

# 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%
<b>Total Allocation</b>	<b>\$25,080,000</b>	<b>100%</b>



## 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

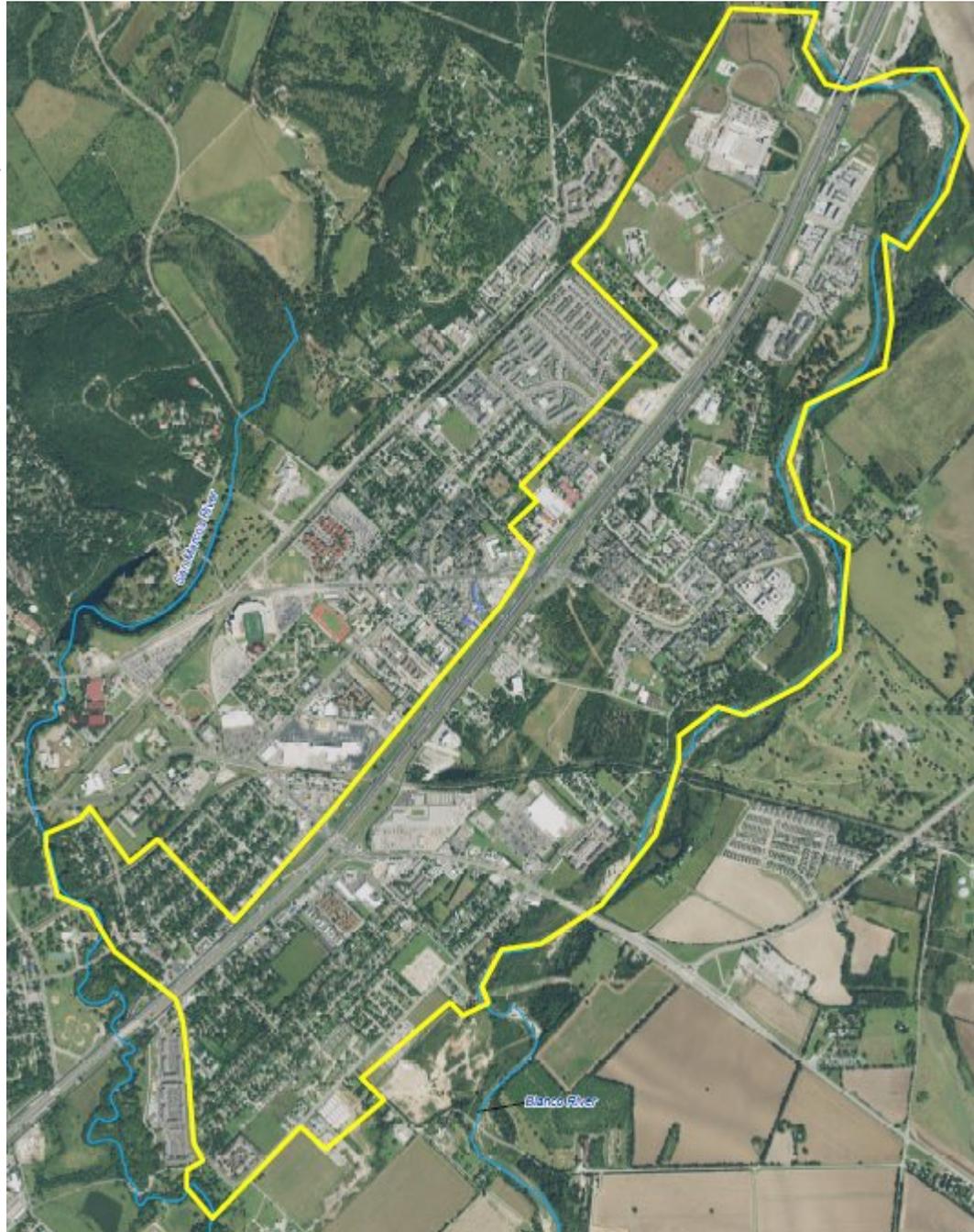


## Study Overview

- 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

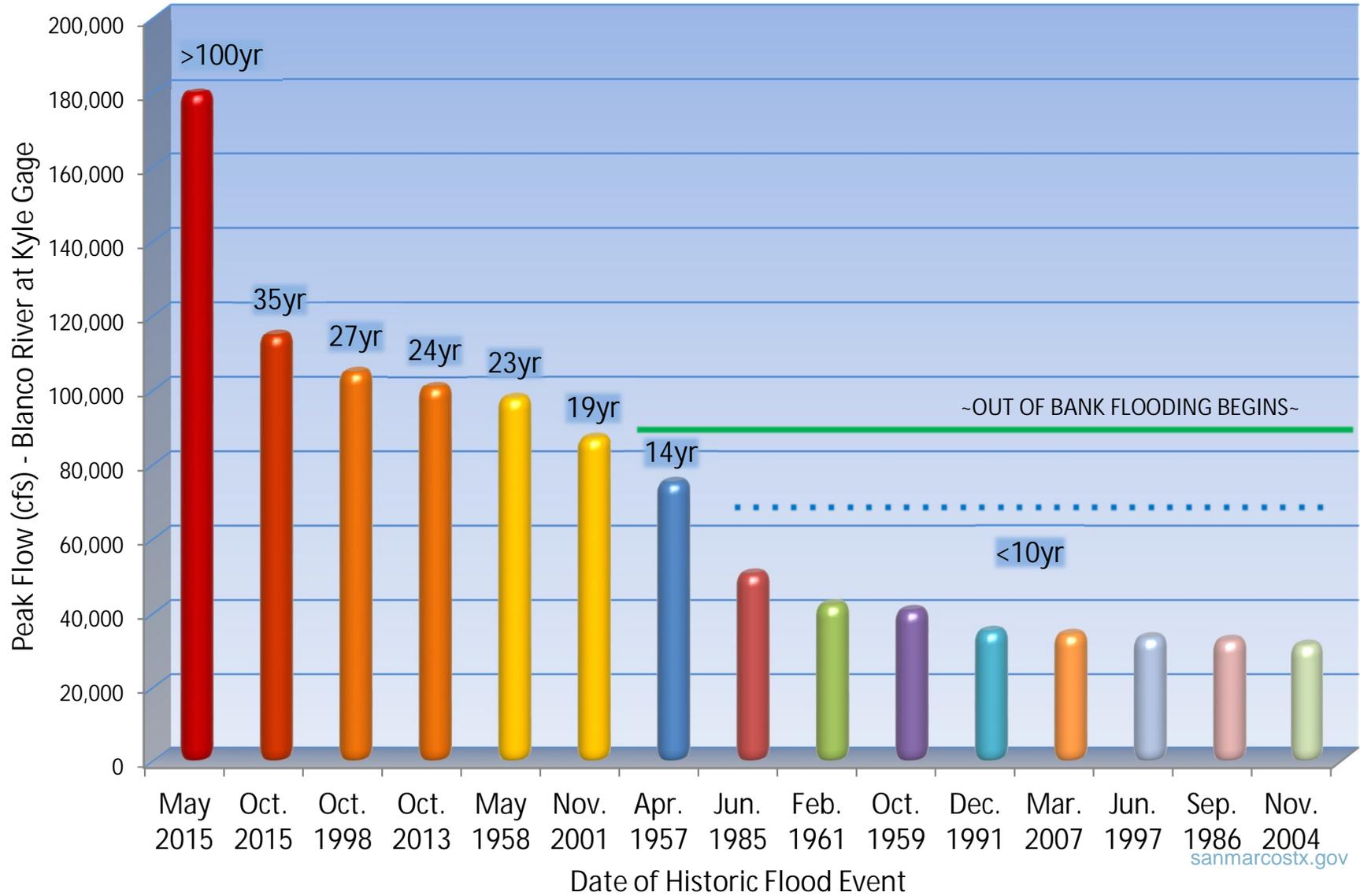
- 2-Dimensional Modeling
- Studying both causes of flooding:
  - Local – Rainfall & Drainage
  - Riverine – San Marcos & Blanco River

