Interlake Tunnel and Spillway Modification Projects

April 16, 2015

Pre-proposal Meeting

Agenda

- Welcome / Introductions
- Pre-proposal meeting instructions
- Project Information
  - Tunnel Project Introduction
  - Spillway Modification Introduction
  - Reservoir simulation modeling results
  - Project schedule
  - Capital cost budget

Agenda (cont.)

- RFP Requirements
- Selection Criteria
- Sample Contract Agreement
  - Compensation and payments
- RFP 10531 Preliminary Engineering Scope of Work
- RFP 10532 Environmental Compliance Scope of Work
- Exhibit B – Technical References
- Questions and Answers

Introductions

Project Owner

EPC Consultants, Inc

Program Management

HOLLENBECK CONSULTING

Conceptual Engineering

Phenix Environmental Planning

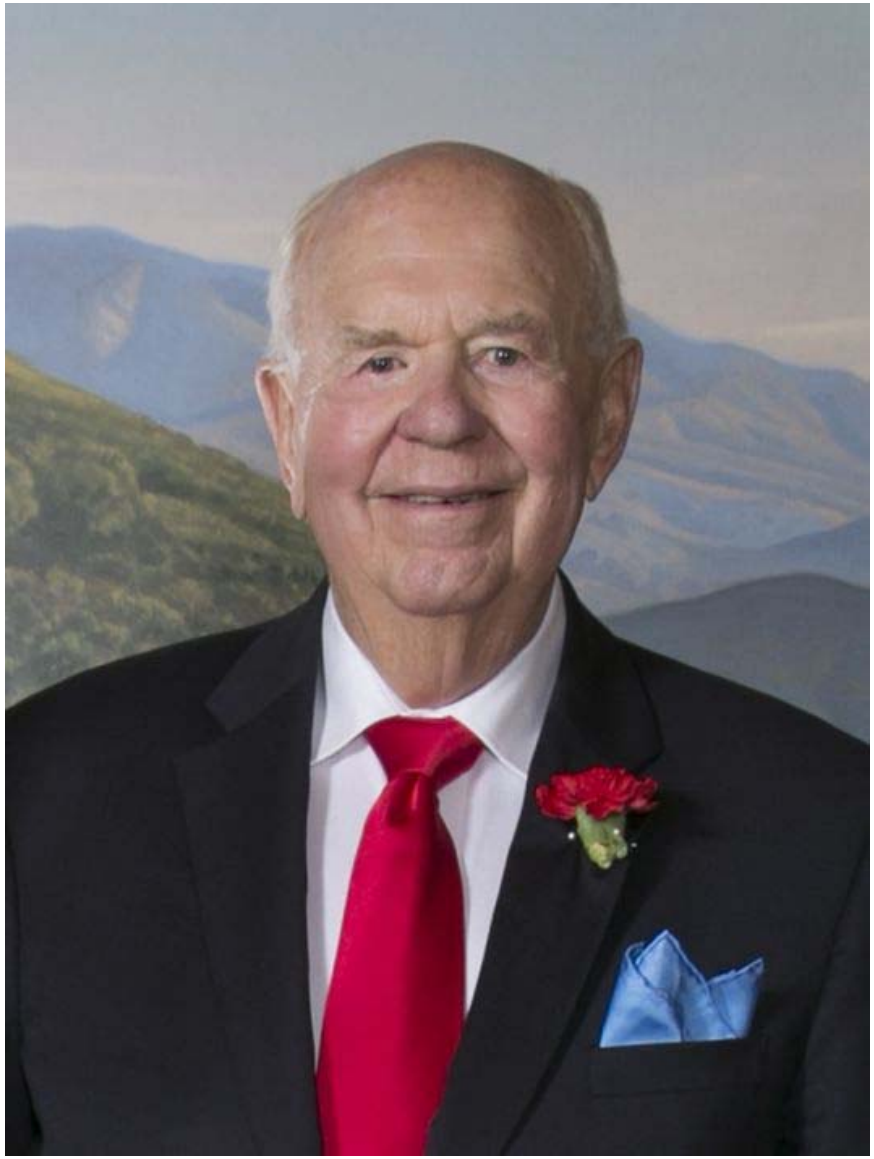
Environmental services

PROJECT BACKGROUND, DESCRIPTION AND FUNCTION

Bob Antle

- Project champion
- Representing agriculture in Salinas Valley
- Desired tunnel to be built:
  - ✓ As fast
  - ✓ As inexpensive
  - ✓ As soon as possible
- Sought alternative means to conventional public project process.

Project team is honoring Bob's legacy.



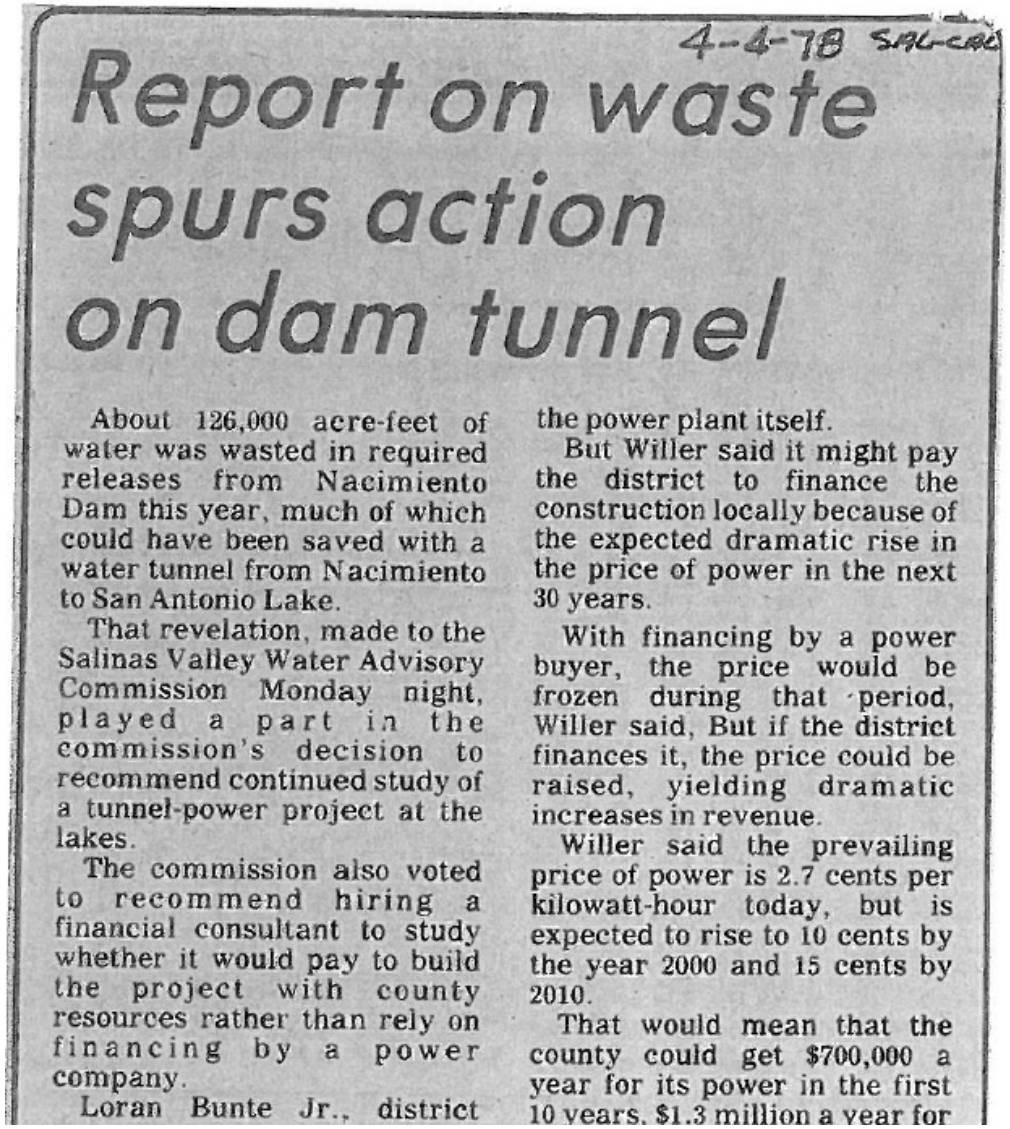
Existing Surface Water Supply for Salinas Valley properties

2 reservoirs, Salinas River, and Salinas River Diversion Facility

Description	Average Annual Amounts (AFY)
Average annual controlled release from reservoirs (baseline)	200,000
Less Evapotranspiration & Conveyance losses	-40,000
SRDF deliveries	-6,000
Ground water recharge	154,000

Provides flood control, minimum flows, and conservation releases

Tunnel has 37 year history from 1978



4-4-78 SAL-CAL

Report on waste spurs action on dam tunnel

About 126,000 acre-feet of water was wasted in required releases from Nacimiento Dam this year, much of which could have been saved with a water tunnel from Nacimiento to San Antonio Lake.

That revelation, made to the Salinas Valley Water Advisory Commission Monday night, played a part in the commission's decision to recommend continued study of a tunnel-power project at the lakes.

The commission also voted to recommend hiring a financial consultant to study whether it would pay to build the project with county resources rather than rely on financing by a power company.

Loran Bunte Jr., district

the power plant itself.

But Willer said it might pay the district to finance the construction locally because of the expected dramatic rise in the price of power in the next 30 years.

With financing by a power buyer, the price would be frozen during that period, Willer said, But if the district finances it, the price could be raised, yielding dramatic increases in revenue.

Willer said the prevailing price of power is 2.7 cents per kilowatt-hour today, but is expected to rise to 10 cents by the year 2000 and 15 cents by 2010.

That would mean that the county could get $700,000 a year for its power in the first 10 years, $1.3 million a year for

Nacimiento Lake's capacity is 350,000 acre-feet, but the top 150,000 acre-feet is set aside for flood control, requiring releases when the level goes above 200,000 acre-feet during flood season.

Bunte said that 50,000 acre-feet could have been saved by releasing it into San Antonio with a gravity flow nine-foot diameter tunnel.

