Watershed Protection Department

Consultant & Construction Contractor Symposium

September 18, 2019

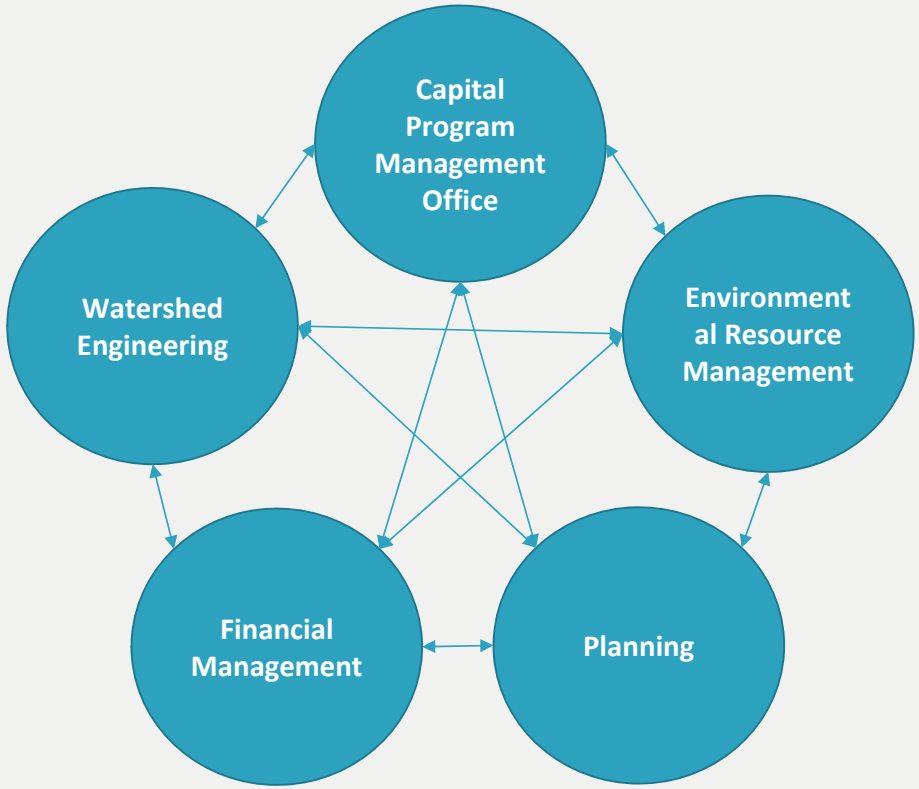
WPD Capital Program Management

Challenges

- Legacy development impacts on drainage
- Aging infrastructure
- Growth – population, infill/re-development
- Public expectations re: level-of-service, timelines
- Atlas 14 – new rainfall intensity standard

Objectives

- Capital project delivery processes improvements
- Funding strategies
- Project tracking and reporting
- Coordinate directly with external support services
- Deploy asset management framework
- Identify cross-department coordination opportunities



Typical Drainage Problems

Typical WPD Project Types

- Storm Drain Systems
- Drainage Channels/ Creek Restoration
- Stormwater Control Structures (i.e. ponds)
- Low Water Crossing Upgrades
- Floodplain Studies
- Environmental Feature Protection

Upcoming Opportunities: Professional Services

Floodplain Mapping Rotation List – FY20

Prepare updated floodplain studies for all watersheds completely and partially within the City's jurisdiction areas. Prompted by the adoption of new design rainfall criteria based on NOAA Atlas 14.

