

CDBG-DR Infrastructure Workshop

Monday, April 24, 2017

Agenda

- Introduction
- Infrastructure
 - Challenges
 - Solutions
 - Prioritization
 - Packaging
- Council Direction
- Next Steps



Action Plan Budget

City of San Marcos		
Housing	\$7,524,000	
SF Owner Occupied Rehabilitation, Reconstruction, or Buyout	\$5,000,000	30%
SF 1-4 Unit Rental Rehabilitation, Reconstruction, or Buyout	\$2,524,000	
Infrastructure	\$12,540,000	50%
Planning	\$3,762,000	15%
Admin	\$1,254,000	5%
Total Allocation	\$25,080,000	100%

Actions Completed to Date

- ✓ 1. Completion of Risk Analysis Documentation
- ✓ 2. Initiated FEMA Flood Map Revision Process
- ✓ 3. Initiated Infrastructure Feasibility Studies
- ✓ 4. Hiring of Additional Disaster Recovery Staff
- ✓ 5. Amendment of Policies and Procedures for Compliance with Federal Guidelines
- ✓ 6. Action Plan approved by HUD
- ✓ 7. Completed Reassessment of Housing Needs – March 2017 Survey
- ✓ 8. Completed Infrastructure Feasibility Studies
9. Housing Applications (May 15)
10. Council Approval of Action Plan Amendment (May 16)
11. Submittal of Action Plan to HUD (June 1)

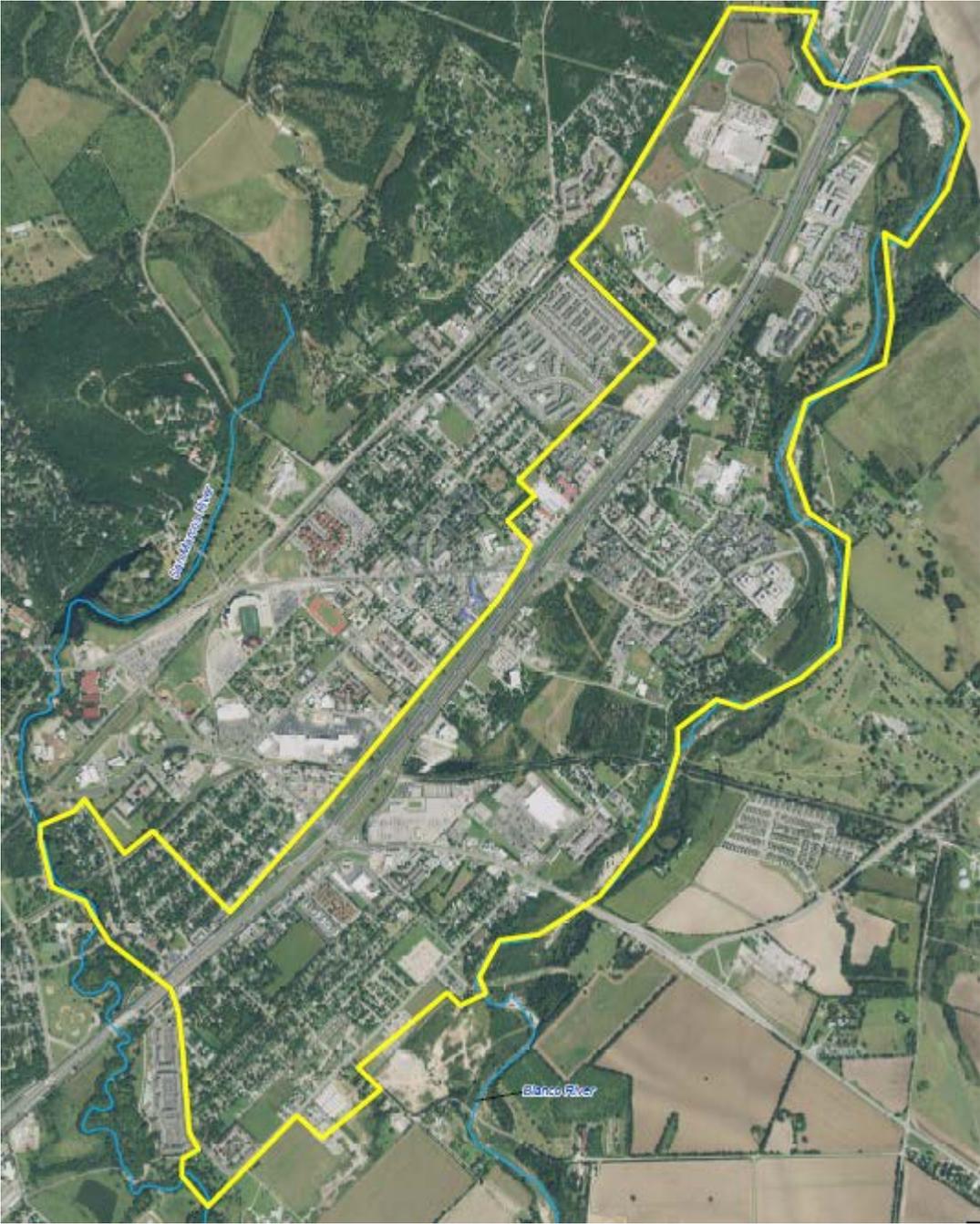
Challenges

Study Overview

- Contract Awarded: January 2017
- Objective: Identify & Prioritize infrastructure projects.
- \$12.5M budget for infrastructure
- Projects must:
 - Benefit Low to Moderate Income Residents
 - Be Implemented within 6 yrs
- Action Plan Amendment with selected projects: Due May 2017



- Study Area



Methods

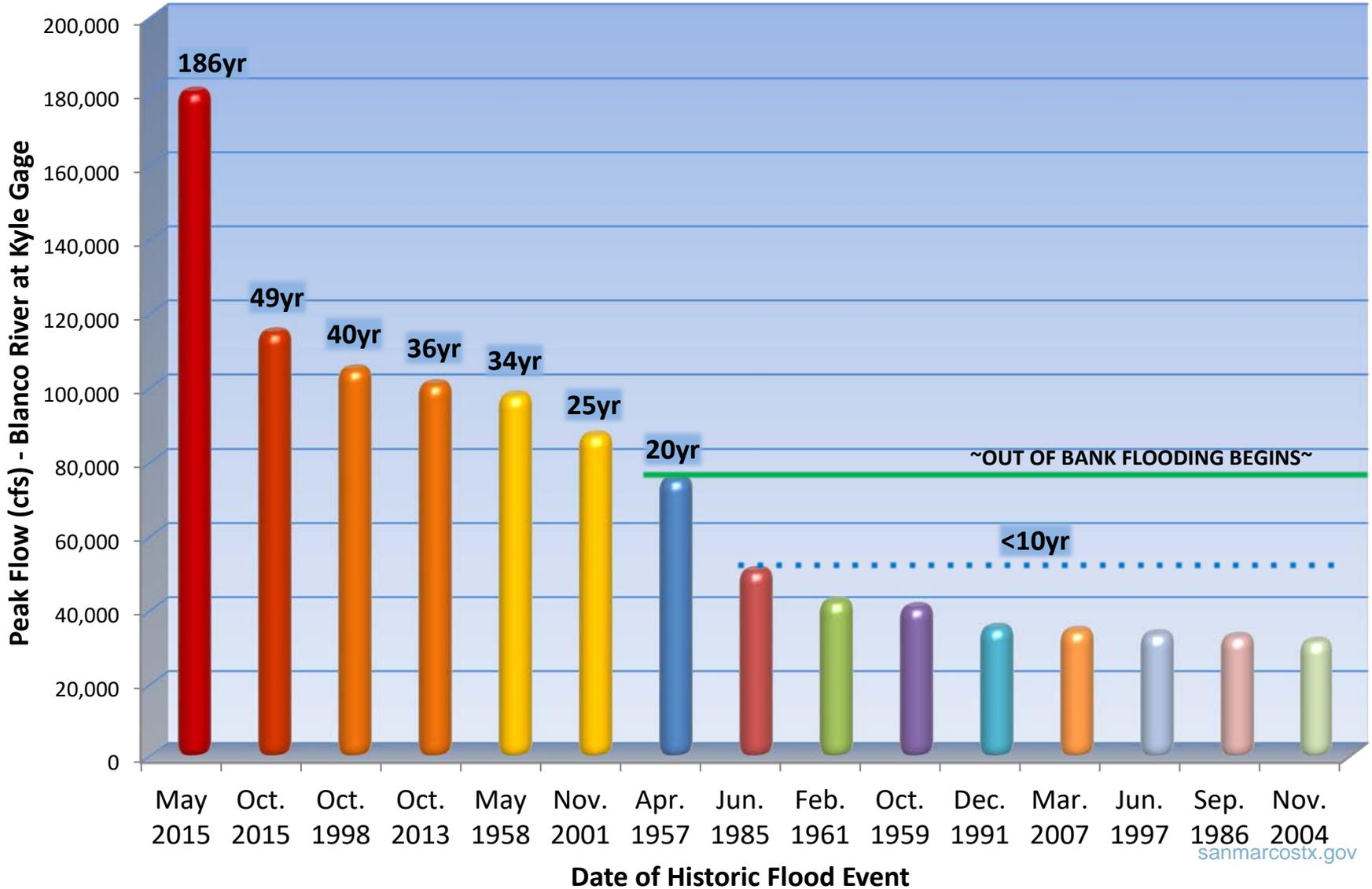
- 2-Dimensional Modeling
- Studying both causes of flooding:
 - Local – Rainfall & Drainage
 - Riverine – San Marcos & Blanco River

