Carson City, Nevada

Connection Charge Draft Results

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FCS GROUP
Solutions-Oriented Consulting

Agenda

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- Water Utility
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  - Comparison of Connection Charges
- Sewer Utility
  - Draft Results
  - Comparison of Connection Charges
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Methodology

Average Cost – Integrated Approach

$$\text{Connection Charge} = \frac{\text{Existing System Cost} + \text{Future Project Costs}}{\text{Existing Customer Base} + \text{Future Growth Served}}$$

Key Considerations: Numerator
Allocable Capital Cost

- Existing Facilities Costs: intended to recover an equitable share of the current system
  - Inclusion of interest – carrying, financing cost (up to 10 years)
  - Deduction of debt outstanding (net of cash balances)
  - Deduction of contributions (donated, grant-funded)

Key Considerations: Numerator
Allocable Capital Cost

- Future Facilities Costs: intended to recover a fair share of planned future capital costs built to serve new customers
  - Deduction of other prospective funding (e.g., grants)
  - Deduction of repair & replacement projects (paid through user rates)
  - Planning period of capital program (CIP)

Key Considerations: Denominator

Applicable Customer Base

- Planning period consistent with numerator
- Defining system capacity in units
  - Meter equivalents
  - Usage-based ERUs (WERC / SERC)
  - Demand-based ERUs

Water Utility
Draft Results

Water Scenario Definition

- Cost basis is the same in all scenarios; only customer base differs
- Scenario A: Usage Based ERUs (Updated WERC)
  - 1.0 WERC per residential, quasi-residential, or senior discount unit
  - 0.5 WERC per duplex unit
  - 0.3 WERC per multifamily unit
  - All other classes based on usage equal to 425 gallons per day (calculated from the FY 2013/14 customer statistics)
- Scenario B: Meter Capacity Equivalents
  - Uses AWWA meter equivalency factors to increase charge by meter size
- Scenario C: Maximum Day GPM
  - Estimates maximum day water use upon connection
  - Recommended only for non-single family residential meter sizes of 1 ½" and larger

Water Scenario Customer Base

Customer Base Calculations			
System Parameter	Existing	Future	Growth Factor
Average Day Demand (mgd)	9.80	11.71	119.46%
Max Day Demand (mgd) [a]	20.09	24.00	119.46%
Scenario A: Usage Based ERUs (425 gpd)	23,059	27,547	119.46%
Scenario B: Meter Capacity Equivalents [b]	25,222	30,131	119.46%
Scenario C: Maximum Day GPM	13,951	16,667	119.46%

[a] Max day to average day demand ratio = 2.05 per Master Plan

[b] Based on AWWA Meter Capacity Ratios

Water Scenario Summary

Water Connection Charge Calculation			
Connection Charge Components	**Scenario A Usage Based ERUs (425 gpd)**	**Scenario B Meter Capacity Equivalents**	**Scenario C Maximum Day GPM**
Existing Cost Basis			
Utility Capital Assets	$ 134,554,918	$ 134,554,918	$ 134,554,918
plus: Construction Work in Progress	2,827,601	2,827,601	2,827,601
less: Contributed Capital	(25,802,750)	(25,802,750)	(25,802,750)
plus: Interest on Non-Contributed Plant	40,385,456	40,385,456	40,385,456
less: Net Debt Principal Outstanding			
Existing Cash Balances	$ 4,364,927	$ 4,364,927	$ 4,364,927
less: Debt Principal Outstanding	(60,851,971)	(60,851,971)	(60,851,971)
Net Debt Principal Outstanding	(56,487,044)	(56,487,044)	(56,487,044)
Total Existing Cost Basis	**$ 95,478,181**	**$ 95,478,181**	**$ 95,478,181**
Future Cost Basis			
Total Future Projects	$ 16,740,000	$ 16,740,000	$ 16,740,000
less: Identified Repair & Replacement Projects	(8,567,000)	(8,567,000)	(8,567,000)
less: Contributed Future Upgrade & Expansion Assets	-	-	-
Total Future Cost Basis	**$ 8,173,000**	**$ 8,173,000**	**$ 8,173,000**
Total Cost Basis	**$ 103,651,181**	**$ 103,651,181**	**$ 103,651,181**
Customer Base			
Existing	23,059	25,222	13,951
Future (Incremental)	4,488	4,909	2,715
Total Customer Base	**27,547**	**30,131**	**16,667**
Calculated Connection Charge	**$ 3,763**	**$ 3,440**	**$ 6,219**

