

Leveraging Public Spending for Greener Cities

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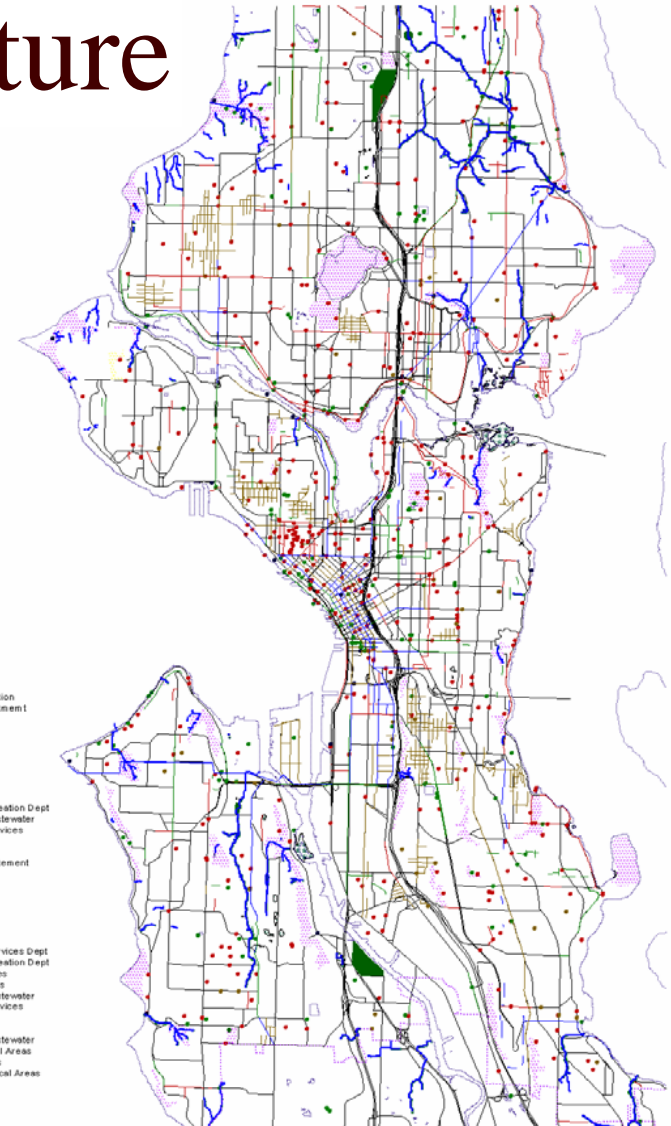
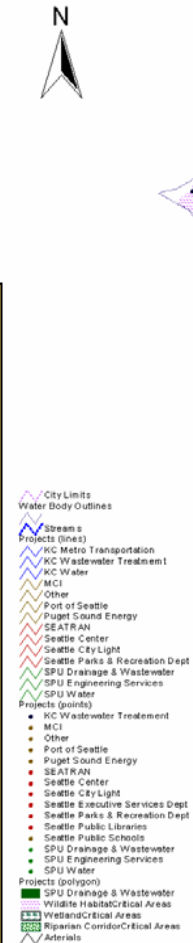
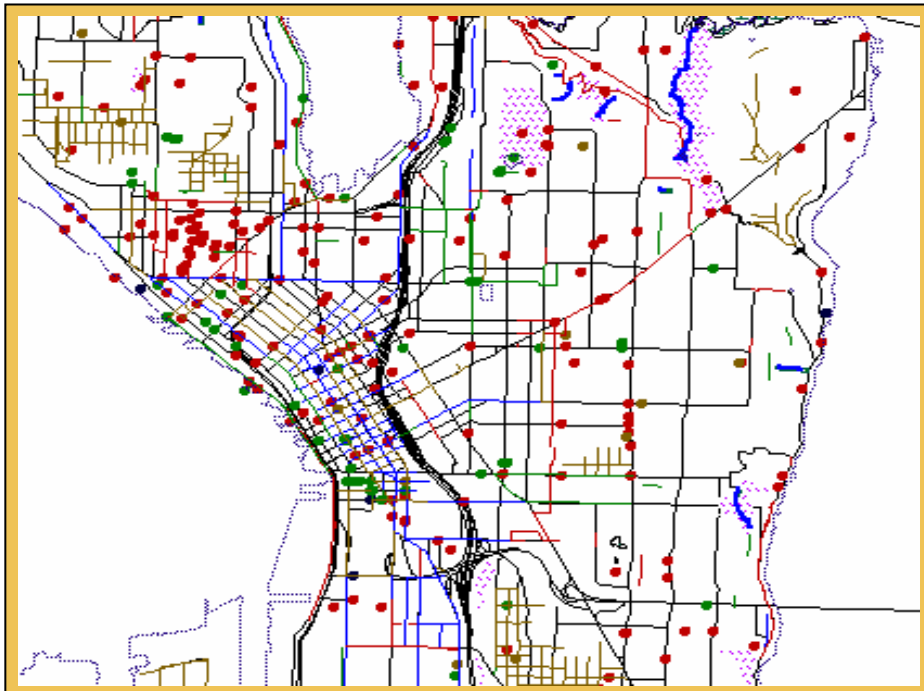
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Are we getting the results we want?



Sustainable infrastructure

- We spend much of \$650 million each year to maintain and improve it.