## 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



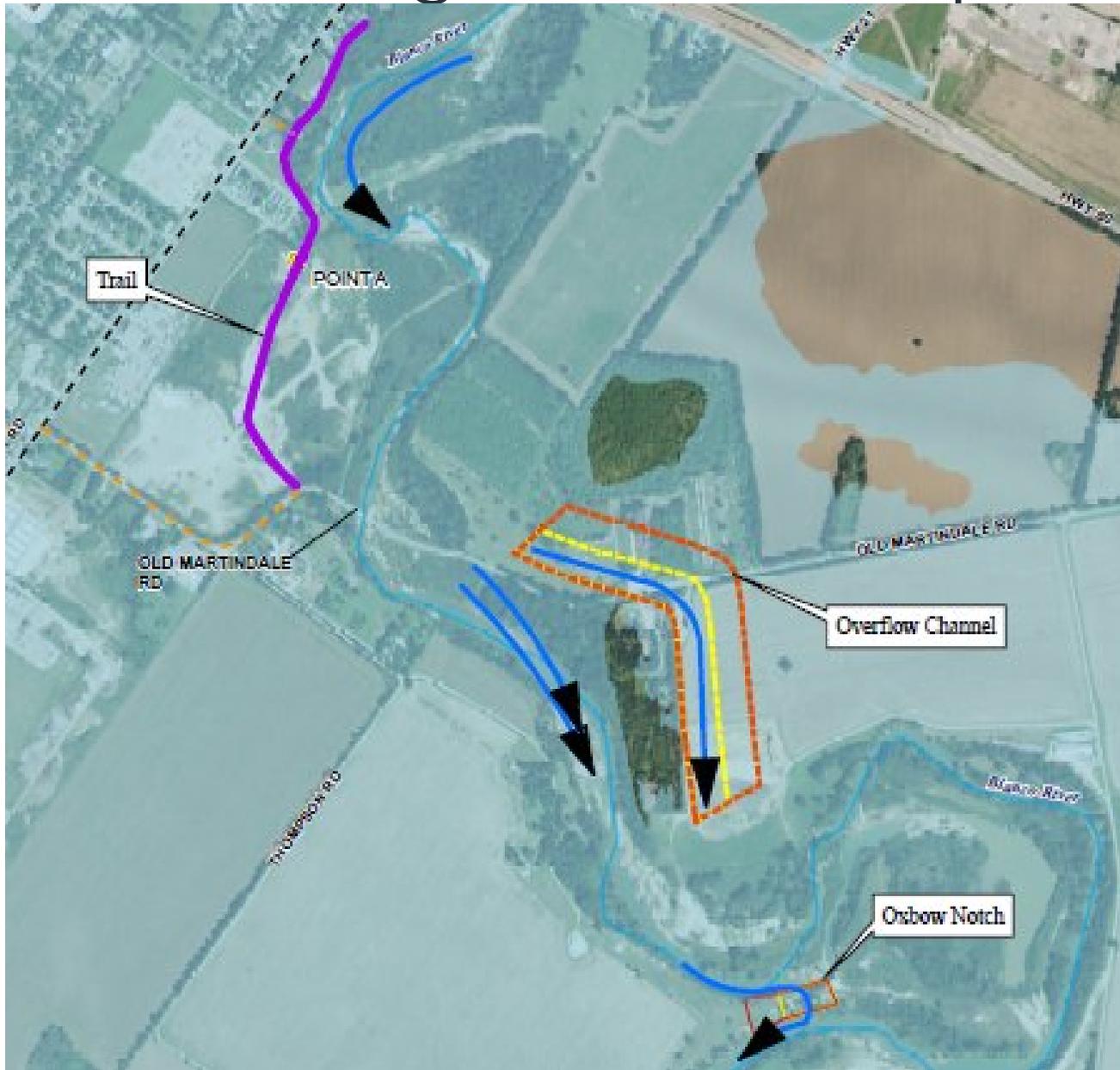
# Stakeholder Input & Field Visits



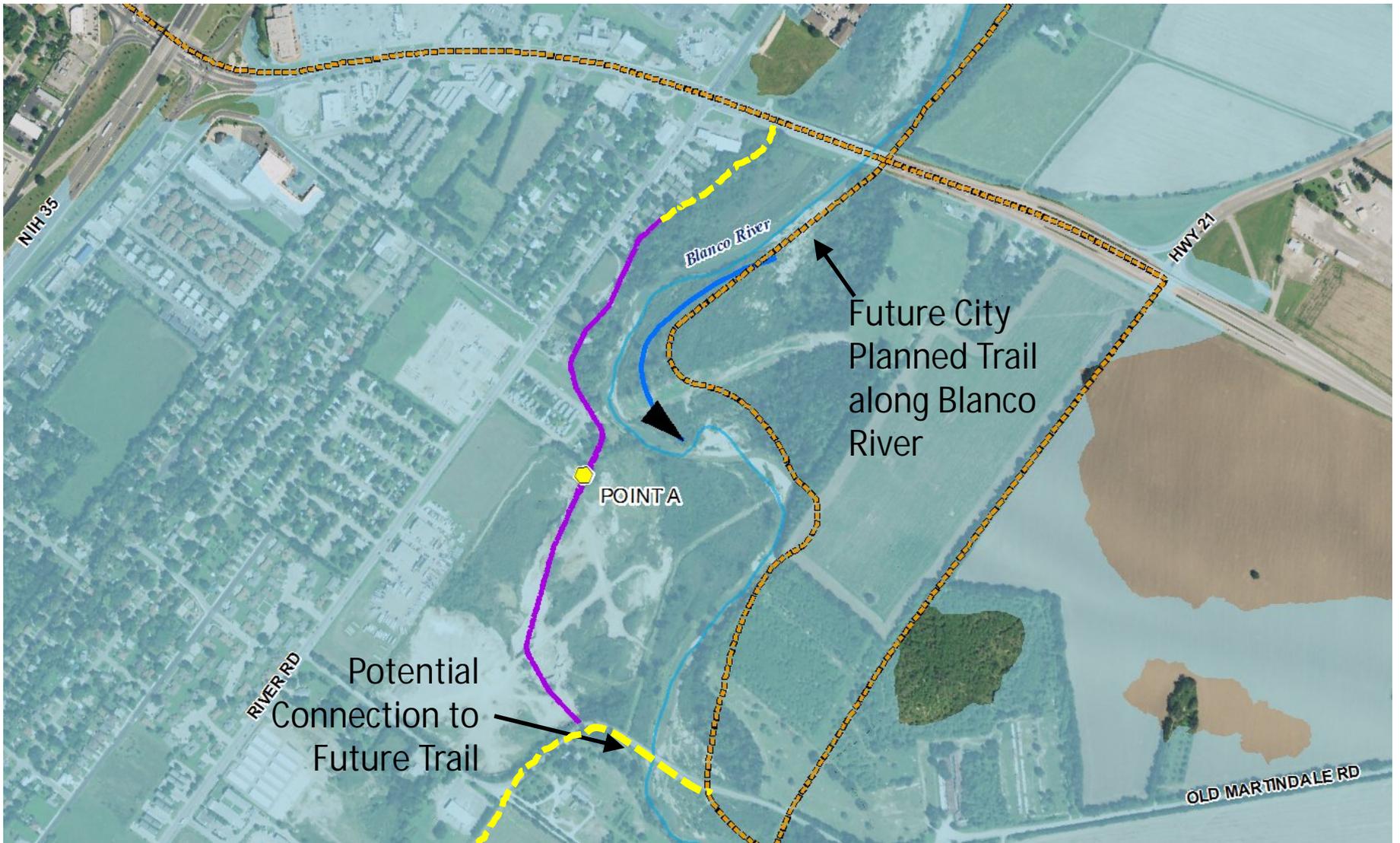
