Water and Wastewater Infrastructure CIP

December 8, 2010

Impact Fee Study 2011 – 2020

Kathleen M. Price, P.E.

Manager of Master Planning

Capital Improvement Plan Overview

- Impact Fee Total CIP Cost
- Water Infrastructure Plan – CIP
- Wastewater Infrastructure Plan – CIP

Existing and New Capacity

Service Area	Value of Existing Capacity	Value of New CIP Capacity	Total Value of Existing and New CIP Capacity	Total Value of Eligible Study Period Capacity
Water Delivery	$940,709,726	$304,099,731	$1,244,809,457	$171,365,717
Water Supply	575,247,480	139,655,073	714,902,553	139,655,073
Wastewater	876,059,608	804,062,645	1,680,122,253	259,988,679
Total	**$2,392,016,814**	**$1,247,817,449**	**$3,639,834,263**	**$571,009,469**

Eligible Existing Value	Financing Costs (Eligible Existing)	Eligible CIP Value	Total Value of Eligible Capacity for 2011-2020 Growth
$146,081,961	$66,862,063	$358,065,445	$571,009,469

Notes:

Values exclude all mains <12” for water and <10” for sewer, & other infrastructure contributed by developers & grants.

Water Supply existing value not included in eligible study period value.

New CIP Project Count

Fee Type	Service Area	Project Count
Water Supply	All	4
	Total	**4**
Flow	All	179
	Total	**179**
Sys Dev	High	19
	Middle	30
	Low	17
	Shared	8
	Total	**74**

Fee Type	Service Area	Project Count
Collection	Upper	10
	Middle	16
	Lower	16
	Upper/Lower	3
	Upper Medina	4
	Lower Medina	6
	Medio Creek	10
	Total	**65**
Treatment	Dos Rios/Leon Creek	1
	Total	**1**
	Grand Total	**323**

Water Infrastructure Plan

- Water Infrastructure Plan (WIP) - 60 years with updates about every 5 years
- Last WIP update was in 2008
- Current WIP recommends $415M of Infrastructure
  - Tanks, Wells, Pumps & Pipes Required to meet customer demand through 2027

Water Infrastructure Plan Overview

Water Infrastructure Plan Overview

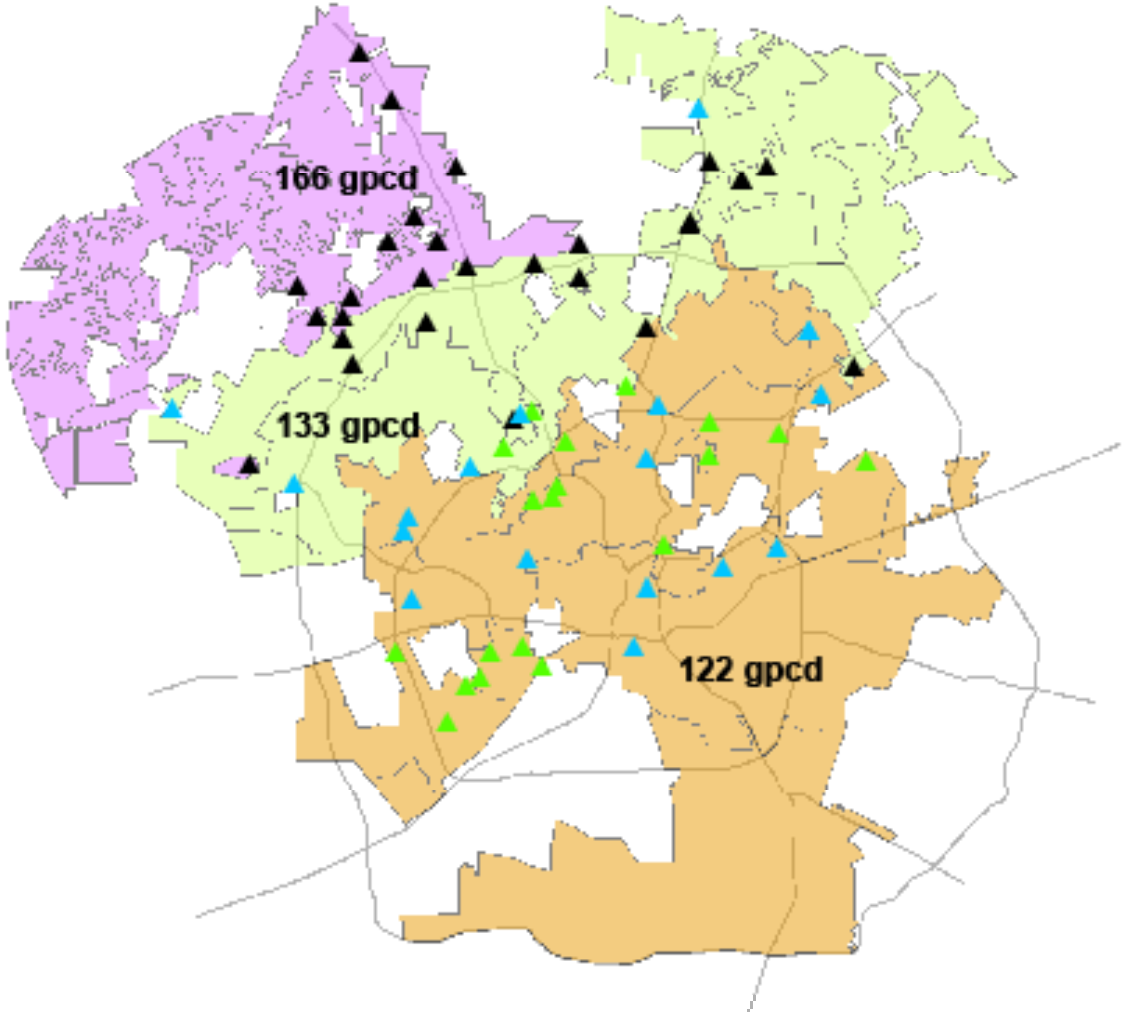
- Population Projections - LUAP
- Demand (historical consumption and pumpage)
- Design Criteria for Sizing Infrastructure
  - Wells – meet maximum day
  - Pumps – meet maximum hour
  - Tanks – meet maximum hour for elevated
  - Pipes – meet maximum hour
- Hydraulic Model – Tool for Simulating the Water System
- TCEQ Sizing Requirements