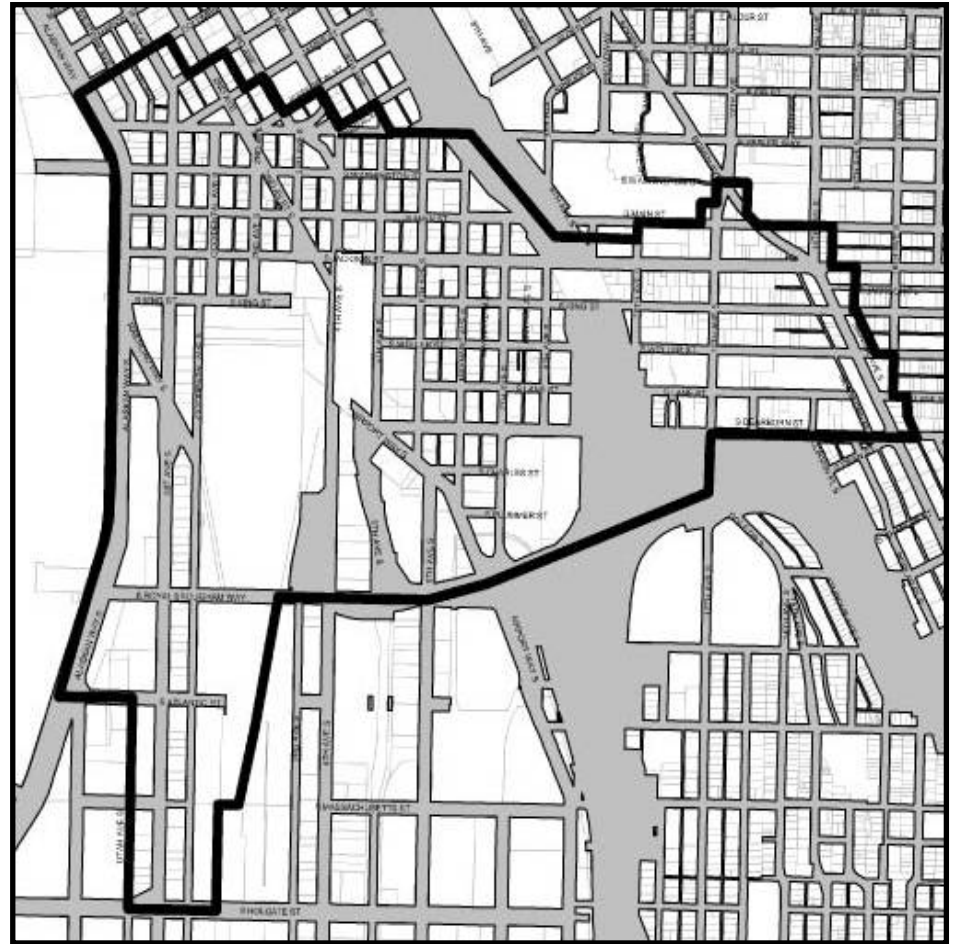


The idea: sustainable infrastructure

Manage all public urban lands as an integrated urban ecosystem that

- provides mobility
- open space
- recreation
- habitat
- aesthetic beauty.

Use asset management and triple bottom line accounting to compare alternatives





What are triple bottom line tools?

Range of feasible alternatives

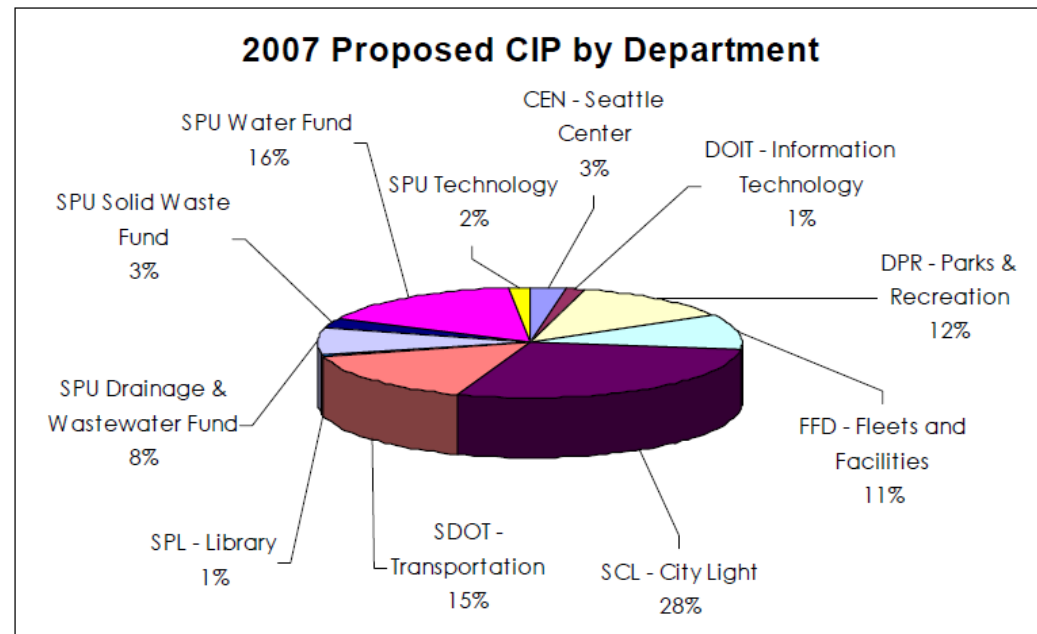
- ❑ Capital-intensive vs. operations and maintenance
- ❑ Centralized vs. decentralized
- ❑ Department-alone vs. collaboration
- ❑ Traditional vs. natural/green
- ❑ Supply enhancement vs. demand management
- ❑ City staff vs. contracted performance

