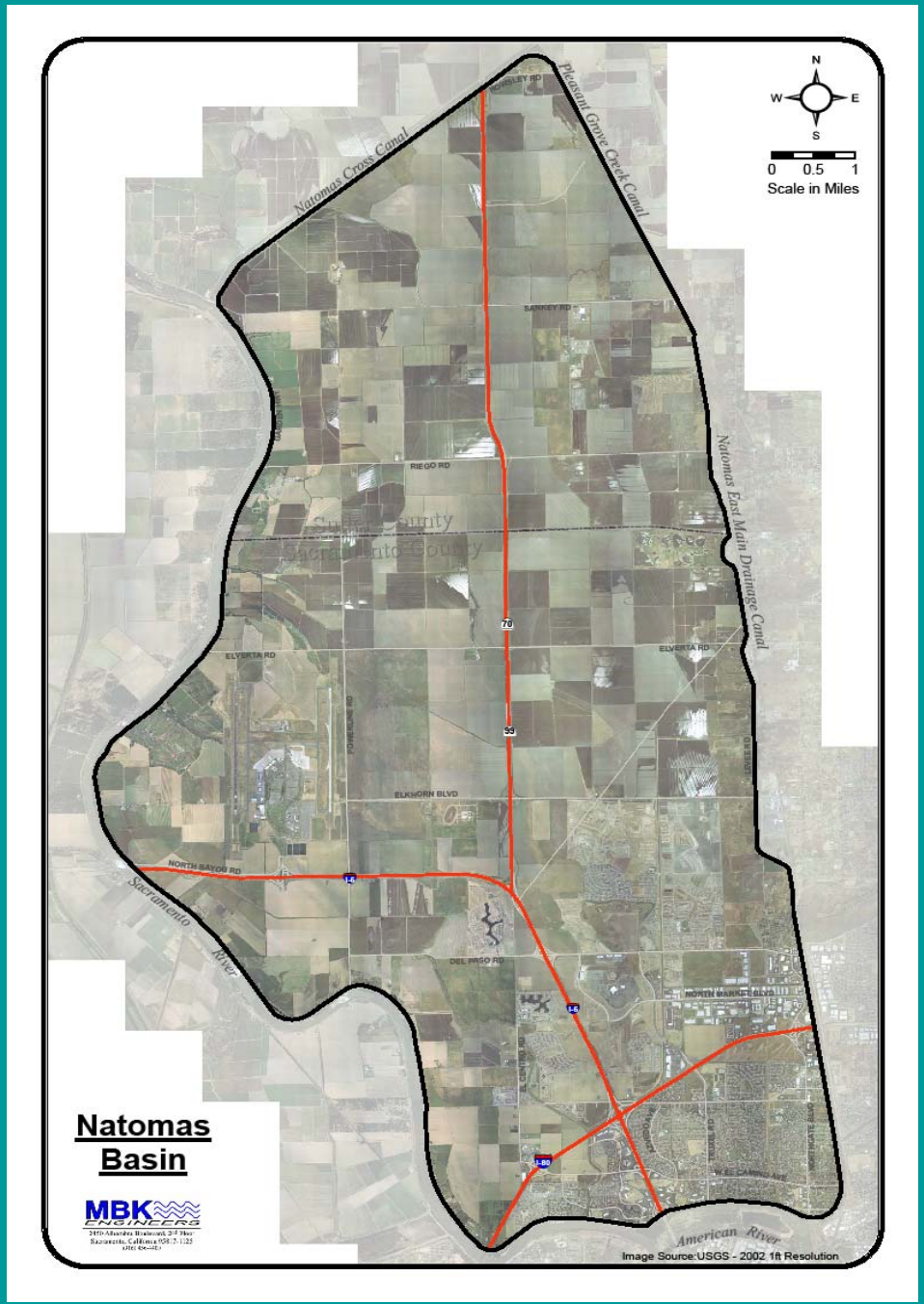
Natomas Levee Improvement Program Concept Plan – June 12, 2007

Natomas Levee Improvement Program

- Part of comprehensive flood risk reduction program for Sacramento area
- Being carried out as part of the federal-state-local American River Common Features Project
- SAFCA is the Local Sponsor

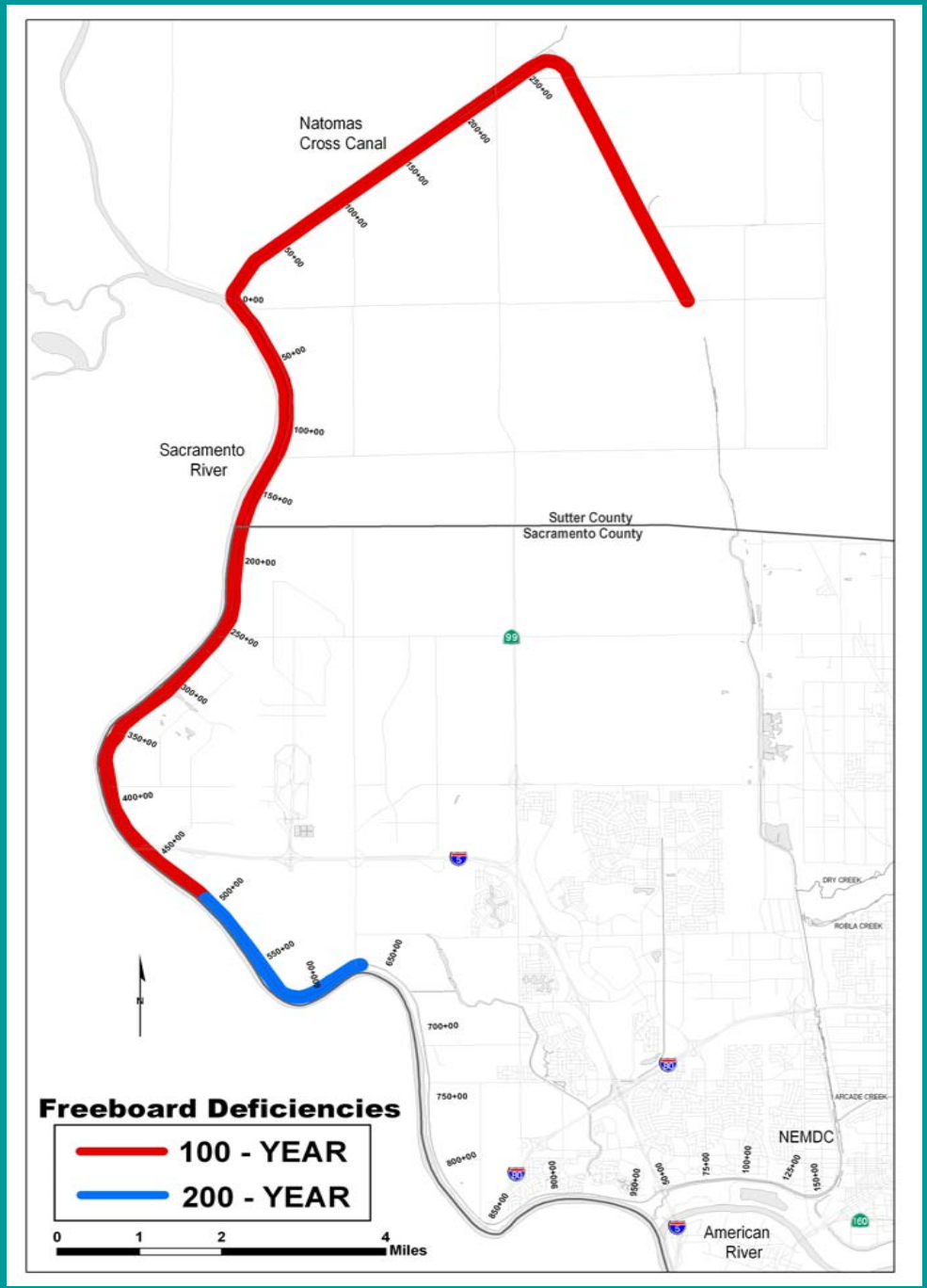
Program Objectives

- Provide 100-year flood protection as quickly as possible
- Provide 200-year flood protection over time
- Ensure that new development does not substantially increase the expected damage of an uncontrolled flood



Identified Flood Risks

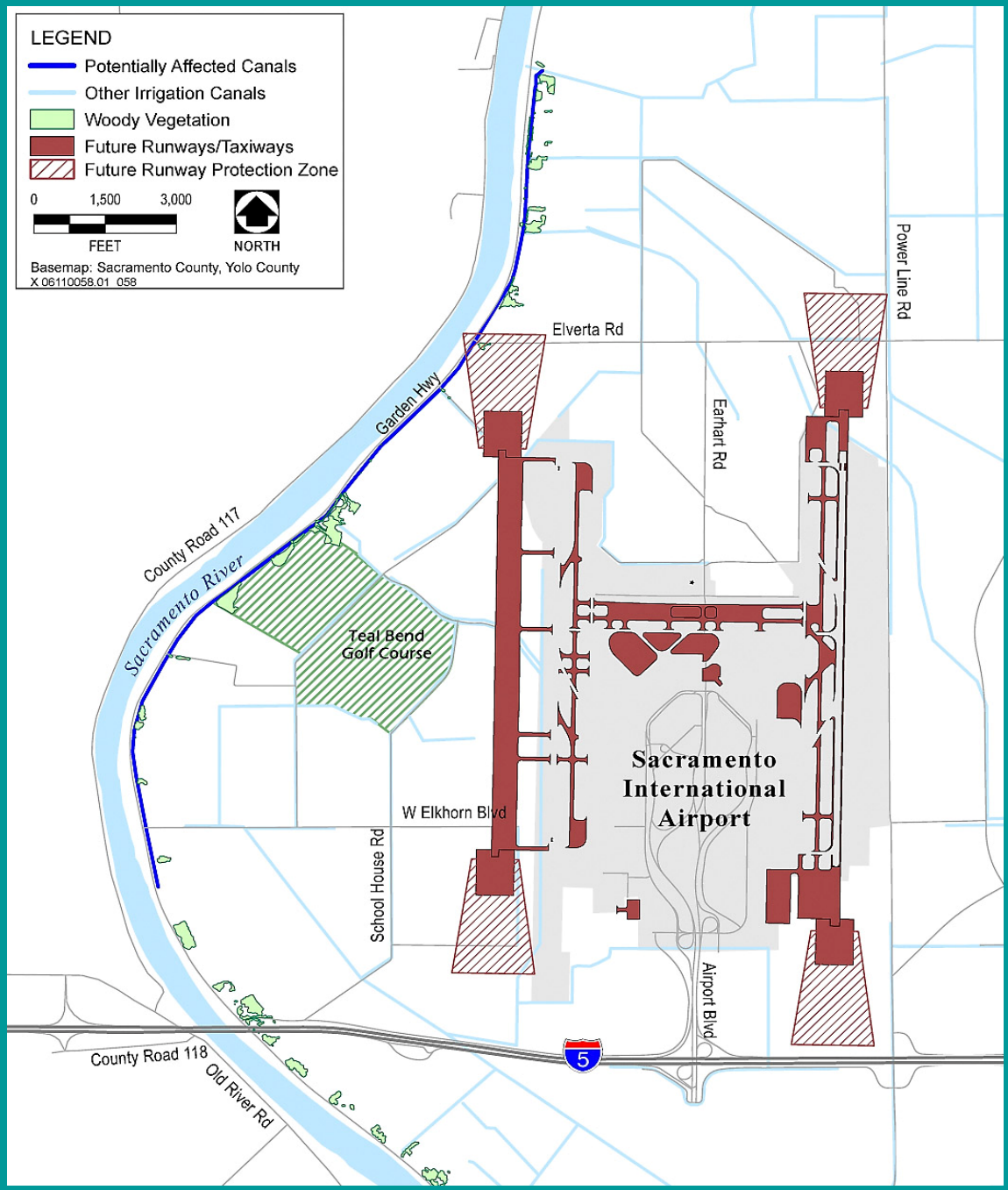
- Inadequate freeboard
- Underseepage
- Levee encroachments
- Channel erosion



