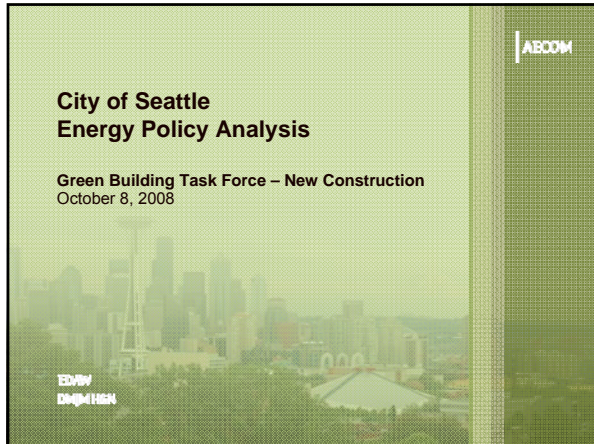


| AECOM

City of Seattle Energy Policy Analysis

Green Building Task Force – New Construction
October 8, 2008



EMW
D&P

Agenda

- ▶ Revision to Cost Effectiveness Methodology
- ▶ Density Bonus
 - » Discussion
- ▶ Priority Green Permitting
 - » Discussion



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Cost Effectiveness – Methodology

(1) Direct Benefit Cost to City = $\frac{\text{Energy Savings (\$)}}{\text{Program Costs to City (\$)}}$

(2) Direct Benefit Cost to Developer = $\frac{\text{Financial Benefit to Developer (\$)}}{\text{Cost to Developer (\$)}}$

(3) Net Benefit Cost = $\frac{\text{Energy Savings (\$)} + \text{Financial Benefit to Developer (\$)}}{\text{Program Costs to City (\$)} + \text{Cost to Developer (\$)}}$

(4) Cost per MWhr Saved = $\frac{\text{Cost to City (\$)}}{\text{Energy Savings (MWhr)}}$

- ▶ Costs calculated through 2030
- ▶ Energy Savings = Baseline (MWhr) x Savings (%) x Energy Cost (\$/MWhr)
 - » Baseline Energy Consumption per Building Type = S3IM Model (kWhr)
 - » Energy Savings = Minimum threshold energy performance (% reduction)
 - » Cost of Energy based on current rates, escalating at inflation
 - » Energy efficiency improvements assumed as constant through 2030
- ▶ Financial Benefit to Developer (\$)
 - » Dependent on policy (i.e. density bonus = increase in revenue from rents/sales)
- ▶ Program Cost to City (\$) and Cost to Developer (\$)
 - » Costs discounted and increased at rate of inflation

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Density Bonus

- ▶ Green Building Density Bonus
Arlington County, VA



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Density Bonus

Current Policy in Seattle

- ▶ **Objective:** To create an incentive for developers to incorporate green building practices and/or achieve specified local sustainability objectives by permitting additional floor space above the permitted zoning for qualified projects
- ▶ **Project Performance Threshold:** Currently LEED® Silver, but will be updated in December
- ▶ **Geographic Focus:** Downtown Seattle, though shifting to outside Downtown area in 2009
- ▶ **Enforcement:** For buildings that renege on their commitments, a penalty is assessed
 - » \$500 per day for failure to submit report
 - » For failure to meet LEED® Silver Rate - 0.75% of construction value x ratio of missing credits to total required credits



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Density Bonus

Downtown Zoning Adopted by City Council

April 3, 2008



District	Min. Floor Area	Max. Floor Area	Max. Height (feet)	Notes
DOC-1	5	20	100	Max. residential floor area: Unlimited Residential Use: Bonus height 400' Height limit with bonus: unlimited
DOC-2	5	14	100	Max. residential floor area: 100,000 sq ft Residential Use: Bonus height 200' Height limit with bonus: 200'
DOC-3	5	14	100	Max. residential floor area: 100,000 sq ft Residential Use: Bonus height 200' Height limit with bonus: 400'
DOC-4	5	14	100	Max. residential floor area: 100,000 sq ft Residential Use: Bonus height 200' Height limit with bonus: 400'
DOC-5	5	7	100	Max. residential floor area: 100,000 sq ft Residential Use: Bonus height 200' Height limit with bonus: 400'

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Density Bonus

Economic Impacts ★



- ▶ **Little impact on job market**
 - » Policy would primarily support existing green building professionals
- ▶ **Increased support for transit and local retail**
- ▶ **Lower-income areas could benefit from funded projects**
 - » May provide more discretionary income through lower utility bills
 - » May reduce transportation costs through access to transit and employment if the density bonus is realized along transit corridors




Density Bonus

Cost of Policy Implementation ★★★


- ▶ **Cost to City:** Probable low cost to city due to existing program
 - » Possible costs to city due to increased demand for infrastructure, services, and transit
- ▶ **Cost to Developer:** Benefits exceed costs to developers
 - » Approximately 2-3% of project cost to meet threshold building performance standards
 - » Benefit of additional rentable or saleable space far outweighs the cost to developers of achieving LEED®

