

# Discussion of Priority Environmental Strategies for 2016-2019

City Council  
February 1, 2016



# 2016-2019 Priority Strategies

- Adopt Living Building Challenge Ordinance and consider Petal Recognition
- Examine feasibility of District Energy
- Conduct Solarize campaign



# Living Building Challenge Ordinance

Net Zero: When the total amount of energy and/or water used by the building on an annual basis is roughly equal to the amount of renewable energy generated or water captured/reused on the site





**PLACE** | Restoring a healthy interrelationship with nature



**WATER** | Creating developments that operate within the water balance of a given place and climate



**ENERGY** | Relying only on current solar income

## LIVING BUILDING CHALLENGE

Seven Petals to Certification



**HEALTH & HAPPINESS** | Creating environments that optimize physical and psychological health and well being



**MATERIALS** | Endorsing products that are safe for all species throughout time



**EQUITY** | Supporting a just, equitable world



**BEAUTY** | Celebrating design that uplifts the human spirit

# Petal Recognition

## 7 Petals, 20 Imperatives

1. Place
2. Water
3. Energy
4. Health & Happiness
5. Materials
6. Equity
7. Beauty

# Update

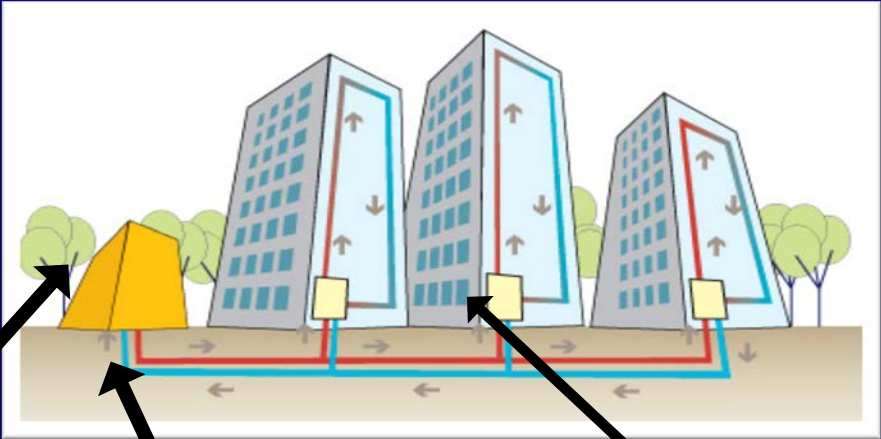
- ILFI will give presentation to Planning Commission on February 18
- Commission may consider potential regulations late spring/early summer
- ***Would Council like additional information on the program in advance of a recommendation from the Commission?***



# District Energy



**CENTRAL PLANT**  
Plant on roof of building



**DISTRIBUTION PIPING**  
4 pipe system (heating & cooling)



**BUILDING CONNECTION**  
Heat Exchanger





# District Energy Benefits

## Community Benefits:

1. Increased energy efficiency
2. Reduced Greenhouse Gas emissions
3. Reduced cost of energy service
4. Improved resiliency and risk mitigation
5. Partnership and investment opportunity

## Building Benefits:

1. Reduced energy costs and cost stability
2. Increased cost effectiveness
3. Enhanced energy efficiency and greener energy
4. Reduced building O&M responsibility and cost
5. Future technology benefits



# Determining Potential Value of DE

1. SCALE – the ultimate scale of the system.
2. Density and load mix – the density and mix of loads (the higher density and greater use mix will typically results in greater ratio of benefits to costs).
3. Development rate and phasing – adequate development demand to justify capital investments.
4. Load security – ensuring load certainty through agreements, requirements and/or incentives for customers to connect and consume.





