

## 2019 City of New Braunfels Work Plan Budget

HCP Section	Conservation Measure	Table 7.1	Available Budget for 2019	Estimated 2019 Budget	Difference from Available Budget
5.2.1	Flow Split Management	\$30,000	\$30,000	\$0	\$30,000
5.2.2.1/ 5.2.2.3	Old Channel Aquatic Vegetation Restoration & Maintenance	\$100,000	\$100,000	\$50,000	\$50,000
5.2.2.2/ 5.2.2.3	Landa Lake/ Comal River Aquatic Vegetation Restoration & Maintenance	\$50,000	\$50,000	\$100,000	(\$50,000) <sup>1</sup>
5.2.3	Management of Public Recreation	\$0	\$0	\$0	\$0
5.2.4	Decaying Vegetation Removal and Dissolved Oxygen Management	\$15,000	\$15,000	\$15,000 <sup>2</sup>	\$0
5.2.5/5.2.9	Non-Native Animal Species Control	\$75,000	\$75,000	\$55,000	\$20,000
5.2.6/ 6.3.6	Monitoring and Reduction of Gill Parasites	\$75,000	\$75,000	\$10,000 <sup>2</sup>	\$65,000
5.2.7	Prohibition of Hazardous Material Transport Routes	\$0	\$0	\$0	\$0
5.2.8	Native Riparian Habitat Restoration (Riffle Beetle)	\$25,000	\$25,000	\$25,000	\$0
5.2.10	Litter and Floating Vegetation Management	\$0	\$0	\$30,000	(\$30,000)
5.2.11	Golf Course Management	\$0	\$0	\$0	\$0
5.7.1	Native Riparian Habitat Restoration	\$100,000	\$75,000	\$100,000	(\$25,000) <sup>3</sup>
5.7.5	Management of Household Hazardous Waste	\$30,000	\$30,000	\$30,000	\$0
5.7.6	Impervious Cover/ Water Quality Protection	\$150,000	\$250,000 <sup>4</sup>	\$250,000	\$0
	<b>Totals</b>	<b>\$650,000</b>	<b>\$725,000</b>	<b>\$665,000</b>	<b>\$60,000</b>

<sup>1</sup> The increase of \$50,000 for Task 5.2.2.2 is to be offset by a \$50,000 decrease for Task 5.2.2.1.

<sup>2</sup> Funds for these measures will be expended only if low-flow conditions (<100 cfs) are realized at Comal Springs.

<sup>3</sup> The increase in the budget for Task 5.7.1 will be offset by a decreased budget for Task 5.2.6.

<sup>4</sup> The increase in the Task 5.7.6 available budget is a result of the re-allocation of unspent funds from 2018 (\$100,000) to 2019.

### 5.7.6 Impervious Cover/Water Quality Protection

#### Long-term Objective:

To reduce non-point source pollutant discharges to Landa Lake and the Comal River system.

#### Target for 2019:

The City will implement water quality management strategies identified in the *Water Quality Protection Plan (WQPP): Phase I* that was developed in 2017. Specific activities to be completed in 2019 include the design and installation of an underground stormwater filtration to treat stormwater that discharges to Spring Run #1 and design of a stormwater treatment project for a City-owned parking lot located at the corner of Elizabeth Ave and Landa Park Drive.

#### Methods:

The WQPP that was developed in 2017 includes evaluation criteria for seven water quality retrofit projects within the Comal River watershed. The potential water quality projects are presented in **Table 6**.