Freeboard Deficient Areas

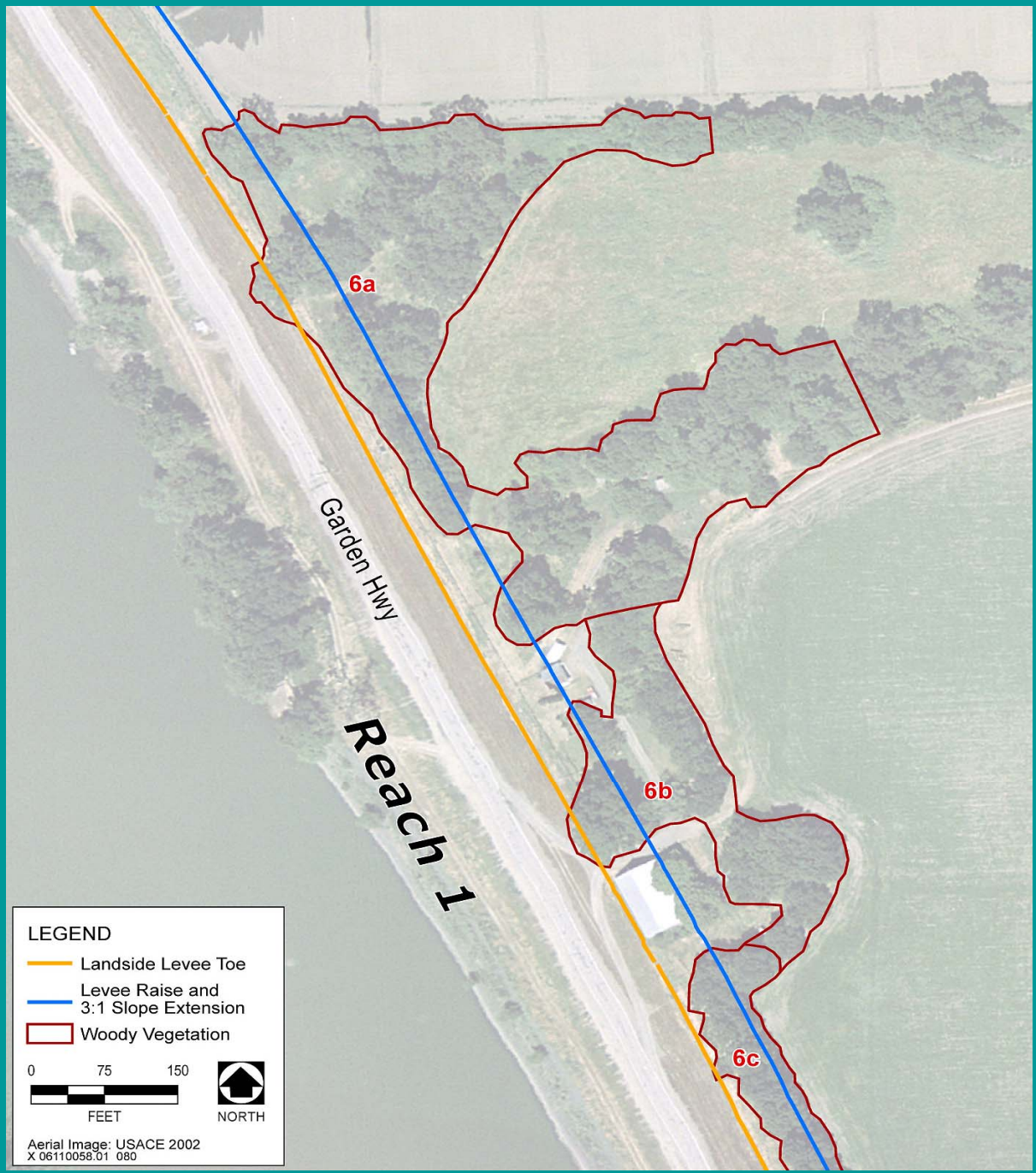
Levee Raise Objectives

- Provide 3 feet of freeboard above the 200-year water surface profile
- Flatten landside levee slopes to at least 3H:1V and provide adequate landside maintenance area

