LIVINGSTON REGIONAL WATER SYSTEM

City Of Livingston Public Works
330 North Bennett Street
Livingston, MT 59047

PRELIMINARY ENGINEERING REPORT (PER)

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B24-011

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1.0 PROJECT PLANNING

The City of Livingston provides water service to residences within city limits. The following sections describe the service area in detail.

A. LOCATION

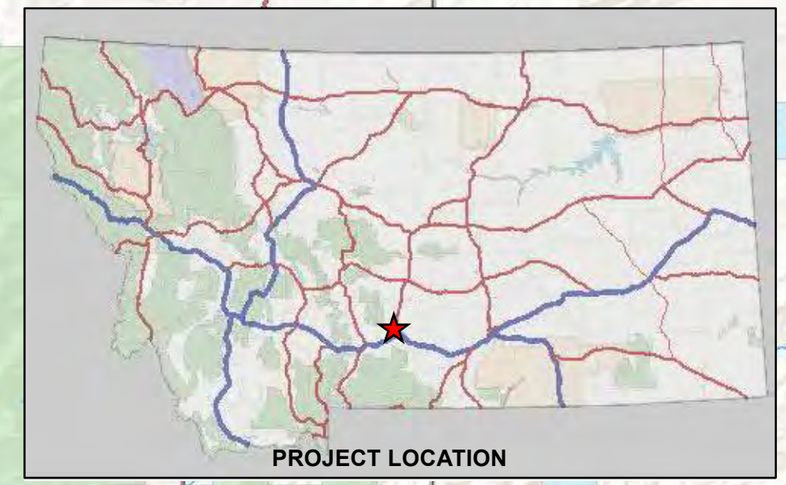
The City of Livingston is the county seat of Park County, Montana. Livingston was established in 1882 when construction of the Northern Pacific Railway (NPR) reached the area and developed a railroad depot and railroad shops. With the expansion of the rail line, visitors to Yellowstone National Park passed through Livingston regularly and it became known as the Gateway to Yellowstone National Park. Although the population and economy experienced a decline when the railroad moved the rail shops out of Livingston in the mid 1980's, the City has rebounded and expanded its industries and businesses to include general service, manufacturing, health, and online/digital service providers as well as agriculture, ranching, logging, and mining. In addition, Livingston continues to capitalize on the tourism industry with its access into Yellowstone National Park. The City sees significant tourist volumes from April through September. Livingston provides opportunities for many recreational activities including fishing, hunting, hiking, rafting, hot springs, and entertainment.

The City of Livingston lies in Township 2 South, Ranges 9 and 10 East. Livingston is located along Interstate-90 (I-90), approximately 25 miles east of Bozeman and 115 miles west of Billings. The City's center is at a latitude and longitude of 45°39'46.5"N and 110°33'26.8"W and is at an elevation of approximately 4,500 feet above sea level. Livingston is located along the Yellowstone River, between four mountain ranges: the Bangtail Hills to the northwest, the Crazy Mountains to the northeast, the Gallatin Range to the southwest, and the Absaroka – Beartooth Mountains to the southeast. In addition to the Yellowstone River, there are several other year-round streams that flow in and around Livingston including Fleshman Creek, Billman Creek, Livingston Ditch, and other minor tributaries. Information on the hydrogeologic conditions have been provided in the City of Livingston's 2001 Source Water Delineation and Assessment Report. According to this report:

The ancestral Yellowstone River cut a 25 to 80 ft deep and roughly one-mile wide trough into bedrock beneath present day Livingston. The river later filled this trough with coarse sand and gravel layers that comprise the Livingston Aquifer, the source of the City of Livingston public water system wells. Fine-grained sandy clay layers are encountered when drilling the Livingston Aquifer…

The average daily low and high temperatures are 17° F and 37° F in January and 49° F and 85° F in July. Precipitation ranges from approximately 0.5 inches per month during the dry season (December through February) to approximately 2.5 inches per month during the wet season (May and June). Livingston receives on average 14.8 inches of precipitation annually and an average of 46.8 inches of snowfall annually.

Refer to **Figure 1-1** for a vicinity map. Livingston encompasses an area of approximately six square miles including developed areas outside the City limits as shown in **Figure 1-2**.



Crazy Mountains

Clyde Park

Bridger Range

Bangtail Range

Shields River

89N

SWEET GRASS

GALLATIN

86

PARK

Yellowstone River

TO BILLINGS

TO BOZEMAN

Livingston

89S

90

10W

295

McLeod

Gallatin Range

N

0 1 2 4
Miles

89

540

TO YELLOWSTONE NTL PARK

Absaroka Range

West Boulder River

Boulder River

Beartooth Mountains

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QUALITY CHECK:	
DATE DRAWN:	2/2/21
JOB NO.:	20-085
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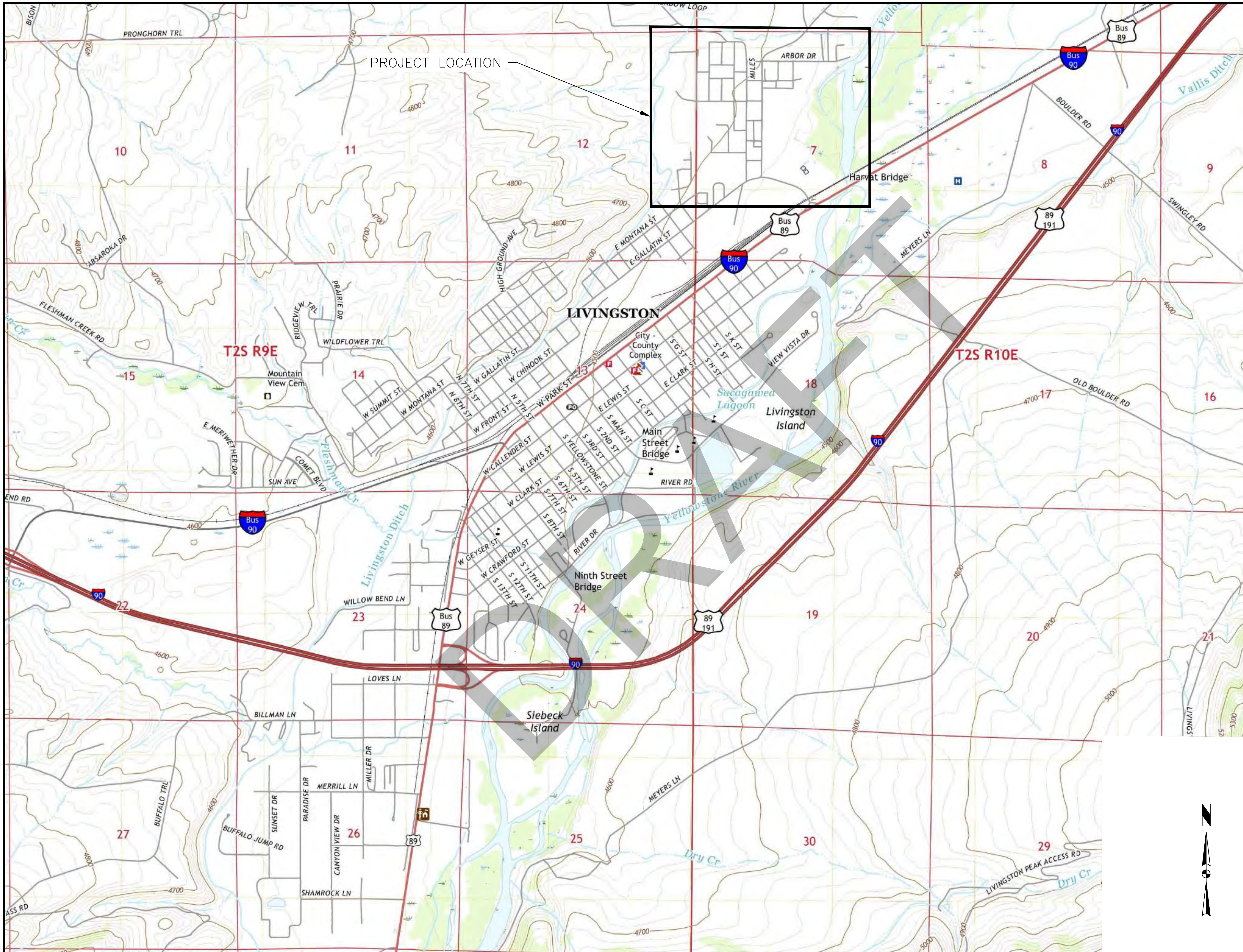
LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

PROJECT VICINITY MAP

20-085 FIG 1-1.MXD

FIGURE 1-1

J:\2020\20-085 City of Livingston_Wastewater\CADD\CIVIL\20-085 FIG 1-1.mxd



PROJECT LOCATION
LIVINGSTON
T2S R9E
T2S R10E
PRONGHORN TRL
ARBOR DR
MILES
BOULDER RD
SWINGLEY RD
OLD BOULDER RD
MEYERS LN
VIEW VISTA DR
ABSAROKA DR
FLESHMAN CREEK RD
PRAIRIE DR
RIDGEVIEW TRL
WILDFLOWER TRL
HIGH GROUND AVE
E MONTANA ST
E GALLATIN ST
W GALLATIN ST
W CHINOOK ST
W PARK ST
W SUMMIT ST
W MONTANA ST
W FRONT ST
N 7TH ST
N 8TH ST
N 5TH ST
W CALLENDER ST
W LEWIS ST
W CLARK ST
W GEYSER ST
W CRAWFORD ST
E LEWIS ST
E CLARK ST
S MAIN ST
S 2ND ST
S 3RD ST
S YELLOWSTONE ST
S 5TH ST
S 6TH ST
S 7TH ST
S 8TH ST
S 11TH ST
S 12TH ST
S 13TH ST
S C ST
S G ST
S H ST
S I ST
S K ST
RIVER DR
RIVER RD
E MERIWETHER DR
COMET BLVD
SUN AVE
WILLOW BEND LN
LOVES LN
BILLMAN LN
MERRILL LN
MILLER DR
SUNSET DR
PARADISE DR
CANYON VIEW DR
SHAMROCK LN
BUFFALO TRL
BUFFALO JUMP RD
MEYERS LN
LIVINGSTON PEAK ACCESS RD
City - County Complex
Mountain View Cem
Harvat Bridge
Sacagawea Lagoon
Livingston Island
Main Street Bridge
Ninth Street Bridge
Siebeck Island
Yellowstone River
Fleshman Cr
Livingston Ditch
Vallis Ditch
Dry Cr
Bus 89
Bus 90
89 191
90
DRAFT

PRINTED 2024-04-21, BY NICOLE M. REDISKE, I:\2024\BOZ\B24-011 LIVINGSTON REGIONAL WATER PER\06_CADD\CIVIL\FIGURES\B24-011-FIGURE 1-1.DWG

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LIVINGSTON REGIONAL WATER SYSTEM PER

LINVINGSTON, MONTANA

DISTRICT TOPOGRAPHICAL MAP

B24-011-FIGURE 1-1.DWG

FIGURE 1-2

B. ENVIRONMENTAL RESOURCES PRESENT

Environmental resources in the vicinity of the City of Livingston are discussed below. Specific impacts for each alternative are discussed further in Chapter 4.0 of this Report. The completed Uniform Environmental Checklist will be included in **Appendix 1-A** of the final draft. Environmental documentation is provided in **Appendix 1-B**; all agency correspondences will be included in **Appendix 1-C** of the final draft**.**

1. Land Resources

The City of Livingston is at an elevation of approximately 4,500 feet above sea level and situated in the Paradise Valley, surrounded by the Crazy Mountains to the northeast, the Gallatin and Bridger Mountain Ranges to the west, and the Absaroka – Beartooth Mountains to the southeast. Area topography is illustrated in the United State Geological Survey (USGS) maps included in **Appendix 1-B.** Soils information, available through the Natural Resources Conservation Service (NRCS) Web Soil Survey, is provided in **Appendix 1-B.** Beaverell-Beavwan complex, 0% to 2% slope is the most prominent soil type within City limits. A letter requesting comment on the proposed improvements has been sent to the NRCS. All correspondence will be provided with the final PER.

2. Floodplains

The City of Livingston is located along the Yellowstone River with additional creeks and minor tributaries running in and around the City. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) City of Livingston and the surrounding area are provided in **Appendix 1-B**. The proposed improvements in the PER are located outside designated floodplains.

3. Wetlands

There are several designated wetland areas immediately adjacent the planning boundary, such as Freshwater Emergent Wetlands, Freshwater Forested/Shrub Wetlands, Freshwater Ponds, and Riverine. A copy of the National Wetlands Inventory, published by the US Fish and Wildlife Service (FWS) is included in **Appendix 1-B**. The proposed project is not expected to impact designated wetlands. An aquatic resource delineation will be completed as necessary to confirm no wetlands will be impacted. Appropriate mitigation measures and permitting will be pursued as required.

4. Agricultural Lands

The City of Livingston and surrounding area has considerable amounts of agricultural lands. The Farmlands Protection Policy Act (FPPA) of 1981 was passed to minimize the impact of Federal programs and projects on the conversion of farmland to non-agricultural uses. The project as currently planned is within City limits where FPPA does not apply. Additionally, the planning area is currently developed areas, which contain no areas of prime or unique farmland thus no impact to important farmlands is expected to occur. The project area is designated as Not Prime Farmland by the NRCS, a copy of the NRCS's Web Soil Survey is available for review in **Appendix 1-B.**

5. Historic Sites

The City of Livingston has four districts that are recognized by the National Register of Historic Places:

- Westside Residential
- Eastside Residential
- B Street
- Downtown (business)

The Montana State Historic Preservation Office (SHPO) has been contacted to comment on the historical and archeological sites in the project area. All correspondences will be included in the final Preliminary Engineering Report.

6. Biological Species Occurrences

The Montana Ecological Services Field Office of the U.S. Fish and Wildlife Service lists four species of concern within Park County that are candidate, proposed, or protected under the Endangered Species Act as threatened species. There are no endangered species in Park County. The species listed by the U.S. Fish and Wildlife Service and their statuses are provided in **Appendix 1-B** and are as follows:

- Canada Lynx – Candidate, Listed Threatened
- Whitebark Pine – Proposed
- Grizzly Bear – Listed Threatened

The Montana Natural Heritage Program (MTNHP) Environmental Report provided a list of the plant and animal "Species of Concern", "Potential Species of Concern", and "Special Status Species" within the queried area. The species of concern and potential species of concern are plants or animals that are native to Montana and are currently, or potentially at risk for extirpation or local extinction. The special status species are species that have some legal protection in place but are no longer recognized as federally listed under the Endangered Species Act. The full list of species can be found in **Appendix 1-B**.

7. Sage Grouse

A query of the Montana Sage Grouse Conservation Program website indicates any improvements to the City's water system will be located outside of the sage grouse habitat designated as a core area, general habitat, or connectivity area and will not be subject to Executive Orders 12-2015 and 21-2015. The Montana Sage Grouse Habitat Conservation Map is included in **Appendix 1-B**. Previous conversations with the Program indicate that projects not within defined sage grouse habitat are not required to coordinate with the Program.

8. Tribal Sites

To protect site of Tribal significance, the Bureau of Indian Affairs (BIA) and the Tribal Historic Preservation Offices (THPO) of the following Tribes have been contacted for comment.

- Apache Tribe of Oklahoma
- Assiniboine and Sioux Tribes Cultural Resources Committee
- Blackfeet Nation Tribe
- Chippewa Cree Cultural Resources Preservation Department
- Confederated Salish and Kootenai Tribes
- Crow Tribe of Montana
- Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
- Little Shell Culture Committee
- Northern Cheyenne Tribe

At this time, no impacts to sites of Tribal significance have been reported. All correspondence will be included in the final draft of this report

9. Socio-economic/Environmental Justice Issues

The City of Livingston is a community where a significant portion of the residents are low and moderate income (LMI). The 2020 to 2023 American Community Survey (ACS) indicates that 37.2% of the Livingston City population was LMI and 15.2% were below the poverty level. The 2024 ACS also indicated the median household income (MHI) is $65,187. Information reported by the Montana Department of Commerce (DOC) is included in **Appendix 1-D.**

The City has been proactive in pursuing grants and low interest loans to minimize impacts to the residents' user rates.

C. POPULATION TRENDS

Population data from the United States Census Bureau is available for Park County and the City of Livingston. Population records from 1970 to 2022 were referenced. **Table 1-1** presents the historical population data.

Table 1-1
Historic Population Data

Year	Park County		City of Livingston	
	Population	% Annual Growth	Population	% Annual Growth
1970	11,197	--	--	--
1980	12,869	1.40%		--
1990	14,484	1.19%	6,701	
2000	15,694	0.81%	6,851	0.22%
2010	15,636	-0.04%	7,044	0.28%
2020	17,191	0.95%	8,223	1.56%

The City of Livingston has been consistently growing since 1990. Steady growth can be expected to continue. The recent population boom in the neighboring Gallatin Valley has reported annual growth rates nearing 3.0%. As such, an annual growth rate of 0.25% is not considered reasonable for projecting the City of Livingston's 20-year design population. It is considered likely that Park County and the City of Livingston will experience elevated growth similar to the neighboring Gallatin County.

The 2021 Sanitary Sewer PER Amendment assumed an annual growth rate of 2.6%. This growth rate is still believed to be reasonable for the City. Populations trends can be shown in **Table 1-2. The anticipated City of Livingston population in 2044 is 15,225 persons.**

Table 1-2
Population Projections

Year	Annual Growth Rate	Population
2020		8,223
2024	2.6%	9,112
2030	2.6%	10,629
2035	2.6%	12,084
2040	2.6%	13,739
2044	2.6%	15,225

D. COMMUNITY ENGAGEMENT

Advertised public meetings were held in the County Complex, with a remote dial-in option also provided. Public notices and meeting minutes are included in **Appendix 1-E.**

The first hearing was held on December 9, 2024; advertisements were posted throughout the community. The primary purpose of the initial public hearing was to discuss deficiencies in the City's existing system and discuss project goals and potential solutions. Meeting attendees included the City Public Works Director and the City Project Manager, TD&H staff, and 27 members of the community. Much of the meeting was utilized to discuss annexed communities to be considered during project planning, estimated costs and funding goals, and planned public process procedures.

The initial public hearing was followed by a public hearing held December 18, 2024 and included both an in-person and virtual option and was advertised throughout the community. Attendees included City staff, TD&H staff, and 8 members of the community. The main purpose of the hearing was to discuss the water alternatives, inform the residents that did not attend the first meeting, and listen to public input.

A third public hearing was held on January 22, 2025. Attendees included the City Public Works Director, the City Project Manager, the Water & Sewer Superintendent, TD&H staff, and a number of members of the community. The main purpose of the hearing was to discuss updated alternative maps, preliminary costs, and discuss the shared wells that will be used for irrigation in the future in Montague and Sleeping Giant.

A fourth public hearing was held on March 26, 2025. Attendees included City staff, TD&H staff, and 17 members of the community. The main purpose of the hearing was to discuss updated alternative maps and preliminary design alternatives and initial cost estimates.

Direct input received from the community at the time of this report included an email from community member Michael Kokot, in which the Mr. Kokot expressed concern about a potential Tana Lane water connection, specifically concerns about insufficient space on his property to maintain adequate separation between planned and/or existing water and sewer lines.

2.0 EXISTING FACILITIES

The following Chapter describes the public water system in and around the Green Acres and Montague subdivisions and Sleeping Giant Estates, both condition and capacity. The City's water system's financial status is also detailed.

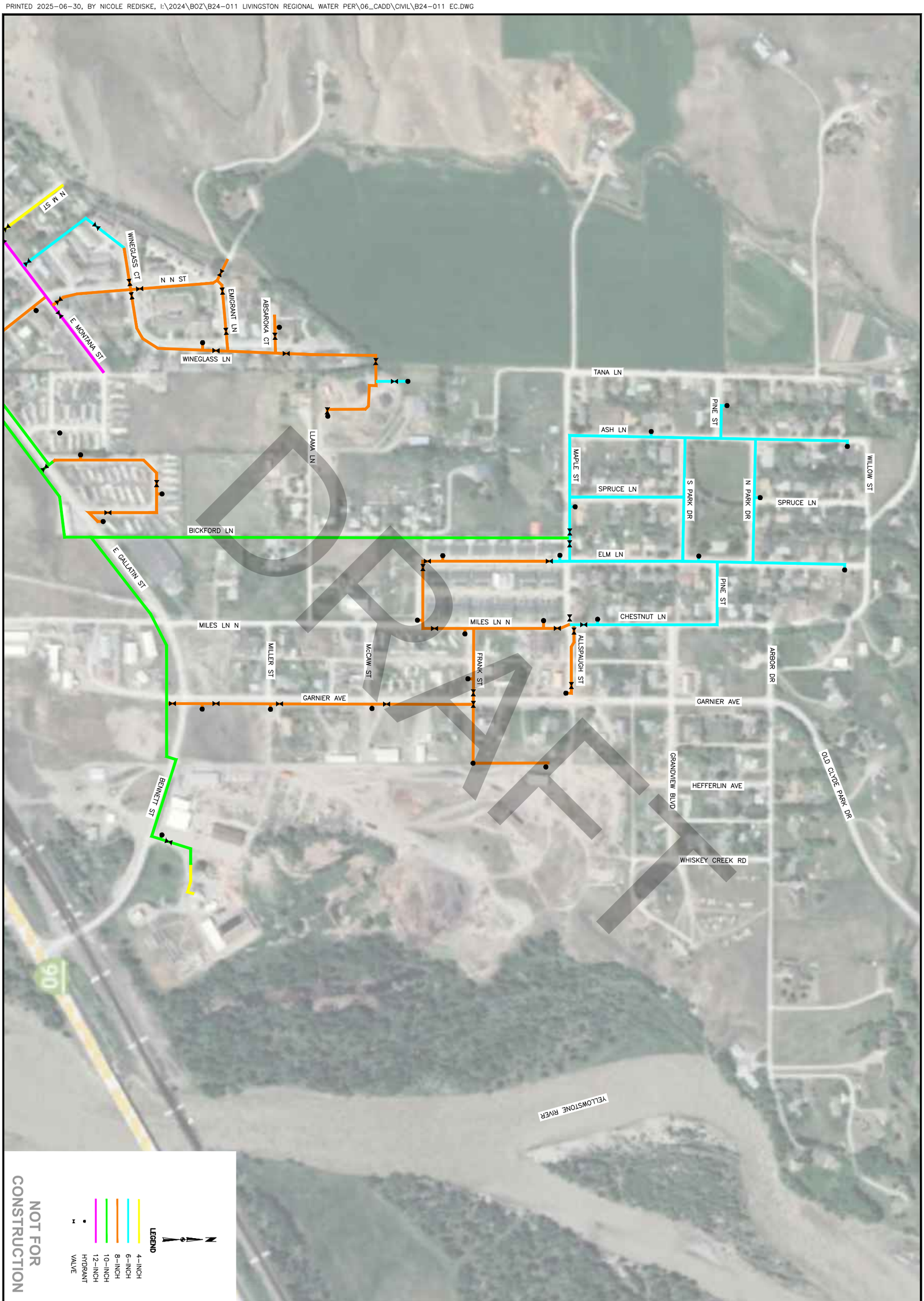
A. LOCATION MAP

The City's jurisdiction zoning boundary encompasses roughly 6 square miles in Park County. The City's water service area covers approximately 2.2 square miles within the jurisdictional boundary. The project area includes roughly 0.2 square miles along the northeast section of the City. **Figure 2-1** presents the project location.

Green Acres, Montague, and Sleeping Giant comprise three subdivisions located northeast of Livingston, MT. Currently Livingston is providing water & sewer service to 165 homes within the Green Acres subdivision. Montague Subdivision and Sleeping Giant Estates are not currently connected to the City's public water system.

B. HISTORY

The Green Acres Subdivision water system was installed and connected to the City of Livingston's water system in 1959. Green Acres Subdivision and Montague Subdivision were annexed into the City of Livingston in 2020 and 2021, respectively. Montague Subdivision and the Sleeping Giant community are not connected to the City's water system and utilize groundwater wells for their potable water source. From 2022 to 2023 a new sewer system was installed to replace the septic system in Green Acres Subdivision and Montague Subdivision.



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LEGEND

4-INCH
6-INCH
8-INCH
10-INCH
12-INCH
HYDRANT
VALVE

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

PROJECT AREA DISTRIBUTION SYSTEM
BY SIZE

FIGURE 2-1

B24-011 EC.DWG

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DRAWN BY:

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C. CONDITION AND CAPACITY OF EXISTING FACILITIES

The following sections detail the condition and capacity of the City of Livingston's water distribution system in the project area.

1. Condition

The current distribution system for Green Acres Subdivision is being fed by a water storage tank ~3/5 a mile to the NW of city center, a connection to the City of Livingston public system extending north along Garnier Avenue, and a 10-inch asbestos cement main extending north along Bickford Lane. The asbestos cement main along Bickford Lane is aging and is likely leaking. Additionally, it extends beneath residential garage structures in the section immediately south of Maple Street. The Green Acres Subdivision's water distribution mains are comprised primarily of ductile iron pipe. Ductile pipe can be operational for 100+ years if optimally maintained under ideal conditions. However, most ductile iron with similar corrosion protection as cast iron in corrosive environments can fail as soon as 25 years. The current system features dead-ends, inadequate isolation, inadequate redundancy, and services crossing adjacent private properties. Additionally, Montague and Sleeping Giant are annexed into the City of Livingston and are currently not connected to the City's public water system.

a. Dead ends

Dead ends in water systems are sections of the system where flow or turbulence in different elements of the system remain low or non-existent for extended periods of time causing stagnation of the water in those elements. During stagnation disinfectant residuals decrease and in turn pathogen concentrations increase. This can generate a permanent source of pathogens in the system if not regularly flushed. Looping water system sections will alleviate this concern by allowing water to flow to services in shorter time periods before disinfectant residuals reduce to critical concentrations. The current Green Acres Subdivision distribution system has dead ends located extending north along both Ash Lane and Elm Lane from North Park Drive, and west from Ash Lane along Pine Street.

b. Inadequate isolation and redundance

Low valve density within the Green Acres Subdivision precludes isolating the water system into small sections or single water lines without denying water to most of the system. Currently, during times of system failure nearly the entire system needs to be off-line to make repairs and all current loops in the system are converted to dead ends. Any current/unknown leaks in the system bring health and safety concerns when system gauge pressure is zero. This allows water to infiltrate the system. Failures within the current system could take multiple days to address, including repairs and disinfection efforts within all sections taken off-line during repair efforts.

Installing adequate valving will allow most of the system to remain functional, isolating and shutting off only the affected sections, eliminating compromise to overall system integrity.

c. Services crossing adjacent properties

Several existing residential homes in Green Acres require their service to cross the neighboring property and connect to the public water main. Water services that cross multiple properties owned by separate entities can cause issues when repairing water service connections. Flooding base course or soil for home foundations can cause swelling or washout under the foundation. Locating the failure if not at the water main or the service connection to the home can be a very invasive process to the neighboring property. This will require exploratory digging or trenching and installing a new service line through the property. Installing waterlines adjacent to public/private property boundaries will make water service installations reside in city right-of-way and homeowner property.

d. Fragile mains

During the 2022 and 2023 sanitary sewer project in Green Acres, it was noted that the existing water mains within the Green Acres Subdivision are fragile and susceptible to failure. During construction, the Contractor reported several unexpected water main breaks. Any current/unknown leaks in the system bring health and safety concerns when system gauge pressure is zero. This allows for ground water to infiltrate the system. As previously discussed, failures within the current system could take multiple days to address, including repairs and disinfection efforts within all sections taken off-line during repair efforts.

e. Neighboring subsurface wastewater treatment system

The Montague Subdivision and Sleeping Giant Community utilize groundwater wells for access to potable water. Until 2022, all three communities utilized septic tanks and drainfields. Many of the subsurface systems were aging and it is unknown if proper maintenance has been followed for the life of the system. With such a high density of aging private subsurface wastewater treatment systems in the area, it is likely that the area groundwater has been contaminated with pathogens and nutrients. This can cause a serious risk to the health and safety of any individual drinking from area wells. Connecting to the City's public water system would ensure the residence of the Montague Subdivision and Sleeping Giant Estates have access to clean and safe drinking water.

f. Lack of Redundancy

Currently, this area of the City's distribution system is served by two mains; an 8-inch PVC main along Garnier Avenue and a 10-inch asbestos cement (AC) main along Bickford Lane. The 10-inch main along Bickford Lane is aging and unreliable. This main requires increased maintenance efforts. Additionally, several structures have been constructed directly over the northern end of this main. This complicates maintenance efforts for over 600 feet of the essential looping water main. This puts the access to safe and reliable drinking water at risk for the Montague and Sleeping Giant Subdivision. Should a breaks occur along the Bickford Lane and Garnier Avenue Mains, these neighborhoods would have no access to the City's water system until the mains can be replaced.

2. Capacity

The existing system in the project area was included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned based on the existing number of units per lot, assuming 2.5 persons per unit and an average usage of 127.5 gpd per person. Vacant lot demands were assigned using the City of Livingston's assigned zoning and projected unit density correlated with each zone. The projected unit density was also correlated to a proposed population of 2.5 persons per unit and an average day demand of 127.5 gpd per person. Maximum day demands were calculated by multiplying average day demands by the peak hour factor of 2.36. Maximum day demand calculations are included in **Appendix 2-1**. Projected maximum day demands resulted in a calculated minimum pressure value of 76 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 1,484 gpm in the project area. WaterCAD reports are included in the **Appendix 2-1**. Detailed WaterCAD system reports are available upon request. See **Figure 2-2** for Junctions color coded by system pressures while supplying maximum day demands.

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COLOR CODING LEGEND
JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES
EXISTING CONDITIONS

B24-011-FIGURE 2-2.DWG

FIGURE 2-2

D. FINANCIAL STATUS OF ANY EXISTING FACILITIES

1. History of Revenues and Expenditures

   Financial records for water and sewer were provided by the City of Livingston. **Table 2-1** summarizes the incomes and expenditures for the water system for 2021 to 2023. Details of the City's profits and losses can be found in **Appendix 2-2.**

Table 2-1 Revenue and Expenditure			
Income			
	2021	**2022**	**2023**
Operating Revenue	$ 2,071,413.64	$ 2,059,275.79	$ 2,214,391.86
Non-Operating Revenue	$ 26,707.67	$ 30,046.20	$ 37,802.03
Total Revenue	$ 2,098,121.31	$ 2,089,321.99	$ 2,252,193.89
Expenditures			
	2021	**2022**	**2023**
Total Expenditures	$1,425,082.31	$1,598,260.36	$1,552,835.36
Net			
	2021	**2022**	**2023**
Total Net Income	$ 673,039.00	$ 491,061.63	$ 699,358.53

2. Rate Schedules

   The City of Livingston has residential and commercial services comprising ¾" to 6" meter sizes. The City charges a sewer base rate of $18.94 per month, plus $7.70 per 1,000 gallons. For residential water, the City charges a base rate of $13.00 per month, plus $3.00 per 1,000 gallons, based on a standard 5/8" meter. For commercial water, the City charges a base rate based on meter size, as summarized in **Table 2-2.**

Table 2-2 Commercial Water Rate Summary			
Meter Size	**Gallons**	**Base Charge**	**Per 1,000 gallons**
¾"	Up to 7,000	$34.00	$3.00 per 1,000 above 7,000
1"	Up to 15,000	$58.00	$3.00 per 1,000 above 15,000
1.5"	Up to 25,000	$88.00	$3.00 per 1,000 above 25,000
2"	Up to 42,000	$139.00	$3.00 per 1,000 above 42,000
3"	Up to 60,000	$193.00	$3.00 per 1,000 above 60,000
4"	Up to 100,000	$313.00	$3.00 per 1,000 above 100,000
6"	Up to 275,000	$838.00	$3.00 per 1,000 above 275,000

3. Annual Operating and Maintenance Costs

The City of Livingston provided operating and maintenance information for the water system for 2021 to 2023. O&M information is summarized in **Table 2-3**.

Table 2-3
Operation and Maintenance Budget

Operating Expense	FY '21	FY '22	FY '23	Average
Water Administration	$ 127,347.69	$ 133,659.17	$ 280,069.50	$ 180,358.79
Water Services	$ 697,099.59	$ 801,587.73	$ 840,949.09	$ 779,878.80
Payroll	*$ 386,353.79*	*$ 457,773.78*	*$ 405,277.58*	*$ 416,468.38*
Repairs and Maintenance	*$ 156,688.49*	*$ 174,006.03*	*$ 216,807.61*	*$ 182,500.71*
Utilities	*$ 130,388.41*	*$ 143,754.58*	*$ 189,664.70*	*$ 154,602.56*
Safety and Risk Management		*$ 344.31*	*$ 1,660.71*	*$ 1,002.51*
Professional Services	*$ 3,463.06*	*$ -*	*$ 171.00*	*$ 1,211.35*
Water Analysis and Treatment	*$ 11,733.01*	*$ 15,168.17*	*$ 19,100.11*	*$ 15,333.76*
Travel/Lodging/Meals	*$ 26.83*	*$ 263.80*	*$ 151.58*	*$ 147.40*
Training Services	*$ 60.00*	*$ 1,065.56*	*$ 121.80*	*$ 415.79*
State Fee Assessments	*$ 8,386.00*	*$ 9,211.50*	*$ 7,994.00*	*$ 8,530.50*
Facilities/Capital Outlay	$ 13,074.66	$ 21,701.28	$ 9,636.98	$ 14,804.31
Customer Accounting/Collections	$ 64,679.05	$ 70,806.20	$ 85,508.99	$ 73,664.75
Water Department-Miscellaneous	$ 345,404.29	$ 349,830.69	$ 336,670.80	$ 343,968.59
Total	**$ 1,247,605.28**	**$ 1,377,585.07**	**$ 1,552,835.36**	**$ 1,392,675.24**

E. WATER AND ENERGY AUDITS

Aside from the City of Livingston comparing water production and water usage to evaluate water losses within the existing system, no water and energy audits have been recently completed.

3.0 NEED FOR PROJECT

The following Chapter details the City of Livingston's need for improvements to their existing water system. The needs for the project are discussed below in terms of health, sanitation and security, infrastructure age, and system growth.

A. HEALTH, SANITATION AND SECURITY

Health, sanitation, and security are of the utmost importance to the City. Currently the existing distribution system poses a significant threat to the safety and well-being of the communities within the project area.

The current Green Acres Subdivision distribution system has several dead-ends, inadequate isolation, inadequate redundancy, and services crossing private properties. Additionally, while the Montague Subdivision and Sleeping Giant Estates are annexed into the City of Livingston, they do not currently benefit from connection to the City of Livingston public water system and source water from private wells.

Dead ends in the water system allow for periods of low or non-existent flow in some sections of the current Green Acres distribution system. During these periods of stagnation, the disinfection residuals decrease, allowing pathogen concentrations to increase, and in-turn generating a permanent source of pathogens in the system without regular flushing.

Additionally, the distribution system within the Green Acres Subdivision currently maintains a low valve density. During system failure, nearly all the system needs to be taken off-line to make repairs, increasing health and safety concerns associated with an increase of potential pathogens. Fire flows are not provided to these areas while they are taken offline. Additionally, while the system maintains zero pressure, leaks in the system allow for affluents and groundwater to infiltrate the system, also increasing health and safety concern risks. Currently, failures within the current system could take multiple days to complete repairs and disinfection with the entire system taken off-line rather than a smaller section.

Finally, the Montague Subdivision and Sleeping Giant Estates are not on the City's public water system and currently rely on wells for potable water. Until recently, all three communities also utilized septic tanks and drainfields. These subsurface wastewater treatment systems are known to introduce pathogens and high nutrient concentrations to groundwater. Contaminated drinking water contains pathogens. These are disease-producing micro-organisms, which include bacteria (such as giardia lamblia), viruses, and parasites. They can enter drinking water when the water source is contaminated by sewage from area drainfields. They can cause gastroenteritis, salmonella infection, dysentery, shigellosis, hepatitis, and giardiasis, all of which can be dangerous to human health. Additionally, extended exposure to nitrogen in drinking water can be damaging or even fatal to infants. Nitrites react directly with hemoglobin in the human blood and other warm-blooded animals to produce methemoglobin. Methemoglobin destroys the ability of red blood cells to transport oxygen. This condition is especially serious in babies under three months of age. It causes a condition known as methemoglobinemia or "blue baby syndrome".

B. AGING INFRASTRUCTURE

The current distribution within and adjacent the Green Acres Subdivision comprises asbestos cement and ductile iron mains. The existing pipes are aging and likely leaking. It is expected that these mains are contributing to water losses within the City. Additionally, these aging mains showed to be fragile with regular failures during the recent Green Acres Subdivision sanitary sewer project. Fragile mains increase the likelihood of main breaks, requiring the upstream areas to be taken offline. This presents a risk to the health and safety of the community, discussed in the previous section.

C. REASONABLE GROWTH

Green Acres Subdivision, Montague Subdivision, and Sleeping Giant Estates are located on the outer limits of the City of Livingston. The immediate area has the potential for expansion and, subsequently a potential greater rate of overall population growth compared to the City itself. The problems present in the current distribution within the Green Acres subdivision will be perpetuated with future growth. Additionally, without connection to the City water system, growth within the Montague and Sleeping Giant subdivisions will likely perpetuate private groundwater well usage and the risks associated with it.

4.0 ALTERNATIVES CONSIDERED

The following Chapter describes different alternatives that may be implemented to improve the current system. Descriptions and reason for inclusion will be discussed for each alternative. Where alternatives are excluded from further consideration, justification for elimination is provided. If an alternative appears to be feasible, it is analyzed in accordance with all required information identified in the *13th Edition of the Uniform Application for Montana Public Facility Projects*.

A. GREEN ACRES LOOPING MAIN ALTERNATIVES

The following alternatives represent measures to improve water distribution system within the Green Acres Subdivision.

1. Alternative G-1: No Action

The no action alternative proposes no changes to the existing distribution system. Certain physical characteristics such as inadequate valve density over the system and water service connections crossing multiple private properties for certain services, and dead ends are known deficiencies in the current system. The existing ductile iron pipe has shown to be fragile and susceptible to main breaks. For these reasons, the no action alternative is not recommended and will not be considered further.