Alternatives checklist

- ❑ Off-ramp: elimination of inferior alternative types and alternatives

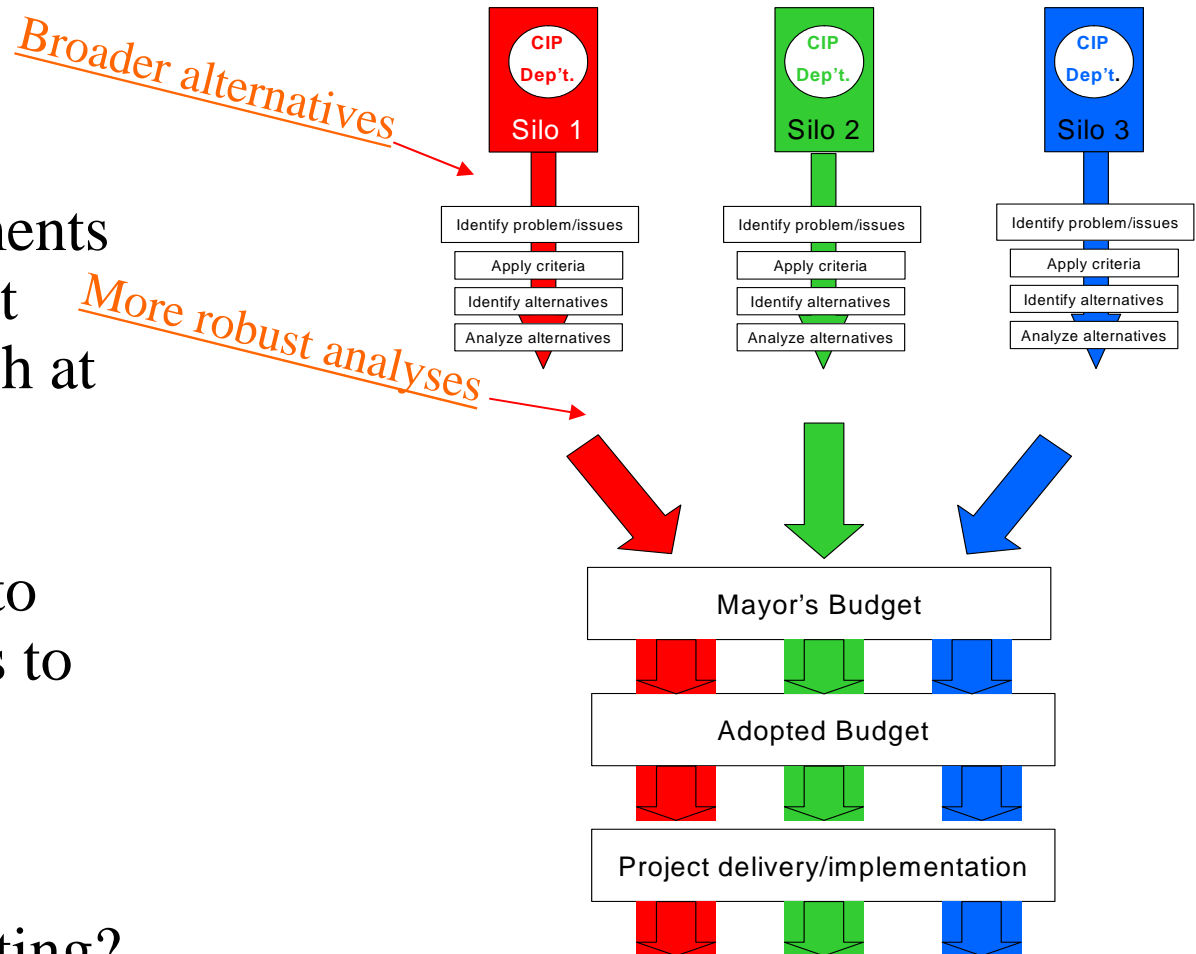
Sustainable infrastructure

- We tend to spend that money with a “silo” perspective because of tradition and funding restrictions



Sustainability + asset management + TBL

- Are we missing opportunities for sustainable investments because of we don't look broadly enough at alternatives?
- Can we apply asset management tools to sustainable projects to get more value per dollar spent?
- Can we use triple-bottom line accounting?



