

Wastewater Treatment Plant (WWTP) Consolidation



Council Presentation
May 20, 2014



Recommendation

- ❑ Consolidate all plants, except Broadway, as soon as possible (Option 4)
 - Fund Effluent Line to the ship channel via Alternate Funding mechanism

- ❑ Why?
 - O & M Savings are the deciding factor
 - \$324M in savings over the first 30 years at midpoint O&M cost of \$1.50/1000 gallons
 - Implement as soon as possible to realize savings
 - Effluent Line should not be funded by the wastewater ratepayers but instead should be funded as a new water supply or directly by the reuse customers



WWTP Feasibility Analysis

- Problem Identification
 - Operations & Maintenance (O&M) Economy Of Scale
 - Life of Current Plants
 - Required Expansion
 - Outfall Permitting
 - Consolidated Demand for Reuse
- Develop 30 Year O&M Asset Management Plan
- Identify 30 Year Capital Needs
- Developed 5 Options



WWTP O & M Needs

- 30 Year O&M Plan for 6 Plants

- Preventative Maintenance
- Labor
- Electricity
- Purification Chemicals
- Solids Handling

| 30 Year O&M Breakdown | | |
|-----------------------|------------------------|-------------------------|
| Plant | Total O&M | Average \$/1000 gallons |
| Greenwood | \$211,000,000 | \$2.30 |
| Oso | \$403,000,000 | \$2.35 |
| Broadway | \$174,000,000 | \$2.49 |
| Laguna Madre | \$94,500,000 | \$3.41 |
| Whitecap | \$70,200,000 | \$3.78 |
| Allison | \$155,000,000 | \$3.93 |
| Total | \$1,110,000,000 | \$2.65 (avg) |

