TAPPING FEES

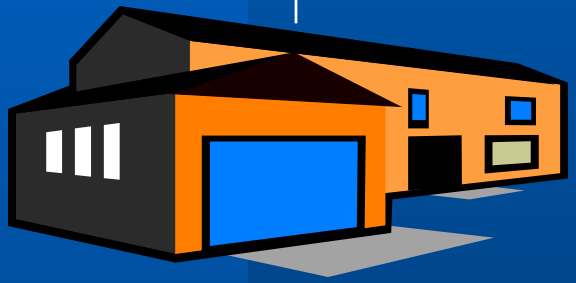
Act 57 Revisions
Presented at
PMAA Workshops 2004

Basic
Examples

Example # 1 – New Water System Serving Exclusively New Customers (Post- Act 57)

Water System Components

WATER SOURCE $5M



TREATMENT PLANT $22M

WELL $2M

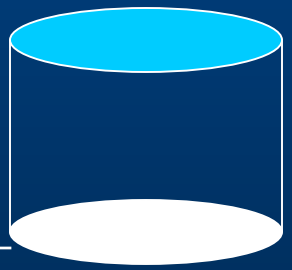
TRANSMISSION MAIN $1M

DISTRIBUTION SYSTEM $12M

HIGH ELEVATION DISTRIBUTION SYSTEM $2M

BOOSTER STATION $2M

STORAGE TANK $4M



Tapping Fees – Water System Facility Classification

Capacity Part	Capital Cost $ Millions
Source & Intake	5
Water Treatment Plant	22
Well	2
Transmission Main	1
Storage Tank	4
Total	$34 M

Tapping Fees – Water System Facility Classification (Cont.)

	Capital Cost $Millions
Distribution Part	
Distribution System	$12
Pump Station	2
High Elevation Dist. System	2
Total	$16
- OR -	
Special Purpose Part (Option)	
Pump Station	$ 2
High Elevation Dist. System	2
Total	$ 4

Water System
Other Information

$ 6M Grant for WTP

$ 44M Loan, 3.5%, 20 yrs

System Design Capacity – 12 mgd (avg. daily demand)

Special Purpose Part of system to serve 1,000 EDUs

Assume Usage = 65 gpcd; Census data of 2.5 residents/household

65 x 2.5 = 162.5 gpd/household

(Option to use "avg. residential water consumption" over 12 months, during past 5 years)

Water System
Tapping Fee - Capacity Part

Capacity Part (CAP)		Act 57 Method
Total CAP Cost		$34M
Deduct Grant		- 6M
Net Cost		$28M
System Design Capacity		12 mgd
Unit Cost	$28 M / 12 mgd =	$2.33/gpd
Household Flow		X 162.5 gpd
Maximum CAP TF per Household		$379

Water System
Tapping Fee – Distribution Part

Distribution Part (DP)

Total DP Cost		$16M
Design Capacity		12 mgd
Unit Cost	$16M / 12 mgd =	$1.33 / gpd
Household Flow		X 162.5 gpd
Maximum DP TF per Household		$ 216

Water System
Tapping Fee – Distribution Part (Option)

Distribution Part – Minus Special Purpose Part

Total DP Cost	$16M
Minus SP Components	- $4 M
	$12 M
Design Capacity	12 mgd

Unit Cost	$12M / 12 mgd =	$1.00 / gpd
Household Flow		X 162.5 gpd
Maximum DP TF per Household		$ 163

Water System
Tapping Fee –Special Purpose Part

Special Purpose (SP) Part

(Applies only with DP – Alternative 2)

Total SP Cost	**$ 4M**
System Design Capacity	**1,000 EDU's**
Maximum SP TF per Household	**$4,000**

Total Tapping Fee

	Gen'l	Without SP	SP Customers
Capacity Part	$379	$ 379	$ 379
Distribution Part	$216	$ 163	$ 163
Special Purpose Part			$4,000
Totals	$595	$ 542	$4,542

Future Updating of Tapping Fee

Periodically index the TF using “weighted average interest rate on debt”

Indexing the Tapping Fee
Water System Example

Basic TF = $595, Loan Interest Rate = 3.5%

Timeframe	Indexing Factor	New TF
1 Yr	1.035	$616
2 Yrs	1.071	$637
3 Yrs	1.109	$660
etc	etc	

Future Capacity Element

What if an additional capacity facilities are anticipated in a few years ?