# Furthering District Energy In Shoreline

## 185<sup>th</sup> St. Station District Energy Opportunity

Step 1 District Energy Feasibility Evaluation

Step 2 Preliminary Go/No Go Decision

Step 3 3<sup>rd</sup> Party District Energy Provider Selection

Step 4 District Energy Evaluation Refinement & Agreements

Step 5 Final Go/No Go Decision



# District Energy Feasibility Examples

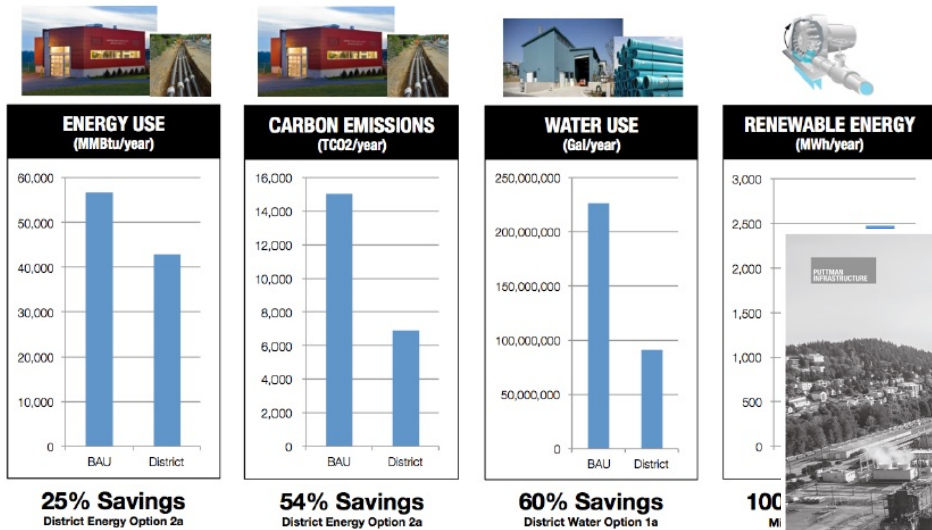
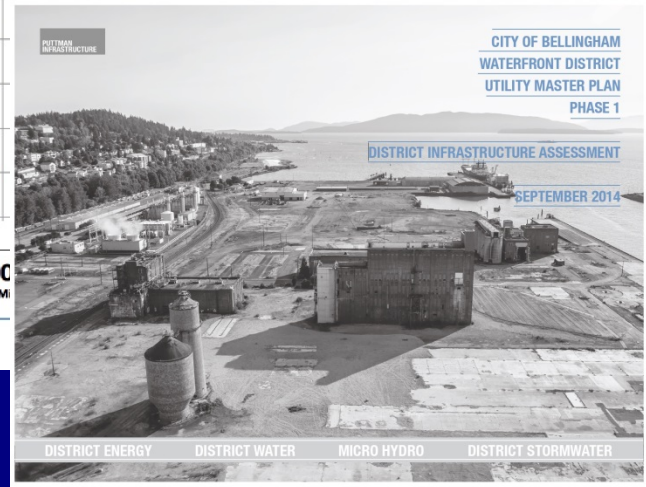
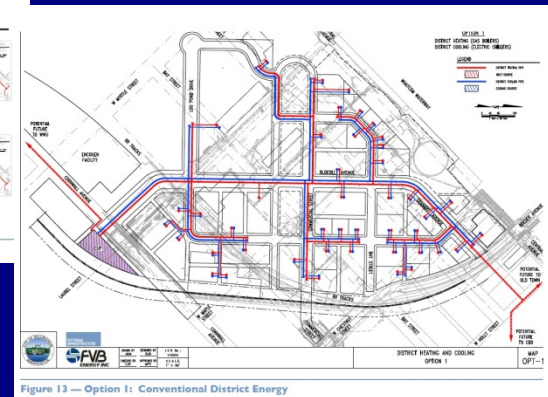
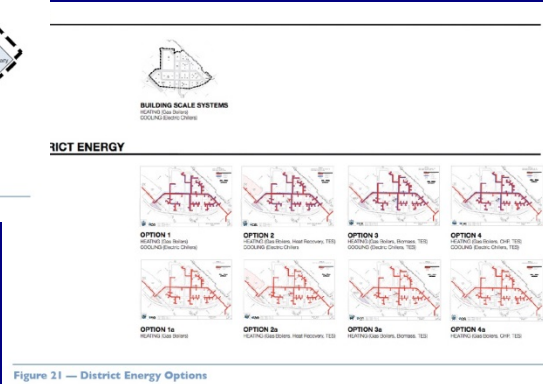
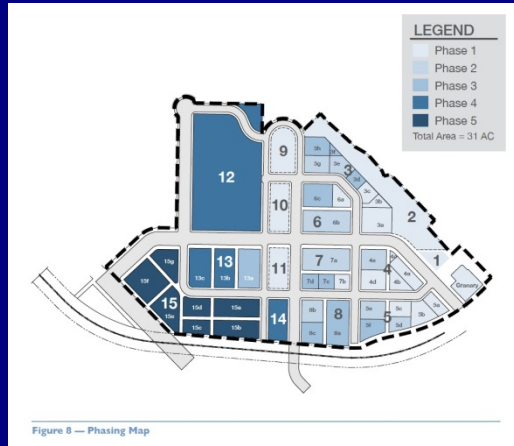