Density Bonus

Cost Effectiveness ★★★★★

- ▶ **Direct City Benefit Cost -5.0** (\$5.00 of energy savings per \$1.00 of program costs to the city)
- ▶ **Direct Developer Benefit Cost - 8.1** (\$8.10 of financial benefit to developer per \$1.00 of developer costs)
- ▶ **Net Benefit Cost -7.9** (\$7.90 of benefits for every \$1.00 of costs to the city and developer)
 - » Benefits are skewed towards developers who receive large financial gains through increased rentable/saleable space
 - » Program is highly desirable for developers which specialize in commercial and mixed-use buildings that can support additional floor area easily
- ▶ **Cost per MWhr Saved - \$4.67**



Density Bonus

Administrative Feasibility ★★★★

- ▶ **Ease of Initiation:** Programmatic infrastructure and experience exist with current program
 - » Easy to adapt the policy to target different building types, sizes, and locations, or have different goals
 - » Potentially detailed planning involved in determining geographic focus
- ▶ **Administrative capacity sufficient:** to administer current policy within Seattle Department of Planning but if policy uptake significantly exceeds past performance extra staff may be required.

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Density Bonus

Stakeholder Impacts

- ▶ Differential impact on development types and markets

Market Impacts		Development Type			
		Single Family Residential	Multi-Family Residential	Commercial	Retail
Development Size	Small				
	Medium				
	Large				

- ▶ Good synergy with existing SCL/PSE policies, though some potential for redundancy

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Density Bonus

Policy Scorecard

SUMMARY RATINGS (★★★★ = best/most feasible)

ENERGY EFFICIENCY POTENTIAL	★★	COST EFFECTIVENESS	★★★★
ECONOMIC BENEFIT	★	ADMINISTRATIVE FEASIBILITY	★★★★
COST OF POLICY IMPLEMENTATION	★★★		

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Density Bonus

Lessons Learned

- ▶ **PROS**
 - » Cost effective policy – low program costs for the energy savings and financial benefits
 - » Few new resources are needed to implement policy unless high demand
 - » High potential for providing visible models of high performance and sustainable development for Seattle developers
- ▶ **CONS**
 - » Limited by potential areas of densification
 - » May require stringent enforcement mechanism such as a bond
 - » Program can be biased towards larger projects
 - » Policy may not be as effective in addressing residential developers

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Density Bonus

Recommendations to Consider

- ▶ Use threshold building performance qualifications beyond just LEED® certification, such as additional LEED® Energy and Atmosphere credits or local energy performance standards
- ▶ Include an enforcement mechanism such as a bond program to ensure program compliance
- ▶ To maximize energy savings, set:
 - » Achievable energy efficiency standards (minimum LEED® Silver + some EA credits)
 - » Attractive FAR incentives (ranging from 0.2 to 0.4) for each typical building type and size

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Discussion

LEED | ACCO | EQUUS | ACCO

Priority Green Permitting

- ▶ Green Priority Permitting
San Francisco, CA
- ▶ Green Permit Program
Chicago, IL



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Priority Green Permitting

Current Policy in Seattle

- ▶ **Objective:**
 - » To assist innovative projects which serve as visible models of high performance and sustainable development
 - » Facilitates rather than expedites permitting for projects that meet criteria thresholds for green building in Seattle



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Priority Green Permitting

Current Policy in Seattle


- ▶ **Benefits:**
 - » Provides a project facilitator for applicants demonstrating commitment to innovative, high performance, deep green projects that exceed current codes and standards
 - » Priority land use and building permit review on development proposals is performed by an interdisciplinary team of reviewers with technical assistance from City Green Building
 - » Provides support and facilitation in navigation of complex code issues
 - » Provides opportunity for early identification of code constraints for innovative proposals, and highlights the need for potential code changes

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Priority Green Permitting

Current Policy in Seattle

- ▶ **Energy and Climate requirement:**
 - » 60% energy & fossil fuel use reduction using Energy Star Target Finder
 - or
 - » Building performance improvement of 20% over Seattle Energy Code for commercial building projects and an improvement of 30% for residential projects
- ▶ **Potential alternative pathways to demonstrate performance:**
 - » **Suggested preliminary step** – Use the Energy Star Target Finder program to develop an energy target or energy budget for your project type
 - » Seattle Energy Code - Reference Standard-29
 - » Propose an alternative energy modeling approach
 - » If pursuing LEED®, achieve 8 LEED EA1 credits
 - » Apply for utility incentives and create an incentive package proposal demonstrating performance 20% or 30% beyond SEC



