

Staff Report

for the Regular Meeting of the Board of Directors, July 24, 2019

TO: Honorable Board of Directors

FROM: Keane Sommers, P.E., Hydroelectric Manager
Lacy Cannon, Assistant Engineer

DATE: July 16, 2019

SUBJECT: Dutch Flat Flume Foundation Rehabilitation Project – Award of Contract

HYDROELECTRIC

RECOMMENDATION:

Approve a contract in the amount of \$317,000 with Syblon Reid for design and construction of foundation protection at four problem sites on the Dutch Flat Flume, approve the associated budget amendment, and authorize the General Manager to execute the necessary documents.

BACKGROUND:

The Hydroelectric Department has identified four locations on the Dutch Flat Flume where the foundations have been seriously eroded (please see the location map and photos of the four sites in Attachment 1). SAGE Engineers (now Gannett-Fleming) evaluated the sites and provided recommendations for foundation protection at each of the four locations. It has been determined that if protections of these damaged foundations are not constructed in time, the stabilities of the flume structures will be compromised. As there is no vehicular access road to any of the four sites, the only alternative for construction transportation is via the flume channel during its annual outage window, which is scheduled for September 23 to October 4 in 2019.

A request for quote (RFQ) was sent to seven general contractors. Three general contractors and an additional four specialty contractors participated in the mandatory job walk on June 26, 2019. One quote was received, from Syblon Reid. Hydroelectric staff has reviewed the quote and found that the cost for each item appears reasonable.

The contractor's proposed quote schedule is summarized in the following table:

Quote by: Syblon Reid

No.	Items	Costs
1.	Design Package (to be reviewed and approved by NID)	\$30,000
2.	Construction: Mobilization and Demobilization	\$30,000
3.	Construction: Station 107+82 Site – (shotcrete/soil nail wall/subdrainage and surface drainage systems)	\$142,000
4.	Construction: Station 137+22 Site – (riprap shotcrete under column/armor around column)	\$19,000
5.	Construction: Station 154+02 Site – (reinforced shotcrete apron)	\$20,000
6.	Construction: Station 196+02 Site – (shotcrete/soil nail wall/subdrainage system)	\$76,000
Total Quote Price:		<u>\$317,000</u>

This project supports Goal No. 1 of the District's Strategic Plan by proactively repairing District assets prior to their failure providing for improved reliability.

BUDGETARY IMPACT:

