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PRESENTED
10/4/06 BY
JON SORENSEN
TO BOARD



Board of Directors Meeting
October 4, 2006

Level of Service, Rates, and Rate Structures

Jon Sorensen

**What is the "Level of Service"
for Stormwater Infrastructure?**

- Street drainage: 5 year
- For major streams: 100 year
- High risk areas: 500 year*

(with limits to life safety and property damage hazards)

Case by case exceptions based on providing adequate life safety, property damage reduction, environmental protection, etc.

* Desirable for hospitals, fire departments, police locations.

**What will it take to achieve the defined " Level of Service"
for Stormwater CIP?**

- Current Capital Needs
 - \$30,000,000 in critical needs
 - \$45,000,000 in medium priority needs

**What will it take to achieve the defined " Level of Service"
for Stormwater Infrastructure Maintenance?**

	LEVEL OF SERVICE	
	Low	Medium
Channels	\$250,000	\$500,000
Storm Sewers	\$600,000	\$1,200,000
Ponds	\$350,000	\$700,000
Total Annual Cost	\$1,200,000	\$2,400,000

Proposed Program Defined Level of Service

- Capital
 - Critical CIP of \$30 Million Constructed in Years 1 - 10
 - Medium CIP of \$45 Million Constructed in Years 11 - 20
- Maintenance
 - Low level for the first 5 years
 - Increase 25% in 5 years (low)
 - Increase 50% in 10 years (Low/Medium)
- Program
 - Staff levels remain constant
- Assumptions
 - Inflation 3% per year
 - Salary costs 5% per year



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Rates to Meet Proposed Program and Defined Level of Service

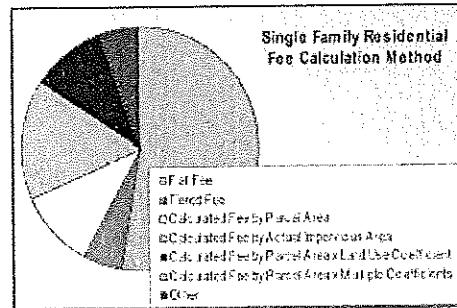
- Initial Rate
 - \$6.25 per month SFR detached
 - 3% inflation increase per year
 - 10% maintenance program increase every 5 years
- Assumptions
 - 1.75% growth in Impervious area per year
 - 1.00% delinquent account
 - 2.00% credits



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Rate Structures in Colorado



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Single Family Residential (detached) Rate Structures in Colorado

IA = Impervious Area
IP = Impervious Percentage

City	Rate Structure	Reason
Lakewood	Flat	Easy to implement and understand
Castle Rock	Flat	Easy to implement and understand
Parker	Flat	Easy to implement and understand
Colorado Springs	IA & IP	Residents demanded equity
Pueblo	Tiered	Wanted simple with low tier for low income residents
Fort Collins	IA & IP	Equity
Arvada	Actual IA	Equity and public perception
Denver	IA & IP	Equity

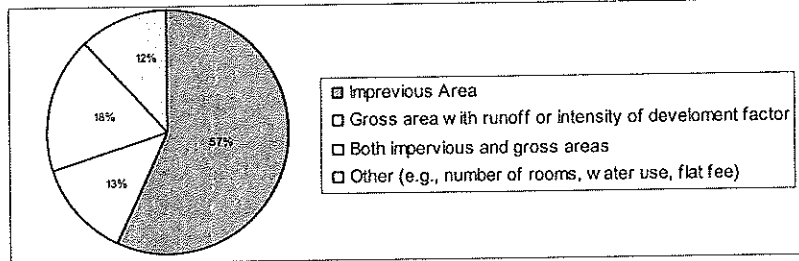
Longmont, Littleton, Loveland, Westminster, also have flat rates



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Rate Structure Types in U.S.



Rate Structures

- Arapahoe County Wastewater Association
 - Single Family Residential (detached): Flat Rate \$5.98 per month
 - Commercial: \$2.69 base rate + \$0.000864 per square foot Impervious area



Rate Structures

(from Last Week's Meeting)

- Impervious area based rate structures
 - Single Family Residential (detached)
 - Same rate for all
 - 3 Tiered rate
 - Actual impervious area
 - Non-Single Family Residential
 - Charge for amount of impervious area



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Single Family Residential Examples from Last Week

(Impervious Area Options)

	Example		
	Small No. 1	Average No. 2	Horse Prop. No. 3
Flat Fee	\$6.00	\$6.00	\$6.00
3 Tiered Fee	\$4.50	\$6.00	\$9.00
Actual Imp. Area	\$4.26	\$5.93	\$9.45
Impervious Area (sq/ft)	2,300	3,200	5,100
Total Area (sq/ft)	6,765	8,205	102,000
Impervious %	34%	39%	5%