Findings

- Cannot handle 100-yr “regional” flooding with “local” solutions.
- Can handle “local” flooding and reduce impacts of “regional” flooding.



1957 to Present Blanco River Flood Events



Blanco Gardens Riverine Flooding

Infrastructure Expectations

- **Will the improvements reduce the level of impacts that structures experience during flood events?**
 - Yes: Projects will provide increased protection during local rainfall events but in larger regional events flooding will still occur.
 - Projects will contain 25-yr storm flooding but will not remove structures from the 100-year floodplain.
- **Will all of the infrastructure DR funds be needed?**
 - Yes. To improve drainage in all of the impacted areas additional funding sources will be needed, including City drainage C.I.P. funds.
- **Will the City be able to determine which projects provide the greatest benefit?**
 - Yes: Prioritization Matrix is part of your handouts and will be presented

Questions from Previous Meetings

- **How is the San Marcos River Considered**
 - State-of-the-art U.S. Army Corps of Engineers Hydrology calculates nearly simultaneous peak flows of both rivers
- **How does each project reduce risk?**
 - Homes/buildings with reduced risk are counted for each project
- **When does the Blanco Spill into River Ridge**
 - At riverine events greater than the 50-yr (2% annual chance)
- **Describe the Tuesday April 11 rainfall**
 - Greater than 50-yr event

