

Not (shovel) ready for prime time?

105th Annual Conference & Trade Show
International District Energy Association
Seattle, WA
June 10, 2014

Paul Wetherbee

Director, Wind and Hydro Resources
Puget Sound Energy

Pete Sullivan


Senior Urban Planner
City of Redmond, WA

District Energy in Overlake (?)

YOU'RE INVITED

August 22, 2011
11:00 am to 1:30 pm
Redmond City Hall
Council Chambers

**Overlake Village
Eco-District/
District Energy Forum**



Revitalizing Overlake Village, Redmond's
Other Urban Center—Focus on District Energy
Potential/Eco-District Planning

Climate Action Strategy

Climate Change:

Include specific provisions to reduce greenhouse gas emissions; include provisions addressing adaptation to the effects of climate change (MPP-En-16, 20 through 25. MPP-DP-45, MPP-T-5 through 7; MPP-PS-1, 12, 13; RCW 80.80.020)

Excerpt from PSRC checklist for Comp Plan periodic update

Climate Action Strategy

The screenshot displays the Impact Redmond website with a teal and orange color scheme. At the top right, there are links for 'Log in' and 'Sign Up'. The main navigation bar includes 'News', 'Community', 'Case Studies', 'Programs', 'Pledge Card', 'Calculator', and 'Buy Local'. A search bar is located on the right side of the navigation bar. The main content area features a large image of a heron in a pond with the text 'welcome.' and the City of Redmond logo. To the right of the main image are three interactive sections: 'Take the Pledge' with a 'Get Started' button, 'Carbon Calculator' with a 'Get Started' button, and 'Buy Local' with a 'Browse Directory' button. Below the main image is a section titled 'Recent Case Studies That Have Impacted Redmond:' listing three studies with dates and icons. At the bottom, there are two sections: 'News From the Blog' and 'Community Discussions', each listing recent posts with dates and titles. The footer contains copyright information and a list of links: 'FAQ', 'Contact Us', 'About', 'Legal', 'Privacy', and 'Sitemap'.

Log in | Sign Up

IMPACT redmond

Search

News Community Case Studies Programs Pledge Card Calculator Buy Local

welcome.

City of Redmond

Take the Pledge
Make a positive impact and take the pledge today!
Get Started

Carbon Calculator
How big is your carbon footprint? Find out now.
Get Started

Buy Local
Think Local. Act Local. Save on gas, reduce traffic, and improve the environment when you shop nearby.
Browse Directory

Recent Case Studies That Have Impacted Redmond:

Date	Icon	Title
Dec 1, 2011	Elephant	Education Through Photography
May 24, 2012	Car	Biking Mom Leaves Car Behind
Sep 14, 2011	Box	Making a Difference One Box at a Time

News From the Blog

Date	Title
Sep 30, 2013	Kudos to Microsoft
Sep 23, 2013	PestWise
Sep 19, 2013	Puget Sound Starts Here
Sep 30, 2013	In the Market for a Used Car?

Community Discussions

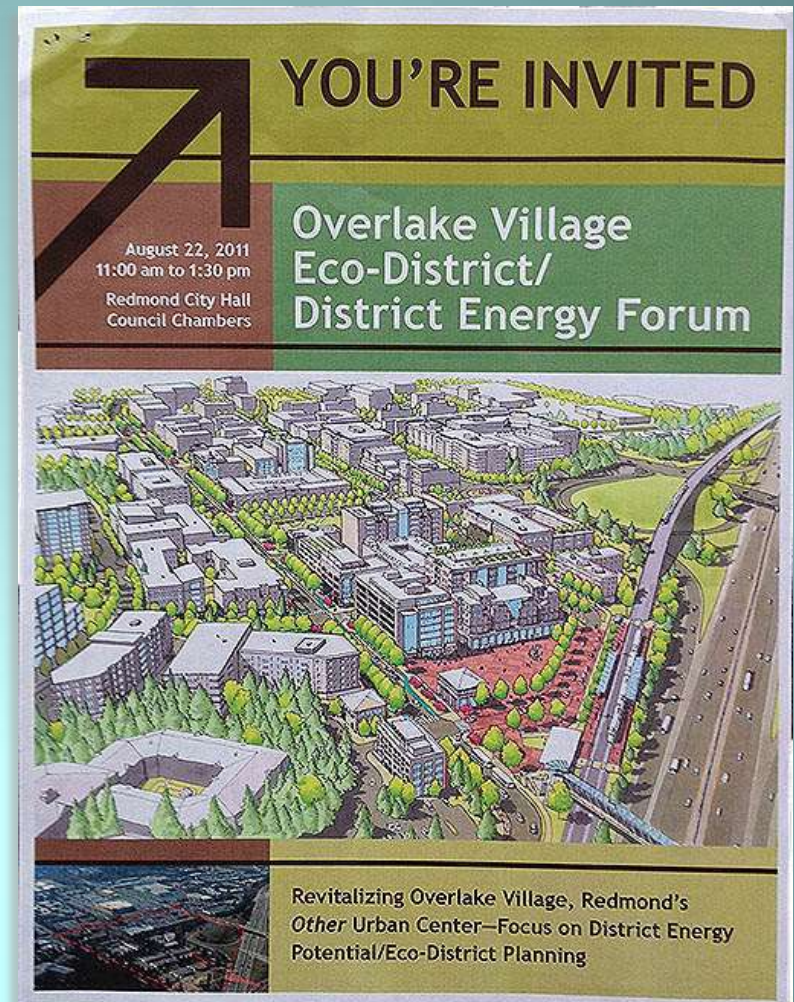
Date	Title
Jan 22, 2013	An Early Spring??
Dec 17, 2012	Re: Climate Change Grief in the Suburbs
Oct 1, 2012	Climate Change Grief in the Suburbs
Jun 7, 2012	Which Cities are Most Prepped for Climate Change