1991 Analysis

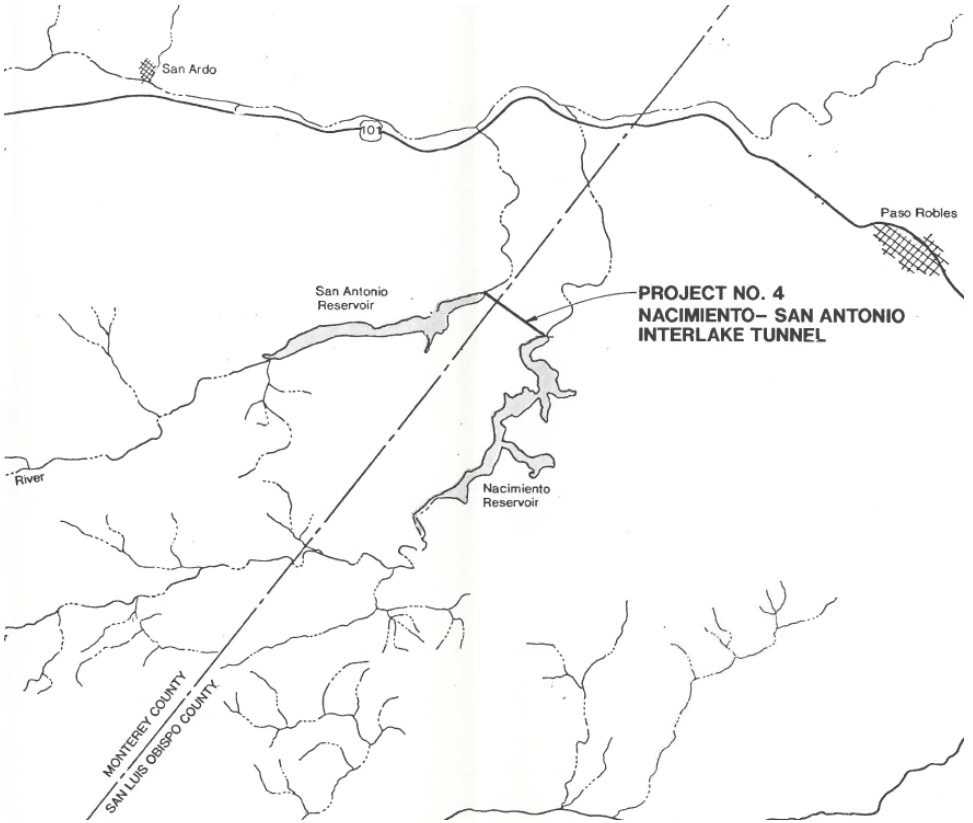
MONTEREY COUNTY
WATER RESOURCES AGENCY

WATER CAPITAL FACILITIES PLAN

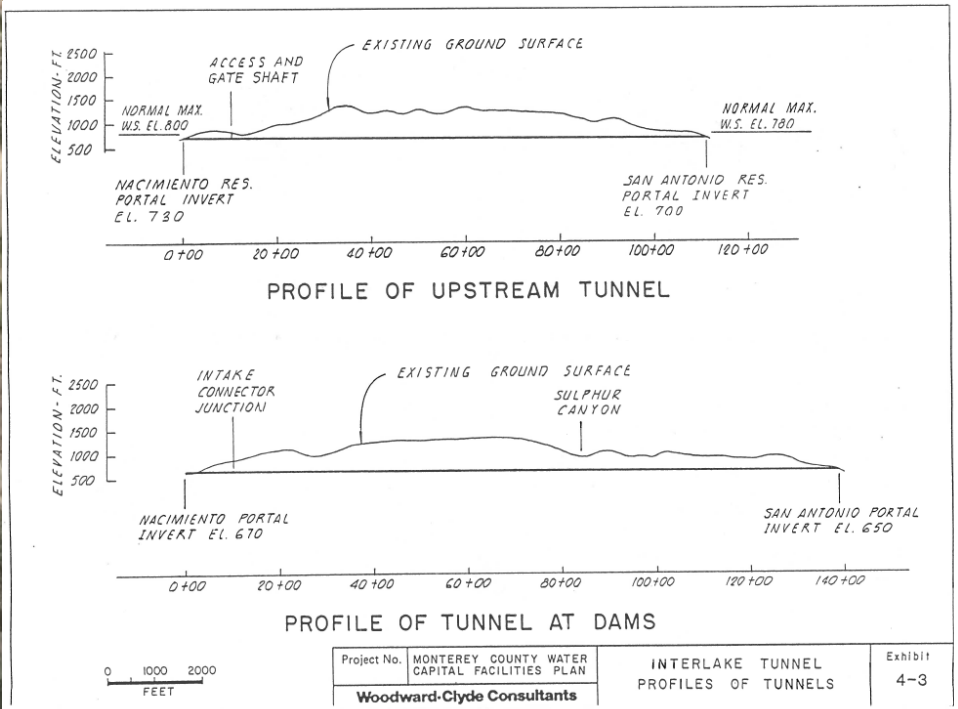
JULY 1991

VOLUME I REPORT

BOYLE ENGINEERING CORPORATION

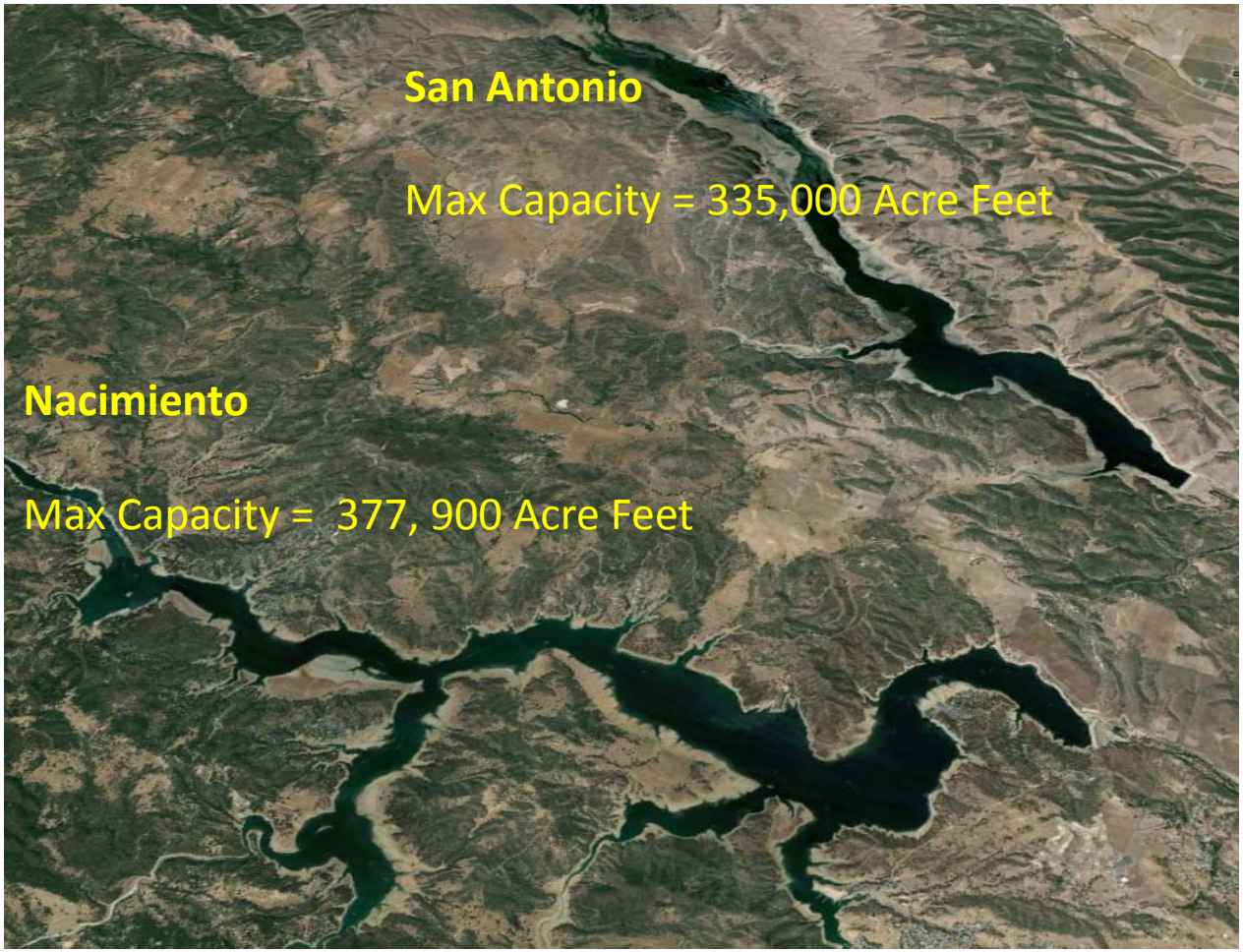


1991 tunnel studies



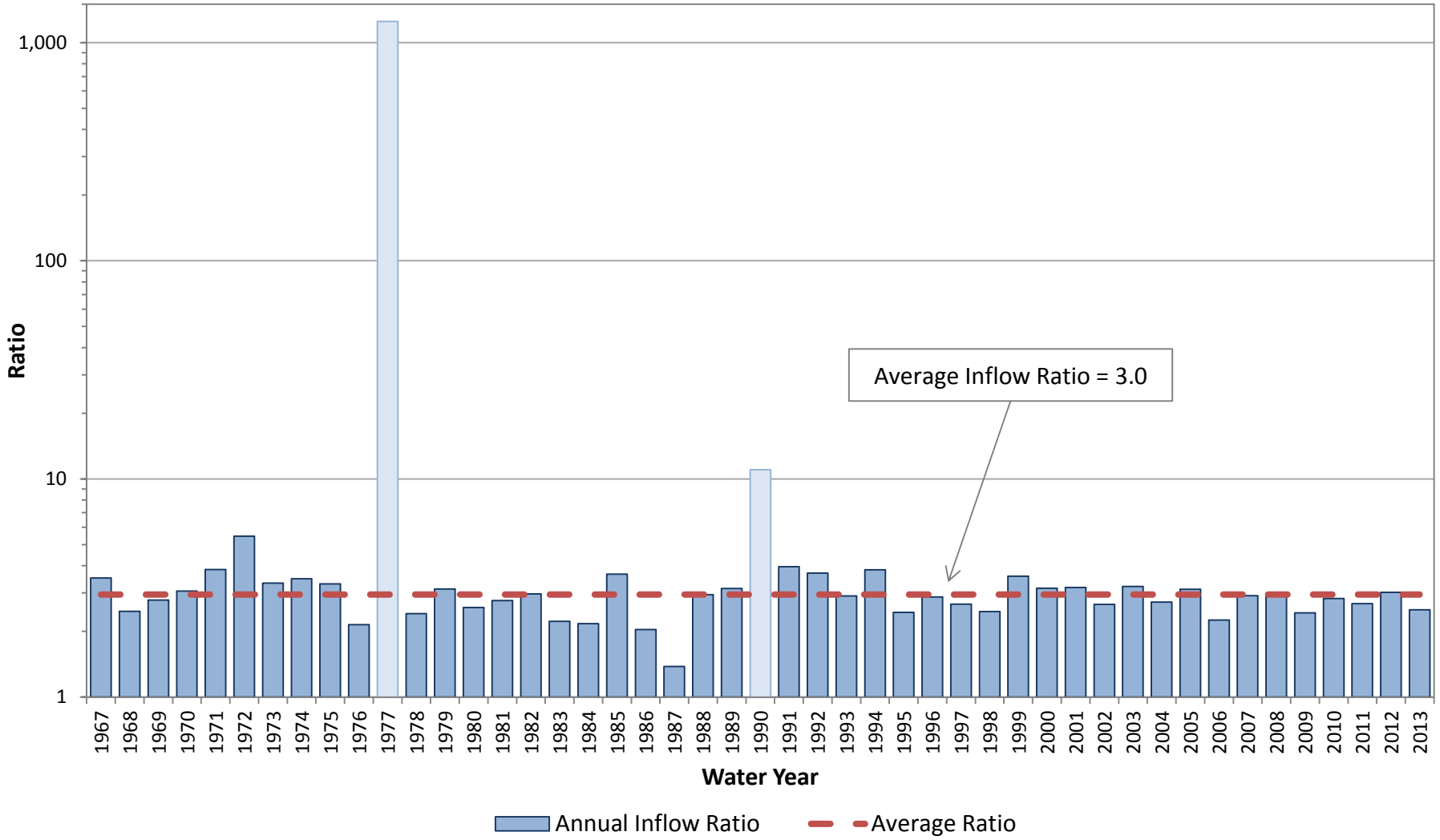
Reservoirs Features

Nacimiento fills 3X faster than San Antonio



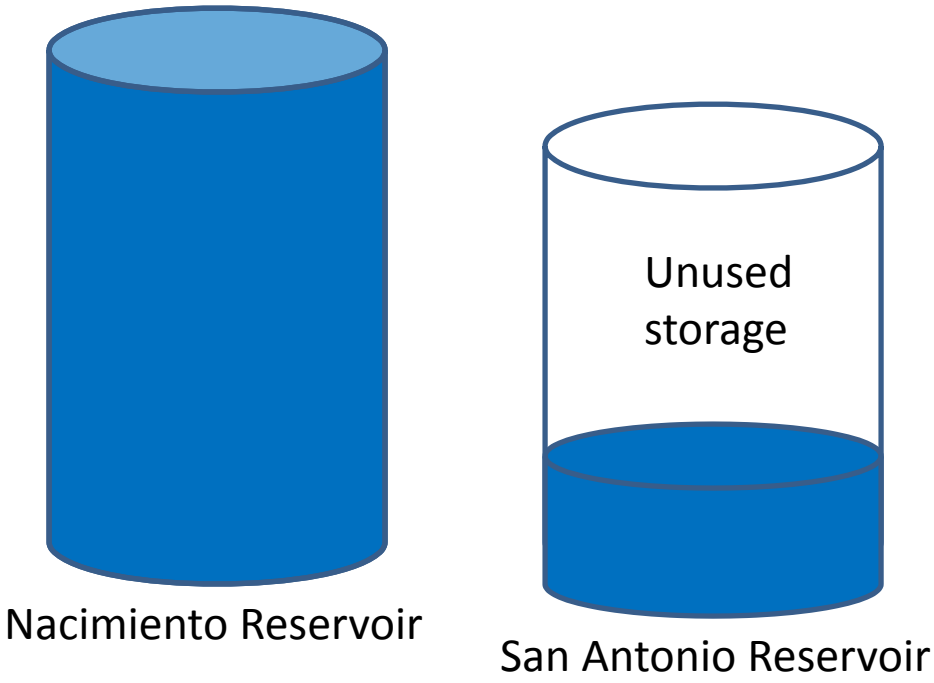
Item	Nacimiento Reservoir	San Antonio Reservoir
Watershed Area (square miles)	322	353
Normal Maximum Storage (acre-feet)	377,900	335,000
Spillway	Overflow Weir and Chute, Obermeyer Gate Control	Fixed Crest Overflow Weir and Chute
Spillway Crest Elevation (ft)	800.00 Gate "closed" 787.75 Gate "opened"	780.00

Ratio of Calculated Annual Inflow - Nacimiento over San Antonio (Water Years 1967-2013)



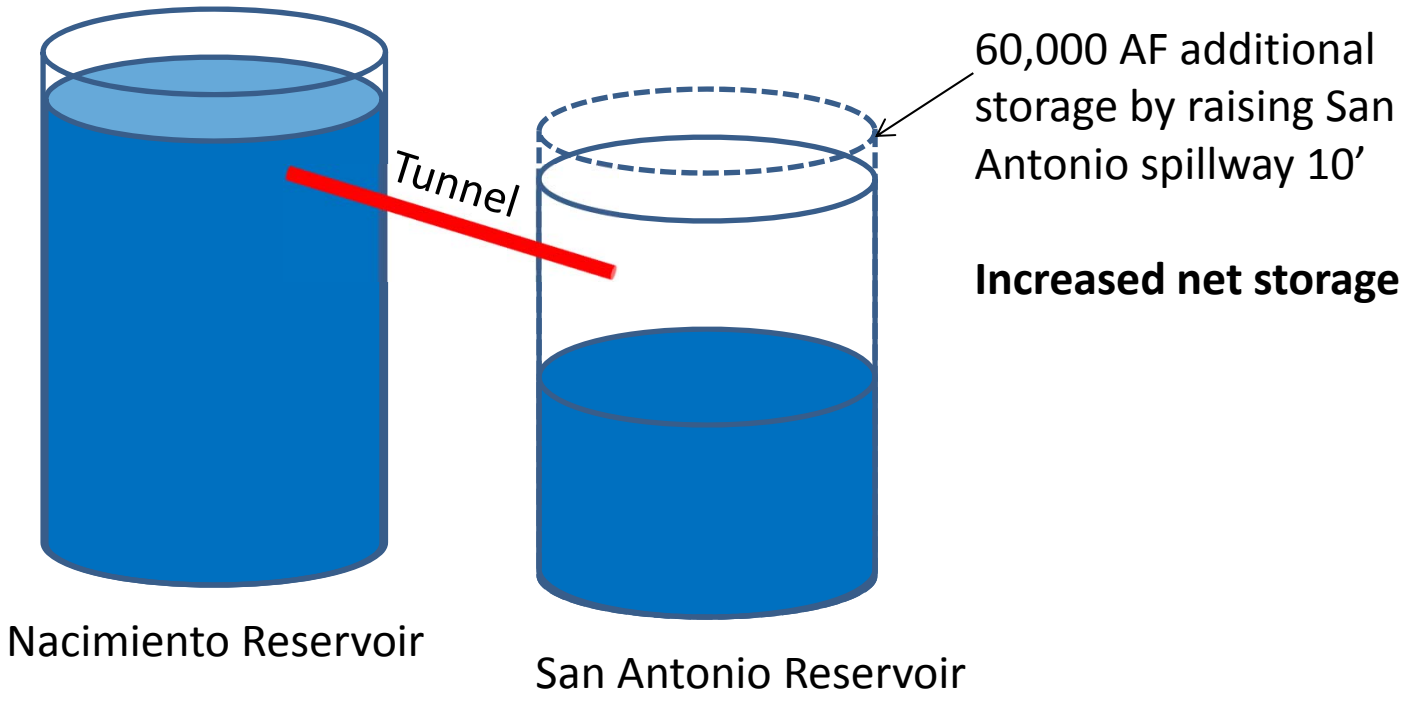
Inflow ratios from WY 1977 and WY 1990 were omitted from the average ratio as outliers due to inconsistency with the long term trend. WY 1977 and WY 1990 were the lowest inflow years on record at San Antonio and do not represent typical inflow ratios.

Current Situation at Reservoirs



- Nacimiento fills 3 x faster than San Antonio
- San Antonio has unused storage
- **Excess water spilled to ocean**

Tunnel Project Fundamentals

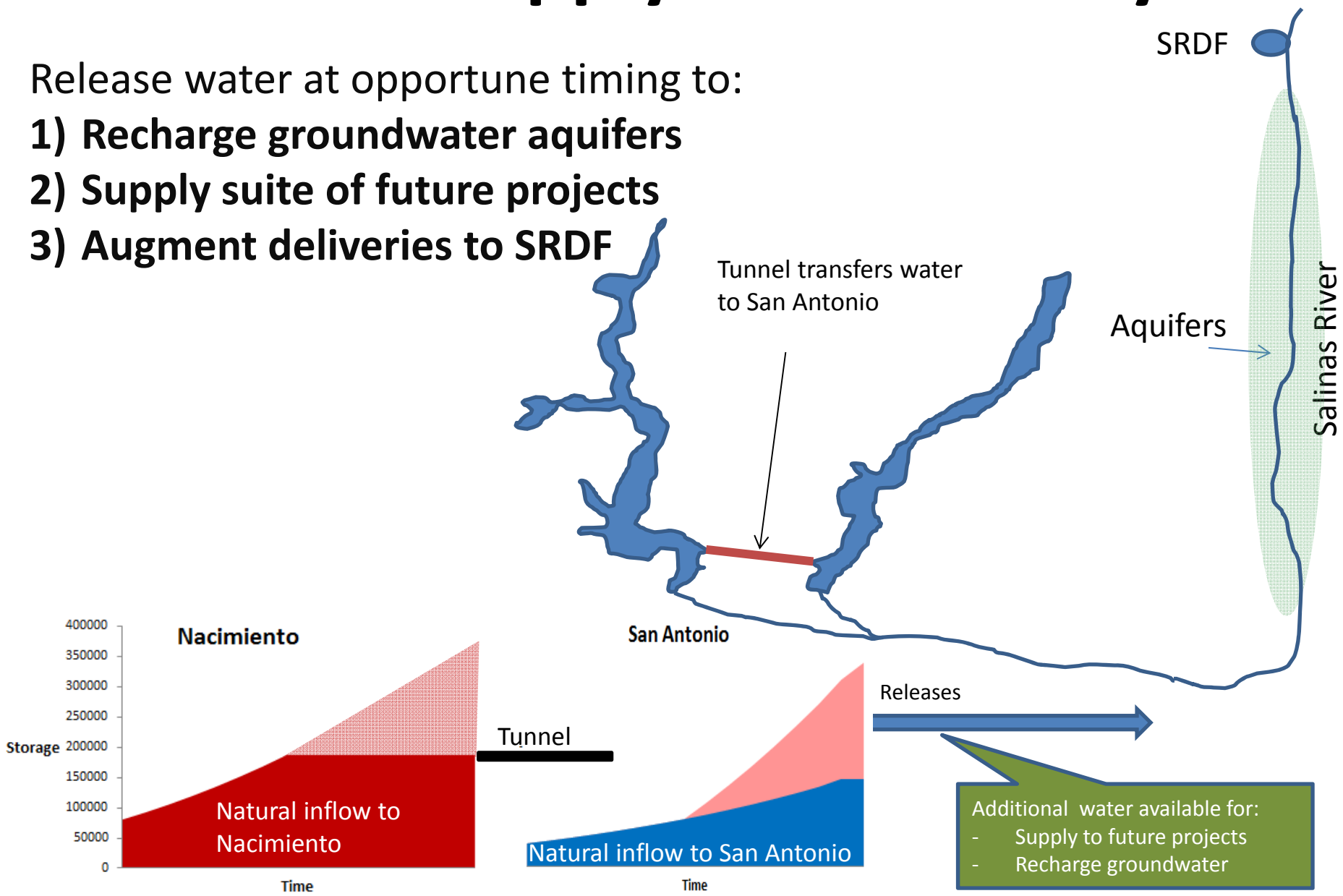


Increases net storage of reservoirs
provides flood control and reduces flood spills

Water supply sustainability

Release water at opportune timing to:

1) **Recharge groundwater aquifers**
2) **Supply suite of future projects**
3) **Augment deliveries to SRDF**



Interlake Tunnel

Portals and Tunnel Profile

(conceptual)