(Addtl Cost = $2 M, Addtl Capacity = 0.5 mgd)

- **Can include new cost and new capacity in the basic calculation**
- **Must provide separate accounting for the TF increase (if any)**
- **Must be able to refund the increase if new source not built in 7 years**

Future Capacity Element

Capacity Part (CAP)	Current System	With Future Source
Total CAP Cost	$34M	$36M
Deduct Grant	- 6M	- 6M
Net Cost	$28M	$30M
System Design Capacity	12 mgd	12.5 mgd
Unit Cost	$2.33/gpd	$2.40/gpd
Household Flow	X 162.5 gpd	X 162.5 gpd
Maximum CAP TF per Household	$379	$390
		$11 change

Example # 2 – Existing Wastewater System

Needing to Recompute Tapping Fee (by 6/30/05)

Wastewater System Components

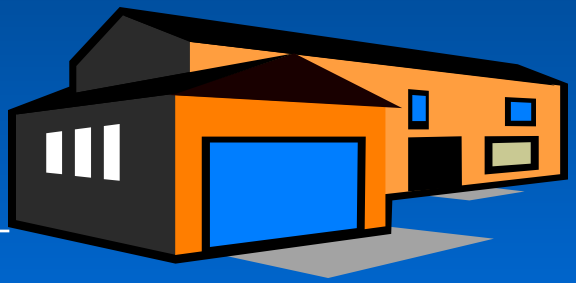
LOW ELEVATION

COLLECTION SYSTEM $3M

PUMP STATION $2M

COLLECTION SYSTEM $20M

INTERCEPTOR $5M



SEWAGE TREATMENT PLANT $50M

Tapping Fees – Wastewater System Facility Classification

Capacity Part	Capital Cost $Millions
Sewage Treatment Plant and Outfall Structure	$50
Interceptor Sewer	5
Total	$55 M

Tapping Fees – Wastewater System Facility Classification (Cont.)

	Capital Cost $Millions
Collection Part	
Collection System	$20
Pump Station	2
Low Elevation Collection System	3
Total	$25
- OR -	
Special Purpose Part (Option)	
Pump Station	$ 2
Low Elevation Collection System	3
Total	$ 5

Wastewater System Tapping Fee Assumptions

System Constructed 10 years ago

System Design Capacity – 10 mgd (avg. annual flow)

$ 40 M Bond Issue (20 yrs, 4% - 6% interest)

$15M Grant Funds Received **

Avg Weighted Interest Rate on Debt = 4.8 %

$20 M Outstanding Debt [$15 CAP and $ 5 CP]

Financing Costs = $ 8 million [$6 CAP, $2 CP]

31% Inflation on Capital Costs (using ENR cost indices, 10 yrs)

** For simplicity in this example, grant amount is assigned to the Capacity components

Wastewater System Tapping Fee Assumptions (Cont.)

Assumed Usage – 90 gpcd; Census data of 2.5 residents/household

90 x 2.5 = 225 gpd / household

(Options available include:

- **Results of "measured sewage flow study"**
- **"Average residential water consumption + 10%)**

BASIC APPROACHES AVAILABLE FOR AN EXISTING SYSTEM

- Approach # 1 – use historical cost, trended to current cost

- Approach # 2 – use historical cost plus interest and other financing fees paid on debt

- Approach # 3 – index existing tapping fee using weighted average interest rate on debt **(only available when the facilities initially served exclusively new customers)**

