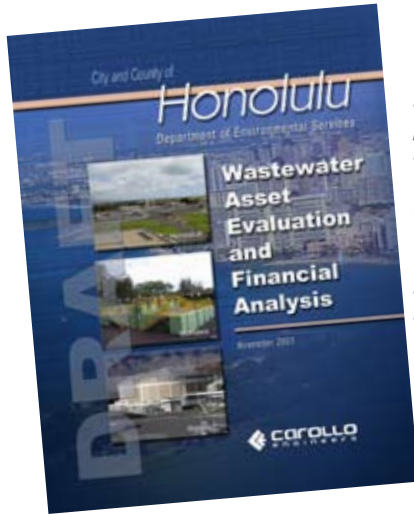


Honolulu Asset Management and Financial Analysis



Carollo Engineers developed an asset management program for seven of the City and County of Honolulu's wastewater treatment plants and eight pump stations.

Carollo Engineers performed an asset valuation and financial analysis for seven of the City and County of Honolulu's eight wastewater treatment plants: Honouliuli, Waianae, Wahiawa, Sand Island, Pa'alaa Kai, Kailua, Kahuku, and eight pump stations. This asset inventory, assessment, valuation, and financial analysis incorporated the first three steps of the overall asset management process. The asset management process is driven, in part, by GASB 34 and the new "modified" approach to accounting.

Project Outline

This project involved establishing an asset inventory, assessment, valuation, and financial analysis for each of the plants and pump stations. This included applying Carollo's Water/Wastewater Asset Manager (WAM) software program, a dynamic and analytical tool for asset management and valuation that is tailored to each facility and provides a detailed record of each assessed component. This software has the ability to track various parameters over time as well as to create a variety of reports and graphs from customized queries.

Historical Costs

Historical capital or acquisition costs were determined for both the facility and treatment processes by reviewing construction bid tabulations and engineering contracts. These costs were then escalated to "current value" using ENR's Cost of Construction Indices (ENRCCI). Process knowledge of the wastewater treatment plants were developed by reviewing

flow diagrams and reports provided by the City and County of Honolulu and conducting interviews with staff members.

Asset Assessment and Evaluation

Carollo assembled a team of experts in the fields of structural, mechanical, electrical/instrumentation, and process engineering, including Grade V operators, and conducted a physical assessment of the wastewater treatment plants and pump stations. The information collected during the assessments, such as condition, criticality, vulnerability, risk, level of service, and useful lives, as well as digital photos and videotape, was interfaced with the WAM software, which allocated costs to each treatment process, and calculated each asset and facility value. Different valuation techniques, including straight-line and modified depreciation approaches, were used to value the assets of each plant, including book value, current value, evaluated value, repair costs, and other ancillary costs, including annual and cumulative depreciation.

Financial Analysis

A cash flow financial analysis and bond evaluation was performed in order to assess the financial indicators important to the issuance of revenue bonds for possible sale of the wastewater treatment plants. This included reviewing revenue sources, operations and maintenance costs, land appraisals, and other relevant financial information.

Highlights

- ▼ Asset Management Program with clear communication and consistent data throughout organization.
- ▼ Valuation, financial analysis, and bond evaluation.
- ▼ Integration of planning strategies and asset management program.
- ▼ Repair versus replace decision-making framework.
- ▼ Water/Wastewater Asset Manager for asset management and valuation.
- ▼ Field assessments of seven wastewater plants and eight pump stations.

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The Future

This asset management plan will enable the City and County of Honolulu to expand on their own continuous assessment and improvement program and to be internally consistent with their data. In addition, it will empower them to improve their decision-making framework for repair versus replace decisions and to further optimize the processes at their wastewater facilities. This gives the City and County of Honolulu the ability to integrate their planning strategies with their asset management program.



Issue	Resolution	Relevancy
<p>Data Discrepancies.</p> <ul style="list-style-type: none"> ▼ Difficult to obtain. ▼ Conflicting/duplicate. ▼ Large amounts. ▼ New versus repair versus replaced versus demolished. ▼ Construction projects versus engineering contracts. 	<p>"Ground-truthing" Investigation.</p> <ul style="list-style-type: none"> ▼ Developed "rapid data input" record fields and spreadsheets. ▼ In-the-field investigations. ▼ Discussions with staff. ▼ Developed database. 	<p>Information Integrity.</p> <ul style="list-style-type: none"> ▼ Saves time during in-the-field investigations and interviews. ▼ Allows handling and organization of large amounts of data.
<p>Complexity of Condition Assessment.</p> <ul style="list-style-type: none"> ▼ Evaluate physical condition, functionality, or performance? ▼ Field testing? ▼ Documentation of condition, criticality, vulnerability, risk, and level of service. 	<p>Multi-Discipline Assessment Team.</p> <ul style="list-style-type: none"> ▼ Multiple engineering discipline "strike team" to conduct asset assessment. ▼ Calibration with other asset management systems. 	<p>Knowledge and Experience.</p> <ul style="list-style-type: none"> ▼ Thorough understanding of asset management and issues. ▼ Experience with philosophy, strategy, and organization.
<p>Key Criteria.</p> <ul style="list-style-type: none"> ▼ Condition, criticality, vulnerability, risk, and level of service. ▼ Useful lives. ▼ Repair costs. ▼ Valuation techniques; book value, replacement value, current value less repairs, and acquisition cost. 	<p>Evaluation System.</p> <ul style="list-style-type: none"> ▼ Reviewed Australian/New Zealand methods. ▼ Developed calculations for key criteria. ▼ Examined/established valuation methods. 	<p>Relevant Factors.</p> <ul style="list-style-type: none"> ▼ Customized decay curves for assets improve accuracy and save time. ▼ Prior experience with variety of valuation methods.