Nacimiento portal

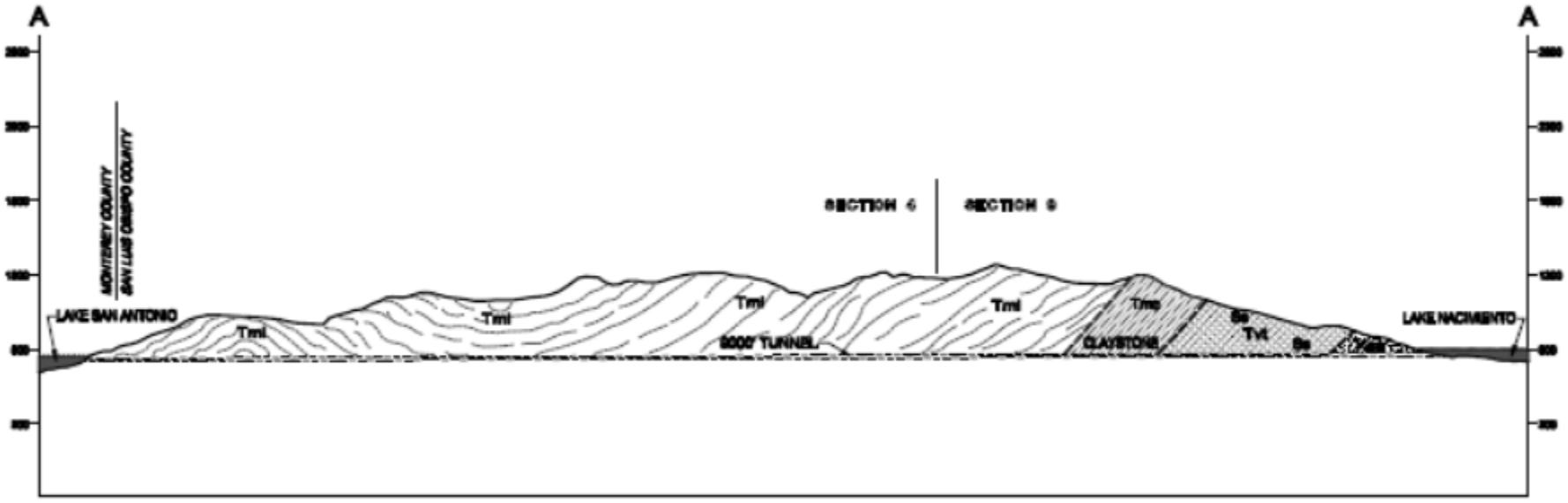
Portal Invert Elevation (~745’)
Spillway elevation ~ 800’

San Antonio portal

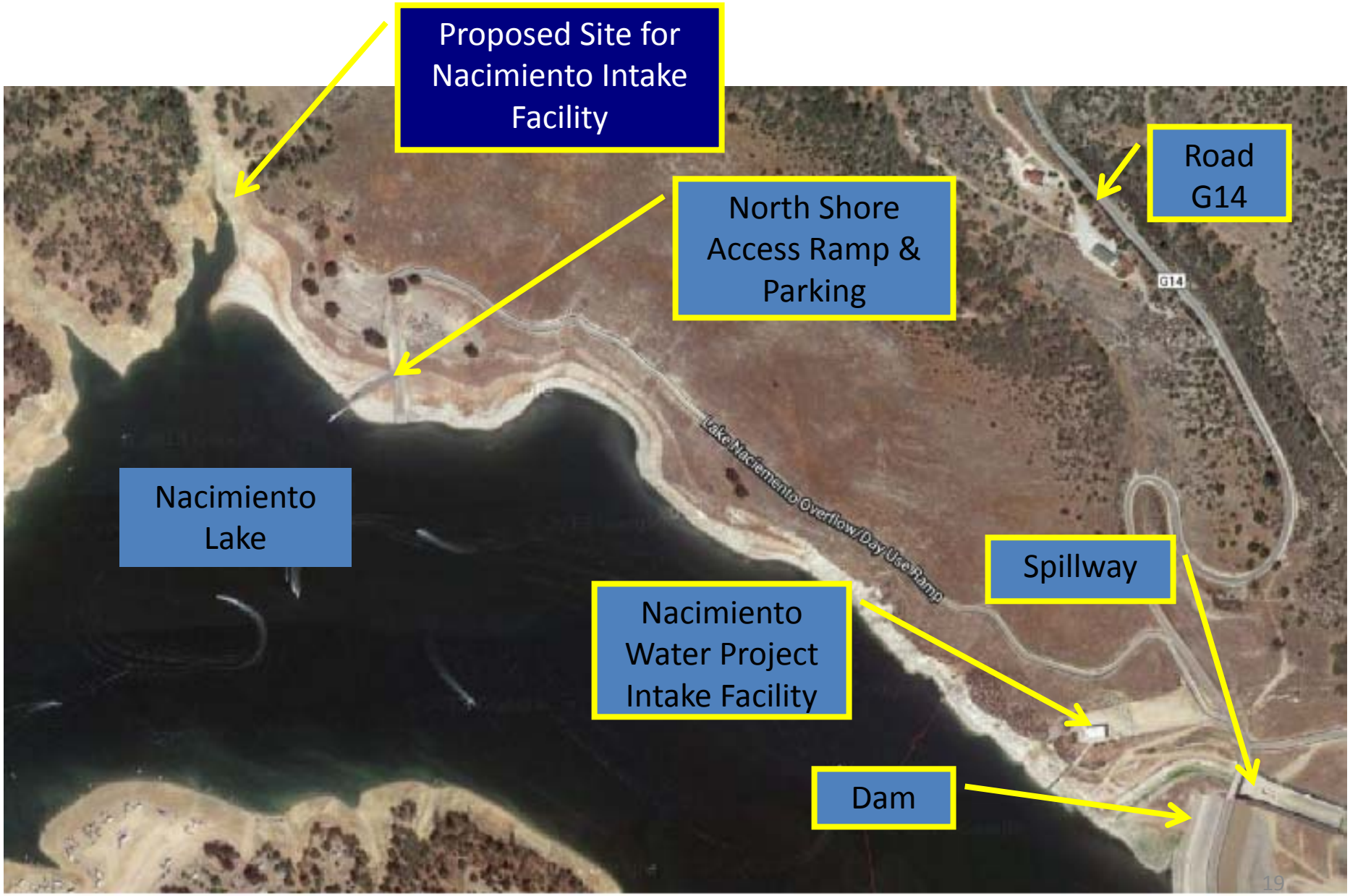
Portal Invert Elevation (~695')
Spillway elevation ~ 780’

Sample geologic profile

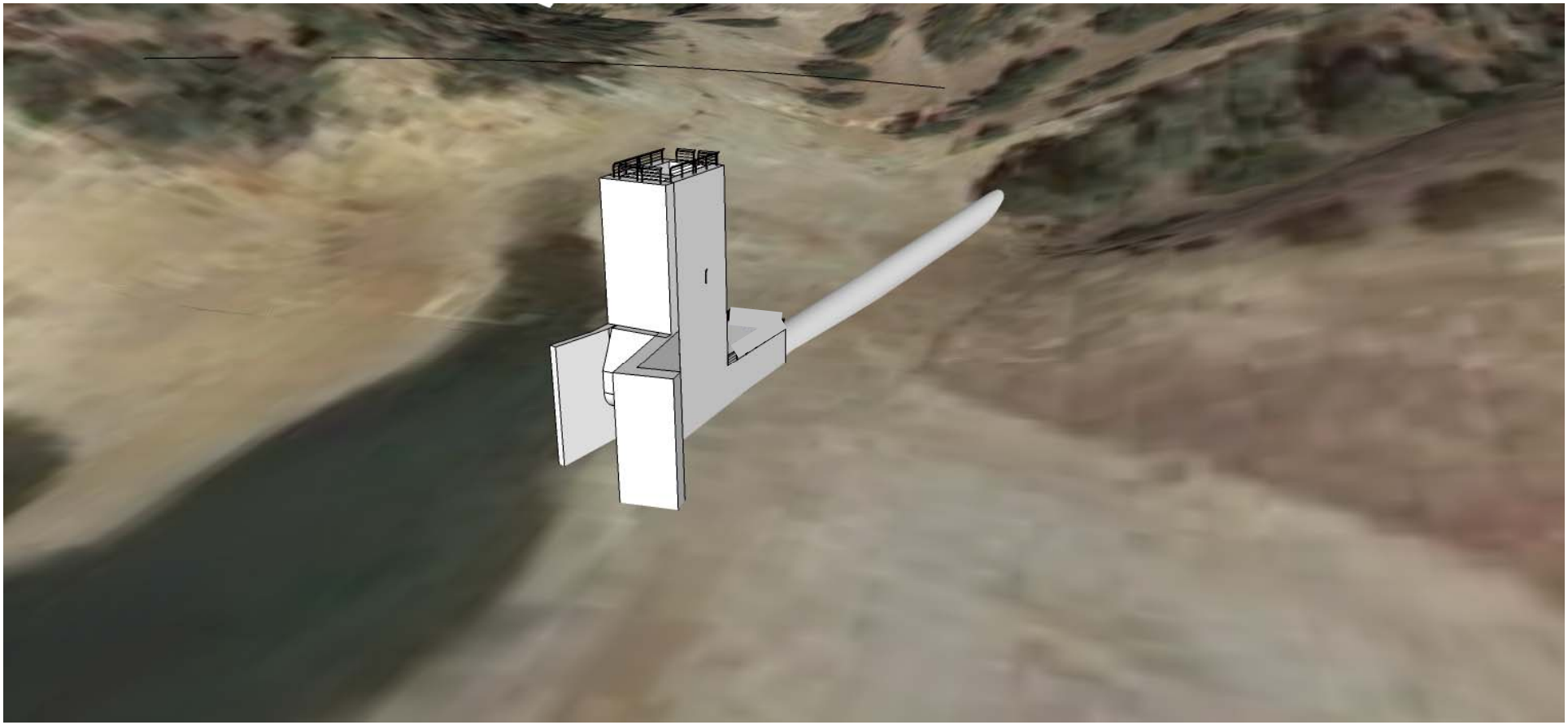
Upper Cretaceous and lower Tertiary Rocks – Monterey Formation