❖ National Average for small plants \$1.23 - \$3.42 per 1000 gallons



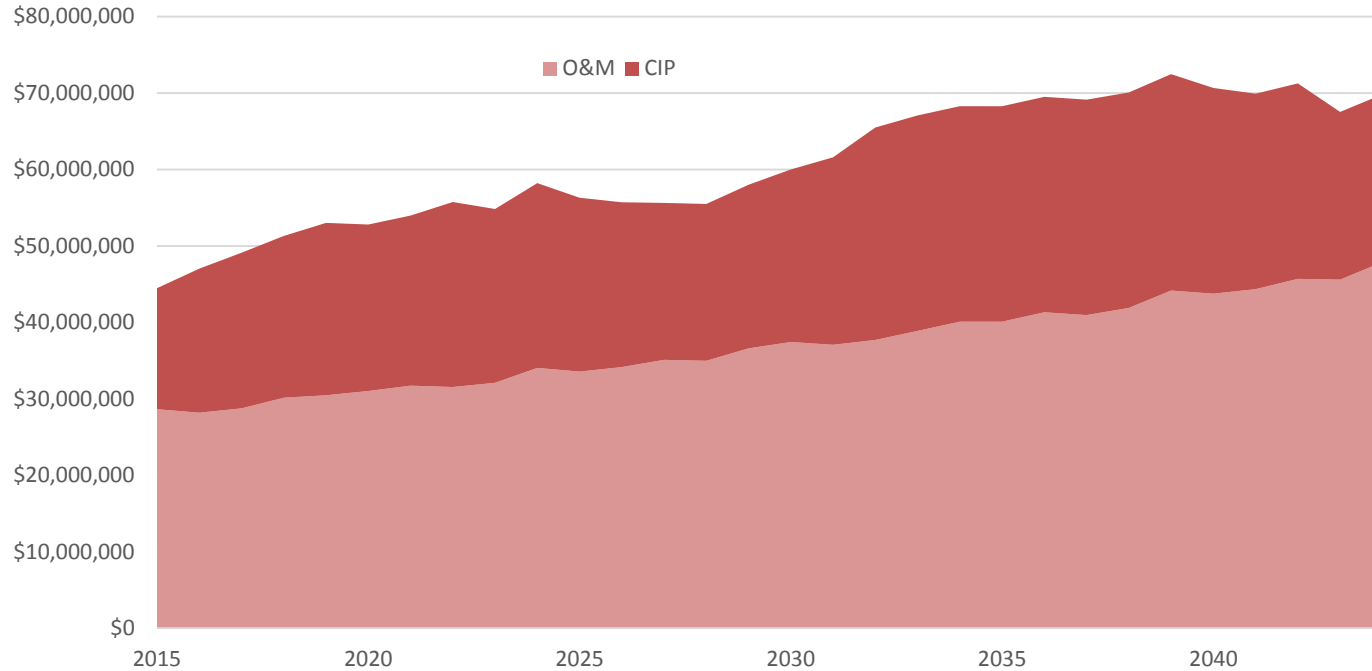
30 Year Capital Needs

- Capital Needs Include:
 - Plant Expansions
 - Recapitalization
 - Changing Permit Requirements

| Plant | Program Dollars |
|--------------|------------------------|
| Allison | \$34,240,000 |
| Broadway | \$26,200,000 |
| Greenwood | \$93,450,000 |
| Laguna Madre | \$28,750,000 |
| Oso | \$89,000,000 |
| Whitecap | \$25,600,000 |
| Total | \$297,240,000 |



WWTP Total Annual Cost



- Expected O&M and Annualized Capital Expenses for the next 30 years



Options Considered

❑ Option 1 – Phased (Including Effluent Line to Ship Channel)

➤ Phase 1 Construction (Year 5)

- 16 MGD Regional Plant
 - 8 MGD Oso Diversion
 - 4 MGD Greenwood Expansion
 - 4 MGD Additional Capacity
 - 1.5 MGD Allison
- Oso Diversion Line
 - 24" up to 20 MGD
- Upgrades to Williams and Wooldridge
- Effluent Line to Ship Channel
 - 2 X 42" up to 124 MDG total
- Transferring Laguna Madre to Oso

➤ Phase 2 Construction (Year 10)

- 8 MGD Regional Plant Expansion
 - 4 MGD Greenwood Remaining Flow
 - 4 MGD Allison
- Decommissioning Allison
- Decommissioning Greenwood
- Infrastructure from Allison to Greenwood

➤ Phase 3 Construction (Year 15)

- Demolition of Greenwood

➤ Phase 4 Construction (Year 20)

- 16 MGD Regional Plant
- 16 MGD Oso Diversion
- Force Main Oso to Greenwood 42" up to 62 MGD
- Decommissioning Oso



Options Considered (Cont.)

- ❑ Option 2 - Phased (Alt Funding for Effluent Line to Ship Channel)
 - Same Construction Phasing as Option 1
 - Alternate Funding for Effluent Line to Ship Channel