Scenario A: Usage Based ERUs (Updated WERC)

Water Equivalent Residential Customer (WERC)	WERC	Existing Charge	Proposed Charge
Single Family Residence	1.00	$ 454	$ 3,763
Duplex (each living unit)	0.50	227	1,881
Apartment (each living unit)	0.30	136	1,129
Mobile Home Individual lot	1.00	454	3,763
Mobile Home Park (each pad)	0.30	136	1,129
All others, per WERC	1.00	454	3,763

[a] One WERC is equal to 425 gallons per day

Scenario B: Meter Capacity Equivalents

Most Common

Meter Size	Meter Equivalency Factors [a]	Proposed Charge
5/8-inch	1.00	$ 3,440
1-inch	2.50	8,600
1 1/2-inch	5.00	17,200
2-inch	8.00	27,520
3-inch	16.00	55,040
4-inch	25.00	86,000
6-inch	50.00	172,001
8-inch	80.00	275,201
10-inch	115.00	395,601
Multifamily per unit [b]:		$ 1,032

[a] AWWA meter capacity equivalent ratios

[b] Alternative multifamily option: 30% of 5/8" meter charge per unit

Scenario C: Maximum Day GPM

- $6,219 per maximum day GPM applied to estimated maximum day use
- Option to charge for non-single family residential meter sizes 1 ½" and larger

Sample Charges

Customer	Meter Size	Scenario A: Usage Based ERUs			Scenario B: Meter Capacity Equivalents		Scenario C: Maximum Day GPM	
		Average Daily Use (gpd)	# WERCs (@ 425 gpd)	Resulting Charge	MCE Ratio	Resulting Charge	Estimated Max Daily use (gpm)	Resulting Charge
Restaurant 1	2"	1,767	4.2	$ 15,645	8.0	$ 27,520	2.0	$ 12,328
Restaurant 2	5/8"	2,195	5.2	$ 19,435	1.0	$ 3,440	2.9	$ 17,970
Restaurant 3	1"	3,710	8.7	$ 32,849	2.5	$ 8,600	5.5	$ 34,483
Restaurant 3 Irrigation	5/8"	77	0.2	$ 682	1.0	$ 3,440	0.2	$ 1,043
Large Retail Store 1	2"	660	1.6	$ 5,844	8.0	$ 27,520	0.6	$ 3,971
Large Retail Store 1 Irrigation	2"	2,353	5.5	$ 20,834	8.0	$ 27,520	5.5	$ 34,483
Large Retail Store 2	2"	1,060	2.5	$ 9,385	8.0	$ 27,520	1.6	$ 10,028
Large Retail Store 2 Irrigation	2"	912	2.1	$ 8,075	8.0	$ 27,520	3.2	$ 20,063
Large Retail Store 3	1-1/2"	6,742	15.9	$ 59,694	5.0	$ 17,200	8.3	$ 51,404
Large Retail Store 3 Irrigation	2"	2,238	5.3	$ 19,816	8.0	$ 27,520	3.5	$ 21,941
Industrial 1	3"	15,584	36.7	$ 137,983	16.0	$ 55,040	24.9	$ 154,639
Industrial 1 Irrigation	1-1/2"	6,126	14.4	$ 54,240	5.0	$ 17,200	11.1	$ 68,960
Industrial 2	2"	342	0.8	$ 3,028	8.0	$ 27,520	0.5	$ 2,928
Industrial 2 Irrigation	1"	1,230	2.9	$ 10,891	2.5	$ 8,600	2.8	$ 17,135
Grocery Store 1	2"	5,490	12.9	$ 48,609	8.0	$ 27,520	7.4	$ 46,183
Grocery Store 1 Irrigation	2"	904	2.1	$ 8,004	8.0	$ 27,520	2.6	$ 15,884
Hotel 1	3"	5,088	12.0	$ 45,050	16.0	$ 55,040	8.9	$ 55,168
Hotel 1 Irrigation	1"	2,874	6.8	$ 25,447	2.5	$ 8,600	10.9	$ 67,496
Hotel 2	6"	6,433	15.1	$ 56,959	50.0	$ 172,000	9.5	$ 59,139
Hotel 2 Irrigation	1-1/2"	3,164	7.4	$ 28,014	5.0	$ 17,200	6.8	$ 42,211

