FROM: Cathy Rosen, Public Works Director
       Eric Johnston, City Engineer

INITIALED AS APPROVED FOR SUBMITTAL TO THE COUNCIL BY:

Jim Slowik, Mayor
Paul Schmidt, City Administrator
Doug Merriman, Finance Director
Margery Hite, City Attorney, as to form

PURPOSE
This agenda bill proposes adoption of a resolution related to five candidate sites for a new wastewater treatment facility.

AUTHORITY
The City has authority under RCW 35A.11.020 to render governmental services including operating and supplying of utilities and municipal services commonly or conveniently rendered by cities or towns. Planning for those services as may be required under RCW 90.48.110 and Chapter 173-240 WAC is included in this authority.

SUMMARY STATEMENT
On March 9, 2011, a workshop with the City Council was held to present and discuss the status of the wastewater facility planning process and to present four sites for further consideration. As discussed during the workshop, a resolution would be presented for consideration and adoption by the Council. Following the workshop, additional information became available allowing for further consideration of a fifth site. The resolution authorizing and directing the project team to proceed with the five candidate sites is attached.

STANDING COMMITTEE REPORT
This item was presented to the entire City Council at a workshop held on March 9, 2011.

RECOMMENDED ACTION
Adopt Resolution No. 11-07 directing the evaluation of five potential sites for a future wastewater treatment facility.
ATTACHMENTS
Resolution
Workshop presentation slides
Briefing document
Crescent Harbor site ranking

MAYOR'S COMMENTS
RESOLUTION NO. 11-07

A RESOLUTION OF THE CITY OF OAK HARBOR DIRECTING THE EVALUATION OF POTENTIAL SITES FOR A FUTURE WASTEWATER TREATMENT FACILITY.

WHEREAS, the 2008 City of Oak Harbor Comprehensive Sewer Plan identifies the need for a new wastewater treatment facility to meet future growth needs and to replace aging and at-risk infrastructure; and

WHEREAS, recognizing that the City of Oak Harbor is connected to the pristine waters of Puget Sound, specifically Oak Harbor Bay and Crescent Harbor Bay, the City’s goal is to obtain the highest level of water quality practical while recognizing the limitations of the rate payers of the City to fund the improvements; and

WHEREAS, the City of Oak Harbor Capital Improvement Plan of 2010-2015 specifically lists the Wastewater Treatment Plant Facilities Plan as a prioritized public project to be undertaken within the capital improvement plan time period; and

WHEREAS, on August 4, 2010 the City Council authorized the Mayor to enter into a contract with Carollo, Inc. for development of the aforementioned Facilities Plan required by RCW 90.48.110 and Chapter 173-240 WAC for a new wastewater treatment facility; and

WHEREAS, public input was sought, received and considered on potential wastewater treatment plant locations resulting in the identification of 13 potential locations; and

WHEREAS, input from the U.S. NAVY was sought, received and considered on potential wastewater treatment plant locations; and

WHEREAS, public input was sought, received and considered on the evaluation criteria to be used; and

WHEREAS, input from various stakeholder groups including the U.S. Navy, the Washington State Department of Ecology, Washington State Department of Health, was sought and incorporated into the evaluation criteria; and

WHEREAS, based on input from the public, various stakeholder groups, technical staff, engineering professionals and City staff, four equally weighted categories, being Social, Technical, Environmental and Financial, were developed for the evaluation of all potential site locations, and

WHEREAS, the Social criteria are as follows: 1) Protect Public Health and Safety, 2) Preserve/Enhance Public Amenities, and 3) Minimize Neighborhood Impacts; and

WHEREAS, the Environmental criteria are as follows: 1) Produce Best Water Quality, 2) Protect Environmental Sensitive Areas, and 3) Minimize Carbon Footprint; and

WHEREAS, the Technical criteria are as follows: 1) Reliable Performance, 2) Ease of Construction, and 3) Overall System Efficiency; and
WHEREAS, the Financial criteria are as follows: 1) Low Capital Cost, 2) Low Life Cycle Cost, and 3) Protect Assets for Future Development; and

WHEREAS, in order to efficiently and cost effectively study alternatives it is necessary to narrow the options to five candidate locations; and

WHEREAS, in order to efficiently and cost effectively study alternatives it is necessary to narrow the options to two treatment processes, being membrane bioreactor and conventional activated sludge; and

WHEREAS, after applying the aforementioned criteria to the 13 potential sites there are five candidate locations that best meet the City’s goal and objectives;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Oak Harbor as follows:

