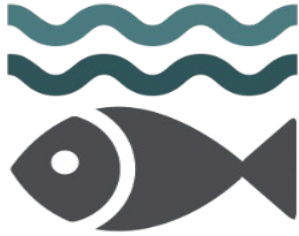




# Environmental Action Committee CLEAN Strategic Goal Briefing

December 11, 2020





# CLEAN

**OBJECTIVE 1:** Implement ecosystem restoration and habitat protection projects to support more livable and resilient communities

**OBJECTIVE 2:** Complete studies and water quality monitoring to support science-based decision making

**OBJECTIVE 3:** Invest in projects and incentives that improve water quality within the basin

**OBJECTIVE 4:** Provide wastewater treatment utility services to support the vitality of the communities we serve





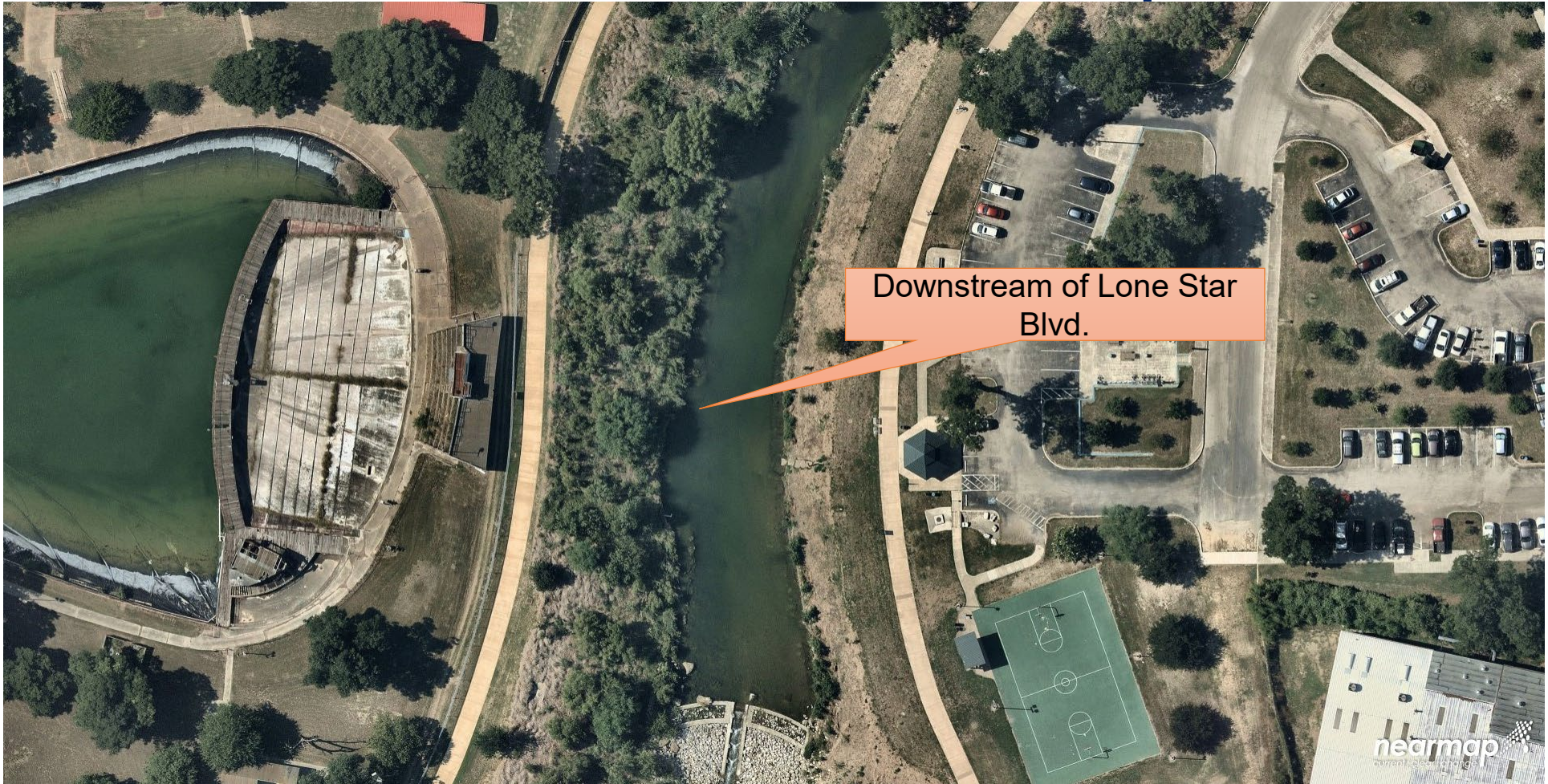
