



Photos by Nic Lehoux

Sustainable Buildings & Sites Policy

Seattle Design Commission

July 19, 2012

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Office of Sustainability & Environment



2000 Sustainable Building Policy

- *demonstrate the City's commitment*
- *yield cost savings to the City taxpayers*
- *provide healthy work environments*
- *contribute to the City's environmental goals*

Buildings over **5,000 square feet** meet a minimum **LEED Silver** rating

Photo by Benjamin Drummand



Photos courtesy of Mithun



Photo by Pragnesh Parki





2000 Sustainable Building Policy Successes: Expertise / Quality

year completed

| | | | |
|------|---------------------------------|-------------------|---------------|
| 2002 | FISHER PAVILION | Seattle Center | certified |
| 2002 | SEATTLE JUSTICE CENTER | FAS | silver |
| 2003 | MCCAOW HALL | Seattle Center | no rating |
| 2003 | SOUTHWEST PRECINCT | FAS | no rating |
| 2003 | CARKEEK PARK ELC | Parks | gold |
| 2004 | SEATTLE CENTRAL LIBRARY | SPL | silver |
| 2004 | CEDAR RIVER TREATMENT FACILITY | SPU | gold |
| 2004 | PARK 90/5A - Airport Way Center | FAS | silver |
| 2004 | PARK 90/5C - Airport Way Center | FAS | gold |
| 2004 | HIGHPOINT COMMUNITY CENTER | Parks | certified |
| 2005 | YESLER COMMUNITY CENTER | Parks | gold |
| 2006 | NORTHGATE CIVIC CENTER | Parks | gold |
| 2006 | ZOOMAZIUM | Woodland Park Zoo | gold |
| 2006 | NORTH CASCADES ELC | SCL | silver |
| 2006 | SEATTLE JOINT TRAINING FACILITY | FAS | silver |
| 2007 | SEATTLE CITY HALL | FAS | gold |
| 2007 | MONTLAKE COMMUNITY CENTER | Parks | gold |
| 2007 | OPERATIONS & CONTROL CENTER | SPU | gold |
| 2008 | FIFTH AVENUE GARAGE | Seattle Center | gold |
| 2008 | FIRESTATION 10 | FAS | silver |
| 2009 | FIRESTATION 28 | FAS | gold |
| 2010 | WEST ENTRY | Woodland Park Zoo | gold |
| 2010 | FIRESTATION 17 | FAS | silver |
| 2010 | FIRESTATION 35 | FAS | gold |
| 2010 | FIRESTATION 39 | FAS | gold |
| 2010 | FIRESTATION 37 | FAS | gold |
| 2011 | FIRESTATION 30 | FAS | gold |
| 2012 | FIRESTATION 38 | FAS | gold |





2000 Sustainable Building Policy Successes: Environmental Impact

Total Environmental Benefits of 25 City of Seattle LEED Projects certified 2003 – 2011

| | |
|---|-------------------------------------|
| Annual Projected Energy Savings <i>(compared to LEED baseline, ASHRAE 90.1)*</i> | 53,926,600 kBtu/yr 29 kBtu/SF/yr |
| Annual Projected CO2 Emission Reduction <i>(resulting from energy savings)</i> | 14,540,500 lbs/yr |
| Annual Projected Potable Water Savings | 4,643,300 gallons/yr |
| Annual Projected Stormwater Reduction | 1,193,176 gallons/yr |
| Construction Waste Diverted | 51,933 tons |
| Bike Parking Spaces Added | 171 |
| Number of Showers Added | 88 |

**ASHRAE 90.1 is a national standard against which all LEED projects are compared. The Seattle Energy Code is more stringent than ASHRAE 90.1, therefore relative savings against the SEC would be less.*

