Interlake Tunnel Project

Contents

1. Background – current facilities
2. Project description and function
3. Baseline and tunnel scenario modeling
4. Project benefits / opportunities
5. Project cost estimate
6. Proposed financing plan
7. Comparison of costs with other projects
8. Project development schedule
9. Water rights position
10. Next steps and requirements

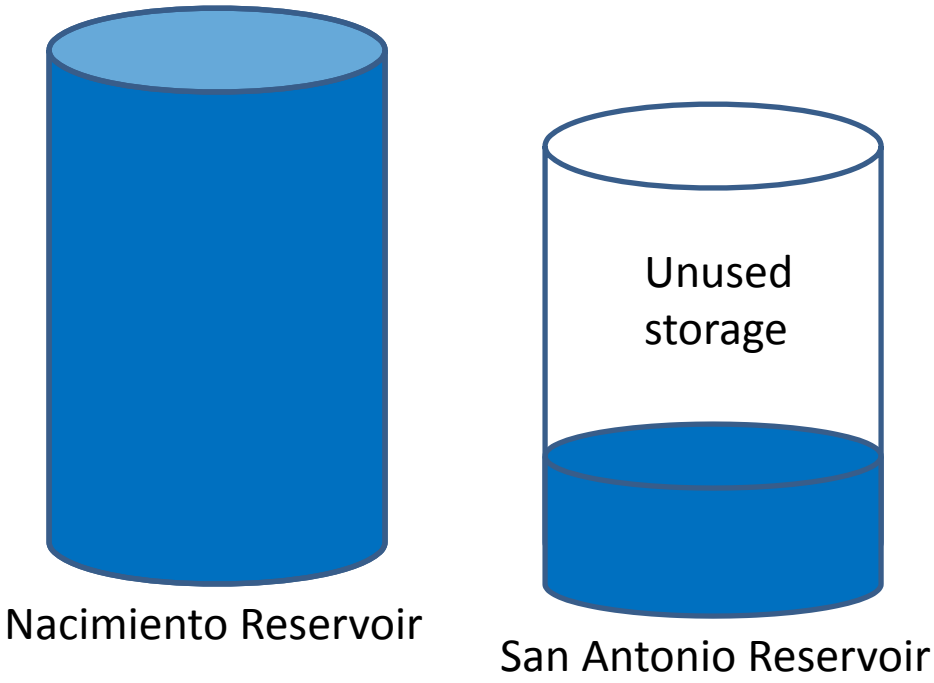
Existing Surface Water Supply

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

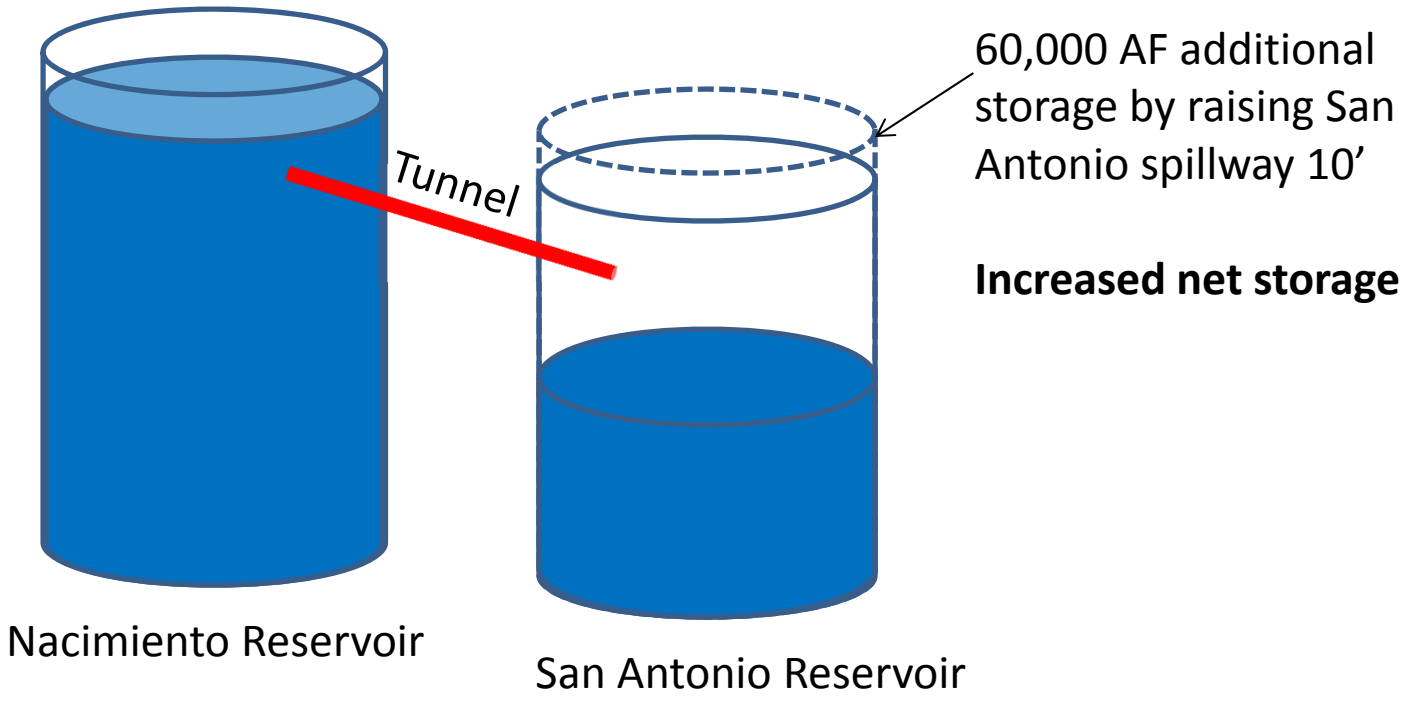
Provides flood control, minimum flows, and conservation releases

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

Interlake Tunnel

Portals and Tunnel Profile

(conceptual)

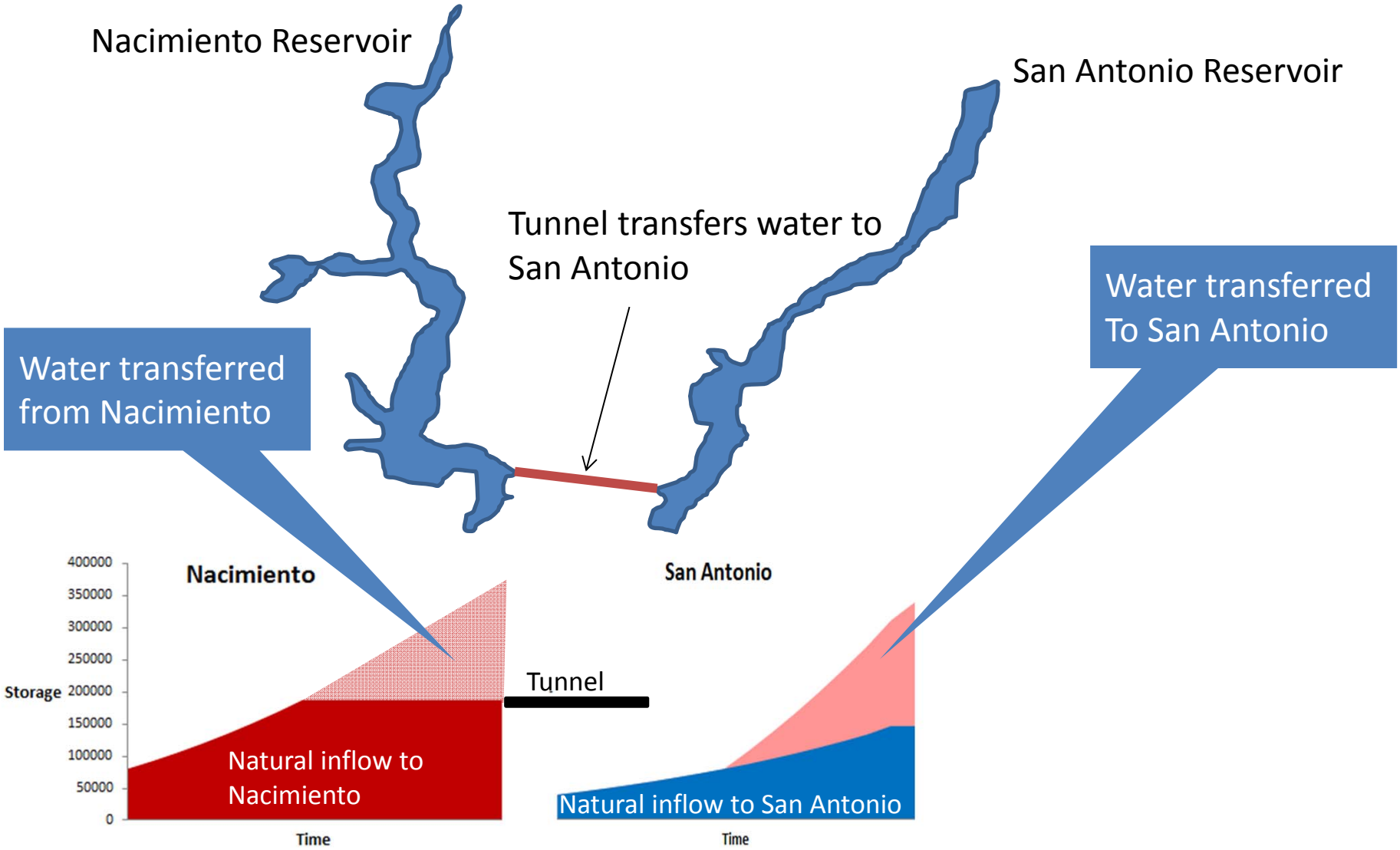
Nacimiento portal

Portal Elevation (TBD)
Spillway elevation ~ 800’