Solutions

Stakeholder Input & Field Visits



Stakeholder Input & Field Visits



Stakeholder Input & Field Visits

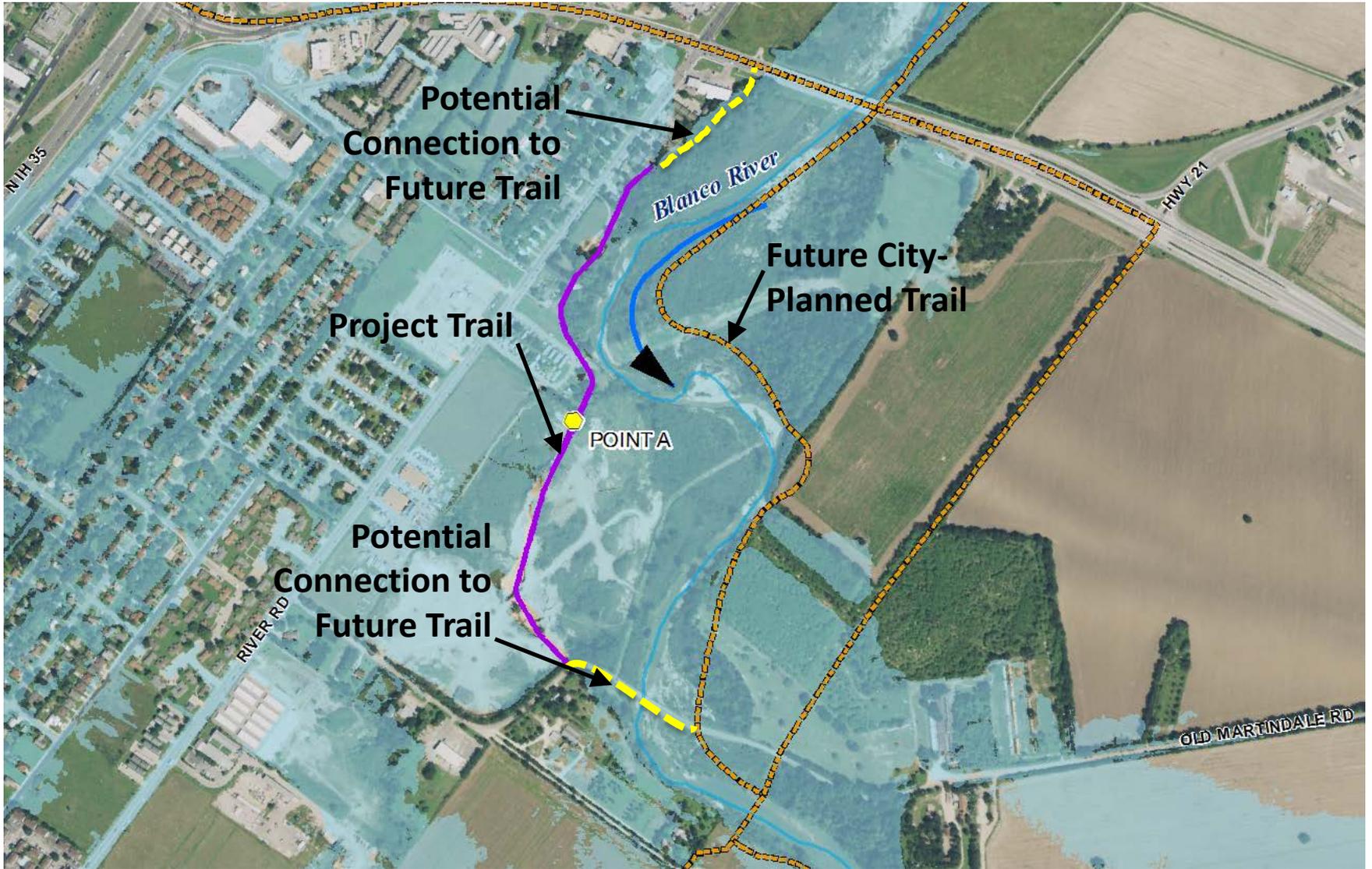


Riverine Solution

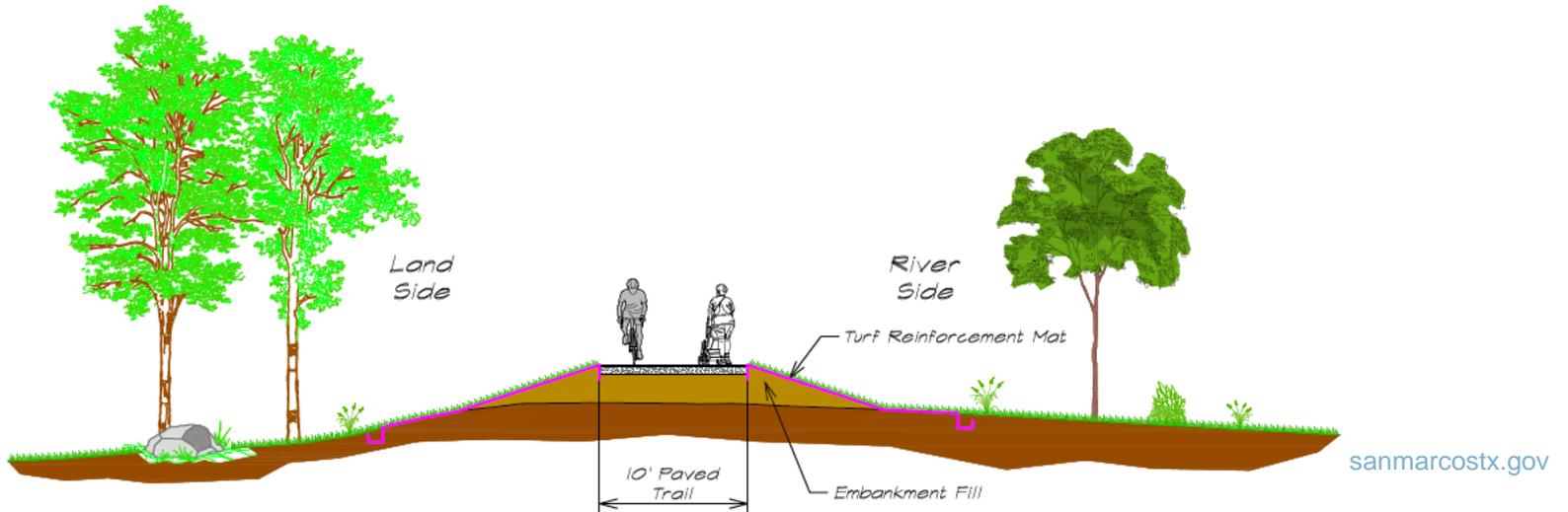
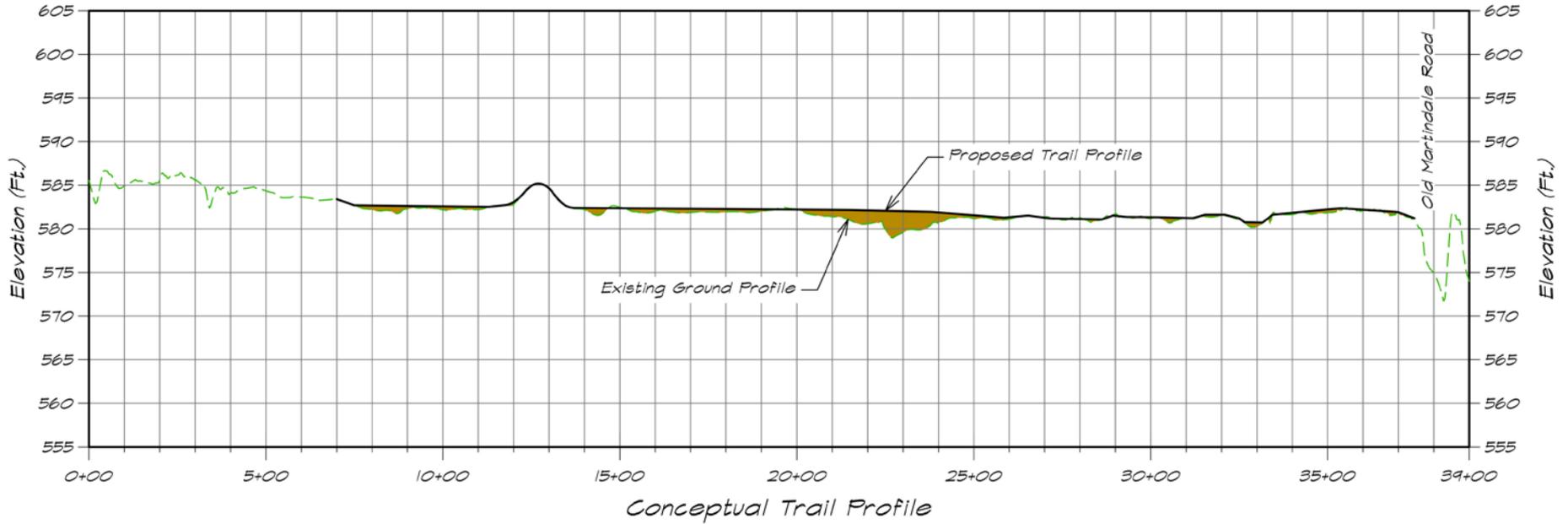
SAN MARCOS Drainage & Bank Improvements