Photo by Michael Burns



Photo by William Wright



Photo by Francis Zera





2000 Sustainable Building Policy Successes: Environmental Impact

*Performance Evaluation Report.
Paladino & Company Inc., 2008*

Justice Center

City Hall

Yearly Energy Savings

26%

17%

Regulated Loads

Compared to Seattle Energy Code baseline

Yearly Water Savings

46%

40%

Per FTE. Compared to Public Safety Building

Yearly Utility Savings

\$113,400

\$58,400

Initial Utility Rebates

\$423,070

\$420,160

Photos by Christian Richters





2000 Sustainable Building Policy Successes: Departmental Initiatives

| | | |
|-----------|---|---|
| Category | E | Energy |
| Intent | 1 | Reduce Energy Consumption in Building Operations |
| Objective | 4 | Reduce Energy Load by Increasing Equipment Efficiency |
| Strategy | A | Use efficient gas heating equipment |

Small
Projects

Tenant
Improvements

Infrastructure
Replacement

Capital Green

Finance and Administrative Services

Strategy Performance Standard

Project strategies should not fall below baseline. Target is a benchmark to strive for.
Provide feedback at project completion on level achieved or why strategy was not achievable.

| | Baseline | Target |
|----------------------------|--|---|
| Small Projects | Exceed by 5% Annual Fuel Utilization Efficiency (AFUE) required by current Seattle Energy Code | Exceed Seattle Energy Code by 20% by using gas condensing units |
| Tenant Improvements | Exceed by 5% Annual Fuel Utilization Efficiency (AFUE) required by current Seattle Energy Code | Exceed Seattle Energy Code by 20% by using gas condensing units |
| Infrastructure Replacement | Exceed by 5% Annual Fuel Utilization Efficiency (AFUE) required by current Seattle Energy Code | Exceed Seattle Energy Code by 20% by using gas condensing units & size units to optimize efficiency |

Phase Check if the strategy was pursued during each phase of the project.