Water Infrastructure Plan Overview

TCEQ Minimum Design Criteria

- Ground Storage
  - Minimum = 100 gallons/connection or the difference between Total and Elevated, whichever is less
- Elevated Storage
  - Minimum = 100 gallons/connection
- Wells
  - Minimum = 0.6 gpm/connection
- High Service Pumps
  - Minimum = 2.0 gpm/connection or the ability to meet max hour demand, whichever is less

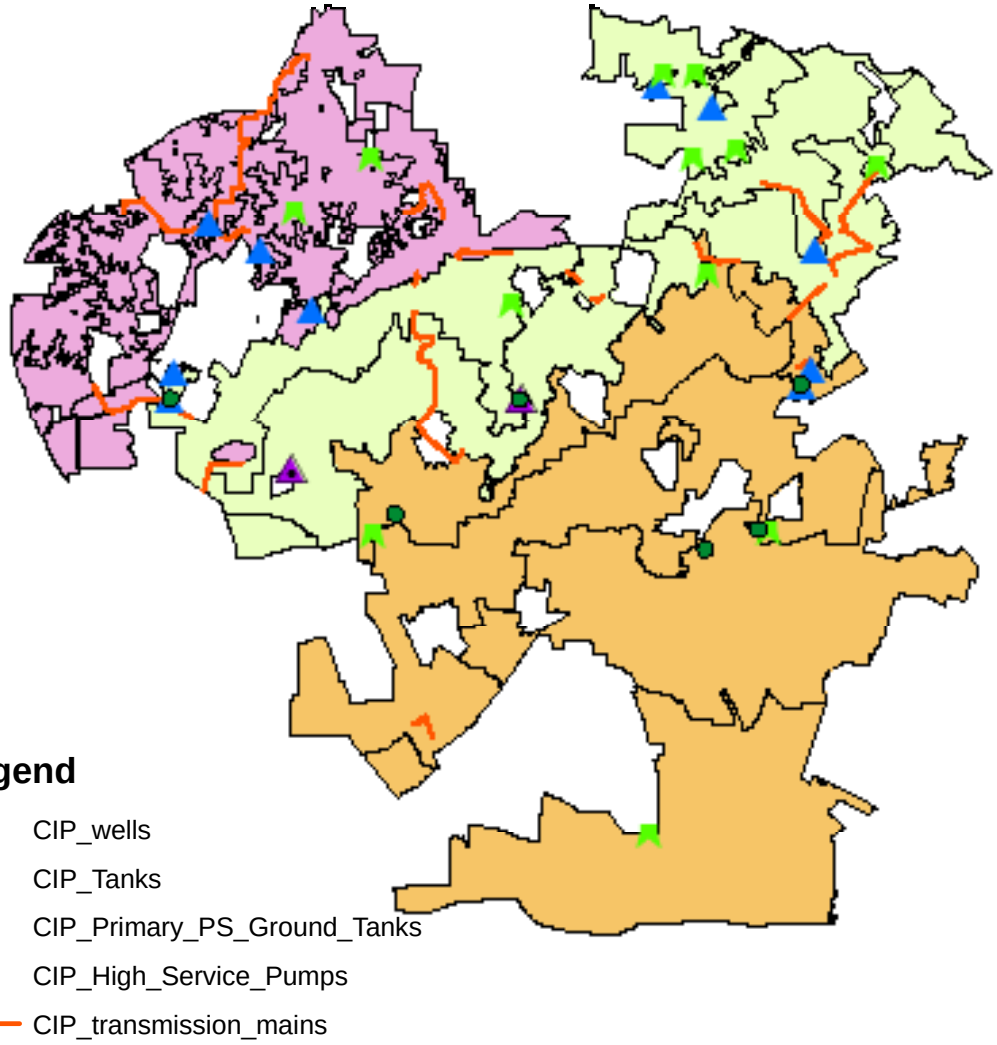
Production Pump Stations



Legend

- 21 Primary Pump Stations
- 21 Secondary Pump Stations
- 28 Booster Pump Stations

Impact Fee CIP Water Infrastructure



Total Cost $304,099,731

- 9 Wells (44.5 mgd) - $41,202,000
- 37 pumps (136.9 mgd) - $24,379,000
- 2 ground tanks (12.5 mgd) - $7,060,890
- 12 elevated (24.5 mgd) - $60,955,500
- 40.8 miles of transmission mains from 16” to 48” $57,460,829
- 126.4 miles of distribution mains from 12” to 48’’ $113,041,512

Impact Fee Eligible Cost $79,130,182

Wastewater Infrastructure Plan Overview

- Wastewater Infrastructure Plan (WWIP)
  - 1998 – Skeleton Version (about 17% of system)
- Update each sewershed every 5 years
  - 5 sewersheds
    - Eastern – 2006
    - Leon, Far West and South – 2008
    - Central – 2009
    - All sewershed – Risk Based Study - 2010