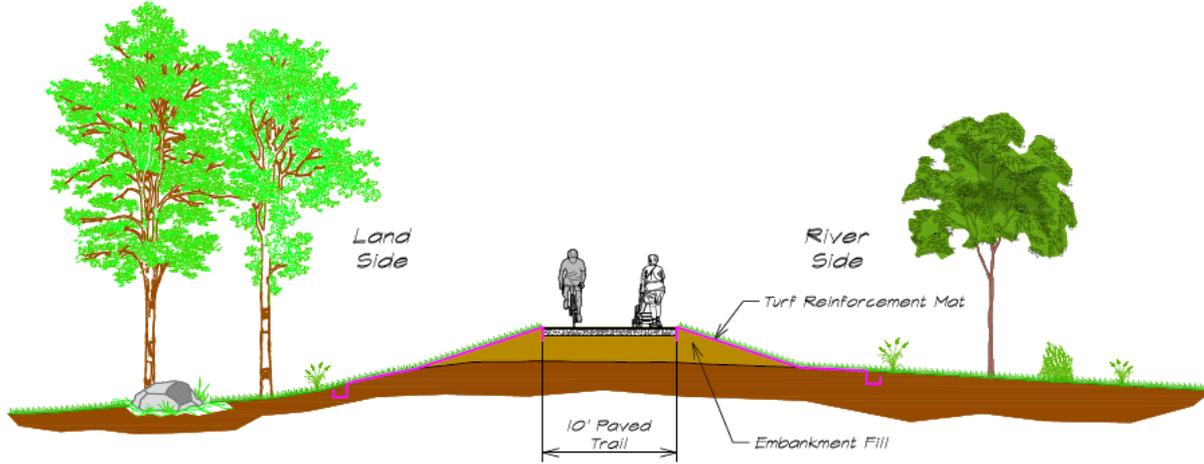
Bank Improvement Trail



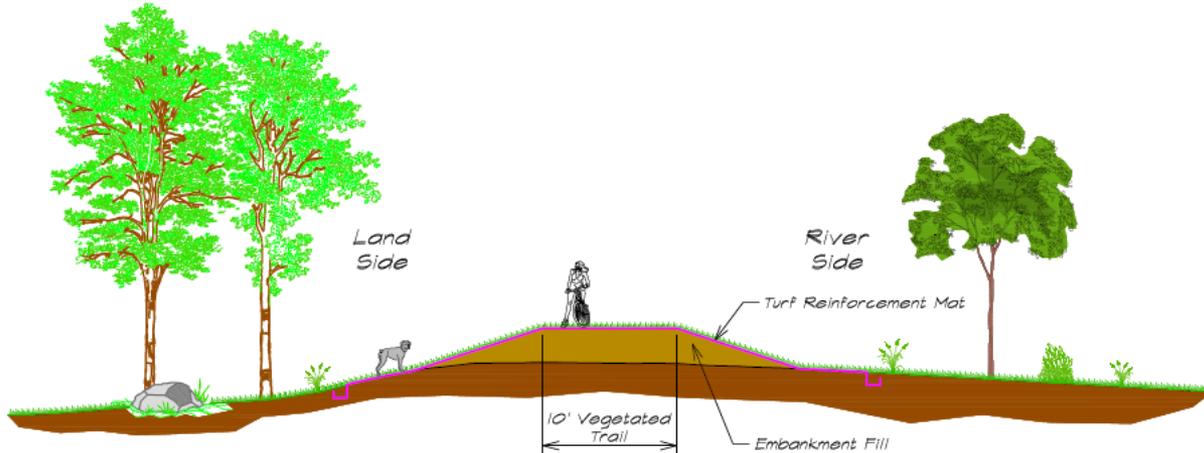
SAN MARCOS Cross Section and Profile



Cross Section of Trail Options

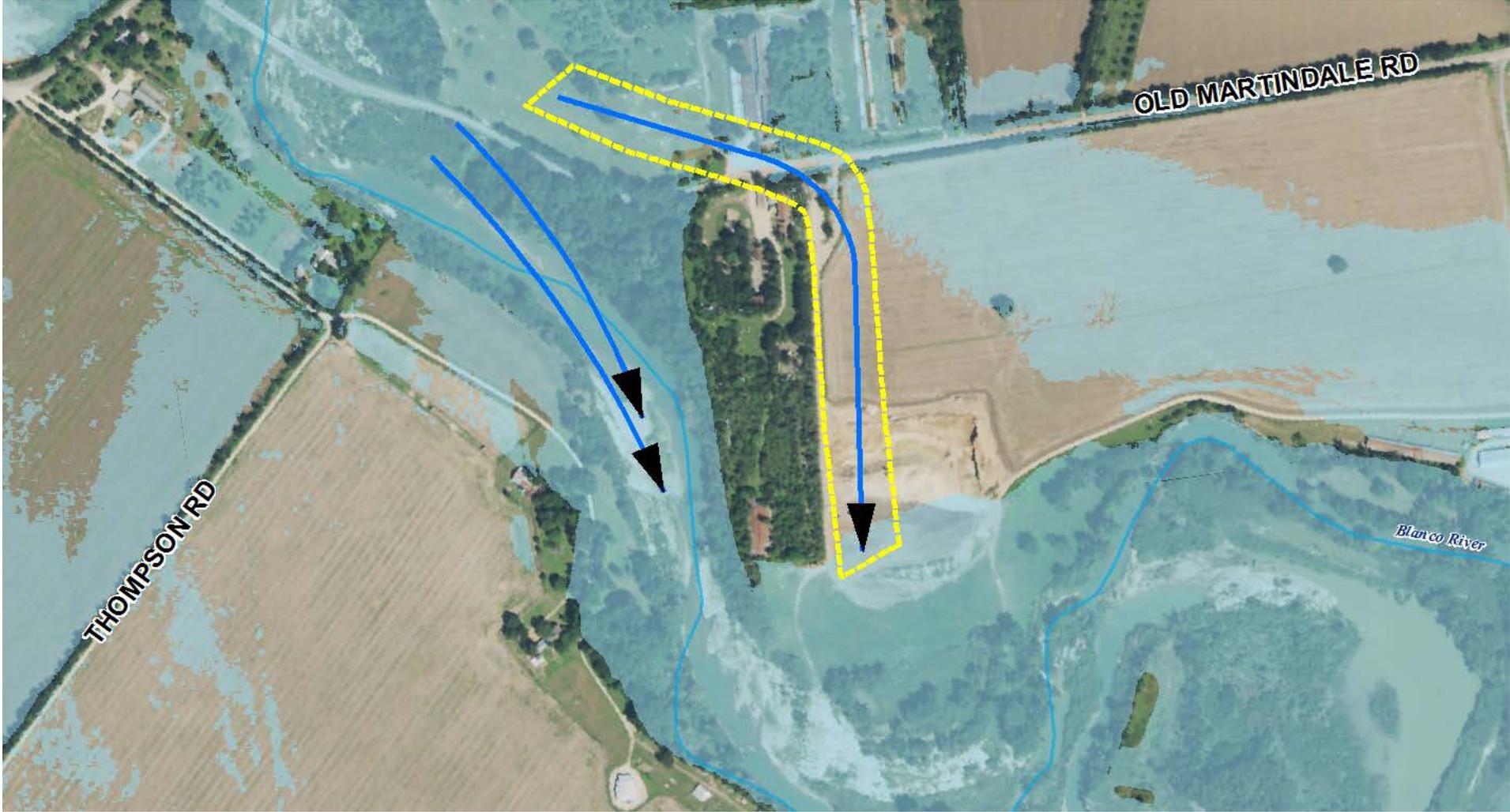


Blanco River Bike Trail with Paved Surface

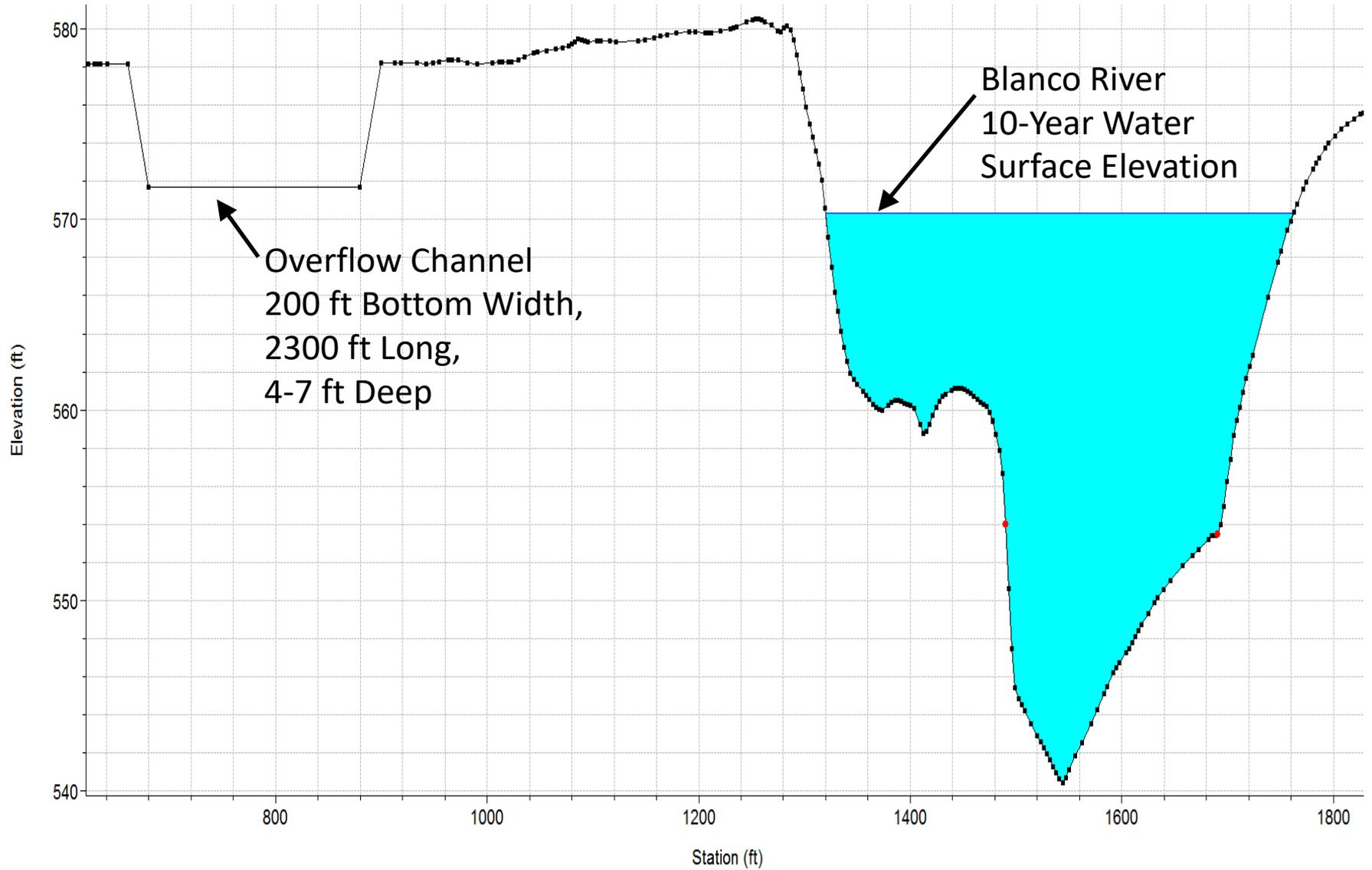


Blanco River Bike Trail with Vegetated Surface

SAN MARCOS Overflow Channel