# Riverine Solution



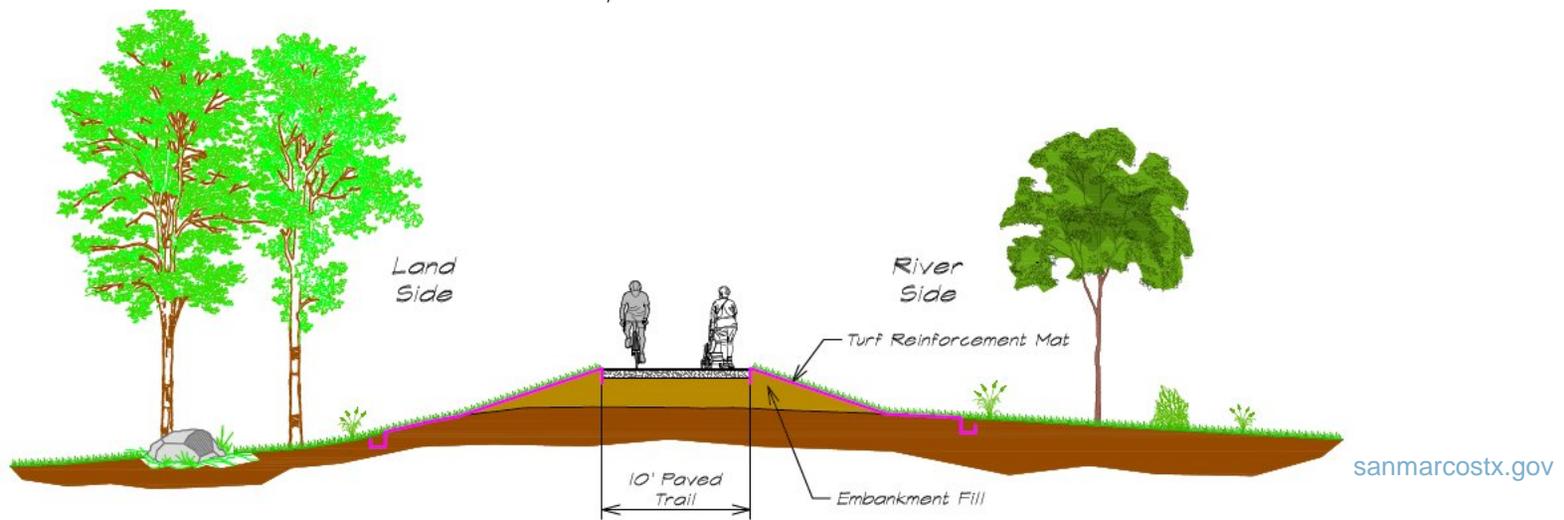
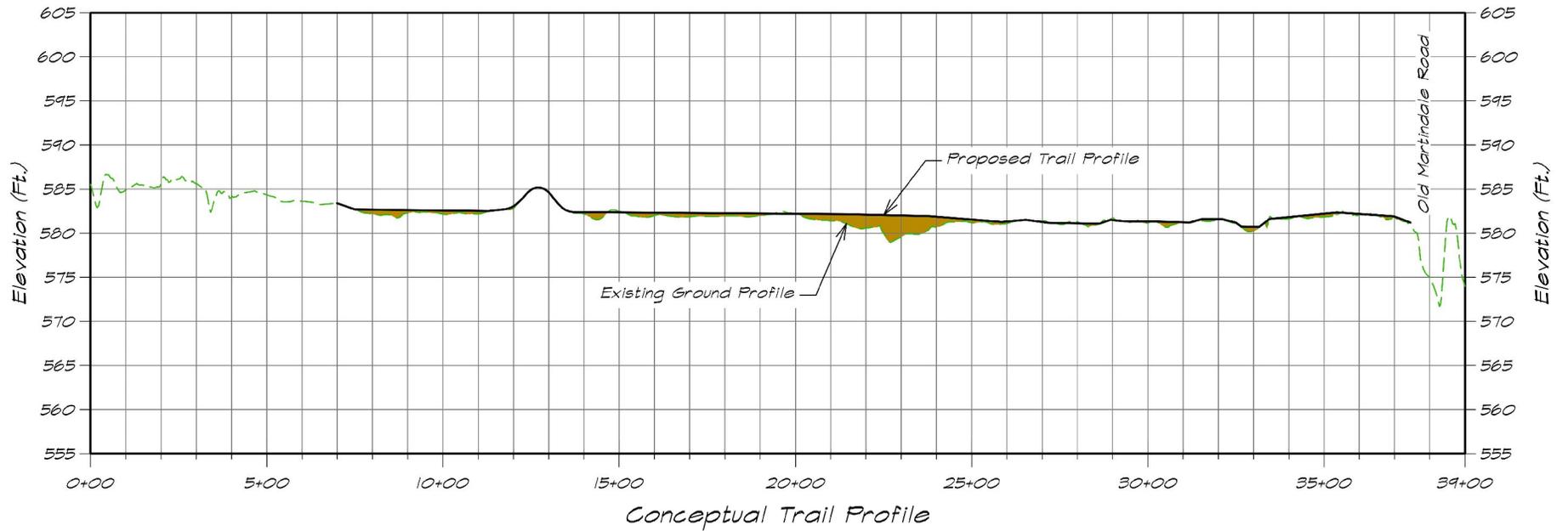
# SAN MARCOS Drainage & Bank Improvements