- Current growth related WWIP recommends $881M of infrastructure through year 2027
  - Pipes
  - Lift Stations

Wastewater Infrastructure Plan Overview

- Population Projections - LUAP
- Flow (flow meter data)
- Design Criteria for Sizing Infrastructure
  - Pipes – peak wet weather conditions
  - Lift Stations – peak wet weather
- Hydraulic Model – Tool for Simulating the Wastewater System
- TCEQ Sizing Requirements
  - Peak weather flow of 675 gpd/edu

Leon Creek Collection Example

Project Title	Service Area	Project Cost Estimate [$ 2010]	Allocated to Existing Customer Demand [%]	Allocated to Existing Customer Demand [$ 2010]
W-31: I.H. 10 - La Cantera to Boerne Stage Road	***Upper Collection***	$ 17,050,860	12%	$ 2,075,458
W-44: Leon Creek - Prue Rd and La Cantera	***Upper Collection***	$ 26,774,030	24%	$ 6,311,605
W-9: Leon Creek - Ingram to Timberline	***Upper (10%), Lower 90%***	$ 33,723,620	26%	$ 8,801,966
W-1: Leon Creek - U.S. 90 to S.H. 151	***Middle Collection***	$ 28,829,010	32%	$ 9,148,054
W-6: Leon Creek - US 90 to New Laredo Hwy	***Lower Collection***	$ 38,361,930	36%	$ 13,706,761
W-39: Leon Creek - New Laredo Hwy and SH 16	***Lower Collection***	$ 12,531,390	36%	$ 4,514,336
Total		**$ 157,270,840**	**33%**	**$ 51,218,424**