☐ Pre-Design ☐ Schematic Design ☐ Design Development ☐ Construction Documents

Scope
HVAC

Operational Impact



Implementation

Cost \$

Difficulty ★

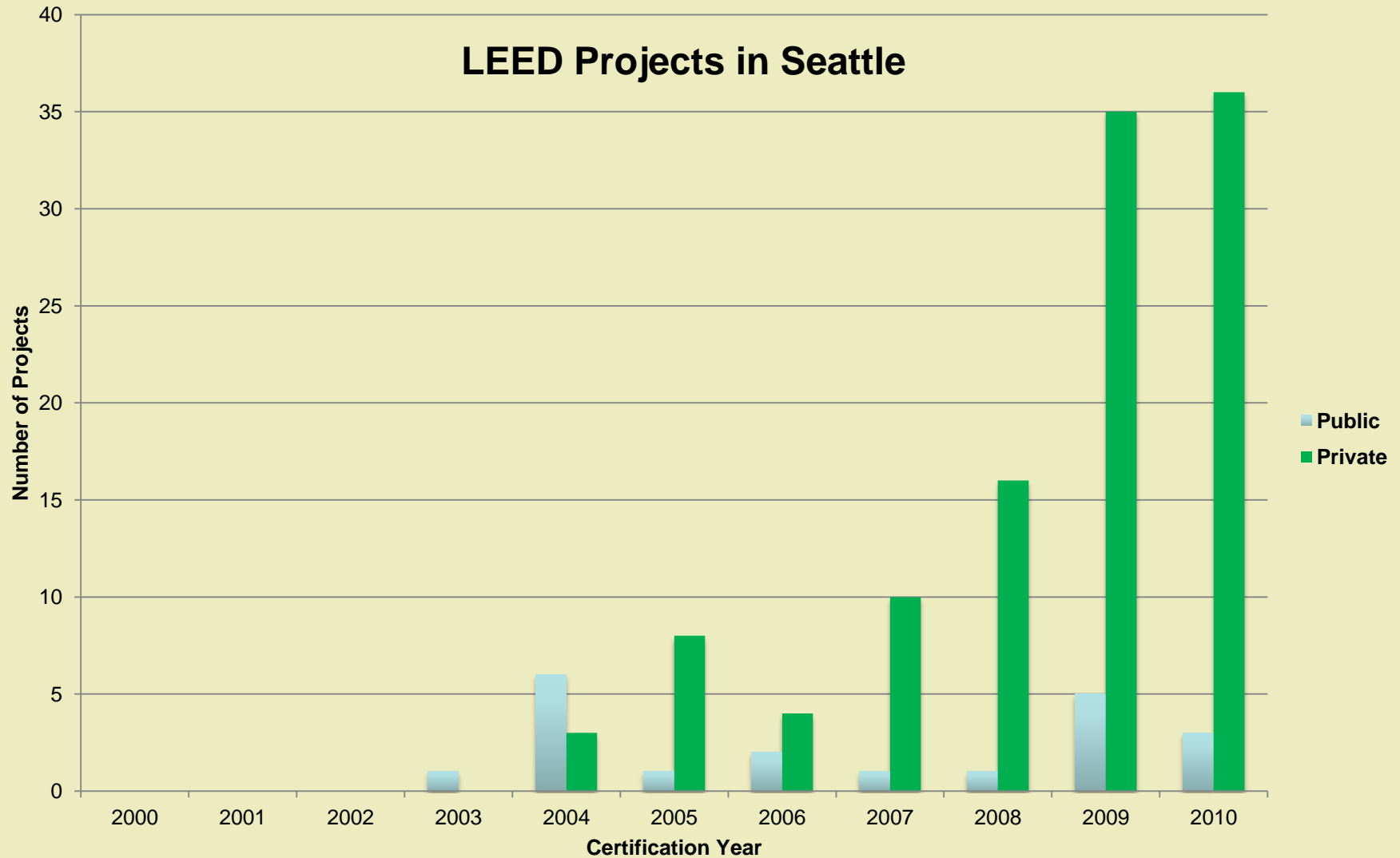
Environmental Benefit

Ideal Green Parks
Parks & Recreation



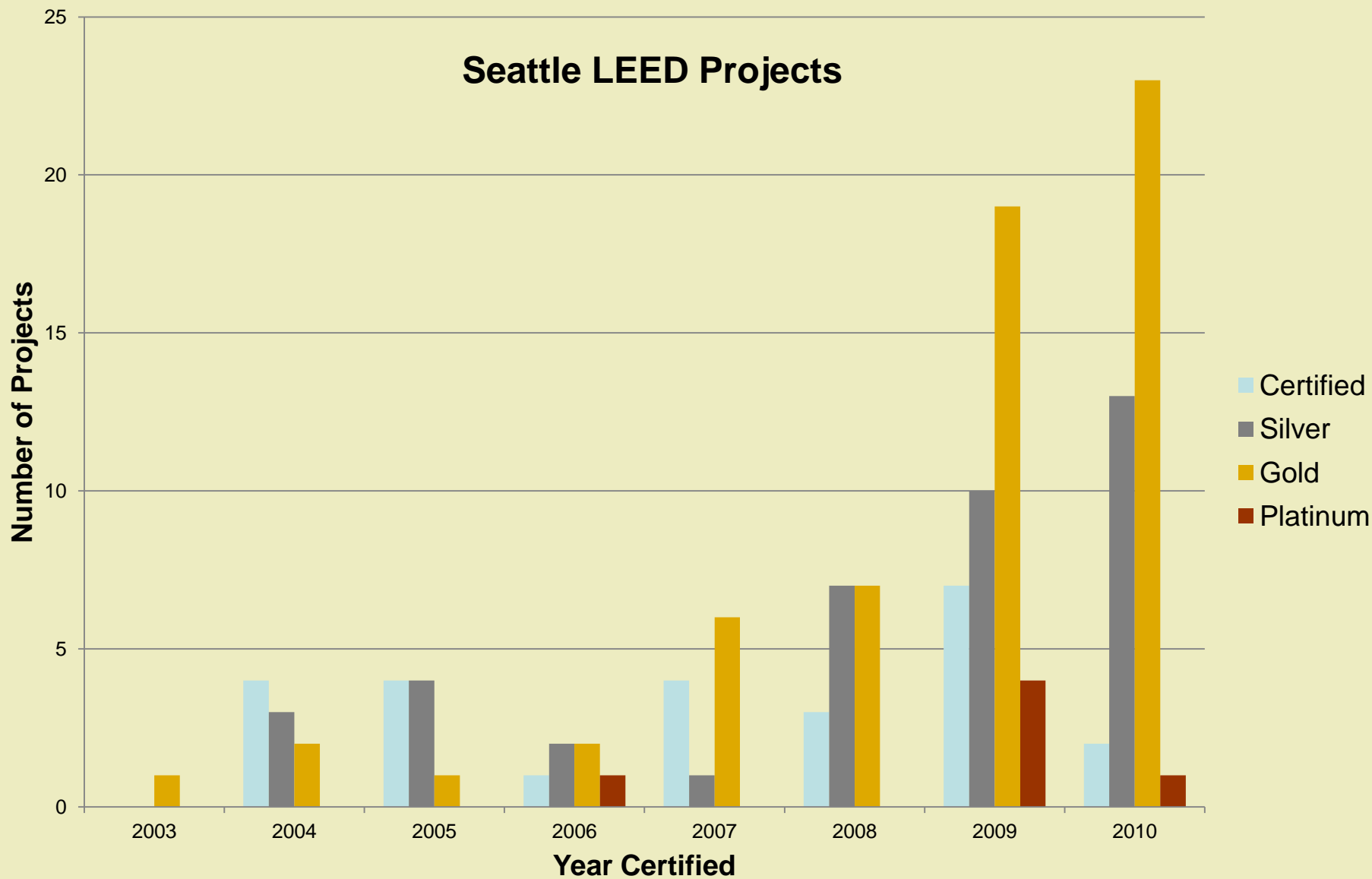


2000 Sustainable Building Policy Successes: Market Transformation



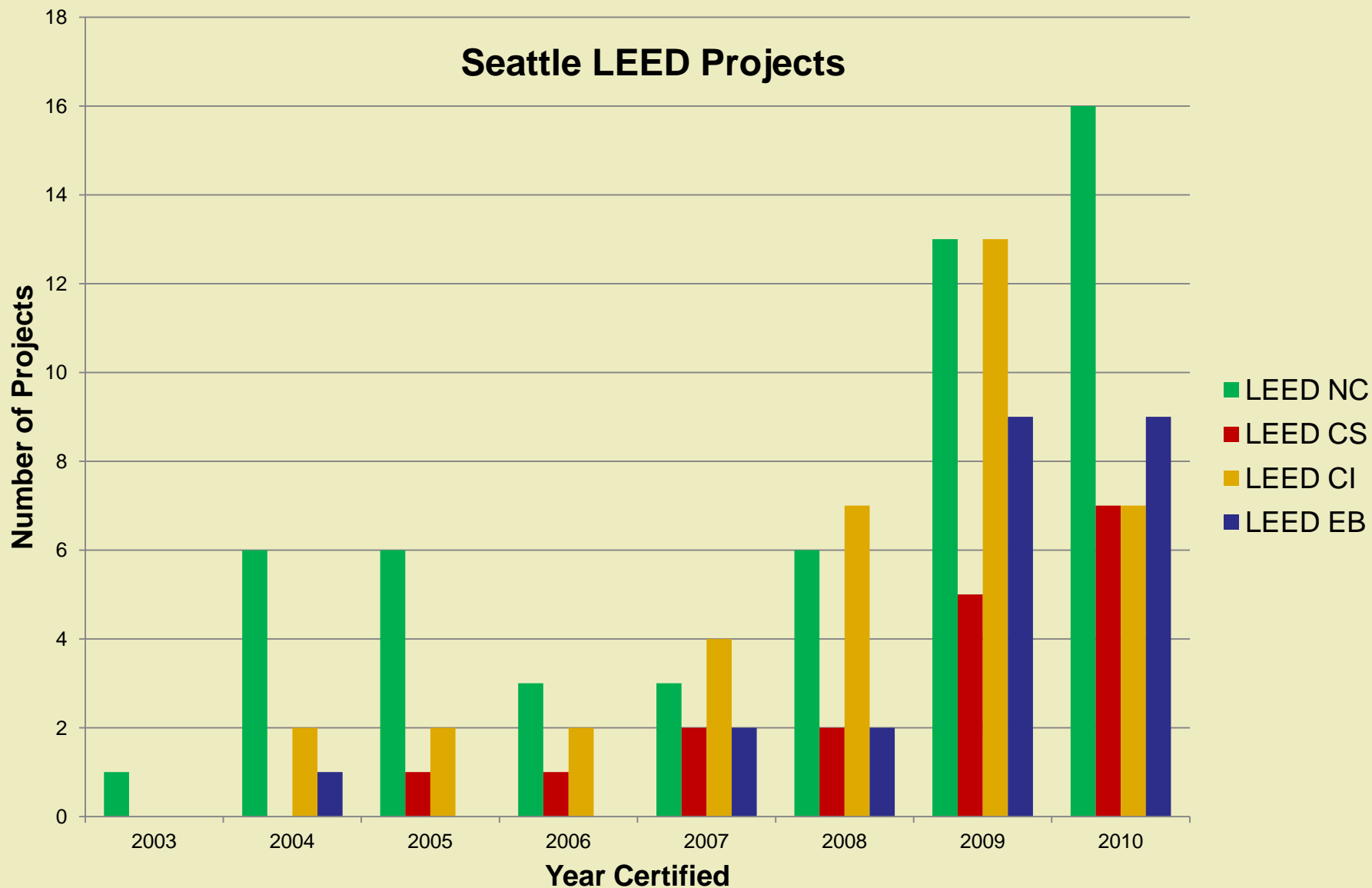


2000 Sustainable Building Policy Successes: Market Transformation





2000 Sustainable Building Policy Successes: Market Transformation





2000 Sustainable Building Policy Successes: Municipal Policies

| | |
|--------------------|--|
| Greensburg, KS | LEED Platinum Equivalent |
| State of Michigan | LEED Platinum Equivalent |