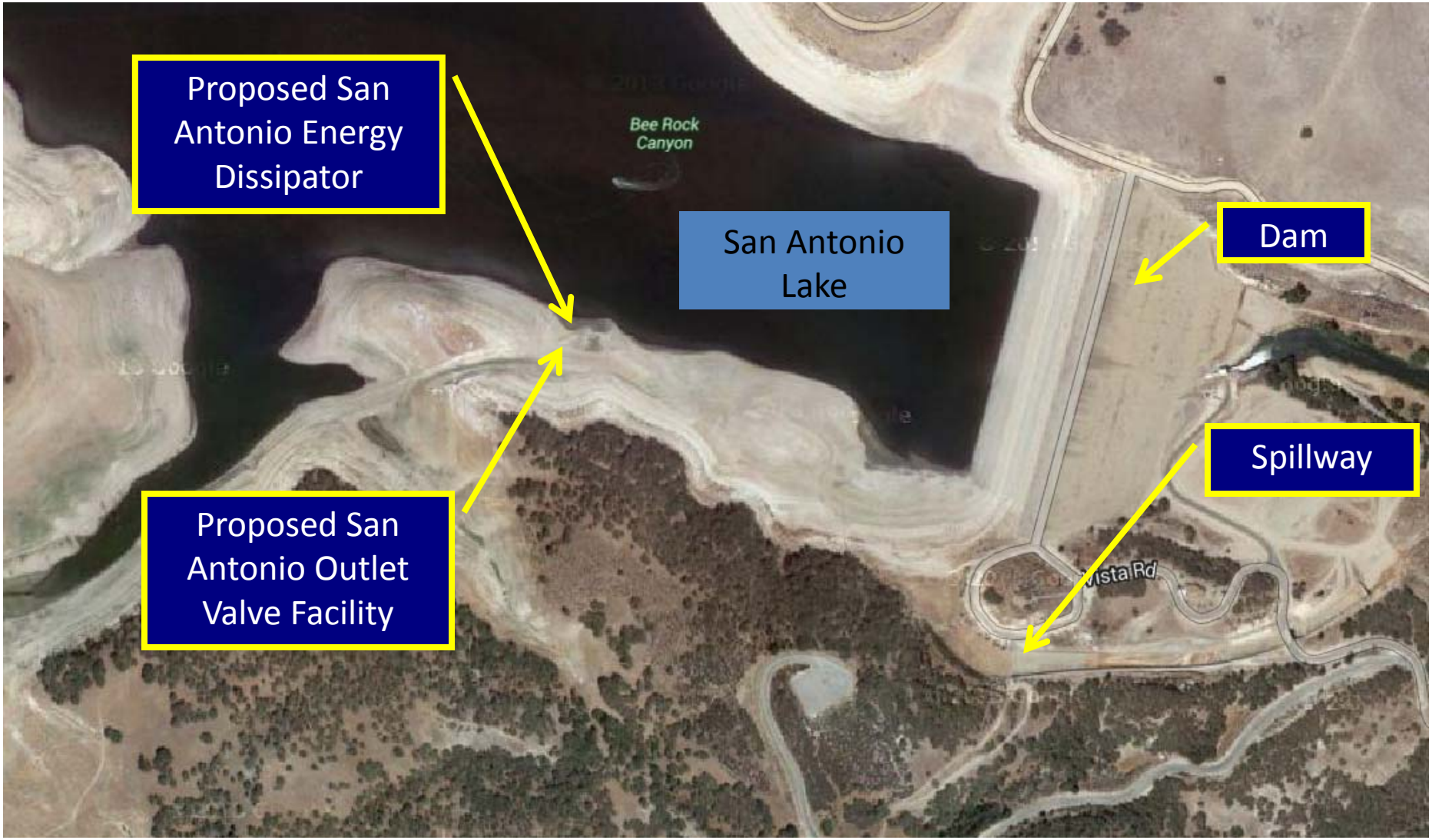
Nacimiento proposed intake



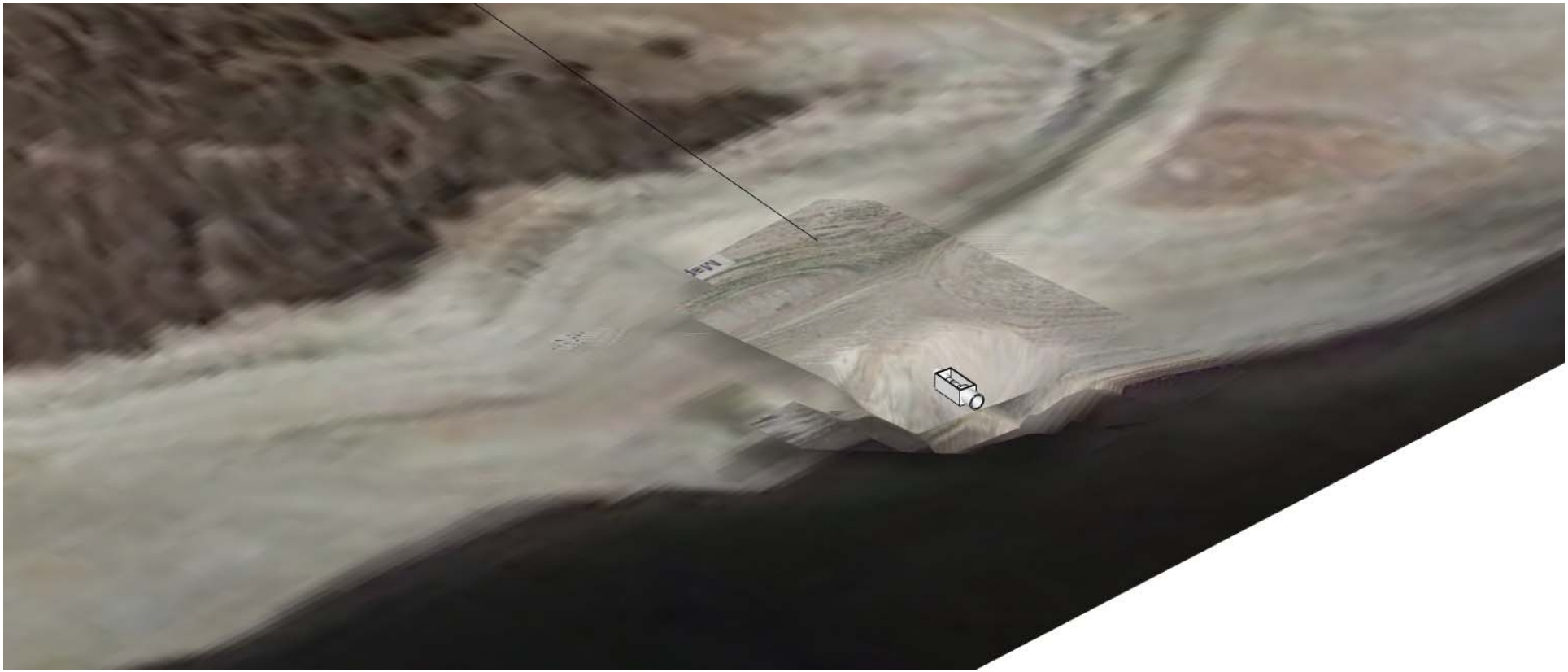
Nacimiento intake structure concept



San Antonio Hydraulic Structures



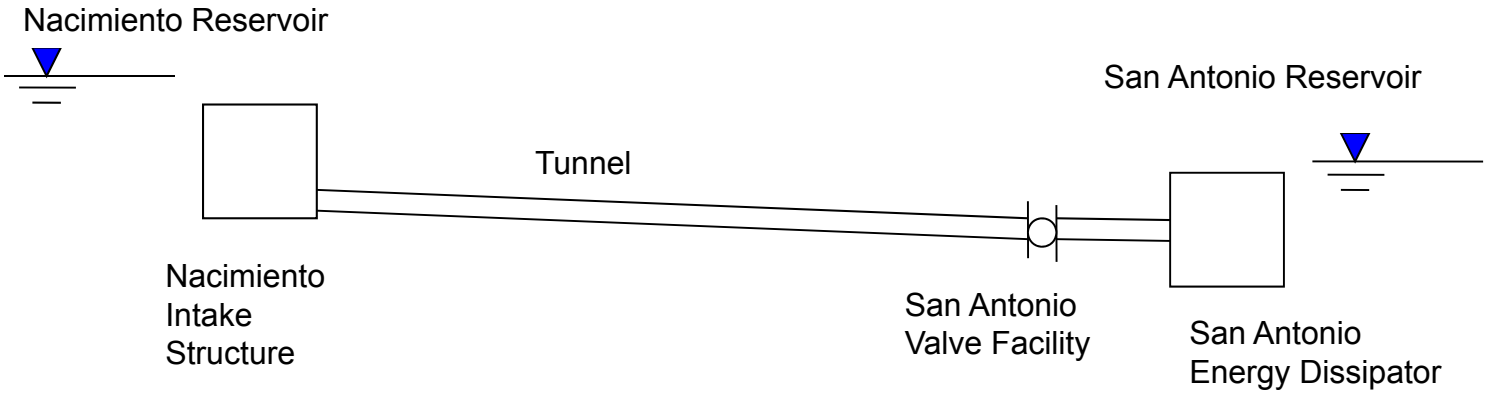
San Antonio outlet concept

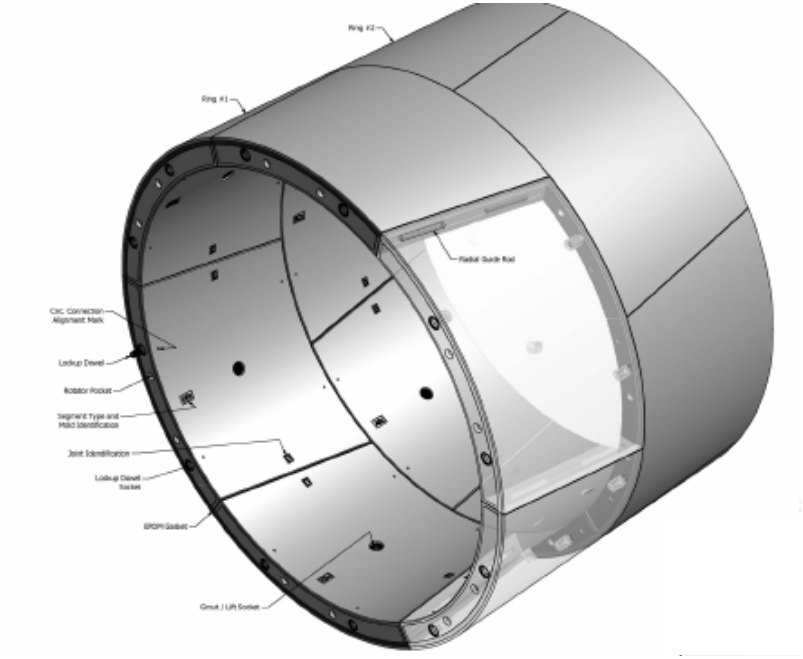


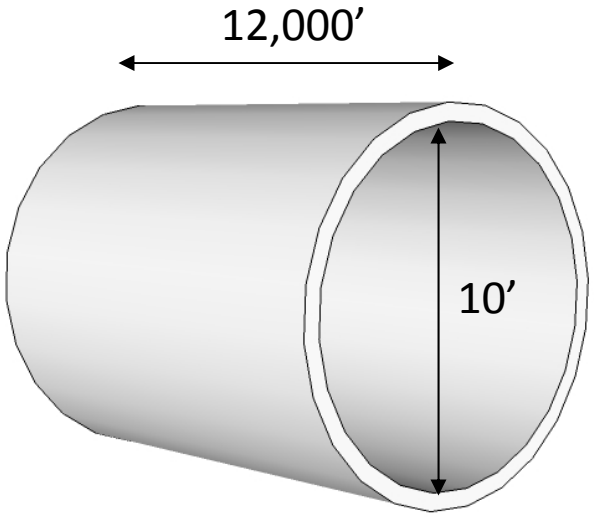
Conceptual design criteria

- Technical Life of Tunnel > 100 years
- Length ~ 12,000 ft
- Diameter – 10’ ID
- Slope: 0.004 ft/ft
- Friction Loss Function: Darcy-Weisbach
  - Concrete lined
- Gravity full-flow pipe with a 15’ minimum head at Nacimiento.

Tunnel concept







Tunnel maximum flow capacity ~ 1,700 CFS

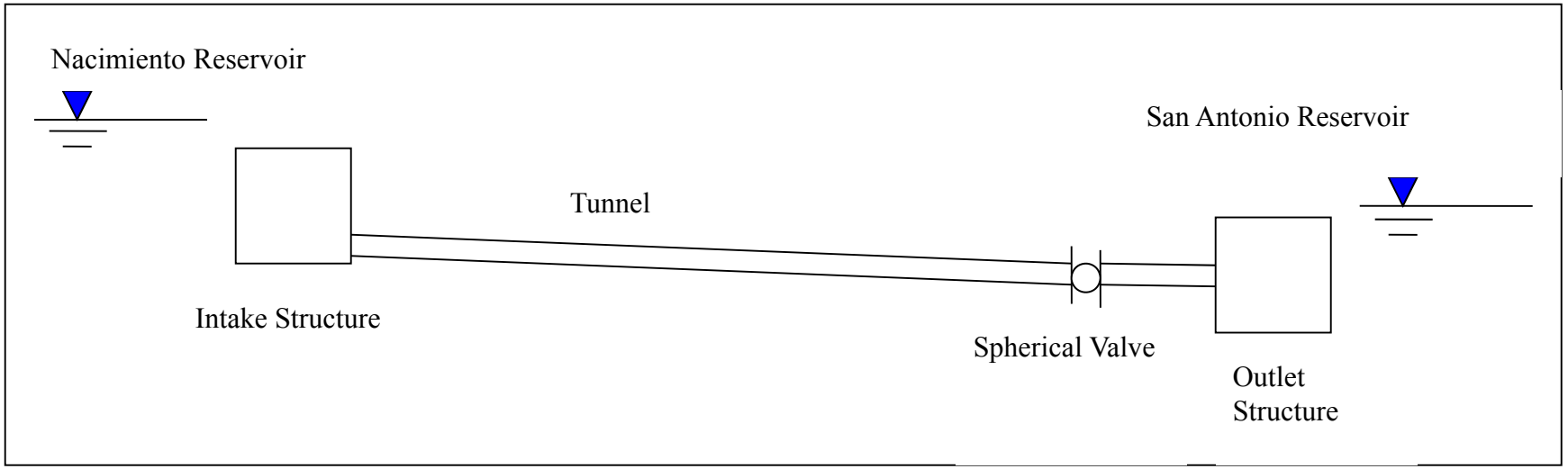
Hydraulics Operation Concepts

- Invert elevation: 745.0 ft
  - Selected as potential “sweet spot” to optimize water transfer.
- Preliminary Engineer to perform detailed water surface profile (HGL) computation to verify hydraulics, slopes and elevations

(TM HC.01)

Hydraulics Operation Concepts

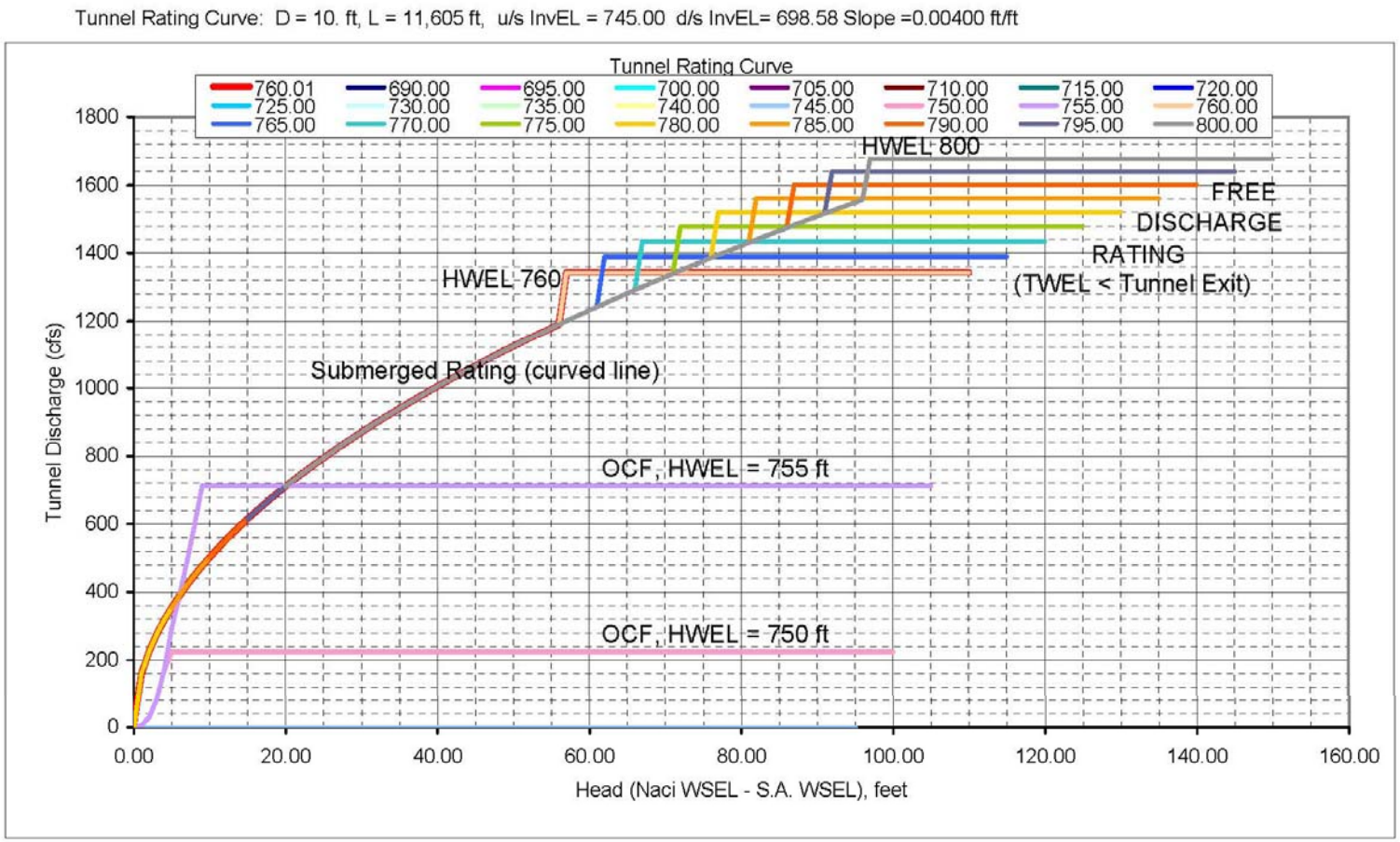
- Flow Control: down stream control allows tunnel to flow full



Concept is downstream spherical valve

(TM HC.01)

Tunnel rating curve



OCF = Open Channel Flow
HWEL = Headwater Elevation (Nacimiento)
WSEL = Water Surface Elevation
TWEL = Tailwater Elevation (San Antonio)

Technical Memorandum HC.02, REV00 (DRAFT)
Figure 13. Revised Interlake Tunnel Rating Curve

FEASIBILITY AND HYDRAULIC MODELING

Hydrologic model fundamentals

Water rights limitations:

- Each reservoir is operated within its water rights.
- Nacimiento has 17,500 afy consumptive demands

Water supply requirements:

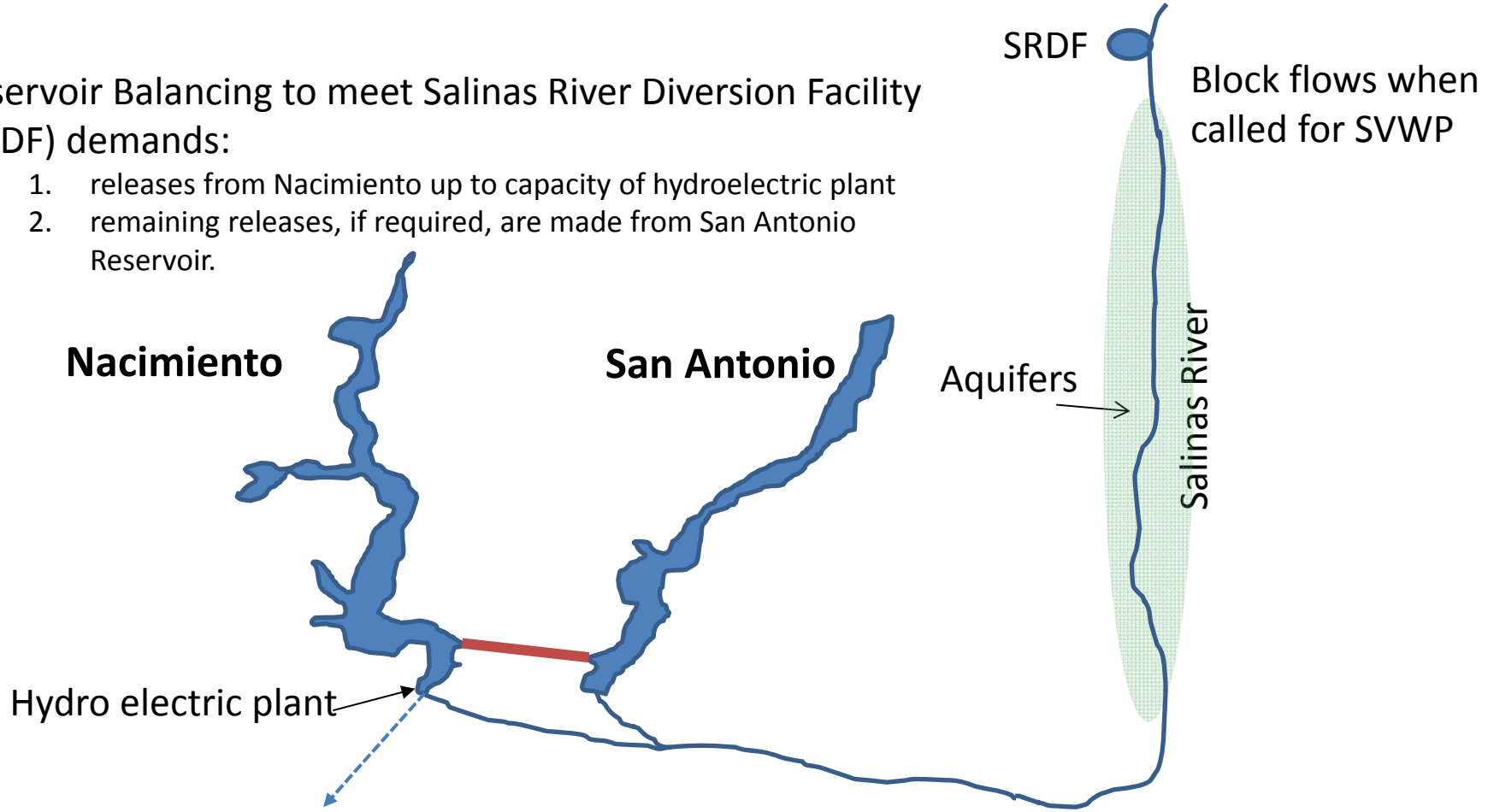
- Minimum Flow Requirements are met from each reservoir.
- Reservoir Balancing to meet Salinas River Diversion Facility (SRDF) demands is achieved through:
  - releases from Nacimiento up to capacity of hydroelectric plant
  - remaining releases, if required, are made from San Antonio Reservoir.
- Block flows are released when called for per SVWP

Hydrologic model fundamentals

Each reservoir is operated within its water rights.
Water rights limitations and water supply requirements are met.