# CLEAN

1. Implement ecosystem restoration and habitat protection projects to support more livable and resilient communities





# Lone Star Erosion Repair



Downstream of Lone Star  
Blvd.



**Committed to Safe, Clean, Enjoyable Creeks and Rivers.**



# Bank Erosion



# Natural Channel Design

- Bank structural restoration using toe wood
- Aquatic habitat and ecosystem restoration

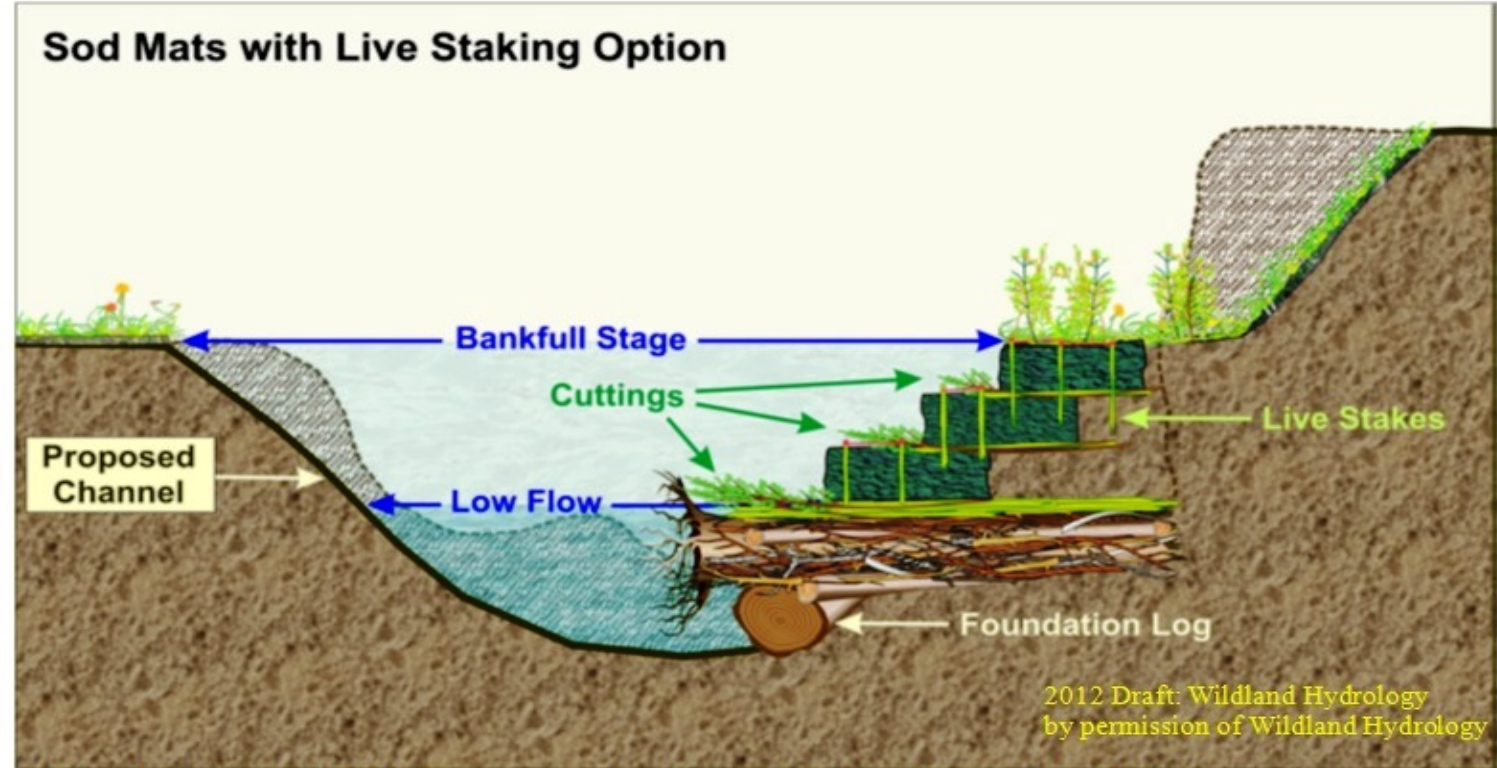


Figure 13: Illustration of toe wood methodology using sod mats applied to left bank, shown in Figure 11