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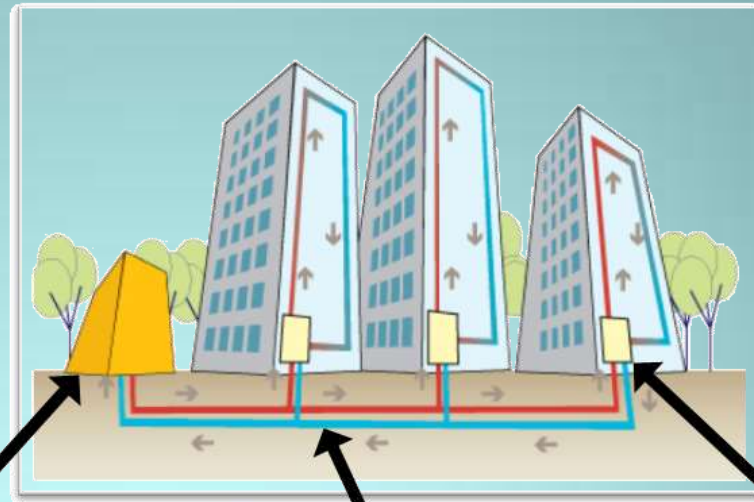
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www.impactredmond.com

Idea: How about district energy?



What is district energy?



CENTRAL PLANT
Plant on roof of building

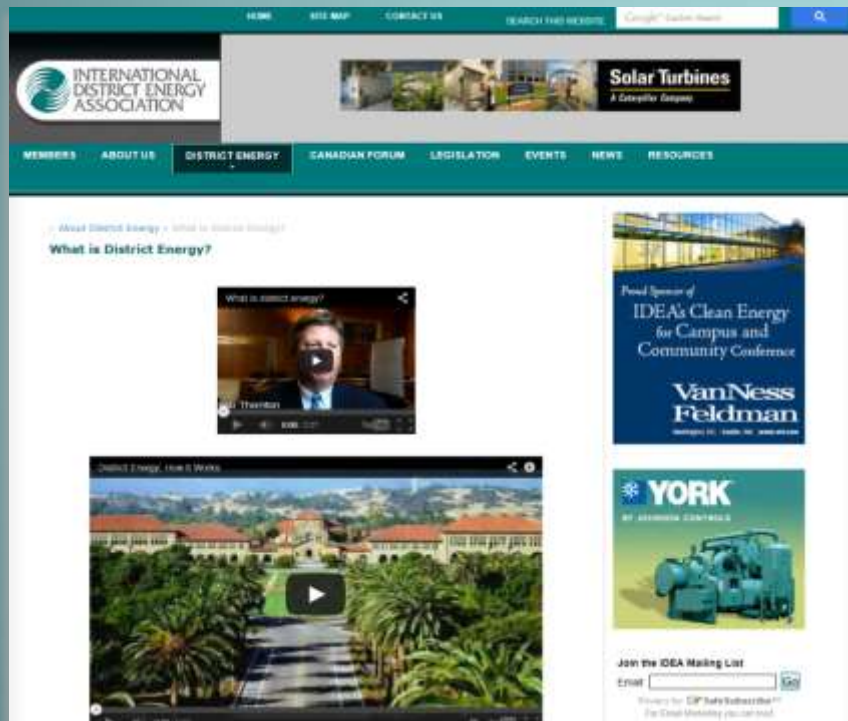


DISTRIBUTION PIPING
4 pipe system (heating & cooling)



BUILDING CONNECTION
Heat Exchanger

Wait, we need to know more...
a *lot* more.