1. That Carollo, Inc., acting on behalf of the City and under the management of the City Engineer, is directed to evaluate five locations for further consideration as part of the wastewater treatment facility planning process.
2. That the five locations to be evaluated further are generally shown on Exhibit A and are referred to as:
   a. Windjammer Park
   b. Marina/Seaplane Base
   c. Old City Shops
   d. Beachview Farm
   e. Crescent Harbor
3. That both Membrane Bioreactor (MBR) and Activate Sludge (AS) treatment processes will be considered at all sites except for Windjammer Park where only MBR technology will be considered.
4. That outfalls to Oak Harbor Bay will be considered for all sites.
5. That an outfall to West Beach for the Beachview Farm site will be considered in addition to an Oak Harbor Bay outfall.
6. That additional public input will be sought and incorporated in the analysis and development of all alternatives.
7. That a report will be provided to the City Council comparing the five candidate sites.
8. That, as appropriate, additional sites and process may be considered as may be directed.

PASSED and approved by the City Council this 5th day of April, 2011.

THE CITY OF OAK HARBOR

______________________________, Mayor

Attest:

______________________________
City Clerk
Approved as to Form:

______________________________
City Attorney
Agenda

- Project Schedule Update
- Brief Review of Preliminary Alternatives
- Overview of Evaluation Process
- Proposed Alternatives and Sites
- Summary/Next Steps

Project Schedule Update
Matrix of Preliminary Alternatives
13 Alternatives, 8 Potential Sites

TBL+ Comparison of Alternatives

Technical and community objectives drive alternative selection
- Technical considerations:
  - Reliable, safe, efficient treatment facility to meet current and future regulations
- Community feedback:
  - Continue existing level of service
  - Control costs
  - Avoid open space/public impact
  - Implement a long-term solution
TBL+ objectives developed to match input

Environmental Objectives
E1: Produce Best Water Quality
- Meet the best wastewater treatment standards
- Achieve the highest water quality standards

E2: Protect Environmental and Natural Areas
- Protect wetlands, streams, and other critical areas
- Meet or exceed local and federal regulations

E3: Minimize Carbon Footprint
- Minimize the carbon footprint of Oak Harbor
- Meet or exceed local and federal regulations

* Criteria matching Oak Harbor Comprehensive Plan

Social Objectives
S1: Protect Public Health & Safety
- Protect public health and safety from potential hazards

S2: Preserve Natural Public Access
- Preserve natural public access for public use
- Meet local and national regulations

S3: Minimize Neighborhood Impacts
- Minimize the impact on existing neighborhoods
- Meet local and national regulations

* Criteria matching Oak Harbor Comprehensive Plan
Technical Objectives

T1
- Select treatment processes with many years of proven record
- Design for adequate redundancy

T2
- Avoid steeply sloped sites and/or sites with difficult access
- Avoid sites where acquisitions/construction could cause excessive costly delays

T3
- Overall System Efficiency
- Minimize the amount of energy consumed in operations

* Criteria matching Oak Harbor Comprehensive Plan

Financial Objectives

F1
- Low Capital Cost
  - Choose alternatives that are lower in cost (or "reasonable close" to lowest)
  - NOTE: Consider local, county, and state costs

F2
- Low Life-Cycle Cost
  - Choose alternatives that are lower in cost (or "reasonable close" to lowest)
  - NOTE: Consider capital cost and annual O&M costs for 20-year period

F3
- Protect Assets for Future Economic Development
  - Avoid areas served for commercial/business use within downstream stream

* Criteria matching Oak Harbor Comprehensive Plan

Financial analysis focused on comparing relative cost of alternatives

- "Conceptual level" costs developed for 3 major components:
  - Conveyance: 3% - 5% of total
  - Outfall: 3 - 8% of total
  - Treatment Plant: 90% - 95% of total

* Expected accuracy is ±50 to ±30%
"Unit cost" of treatment compared with multiple local MBR projects as check

- AS facilities typically cost 8% to 10% less than MBR

Other cost factors considered in comparative analysis

- Project Contingency: 30%
  - Accounts for planning level uncertainty
- Washington State Sales Tax: 8.7%
- Allied Costs (Engineering, Legal, Admin): 25%
  - "Soft" project costs not related to construction
- Escalation to Mid-point of Construction: 3% per yr
  - Assumes bidding in 2014

6 Alternatives are within 10% of lowest cost Alternative (3B)
Windjammer Park Site
Alternative 1: MBR with discharge to Oak Harbor outfall

Advantages
- Low relative cost (~ 6% above lowest cost)
- Most efficient use of infrastructure

Challenges
- Facilities located in/near Windjammer Park

Marina Site
Alternative 2A/B: MBR/AS with discharge to Oak Harbor outfall

Advantages
- Low relative cost (3% to 9% above lowest cost)
- Avoids facilities in/near Windjammer Park