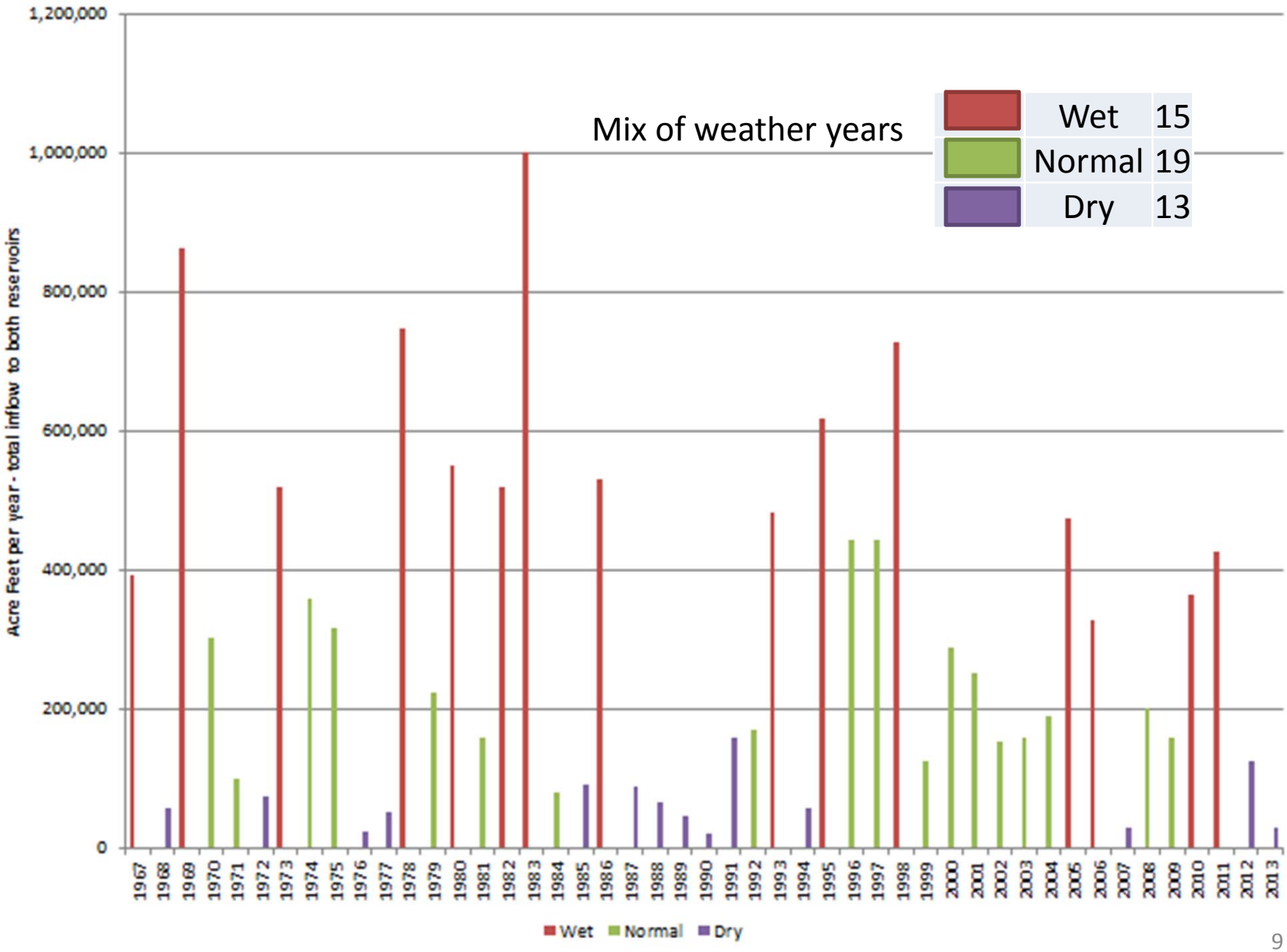
San Antonio portal

Portal Elevation (TBD)
Spillway elevation ~ 780’