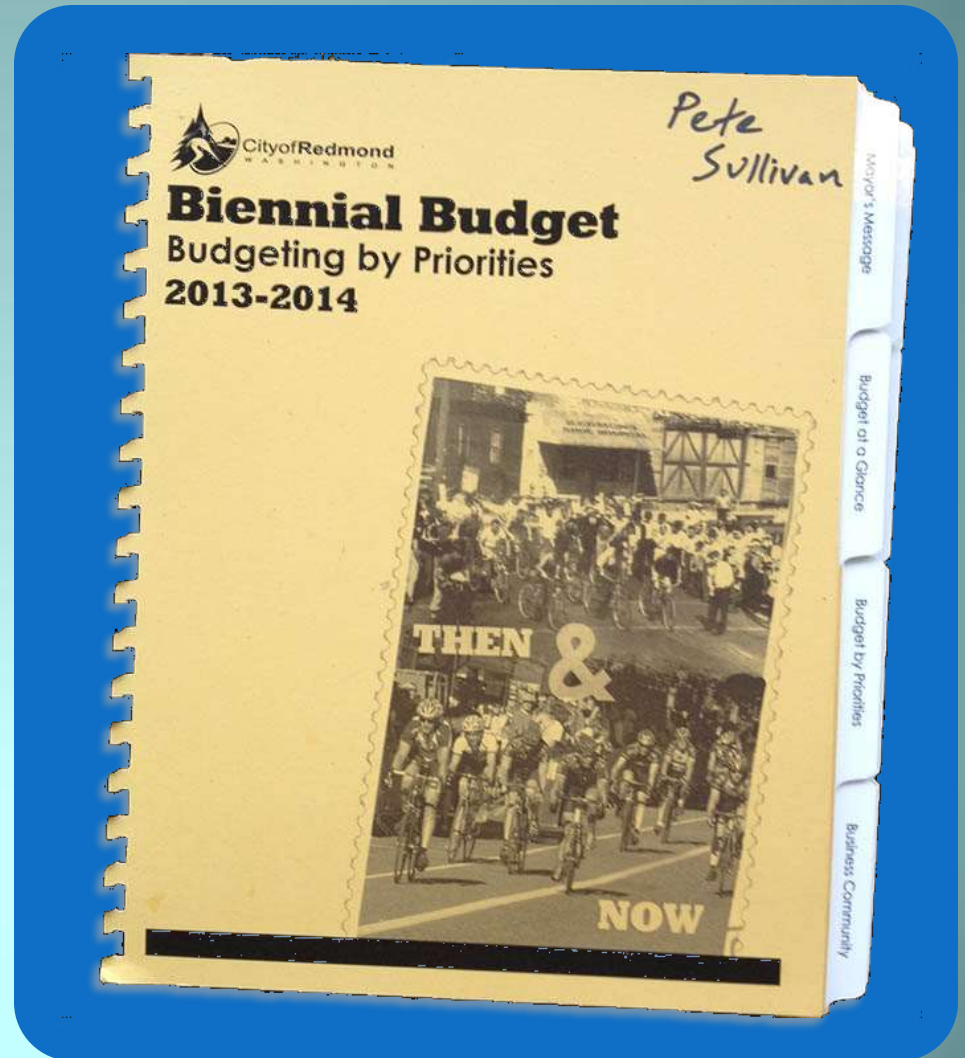


www.districtenergy.org

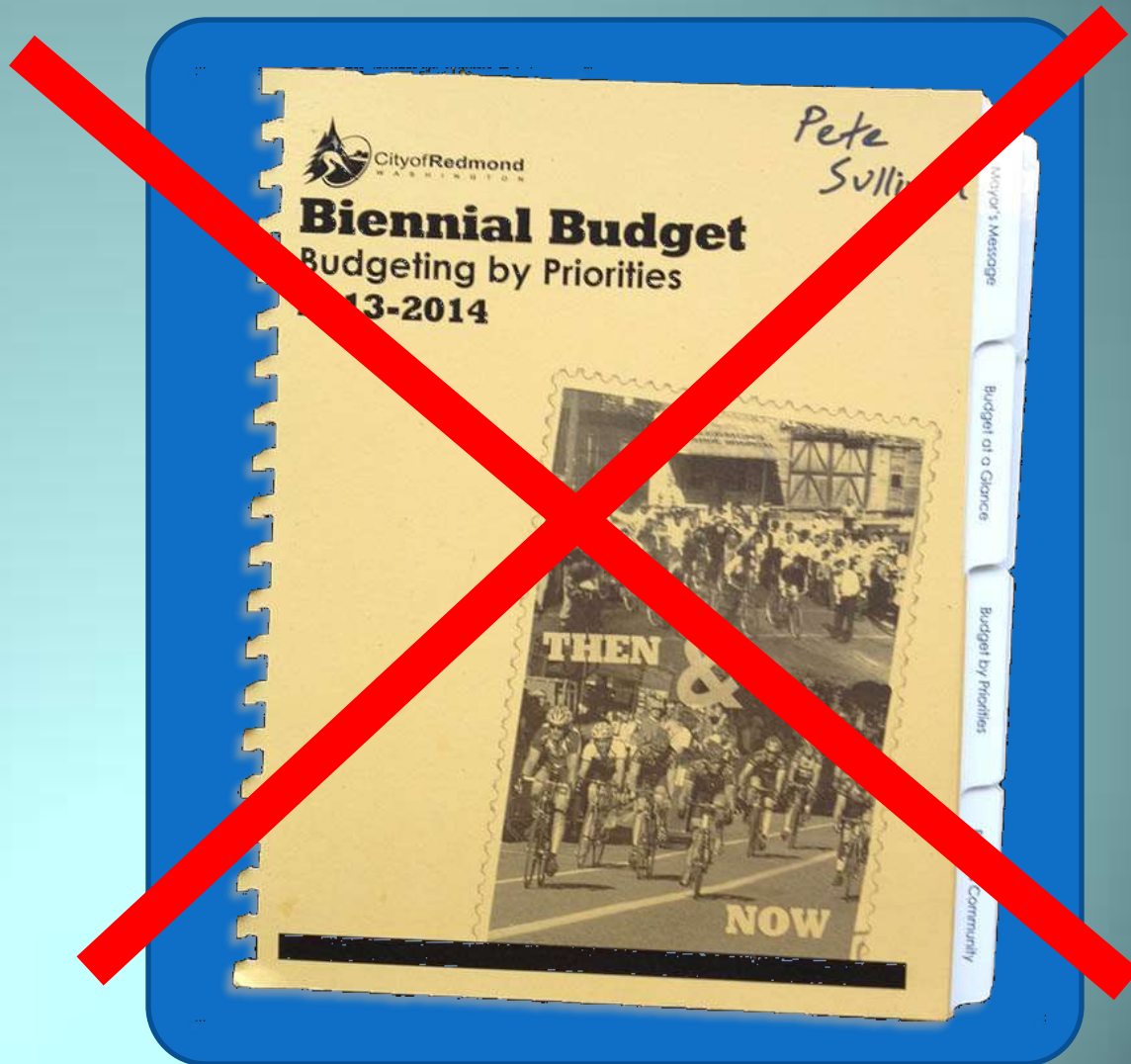


