WRF Secondary Expansion

Final Design Work Session

November 2nd, 2011

Tonight's Objective-
Address your questions and concerns

If we heard you correctly, it appears your major concerns are:

- Why not start over with a new plant? Why this particular project?
- What was the project cost estimate and has that changed?
- Why CH2M HILL and WH Pacific? Why should we continue working with them?
- Why does it cost so much?
- What are the industry standards for indirect or non-construction costs?
- How do we manage costs and risk?
- How does the Project Team manage non-construction costs?
- Are the consultant's rates reasonable?

Why this particular project?
Why not start over with a new plant?

- Take advantage of existing site
  - Expands existing facilities per original plan
  - Utilizes 1600 acre site for effluent discharge and biosolids
  - Minimal investment in Odor Control
- Maximize the value of the existing investment. Our current plant operates well and is an investment already made of approximately $150 million .
  - Reuses existing basins/concrete tanks – extends their life
  - Builds on the recently completed Digester Upgrades, Headworks facility
- Costs for a new plant -between $15 to $20 per gallon treated or $175 million dollars.
- Modular or “off the shelf” wastewater plants can be economical for smaller communities with flows less than 1 MGD but would be very expensive to purchase and operate for a plant our size.

What was budgeted and how has that changed?

1980's Original Facility Plan -intended the plant to be expanded.

1996 Master Plan phased expansions (6 mgd, 9 mgd, 12 mgd)

- Cost estimate at that time = $37.8 Million in 1996 dollars ($60 Million in today's dollars)
- We have completed projects since 1996 to treat to 6 mgd and are at capacity

2008 Facilities Plan adopted by council phased (8.5 mgd, 12 mgd).

- Year 2008 to 2030 -20 yr Project estimate total $52 million
- Years 2008-2016 First Phase estimate at $37 million in 2007 dollars = $43 million in today's dollars)
- The eight year project will continue through 2016, spanning several biennial budget periods

Let's look at a project estimate more closely.

What was budgeted and how has that changed?

Total Project Estimate

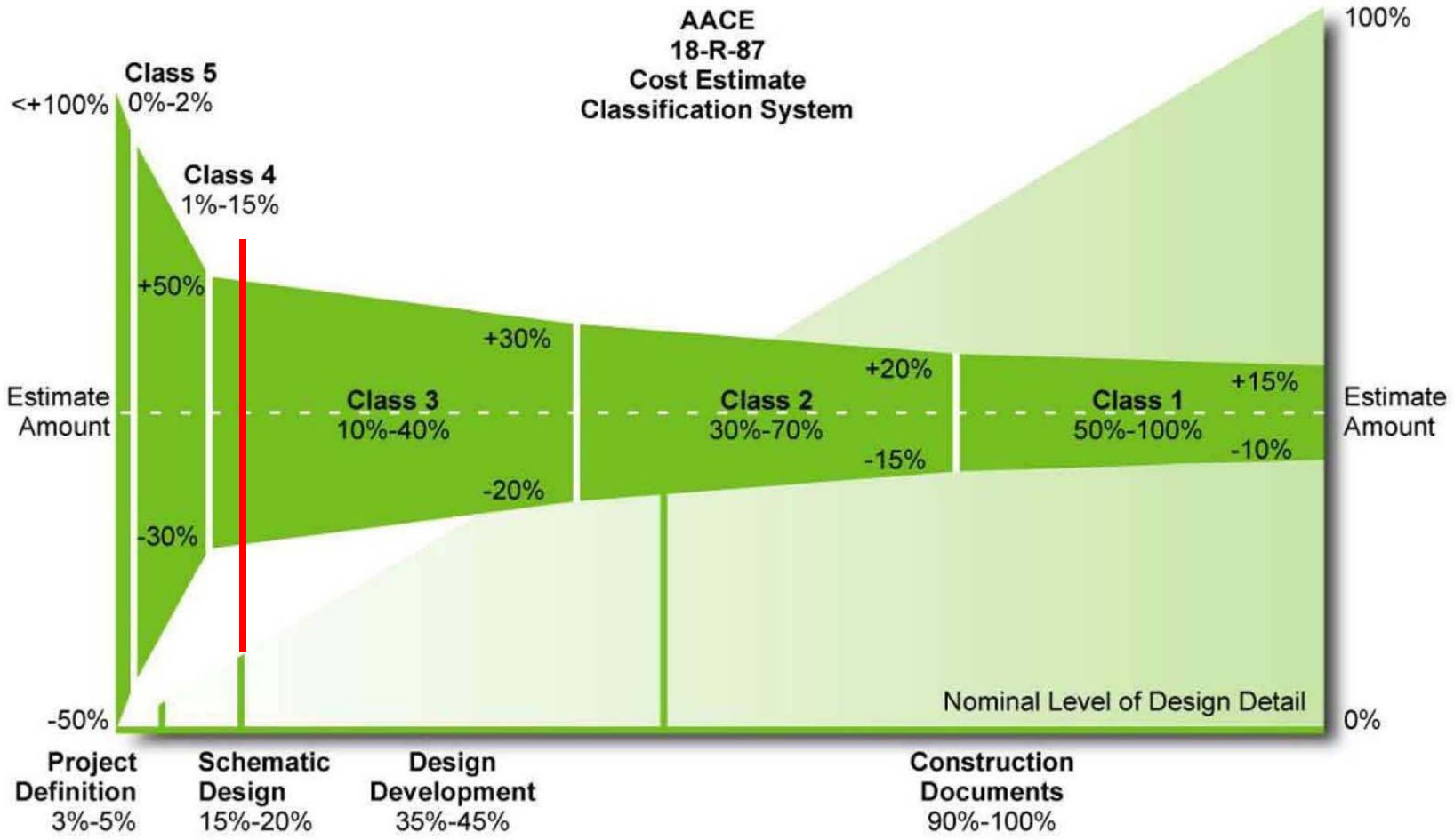
Stage	Amount	Range
2008 WRF Plan Project ***Estimate***	$43,000,000 (today's dollars)	Class IV = (+50% / -30%)
2011 Schematic Design (30%) ***Estimate***	$ 38,500,000	Class III = (+30% / -20%)
Current 5 yr CIP	$ 30,777,800	