Interlake Tunnel function

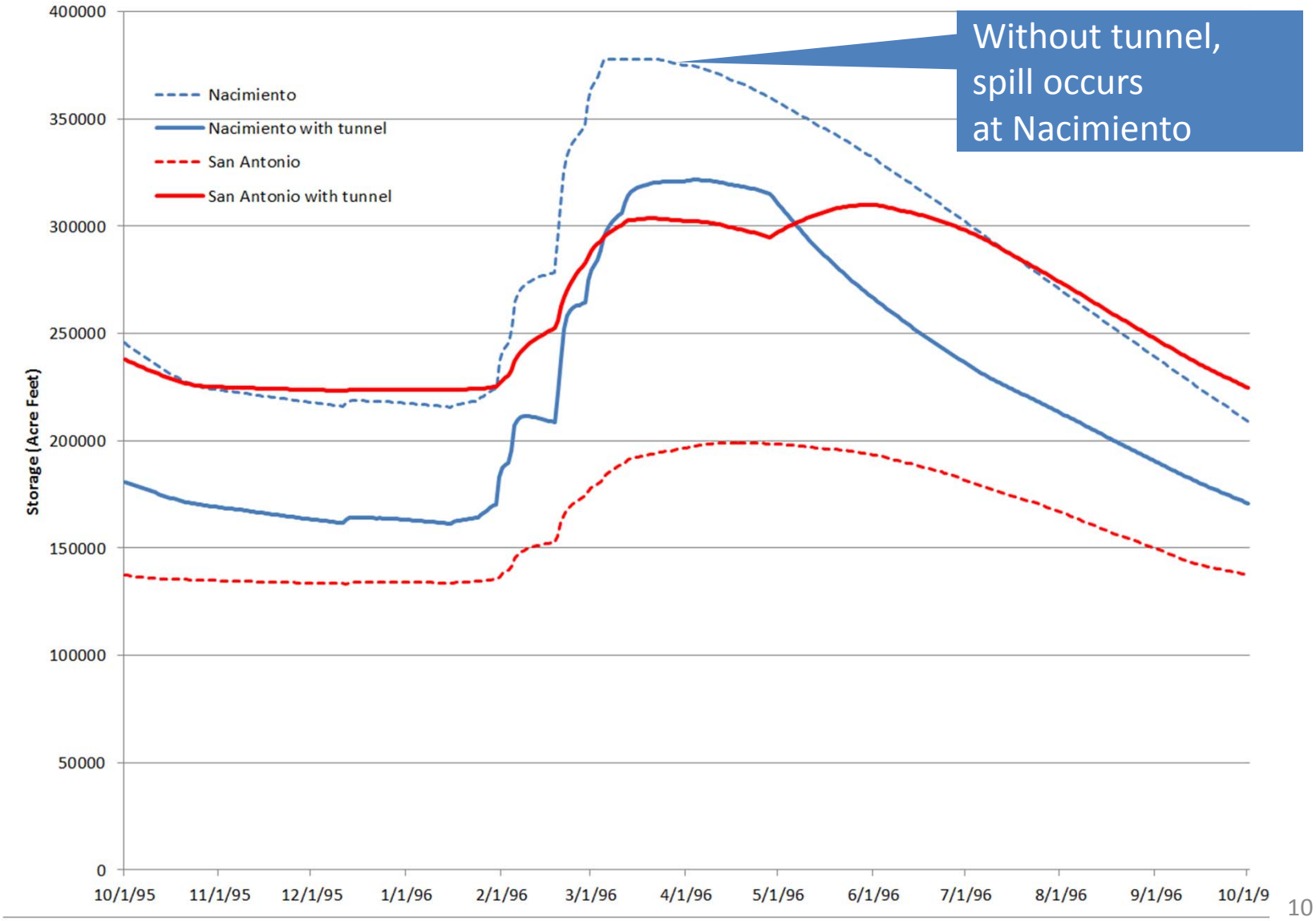


Water Year 1967-2013 Model Simulation

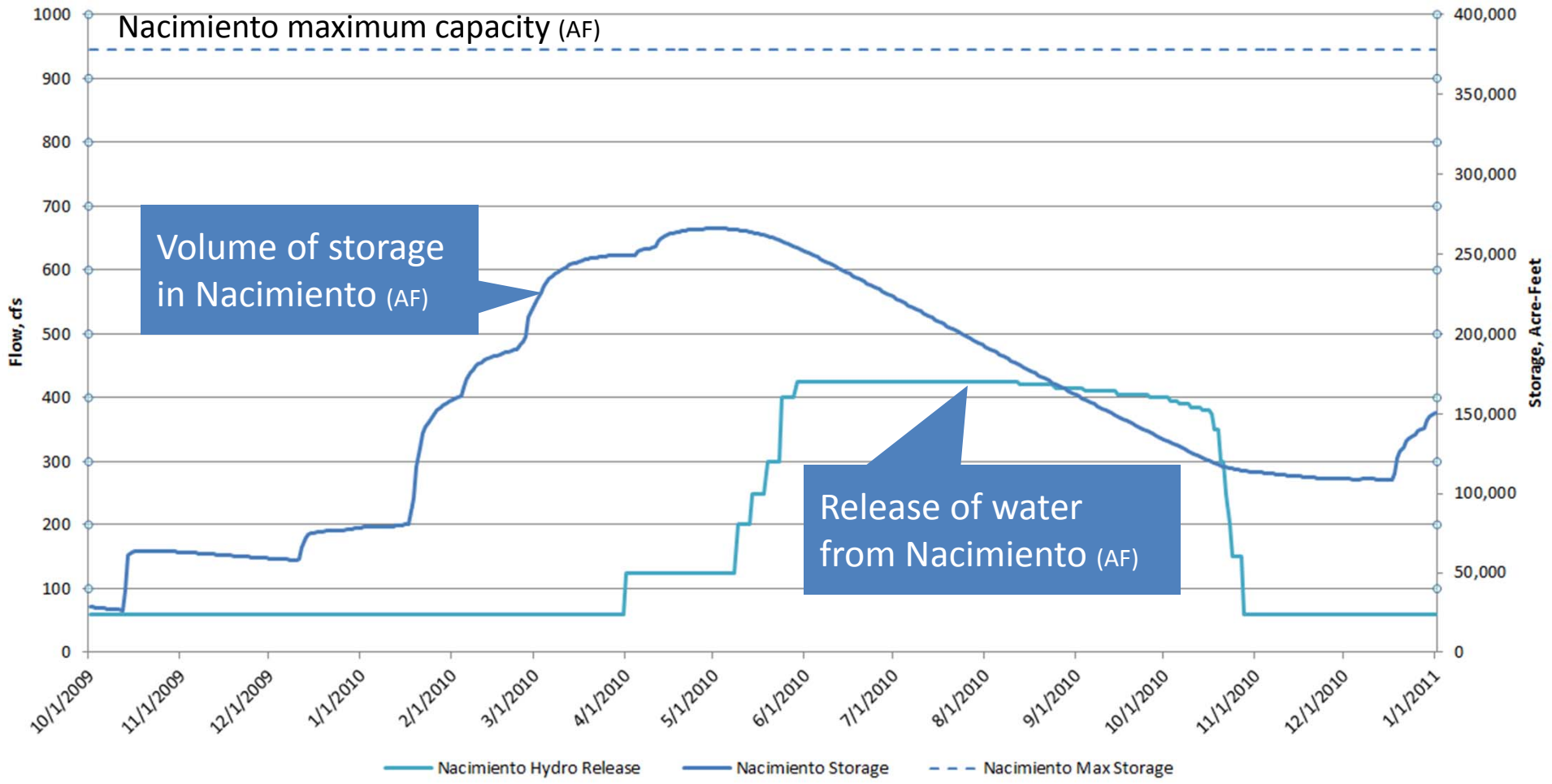


Weather year determined by MCWRA

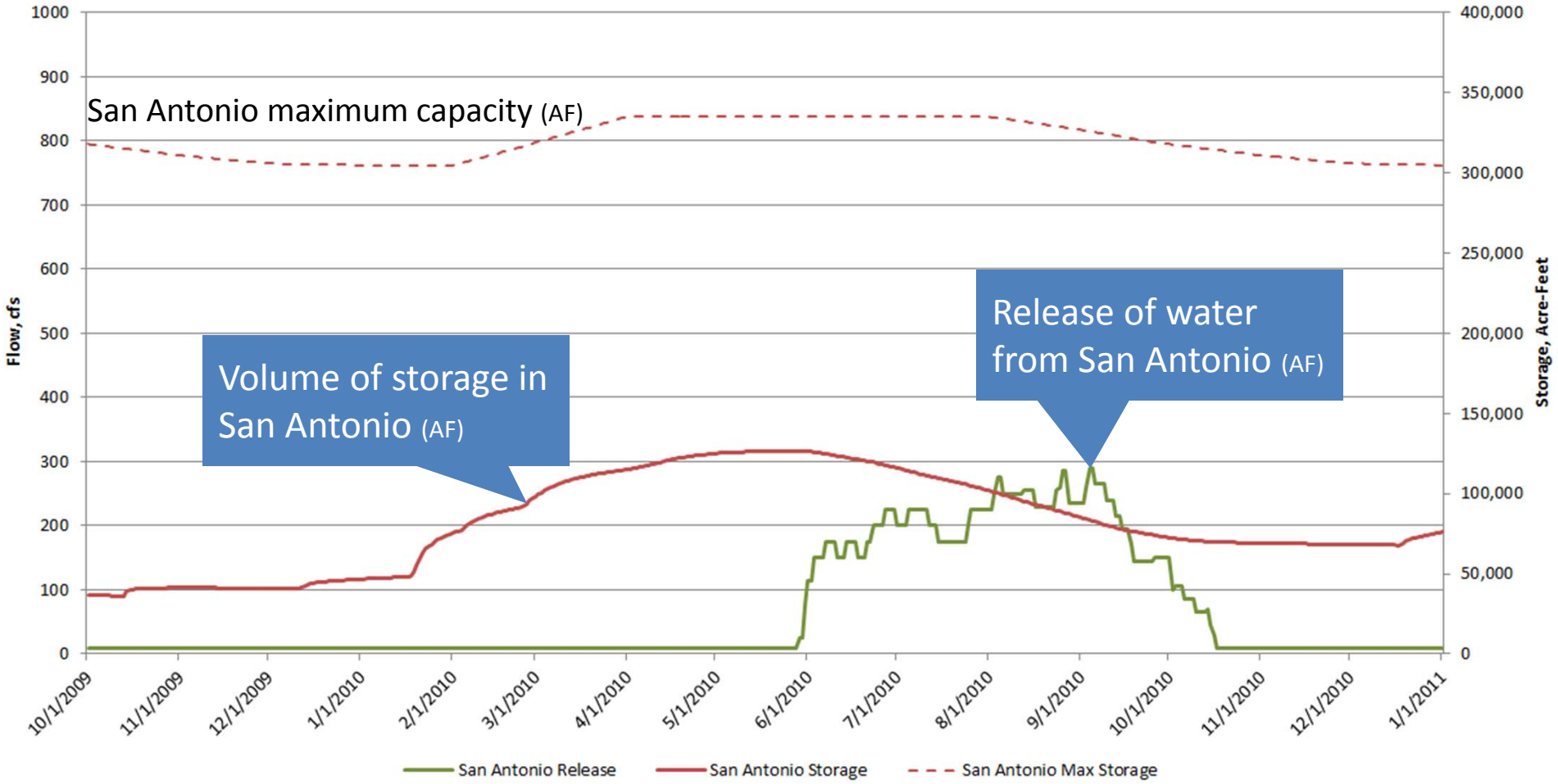
Tunnel Transfers Storage from Nacimiento to San Antonio