<i>Design Data</i>	<b>Site 1</b>	<b>Site 2</b>	<b>Site 3</b>	<b>Site 4</b>	<b>Site 5</b>	<b>Site 6</b>	<b>Site 7</b>
<u>Location</u>	Elizabeth Ave at Landa Lake	North Union Street From Dallas St to Edgewater	North Houston Ave at Landa Lake	Golf Course Club House	Overflow Parking along Elizabeth Ave	Fredericksburg Road Storm Drain Outfall into Landa Park	Landa Park Aquatic Complex Parking Lot
Recommended Measure	Rain Garden	Linear Roadside Rain Garden	Rain Garden	Grass/gravel pavers, function as filter strip	Grass/gravel pavers	Storm Drain Underground Vault	Permeable Pavers
Approx. Drainage area (acres)	5.0	4.0	4.3	0.26	1.2	5.4	1.5
Approx. Impervious cover (acres)	1.9	1.2	1.3	0.24	0	5	1.4
Approx. % Impervious Cover	38.0%	30.0%	30.2%	92.3%	0.0%	92.6%	93.3%
Measure width (feet)	30	8	30	20	20	NA	100
Measure length (feet)	50	300	70	150	800	NA	160
Measure footprint (sq ft)	1500	2400	2100	3000	16,000	NA	16000
Measure depth (ft)	1.5	1	1	NA	NA	NA	NA
Measure Volume (cubic feet)	2250	2400	2100	NA	NA	NA	NA
Runoff depth treated (inches)	0.34	0.52	0.44	NA	NA	NA	NA
TSS lbs per year managed	875	720	700	170	15	2200	170
Estimated measure cost/\$F	\$33.00	\$40.00	\$33.00	\$8.00	\$6.00	NA	\$15.00
Cost per Unit						\$60,000.00 12'x6'x84	
Total Measure Cost	\$71,156	\$138,000	\$99,619	\$34,500	\$138,000	\$86,250	\$345,000
Cost/TSS lbs managed/year	\$81	\$192	\$142	\$203	\$9,200	\$39	\$2,029
Maintenance Requirements	MINIMAL to MODERATE: Vegetation management required, occasional sediment/debris removal	MINIMAL to MODERATE: Vegetation management required, occasional sediment/debris removal	MINIMAL to MODERATE: Vegetation management required, occasional sediment/debris removal	MODERATE: Vegetation management, rejuvenation may be necessary, inspect two times per year	MODERATE: Vegetation management, rejuvenation may be necessary, inspect two times per year	MODERATE: Inspect four times per year, removal of sediment and debris	MODERATE: Semi-annual inspection, vacuuming required based on infiltration loss/sediment load.

The City will construct a stormwater treatment facility at the end of North Houston Ave (Site 3) in 2019. The project will involve removal of approximately 2,000 ft<sup>2</sup> of existing asphalt pavement. The existing asphalt pavement will be replaced with a bio-retention basin that was designed to infiltrate and treat stormwater runoff prior to entering Landa Lake at the Upper Spring Run. The stormwater treatment facility is expected to prevent approximately 700 lbs/year of sediment, solids and associated pollutants from entering Landa Lake. Design of the bio-retention basin was completed in 2018. The City of New Braunfels will assume responsibility of ongoing maintenance of the stormwater facility to ensure maximum sediment and pollutant removal.

The City will design and install an underground stormwater treatment vault that will treat stormwater runoff that discharges via underground storm drain piping to Spring Run #1 (Site 6, **Figure 7**). There is existing underground stormwater infrastructure in the residential neighborhood immediately adjacent to Landa Park, Landa Lake and Spring Run 1. This stormwater infrastructure is comprised of drainage inlets that collect stormwater runoff from roadways and an approximately 50-acre drainage area. The drainage inlets are connected to underground stormwater piping that conveys stormwater to an outfall that discharges to Spring Run 1. There is observable sedimentation in Spring Run 1 near the stormwater pipe outfall following storm events. The project will involve design and installation of a large underground stormwater filtration/ treatment vault in-line with the existing stormwater pipe located beneath Fredericksburg Road. The project is estimated to prevent approximately 2,200 lbs/ year of sediment, solids, and associated pollutants from entering the Spring Run 1 and the Comal River system. The City of New Braunfels will assume routine maintenance of the stormwater treatment unit following installation. Maintenance will include quarterly inspections and annual removal of accumulated material from within the treatment chamber.



**Figure 7.** Map of water quality treatment vault

The City will also contract with an engineer for design of a pervious parking surface at a City-owned parking lot located at the corner of Elizabeth Ave and Landa Park Drive. The parking lot is currently used for employee and visitor parking and is constructed of a traditional, impervious asphalt surface. Stormwater runoff from the parking lot drains to the New Channel of the Comal River. The pervious parking surface will reduce the volume of stormwater runoff and filter stormwater prior to entering the Comal River system. Construction of the pervious parking lot will occur in 2020 once plans and cost estimates have been developed.

**Budget:**Table 7.1:

\$150,000

Available budget:

\$250,000

Estimated 2019 budget:

\$250,000\*

\*Approx. \$100,000 for the construction of the bio-retention basin at North Houston Avenue, \$110,000 for design and construction of the stormwater treatment vault at Frederick Ave and \$40,000 for design of a permeable parking surface.