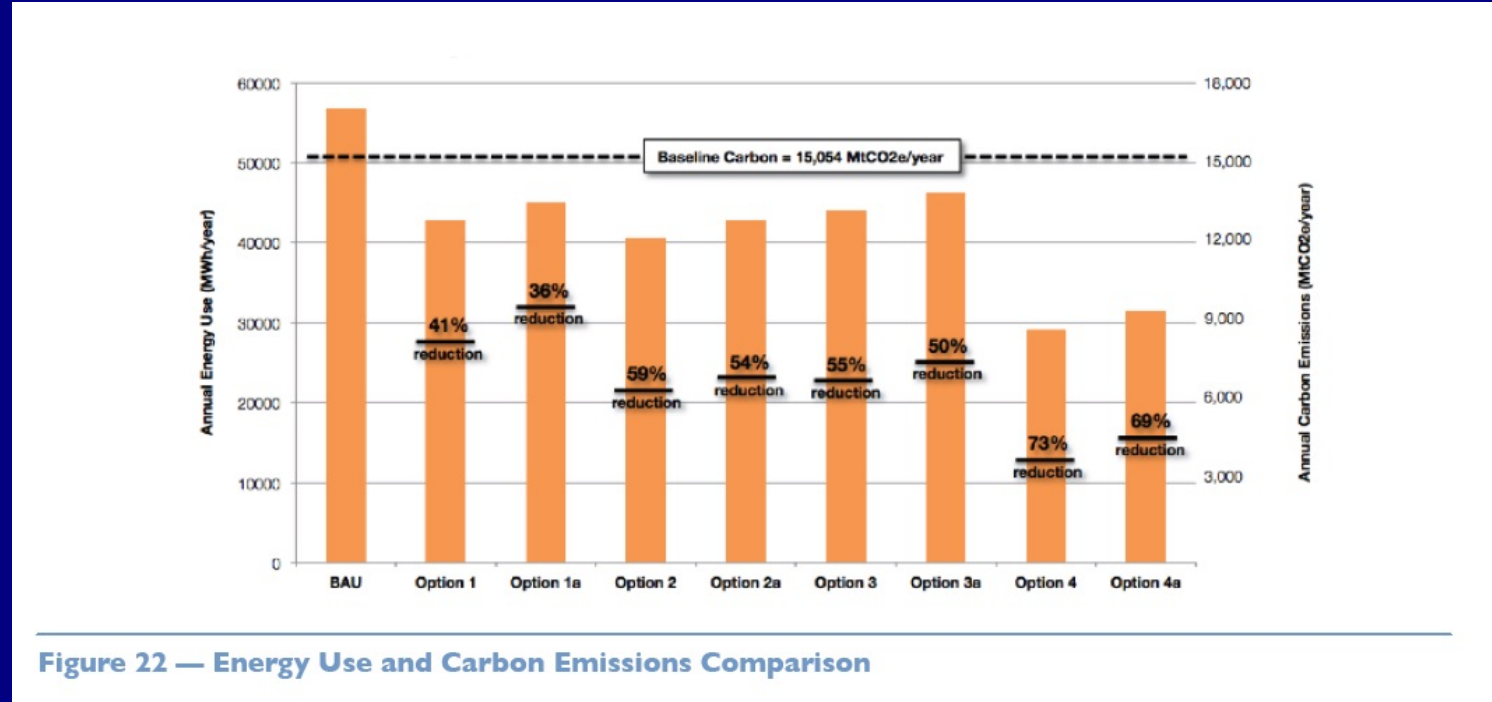
Figure 2 — Summary of District Infrastructure Benefits