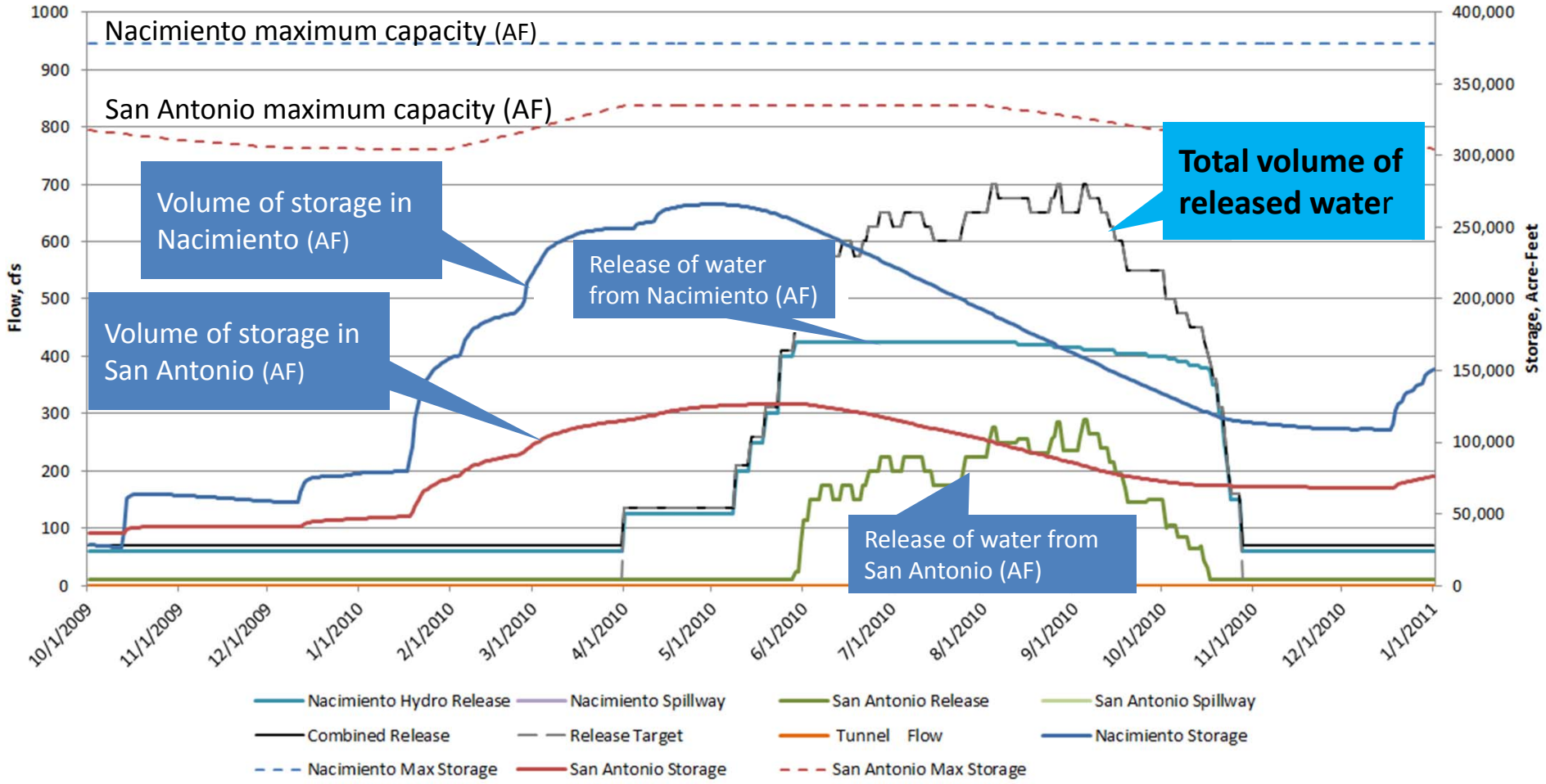
Hydrograph Explanation
Flow/Storage Over Time



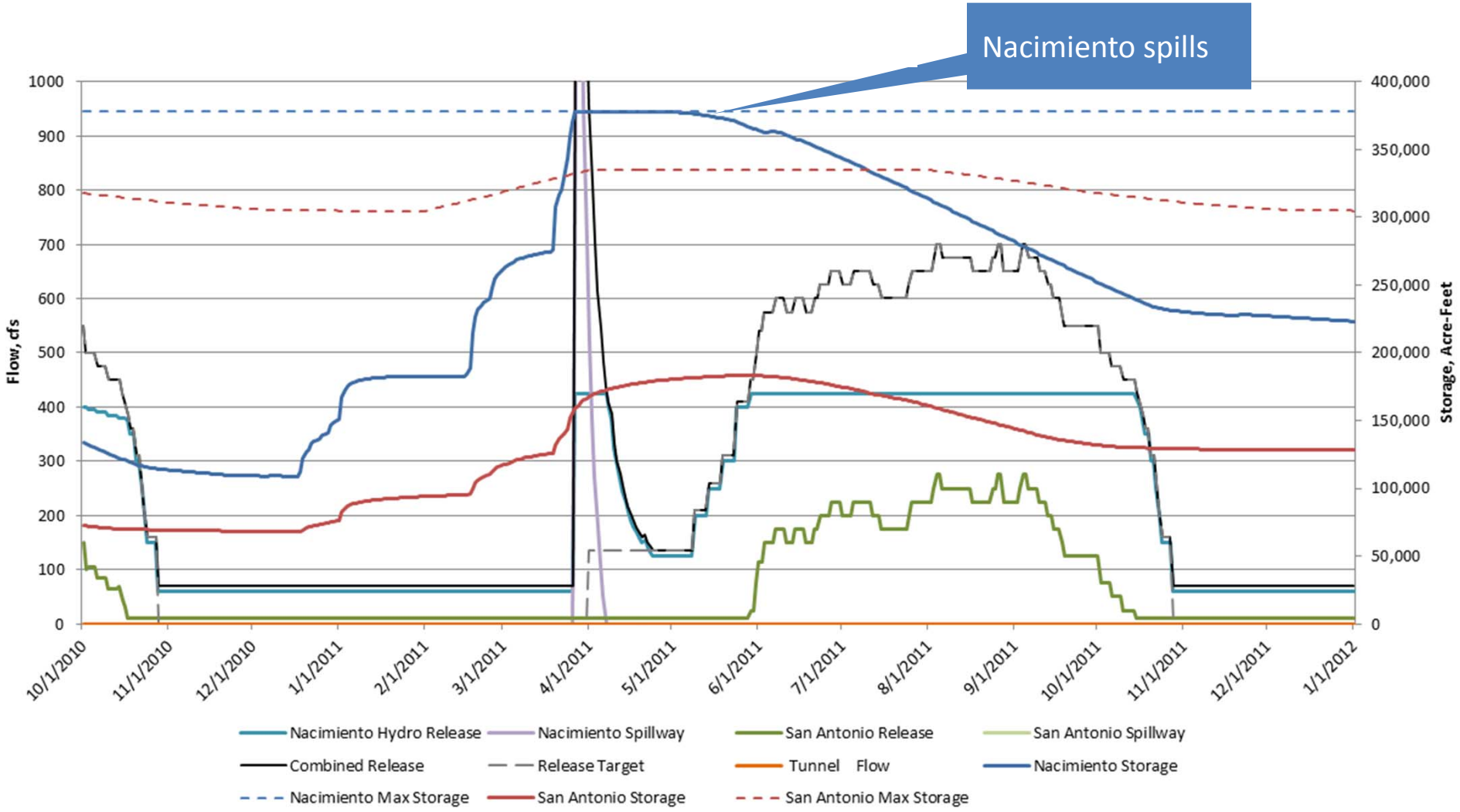
Hydrograph Explanation
Flow/Storage Over Time