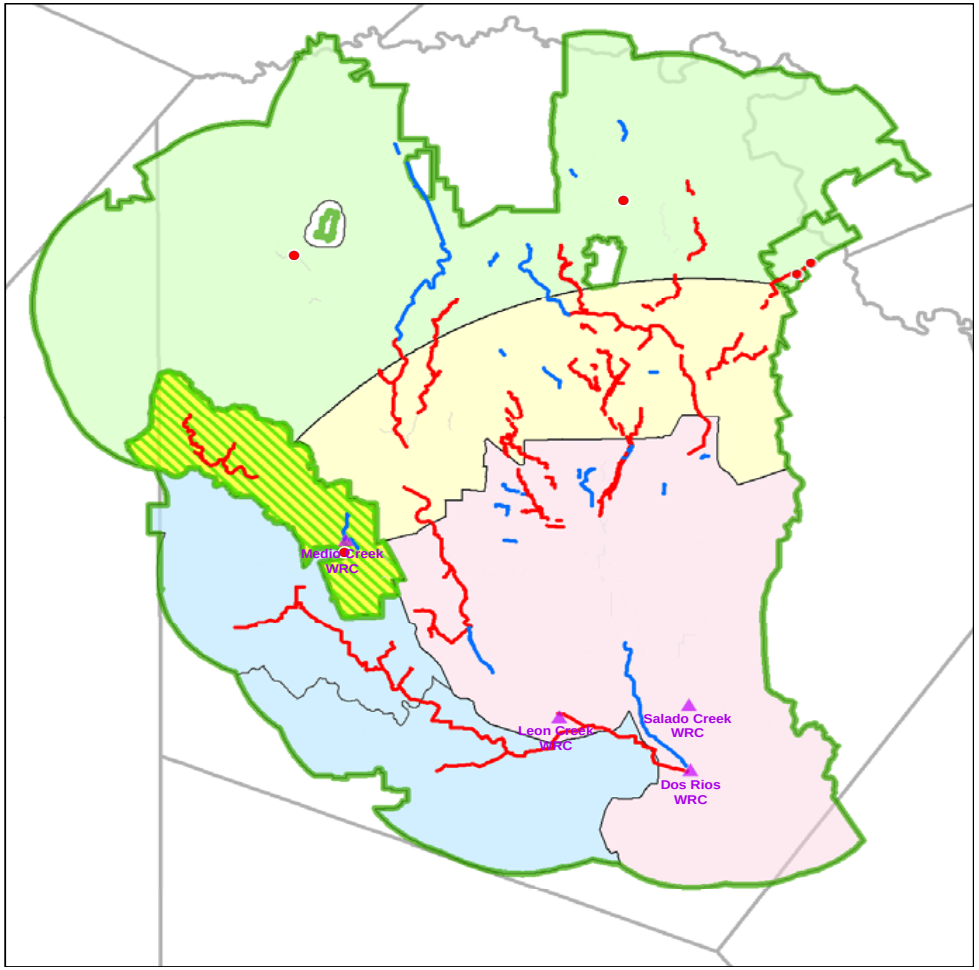
Wastewater Infrastructure Plan

- Example Project in Leon Creek

Project Title	Service Area	Project Cost Estimate [$ 2010]	Allocated to Study Period Growth Demand [%]	Allocated to Study Period Growth Demand [$]
W-31: I.H. 10 - La Cantera to Boerne Stage Road	***Upper Collection***	$ 17,050,860	42%	$ 7,212,502
W-44: Leon Creek - Prue Rd and La Cantera	***Upper Collection***	$ 26,774,030	26%	$ 6,902,532
W-9: Leon Creek - Ingram to Timberline	***Upper (10%), Lower 90%***	$ 33,723,620	23%	$ 7,923,311
W-1: Leon Creek - U.S. 90 to S.H. 151	***Middle Collection***	$ 28,829,010	20%	$ 5,745,097
W-6: Leon Creek - US 90 to New Laredo Hwy	***Lower Collection***	$ 38,361,930	17%	$ 6,344,070
W-39: Leon Creek - New Laredo Hwy and SH 16	***Lower Collection***	$ 12,531,390	16%	$ 1,993,315
Total		**$ 157,270,840**	**19%**	**$ 29,820,455**

Existing Customer Demand	$51,218,424
Post Study Period Growth Demand	$76,231,961

Impact Fee CIP Wastewater Infrastructure



Total Cost $744,396,935

- Collection Pipes (182 miles) $734,811,218
- 4 Lift Stations (17 mgd) $9,585,717

Impact Fee Eligible Cost $79,614,480

1st 5 years
2nd 5 years

Capital Improvement Projects

Treatment

Total cost for projects built in the next 10 years is $338,685,832

- Leon Transfer - $ 13,597,395
- Treatment share of MRSO - $ 12,392,972
- Improvements to Dos Rios - $ 312,695,465

Impact fee eligible cost is $59,665,710

Capital Improvement Projects

Questions?

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