

CENTRALCITY
2035

Decision Packet E: Green Building Standards

PSC Work Session 4 – 01/24/2017

 **Bureau of Planning and Sustainability**
Innovation. Collaboration. Practical Solutions.
City of Portland, Oregon
Charis Niles, Mayor • Jason Anderson, Director



Proposed Ecoroof Standard

Proposed Standard:

- Requires ecoroof on new buildings at least 20,000 sq ft
- 60% of the roof area must be ecoroof
- Exemptions: mechanical equipment, solar panels, skylights, fire evacuation routes

Testimony received:

- Increase required ecoroofs percentage
- Reduce the threshold to 10,000 sq ft
- Provide space for amenities
- Cost impacts
- Consider white roofs



Benefits of Ecoroofs

- Reduce stormwater runoff
- Flexible and space- efficient
- Improve air quality
- Keep the Central City cooler
- Reduce building energy use
- Attract birds and pollinators
- Increase urban greenspaces



Application of Ecoroof Standard

CC2035 Ecoroof Requirement Applied to Current Development Projects

All measurements in square feet

	North Hollow	St. Francis	Modera Pearl*	Block 136	The Slate	Hyatt House*
Gross Roof Area	19,321	18,829	33,664	27,596	13,737	27,685
<i>Minus Exempted Area</i>	-938	-300	-1,864	-2,219	-1,095	-1,169
Net Roof Area	18,383	18,529	31,800	25,377	12,642	26,517
Resulting Ecoroof Area (60% of Net Roof Area)	11,030	11,117	19,080	15,226	7,585	15,910

* Project ecoroofs exceed what Central City regulation would require



Application of Ecoroof Standard

- ~38% of the rooftop available for other amenities
- Two sites are proposing ecoroofs at 66% and 78%
- Both also have outdoor spaces
- Applying the standard would result in ~80,000 sq ft of total ecoroof (1.8 acres)