www.ecodistricts.org

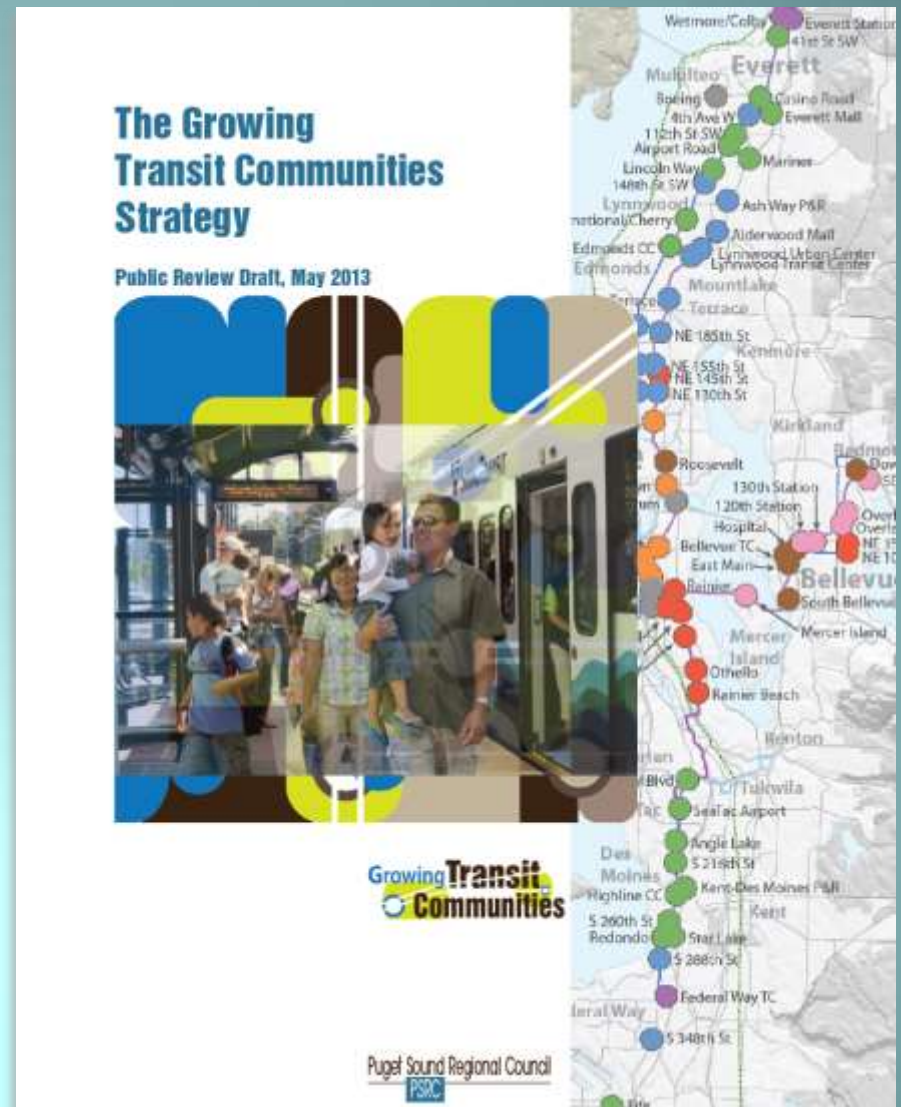
Sounds great, let's study it!