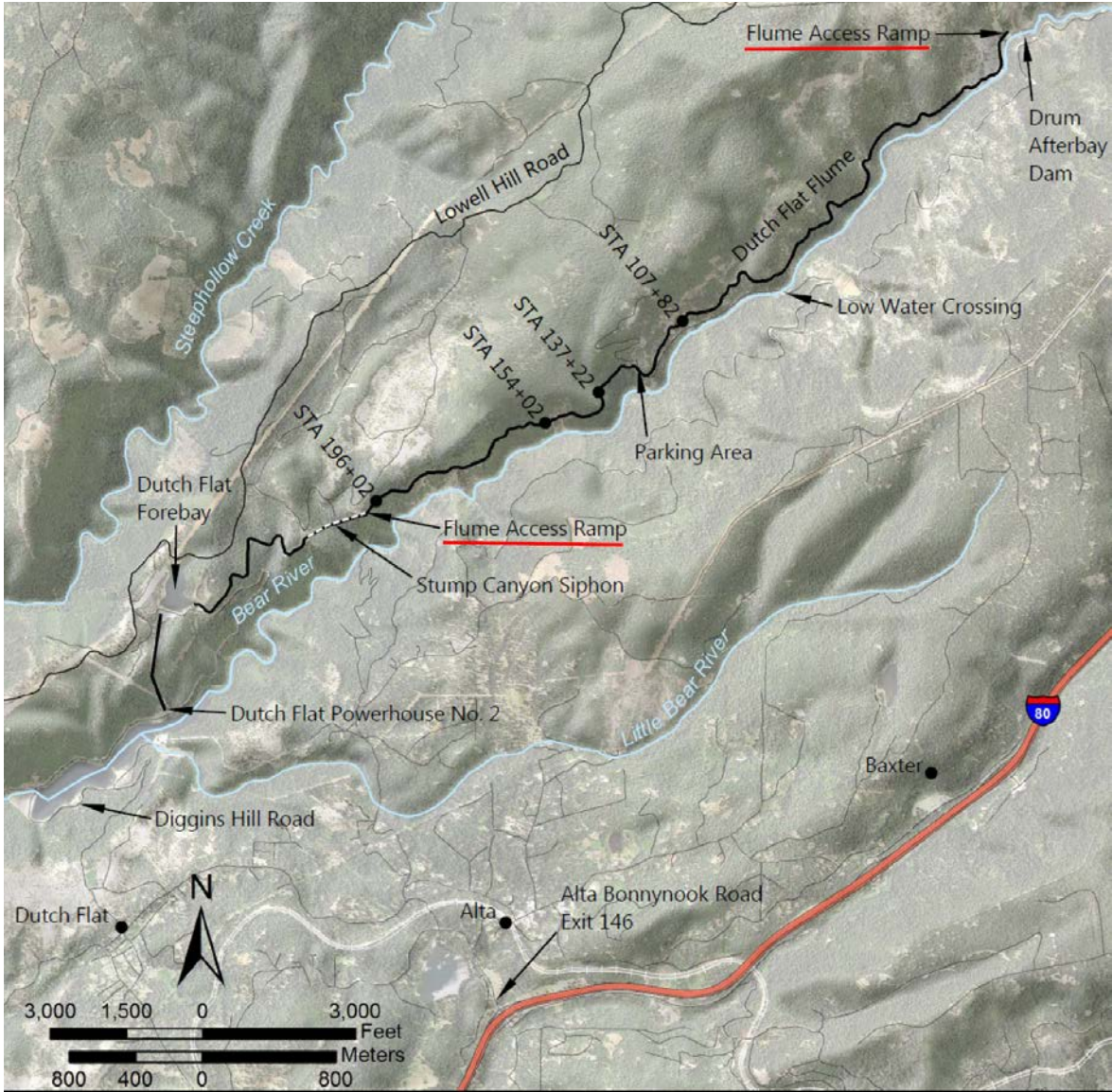
A total of \$450,000 for the construction of this project was included in the 2019 budget. This amount was reduced by \$250,000 in order to achieve the five percent budget cuts requested by the Board of Directors. Staff believes that it is important to construct these repairs this year and recommends transferring \$140,000 from the Loma Rica Powerhouse Project to cover the budget shortfall. The Loma Rica Powerhouse has been delayed due to issues obtaining the necessary water rights.

KSS
LJC

Attachments:

1. Location Map and Photos at the Four Dutch Flat Flume sites
2. Budget Amendment Form
3. Power Point Presentation for the July 24, 2019 Board Meeting

Attachment 1



Dutch Flat Flume

Vehicular access locations into the 4-mile-long flume channel are only through the access ramps at either end of the flume.



Station 107 +82

Problems: Approximately 55-foot-long x 6-foot-high x 10-foot-wide erosion and raveling of foundation ground under the flume wall and floor.

Protection: Shotcrete/Soil Nail Wall/Sub-drains/Surface Drainage



Station 137 +22

Problem: Partial undermining of one concrete column due to scouring at the flume crossing of a natural ravine.

Protection: Riprap/Shotcrete Beneath Column/Armor Around the Column



Station 154+02

Problem: Localized erosion under the drainage culvert outlet.

Protection: Reinforced Shotcrete Apron



Station 196+02

Problem: Erosion and raveling of the foundation at/near a corner of the spillway structure for the flume.

Protection: Shotcrete/Soil Nail Wall/Sub-drain.



**NEVADA IRRIGATION DISTRICT
BUDGET AMENDMENT REQUEST**

Request Number

Req. No BA 2019 - 110

Date: 7/16/2019
 To: Remleh Scherzinger, General Manager
 From: Department Manager(s)

Initial

Budget Transfer: Enter Operating/Capital Expenditure or Revenue line items.

Department	Object / Account	Increase/(Decrease)
50112 Hydro Administration	52915 Proj Bud: Non-Programmatic	(\$140,000.00)
50112 Hydro Administration	52921 Proj Bud: Dam & Water Impr	\$140,000.00

Budget Increase: Enter Operating/Capital Expenditure or Revenue line items.

Department	Object / Account	Increase/(Decrease)

Division Fund	Funding Account	Increase/(Decrease)

Explanation: Enter narrative explaining reason for amendment.

Requested budget transfer in Hydroelectric Department Budget to complete necessary repairs of the Dutch Flat Flume Foundation.