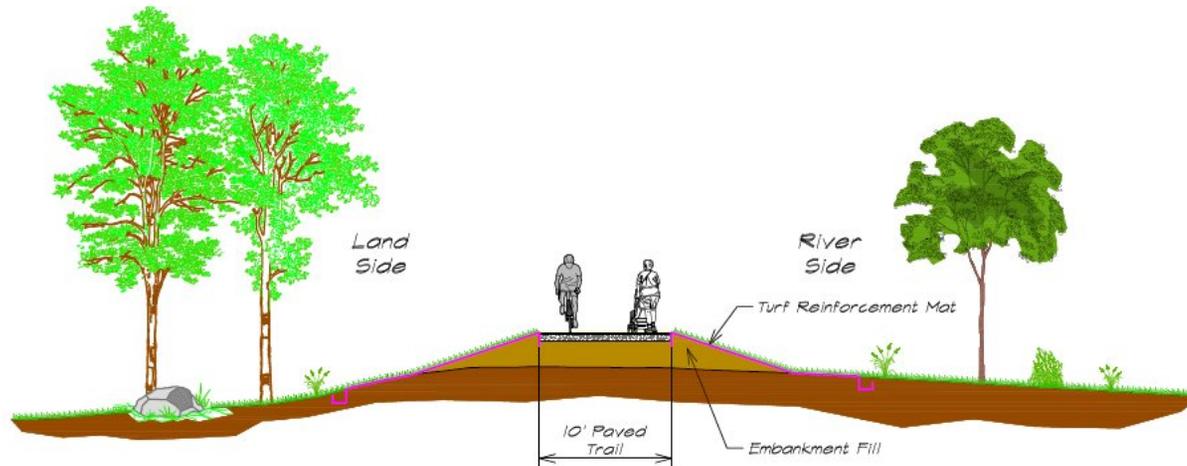
# SAN MARCOS Bank Improvement Trail



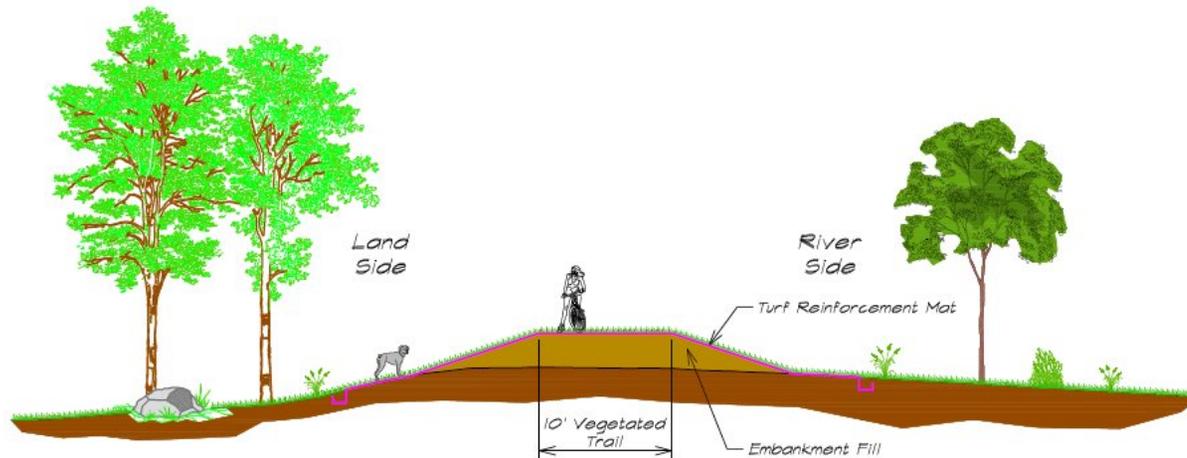
# SAN MARCOS Cross Section and Profile



# Cross Section of Trail Options



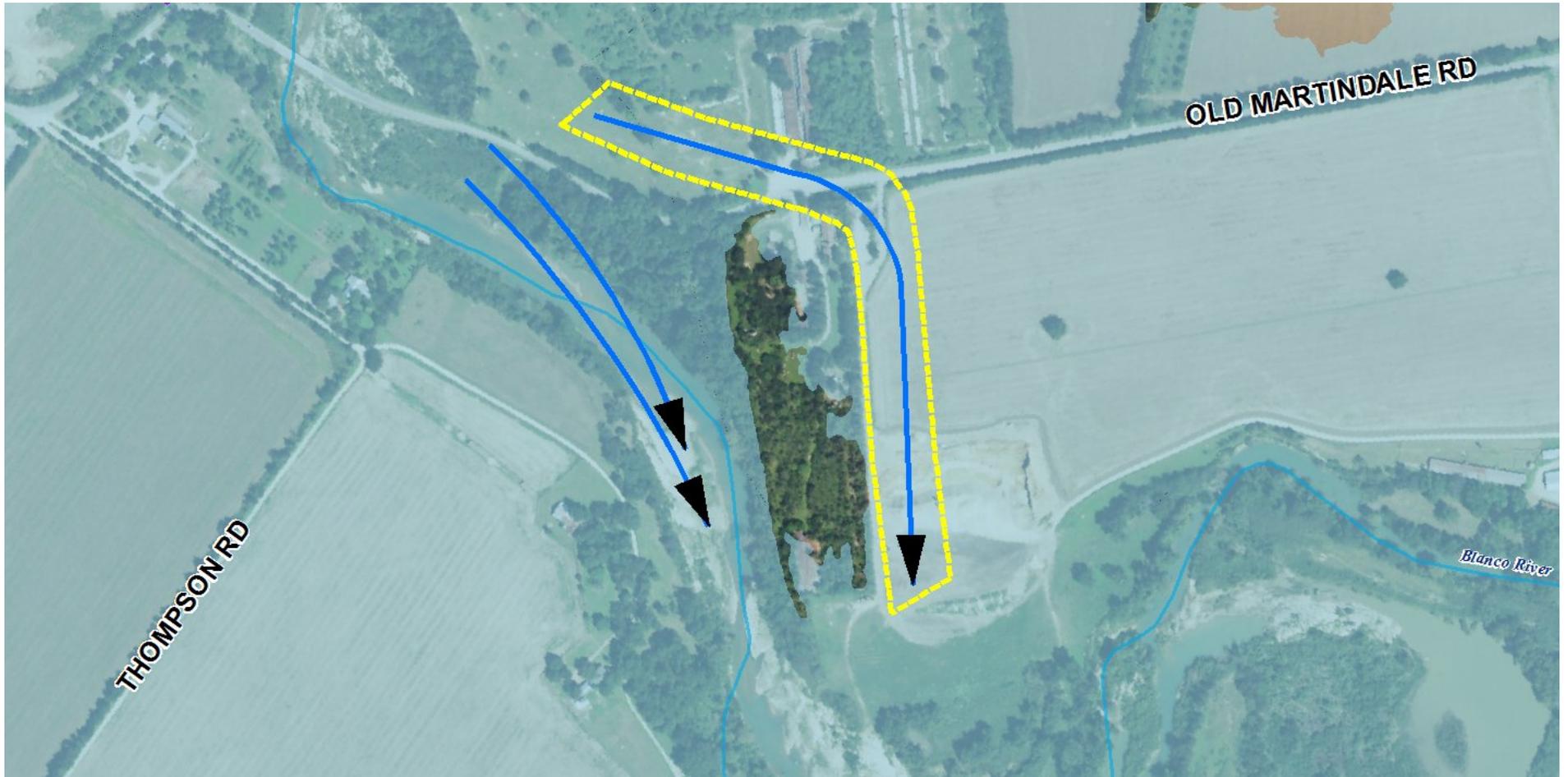
Blanco River Bike Trail with Paved Surface



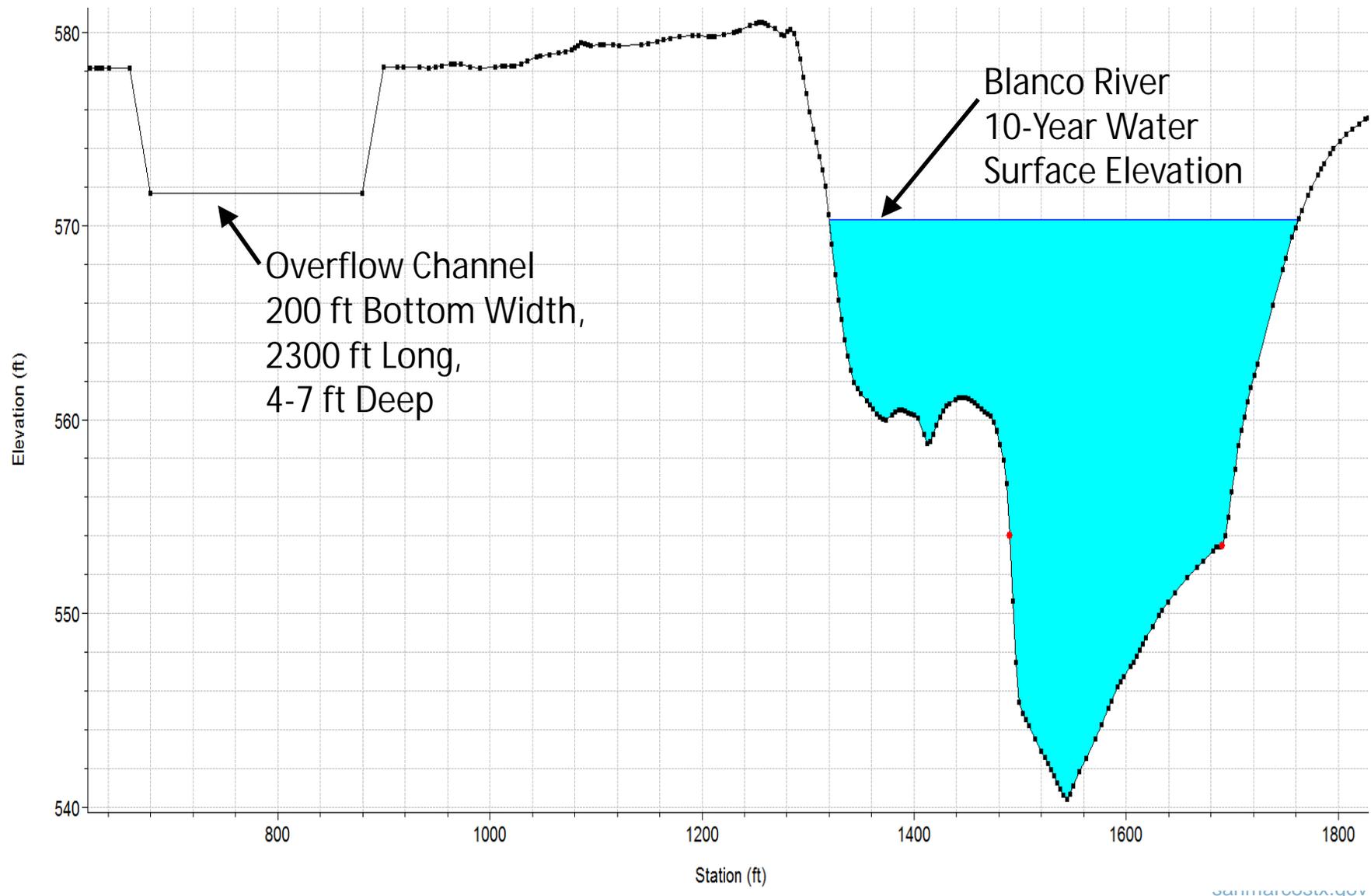
Blanco River Bike Trail with Vegetated Surface