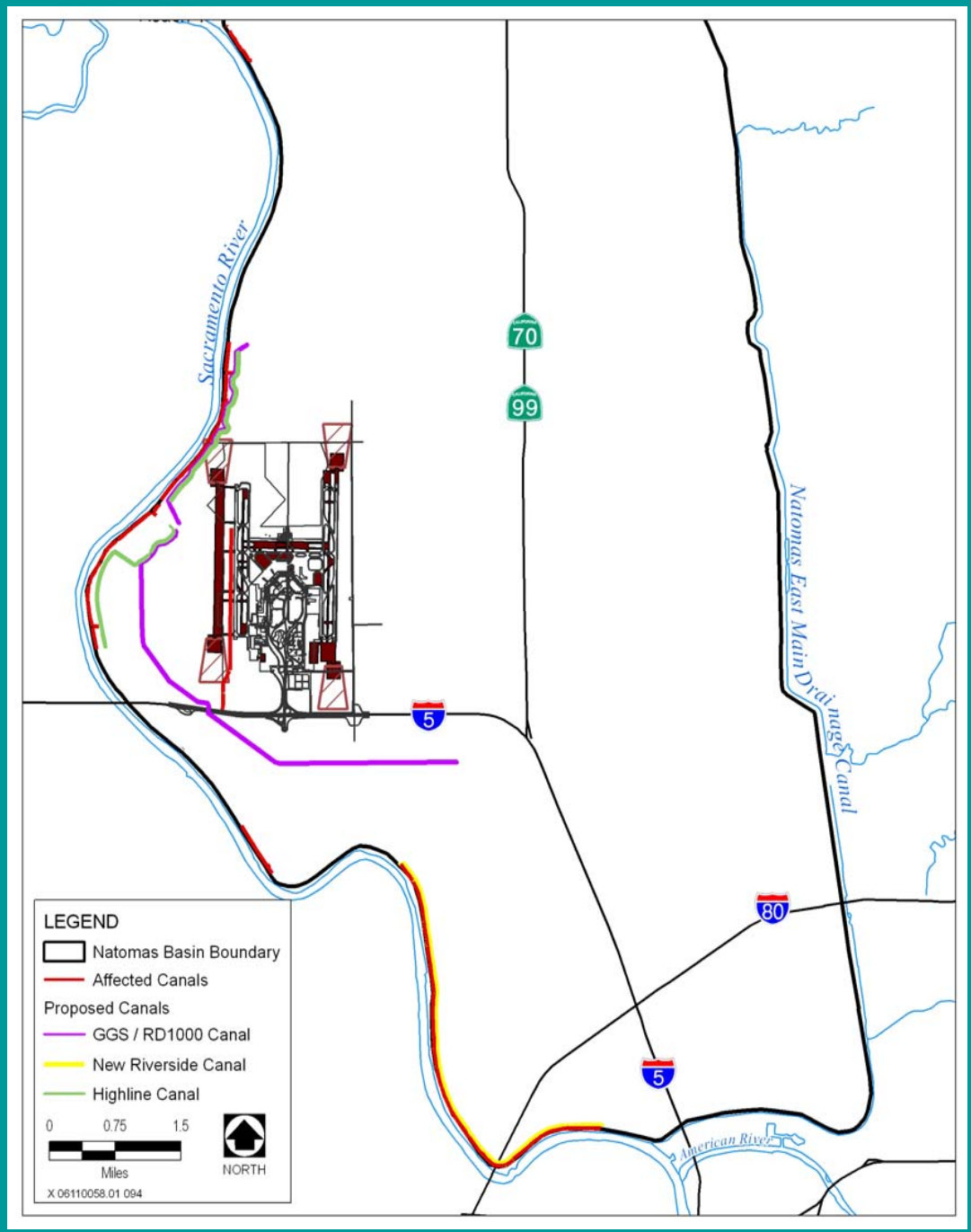


Levee Raise Constraints

Unavoidable Woodland Impacts

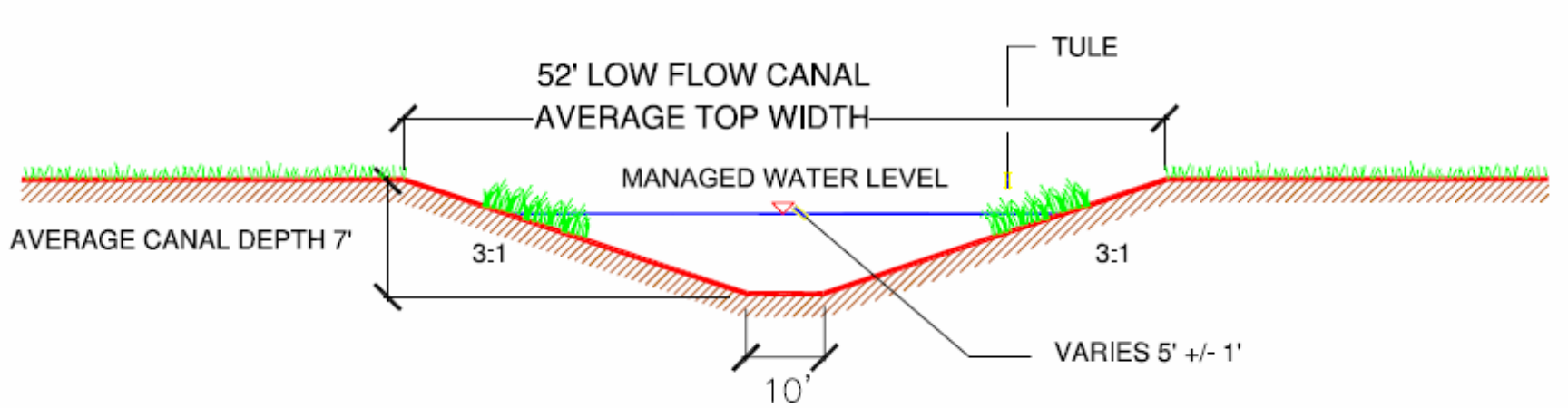


Unavoidable Woodland Impacts

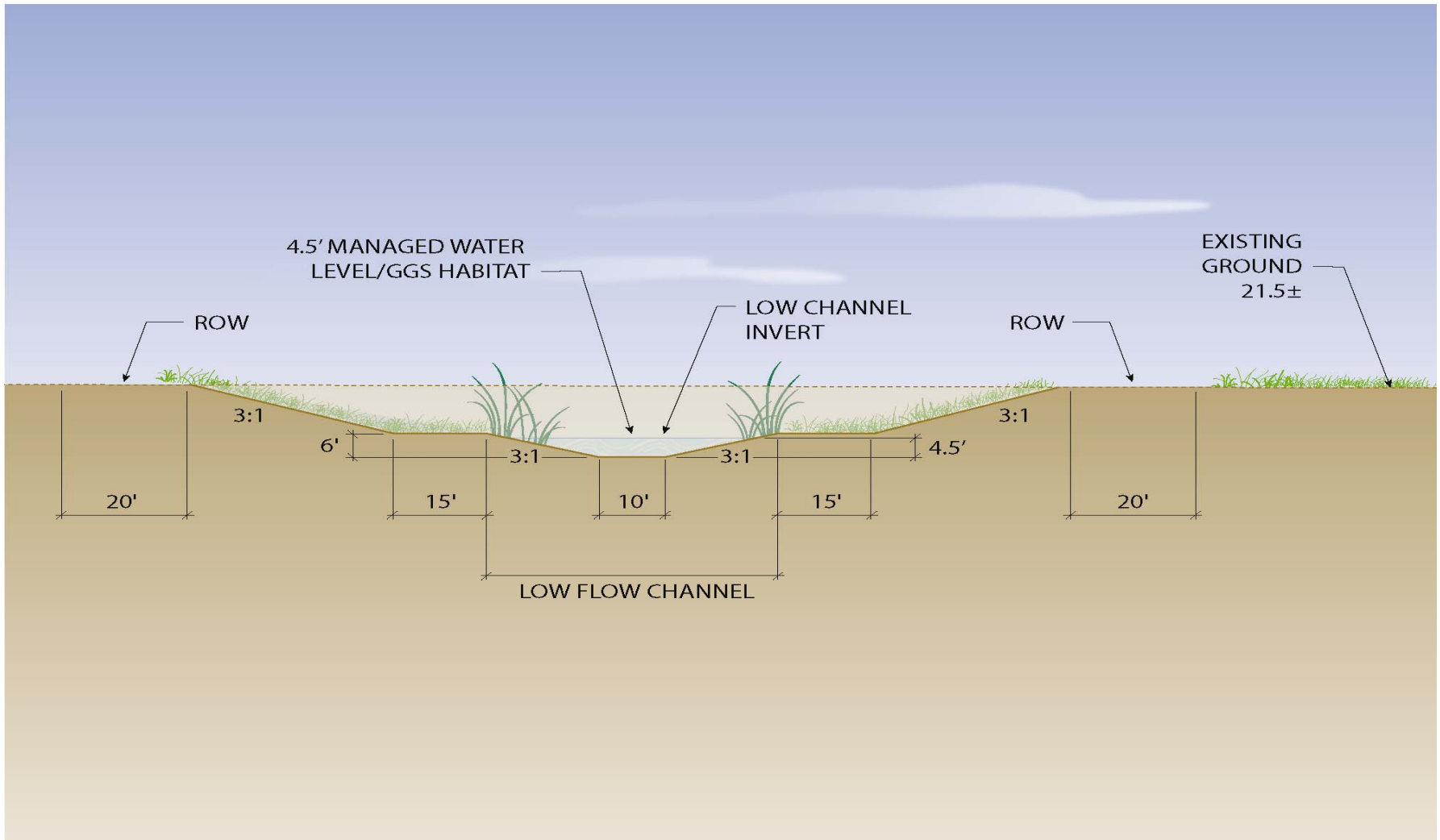


Canal Redesign and Relocation

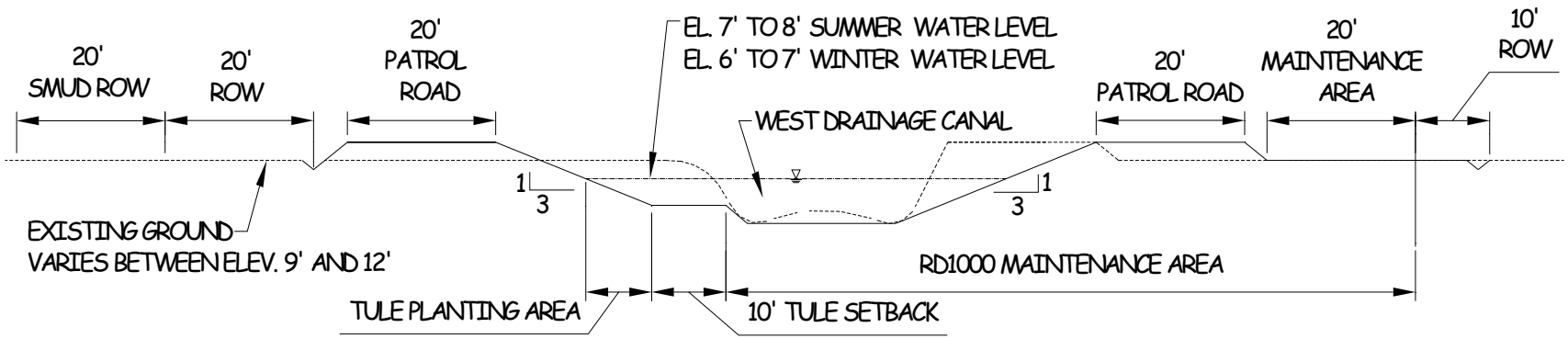
Typical GGS Canal Section – North of Golf Course



Typical GGS/ RD 1000 Canal Section – South of Golf Course to I-5



Typical Section – West Drainage Canal South of I-5

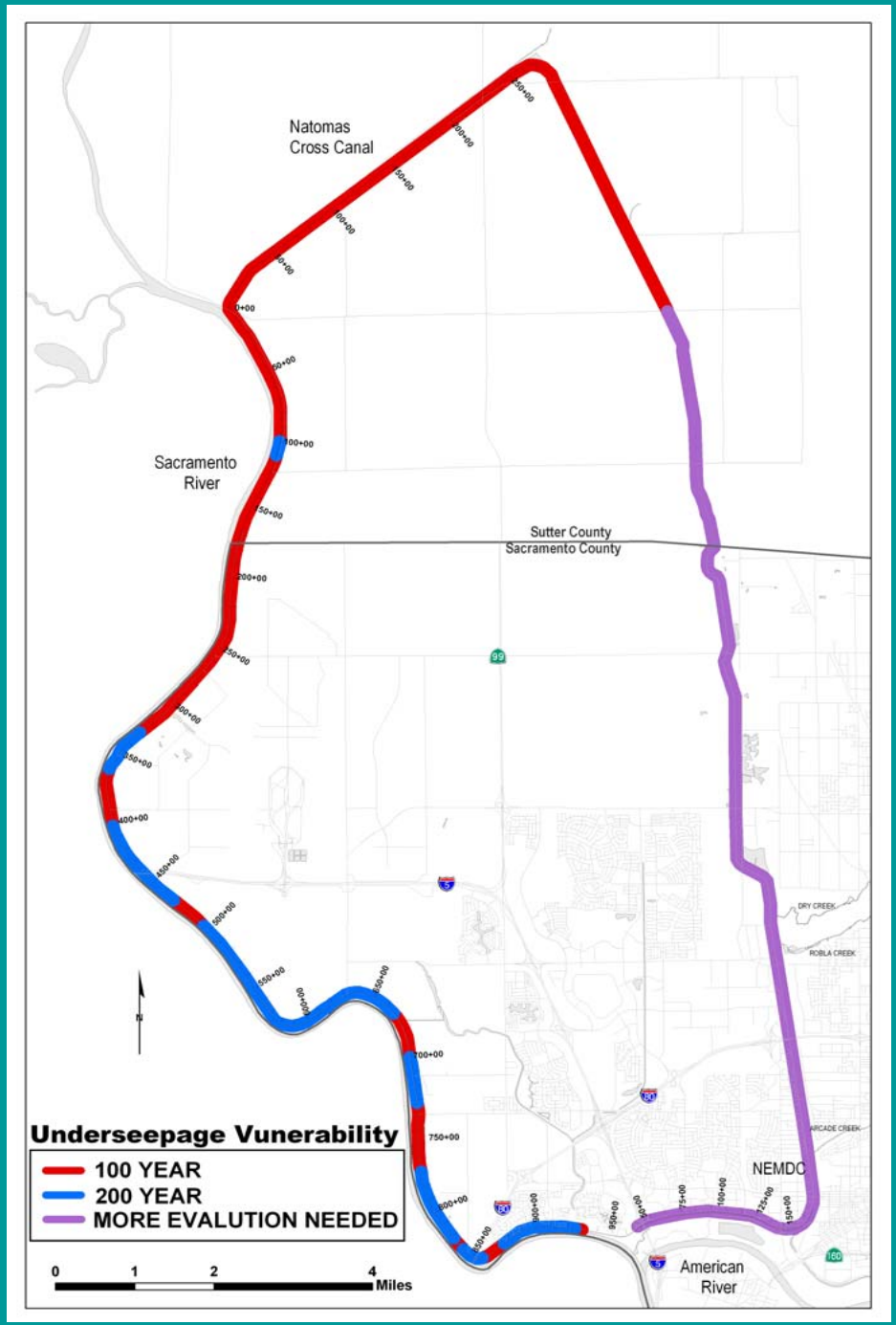


Giant Garter Snake Habitat Impacts

- Canals in levee footprint = 9.1 miles (16.5 acres)
- West Airport ditch dewatering = 2.1 miles (6.3 acres)
- NMWC pond impacts = 1.0 acre