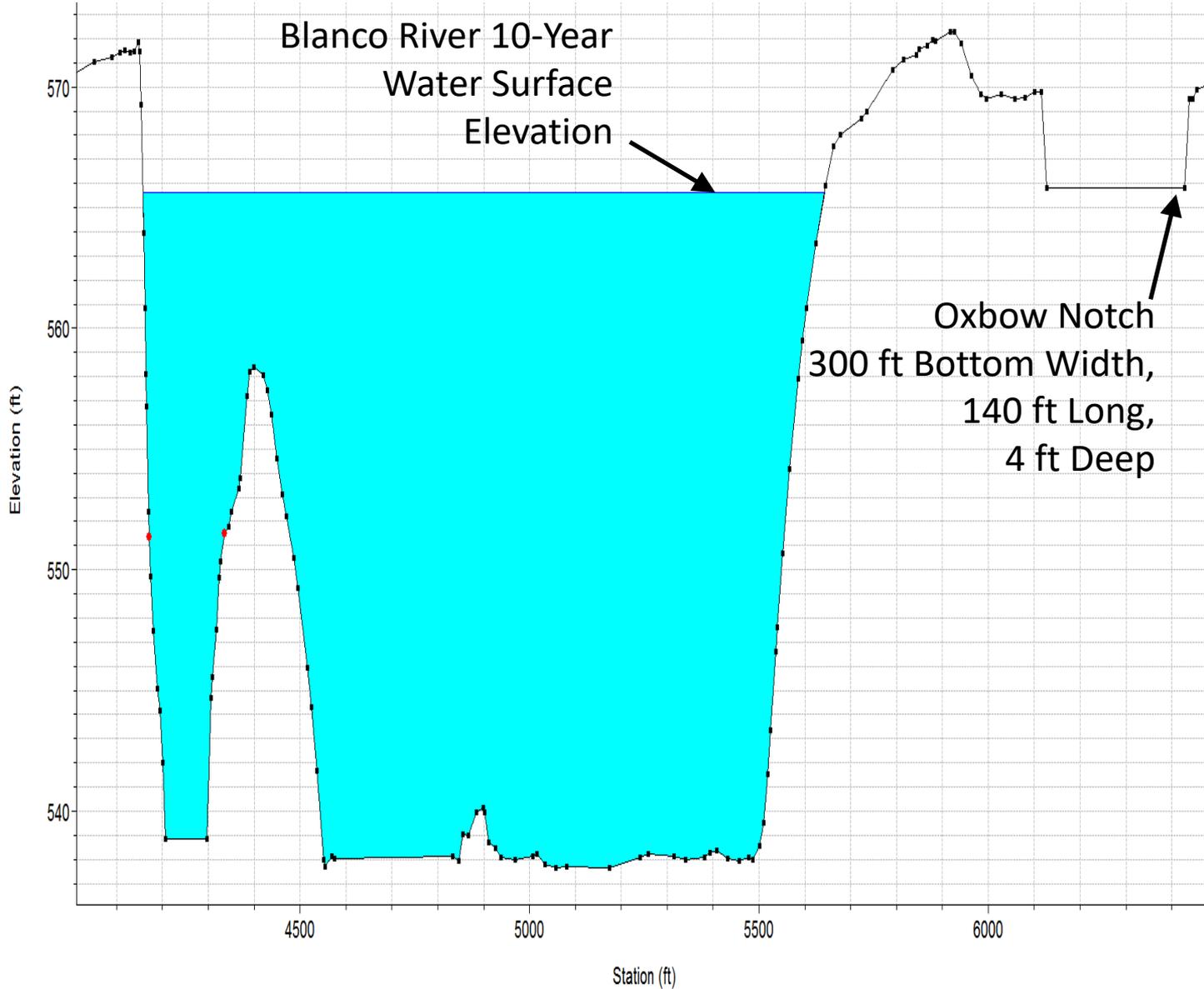
SAN MARCOS Cross Section



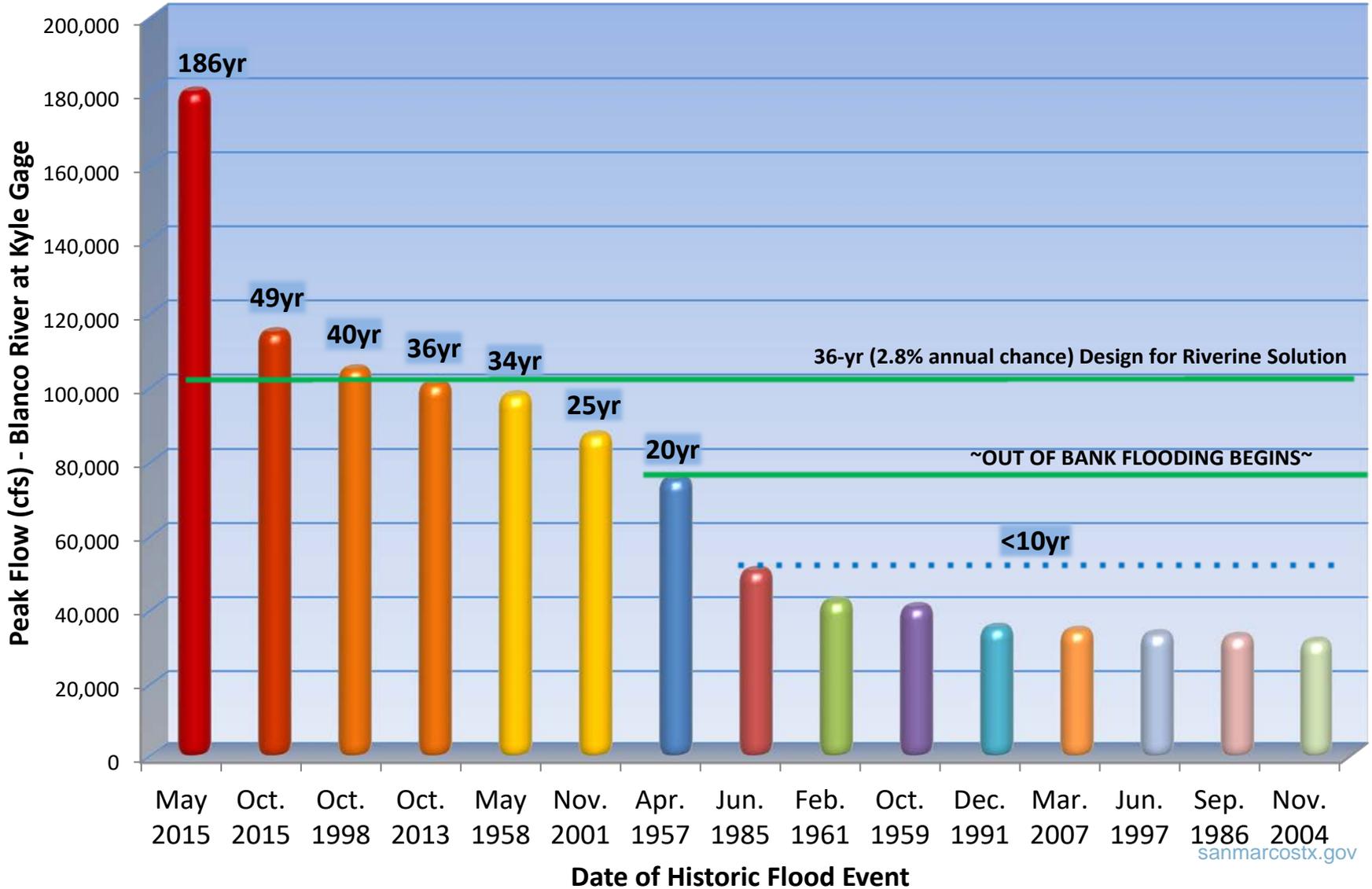
SAN MARCOS Oxbow Notch



SAN MARCOS Cross Section



1957 to Present Blanco River Flood Events

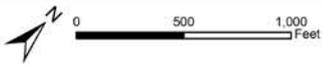


Rainfall & Local Drainage Solutions

SAN MARCOS Rainfall - Blanco Gardens



- Structures Benefited = 420
- Improved Mobility
- 25Yr Design
- Relief to Exist System