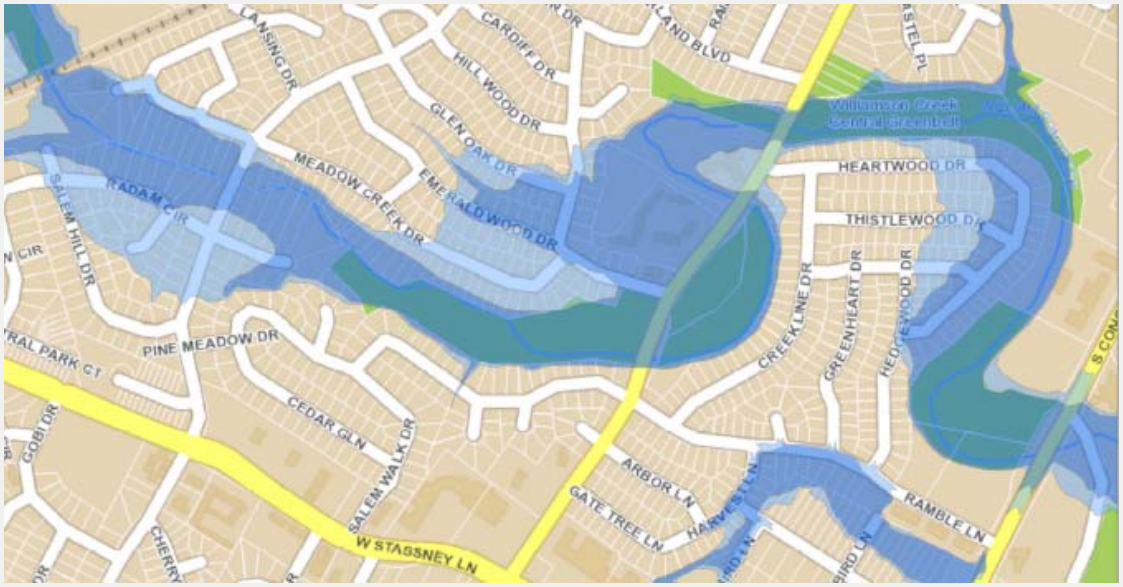
Anticipated ~ 5 firms & Total Authorization ~$17M

Type of Work Performed

- Hydrologic & Hydraulic Studies
- Floodplain Mapping
- Surveying

Top Team Additional Authorization

- QA review, per FEMA standards
- Support for public meetings.

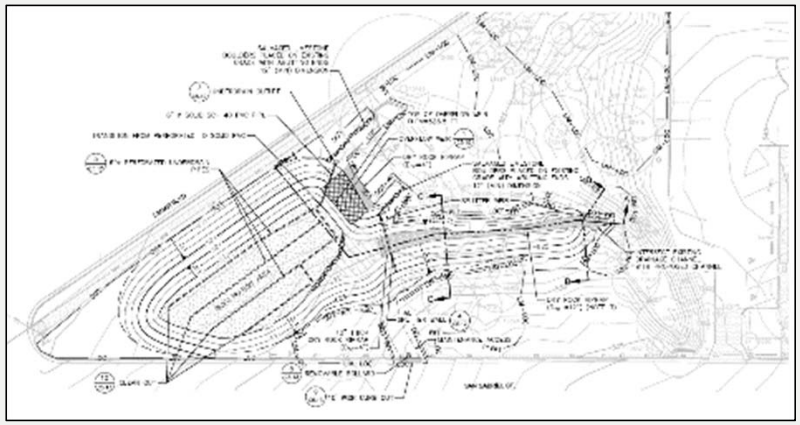


Upcoming Opportunities: Professional Services

Stream Restoration and Stormwater Treatment Engineering - FY20

Preliminary, design and construction phase engineering services for creek erosion stabilization and stormwater quality measures

Anticipated ~4 firms Total Authorization ~ $12M

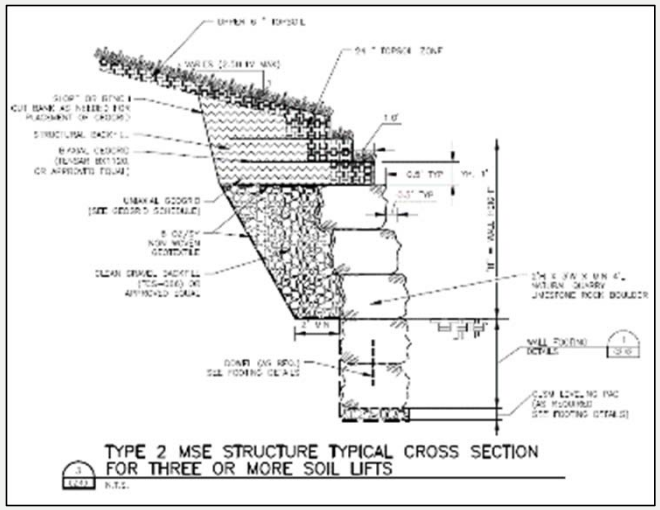


Biolfiltration Pond

Type of Work Performed

- Streambank Stabilization Design
- Landscape Architecture
- Hydrologic & Hydraulic Analysis
- Stream Geomorphology
- Water Quality Modeling/Design
- Surveying
- Geotechnical/Structural Engineering

