ALVISO DOCK FEASIBILITY STUDY PHASE II:
BATHYMETRIC SURVEY REPORT

Housing, Land Use, Environment and Transportation (HLUET) Committee
County of Santa Clara

June 21, 2018
Aug 2015: Public asks County to consider replacing dock at SBYC

June 2016: Funding to perform study

April 2017: Alviso Dock Feasibility Study (Phase I) presented at HLUET
  Dock construction feasible, significant environmental / cost constraints
  Dredging is core issue

HLUET request for additional study

2018 Bathymetric Survey & Report (Phase II)
Proposed changes to South Bay Yacht Club Dock Configurator
4/2/2015

Notes:
1. S.C. County takes over operation of docks.
2. Docks are moved to open water.
3. Old docks are removed.
4. All boats are side tied.
5. Berthing is open to the public. One does not need to be a member of the Yacht Club in order to rent berth space.

Green – existing dock to be removed
Red – new proposed dock
Alviso Dock Feasibility Study
TranSystems Corporation

Legend
- Docks and Vessels To Be Removed
- Proposed Project Dock (740 Linear Feet, 18 Berths)

South Bay Yacht Club
New ADA Gangway (80 Feet Long)
STUDY METHODOLOGY

- Study builds on Phase I Feasibility Study
- Multibeam Sonar/LIDAR
- Photography
ASSUMPTIONS

Appropriate design standards for the potential Project:

- 50-foot channel bottom width *(Provides ability to dredge to recommended depth and limits impact to levees and vegetation)*

- 35-ft max vessel size *(Encompasses non-powered watercraft, shallow draft pontoon, inflatable raft-type, power boats, and some deeper draft sailboats)*

- 1.8ft Mean Low Water Level (MLLW) lowest observed tide

- -6.8 MLLW slough bottom elevation *(Allows various boats up to ~35-feet length to safely enter, exit and moor)*

- 3:1 slough side slopes *(Based on engineering principles)*
BATHYMETRIC SURVEY RESULTS

Channel Accessibility
BATHYMETRIC SURVEY RESULTS

- Based on assumptions, *dredging is necessary*
- Various areas where depth/width are potential hazards
- Area around existing SBYC dock lacks width, depth
- Primary issues are:
  - Ability for boats to pass
  - Ability to turn
  - Low tide
DREDGING DETAIL

- Initial dredging required
- Maintenance of slough every 5 years
- Sediment likely mercury–laden (costly disposal)
- Potential impacts to wetland habitat
- Project void if USACE denies permit
- Other permits needed
ALTERNATIVES

Alternative 1
Replace dock; dredging performed by other entity (no longer applicable)

Alternative 2A
Replace dock; no dredging (no longer applicable)

Alternative 2B
Dock replacement and dredging included in project (most appropriate/likely)
SECTION AT SOUTH BAY YACHT CLUB
SLOUGH CROSS SECTION: STA 95 + 00
SLOUGH CROSS SECTION AT STA 30+00
PROJECT LOCATION

FIGURE 9 - SOUTH BAY YACHT CLUB DETAIL
ALVISO SLOUGH: -4’ MLLW

* Mean Lower Low Water (MLLW): The average of all low water heights observed over the National Tidal Datum
ALVISIO SLOUGH: -4’ MLLW

* Mean Lower Low Water (MLLW): The average of all low water heights observed over the National Tidal Datum
## ALTERNATIVE 2B
Dock Replacement & Slough Dredging

| Dredging                      | • ~107,000 CY removed from dock area and slough  
|                              | • Maintenance dredging assumed needed every 5 years |
| Environmental (CEQA)         | Environmental Impact Report (EIR) |
| Environmental Mitigation     | Assumed requirement for dredging and wetland take |
| Unique Assumptions           | • No other project impacts or changes the scope (performs dredging)  
|                              | • Necessary demolition existing SBYC docks (42), piles, abandoned boats |
## COST ESTIMATES

<table>
<thead>
<tr>
<th>Cost Item</th>
<th>2017 Dollars</th>
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<tbody>
<tr>
<td><strong>Capital Costs</strong></td>
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<tr>
<td>Construction Costs</td>
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<td>Soft Costs*</td>
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<td><strong>Total Capital</strong></td>
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<td><strong>Net Annual Costs</strong></td>
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<td>Annual Maintenance Costs</td>
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<td><strong>Net Annual Costs</strong></td>
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* Includes estimated costs for engineering, construction management, regulatory permits, mitigation.
SUMMARY

- Dredging is required
- Multiple permits for dredging necessary, possibly challenging
- High capital and ongoing maintenance costs
- Revenue generation less than ongoing cost
QUESTIONS?