Legend

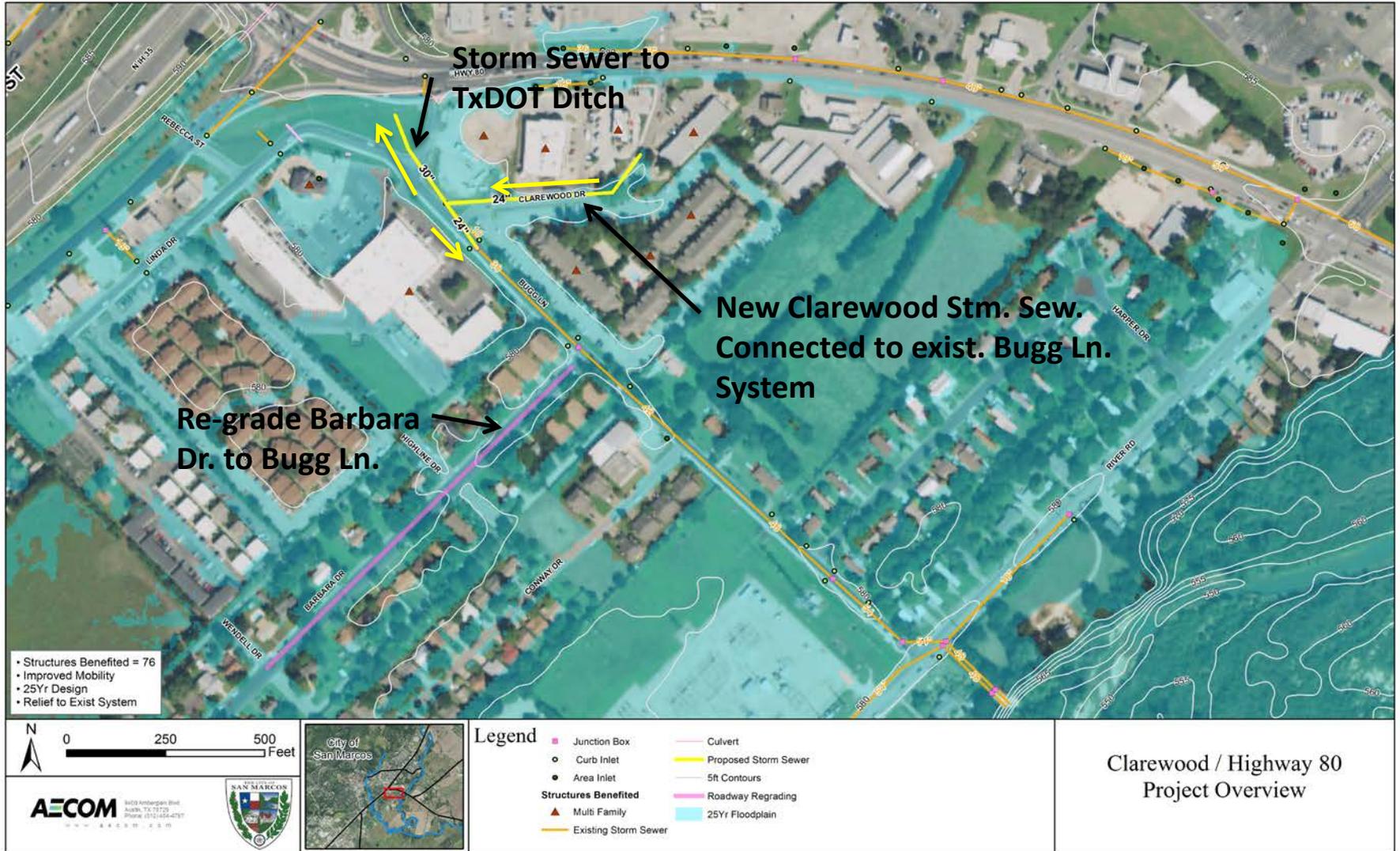
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|----------------|------------------------|------------------------|
| ● Outfalls | ▲ Multi Family | — 5ft Contours |
| ■ Junction Box | ● Single Family | — Proposed Storm Sewer |
| ○ Curb Inlet | — Existing Storm Sewer | — Roadway Regrading |
| ● Area Inlet | — Culvert | |

Blanco Gardens & Clarewood Project Overviews

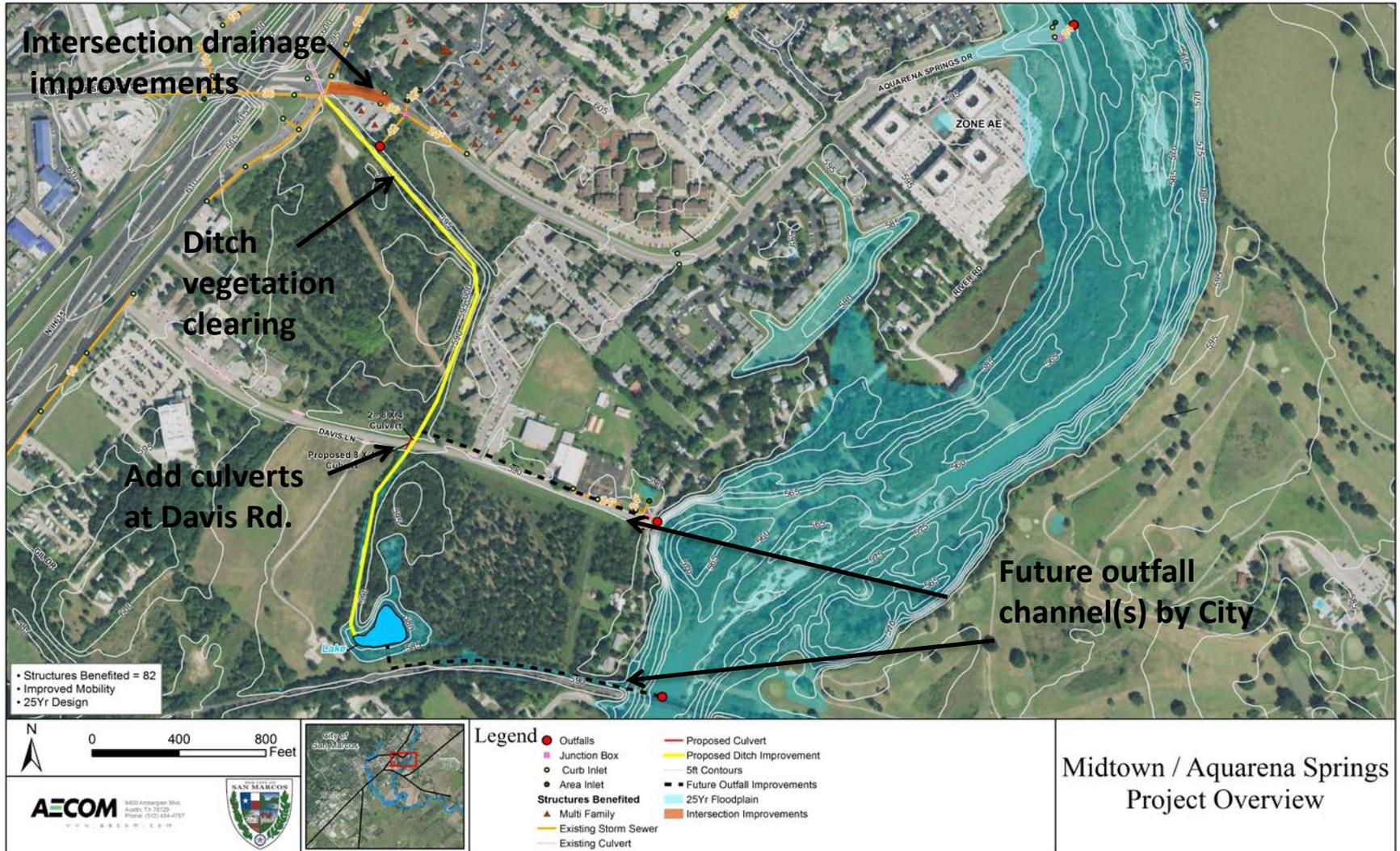
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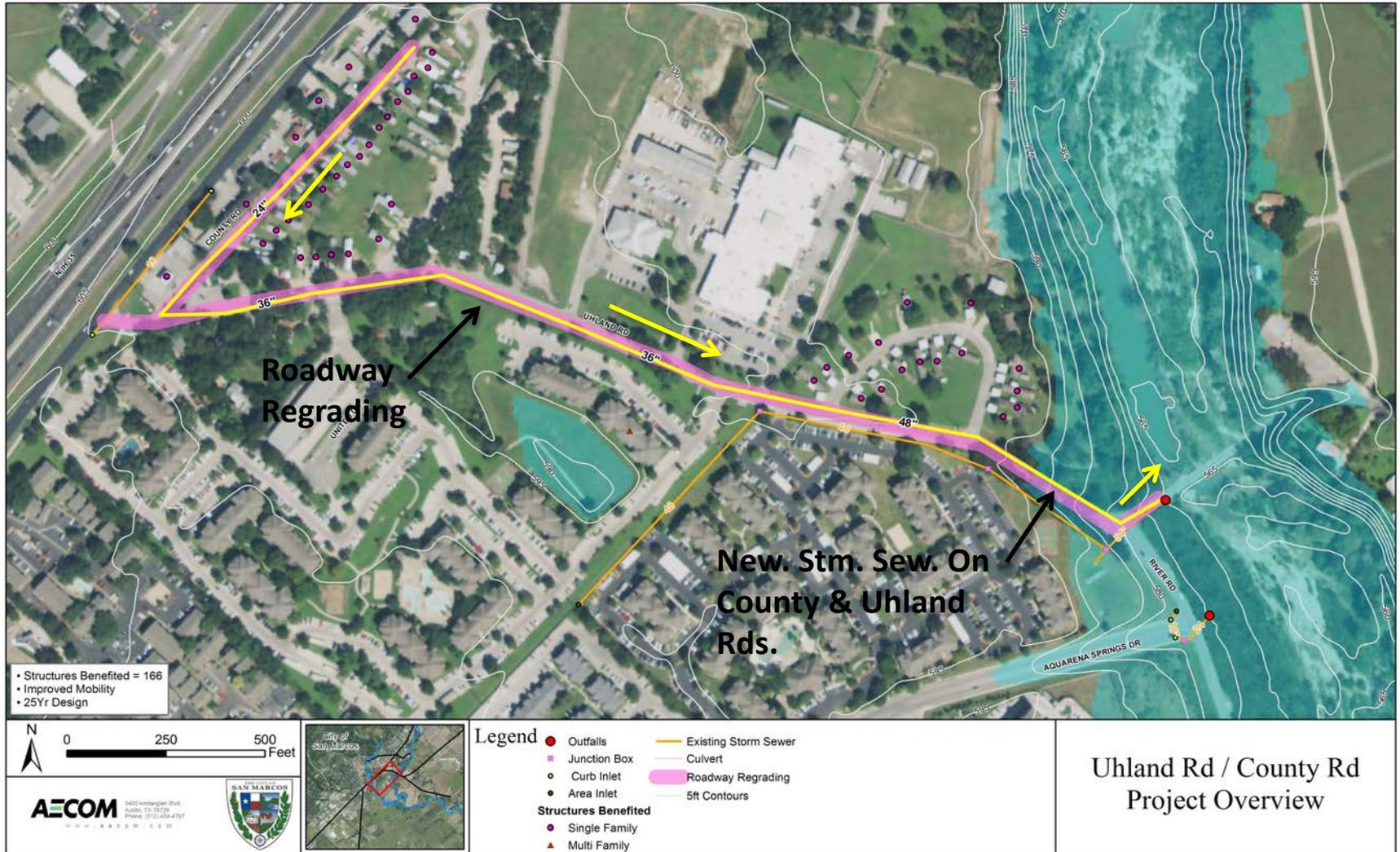
Rainfall – Clarewood/Barbara Drive