APPROVALS:

	<u>Date</u>	<u>Signature</u>	<u>AGM/FM Initials</u>	<u>Approved/Denied</u>
Level I:				
Level II:				
Level III:				



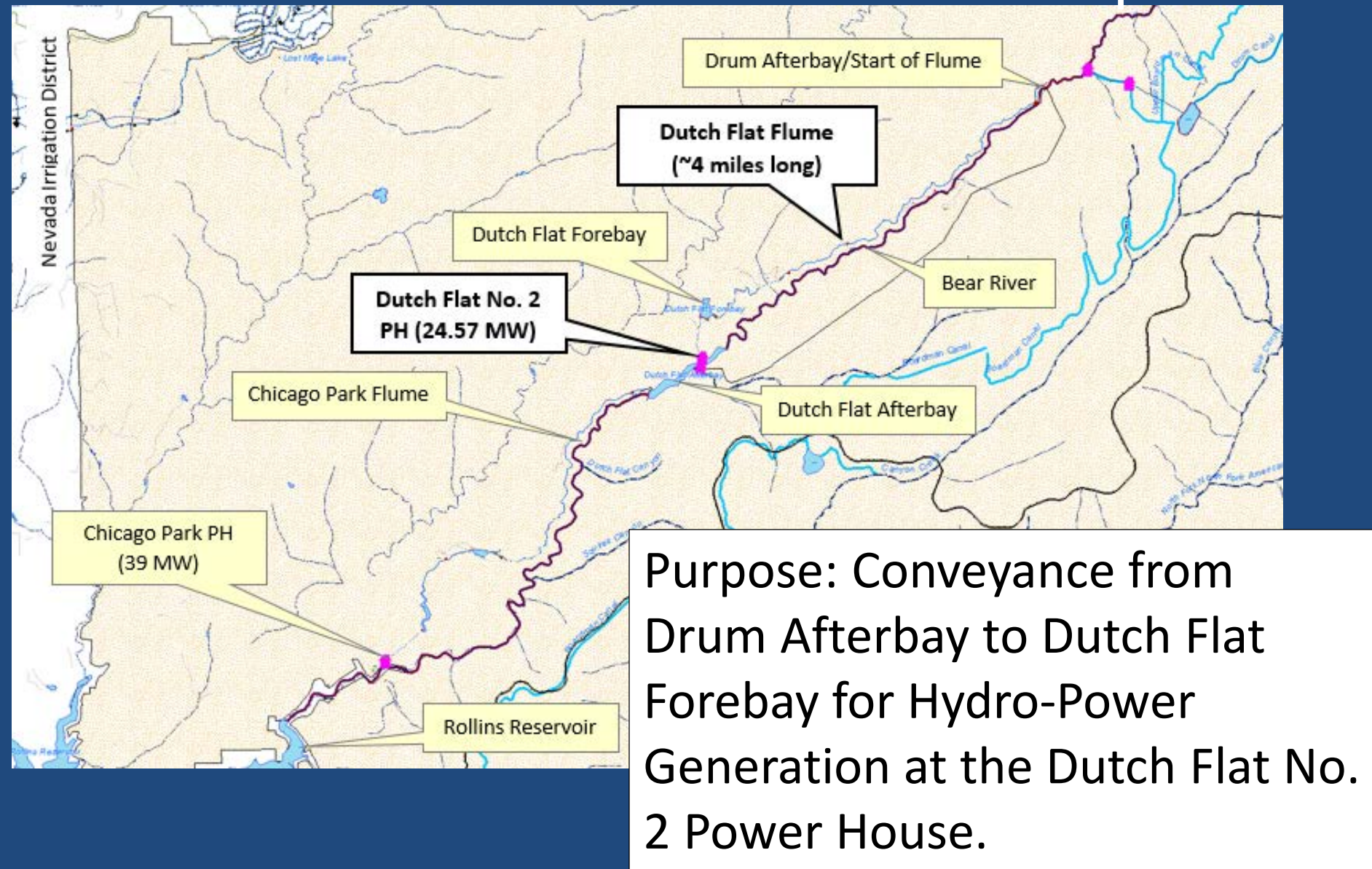
Dutch Flat Flume Foundation Rehabilitation Project