Reservoir Balancing to meet Salinas River Diversion Facility (SRDF) demands:

1. releases from Nacimiento up to capacity of hydroelectric plant
2. remaining releases, if required, are made from San Antonio Reservoir.

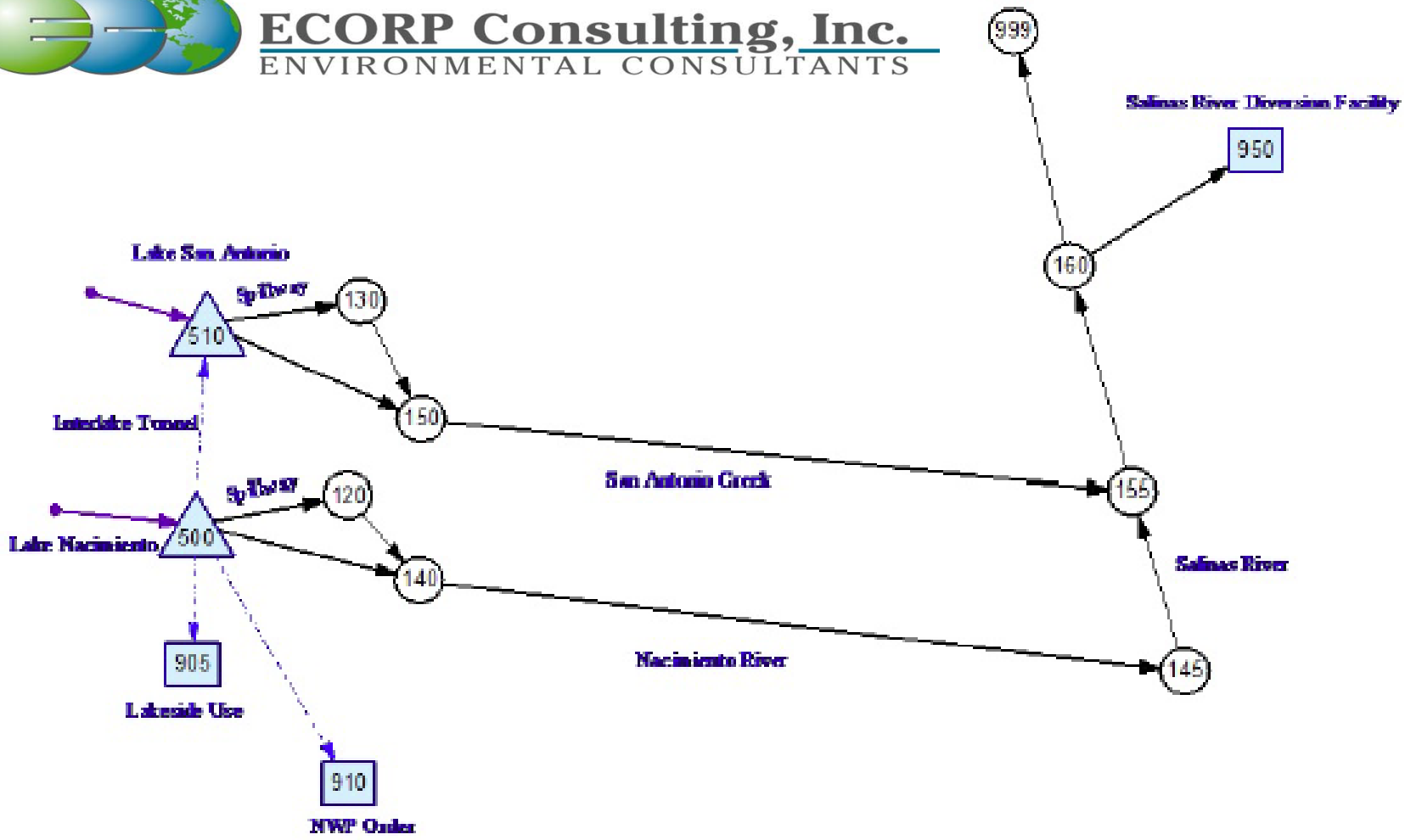


Proposed tunnel operating concepts

- Operate on head relationships between inflow and outflow in a pressure flow mode.
- Water conveyance through the tunnel when the Nacimiento surface water elevation is above 760 feet during flood events.
- No water conveyance through the tunnel when San Antonio is spilling.

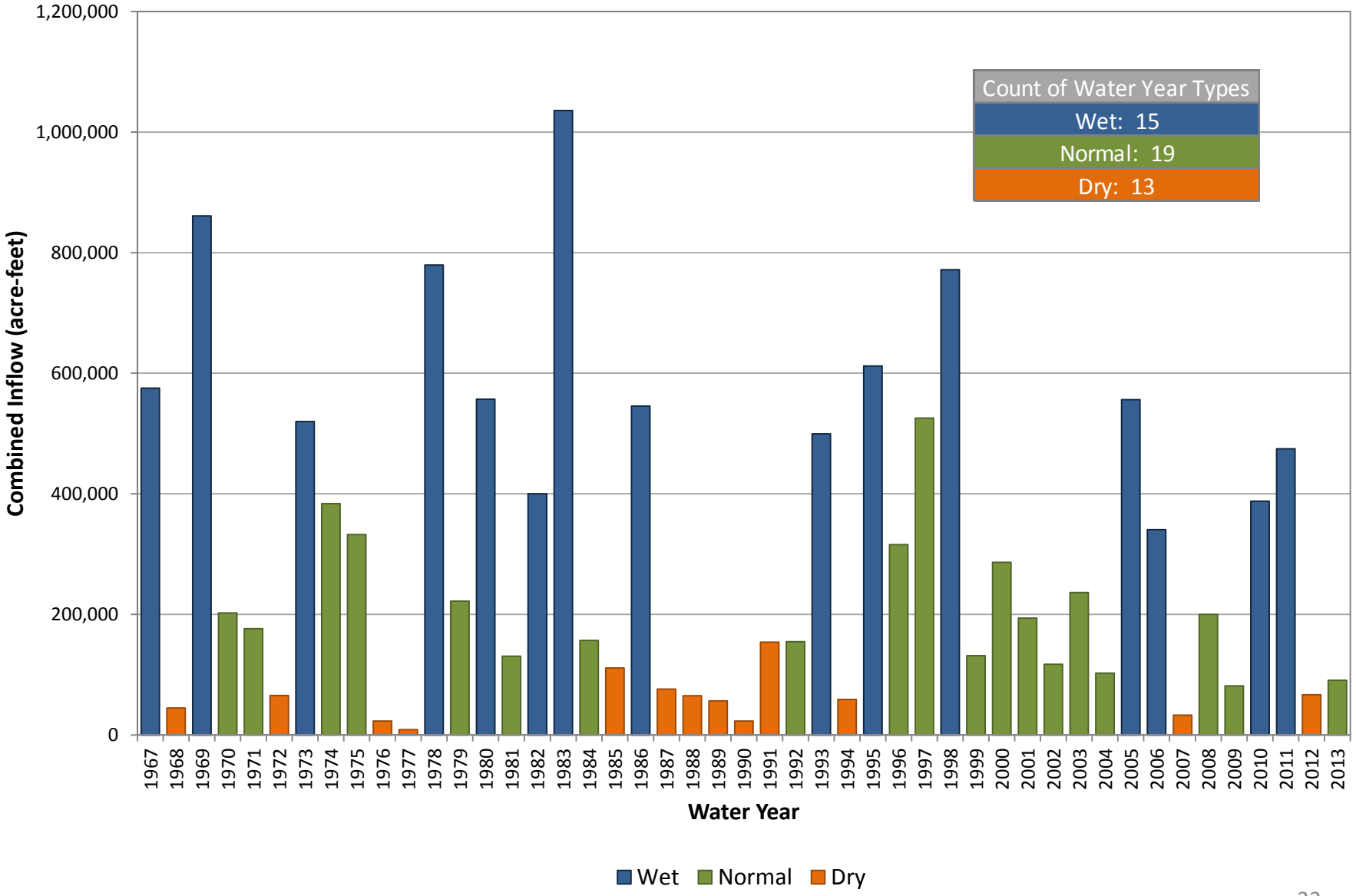
Hydrologic Modeling

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

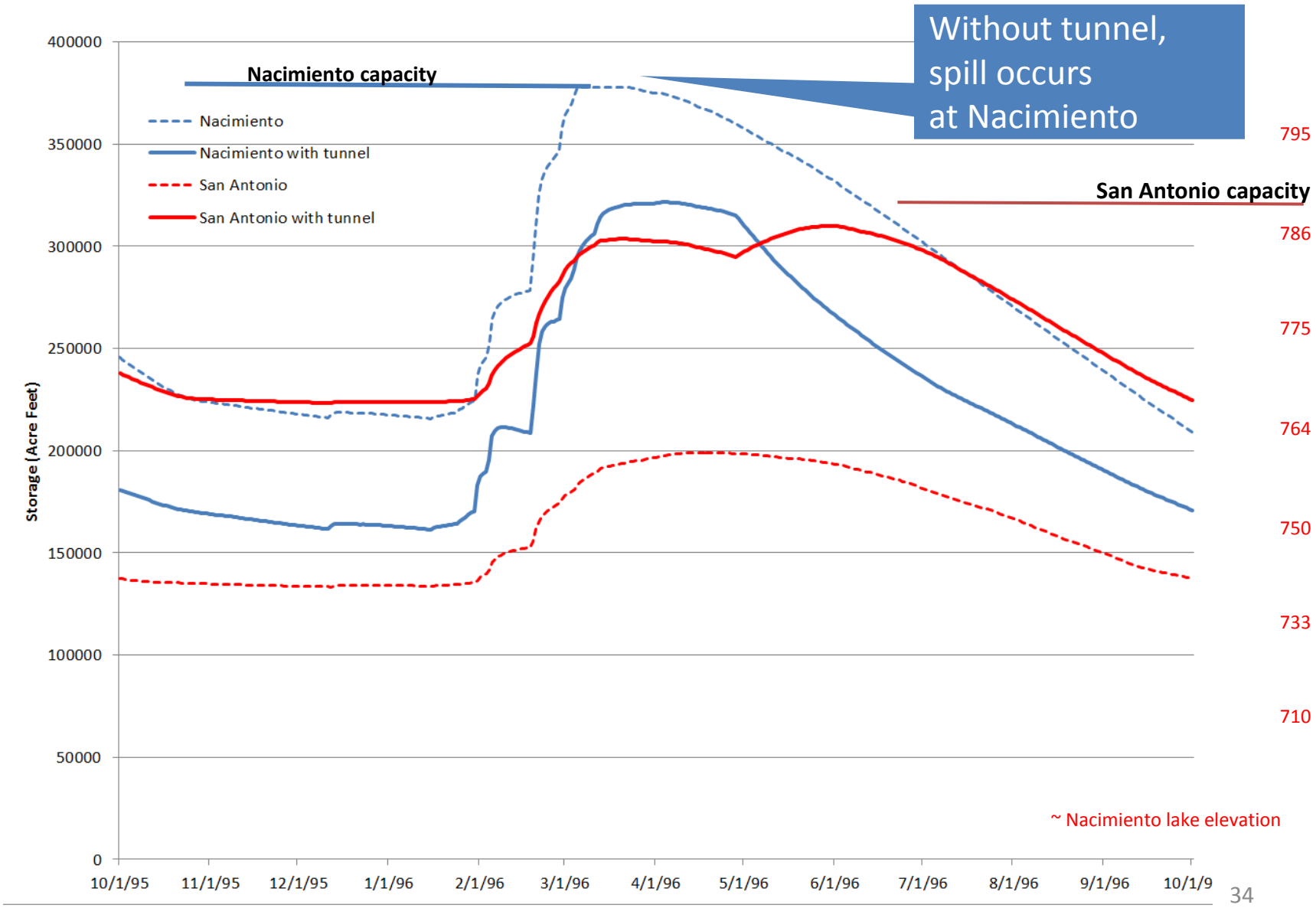


OASIS Computer Operational Simulation Model Schematic

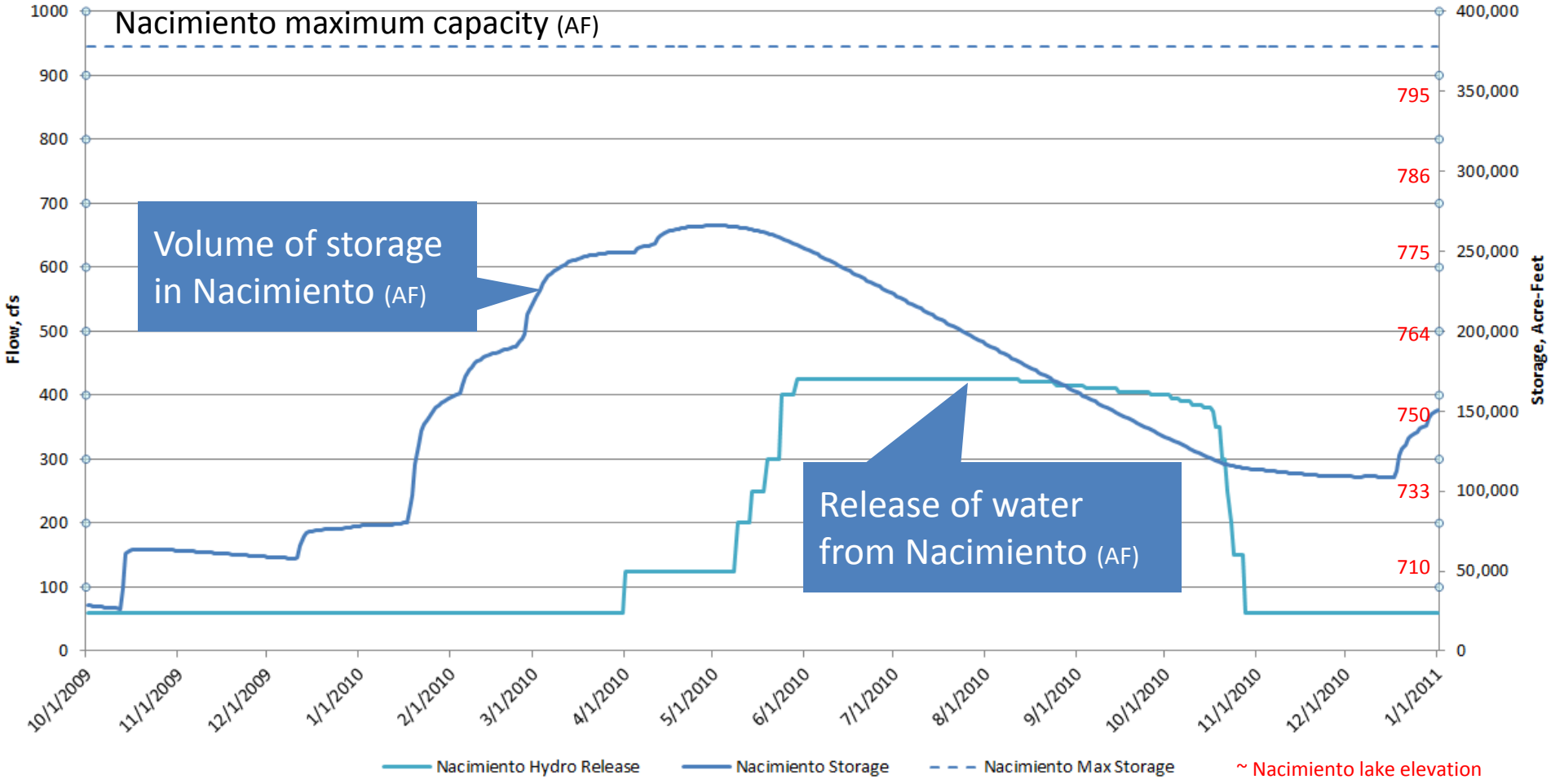
Combined Nacimiento and San Antonio Inflow by Water Year Type (Water Years 1967 - 2013)