# District Energy Feasibility Examples



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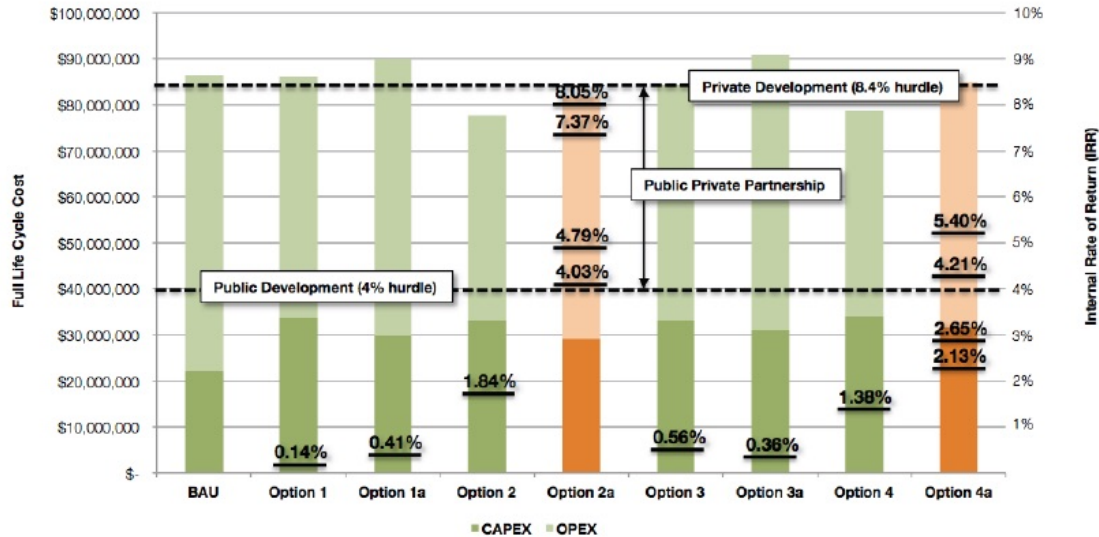


Figure 23 — Life Cycle Costs and Investment Returns Comparison



# Questions for Discussion

- *What questions does Council have about DE and determining feasibility?*



# Solarize Campaign

## Options:

- Streamline Permitting
- Solar-ready
- Community Solar
- Household Challenge

## Partnership Opportunities:





# Streamlined Permitting



Planning & Community  
Development

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Shoreline, WA 98133-4905  
206-801-2500 [phone]  
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pod@shorelinewa.gov  
www.shorelinewa.gov

## Solar Photovoltaic Roof-Top Mounted Panels

**Did you know**, that every hour, enough sunshine strikes Earth's surface to satisfy global energy consumption for an entire year? Our area receives as much sun as Germany, the world leader in solar power. Photovoltaic panels use the power of the sun to generate electricity.



### Can it work for you?

If your house has a south facing roof or wall and not much shade from trees or neighboring buildings, you may be able to use the power of the sun for electricity. This can make a big impact on your energy bill, especially if you add up the savings over the life of the system. If you don't have shading issues, you can even make solar work on an east or west facing roof.

Photovoltaic (PV) panels are used to convert solar power to electricity.



**Permit Processing Hours:**  
Monday to Friday  
8:00 a.m. to 4:00 p.m.

**Business Hours:**  
Monday to Friday  
8:00 a.m. to 5:00 p.m.

- State waived Building Permit requirement (still requires Electrical Permit from L&I) for systems meeting common specifications
- City created development handouts to explain process
- No additional action required at this time

# Solar-Ready

Mandates that new construction be designed to accommodate solar installation in the future by

- Incorporating conduit
- Reserving roof space (preferably south-facing) free of obstacles (vent stacks, etc.)
- Leaving open pathway for firefighters



## EXAMPLES OF SOLAR ARRAY FIREFIGHTER PATHWAYS

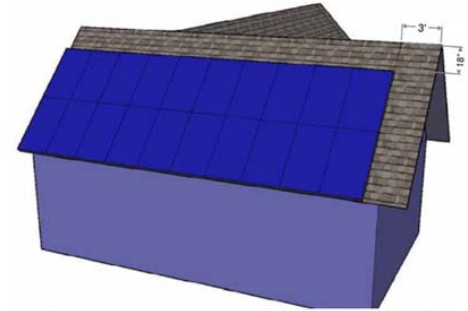


Figure 1 – Cross Gable Roof (The 3' vertical pathway shown does not apply if exception #5 under "Firefighter Access" is met)

