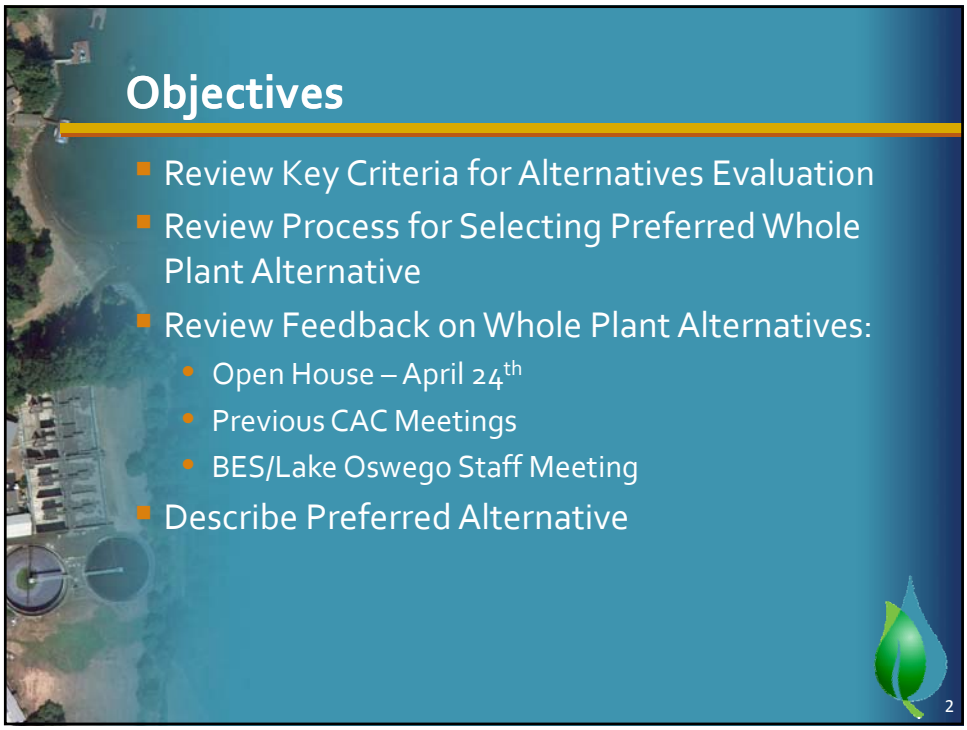
ENVIRONMENTAL SERVICES
CITY OF PORTLAND
working for clean rivers
Oversight Committee Meeting Oct 15,2013
Tryon Creek
Wastewater Treatment Plant
Preferred Alternative
CH2MHILL.


Objectives
Review Key Criteria for Alternatives Evaluation
Review Process for Selecting Preferred Whole Plant Alternative
Review Feedback on Whole Plant Alternatives:
Open House – April 24th
Previous CAC Meetings
BES/Lake Oswego Staff Meeting
Describe Preferred Alternative
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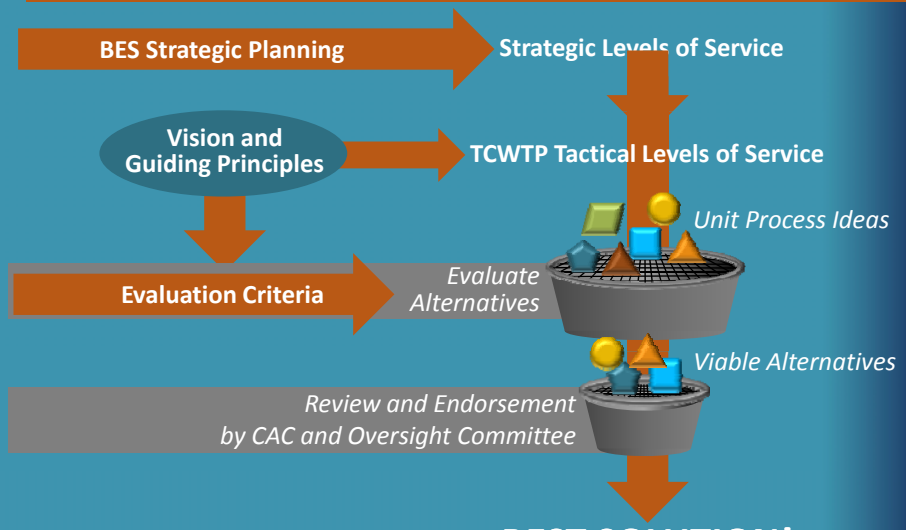
Whole Plant Alternatives Development