Without funding!



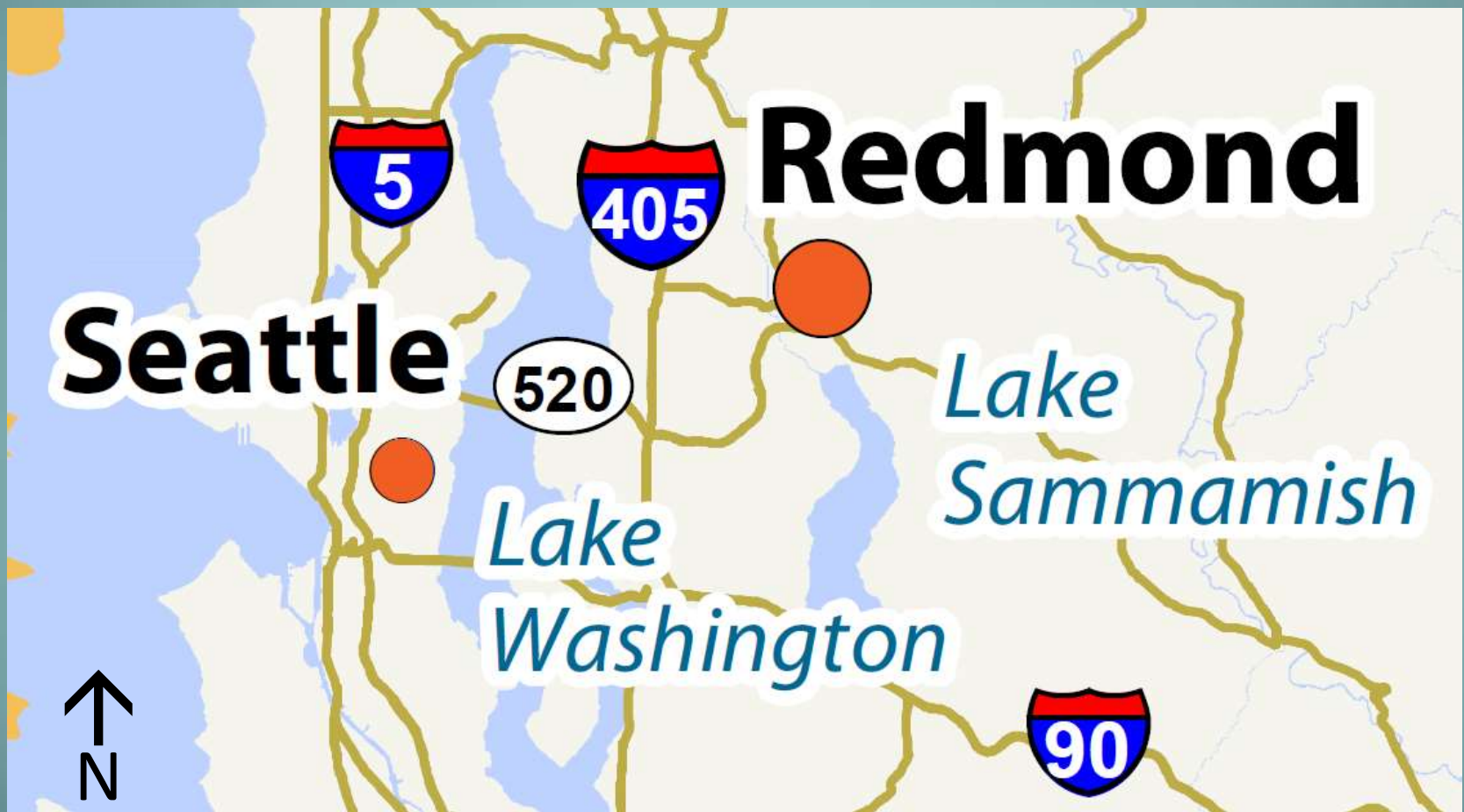
Planning grants in a
shovel-ready world...?