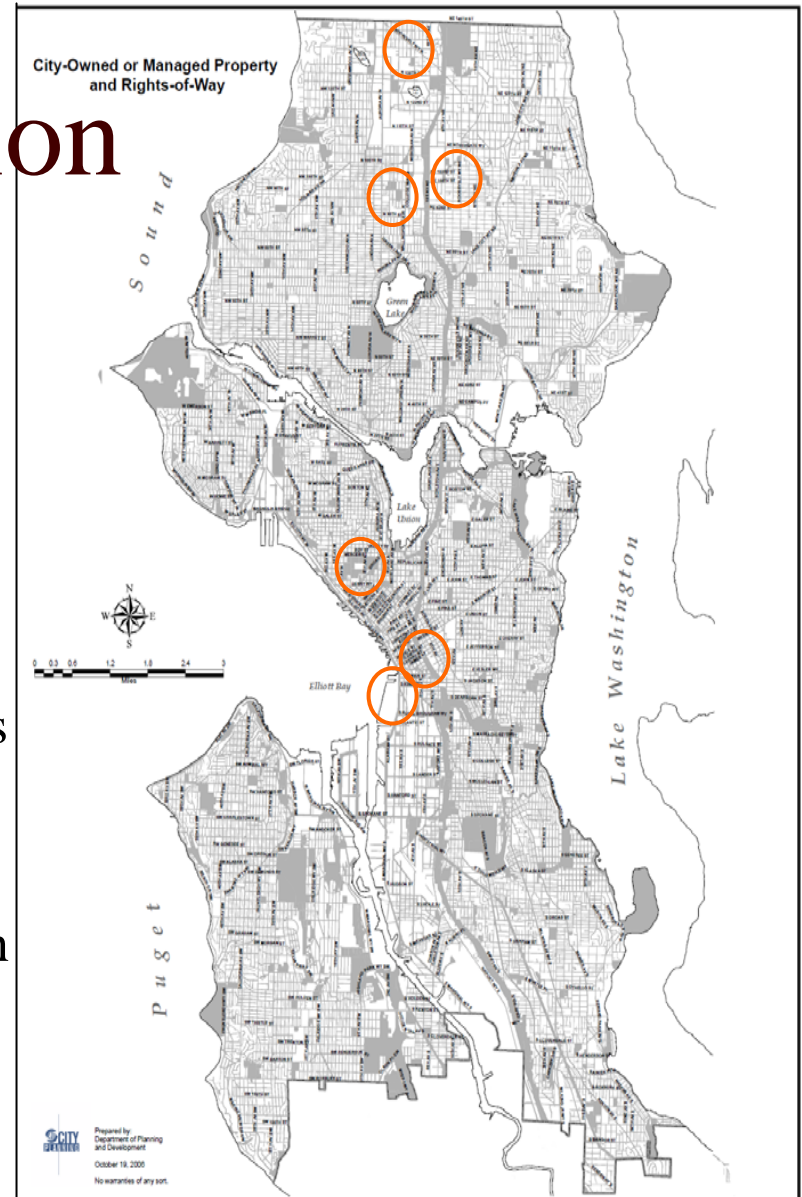
Test the ideas

- Pilot projects
- Process alternatives

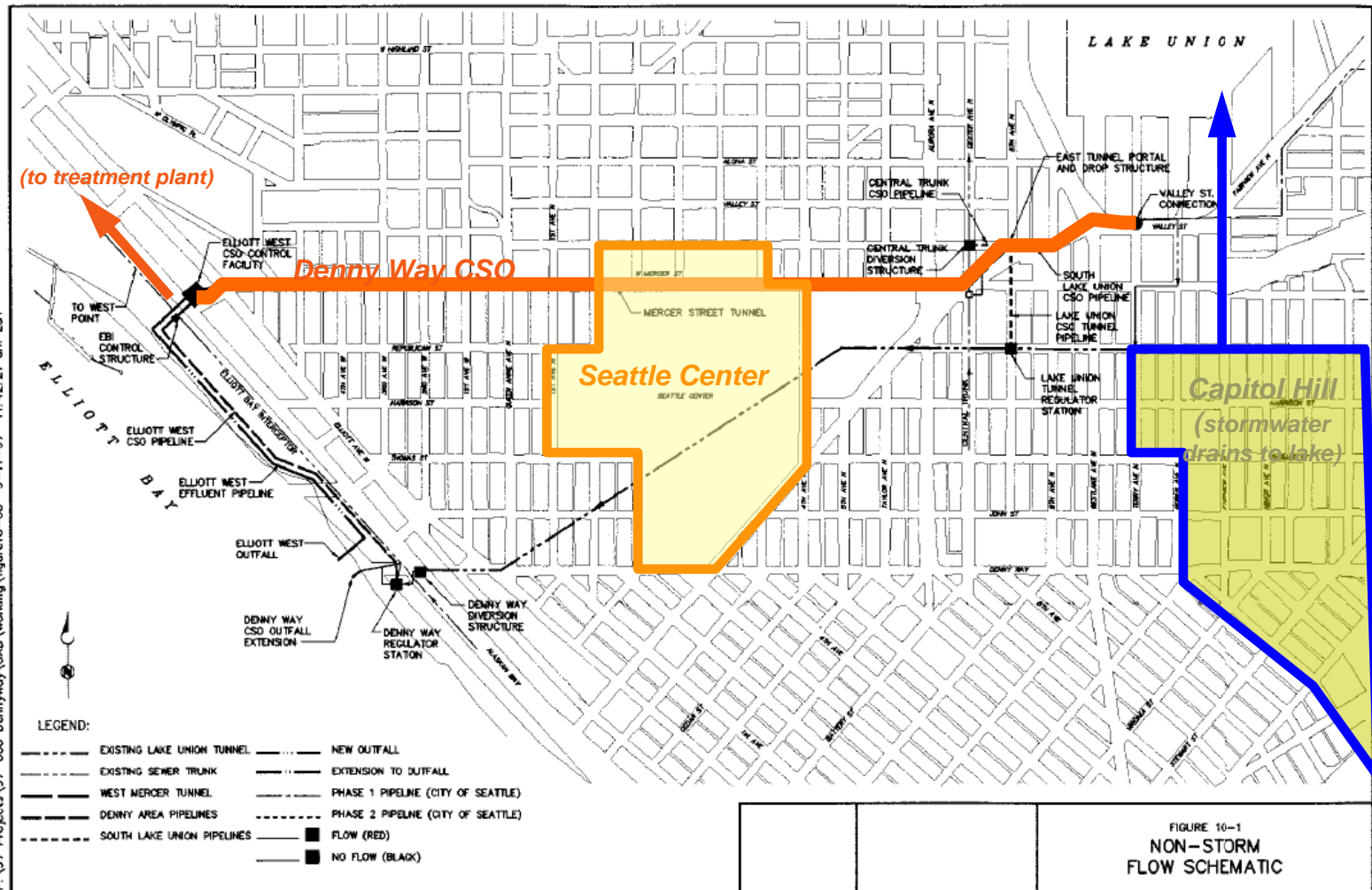


Projects for evaluation

1. Swap polluted stormwater for clean Seattle Center water
2. Compare energy conservation in a district with new demands for shore-to-ship electricity to protect air quality
3. Consider underground voids in historic Seattle for stormwater collection and reuse
4. Evaluate stormwater treatment facilities as a fundamental design element to a new city park
5. Re-imagine mobility strategies for a neighborhood with multi-family growth but no sidewalks
6. Re-purposing water supply reservoir surfaces for urban agriculture or other neighborhood needs