| Portland, OR | LEED Gold + 30% energy ¹ & water reduction; no potable water for irrigation; 85% waste diversion; green roof; on-site renewable energy |
| Vancouver, BC | LEED Gold + 30% energy reduction |
| Federal | LEED Gold + Energy Star + 30% energy reduction ¹ |
| Dallas, TX | LEED Gold + 17% energy reduction ¹ ; 20% water reduction |
| State of Minnesota | MN Sustainable Bldg Guidelines + EUI target @ 60% energy reduction ² |
| King County | LEED Gold |
| Washington, DC | LEED Silver + Energy Star rating of 75 |
| LEED Silver | Seattle, WA; Whatcom County, WA; Bellingham, WA; Everett, WA; Washington State; Austin, TX; Baltimore, MD; Chicago, IL; San Jose, CA |

1. Compared to ASHRAE 90.1 baseline; 2. compared to typical regional building of the same type



❖ Comprehensive Plan

Toward a Sustainable Seattle

❖ Seattle Climate Action Plan

Reduce GHG Emissions 58% by 2030

Net Zero GHG Emissions by 2050

❖ Living Building Challenge Pilot

❖ Priority Green Permitting

❖ Energy Benchmarking

❖ Incentive Zoning

❖ 2030 District

Playhouse Design
Greenleaf Construction



Terry Thomas Building
Weber Thompson Architects
Photo: Lara Swimmer



Alcyone
Harbor Properties
GGLO Architects





- Policy Scope – only addressed new construction & larger projects
- Criteria – LEED doesn't guarantee energy improvements beyond Seattle Energy Code
- Performance – Minimal post occupancy data available
- Costs / Savings – Minimal data on green capital & operational costs
- Life Cycle Costing – Capital vs. Operations budgets