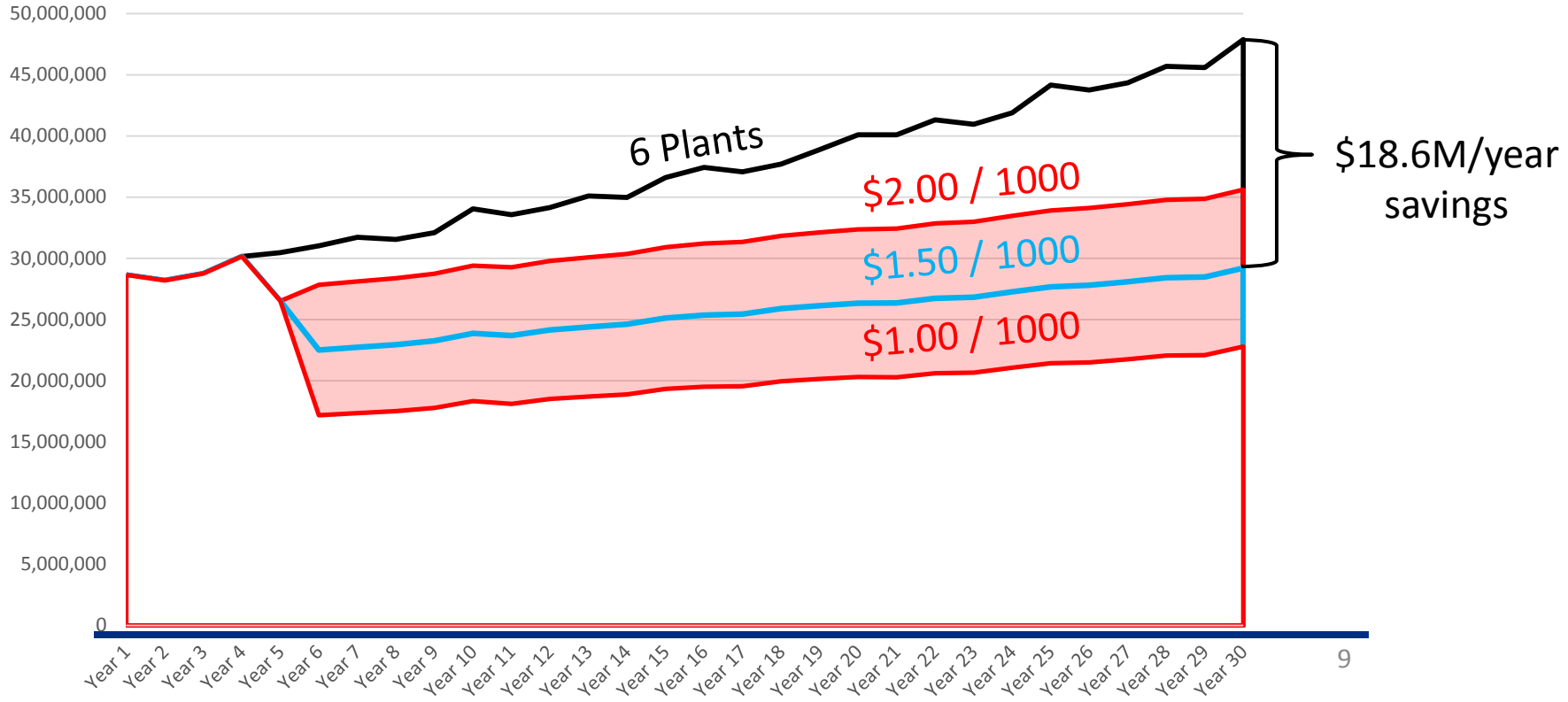
 - ❑ Option 3 - All, except Broadway (Including Effluent Line to Ship Channel)
 - Construct all Improvements by Year 6

 - ❑ Option 4 - All, except Broadway (Alt Funding for Effluent Line to Ship Channel)
 - Same Construction Schedule as Option 3
 - Alternate Funding for Effluent Line to Ship Channel

 - ❑ Current Needs - Continue with 6 WWTPs (No Action Alternative)
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Option 4 - O&M