2. Alternative G-2: Green Acres Replacement

a. Description

Alternative G-2 proposes to replace the existing 6-inch ductile iron water mains within the Green Acres Subdivision with new 8-inch PVC mains. In addition to replacing the existing mains, a new section of 8-inch PVC main is also proposed to extend north from Pine Street along Chestnut Lane and A new 8-inch PVC main along Tana Lane. Valving is including throughout the replacement area to allow for better isolation. Traditional trench excavation is the assumed construction method for new water main installation and water main replacements.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned based on the existing number of units per lot, assuming 2.5 persons per unit and an average usage of 127.5 gpd per person. Vacant lot demands were assigned using the City of Livingston's assigned zoning and projected unit density correlated with each zone. The projected unit density was also correlated to a proposed population of 2.5 persons per unit and an average day demand of 127.5 gpd per person. Maximum day demands were calculated by multiplying average day demands by the peak hour factor of 2.36. Maximum day demand calculations are included in the **Appendix 2-1**. Projected maximum day demands resulted in a calculated minimum pressure value of 73 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS

solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 2,113 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in **Appendix 4-1.** See **Figure 4-1** for Junctions color coded by system pressures while supplying maximum day demands.

c. Map

Figure 4-2 presents the preliminary extents of Alternative G-2.

d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices.

e. Land Requirements

No land purchase, lease or easements are anticipated for this alternative as it is assumed that the existing infrastructure was built in existing right-of-way. All mains will be replaced in their existing alignment and new mains will have a new alignment.

f. Potential Construction Problems

Minor construction problems associated temporary water are anticipated. This can be easily mitigated during construction with proper planning and scheduling.

g. Sustainability Considerations

i. Water and Energy Efficiency

Replacing potentially damaged or corroded mains will eliminate water loss due to leaks in the pipe or fittings.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

Replacement of aging mains with inadequate isolation will allow for more manageable repair and maintenance of the system and allows for optimal constructability of expansions for the system in the future.

REPLACE EXISTING 6-INCH MAINS WITH NEW 8-INCH MAINS

WILLOW ST
SPRUCE LN
OLD CLYDE PARK DR
ARBOR DR
N PARK DR
PINE ST
S PARK DR
GARNIER AVE
HEFFERLIN AVE
WHISKEY CREEK RD
GRANDVIEW BLVD
CHESTNUT LN
TANA LN
ASH LN
ELM LN
MAPLE ST
ALLSPAUGH ST
MILES LN N
FRANK ST
YELLOWSTONE RIVER
McCAW ST
MILLER ST
LLAMA LN
ABSAROKA CT
EMIGRANT LN
WINEGLASS LN
WINEGLASS CT
N N ST
N M ST
E MONTANA ST
BICKFORD LN
E GALLATIN ST
BENNETT ST

H-122 H-124 J-1103 J-1107 J-1102 J-787 H-123 J-781 H-121 J-1108 J-780 J-1113 J-790 J-793 HYDRAULIC TEST J-778 J-1112 H-120 J-705 J-777 H-125 J-1109 J-798 J-799 H-126 H-130 J-876 J-1124 J-878 H-128 J-1126 J-1116 H-127 H-129 H-131 J-1115 J-1084 J-747 J-1111

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COLOR CODING LEGEND JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES
ALTERNATIVE G-2: GREEN ACRES REPLACEMENT

B24-011-FIGURE ALT G-2.DWG

FIGURE 4-1

PRINTED 2025-07-24, BY NICOLE REDISKE, I:\2024\B02\B24-011 LIVINGSTON REGIONAL WATER PER\06_CADD\CIVIL\FIGURES\FIGURE ALT G-2\FIGURE ALT G-2 PRESSURES\B24-011-FIGURE ALT G-2.DWG

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP
ALTERNATIVE G-2: GREEN ACRES REPLACEMENT

FIGURE 4-2

B24-011-FIGURE ALT G-1.DWG

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h. Cost Estimates

Planning level capital costs for Alternative G-2 are presented in **Table 4-1**. Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 20% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities.

An increases to general O&M is not anticipated as a result of Alternative G-2. **Table 4-2** identifies the O&M budget.

Table 4-1
Construction Cost Estimate
Alternative G-2: Green Acres Replacement

Item	Quantity	Units	Unit Cost	Cost	Salvage Value[1]
Mobilization	5	%	--	$88,860	$0
Traffic Control	1	LS	$10,000	$10,000	$0
Connect to Existing Main	4	LS	$3,500	$14,000	$10,500
New 8" PVC Water Main	8,687	LF	$100	$868,700	$651,525
New 1" Water SVC (Hardware)	92	EA	$2,000	$184,000	$138,000
New 1" Water SVC (Line)	2,300	LF	$70	$161,000	$120,750
New Fire Hydrant Assembly	15	EA	$8,000	$120,000	$90,000
8" Gate Valve (Ductile Iron)	33	EA	$3,000	$99,000	$74,250
8"x8"x6" Tee (Ductile Iron)	15	EA	$1,200	$18,000	$13,500
8"x8"x8" Tee (Ductile Iron)	12	EA	$1,600	$19,200	$14,400
8" 90 Degree Bend (Ductile Iron)	2	EA	$1,000	$2,000	$1,500
Temporary Service	1	LS	$40,000	$40,000	$0
Road Restoration	9,252	SY	$25	$231,294	$173,471
Exploratory Excavation	10	HR	$1,000	$10,000	$0
Clean Up (3% Minimum of Total Bid)	3	%	--	$55,982	$0
Construction Estimate				**$1,922,036**	**$1,287,896**
Inflation (1.5% for 8 quarters)			12%	$230,644	
Contingency			10%	$215,268	
Administrative, Legal, & Engineering			20%	$473,590	
Total (rounded to the nearest thousand)				**$2,842,000**	**$834,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-2 Operation and Maintenance Budget Alternative G-2: Green Acres Replacement		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	182,500.71
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**780,212.97**

3. Alternative G-3: Green Acres Expansion

a. Description

Alternative G-3 proposes to replace the existing 6-inch ductile iron water mains within the Green Acres Subdivision with new 8-inch PVC mains. Alternative G-3 would also incorporate new looped mains around the perimeter of the subdivision to meet City standards, including on Chestnut Lane north of Pine Street to Willow Street, east-west on Willow Street to Ash Lane, on Tana Lane from Maple Street to Pine Street, and an extension of the main on Pine Street between Tana Lane and Ash Lane and north along Tana Lane from Pine Street to where Tana Lane turns west. The proposed work will also include 43 new valves and 19 new hydrants. Traditional trench excavation is the assumed construction method for new water main installation and water main replacements.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned in the same manner as described previously in Alternative G-2. Maximum day demand calculations are included in the **Appendix 2-1.** Projected maximum day demands resulted in a calculated minimum pressure value of 73 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 2,135 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in the **Appendix 4-1**. See **Figure 4-3** for Junctions color coded by system pressures while supplying maximum day demands.

REPLACE EXISTING 6-INCH MAINS WITH NEW 8-INCH MAINS

J-1106 WILLOW ST J-1105 J-1104 J-1103

H-122 H-124

J-1107

SPRUCE LN

OLD CLYDE PARK DR

J-1102 ARBOR DR

J-787 N PARK DR H-123 J-781

H-121

J-1108 PINE ST J-780 PINE ST J-1113

GARNIER AVE

HEFFERLIN AVE

WHISKEY CREEK RD

J-790 J-793 S PARK DR HYDRANT TEST J-778

J-1112

GRANDVIEW BLVD

CHESTNUT LN

H-120

ASH LN

SPRUCE LN

ELM LN

TANA LN

MAPLE ST J-705 J-777 H-125 ALLSPAUGH ST

J-1109 J-798 J-799 H-126 H-130

YELLOWSTONE RIVER

MILES LN N

FRANK ST J-1124

J-876 J-1126 J-878 H-128

J-1116 H-127 H-129 H-131

J-1115

J-1084

McCAW ST

J-1111

J-747

LLAMA LN

ABSAROKA CT

MILLER ST

EMIGRANT LN

WINEGLASS LN

BICKFORD LN

MILES LN N

GARNIER AVE

N N ST

WINEGLASS CT

BENNETT ST

E GALLATIN ST

E MONTANA ST

N M ST

DRAFT

COLOR CODING LEGEND JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON REGIONAL WATER SYSTEM PER LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES ALTERNATIVE G-3: GREEN ACRES EXPANSION

B24-011-FIGURE ALT G-3.DWG

FIGURE 4-3

c. Map

Figure 4-4 presents the preliminary extents of Alternative G-3.

d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices.

e. Land Requirements

No land purchase, lease or easements are anticipated for this alternative as it is assumed that the existing infrastructure was built in existing right-of-way. All mains will be replaced in their existing alignment and new mains will have a new alignment.

f. Potential Construction Problems

Minor construction problems associated temporary water are anticipated. This can be easily mitigated during construction with proper planning and scheduling.

g. Sustainability Considerations

i. Water and Energy Efficiency

Replacing potentially damaged or corroded mains will eliminate water loss due to leaks in the pipe or fittings. Additionally eliminating dead ends in the system will allow for disinfectant residual to remain at optimal levels and will no longer require the system to be manually flushed periodically.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

Replacement of aging mains with inadequate isolation will allow for more manageable repair and maintenance of the system and allows for optimal constructability of expansions for the system in the future.

h. Cost Estimates

Planning level capital costs for Alternative G-3 are presented in **Table 4-3**. Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 20% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities.

Increase to general O&M is anticipated as a result of Alternative G-3 with increased valve density in the new system**. Table 4-4** identifies the O&M budget.

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP

ALTERNATIVE G-3: GREEN ACRES EXPANSION

FIGURE 4-4

B24-011-FIGURE ALT G-2.DWG

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Table 4-3 Construction Cost Estimate Alternative G-3: Green Acres Expansion					
Item	**Quantity**	**Units**	**Unit Cost**	**Cost**	**Salvage Value[1]**
Mobilization	5	%	--	$98,371	$0
Traffic Control	1	LS	$10,000	$10,000	$0
Connect to Existing Main	4	LS	$3,500	$14,000	$10,500
New 8" PVC Water Main	9,620	LF	$100	$962,000	$721,500
New 1" Water SVC (Hardware)	92	EA	$2,000	$184,000	$138,000
New 1" Water SVC (Line)	2,300	LF	$70	$161,000	$120,750
New Fire Hydrant Assembly	19	EA	$8,000	$152,000	$114,000
8" Gate Valve (Ductile Iron)	43	EA	$3,000	$129,000	$96,750
8"x8"x6" Tee (Ductile Iron)	19	EA	$1,200	$22,800	$0
8"x8"x8" Tee (Ductile Iron)	16	EA	$1,600	$25,600	$19,200
8" 90 Degree Bend (Ductile Iron)	3	EA	$1,000	$3,000	$2,250
8" 45 Degree Bend (Ductile Iron)	2	EA	$1,000	$2,000	$1,500
Temporary Service	1	LS	$40,000	$40,000	$0
Road Restoration	10,081	SY	$25	$252,028	$189,021
Exploratory Excavation	10	HR	$1,000	$10,000	$0
Clean Up (3% Minimum of Total Bid)	3	%	--	$61,974	$0
Construction Estimate				**$2,127,773**	**$1,413,471**
Inflation (1.5% for 8 quarters)			12%	$255,333	
Contingency			10%	$238,311	
Administrative, Legal, & Engineering			20%	$524,283	
Total (rounded to the nearest thousand)				**$3,146,000**	**$915,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-4 Operation and Maintenance Budget Alternative G-3: Green Acres Expansion		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	182,500.71
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**780,212.97**

B. CONNECTION LOOPING MAIN ALTERNATIVES

As discussed previously in Chapter 2, two mains feed the project area. One of the mains is a 10-inch AC main that is partially buried under new structures. This increases the maintenance requirements and complexity for the distribution systems and puts the neighborhoods' access to clean water at risk. The following alternatives discuss new looping mains.

1. Alternative L-1: No Action

The no action alternative proposes no changes to the existing distribution system. Given the limited 2 existing connection points for the project area and the location and age of the Bickford line, this alternative is not considered feasible and will not be considered further.

2. Alternative L-2 Tana Lane Connection

a. Description

Alternative L-2 would create new connection points to the Green Acres Subdivision from the south, including a connection extending north from Llama Lane to the intersection of Maple Street and Tana Lane, A second connection would be made by extending a new 8-inc mains west from Miles Lane North to the point at which Llama Lane turns north. The proposed work would include abandoning the existing 10-inch asbestos cement main along Bickford Lane between East Gallatin Street and Maple Street. The proposed work will also include 3 new valves and 1 new hydrant. Traditional trench excavation is the assumed construction method for new water main installation.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned in the same manner as described previously in Alternative G-2. Maximum day demand calculations are included in the **Appendix 2-1**. Projected maximum day demands resulted in a calculated minimum pressure value of 76 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 1,478 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in the **Appendix 4-1**. See **Figure 4-5** for Junctions color coded by system pressures while supplying maximum day demands.

c. Map

Figure 4-6 presents the preliminary extents of Alternative L-2.

d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices.

e. Land Requirements

Preliminary design suggests all proposed mains will be located within City right of way. If minor changes to the proposed alignment occurs, easements from private property owners will be secured.

f. Potential Construction Problems

Minor construction problems associated temporary water are anticipated. This can be easily mitigated during construction with proper planning and scheduling.

g. Sustainability Considerations

i. Water and Energy Efficiency

Abandoning the existing asbestos cement main along Bickford Lane is expected to eliminate leaking mains, increasing both water and energy efficiency.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

No other sustainability concerns are applicable to this alternative.

COLOR CODING LEGEND
JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES
ALTERNATIVE L-2: TANA LANE CONNECTION

B24-011-FIGURE ALT L-2.DWG

FIGURE 4-5

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP

ALTERNATIVE L-2: TANA LANE CONNECTION

FIGURE 4-6 — B24-011-FIGURE ALT L-1.DWG

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h. Cost Estimates

Planning level capital costs for Alternative L-2 are presented in **Table 4-5**. Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 20% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities.

An increase to general O&M is not anticipated as a result of Alternative L-2. **Table 4-6** identifies the O&M budget.

Table 4-5
Construction Cost Estimate
Alternative L-2: Tana Lane Connection

Item	Quantity	Units	Unit Cost	Cost	Salvage Value[1]
Mobilization	5	%	--	$19,158	$0
Traffic Control	1	LS	$10,000	$10,000	$0
Connect to Existing Main	4	LS	$3,500	$14,000	$0
Abandon Existing 10" Main	1	LS	$1,500	$1,500	$1,125
New 8" PVC Water Main	1,932	LF	$100	$193,200	$144,900
New 1" Water SVC (Hardware)	7	EA	$2,000	$14,000	$10,500
New 1" Water SVC (Line)	350	LF	$70	$24,500	$18,375
New Fire Hydrant Assembly	1	EA	$8,000	$8,000	$6,000
8" Gate Valve (Ductile Iron)	3	EA	$3,000	$9,000	$6,750
8"x8"x6" Tee (Ductile Iron)	1	EA	$1,200	$1,200	$900
8"x8"x8" Tee (Ductile Iron)	5	EA	$1,600	$8,000	$6,000
8" 90 Degree Bend (Ductile Iron)	1	EA	$1,000	$1,000	$750
Road Restoration	1,951	SY	$25	$48,767	$36,575
Temporary Service	1	LS	$40,000	$40,000	$0
Exploratory Excavation	10	HR	$1,000	$10,000	$0
Clean Up (Minimum 3% of Total Bid)	3	%	--	$11,495	$0
Construction Estimate				**$413,820**	**$231,875**
Inflation (1.5% for 8 quarters)			12%	$49,658	
Contingency			10%	$46,348	
Administrative, Legal, & Engineering			20%	$101,965	
Total (rounded to the nearest thousand)				**$612,000**	**$151,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-6 Operation and Maintenance Budget Alternative L-2: Tana Lane Connection		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	182,500.71
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**780,212.97**

3. Alternative L-3: Bickford Lane Connection

a. Description

Alternative L-3 would replace a portion of the existing 10-inch Bickford Lane main extending from Gallatin Street to Brookstone Street and abandon in place the main extending north from the corner of Brookstone Steet and Bickford Lane. The proposed work will also include 3 new valves and 2 new hydrants. Traditional trench excavation is the assumed construction method for new water main installation and water main replacements.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned in the same manner as described previously in Alternative G-2. Maximum day demand calculations are included in the **Appendix 2-1**. Projected maximum day demands resulted in a calculated minimum pressure value of 76 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 1,478 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in the Appendix. See **Figure 4-7** for Junctions color coded by system pressures while supplying maximum day demands.

c. Map

Figure 4-8 presents the preliminary extents of Alternative L-3.

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES

ALTERNATIVE L-3: BICKFORD LANE CONNECTION

FIGURE 4-7

B24-011-FIGURE ALT L-3.DWG

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LEGEND

- NEW 8-INCH
- EXISTING MAIN
- NEW 10-INCH
- ABANDONED 10-INCH MAIN
- EXISTING HYDRANT
- EXISTING VALVE
- EXISTING WELL
- NEW HYDRANT
- NEW VALVE

NOT FOR CONSTRUCTION

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP

ALTERNATIVE L-3: BICKFORD LANE CONNECTION

FIGURE 4-8

B24-011-FIGURE ALT L-2.DWG

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ALTERNATIVE MAP
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d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices. Groundwater degradation associated with exfiltration from pipes will be minimized because of this alternative.

e. Land Requirements

No land purchase, lease or easements are anticipated for this alternative as it is assumed that the existing infrastructure was built in existing right-of-way.

f. Potential Construction Problems

Minor construction problems associated temporary water are anticipated. This can be easily mitigated during construction with proper planning and scheduling.

g. Sustainability Considerations

i. Water and Energy Efficiency

Replacing and abandoning the potentially damaged or corroded asbestos cement main will eliminate water loss due to leaks in the pipe or fittings.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

Replacement of aging mains with inadequate isolation will allow for more manageable repair and maintenance of the system and allows for optimal constructability of expansions for the system in the future.

i. Cost Estimates

Planning level capital costs for Alternative L-3 are presented in **Table 4-7**. Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 20% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities.

An increase to general O&M is not anticipated as a result of Alternative L-3. **Table 4-8** identifies the O&M budget.

Table 4-7 Construction Cost Estimate Alternative L-3: Bickford Lane Connection					
Item	**Quantity**	**Units**	**Unit Cost**	**Cost**	**Salvage Value[1]**
Mobilization	5	%	--	$17,516	$0
Traffic Control	1	LS	$10,000	$10,000	$7,500
Connect to Existing Main	4	LS	$3,500	$14,000	$10,500
Abandon Existing 10" Main	1	LS	$1,500	$1,500	$1,125
New 10" PVC Water Main	1,615	LF	$100	$161,500	$121,125
New 1" Water SVC (Hardware)	7	EA	$2,000	$14,000	$10,500
New 1" Water SVC (Line)	350	LF	$70	$24,500	$18,375
New Fire Hydrant Assembly	2	EA	$8,000	$16,000	$12,000
10" Gate Valve (Ductile Iron)	3	EA	$4,500	$13,500	$10,125
10"x10"x6" Tee (Ductile Iron)	2	EA	$1,800	$3,600	$2,700
Road Restoration	1,669	SY	$25	$41,722	$31,292
Temporary Service	1	LS	$40,000	$40,000	$30,000
Exploratory Excavation	10	HR	$1,000	$10,000	$7,500
Clean Up (Minimum 3% of Total Bid)	3	%	--	$11,035	$8,276
Construction Estimate				**$378,873**	**$271,018**
Inflation (1.5% for 8 quarters)			12%	$45,465	
Contingency			10%	$42,434	
Administrative, Legal, & Engineering			20%	$93,354	
Total (rounded to the nearest thousand)				**$560,000**	**$176,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-8 Operation and Maintenance Budget Alternative L-3: Bickford Lane Connections		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	182,500.71
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**780,212.97**

C. MONTAGUE SUBDIVISION ALTERNATIVES

1. Alternative M-1: No Action

The no action alternative proposes no changes to the existing water system for Montague Subdivision. The no action alternative would mean a continuation of the use of well water sourcing for the residents of The Montague Subdivision and would thereby preclude the residents from the health and safety benefits of a connection to the existing public water system. The no action alternative is not recommended and will not be considered further.

2. Alternative M-2: Montague Streets

a. Description

Alternative M-2 would install a new 8-inch main within the Montague Subdivision east-west on Arbor Drive and Grandview Boulevard, and north-south on Garnier Avenue, Hefferlin Avenue, and Whiskey Creek Road. The new mains would connect to the existing City of Livingston water system on Garnier Avenue and Frank Street, Garnier Avenue and Allspaugh Street, and Hefferlin Avenue and Allspaugh, as well as within the Green Acres Subdivision. The proposed work will also include 21 new valves and 9 new hydrants. Traditional trench excavation is the assumed construction method for new water main installation.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned in the same manner as previously described in Alternative G-2. Maximum day demand calculations are included in **Appendix 2-1**. Projected maximum day demands resulted in

a calculated minimum pressure value of 75 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 1,429 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in **Appendix 4-1**. See **Figure 4-9** for Junctions color coded by system pressures while supplying maximum day demands.

c. Map

Figure 4-10 presents the preliminary extents of Alternative M-2.

d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices.

e. Land Requirements

No land purchase, lease or easements are anticipated for this alternative as it is assumed that the existing infrastructure was built in existing right-of-way.

f. Potential Construction Problems

No notable construction problems are anticipated for this alternative.

g. Sustainability Considerations

i. Water and Energy Efficiency

Expansion of the existing public water system into the Montague Subdivision would decrease use of private wells, would create a single, unified, public source, and thereby eliminate inefficient water and energy usage associated with multiple private water sources.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

No other sustainability considerations are applicable for this alternative.

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PIPE CONNECTION PROPOSED IN GREEN ACRES ALTERNATIVES

WILLOW ST
H-122
H-124
SPRUCE LN
OLD CLYDE PARK DR
J-1102
J-1101
ARBOR DR
J-1100
J-1099
J-1118
J-1120
J-1121
J-787
N PARK DR
H-123
J-781
H-121
PINE ST
J-780
PINE ST
J-1113
GARNIER AVE
HEFFERLIN AVE
WHISKEY CREEK RD
J-790
J-793
HYDRANT TEST
J-778
S PARK DR
J-1112
J-1096
J-1119
J-1122
GRANDVIEW BLVD
J-1097
J-1098
CHESTNUT LN
H-120
TANA LN
ASH LN
SPRUCE LN
ELM LN
MAPLE ST
J-705
J-777
H-125
ALLSPAUGH ST
J-1117
J-798
J-799
H-126
H-130
MILES LN N
FRANK ST
J-1124
J-876
J-878
H-128
J-1126
YELLOWSTONE RIVER
J-1116
H-127
H-129
H-131
J-1115
J-1084
McCAW ST
J-1111
J-747
LLAMA LN
ABSAROKA CT
MILLER ST
EMIGRANT LN
WINEGLASS LN
N N ST
BICKFORD LN
MILES LN N
GARNIER AVE
WINEGLASS CT
BENNETT ST
E GALLATIN ST
E MONTANA ST
N M ST
70

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COLOR CODING LEGEND
JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON REGIONAL WATER SYSTEM PER LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES ALTERNATIVE M-2: MONTAGUE STREETS

B24-011-FIGURE ALT M-2.DWG

FIGURE 4-9

LEGEND

- NEW 8-INCH
- EXISTING MAIN
- EXISTING HYDRANT
- NEW HYDRANT
- EXISTING WELL
- EXISTING VALVE
- NEW VALVE

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LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP

ALTERNATIVE M-2: MONTAGUE STREETS

FIGURE 4-10

B24-011-FIGURE ALT M-1.DWG

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h. Cost Estimates

Planning level capital costs for Alternative M-2 are presented in **Table 4-9.** Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 20% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities.

Increase to general O&M is anticipated as a result of Alternative M-2 with the increased service area. **Table 4-10** identifies the O&M budget.

Table 4-9
Construction Cost Estimate
Alternative M-2: Montague Streets

Item	Quantity	Units	Unit Cost	Cost	Salvage Value[1]
Mobilization	5	%	--	$54,544	$0
Traffic Control	1	LS	$30,000	$30,000	$0
Connect to Existing Main	5	LS	$3,500	$17,500	$13,125
New 8" PVC Water Main	5,750	LF	$100	$575,000	$431,250
New 1" Water SVC (Hardware)	30	EA	$2,000	$60,000	$45,000
New 1" Water SVC (Line)	750	LF	$70	$52,500	$39,375
New Fire Hydrant Assembly	9	EA	$8,000	$72,000	$54,000
8" Gate Valve (Ductile Iron)	21	EA	$3,000	$63,000	$47,250
8"x8"x6" Tee (Ductile Iron)	9	EA	$1,200	$10,800	
8"x8"x8" Tee (Ductile Iron)	8	EA	$1,600	$12,800	$9,600
8" Cross (Ductile Iron)	2	EA	$2,000	$4,000	$3,000
8" 90 Degree Bend (Ductile Iron)	3	EA	$1,000	$3,000	$2,250
Road Restoration	5,611	SY	$25	$140,278	$105,208
Temporary Service	1	LS	$40,000	$40,000	$0
Exploratory Excavation	10	HR	$1,000	$10,000	$0
Clean Up (3% Minimum of Total Bid)	3	%	--	$34,363	$0
Construction Estimate				**$1,179,784**	**$750,058**
Inflation (1.5% for 8 quarters)			12%	$141,574	
Contingency			10%	$132,136	
Administrative, Legal, & Engineering			20%	$290,699	
Total (rounded to the nearest thousand)				**$1,744,000**	**$486,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-10 Operation and Maintenance Budget Alternative M-2: Montague Streets		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	192,000.00
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**789,712.26**

1. Alternative M-3: Montague Alleys

a. Description

Alternative M-3 would install a new 8-inch main within the Montague Subdivision east-west on Arbor Drive and Grandview Boulevard, and north-south on Garnier Avenue and in the alleyways between Garnier Avenue and Hefferlin Avenue and between Hefferlin Avenue and Whiskey Creek Road. The new mains would connect to the existing City of Livingston water system on Garnier Avenue and Frank Street, Garnier Avenue and Allspaugh Street, and Hefferlin Avenue and Allspaugh, as well as within the Green Acres Subdivision. The proposed work will also include 23 new valves and 12 new hydrants. Traditional trench excavation is the assumed construction method for new water main installation and water main replacements.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned in the same manner as previously described in Alternative G-2. Maximum day demand calculations are included in the **Appendix 2-1**. Projected maximum day demands resulted in a calculated minimum pressure value of 75 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 1,429 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in the Appendix. See **Figure 4-11** for Junctions color coded by system pressures while supplying maximum day demands.

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COLOR CODING LEGEND JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES
ALTERNATIVE M-3: MONTAGUE ALLEYS

B24-011-FIGURE ALT M-3.DWG

FIGURE 4-11

NOT FOR CONSTRUCTION

c. Map

Figure 4-12 presents the preliminary extents of Alternative M-3.

d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices.

e. Land Requirements

No land purchase, lease or easements are anticipated for this alternative as it is assumed that the existing infrastructure was built in existing right-of-way.

f. Potential Construction Problems

No notable construction problems are anticipated for this alternative.

g. Sustainability Considerations

i. Water and Energy Efficiency

Expansion of the existing public water system into the Montague Subdivision would decrease use of private wells, would create a single, unified, public source, and thereby eliminate inefficient water and energy usage associated with multiple private water sources.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

No other sustainability considerations are applicable for this alternative.

h. Cost Estimates

Planning level capital costs for Alternative M-3 are presented in **Table 4-11**. Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 25% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities.

Increase to general O&M is anticipated as a result of Alternative M-3 with the increased service area. **Table 4-12** identifies the O&M budget.

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP

ALTERNATIVE M-3: MONTAGUE ALLEYS

FIGURE 4-12

B24-011-FIGURE ALT M-3.DWG

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Table 4-11 Construction Cost Estimate Alternative M-3: Montague Alleys					
Item	**Quantity**	**Units**	**Unit Cost**	**Cost**	**Salvage Value[1]**
Mobilization	5	%	--	$57,139	$0
Traffic Control	1	LS	$10,000	$10,000	$0
Connect to Existing Main	5	LS	$3,500	$17,500	$13,125
New 8" PVC Water Main	5,620	LF	$110	$618,200	$463,650
New 1" Water SVC (Hardware)	30	EA	$2,000	$60,000	$45,000
New 1" Water SVC (Line)	750	LF	$70	$52,500	$39,375
New Fire Hydrant Assembly	12	EA	$8,000	$96,000	$72,000
8" Gate Valve (Ductile Iron)	23	EA	$3,000	$69,000	$51,750
8"x8"x6" Tee (Ductile Iron)	12	EA	$1,200	$14,400	
8"x8"x8" Tee (Ductile Iron)	8	EA	$1,600	$12,800	$9,600
8" Cross (Ductile Iron)	1	EA	$2,000	$2,000	$1,500
8" 90 Degree Bend (Ductile Iron)	3	EA	$1,000	$3,000	$2,250
Road Restoration	5,496	SY	$25	$137,389	$103,042
Temporary Service	1	LS	$40,000	$40,000	$0
Exploratory Excavation	10	HR	$1,000	$10,000	$0
Clean Up (3% Minimum of Total Bid)	3	%	--	$35,998	$0
Construction Estimate				**$1,235,926**	**$801,292**
Inflation (1.5% for 8 quarters)			12%	$148,311	
Contingency			10%	$138,424	
Administrative, Legal, & Engineering			20%	$304,532	
Total (rounded to the nearest thousand)				**$1,827,000**	**$519,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-12 Operation and Maintenance Budget Alternative M-3: Montague Alleys		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	192,000.00
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**789,712.26**

D. SLEEPING GIANT ESTATES

1. Alternative S-1: No Action

The no action alternative proposes no changes to the existing water system for Sleeping Giant Estates. The no action alternative would mean a continuation of the use of private well water sourcing for the residents of Sleeping Giant Estates and would thereby preclude the Sleeping Giant Estates from the health and safety benefits of a connection to the existing public water system. The no action alternative is not recommended and will not be considered further.

2. Alternative S-2: McCaw/Garnier Street Connection

a. Description

Alternative S-2 proposes to install new 8-inch PVC main north along Miles Lane North from East Gallatin Street to Brookstone Street, and east from Miles Lane North along McCaw Street and Miller Street between Miles Lane North from Miles Lane to Garnier Avenue. The proposed work also includes 5 new valves and 2 new hydrants. Traditional trench excavation is the assumed construction method for new water main installation.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned in the same manner as previously described in Alternative G-2. Maximum day demand calculations are included in the **Appendix 2-1**. Projected maximum day demands resulted in a calculated minimum pressure value of 76 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow

of 1,453 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in the Appendix. See **Figure 4-13** for Junctions color coded by system pressures while supplying maximum day demands.

c. Map

Figure 4-14 presents the preliminary extents of Alternative S-2.

d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices.

e. Land Requirements

No land purchase, lease or easements are anticipated for this alternative as it is assumed that the existing infrastructure was built in existing right-of-way.

f. Potential Construction Problems

No notable construction problems are anticipated for this alternative.

g. Sustainability Considerations

i. Water and Energy Efficiency

Expansion of the existing public water system into the Sleeping Giant Estates would decrease use of private wells, would create a single, unified, public source, and thereby eliminate inefficient water and energy usage associated with multiple private water sources.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

No other sustainability considerations are applicable to this alternative.

COLOR CODING LEGEND
JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON WATE SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES
ALTERNATIVE S-2: McCAW GARNIER STREET CONNECTION

B24-011 FIGURE ALT S-2.DWG

FIGURE 4-13

LIVINGSTON WATE SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP

ALTERNATIVE S-2: McCAW GARNIER STREET CONNECTION

FIGURE 4-14

B24-011 FIGURE ALT S-2.DWG

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h. Cost Estimates

Planning level capital costs for Alternative S-2 are presented in **Table 4-13.** Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 20% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities.

Increase to general O&M is anticipated as a result of Alternative S-2 with the expansion of the City's distribution system. **Table 4-14** identifies the O&M budget.

Table 4-13
Construction Cost Estimate
Alternative S-2: McCaw/Garnier Street Connection

Item	Quantity	Units	Unit Cost	Cost	Salvage Value[1]
Mobilization	5	%	--	$37,069	$0
Traffic Control	1	LS	$15,000	$15,000	$0
Connect to Existing Main	4	LS	$3,500	$14,000	$10,500
New 8" PVC Water Main	1,890	LF	$100	$189,000	$141,750
New 1" Water SVC (Hardware)	30	EA	$2,000	$60,000	$45,000
New 1" Water SVC (Line)	1,866	LF	$70	$130,620	$97,965
New Fire Hydrant Assembly	2	EA	$8,000	$16,000	$12,000
8" Gate Valve (Ductile Iron)	5	EA	$3,000	$15,000	$11,250
8"x8"x6" Tee (Ductile Iron)	2	EA	$1,200	$2,400	
8"x8"x8" Tee (Ductile Iron)	6	EA	$1,600	$9,600	$7,200
Road Patching Restoration	1,667	SY	$100	$166,667	$125,000
Road Restoration	2,924	SY	$25	$73,100	$54,825
Temporary Service	1	LS	$40,000	$40,000	$0
Exploratory Excavation	10	HR	$1,000	$10,000	$0
Clean Up (3% Minimum of Total Bid)	3	%	--	$23,354	$0
Construction Estimate				**$801,810**	**$505,490**
Inflation (1.5% for 8 quarters)			12%	$96,217	
Contingency			10%	$89,803	
Administrative, Legal, & Engineering			20%	$197,566	
Total (rounded to the nearest thousand)				**$1,185,000**	**$328,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-14 Operation and Maintenance Budget Alternative S-2: McCaw/Garnier Street Connection		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	192,000.00
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**789,712.26**

3. Alternative S-3: McCaw/Frank Street Connection

a. Description

Alternative S-3 proposes to install new 8-inch PVC main north along Miles Lane North from East Gallatin Street to Brookstone Street, east from Miles Lane North along Miller Street between Miles Lane North and Garnier Avenue, and north along Garnier Avenue from McCaw Street to Frank Street. The proposed work also includes 7 new valves and 2 new hydrants. Traditional trench excavation is the assumed construction method for new water main installation.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned in the same manner as previously described in Alternative G-2. Maximum day demand calculations are included in the **Appendix 2-1.** Projected maximum day demands resulted in a calculated minimum pressure value of 76 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 1,454 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in **Appendix 4-1.** See **Figure 4-15** for Junctions color coded by system pressures while supplying maximum day demands.

WILLOW ST
H-122
H-124
SPRUCE LN
OLD CLYDE PARK DR
ARBOR DR
J-787
N PARK DR
H-123
J-781
H-121
PINE ST
J-780
PINE ST
J-1113
GARNIER AVE
HEFFERLIN AVE
WHISKEY CREEK RD
J-790
J-793
HYDRANT TEST
J-778
S PARK DR
J-1112
GRANDVIEW BLVD
CHESTNUT LN
H-120
TANA LN
ASH LN
SPRUCE LN
ELM LN
YELLOWSTONE RIVER
MAPLE ST
J-705
J-777
H-125
ALLSPAUGH ST
J-798
J-799
H-126
H-130
MILES LN N
FRANK ST
J-1124
J-876
J-878
H-128
J-1126
J-1116
H-127
H-129
H-131
J-1115
J-1125
McCAW ST
J-1123
J-1084
J-1111
J-747
LLAMA LN
J-1110
MILLER ST
ABSAROKA CT
EMIGRANT LN
WINEGLASS LN
BICKFORD LN
MILES LN N
GARNIER AVE
N N ST
BENNETT ST
WINEGLASS CT
E GALLATIN ST
E MONTANA ST
N M ST
70

DRAFT

COLOR CODING LEGEND
JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES
ALTERNATIVE S-3: McCAW FANK STREET CONNECTION

B24-011 FIGURE ALT S-3.DWG

FIGURE 4-15

c. Map

Figure 4-16 presents the preliminary extents of Alternative S-3.

d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices. Groundwater degradation associated with exfiltration from pipes will be minimized because of this alternative.

e. Land Requirements

No land purchase, lease or easements are anticipated for this alternative as it is assumed that the existing infrastructure was built in existing right-of-way.

f. Potential Construction Problems

No notable construction problems are anticipated for this alternative.

g. Sustainability Considerations

i. Water and Energy Efficiency

Expansion of the existing public water system into the Sleeping Giant Estates would decrease use of private wells, would create a single, unified, public source, and thereby eliminate inefficient water and energy usage associated with multiple private water sources.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

No other sustainability considerations are applicable to this alternative.

h. Cost Estimates

Planning level capital costs for Alternative S-3 are presented in **Table 4-15**. Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 20% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities.

Increase to general O&M is anticipated as a result of Alternative S-3 as a result of the increased service area. **Table 4-16** identifies the O&M budget.

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP

ALTERNATIVE S-3: McCAW/FRANK STREET CONNECTION

FIGURE 4-16
B24-011 FIGURE ALT S-2.5.DWG

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Table 4-15 Construction Cost Estimate Alternative S-3: McCaw/Frank Street Connection					
Item	**Quantity**	**Units**	**Unit Cost**	**Cost**	**Salvage Value[1]**
Mobilization	5	%	--	$38,595	$0
Traffic Control	1	LS	$15,000	$15,000	$0
Connect to Existing Main	4	LS	$3,500	$14,000	$10,500
New 8" PVC Water Main	2,330	LF	$100	$233,000	$174,750
New 1" Water SVC (Hardware)	30	EA	$2,000	$60,000	$45,000
New 1" Water SVC (Line)	1,727	LF	$70	$120,890	$90,668
New Fire Hydrant Assembly	2	EA	$8,000	$16,000	$12,000
8" Gate Valve (Ductile Iron)	5	EA	$3,000	$15,000	$11,250
8"x8"x6" Tee (Ductile Iron)	2	EA	$1,200	$2,400	$1,800
8"x8"x8" Tee (Ductile Iron)	6	EA	$1,600	$9,600	$7,200
8" 90 Degree Bend (Ductile Iron)	1	EA	$1,000	$1,000	$750
Road Patching Restoration	1,544	SY	$100	$154,444	$115,833
Road Restoration	3,222	SY	$25	$80,561	$60,421
Temporary Service	1	LS	$40,000	$40,000	$0
Exploratory Excavation	10	HR	$1,000	$10,000	$0
Clean Up (3% Minimum of Total Bid)	3	%	--	$24,315	$0
Construction Estimate				**$834,805**	**$530,172**
Inflation (1.5% for 8 quarters)			12%	$100,177	
Contingency			10%	$93,498	
Administrative, Legal, & Engineering			20%	$205,696	
Total (rounded to the nearest thousand)				**$1,234,000**	**$344,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-16 Operation and Maintenance Budget Alternative S-3: McCaw/Frank Street Connection		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	192,000.00
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**789,712.26**

4. Alternative S-4: Frank/Garnier Street Connection

a. Description

Alternative S-4 proposes to install new 8-inch PVC main north along Miles Lane North from East Gallatin Street to Brookstone Street, east from Miles Lane North along Miller Street between Miles Lane North and Garnier Avenue, and west along McCaw Street from Garnier Avenue to the access driver through the Sleeping Giant Estates and north along the access drive from McCaw Street to Frank Street. The proposed work also includes 6 new valves and 2 new hydrants. Traditional trench excavation is the assumed construction method for new water main installation.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned in the same manner as previously described in Alternative G-2. Maximum day demand calculations are included in the **Appendix 2-1**. Projected maximum day demands resulted in a calculated minimum pressure value of 76 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 1,454 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in Appendix 4-1. See **Figure 4-17** for Junctions color coded by system pressures while supplying maximum day demands.

