Capital Improvements Plan (CIP) – Water Delivery / Flow

Capital Improvements Advisory Committee
August 22, 2018

WATER
OUR FOCUS
OUR BUSINESS
OUR PASSION

carollo
Engineers...*Working Wonders With Water* ®

Consultant Introduction

Carollo Engineers, Inc.

- ENR Top Design Firm (1st for firms specializing solely in water)
- 85 years of experience in water

Jennifer Ivey, P.E.

- Licensed Professional Engineer in TX
- Leads Carollo's Financial Management Group
- Leads SDC Subcommittee for AWWA Rates & Charges Committee
- Reviewer for latest editions of AWWA *M1* and WEF *MOP27*
- Completed last 2 Impact Fee Updates for SAWS
- 20 years of experience
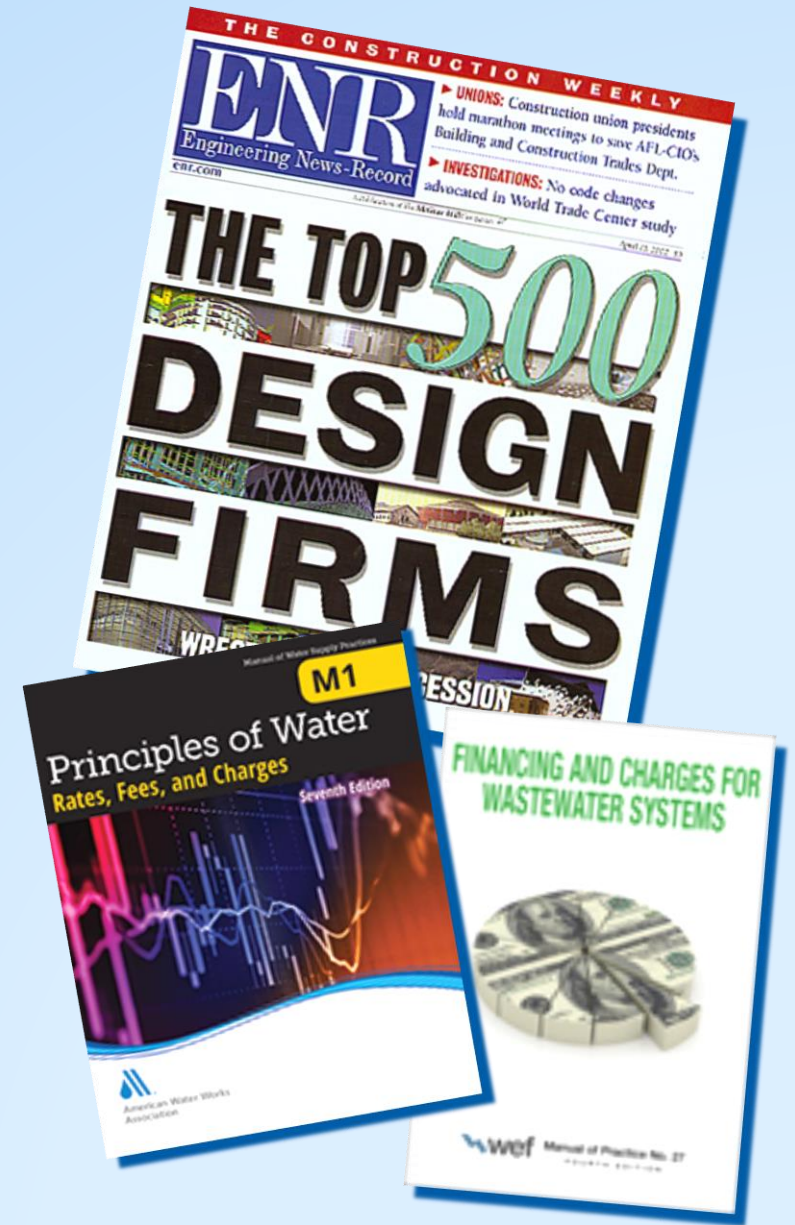
Impact Fee Components

Water Supply

Water Delivery
System Development

Water Delivery
Flow

Wastewater Collection

Wastewater Treatment

Impact Fee Calculation

$$Calculated\ Impact\ Fee = \frac{Cost\ of\ Eligible\ CIP}{Added\ EDUs}$$

- LUAP provides number of added EDUs
- CIP provides cost of eligible capital improvements
  - Extensions and expansions
  - Pipeline upsizing
- Study period for LUAP and CIP is 10 years
  - How many EDUs are expected to be added in 10-year study period?
  - What is the cost of the capacity that is required to serve these added EDUs?

Water Delivery / Flow Equity Value

Existing distribution system value is **$707,256,404**

- Valuation method is Original Cost (OC)
- Value is not depreciated
- Value excludes contributed assets and water mains less than or equal to 8"

Allocation of Water Delivery / Flow Equity to Impact Fee

Allocation is based on maximum hour demand (MHD):

- 2018 population is 1,851,348; 2028 population is 2,190,178
- $Average\ Day\ Demand\ (ADD) = \dfrac{290\ gpd\ per\ EDU}{2.39\ persons\ per\ EDU}$
- $ADD = 121\ gallons\ per\ capita\ per\ day\ (gpcd)$
- Maximum hour peaking factor (MHPF) is 3.31 (*Water Infrastructure Plan*)
- $MHD = ADD * MHPF * Population$
- $2018\ MHD = 121\ gpcd * 3.31 * 1,851,348 = \mathbf{741.5\ mgd}$
- $2028\ MHD = 121\ gpcd * 3.31 * 2,190,178 = \mathbf{877.2\ mgd}$

Allocation of Water Delivery / Flow Equity to Impact Fee

> **Water distribution system is assumed to be maintained at 90% capacity**

- $2018\ MHD = 741.5\ mgd$
- $2018\ Capacity = \dfrac{741.5\ mgd}{90\%} = \mathbf{823.9\ mgd}$

> **Unused portion of Water Delivery / Flow assets is allocated to impact fee calculation**

- $Allocation = \dfrac{2018\ Capacity - 2018\ MHD}{2018\ Capacity}$
- $Allocation = \dfrac{823.9\ mgd - 741.5\ mgd}{823.9\ mgd} = \mathbf{10}\%$

Allocation of Water Delivery / Flow CIP to Impact Fee

Water distribution system is assumed to be maintained at 90% capacity

- $2018\ Capacity = 823.9\ mgd$
- $2028\ MHD = 877.2\ mgd$
- $2028\ Capacity = \dfrac{877.2\ mgd}{90\%} = \mathbf{974.7\ mgd}$

Capacity required to serve 2028 MHD:

- $Allocation = \dfrac{2028\ MHD - 2018\ Capacity}{2028\ Capacity - 2018\ Capacity}$
- $Allocation = \dfrac{877.2\ mgd - 823.9\ mgd}{974.7\ mgd - 823.9\ mgd} = \mathbf{35}\%$

Water Delivery / Flow CIP – Eligible Value

Description	Total Cost	Eligible %	Eligible Cost*
Existing Assets	$ 707,256,404	10%	$ 70,725,640
CIP Projects	$ 249,928,263	35%	$ 88,376,044
TOTAL	**$ 957,184,667**	**16.6%**	**$ 159,101,684**

 * Costs shown do not include financing charges.

Questions?