Presented to the Nevada Irrigation District Board of Directors

Presented by
Keane Sommers, P.E., Hydroelectric Manager

July 24, 2019

Dutch Flat Flume – Location & Purpose



Dutch Flat Flume – Impacts of Failure

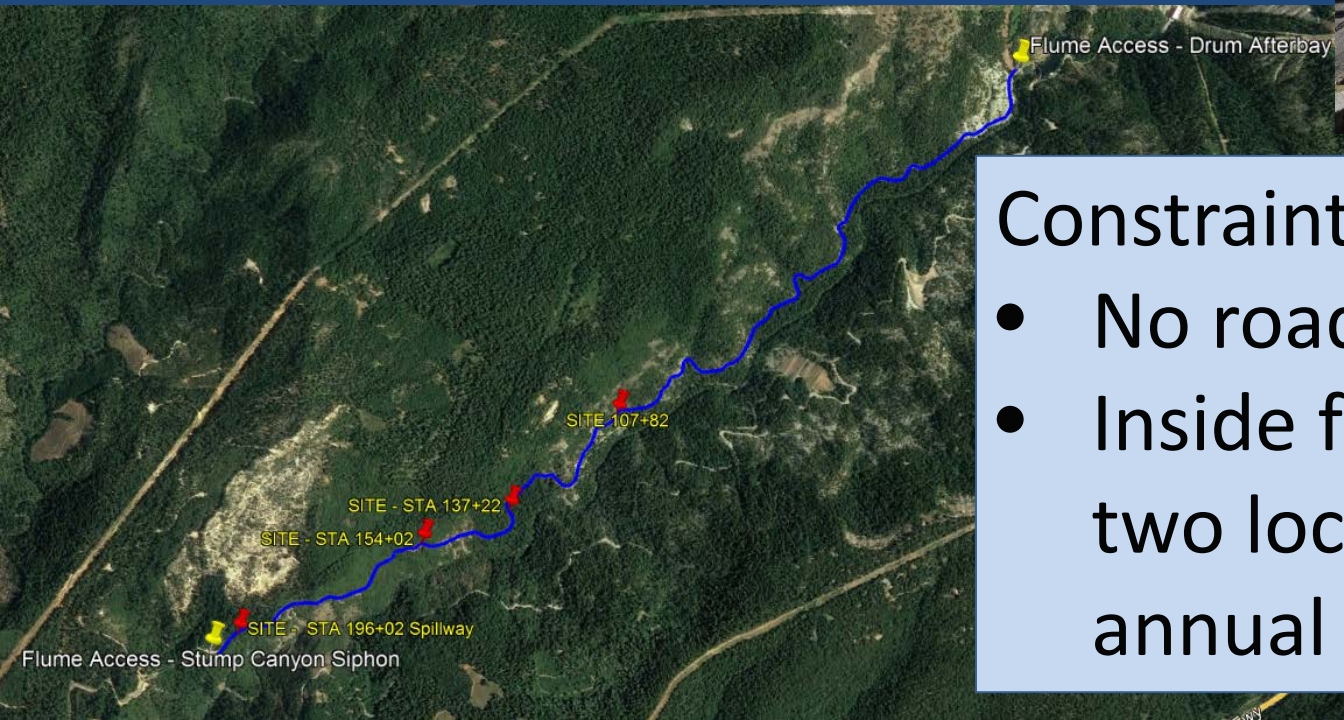
- Inability to generate = Lost Revenue
 - Monthly Revenue = \$230,000 to \$870,000
- Emergency repair cost several times cost of scheduled maintenance
- Environmental Consequences