WILLOW ST
H-122
H-124
SPRUCE LN
OLD CLYDE PARK DR
ARBOR DR
J-787
N PARK DR
H-123
J-781
H-121
PINE ST
J-780
PINE ST
J-1113
GARNIER AVE
HEFFERLIN AVE
WHISKEY CREEK RD
J-790
J-793
HYDRANT TEST
S PARK DR
J-778
J-1112
GRANDVIEW BLVD
CHESTNUT LN
H-120
TANA LN
ASH LN
SPRUCE LN
ELM LN
YELLOWSTONE RIVER
MAPLE ST
J-705
J-777
H-125
ALLSPAUGH ST
J-798
J-799
H-126
H-130
MILES LN N
FRANK ST
J-1124
J-876
J-1126
J-878
H-128
J-1116
H-127
H-129
H-131
J-1115
McCAW ST
J-1123
J-1084
J-1125
J-747
LLAMA LN
MILLER ST
J-1111
ABSAROKA CT
J-1110
EMIGRANT LN
WINEGLASS LN
BICKFORD LN
MILES LN N
GARNIER AVE
N N ST
BENNETT ST
WINEGLASS CT
E GALLATIN ST
E MONTANA ST
N M ST
90

DRAFT

COLOR CODING LEGEND
JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES
ALTERNATIVE S-4: FRANK GARNIER STEET CONNECTION

B24-011 FIGURE ALT S-4.DWG

FIGURE 4-17

c. Map

Figure 4-18 presents the preliminary extents of Alternative S-4.

d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices.

e. Land Requirements

No land purchase, lease or easements are anticipated for this alternative as it is assumed that the existing infrastructure was built in existing right-of-way.

f. Potential Construction Problems

No notable construction problems are anticipated for this alternative.

g. Sustainability Considerations

i. Water and Energy Efficiency

Expansion of the existing public water system into the Sleeping Giant Estates would decrease use of private wells, would create a single, unified, public source, and thereby eliminate inefficient water and energy usage associated with multiple private water sources.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

No other sustainability considerations are applicable to this alternative.

h. Cost Estimates

Planning level capital costs for Alternative S-4 are presented in **Table 4-17.** Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 20% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities.

Increase to general O&M is anticipated as a result of Alternative S-4 with increased service area. **Table 4-18** identifies the O&M budget.

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP
ALTERNATIVE S-4: FRANK/GARNIER STEET CONNECTION

FIGURE 4-18
B24-011 FIGURE ALT S-1.DWG

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Table 4-18 Construction Cost Estimate Alternative S-4: Frank/Garnier Street Connection					
Item	**Quantity**	**Units**	**Unit Cost**	**Cost**	**Salvage Value[1]**
Mobilization	5	%	--	$33,345	$0
Traffic Control	1	LS	$15,000	$15,000	$0
Connect to Existing Main	5	LS	$3,500	$17,500	$13,125
New 8" PVC Water Main	2,215	LF	$110	$243,650	$182,738
New 1" Water SVC (Hardware)	30	EA	$2,000	$60,000	$45,000
New 1" Water SVC (Line)	1,045	LF	$70	$73,150	$54,863
New Fire Hydrant Assembly	2	EA	$8,000	$16,000	$12,000
8" Gate Valve (Ductile Iron)	6	EA	$3,000	$18,000	$13,500
8"x8"x6" Tee (Ductile Iron)	2	EA	$1,200	$2,400	$1,800
8"x8"x8" Tee (Ductile Iron)	5	EA	$1,600	$8,000	$6,000
8" 90 Degree Bend (Ductile Iron)	1	EA	$1,000	$1,000	$750
Road Patching Restoration	956	SY	$100	$95,556	$71,667
Road Restoration	2,666	SY	$25	$66,639	$49,979
Temporary Service	1	LS	$40,000	$40,000	$0
Exploratory Excavation	10	HR	$1,000	$10,000	$0
Clean Up (3% Minimum of Total Bid)	3	%	--	$21,007	$0
			Construction Estimate	**$721,246**	**$451,421**
			Inflation (1.5% for 8 quarters) 12%	$86,550	
			Contingency 10%	$80,780	
			Administrative, Legal, & Engineering 20%	$177,715	
			Total (rounded to the nearest thousand)	**$1,066,000**	**$293,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-18 Operation and Maintenance Budget Alternative S-4: Frank/Garnier Street Connection		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	192,000.00
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**789,712.26**

5. Alternative S-5: Frank Street Loop

a. Description

Alternative S-5 proposes to install new 8-inch PVC main north along Miles Lane North from East Gallatin Street to Brookstone Street, east along Miller Street between Miles Lane North and Garnier Avenue. Alternative S-5 also proposes to install a loop from Frank Street, south along Garnier Avenue, west along McCaw Street to the access drive through Sleeping Giant Estates and north to Frank Street. The proposed work also includes 7 new valves and 2 new hydrants. Traditional trench excavation is the assumed construction method for new water main installation.

b. Design Criteria

All distribution improvements will adhere to DEQ guidelines as set for *Circular DEQ-1, Standards for Water Works.* Final project design will also adhere to Montana Public Works Standard Specifications (MPWSS) and generally accepted engineering practice.

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Maximum day demands were assigned in the same manner as previously described in Alternative G-2. Maximum day demand calculations are included in **Appendix 2-1**. Projected maximum day demands resulted in a calculated minimum pressure value of 76 psi in the project area while supplying maximum day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 1,454 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in **Appendix 4-1**. **See Figure 4-19** for Junctions color coded by system pressures while supplying maximum day demands.

COLOR CODING LEGEND
JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

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LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES
ALTERNATIVE S-5: FRANK STREET LOOP

B24-011 FIGURE ALT S-5.DWG

FIGURE 4-19

NOT FOR CONSTRUCTION

c. Map

Figure 4-20 presents the preliminary extents of Alternative S-5.

d. Environmental Impacts

Minor, short-term environmental impacts associated with dust and noise are anticipated during pipe installation. These impacts can be easily mitigated with carefully planned construction practices.

e. Land Requirements

No land purchase, lease or easements are anticipated for this alternative as it is assumed that the existing infrastructure was built in existing right-of-way.

f. Potential Construction Problems

No notable construction problems are anticipated for this alternative.

g. Sustainability Considerations

i. Water and Energy Efficiency

Expansion of the existing public water system into the Sleeping Giant Estates would decrease use of private wells, would create a single, unified, public source, and thereby eliminate inefficient water and energy usage associated with multiple private water sources.

ii. Green Infrastructure

Storm water management with regard to water system replacement is not applicable.

iii. Other

No other sustainability considerations are applicable to this alternative.

h. Cost Estimates

Planning level capital costs for Alternative S-5 are presented in **Table 4-19**. Cost estimates are prepared based on limited information in which engineering is up to 5% complete. The accuracy of cost estimates ranges from 15% to 50%. Given the high level of uncertainty at this stage, a contingency of 10% was applied. A 20% allowance for engineering design, legal, and construction administration was included to pay for non-construction related activities

Increase to general O&M is anticipated as a result of Alternative S-5 with increased service area. **Table 4-20** identifies the O&M budget.

LEGEND

- NEW 8-INCH
- EXISTING MAIN
- EXISTING HYDRANT
- NEW HYDRANT
- EXISTING WELL
- EXISTING VALVE
- NEW VALVE

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LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

ALTERNATIVE MAP

ALTERNATIVE S-5: FRANK STREET LOOP

FIGURE 4-20

B24-011 FIGURE ALT S-1.5.DWG

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Table 4-19 Construction Cost Estimate Alternative S-5: Frank Street Loop					
Item	**Quantity**	**Units**	**Unit Cost**	**Cost**	**Salvage Value[1]**
Mobilization	5	%	--	$35,634	$0
Traffic Control	1	LS	$15,000	$15,000	$0
Connect to Existing Main	6	LS	$3,500	$21,000	$15,750
New 8" PVC Water Main	2,680	LF	$110	$294,800	$221,100
New 1" Water SVC (Hardware)	30	EA	$2,000	$60,000	$45,000
New 1" Water SVC (Line)	993	LF	$70	$69,510	$52,133
New Fire Hydrant Assembly	2	EA	$8,000	$16,000	$12,000
8" Gate Valve (Ductile Iron)	7	EA	$3,000	$21,000	$15,750
8"x8"x6" Tee (Ductile Iron)	2	EA	$1,200	$2,400	$1,800
8"x8"x8" Tee (Ductile Iron)	7	EA	$1,600	$11,200	$8,400
8" 90 Degree Bend (Ductile Iron)	1	EA	$1,000	$1,000	$750
Road Patching Restoration	747	SY	$100	$74,667	$56,000
Road Restoration	3,044	SY	$25	$76,106	$57,079
Temporary Service	1	LS	$40,000	$40,000	$0
Exploratory Excavation	10	HR	$1,000	$10,000	$0
Clean Up (3% Minimum of Total Bid)	3	%	--	$22,449	$0
Construction Estimate				**$770,766**	**$485,762**
Inflation (1.5% for 8 quarters)			12%	$92,492	
Contingency			10%	$86,326	
Administrative, Legal, & Engineering			20%	$189,917	
Total (rounded to the nearest thousand)				**$1,140,000**	**$315,000**

1. Salvage Value PW Factor @ 2.2% for 20 years

Table 4-20 Operation and Maintenance Budget Alternative S-4: Frank Street Loop		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	192,000.00
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**789,712.26**

5.0 SELECTION OF AN ALTERNATIVE

Each technically feasible alternative presented in Chapter 4 was evaluated to select the most beneficial alternative for the City of Livingston. The viable alternatives are evaluated below based on an organized and systematic approach. This methodology ensures a consistent and unbiased means of selecting the most beneficial alternative for each community. Each alternative was evaluated by applying consistent criteria. These criteria include life cycle cost analysis, technical and logistical feasibility, operation and maintenance complexity, public health and safety, environmental impacts, and public acceptance. Each viable option was ranked within a decision matrix. The alternative selection process is presented in the following sections. Options chosen for further consideration from this method will be discussed in greater details in Chapter 6.0 – Proposed Project.

A. GREEN ACRES ALTERNATIVES

Three water distribution alternatives for Green Acres Subdivision were discussed in Chapter 4. Alternative G-1: No Action was considered not feasible. Alternative G-1 did not provide a solution to the distribution concerns present in the Green Acres Subdivision. Therefore, the G-1 alternative has been eliminated from further consideration. The following sections compares the remaining two alternatives with respect to the above-mentioned criterion. Each alternative was given a score with the lower scores representing the most desirable alternative. Scores for each criterion were summed together in the decision matrix; the lowest total score indicates the most advantageous project for the Green Acres Subdivision.

1. Life Cycle Cost Analysis

Life Cycle Cost Analysis will be completed for the final draft.

2. Non-Monetary Factors

The alternative analysis includes consideration of non-monetary factors such as technical and logistical feasibility, operations and maintenance complexity, public health and safety, environmental impacts, and public acceptance. The following discussion evaluates the remaining two alternatives with respect to each criterion. Each Green Acres alternative has been ranked 1-2 for each criterion, with 1 indicating the most desirable option.

a. Technical and Logistical Feasibility

Technical and logistical feasibility considers factors such as permitting requirements, land acquisition, and technical practicality of the project. The two remaining Green Acres alternatives are both considered technically feasible. Preliminary designs apply typical industry standards and meet applicable design requirements.

Alternative G-2 is considered the most logistically feasible option. This alternative place new system features and replacement mains almost entirely within the existing pipe network alignments, therefore minimal new pipe alignments are planned as a part of this alternative. Logistical complications for planning and construction are minimized as a part of this alternative. For these reasons, Alternative G-2 has been ranked 1 in terms of technical and logistical feasibility.

Alternative G-3 expands the new pipe network alignments around the perimeter of the Green Acres Subdivision. It is expected that the new main would be constructed within the existing roadway easements. This alternative also comprises construction of a substantial

length of new main, increasing the likelihood of logistical complications for planning and construction. Therefore, this alternative is ranked 2 in terms of technical and logistical feasibility.

b. Operation and Maintenance Complexity

The City of Livingston maintains many residential communities and businesses within their service area. Limited resources and manpower must be sufficient to maintain all service connections within the City. Therefore, it is desirable to optimize the complexity of operation and maintenance procedures to minimize impact to available staffing and associated technical expertise. An ideal alternative will minimize O&M complexities to avoid unnecessary strain.

Alternative G-2 does not substantially increase length of pipe or the density of the valve distribution across the Green Acres distribution system. For these reasons, it is expected that O&M efforts will not increase as a part of this alternative. However, the current valve density within the existing system disallows system isolation during maintenance and repair events and the current O&M complexities are considered less than ideal. Therefore, Alternative G-2 is ranked 2 in terms of operation and maintenance complexities.

Alternative G-3 increases pipe length and valve density within the Green Acres distribution system. Therefore it is expected that there will be some increase in routine maintenance and operations effort as a part of the facility expansion. However, the increase of valve density allows system isolation during maintenance and repair events and thereby greatly improves O&M complexities and required effort during events that take portions of the system off-line. Currently, substantial repair and maintenance emergencies would require taking nearly the entire Green Acres Subdivision system off-line and require substantial effort to appropriately reestablish connection upon completion of repair. Alternative G-3 increases valve density significantly and thereby minimizes the O&M effort and complexity during substantial maintenance and repair events. Therefore, Alternative G-3 is ranked 1 in terms of operations and maintenance complexities.

c. Public Health and Safety

The purpose of the improvements to the water distribution system within the Green Acres subdivision is to provide greater access to clean and reliable water.

Alternative G-2 replaces aging, and potentially leaking, mains with new PVC pipe and thereby decrease risk of groundwater and potential contaminants from entering the system at leakage points. However, Alternative G-2 does not address the existing dead ends within the system, so improvements to stagnation and associated health and safety concerns are minimal with Alternative G-2. Additionally, Alternative G-2 does not address public health and safety concerns associated with the inability to isolate portions of the system during repair and maintenance emergencies. For these reasons, Alternative G-2 is ranked 2 in terms of public health and safety.

Alternative G-3 is considered ideal in terms of public health and safety. This alternative addresses potentially leaking pipes, dead ends and stagnation concerns, and improves the ability for portions of the system to be isolated during repair and maintenance emergencies. Therefore, Alternative G-3 is ranked 1 in terms of public health and safety.

d. Environmental Impacts

Each alternative is expected to impact the surrounding environment during construction. These environmental impacts are expected to be minor and short-term. Alternative G-2 and G-3 have been ranked equally in terms of environmental impact.

e. Public Acceptance

Conversations with City staff and community members have indicated Alternative G-3 is preferred. Alternatives G-2 and G-3 have been ranked 2 and 1, respectively in terms of public acceptance.

3. Alternative Ranking Matrix

The non-monetary were compared in an organized and systematic method. A scoring structure was implemented to impartially compare the water distribution alternatives for the Green Acres Subdivision. The alternatives were ranked 1-2 for each of the criterion. The lowest overall score indicates the most desirable option. The alternative scoring is presented in Table 5-1. As shown in the table below, **Alternative G-3: Green Acres Expansion is currently considered the most ideal water distribution alternative for Green Acres.**

Table 5-1
Green Acres Alternative Decision Ranking Matrix

Alt.	Life Cycle Cost	Technical and Logistical Feasibility	O&M Complexity	Public Health and Safety	Environmental Impacts	Public Acceptance	Total	Ranking
G-2	_	1	2	2	1	2	8	_
G-3	_	2	1	1	1	1	6	_

B. CONNECTION LOOPING MAIN ALTERNATIVES

Three water main looping alternatives were discussed in Chapter 4. Alternative L-1: No Action was considered not feasible. Alternative L-1 proposes no changes to the existing connection and does not address issues with aging and leaking pipes, nor does it eliminate crossing private properties. Therefore, the L-1 alternative has been eliminated from further consideration. The following sections compares the remaining two alternatives with respect to the above-mentioned criterion. Each alternative was given a score with the lower scores representing the most desirable alternative. Scores for each criterion were summed together in the decision matrix; the lowest total score indicates the most advantageous project for the Connection Looping Mains.

1. Life Cycle Cost Analysis

Life Cycle Cost Analysis will be completed for the final draft.

2. Non-Monetary Factors

The alternative analysis includes consideration of non-monetary factors such as technical and logistical feasibility, operations and maintenance complexity, public health and safety,

environmental impacts, and public acceptance. The following discussion evaluates the remaining two alternatives with respect to each criterion. Each looping connection alternative has been ranked 1-2 for each criterion, with 1 indicating the most desirable option.

a. Technical and Logistical Feasibility

   Technical and logistical feasibility considers factors such as permitting requirements, land acquisition, and technical practicality of the project. The two remaining looping main connection alternatives are both considered technically feasible. Preliminary designs apply typical industry standards and meet applicable design requirements.

   Alternative L-3 is considered the most logistically feasible option. This alternative replaces mains entirely within the existing pipe alignment. Therefore this alternative will not require new easements or land acquisition. Additionally, no new pipe alignments are planned as a part of this alternative, therefore logistical complications for planning and construction are minimized as a part of this alternative. For these reasons, Alternative L-3 has been ranked 1 in terms of technical and logistical feasibility.

   Alternative L-2 creates new connections from the City water system to the Green Acres distribution network and completely abandons the existing main connection along Bickford Lane. It is expected that the new main would be constructed mostly within the existing roadway easements, however, some new easement may be required between Llama Lane and Tana Lane. This alternative also comprises construction of a greater length of new main, increasing the likelihood of logistical complications for planning and construction. Therefore, this alternative is ranked 2 in terms of technical and logistical feasibility.

b. Operation and Maintenance Complexity

   The City of Livingston maintains many residential communities and businesses within their service area. Limited resources and manpower must be sufficient to maintain all service connections within the City. Therefore, it is desirable to optimize the complexity of operation and maintenance procedures to minimize impact to available staffing and associated technical expertise. An ideal alternative will minimize O&M complexities to avoid unnecessary strain.

   Alternatives L-2 and L-3 represent similar O&M requirements. The overall complexities of these two alternatives also are similar. Alternatives L-2 and L-3 have been ranked equally in terms of operations and maintenance complexities.

c. Public Health and Safety

   The purpose of the improvements to the water distribution system connection from the City water system to the Green Acres Subdivision distribution network is to provide greater access to clean and reliable water.

   Both Alternatives L-2 and L-3 eliminate the aging and potentially leaking main along Bickford Lane and sufficiently create an alternative second connection between the existing City water system at East Gallatin Street and the communities to the north. Therefore, both Alternatives L-2 and L-3 have been ranked 1 in terms of public health and safety.

d. Environmental Impacts

Each alternative is expected to impact the surrounding environment during construction. These environmental impacts are expected to be minor and short-term. However, the greater addition of new main for Alternative L-2 will cause the greatest disruption. Therefore, Alternative L-2 and L-3 have been ranked 2 and 1, respectively, in terms of environmental impact.

e. Public Acceptance

It is unclear at this time what the public's opinion regarding looping main alternatives is.

3. Alternative Ranking Matrix

The non-monetary were compared in an organized and systematic method. A scoring structure was implemented to impartially compare the water distribution alternatives for the proposed looping main. The alternatives were ranked 1-2 for each of the criterion. The lowest overall score indicates the most desirable option. The alternative scoring is presented in **Table 5-2**. As shown in the table below, **Alternative L-3: Bickford Lane Connection is considered the most ideal connection looping main alternative**.

Table 5-2
Looping Main Alternative Decision Ranking Matrix

Alt.	Life Cycle Cost	Technical and Logistical Feasibility	O&M Complexity	Public Health and Safety	Environmental Impacts	Public Acceptance	Total	Ranking
L-2	_	2	1	1	2	_	6	_
L-3	_	1	1	1	1	_	4	_

C. MONTAGUE MAIN ALTERNATIVES

Three alternatives for the Montague Subdivision were discussed in Chapter 4. Alternative M-1: No Action was considered not feasible. Alternative M-1 proposes no changes to the existing system and does not supply connection from the City water system and the Montague Subdivision. Therefore, the M-1 alternative has been eliminated from further consideration. The following sections compares the remaining two alternatives with respect to the above-mentioned criterion. Each alternative was given a score with the lower scores representing the most desirable alternative. Scores for each criterion were summed together in the decision matrix; the lowest total score indicates the most advantageous project for the Montague Subdivision.

1. Life Cycle Cost Analysis

Life Cycle Cost Analysis will be completed for the final draft.

2. Non-Monetary Factors

The alternative analysis includes consideration of non-monetary factors such as technical and logistical feasibility, operations and maintenance complexity, public health and safety,

environmental impacts, and public acceptance. The following discussion evaluates the remaining two alternatives with respect to each criterion. Each looping connection alternative has been ranked 1-2 for each criterion, with 1 indicating the most desirable option.

a. Technical and Logistical Feasibility

   Technical and logistical feasibility considers factors such as permitting requirements, land acquisition, and technical practicality of the project. The two remaining looping main connection alternatives are both considered technically feasible. Preliminary designs apply typical industry standards and meet applicable design requirements.

   Alternative M-2 is considered the most logistically feasible option. This alternative proposes to construct all new mains within the existing roadway. This will simplify construction practices For these reasons, Alternative M-2 has been ranked 1 in terms of technical and logistical feasibility.

   Alternative M-3 proposes to construct all new mains within the Montague Subdivision alleyways. While technically feasible, alleyway construction could present some additional challenges in design and construction. Therefore, this alternative is ranked 2 in terms of technical and logistical feasibility.

b. Operation and Maintenance Complexity

   The City of Livingston maintains many residential communities and businesses within their service area. Limited resources and manpower must be sufficient to maintain all service connections within the City. Therefore, it is desirable to optimize the complexity of operation and maintenance procedures to minimize impact to available staffing and associated technical expertise. An ideal alternative will minimize O&M complexities to avoid unnecessary strain.

   Alternatives M-2 and M-3 represent similar O&M requirements. The overall complexities of these two alternatives are not substantially different. Therefore, Alternatives M-2 and M-3 have both been ranked 1 in terms of operations and maintenance complexities.

c. Public Health and Safety

   The purpose of creating a connection from the City of Livingston water system and the Montague Subdivision is to provide greater access to clean and reliable water to the Montague Subdivision.

   Both Alternatives M-2 and M-3 effectively create a connection from The City system to the Montague Subdivision. The preliminary design of each of the two alternatives represents adequate looping and minimal dead-ends. Therefore, both Alternatives M-2 and M-3 have been ranked 1 in terms of public health and safety.

d. Environmental Impacts

   Each alternative is expected to impact the surrounding environment during construction. These environmental impacts are expected to be minor and short-term. The impact of both alternatives is expected to be similar. Therefore, Alternative M-2 and M-3 have been ranked 1, in terms of environmental impact.

e. Public Acceptance

Conversations with City staff and community members has indicated M-2 is preferred. Therefore, Alternatives M-2 and M-3 have been ranked 1 and 2, respectively in terms of public acceptance.

3. Alternative Ranking Matrix

Both the non-monetary and life cycle costs were compared in an organized and systematic method. A scoring structure was implemented to impartially compare the Montague Subdivision looping main alternatives. The alternatives were ranked 1-2 for each of the criterion. The lowest overall score indicates the most desirable option. The alternative scoring is presented in Table 5-3. As shown in the table below, **Alternative M-2: Montague Streets is currently considered the most ideal Montague Streets Looping Mains alternative**.

Table 5-3
Montague Subdivision Alternative Decision Ranking Matrix

Alt.	Life Cycle Cost	Technical and Logistical Feasibility	O&M Complexity	Public Health and Safety	Environmental Impacts	Public Acceptance	Total	Ranking
M-2	_	1	1	1	1	1	5	_
M-3	_	2	1	1	1	2	7	_

D. SLEEPING GIANT COMMUNITY

Five looping alternatives for the Sleeping Giant Community were discussed in Chapter 4. Alternative S-1: No Action was considered not feasible. Alternative S-1 proposes no changes to the existing system and does not supply connection from the City water system and the Sleeping Giant Estates. Therefore, the S-1 alternative has been eliminated from further consideration. The following sections compares the remaining four alternatives with respect to the above-mentioned criterion. Each alternative was given a score with the lower scores representing the most desirable alternative. Scores for each criterion were summed together in the decision matrix; the lowest total score indicates the most advantageous project for the Sleeping Giant community.

1. Life Cycle Cost Analysis

Life Cycle Cost Analysis will be completed for the final draft.

2. Non-Monetary Factors

The alternative analysis includes consideration of non-monetary factors such as technical and logistical feasibility, operations and maintenance complexity, public health and safety, environmental impacts, and public acceptance. The following discussion evaluates the remaining two alternatives with respect to each criterion. Each looping connection alternative has been ranked 1-4 for each criterion, with 1 indicating the most desirable option.

a. Technical and Logistical Feasibility

Technical and logistical feasibility considers factors such as permitting requirements, land acquisition, and technical practicality of the project. The four remaining alternatives are all considered technically feasible. Preliminary designs apply typical industry standards and meet applicable design requirements.

Alternative S-2 is considered the logistically feasible option. Alternative S-2 represents the simplest alignment option, and therefore minimizes potential logistical or technical complications during design and construction. Therefore, Alternative S-2 has been ranked 1 in terms of technical and logistical feasibility.

Alternative S-3 proposes to construct new mains within the existing roadway. This alternative represents a slightly more complex alignment option as it incorporates a duplicate main running north-south along Garnier Avenue between McCaw Street and Frank Street. Therefore, Alternative S-3 has been ranked 2 in terms of technical and logistical feasibility.

Alternatives S-4 and S-5 propose the construction of new main along the access drive bisecting the Sleeping Giant Community. S-5 includes the addition of a duplicate main running north-south along Garnier Avenue between McCaw Street and Frank Street. Both these alternatives represent more complex alignment options and may present more logical or technical complications during design and construction. Therefore, Alternatives S-4 and S-5 have been ranked 3 and 4, respectively in terms of technical and logistical feasibility.

b. Operation and Maintenance Complexity

The City of Livingston maintains many residential communities and businesses within their service area. Limited resources and manpower must be sufficient to maintain all service connections within the City. Therefore, it is desirable to optimize the complexity of operation and maintenance procedures to minimize impact to available staffing and associated technical expertise. An ideal alternative will minimize O&M complexities to avoid unnecessary strain. Each of the remaining four alternatives are considered to be similar in terms of operation and maintenance complexity. All 4 remaining Sleeping Giant Estates alternatives been equally ranked 1 in terms of operations and maintenance complexities.

Alternative S-2 represents the simplest pipe alignment alternative and incorporates the fewest locations at which a valve will be installed. Alternative S-2 is considered the most ideal alternative in terms of operation and maintenance complexity. Therefore, Alternative S-2 had been ranked 1 in terms of operations and maintenance complexity.

Alternative S-3 includes a slightly greater number of valves and a more complex design layout than alternative S-2 and has been ranked 2 in terms of operation and maintenance complexity.

Alternatives S-4 and S-5 are more considerably more complex design layout alternatives than S-2, both incorporating segments passing through the Sleeping Giant Community. Alternatives S-4 and S-5 have been ranked 3 and 4 in terms of operations and maintenance complexity.

c. Public Health and Safety

The purpose of creating a connection from the City of Livingston water system and the Sleeping Giant Community is to provide greater access to clean and reliable water to the Sleeping Giant Community.

All of the remaining four alternatives effectively create a connection from The City system to the Sleeping Giant Community. The preliminary design of each of the four alternatives represents adequate looping and minimal dead-ends. Therefore, each of the four alternatives have been ranked 1 in terms of public health and safety.

d. Environmental Impacts

Each alternative is expected to impact the surrounding environment during construction. These environmental impacts are expected to be minor and short-term. The impact of all of the remaining four alternatives have been equally ranked 1 in terms of operations and maintenance complexities.

e. Public Acceptance

Conversations with City staff and community members has Alternative S-4 is desired.

3. Alternative Ranking Matrix

Both the non-monetary and life cycle costs were compared in an organized and systematic method. A scoring structure was implemented to impartially compare the Sleeping Giant Community alternatives. The alternatives were ranked 1-4 for each of the criterion. The lowest overall score indicates the most desirable option. The alternative scoring is presented in **Table 5-4.** As shown in the table below, **Alternative S-4: Frank Garnier Street Connection is currently considered the most ideal Sleeping Giant Estates alternative**.

Table 5-4
Sleeping Giant Estates Alternative Decision Ranking Matrix

Alt.	Life Cycle Cost	Technical and Logistical Feasibility	O&M Complexity	Public Health and Safety	Environmental Impacts	Public Acceptance	Total	Ranking
S-2	_	1	1	1	1	3	7	_
S-3	_	2	1	1	1	3	8	_
S-4	_	3	1	1	1	1	7	_
S-5	_	4	1	1	1	3	10	_

6.0 PROPOSED PROJECT

A. PRELIMINARY PROJECT DESIGN

The recommended projects include the following:

- Alternative G-3: Green Acres Expansion
- Alternative M-2: Montague Streets
- Alternative S-4: McCaw/Frank Street Connection

1. Description

Improvements to the Green Acres Subdivision includes replacing the existing 6-inch ductile iron water mains with new 8-inch PVC mains. In addition to replacing the existing mains, a new section of 8-inch PVC main is also proposed to extend north from Pine Street along Chestnut Lane and A new 8-inch PVC main along Tana Lane. Valving is including throughout the replacement area to allow for better isolation. The proposed project within Montague Subdivision will install a new 8-inch main east-west on Arbor Drive and Grandview Boulevard, and north-south on Garnier Avenue, Hefferlin Avenue, and Whiskey Creek Road. The new mains would connect to the existing City of Livingston water system on Garnier Avenue and Frank Street, Garnier Avenue and Allspaugh Street, and Hefferlin Avenue and Allspaugh, as well as within the Green Acres Subdivision. New 8-inch PVC mains will be installed within Sleeping Giant Estates. Mains will be installed north along Miles Lane North from East Gallatin Street to Brookstone Street, east from Miles Lane North along Miller Street between Miles Lane North and Garnier Avenue, and west along McCaw Street from Garnier Avenue to the access drive through the Sleeping Giant Estates and north along the access drive from McCaw Street to Frank Street. Reference **Figure 6-1** for proposed improvements.

2. Design Criteria

The proposed improvements were included in the City's WaterCAD model to assess the hydraulic implications of the improvements. Max day demands were assigned based on the existing number of units per lot, assuming 2.5 persons per unit and an average usage of 127.5 gpd per person. Vacant lot demands were assigned using the City of Livingston's assigned zoning and projected unit density correlated with each zone. The projected unit density was also correlated to a proposed population of 2.5 persons per unit and an average day demand of 127.5 gpd per person. Max day demands were calculated by multiplying average day demands by the peak hour factor of 2.36. Max day demand calculations are included in the **Appendix 2-1**. Projected max day demands resulted in a calculated minimum pressure value of 73 psi in the project area while supplying max day demands. Fire flow calculations performed via the EPS solver indicated a minimum residual pressure of 20 psi can be retained while delivering a minimum fire flow of 2,331 gpm in the project area. WaterCAD reports corresponding to Fire flow and pressures are included in **Appendix 6-1**. See **Figure 6-2** for Junctions color coded by system pressures while supplying max day demands.

NOT FOR CONSTRUCTION

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

PROPOSED PROJECT MAP

FIGURE 6-1

B24-011-FINAL PROJECT.DWG

JOB NO: B24-011
FIELDBOOK:
DATE:
QUALITY CHECK: NNR
DESIGNED BY: JEM
DRAWN BY:

TD&H Engineering
406.586.0277 • tdhengineering.com
234 E. BABCOCK ST., SUITE 3 • BOZEMAN, MONTANA 59715

REV	DATE	REVISION

NOT FOR CONSTRUCTION

PRINTED 2025-07-24, BY NICOLE REDISKE, I:\2024\B02\B24-011 LIVINGSTON REGIONAL WATER PER\06_CADD\CIVIL\FIGURES\FIGURE ALT 6-1\FIGURE 6-1 PRESSURES\B24-011-FIG 6-2.DWG

COLOR CODING LEGEND
JUNCTION PRESSURE (PSI)

- 0–20 PSI
- 21–50 PSI
- 51–60 PSI
- 61–80 PSI
- 81–90 PSI
- 91–110 PSI
- GREATER THAN 110 PSI

NOT FOR CONSTRUCTION

NOT FOR CONSTRUCTION

REV	DATE	REVISION

TD&H Engineering
406.586.0277 • tdhengineering.com
234 E. BABCOCK ST., SUITE 3 • BOZEMAN, MONTANA 59715

DRAWN BY:	JEM
DESIGNED BY:	
QUALITY CHECK:	NMR
DATE:	
JOB NO.	B24-011
FIELDBOOK	

LIVINGSTON REGIONAL WATER SYSTEM PER
LIVINGSTON, MONTANA

WATERCAD RESULTS - PRESSURES
SELECTED PROJECT

B24-011-FIG 6-2.DWG

FIGURE 6-2

B. PERMIT REQUIREMENTS AND ENVIRONMENTAL IMPACTS

A stormwater pollution prevention plan (SWPPP) and Notice of Intent (NOI) are anticipated. DEQ plan and specification approvals, approval from funding agencies, and the City of Livingston approval of plans and specifications will be required prior to construction.

Letters regarding environmental issues were sent to the following agencies requesting comments on the proposed project:

- United States Army Corp of Engineers
- Bureau of Land Management
- Department of Environmental Quality
- Department of Natural Resources and Conservation
- United States Environmental Protection Agency
- US Fish and Wildlife Service
- Natural Resources Conservation Service
- Montana Fish, Wildlife and Parks
- State Historic Preservation Office

C. SUSTAINABILITY CONSIDERATIONS

i. Water and Energy Efficiency

Replacing potentially damaged or corroded mains will eliminate water loss due to leaks in the pipe or fittings. Additionally eliminating dead ends in the system will allow for disinfectant residual to remain at optimal levels and will no longer require the system to be manually flushed periodically.

Expansion of the existing public water system into the Montague Subdivision and Green Acres Estates will decrease use of private wells, would create a single, unified, public source, and thereby eliminate inefficient water and energy usage associated with multiple private water sources.

ii. Green Infrastructure

Storm water management with regard to the proposed project is not applicable.

iii. Other

Replacement of aging mains with inadequate isolation will allow for more manageable repair and maintenance of the system and allows for optimal constructability of expansions for the system in the future

D. TOTAL PROJECT COST ESTIMATE

Table 6-1 presents a summary of the construction, contingency, administrative, engineering, and legal costs estimates for the proposed project.

Table 6-1 Recommended Project Cost Summary				
Category	**Alternative G-3**	**Alternative M-2**	**Alternative S-4**	**Category Total**
Construction & Inflation	$2,383,106	$1,321,358	$807,796	$4,512,260
Contingency	$238,311	$132,136	$80,780	$451,226
Administrative, Engineering, and Legal	$524,283	$304,532	$177,715	$1,006,531
Totals	**$3,145,700**	**$1,758,026**	**$1,066,291**	**$5,970,017**

E. ANNUAL OPERATING BUDGET

The proposed annual O&M budget for the District's sanitary sewer system, including collection and treatment, is presented in **Table 6-2**.