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Commercial and School Examples from Last Week
(Impervious Area Options)

	Example		
	Small No. 1	Large No. 2 (high impervious %)	School No. 1* (low impervious %)
Actual Impervious Area	\$45	\$450	\$450
Impervious Area (sq/ft)	24,000	243,000	243,000
Total Area (sq/ft)	31,400	300,000	800,000
Impervious %	76%	81%	30%

**Revised to show lower impervious percentage, but same impervious Square feet as Large No. 2*



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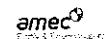


"Issues" with Impervious Area Rate Structures

- Does not account for increased runoff from parcels that have high impervious percentages (60% or more). These parcels are undercharged.
- Does not account for decreased runoff from parcels that have low impervious percentages (30% or less). These parcels are over charged.



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Percent Impervious Rate Structures

- Normally combine Single Family Residential (detached) with Multi Family, Commercial, and Tax Exempt
- Rate is 50% lower if under 30% Impervious
- Rate is 50% higher if over 60% Impervious



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Rate Based on Percent Imperviousness

Actual Impervious Area Fee (tiered for illustration)

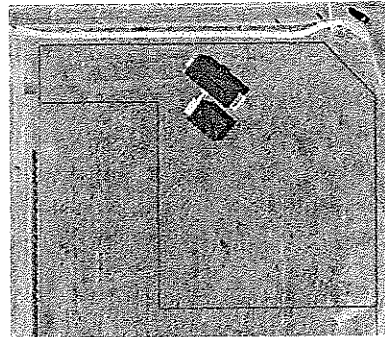
Impervious Area Range		Impervious Percent		
From (sq/ft)	To (sq/ft)	0 to 30%	31% to 60%	61% to 100%
Monthly Fee				
0	2,900	\$3.45	\$4.60	\$6.90
2,901	3,875	\$4.50	\$6.00	\$9.00
3,876	8,000	\$8.00	\$11.00	\$16.00
8,001	15,000	\$16.00	\$21.00	\$31.00
15,001	35,000	\$34.00	\$45.00	\$68.00
35,001	95,000	\$89.00	\$118.00	\$177.00
95,001	250,000	\$235.00	\$314.00	\$470.00
250,001	850,000	\$750.00	\$1,000	\$1,500
850,001	up	varies	varies	varies



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**Comparison of Impervious Area
and Impervious Percent Rate Structures**
Example A - Single Family Residential (detached)



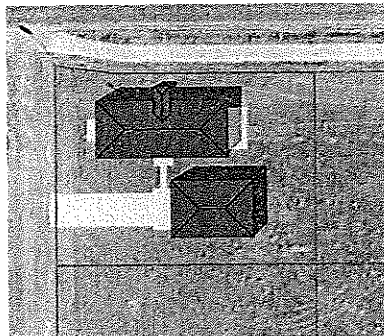
EXAMPLE - A	
Parcel Area:	23,600 sq/ft
Impervious Area:	3,300 sq/ft
Percent Impervious:	11%
Monthly Fees	
Impervious Area:	\$6.00
Impervious Percent:	\$4.50



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**Comparison of Impervious Area
and Impervious Percent Rate Structures**
Example B - Single Family Residential (detached)



EXAMPLE - B	
Parcel Area:	4,500 sq/ft
Impervious Area:	3,300 sq/ft
Percent Impervious:	73%
Monthly Fees	
Impervious Area:	\$6.00
Impervious Percent:	\$9.00

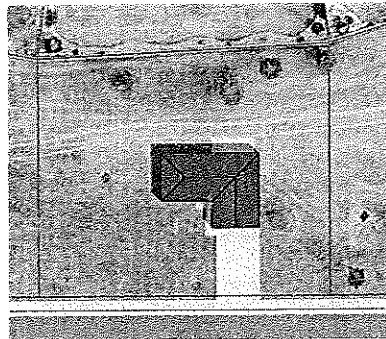


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Comparison of Impervious Area and Impervious Percent Rate Structures

Example C - Single Family Residential (detached)