Tunnel Transfers Storage from Nacimiento to San Antonio



Hydrograph Explanation
Flow/Storage Over Time



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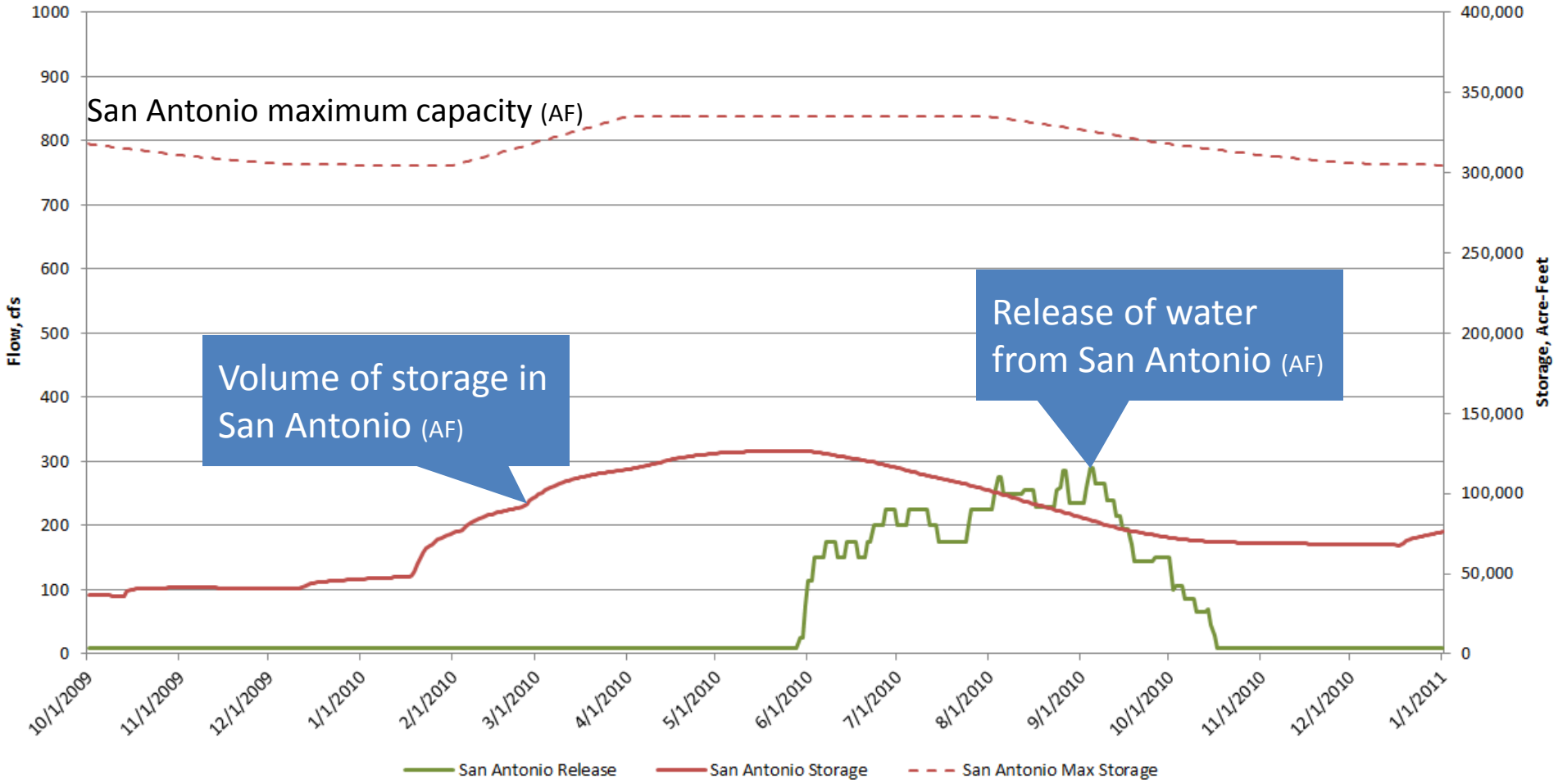
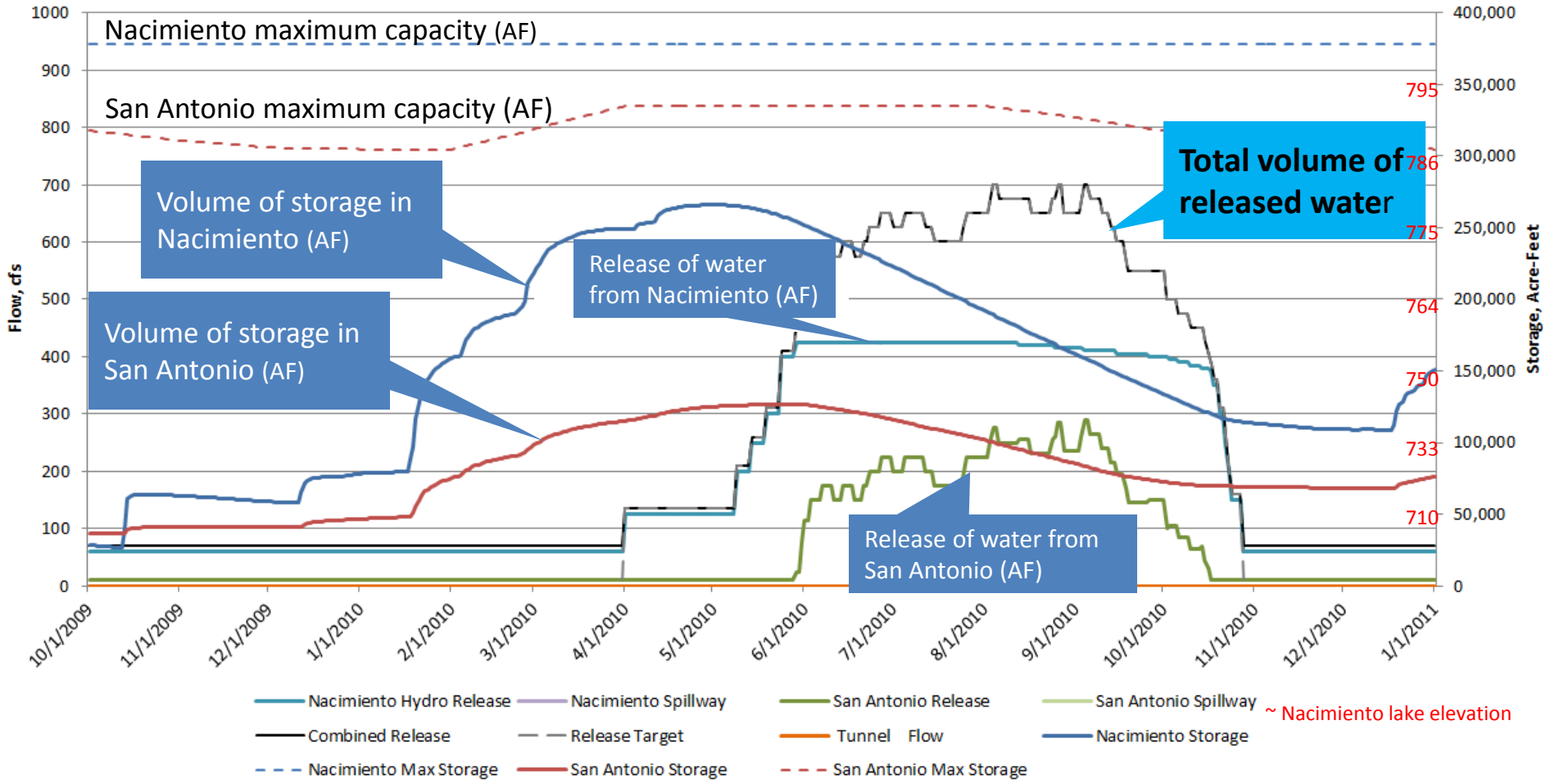
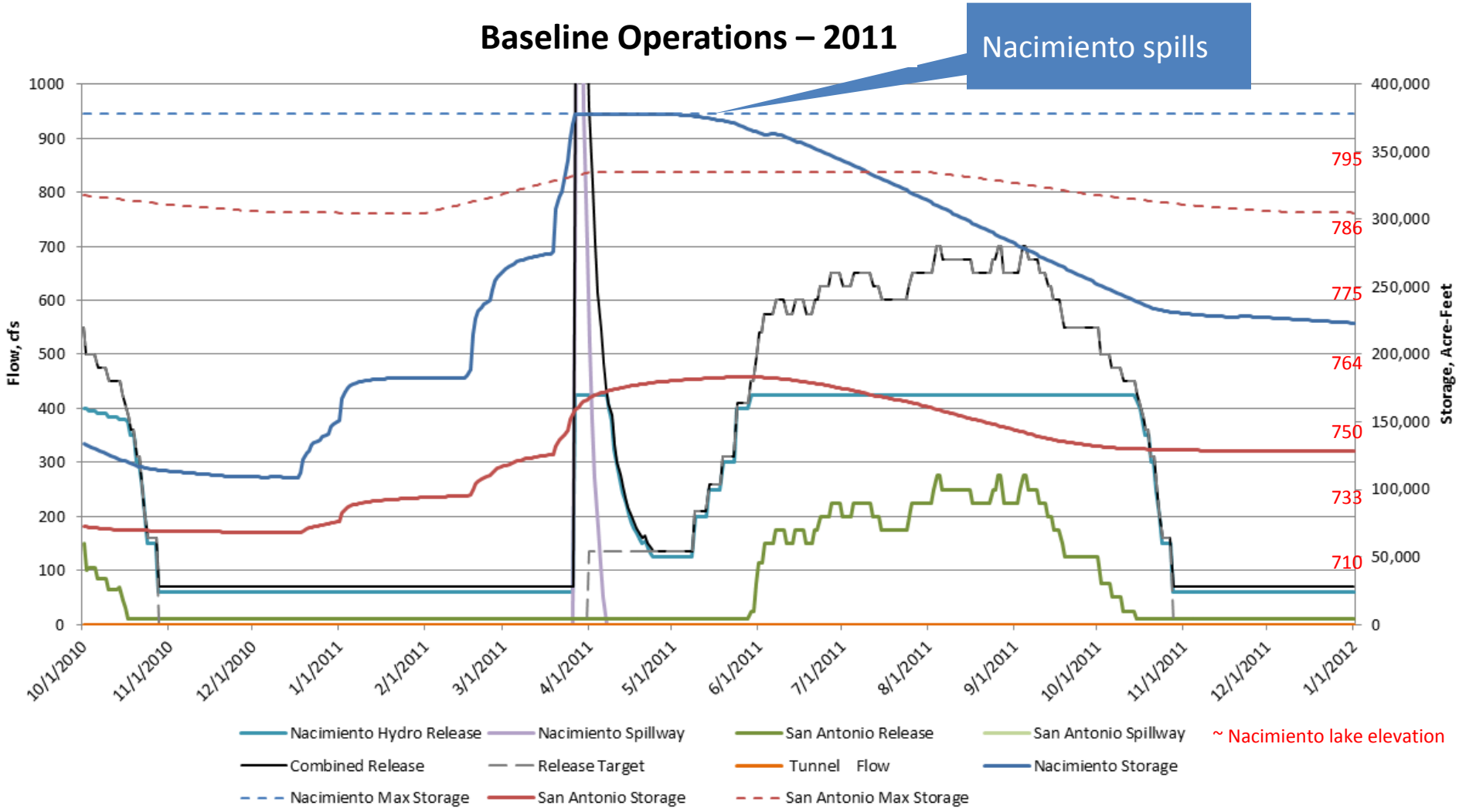


