



September 7, 2023

Ms. Amber Gregory, PE  
City of Steamboat Springs – Utilities  
137 10<sup>th</sup> Street  
Steamboat Springs, Colorado 80477

**Re: Water Demand  
RiverView Lots E & B, Steamboat Springs, Colorado**

Dear Amber:

This letter is an analysis of water demand required for the proposed construction of RiverView Lots B & E (the Project). This letter includes the base data, methods, assumptions and calculations used by Landmark Consultants, Inc. (Landmark). It was prepared in conjunction with the concurrent Development Plan application submitted for the project.

Landmark prepared this letter in accordance with Section 25-78 of the City of Steamboat Springs Municipal Code for the purpose of quantifying the water demanded associated with the project.

The facts and opinions expressed in this letter are based on Landmark's understanding of the project and data gathered from:

- The Plans provided as part of the Development Plan application.
- 2020 Water Distribution and Wastewater Collection Infrastructure Master Plan, Steamboat Springs prepared by Baseline Engineering Corporation, April 2021 (referred herein as **Master Plan**)
- Drinking Water Utility White Paper prepared by the City of Steamboat Springs, February 15, 2023.

The project is located on Lots B & E of the Downtown RiverView Subdivision.

The project proposes the construction of 104 residential rental apartments and accompanying facilities and minimal landscaping on the largely undeveloped land. The project is proposing a mix of units ranging among studio, 1, 2, and 3 bedrooms in layout. Additionally, the project also contains a common area including a club house area, leasing office, and lobby.

The Master Plan uses the Equivalent Residential Unit (EQR) method for equating 'water demands and wastewater flows for different user categories' and describes EQR for Steamboat Springs as a 'three-bedroom, 2-bathroom home up to 2,500 sf.

Per the City's current definition and the Master Plan, Landmark assumed a demand of 200 gallons per EQR per day to estimate the water demand and used peaking factors for the Maximum Day (2.4 times Average Day) and the Maximum Hour (2.0 times the Maximum Day) as described in the Master Plan.

## RiverView Lots B & E – Water Demand

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Landmark applied the land use category of Multi-Family with the following EQR reduction factors:

- 1 bedroom: 0.65
- 2 bedroom: 0.75
- 3 bedroom: 0.85

Landmark calculated an Average Day Flow demand of 10 gpm for the entire development with a Max Day Flow demand of 25 gpm and a Max Hour Flow of demand of 35 gpm. These water usage Calculations can be found in the attached spread sheet.

Landmark also completed the City's Water Demand Worksheet and a copy is attached.

If you have any questions during your review process, feel free to contact us.

Sincerely,

Landmark Consultants, Inc.

A handwritten signature in blue ink, appearing to read "Ryan Spaustat", with a long horizontal flourish extending to the right.

Ryan Spaustat, P.E.  
Landmark Consultants



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## RiverView Lots B & E

### Water Usage Calculations

Assumptions based on City of Steamboat Springs Water and Wastewater Master Plan

<b>WATER DEMAND CALCULATIONS</b>											
<i>Description/ Land Use</i>	Assigned EQR Value	Acres	Units	Equivalent Residential Units (EQR)	<b>Assumptions:</b>				<b>Calculations:</b>		
					Assumed Demand	Average Day	Max Day <sup>1</sup>	Max Hour <sup>2</sup>	Average Day	Max Day	Max Hour
					(gal /day /EQR)	(gpm/EQR)	(gpm/EQR)	(gpm/EQR)	(gpm)	(gpm)	(gpm)
Studio/1 Bedroom Units	0.65	N/A	55	36	200	0.14	0.33	0.67	5	12	24
2 Bedroom Units	0.75	N/A	25	19	200	0.14	0.33	0.67	3	6	13
3 Bedroom Units	0.85	N/A	24	20	200	0.14	0.33	0.67	3	7	14
N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>TOTAL =</b>									<b>10</b>	<b>25</b>	<b>35</b>

<sup>1</sup>Assumed Max Day peaking factor is 2.4 times the Average Day

<sup>2</sup>Assumed Max Hour is 2.0 times Maximum Day

## WATER DEMAND WORKSHEET

### City of Steamboat Springs

Note to Applicants: Please complete all information. Additional comments to be entered under Section 8 below.

Project Name: Riverview Lots B & E  
Contact Person: Phillip Parker  
Telephone: 720-651-0201  
Email: [philp@landmark-co.com](mailto:philp@landmark-co.com)  
Date: 9/8/2023

Description of Proposed Project:  
Apartments and condos located in Downtown Riverview Subdivision with internal parking and office/retail space on ground level.

