

‘ĪAO VALLEY STATE MONUMENT PARK IMPROVEMENTS



Public Informational Meeting

Wailuku Community Center

Thursday, March 14, 2019

5:00 pm to 7:00 pm



AGENDA

- WELCOME
- MEETING FORMAT
- PROJECT OVERVIEW
- PROPOSED IMPROVEMENTS
 - Site Plan
 - Operational Requirements
 - Potential Impacts
- SLOPE REPAIRS
 - Design Considerations
 - Long-Term Slope Stabilization
- BREAK OUT SESSION
- CLOSING REMARKS



PROJECT OVERVIEW

- The Department of Land and Natural Resources (DLNR) is planning to improve existing facilities at the 'Īao Valley State Monument.
- \$3 million of appropriated funds.
- Anticipated to go out for bid by end of 2019 with construction planned to commence in 2020.
- Prime Consultant:



WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS



PROPOSED IMPROVEMENTS

Provide additional parking

Install non-potable water lines to comfort station

Renovate existing comfort station

Install sewer lines from comfort station to holding tanks

Relocate ADA stalls

Enhance park entrance



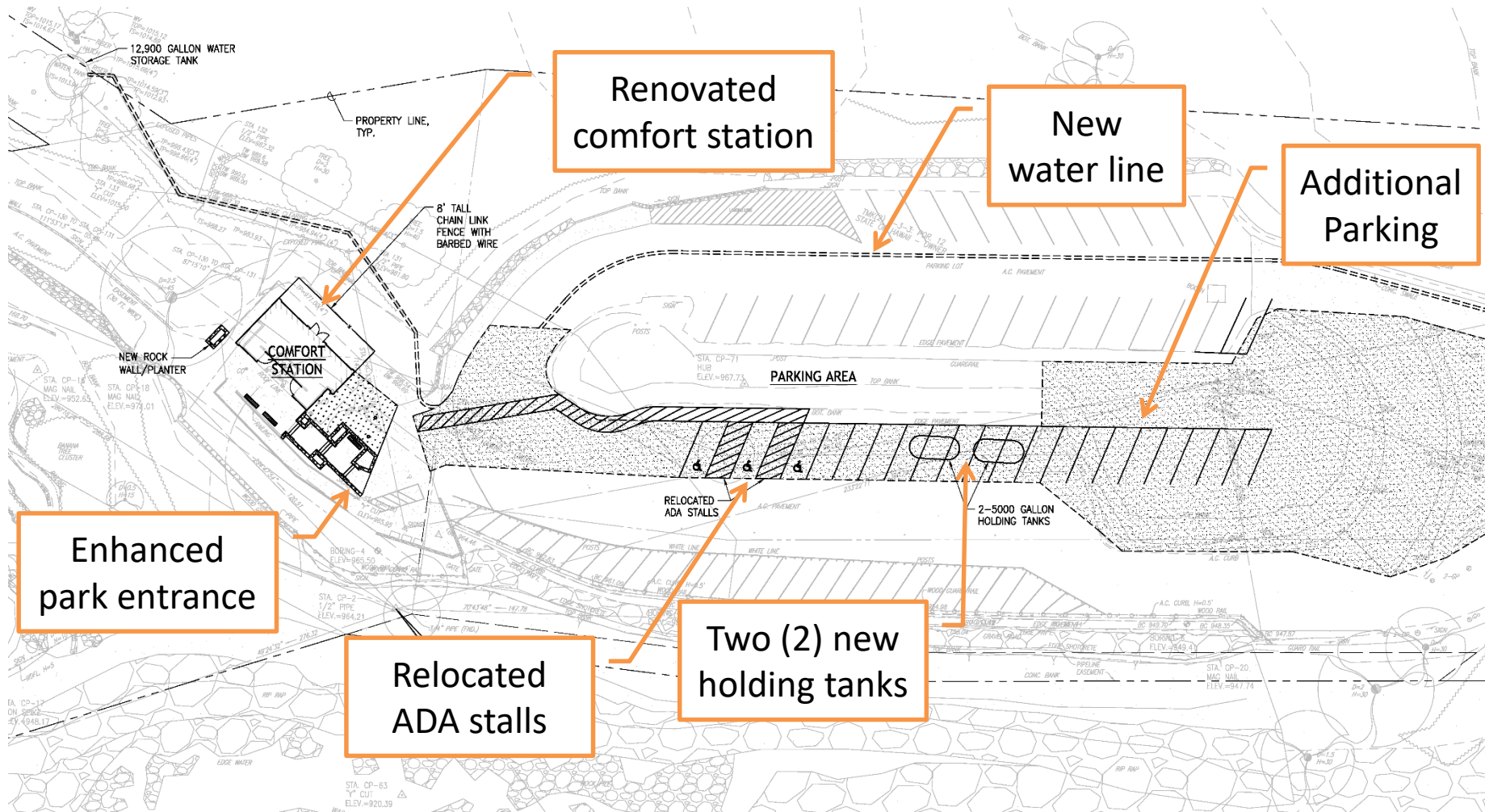
(Restroom and Parking Lot)