Table 6-2 Operation and Maintenance Budget		
Operating Expense	**Annual Budget**	
Payroll	$	416,468.38
Repairs and Maintenance	$	200,750.78
Utilities	$	154,602.56
Safety and Risk Management	$	1,002.51
Professional Services	$	1,211.35
Water Analysis and Treatment	$	15,333.76
Travel/Lodging/Meals	$	147.40
Training Services	$	415.79
State Fee Assessment	$	8,530.50
Total	**$**	**798,463.04**

APPENDIX 1-A
UNIFORM ENVIRONMENTAL CHECKLIST
(Not included with Draft)

APPENDIX 1-B
ENVIRONMENTAL RESOURCE

USGS Map

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

LIVINGSTON QUADRANGLE
MONTANA-PARK CO.
7.5-MINUTE SERIES

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 12T
10 000-foot ticks: Montana Coordinate System of 1983

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, November 2015
Roads..... U.S. Census Bureau, 2015 - 2016
Names.....GNIS, 2016
Hydrography.....National Hydrography Dataset, 2015
Contours.....National Elevation Dataset, 2001
Boundaries.....Multiple sources; see metadata file 1972 - 2016
Public Land Survey System.....BLM, 2016
Wetlands.....FWS National Wetlands Inventory 1977 - 2014

UTM GRID AND 2017 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
WR
Grid Zone Designation
12T

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Gobblers Knob
2 Chadborn
3 Grannis
4 Hoppers
5 Mission
6 Chimney Rock
7 Brisbin
8 Livingston Peak

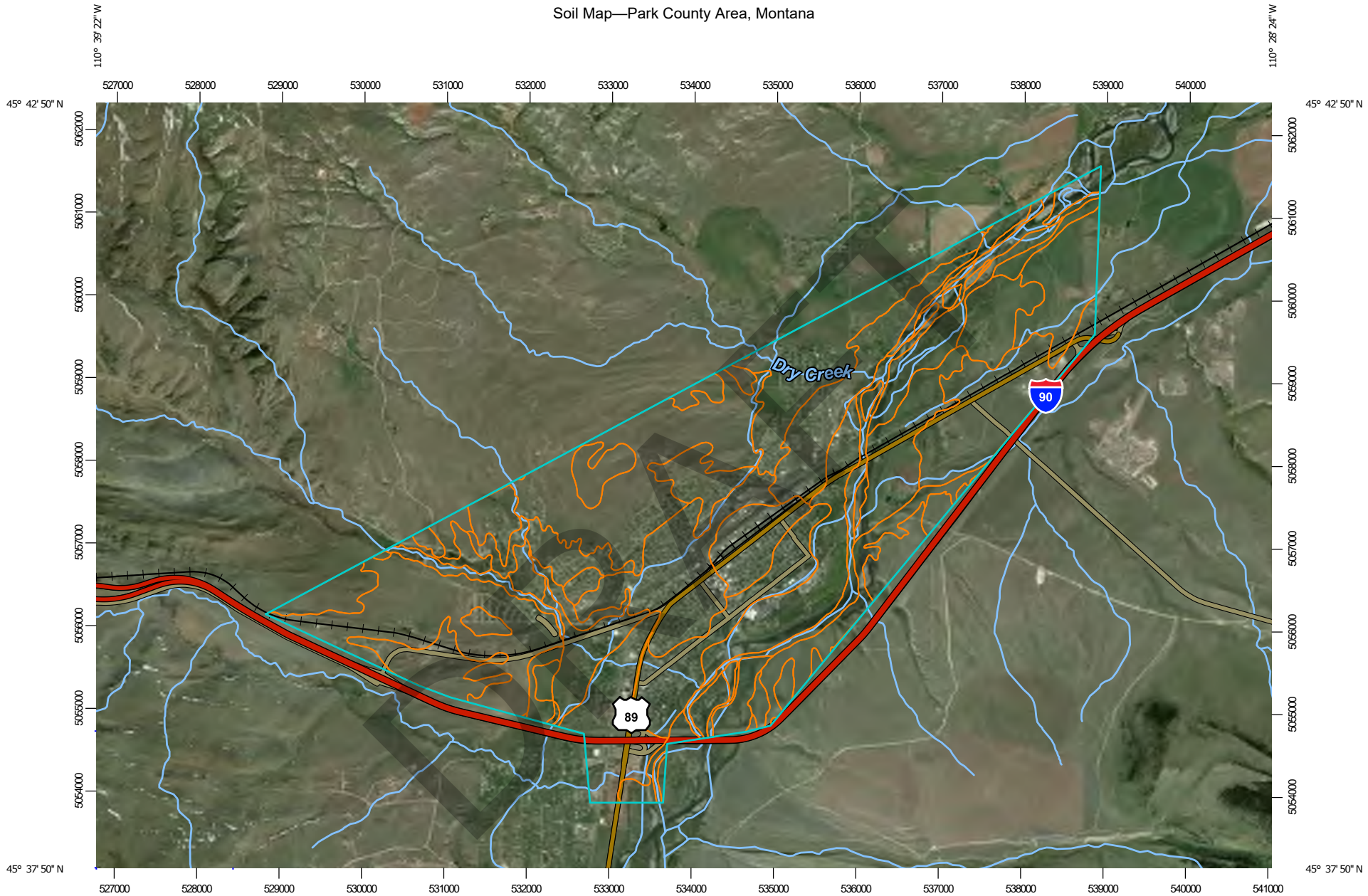
ADJOINING QUADRANGLES

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

LIVINGSTON, MT
2017

NSN 7643016937114
NGA REF NO. USGSX24261124

NRCS WSS Soil Map


110° 39' 22" W
110° 28' 24" W
45° 42' 50" N
45° 37' 50" N
527000
528000
529000
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531000
532000
533000
534000
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538000
539000
540000
541000
5062000
5061000
5060000
5059000
5058000
5057000
5056000
5055000
5054000
Dry Creek
90
89
Map Scale: 1:65,200 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 500 1000 2000 3000
Feet
0 3000 6000 12000 18000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Park County Area, Montana
Survey Area Data: Version 12, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2009—Sep 1, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4B	Kremlin-Rothiemay complex, 0 to 4 percent slopes	159.8	2.1%
11A	Urban land-Glendive, occasionally flooded-Rivra , occasionally flooded complex, 0 to 2 percent slopes	344.1	4.6%
12B	Ethridge-Urban land-Kremlin complex, 0 to 4 percent slopes	453.5	6.0%
57B	Kremlin clay loam, 0 to 4 percent slopes	171.2	2.3%
58A	Beaverell-Beavwan complex, 0 to 2 percent slopes	1,116.9	14.8%
111A	Beaverell-Urbanland-Beavwan complex, 0 to 2 percent slopes	193.2	2.6%
302A	Glendive-Meadowcreek-Clunton complex, 0 to 4 percent slopes, occasionally flooded	99.1	1.3%
602A	Glendive-McCabe-Rivra complex, 0 to 2 percent slopes, occasionally flooded	808.0	10.7%
720B	Cozdome-Vendome loams, 0 to 4 percent slopes	272.8	3.6%
1216A	Riverwash-Rivra complex, 0 to 2 percent slopes	57.9	0.8%
1218B	Vendome-Meadowcreek complex, 0 to 4 percent slopes	265.0	3.5%
1303D	Nirling-Clunton complex, 0 to 10 percent slopes, occasionally flooded	62.9	0.8%
2202C	Ethridge-Kremlin-Yamacall complex, 0 to 8 percent slopes	601.9	8.0%
2205C	Meagher-Shawmut complex, 2 to 8 percent slopes	91.9	1.2%
2207C	Trimad-Trimad stony complex, 0 to 8 percent slopes	32.8	0.4%
5401D	Ethridge-Tanna-Reedpoint complex, 2 to 15 percent slopes	964.0	12.8%
5407E	Evanston-Ethridge complex, 2 to 15 percent slopes	90.3	1.2%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5501E	Bacbuster-Bigbear-Vershal complex, 4 to 35 percent slopes	98.8	1.3%
5502E	Reedpoint-Tanna-Ethridge complex, 4 to 35 percent slopes	930.4	12.3%
5601F	Cabbart-Tanna-Rock outcrop complex, 25 to 60 percent slopes	240.4	3.2%
5602F	Cabba-Doney-Rock outcrop complex, 15 to 60 percent slopes	3.7	0.0%
5619F	Bacbuster-Sawicki-Corbly complex, 15 to 60 percent slopes	209.9	2.8%
GP	Gravel pit	26.0	0.3%
W	Water	240.2	3.2%
Totals for Area of Interest		**7,534.9**	**100.0%**

FEMA Firm Maps

NOTES TO USERS

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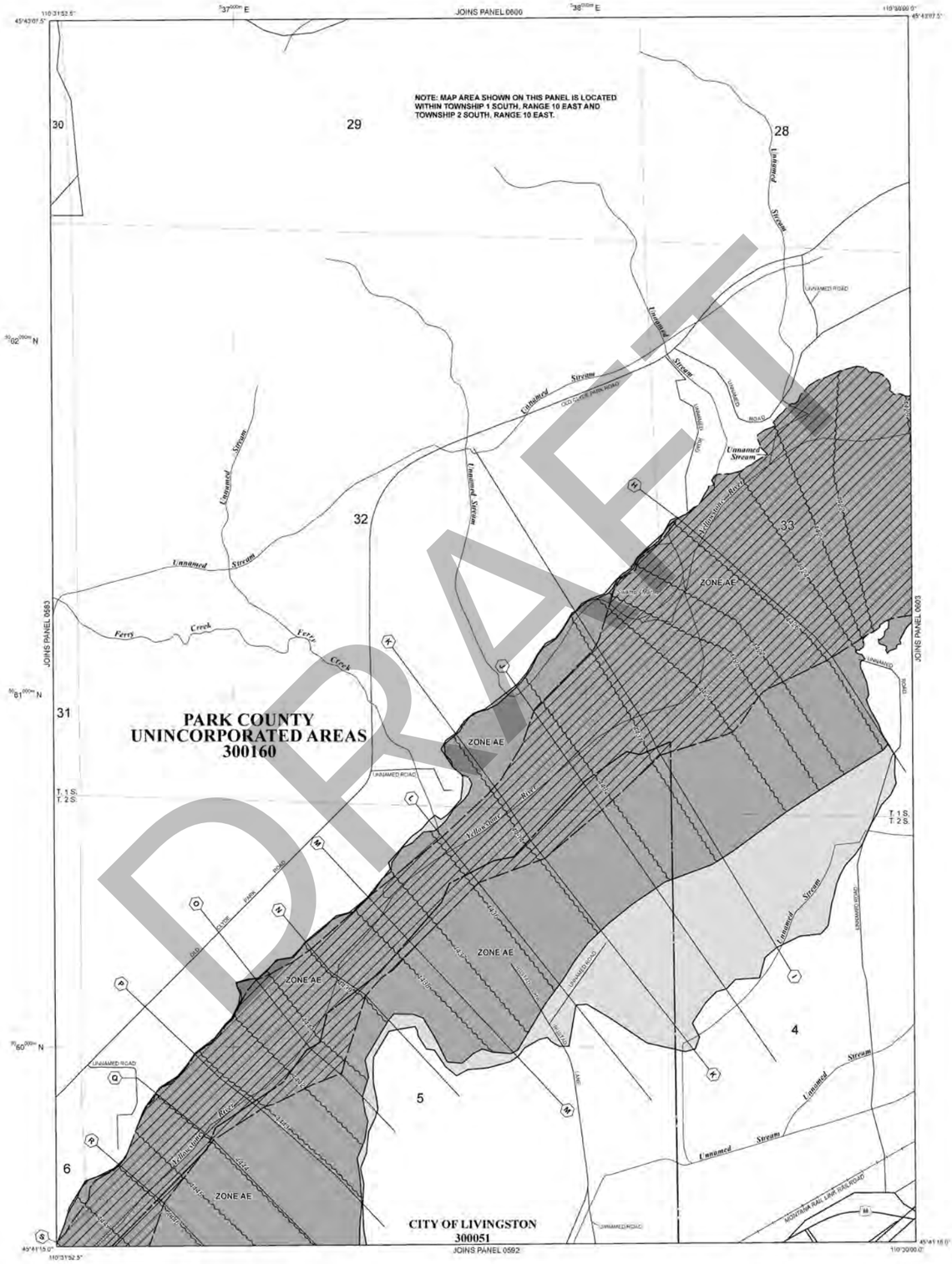

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. This Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

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FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- (A) — (A) Cross section line
- (23) ------ (23) Transect line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4279000 N 1000-meter Universal Transverse Mercator grid ticks, zone 12
- 6000000 M 5000-foot grid ticks: Alabama State Plane coordinate system, east zone (FIPSZONE 0101), Transverse Mercator
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
October 18, 2011
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0584C

FIRM
FLOOD INSURANCE RATE MAP
PARK COUNTY, MONTANA AND INCORPORATED AREAS

PANEL 584 OF 1925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PARK COUNTY	300160	0584	C
LIVINGSTON, CITY OF	300051	0584	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
30067C0584C
EFFECTIVE DATE
OCTOBER 18, 2011

Federal Emergency Management Agency

Figure 1-6A

NOTES TO USERS

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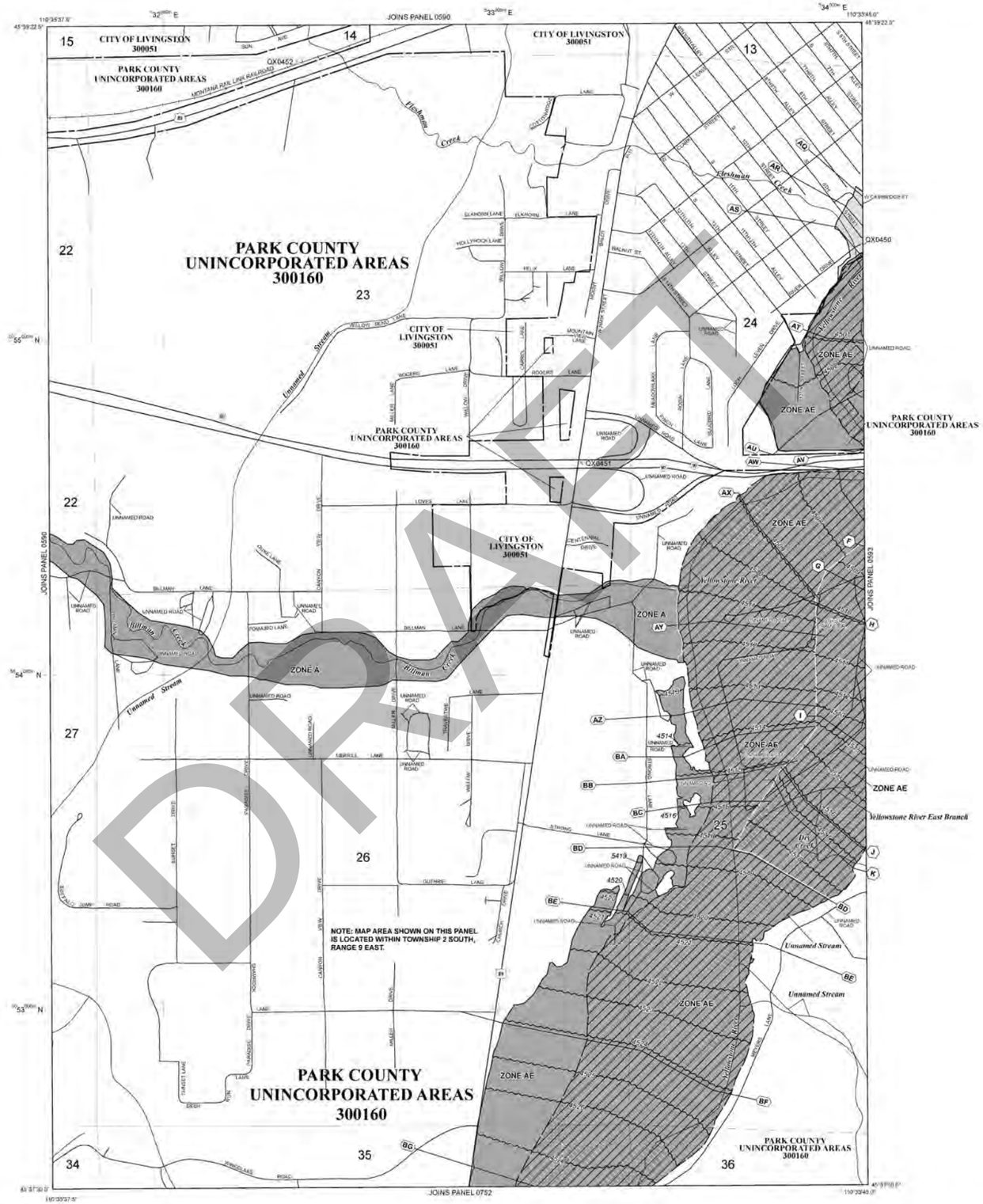
Figure 1-6B



LEGEND

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OTHER FLOOD AREAS

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NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0589C

FIRM
FLOOD INSURANCE RATE MAP
PARK COUNTY, MONTANA
AND INCORPORATED AREAS

PANEL 589 OF 1925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

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LIVINGSTON, CITY OF	300051	0589	C

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Federal Emergency Management Agency

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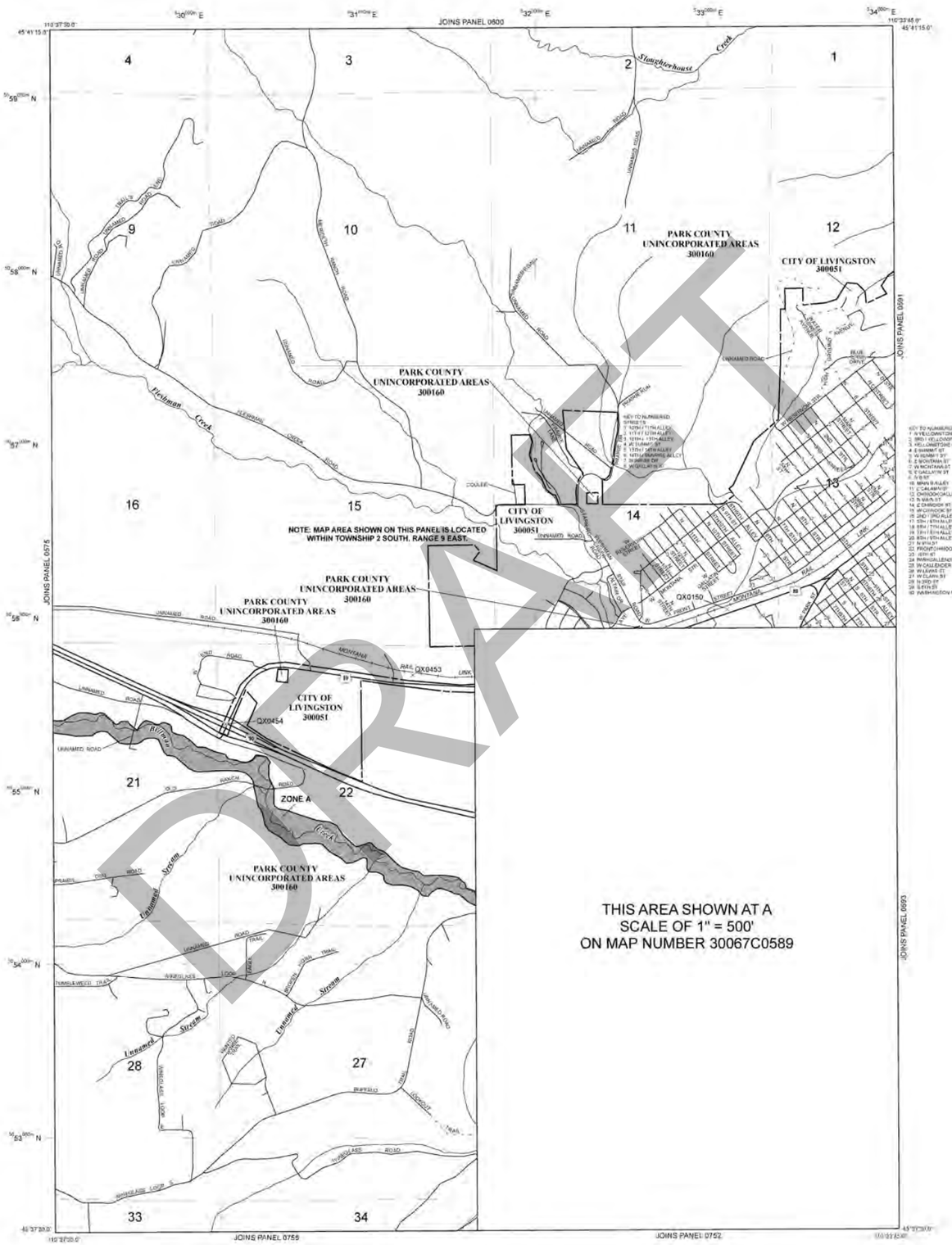

LEGEND

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300 0 300 600 METERS

NFIP

PANEL 0590C

FIRM
FLOOD INSURANCE RATE MAP
PARK COUNTY, MONTANA AND INCORPORATED AREAS

PANEL 590 OF 1925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PARK COUNTY	300160	0590	C
LIVINGSTON, CITY OF	300051	0590	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
30067C0590C
MAP REVISED
OCTOBER 18, 2011

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

Figure 1-6C

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 12. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC- 3, #9202
1315 East- West Highway
Silver Spring, MD 20910- 3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242,** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided by the U.S Census Bureau, Geographic Division, 2009 TIGER/Line files.The coordinate system used for production of the digital FIRM is the Universal Transverse Mercator Zone 12 North, reference to the North American Datum of 1983 and GRS spheroid, Western Hemisphere.
This map reflects more detailed and up- to- date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables *in the Flood Insurance Study report (which contains authoritative hydraulic data)* may reflect stream channel distances that differ from what is shown on this map.

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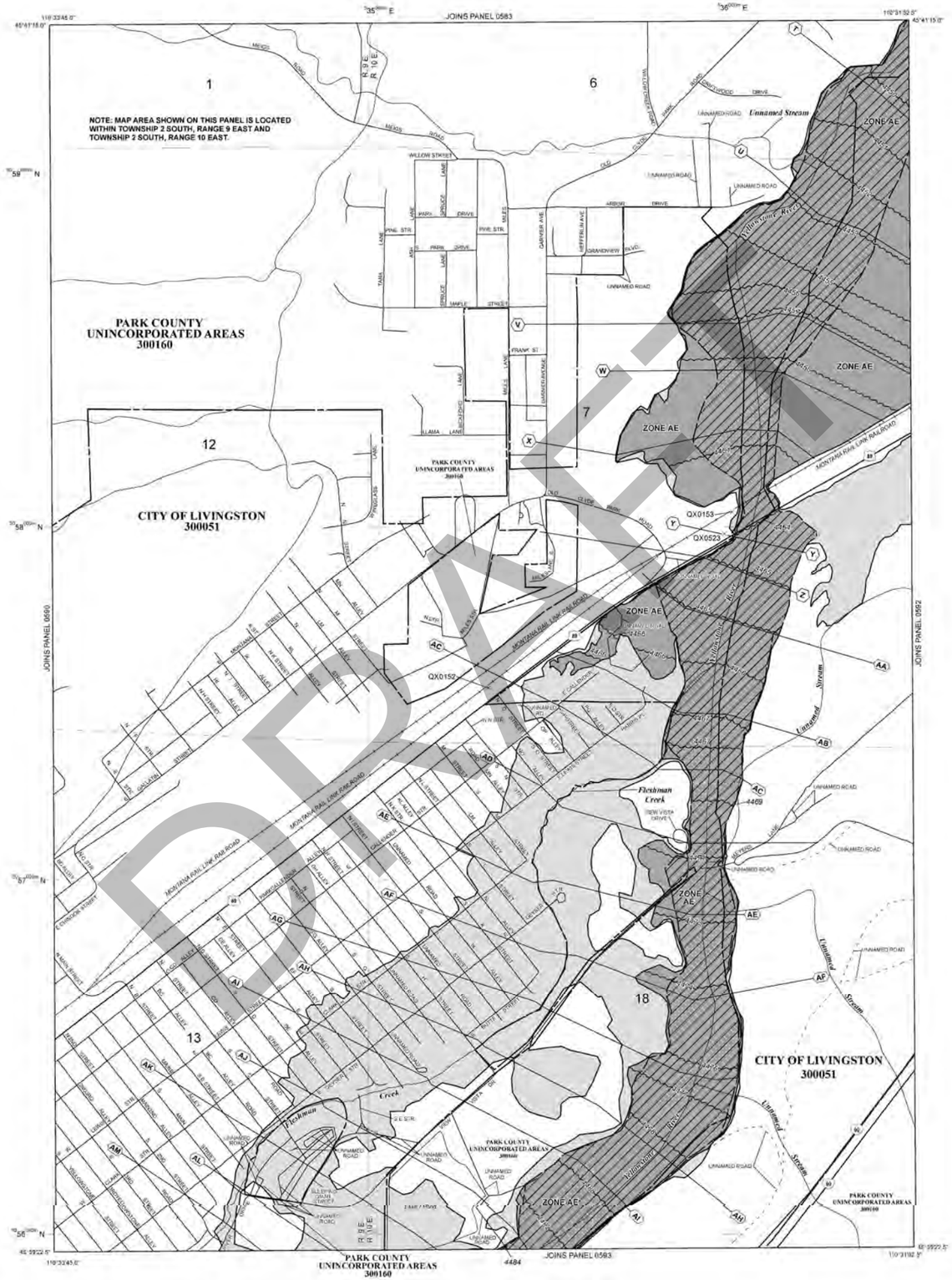
Figure 1-6D



LEGEND

▨	SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
▩	FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

▨	OTHER FLOOD AREAS
ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
☐	OTHER AREAS
ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.
▧	COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
▧	OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

————	Floodplain boundary
— — —	Floodway boundary
- —— —— -	Zone D boundary
••••••••	CBRS and OPA boundary
▭ ←	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
~~ 513 ~~~~	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

Ⓐ——Ⓐ	Cross section line
㉓- - - -㉓	Transect line
97°07'30", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
$^{42}75^{000m}$N	1000-meter Universal Transverse Mercator grid ticks, zone 12
6000000 M	5000-foot grid ticks: Alabama State Plane coordinate system, east zone (FIPSZONE 0101), Transverse Mercator
DX5510	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
October 18, 2011
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

PANEL 0591C

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
PARK COUNTY, MONTANA
AND INCORPORATED AREAS

PANEL 591 OF 1925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PARK COUNTY	300160	0591	C
LIVINGSTON, CITY OF	300051	0591	C

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MAP NUMBER
30067C0591C

EFFECTIVE DATE
OCTOBER 18, 2011

Federal Emergency Management Agency

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1315 East-West Highway
Silver Spring, MD 20910-3282

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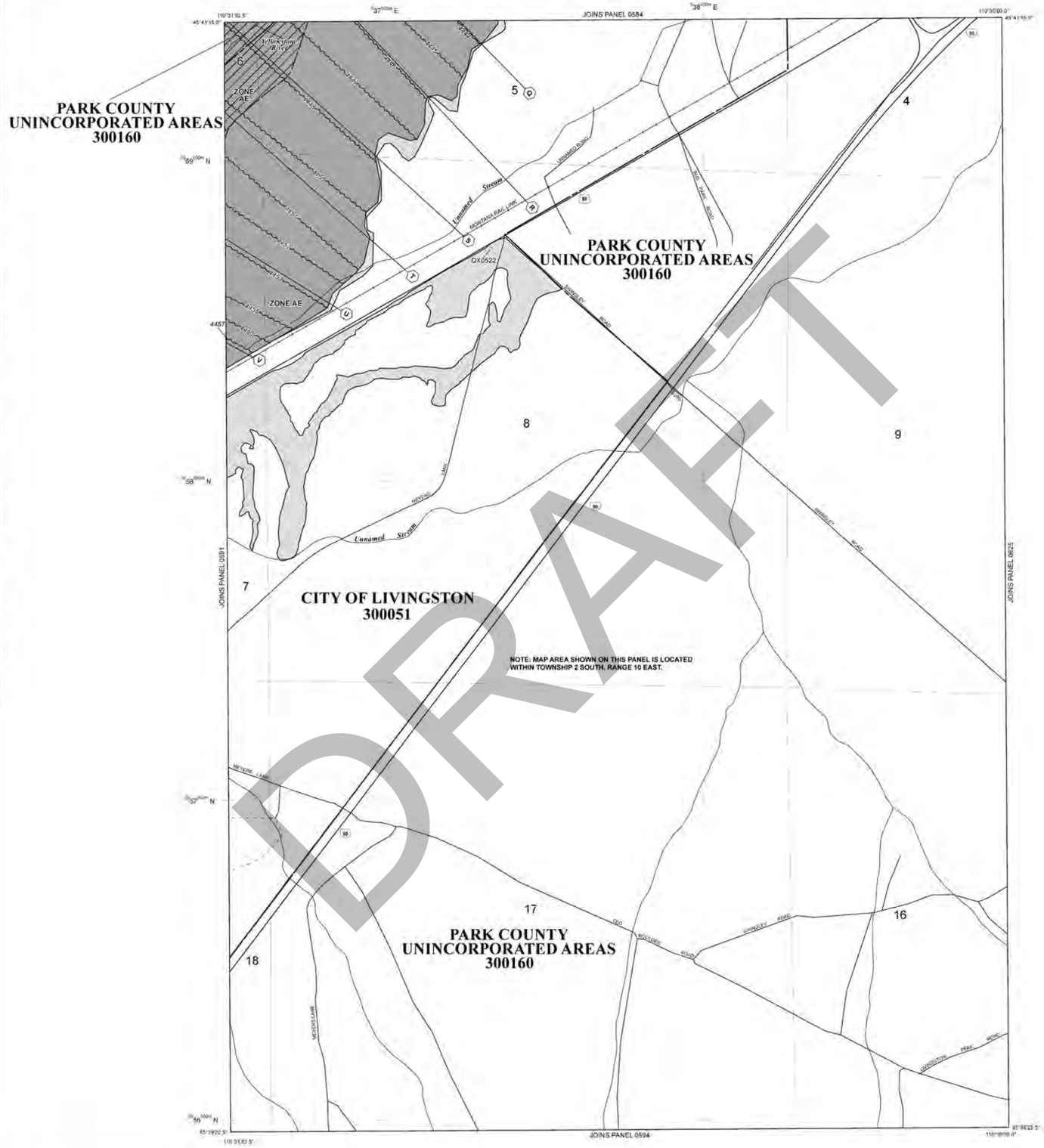
Figure 1-6E



LEGEND

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▩ FLOODWAY AREAS IN ZONE AE

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▨ OTHER FLOOD AREAS

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☐ OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
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▧ COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

▧ OTHERWISE PROTECTED AREAS (OPAs)

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DX5510	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
October 18, 2011
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0592C

FIRM
FLOOD INSURANCE RATE MAP

PARK COUNTY,
MONTANA
AND INCORPORATED AREAS

PANEL 592 OF 1925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PARK COUNTY	300160	0592	C
LIVINGSTON, CITY OF	300051	0592	C

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MAP NUMBER
30067C0592C

EFFECTIVE DATE
OCTOBER 18, 2011

Federal Emergency Management Agency

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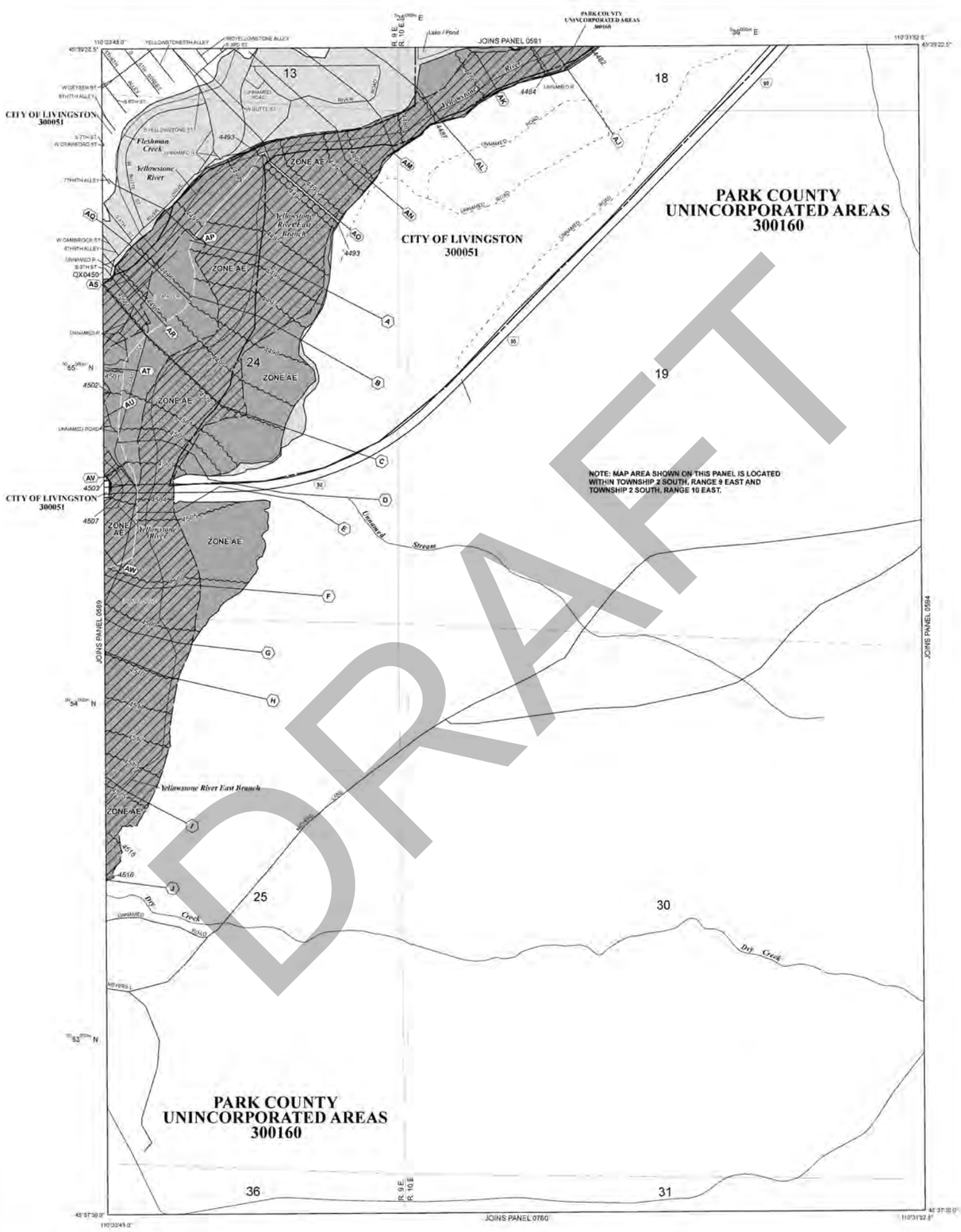

LEGEND

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FLOODWAY AREAS IN ZONE AE

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OTHER FLOOD AREAS

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OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
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OTHERWISE PROTECTED AREAS (OPAs)

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- CBRS and OPA boundary
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* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- (A) — (A) Cross section line
- (23) ------- (23) Transect line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4275000 FT N 1000-meter Universal Transverse Mercator grid ticks, zone 12
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MAP REPOSITORIES
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EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
October 18, 2011
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0593C

FIRM
FLOOD INSURANCE RATE MAP
PARK COUNTY, MONTANA AND INCORPORATED AREAS

PANEL 593 OF 1925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PARK COUNTY	300160	0593	C
LIVINGSTON, CITY OF	300051	0593	C

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MAP NUMBER
30067C0593C
EFFECTIVE DATE
OCTOBER 18, 2011

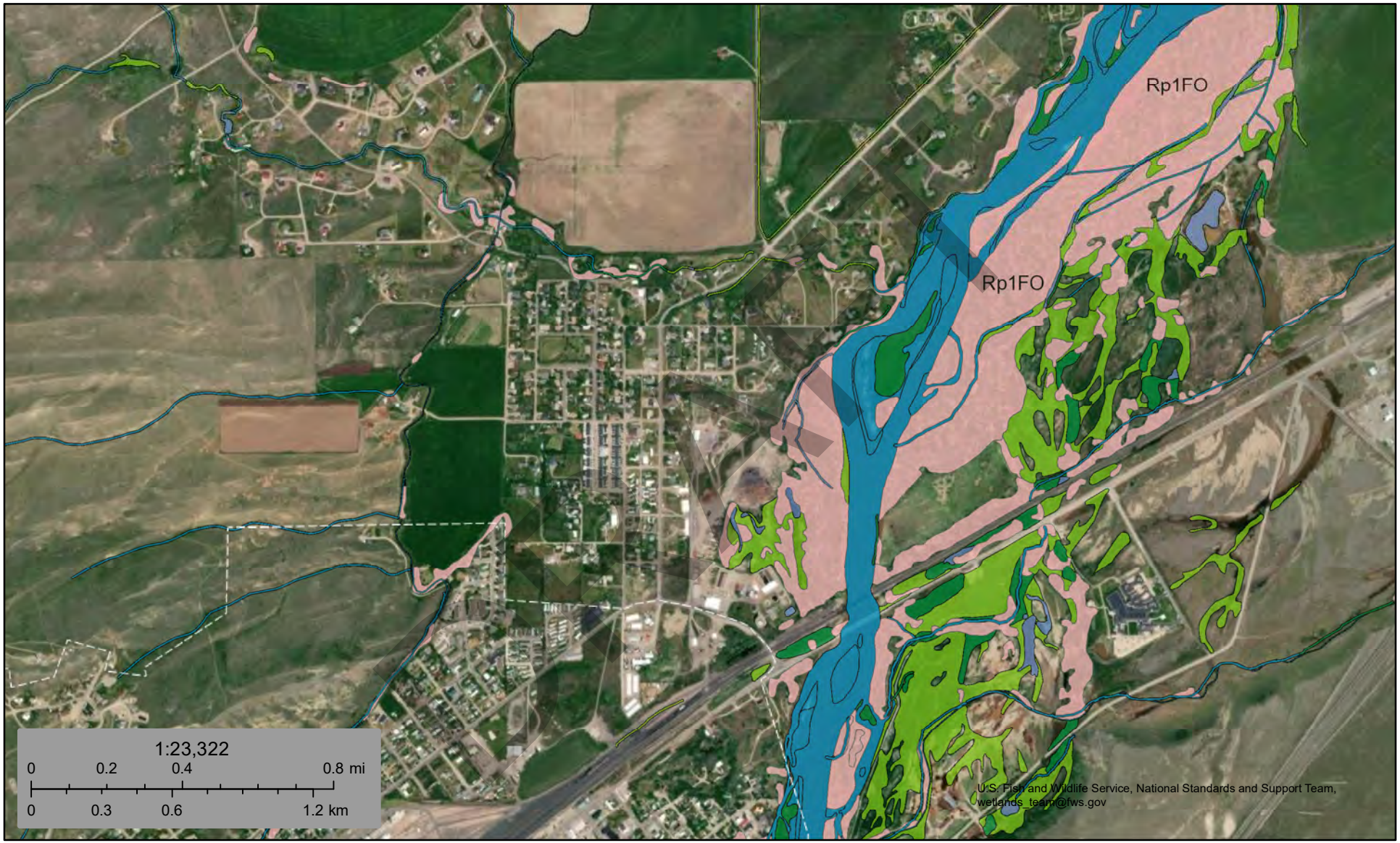
Federal Emergency Management Agency

Figure 1-6F

Wetlands 2024 PER Area

U.S. Fish and Wildlife Service
National Wetlands Inventory

Livingston MT 2024 WATER PER AREA



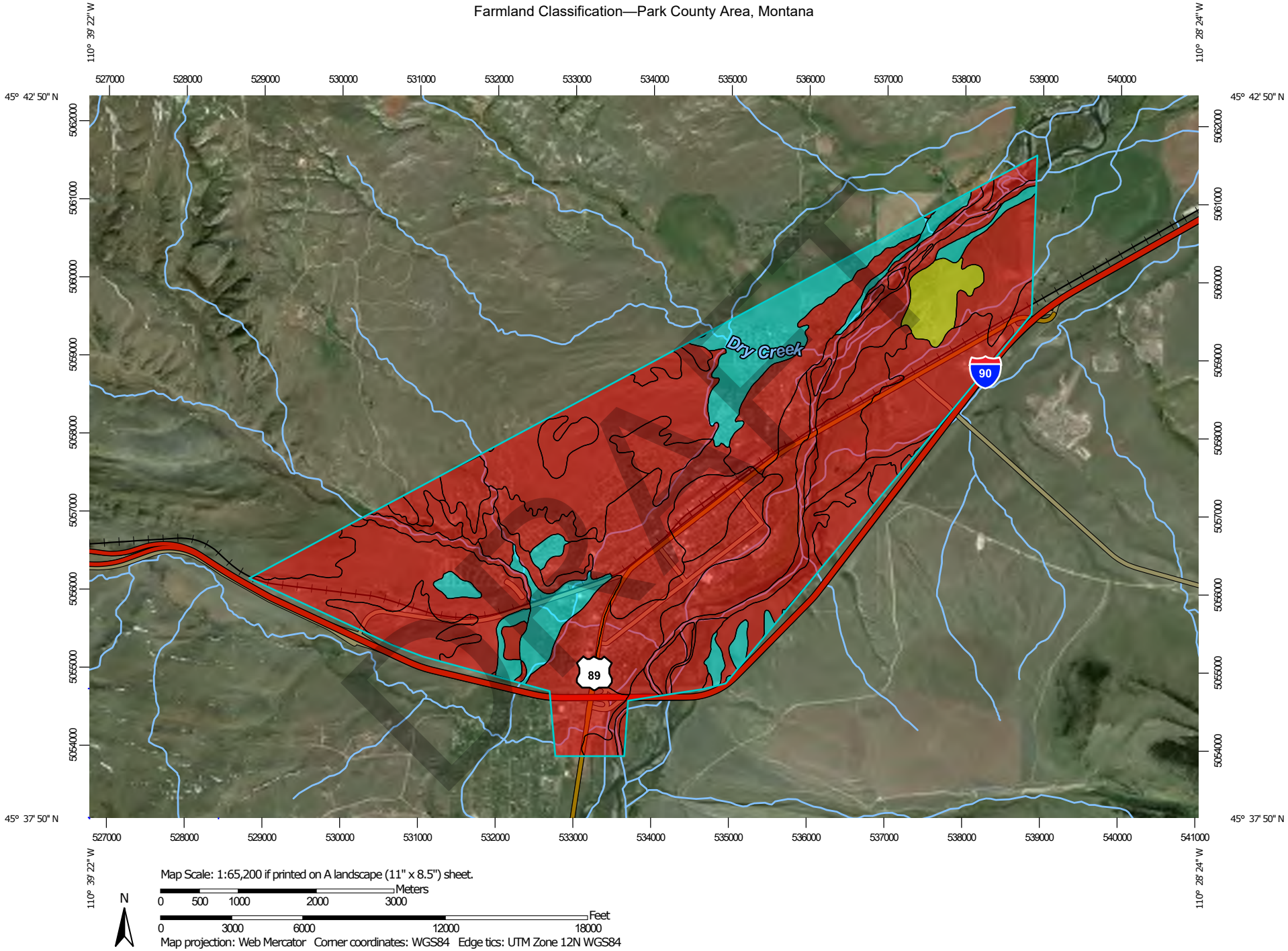
January 25, 2024

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

NRCS Farmland Classification


110° 39' 22" W
110° 28' 24" W
45° 42' 50" N
45° 37' 50" N
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Dry Creek
90
89
DRAFT
Map Scale: 1:65,200 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 500 1000 2000 3000
Feet
0 3000 6000 12000 18000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