# Toe wood Installation

- 30 root wads installed along bank





# Live Stake Installation

- 100 Black Willow live stakes





# Before



# After



## Construction: May – July 2020



- Habitat Enhancement





# Blue Hole Restoration





# Blue Hole Restoration

- River Authority
  - Invasive and non-native tree removal
- City of San Antonio
  - Tree mitigation fund provided trees/plants
- Headwater Sanctuary
  - Planted trees and plants







**CLEAN**

2. Complete studies and water quality monitoring to support science-based decision making



# Mission Reach Intensive Nekton Survey

- Conducted October 5-8 to identify species diversity and habitat associations
- 27 species observed, only 21 observed in 2019
- Species of note:
  - Gray Redhorse
  - Texas Logperch
  - Guadalupe Bass





# Clean Rivers Program (CRP)



- Conducted 28 fish and habitat surveys, 4 aquatic insect surveys
- All other CRP partners combined conducted 32 fish and habitat surveys



# Mission Reach E. Coli Sampling

- Joint effort between WPO and ESD
- Provide information to management to determine if non-contact ordinance can be lifted





# Mission Reach E. Coli Sampling

- Provide information of E. coli levels and determine how many days per year each site is meeting State of Texas swimming standard (daily)
- Determine the nature of the fecal contamination (Human/Non-Human and Quantification)



# Mission Reach E. Coli Sampling

- Samples Collected 7 days a week
- Four site are collected:
  - SAR at center of walking bridge upstream of SPC confluence
  - SAR @ Padre Park upstream of the chute
  - Espada remnant of the SAR at walking bridge
  - SAR at low water crossing Camino Coahuilteca





# Mission Reach E. Coli Sampling

- Data collected include:
  - *E. coli*
  - Bacteria Source Tracking- Human only
  - Observations
  - Weather Conditions
- ESD anticipates providing an update to the Operation Committee of the Board of Directors mid-year (likely February 2021)





**CLEAN**

3. Invest in projects and incentives that improve water quality within the basin





# Watershed Wise Rebate Summary

- 2020/21 is Seventh Year
- Bexar, Wilson, Karnes and Goliad counties
- 28 Projects Complete
- 12 Schools – 16 Rebates
- Calculated Annual Benefits:

Treated Volume

1,311,700 CF = 9,812,197 gallons  
= 14.9 Olympic Size Swimming Pools

Removed

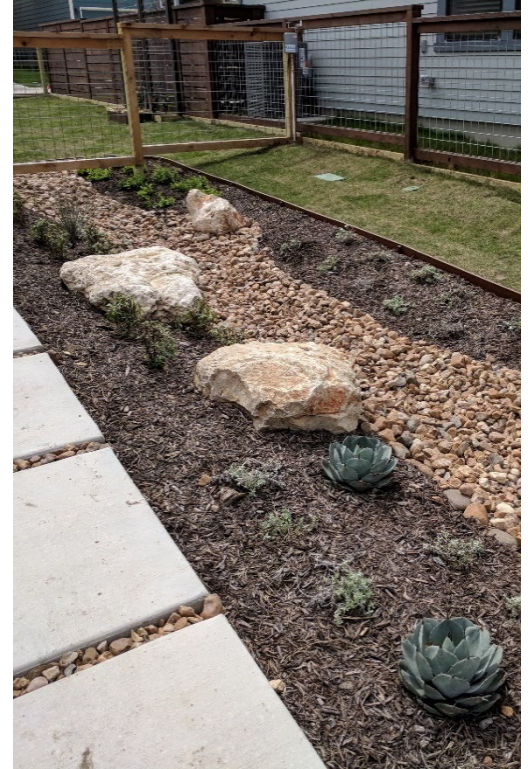
3,421 lbs. of Sediment

13,875 Billion Colonies of Bacterial



# Watershed Wise Rebate 2020-21

- Budget \$500,000
- Application due October 30, 2020
- Targets
  - High priority SubBasins from Model
  - High priority uses – transportation – parking
  - Direct impact on local creek or river
  - Amount of treatment





