

POTENTIAL MANAGEMENT MEASURES

Overview

Review Management Measure Goals decided at our last meeting.

Identify a timeline for implementation and an estimate of costs and responsible parties.

MM 1: Developing and Implementing Water Quality Management Plans or Conservation Plans

- Work with landowners to develop property-specific CPs and WQMPs (400 over 10 years – 200 plans in Petronila watershed and 200 in San Fernando watershed)
- Develop funding to hire WQMP technician
- Deliver education and outreach programs and workshops for landowners
- Direct mail outs about CPs and WQMPs
- *Potential Responsible Parties: TSSWCB, SWCDs, NRCS, Landowners, Lessees*

MM 1	Estimated Unit Cost	# Implemented (year 1-3)	# Implemented (year 4-6)	# Implemented (year 7-10)	Estimated Total Cost
Develop WQMPs	\$15,000 per plan	90 – a combination of CPs and WQMPs	130 – a combination of CPs and WQMPs	180 – a combination of CPs and WQMPs	\$6,000,000
Develop CPs	***				***
Deliver O/E	NA	1	1	1	NA

- **** unit costs for NRCS Conservation Plans vary widely depending on plan specifics*

MM 2: Promote technical and direct operational assistance to landowners for feral hog control

- Work with landowners to reduce feral hog populations by 15% in Petronila watershed (590 hogs annually) and 15% in San Fernando watershed (2,674 hogs annually)
 - Voluntarily construct fencing around deer feeders
 - Voluntarily trap/remove feral hogs
- Provide education and outreach to stakeholders
- *Potential Responsible Parties: AgriLife Extension, TSSWCB, SWCDs, NRCS, landowners, lessees*

MM 2	Estimated Unit Cost	# Implemented (year 1-3)	# Implemented (year 4-6)	# Implemented (year 7-10)	Estimated Total Cost
Construct Feeder Fencing	\$200 per feeder	As many as possible			NA
Trap/Remove feral hogs	NA	3,264 hogs per year (15% reduction in each watershed)			NA
Feral Hog Education	\$3,000 each	1	1	1	\$9,000

MM 3: Identify and repair or replace failing on-site sewage systems

- Inspect failing OSSFs in the watershed and secure funding to promote OSSF repairs
- Repair or replace OSSFs (100 over the 10 years – 40 OSSFs in Petronila and 60 OSSFs in San Fernando Creek watersheds)
- Educate homeowners on proper maintenance
- *Potential Responsible Parties: AgriLife Extension, county staff/DR, homeowners, contractors, Voices of the Colonias*

MM 3	Estimated Unit Cost	# Implemented (year 1-3)	# Implemented (year 4-6)	# Implemented (year 7-10)	Estimated Total Cost
Identify, inspect, repair/replace OSSFs, as funding allows	\$8,000-10,000	20	30	50	\$800,000 - \$1,000,000
Deliver O/E	\$3,500	1	1	1	\$10,500

MM 4 – Lawn and Landscape Maintenance

- Expend education and outreach messaging on disposal of pet waste, implement pet waste station and give out pet disposal bag carriers to owners.
- Include education and outreach materials on proper fertilizer and pesticide use and irrigation management for homeowners.
- Goal is a 20% behavior change in the watershed of those folks who do not pick up after pets or maintain lawns appropriately.
- *Potential Responsible Parties: AgriLife Extension, Texas SeaGrant, Nueces River Authority, local communities, HOAs*

MM 4	Estimated Unit Cost	# Implemented (year 1-3)	# Implemented (year 4-6)	# Implemented (year 7-10)	Estimated Total Cost
Pet waste stations/personal carriers	\$500 per station	10	20	20	\$25,000
Educational programming for homeowners	\$3,000	1	1	1	\$9,000
Homeowner outreach materials	NA	1	1	1	NA

MM 5 – Implement and expand urban and impervious surface stormwater runoff management

- Education and Demonstration sites to inform residents about stormwater BMPs (Green Stormwater Infrastructure)
- Identify and Install stormwater BMP sites, stream restoration projects
- Potential Responsible Parties: Nueces River Authority, CBBEP, cities, AgriLife Extension

MM 5	Estimated Unit Cost	# Implemented (year 1-3)	# Implemented (year 4-6)	# Implemented (year 7-10)	Estimated Total Cost
Identify and Install stormwater BMPs/Demo sites	\$4,000 - \$45,000 per acre	As many as possible			NA
Deliver O/E	NA	1	0	1	NA

MM6 – WWTF Infrastructure Repair and Replace

- Reduce unauthorized discharges and SSOs
- Replace and Repair infrastructure where problems have been identified
- Develop and Deliver education material to resident and property owners
 - Proper Disposal Fats, Oils and Grease and unflushables
 - \$41.5 million to repair infrastructure at all the plants that NRA have evaluated.
- *Potential Responsible Parties: Nueces River Authority, WWTFs, Cities*

MM 6	Estimated Unit Cost	# Implemented (year 1-3)	# Implemented (year 4-6)	# Implemented (year 7-10)	Estimated Total Cost
Identify and replace pipes / Infrastructure contributing to problems	\$3,000,000 - \$4,000,000 per site	As identified/needed			
Deliver O/E	NA	1	1	1	NA

MM 7 – Reduce Illicit Dumping

- Increase awareness of proper disposal techniques and reduce illicit dumping of waste and animal carcasses
 - Develop and deliver educational and outreach materials to residents.
 - Hazardous Waste Collection events watershed-wide (Annually).
 - Stream Clean up events around the watershed
- *Potential Responsible Parties: Local communities, cities and counties, Nueces River Authority*

MM 7	Estimated Unit Cost	# Implemented (year 1-3)	# Implemented (year 4-6)	# Implemented (year 7-10)	Estimated Total Cost
Hazardous waste collection events	\$35,000 - \$60,000 per event	3	3	3	\$315,000 - \$540,000
Deliver O/E	\$7,000	1	1	1	\$21,000

Questions?

Clare Escamilla
Texas Water Resources Institute
clare.entwistle@ag.tamu.edu

Lucas Gregory, PhD
Texas Water Resources Institute
LFGregory@ag.tamu.edu

Ennis Rios
Texas Water Resources Institute
Ennis.Rios@ag.tamu.edu

"This effort was funded through a State Nonpoint Source grant from the Texas State Soil and Water Conservation Board."