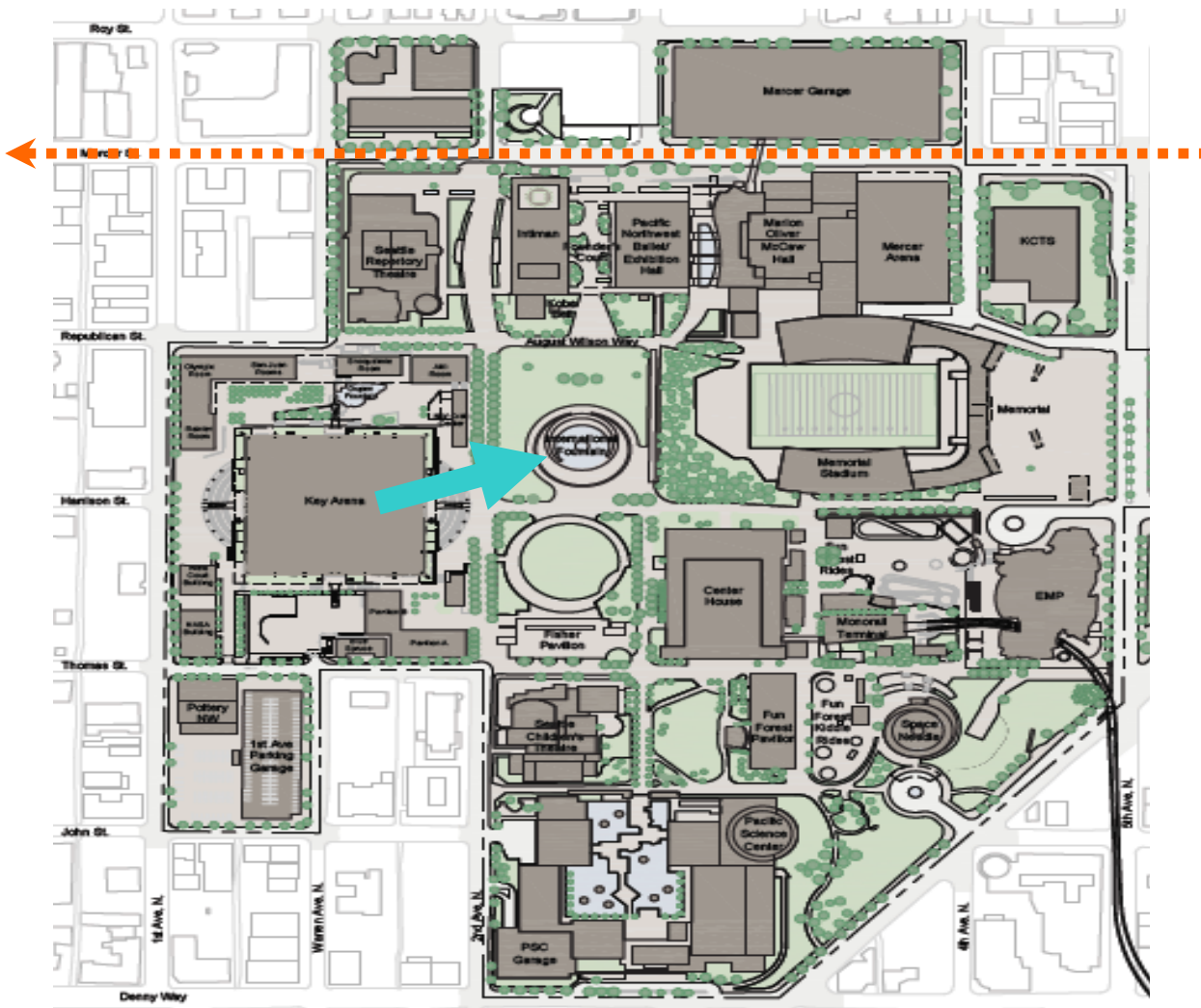


Seattle Center water swap



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Seattle Center water swap

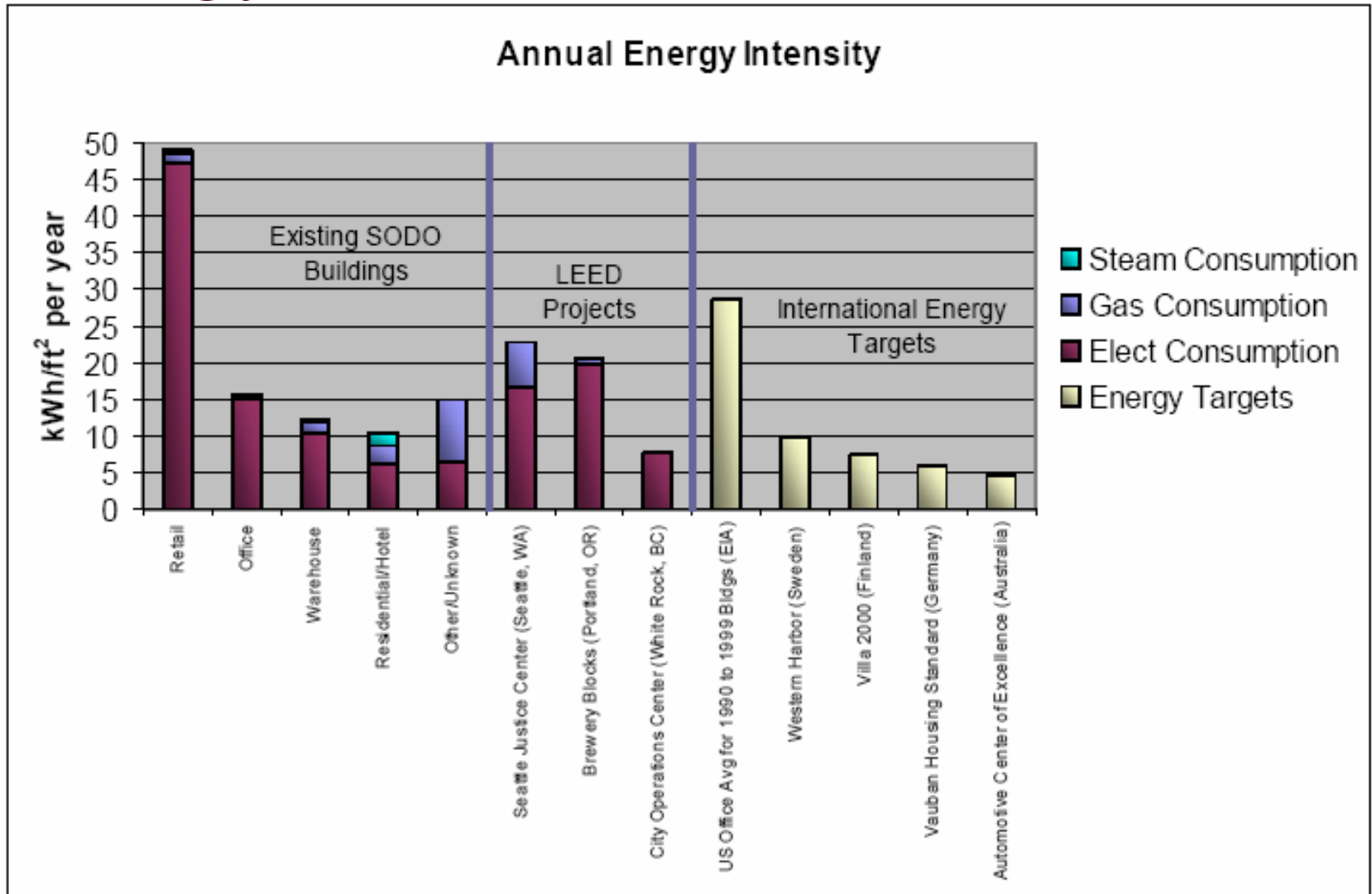


Shore to ship + energy conservation

- ❑ 2,937 inbound vessels per year to ports of Seattle, Tacoma and Vancouver
- ❑ 50,000+ tons per year of CO₂ equivalents released *while tied to the dock*
- ❑ Seattle goal is to reduce greenhouse gas emissions by 680,000 tons
- ❑ Port of Seattle and Seattle City Light are exploring use climate neutral shore power
- ❑ Could there be an conservation element linked to new development?