Streambank Stabilization



Upcoming Opportunities: Construction

Invitation for Bid (IFB) Individual Projects

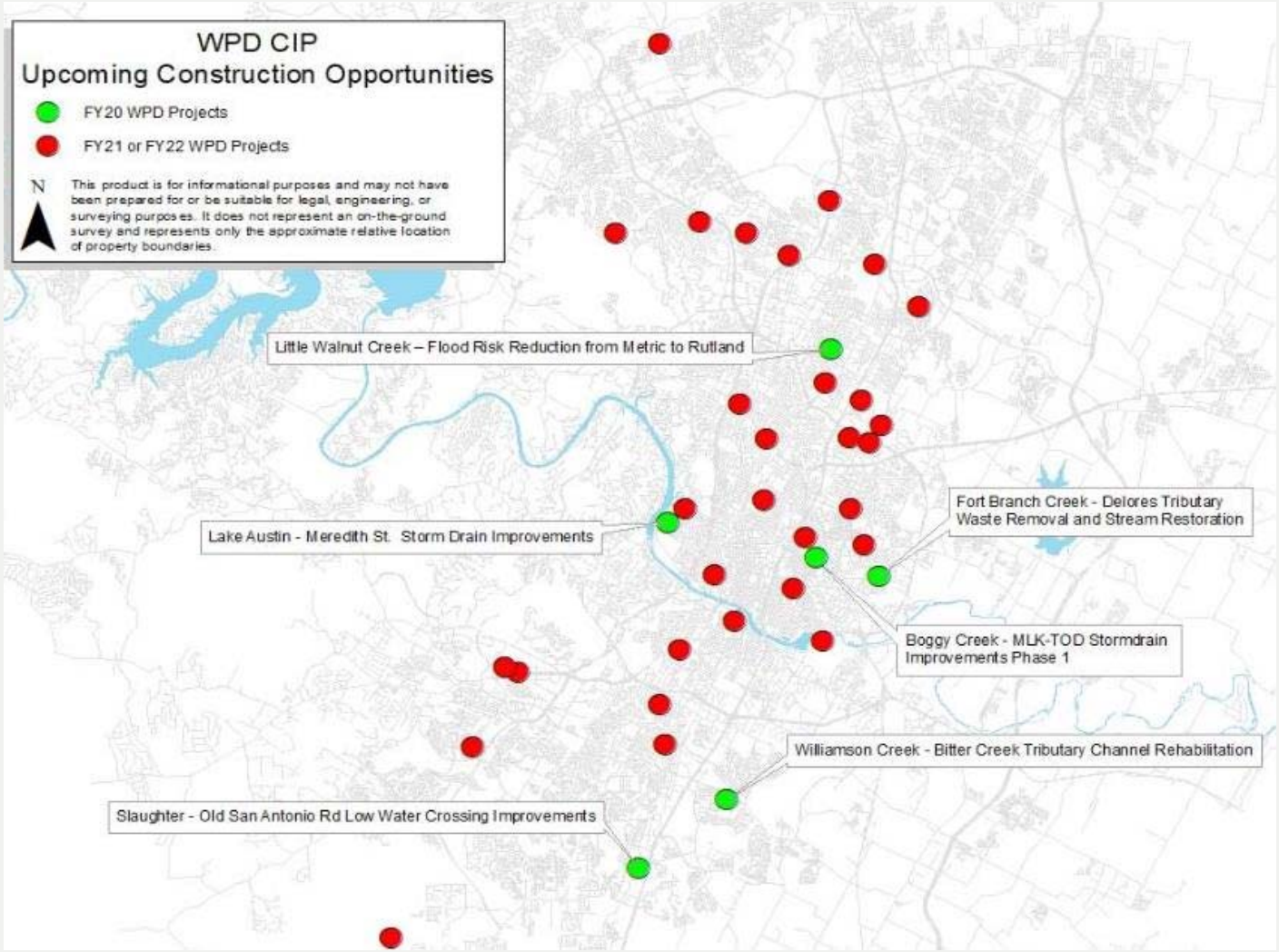
Name	Primary Project Type	Estimated Construction Cost*
Boggy Creek – MLK-TOD Storm Drain Improvements Phase 1	Storm Drain System	**$2,800,000**
Williamson Creek – Bitter Creek Tributary Channel Rehabilitation	Drainage Channel	**$2,410,000**
Lake Austin – Meredith St Storm Drain Improvements	Storm Drain System	**$4,730,000**
Little Walnut Creek – Flood Risk Reduction from Metric Blvd to Rutland Dr	Storm Drain System	**$16,600,000**
Fort Branch Creek – Delores Ave Tributary Waste Removal and Stream Restoration	Drainage Channel	**$2,673,000**
Slaughter – Old San Antonio Rd Low Water Crossing Improvements	Low Water Crossing	**$560,000**
	***Total Construction**	**$29,773,000**