Central Puget Sound region



Seattle → Greater Eastside → Redmond, WA



Overlake Village

vision



and

implementation



160 acres

+ 5000 people & jobs by 2030

Central plant examples



SOUTH FALSE CREEK
Vancouver, BC



DOCKSIDE GREEN
Victoria, BC



REGENT PARK
Toronto, ON



THE BREWERY BLOCKS
Portland, OR

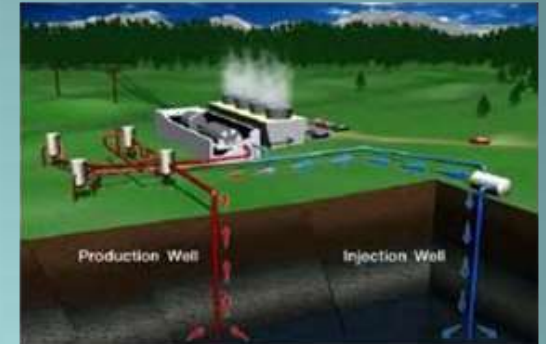


THE ROUND
Beaverton, OR



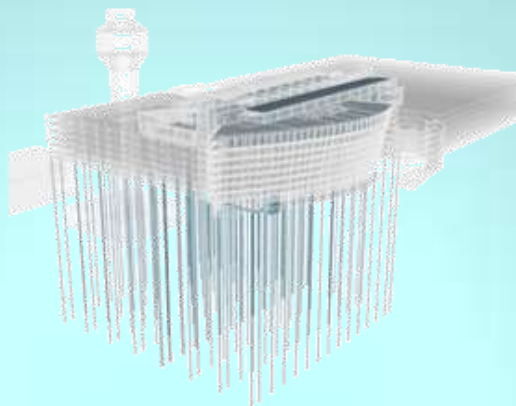
Hartford Central School District
Hartford, NY

Geothermal too?



OPEN LOOP SYSTEMS

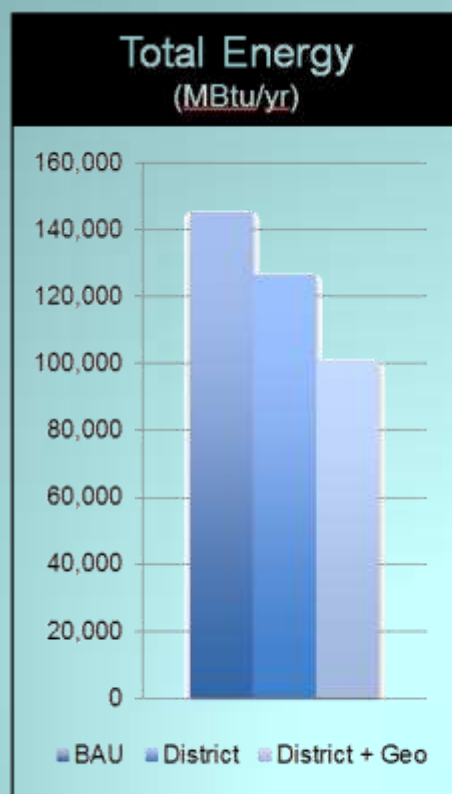
Production well and injections well(s). Groundwater withdrawn and re-injected.



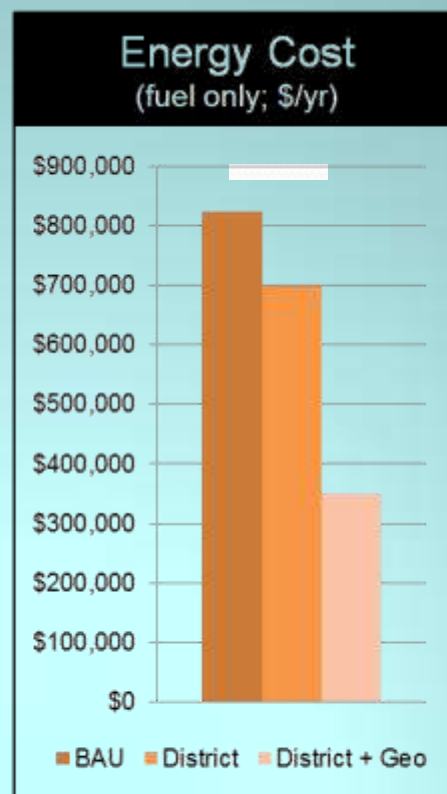
CLOSED LOOP SYSTEMS

Multiple "wells" but no groundwater withdrawn.