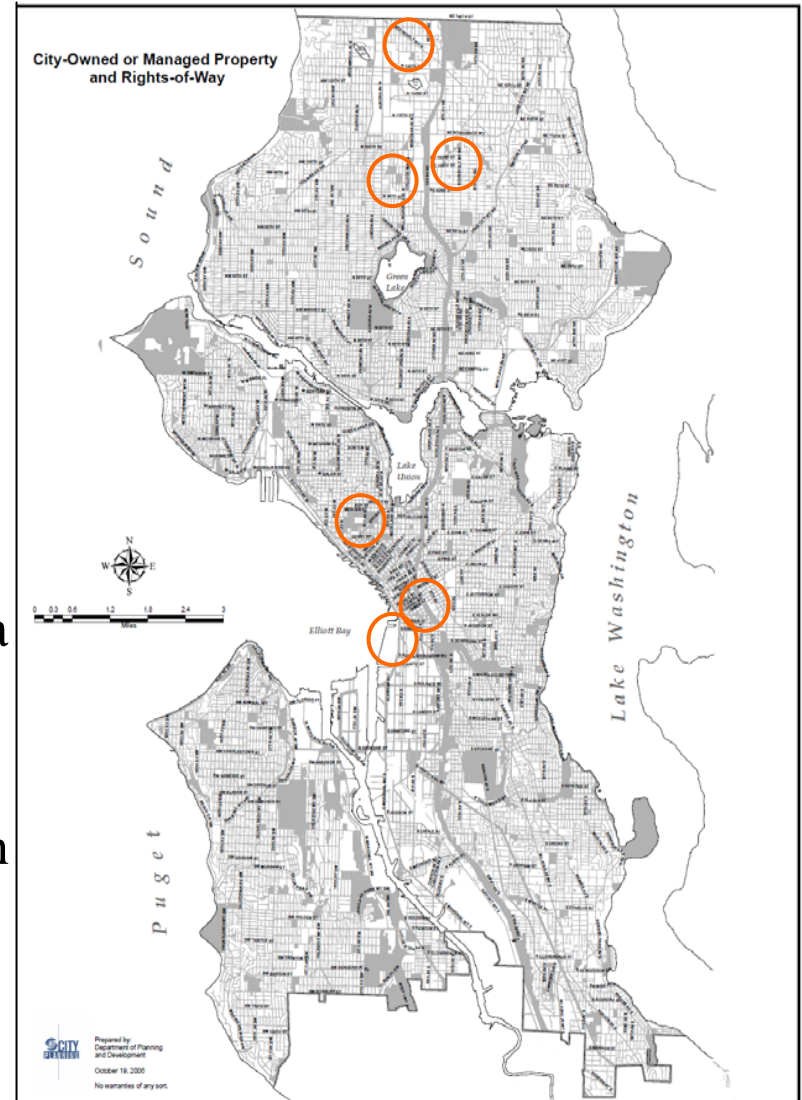


Energy conservation



Project evaluations

1. Swap polluted stormwater for clean Seattle Center water
2. Compare energy conservation in a district with new demands for shore-to-ship electricity to protect air quality
3. Use underground voids in historic Seattle for stormwater collection and reuse
4. Add stormwater treatment facilities as a fundamental design element to a new city park
5. Re-imagine mobility strategies for a neighborhood with multi-family growth but no sidewalks
6. Re-purposing water supply reservoir surfaces for urban agriculture or other neighborhood needs



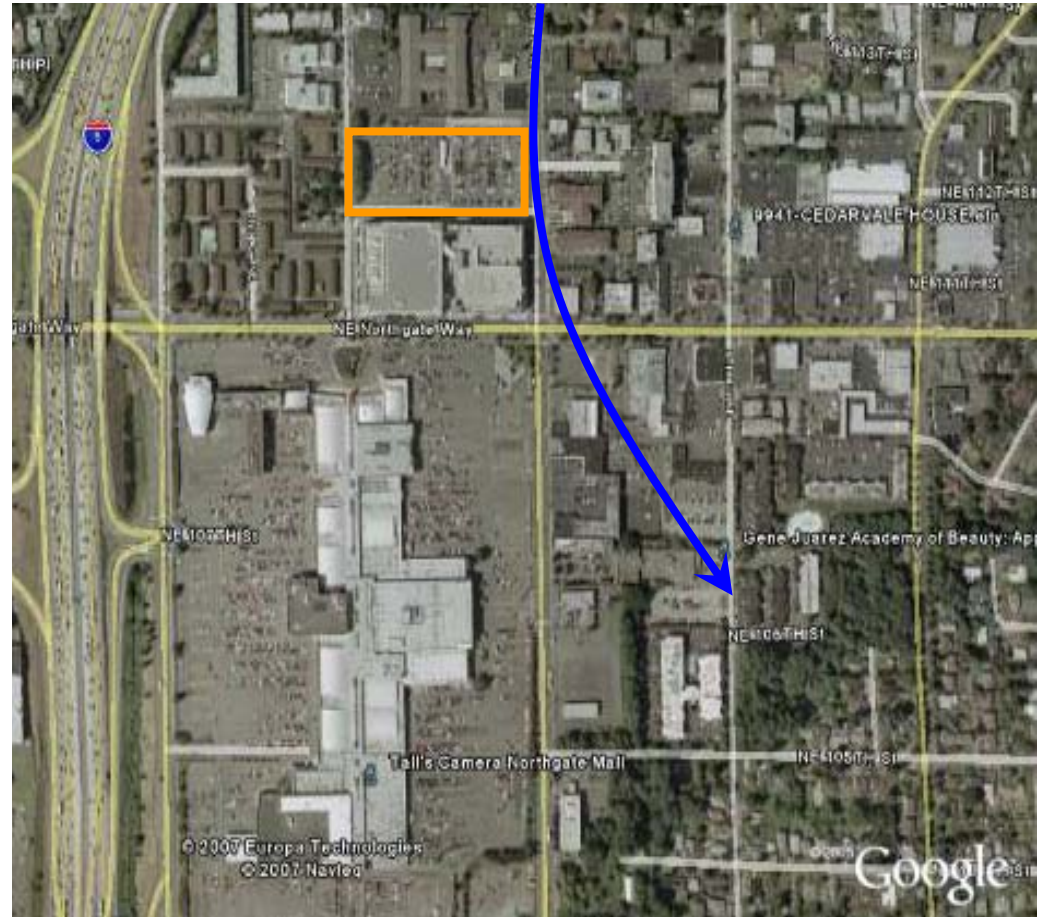
Areaways

- Capture runoff from buildings and reuse water
- Could be element of CSO strategy
- Structural issues with ability of areaways to support weight of stored water



Northgate Park n'Ride Park

- ❑ Northgate Park N'Ride to become new park
- ❑ Ideas from community
- ❑ Adjacent stormwater pipes nearby



Linden Av N

- New growth
- Road improvement costs high
- Are there cost effective alternatives?
- Can we leverage city ownership?



Reservoir reuse

- What is long-term function of reservoirs after covering program is completed?
- Evaluate options for green infrastructure, urban agriculture, parks, other





Next steps

- ❑ Coordinate capital planning (Silo Buster)
- ❑ Conduct deep programmatic review – pick one cross-cutting issue and drill down into it
- ❑ Continue pilot projects
- ❑ Implement sustainable infrastructure guidelines into budget requests
- ❑ Develop long term strategy (10-years plus)



What do we mean “sustainable”?

- ❑ Pays for itself over time (the services provided exceed the cost)
- ❑ Restores environmental functions (relies upon natural systems/ecologies)
- ❑ Benefits the community (provides services, cultural diversity, open space, etc.)
- ❑ Benefits the economy (creates jobs, increases opportunity, etc.)