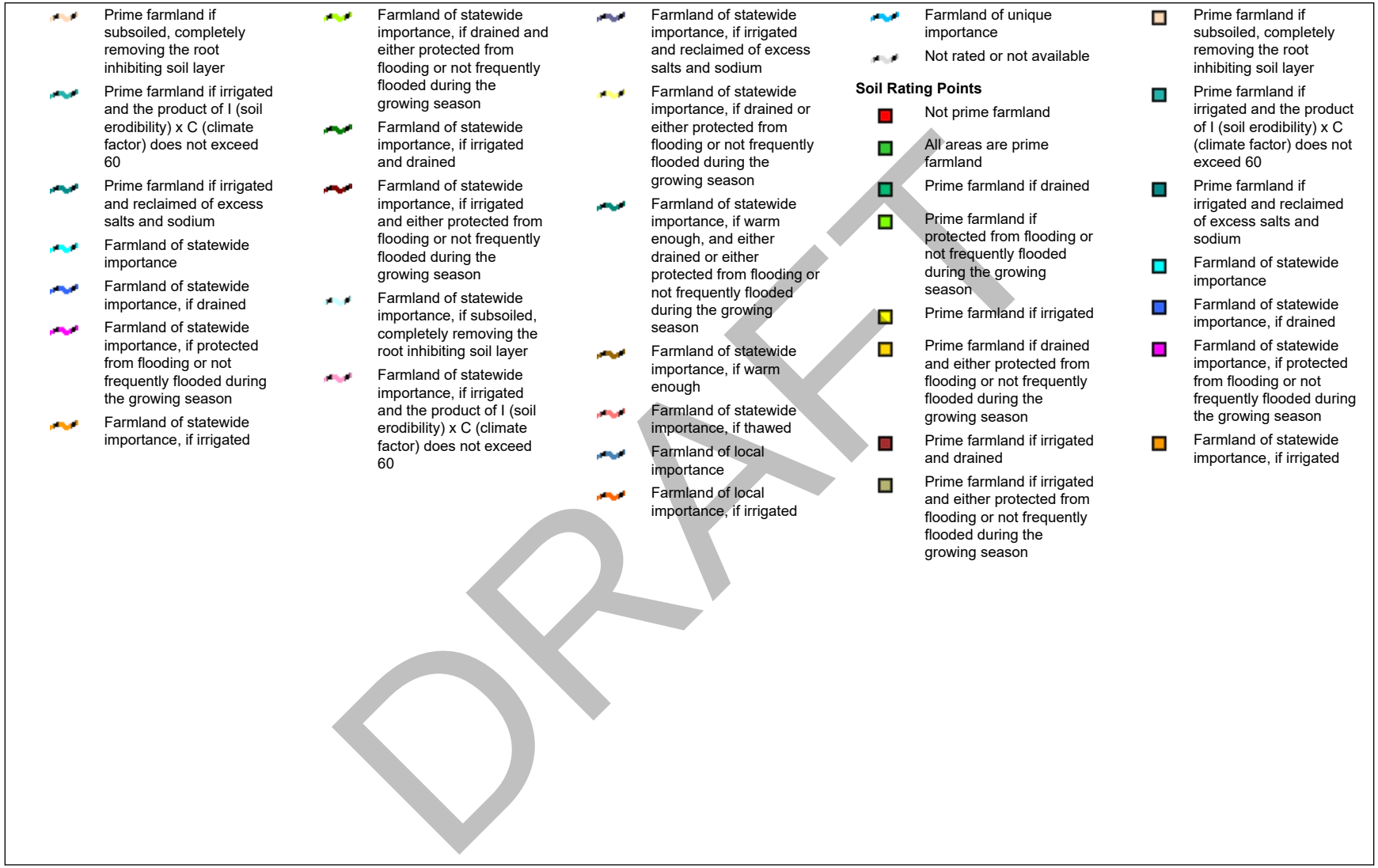
Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Park County Area, Montana
Survey Area Data: Version 12, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2009—Sep 1, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
4B	Kremlin-Rothiemay complex, 0 to 4 percent slopes	Farmland of statewide importance	159.8	2.1%
11A	Urban land-Glendive, occasionally flooded-Rivra , occasionally flooded complex, 0 to 2 percent slopes	Not prime farmland	344.1	4.6%
12B	Ethridge-Urban land-Kremlin complex, 0 to 4 percent slopes	Not prime farmland	453.5	6.0%
57B	Kremlin clay loam, 0 to 4 percent slopes	Prime farmland if irrigated	171.2	2.3%
58A	Beaverell-Beavwan complex, 0 to 2 percent slopes	Not prime farmland	1,116.9	14.8%
111A	Beaverell-Urbanland-Beavwan complex, 0 to 2 percent slopes	Not prime farmland	193.2	2.6%
302A	Glendive-Meadowcreek-Clunton complex, 0 to 4 percent slopes, occasionally flooded	Farmland of statewide importance	99.1	1.3%
602A	Glendive-McCabe-Rivra complex, 0 to 2 percent slopes, occasionally flooded	Not prime farmland	808.0	10.7%
720B	Cozdome-Vendome loams, 0 to 4 percent slopes	Not prime farmland	272.8	3.6%
1216A	Riverwash-Rivra complex, 0 to 2 percent slopes	Not prime farmland	57.9	0.8%
1218B	Vendome-Meadowcreek complex, 0 to 4 percent slopes	Not prime farmland	265.0	3.5%
1303D	Nirling-Clunton complex, 0 to 10 percent slopes, occasionally flooded	Not prime farmland	62.9	0.8%
2202C	Ethridge-Kremlin-Yamacall complex, 0 to 8 percent slopes	Farmland of statewide importance	601.9	8.0%
2205C	Meagher-Shawmut complex, 2 to 8 percent slopes	Not prime farmland	91.9	1.2%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2207C	Trimad-Trimad stony complex, 0 to 8 percent slopes	Not prime farmland	32.8	0.4%
5401D	Ethridge-Tanna-Reedpoint complex, 2 to 15 percent slopes	Not prime farmland	964.0	12.8%
5407E	Evanston-Ethridge complex, 2 to 15 percent slopes	Not prime farmland	90.3	1.2%
5501E	Bacbuster-Bigbear-Vershal complex, 4 to 35 percent slopes	Not prime farmland	98.8	1.3%
5502E	Reedpoint-Tanna-Ethridge complex, 4 to 35 percent slopes	Not prime farmland	930.4	12.3%
5601F	Cabbart-Tanna-Rock outcrop complex, 25 to 60 percent slopes	Not prime farmland	240.4	3.2%
5602F	Cabba-Doney-Rock outcrop complex, 15 to 60 percent slopes	Not prime farmland	3.7	0.0%
5619F	Bacbuster-Sawicki-Corbly complex, 15 to 60 percent slopes	Not prime farmland	209.9	2.8%
GP	Gravel pit	Not prime farmland	26.0	0.3%
W	Water	Not prime farmland	240.2	3.2%
Totals for Area of Interest			**7,534.9**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

USFWS Endangered Species List

United States Department of the Interior
Fish and Wildlife Service
Ecological Services
Montana Field Office
585 Shepard Way, Suite 1
Helena, Montana 59601-6287
Phone: (406) 449-5225, Fax: (406) 449-5339

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES*
Endangered Species Act

January 25, 2021

C = Candidate
LT = Listed Threatened
LE = Listed Endangered
P = Proposed
PCH = Proposed Critical Habitat
CH = Designated Critical Habitat
XN = Experimental non-essential population

*Note: Generally, this list identifies the counties where one would reasonably expect the species to occur, not necessarily every county where the species is listed

County/Scientific Name	Common Name	Status
BEAVERHEAD		
Spiranthes diluvialis	Ute Ladies' Tresses	LT
Ursus arctos horribilis	Grizzly Bear	LT
Lynx canadensis	Canada Lynx	LT
Pinus albicaulis	Whitebark Pine	P
BIG HORN		
Mustela nigripes	Black-footed Ferret	LE
BLAINE		
Scaphirhynchus albus	Pallid Sturgeon	LE
Mustela nigripes	Black-footed Ferret	LE
Charadrius melodus	Piping Plover	LT
BROADWATER		
Spiranthes diluvialis	Ute Ladies' Tresses	LT
Lynx canadensis	Canada Lynx	LT
Ursus arctos horribilis	Grizzly Bear	LT
Pinus albicaulis	Whitebark Pine	P
CARBON		
Lynx canadensis	Canada Lynx	LT, CH
Ursus arctos horribilis	Grizzly Bear	LT
Zapada glacier	Western Glacier Stonefly	LT
Pinus albicaulis	Whitebark Pine	P

County/Scientific Name	Common Name	Status
MISSOULA		
Ursus arctos horribilis	Grizzly Bear	LT
Howellia aquatilis	Water Howellia	LT
Lynx canadensis	Canada Lynx	LT, CH
Salvelinus confluentus	Bull Trout	LT, CH
Coccyzus americanus	Yellow-billed cuckoo (western pop.)	LT
Calidris canutus rufa	Red Knot	LT
Pinus albicaulis	Whitebark Pine	P
MUSSELSHELL		
PARK		
Lynx canadensis	Canada Lynx	LT, CH
Ursus arctos horribilis	Grizzly Bear	LT
Pinus albicaulis	Whitebark Pine	P
PETROLEUM		
Scaphirhynchus albus	Pallid Sturgeon	LE
Calidris canutus rufa	Red Knot	LT
PHILLIPS		
Scaphirhynchus albus	Pallid Sturgeon	LE
Charadrius melodus	Piping Plover	LT, CH
Mustela nigripes	Black-footed Ferret	LE, XN
Grus americana	Whooping Crane	LE
Calidris canutus rufa	Red Knot	LT
PONDERA		
Charadrius melodus	Piping Plover	LT
Ursus arctos horribilis	Grizzly Bear	LT
Lynx canadensis	Canada Lynx	LT, CH
Pinus albicaulis	Whitebark Pine	P
POWDER RIVER		
Grus americana	Whooping Crane	LE
Scaphirhynchus albus	Pallid Sturgeon	LE
Myotis septentrionalis	Northern Long-eared Bat	LT
POWELL		
Ursus arctos horribilis	Grizzly Bear	LT
Lynx canadensis	Canada Lynx	LT, CH
Salvelinus confluentus	Bull Trout	LT, CH
Pinus albicaulis	Whitebark Pine	P
PRAIRIE		
Scaphirhynchus albus	Pallid Sturgeon	LE
Grus americana	Whooping Crane	LE
Myotis septentrionalis	Northern Long-eared Bat	LT
Charadrius melodus	Piping Plover	LT

MTNHP-ESR-Data

MT Stat	Species Grou	Sort Or	Invasive Gr	Doc	ELCODE	Common Name	Scientific Name	Habitat	Distribution	SO Count	OBS Coun	Has I	Models	Model N Pc	Model O Pc	Model M Pc	Model L Pct	Model W Pc	Model G Pc	Model I Pct	Ranges	USFWS Sec	Global Rank	MT State Ra	USFWS	USFS	USFS_BD	USFS_BRT	USFS_CG	USFS_FLAT	USFS_HLC	USFS_KOOT	USFS_LOLO	BLM	FWP SWAP	Montana PI	MNPS Thre	State Threa	CCVI	SO Delineat	Criteria	Last Updated
SOC	Vascular Pla	7		Occ	PDLYT01050	Scarlet Ammannia	Ammannia robusta	Wetland/Riparian	Present	1			N	88							Y		G5	S2														2	Medium	Moderatel	Individual	9/6/2017
SOC	Fish	5		Occ	AFCHA02087	Yellowstone Cutthroat Trou	Oncorhynchus clarkii bouvieri	Mountain streams, rive	Resident Year Round	7	20	Y	N	51							Y		G5T4	S2											SENSITIVE	SGCN2					Stream rea		7/25/2022
SOC	Invertebrat	6		Occ	IILEPP2010	Monarch	Danaus plexippus	Milkweed Milkweed	Migratory Summer Bre	1	1		OML		20	54	27				S		G4	S2S3	C		SM	SM					SM							Confirmed		11/2/2023
SSS	Birds	2		Occ	ABNKC10010	Bald Eagle	Haliaeetus leucocephalus	Riparian forest	Resident Year Round	5	99	Y	OML		10	15	51				Y		G5	S4	BGEPA; ME	SENSITIVE								SK	SENSITIVE			2			Confirmed		12/28/2023
SOC	Birds	2		Occ	ABPBJ18080	Veery	Catharus fuscescens	Riparian forest	Migratory Summer Bre	7	10		OML		2	32	56				SM		G5	S3B	MBTA										SENSITIVE	SGCN3		2			Observatio		12/28/2023
SOC	Birds	2		Occ	ABNNF07070	Long-billed Curlew	Numenius americanus	Grasslands	Migratory Summer Bre	8	21	Y	ML			49	49				SM		G5	S3B	MBTA; BCC										SENSITIVE	SGCN3		2			Confirmed		12/22/2023
SOC	Mammals	1		Occ	AMACC05032	Hoary Bat	Lasiurus cinereus	Riparian and forest	Migratory Summer Bre	1			ML			34	66				SM		G3G4	S3B											SENSITIVE	SGCN3					Confirmed		7/6/2023
SOC	Birds	2		Occ	ABPAV08010	Clark's Nutcracker	Nucifraga columbiana	Conifer forest	Resident Year Round	1	9	Y	ML			34	63				Y		G5	S3	MBTA	SCC					SCC					SGCN3		3			Observatio		1/12/2023
SOC	Mammals	1		Occ	AMACC08010	Townsend's Big-eared Bat	Corynorhinus townsendii	Caves in forested habit	Resident Year Round	1			ML			34	51				Y		G4	S3		SENSITIVE								SK	SENSITIVE	SGCN3					Confirmed		7/6/2023
SOC	Birds	2		Occ	ABPBX74010	Green-tailed Towhee	Pipilo chlorurus	Shrub woodland	Migratory Summer Bre	2	4		ML			32	51				SM		G5	S3B	MBTA											SGCN3		3			Confirmed		12/28/2023
SOC	Birds	2		Occ	ABPBY04030	Cassin's Finch	Haemorhous cassinii	Drier conifer forest	Resident Year Round	9	41		ML			24	56				Y		G5	S3	MBTA; BCC											SGCN3		3			Observatio		6/30/2023
SOC	Birds	2		Occ	ABPBY09020	Evening Grosbeak	Coccothraustes vespertinus	Conifer forest	Resident Year Round	13	40		ML			24	32				YWM		G5	S3	MBTA; BCC											SGCN3					Confirmed		12/28/2023
SOC	Mammals	1		Occ	AMACC01010	Little Brown Myotis	Myotis lucifugus	Generalist	Resident Year Round	1			ML			20	76				Y		G3G4	S3		SENSITIVE	SK		SK				SK			SGCN3					Confirmed		7/6/2023
SOC	Birds	2		Occ	ABNKC22010	Golden Eagle	Aquila chrysaetos	Grasslands	Resident Year Round	4	32	Y	ML			10	54				Y		G5	S3	BGEPA; ME										SENSITIVE	SGCN3					Confirmed		9/21/2023
SOC	Birds	2		Occ	ABPBX94040	Brewer's Sparrow	Spizella breweri	Sagebrush	Migratory Summer Bre	5	3	Y	ML			5	63				SM		G5	S3B	MBTA										SENSITIVE	SGCN3		2			Confirmed		12/28/2023
SOC	Birds	2		Occ	ABNJB02030	Trumpeter Swan	Cygnus buccinator	Lakes, ponds, reservoir	Resident Year Round	1	35	Y	ML			5	61				YM		G4	S3	MBTA										SENSITIVE	SGCN3		1			Standing w		12/22/2023
SOC	Birds	2		Occ	ABNRB02010	Black-billed Cuckoo	Coccyzus erythropthalmus	Riparian forest	Migratory Summer Bre	1			ML			5	44				SM		G5	S3B	MBTA; BCC										SENSITIVE	SGCN3, SG		2			Observatio		12/30/2022
SOC	Mammals	1		Occ	AMAJB01020	Grizzly Bear	Ursus arctos	Conifer forest	Resident Year Round	1			L				59				YX		G4	S2S3	LT										THREATEN	SGCN2-3					Species Oc		12/22/2023
SOC	Birds	2		Occ	ABPBXA6010	Thick-billed Longspur	Rhynchophanes mccownii	Grasslands	Migratory Summer Bre	4	4	Y	L				37				SM		G4	S3B	MBTA; BCC										SENSITIVE	SGCN3		2			Confirmed		6/29/2023
SOC	Birds	2		Occ	ABPBM02060	Sprague's Pipit	Anthus spragueii	Grasslands	Migratory Summer Bre	2	1		L				24				SM	Y	G3G4	S3B	MBTA; BCC										SENSITIVE	SGCN3		1			Confirmed		12/28/2023
SOC	Vascular Pla	7		Occ	PDSAL022P0	Autumn Willow	Salix serissima	Wetland/Riparian	Present	1	1		L				7				Y		G5	S3														3	Unknown	Less Vulne	Individual	4/11/2023
SOC	Vascular Pla	7		Occ	PDCAM0N040	Slim-pod Venus'-looking-gla	Triodanis leptocarpa		Present	1			L				5				Y		G5?	S3														3	No Known	Moderatel		12/1/2023
SOC	Birds	2		Occ	ABPBA01010	Brown Creeper	Certhia americana	Moist conifer forests	Resident Year Round	1	11		L				2				Y		G5	S3	MBTA											SGCN3		1			Observatio		6/29/2023
SOC	Mammals	1		Occ	AMACC05010	Eastern Red Bat	Lasiurus borealis	Riparian forest	Migratory Summer Bre	1			L				2				SM		G3G4	S3B											SENSITIVE						Confirmed		7/20/2022
SOC	Vascular Pla	7		Occ	PDAST8H1S8	Scribner's Ragwort	Senecio integerrimus var. scril		Present	1											Y		G5T2T3	S2S3														3	No Known	Less Vulne		4/26/2018
SOC	Birds	2		Occ	ABPBX97040	Sagebrush Sparrow	Artemisiospiza nevadensis	Sagebrush	Migratory Rare Summe	1		Y									SM		G5	S3B	MBTA										SENSITIVE	SGCN3					Confirmed		6/29/2023
IAH	Other	99		Occ	OBATROOST1	Bat Roost (Non-Cave)	Bat Roost (Non-Cave)		Species Group or Habit	3													GNR	SNR																	Confirmed		10/22/2019

MT Stat	Species Grou	Sort Ord	Invasive Gro	Docu	ELCODE	Common Name	Scientific Name	Habitat	Distribution	SO Count	OBS Coun	Has I	Models	Model N Pct	Model O Pct	Model M Pct	Model L Pct	Model W Pct	Model G Pct	Model I Pct	Ranges	USFWS Sec7	Global Rank	MT State Ra	USFWS	USFS	USFS_BD	USFS_BRT	USFS_CG	USFS_FLAT	USFS_HLC	USFS_KOOT	USFS_LOLO	BLM	FWP SWAP	Montana PI	MNPS Threa	State Threa	CCVI	SO Delineat	Criteria	Last Updated
SOC	Birds	2		Othe	ABNFC01010	American White Pelican	Pelecanus erythrorhynchos	Lakes, ponds, reservoir	Migratory Summer Bre		30		OML		10	49	39				SM		G4	S3B	MBTA											SGCN3	3				Standing w		12/22/2023
SOC	Birds	2		Othe	ABNYF04010	Lewis's Woodpecker	Melanerpes lewis	Riparian forest	Migratory Summer Bre		2		OML		10	32	56				SM		G4	S2B	MBTA; BCC	SCC					SCC			SENSITIVE	SGCN2	2				Confirmed		12/28/2023
SOC	Birds	2		Othe	ABNGA04010	Great Blue Heron	Ardea herodias	Riparian forest	Resident Year Round		23	Y	OML		10	22	41				YSM		G5	S3	MBTA											SGCN3							12/22/2023
PSOC	Birds	2		Othe	ABNJB20010	Hooded Merganser	Lophodytes cucullatus	Rivers, Riparian/Wetla	Resident Year Round		6		OML		5	27	39				YM		G5	S4	MBTA											SGIN	2						
SOC	Birds	2		Othe	ABPAV07010	Pinyon Jay	Gymnorhinus cyanocephalus	Open conifer forest	Resident Year Round		3		ML			59	39				Y		G3	S3	MBTA; BCC											SGCN3					Observatio		1/4/2023
PSOC	Birds	2		Othe	ABNUC51020	Rufous Hummingbird	Selasphorus rufus	Riparian shrub	Migratory Summer Bre		4		ML			39	49				SM		G4	S4B	MBTA; BCC												3						
PSOC	Birds	2		Othe	ABNJB18020	Barrow's Goldeneye	Bucephala islandica	Mountain Lakes and W	Resident Year Round		6	Y	ML			32	44				YWM		G5	S4	MBTA											SGIN	2						
SOC	Birds	2		Othe	ABNGE02020	White-faced Ibis	Plegadis chihi	Wetlands	Migratory Summer Bre		3		ML			15	32				SM		G5	S3B	MBTA										SENSITIVE	SGCN3	2				Standing w		12/22/2023
SOC	Mammals	1		Othe	AMAJH03010	Canada Lynx	Lynx canadensis	Subalpine conifer fores	Resident Year Round			Y	ML			2	51				Y	Y	G5	S3	LT; CH										THREATEN	SGCN3					Areas desi		12/22/2023
SOC	Birds	2		Othe	ABNKC12061	American Goshawk	Accipiter atricapillus	Mixed conifer forests	Resident Year Round		4		ML			2	2				YWM		G5	S3	MBTA											SGCN3	2				Confirmed		12/27/2023
SOC	Birds	2		Othe	ABNLC13030	Sharp-tailed Grouse	Tympanuchus phasianellus	Shrub grassland	Resident Year Round		1		L				93				Y		G5	SX,S4												SGCN1	2				Confirmed		
SOC	Birds	2		Othe	ABPBXA9010	Bobolink	Dolichonyx oryzivorus	Moist grasslands	Migratory Summer Bre		1		L				37				SM		G5	S3B	MBTA; BCC											SGCN3	3				Confirmed		12/28/2023
SOC	Birds	2		Othe	ABNKC19120	Ferruginous Hawk	Buteo regalis	Sagebrush grassland	Migratory Summer Bre		1		L				34				SM		G4	S3B	MBTA; BCC										SENSITIVE	SGCN3	2				Confirmed		12/27/2023
SOC	Birds	2		Othe	ABNND01010	Black-necked Stilt	Himantopus mexicanus	Wetlands	Migratory Summer Bre		4		L				29				SM		G5	S3B	MBTA											SGCN3	3				Standing w		12/27/2023
SOC	Birds	2		Othe	ABNNM03020	Franklin's Gull	Leucophaeus pipixcan	Wetlands	Migratory Summer Bre		4		L				5				SM		G5	S3B	MBTA; BCC										SENSITIVE	SGCN3	2				Standing w		1/3/2023
SOC	Mammals	1		Othe	AMAJF03010	Wolverine	Gulo gulo	Boreal Forest and Alpir	Resident Year Round			Y	L				2				Y	Y	G4	S3	LT	SENSITIVE								SK	SENSITIVE	SGCN3					Confirmed		12/20/2023
SOC	Birds	2		Othe	ABPBY02010	Black Rosy-Finch	Leucosticte atrata	Alpine	Resident Year Round		2										YSM		G4	S2	MBTA; BCC											SGCN2, SG	2				Confirmed		1/2/2024
SOC	Birds	2		Othe	ABPBG09090	Pacific Wren	Troglodytes pacificus	Moist conifer forests	Resident Year Round		1										Y		G5	S3	MBTA											SGCN3	2				Observatio		12/28/2023
SSS	Invertebrat	6		Othe	IIORTB2040	Rehn's Slow Grasshopper	Argiacris rehni	Montane steppe/ poor	Resident Year Round			Y									Y		G2G3	SNR																Confirmed		6/22/2022
SOC	Birds	2		Othe	ABNNB03100	Mountain Plover	Charadrius montanus	Grasslands	Migratory Summer Bre		1										SM		G3	S2B	MBTA; BCC										SENSITIVE	SGCN2	1				Confirmed		12/27/2023
SOC	Birds	2		Othe	ABPBJ22010	Varied Thrush	Ixoreus naevius	Moist conifer forests	Migratory Summer Bre		7										SM		G5	S3B	MBTA											SGCN3	3				Confirmed		12/28/2023
SOC	Birds	2		Othe	ABPBY02030	Gray-crowned Rosy-Finch	Leucosticte tephrocotis	Alpine	Resident Year Round		6										WM		G5	S2	MBTA											SGCN2, SG					Confirmed		12/28/2023
SOC	Birds	2		Othe	ABNBA01030	Common Loon	Gavia immer	Mountain lakes w/ emi	Migratory Summer Bre		5										M		G5	S3B	MBTA	SENSITIVE								SK		SGCN3	1				Standing w		12/22/2023
SOC	Birds	2		Othe	ABNNM08090	Forster's Tern	Sterna forsteri	Wetlands	Migratory Summer Bre		1										M		G5	S3B	MBTA										SENSITIVE	SGCN3	2				Standing w		12/27/2023
SOC	Birds	2		Othe	ABNCA03010	Horned Grebe	Podiceps auritus	Wetlands	Migratory Summer Bre		2										M		G5	S3B	MBTA										SENSITIVE	SGCN3	2				Standing w		12/28/2022
PSOC	Birds	2		Othe	ABPBX01040	Tennessee Warbler	Leiothlypis peregrina	Forest wetland	Migratory Summer Bre		1										M		G5	S3S4B	MBTA																		
SOC	Birds	2		Othe	ABPBXA6040	Chestnut-collared Longspur	Calcarius ornatus	Grasslands	Migratory Summer Bre		1												G5	S2B	MBTA; BCC										SENSITIVE	SGCN2	2				Confirmed		6/30/2023
SOC	Fish	5		Othe	AFCHA02088	Westslope Cutthroat Trout	Oncorhynchus clarkii lewisi	Mountain streams, rive	Resident Year Round			Y									N		G5T4	S2		SENSITIVE; SK		SK		SCC		SCC	SK	SK	SENSITIVE	SGCN2					Stream rea		7/25/2022

MT Stat	Species Grou	Sort Or	Invasive Gr	Doc	ELCODE	Common Name	Scientific Name	Habitat	Distribution	SO Count	OBS Coun	Has I	Models	Model N Pc	Model O Pc	Model M Pc	Model L Pct	Model W Pc	Model G Pc	Model I Pct	Ranges	USFWS Sec	Global Rank	MT State Ra	USFWS	USFS	USFS_BD	USFS_BRT	USFS_CG	USFS_FLAT	USFS_HLC	USFS_KOOT	USFS_LOLO	BLM	FWP SWAP	Montana Pl	MNPS Threa	State Threa	CCVI	SO	Delineat	Criteria	Last Updated
PSOC	Birds	2		Oth	ABNUC51010	Broad-tailed Hummingbird	Selasphorus platycercus	Montane shrublands /	Migratory Summer Bre				OML		34	37	24				SM		G5	S4B	MBTA; BCC										SGIN						Confirmed		
PSOC	Mammals	1		Oth	AMAJF05020	Western Spotted Skunk	Spilogale gracilis	Riparian shrub	Resident Year Round				OM		29	71					Y		G5	SU											SGIN						Confirmed		
SOC	Vascular Pla	7		Oth	PMLIL1A0L0	Wood Lily	Lilium philadelphicum		Present				OML		7	24	41				Y		G5	S3														3	Low	Less Vulne		12/1/2023	
SOC	Vascular Pla	7		Oth	PMPOA24020	Panic Grass	Dichanthelium acuminatum		Present				OML		5	73	22				Y		G5	S2S3														2	Unknown			3/3/2022	
SOC	Birds	2		Oth	ABNRB02020	Yellow-billed Cuckoo	Coccyzus americanus	Prairie riparian forest	Migratory Rare Summe				OML		5	56	37				SM		G5	S3B	PS: LT; MB																Observatio		6/28/2023	
SOC	Mammals	1		Oth	AMACC07010	Spotted Bat	Euderma maculatum	Cliffs with rock crevices	Migratory Summer Bre				OML		5	29	66				SM		G4	S3										THREATEN	SGCN3, SG	2				Confirmed		12/22/2022	
SOC	Vascular Pla	7		Oth	PMCYP091P0	Beaked Spikerush	Eleocharis rostellata	Wetlands (Alkaline)	Present				OML		2	76	22				Y		G5	S3		SENSITIVE;			SCC	SCC	SCC			SENSITIVE	SGCN3, SG			2	Unknown	Less Vulne	Individual (	4/12/2023	
SOC	Vascular Pla	7		Oth	PMCYP03360	Crawe's Sedge	Carex crawei	Wetland/Riparian	Present				OML		2	61	32				Y		G5	S2S3														3	Low		Individual (	4/26/2018	
SOC	Invertebrat	6		Oth	IMGASB5328	Berry's Mountainsnail	Oreohelix strigosa berryi	Limestone talus	Resident Year Round				OML		2	24	37				Y		G5T2	S1S2																	Confirmed		12/20/2022
SOC	Vascular Pla	7		Oth	PDAST3M1E0	Fan-leaved Fleabane	Erigeron flabellifolius	Alpine	Present				OML		2	7	12				Y		G3	S3		SCC					SCC							3	No Known	Highly Vulr	Individual (	10/21/2022	
SOC	Mammals	1		Oth	AMABA01230	Merriam's Shrew	Sorex merriami	Sagebrush grassland	Resident Year Round				ML			95	5				Y		G4	S3											SGCN3						Confirmed		6/14/2014
PSOC	Mammals	1		Oth	AMAFB05050	Uinta Ground Squirrel	Urocitellus armatus	Open grassy edges	Resident Year Round				ML			73	20				Y		G5	S3S4											SGIN								
SOC	Invertebrat	6		Oth	IIHYM24350	Suckley Cuckoo Bumble Bee	Bombus suckleyi	Montane/steppe grass	Resident Year Round				ML			49	44				Y		G2G3	S1																	Confirmed		6/22/2022
SOC	Reptiles	3		Oth	ARADB1905B	Western Milksnake	Lampropeltis gentilis	Rock outcrops	Resident Year Round				ML			46	49				Y		G5	S2										SENSITIVE	SGCN2						Confirmed		12/21/2023
PSOC	Mammals	1		Oth	AMAFJ01010	North American Porcupine	Erethizon dorsatum	Mixed forest	Resident Year Round				ML			39	56				Y		G5	S3S4											SGIN						Confirmed		
SOC	Mammals	1		Oth	AMACC01090	Fringed Myotis	Myotis thysanodes	Riparian and dry mixed	Resident Year Round				ML			39	49				Y		G4	S3										SENSITIVE	SGCN3						Confirmed		7/21/2022
SOC	Vascular Pla	7		Oth	PDROS1B1E0	Platte Cinquefoil	Potentilla plattensis	Grasslands/Sagebrush	Present				ML			32	66				Y		G4	S3														4	No Known	Highly Vulr	Individual (	1/20/2023	
SOC	Vascular Pla	7		Oth	PDBRA110W0	Dense-leaf Draba	Draba densifolia	Alpine	Present				ML			32	17				Y		G5	S2		SENSITIVE;	SK		SK	SCC		SCC						2	Low	Moderatel	Individual (	1/20/2023	
PSOC	Vascular Pla	7		Oth	PDRAN0L1A0	High Northern Buttercup	Ranunculus hyperboreus	Wetland/Riparian (Mo	Present				ML			24	66				Y		G5	S3S4																	Individual (	1/20/2023	
PSOC	Mammals	1		Oth	AMABA01280	Hayden's Shrew	Sorex haydeni	Grasslands	Resident Year Round				ML			22	73				Y		G5	S3S4																			
SOC	Mammals	1		Oth	AMABA01130	Dwarf Shrew	Sorex nanus	Rocky habitat	Resident Year Round				ML			20	80				Y		G4	S2S3											SGCN2-3						Confirmed		6/14/2014
SOC	Mammals	1		Oth	AMACC01070	Long-eared Myotis	Myotis evotis	Forest	Resident Year Round				ML			20	80				Y		G5	S3																	Confirmed		3/22/2023
SOC	Vascular Pla	7		Oth	PDSCR1B170	Floriferous Monkeyflower	Mimulus floribundus		Unknown				ML			17	44				Y		G5	SH														4	No Known	Highly Vulr		12/5/2023	
SOC	Vascular Pla	7		Oth	PMPOA5X0H0	Letterman's Needlegrass	Stipa lettermanii	Talus and Grasslands (I	Present				ML			17	27				Y		G5	S1S3		SCC					SCC							3	No Known		Individual (	4/11/2023	
SOC	Vascular Pla	7		Oth	PDSCR0D150	Slender Indian Paintbrush	Castilleja gracillima	Wetland/Riparian	Present				ML			15	76				Y		G3G4	S2														3	Low	Highly Vulr	Individual (	10/21/2022	
PSOC	Birds	2		Oth	ABNSB13040	Short-eared Owl	Asio flammeus	Grasslands	Resident Year Round				ML			15	59				Y		G5	S4	MBTA; BCC													3					
PSOC	Birds	2		Oth	ABPBW01280	Plumbeous Vireo	Vireo plumbeus	Conifer forest	Migratory Summer Bre				ML			15	49					SM		G5	S3S4B	MBTA													3					
SOC	Vascular Pla	7		Oth	PDCAR0X090	Fleshy Stitchwort	Stellaria crassifolia	Wetland/Riparian	Present				ML			10	71				Y		G5	S2														3	No Known		Individual (	12/5/2023	
SOC	Vascular Pla	7		Oth	PDAST3M320	Parry's Fleabane	Erigeron parryi	Slopes and ridges (Ope	Present				ML			10	44				Y		G2G3	S2S3		SENSITIVE		SK										3	No Known	Moderatel	Individual (	1/29/2021	
SOC	Vascular Pla	7		Oth	PDCHE0C020	Spiny Hopsage	Grayia spinosa	Shrublands (Dry)	Present				ML			10	12				Y		G5	S2		SCC				SCC								2	Unknown	Less Vulne	Individual (	1/20/2023	
PSOC	Birds	2		Oth	ABNTA04010	Common Poorwill	Phalaenoptilus nuttallii	Shrub grassland	Migratory Summer Bre				ML			7	93					SM		G5	S4B	MBTA										SGIN	3							
SOC	Mammals	1		Oth	AMACC01110	Long-legged Myotis	Myotis volans	Conifer forest	Resident Year Round				ML			7	90				Y		G4G5	S3																	Confirmed		7/6/2023
SOC	Vascular Pla	7		Oth	PDAST3M2B0	Linear-leaf Fleabane	Erigeron linearis	Sagebrush/Grasslands	Present				ML			7	78				Y		G5	S2														2	Low	Less Vulne	Individual (	1/20/2023	
SOC	Bryophytes	9		Oth	NBMUS4L020	Meesia Moss	Meesia triquetra		Present				ML			7	56				Y		G5	S2		SENSITIVE;	SK		SK	SCC	SCC		SK	SS										3/2/2022	
PSOC	Birds	2		Oth	ABPBX10010	Ovenbird	Seiurus aurocapilla	Deciduous forest	Migratory Summer Bre				ML			5	59					SM		G5	S4B	MBTA													3					
SOC	Mammals	1		Oth	AMABA01030	Preble's Shrew	Sorex preblei	Sagebrush grassland	Resident Year Round				ML			5	34				Y		G4	S3											SGCN3						Confirmed		10/19/2018
SOC	Vascular Pla	7		Oth	PDSCR0R030	Bractless Hedge-hyssop	Gratiola ebracteata	Wetland/Riparian	Present				ML			5	5				Y		G4	S2														3	No Known	Moderatel	Individual (	4/26/2018	
PSOC	Mammals	1		Oth	AMACC02010	Silver-haired Bat	Lasionycteris noctivagans	Riparian and forest	Resident Year Round				ML			2	95				Y		G3G4	S4																			
SOC	Birds	2		Oth	ABPBK04010	Sage Thrasher	Oreoscoptes montanus	Sagebrush	Migratory Summer Bre				ML			2	61					SM		G4	S3B	MBTA										SENSITIVE	SGCN3	3				Confirmed		12/28/2023
SOC	Vascular Pla	7		Oth	PMCYP0F030	Simple Kobresia	Kobresia simpliciuscula	Alpine	Present				ML			2	29				Y		G5	S3														3	Unknown		Individual (	4/11/2023	
SOC	Birds	2		Oth	ABNGA11010	Black-crowned Night-Heron	Nycticorax nycticorax	Wetlands	Migratory Summer Bre				ML			2	29					SM		G5	S3B	MBTA										SGCN3	3					Standing w		12/22/2023
SOC	Amphibians	4		Oth	AAABB01030	Western Toad	Anaxyrus boreas	Wetlands, floodplain p	Resident Year Round				ML			2	27				Y		G4	S2		SENSITIVE	SK		SK				SK	SK	SENSITIVE	SGCN2						Standing w		12/21/2023
SOC	Birds	2		Oth	ABNGA01020	American Bittern	Botaurus lentiginosus	Wetlands	Migratory Summer Bre				ML			2	27					SM		G5	S3B	MBTA										SENSITIVE	SGCN3	3				Wetlands a		12/27/2023
SOC	Birds	2		Oth	ABNYF07090	Black-backed Woodpecker	Picoides arcticus	Conifer forest burns	Resident Year Round				ML			2	5					Y		G5	S3	MBTA	SENSITIVE							SK		SENSITIVE	SGCN3	1				Confirmed		6/28/2023
PSOC	Mammals	1		Oth	AMAFF11190	North American Water Vole	Microtus richardsoni	Alpine and subalpine a	Resident Year Round				L				63					Y		G5	S4																			
PSOC	Vascular Pla	7		Oth	PDAPI1C040	Rydberg's Parsley	Musineon vaginatum		Present				L				61					Y		G3G4	S3S4																			
SOC	Birds	2		Oth	ABNJB15010	Harlequin Duck	Histrionicus histrionicus	Mountain streams	Migratory Summer Bre				L				61					SM		G4	S2B	MBTA	SENSITIVE	SK		SM				SK	SK		SGCN2	1					Stream rea		12/22/2023
SOC	Reptiles	3		Oth	ARACF12080	Greater Short-horned Lizard	Phrynosoma hernandesi	Sandy / gravelly soils	Resident Year Round				L				49					Y		G5	S3										SENSITIVE	SGCN3, SG					Confirmed		12/21/2023
SOC	Birds	2		Oth	ABNLC12010	Greater Sage-Grouse	Centrocercus urophasianus	Sagebrush	Resident Year Round				L				41					Y		G3G4	S2		SENSITIVE;	SK			SCC					SENSITIVE	SGCN2	1				Confirmed		1/5/2024
SOC	Birds	2		Oth	ABPBR01030	Loggerhead Shrike	Lanius ludovicianus	Shrubland	Migratory Summer Bre				L				32					SM		G4	S3B	MBTA										SENSITIVE	SGCN3	2				Confirmed		12/28/2023
SSS	Invertebrat	6		Oth	IITRI19480	A Caddisfly	Rhyacophila betteni	Cold water mountain s	Resident Year Round				L				29					Y		G2G4	S3S4																	Confirmed		6/16/2022
PSOC	Vascular Pla	7		Oth	PMORC0Q090	Small Yellow Lady's-slipper	Cypripedium parviflorum		Present				L				29					Y		G5	S3S4		SENSITIVE;			SCC		SCC		SK					2				12/12/2023	
SOC	Vascular Pla	7		Oth	PMHYD03010	Long-sheath Waterweed	Elodea bifoliata	Wetland/Riparian (Sha	Present				L				29					Y		G4G5	S2?														3	No Known		Individual (	10/27/2023	
SOC	Amphibians	4		Oth	AAABH01170	Northern Leopard Frog	Lithobates pipiens	Wetlands, floodplain p	Resident Year Round				L				27					Y		G5	S1,S4		SENSITIVE						SS	SS	SENSITIVE	SGCN1					Standing w		12/2/2016
SOC	Birds	2		Oth	ABNSB12040	Great Gray Owl	Strix nebulosa	Conifer forest near ope	Resident Year Round				L				24					Y		G5	S3	MBTA										SENSITIVE	SGCN3, SG	3				Confirmed		1/4/2023
PSOC	Vascular Pla	7		Oth	PDPGN0L0X1	Austin's Knotweed	Polygonum austiniae	Rock/Talus	Present				L				22					Y		G5T4	S3S4		SENSITIVE;					SCC							2			Individual (	1/20/2023	
SOC	Vascular Pla	7		Oth	PDADO01010	Musk-root	Adoxa moschatellina	Rock/Talus	Present				L				20					Y		G5	S3		SENSITIVE;	SK			SCC		SCC		SK					3	Low	Highly Vulr	Individual (	1/20/2023	