Dutch Flat No. 2 Power House

Dutch Flat Flume Foundation Rehabilitation Background

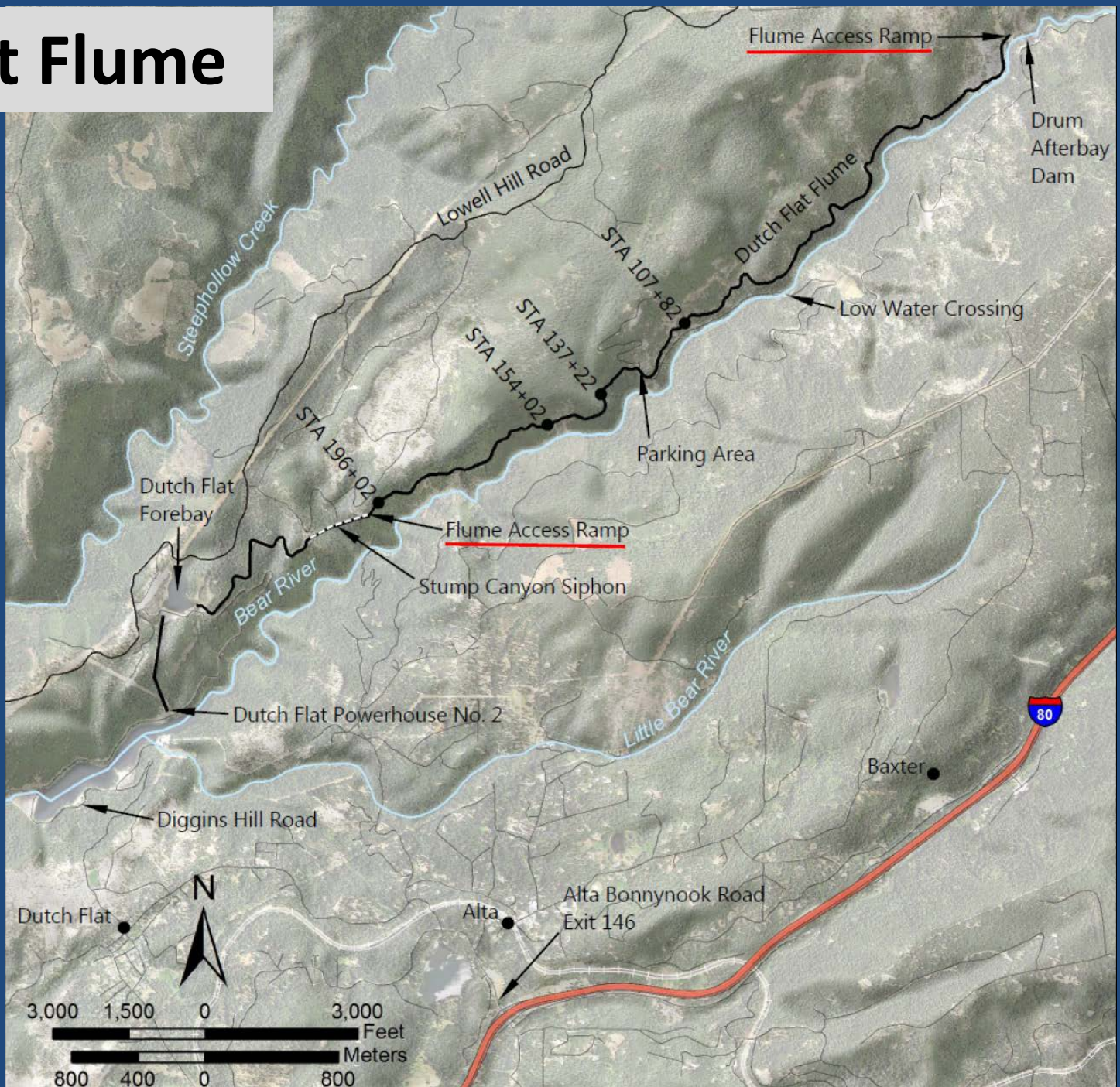
- Four sites with partially undermined foundations
- Scope of work:
 - Design and Specifications
 - Construction



Constraints:

- No roads to sites
- Inside flume access at two locations during annual outage

Dutch Flat Flume



Station 107 + 82:

Erosion and Raveling of Flume Foundation



Rehabilitation:

Shotcrete/Soil Nail Wall/Sub-drain/Surface Drain

Station 137+22

Partial Undermining of Concrete Column



Rehabilitation:

Riprap/Shotcrete Under Column/Armor Around Column

Station 154+02

Erosion Under Drainage Culvert



Rehabilitation:
Reinforced Shotcrete Apron

Station 196+02

Undermining of Foundation at Flume Spillway Corner



Rehabilitation:
Shotcrete/Soil Nail Wall/Sub-Drain

Dutch Flat Flume Foundation Protection Request for Quote (RFQ) Summary

- RFQ sent to 7 contractors on June 10, 2019
- 7 contractors participated in the mandatory Job Walk on June 26, 2019
- One quote was received



Dutch Flat Flume Foundation Protection Proposed Quote Schedule

Quoter: Syblon Reid – Quote Schedule

No.	Item	Price
1.	Design Package (to be reviewed and approved by NID)	\$30,000
2.	Construction: Mobilization and Demobilization	\$30,000
3.	Construction: Station 107+82 Site – (shotcrete/soil nail wall/subdrainage and surface drainage systems)	\$142,000
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Total Quote Price: \$317,000

Project Funding

- Original Budget - \$450,000
- Budget after reductions required to meet 5% savings - \$200,000
- Staff recommends a transfer of \$140,000 from the Loma Rica Powerhouse to fund the project and potential change orders.
 - Powerhouse delayed by water rights issues



Dutch Flat Flume Foundation Protection Recommendation

- Approve a contract in the amount of \$317,000 with Syblon Reid for design and construction of foundation protection at four problem sites on the Dutch Flat Flume, approve the associated budget amendment, and authorize the General Manager to execute the necessary documents.