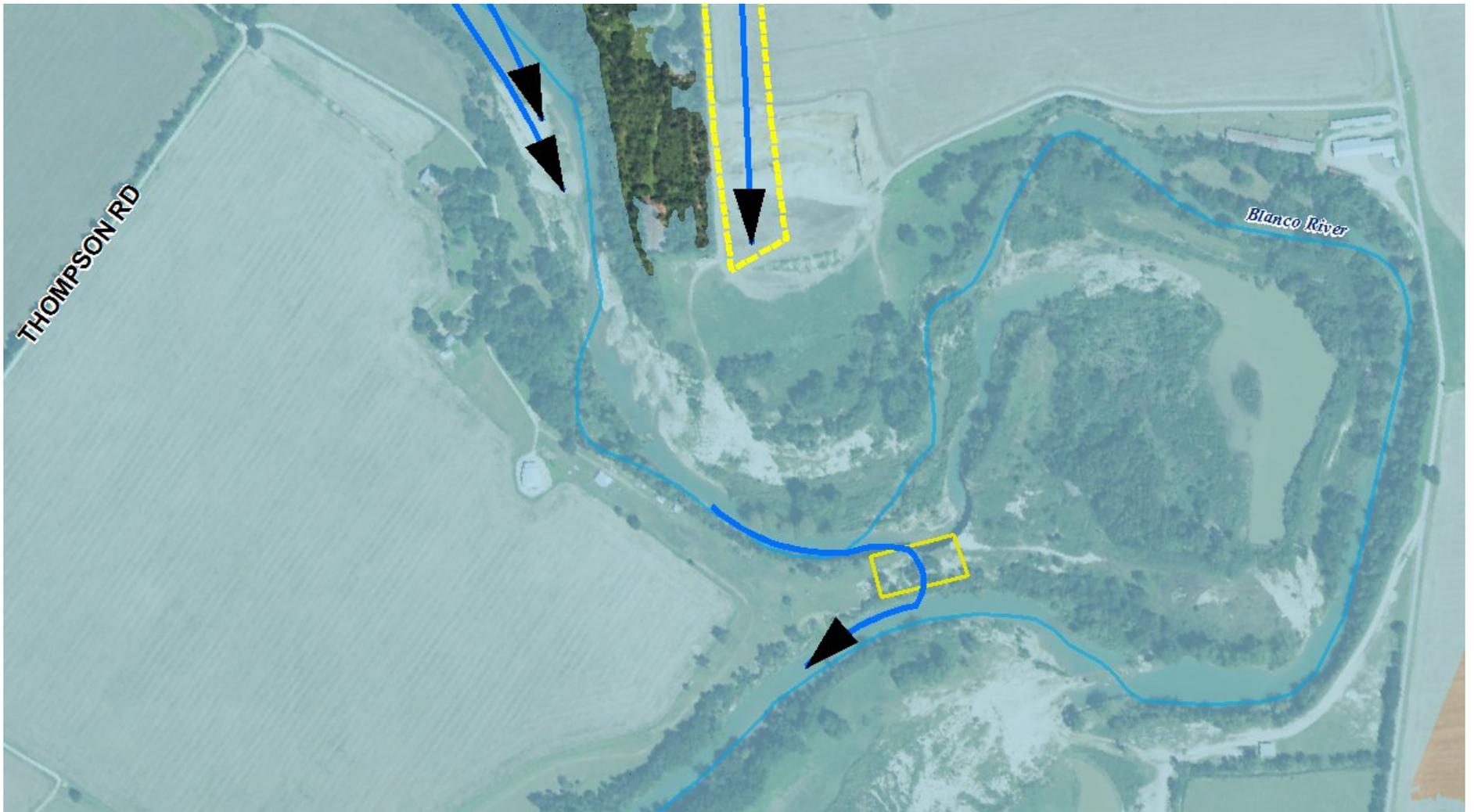
# SAN MARCOS Overflow Channel



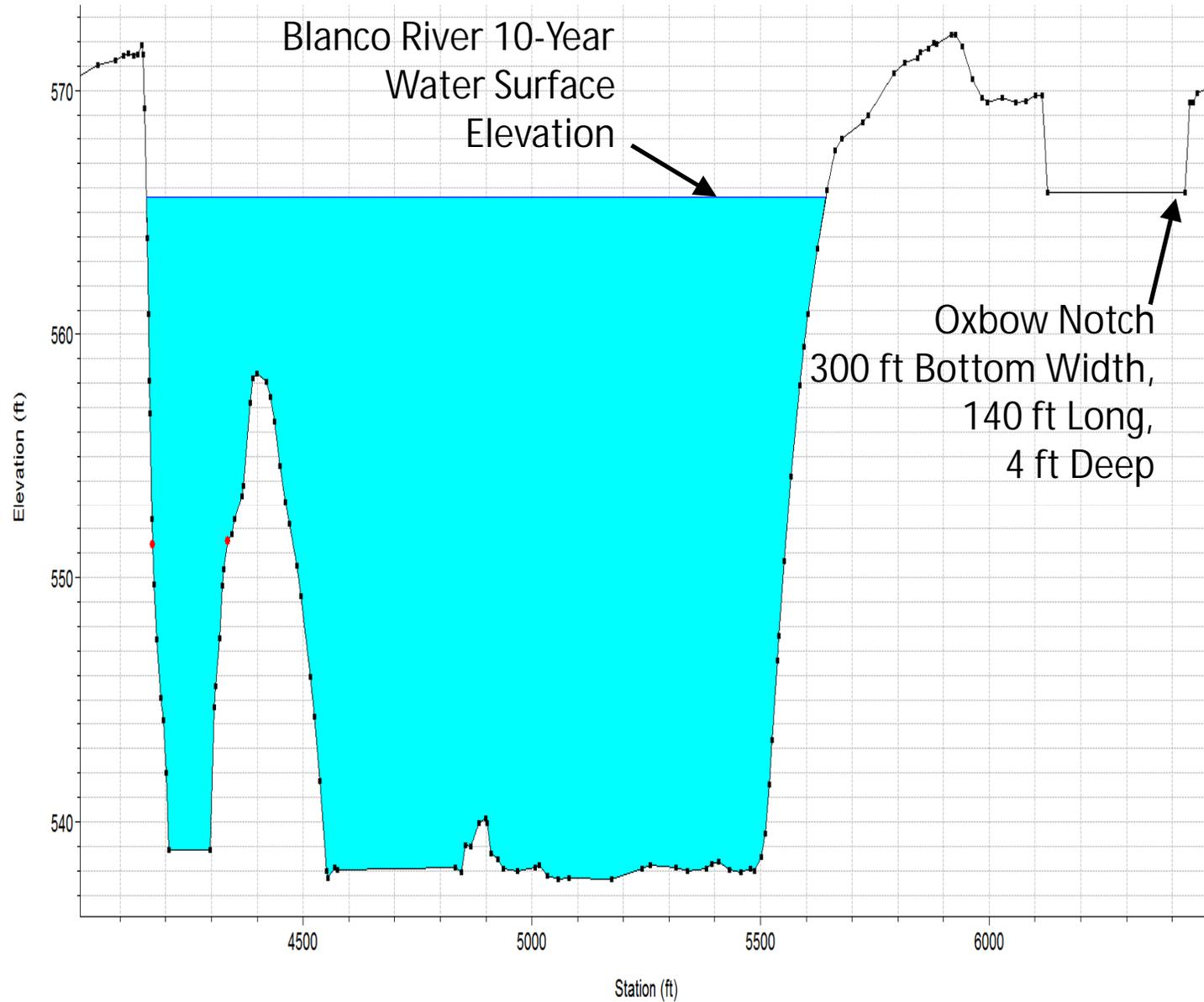
# SAN MARCOS Cross Section



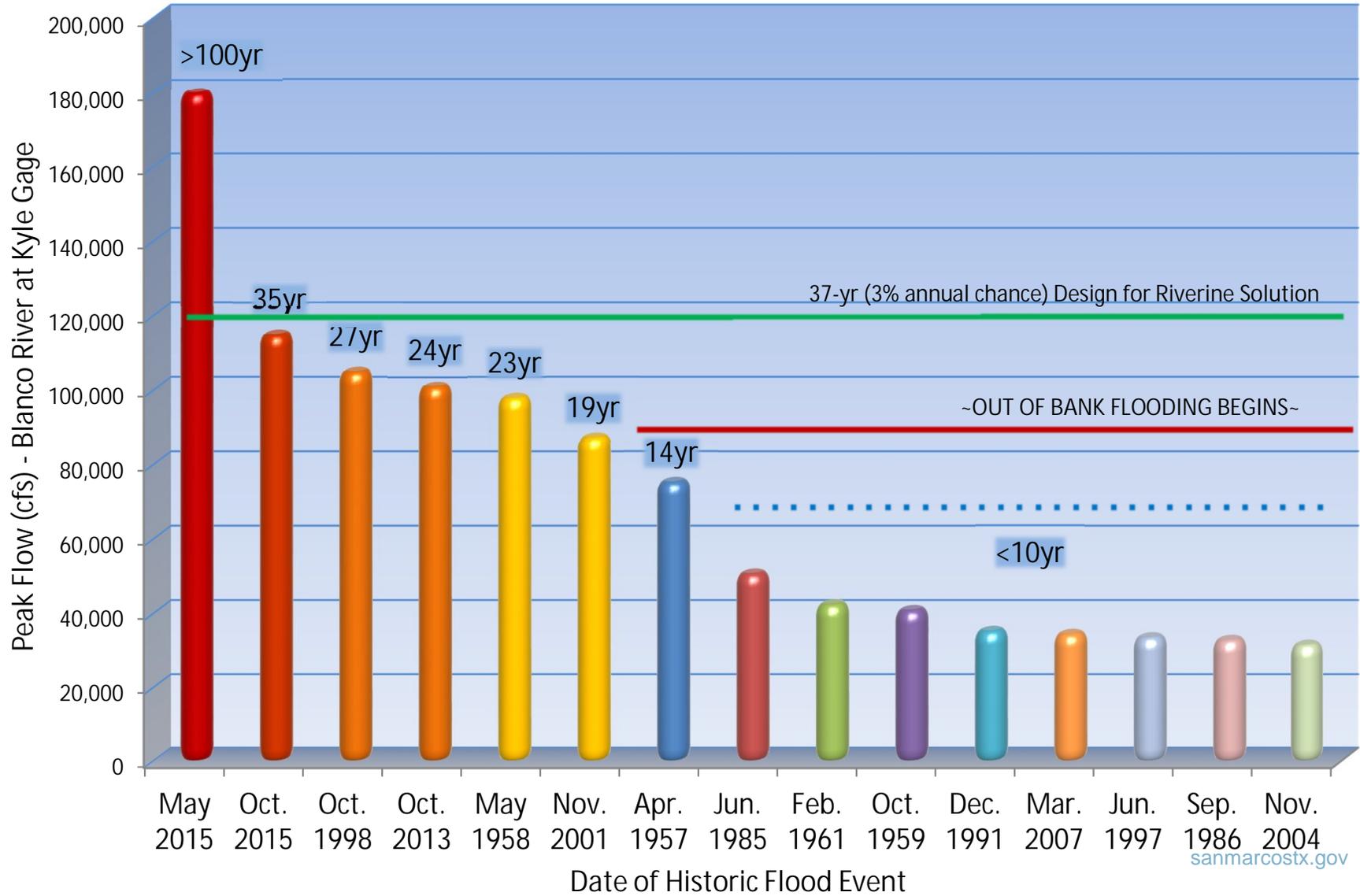
# SAN MARCOS Oxbow Notch



# SAN MARCOS Cross Section



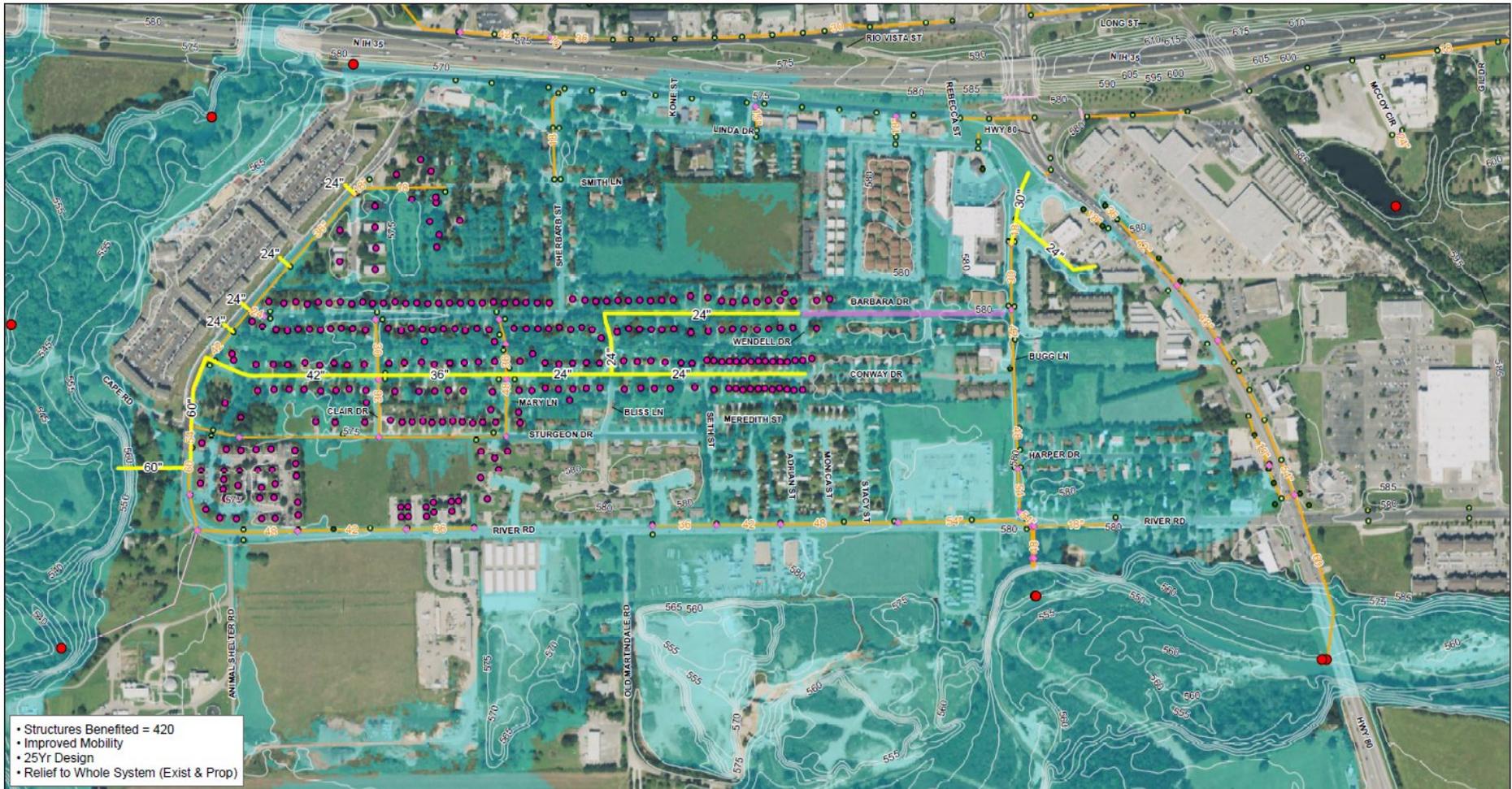
# Historic Flood Events - Blanco River



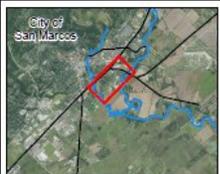
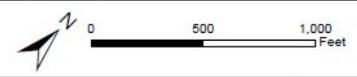
# Rainfall & Local Drainage Solutions



# SAN MARCOS Rainfall – Blanco Gardens



- Structures Benefited = 420
- Improved Mobility
- 25Yr Design
- Relief to Whole System (Exist & Prop)



- Legend**
- Outfalls
  - Junction Box
  - Curb Inlet
  - Area Inlet
  - Structures Benefited
  - Existing Storm Sewer