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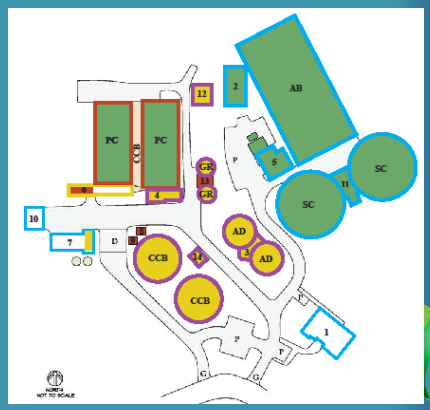
Condition and Reliability

- Condition Summary - Aging Infrastructure
- Reliability requirements are standardized through EPA
- Class I facility



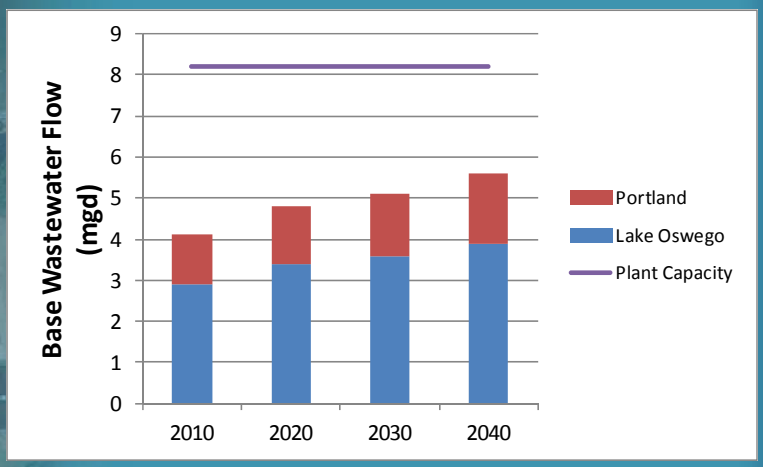
River Levels – Flood Stage

- High River Levels flood the end of the plant during extraordinary events
- 1964 Facilities are located in the 100 year flood plain
- Impacts TCWTP's ability to protect public health during flood events

Emerging and Future Water Quality Issues

- Increased Level of Treatment for all Flows During Wet Weather
  - Currently TCWTP treats ~20 mgd through secondary
  - Higher flows receive preliminary and primary treatment, disinfection
- Willamette Basin Standard
  - 10 mg/L BOD and TSS in the dry season
- Temperature
  - Expected limit is 49-52 million Kcals/day
  - Discharge at plant capacity is 42 million Kcals/day
- Ammonia
  - Existing diffuser provides high dilution
  - Corresponding high head loss carries hydraulic constraints

How much is driven by growth?



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Implications/Findings - General

- Sufficient *dry* weather capacity for current flows/loads, as well as projected 2040 flows/loads
- Sufficient wet weather capacity for current flows/loads and level of service
- Insufficient capacity for current and 2040 peak flows associated with the 25-year storm
- Condition is fair to good; requires base level of investment throughout planning horizon

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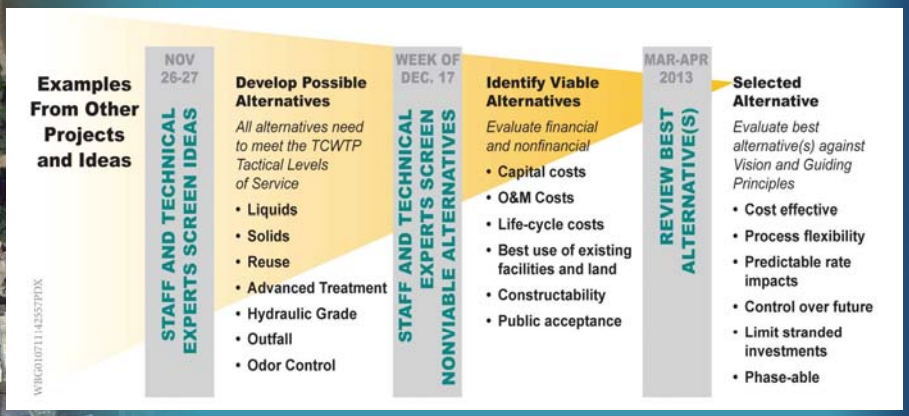
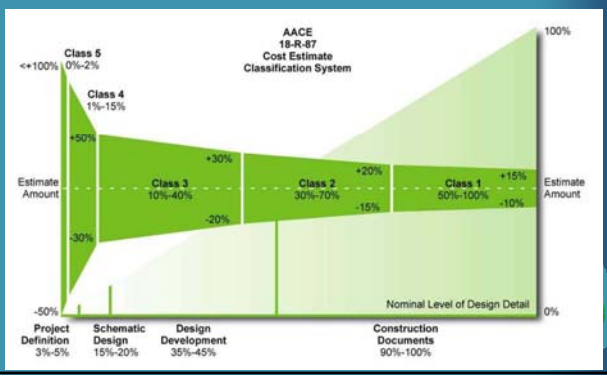
Alternative Evaluation Process