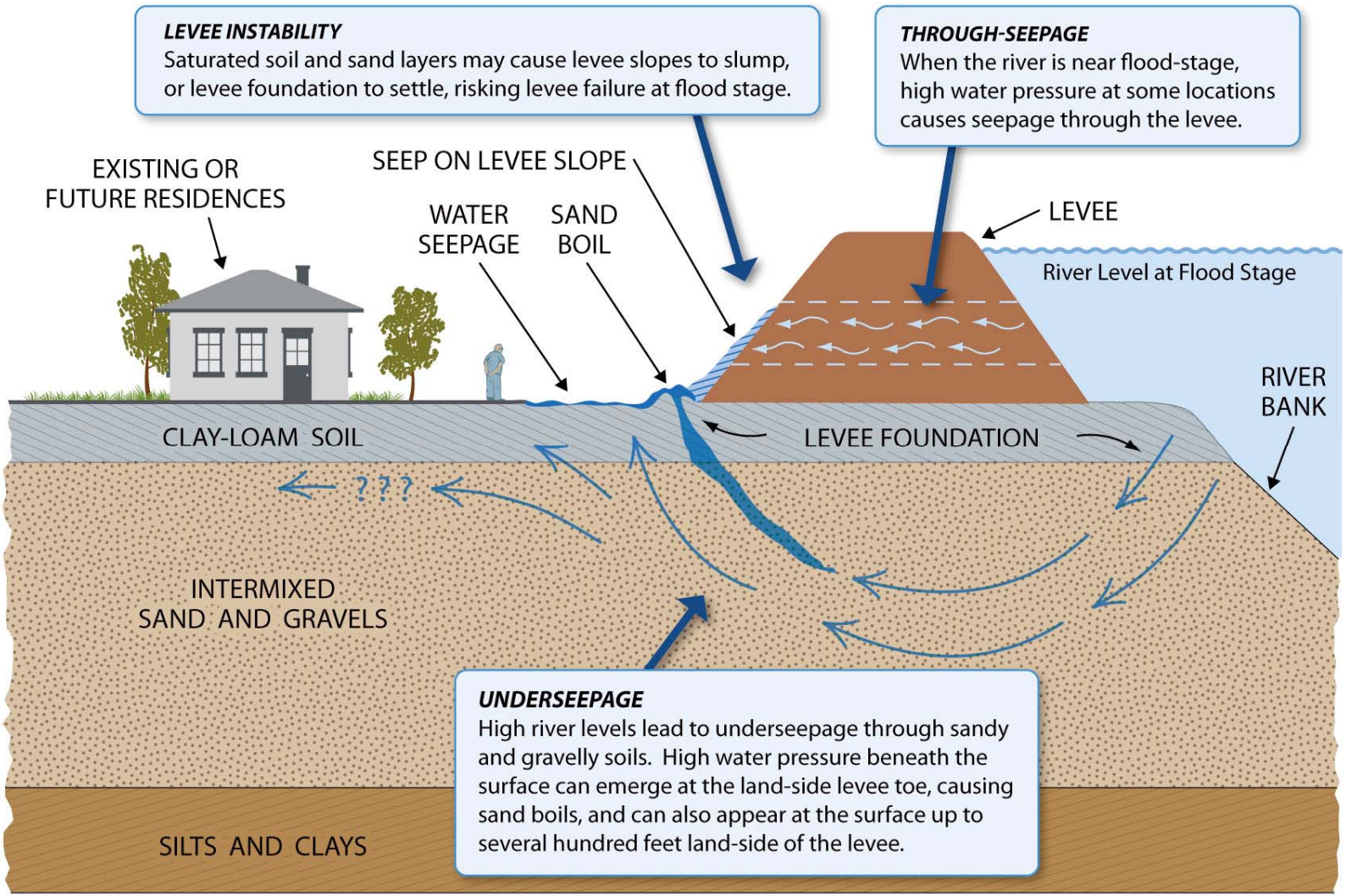
Giant Garter Snake Habitat Creation

- Elkhorn Canal replacement = 4.0 miles (25.1 acres)
- New GGS/RD 1000 Canal = 4.7 miles (46.4 acres)
- Riverside Canal replacement = 3.4 miles (4.2 acres)
- West Drainage Canal enhancement = 2.9 miles (7.1 acres)
- Total GGS Habitat Created = 15 miles (85.7 acres)



Underseepage Vulnerability

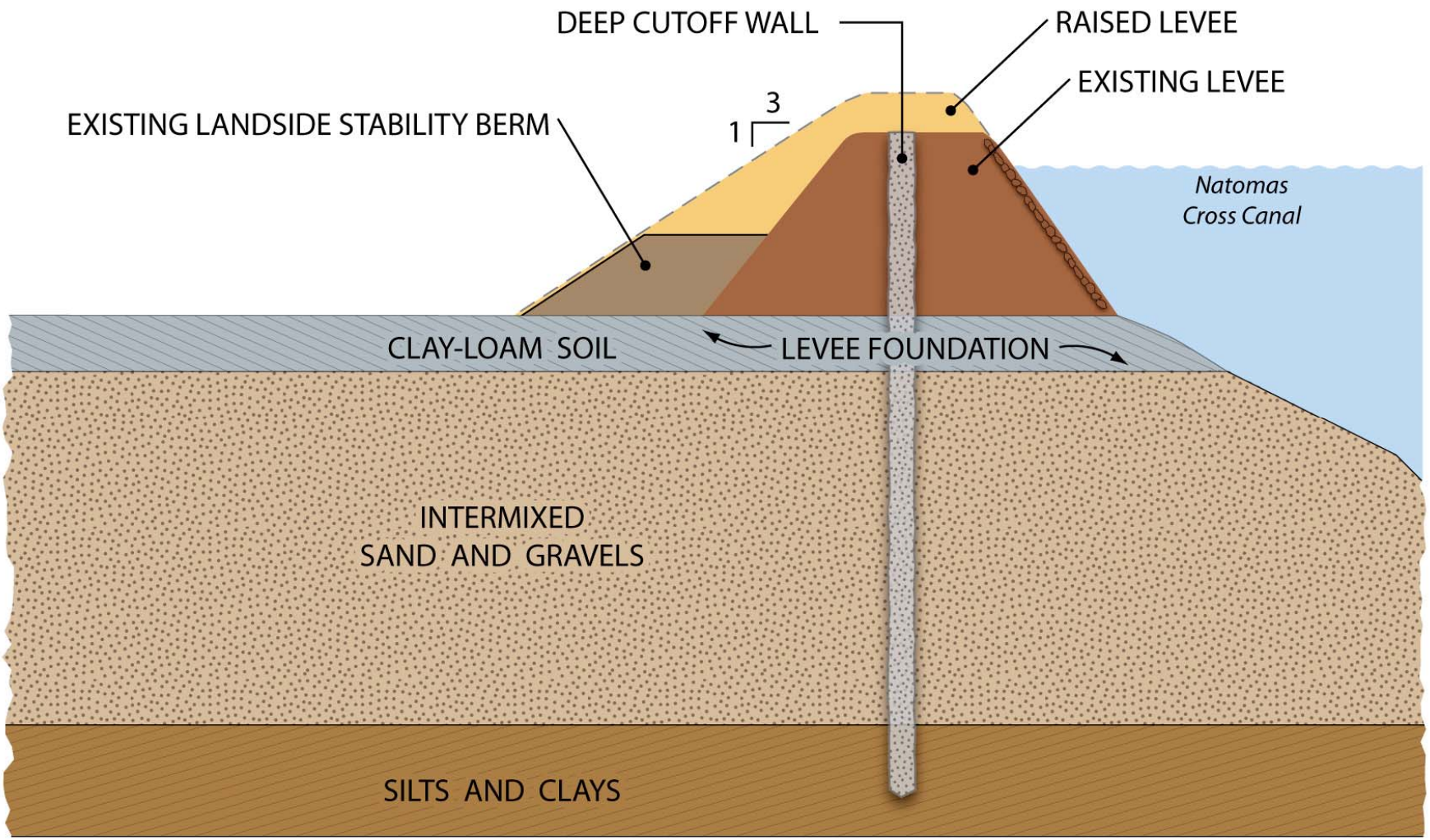
Seepage Mechanisms



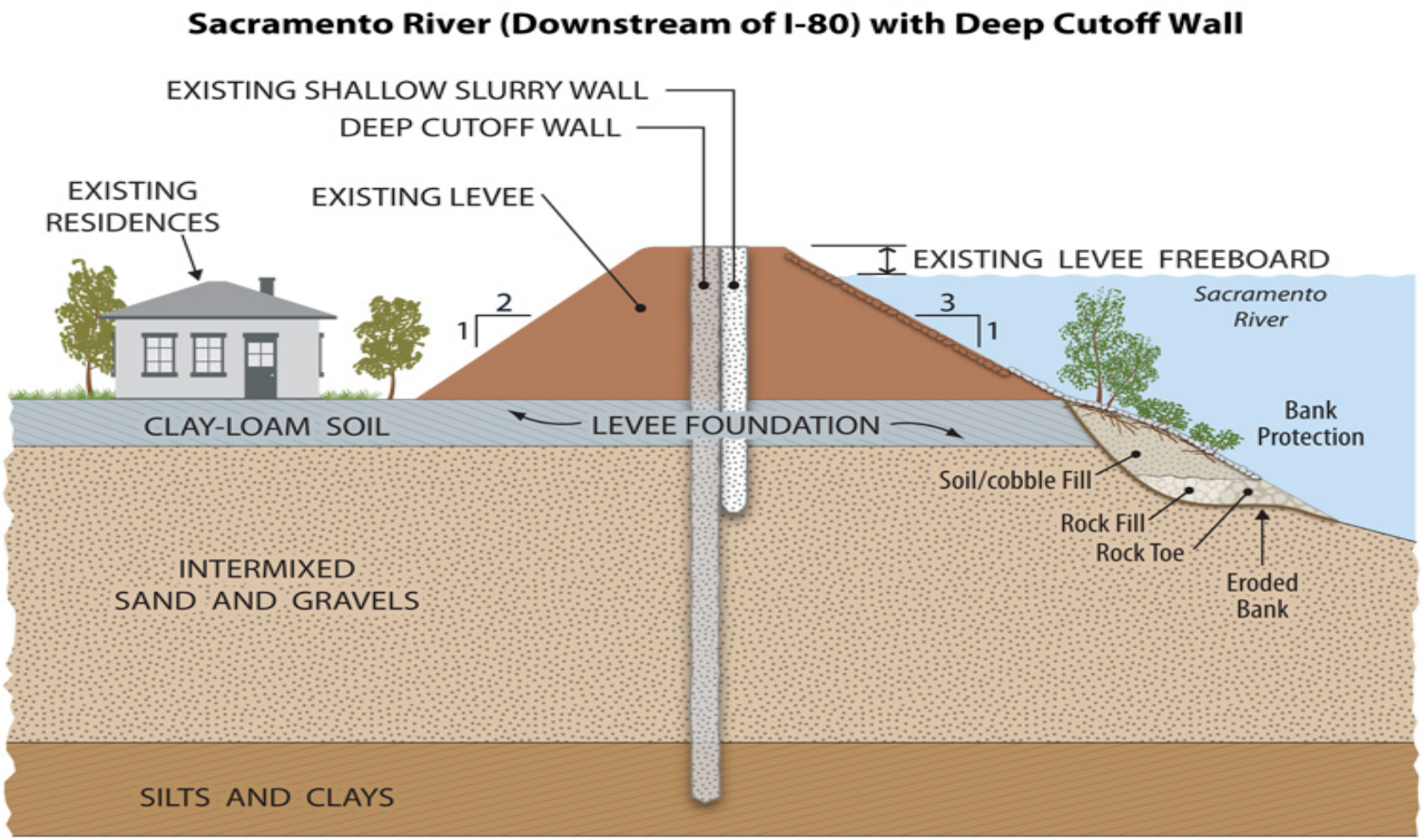
Seepage Remediation Measures

- Cutoff walls
  - Conventional (down to 70 feet)
  - DSM or TRD (down to 110 feet)
- Relief wells
  - (60-foot spacing)
- Seepage berms
  - 100 feet to 300 feet wide
  - Sand/gravel drainage layer
  - Random fill