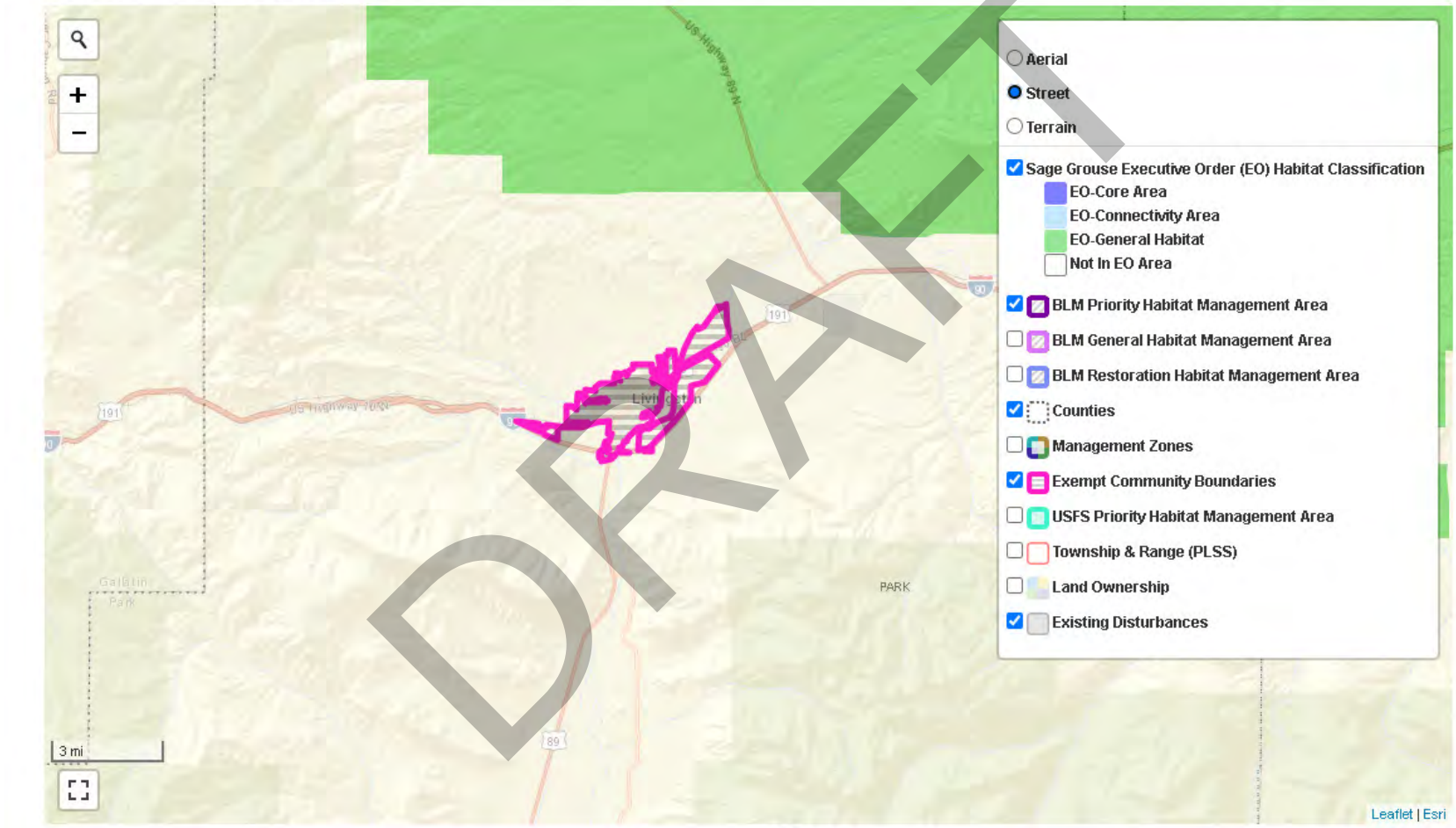
Survey Protocol	Protocol Name	Survey Co	Obs Coun	Recent Survey	
B-Bald Eagle Nest	Bald Eagle Nest Survey	20	19	2014	
B-Long-billed Curlew	Long-billed Curlew, Road-based, Point Count	5	2	2015	
B-Raptor nest	Raptor Nest Survey	23	21	2020	
E-Eastern Heath Snail	Eastern Heath Snail Survey	3	0	2012	
E-Eurasian Water-milfoil Rake	Rake tows/pulls for Eurasian Water-milfoil	35	1	2023	
E-Invasive Mussel Plankton Tow	Plankton tows for veligers of Invasive Mussels	16	0	2023	
E-Kicknet	Kicknet Collection Survey for Invasive Mussels and Snai	23	11	2023	
E-Noxious Weed, Road-based	Noxious Weed Road-based Visual Surveys	39	239	2003	
E-Noxious Weed, Visual	Noxious Weed Visual Surveys	2	21	2007	
E-Visual Aquatic Invasives	Visual Encounter Surveys for Aquatic Invasives on Shor	157	205	2023	
F-Fish Electrofishing	Fish Electrofishing Surveys	6	29	2021	
F-Fish Other Survey	Fish Other Survey (FWP Survey Type)	15	90	1988	
I-Aquatic Invert Lotic Dipnet	Invertebrate Lotic Site Dipnet and Visual Encounter Sur	1	1	2002	
I-Mosquito Traps	Montana Mosquito Surveillance Project	12	70	2006	
I-Mussel	Stream Mussel Survey	1	0	2009	
M-Bat Roost (Active Season)	Bat Roost (Active Season) Survey	1	1	2019	
P-AIM Terrestrial Plot	BLM AIM Terrestrial Survey Plot	1	20	2022	
P-Algal scraping	Algal Scraping	1	75	2000	
P-Wetland EIA	MTNHP Wetland EIA	1	30	2018	

NWI_CODE	System	Subsystem	Class	Subclass	Water Regi	Special Modifier	Acres	Full Code	SYS_ID	SUBSYS_ID	CLASS_ID	SUBCLASS_	WATREG_II	SPECMOD_	Description
PUB	P - Palustrine		UB - Unconsolidated Botton		F - Semipe	(no modifier)	1	PUBF	P		UB		F		Wetlands where mud, silt or similar fine particles cover at least 25% of the bottom, and where vegetation cover is less than 30%.
PAB	P - Palustrine		AB - Aquatic Bed		F - Semipe	(no modifier)	15	PABF	P		AB		F		Wetlands with vegetation growing on or below the water surface for most of the growing season.
PAB	P - Palustrine		AB - Aquatic Bed		F - Semipe	b - Beaver	5	PABFb	P		AB		F	b	Wetlands with vegetation growing on or below the water surface for most of the growing season.
PAB	P - Palustrine		AB - Aquatic Bed		F - Semipe	h - Diked/Impounded	7	PABFh	P		AB		F	h	Wetlands with vegetation growing on or below the water surface for most of the growing season.
PAB	P - Palustrine		AB - Aquatic Bed		F - Semipe	x - Excavated	12	PABFx	P		AB		F	x	Wetlands with vegetation growing on or below the water surface for most of the growing season.
PAB	P - Palustrine		AB - Aquatic Bed		G - Intermi	h - Diked/Impounded	17	PABGh	P		AB		G	h	Wetlands with vegetation growing on or below the water surface for most of the growing season.
PAB	P - Palustrine		AB - Aquatic Bed		K - Artificia	x - Excavated	0	PABKx	P		AB		K	x	Wetlands with vegetation growing on or below the water surface for most of the growing season.
PUS	P - Palustrine		US - Unconsolidated Shore		A - Tempo	(no modifier)	0	PUSA	P		US		A		Wetlands with less than 75% areal cover of stones, boulders, or bedrock. AND with less than 30% vegetative cover AND the wetland is irregularly exposed due to seasonal or irregular flooding and subsequent drying.
PUS	P - Palustrine		US - Unconsolidated Shore		C - Season	h - Diked/Impounded	1	PUSCh	P		US		C	h	Wetlands with less than 75% areal cover of stones, boulders, or bedrock. AND with less than 30% vegetative cover AND the wetland is irregularly exposed due to seasonal or irregular flooding and subsequent drying.
PEM	P - Palustrine		EM - Emergent		A - Tempo	(no modifier)	269	PEMA	P		EM		A		Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
PEM	P - Palustrine		EM - Emergent		A - Tempo	h - Diked/Impounded	1	PEMAh	P		EM		A	h	Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
PEM	P - Palustrine		EM - Emergent		C - Season	(no modifier)	44	PEMC	P		EM		C		Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
PEM	P - Palustrine		EM - Emergent		C - Season	b - Beaver	2	PEMCb	P		EM		C	b	Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
PEM	P - Palustrine		EM - Emergent		C - Season	h - Diked/Impounded	4	PEMCh	P		EM		C	h	Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
PEM	P - Palustrine		EM - Emergent		F - Semipe	h - Diked/Impounded	1	PEMFh	P		EM		F	h	Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
PEM	P - Palustrine		EM - Emergent		F - Semipe	x - Excavated	0	PEMFx	P		EM		F	x	Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
PSS	P - Palustrine		SS - Scrub-Shrub		A - Tempo	(no modifier)	135	PSSA	P		SS		A		Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.
PSS	P - Palustrine		SS - Scrub-Shrub		A - Tempo	b - Beaver	6	PSSAb	P		SS		A	b	Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.
PSS	P - Palustrine		SS - Scrub-Shrub		C - Season	(no modifier)	7	PSSC	P		SS		C		Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.
PSS	P - Palustrine		SS - Scrub-Shrub		C - Season	b - Beaver	28	PSSCb	P		SS		C	b	Wetlands dominated by woody vegetation less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.
R3UB	R - Riverine	3 - Upper Peren	UB - Unconsolidated Botton		H - Permar	(no modifier)	438	R3UBH	R	3	UB		H		Stream channels where the substrate is at least 25% mud, silt or other fine particles.
R3US	R - Riverine	3 - Upper Peren	US - Unconsolidated Shore		A - Tempo	(no modifier)	82	R3USA	R	3	US		A		Shorelines with less than 75% areal cover of stones, boulders, or bedrock and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.
R3US	R - Riverine	3 - Upper Peren	US - Unconsolidated Shore		C - Season	(no modifier)	97	R3USC	R	3	US		C		Shorelines with less than 75% areal cover of stones, boulders, or bedrock and less than 30% vegetation cover. The area is also irregularly exposed due to seasonal or irregular flooding and subsequent drying.
R4SB	R - Riverine	4 - Intermittent	SB - Stream Bed		C - Season	(no modifier)	0	R4SBC	R	4	SB		C		Active channel that contains periodic water flow.
R4SB	R - Riverine	4 - Intermittent	SB - Stream Bed		C - Season	x - Excavated	15	R4SBCx	R	4	SB		C	x	Active channel that contains periodic water flow.
Rp1SS	Rp - Riparian	1 - Lotic	SS - Scrub-Shrub			(no modifier)	115	Rp1SS	Rp	1	SS				This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.
Rp1FO	Rp - Riparian	1 - Lotic	FO - Forested			(no modifier)	736	Rp1FO	Rp	1	FO				This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.
Rp1EM	Rp - Riparian	1 - Lotic	EM - Emergent			(no modifier)	20	Rp1EM	Rp	1	EM				Riparian areas that have erect, rooted herbaceous vegetation during most of the growing season.
Rp2FO	Rp - Riparian	2 - Lentic	FO - Forested			(no modifier)	2	Rp2FO	Rp	2	FO				This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.

Sage Grouse Map

MT Sage Grouse Habitat Conservation Program ABOUT FAQ MAP LOGI

area, please submit your project for review as permitting agencies will be checking to see if your project is located within these designated sage grouse habitats. If your permitting agency requires evidence that your project is outside of designated sage grouse habitat, we recommend that you log in and start a project application and take a screenshot of your project's location.



Census & Target Rate

RESOURCES [INDEX]

TARGET RATE CALCULATION RESOURCE

The Community Development Division (CDD) has updated the U.S. Census Bureau's American Communities Survey (ACS) data set 2015-2019 for the calculation of local government target rates. The Montana Coal Endowment Program (MCEP) and Community Development Block Grant (CDBG) programs use ACS information as the base data set to calculate applicant target rates for community infrastructure systems.

These calculated rates, along with other demographic information, are components of the review and analysis of applications submitted to the programs for funding requests. Applications to be submitted in 2021 or later for MCEP or CDBG programs must use the 2015-2019 ACS data for the calculation of target rates for an applicant.

Low and moderate income (LMI) data is subject to change due to information released by the U.S Department of Housing and Urban Development (HUD).

Search below for 2015-2019 American Communities Survey data used to calculate target rates when applying to the **Montana Coal Endowment Program** and **Community Development Block Group Grant Program.**

Step 1a:
Select a geography type
City

OR

Step 1b:
Select a county or counties
Park County

Step 2:
Select a geography
Livingston city

MONTANA
DEPARTMENT OF COMMERCE

Selected Geography Associated County	Livingston city *Park County*
Population	7,575
Total Households	3,711
Median Household Income	$46,097
Low & Moderate Income Percent	42.2%
Percent Poverty	14.5%

Target Rates

Water & Wastewater	$88.35
Water Only	$53.78
Wastewater Only	$34.57
Solid Waste Only	$11.52

[#]

Amounts are computed using the 2015-2019 census and target percentage rationale reviewed biennially by Commerce. The target percentages are:

2.3% combined (water and wastewater)
1.4% for water alone
0.9% for wastewater alone
0.3% for solid waste

For example: Community median household income is $25,000 and the residents pay both water and wastewater rates, the calculation would be: $25,000 times 2.3% divided by 12 equals monthly target rate of $47.92. (25,000 x 2.3%)/12 = $47.92)

Having trouble finding data for your community? Some communities may not be listed in the resources above because the American Community Survey (ACS) did not provide 2015-2019 MHI data for those areas. Please contact us [../Contact]
[../Contact]
if you have any questions about this information.

MAPPING

To see maps of the City/Town/CDP or County in which you are interested, please go to the Census and Economic Information Center [https://ceic.mt.gov/Programs/US-Census-Bureau/Census-Geography-Map]
. For more information about the maps or tools available, please contact the Census and Economic Information Bureau [https://ceic.mt.gov/contact]

CONTACTS

Montana Coal Endowment Program (MCEP)	406 841-2770
Community Development Block Grant Program (CDBG)	406 841-2770
Census & Economic Information Center (CEIC)	406 841-2740

DEFINITIONS

Census Designated Place (CDP): Census designated places (CDPs) have been created for each decennial census as the statistical counterparts of incorporated places. CDPs are delineated to provide census data for concentrations of population, housing, and commercial structures that are identifiable by name but are not within an incorporated place. CDP boundaries usually are defined in cooperation with state, local, and tribal officials. These boundaries, which usually coincide with visible features or the boundary of an adjacent incorporated place or other legal entity boundary, have no legal status, nor do these places have officials elected to serve traditional municipal functions.

Household: A household includes all the people who occupy a housing unit as their usual place of residence.

Income of households: This includes the income of the householder and all other individuals 15 years old and over in the household, whether they are related to the householder or not.

Low and Moderate Income Percent: Low and Moderate Income Percent is calculated by U.S. Housing and Urban Development (HUD) using data from the U.S. Census Bureau's Decennial Census, specifically for the Community Development Block Grant Program (CDBG). LMI families are defined as those families whose income does not exceed 80% of the county median income for the previous year or 80% of the median income of the entire non-metropolitan area of the State of Montana, whichever is higher.

Median income: The median income divides the income distribution into two equal groups, one having incomes above the median, and other having incomes below the median.

Notes: Total Population and Total Households are from Summary File (SF) 1, 100% data. Poverty Rates and Median Household Income are from Summary File (SF) 3, Sample data. Low and Moderate Income Percentage was developed by HUD using Census 2010 data.

Sources: U.S. Census Bureau & HUD
Median Household Income
Census Bureau, American Community Survey 2015-2019 Estimates

[#]

Total Population & Households

U.S. Census Bureau, 2015-2019 Census - Summary File 1 (SF1) 100% Data

Low to Moderate Income Percent

HUD 2015 Low and Moderate Income Data

[#]

APPENDIX 1-C
AGENCY CORRESPONDENCE
(Not included in Draft)

APPENDIX 1-D
POPULATION TRENDS

Livingston, MT

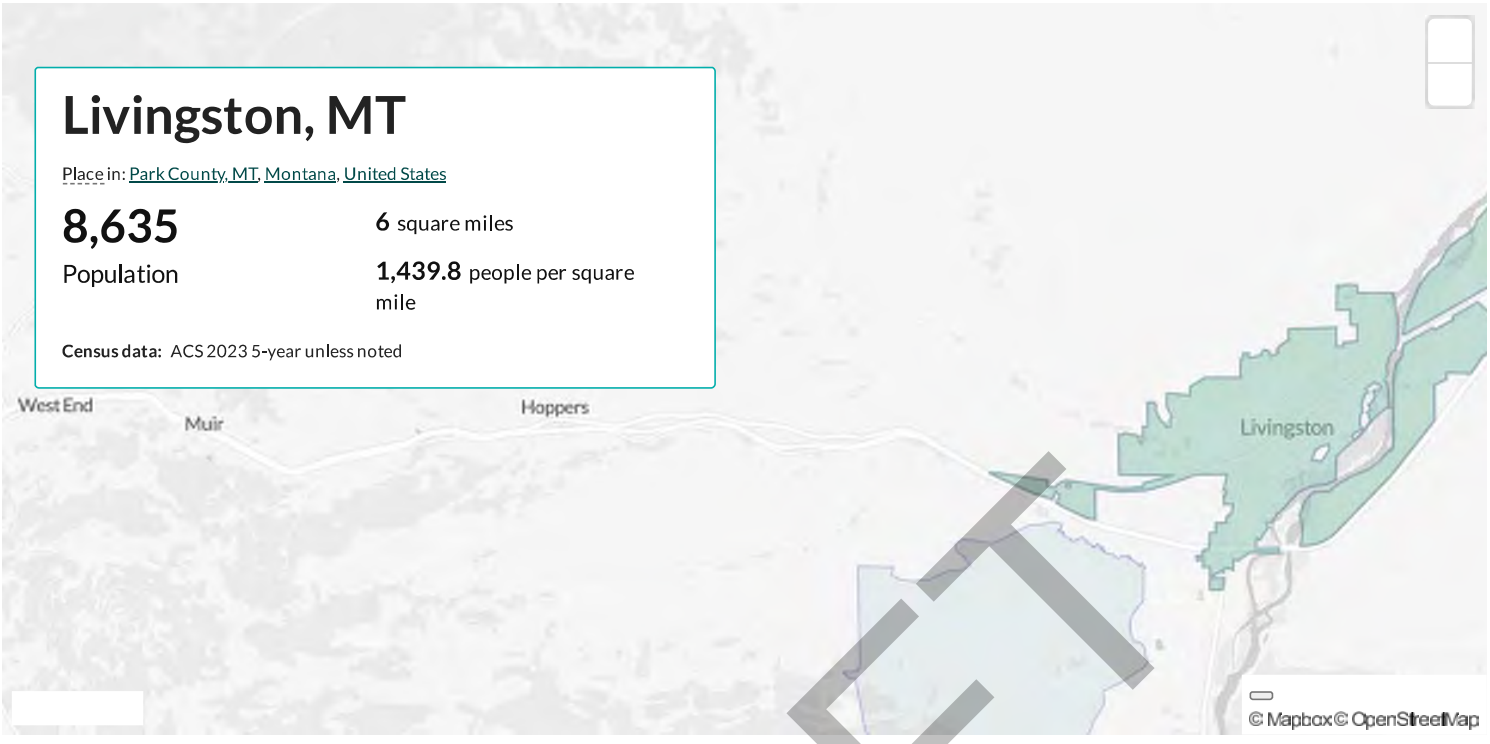
Place in: Park County, MT, Montana, United States

8,635
Population

6 square miles

1,439.8 people per square mile

Census data: ACS 2023 5-year unless noted



Find data for this place Search by table or column name...

Hover for margins of error and contextual data.

Demographics

† Margin of error is at least 10 percent of the total value. Take care with this statistic.

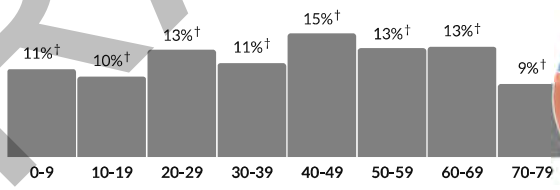
Age

43.1
Median age

about 90 percent of the figure in Park County: 46.2

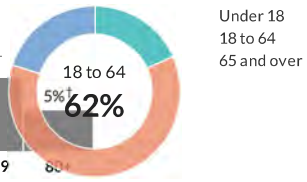
about 10 percent higher than the figure in Montana: 40.2

Population by age range



Show data / Embed

Population by age category



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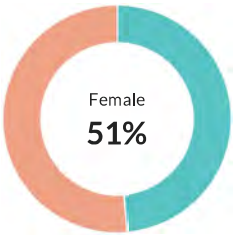
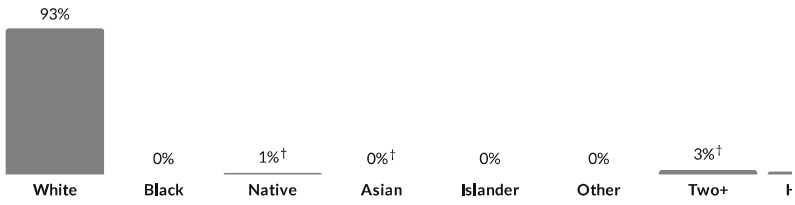
† Margin of error is at least 10 percent of the total value. Take care with this statistic.

Sex



Show data / Embed

Race & Ethnicity



* Hispanic includes respondents of any race. Other categories are non-Hispanic.

Show data / Embed

Economics

Income

† Margin of error is at least 10 percent of the total value. Take care with this statistic.

$40,760
Per capita income

about 90 percent of the amount in Park County: $45,894

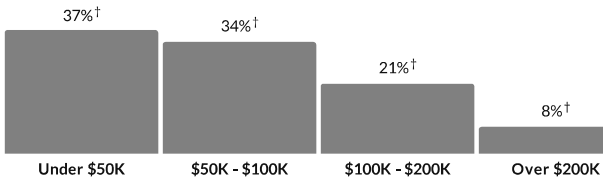
about the same as the amount in Montana: $39,842

$65,187
Median household income

about the same as the amount in Park County: $66,607

about 90 percent of the amount in Montana: $69,922

Household income



Show data / Embed

Poverty

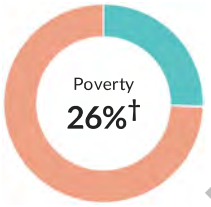
† Margin of error is at least 10 percent of the total value. Take care with this statistic.

15.2%
Persons below poverty line

about 20 percent higher than the rate in Park County: 13.1% †

about 25 percent higher than the rate in Montana: 12.1%

Children (Under 18)



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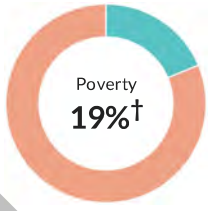
Seniors (65 and over)



Show data / Embed

Transportation to work

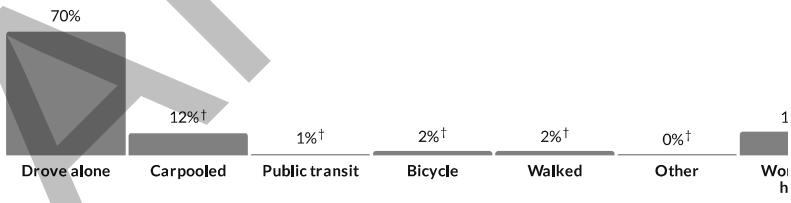
† Margin of error is at least 10 percent of the total value. Take care with this statistic.

23.3 minutes
Mean travel time to work

a little less than the figure in Park County: 24.6

about 25 percent higher than the figure in Montana: 19.2

Means of transportation to work



* Universe: Workers 16 years and over

Show data / Embed

Families

Households

† Margin of error is at least 10 percent of the total value. Take care with this statistic.

4,087
Number of households

Park County: 8,257

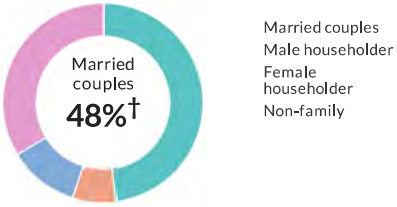
Montana: 452,683

2.1
Persons per household

about the same as the figure in Park County: 2.1

about 90 percent of the figure in Montana: 2.4

Population by household type



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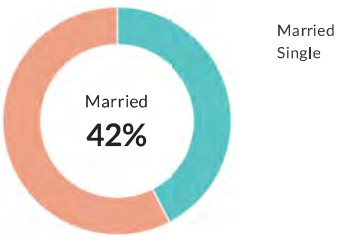
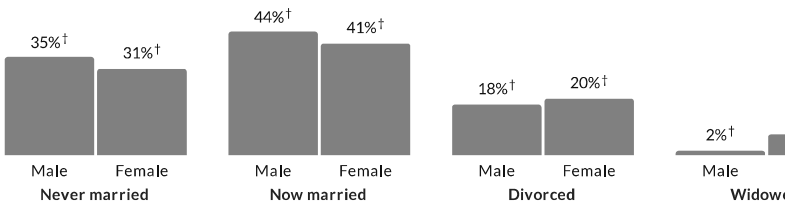
Marital status

† Margin of error is at least 10 percent of the total value. Take care with this statistic.



* Universe: Population 15 years and over

Marital status, by sex



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Show data / Embed

Fertility

† Margin of error is at least 10 percent of the total value. Take care with this statistic.

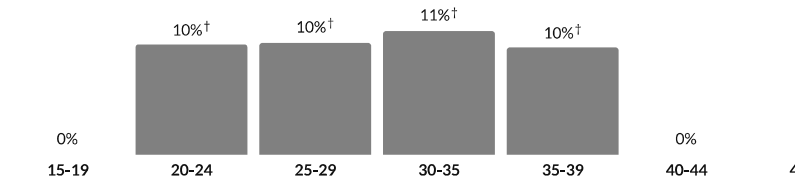
5.9%

Women 15-50 who gave birth during past year

about 10 percent higher than the rate in Park County: 5.3% †

about 10 percent higher than the rate in Montana: 5.5%

Women who gave birth during past year, by age group



* Universe: Women 15 to 50 years

Show data / Embed

Housing

Units & Occupancy

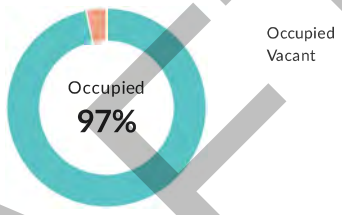
4,220

Number of housing units

Park County: 9,597

Montana: 522,939

Occupied vs. Vacant



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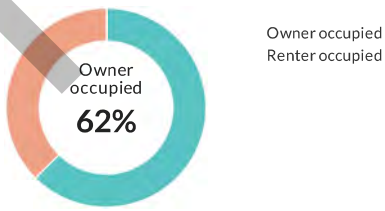
Ownership of occupied units



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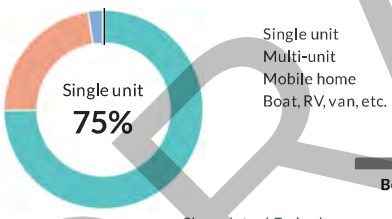
Types of structure



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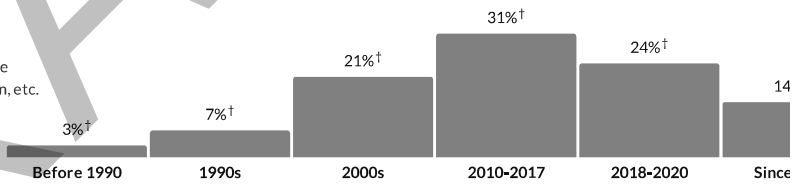
Year moved in, by percentage of population



Show data / Embed

Value

† Margin of error is at least 10 percent of the total value. Take care with this statistic.

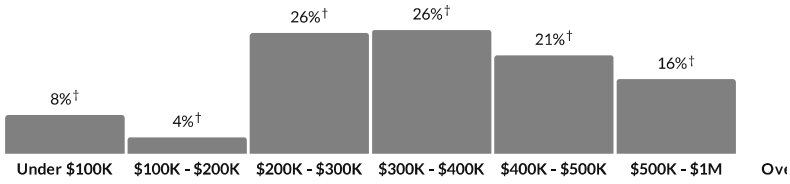
$348,700

Median value of owner-occupied housing units

about 80 percent of the amount in Park County: $429,700

a little higher than the amount in Montana: $338,100

Value of owner-occupied housing units



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Geographical mobility

† Margin of error is at least 10 percent of the total value. Take care with this statistic.

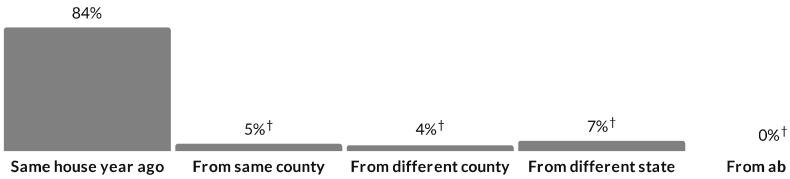
16.2%

Moved since previous year

about 25 percent higher than the rate in Park County: 12.9% †

about 10 percent higher than the rate in Montana: 14.2%

Population migration since previous year



Show data / Embed

Social

† Margin of error is at least 10 percent of the total value. Take care with this statistic.

Educational attainment

97.1%
High school grad or higher

about the same as the rate in Park County: 96.7%

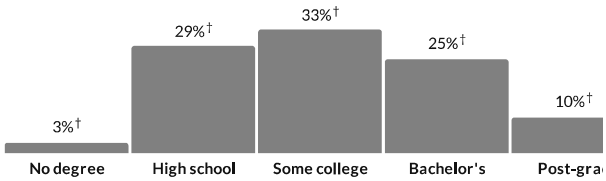
a little higher than the rate in Montana: 94.6%

35.1%
Bachelor's degree or higher

about 90 percent of the rate in Park County: 38.1%

about the same as the rate in Montana: 34.5%

Population by highest level of education



* Universe: Population 25 years and over

Show data / Embed

Language

N/A
Persons with language other than English spoken at home

Language at home, children 5-17
No data available

Language at home, adults 18+
No data available

Place of birth

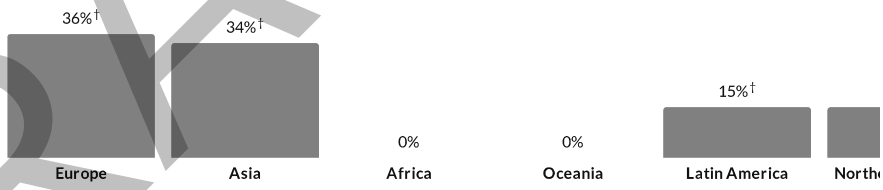
† Margin of error is at least 10 percent of the total value. Take care with this statistic.

0.9%
Foreign-born population

about two-fifths of the rate in Park County: 2.3%

about two-fifths of the rate in Montana: 2.3%

Place of birth for foreign-born population



Show data / Embed

Veteran status

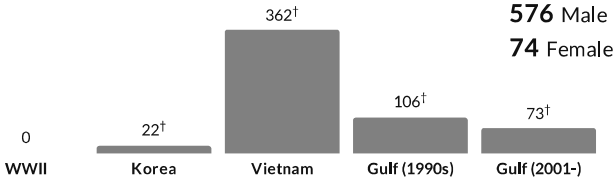
† Margin of error is at least 10 percent of the total value. Take care with this statistic.

9.2%
Population with veteran status

about 90 percent of the rate in Park County: 10.7% †

about the same as the rate in Montana: 9.4%

Veterans by wartime service



650 Total veterans
576 Male
74 Female

* Civilian veterans who served during wartime only

Show data / Embed

Hover for margins of error and contextual data.

Citation: U.S. Census Bureau (2023). *American Community Survey 5-year estimates*. Retrieved from *Census Reporter Profile page for Livingston, MT* <http://censusreporter.org/profiles/16000US3043975-livingston-mt/>

Place

Livingston city, Montana

Livingston city, Montana is a city, town, place equivalent, or township located in Montana. Livingston city, Montana has a land area of 5.6 square miles.