Cost basis

- Costs through 2040 in today's dollars
- Includes investment in existing facilities
- Includes Project 'Soft' Costs
- Class 5 estimate



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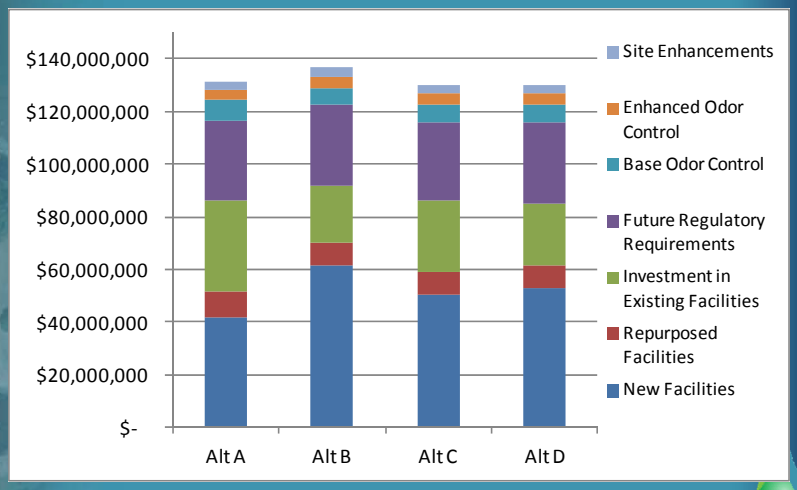
Capital Cost Components



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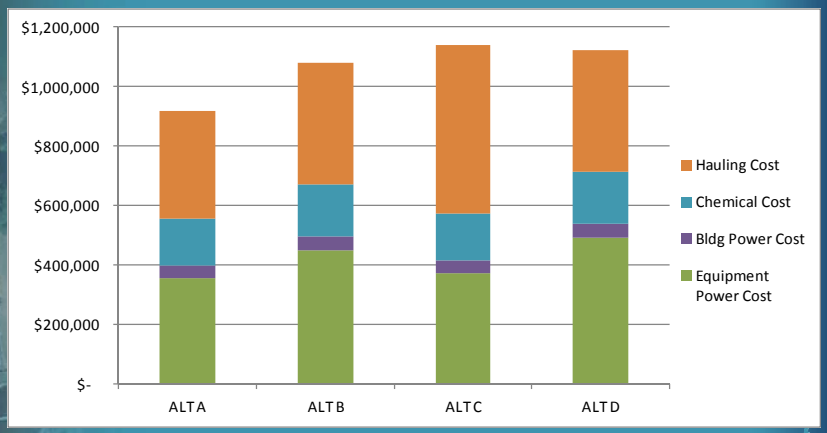
Annual Cost Components



- Labor costs (O&M) are not expected to differ between the alternatives - not reflected above

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What input were we looking for from CAC?

- Highest and best use of available property
- Compatibility with neighbors
- Anticipate impacts/coordination with Foothills development
- Input on rate impacts, somewhat associated with phaseability
- Which edge treatment(s) best serves the facility?
- Impact of site massing/density
- How important are views from above?

Input received from both CAC and Open House attendees

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BES/Lake Oswego Ranking

	Alt A	Alt B	Alt C	Alt D
Protect Public Health	4.5	4.5	4.5	4.5
Practice Environmental Stewardship	3.6	3.4	3.9	3.1
Be a Good Neighbor	2.6	4.0	3.2	3.7
Provide Value to Ratepayers	3.2	3.2	4.0	3.7
Achieve Outstanding Operational Performance	3.0	3.9	3.6	3.3
Total	**16.8**	**19.0**	**19.2**	**18.3**

- Strong preference for Gravity Flow
- Strong preference for Primary Clarification

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Development of Preferred Alternative

- Preferred Alternative:
  - Alternative B from a site standpoint (but incorporate primaries)
  - Alternative C from treatment standpoint (but incorporate gravity)
- Optimize O&M costs
  - Minimize power costs
    - Gravity flow **most** of the time
  - Potential for energy generation
  - Minimize solids hauling costs
- Flexibility for plant/truck access to Hwy 43
- Assume Property Purchase
- Maximize buffer to the south
- Maintain cost compatibility with 4 Alternatives