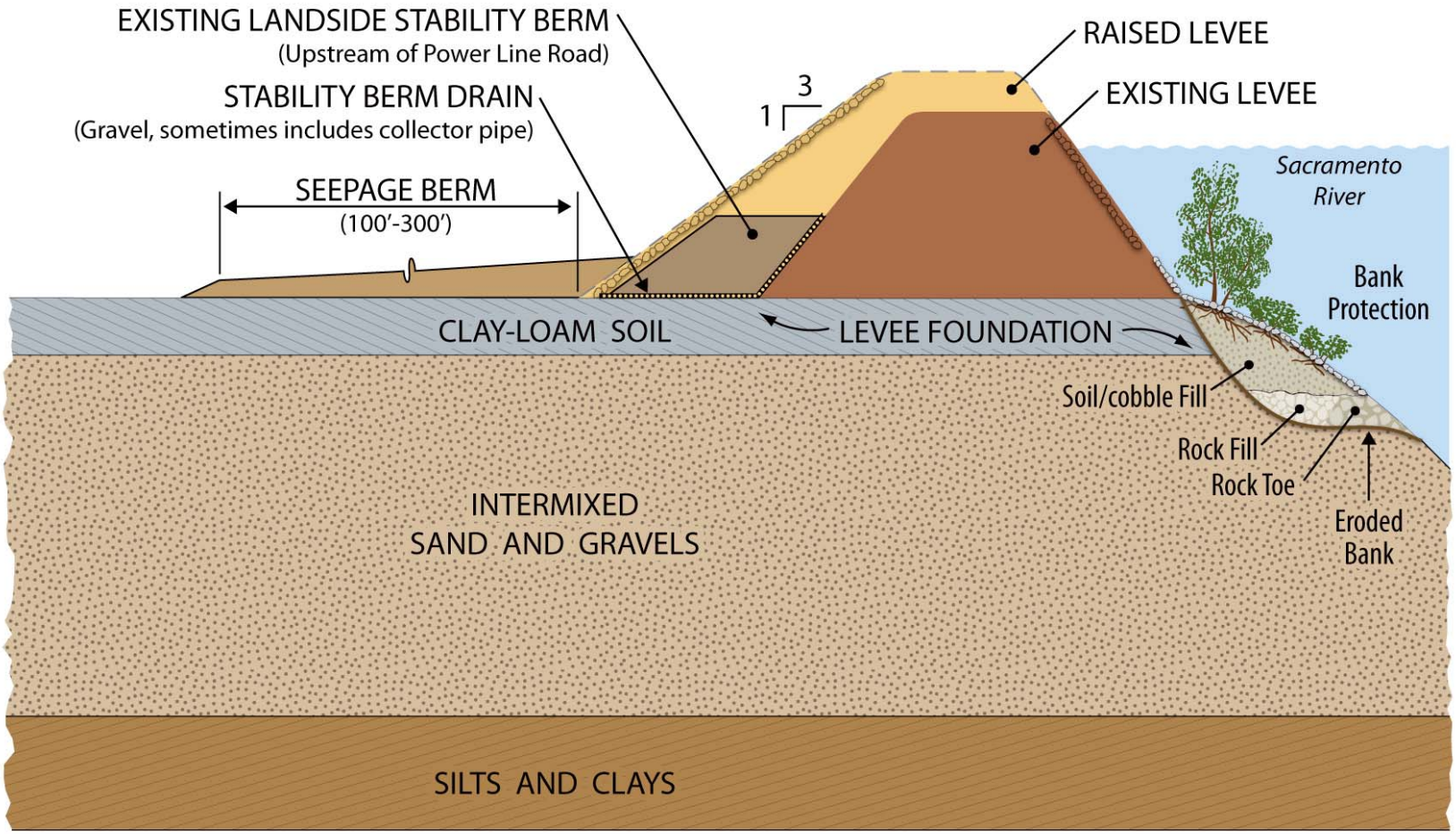
Natomas Cross Canal



Sacramento River East Levee Downstream of I-80 – Cutoff Wall



Sacramento River East Levee Upstream of I-80 – Berm

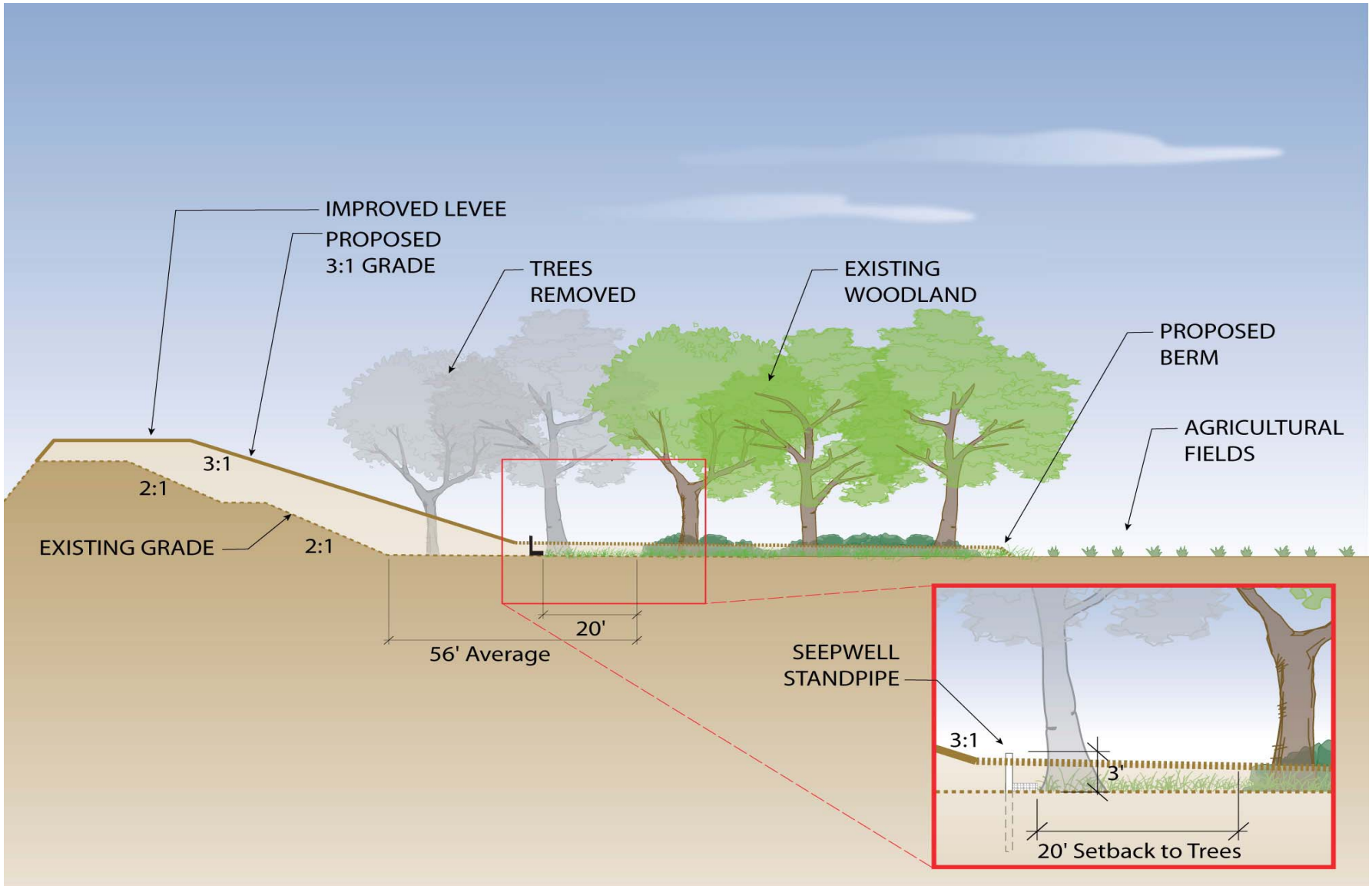


Berm Constraint - Woodlands

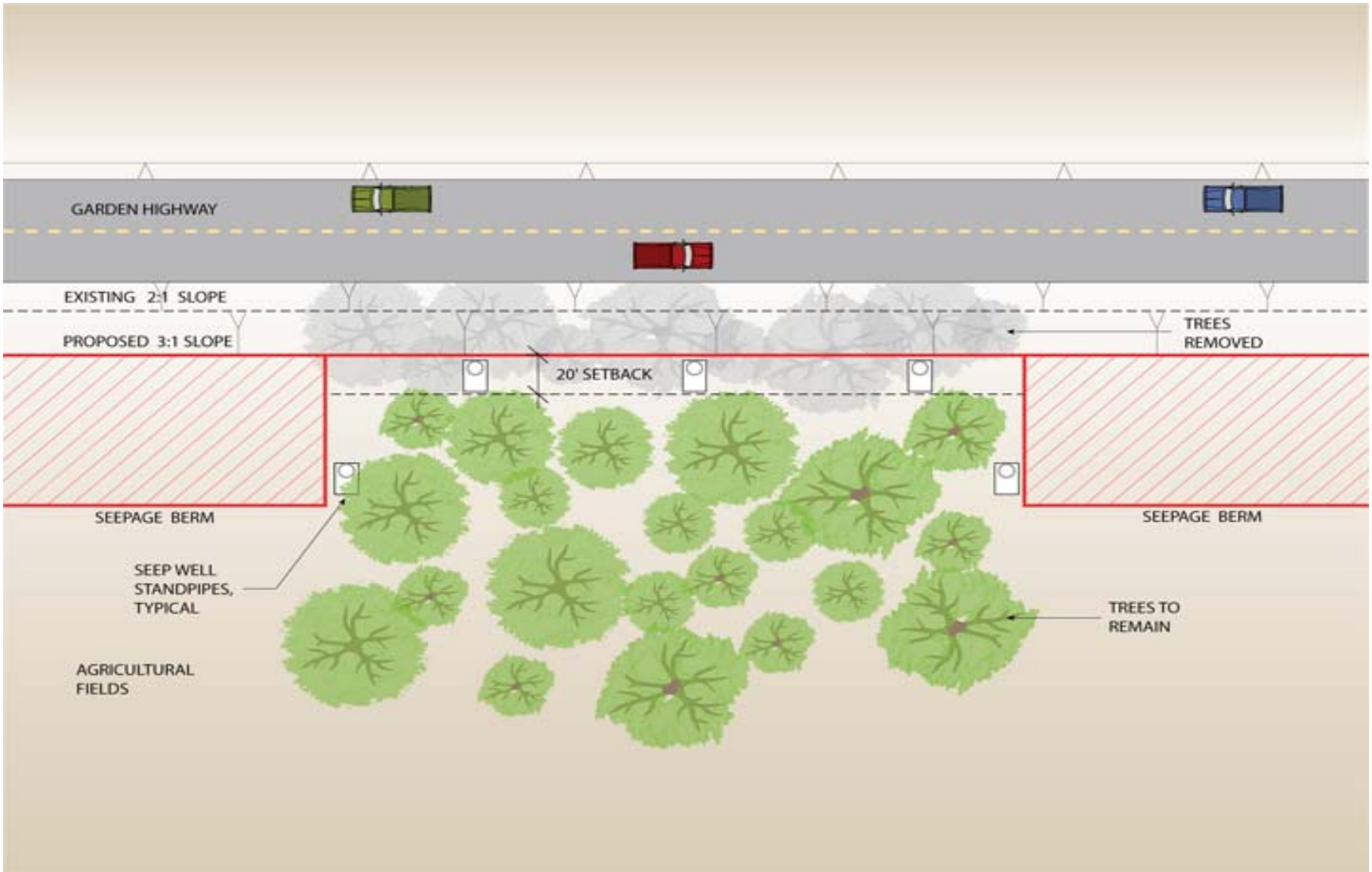
← Landside Trees Removed for Levee Raising →