// United States / Montana / Livingston city, Montana

Display Sources

Populations and People
Total Population
8,040
P1 | 2020 Decennial Census

Income and Poverty
Median Household Income
$65,187
S1901 | 2023 American Community Survey 5-Year Estimates

Education
Bachelor's Degree or Higher
35.1%
S1501 | 2023 American Community Survey 5-Year Estimates

Employment
Employment Rate
68.2%
DP03 | 2023 American Community Survey 5-Year Estimates

Housing
Total Housing Units
4,130
H1 | 2020 Decennial Census

Health
Without Health Care Coverage
7.5%
S2701 | 2023 American Community Survey 5-Year Estimates

Families and Living Arrangements
Total Households
4,087
DP02 | 2023 American Community Survey 5-Year Estimates

Race and Ethnicity
Hispanic or Latino (of any race)
270
P9 | 2020 Decennial Census

Source: undefined |

Populations and People

Age and Sex

43.1 ± 1.4
Median Age in Livingston city, Montana

40.6 ± 0.4
Median Age in Montana

S0101 | 2023 American Community Survey 5-Year Estimates

Population Pyramid: Population by Age and Sex
in Livingston city, Montana

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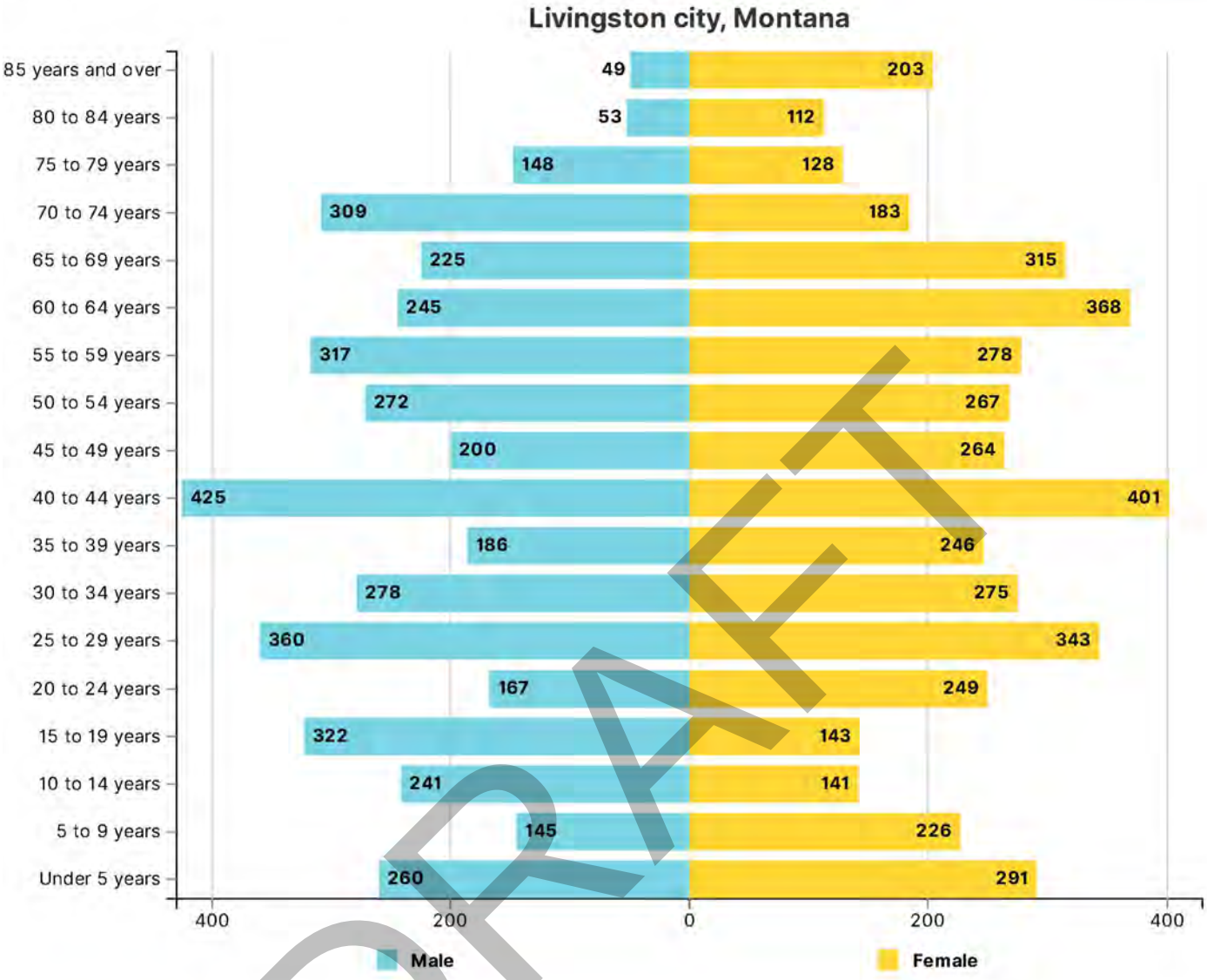

Display Margin of Error
S0101 | 2023 ACS 5-Year Estimates Subject Tables

Language Spoken at Home

2.8% ± 1.5%
Language Other Than English Spoken at Home in Livingston city, Montana

4.5% ± 0.4%
Language Other Than English Spoken at Home in Montana

S1601 | 2023 American Community Survey 5-Year Estimates

Types of Language Spoken at Home
in Livingston city, Montana

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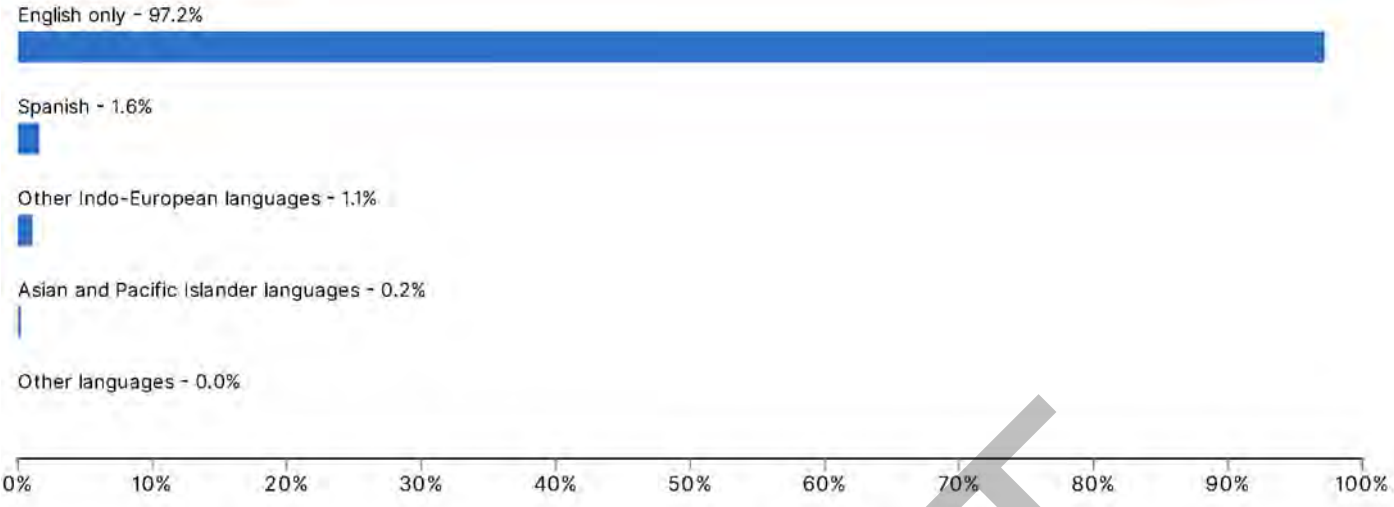

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S1601 | 2023 American Community Survey 5-Year Estimates

Native and Foreign-Born

0.9% ± 0.6%
Foreign-Born population in Livingston city, Montana

2.2% ± 0.2%
Foreign-Born population in Montana

DP02 | 2023 American Community Survey 5-Year Estimates

Foreign-Born Population
in Livingston city, Montana

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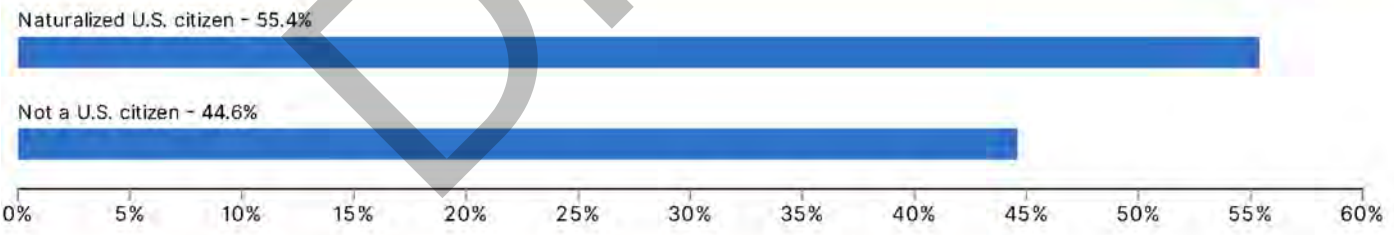

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DP02 | 2023 American Community Survey 5-Year Estimates

Older Population

20.0% ± 2.5%
65 Years and Older in Livingston city, Montana

20.5% ± 0.1%
65 Years and Older in Montana

DP05 | 2023 American Community Survey 5-Year Estimates

Older Population by Age
in Livingston city, Montana

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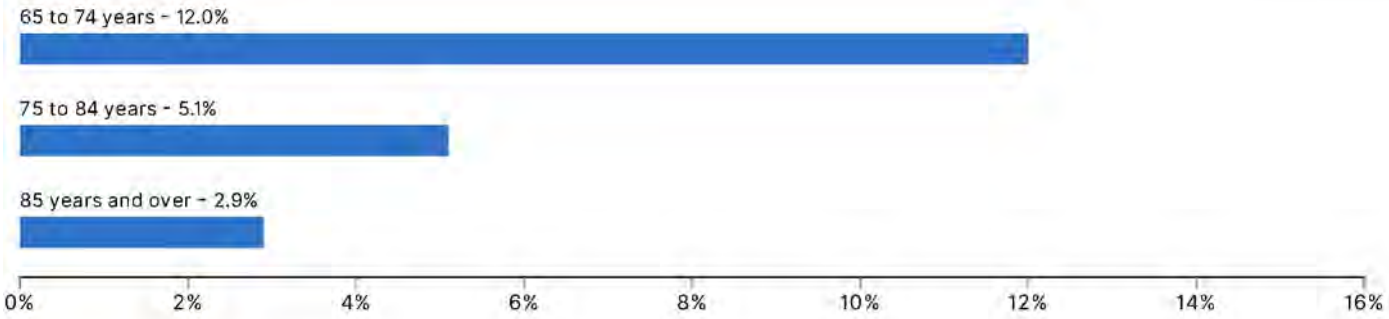

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DP05 | 2023 American Community Survey 5-Year Estimates

Residential Mobility

6.7% ± 3.8%
Moved From a Different State in the Last Year in Livingston city, Montana

3.3% ± 0.4%
Moved From a Different State in the Last Year in Montana

S0701 | 2023 American Community Survey 5-Year Estimates

Residential Mobility in the Last Year
in Livingston city, Montana

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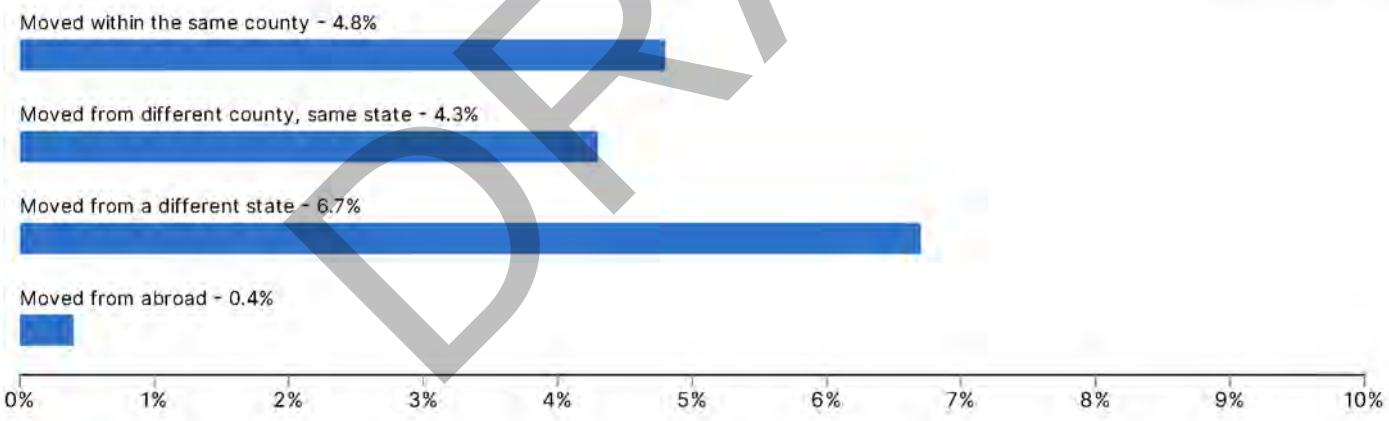

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S0701 | 2023 American Community Survey 5-Year Estimates

Veterans

9.2% ± 2.6%
Veterans in Livingston city, Montana

8.9% ± 0.4%
Veterans in Montana

S2101 | 2023 American Community Survey 5-Year Estimates

Veterans by Sex
in Livingston city, Montana

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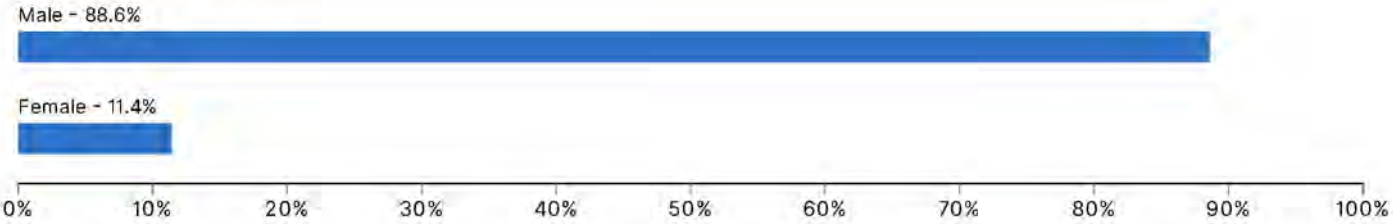

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S2101 | 2023 American Community Survey 5-Year Estimates

			Livingston city			
			Total	Total MOE	Percent	Percent MOE
DP03_0051	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households	High	4,087.00	194.00		
DP03_0052	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - Less than $10,000	Moderate	209.00	108.00	5.1%	2.6%
DP03_0053	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - $10,000 to $14,999	Moderate	237.00	101.00	5.8%	2.4%
DP03_0054	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - $15,000 to $24,999	Moderate	301.00	131.00	7.4%	3.2%
DP03_0055	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - $25,000 to $34,999	Moderate	371.00	163.00	9.1%	3.9%
DP03_0056	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - $35,000 to $49,999	Moderate	400.00	138.00	9.8%	3.4%
DP03_0057	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - $50,000 to $74,999	Moderate	819.00	215.00	20.0%	5.2%
DP03_0058	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - $75,000 to $99,999	Moderate	556.00	168.00	13.6%	4.0%
DP03_0059	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - $100,000 to $149,999	Moderate	737.00	164.00	18.0%	4.0%
DP03_0060	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - $150,000 to $199,999	Moderate	124.00	70.00	3.0%	1.7%
DP03_0061	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - $200,000 or more	Moderate	333.00	144.00	8.1%	3.5%
DP03_0062	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - Median household income (dollars)	High	65,187.00	7,286.00		
DP03_0063	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - Mean household income (dollars)	High	83,546.00	8,230.00		
DP03_0064	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With earnings	High	3,110.00	190.00	76.1%	3.8%
DP03_0065	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With earnings - Mean earnings (dollars)	High	80,086.00	8,130.00		
DP03_0066	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With Social Security	High	1,083.00	157.00	26.5%	3.6%
DP03_0067	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With Social Security - Mean Social Security income (dollars)	High	22,448.00	2,299.00		
DP03_0068	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With retirement income	Moderate	640.00	161.00	15.7%	3.8%
DP03_0069	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With retirement income - Mean retirement income (dollars)	Moderate	37,430.00	13,045.00		
DP03_0070	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With Supplemental Security Income	Moderate	151.00	83.00	3.7%	2.0%
DP03_0071	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With Supplemental Security Income - Mean Supplemental Security Income (dollars)	Moderate	9,630.00	4,618.00		
DP03_0072	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With cash public assistance income	Low	94.00	79.00	2.3%	2.0%
DP03_0073	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With cash public assistance income - Mean cash public assistance income (dollars)	Low	3,637.00	3,608.00		
DP03_0074	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Total households - With Food Stamp/SNAP benefits in the past 12 months	Moderate	377.00	129.00	9.2%	3.3%
DP03_0075	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families	High	1,952.00	235.00		
DP03_0076	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - Less than $10,000	Low	39.00	54.00	2.0%	2.8%
DP03_0077	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - $10,000 to $14,999	Low	22.00	30.00	1.1%	1.5%
DP03_0078	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - $15,000 to $24,999	Moderate	125.00	71.00	6.4%	3.6%
DP03_0079	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - $25,000 to $34,999	Low	62.00	52.00	3.2%	2.6%
DP03_0080	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - $35,000 to $49,999	Moderate	163.00	102.00	8.4%	5.2%
DP03_0081	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - $50,000 to $74,999	Moderate	428.00	155.00	21.9%	7.1%
DP03_0082	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - $75,000 to $99,999	Moderate	301.00	130.00	15.4%	6.5%
DP03_0083	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - $100,000 to $149,999	Moderate	519.00	135.00	26.6%	6.0%
DP03_0084	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - $150,000 to $199,999	Moderate	106.00	64.00	5.4%	3.3%
DP03_0085	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - $200,000 or more	Moderate	187.00	112.00	9.6%	5.6%
DP03_0086	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - Median family income (dollars)	High	85,000.00	13,114.00		
DP03_0087	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Families - Mean family income (dollars)	High	97,897.00	11,725.00		
DP03_0088	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Per capita income (dollars)	High	40,760.00	4,430.00		
DP03_0089	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Nonfamily households	High	2,135.00	283.00		
DP03_0090	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Nonfamily households - Median nonfamily income (dollars)	Moderate	45,825.00	9,674.00		
DP03_0091	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Nonfamily households - Mean nonfamily income (dollars)	High	68,668.00	12,057.00		
DP03_0092	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Median earnings for workers (dollars)	High	40,631.00	5,190.00		
DP03_0093	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Median earnings for male full-time, year-round workers (dollars)	High	56,732.00	3,929.00		
DP03_0094	INCOME AND BENEFITS (IN VINTAGE YEAR INFLATION-ADJUSTED DOLLARS) - Median earnings for female full-time, year-round workers (dollars)	High	48,280.00	5,090.00		
DP03_0119	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All families	Moderate			9.3%	4.3%
DP03_0120	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All families - With related children of the householder under 18 years	Moderate			16.9%	9.4%
DP03_0121	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All families - With related children of the householder under 18 years - With related children of the householder under 5 years only	Low			5.4%	10.2%
DP03_0122	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All families - Married couple families	Moderate			4.8%	3.1%
DP03_0123	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All families - Married couple families - With related children of the householder under 18 years	Low			7.2%	7.6%
DP03_0124	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All families - Married couple families - With related children of the householder under 18 years - With related children of the householder under 5 years only	Low			0.0%	16.2%
DP03_0125	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All families - Families with female householder, no spouse present	Moderate			34.5%	22.0%
DP03_0126	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All families - Families with female householder, no spouse present - With related children of the householder under 18 years	Moderate			52.3%	26.6%
DP03_0127	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All families - Families with female householder, no spouse present - With related children of the householder under 18 years - With related children of the householder under 5 years only	Low			0.0%	96.4%
DP03_0128	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people	Moderate			15.1%	4.3%
DP03_0129	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people - Under 18 years	Moderate			25.5%	14.2%
DP03_0130	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people - Under 18 years - Related children of the householder under 18 years	Moderate			25.5%	14.2%
DP03_0131	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people - Under 18 years - Related children of the householder under 18 years - Related children of the householder under 5 years	Moderate			28.5%	17.1%
DP03_0132	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people - Under 18 years - Related children of the householder under 18 years - Related children of the householder 5 to 17 years	Low			23.9%	16.2%
DP03_0133	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people - 18 years and over	Moderate			12.8%	3.1%
DP03_0134	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people - 18 years and over - 18 to 64 years	Moderate			10.9%	3.5%
DP03_0135	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people - 18 years and over - 65 years and over	Moderate			18.8%	5.9%
DP03_0136	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people - People in families	Moderate			12.2%	6.0%
DP03_0137	PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL - All people - Unrelated individuals 15 years and over	Moderate			20.3%	6.0%

APPENDIX 1-E
PUBLIC NOTICES AND MEETING MINUTES

Livingston Regional Water PER

Public Meeting #1
December 9th 2024
City / County Complex – Community Room

1. Welcome & Introductions
    a. Shannon Holmes - City Public Works Director, sholmes@livingstonmontana.org
    b. Adam Ballew - City Project Manager, aballew@livingstonmontana.org
    c. Matt McGee - Consulting Engineer, matt.mcgee@tdhengineering.com
2. History & Importance of this Project:
    a. 2003 Preliminary Engineering Report by Nelson Engineering
    b. 2017 HOA Meeting with Green Acres regarding annexation, future sewer improvements, and water improvements
    c. Recent Annexations into the City. MCA intent to serve with municipal utilities.
    d. Rising costs of construction
    e. See water alternate maps attached. Alignments are conceptual and will be refined prior to estimating costs based on resident and City input.
3. Project Goals
    a. Provide every City property with reliable utility services
    b. Protect drinking water quality
    c. Maintain existing water wells for irrigation only
    d. Maintain a public process that includes input from all residents – open communication
    e. Secure as much funding as possible to lessen the cost burden to residents
4. Communication
    a. Transparency and community involvement
    b. www.improvelivingston.com
    c. Email list
    d. Subcommittee
5. Project Funding
    a. MCEP planning grant for $40,000 for the Preliminary Engineering Report (PER)
    b. Look into all potential funding sources (SRF, MCEP…)
    c. Special Improvement District (SID) for water
6. Schedule
    a. Preliminary Engineering Study – to be completed winter 2024/2025
    b. Next public meeting: December 18, 2024. Virtual information provided below

Join the meeting now
Meeting ID: 266 519 863 221
Passcode: 8g5rX6hc
Dial in by phone:
+1 929-352-1793 Phone conference ID: 303 370 228#

MEETING

SIGN IN SHEET

Livingston Regional Water PER

December 9, 2024 6:00 p.m.

Printed Name	Address	Phone Number	Email address
Barbara/Bob Agle	POB 24 Gardiner 59030 / 212 Garnier Ave Livingston	406-220-1555	bob84barb@gmail.com
Kevin Haines	PO Box 2526 Livingston, MT 59047 / 213 Elm Lane (nomail)*	406-570-4232	kevinhaines2526@gmail.com
Tina Haines	" / "	(406) 222-3821	thphoto91@gmail.com (new email as of 12/23)***
Karen Durow	105 Pine St.	(406) 222-2960	kmdurow@Gmail.com
A. Roesner de Feltre	106 Elm Lane	406.222.5459	ardf@proton.me
O'Neill	210 Ash Lane	406-220-0514	shamrock0n_13@yahoo.com
Jay O'Neill	106 Spruce	406-220-9470	
Kim O'Neill		220-4918	jkjki1994@AOL.com
Spencer Bruce	113 Chestnut Ln.	406-624-9713	spencer.m.bruce@gmail.com
SID payoff * Bradshaw Summers	103 Spruce Ln.	406 220 1396	BradshawSummers49@gmail.com
Pattie Ottmann	104 Chestnut Ln	207 944 5801	pattie.Ottmann@gmail.com
Michael Kokot	104 Tana Ln	406-222-6294	mkokot@gmail.com
Patti Smith	115 Allspaugh St	406-539-7149	phear55@charter.net

MEETING

SIGN IN SHEET

Livingston Regional Water PER

December 9, 2024 6:00 p.m.

Printed Name	Address	Phone Number	Email address
Larry + Colleen Krehmer	109 Elm Ln	406 223 2176	crehmer@msn.com
Rebecca Heemstra	121 S N St	406-931-0987	
Jordan Ballinger	211 Spruce Lane	406-223-7099	jaguilar1685@gmail.com
Chris Posbergh	203 Chestnut Ln	406 823 9615	cposbergh@gmail.com
Malcolm Foulke	211 Grandview	406-595-0796	falcon7@bresnan.net
Patrick Resatell	206 Arbor	920-471-7144	Resatellp@gmail.com
Jolyn Jerde	306 Grandview Blvd.	406-223-0579	JERDESCANOL@gmail.com
Scott McNeil	408 Garnier Ave	406-223-7874	SMCTwo2@Gmail.Com
Amber Stringfellow	219 Garnier Ave #16	406-224-1090	stringfellowforever@gmail
Bret Graden	116 Elm Lane	406 581-6353	graden.farm@gmail.com
Karen Stenseth	605 Heffernine Ave	406-539-3905	drsstenseth@earthlink.net
Tracy Pelach	105 Willow St	406.224.0254	tpelach@yahoo.com
Artyce Lizotte	312 Garnier Ave	406-220-1579	artyce.lizotte@gmail.com

MEETING

SIGN IN SHEET

Livingston Regional Water PER

December 9, 2024 6:00 p.m.

Printed Name	Address	Phone Number	Email address
Dennis Springer	212 Spruce Ln	(406) 580.1382	dgs1251@gmail.com

Transcript-Microsoft TEAMS

December 18, 2024

Livingston Regional Water PER

AI-generated content may be incorrect

Matt McGee

started transcription

AB

Adam Ballew

0 minutes 3 seconds0:03

Adam Ballew 0 minutes 3 seconds

Four meetings that we're gonna have involving the Regional Water per I'll start.

Adam Ballew 0 minutes 9 seconds

My name is Shannon Holmes.

Adam Ballew 0 minutes 11 seconds

I'm the works director. We've got Adam Balu, our project manager.

Adam Ballew 0 minutes 16 seconds

Matt McGee is feeling under the weather tonight, so he's attending virtually.

Adam Ballew 0 minutes 22 seconds

From his home. And then we have Brian Townsend, our water and sewer foreman, our Superintendent with the Public Works department here tonight. So.

Adam Ballew 0 minutes 32 seconds

For some of you that attended our week, our meeting on December 9th, some of this is going to be redundant, but we have moved forward with some of the comments from the last meeting.

Adam Ballew 0 minutes 46 seconds

So I'll I'll start with.

Adam Ballew 0 minutes 49 seconds

Giving everyone a history.

Adam Ballew 0 minutes 53 seconds

When the city annexed Green Acres and the Montague subdivision, that was not the first time that the city.

Adam Ballew 1 minute 1 second

Thought about or planned to extend utilities to the Green Acres Montague area.

Adam Ballew 1 hour 19 minutes 41 seconds

So like with the Wellness Center filling all those pools and then with the new ones, is that gonna create any kind of?

Adam Ballew 1 hour 19 minutes 51 seconds

Issue no and and I'll tell you the the water loop that we talked about at Bennett Street is huge and that needs to happen for the Lama center is open for business so.

Adam Ballew 1 hour 20 minutes 4 seconds

As far as capacity, you know Ryan and his team, I mean he he keeps an eye on our wells and reservoirs every day and I think you know this town.

Adam Ballew 1 hour 20 minutes 19 seconds

I love it dearly, but we've evolved and we're a growing town.

Adam Ballew 1 hour 20 minutes 23 seconds

And I hope we didn't cause any anxiety from people last year when we actually, for the first time in the history of this town, like formalize our water restrictions.

Adam Ballew 1 hour 20 minutes 33 seconds

So really all the exercise we did last summer was just to be open and transparent with people on what the four tiers were and if we ever and and really that that could come into play not based on demand and number of homes connected to our water system.

Adam Ballew 1 hour 20 minutes 50 seconds

It could be if we have a water main break or if one of our wells, you know, the motor burns up in it and we we need two weeks to get a replacement motor and get it installed.

Adam Ballew 1 hour 21 minutes 4 seconds

So there's a lot of.

Adam Ballew 1 hour 21 minutes 8 seconds

You know, I mean, I've provided the city's provided tankers of water for fires in the National Forest around here, and man camps and everything else.

Adam Ballew 1 hour 21 minutes 17 seconds

So there's there's a lot of extenuating circumstances.

Adam Ballew 1 hour 21 minutes 23 seconds

Go in with that and it's not really just based on connections.

Adam Ballew 1 hour 49 minutes 58 seconds

You know when that was in the county. The one thing now that it's in the city and there's no residents there, nothing.

Adam Ballew 1 hour 50 minutes 5 seconds

Nothing there that's going to have an impact, kind of like your garbage can that I have that does nothing, but I only use the garbage.

Adam Ballew 1 hour 50 minutes 13 seconds

It's kind of wasted, alright?

Adam Ballew 1 hour 50 minutes 16 seconds

I I understand where you're coming from, but I'm I'm. I'm just the messenger here.

Adam Ballew 1 hour 50 minutes 20 seconds

When when the when the city annexed those, these are all services that every resident pays are the are the cities required to by state law to provide so?

Adam Ballew 1 hour 50 minutes 36 seconds

You know it's.

Adam Ballew 1 hour 50 minutes 40 seconds

I deserve to get the brunt of this cause.

Adam Ballew 1 hour 50 minutes 43 seconds

I'm the public works director.

Adam Ballew 1 hour 50 minutes 44 seconds

But when the when the annexation occurred, that's what set all this stuff in motion. Unfortunately for all the residents out here.

Adam Ballew 1 hour 50 minutes 52 seconds

And I'm just trying to do my job and be open and transparent with everybody and.

Adam Ballew 1 hour 51 minutes 1 second

Try to make this as cheap on everybody as we can.

Adam Ballew 1 hour 51 minutes 12 seconds

Anything else?

Adam Ballew 1 hour 51 minutes 14 seconds

Just stated, I think there's gonna have to be a lot of trust.

Adam Ballew 1 hour 51 minutes 18 seconds

There's no way you're gonna be able to communicate to everybody and have them. There's too many combinations of different things that that happen, just like even the grants and maybe a certain grants with a larger number could be bigger than, you know, breaking them up into multiple siz.

Adam Ballew 1 hour 51 minutes 34 seconds

So it just we're gonna have to trust that somebody's looking all this looking at different combinations and.

Adam Ballew 1 hour 51 minutes 42 seconds

And maybe giving us two different plans to vote on that.

Adam Ballew 1 hour 51 minutes 46 seconds

There's so many different ways you can take this thing, right?

Adam Ballew 1 hour 51 minutes 48 seconds

This I don't see.

Adam Ballew 1 hour 51 minutes 49 seconds

It's not gonna do any good to keep telling everybody. All we can do it this way to do it this way.

Adam Ballew 1 hour 51 minutes 55 seconds

It's just gonna.

Adam Ballew 1 hour 51 minutes 57 seconds

Go to.

Adam Ballew 1 hour 52 minutes

Have their own take on it.

Adam Ballew 1 hour 52 minutes 3 seconds

Yep, I agree. I agree.

Adam Ballew 1 hour 52 minutes 9 seconds

We wanna do a good job on this per because we it really makes us more competitive in the eyes of these grant opportunities.

Adam Ballew 1 hour 52 minutes 21 seconds

We're not even.

Adam Ballew 1 hour 52 minutes 22 seconds

I mean, as a municipality, most of these grants were not even able to apply for unless we have a a preliminary engineering report so.

Adam Ballew 1 hour 52 minutes 32 seconds

We want that to be a document that hopefully has completed this spring and it's a reference point for all the for all the residents out there.

Adam Ballew 1 hour 52 minutes 42 seconds

Plus, it's going to be a be a big feather in our cap for when these grants cycles open up and we apply.

Adam Ballew 1 hour 52 minutes 50 seconds

The funding agencies like to see that there's more than one alternative to us know for a solution.

Adam Ballew 1 hour 53 minutes 6 seconds

In a lot of ways, I'm optimistic that we can ride the coattails of the sewer project that we got 160 homes off of septic systems on the city sewer and and now we have community wells. In some cases, some of those community wells have more.

Adam Ballew 1 hour 53 minutes 22 seconds

People connected to them than they should.

Adam Ballew 1 hour 53 minutes 25 seconds

Without a certified water operator and that this really.

Adam Ballew 1 hour 53 minutes 30 seconds

Provides all the essential services for the northeast part of Livingston.

Adam Ballew 1 hour 53 minutes 37 seconds

Even the greeting anchors it's it's so it doesn't meet your codes and stuff like that that you think that would be a decent.

Adam Ballew 1 hour 53 minutes 49 seconds

Show even though we all have water that.

Adam Ballew 1 hour 53 minutes 54 seconds

Is that is our biggest obstacle with Green Acres because as of right now, most people are like I have water.

Adam Ballew 1 hour 54 minutes

There's no.

Adam Ballew 1 hour 54 minutes

There's no issues with it, so I think we need to focus on this is what our standards are elsewhere in town.

Adam Ballew 1 hour 54 minutes 9 seconds

This is the age of the pipe system that you have in Green Acres.

Adam Ballew 1 hour 54 minutes 12 seconds

It's undersized. It doesn't.

Adam Ballew 1 hour 54 minutes 14 seconds

I mean.

Adam Ballew 1 hour 54 minutes 17 seconds

Everybody's home insurance should actually go down. Not that that's gonna cover the cost of this project, but.

Adam Ballew 1 hour 54 minutes 27 seconds

The fire flow well first.

Adam Ballew 1 hour 54 minutes 28 seconds

I mean, if there's a fire in Green Acres, it's gonna be really challenging because there's not many hydrants and they're small, undersized lines that are dead end.

Adam Ballew 1 hour 54 minutes 37 seconds

And that puts the fire department in the city in a big liability.

Adam Ballew 1 hour 54 minutes 41 seconds

Those are grant kind of approved that I I think we're gonna turn every stone over.

Adam Ballew 1 hour 54 minutes 47 seconds

That we can and.

Adam Ballew 1 hour 54 minutes 58 seconds

Greg Anthony, the policy analyst that works under the city manager, has been doing a lot of those over the last year.

Adam Ballew 1 hour 55 minutes 7 seconds

We've very successful.

Adam Ballew 1 hour 55 minutes 8 seconds

I mean, you know the the per for this project was, I mean $40,000 of it was funded by the Montana Coal Endowment, so.

Adam Ballew 1 hour 55 minutes 20 seconds

The city matched a portion of that.

Adam Ballew 1 hour 55 minutes 24 seconds

So I mean, we already I mean.

Adam Ballew 1 hour 55 minutes 29 seconds

The state grant agencies already saw that this was a competitive preliminary engineering report.

Adam Ballew 1 hour 55 minutes 34 seconds

So we, you know, to get $40,000 for this study is already helping the residents out.

Adam Ballew 1 hour 55 minutes 42 seconds

So we're hoping that we can continue that through the construction phase.

Adam Ballew 1 hour 55 minutes 50 seconds

And the other thing, I mean Matt and his team are very familiar with Livingston.

Adam Ballew 1 hour 55 minutes 55 seconds

You know the design of this to do the actual design of the water mains is gonna be a lot cheaper.

Adam Ballew 1 hour 56 minutes 4 seconds

Than some other firms can do that just because of of doing the per and a lot of the leg work that we're doing plus the the knowledge that we gain from the sewer project.

Adam Ballew 1 hour 56 minutes 15 seconds

So we're confident that the design of this is going to be below what a typical project would be.

Adam Ballew 1 hour 56 minutes 23 seconds

And then hopefully we can find some good contractors that.

Adam Ballew 1 hour 56 minutes 29 seconds

Are willing to bid a good construction cost for this and historically we bid jobs in December, January when most most projects are shut down.

Adam Ballew 1 hour 56 minutes 41 seconds

And they're trying to fill their schedules with the following year and we've seen the prices for construction a lot better when you bid projects in the winter time.

Adam Ballew 1 hour 57 minutes 6 seconds

Anything else?

Adam Ballew 1 hour 57 minutes 11 seconds

Well, I really appreciate all the.

Adam Ballew 1 hour 57 minutes 20 seconds

Provided value and I think we have a lot of work to do to kind of document what was all discussed tonight and put that out on the website and make sure that it's available for other folks that fit the 10 tonight.

Adam Ballew 1 hour 57 minutes 40 seconds

Alright, thank you. Have a good evening.

Matt McGee

1 hour 57 minutes 46 seconds1:57:46

Matt McGee 1 hour 57 minutes 46 seconds

Good job.

Matt McGee 1 hour 57 minutes 47 seconds

Thanks Shannon.

AB

Adam Ballew

1 hour 57 minutes 49 seconds1:57:49

Adam Ballew 1 hour 57 minutes 49 seconds

Hope you feel better, Matt.

Matt McGee

1 hour 57 minutes 51 seconds1:57:51

Matt McGee 1 hour 57 minutes 51 seconds

Thank you.

AB

Adam Ballew

1 hour 57 minutes 52 seconds1:57:52

Adam Ballew 1 hour 57 minutes 52 seconds

Some rest.

Adam Ballew 1 hour 57 minutes 58 seconds

So what we would like to do is just have a.

⍰⍰

Matt McGee

stopped transcription

MEETING
SIGN IN SHEET

Regional Water PER Meeting

December 18, 2024 6:00 p.m.

Printed Name	Address	Phone Number	Email address
Bob Agle	see last meeting		
Arlene Roemer da Feltre	see last mtg.		
Pattie + Dave Ottman	see last mtg		
Rebecca Heemstra	121 S N St	406 931 0987	rheemstra@nwmt.org
Jordan Ballinger	See last meeting		
Jane Gardner	105 Miller St		
Jolyn Jerde	306 Grandview Blvd	406-223-0579	

Livingston Regional Water PER

Public Meeting Agenda
January 22, 2025
City / County Complex – Community Room

1. Welcome & Introductions
    a. Shannon Holmes - City Public Works Director, sholmes@livingstonmontana.org
    b. Adam Ballew - City Project Manager, aballew@livingstonmontana.org
    c. Ryan Townsend – Water & Sewer Superintendent, rtownsend@livingstonmontana.org
    d. Matt McGee - Consulting Engineer, matt.mcgee@tdhengineering.com

2. New Items
    a. Updated alignment alternative maps
        i. Started on developing preliminary costs for each alternative
    b. Shared well locations and internal piping – looking for information on Montague shared wells

3. Project Goals
    a. Provide every City property with reliable utility services
    b. Protect drinking water quality
    c. Maintain existing water wells for irrigation only
    d. Maintain a public process that includes input from all residents and facilitates open communication
    e. Secure the maximum amount of potential funding to lessen the cost burden to residents

4. Communication
    a. Transparency and community involvement
    b. www.improvelivingston.com
    c. Email list

5. Project Funding
    a. MCEP planning grant for $40,000 for the Preliminary Engineering Report (PER)
    b. Look into all potential funding sources (SRF, MCEP…)
    c. Special Improvement District (SID) for water

6. Schedule
    a. Preliminary Engineering Study – to be completed spring 2025
    b. Next public meeting: Meet with sub-committee in the next couple weeks and schedule a public meeting near end of February to present costs.

7. Questions?

Livingston Regional Water PER

Public Meeting Agenda
March 26, 2025
City / County Complex

1. Welcome & Introductions
    a. Shannon Holmes - City Public Works Director, sholmes@livingstonmontana.org
    b. Adam Ballew - City Project Manager, aballew@livingstonmontana.org
    c. Matt McGee - Consulting Engineer, matt.mcgee@tdhengineering.com

2. New Items
    a. Updated alignment alternative maps
        i. Developed preliminary costs for each alternative
    b. Met with subcommittee last week

3. Project Goals
    a. Provide every City property with reliable utility services
    b. Protect drinking water quality
    c. Maintain existing water wells for irrigation only
    d. Maintain a public process that includes input from all residents and facilitates open communication
    e. Secure the maximum amount of potential funding to lessen the cost burden to residents

4. Communication
    a. Transparency and community involvement
    b. www.improvelivingston.com
    c. Email list

5. Project Funding
    a. MCEP planning grant for $40,000 for the Preliminary Engineering Report (PER)
    b. Look into all potential funding sources (SRF, MCEP…)
    c. Special Improvement District (SID) for water

6. Overall Project Schedule
    a. Preliminary Engineering Study – to be completed spring 2025
    b. Next public meeting: Present final PER to Commission
    c. Pursue grant funding
    d. Design
    e. SID creation
    f. Construction

MEETING
SIGN IN SHEET

Livingston Regional Water PER

March 26, 2025 6:00 p.m.

Printed Name	Address	Phone Number	Email address
Patti Smith	PO Box 798	406-539-7149	
Dina Rockafellow	P.O. Box 64	406-223-2935	drockafellow@msn.com
Mary Jo Meredith	206 Spruce	406 222-6661	MaryJoMeredith@gmail
Hank Poeschl	304 Northpark Dr.	406 222-6244	hankpoeschl@gmail.com
Dona Poeschl	"	"	"
James Meredith	206 Spruce Ln	406-224 3478	Same as Mary Jo
Craig Carlson	112 Elm	406-220-3579	
Bob Agle	212 Garnier	406-220-1555	bob84bob@gmail.com
Malcolm Fowlie	211 Grandview	406-595-0796	falcon7@bresnan.net
Kathryn Gutebier	105 Spruce	406-223-0260	Kgutebier3@gmail.com
Pattie + Dave Offmann	904 Chestnut	207 944 5809	
Roger & Jane Gardner	105 Miller Ave	406-220-1062	rjeegardner@yahoo.com
Joel Pottengale	223 Llama Ln	406 223 5136	joelpottengale@gmail.com
Spencer Bruce	113 Chestnut Ln	406-624-9713	spencer.m.bruce@gmail.com

MEETING

SIGN IN SHEET

Livingston Regional Water PER

March 26, 2025 6:00 p.m.

Printed Name	Address	Phone Number	Email address
Guy Olson	132 W. Lewis D	223-5111	guyo@fuelguy.ca

Yellowstone News Group

Big Timber Pioneer | Columbus Stillwater Co News | Dillon Tribune | Forsyth Independent News | Glendive Ranger Review | Laurel Outlook
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ADVERTISING PROOF

PO Box 2000,
Livingston, MT 59047
Ph.

BILLING DATE:	ACCOUNT NO:
11/27/24	71616

City of Livingston Public Works Dept
330 Bennett St
Livingston, MT 59047

AD #	DESCRIPTION	START	STOP	TIMES	AMOUNT
586067	PUBLIC NOTICE CITY O	12/07/24	12/11/24	2	$96.00

Payments:

Date	Method	Card Type	Last 4 Digits	Check	Amount

Discount: **$0.00**
Surcharge: **$0.00**
Credits: **$0.00**

Gross: **$96.00**
Paid Amount: **$0.00**

Amount Due: **$96.00**

We Appreciate Your Business!

AD# 586067

PUBLIC NOTICE

CITY OF LIVINGSTON, MONTANA

2025– Regional Water Preliminary Engineering Report

The City of Livingston is currently in the planning and design phase for of a preliminary engineering report to study a regional water extension, allowing the city to provide water services to the residents of the Green Acres, Sleeping Giant and Montague Subdivisions.