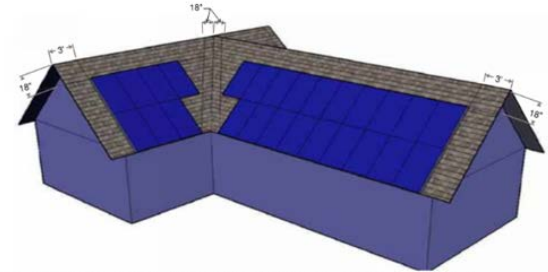


Figure 2 – Cross Gable with Valley (Neither of the 3' vertical pathways shown, nor the 18" vertical pathways on each side of the valley apply if exception #5 under "Firefighter Access" is met)

# Community Solar



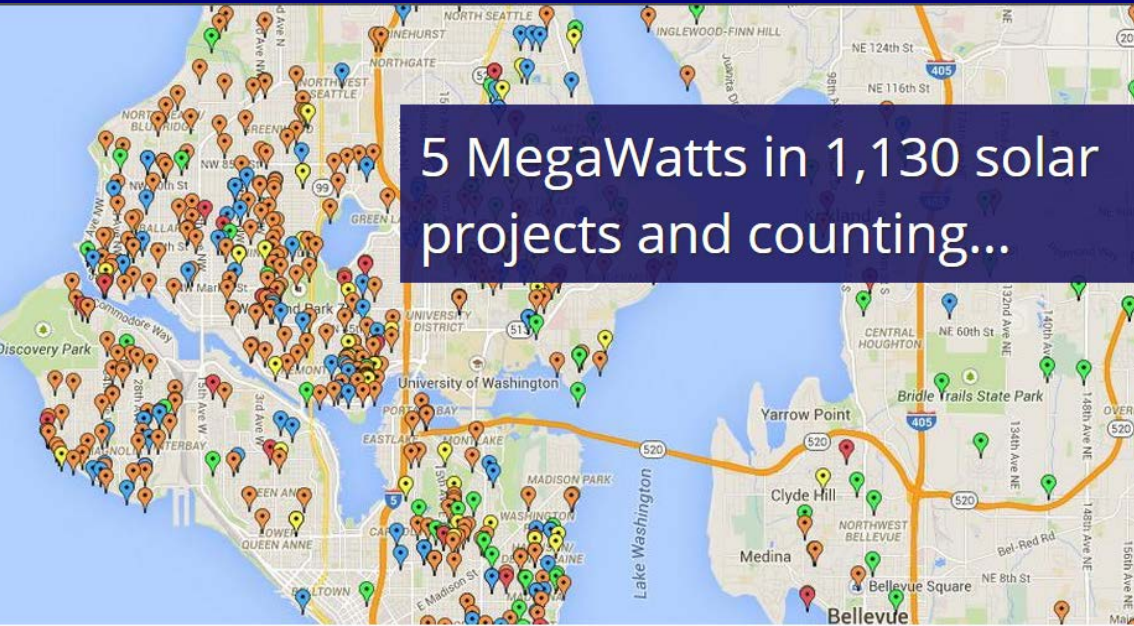
**Winthrop – Jun 2011 – 23kw**



**Bainbridge – Aug 2012 – 71kw**



# Household Challenge



5 MegaWatts in 1,130 solar projects and counting...

**solarize mercer island**

We think your house could be a great candidate to go solar, based on sun exposure and roof space!

With current state and federal discounts and incentives, your system can pay off in just 5-9 years.

Come to a public workshop for more information, and qualify for a **FREE** site assessment.

Next workshop dates are:

- Sept 20th, 10-11:30am (at the Community Center)
- Oct 15th, Noon-1pm (webinar)

Help us reach our campaign goal of 80 new projects, and we'll give a free installation for the community!

**Don't miss out on this City program to help you go solar...**

[www.mercergov.org/solarpower](http://www.mercergov.org/solarpower)

**We Think You've Got Potential!**

Do you want to make power from the sun and get paid for it? Your roof, boathouse, or garage looks just right for solar.

Learn more about this new City-sponsored program...

XXXXXXXX, MR & MRS  
8474 85TH AVE SE  
MERCER ISLAND WA, 98040

**Get the details at [www.mercergov.org/solarpower](http://www.mercergov.org/solarpower)**



# Questions for Discussion

- *What questions does Council have about Solarize?*
- *Does Council wish to pursue household challenge, community solar, and/or “solar-ready” regulations?*



# For More Information

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