← Trees in Berm Footprint →

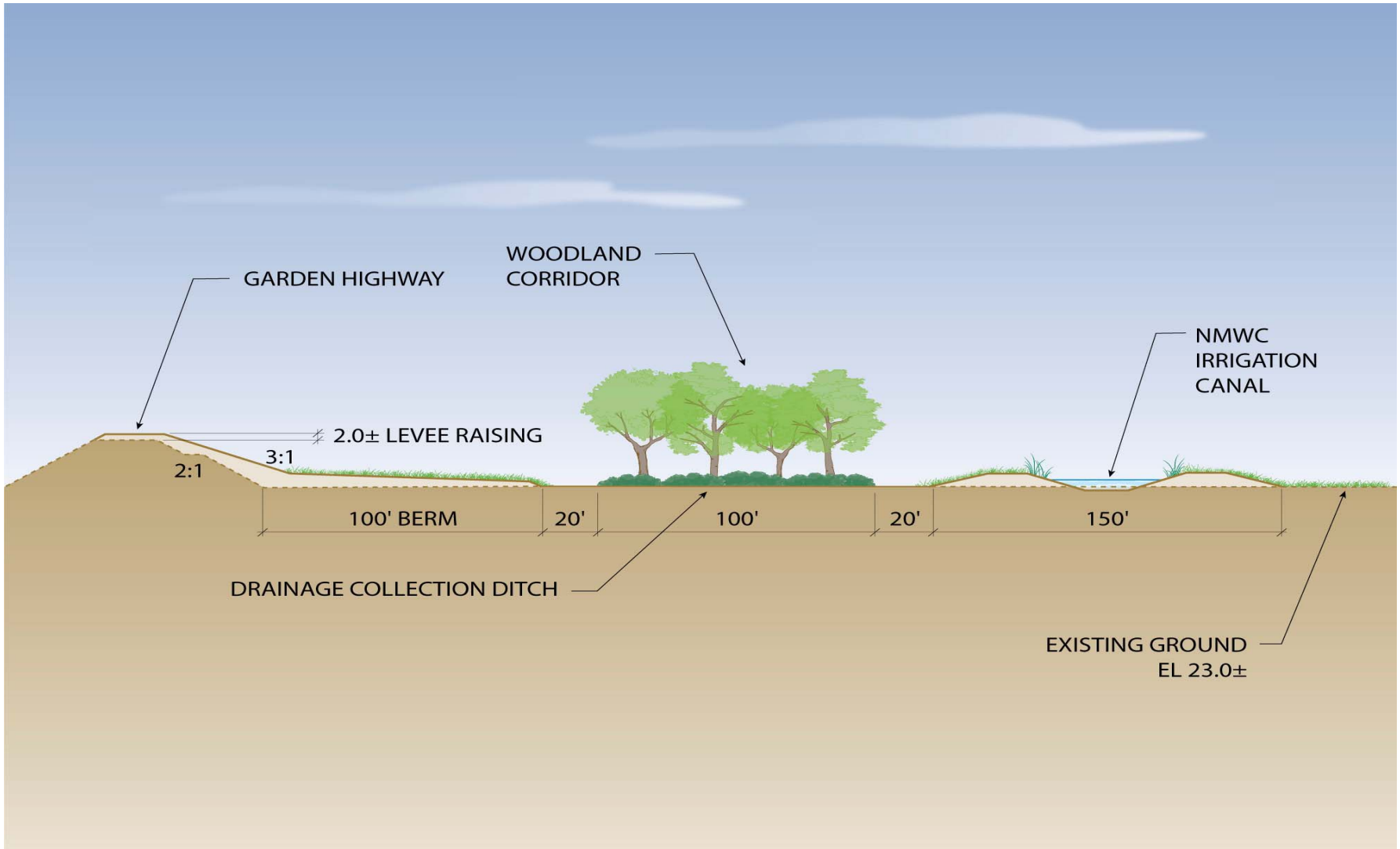
Woodland Avoidance Strategy



Woodland Avoidance Strategy

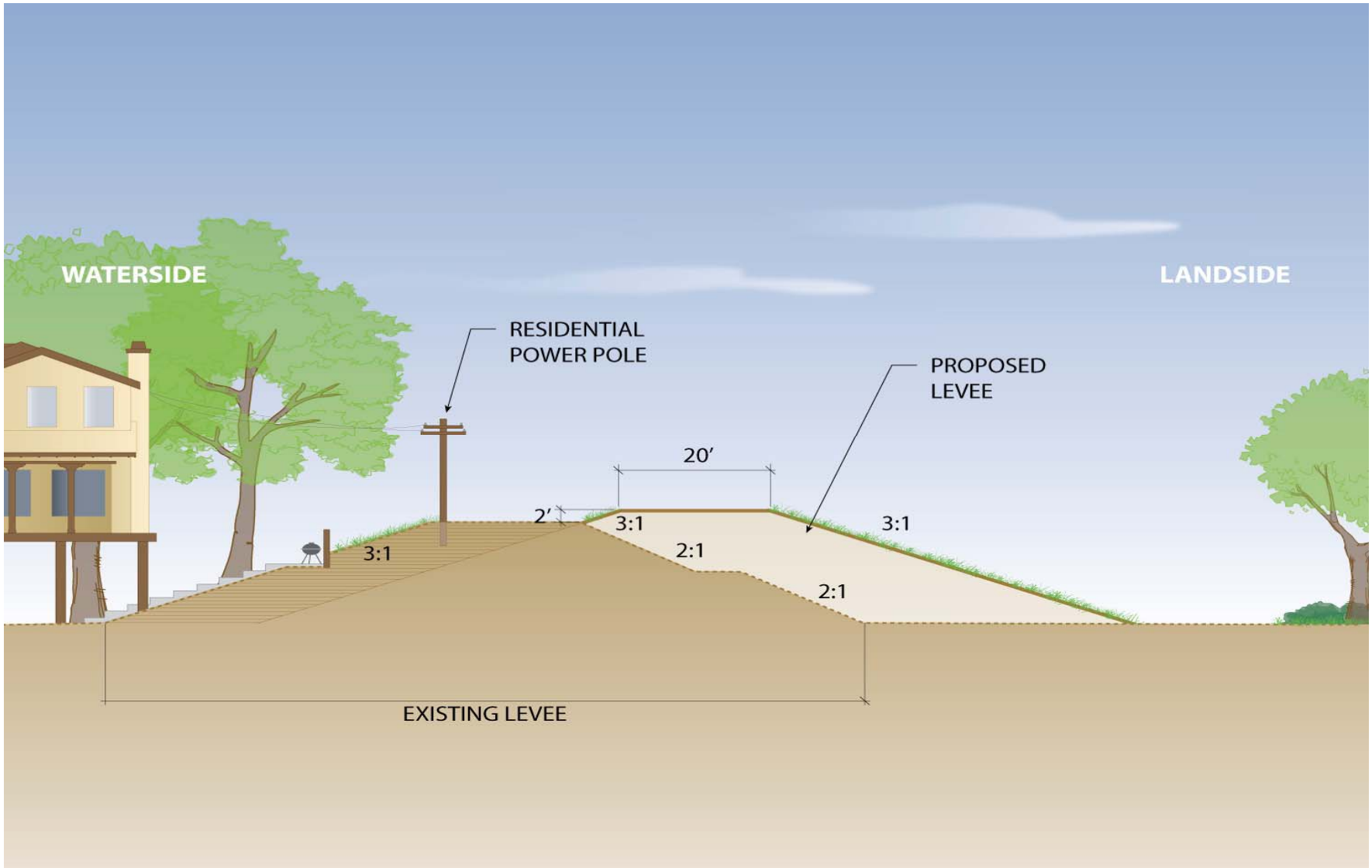


Section with Woodland Corridor and Highline Canal



Waterside Levee Encroachments

Adjacent Setback Levee



Adjacent Setback Levee Evaluation

- Could reduce impacts of removing levee encroachments
- Could improve roadway safety
- Could accommodate utility line relocations
- Benefits may justify increased cost

Woodland Impacts/Creation

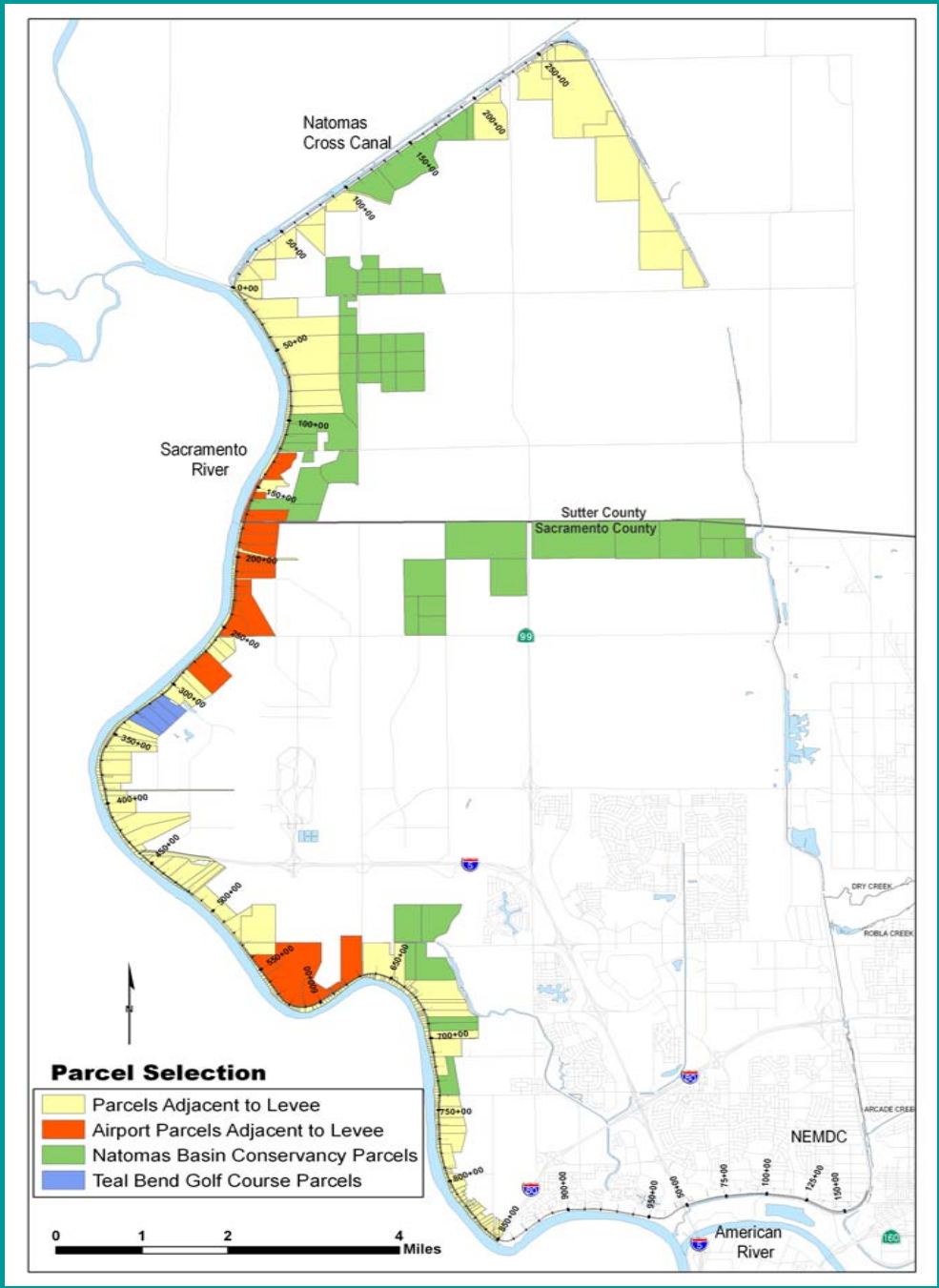
Existing Woodlands

- 120 acres within 500 feet of landside levee toe
- 440 acres within 200 feet of waterside levee toe