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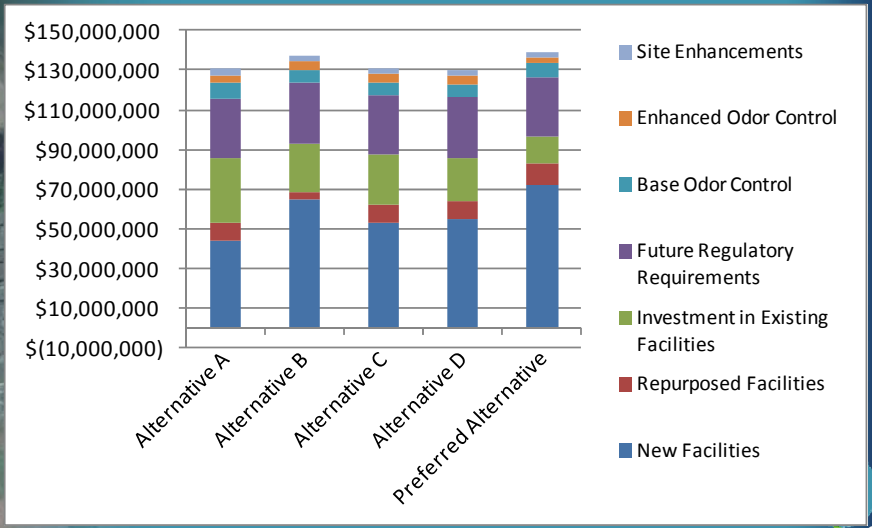
Resulting Cost Comparison



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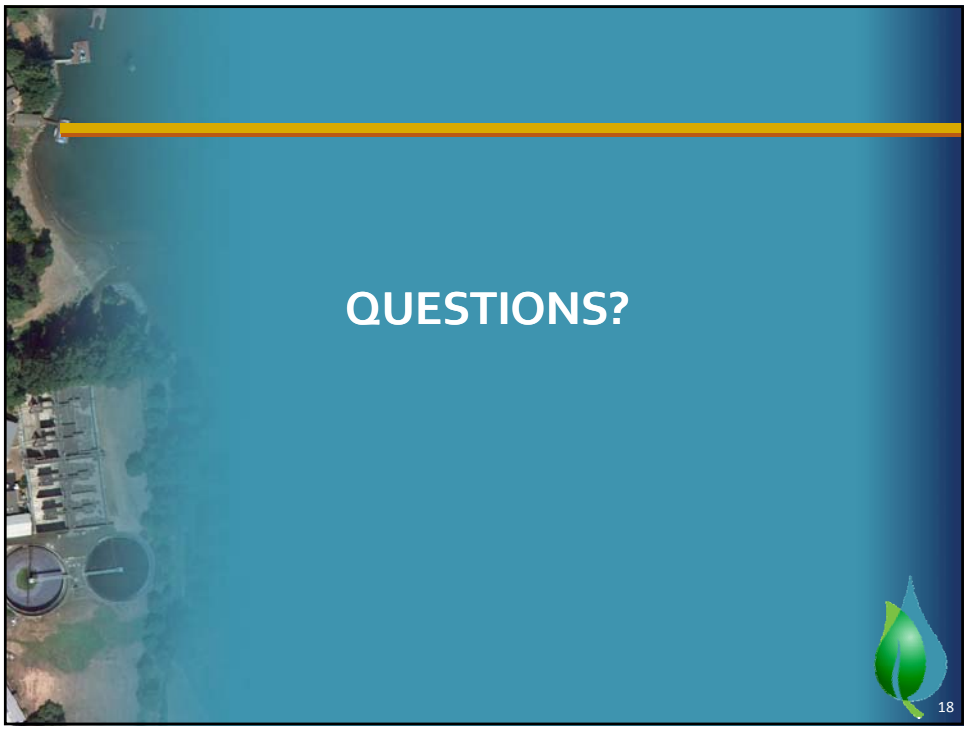
KEY NOTES
1 Existing S. Entrance to Remain (Secure)
2 New West Entrance (Secure)
3 New Truck Entrance (Secure)
4 Parkway Trail & Buffer Plantings
5 Riparian Forest Enhancement Areas
6 "Main Street" Interior Plantings
7 Low Maintenance Interior Plantings
8 Green Street Stormwater Facilities
9 Existing Trees to Remain
10 Vertical Screening / Site Walls
11 New Parking Lot
12 Interpretive Node
13 Tryon Creek Restoration
14 Green Roof
SENSITIVE LANDS AREA
NATURAL RESOURCES AREA
NATURAL RESOURCES BUFFER
WILLAMETTE RIVER GREENWAY
WILLAMETTE RIVER
FOOTHILLS DISTRICT FRAMEWORK PLAN (ADOPTED JULY 2012)
FOOTHILLS RD.
FOOTHILLS PARK
N. STATE ST. (OR 43)
DRAFT PREFERRED SITE PLAN
Tryon Creek Wastewater Treatment Plant Facilities Plan
Sept. 11, 2013
CH2MHILL
GREENWORKS


QUESTIONS?
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