Ecoroof vs other roof types

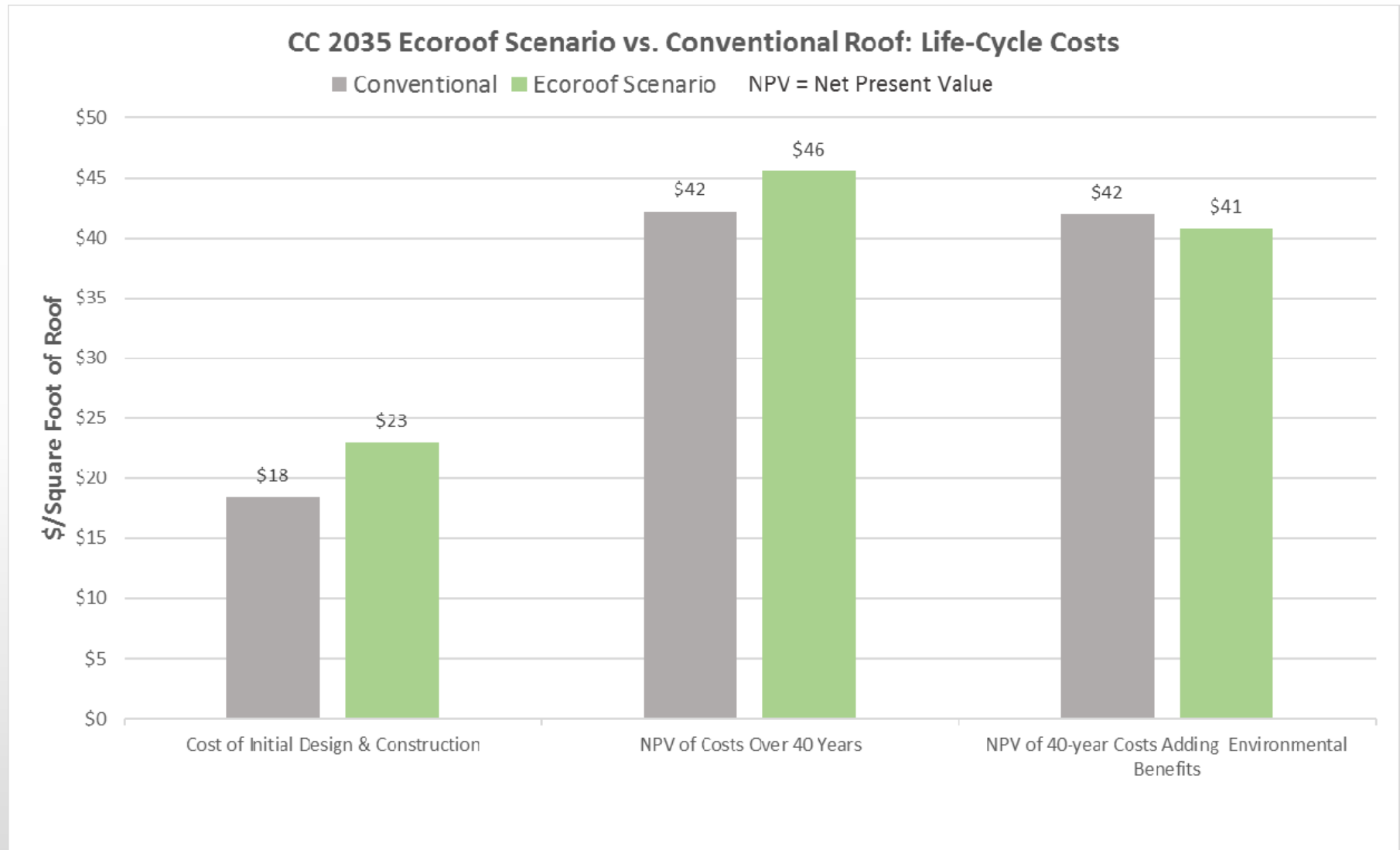


Cost Impacts of Ecoroofs

- Costs are more initially but nearly same over 40 years
- There is a wide range of cost: functional vs functional + attractive
- CC2035 standard comes close to meeting all stormwater requirements



Life Cycle Costs – 40 Year Net Present Value



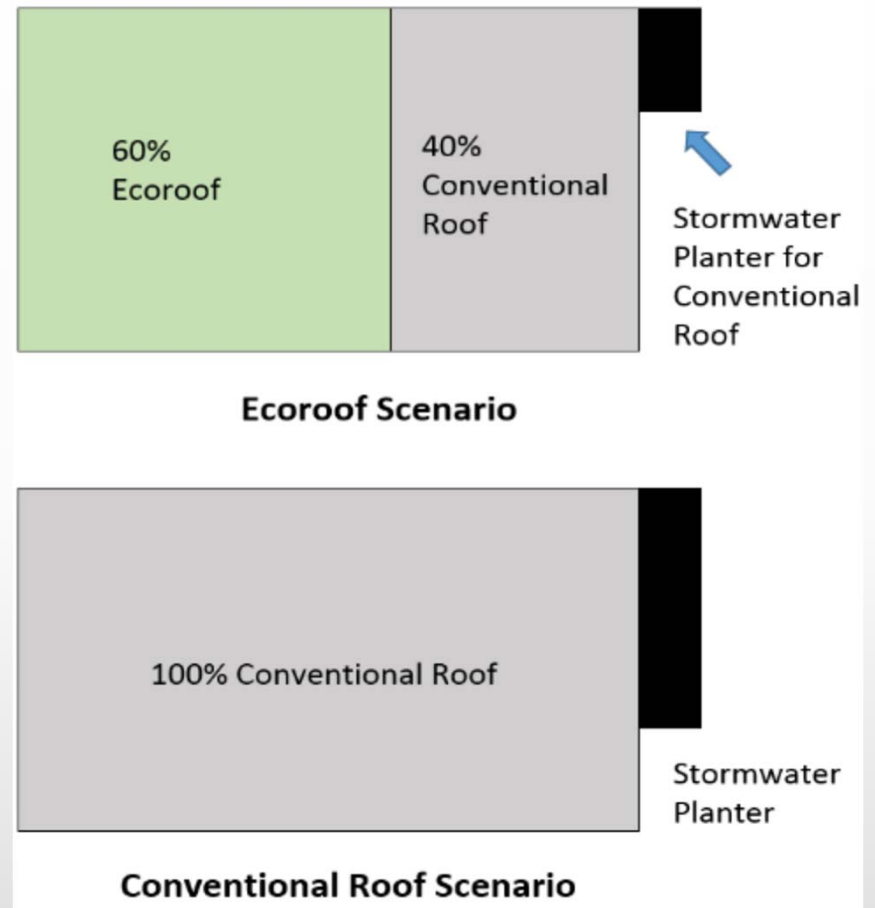
Cost Analysis Assumptions

A membrane is included in both scenarios.

Asset life:

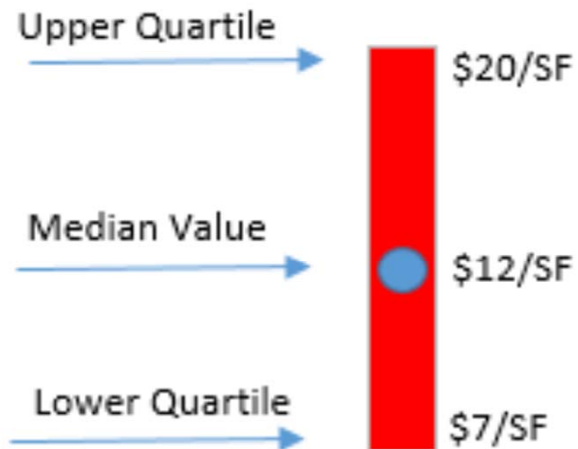
- Conventional roof = 20 yrs
- Ecoroof = 40 yrs
- Stormwater planter = 30 yrs

Costs - Design, construction, maintenance, replacement



Variability in Ecoroof Cost and Quality

Variability in Ecoroof Unit Construction Costs - BES Ecoroof Incentive Program, '08-'14



Cost data for the middle 50% of applicable incentive program projects (36 projects); Ecometrix report, 2016 \$.