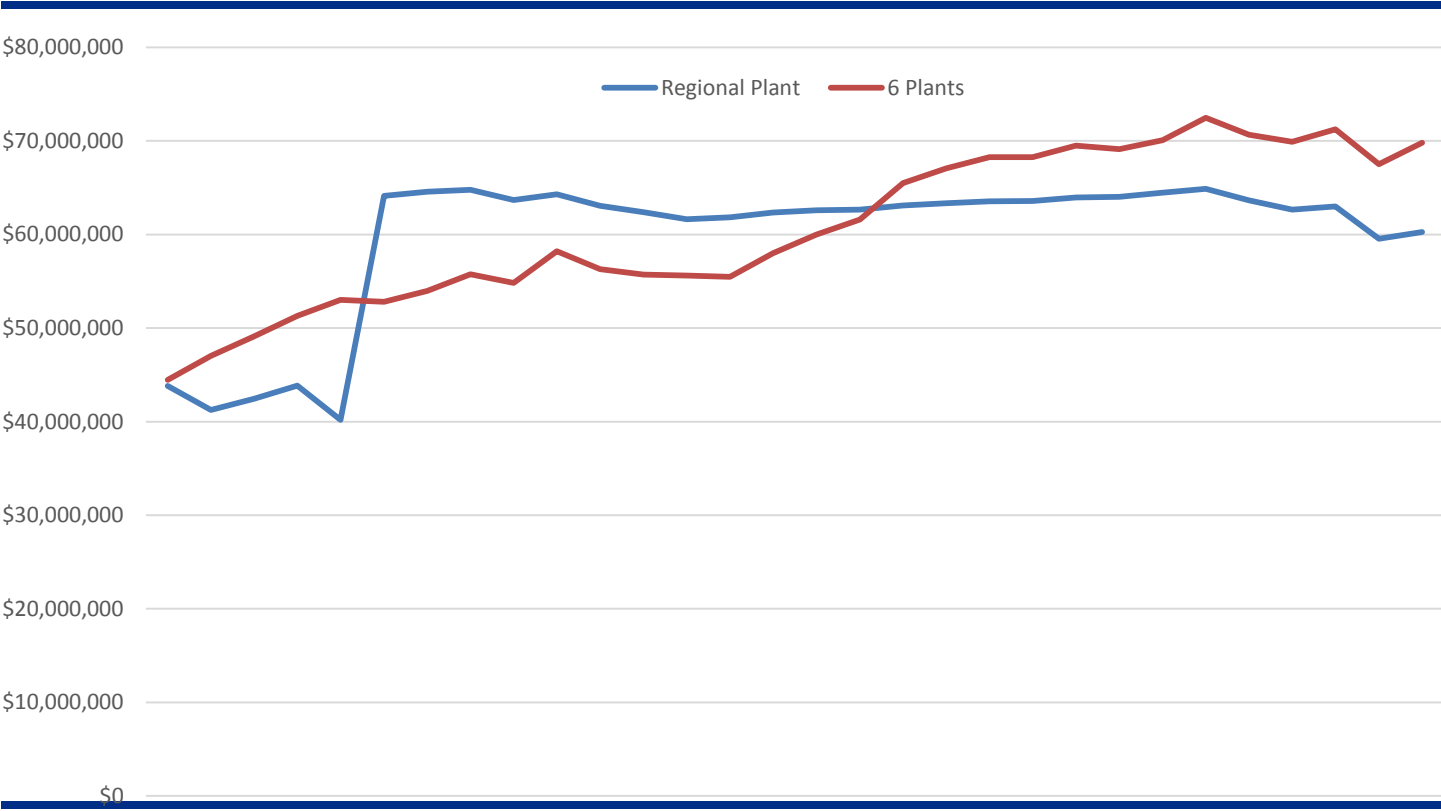


Financial Summary

| Financial Summary in \$MM | | | | |
|---------------------------|---------|-------|---------|-------------|
| | O&M | CIP | Total | 30 Year Net |
| 6 Plants | \$1,110 | \$297 | \$1,410 | |
| Option 4 @ \$1.00 /1000 | \$638 | \$483 | \$1,120 | -\$284 |
| Option 4 @ \$1.50 /1000 | \$786 | \$483 | \$1,270 | -\$137 |
| Option 4 @ \$2.00 /1000 | \$933 | \$483 | \$1,420 | \$11 |