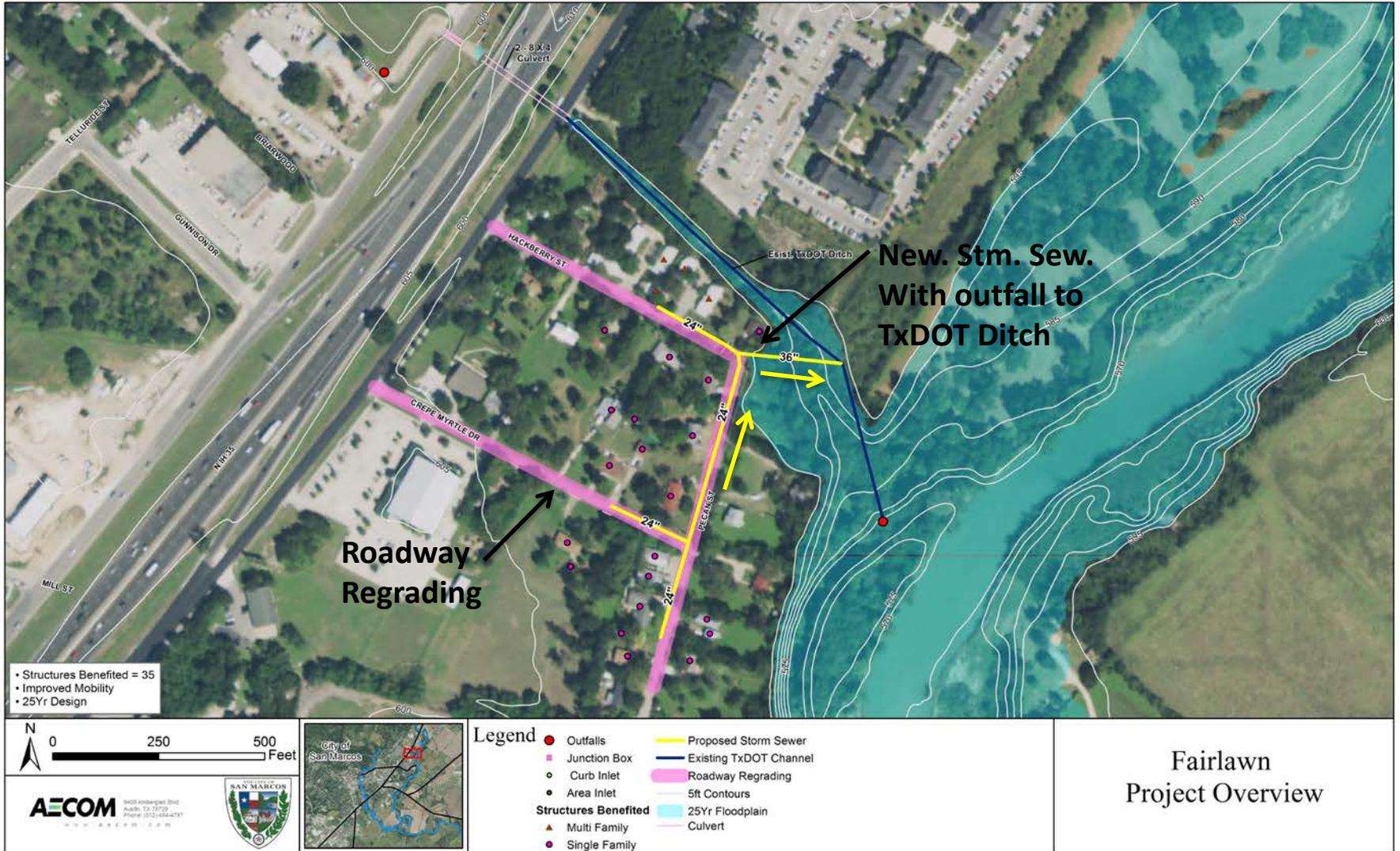
Rainfall - Midtown/Aquarena Springs



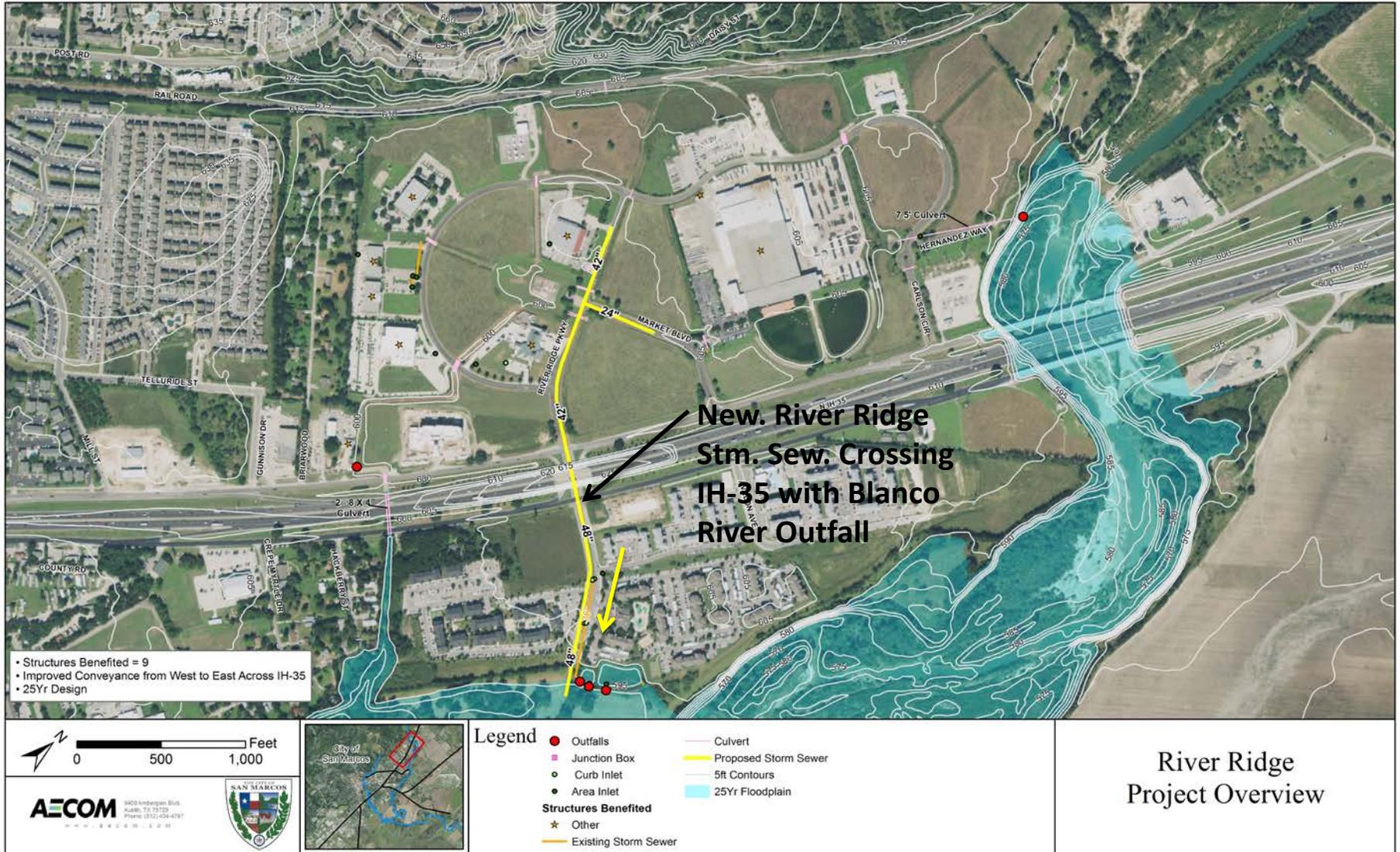
Rainfall - Umland Rd/County Rd



Rainfall - Fairlawn



Rainfall - River Ridge



Rainfall – Rio Vista



Prioritization

Prioritization Matrix

City of San Marcos CDBG-DR Infrastructure Feasibility Study

Prioritization Matrix



Infrastructure Prioritization Score

Prioritization Category	Weight	Criteria	Benefit	Point Range	Measurement or Calculation
% Low-to-Mid Income (LMI) Served	20%	LMI population benefitted by proposed improvement(s)	Reduction of flood damage burden for LMI population	0-20	(Census Tract LMI Percentage) x 20
Flood Risk Reduction	20%	Flood protection level of service provided by proposed improvement(s)	Improved flood protection over existing conditions	0-10	Minimal increase in level of protection = 0 Local or Riverine 25-yr level of protection = 4 Local and Riverine 25-yr level of protection = 7 Above 25yr level of protection = 10
		Number of equivalent structures benefitted by proposed improvement(s)	Reduction in flood damage burden	0-10	0 - 10 structures = 2 10 - 25 structures = 5 25 - 50 structures = 7 Greater than 50 structures = 10
Benefit-Cost Ratio	20%	Estimated cost per equivalent structure benefitted by proposed improvement(s)	Cost effectiveness compared to other alternatives	0-20	Lower Quartile = 0 Lower Middle Quartile = 7 Upper Middle Quartile = 13 Upper Quartile = 20
Leveraged Funding	10%	Identified cost-share opportunity for proposed improvement(s)	Ability to leverage HUD funding to increase benefit to the community	0-10	No potential cost-share opportunity identified = 0 Limited cost-share opportunity(ies) identified = 5 Significant cost-share opportunity(ies) identified = 10
Permitting Requirements / Schedule	10%	Ability to acquire permits and meet overall schedule	Efficiency and grant compliance	0-10	Significant challenges acquiring permit - likely schedule delay = 0 Potential challenges acquiring permit - potential schedule delay = 5 No permit required / no issues obtaining permit - minimal schedule delay = 10
Mobility Improvement	5%	Mobility improvement due to proposed improvement(s)	Improved mobility for emergency responders and general public during storm events	0-5	Minimal mobility improvements = 0 Limited mobility improvements = 3 Significant mobility improvements for emergency responders = 5
Phasing Considerations	5%	Supports phased approach to implementation of larger projects	Supports completion or effectiveness of future regional project beyond current funding	0-5	No connection to larger-scale project = 0 Limited contribution to larger-scale project = 3 Significant contribution to larger-scale project = 5