Hydrograph Explanation
Combined Flow/Storage Over Time

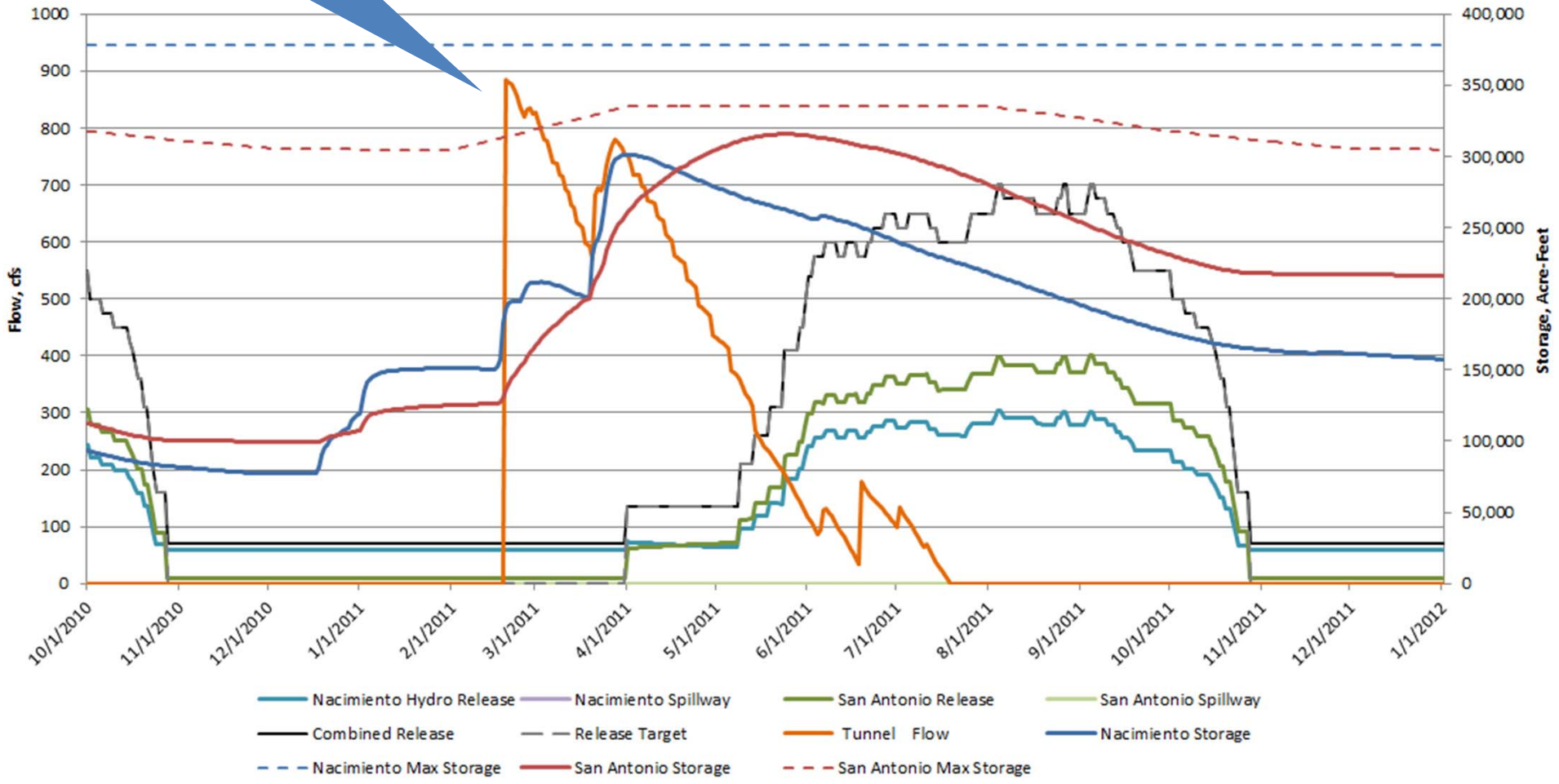


2011 – Baseline Operations

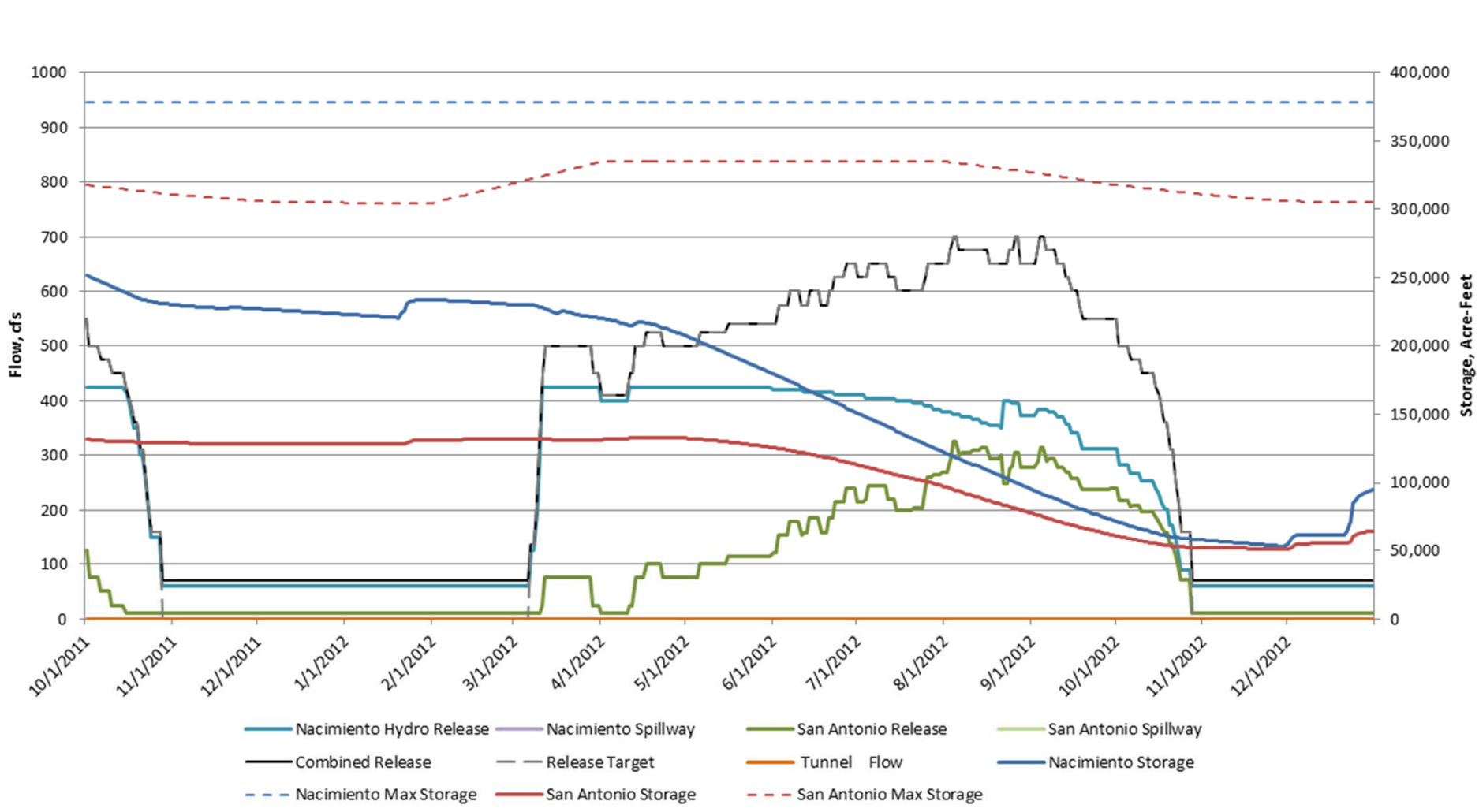


2011 – Tunnel Operations

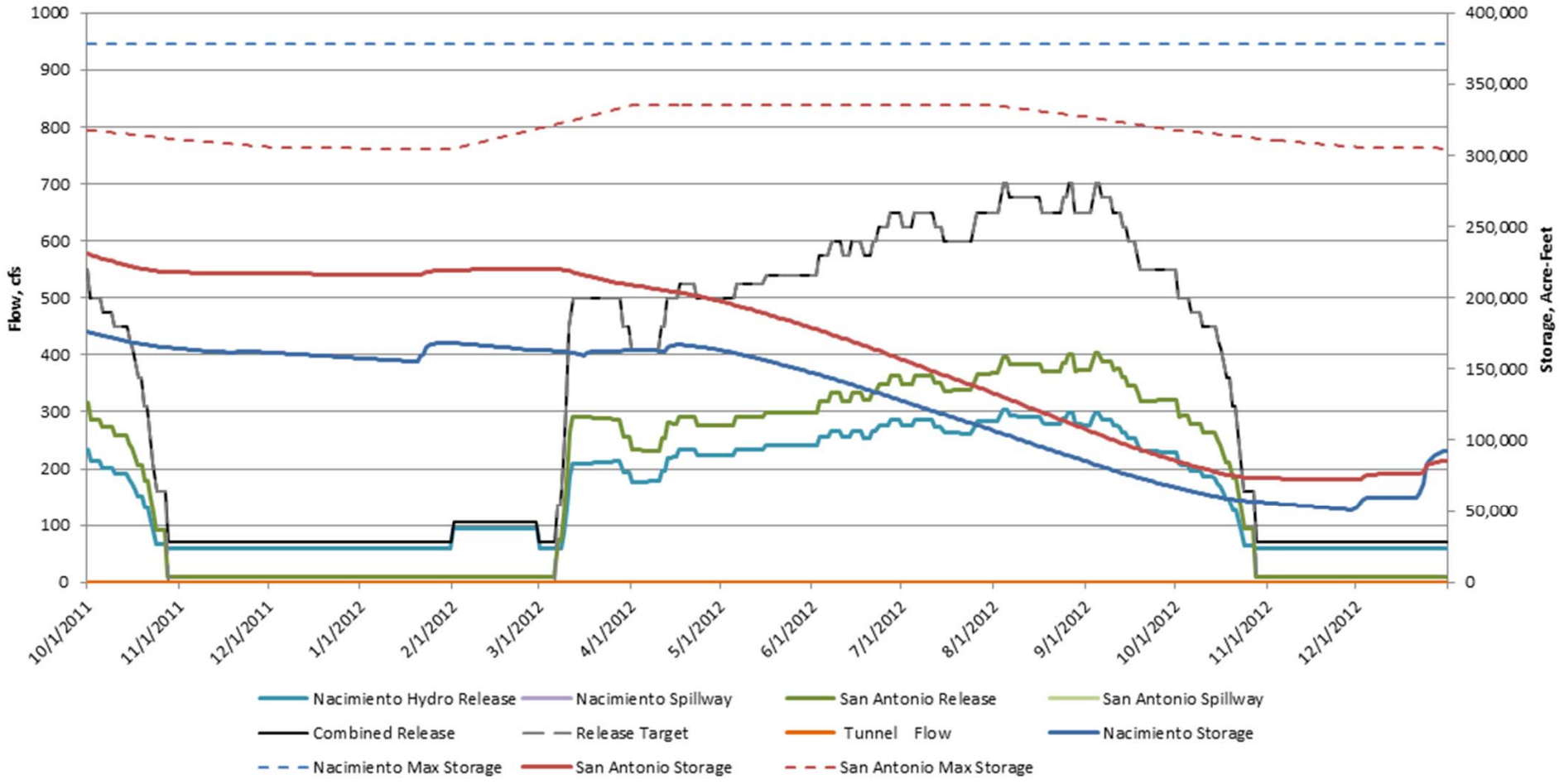
Tunnel transfers water to San Antonio



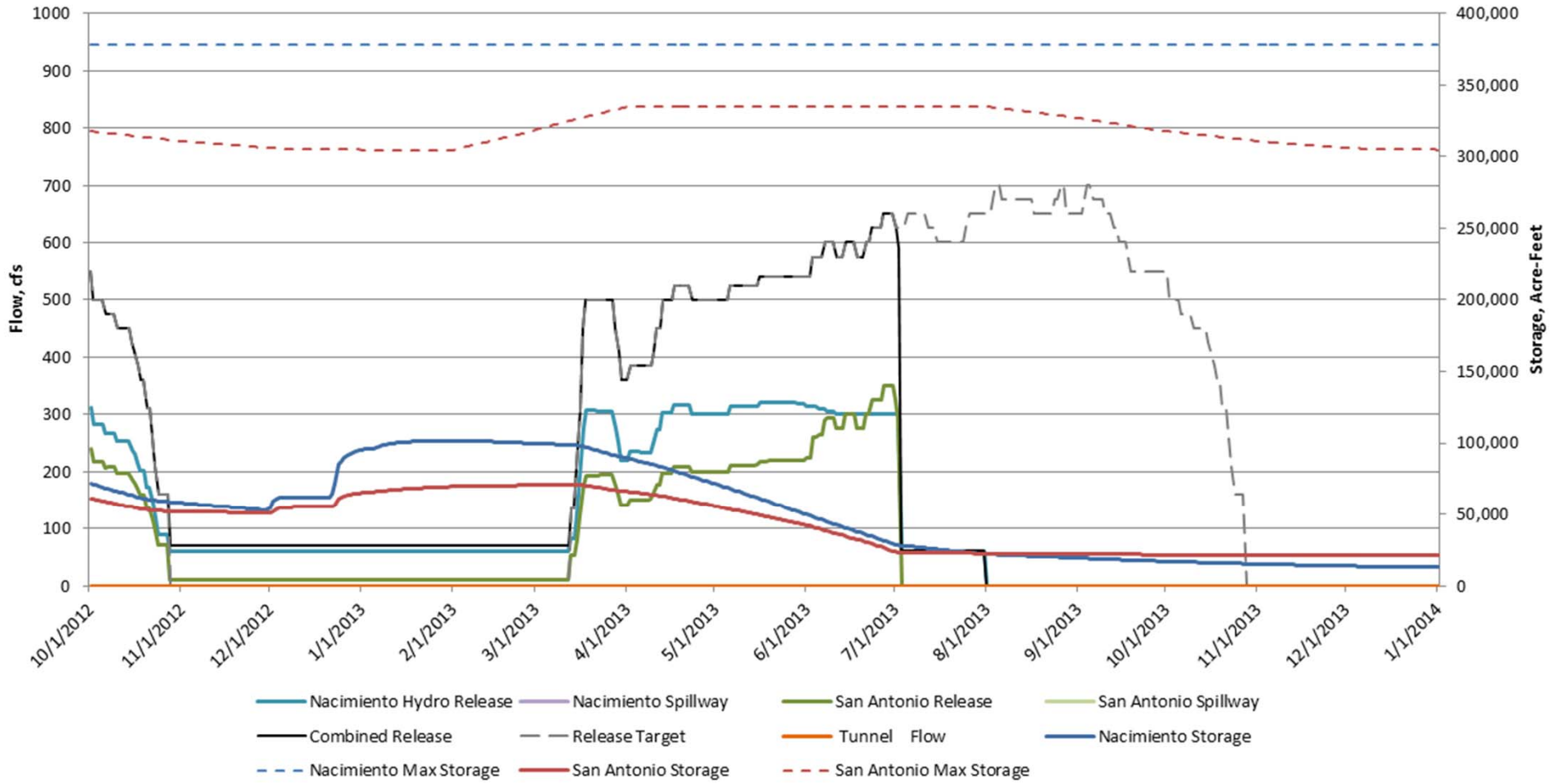
2012 – Baseline Operations



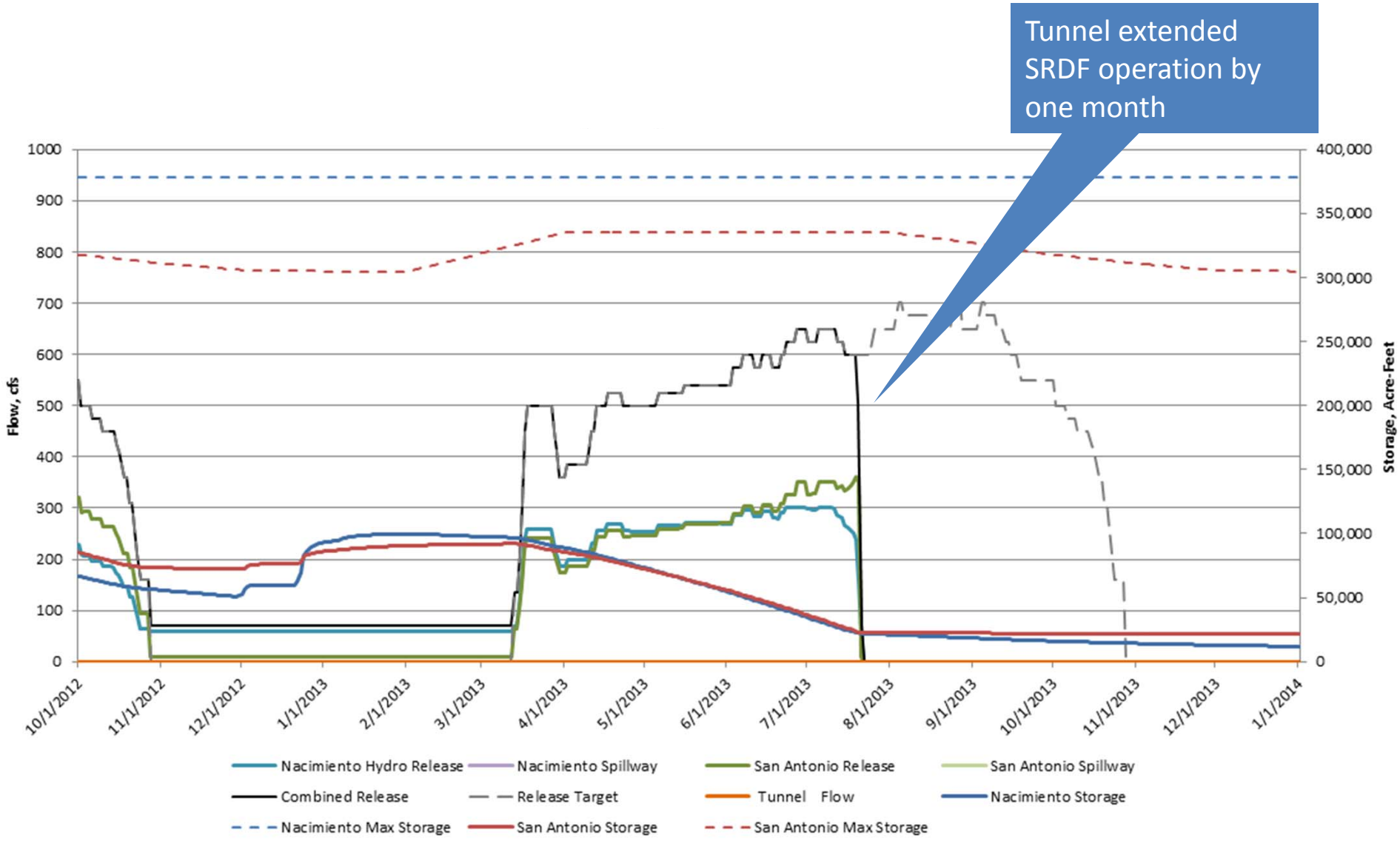
2012 – Tunnel Operations



2013 – Baseline Operations



2013 Tunnel Operations



Interlake Tunnel
Operational Modeling Results

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

Project description	Reduction in Spills		Increase in Conservation Releases			Increase in Dry Year Conservation Releases	Tunnel Transfers
10’ Tunnel	7,736		5,390			14,805	50,493
10’ Tunnel with SA Raise*	11,857		8,101			20,949	53,840

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

Total Controlled Releases are total releases to the river through the outlets
Conservation Releases are in addition to Minimum Flow Releases

Interlake Tunnel
Operational Modeling Results

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

Project description	Reduction in Spills		Increase in Conservation Releases			Increase in Dry Year Conservation Releases	Tunnel Transfers
10’ Tunnel	7,736		5,390			14,805	50,493
10’ Tunnel with SA Raise*	11,857		8,101			20,949	53,840

Extra water to supply future infrastructure (releases December through March)

	Reduction in Spills	Additional Beneficial Use (DEC - MAR)	Increase in Conservation Releases	Increase in Total Controlled Releases	Increase in Dry Year Total Controlled Releases	Increase in Dry Year Conservation Releases	Tunnel Transfers
10’ Tunnel	17,132	15,372	955	16,327	5,020	4,406	46,527
10’ Tunnel with SA Raise*	22,198	15,774	4,912	20,686	5,262	4,429	50,179

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

Total Controlled Releases are total releases to the river through the outlets
Conservation Releases are in addition to Minimum Flow Releases