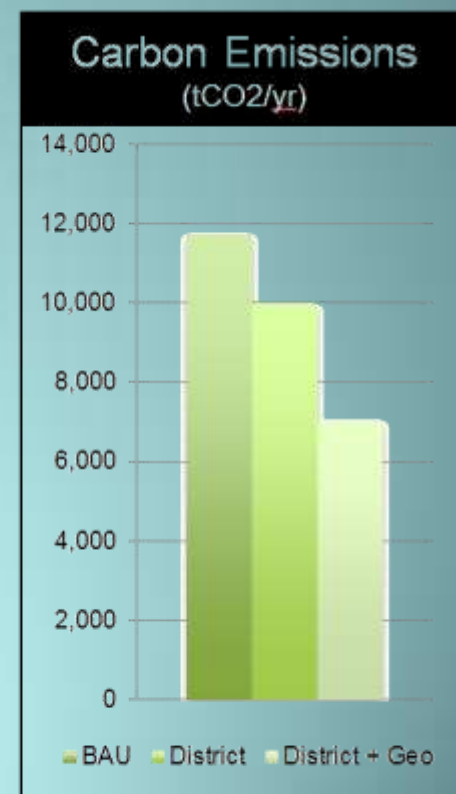
Initial findings



10-30% Savings



10-50% Savings



15-40% Savings

Ownership models

PUBLIC	PRIVATE	PUBLIC PRIVATE	COOPERATIVE
<ul style="list-style-type: none">• Ownership = Public• Funding = Public• Design/Build & Regulatory = Public• Operations = Public• Customer Relationships = Public	<ul style="list-style-type: none">• Ownership = Private• Funding = Private• Design/Build & Regulatory = Private• Operations = Private• Customer Relationships = Private	<ul style="list-style-type: none">• Ownership = Pr3• Funding = P3• Design/Build & Regulatory = P3• Operations = P3• Customer Relationships = P3	<ul style="list-style-type: none">• Ownership = Properties• Funding = Properties• Design/Build & Regulatory = Properties• Operations = Properties• Customer Relationships = Properties

Need more specifics...

Technology

Timing

Investment

Impact to private developers

Location

Incentives

What next?

City Council direction

Partnerships?