Woodland Impacts

- 16 acres for freeboard raise and 3H:1V footprint
- 9 additional acres in adjacent setback levee footprint
- 13 additional acres within berm footprint
- 12 acres in berm footprint retained in near term through use of seepage wells
- Less than 1 acre for relocated canals

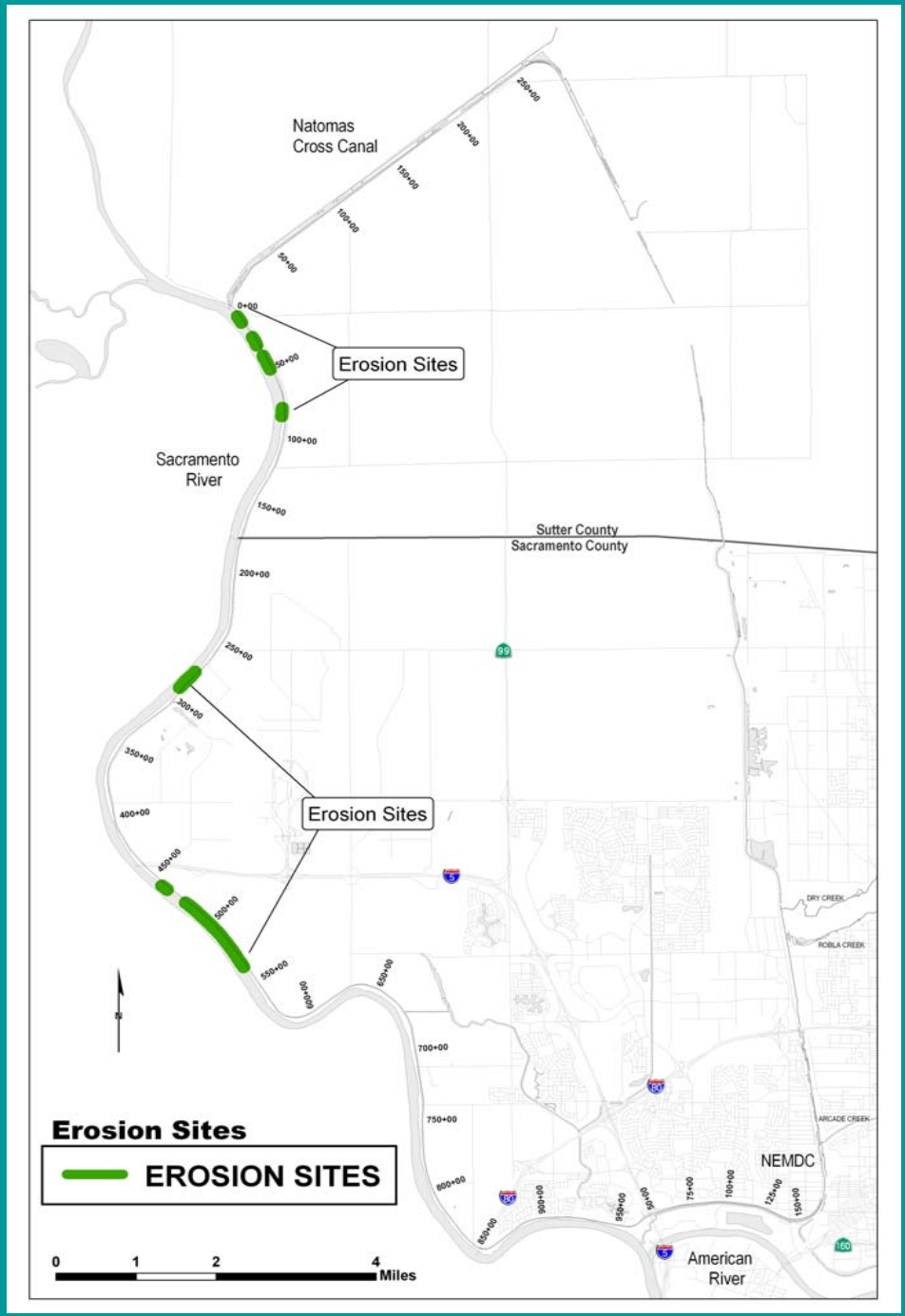
Woodland Created – 150 acres



NLIP Land Acquisition

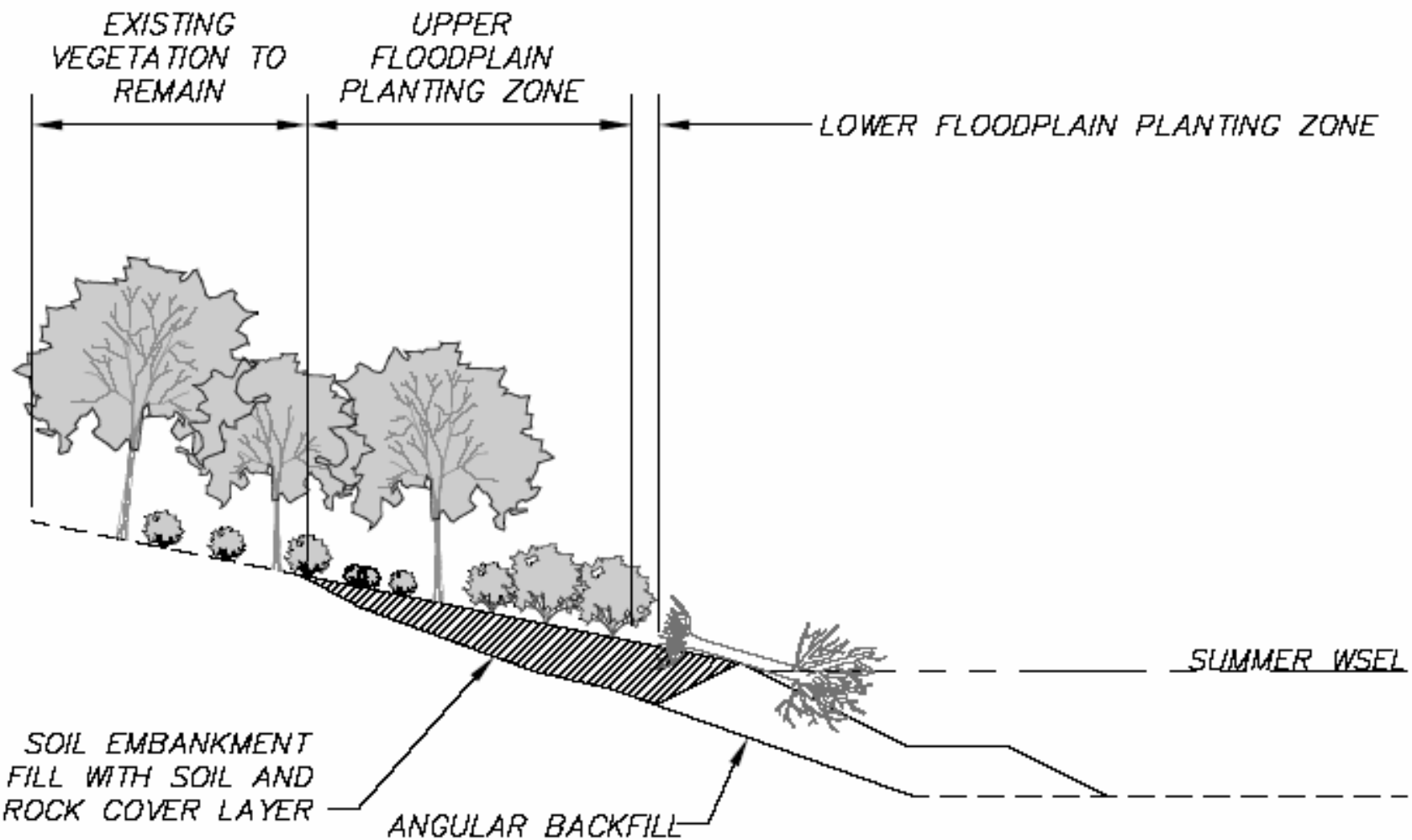
NLIP Land Acquisition Requirements

Corridor	Raise	Adj Setback Levee	Canals	100-year berm	200-year berm	Woodland	Total
PGCC	10		--	15	--	--	25
NCC	10		--	--	--	--	10
Sac Riv East Levee	150	45	175	125	100	110	705
Total	170 ac	45 ac	175 ac	140 ac	100 ac	110 ac	740 ac