Project Estimate Costs Distribution

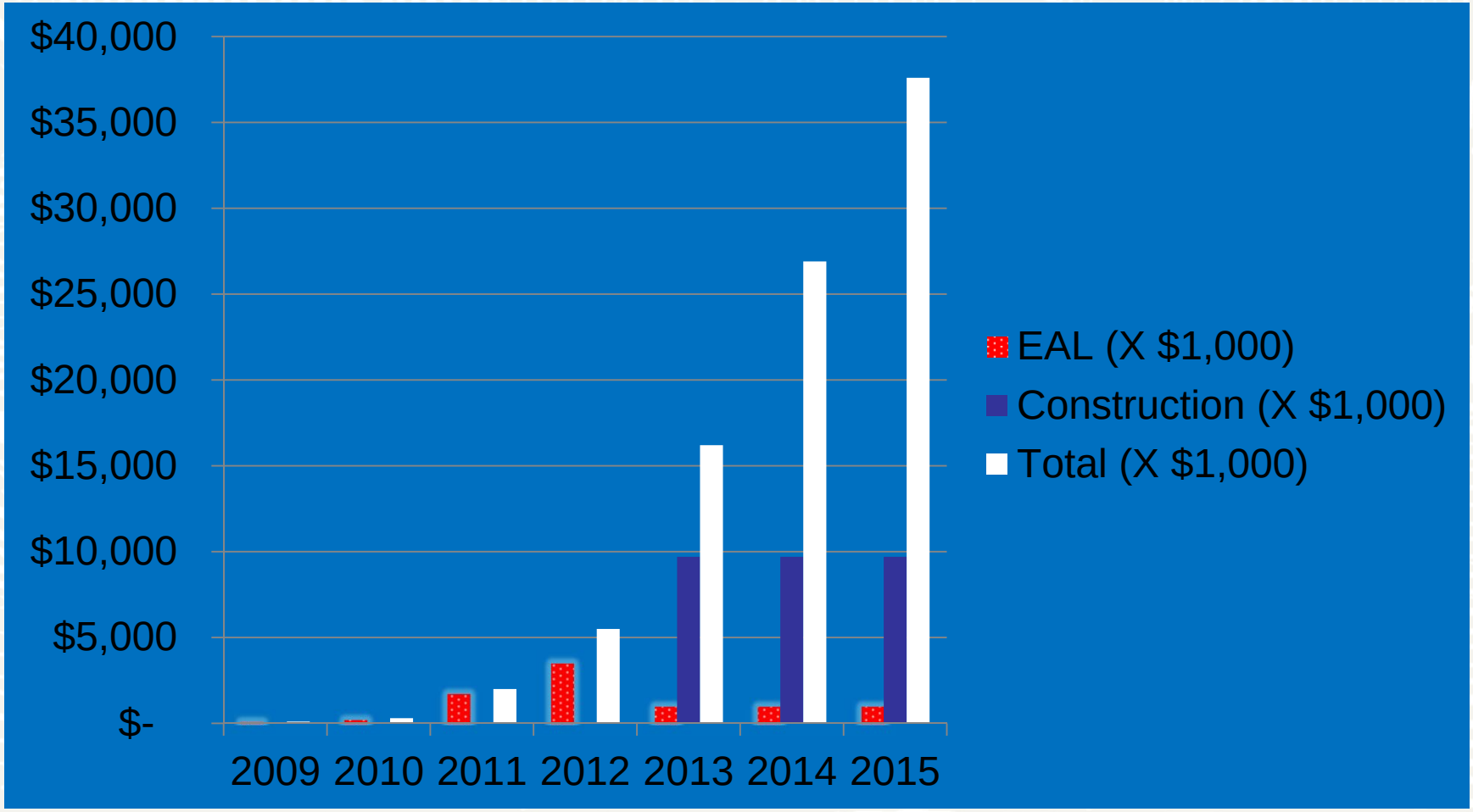
Stage	Amount	Range
Design / Consulting Costs Current ***Estimate***	$ 9,000,000	23% of Total Project
Construction Costs Current ***Estimate***	$ 29,500,000	77% of Total Project

Schematic Design Report

Costs



Implementing the Facility Plan Project



Why CH2M HILL and WH Pacific?
Why should we continue working with them?