Site plan for the proposed station improvements at the intersection of Highway 101 and Highway 102. The plan shows the existing station building, a new waiting area, a new entry, and new landscaping. Key features include a new rock wall/planter, a new bench, a new alum. railing, and a new HC ramp. The plan also shows existing concrete paving and a new landscaping area. Elevation markers and dimensions are provided throughout the plan.

Key features and dimensions:

- NEW LANDSCAPING:** A large green area on the right side of the plan, with dimensions of 4'-0" and 8'-0".
- NEW BENCH:** Two benches are shown, one in the new waiting area and one in the new entry area.
- NEW ENTRY CONC.:** A new concrete entry area with a width of 5'-0".
- NEW ALUM. RAILING:** A new aluminum railing area with a width of 4'-0".
- NEW ROCK WALL/PLANTER:** A new rock wall/planter area with a width of 4'-0".
- EXIST. WAITING AREA CONC.:** An existing concrete waiting area with a width of 4'-0".
- EXIST. HC RAMP CONC.:** An existing concrete highway ramp area with a width of 4'-0".
- EXIST. CONC. PAVING:** Existing concrete paving areas are shown on the right side of the plan.
- Elevation Markers:** Various elevation markers are provided throughout the plan, including 970.50, 970.55, 970.59, 970.60, 970.66, 970.73, 970.75, 970.76, 970.77, 970.78, 970.79, 970.80, 970.81, 970.82, 970.83, 970.84, 970.85, 970.86, 970.87, 970.88, 970.89, 970.90, 970.91, 970.92, 970.93, 970.94, 970.95, 970.96, 970.97, 970.98, 970.99, 971.00, 971.01, 971.02, 971.03, 971.04, 971.05, 971.06, 971.07, 971.08, 971.09, 971.10, 971.11, 971.12, 971.13, 971.14, 971.15, 971.16, 971.17, 971.18, 971.19, 971.20, 971.21, 971.22, 971.23, 971.24, 971.25, 971.26, 971.27, 971.28, 971.29, 971.30, 971.31, 971.32, 971.33, 971.34, 971.35, 971.36, 971.37, 971.38, 971.39, 971.40, 971.41, 971.42, 971.43, 971.44, 971.45, 971.46, 971.47, 971.48, 971.49, 971.50, 971.51, 971.52, 971.53, 971.54, 971.55, 971.56, 971.57, 971.58, 971.59, 971.60, 971.61, 971.62, 971.63, 971.64, 971.65, 971.66, 971.67, 971.68, 971.69, 971.70, 971.71, 971.72, 971.73, 971.74, 971.75, 971.76, 971.77, 971.78, 971.79, 971.80, 971.81, 971.82, 971.83, 971.84, 971.85, 971.86, 971.87, 971.88, 971.89, 971.90, 971.91, 971.92, 971.93, 971.94, 971.95, 971.96, 971.97, 971.98, 971.99, 972.00, 972.01, 972.02, 972.03, 972.04, 972.05, 972.06, 972.07, 972.08, 972.09, 972.10, 972.11, 972.12, 972.13, 972.14, 972.15, 972.16, 972.17, 972.18, 972.19, 972.20, 972.21, 972.22, 972.23, 972.24, 972.25, 972.26, 972.27, 972.28, 972.29, 972.30, 972.31, 972.32, 972.33, 972.34, 972.35, 972.36, 972.37, 972.38, 972.39, 972.40, 972.41, 972.42, 972.43, 972.44, 972.45, 972.46, 972.47, 972.48, 972.49, 972.50, 972.51, 972.52, 972.53, 972.54, 972.55, 972.56, 972.57, 972.58, 972.59, 972.60, 972.61, 972.62, 972.63, 972.64, 972.65, 972.66, 972.67, 972.68, 972.69, 972.70, 972.71, 972.72, 972.73, 972.74, 972.75, 972.76, 972.77, 972.78, 972.79, 972.80, 972.81, 972.82, 972.83, 972.84, 972.85, 972.86, 972.87, 972.88, 972.89, 972.90, 972.91, 972.92, 972.93, 972.94, 972.95, 972.96, 972.97, 972.98, 972.99, 973.00, 973.01, 973.02, 973.03, 973.04, 973.05, 973.06, 973.07, 973.08, 973.09, 973.10, 973.11, 973.12, 973.13, 973.14, 973.15, 973.16, 973.17, 973.18, 973.19, 973.20, 973.21, 973.22, 973.23, 973.24, 973.25, 973.26, 973.27, 973.28, 973.29, 973.30, 973.31, 973.32, 973.33, 973.34, 973.35, 973.36, 973.37, 973.38, 973.39, 973.40, 973.41, 973.42, 973.43, 973.44, 973.45, 973.46, 973.47, 973.48, 973.49, 973.50, 973.51, 973.52, 973.53, 973.54, 973.55, 973.56, 973.57, 973.58, 973.59, 973.60, 973.61, 973.62, 973.63, 973.64, 973.65, 973.66, 973.67, 973.68, 973.69, 973.70, 973.71, 973.72, 973.73, 973.74, 973.75, 973.76, 973.77, 973.78, 973.79, 973.80, 973.81, 973.82, 973.83, 973.84, 973.85, 973.86, 973.87, 973.88, 973.89, 973.90, 973.91, 973.92, 973.93, 973.94, 973.95, 973.96, 973.97, 973.98, 973.99, 974.00, 974.01, 974.02, 974.03, 974.04, 974.05, 974.06, 974.07, 974.08, 974.09, 974.10, 974.11, 974.12, 974.13, 974.14, 974.15, 974.16, 974.17, 974.18, 974.19, 974.20, 974.21, 974.22, 974.23, 974.24, 974.25, 974.26, 974.27, 974.28, 974.29, 974.30, 974.31, 974.32, 974.33, 974.34, 974.35, 974.36, 974.37, 974.38, 974.39, 974.40, 974.41, 974.42, 974.43, 974.44, 974.45, 974.46, 974.47, 974.48, 974.49, 974.50, 974.51, 974.52, 974.53, 974.54, 974.55, 974.56, 974.57, 974.58, 974.59, 974.60, 974.61, 974.62, 974.63, 974.64, 974.65, 974.66, 974.67, 974.68, 974.69, 974.70, 974.71, 974.72, 974.73, 974.74, 974.75, 974.76, 974.77, 974.78, 974.79, 974.80, 974.81, 974.82, 974.83, 974.84, 974.85, 974.86, 974.87, 974.88, 974.89, 974.90, 974.91, 974.92, 974.93, 974.94, 974.95, 974.96, 974.97, 974.98, 974.99, 975.00, 975.01, 975.02, 975.03, 975.04, 975.05, 975.06, 975.07, 975.08, 975.09, 975.10, 975.11, 975.12, 975.13, 975.14, 975.15, 975.16, 975.17, 975.1