EXAMPLE - C

Parcel Area: 9,800 sq/ft
Impervious Area: 2,530 sq/ft
Percent Impervious: 26%

Monthly Fees

Impervious Area: \$4.50
Impervious Percent: \$3.45

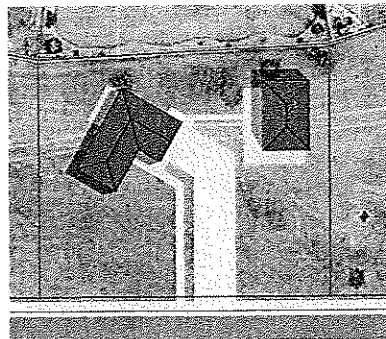


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Comparison of Impervious Area and Impervious Percent Rate Structures

Example D - Single Family Residential (detached)



EXAMPLE - D

Parcel Area: 9,800 sq/ft
Impervious Area: 6,300 sq/ft
Percent Impervious: 66%

Monthly Fees

Impervious Area: \$9.00
Impervious Percent: \$16.00



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Single Family Residential Comparison

	Example A	Example B	Example C	Example D
	Large vs Small Parcels with Equal Impervious Areas		Large vs Small Impervious areas with Equal Parcel Sizes	
	Monthly Rate			
Impervious Area	\$6.00	\$6.00	\$4.50	\$9.00
Impervious Percent	\$4.50	\$9.00	\$3.45	\$16.00
Impervious Area (sq/ft)	3,300		2,530	6,300
Total Area (sq/ft)	28,800	4,500	9,600	
Impervious %	11%	73%	26%	66%

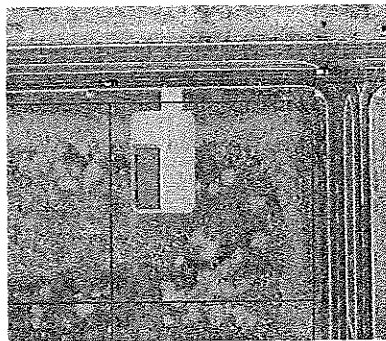


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Comparison of Impervious Area and Impervious Percent Rate Structures

Example E - Multi Family, Commercial and Tax Exempt



EXAMPLE - E
Parcel Area: 38,333 sq/ft
Impervious Area: 11,500 sq/ft
Percent Impervious: 30%

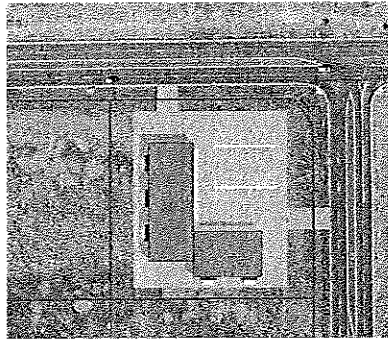
Monthly Fees
Impervious Area: \$21.00
Impervious Percent: \$16.00



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**Comparison of Impervious Area
and Impervious Percent Rate Structures**
Example F - Multi Family, Commercial and Tax Exempt



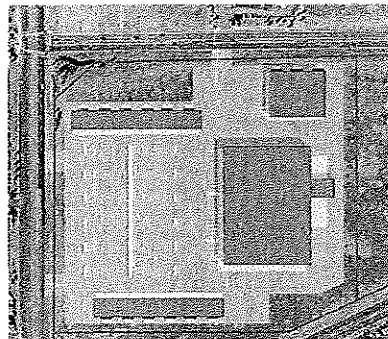
EXAMPLE - F	
Parcel Area:	38,333 sq/ft
Impervious Area:	30,666 sq/ft
Percent Impervious:	80%
Monthly Fees	
Impervious Area:	\$45.00
Impervious Percent:	\$68.00



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**Comparison of Impervious Area
and Impervious Percent Rate Structures**
Example G - Multi Family, Commercial and Tax Exempt



EXAMPLE - G	
Parcel Area:	687,500 sq/ft
Impervious Area:	550,000 sq/ft
Percent Impervious:	80%
Monthly Fees	
Impervious Area:	\$1000.00
Impervious Percent:	\$1500.00



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**Comparison of Impervious Area
and Impervious Percent Rate Structures**
Example H - Multi Family, Commercial and Tax Exempt



EXAMPLE - H
Parcel Area: 2,000,000 sq/ft
Impervious Area: 550,000 sq/ft
Percent Impervious: 28%

Monthly Fees
Impervious Area: \$1000.00
Impervious Percent: \$750.00



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Summary
Multi family, Commercial and Tax Exempt

	Example g	Example h	Example e	Example f
	Monthly Rate			
Impervious Area	\$1,000	\$1,000	\$21	\$55
Impervious Percent	\$1,500	\$750	\$16	\$68
Impervious Area (sq/ft)	550,000		11,500	30,000
Total Area (sq/ft)	687,000	2,000,000	38,333	
Impervious %	80%	25%	30%	80%



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