gpd = gallons per day gpm = gallons per minute MCE = meter capacity equivalent

Sample Charges

****REVISED****

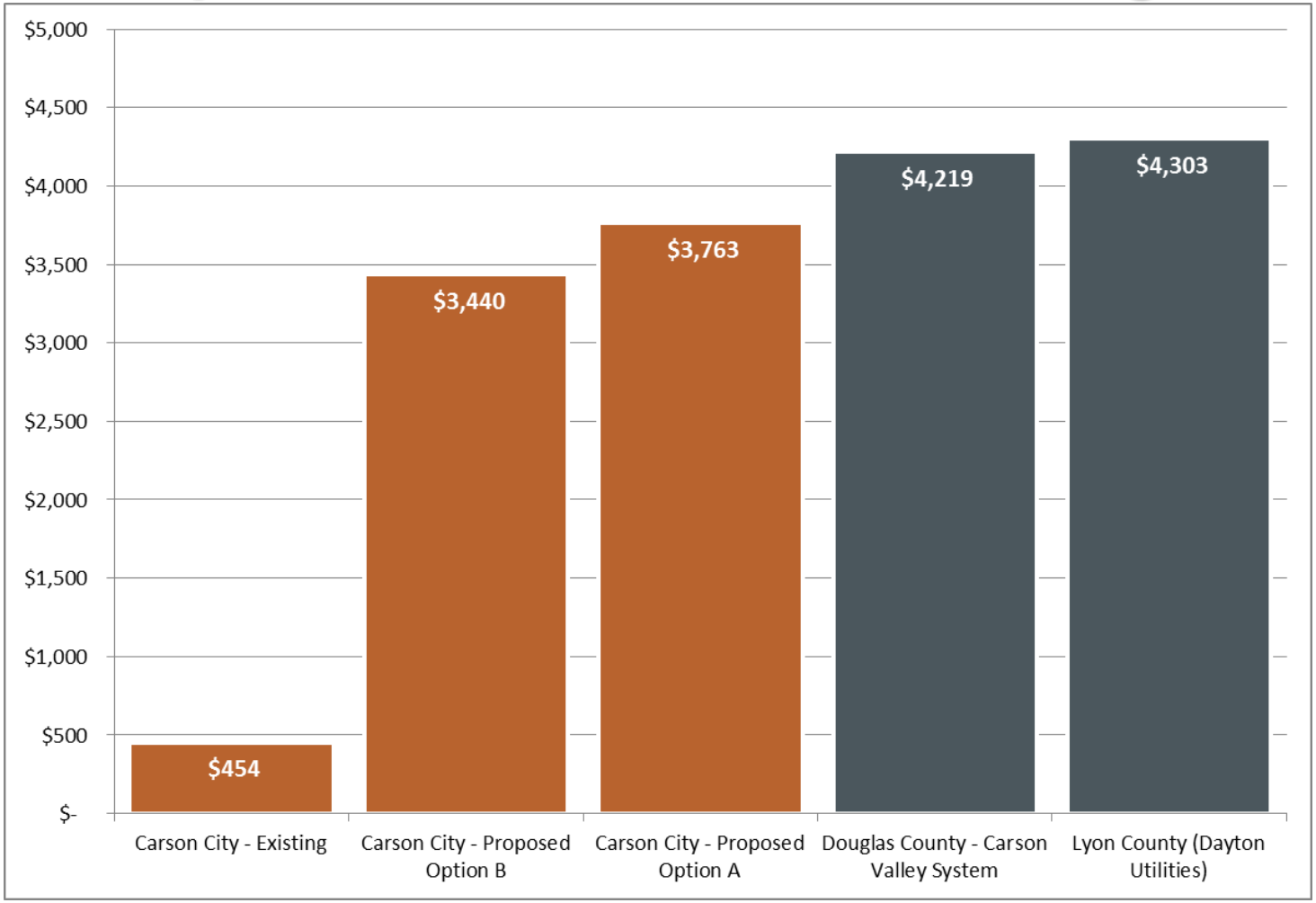
			Scenario A: Usage Based ERUs		Scenario B: Meter Capacity Equivalents			Scenario C: Maximum Day GPM	
Customer	Meter Size	Units	# WERCs (0.3 WERC/unit)	Resulting Charge	MCE Ratio	Resulting Charge	Multifamily Charge Option	Estimated Max Daily use (gpm)	Resulting Charge
Apartments 1	1-1/2"	88	26.4	$ 99,343	5.0	$ 17,200	$ 90,816	24.9	$ 154,847
Apartments 2	1-1/2"	36	10.8	$ 40,640	5.0	$ 17,200	$ 37,152	11.8	$ 73,352
Apartments 3	5/8"	8	2.4	$ 9,031	1.0	$ 3,440	$ 8,256	1.9	$ 12,121
Mobile Home Park 1	1-1/2"	54	16.2	$ 60,961	5.0	$ 17,200	$ 55,728	18.4	$ 114,514

