for streamlined green building permitting

ESI Strategic Plan Progress: Energy and Water

Goal: Ensure long-term access to clean energy and water while reducing the fiscal and environmental impacts of consumption

Strategy	Next Steps
Engage the community on best practices for conservation	<ol style="list-style-type: none">1. Continue implementation of Urban Smart Bellevue and outreach for the Georgetown University Energy Prize2. Review Cascade's Water Conservation outreach efforts and identify opportunities to increase water conservation outreach and education, and integrate energy conservation.
Support renewable energy	<ol style="list-style-type: none">1. Continue to promote renewables in the community2. Consider purchasing Green Power for City facilities3. Identify opportunities for evaluating District Energy

ESI Strategic Plan Progress: Materials Management and Waste

Implemented
Actions:
6 of 11 (55%)

Goal: Inspire systemic change that will reduce negative impacts to land, air, water, materials, and energy resources from existing consumption and waste practices.

Strategy	Next Steps
Increase Community recycling, composting, and waste reduction opportunities	<ol style="list-style-type: none">1. Integrate "toward zero waste" principles into outreach2. Ensure new contracts require contractors to follow state and local C&D waste laws and educate project managers3. Incorporate recycling space requirements into Downtown code
Increase municipal recycling, composting, and waste reduction	<ol style="list-style-type: none">1. Expand recycling and composting to Parks facilities2. Expand organics collection to all city facilities3. Establish a policy for recycling and organics collection at all City events
Improve green purchasing practices and reduce material consumption in municipal operations	<ol style="list-style-type: none">1. Verify that our operations and purchasing comply with LEED for Operations and Management. Update policies if necessary.

ESI Strategic Plan Progress: Ecosystems & Open Spaces

Implemented
Actions:
8 of 16 (50%)

Goal: Repair the integrity of natural systems in and around Bellevue to the highest of standards, which will allow residents, fish, and wildlife to thrive.

Strategy	Next Steps
Increase tree canopy citywide	<ol style="list-style-type: none">1. Tree canopy assessment and action plan proposed in 2017-2018 ESI budget2. Evaluate options for preventing additional loss on private lands, not covered by NPDES3. Tree canopy benefits outreach campaign
Improve ecological conditions for forests, streams, wetlands, and wildlife	<ol style="list-style-type: none">1. Identify priority habitat corridors and incorporate into departmental project plans

ESI Strategic Plan Progress: Ecosystems & Open Spaces

Goal: Repair the integrity of natural systems in and around Bellevue to the highest of standards, which will allow residents, fish, and wildlife to thrive.

Strategy	Next Steps
Improve natural stormwater retention systems and reduce chemical use	1. Proposed Green Factor for development in downtown Bellevue
Support preservation of open space and agriculture	1. Evaluate opportunities to implement the Fresh Bucks program at local farmers markets
Improve air quality	1. Determine if we need additional air quality data 2. Evaluate potential for community-wide anti-idling campaign, possibly through a partnership