# COSA Bond Projects' LID Implementation



# Interlocal Agreement with the City of San Antonio

- Agreement approved in Oct 2019
  - SARA will partner with the City of San Antonio to incorporate BMPs on select 2017-2022 bond projects
- Implement BMPs with the goal to meet primary contact standards





# Bond Projects for BMP Consideration

- Lower Broadway
- Upper Broadway
- S. Alamo Street
- Roosevelt Avenue
- World Heritage Center
- District 9 Senior Center
- Woodlawn Multi-Generational Center



# Woodlawn MG Center

- Design complete
- Contract negotiation
- 3 cisterns and 2 bioretention areas







CLEAN

4. Provide wastewater treatment utility services to support the vitality of the communities we serve



# Key Metrics - Utilities

- Infrastructure Management (SSOs)
- Wastewater Treatment Plant Management
- Wastewater Treatment Plant Discharge Water Quality – E.coli





# Infrastructure Management – SSOs

- Number of sanitary sewer overflows (SSOs) that occur within the River Authority's wastewater systems and those in the wholesale wastewater systems.
- SSOs
  - Releases of untreated sewage into the environment.
  - Pose a substantial health and environmental challenge.
  - Caused by collection systems that are old and in disrepair; wipes, fats, oil and grease build up in collection pipes, inflow and infiltration where stormwater infiltrates sewer pipes, or in some instances people throwing materials into manholes which create blockages.
  - If they enter our water ways, they effect water quality.



# Infrastructure Management - SSOs

Year	Salitrillo	Upper Martinez	Martinez II	Martinez IV	FRA
FY 20 – entire					
FY 21 – Q1	1	1	0	0	0





# Wastewater Treatment Plant Management

- TCEQ provides each WWTP its own permit limits for the effluent discharged to the creeks.
- Number of permit violations per River Authority WWTP within a calendar year.
  - BOD, TSS, NH<sub>3</sub>, DO, PH, Two-hour peak, E.coli



# Wastewater Treatment Plant Management

- **Two-hour peak** violations are solely dependent on rain events which typically indicate excessive **inflow and infiltration** into a collection system
- **Inflow** is water that is dumped into the sewer system through improper connections such as downspouts and ground water sump pumps. **Infiltration** is groundwater that enters the sewer system through leaks in the pipes.





# Permit Violations – 1<sup>st</sup> Qtr. 20/21

Salitrillo	Upper Martinez	Martinez II	Martinez IV	FRA
0	0	0	4	0



# Wastewater Treatment Discharge Water Quality

- As required by Texas State law certain regulations appear as standard conditions in wastewater discharge permits.
  - BOD, TSS, NH3, DO, PH, Two-hour peak, [E.coli bacteria \(E. coli\)](#)
- Many creeks in the San Antonio River Basin are challenged by [E. coli](#).
- River Authority's compliance with the effluent water quality discharge criteria
  - monthly [E.coli](#) maximum probably number (MPN) annual average was examined





# E-Coli Permit Levels – 1<sup>st</sup> Qtr. 20/21

	Salitrillo	Upper Martinez	Martinez II	Martinez IV	FRA
	E. Coli MPN	E. Coli MPN	E. Coli MPN	E. Coli MPN	E. Coli MPN
Jul-20	78	6	7	9	1
Aug-20	160	24	61	2	1
Sep-20	32	130	210	2	1

E-Coli Permit limit = 399 MPN Daily Max



# Wastewater Treated – 1<sup>st</sup> Qtr. 20/21

Salitrillo	Martinez II	Upper Martinez	Martinez IV	FRA	Total Treated
Gallons	Gallons	Gallons	Gallons	Gallons	Gallons
356,242,921	188,716,133	136,885,325	34,781,994	139,650	<u>716,766,023</u>





# Questions?