Hydrograph Explanation
Combined Flow/Storage Over Time

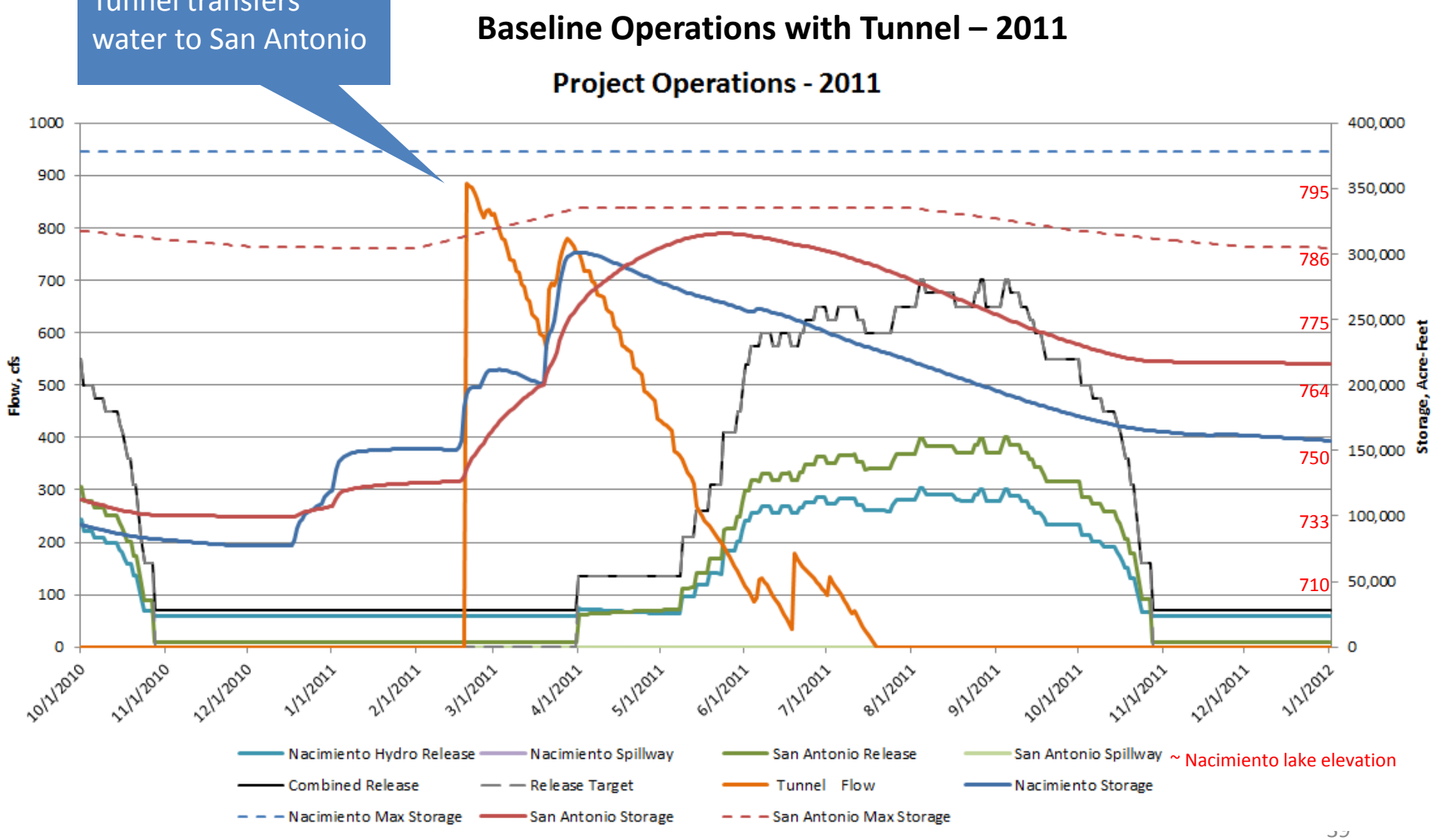


2011 – Baseline Operations

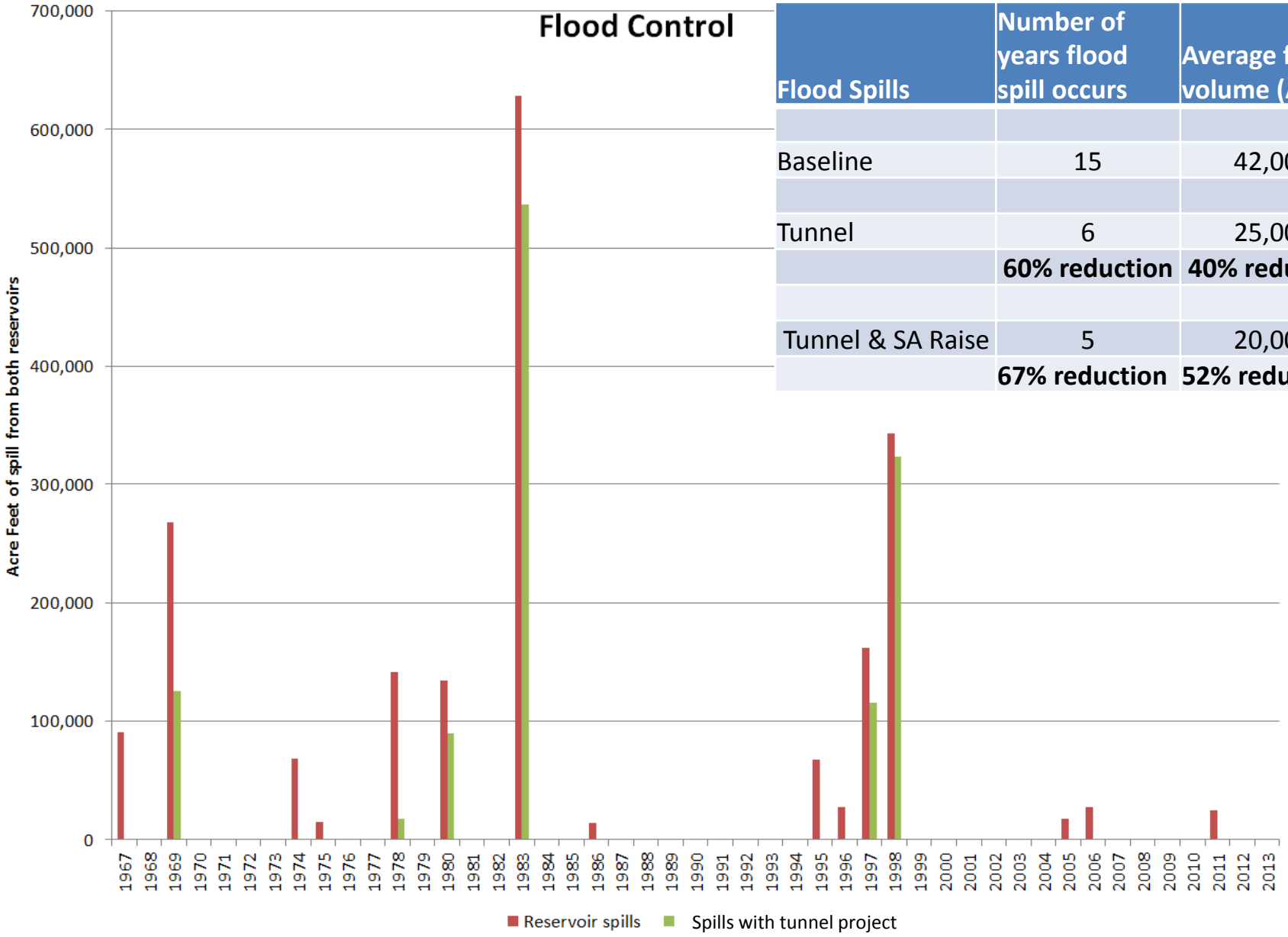


2011 – Tunnel Operations

Tunnel transfers water to San Antonio



Flood Control Benefit



Flood Spills	Number of years flood spill occurs	Average flood volume (AFY)
Baseline	15	42,000
Tunnel	6	25,000
	60% reduction	**40% reduction**
Tunnel & SA Raise	5	20,000
	67% reduction	**52% reduction**

Additional Storage Opportunity

Opportunity to increase storage capacity in San Antonio reservoir 59,000 acre feet (18%)

Additional Reservoir Storage

Modifying the spillway with a crest control device provides the effect of "raising the dam" up 10 feet.

Potential added storage increases the benefits of the tunnel by providing additional storage for flood control and conservation releases.

San Antonio Spillway Modification steps to evaluate

- Conceptual design of spillway modification structures
- Probable Maximum Flood (PMF) and Hydrologic Model analysis (HMR58)
- Stability analysis
- Hydraulic capacity analysis
- Evaluation of modifications by DSOD

Interlake Tunnel and Spillway Modification Operational Modeling Results

(for water years 1967 - 2013)
(Average Acre Feet/Year)

	Reduction in Spills	Potential Increase in Total Controlled Releases	Tunnel Transfers
10’ Tunnel	17,132	16,327	46,527
10’ Tunnel & SA spillway mod*	22,198	20,686	50,179

Flood Spills	Number of years flood spill occurs	Average flood volume (AFY)
Tunnel	**60% reduction**	**40% reduction**
Tunnel & SA spillway mod	**67% reduction**	**52% reduction**

* (adds 60,000 AF of reservoir storage to San Antonio)

Tunnel Project Benefits
Water Supply Sustainability

- Significant increase in flood control storage, thus a reduction in flood damage downstream
- Additional surface water available to serve current and future suite of infrastructure projects
- Provides a supply of surface water to help sustain ground water supply by offsetting pumping
- Provides environmental benefits through increased flows in the Salinas River

Plan for additional modeling

Salinas Valley Water Coalition requested public collaboration on model specifics:

- Conduct technical evaluation of tunnel and reservoir simulation model to confirm reasonableness of downstream demands.
- Evaluate model to accommodate SRDF design capacity demands.
- In coordination with MCWRA Reservoir Operations, agree on implementation of the tunnel and spillway modification project and operation of the new infrastructure.

Monterey County modeling:

- Surface/ground water interaction simulation model

ENVIRONMENTAL CLEARANCE AND PERMITTING

Preliminary environmental impacts

- **Surface impacts**: minimal grading at portal sites, intake structure at Lake Nacimiento, and headwall tunnel portal structure at Lake San Antonio. Tunnel muck disposed at site near San Antonio Dam.
- **Noise impacts**: Minimal at receptors adjacent to the tunnel construction portal at Lake San Antonio and the intake structure at Lake Nacimiento.
- **Biological impacts**: TBD. Related to water diversion from Lake Nacimiento to Lake San Antonio.

Preliminary environmental impacts

- **Paleontological impacts**: TBD. Impact zone at tunnel portals only.
- **Geologic/Seismic Hazards**: TBD
- **Water resources/Flooding impacts**: TBD. All water rights and water discharge agreements will not be affected. Project assists with flood control.
- **Recreational /Public Facilities impacts**: TBD

No impacts expected relative to:

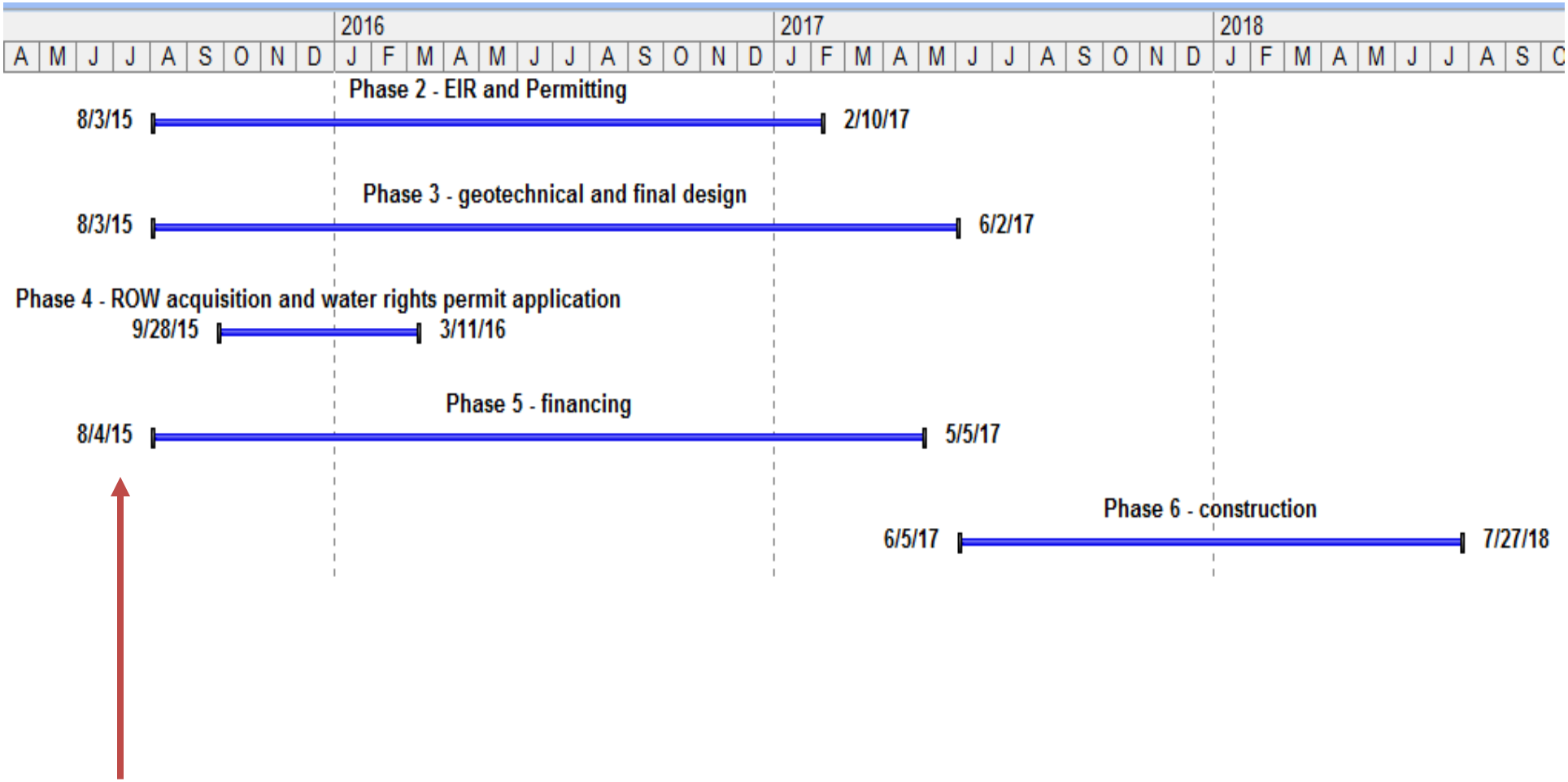
- Aesthetics/visual resources
- Agricultural resources
- Air Quality
- Cultural resources
- Energy
- Fire Protection
- Hazardous materials
- Historic resources

Preliminary biological impacts

- White bass – predator sport fish prohibited from export (alive) from Lake Nacimiento
- Quagga and Zebra Mussels transfer from Nacimiento to San Antonio
- mercury in Lake Nacimiento sediment
- Downstream releases to maintain steelhead migration (NOAA Fisheries)