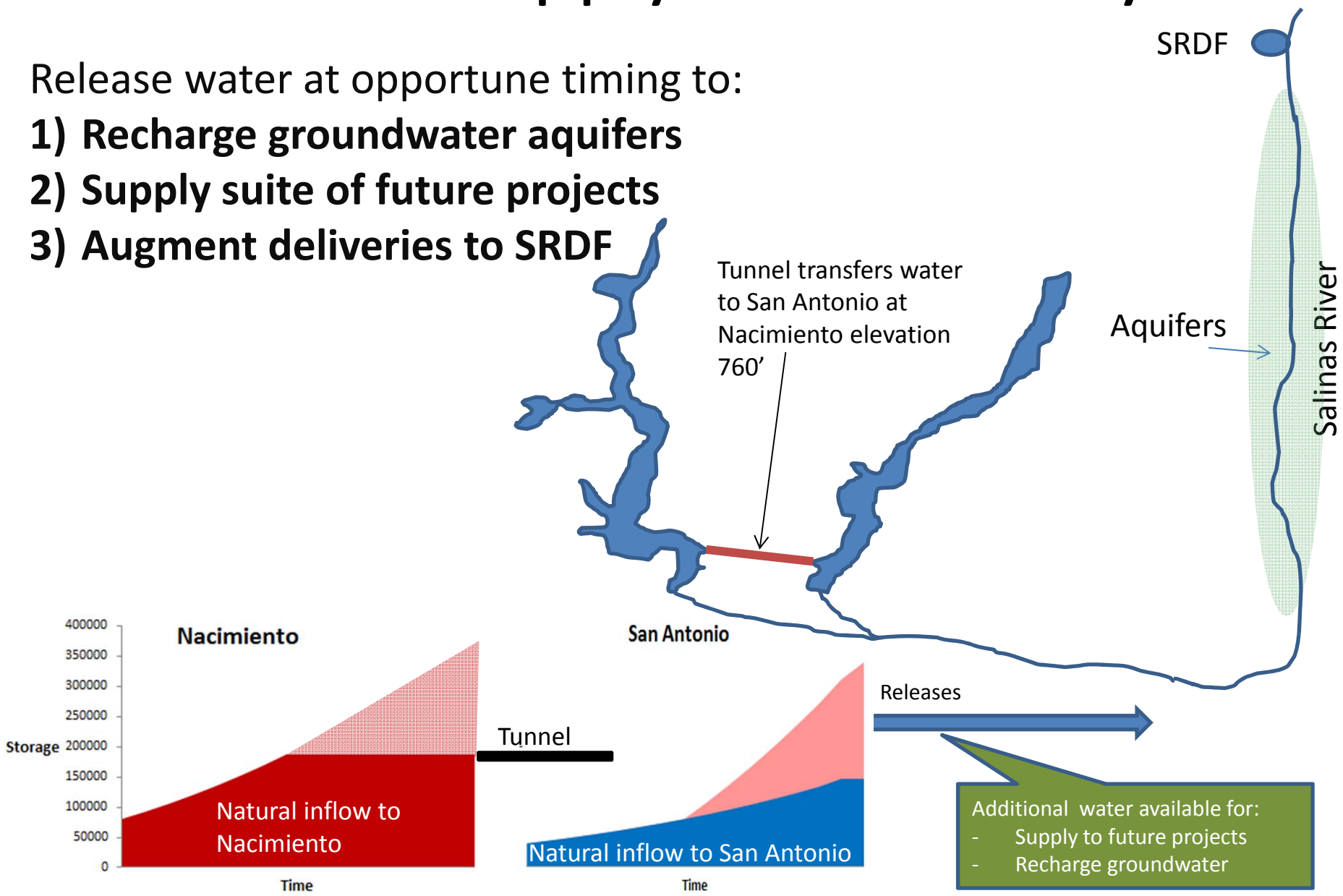
Additional Beneficial Water Supply

Description	Average annual controlled releases (AFY)
Baseline (current)	201,408
With tunnel	217,735
Increase volume over baseline of conservation release made available by the tunnel	16,327
SRDF additional release	5,390
Remaining water available for suite of future projects	10,937

Water supply sustainability

Release water at opportune timing to:

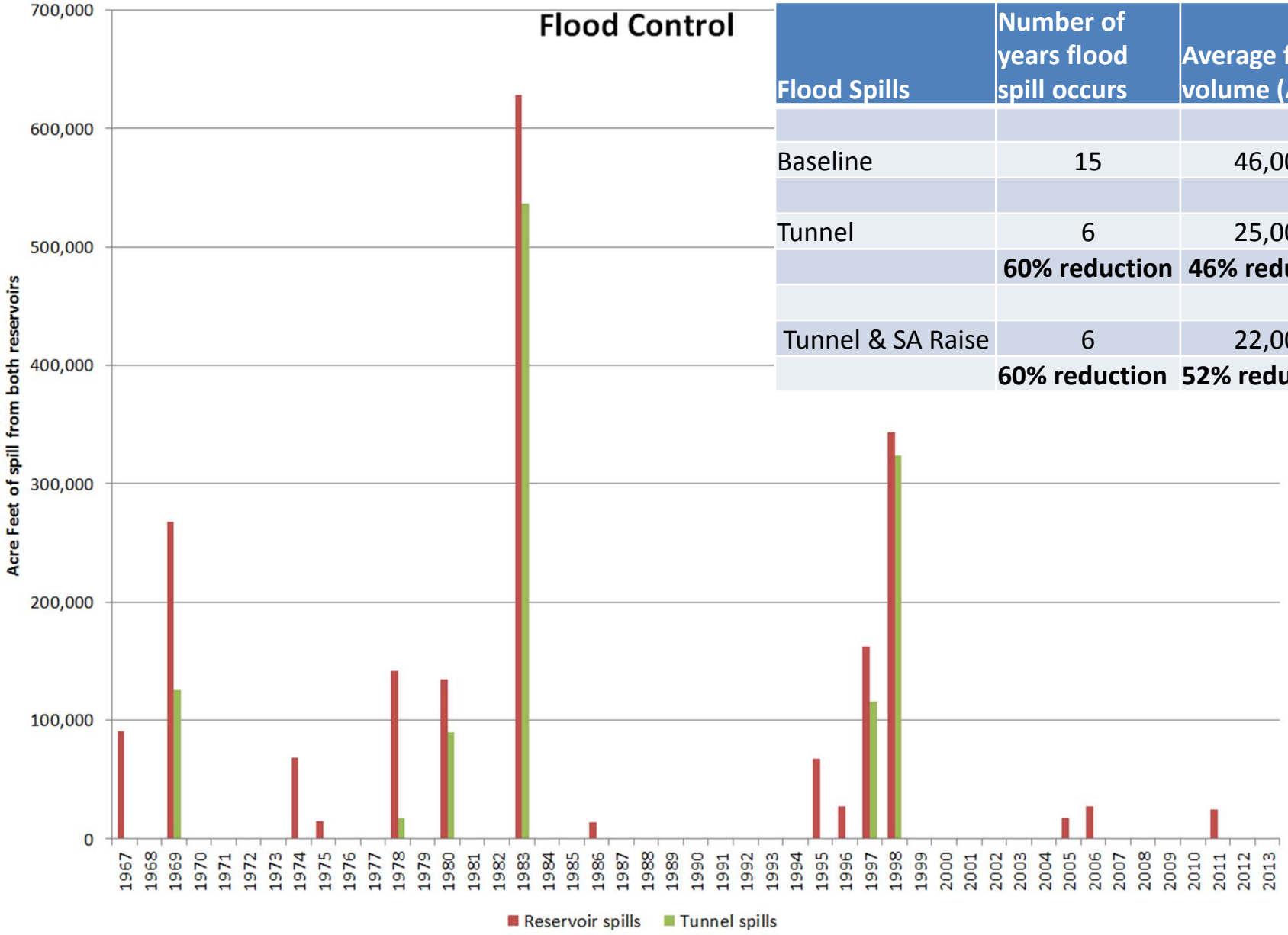
1) **Recharge groundwater aquifers**
2) **Supply suite of future projects**
3) **Augment deliveries to SRDF**



Additional Beneficial Water Release Opportunities

Year	Operation	Benefit
Normal	Release additional water during and after conservation period.	- Recharges aquifer - Surface supply to future projects - Augments supply to SRDF - Enhances aquatic environment
Dry	Release additional water during conservation period and later if water available	- Recharges aquifer in driest season - Surface supply to future projects - Possible augmentation of supply to SRDF - Enhances aquatic environment
Wet	Hold water to release in the fall (Oct. – Dec.)	- Recharges upper aquifer after irrigation and summer season - Surface supply to future projects - Contributes to recharging lower aquifer. - Extends supply and operation of SRDF.