Option 4 Total





Next Steps

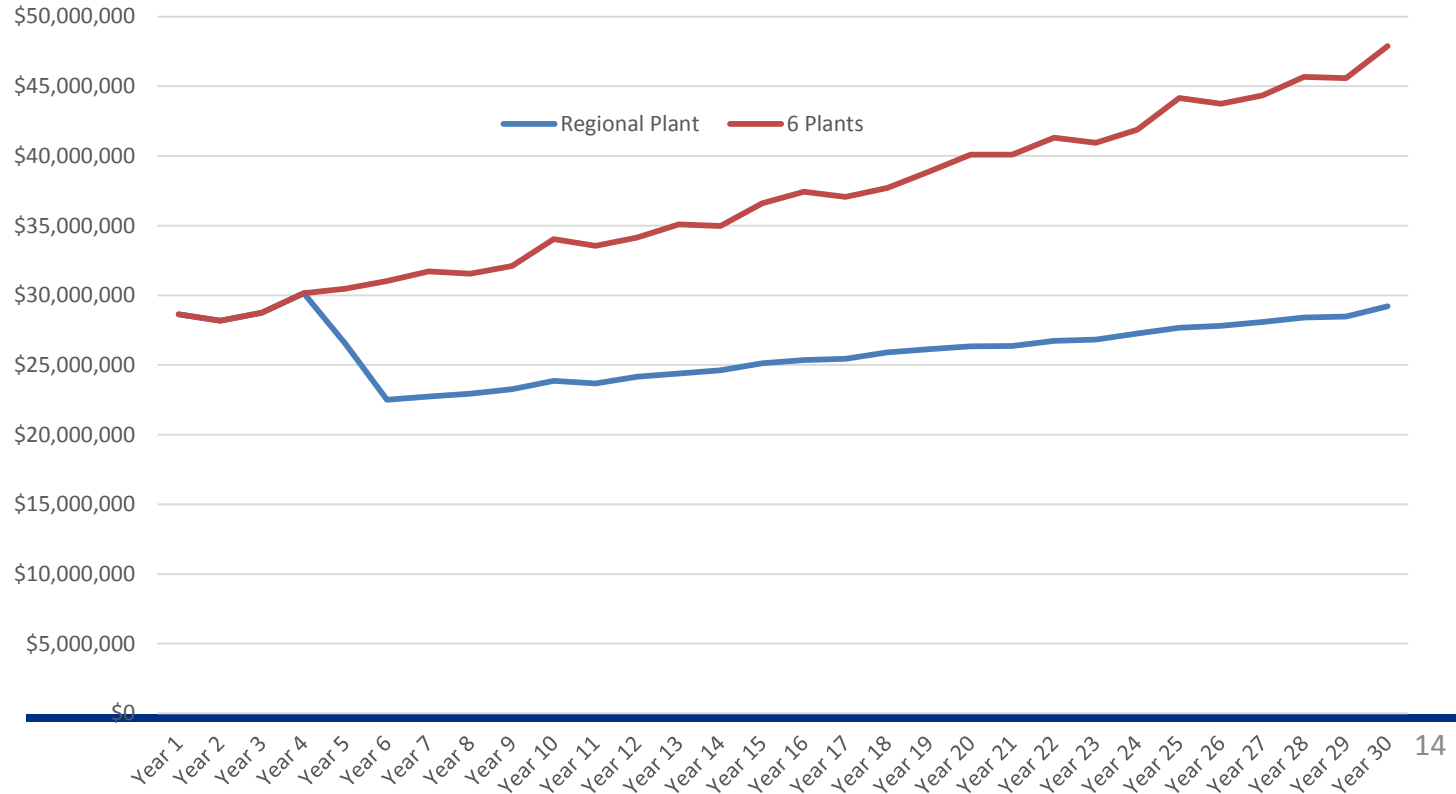
- Hire Program Manager
 - Develop scope and sequencing for use in Alternative Delivery Method Request For Qualifications (RFQ)/Request For Proposals (RFP).
 - Assist in Technical Evaluation of the Alternative Delivery Method Proposals as well as Incremental Designs and Submittals by the Design and Contractor team(s).
- RFQ/RFP Solicitation
 - Construction Manager at Risk & Design Team or
 - Progressive Design Build Team
- Specific Site Evaluation