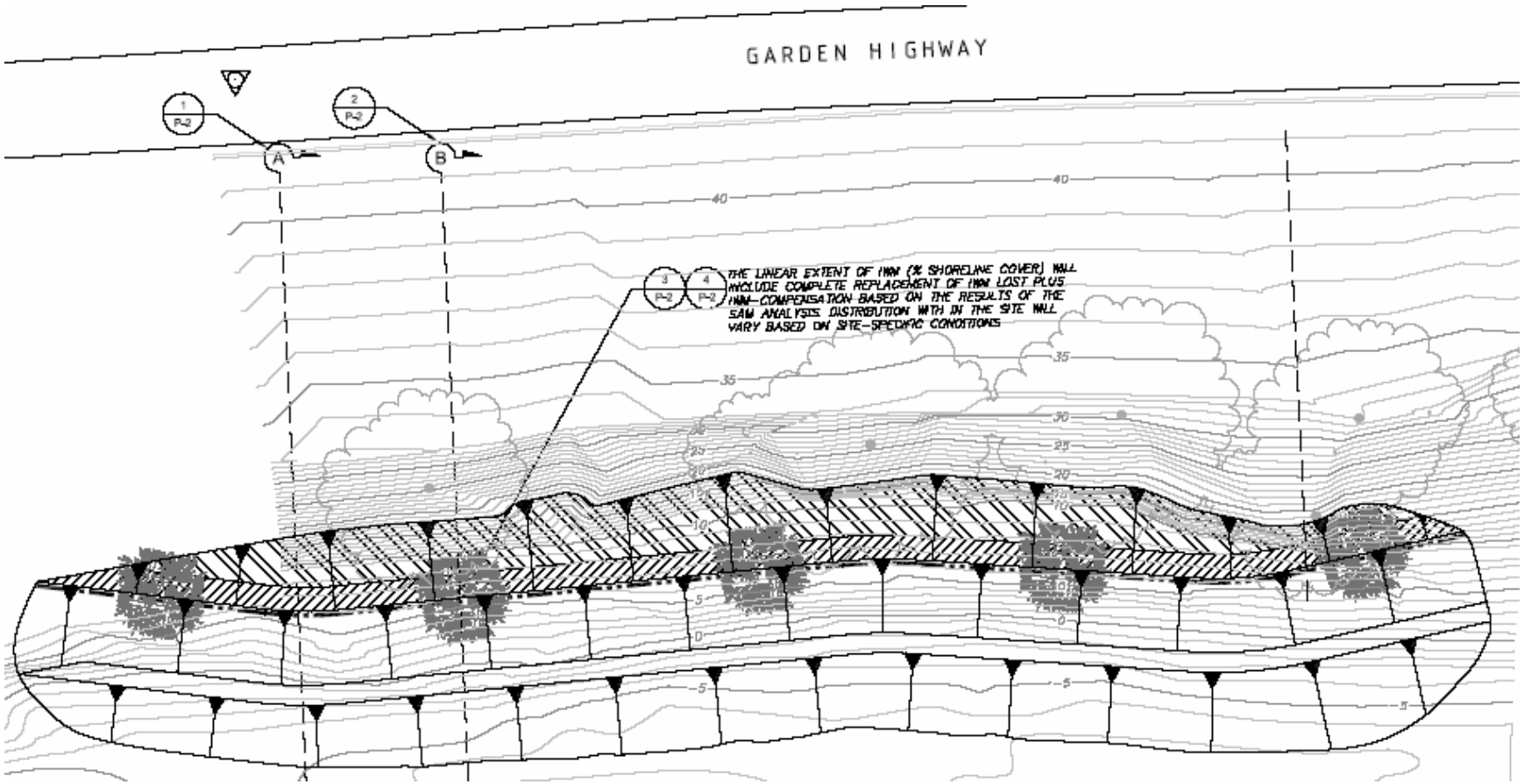


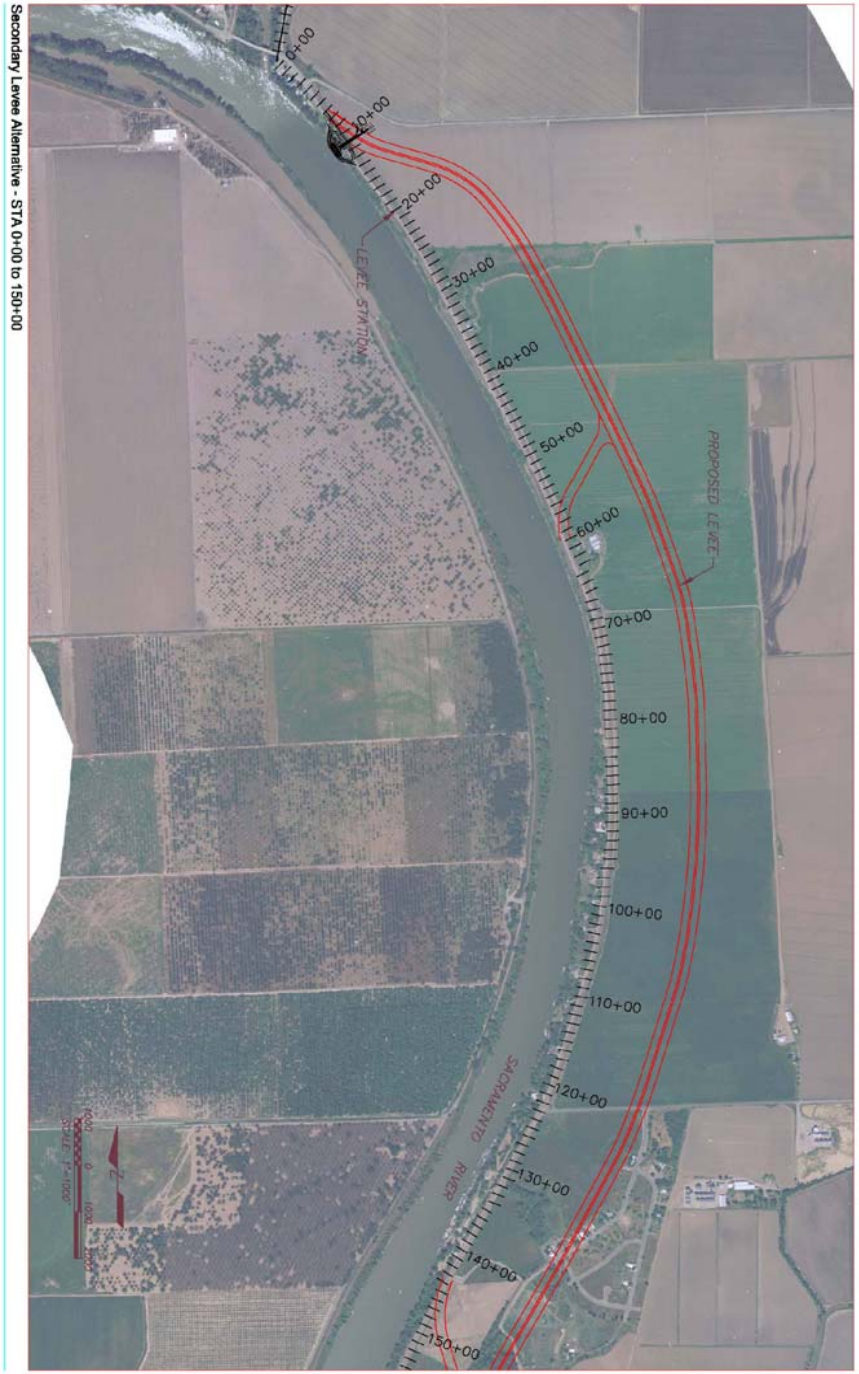
Channel Erosion

Erosion Protection - Typical Section



Erosion Protection – Plan View





500-Foot Setback Levee Concept (Sankey Road to Elverta Road)

Setback Levee Evaluation

- Could alter Fremont Weir flow split (increasing water surface profiles in Sacramento River channel)
- Could increase Airport bird strike risks
- Could impair access to Garden Highway homes
- Benefits may not justify increased cost

NLIP Program Timetable

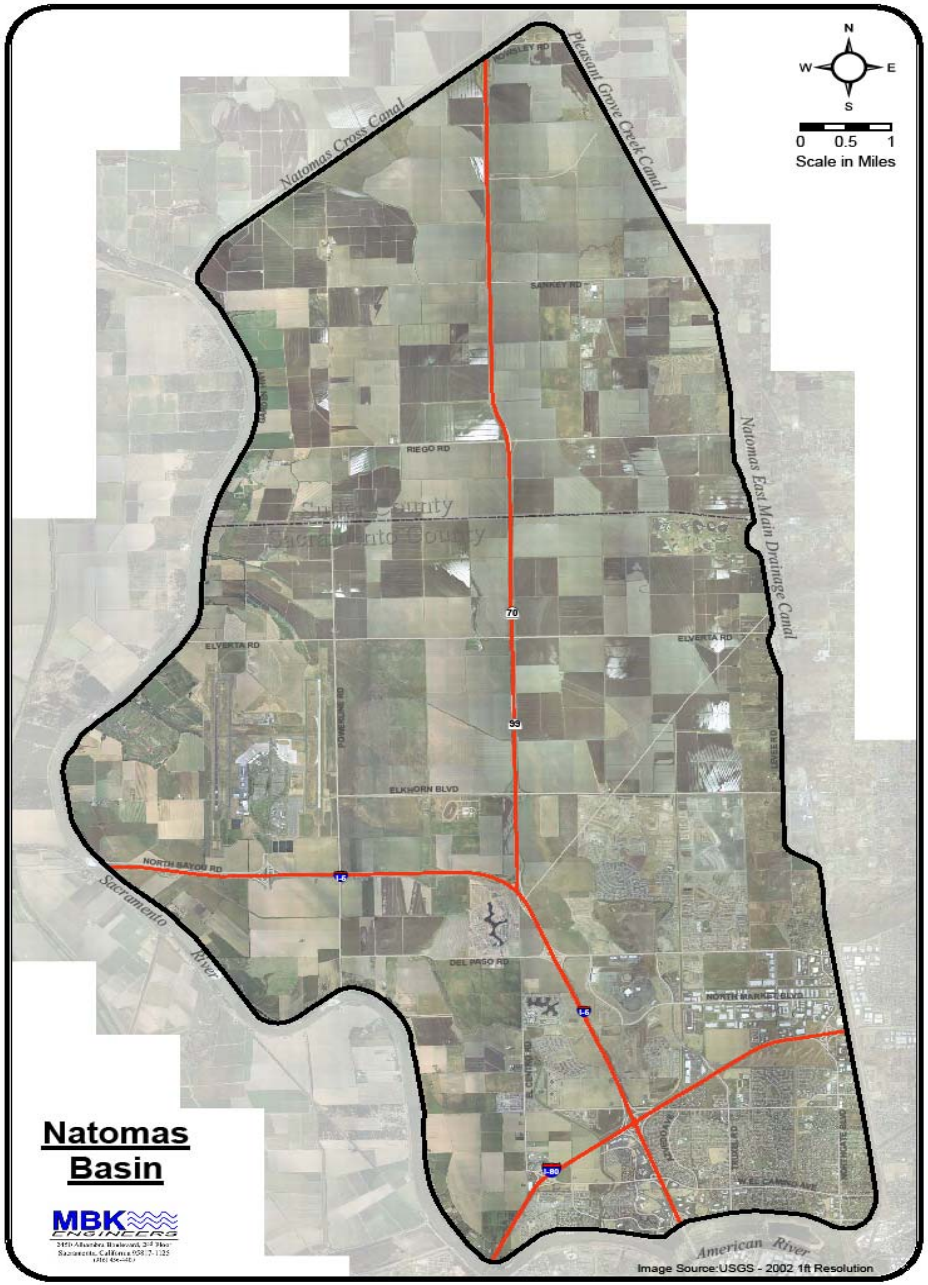
2007	• Initiate NCC south levee cutoff wall
2008	• Expand RD 1001 borrow site & develop additional borrow sites • Complete NCC south levee cutoff wall • Raise NCC south levee • Raise & strengthen Sac River east levee from Verona to RD1000 Plant 2 • Initiate 3-year construction for bank protection improvement component
2009	• Relocate Elkhorn irrigation canal & construct new GGS/RD 1000 drainage canal • Raise & strengthen Sac River east levee RD1000 Plant 2 to Elkhorn Blvd
2010	• Relocate Riverside irrigation canal • Raise & strengthen Sac River east levee - Elkhorn Blvd to I-80 • Raise & strengthen Pleasant Grove Creek Canal west levee • Certify achievement of “100-year” protection
2010-2013	• Congressional approval of Corps Natomas General Re-evaluation Report • Complete “200-year” improvements

NLIP EIR Process Timeline

- June 4, 2007 – Issue NOPs
- July 3, 2007 – Close of scoping period
- July 31, 2007 – Release Public Draft EIRs
- September 13, 2007 – Close of public comment period
- October 5, 2007 – Issue Final EIRs
- October 18, 2007 – Certify Final EIRs and approve projects

NLIP Environmental Review and Permitting

Summer 2007	• Issue Draft EIR for landside components (program/project level): – Concept plan (program level) – NLIP Phase 2 Project (project level): raise and strengthen NCC south levee and Sacramento River east levee (Sutter County) • Issue Draft EIR for bank protection (project level) • Initiate 404, ESA, and CESA permit processes
October 2007	• Certify Final EIRs • Initiate 408 authorization process
February 2008	• Receive 404, ESA, CESA, and 408 authorizations • Issue construction contracts for bank protection and landside NLIP Phase 2
April 2008	• Issue Draft EIR for landside NLIP Phase 3: raise and strengthen Sacramento River east levee (Sac County) and PGCC west levee • Initiate 404, ESA, and CESA permit processes
Sept 2008	• Certify Final EIR • Initiate 408 authorization process
Feb 2009	• Receive 404, ESA, CESA, and 408 authorizations • Issue construction contracts for landside NLIP Phase 3



Questions & Discussion