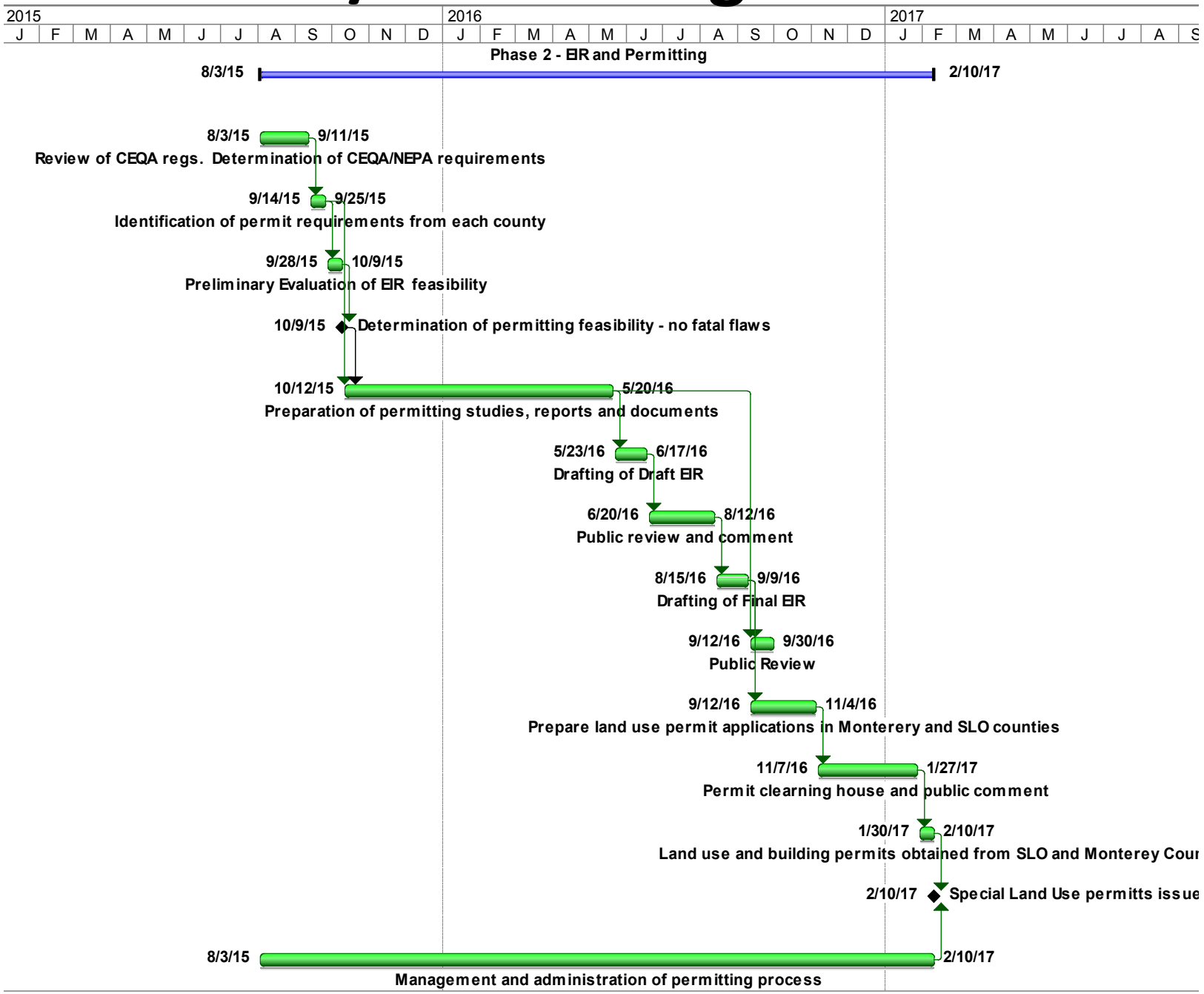
DEVELOPMENT SCHEDULE

Project Development Schedule

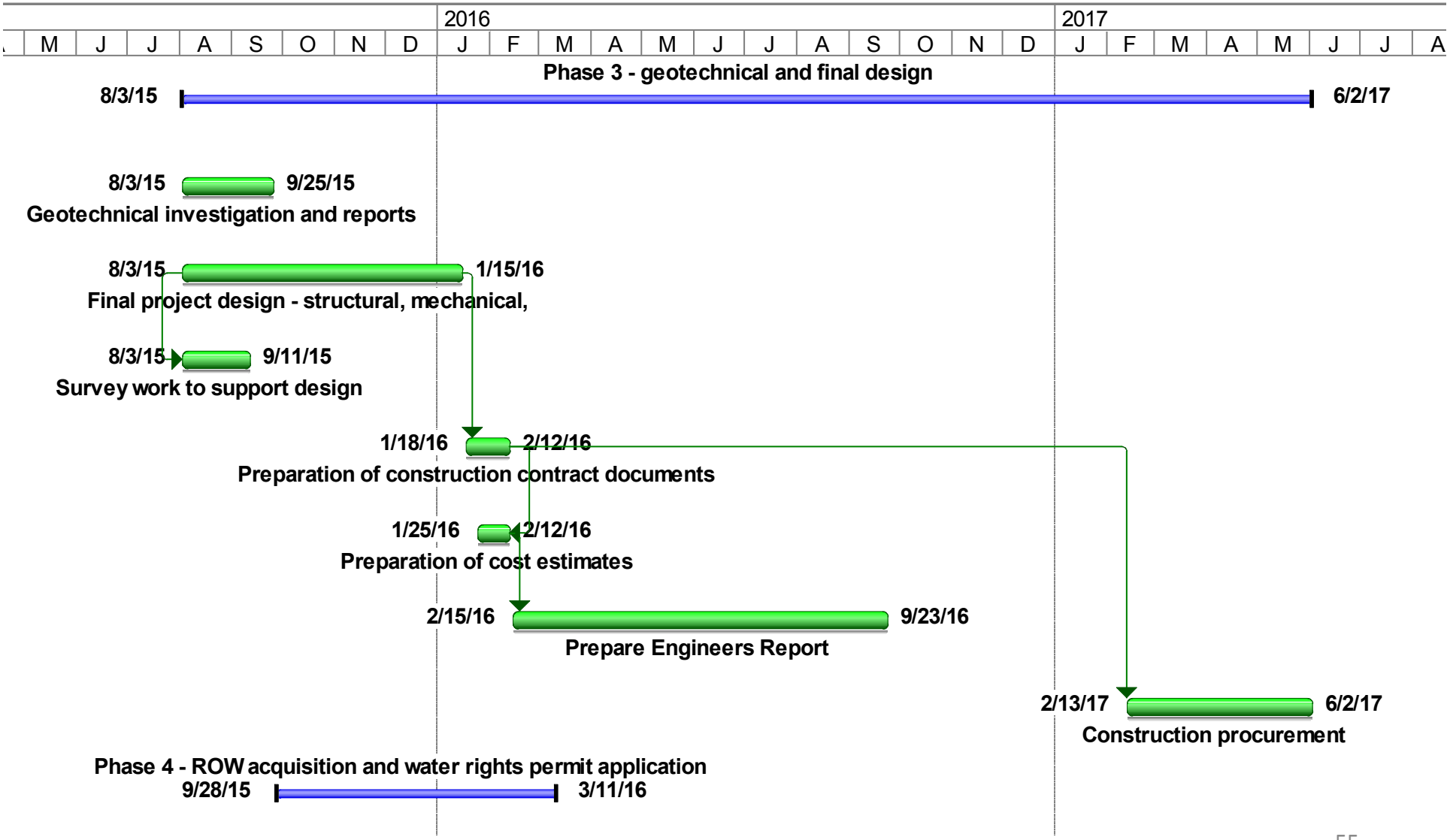


Consultant contract award
July 2015

EIR / Permitting Schedule

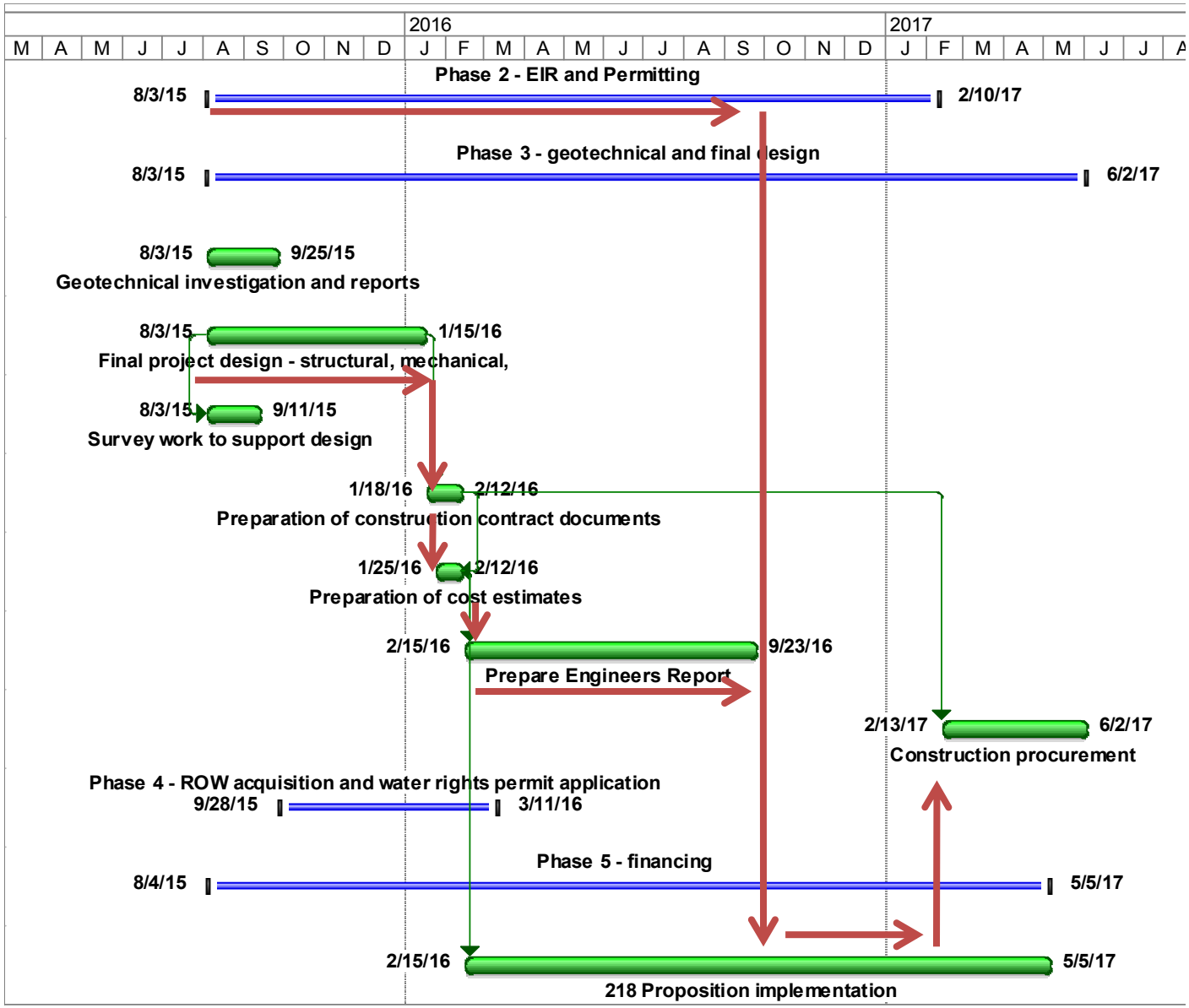


Preliminary Engineering schedule



Critical Development Path

- Phase 2 - permit applications (75% environmental complete)
- Phase 3 - geotechnical and final design (75% design)
- Phase 5 - financing



COST AND FINANCING PLAN

Interlake Tunnel & San Antonio Spillway Modification

Cost Estimate (Dec 2014)

($000)

Phase 1 - preliminary engineering	$315
Phase 2 - permit applications	$1,198
Phase 3 - geotechnical and final design	$1,311
Phase 4 - ROW acquisition and water rights verification	$244
Phase 5 - financing	$342
Phase 6 - construction	$32,206
Program Management	$1,387
Construction Management	$1,200
Expenses	$300
Contingency	$9,500
Subtotal Tunnel	$48,003
San Antonio Spillway Modification*	$15,000
Total	$63,003

*- placeholder estimate. Costs have not been calculated

Proposed Financing Plan

- 218 Proposition – benefit assessment
- Similar in plan and structure to Prop 218 financing for the Salinas Valley Water Project – Zone 2C
- Assessment formulas based on proportional weighting of:
  - Active / Passive land use factors
  - Special benefits from project

RFP REQUIREMENTS

RFP Requirements

1.0 INTENT

2.0 QUALIFICATION REQUIREMENTS

4.0 CALENDAR OF EVENTS

Deadline for Written Questions	**Friday May 1, 2015**
Proposal Submittal Deadline	**Friday June 5, 2015**
Estimated Notification of Selection	**June 2015**
Estimated AGREEMENT Date	**July 2015**

Potential interviews of shortlisted teams **Week of July 6, 2015**

RFP Requirements

5.0 COUNTY POINT OF CONTACT

Michael R. Derr
Contracts/Purchasing Officer

7.0 PROPOSAL PACKAGE REQUIREMENTS

Proposal Package Layout; Organize and Number Sections as Follows:	
Section 1	COVER LETTER (INCLUDING CONTACT INFO)
	SIGNATURE PAGE
	RECEIPT OF SIGNED ADDENDA (IF ANY)
	TABLE OF CONTENTS
Section 2	APPROACH TO WORK
Section 3	SPECIALIZED EXPERIENCE
Section 4	REFERENCES
Section 5	ATTACHMENTS
Section 6	EXCEPTIONS
Section 7	APPENDIX

Proposal Attachments

• Attachment-A	RFP Signature Page
• Attachment-B	Any applicable Signed Addenda
• Attachment-C	General Firm Information
• Attachment-D	Project Experience Information
• Attachment-E	Organizational Chart of Proposed Team
• Attachment-F	Resumes of Key Personnel for this Project
• Attachment-G	Project Management Approach
• Attachment-H	Schedule Management Approach
• Attachment-I	Environmentally-Friendly Business Practices including Green Business Certifications (one (1) Page Limit)
• Attachment-J (Engineering)	**Sealed Submittal of Lump Sum Proposal** (this form must be submitted and sealed in a separate envelope and will not be opened until a tentative selection has been made by MCWRA).
(Environmental)	**Sealed Submittal Not To Exceed Proposal organized by task**

SIGNATURE PAGE

RFP Requirements

8.0 SUBMITTAL INSTRUCTIONS & CONDITIONS

9.0 SELECTION CRITERIA

Proposed Team Qualifications and Resume (s)	**Points 0 - 20**
Project Experience	**Points 0 - 30**
Quality of Project Management Approach	**Points 0 - 15**
Quality of Schedule Management Approach	**Points 0 - 10**
Quality of Cost Management Approach	**Points 0 - 20**
Environmentally Friendly Business Practices	**Points 0 - 5**

RFP Requirements

10.0 CONTRACT AWARD

SAMPLE AGREEMENT BETWEEN MCWRA AND CONTRACTOR

ENVIRONMENTAL SCOPE OF WORK

Objectives

- Prepare a complete and legally defensible Environmental Impact Report in compliance with CEQA and the CEQA Guidelines.

- Develop and implement a permit strategy that will result in the timely receipt of approvals from any/all Lead, Responsible, Cooperating, Trustee, and/or Reviewing Agencies.

Scope summary

- Outline the permitting strategy for the project
- Prepare timeline to complete all necessary permit processes
- Prepare not to exceed cost estimate to perform the scope of work
  - schedule of values tied to milestones and deliverables
- develop the strategy and environmental compliance plan necessary for successful processing (both draft and final versions of the EIR)

Work tasks

- Project Management and Team Coordination
- Initial Study and Notice of Preparation (NOP)
- Probable Environmental Effects
- Prepare Administrative Draft EIR (ADEIR)
- Prepare Draft Responses to Comments
- Prepare Administrative Draft Final EIR
- Prepare Final EIR

Work tasks (cont.)

- Prepare Findings, Statements of Overriding Considerations Notice of Determination, and Mitigation Monitoring & Reporting Plan
- Final EIR Certification / Public Outreach
- Public Meetings
- Public Outreach
- Permitting

Probable Environmental Effects

- Drainage, Erosion and Sedimentation
- Geology, Seismicity, and Soils
- Hydrology and Water Quality
- Terrestrial and Aquatic Biological Resources
- Noise
- Cultural and Paleontological Resources
- Air Quality
- Visual and Aesthetic Resources

Probable Environmental Effects (cont.)

- Recreational Resources
- Public Services and Utilities
- Transportation and Circulation
- Land Use and Planning
- Socioeconomic Resources

PRELIMINARY ENGINEERING SCOPE OF WORK

Objectives

1. Design the Projects within the capital cost constraints established for each project
2. Preliminary engineering design services necessary to achieve a 95% confidence of probable construction and operating costs
3. Preparation of an Engineer's Report to support a Proposition 218 benefit assessment financing program
4. Preparation of Design-Build procurement documents for Interlake Tunnel
5. Preparation of 100% design and construction bid documents for the Spillway Modification Project

Scope of Work Summary

1. Preparation of contract documents for Design-Build services for the Interlake Tunnel Project in accordance with the requirements of AB 155.
2. Preparation of design-bid-build contract documents for the San Antonio Spillway Modification Project.

Scope of Work Summary

3. Preparation of technical documents to support the draft and final EIR environmental and regulatory approval for both Projects.
4. Preparation of an Engineer's Report and detailed capital and operating cost estimates for the Projects to achieve 95% confidence of probable costs

Prepare lump sum cost estimate to perform the scope of work

- schedule of values tied to milestones and deliverables

Work tasks

- Project Management and Team Coordination
- Development of the Engineer's Report for Proposition 218 benefit assessment financing
- Support MCWRA as a liaison of the Proposition 218 process
- Support the environmental consultants with the impact and alternatives analyses

Tunnel preliminary engineering

- Constructible within the project cost budget
- Perform site survey
- Prepare Geotechnical Baseline Report
- Coordinate development of new operating criteria
- ROW acquisition support
- PE deliverables at 30%, 60% and 90%
- DB contract document submittals at 50%, 75% and 100%
- Coordinate “plan check” reviews
- Support MCWRA during DB RFP phase

Design-Bid-Build San Antonio Spillway Modification Project

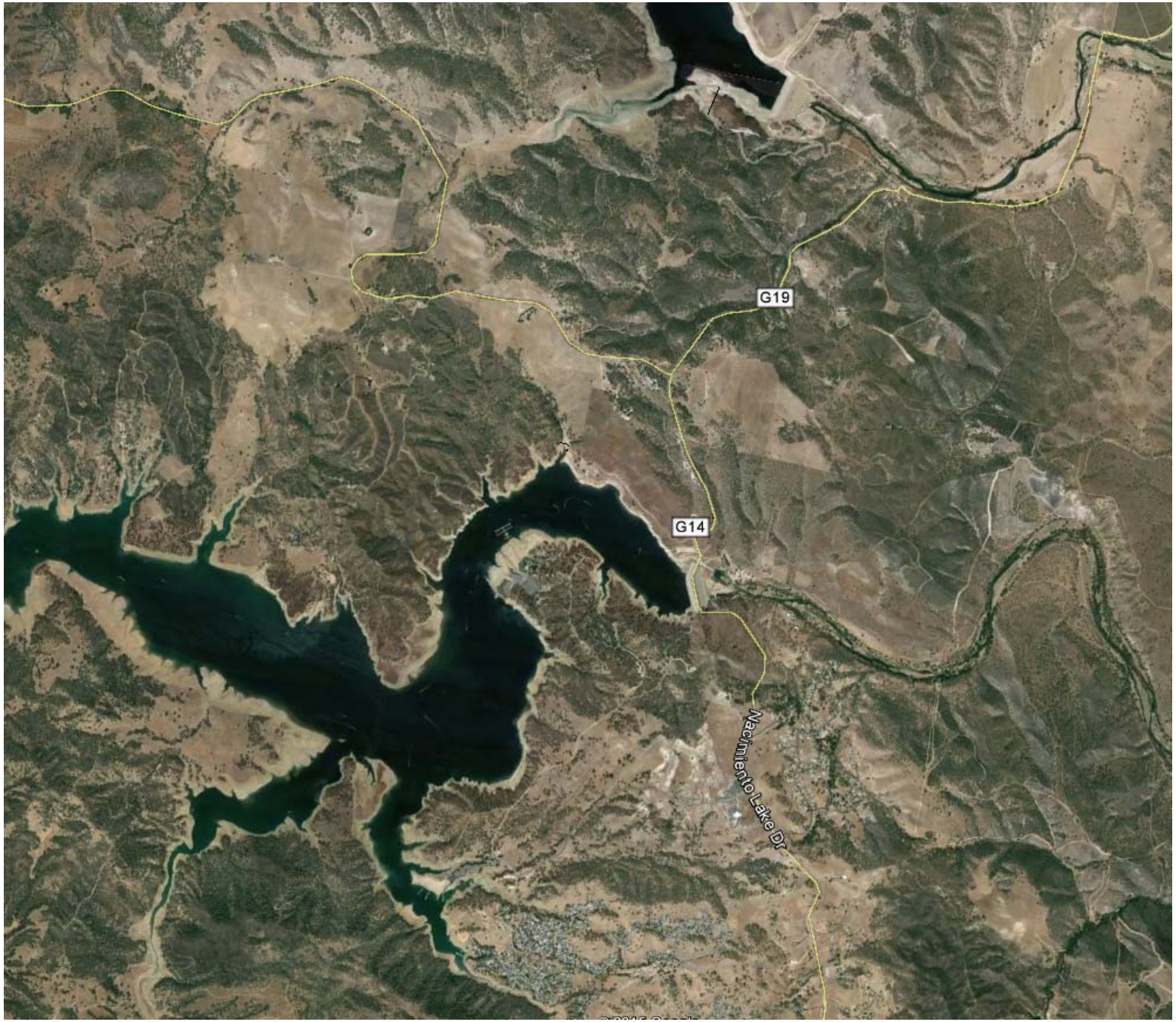
- Preliminary and final design
- Prepare 100% DBB contract documents
- Identify equipment procurement packages
- Perform site survey work
- Geotechnical – GDR and GIR
- VE study on 30-percent design
- Physically model hydraulic energy loss capabilities of dissipating structures
- Deliverables at 30%, 60%, and 90% design
- Assist MCWRA in coordination with DSOD
- Assist MCWRA in plan check coordination and bidding phase

Closing

Thank you

Questions and Answers

Optional Site Tour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