Northgate photos courtesy of Miller/Hull

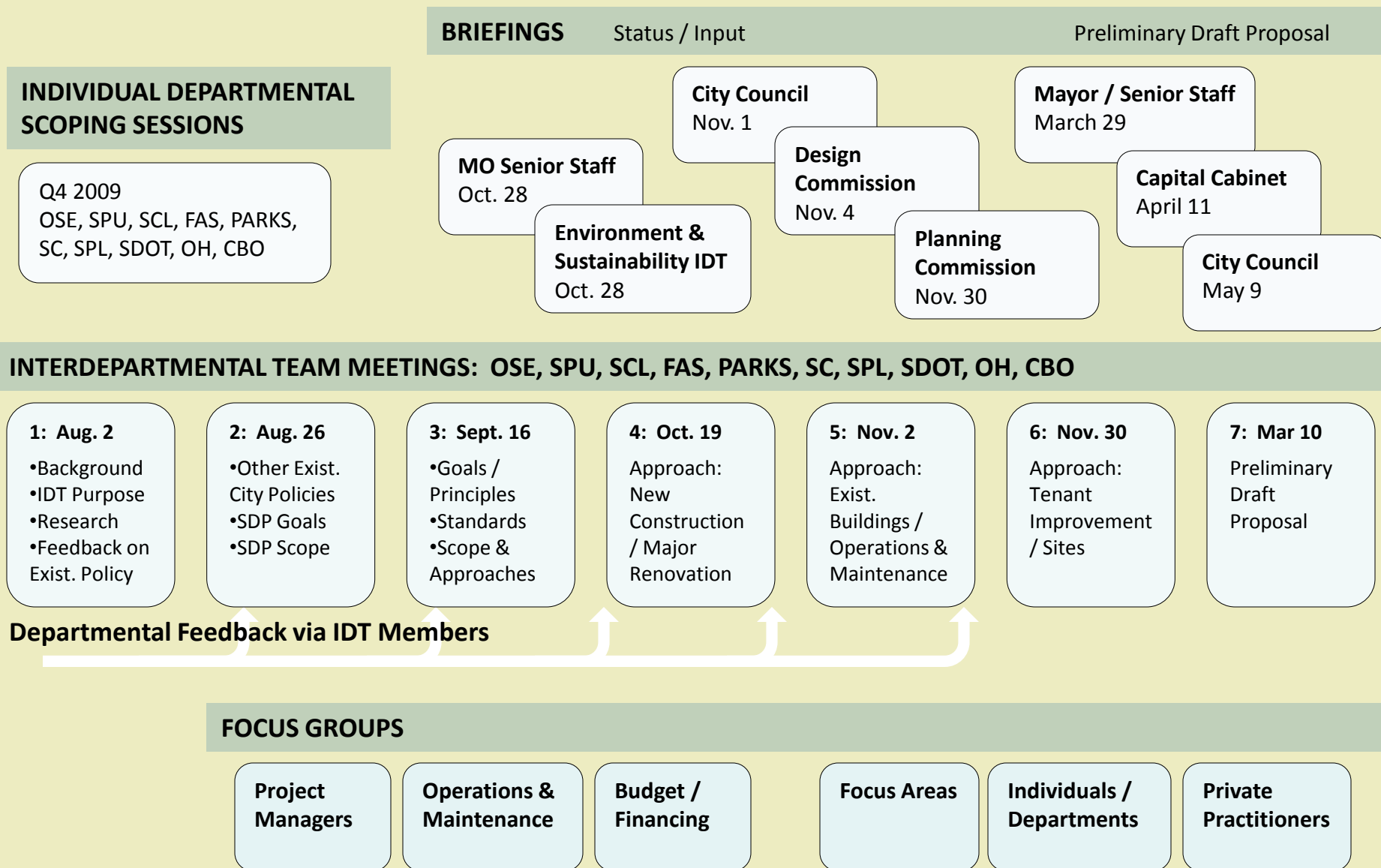


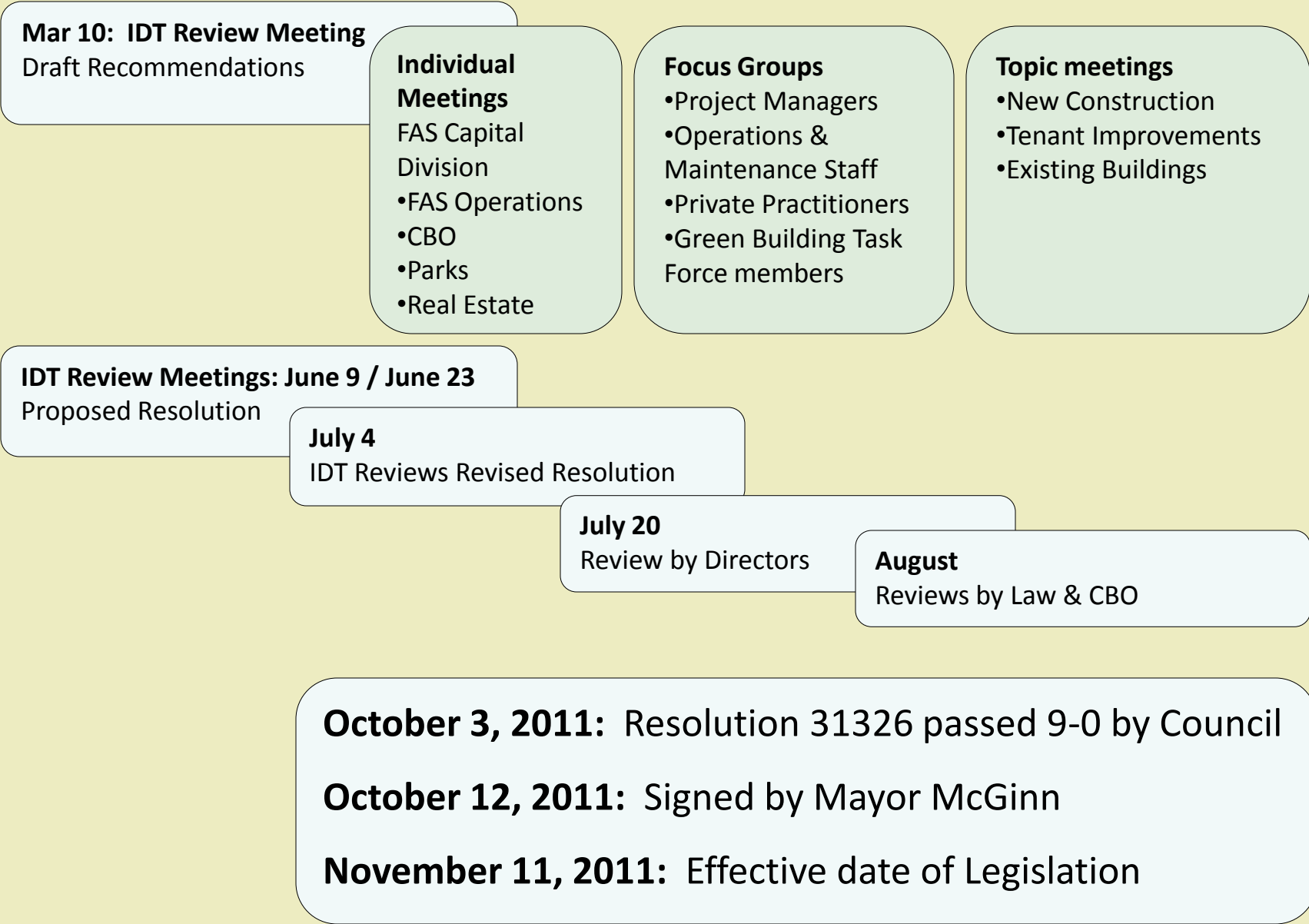
Cedar Water Treatment Facilities photos by Lara Swimmer





Policy Update Process







The purpose of a Citywide policy on sustainable buildings and sites is to:

- ❖ demonstrate the City's **commitment** to addressing climate change and creating a sustainable future;
- ❖ provide **leadership** in setting community standards for sustainable development;
- ❖ provide responsible **stewardship** of the City's fiscal resources and public assets;
- ❖ create **quality environments** that are healthy and provide community benefit.

Carkeek - photo by Eric Stuhau



Fisher Pavilion- photo by Steven Keating



SPU Operations Control Center - photo by William Wright





- All City departments and offices, and their contractors, responsible for planning, financing, designing, developing, constructing, occupying, or managing buildings and sites
- Non-City entities receiving more than 50% City funding
 - Non-City entity occupying City owned buildings

Yesler - photo by Mithun



Cedar Watershed - photo by Ralph Ness



Northgate – photos by Miller/Hull



Photo courtesy of Seattle Public Library





- ❖ LEED Gold + PLUS Minimum Requirements
- ❖ Broaden scope
Sites, Small Projects, Leasing
- ❖ Pilot advanced standards
- ❖ Assessment & Performance





Guidelines (section 3)

- Triple Bottom Line
- Life Cycle Cost
- Integrated Design Process

City Priorities (section 8)