Continue learning and exploring

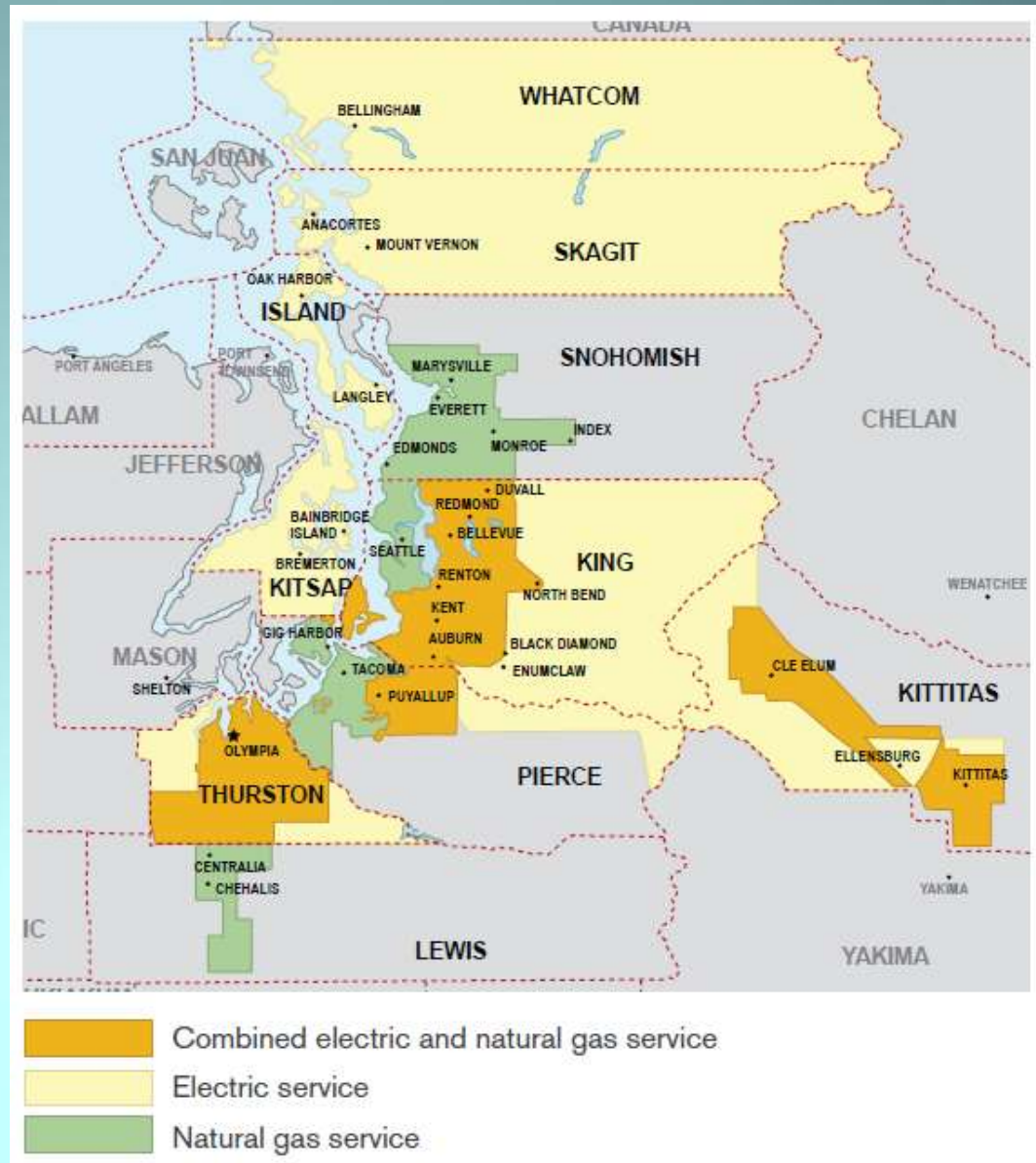
Take-away

Preparing for growth and investment? Consider district energy

Follow all leads

Like running a marathon

Service area - Puget Sound Energy



Business Opportunity & Benefit

- Strengthens PSE's relationship with the City of Redmond as its energy partner.
- Provides potential capacity deferral.
- Provides a cross-functional learning opportunity.
- Gains experience with new concepts.
- Better alignment with State Energy Strategy.
 - “The third emphasis area for the 2012 Energy Strategy focuses on ... **energy production using smaller, alternative energy resources instead of large utility-owned plants.**”

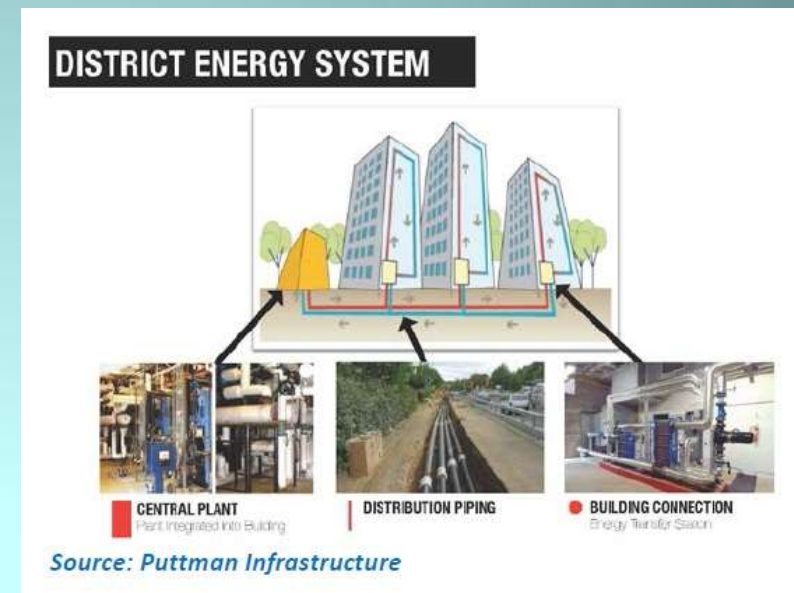
Potential load served
~ 2 aMW

Study Tasks & Timeline

1. Energy Use & Engineering Study
2. Technology Assessment
3. Utility Interconnection Analysis
4. Regulatory Review
5. Ownership Structures & Financing Methods Evaluation
6. Scenario Analyses & Report

Timeline:

Completion in December 2014



Study Team

- External consultants:
 - McKinstry
 - Sound Energy Investments
- Cross-functional team of key PSE contributors:



Name	Title
Laura Feinstein	Mgr Smart Grid Technology
Mark Lenssen	Supv Energy Mgmt Engineering
Ray Hisayasu	Consulting Engineer, System Planning
Bill Foster	Engineer, System Planning
Micah Haman	EES Program Manager
Duane Henderson	Mgr Gas System Integrity
Jeff Kensok	Sr. Engineer, Smart Grid Technology
Patrick Leslie	Emerging Tech Program Mgr
Tom Maclean	Mgr Customer Renewable Energy Prog
Ben Farrow	Mgr Natural Gas & Electric Development
Eric Englert	Mgr Regulatory Initiatives & Tariffs
Jacoline Stewart	Major Accounts Executive

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Questions?

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