Backup Slides

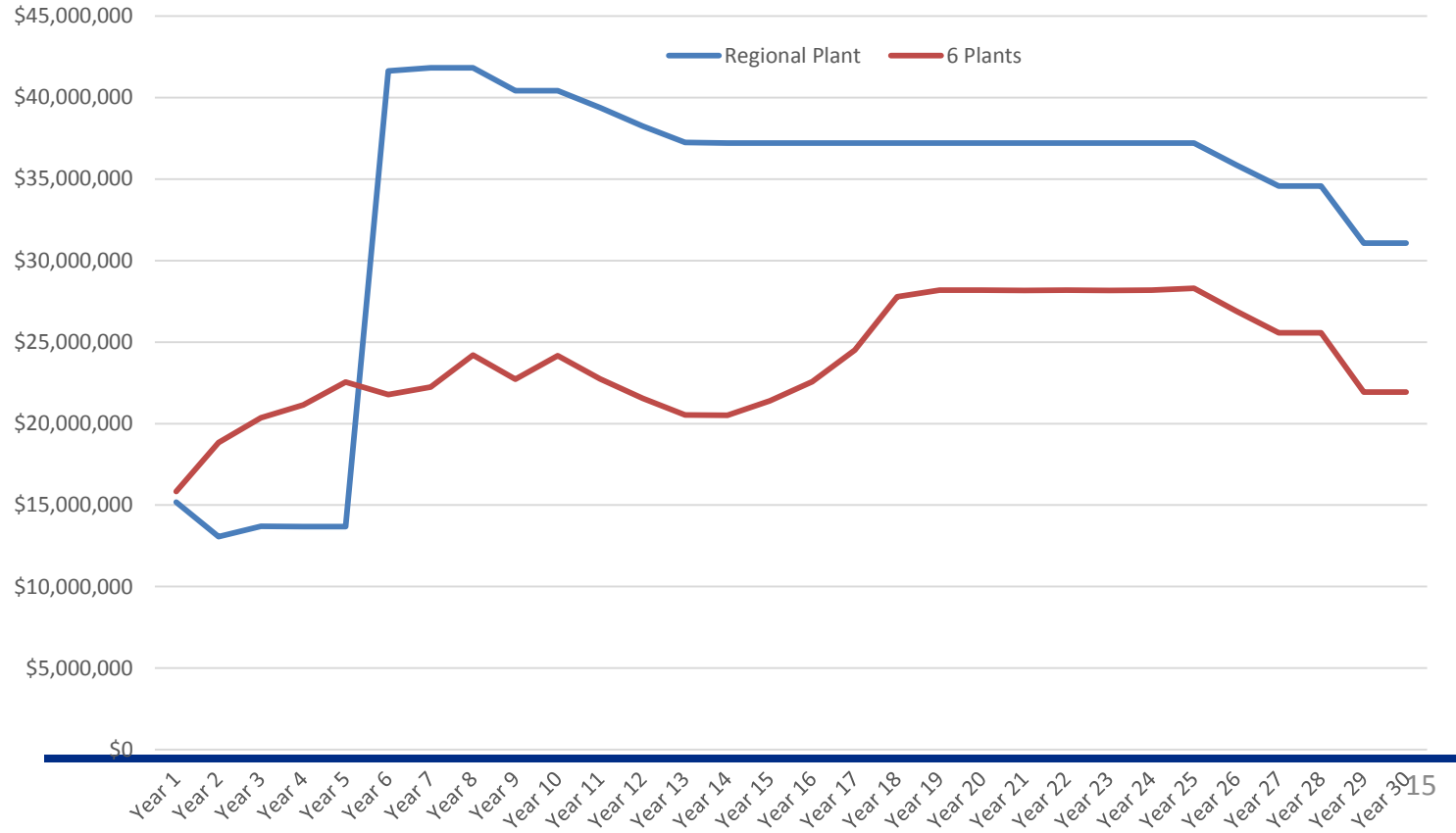


Option 4 O&M





Option 4 CIP





O&M Financial Summary

| All Plants O&M | | | | | |
|----------------|-----------------|---------------|---------------|---------------|---------------|
| Plant | Current Needs | Option 1 | Option 2 | Option 3 | Option 4 |
| Allison | \$155,355,558 | \$43,497,613 | \$43,497,613 | \$26,481,897 | \$26,481,897 |
| Broadway | \$173,514,041 | \$173,514,041 | \$173,514,041 | \$173,514,041 | \$173,514,041 |
| Greenwood | \$211,054,929 | \$52,156,880 | \$52,156,880 | \$28,143,016 | \$28,143,016 |
| Laguna Madre | \$94,545,265 | \$16,688,769 | \$16,688,769 | \$16,688,769 | \$16,688,769 |
| Oso | \$403,214,983 | \$241,630,164 | \$241,630,164 | \$81,229,384 | \$81,229,384 |
| Whitecap | \$70,155,396 | \$15,681,067 | \$15,681,067 | \$15,681,067 | \$15,681,067 |
| Regional Plant | | \$382,585,317 | \$382,585,317 | \$443,765,701 | \$443,765,701 |
| Total | \$1,107,840,171 | \$925,753,851 | \$925,753,851 | \$785,503,874 | \$785,503,874 |
| O&M Savings | | \$182,086,319 | \$182,086,319 | \$322,336,297 | \$322,336,297 |



CIP Financial Summary

| All Plants CIP | | | | | |
|----------------|---------------|---------------|---------------|---------------|---------------|
| Plant | Current Needs | Option 1 | Option 2 | Option 3 | Option 4 |
| Allison | \$34,240,000 | \$9,690,000 | \$9,690,000 | \$0 | \$0 |
| Broadway | \$26,200,000 | \$26,200,000 | \$26,200,000 | \$26,200,000 | \$26,200,000 |