SITE PLAN



OPERATIONAL REQUIREMENTS

- Holding tanks would need to be pumped every three days during peak visitor times.
 - At \$500/load and 3 loads/pump, annual pumping costs would be approximately \$189,000.
- Other treatment and disposal options are being considered.
 - Technologies to treat sewage effluent to higher level of treatment, such as a Membrane Bioreactor (MBR) wastewater treatment system that produces high-quality effluent suitable enough for water reuse.
 - Alternative options may have different power and space requirements for appropriate treatment and disposal.
- No effluent would be discharged into the ground or stream with any of the alternatives.

POTENTIAL IMPACTS

- Construction duration will be **approximately 6 months**.
- **Traffic control measures** will be provided during water line improvements along 'Iao Valley Road.
- Park will need to be **closed** to the public during construction for safety reasons.

POTENTIAL IMPACTS

- **Archaeological monitoring** will be proposed during the initial stages of construction. Monitoring would be extended beyond this period should anything be found in any of the work areas or if such discoveries appear to be more likely than originally anticipated.
- **Excavated soil and rock material** will remain in the valley.
- Temporary construction impacts (i.e. noise, dust, runoff, etc.) will be mitigated through implementation of **site-specific best management practices (BMPs)**.

SLOPE REPAIRS

Apply
shotcrete
and soil
nails to