Flood Control Benefit



Flood Spills	Number of years flood spill occurs	Average flood volume (AFY)
Baseline	15	46,000
Tunnel	6	25,000
	60% reduction	**46% reduction**
Tunnel & SA Raise	6	22,000
	60% reduction	**52% reduction**

Tunnel Project Benefits
"Water Supply Sustainability"

- Significant increase in flood control benefits
  - Flood damage reduction
- Additional surface water available to serve current and future suite of projects
  - Will help sustain ground water supply by offsetting pumping
- Environmental benefits

Project Cost Estimate

($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
Total	$48,003

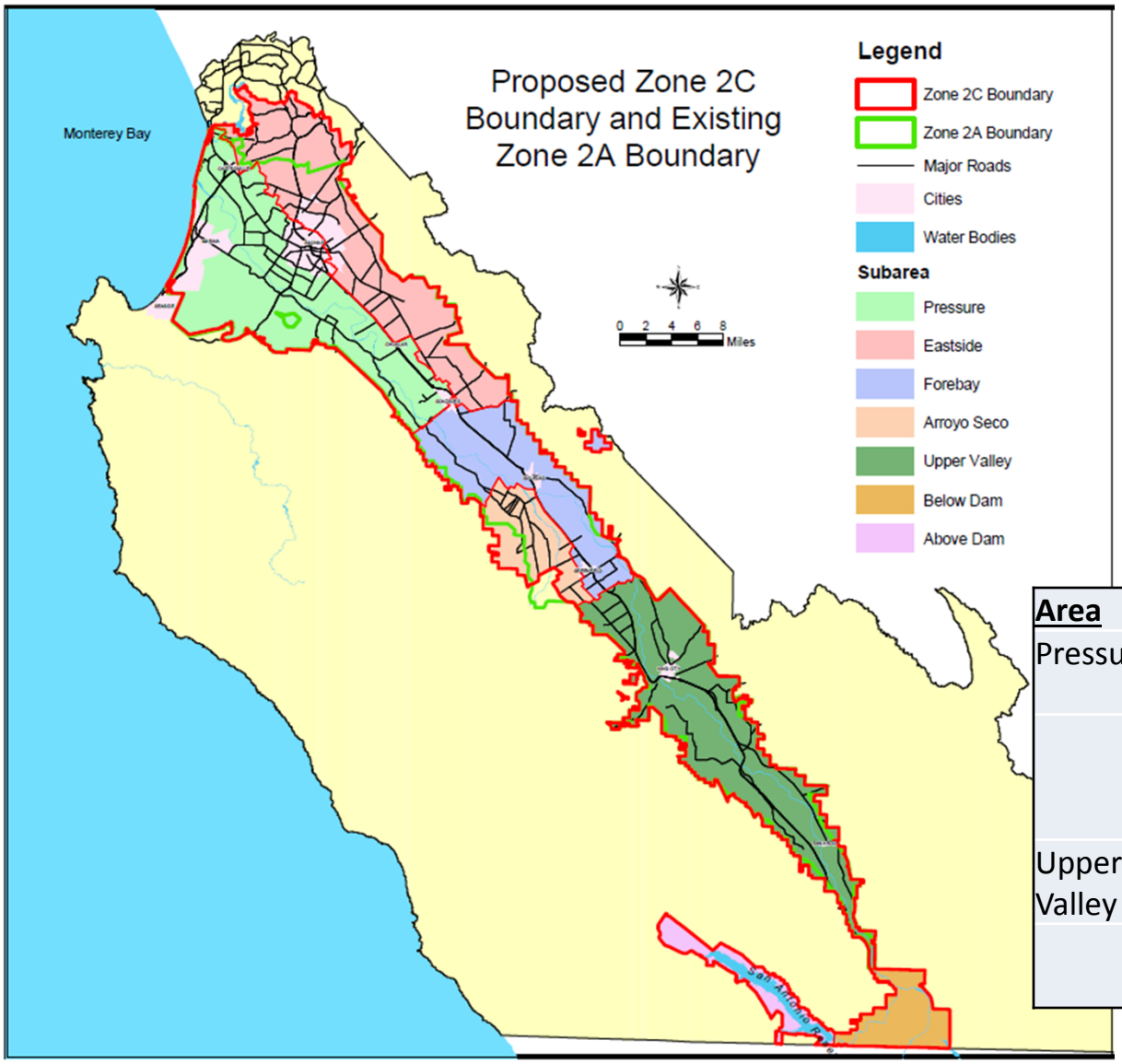
Cost growth:

- Updated construction costs , added 2000’ of length
- Added EIR costs
- Increased contingency.

Proposed Financing Plan

- 218 Proposition – tax levy on beneficiaries
- Similar in plan and structure to 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

218 Financing Zone 2C



2008 acreages

Total Acreage = 424,786

Equivalent Acreage = 283,837

Example of 218 Assessment Taxes per acre per year on SVWP

Area	Factor	Total
Pressure	A - Irrigated Ag	$29.01
	C - Dry Farming, grazing	$2.89
Upper Valley	A - Irrigated Ag	$10.85
	C - Dry Farming, grazing	$1.06

Capital Cost Comparison per AF of Controlled Release

Project	Original Cost	Current year cost @ 5% escalation	Average Annual Controlled Releases (AFY)	Cost AFY
Nacimiento Dam (1957)	$7 mil	$113 mil	140,444	$800
San Antonio Dam (1966)	$12.9 mil	$134 mil	60,964	$2,200
Interlake Tunnel		$48 mil	16,237	$2,956
Interlake Tunnel with SA Raise		$63 mil	20,686	$3,046

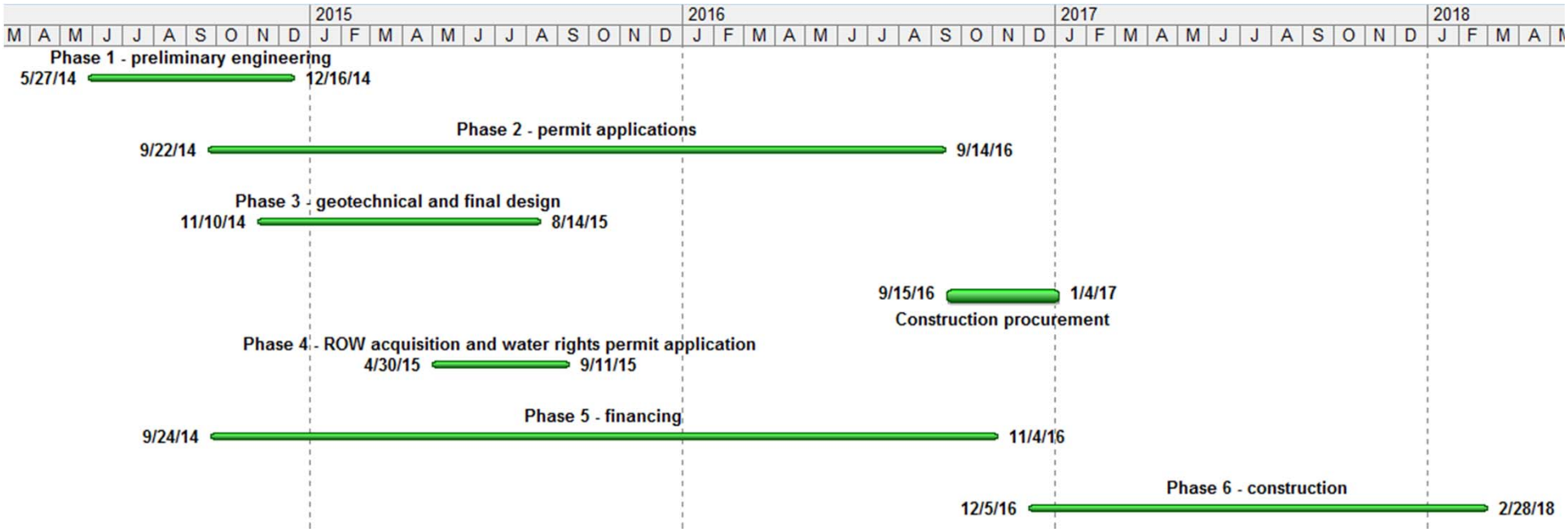
Cost per AF of Water Comparison to Salinas Valley Water Project

Project	Annual Average increase in releases AF/Y	Capital costs	Annual Capital debt service $/AF/Year	Average 218 Capital Assessment $/Acre Zone 2C	Average Operating Cost Assessment $/Acre	Total Average Assessment $/Acre Zone 2C
SVWP	6,094*	$38.8 mil	$334	$7.17	$5.64	$12.81
10' Tunnel	16,237	$48 mil	$192	$11.00	$0.70	$11.71
10' Tunnel with SA Raise	20,098	$63 mil	$195	$14.44	$0.70	$15.14

* - Delivered water

Zone 2C = 283,837 equivalent acres

Project Development Schedule



Water Rights

- Water is rediverted from Nacimiento through the tunnel for storage in San Antonio
  - Rediverted water only counts once for diversion (at Nacimiento)
  - Rediverted water potentially counts twice for storage (depending on operations)
- Existing water rights at Nacimiento and San Antonio are not affected by the operation of the tunnel
- Operation of the tunnel optimizes total reservoir storage without affecting water rights
- Reducing spills from Nacimento enhances water conservation and reduces the waste of water

Project Accomplishments to Date

- ✓ Conceptual / preliminary engineering
- ✓ Development of baseline hydrologic model
- ✓ Reservoir and tunnel simulation modeling
- ✓ Preliminary assessment of environmental and permitting requirements
- ✓ Project update presentations

Costs incurred to date:	$180,000
Remaining balance of interim capital:	$320,000

- Complete Preliminary Engineering
- Prepare Project Description for permitting
- Prepare RFP's for Design and Environmental consultants

Next Steps and Requirements

- MCWRA Board
  - Authority to proceed
- Monterey County Board of Supervisors
  - Authority to proceed
  - Funding of interim financing ($2.3 million)

Final design & geotechnical engineering	$900,000
Permitting and environmental approval	$800,000
Financing plan implementation	$350,000
Program Management	$250,000