Approach # 1 - CapacityPart

Capacity Part (CAP)	Act 203	Act 57
Total CAP Cost	$55M	$55M
Deduct Grant	- 15M	- 15M
Net Original Cost	$40M	$40M
Trending Factor (over 10 yrs)	X 1.31	X 1.31
Trended Cost	$52.4M	$52.4M
Minus Outstanding Debt	$15M	$15 M
	$37.4M	$37.4 M
System Design Capacity	10 mgd	10 mgd
Unit Cost	$3.74/gpd	$3.74/gpd
Household Flow	X 350 gpd **	X 225 gpd
Maximum CAP TF per Household	$1309	$842

** Using DEP Sew Manual 350 gpd/household

Approach # 1 - Collection Part

Collection Part (CP)	
Total CP Cost	$25M
Trending Factor	X 1.31
Trended Cost	$33M
Minus Outstanding Debt	-$5M
	$28M
Design Capacity	10 mgd
Unit Cost	$ 2.80/gpd
Household Flow	X 225 gpd
Maximum CP TF per Household	$630

Approach # 1 - Collection Part (SP Option)

Collection Part – Minus SP Components

Total CP Cost	$25 M
Minus SP Components	- $5 M
	$20 M
Trending Factor	X 1.31
Trended Cost	$26.2M
Minus Outstanding Debt	- $5M
	$21.2M
Design Capacity	10 mgd
Unit Cost	$ 2.12/gpd
Household Flow	X 225 gpd
Maximum CP TF per Household	$477

Wastewater System
Tapping Fee - Special Purpose Part

Special Purpose (SP) Part

Applies with Collection Part – (SP Option)

Total SP Cost	**$ 5M**
Trending Factor	**X 1.31**
Trended Cost	**$ 6.55M**
System Design Capacity	**÷ 1,000 EDU's**
Maximum SP TF per Household	**$6,550**

Approach # 1 - Total Tapping Fee

	Genl	With SP Option	SP Customers
Capacity Part	$ 842	$ 842	$ 842
Collection Part	$ 630	$ 477	$ 477
Special Purpose Part			$6550
Totals	$1472	$1319	$7869

USING APPROACH # 2

	Capacity Part	Collection Part
Total Cost	$55M	$25M
Deduct Grant	- $15M	
Net Cost	$40M	$25M
Minus Outstanding Debt	- $15M	- $5M
	$25M	$20M
Plus Financing Costs	+ $ 6M	+ $2M
Total Eligible Costs	= $31 M	= $22 M
System Design Capacity	10 mgd	10 mgd
Unit Cost	$3.10/gpd	$2.20/gpd
Household Flow	X 225 gpd	X 225 gpd
Resulting TF per Household	$698	$495

Note: The Special Purpose Option could also be used as shown in Approach #1 above

Using Approach #3

Determine existing tapping fee

Original construction costs = $70M

$45 M	$25M
Capacity Part	Collection

Capacity Part (existing)

Capacity Part (CAP)	Act 57
Total CAP Cost	$45M
Deduct Grant	- 15M
Net Original Cost	$40M
System Design Capacity	÷ 10 mgd
Unit Cost	$4.00/gpd
Household Flow	X 225 gpd
Maximum CAP TF per Household	$900

Collection Part (existing)

Collection Part (CP)	
Total CP Cost	**$25M**
Grant	**- 0M**
Net Cost	**$25M**
System Design Capacity	**÷ $10mgd**
Unit Cost	**$2.50/gpd**
Household Flow	**X 225 gpd**
Maximum CP TF per Household	**$563**

Index Existing Tapping Fee

Capacity Part **$900**

Collection Part **$563**

Avg. Weighted Interest on debt = 4.8%

Time since original construction = 10 yrs

$$(1.048)^{10} = 1.60$$

Updated CAP Tapping Fee = 1.6 x $900 = $1,440

Updated CP Tapping Fee = 1.6 x $563 = $900

COMPARISON OF APPROACHES

APPROACH	CAPACITY PART	COLLECTION PART	TOTAL
#1	$842	$630	$1472
#2	$698	$495	$1193
#3	$1440	$900	$2340

Future Updating of Tapping Fee

Future updates could be accomplished by continuing to follow the abovementioned approaches.