- The CH2M-Hill –WH Pacific Team was selected through a formal procurement process in 2009.
  - Original contract only for the first phase but anticipated predesign, design and services during construction

- Consultant Team experience
  - CH2M HILL has experience on similar wastewater treatment projects -What works and what doesn't work.
  - WH Pacific site work and yard piping design team

- Consultant Team Experience –
  - International consulting firm with the resources and experience to manage large and complex projects
    - Dave Green/CH2M HILL, Master's Degree, PM 28 years Experience
    - Jim Griffiths/CH2M HILL, DM, 38 years Experience
    - Brad Rousch/CH2M HILL, , CAD, 30+ years with large projects
    - Bill Leaf/CH2M HILL, Master's Degree, Process Expert
    - Josh Boltz/CH2M HILL, , PHD, Process Expert, National IFAS experience
    - Jim Frost/WH Pacific – Long term Central Oregon Project Management Experience

Why CH2M HILL and WH Pacific?
Why should we continue working with them?

- Consultant Team has laid solid groundwork for the current project. Switching firms would require significant rework and effort for City staff and Consultant.

- Consultant Team proposed the Value Engineering (VE) work to save costs, increase value, and manage risk
  - The technology selection allows Bend to pace expansion with growth
  - Build only what is necessary- eliminates stranded investment
  - Defer $8Million in digester costs to 2030
  - Eliminate $500,000 PAX Project (a chemically intensive solution with long-term O&M costs)
  - Defer $10 Million in Secondary Clarifier costs to 11.0 mgd (almost twice todays flow)

- City of Bend should only solicit for new consultant team unless they are not performing. This is not the case.

Are The Consultant team's rates reasonable?

- The City of Bend works with many consulting firms and takes into consideration labor rates as part of the selection and fee negotiation process.
  - HDR, Brown & Caldwell, Black&Veatch, MWH
- The Consultant Team Rates are similar to other consultant's rates
  - Other Consultants Range on City Projects $68/hr to $226/hr
  - CH2M HILL and WH Pacific team $68/hr to $215/hr

How does the Project Team Negotiate Design cost?

- Negotiate Final Design cost
  - Look at previous project costs that are similar in nature
  - Look at the level of effort reviewed against other projects
    - How many drawings required to construct the job and reduce change orders
    - Consider Labor- labor hours/drawing,
    - Consider construction $/drawing
  - Open book negotiation
  - Final Design costs reduced $400,000 through negotiation

Why does it cost so much?

How Does the Project Team Manage Costs and Risk?

Project Management is all about Managing the balance between Costs and Risks for our customers- ratepayers

Risks to be managed and balanced include:

- Costs- Project Cost Escalation
- Schedule- Capacity not available for residential growth and new/expanded industry (shovel-ready- for breweries,)
- Quality- Reduce Construction Claims and Change Orders
- Compliance- Wastewater Treatment Permit
- O&M costs -Reduce long term that can cost ratepayers money
- Safety

How does the Project Team manage project cost and risk?

- Spend more time planning saves costs later on in the project
  - Planning –
    - Think long term/plan for future changes (Facilities Plan-Carollo)
  - Manage scope of project & project costs
    - 2009 Value Engineering (VE) Study
    - Predesign: Life cycle cost evaluations and detailed cost estimates
- Poor Planning and short cuts early substantially increase costs
  - Final design (reduces Re-Design),
  - Construction Claims,
  - Long Term, Ongoing Operating Costs ($Energy)

What are the industry standards for "Non-Construction" costs?

Where does the 25% Non-Construction Costs come from?

- Non-Construction Costs can consist of:
  - Planning/Studies
  - Pre-Design (Schematic)
  - Design Services (Design Development and Final Design)
  - Design Mgt (Oversight, QA/QC and Project Mgt)
  - Land Acquisition
  - Permit Fees
  - Finance Charges-Bond Interest
  - Materials Testing Quality Control
  - Construction Management
  - Construction Inspection
  - Engineering Services During Construction (Submittals, RFIs, Claim Assistance)
- Non Construction Costs Information*
  - Low Range 14% (Percent of Construction Costs)
  - Typical Range 30% (Percent of Construction Costs)
  - Average Range 25% (Percent of Construction Costs)
  - High Range 50% (Percent of Construction Costs)

*(ref: 2005 AACE International Study *"Controlling Non-Construction Costs")*

WRF Design Summary

Consulting to Date:

Pre-design/Survey/Geo-tech	$204,358
Amend for Value Engineering	$65,914
Amend for Schematic Design	$1,065,129
Amend for Survey/Geo-Tech	$63,016
Current Contract Total	$1,398,417
Proposed Final Design:	$4,192,525
Total Proposed Contract	$5,590,942

Engineering Services During Construction will be negotiated in Fall 2012.
Estimated Costs: $500,000 to $1million a year for the three year project

Tonight's Objective-
Did we answer your questions?

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Are there any more questions?