| Greenwood | \$93,450,000 | \$13,150,000 | \$13,150,000 | \$0 | \$0 |
| Laguna Madre | \$28,750,000 | \$4,750,000 | \$4,750,000 | \$4,750,000 | \$4,750,000 |
| Oso | \$89,000,000 | \$80,000,000 | \$80,000,000 | \$0 | \$0 |
| Whitecap | \$25,600,000 | \$10,000,000 | \$10,000,000 | \$10,000,000 | \$10,000,000 |
| Regional Plant | \$0 | \$491,250,000 | \$442,050,000 | \$491,250,000 | \$442,050,000 |
| Total | \$297,240,000 | \$635,040,000 | \$585,840,000 | \$532,200,000 | \$483,000,000 |



Financial Summary

| All Plants Total Investment | | | | | |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Plant | Current Needs | Option 1 | Option 2 | Option 3 | Option 4 |
| Allison | \$190,000,000 | \$53,200,000 | \$53,200,000 | \$26,500,000 | \$26,500,000 |
| Broadway | \$200,000,000 | \$200,000,000 | \$200,000,000 | \$200,000,000 | \$200,000,000 |
| Greenwood | \$305,000,000 | \$65,300,000 | \$65,300,000 | \$28,100,000 | \$28,100,000 |
| Laguna Madre | \$123,000,000 | \$21,400,000 | \$21,400,000 | \$21,400,000 | \$21,400,000 |
| Oso | \$492,000,000 | \$322,000,000 | \$322,000,000 | \$81,200,000 | \$81,200,000 |
| Whitecap | \$95,800,000 | \$25,700,000 | \$25,700,000 | \$25,700,000 | \$25,700,000 |
| Regional Plant | | \$874,000,000 | \$825,000,000 | \$935,000,000 | \$886,000,000 |
| Total | \$1,410,000,000 | \$1,560,000,000 | \$1,510,000,000 | \$1,320,000,000 | \$1,270,000,000 |
| | | | | | |
| Program Savings | | -\$150,000,000 | -\$100,000,000 | \$90,000,000 | \$140,000,000 |