Challenges
- Inefficient use of infrastructure
- Marina impact (MBR) or US Navy property (AS)
Old City Shops Site
Alternative 3A/B: MBR/AS with discharge to Oak Harbor outfall

**Advantages**
- Low relative cost (0% to 8% above lowest cost)
- Avoids facilities in near Windjammer Park
- Relatively efficient use of infrastructure

**Challenges**
- Places facilities in neighborhood area

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Beachview Farm Site
Alternative 4B: AS with discharge to Oak Harbor outfall

**Advantages**
- Low relative cost (~3% above lowest cost)
- Avoids facilities in parks/neighborhood areas
- Opportunity for beneficial reuse of effluent

**Challenges**
- Inefficient use of infrastructure

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Sites Proposed For Further Evaluation
Project Need: The City of Oak Harbor’s wastewater utility provides service to approximately 24,000 people within its City limits, including approximately 4,000 people located on the US Navy’s Seaplane Base. The City currently operates two wastewater treatment plants: a Rotating Biological Contactor (RBC) plant adjacent to a public park (Windjammer Park); and a lagoon plant on the Seaplane Base. For many years these two plants have reliably handled Oak Harbor’s wastewater. While both plants meet current permit requirements, they are now nearing the end of their useful life. They also lack the technology to meet increasingly stringent water quality standards and the capacity to keep pace with anticipated population growth. The City is currently evaluating alternatives to replace these two aging plants with a modern wastewater facility that will provide reliable, cost effective wastewater service for its customers.

Project Objectives: In September 2010, the City initiated a planning process to meet the following objectives:

1. Provide continued reliable wastewater treatment service.
3. Allow phased expansion to meet future demands.
4. Deliver construction and operation of a new facility in a cost effective manner.

Alternatives Being Considered: Following a series of meetings with the community and key stakeholders, the project team prepared a list of 13 preliminary alternatives located on eight potential sites. Potential sites were selected considering public and stakeholder input, plus technical requirements (e.g. environmentally sensitive areas, geotechnical considerations, land use planning, etc). Two treatment processes are considered: membrane bioreactor (MBR), and activated sludge (AS). Preliminary alternatives were developed and evaluated based on their ability to meet a range of specific objectives in four categories: Technical, Social, Environmental, and Financial. Based on this evaluation, the following sites are proposed for further consideration:

1. Windjammer Park: This site is public open space owned by the City and located adjacent to the existing RBC treatment plant.
2. Old City Shops: This site is near Windjammer Park, and is comprised of approximately 2 acres owned by the City plus adjacent private property.
3. Marina: This site includes approximately 3 acres of City-owned property next to the existing marina, plus adjacent property on the Seaplane Base owned by the US Navy.
4. Beachview Farm: This site is located on a privately owned farm near the City limits, approximately 2.5 miles from the existing RBC plant.

Planning Level Costs: Conceptual level costs have been developed for each preliminary alternative, and used for comparing alternatives on a financial basis. Cost estimates will be refined throughout the planning process. Even the lowest cost alternatives will represent a significant investment for the City. Total project costs for treatment, conveyance, and outfall improvements may be in the range of $70M to $90M.

Project Schedule: The current Facilities Planning effort represents the first step in the project development process. The planning team will propose a final alternative in the summer of 2011. Following Council approval, engineering and environmental documents will be submitted for agency review in 2012. After design and construction phases the City desires to place a new wastewater facility into service in 2017.
## Figure 1 – Potential Sites

<table>
<thead>
<tr>
<th>No. of TBL+ Objectives Met</th>
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<tbody>
<tr>
<td>Ideal Alternative</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Windjammer MBR</td>
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<tr>
<td>Marina MBR</td>
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<tr>
<td>Marina AS</td>
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<tr>
<td>Shops MBR</td>
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<tr>
<td>Shops AS</td>
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<tr>
<td>Beachview AS</td>
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<table>
<thead>
<tr>
<th>Site/Alternative</th>
<th>Advantages</th>
<th>Challenges</th>
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</thead>
</table>
| Windjammer MBR   | • Low relative cost  
                    • Efficient use of infrastructure |
|                  |             | • Facilities located in/near Windjammer Park |
| Marina MBR/AS    | • Low relative cost  
                    • Avoids facilities in/near Windjammer Park |
|                  |             | • Inefficient use of infrastructure  
                    • Marina impact (MBR) or US Navy property (AS) |
| Shops MBR/AS     | • Low relative cost  
                    • Avoids facilities in/near Windjammer Park  
                    • Efficient use of infrastructure |
|                  |             | • Facilities located in neighborhood area |
| Beachview Farm AS| • Low relative cost  
                    • Avoids facilities in parks/neighborhood areas  
                    • Opportunity for beneficial reuse |
|                  |             | • Inefficient use of infrastructure |