  - Culvert
  - Proposed Storm Sewer
  - 5ft Contours
  - Roadway Regrading
  - 25Yr Floodplain

Blanco Gardens & Clarewood  
Project Overviews

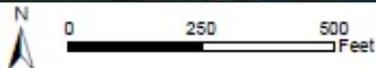
**AECOM**  
3400 Aramburg Blvd  
Austin, TX 78723  
Phone: (512) 454-4797  
www.aecom.com



# Rainfall - Clarewood/Barbara Drive



- Structures Benefited = 76
- Improved Mobility
- 25Yr Design
- Relief to Exist System



**AECOM**  
4400 Cameron Blvd  
 Austin, TX 78728  
 Phone: 512.328.4247



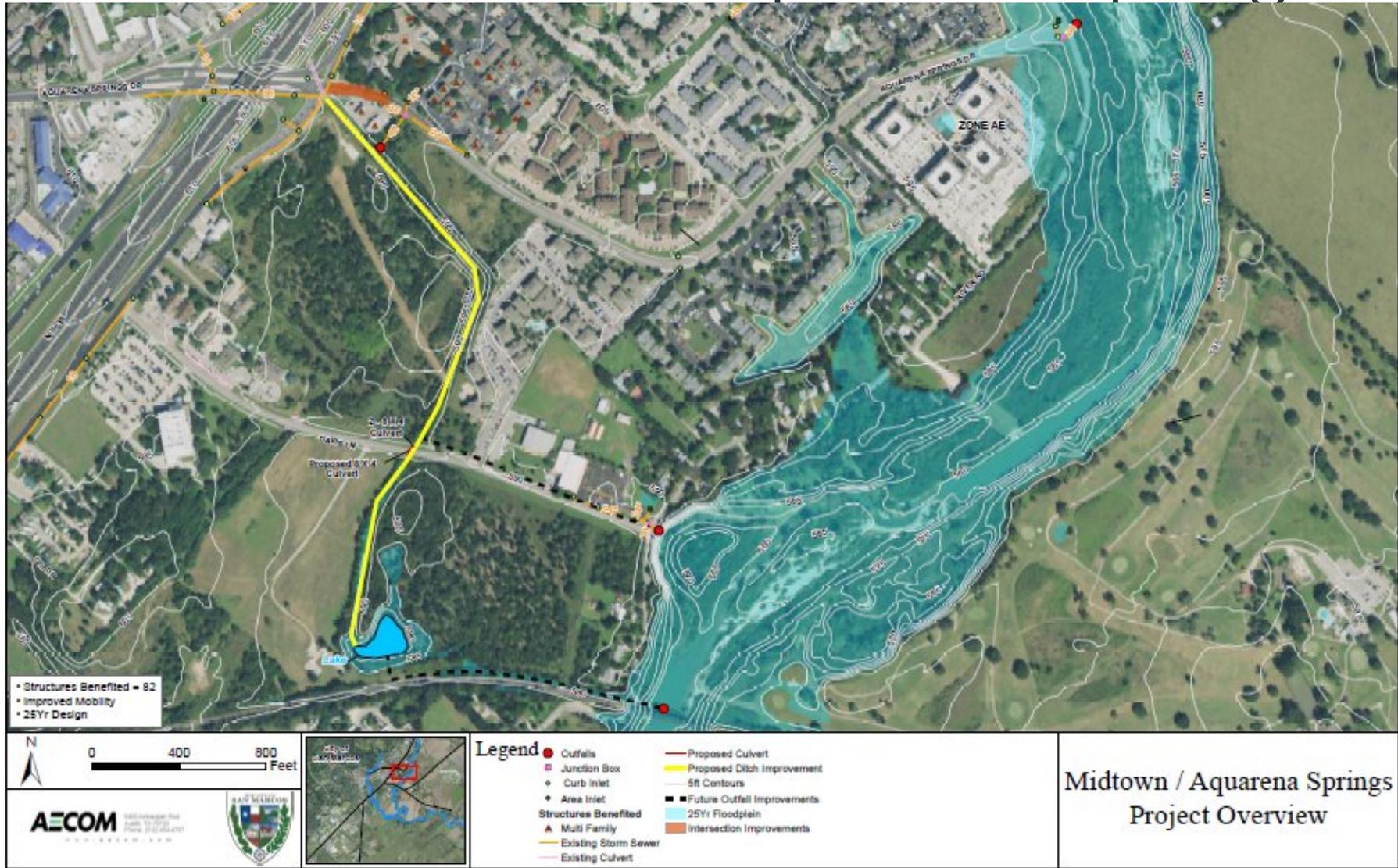
**Legend**

- Junction Box
- Curb Inlet
- Area Inlet
- Structures Benefited
- ▲ Multi Family
- Existing Storm Sewer
- Culvert
- Proposed Storm Sewer
- SR Contours
- Roadway Regreeding
- 25Yr Floodplain