gpd = gallons per day gpm = gallons per minute MCE = meter capacity equivalent

Recommendation

- Option 1:
  - Hybrid approach:
    - Meter capacity equivalents for all customers through 1” meters, except multifamily
    - Multifamily through 1” meters charged 30% of 5/8-inch by number of units
    - Either WERC or maximum day GPM for non-single family customers with 1 ½” and larger meters
- Option 2:
  - Updated WERC for all customers

Comparison of Connection Charges



Note: All other surveyed jurisdictions charge water rights fees in addition to connection charges

Sewer Utility
Draft Results

Usage Based ERUs (Revised SERC)

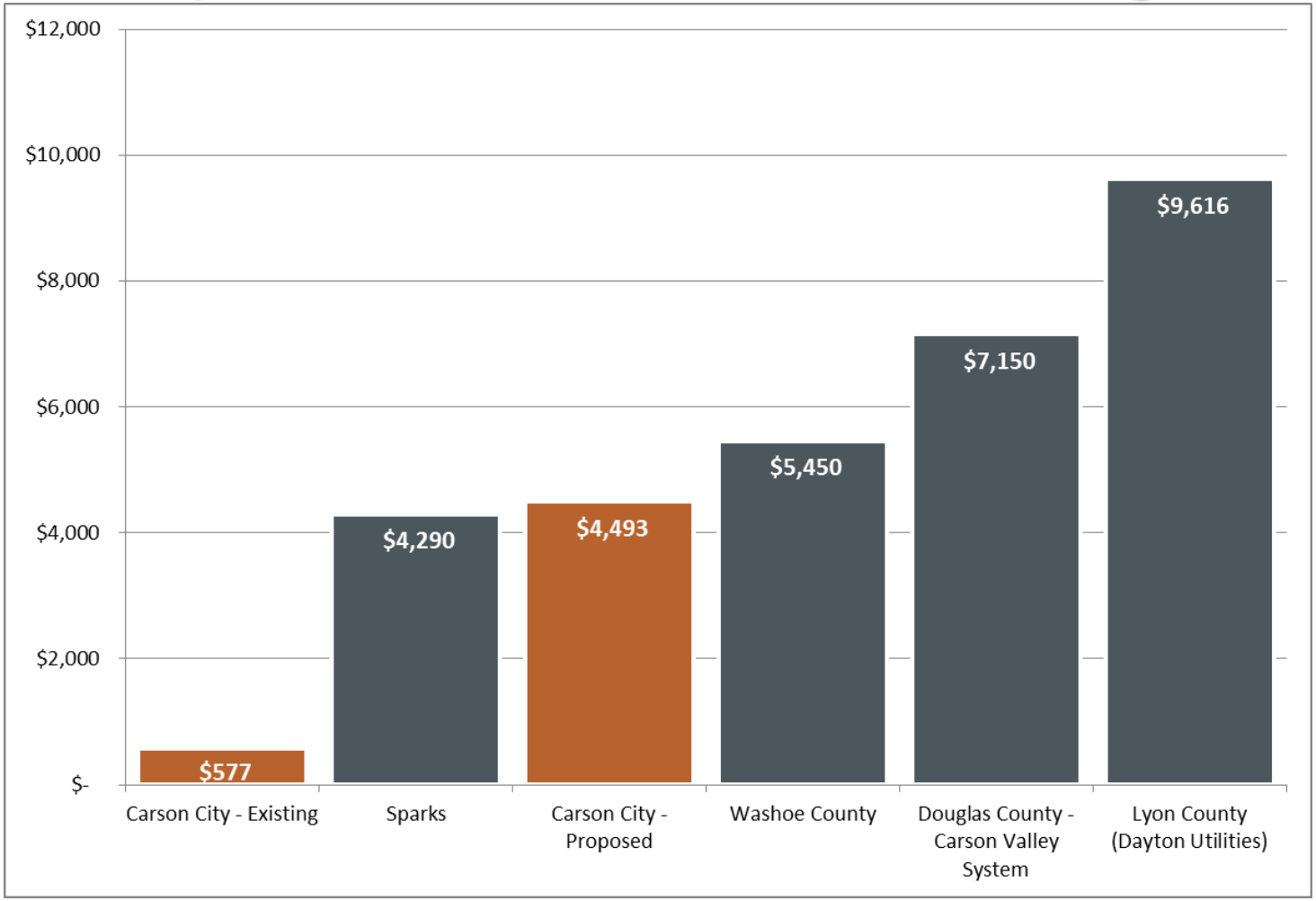
- 1.0 SERC per residential, quasi-residential, or senior discount unit
- 0.75 SERC per duplex unit
- 0.65 SERC per multifamily unit
- All other classes based on assumed flow equal to 200 gallons per day (calculated from the FY 2013/14 customer statistics)

Usage Based ERUs Schedule of Charges

Sewer Equivalent Residential Customer (SERC)	SERC	Existing Charge	Proposed Charge
Single Family Residence	1.00	$ 577	$ 4,493
Duplex (each living unit)	0.75	433	3,370
Apartment (each living unit)	0.65	375	2,920
Mobile Home Individual lot	1.00	577	4,493
Mobile Home Park (each pad)	0.65	375	2,920
All others, per SERC	1.00	577	4,493

[a] Each SERC is equal to 200 gallons per day

Comparison of Connection Charges



Note: All other surveyed jurisdictions charge water rights fees in addition to connection charges

Implementation of Charges

- Represents the maximum allowable charge within the scenario
- The City may implement any charge up to this amount
- Connection charge calculation is in current dollars
- Future years can be updated by:
  - Recalculating the connection charge annually
  - Building in a provision for inflation to the connection charge
  - Adjusting the current dollar charge annually for inflation based on the *Engineering News Record's* "Construction Cost Index" (recommended)

Next Steps

- Policy direction
- Develop phase-in strategy for selected option

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