Concepts in sustainable infrastructure

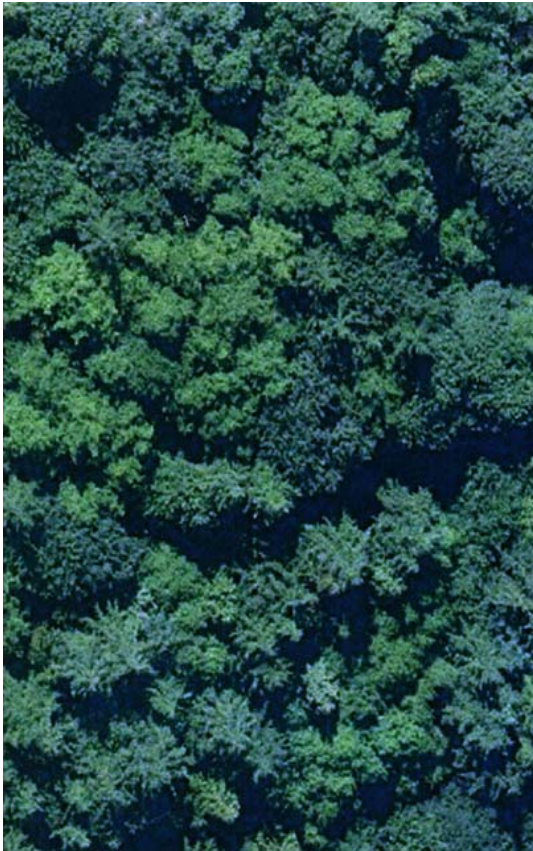
- ❑ Multi-media (integrated across resource types or lines of business)
- ❑ Full life cycle costs
- ❑ Whole city
- ❑ Systems thinking
- ❑ Public/public – public/private solutions
- ❑ “Complete Streets” + 20 feet
- ❑ Use existing flows of capital (follow the money)
- ❑ Use triple bottom line tools
- ❑ Teach and inspire

Seattle Green Factor



SEATTLE / *green factor*

Seattle Green Factor



Pre-Settlement
Conditions



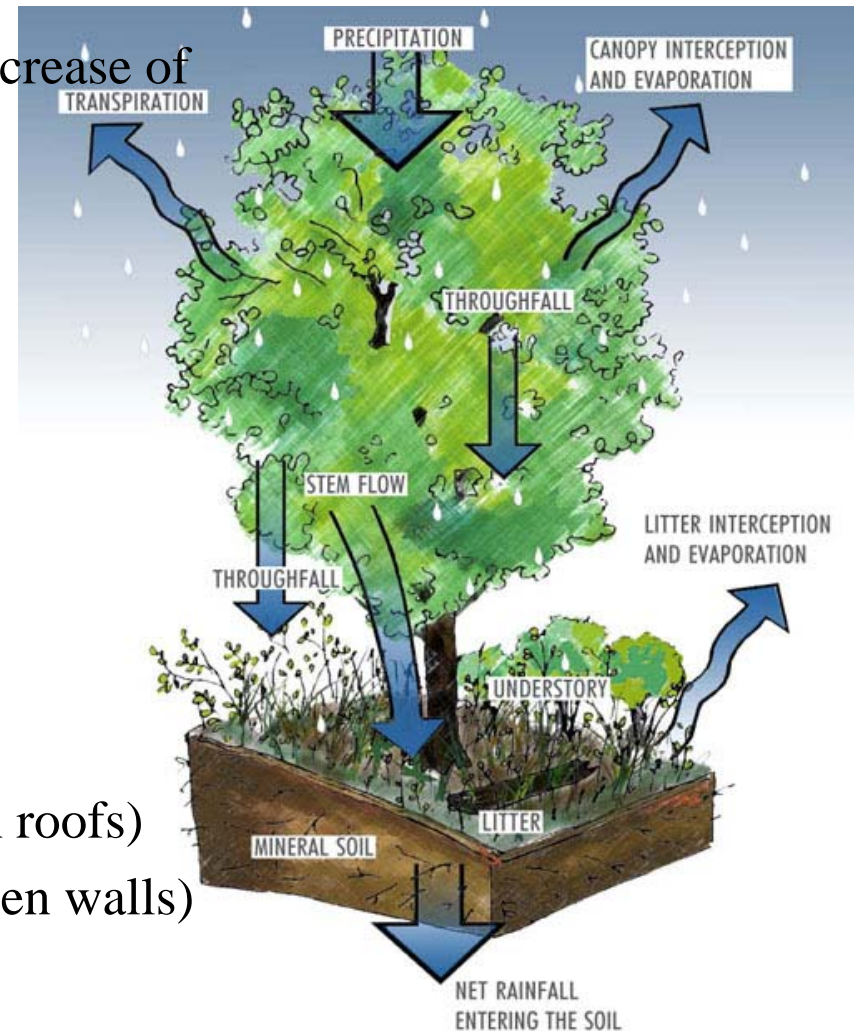
Historical Urban
Development



Urban Greening

Landscapes are more than amenity

- ❑ Increase evapo-transpiration due to increase of surface area
- ❑ Absorb carbon, release oxygen
- ❑ Capture urban dust/ help clean air
- ❑ Muffle sound reflectivity
- ❑ Provide habitat for birds and bees
- ❑ Increase property values
- ❑ Cool buildings with shade
- ❑ Cool cities – urban heat island affect
- ❑ Insulate buildings
- ❑ Increase life of roof membrane (green roofs)
- ❑ Increase life of building cladding (green walls)



Seattle Green Factor

New requirement in all commercial areas that the equivalent of 30% of the parcel is landscaped

- ❑ Allows flexibility
- ❑ Encourages landscaping in public areas
- ❑ Encourages plant layering
- ❑ Encourages vegetated roofs and vegetated walls
- ❑ Encourages permeable paving and rain gardens
- ❑ Requires maintenance plan