eroding
slope



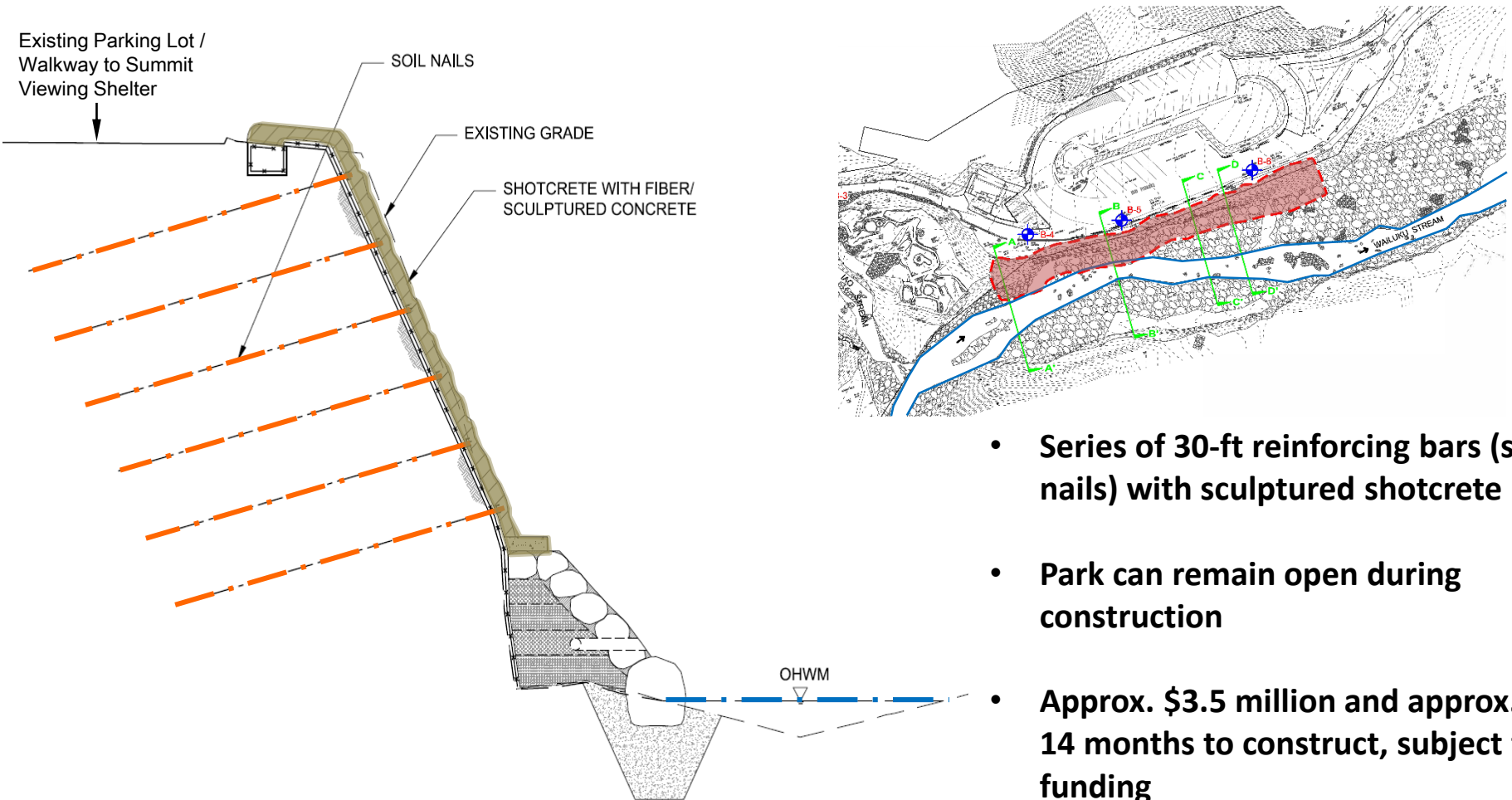
Protect
slope toe
with
grouted
boulder
revetment

(Kinihāpai Stream)

DESIGN CONSIDERATIONS

- Adding slope toe protection would narrow the stream channel and increase stream velocity. Alternatives to protect the slope while maintaining stream capacity are being considered.
- Costs associated with design alternatives may require additional funding.

LONG-TERM SLOPE STABILIZATION



- Series of 30-ft reinforcing bars (soil nails) with sculptured shotcrete
- Park can remain open during construction
- Approx. \$3.5 million and approx. 14 months to construct, subject to funding

LONG-TERM SLOPE STABILIZATION

Existing Shotcrete



Proposed Shotcrete Example (Diamond Head Monument Rockfall Mitigation)



BREAKOUT SESSION

Environmental Permitting

Earl Matsukawa (WOC)

Archaeological & Cultural Resources

Holly McEldowney (State Parks)

Infrastructure Improvements

John Datiles (DLNR - Engineering)
Glenn Kuwaye (WOC)

Slope Repairs

Brian Chang (DLNR - Engineering)

Long-Range Planning for 'Īao Valley

Chris Hart & Partners, Inc.

DLNR – Division of State Parks

Russell Kumabe (State Parks)
Larry Pacheco (State Parks)

CLOSING REMARKS

Russell Kumabe

Chief, Planning and Development

DLNR, State Parks

(808) 587-0305

russell.p.kumabe@hawaii.gov

Larry Pacheco

Maui District Superintendent

DLNR, State Parks

(808) 984-8102

larry.j.pacheco@hawaii.gov

Please visit the DLNR website for other State Parks
information at <http://dlnr.hawaii.gov/>