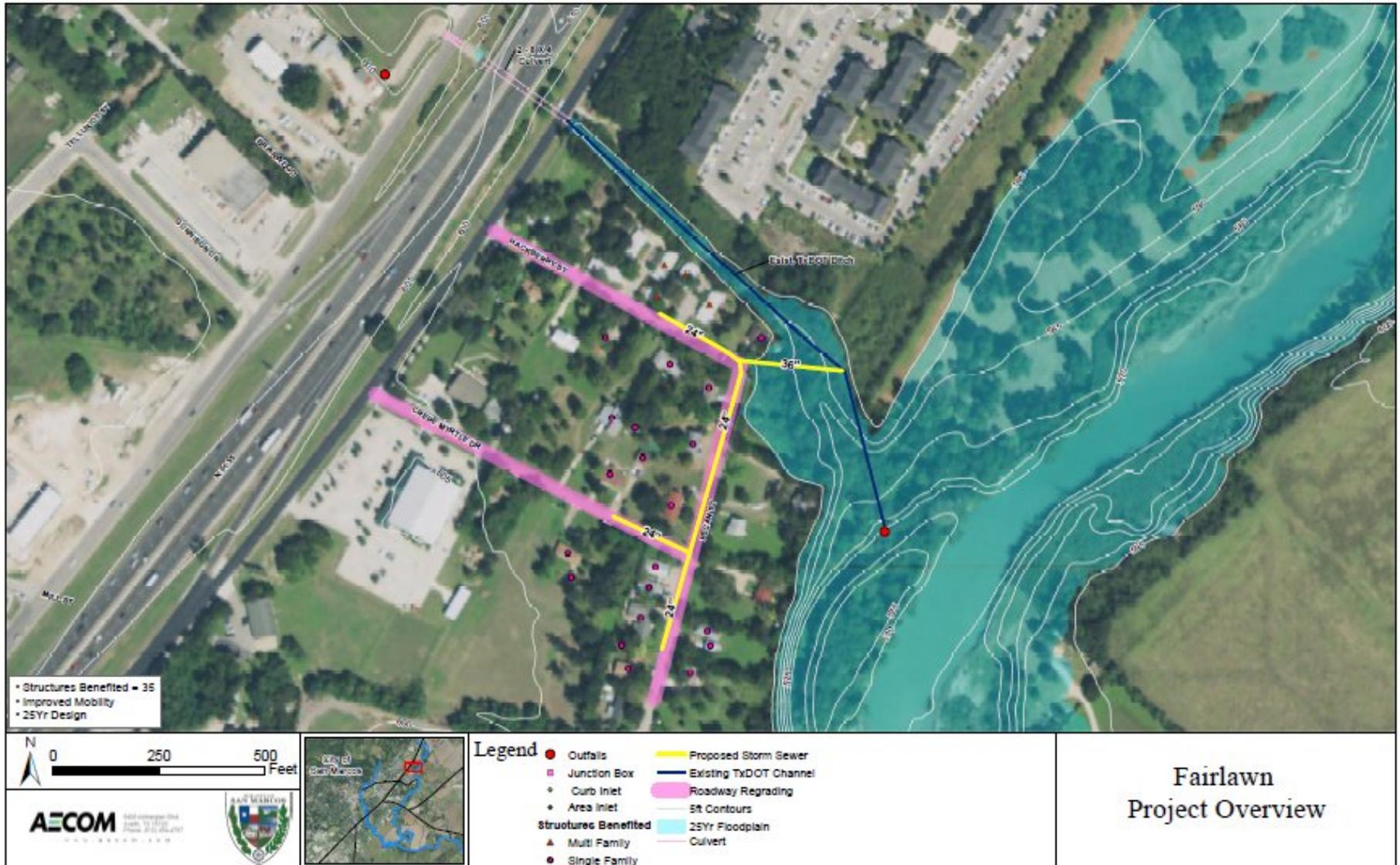
Clarewood / Highway 80  
 Project Overview