Location of Project: Lots B & E, Downtown Riverview Subdivision, Reception No. 795286, File No. 14362  
Northeast 1/4 of Section 17, Township 6 North, Range 84 West of the 6th Principal Meridian, City of Steamboat Springs, Routty County, Colorado  
Lot B PIN: 312600002  
Lot E PIN: 312600005

Project Area: 1.4 Acres, Lot B Area: 0.89 Acres, Lot E Area: 0.51 Acres

Has this area been annexed into City limits? Yes X

No                     

Is this project a redevelopment of existing lots and structures? Yes                     

No X

If Yes, identify by water/sewer billing address: N/A

#### 1. RESIDENTIAL INDOOR WATER DEMAND

A. Detached single family lots (number):	<u>0</u>		
Average lot size:	<u>0</u>	square feet	
B. Average floor area of house: (inclusive of garage and unfinished basement)	<u>0</u>	square feet	
C. Greater of A or A x B/3,000:	<u>0</u>	single family equivalents (SFEs)	
D. In-house demand (C x 0.392):	<u>0</u>	acre-feet per year	
E. Multi-family units (number): (inclusive of duplex, condominium, townhouse, and apartment units)	<u>104</u>		
F. Average floor area of unit: (inclusive of garage and unfinished basement)	<u>849</u>	square feet	E(F)/3k 29.432
G. Greater of E or E x F/3,000:	<u>104</u>	single family equivalents (SFEs)	
H. In-house demand (G x 0.336):	<u>34.944</u>	acre-feet per year	
I. <b>Total indoor demand (D + H):</b>	<u>34.944</u>	acre-feet per year	
J. <b>Total residential SFEs:</b>	<u>104</u>	SFEs	

## 2. IRRIGATION WATER DEMAND

Describe irrigation methods: All landscaped areas will be irrigated with an automatic system. Shrubs will be drip irrigated.  
Automatic irrigation system with drip irrigation.

A. Average irrigated area per detached single family lot:	0 square feet
B. Irrigated area (1A x 2A/43,560):	0 acres
C. Average irrigated area per multi-family unit:	56 square feet
D. Irrigated area (1E x 2C/43,560)	0.133701 acres
E. Other irrigated areas:	
1. Irrigated parks	0 acres
2. Irrigated entry features	0 acres
3. Irrigated street ROW	0 acres
4. Common space	0 acres
5. Total other	0 acres
F. Total irrigated area (2B + 2D + 2E5):	0.133701 acres
G. Total irrigation demand (2F x 2.5)	0.334252

## 3. OTHER OUTDOOR WATER USES

A. Pond water surface area:	0 square feet
B. Fountain water surface area:	0 square feet
C. Swimming pool:	
1. Surface area	0 square feet
2. Volume	0 gallons

## 4. OTHER INDOOR WATER USES


A. Retail (square feet x 0.000112)	1050 square feet	105 0.10 gpd/sqft
B. Office (square feet x 0.000179)	450 square feet	72 0.16 gpd/sqft
C. Warehouse or Storage (square feet x 0.0000672)	0 square feet	0 0.06 gpd/sqft
D. Motel/hotel without kitchens (room x 0.1120)	0 guest rooms	0 100 gpd/room
E. Motel/hotel with kitchens (room x 0.1680)	0 guest rooms	0 150 gpd/room
F. Restaurant (seat x 0.0392)	0 seats	0 35 gpd/seat
G. Tavern	0 seats	0 20 gpd/seat
H. Other (describe)		
I. Total other indoor water usage		177 gpd

Describe below the expected number of employees/guests/daily hours and anything that impacts the number of people using the facilities or special features such as swimming pools, hot tubs, or other indoor water features. Use the Comments worksheet if more space is needed:  
Few employees (~5) and normal business hours.

**5. AVERAGE ANNUAL CONSUMPTION USAGE (FOR CITY OF STEAMBOAT SPRINGS STAFF USE)**

	Demand (acre-feet)	Consumptive Use (acre-feet)
A. Indoor usage		
B. Outdoor usage		
C. Total		

**6. APPLICANT**

Project Name: Riverview Lots B & E  
By (print name): Phillip Parker (on behalf of Landmark Consultants, Inc.)  
(Owner/Authorized Representative)  
Title: Engineer in Training  
Signature:   
Date: 6/29/2023

**7. CITY**

Verified by (print name):  
(City employee)  
Title:  
Signature:  
Date:

**8. ADDITIONAL COMMENTS**