



July 24, 2018

Ms. Tiffany Gatesman, Board President
 Upper Colorado River Watershed Group
 Box 1842
 Grand Lake, CO 80447

Electronic Copy via t.g.gatesman@gmail.com

**Water Fee Calculations for
 Transmountain Diversions**

Dear Tiffany,

Grand Environmental Services is pleased to present to the Upper Colorado River Watershed Group (UCRWG) these initial calculations to support discussion of 1) a possible fee that might be assessed on transmountain diversions from the Colorado River Headwaters, and 2) potential impact upon Denver Water (DW) customers. Working with LRB Hydrology and Analytics, our calculations build upon on-line data available through the Colorado Decision Support System (CDSS) and annual financial reports for DW. We consider diversions through the Moffat and Roberts tunnels to get a more holistic view of the impacts upon West and East Slopes (see Appendices A and B) but focus here on Moffat diversions during the 11-year period 2006 through 2016. Note we use the terms "water fee" and "impact fee" interchangeably but the actual revenue mechanism is yet to be determined.

Findings

Annual diversions through the Moffat collection system average 45,468 acre feet (range 18,307 to 85,027 acre feet per year per CDSS), leading to the following theoretical projections:

Fee Rate Per Gallon Diverted Eastward	Annual Gross Revenue that would be Generated	DW Customers in this Model (Taps)	Annual cost to DW Customers
\$0.01	\$148,000,000	308,750	\$480
\$0.005	\$74,000,000	308,750	\$240
\$0.001	\$14,800,000	308,750	\$48
\$0.0005	\$7,400,000	308,750	\$24

Parallel calculations including Roberts Tunnel diversions are included below in Tables S1, S2,

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and S3, with more detail attached in Appendices A and B.

Moving Forward

We recommend further research into successful applications of this concept elsewhere, including the excise tax levied by the State of Maine for water distributors taking 1,000,000 gallons or more out of state, also ongoing discussions here in Colorado. We understand the Colorado Inter-basin Round tables have considered more than 100 funding mechanisms for “basin of origin restoration projects” including a monthly water tax on households, a bottle tax, a tourism tax, and increased water tap fees for new construction.

Another question is how such water revenues might be apportioned amongst those most heavily impacted by DW Moffat diversions. The UCRWG Board recognizes, for instance, the great need to support a broad range of watershed conservation efforts and improvements to local water and sanitation infrastructure consistent with the UCRWG Watershed Resiliency Plan. Additional parallel conversations would be fruitful in the Blue River Watershed impacted by DW Roberts Tunnel diversions.

Finally, we must respect that some West Slope entities may already be encumbered by previous DW agreements, including certain cash payments which might preclude their participation in this theoretical discussion.

Thank you for this opportunity to work with UCRWG.

Sincerely,



Geoffrey S. Elliott
Principal Earth Scientist
Grand Environmental Services

Attached:

- Appendix A: Preliminary Impact Fee Analysis Report from LRB Hydrology and Analytics
- Appendix B: Baseline data for Roberts and Moffat Tunnel, CDSS from 1975 to 2017, from LRB Hydrology and Analytics

Distribution:

- UCRWG Board, post on website
- Andy Miller, Fraser Town Trustee

Summary Table S-1 from LRB Hydrology and Analytics Summary of Annual Trans-Mountain Diversions Used in Denver Water's Supply: 2006 to 2016*						
	Average of Annual Diversions		Maximum Annual Diversion		Minimum Annual Diversion	
	Million Gallons	Acre-Feet	Million Gallons	Acre-Feet	Million Gallons	Acre-Feet
Moffat Tunnel	14,816	45,468	27,706	85,027	5,965	18,307
Roberts Tunnel	19,845	60,902	36,868	11,3143	2,721	8,350
Combined Total	34,661	106,370	63,969	196,315	10,394	31,899

Summary Table S-2 from LRB Hydrology and Analytics Example Annual Revenue from Impact Fees, Considering 2006 to 2016				
	\$0.01 per gallon	\$0.005 per gallon	\$0.001 per gallon	\$0.0005 per gallon
Moffat Diversions (millions \$)				
Average	148	74.1	14.8	7.4
Maximum	277	139	27.7	13.9
Minimum	59.7	29.8	6.0	3.0
Roberts Diversions (millions \$)				
Average	198	99.2	19.8	9.9
Maximum	369	184	36.9	18.4
Minimum	27.2	13.6	2.7	1.4
Combined Diversions (millions \$)				
Average	332	166	33.2	16.6
Maximum	640	320	64.0	32.0
Minimum	104	52	10.4	5.2

Summary Table S-3 from LRB Hydrology and Analytics Potential Annual Increase in Cost of Treated Water per Tap for Combined Diversions For Customers Inside Denver Water's Combined Service Area** for 2006 to 2016				
	\$0.01 per gallon	\$0.005 per gallon	\$0.001 per gallon	\$0.0005 per gallon
Average	\$938	\$469	\$94	\$47
Maximum	\$1,693	\$847	\$169	\$85
Minimum	\$282	\$141	\$28	\$14

*Data from Colorado Decision Support System

**Average 308,750 taps inside Denver Water's Combined Service Area (range 301,620 to 314,598 taps over the study period) see Denver Water 2015 Comprehensive Annual Report for the years ending December 31, 2015 and 2014.