Indefinite Delivery Indefinite Quantity (IDIQ)

Name	Primary Project Type	Estimated Authorization (3 years)
Stormwater Infrastructure Management - Open Systems IDIQ	Drainage Channel and Ponds	**$6,000,000**

*Costs are approximate for presentation purposes only

Construction Projects



Boggy Creek Watershed

MLK-TOD Storm Drain Improvements Phase 1

Description

This project is the implementation of storm water conveyance infrastructure improvements in the Transit Oriented Districts (TODs) funded by the Watershed Protection Department. Improvements include new stormdrain infrastructure on E Martin Luther King Jr Blvd and Alexander Ave.

Construction Components

- ✓ Roadway excavation
- ✓ Cast-in-place concrete
- ✓ Storm drain/culvert installation
- ✓ Full depth street reconstruction
- ✓ Sidewalk/driveway approaches
- ✓ Landscaping

Primary Project Type	Storm Drain System
Construction Cost*	**$2,800,000**

*Costs are approximate for presentation purposes only

Construction Components

- ✓ Channel excavation
- ✓ Detention pond excavation
- ✓ Retaining walls
- ✓ Cast-in-place concrete
- ✓ Rock riprap
- ✓ Sheet pile
- ✓ Landscaping

Williamson Creek Watershed

Bitter Creek Tributary Channel Rehabilitation

Description

This project will repair and stabilize approximately 1800 linear feet of degraded stream channel and protect up to 67 residential properties from further erosion damage. The location is on an unnamed tributary to Williamson Creek that is located between Bitter Creek Drive and Bucks Run between Branchwood Drive and William Cannon Drive.

Primary Project Type	Drainage Channel
Construction Cost*	**$2,410,000**

*Costs are approximate for presentation purposes only

Description

This project aims to reduce the flooding of houses and yards with an updated storm drain system. In addition, the project will help improve water quality and erosion issues. This project aims to reduce the flooding of houses and yards with an updated storm drain system. In addition, the project will help improve water quality and erosion issues.

Lake Austin Watershed

Meredith St Storm Drain Improvements

Construction Components

- ✓ Roadway excavation
- ✓ Stormdrain and inlet installation
- ✓ Deep trenching and excavation in rock
- ✓ Geotechnical monitoring
- ✓ Outfall restoration
- ✓ Lab and field testing
- ✓ Landscaping
- ✓ Paving & resurfacing of roadway
- ✓ Void mitigation/cave in the vicinity

Primary Project Type	Storm Drain System
Construction Cost*	**$4,730,000**

*Costs are approximate for presentation purposes only

Little Walnut Creek Watershed

Flood Risk Reduction from Metric to Rutland

Description

Project will include a stormdrain/culvert bypass system under Mearns Meadow, pond improvements at Quail Creek Park, and wastewater system upgrades.

Construction Components

- ✓ Roadway excavation
- ✓ Detention pond excavation
- ✓ Cast-in-place concrete
- ✓ Storm drain/culvert installation
- ✓ Water & wastewater pipe installation
- ✓ Full depth street reconstruction
- ✓ Sidewalk/driveway approaches
- ✓ Trail construction
- ✓ Landscaping

Primary Project Type	Storm Drain System
Construction Cost*	**$16,600,000**

*Costs are approximate for presentation purposes only

Fort Branch Watershed

Delores Tributary Waste Removal and Stream Restoration

Description

Site improvements to remove legacy waste material from the city property and stream, and to stabilize & restore the stream along the Delores Tributary.

Construction Components:

- ✓ Channel excavation
- ✓ Waste removal
- ✓ Native landscape restoration
- ✓ Retaining Wall Construction

Primary Project Type	Drainage Channel
Construction Cost*	**$2,673,000**

*Costs are approximate for presentation purposes only

Slaughter Creek Watershed

Old San Antonio Rd Low Water Crossing Improvements

Description

The intent of this project is to reduce the flood risk associated with the Old San Antonio Rd low water crossing. The project currently intends to permanently close the low water crossing to vehicular traffic, it will remain open to bicycle and pedestrians.

Construction Components:

- ✓ Emergency Access Barrier
- ✓ Cul-de-sac/turn-around construction
- ✓ Park access

Primary Project Type	Low Water Crossing
Construction Cost*	**$560,000**

*Costs are approximate for presentation purposes only