Project Synergies	5%	Ability to complete simultaneously with companion project	Efficiency and cost effectiveness	0-5	Unrelated to ongoing projects = 0 Limited cost savings if completed with companion project = 3 Significant cost savings if completed with companion project = 5
Environmental Impact/Benefit	5%	Environmental impact/benefit of proposed improvement(s)	Contribution to improved environmental conditions	0-5	Negative environmental impact = 0 Limited environmental impact = 3 Incorporation of green infrastructure and/or improvement in water quality = 5

Prioritization Results & Ranking

City of San Marcos CDBG-DR Infrastructure Feasibility Study							SAN MARCOS AECOM					
Prioritization Matrix Results & Ranking												
	% LMI Population Served	Flood Risk Reduction: Level of Service	Flood Risk Reduction: # Structures Benefited	Benefit-Cost Ratio	Leveraged Funding	Permitting Requirements / Schedule	Mobility Improvement	Phasing Considerations	Project Synergies	Environmental Impact/Benefit	Total Prioritization Score (out of 100)	Prioritization Ranking
Area 3- Midtown/Aquarena Springs	17	4	10	20	5	5	5	3	3	3	75	1
Area 1- Blanco Gardens	16	4	10	20	5	0	5	0	3	3	66	2
Area 2- Clarewood	18	4	10	7	5	5	5	3	3	3	63	3
Riverine Project 1-Bike trail	16	10	10	7	5	0	5	5	3	0	61	4
Area 4- Uhland Road	15	4	10	13	0	5	3	0	3	3	56	5
Area 7- Rio Vista	18	4	5	13	0	5	0	0	0	3	48	6
Area 6- River Ridge	16	4	2	0	5	5	3	3	3	3	44	7
Area 5- Fairlawn	11	4	7	0	0	5	3	0	3	3	36	8

	BEST	MID	LEAST
Ranking Color Scale	10	5	1

Prioritization Ranking

Top 5 Projects:

1. **Area 3- Midtown/Aquarena Springs**
2. **Area 1- Blanco Gardens**
3. **Area 2- Clarewood/Barbara Drive**
4. **Bank Improvement Trail & Blanco River Improvements**
5. **Area 4- Uhland Road**

Packaging

Estimated Project Costs

2017-2022 CDBG-DR INFRASTRUCTURE PROJECTS PLAN CITY OF SAN MARCOS-DRAINAGE PROJECTS

Project Allocation	Project Total
Rio Vista	\$ 662,699
Midtown/Aquarena Springs	\$ 685,319
Fairlawn	\$ 2,083,239
Clarewood/Barbara Dr.	\$ 2,471,150
River Ridge	\$ 2,672,125
Uhland Road	\$ 4,169,880
Blanco Gardens	\$ 4,739,908
Bike Trail & Blanco Riv. Imp.	\$ 10,537,560
Total Local/Rainfall	\$ 17,484,319
Total All	\$ 28,021,879

Package Recommendations

Top 5 Projects Completed with DR, City & Other Funds

Project Name	Rank	Cost	DR Funds	TWDB Funds	City/Other Funds
Midtown	1	\$850,000	\$650,000		\$200,000
Blanco Gardens	2	\$5,000,000	\$4,450,000		\$550,000
Clarewood Barbara	3	\$2,500,000	\$2,300,000		\$200,000
Bank & Trail Imp	4	\$11,500,000	\$4,000,000	\$1,961,821	\$5,550,000
Uhland Road	5	\$4,200,000	\$1,100,000		\$3,100,000

Package Recommendations

Top 5 Projects - Schedule

Project Name	Rank	Design Start	Construction Start	Construction Complete
Midtown	1	2017	2018	2018
Blanco Gardens	2	2018	2019	2021
Clarewood/ Barbara	3	2018	2019	2021
Bank & Trail Imp	4	2017	2020	2021
Uhland Road	5	2017	2019	2021

Discussion

Next Steps for Recovery – Six Month Snapshot