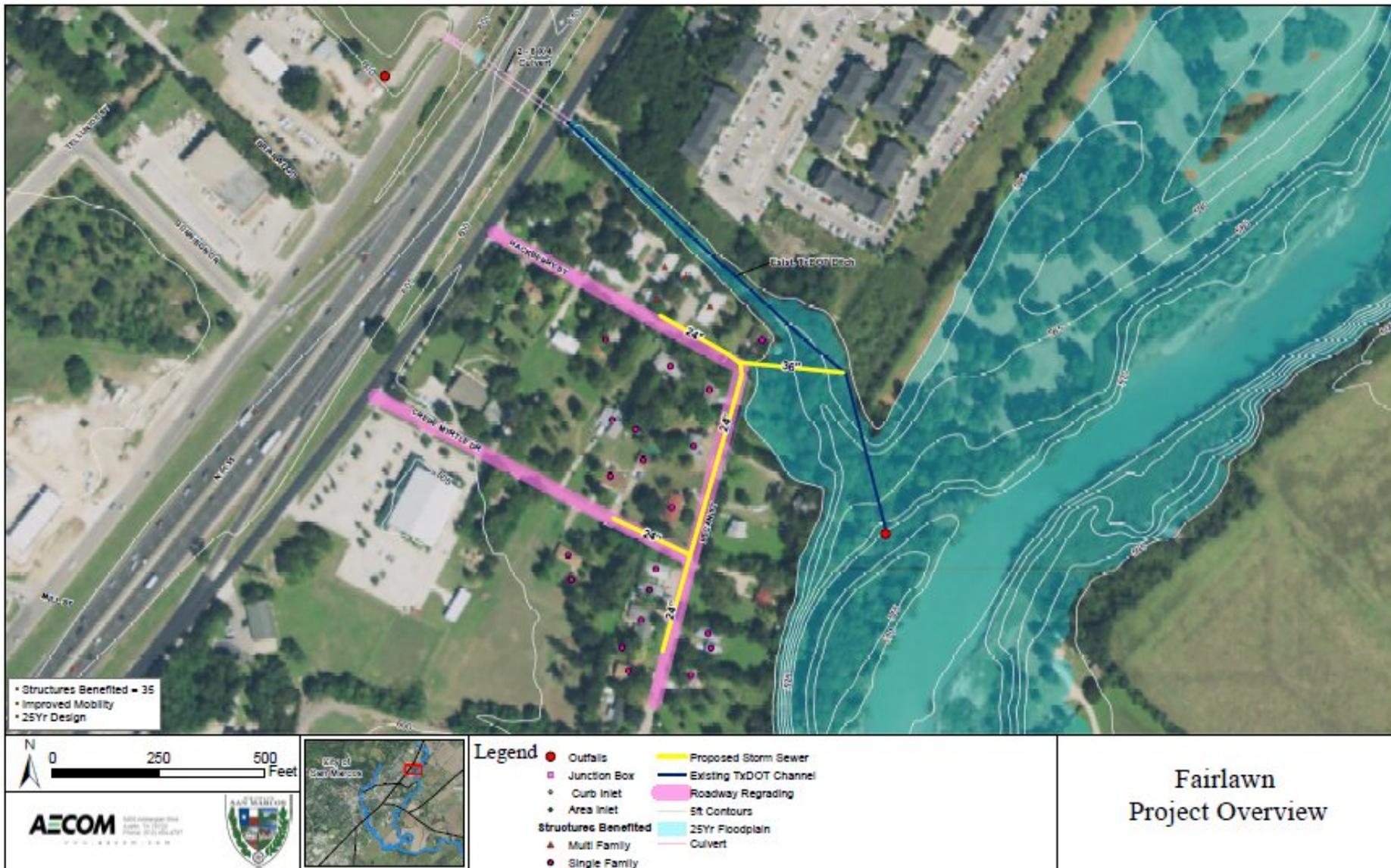
# Rainfall - Midtown/Aquarena Springs



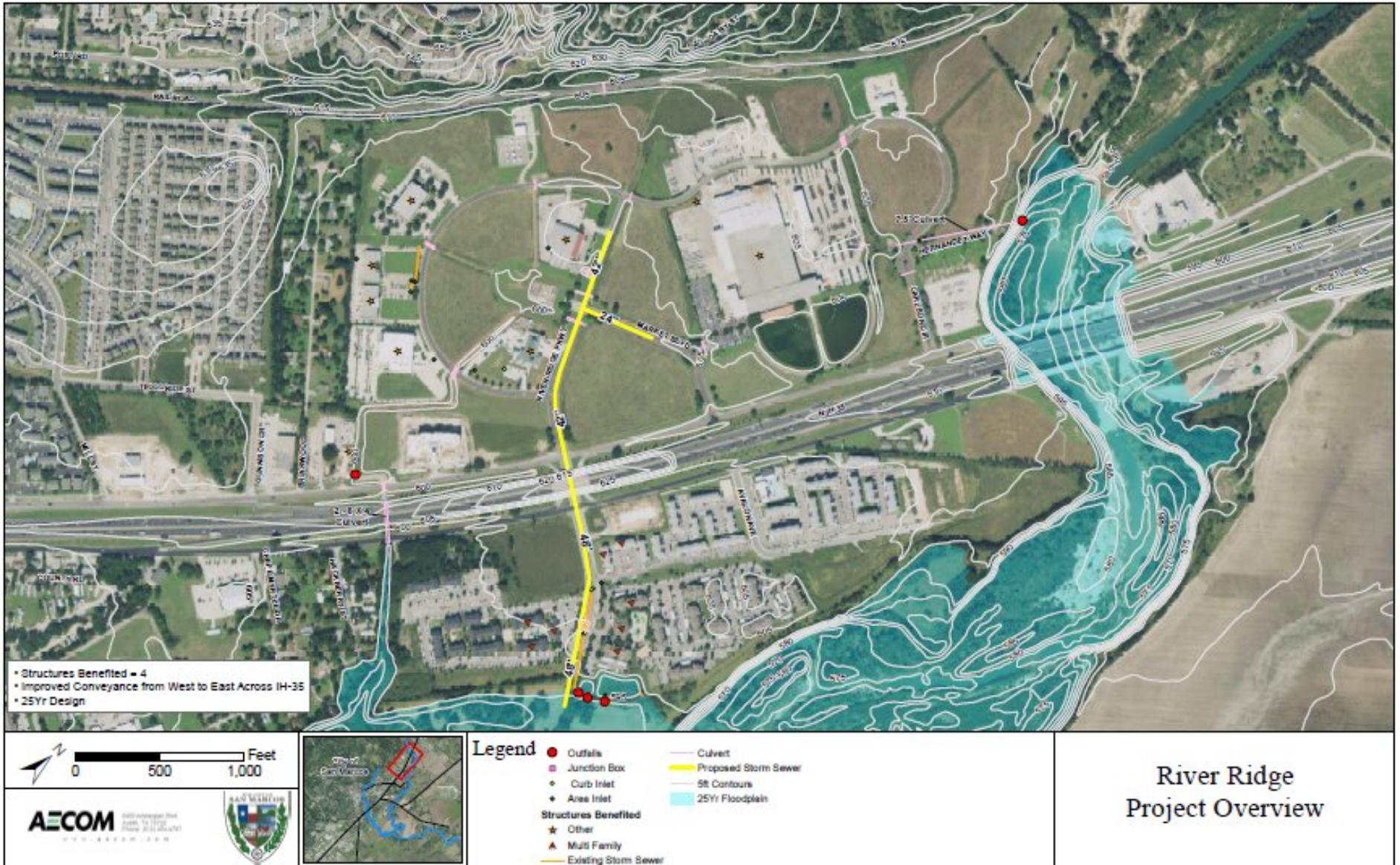
# Rainfall - Uhland Rd/County Rd



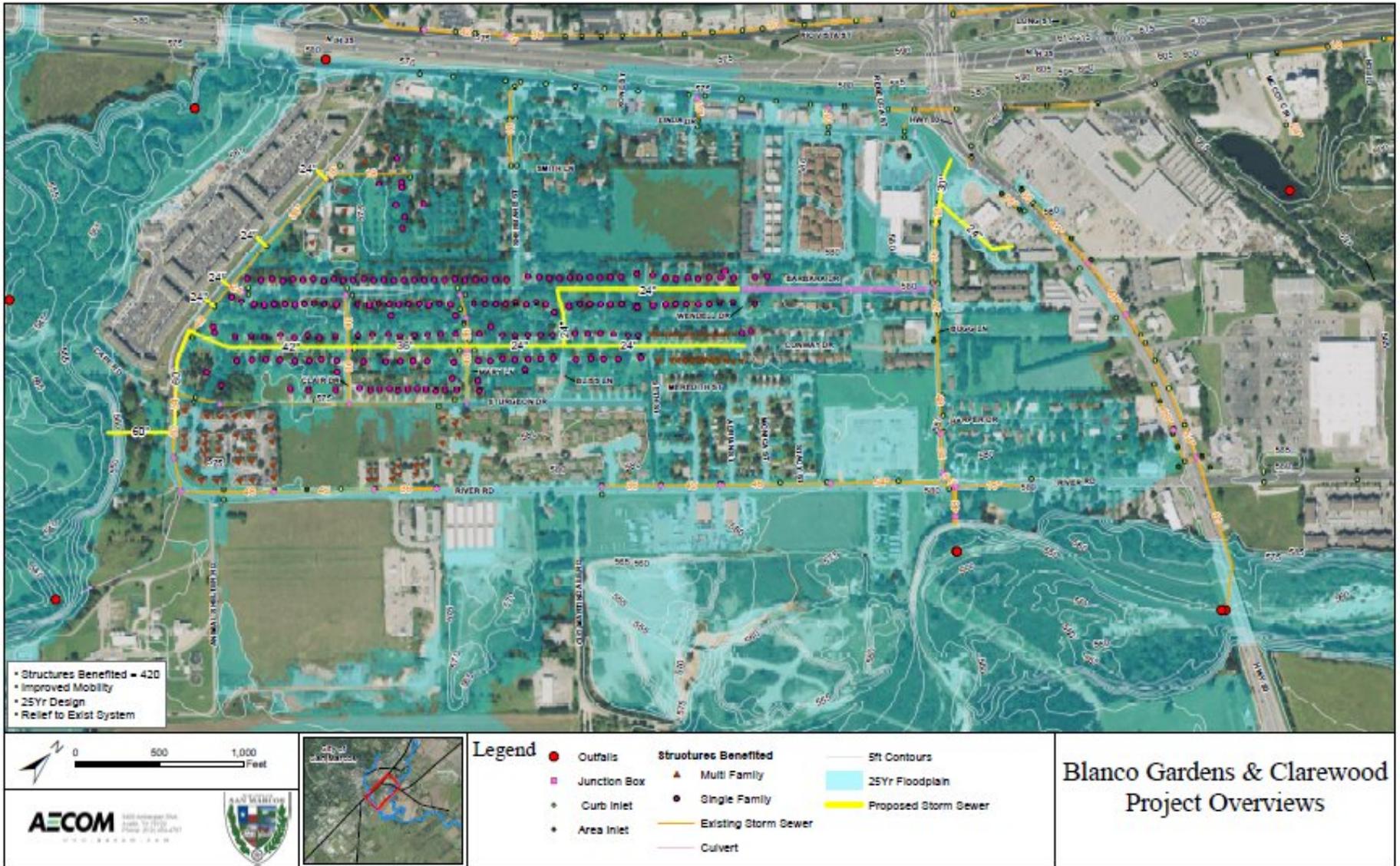
# Rainfall - Fairlawn



# 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  
**Prioritization Matrix Results & Ranking**

	LMI Population Benefitted	Flood Risk Reduction: Level of Service	Flood Risk Reduction-# Structures Benefitted	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	5	5	0	3	3	71	2
Area 2- Clarewood	18	4	10	13	5	5	5	3	3	3	69	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 6- River Ridge	16	4	2	0	5	5	3	3	3	3	44	6
Area 7- Rio Vista	18	4	5	7	0	5	0	0	0	3	42	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 Drive/Highway 80**
4. **Bike 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
Midtown/Aquarena Springs	\$ 431,461
Rio Vista	\$ 676,913
Fairlawn	\$ 1,504,090
Clarewood/Highway 80	\$ 2,298,045
Uhland Road	\$ 2,545,007
Blanco Gardens	\$ 3,185,217
River Ridge	\$ 4,617,260
Bike Trail & Blanco Riv. Imp.	\$ 9,390,000
<b>Total Local/Rainfall</b>	<b>\$ 15,257,993</b>
<b>Total All</b>	<b>\$ 24,647,993</b>



# Package Options

- **City Staff**



# Discussion



## Next Steps for Recovery – Six Month Snapshot