Priority Green Permitting

Case Study Policies

- ▶ **Chicago**
 - » **Permitting Time:**
 - › Reduced to approximately 6 weeks (typical permitting time is 18 weeks)
 - » **Qualifications:**
 - › Must meet minimum LEED® certification standards or Chicago Green Homes standard, as well as local sustainability criteria
 - › Tiered system of benefits, with specific criteria for various building types and sizes
 - › Fee waiver/reduction (up to \$25k) for buildings that qualify in top Tier
- ▶ **San Francisco**
 - » **Permitting time:**
 - › Reduced to approximately 1 month (typical permitting time is 6-9 months)
 - » **Qualifications:**
 - › Must meet minimum LEED® Gold standard



Priority Green Permitting

Energy Efficiency Potential ★★

- ▶ **Policy uptake**
 - » Dependent on the threshold building performance standards and magnitude of financial incentive
 - » If permitting time is not reduced through participation in program, policy uptake may be limited
- ▶ **Energy Savings:** ~ 640,000-780,000 MWhr
- ▶ **Consistent with targets outlined in 2030 Challenge targets**




Priority Green Permitting

Economic Impacts ★

- ▶ **Limited impact on job market due to limited policy uptake**
- ▶ **If permitting time is reduced, developers would have faster response to real estate market opportunities:**
 - » Increase response time by developers to respond to immediate employment growth demand
 - » May have otherwise flowed to other surrounding cities with faster approval processes.
- ▶ **Lower-income areas could benefit from green projects:**
 - » May provide more discretionary income for residents in lower-income neighborhoods or business districts
 - » Encourage development in areas often left behind during construction booms




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Priority Green Permitting

Cost of Policy Implementation ★★★

- ▶ **Cost to City**
 - » Program can build on existing program, though additional resources will be needed if program expands
 - » Following the Chicago model of fee waiver/reduction for high performance buildings could be costly:
 - › Would reduce fee revenue from building permits, in effect reducing the budget of the DPD
- ▶ **Cost to Developer**
 - » Program qualification may result in cost increases for the developer
 - » Cost to developer could be compensated for through expedited permit service
 - » It is expected that large commercial developments would benefit most from this program



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Priority Green Permitting

Cost Effectiveness ★★★

- ▶ **Direct City Benefit Cost -6.1** (\$6.10 of energy savings per \$1.00 of program cost to the city)
- ▶ **Direct Developer Benefit Cost - 0.8-1.2** (\$0.80-\$1.20 of financial benefit to developer per \$1.00 of developer costs)
 - » Assumes an expedited permit program which reduces permitting time by 2 to 3 months
 - » Benefit Cost reduces to 0 if no reduction in permitting time
- ▶ **Net Benefit Cost -1.2-1.6** (\$1.20 - \$1.60 of benefits for every \$1.00 of costs to the city and developer)
 - » Assumes an expedited permit program which reduces permitting time by 2 to 3 months
 - » Net Benefit Cost reduces to -0.5 if no reduction in permitting time
- ▶ **Cost per MWhr Saved - \$8.33**
- ▶ **Current program is desirable for developers which specialize in large or complicated buildings**
 - » Could encourage more developer participation through expedited permitting service

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Priority Green Permitting

Administrative Feasibility ★★★★

- ▶ **Little difficulty in initiating policy in its current form**
 - » Program would require extra resources to expand program or implement an expedited permitting service
- ▶ **Good program flexibility with Priority Green Matrix**
 - » Details the project performance necessary to qualify for the program benefits
 - » Can be adapted to current conditions and/or changing policy goals

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Priority Green Permitting

Stakeholder Impacts

- ▶ **Differential impact on development types and markets**

Market Impacts		Development Type			
		Single Family Residential	Multi-Family Residential	Commercial	Retail
Development Size	Small				
	Medium				
	Large				

- ▶ **Good synergy with existing SCL/PSE policies:** The Priority Green Permit program currently promotes SCL and PSE policies

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Priority Green Permitting

Policy Scorecard

SUMMARY RATINGS (★★★★★ = best/most feasible)

ENERGY EFFICIENCY POTENTIAL	★★	COST EFFECTIVENESS	★★★★
ECONOMIC BENEFIT	★	ADMINISTRATIVE FEASIBILITY	★★★★★
COST OF POLICY IMPLEMENTATION	★★★★		

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Priority Green Permitting

Lessons Learned

- ▶ **PROS**
 - » High potential for providing visible models of high performance and sustainable development for Seattle developers
 - » Flexible program that uses local sustainability criteria that are tied to the 2030 Challenge Goals
 - » Few new resources or staffing requirements are needed to implement policy in its current form (more may be needed for expedited permitting or increase in demand)
- ▶ **CONS**
 - » Program can be biased towards larger projects, which would benefit more from permit facilitation services
 - » Large share of projects may opt not to participate in the program

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Priority Green Permitting

Recommendations to Consider

- ▶ Focus the policy on providing expedited permitting services, not just permitting facilitation
- ▶ Consider potential costs and benefits of including a fee waiver/reduction component

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Discussion

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