- Design Quality
- Transportation Impacts
- Climate Adaptation
- Art
- Urban Forestry
- Public Safety
- Co-location
- Deconstruction





| | New Construction, Additions & Major Renovations (4.1) | Minor Renovations & Tenant Improvements (4.2) |
|------------------------------|--|---|
| Project Scope | 5,000 SF or greater | 5,000 SF or greater <i>-and-</i> mechanical, electrical, plumbing |
| Standard | LEED NC Gold + <ul style="list-style-type: none">• 15% energy reduction• 30% water reduction,• 90% (75%) waste diversion• Bicycle facilities | LEED CI Gold + <ul style="list-style-type: none">• 30% water reduction• 75% (60%) waste diversion |
| Pilot (section 7) | Living Building Challenge | |



Small Building Projects

| | New Construction, Additions & Major Renovations (4.1) | Minor Renovations & Tenant Improvements (4.2) |
|------------------|--|---|
| Project Scope | <ul style="list-style-type: none">• Less than 5,000 SF <i>-or-</i>• Non-LEED eligible | <ul style="list-style-type: none">• Less than 5,000 SF <i>-or-</i>• Non-LEED eligible <i>-or-</i>• No MEP |
| Standard | Capital Green | Capital Green |

Photo courtesy of Mithun



Photo by Lara Swimmer





| | |
|-----------------------------|-------------------------------------|
| Project Scope | All landscaped areas |
| Standard | Citywide site management guidelines |
| Pilot (section 7) | Sustainable Sites Initiative |





- ❖ Sustainable Buildings & Sites Steering Committee
 - ❖ Annual Reporting
 - ❖ Evaluation





❖ Seattle City Light

- Energy Analysis
- Lighting, Equipment, Custom Measures
- Commissioning
- Renewable Energy

❖ Puget Sound Energy

- Whole Building Efficiency
- Lighting, Equipment, Custom Measures
- Commissioning

❖ Saving Water Partnership

- Toilets
- Cooling & Refrigeration
- Sprinklers

❖ Seattle Public Utilities

- Stormwater Facility Credit



New construction

Seattle City Light works collaboratively with design teams to create healthy, high performance buildings with low long-term operating costs. Financial Incentives, Energy Analysis Assistance and Commissioning Assistance work together to build energy efficiency into your project from the beginning.

Our Energy Management Analysts, many of whom are LEED accredited, are here to help you achieve your goals. They will work with you to optimize building systems for both efficiency and high performance.


Please contact us early in the design process. By making energy efficiency an integral part of the building's design, you maximize the value of assistance offered by Energy Smart Services while maximizing building performance.

Energy and dollar savings start on day one.

Energy Analysis Assistance
We provide financial support for professional engineering services to research and evaluate various building system designs. For all the details, see our [Program Manual](#), (pdf format, 1.5 MB)

Commissioning
[Building Commissioning](#) verifies that installed equipment and systems are operating as the design intended. Funding is available to help customers develop an independent commissioning plan.

Financial Incentives
Seattle City Light offers funding for the installation of equipment and controls that go beyond energy code requirements. Some examples:



Construction of the Seattle Public Library.



Saving Water Partnership - Rebates

Contact Us | Site Map

Saving Water Partnership
Seattle and Participating Local Water Utilities

Home Conserve Inside Conserve Outside Conserve at Work Education / Resources About Us

Rebates

Utilities participating in the [Saving Water Partnership](#) offer financial incentives for:

- [Owners/Managers of Apartments and Condos](#)
- [Industrial & Commercial Customers](#)
- [Residential Customers](#)



- ❖ Sites Management Working Group
- ❖ Pilot Projects
- ❖ Project Assistance
- ❖ Annual Reporting Tools
- ❖ Update Capital Green
- ❖ Training
- ❖ Website Updates
- ❖ Buildinggreen.com access
- ❖ Standard Specifications
- ❖ Green Lease Template
- ❖ LEED Plus Implementation Guide





Citywide Resource Conservation Management Plan

- Citywide Portfolio
- Building Inventory & Benchmarking
- Long-term:
Meet City's Climate Change Goals
- Near-term:
20% Energy Reduction by 2020
Water Use Reductions by 2020





www.seattle.gov/greenbuilding
go to “City Projects”

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