Location: The proposed project will affect the following area(s):

- Residents in the boundaries of the Green Acres, Sleeping Giant and Montague Subdivisions.

Project Overview: The project will include, but is not limited to, the following elements:

- The study will provide municipal water service residents in the Green Acres, Sleeping Giant and Montague subdivisions. Green Acres subdivision residents are currently served by City water, but the pipes are approaching the end of design life, undersized and not looped to provide adequate fire protection and system redundancy.
- The other two subdivisions in this project are on shared wells. The existing wells will be utilized for irrigation service after this project is complete.

Public Input:

The City encourages all interested parties, to provide input on the proposed project. Three public meetings will be held in early to discuss the proposed project. Our preliminary meeting schedule is as follows:

Regional Water Preliminary Engineering Report – Green Acres, Montague and Sleeping Giant Residents

12/09 – Community Room, City County Complex 414 E Callender St.

12/18 – Community Room, City County Complex 414 E Callender St.

01/22 – Community Room,

City County Complex 414 E Callender St.

City representatives will be available to answer questions, provide additional information, and address concerns.

For More Information: For additional details, or to request special accommodations for the public meeting, please contact Shannon Holmes Public Works Director sholmes@livingstonmontana.org or Adam Ballew, Project Manager at aballew@livingstonmtonana.org or (406) 222-5667.

This notice is being provided in accordance with the requirements of Montana law and the City's public notification process. All interested parties are encouraged to participate and provide feedback on the project.

Dated November 26, 2024

Adam Ballew,
Project Manager
City of Livingston
Public Works Department
330 Bennett Street
(406) 222-5667
www.livingstonmontana.org/publicworks
www.improvelivingston.com

Pub Dec 7, Jan 15, 2024/25

586067

MNAXLP

Matt McGee

From: Michael Kokot <mkokot@gmail.com>
Sent: Monday, December 16, 2024 9:22 PM
To: sholmes@livingstonmontana.org; Matt McGee
Subject: Kokot: 104 Tana water hookup
Attachments: TanaLaneSewage.png

Categories: Livingston

Shannon,

You might recall that I have two sewage hookups going down my north and south side of the 104 Tana house.

I have a situation with trying to hook up water from Tana Lane as I don't have enough room on the north side of my house to properly handle both a water and sewage line. I am attaching a drawing but I assume you have all this information on file as well. My neighbor to the North of me has a number of large lilac trees between our properties and even if they were taken out I don't believe there is enough room to properly have enough distance between the water and sewage line. The Sewage line is only 2.5 feet coming out of the house and then gradually drops from there until about 15 feet from the road then goes down steadily into the Tana Lane hookup.

My water line was put in around the fall of 2001 and it is a copper line coming from Ash Lane. It goes right down the middle of the two vacant properties to the East of me and it is 6.5 feet down all the way into the house. There should be no need to ever dig up this line even if either of those properties were to be built on as the setbacks should prevent this.

I totally understand wanting to have all the Tana Lane homes hooked up to water on Tana Lane but I just don't see how that can be done with my place without a lot of compromises. You should also have information that the lot to my South side which is vacant has a water line already pulled from Ash to this lot for any future hook up.

I would obviously vote for not having the lower half of Tana having any water line put in the road as we all already have water coming from Ash and in my case it would be very difficult to utilize it.

We can talk about this more later but I would be asking to leave my hookup in Ash Lane at least until this water line fails. If water does get put all the way down Tana then I would need to get some kind of approval to let my water and sewage lines be a few feet from each other to get both hookups going to Tana Lane.

Thanks!

Michael Kokot

APPENDIX 2-A
EXISTING CONTIDIONS
WATERCAD REPORTS

Appendix 4.1.A - Demand Calculations

gpd/capita =	127.5
Capita/unit =	2.5

Max Day Multiplier =	2.36

Green Acres

Block	Unit Count
1	13
2	12
3	12
4	13
5	14
6	12
7	11
8	16

Unit Total	103
Capita =	257.5
Avg GPD =	32831.25
MDD (gpd) =	77481.75
MDD (gpm) =	53.81

Sleeping Giant

Block	Unit Count	Vacant lot (units by acre)	zone	Acre	units/acre
1	8				
2	24				
3	11				
4	2	84	RIII	1.1	76
5	0	35	MU	0.35	99.5

Unit Total	163.43
Capita =	408.56
Avg GPD =	52091.72
MDD (gpd) =	122936.46
MDD (gpm) =	85.37

Montague

Block	Unit Count	Vacant lot (units by acre)	zone	Acre	units/acre	
1	5					
2	8					
3	7					
4	6					
5	0	69.72	RII	2.8	24.9	
6	1	73.455	RII	2.95	24.9	Remaining vacant

Unit Total	170.18
Capita =	425.44
Avg GPD =	54243.28
MDD (gpd) =	128014.14
MDD (gpm) =	88.90

	Alternatives	Junction Count in Community	Assigned MDD (gpm)	
GA Replacement	G-2	20	2.69	Green Acres
GA Expansion	G-3	27	1.99	
Montague Streets	M-2	11	8.08	Montague
Montague Alleys	M-3	11	8.08	
McCaw/Garnier Streets	S-2	15	5.69	Sleeping Giant
McCaw/Frank Street	S-3	15	5.69	
Frank/Garnier Street	S-4	15	5.69	
Frank Street Loop	S-5	15	5.69	

Existing System

Community	Junction Count	Assigned MDD (gpm) per Junction
Green Acres	19	2.83
Montague	0	0.00
Sleeping Giant	12	7.11

Selected Alternatives - Combined

Community	Junction Count	Assigned MDD (gpm) per
Green Acres	27	1.99
Montague	11	8.08
Sleeping Giant	16	5.34

L-2 Tana Lane Connection

Community	Junction Count	Assigned MDD (gpm) per Junction
Green Acres	20	2.69
Montague	0	0.00
Sleeping Giant	12	7.11

L-3 Bickford Lane Connection

Community	Junction Count	Assigned MDD
Green Acres	19	2.83
Montague	0	0.00
Sleeping Giant	11	7.76

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,426.53	20	49	J-643	Passed	86	1.79
J-747	1,000.00	2,421.17	20	32	J-643	Passed	81	1.79
J-777	1,000.00	2,426.67	20	46	J-643	Passed	85	2.83
J-778	1,000.00	2,425.93	20	31	J-643	Passed	83	2.83
1 - Hydrant Test	1,000.00	2,426.11	20	27	J-643	Passed	83	2.83
J-780	1,000.00	2,426.57	20	23	J-643	Passed	80	2.83
J-781	1,000.00	2,176.62	20	21	H-124	Passed	80	2.83
H-124	1,000.00	1,484.88	20	20	J-643	Passed	80	2.83
H-123	1,000.00	2,044.57	20	20	J-643	Passed	80	2.83
J-787	1,000.00	1,979.07	20	23	H-122	Passed	79	2.83
H-122	1,000.00	1,425.61	20	20	J-643	Passed	76	2.83
J-790	1,000.00	2,339.26	20	21	H-121	Passed	80	2.83
H-121	1,000.00	1,867.14	20	20	J-643	Passed	79	2.83
J-793	1,000.00	2,426.32	20	26	J-643	Passed	83	2.83
H-120	1,000.00	2,227.53	20	20	J-643	Passed	81	2.83
J-798	1,000.00	2,293.02	20	20	J-643	Passed	84	2.83
J-799	1,000.00	2,426.61	20	34	J-643	Passed	85	2.83
H-125	1,000.00	2,426.70	20	39	J-643	Passed	85	2.83
J-876	1,000.00	2,426.75	20	49	J-643	Passed	89	7.11
H-128	1,000.00	2,426.90	20	43	J-643	Passed	89	7.11
J-878	1,000.00	2,426.95	20	51	J-643	Passed	89	7.11
H-131	1,000.00	2,427.21	20	52	J-643	Passed	88	7.11
H-127	1,000.00	2,426.60	20	38	J-643	Passed	88	7.11
H-129	1,000.00	2,426.79	20	42	J-643	Passed	89	7.11
H-126	1,000.00	2,426.56	20	43	J-643	Passed	85	7.11
H-130	1,000.00	2,426.77	20	39	J-643	Passed	85	7.11
J-1084	1,000.00	2,417.81	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1097	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1098	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1099	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1100	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1101	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1102	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1103	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1104	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1108	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1109	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1110	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1111	1,000.00	2,427.44	20	58	J-643	Passed	91	7.11
J-1112	1,000.00	2,318.94	20	20	J-643	Passed	83	2.83
J-1113	1,000.00	2,275.40	20	20	J-643	Passed	82	2.83
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,420.90	20	26	J-643	Passed	82	0.00
J-1116	1,000.00	2,426.57	20	56	J-643	Passed	89	7.11
J-1117	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1118	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1119	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1120	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1121	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1122	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1123	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1124	1,000.00	2,427.01	20	50	J-643	Passed	89	7.11

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1126	1,000.00	2,426.87	20	49	J-643	Passed	89	7.11

APPENDIX 2-B
FINANCIAL INFORMATION

CITY OF LIVINGSTON
COMBINED CASH INVESTMENT
JUNE 30, 2021

COMBINED CASH ACCOUNTS

CASH ALLOCATION RECONCILIATION

5210	ALLOCATION TO WATER	1,320,298.97
5310	ALLOCATION TO SEWER	650,767.46
	TOTAL ALLOCATIONS TO OTHER FUNDS	1,971,066.43
	ZERO PROOF IF ALLOCATIONS BALANCE	1,971,066.43

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2021

WATER

	ASSETS			
5210-101000	CASH	1,320,298.97		
5210-102190	SYSTEM DEVELOPMENT FEES	584,030.87		
5210-103300	PETTY CASH - WATER DEPT	300.00		
	TOTAL CASH		1,904,629.84	
	SPECIAL ASSESSMENTS REC.			
5210-118014	2014 - ASSESSMENTS RECEIVABLE	154.89		
	TOTAL SPECIAL ASSESSMENTS REC.		154.89	
5210-122000	UTILITIES RECEIVABLE		246,366.76	
5210-122999	ACCOUNTS RECEIVABLE		5,460.94	
5210-141000	PREPAID INSURANCE		3,774.28	
5210-181000	LAND		52,980.00	
5210-182000	BUILDINGS		645,920.40	
5210-182100	ALLOW FOR DEPREC/BUILDINGS		(392,226.57)	
5210-186000	MACHINERY & EQUIPMENT		919,824.85	
5210-186100	ALLOW FOR DEPR/MACH & EQUIPMEN		(700,780.64)	
5210-189100	SOURCE OF SUPPLY		1,236,274.93	
5210-189110	ALLOW FOR DEPR/SOURCE OF SUPPL		(903,530.62)	
5210-189300	TREATMENT PLANT		48,164.00	
5210-189310	ALLOW FOR DEPR/TREATMENT		(48,164.00)	
5210-189400	TRANSMISSION & DISTRIBUTION		10,133,567.19	
5210-189410	ALLOW FOR DEPR/TRANS-DISTRIB		(3,851,030.80)	
5210-199901	DEFERRED OUTFLOWS-OPEB		7,926.00	
5210-199905	DEFERRED OUTFLOW OF RESOURCES		102,132.41	
	TOTAL ASSETS			9,411,443.86
	LIABILITIES AND EQUITY			
	LIABILITIES			
5210-201000	PAYROLL PAYABLE		17,427.45	
5210-202000	ACCOUNTS PAYABLE		20,237.14	
5210-202500	UTILITY DEPOSITS PAYABLE		1,530.90	
5210-215100	OPEB LIABILITY		76,840.00	
5210-223805	DEFERRED INFLOWS OF RESOURCES		27,246.88	
5210-223806	DEFERRED INFLOWS OPEB		27,927.00	
5210-237000	NET PENSION LIABILITY		424,878.99	
5210-239000	COMPENSATED ABSENCES PAYABLE		21,546.38	
	TOTAL LIABILITIES			617,634.74
	FUND EQUITY			
5210-272000	UNRESERVED RETAINED EARNINGS		8,120,770.12	

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2021

WATER

UNAPPROPRIATED FUND BALANCE:			
REVENUE OVER EXPENDITURES - YTD	673,039.00		
BALANCE - CURRENT DATE		673,039.00	
TOTAL FUND EQUITY			8,793,809.12
TOTAL LIABILITIES AND EQUITY			9,411,443.86

CITY OF LIVINGSTON
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2021

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	INTERGOVERNMENTAL REVENUES					
5210-335050	STATE SHARE PENSION	21,906.59	21,906.59	.00	(21,906.59)	.0
	TOTAL INTERGOVERNMENTAL REVENUES	21,906.59	21,906.59	.00	(21,906.59)	.0
	CHARGES FOR SERVICES					
5210-342055	BAD DEBT RECOVERY	(987.08)	(987.08)	.00	987.08	.0
5210-343021	METERED WATER SALES	1,730,940.72	1,730,940.72	1,495,015.00	(235,925.72)	115.8
5210-343022	WATER TAPS	8,400.00	8,400.00	5,000.00	(3,400.00)	168.0
5210-343024	SALE OF WATER MAT & SUPPL	62,031.15	62,031.15	20,000.00	(42,031.15)	310.2
5210-343026	SYSTEM DEVELOPMENT FEE	255,883.00	255,883.00	76,039.00	(179,844.00)	336.5
5210-343027	MISC. WATER REVENUES	15,145.85	15,145.85	4,000.00	(11,145.85)	378.7
	TOTAL CHARGES FOR SERVICES	2,071,413.64	2,071,413.64	1,600,054.00	(471,359.64)	129.5
	MISCELLANEOUS REVENUES					
5210-363010	SPECIAL ASSESSMENTS	.00	.00	300.00	300.00	.0
	TOTAL MISCELLANEOUS REVENUES	.00	.00	300.00	300.00	.0
	INVESTMENT EARNINGS					
5210-371010	INTEREST & DIVIDEND	4,801.08	4,801.08	6,500.00	1,698.92	73.9
	TOTAL INVESTMENT EARNINGS	4,801.08	4,801.08	6,500.00	1,698.92	73.9
	TOTAL FUND REVENUE	2,098,121.31	2,098,121.31	1,606,854.00	(491,267.31)	130.6

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2021

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
WATER DEPARTMENT - PUBLIC WORKS						
	WATER ADMINISTRATION					
5210-802-430510-110	SALARIES AND WAGES	45,226.60	45,226.60	58,048.00	12,821.40	77.9
5210-802-430510-120	OVERTIME	357.90	357.90	250.00	(107.90)	143.2
5210-802-430510-141	UNEMPLOYMENT INSURANCE	161.24	161.24	321.00	159.76	50.2
5210-802-430510-142	WORKERS' COMPENSATION	336.11	336.11	567.00	230.89	59.3
5210-802-430510-143	HEALTH INSURANCE	8,561.05	8,561.05	9,123.00	561.95	93.8
5210-802-430510-144	F.I.C.A.	2,697.95	2,697.95	3,614.00	916.05	74.7
5210-802-430510-145	P.E.R.S.	14,474.30	14,474.30	4,376.00	(10,098.30)	330.8
5210-802-430510-151	MEDICARE	630.92	630.92	845.00	214.08	74.7
5210-802-430510-212	COMPUTER SUPPLIES	117.95	117.95	750.00	632.05	15.7
5210-802-430510-220	OPERATING SUPPLIES	349.01	349.01	1,200.00	850.99	29.1
5210-802-430510-224	JANITOR CONTRACT/SUPPLIES	1,357.18	1,357.18	1,200.00	(157.18)	113.1
5210-802-430510-331	LEGAL NOTICES	.00	.00	300.00	300.00	.0
5210-802-430510-333	MEMBER/REGISTRATION FEES	1,365.00	1,365.00	1,500.00	135.00	91.0
5210-802-430510-346	INTERNET SERVICE	1,479.60	1,479.60	1,400.00	(79.60)	105.7
5210-802-430510-350	PROFESSIONAL SERVICES	135.00	135.00	.00	(135.00)	.0
5210-802-430510-352	CONSULTANT SERVICES	11,782.97	11,782.97	12,000.00	217.03	98.2
5210-802-430510-357	SOFTWARE SERVICES	2,620.06	2,620.06	750.00	(1,870.06)	349.3
5210-802-430510-368	R&M-COMPUTER/OFFICE MACH	4,205.85	4,205.85	1,085.00	(3,120.85)	387.6
5210-802-430510-370	TRAVEL/LODGING/MEALS	15.98	15.98	750.00	734.02	2.1
5210-802-430510-380	TRAINING SERVICES	160.00	160.00	1,000.00	840.00	16.0
5210-802-430510-394	INTERFUND GOVERNMENTAL SU	5,609.02	5,609.02	8,600.00	2,990.98	65.2
5210-802-430510-510	LIABILITY INSURANCE	17,842.00	17,842.00	29,891.00	12,049.00	59.7
5210-802-430510-512	INSURANCE ON BUILDINGS	5,113.00	5,113.00	5,113.00	.00	100.0
5210-802-430510-513	INS ON VEHICLES & EQUIP	1,606.00	1,606.00	1,606.00	.00	100.0
5210-802-430510-535	LEASE AGREEMENTS	1,143.00	1,143.00	1,750.00	607.00	65.3
	TOTAL WATER ADMINISTRATION	127,347.69	127,347.69	146,039.00	18,691.31	87.2

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2021

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	WATER SERVICES					
5210-802-430515-110	SALARIES AND WAGES	241,828.81	241,828.81	265,960.00	24,131.19	90.9
5210-802-430515-120	OVERTIME	21,003.63	21,003.63	26,000.00	4,996.37	80.8
5210-802-430515-141	UNEMPLOYMENT INSURANCE	954.41	954.41	1,642.00	687.59	58.1
5210-802-430515-142	WORKERS' COMPENSATION	17,899.11	17,899.11	24,268.00	6,368.89	73.8
5210-802-430515-143	HEALTH INSURANCE	54,214.14	54,214.14	60,456.00	6,241.86	89.7
5210-802-430515-144	F.I.C.A.	16,273.31	16,273.31	18,511.00	2,237.69	87.9
5210-802-430515-145	P.E.R.S.	23,251.55	23,251.55	26,528.00	3,276.45	87.7
5210-802-430515-148	CLOTHING ALLOWANCE	7,122.96	7,122.96	6,600.00	(522.96)	107.9
5210-802-430515-151	MEDICARE	3,805.87	3,805.87	4,329.00	523.13	87.9
5210-802-430515-231	REP & MAINT SUPPLIES	12,004.41	12,004.41	11,500.00	(504.41)	104.4
5210-802-430515-232	REP & MAINT-VEHICLES	1,740.50	1,740.50	4,000.00	2,259.50	43.5
5210-802-430515-236	FUEL/OIL/DIESEL	9,450.07	9,450.07	16,000.00	6,549.93	59.1
5210-802-430515-237	MAIN/HYDRANT/WELL PARTS	39,953.57	39,953.57	45,000.00	5,046.43	88.8
5210-802-430515-238	METER PARTS	65,569.77	65,569.77	50,000.00	(15,569.77)	131.1
5210-802-430515-317	UTILITY LOCATE SERVICES	849.71	849.71	900.00	50.29	94.4
5210-802-430515-341	UTILITIES-GAS/ELECTRIC	128,150.99	128,150.99	125,000.00	(3,150.99)	102.5
5210-802-430515-347	CELLULAR PHONE	2,237.42	2,237.42	3,200.00	962.58	69.9
5210-802-430515-350	PROFESSIONAL SERVICES	3,463.06	3,463.06	15,000.00	11,536.94	23.1
5210-802-430515-355	WATER ANALYSIS & TREATMEN	11,733.01	11,733.01	15,000.00	3,266.99	78.2
5210-802-430515-361	REP & MAINT-GENERAL	8,631.83	8,631.83	9,000.00	368.17	95.9
5210-802-430515-362	REP & MAINT-VEHICLES	14,199.51	14,199.51	10,000.00	(4,199.51)	142.0
5210-802-430515-368	R&M-COMPUTER/OFFICE MACH	4,289.12	4,289.12	3,260.00	(1,029.12)	131.6
5210-802-430515-370	TRAVEL/LODGING/MEALS	26.83	26.83	1,275.00	1,248.17	2.1
5210-802-430515-380	TRAINING SERVICES	60.00	60.00	2,500.00	2,440.00	2.4
5210-802-430515-540	STATE FEE ASSESSMENTS	8,386.00	8,386.00	8,000.00	(386.00)	104.8
	TOTAL WATER SERVICES	697,099.59	697,099.59	753,929.00	56,829.41	92.5
	FACILITIES/CAPITAL OUTLAY					
5210-802-430520-220	OPERATING SUPPLIES	1,639.96	1,639.96	3,500.00	1,860.04	46.9
5210-802-430520-227	CAPITAL OUTLAY LESS THAN	3,857.00	3,857.00	7,500.00	3,643.00	51.4
5210-802-430520-341	UTILITIES-GAS/ELECTRIC	2,451.00	2,451.00	2,500.00	49.00	98.0
5210-802-430520-342	UTILITIES-WTR,SWR,GARB	151.32	151.32	2,500.00	2,348.68	6.1
5210-802-430520-361	REP & MAINT-GENERAL	4,975.38	4,975.38	5,500.00	524.62	90.5
5210-802-430520-924	BUILDING IMPROV	.00	.00	6,000.00	6,000.00	.0
5210-802-430520-940	CAPITAL OUTLAY	.00	.00	37,000.00	37,000.00	.0
5210-802-430520-960	INFRASTRUCTURE/WATER/SEWE	.00	.00	206,490.00	206,490.00	.0
5210-802-430520-976	VEHICLES	.00	.00	35,000.00	35,000.00	.0
5210-802-430520-995	WELL REHAB	.00	.00	15,000.00	15,000.00	.0
	TOTAL FACILITIES/CAPITAL OUTLAY	13,074.66	13,074.66	320,990.00	307,915.34	4.1

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	CUSTOMER ACCTG/COLLECTION					
5210-802-430570-110	SALARIES AND WAGES	31,932.55	31,932.55	37,449.00	5,516.45	85.3
5210-802-430570-120	OVERTIME	232.02	232.02	1,250.00	1,017.98	18.6
5210-802-430570-141	UNEMPLOYMENT INSURANCE	113.62	113.62	213.00	99.38	53.3
5210-802-430570-142	WORKERS' COMPENSATION	335.48	335.48	516.00	180.52	65.0
5210-802-430570-143	HEALTH INSURANCE	8,379.61	8,379.61	10,992.00	2,612.39	76.2
5210-802-430570-144	F.I.C.A.	1,874.18	1,874.18	2,399.00	524.82	78.1
5210-802-430570-145	P.E.R.S.	2,821.85	2,821.85	3,394.00	572.15	83.1
5210-802-430570-151	MEDICARE	438.45	438.45	561.00	122.55	78.2
5210-802-430570-200	SUPPLIES	.00	.00	200.00	200.00	.0
5210-802-430570-213	BILLING SUPPLIES	4,701.43	4,701.43	3,600.00	(1,101.43)	130.6
5210-802-430570-310	COMM/TRANS(POSTAGE)	4,324.32	4,324.32	5,600.00	1,275.68	77.2
5210-802-430570-357	SOFTWARE SERVICES	2,299.91	2,299.91	1,900.00	(399.91)	121.1
5210-802-430570-368	R&M-COMPUTER/OFFICE MACH	1,048.27	1,048.27	1,303.00	254.73	80.5
5210-802-430570-370	TRAVEL/LODGING/MEALS	.00	.00	700.00	700.00	.0
5210-802-430570-380	TRAINING SERVICES	199.00	199.00	500.00	301.00	39.8
5210-802-430570-630	PAYING AGENT FEES/SER CHG	5,978.36	5,978.36	3,000.00	(2,978.36)	199.3
	TOTAL CUSTOMER ACCTG/COLLECTION	64,679.05	64,679.05	73,577.00	8,897.95	87.9
	TOTAL PUBLIC WORKS	902,200.99	902,200.99	1,294,535.00	392,334.01	69.7
WATER DEPARTMENT - MISCELLANEOUS						
	OTHER UNALLOCATED COSTS					
5210-802-510331-131	COMPENSATED ABSENCES	2,131.48	2,131.48	.00	(2,131.48)	.0
5210-802-510331-132	OTHER POST EMPLOYMENT BENEFITS	4,033.00	4,033.00	.00	(4,033.00)	.0
5210-802-510331-511	CLAIMS PAID/DEDUCTIBLE	1,500.00	1,500.00	1,500.00	.00	100.0
5210-802-510331-830	DEPRECIATION	337,739.81	337,739.81	.00	(337,739.81)	.0
	TOTAL OTHER UNALLOCATED COSTS	345,404.29	345,404.29	1,500.00	(343,904.29)	23027.
	TOTAL MISCELLANEOUS	345,404.29	345,404.29	1,500.00	(343,904.29)	23027.
WATER DEPARTMENT - OTHER FINANCING USES						
	INTERFUND OP TRANSFERS					
5210-802-521000-392	ADMINISTRATIVE COST ALLOC	177,477.03	177,477.03	140,696.00	(36,781.03)	126.1
	TOTAL INTERFUND OP TRANSFERS	177,477.03	177,477.03	140,696.00	(36,781.03)	126.1
	TOTAL OTHER FINANCING USES	177,477.03	177,477.03	140,696.00	(36,781.03)	126.1
	TOTAL WATER DEPARTMENT	1,425,082.31	1,425,082.31	1,436,731.00	11,648.69	99.2
	TOTAL FUND EXPENDITURES	1,425,082.31	1,425,082.31	1,436,731.00	11,648.69	99.2
	NET REVENUE OVER EXPENDITURES	673,039.00	673,039.00	170,123.00	(502,916.00)	395.6

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2021

SEWER

	ASSETS			
5310-101000	CASH	650,767.46		
5310-102170	RESERVED - INTERCAP LOAN	14,174.00		
5310-102171	RESERVE - DNRC	533,261.00		
5310-102172	RESERVE - USDA DEBT SERVICE	162,600.00		
5310-102190	SYSTEM DEVELOPMENT FEES	738,615.32		
5310-102240	SHORT-LIVED ASSET RESERVE	330,255.00		
	TOTAL CASH		2,429,672.78	
	SPECIAL ASSESSMENTS REC.			
5310-118014	2014 - ASSESSMENTS RECEIVABLE	115.97		
	TOTAL SPECIAL ASSESSMENTS REC.		115.97	
5310-122000	UTILITIES RECEIVABLE		322,200.87	
5310-132003	DUE FROM STATE REVOLVING FUND		22,500.00	
5310-141000	PREPAID INSURANCE		3,918.05	
5310-182000	BUILDINGS		4,271,510.78	
5310-182100	ALLOW FOR DEPREC/BUILDINGS		(3,336,218.29)	
5310-186000	MACHINERY & EQUIPMENT		1,220,404.29	
5310-186100	ALLOW FOR DEPR/MACH & EQUIPMEN		(925,154.02)	
5310-188000	CONSTRUCTION IN PROGRESS		7,140.42	
5310-189300	TREATMENT PLANT		23,532,236.34	
5310-189310	ALLOW FOR DEPR/TREATMENT		(4,126,897.75)	
5310-189400	TRANSMISSION & DISTRIBUTION		9,284,308.16	
5310-189410	ALLOW FOR DEPR/TRANS-DISTRIB		(3,438,215.69)	
5310-199901	DEFERRED OUTFLOWS-OPEB		9,848.00	
5310-199905	DEFERRED OUTFLOW OF RESOURCES		150,798.35	
	TOTAL ASSETS			29,428,168.26
	LIABILITIES AND EQUITY			
	LIABILITIES			
5310-201000	PAYROLL PAYABLE		24,837.03	
5310-202000	ACCOUNTS PAYABLE		214,416.12	
5310-215100	OPEB LIABILITY		95,468.00	
5310-223805	DEFERRED INFLOWS OF RESOURCES		40,229.98	
5310-223806	DEFERRED INFLOWS OPEB		34,698.00	
5310-231000	BONDS PAYABLE		14,750,724.89	
5310-231301	BONDS PAYABLE - ARRA B		166,000.00	
5310-237000	NET PENSION LIABILITY		627,333.21	
5310-239000	COMPENSATED ABSENCES PAYABLE		50,301.94	
	TOTAL LIABILITIES			16,004,009.17
	FUND EQUITY			

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2021

SEWER

5310-250410	RESERVE FOR DNRC		710,035.00	
5310-250600	RESERVE FOR REPLACEMENT AND DE		330,255.00	
5310-272000	UNRESERVED RETAINED EARNINGS		12,349,521.72	
	UNAPPROPRIATED FUND BALANCE:			
	REVENUE OVER EXPENDITURES - YTD	34,347.37		
	BALANCE - CURRENT DATE		34,347.37	
	TOTAL FUND EQUITY			13,424,159.09
	TOTAL LIABILITIES AND EQUITY			29,428,168.26

CITY OF LIVINGSTON
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2021

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	INTERGOVERNMENTAL REVENUES					
5310-331074	USDA RURAL DEVELOPMENT	22,500.00	22,500.00	.00	(22,500.00)	.0
5310-334121	DNRC GRANTS	400,000.00	400,000.00	.00	(400,000.00)	.0
5310-335050	STATE SHARE PENSION	32,345.05	32,345.05	.00	(32,345.05)	.0
	TOTAL INTERGOVERNMENTAL REVENUES	454,845.05	454,845.05	.00	(454,845.05)	.0
	CHARGES FOR SERVICES					
5310-342055	BAD DEBT RECOVERY	43.92	43.92	.00	(43.92)	.0
5310-343031	SEWER SERVICE CHARGES	2,457,961.97	2,457,961.97	2,484,500.00	26,538.03	98.9
5310-343032	SEWER TAPS	10,689.41	10,689.41	5,000.00	(5,689.41)	213.8
5310-343036	MISC SEWER REVENUE	13,330.00	13,330.00	5,000.00	(8,330.00)	266.6
5310-343038	SYSTEM DEVELOPMENT FEE	318,051.00	318,051.00	79,991.00	(238,060.00)	397.6
	TOTAL CHARGES FOR SERVICES	2,800,076.30	2,800,076.30	2,574,491.00	(225,585.30)	108.8
	INVESTMENT EARNINGS					
5310-371010	INTEREST & DIVIDEND	7,899.60	7,899.60	10,000.00	2,100.40	79.0
	TOTAL INVESTMENT EARNINGS	7,899.60	7,899.60	10,000.00	2,100.40	79.0
	TOTAL FUND REVENUE	3,262,820.95	3,262,820.95	2,584,491.00	(678,329.95)	126.3

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2021

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
SEWER DEPARTMENT - PUBLIC WORKS						
	SEWER ADMINISTRATION					
5310-803-430610-110	SALARIES AND WAGES	46,457.23	46,457.23	51,030.00	4,572.77	91.0
5310-803-430610-120	OVERTIME	369.77	369.77	250.00	(119.77)	147.9
5310-803-430610-141	UNEMPLOYMENT INSURANCE	165.62	165.62	282.00	116.38	58.7
5310-803-430610-142	WORKERS' COMPENSATION	344.36	344.36	466.00	121.64	73.9
5310-803-430610-143	HEALTH INSURANCE	8,761.86	8,761.86	9,343.00	581.14	93.8
5310-803-430610-144	F.I.C.A.	2,770.50	2,770.50	3,179.00	408.50	87.2
5310-803-430610-145	P.E.R.S.	70,782.59	70,782.59	4,497.00	(66,285.59)	1574.0
5310-803-430610-151	MEDICARE	647.85	647.85	744.00	96.15	87.1
5310-803-430610-210	OFFICE SUPPLIES	416.44	416.44	1,000.00	583.56	41.6
5310-803-430610-224	JANITOR CONTRACT/SUPPLIES	1,347.11	1,347.11	1,500.00	152.89	89.8
5310-803-430610-331	LEGAL NOTICES	570.50	570.50	300.00	(270.50)	190.2
5310-803-430610-346	INTERNET SERVICE	1,815.74	1,815.74	1,650.00	(165.74)	110.0
5310-803-430610-352	CONSULTANT SERVICES	138,302.38	138,302.38	20,000.00	(118,302.38)	691.5
5310-803-430610-357	SOFTWARE SERVICES	2,120.06	2,120.06	1,000.00	(1,120.06)	212.0
5310-803-430610-368	R&M-COMPUTER/OFFICE MACH	2,318.76	2,318.76	1,110.00	(1,208.76)	208.9
5310-803-430610-394	INTERFUND GOVERNMENTAL SU	5,609.02	5,609.02	8,600.00	2,990.98	65.2
5310-803-430610-510	LIABILITY INSURANCE	28,250.00	28,250.00	26,165.00	(2,085.00)	108.0
5310-803-430610-512	INSURANCE ON BUILDINGS	35,280.00	35,280.00	35,280.00	.00	100.0
5310-803-430610-513	INS ON VEHICLES & EQUIP	2,388.00	2,388.00	2,388.00	.00	100.0
5310-803-430610-535	LEASE AGREEMENTS	1,901.50	1,901.50	2,000.00	98.50	95.1
	TOTAL SEWER ADMINISTRATION	350,619.29	350,619.29	170,784.00	(179,835.29)	205.3
	FACILITIES					
5310-803-430620-220	OPERATING SUPPLIES	753.34	753.34	1,000.00	246.66	75.3
5310-803-430620-341	UTILITIES-GAS/ELECTRIC	2,451.03	2,451.03	2,500.00	48.97	98.0
5310-803-430620-342	UTILITIES-WTR,SWR,GARB	.00	.00	1,600.00	1,600.00	.0
5310-803-430620-343	UTILITIES-PHONES	.00	.00	900.00	900.00	.0
5310-803-430620-347	CELLULAR PHONE	2,659.17	2,659.17	3,000.00	340.83	88.6
5310-803-430620-361	REP & MAINT-GENERAL	1,215.61	1,215.61	2,500.00	1,284.39	48.6
5310-803-430620-924	BUILDING IMPROV	.00	.00	3,000.00	3,000.00	.0
	TOTAL FACILITIES	7,079.15	7,079.15	14,500.00	7,420.85	48.8

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2021

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	SEWER SERVICES					
5310-803-430625-110	SALARIES AND WAGES	146,279.64	146,279.64	147,784.00	1,504.36	99.0
5310-803-430625-120	OVERTIME	14,456.79	14,456.79	13,500.00	(956.79)	107.1
5310-803-430625-141	UNEMPLOYMENT INSURANCE	580.31	580.31	904.00	323.69	64.2
5310-803-430625-142	WORKERS' COMPENSATION	10,888.88	10,888.88	13,353.00	2,464.12	81.6
5310-803-430625-143	HEALTH INSURANCE	27,436.41	27,436.41	27,480.00	43.59	99.8
5310-803-430625-144	F.I.C.A.	9,716.56	9,716.56	10,186.00	469.44	95.4
5310-803-430625-145	P.E.R.S.	14,156.66	14,156.66	14,408.00	251.34	98.3
5310-803-430625-148	CLOTHING ALLOWANCE	3,463.96	3,463.96	3,000.00	(463.96)	115.5
5310-803-430625-151	MEDICARE	2,272.40	2,272.40	2,382.00	109.60	95.4
5310-803-430625-223	MAINTENANCE CLOTHING	(18.00)	(18.00)	.00	18.00	.0
5310-803-430625-231	REP & MAINT SUPPLIES	3,618.02	3,618.02	6,000.00	2,381.98	60.3
5310-803-430625-232	REP & MAINT-VEHICLES	1,869.12	1,869.12	2,500.00	630.88	74.8
5310-803-430625-236	FUEL/OIL/DIESEL	9,935.35	9,935.35	8,000.00	(1,935.35)	124.2
5310-803-430625-237	MAIN/HYDRANT/WELL PARTS	1,909.13	1,909.13	12,000.00	10,090.87	15.9
5310-803-430625-255	SAFETY & RISK MANAGEMENT	.00	.00	500.00	500.00	.0
5310-803-430625-317	UTILITY LOCATE SERVICES	738.95	738.95	900.00	161.05	82.1
5310-803-430625-344	UTILITIES-GAS/ELECTRIC	7,509.00	7,509.00	12,500.00	4,991.00	60.1
5310-803-430625-361	REP & MAINT-GENERAL	9,797.41	9,797.41	12,000.00	2,202.59	81.7
5310-803-430625-362	REP & MAINT-VEHICLES	7,146.42	7,146.42	6,000.00	(1,146.42)	119.1
5310-803-430625-368	R&M-COMPUTER/OFFICE MACH	771.85	771.85	655.00	(116.85)	117.8
5310-803-430625-370	TRAVEL/LODGING/MEALS	29.36	29.36	750.00	720.64	3.9
5310-803-430625-380	TRAINING SERVICES	50.00	50.00	500.00	450.00	10.0
5310-803-430625-531	EQUIP RENTAL	5,364.00	5,364.00	6,000.00	636.00	89.4
5310-803-430625-983	MAINLINE REPLACEMENT	.00	.00	20,000.00	20,000.00	.0
	TOTAL SEWER SERVICES	277,972.22	277,972.22	321,302.00	43,329.78	86.5
	COLLECTION AND TRANSMISSION					
5310-803-430630-940	CAPITAL OUTLAY	.00	.00	32,000.00	32,000.00	.0
5310-803-430630-960	INFRASTRUCTURE/WATER/SEWE	.00	.00	397,460.00	397,460.00	.0
	TOTAL COLLECTION AND TRANSMISSION	.00	.00	429,460.00	429,460.00	.0

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2021

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	SEWER TREATMENT PLANT					
5310-803-430640-110	SALARIES AND WAGES	218,339.35	218,339.35	210,534.00	(7,805.35)	103.7
5310-803-430640-120	OVERTIME	12,272.36	12,272.36	13,000.00	727.64	94.4
5310-803-430640-141	UNEMPLOYMENT INSURANCE	832.83	832.83	1,249.00	416.17	66.7
5310-803-430640-142	WORKERS' COMPENSATION	9,493.86	9,493.86	13,853.00	4,359.14	68.5
5310-803-430640-143	HEALTH INSURANCE	43,965.01	43,965.01	43,968.00	2.99	100.0
5310-803-430640-144	F.I.C.A.	14,399.61	14,399.61	14,082.00	(317.61)	102.3
5310-803-430640-145	P.E.R.S.	20,654.50	20,654.50	19,920.00	(734.50)	103.7
5310-803-430640-148	CLOTHING ALLOWANCE	4,800.00	4,800.00	3,600.00	(1,200.00)	133.3
5310-803-430640-151	MEDICARE	3,367.62	3,367.62	3,293.00	(74.62)	102.3
5310-803-430640-222	CHEMICALS	37,740.37	37,740.37	20,000.00	(17,740.37)	188.7
5310-803-430640-225	LABORATORY SUPPLIES	10,609.52	10,609.52	14,000.00	3,390.48	75.8
5310-803-430640-231	REP & MAINT SUPPLIES	19,553.37	19,553.37	18,000.00	(1,553.37)	108.6
5310-803-430640-232	REP & MAINT-VEHICLES	865.95	865.95	750.00	(115.95)	115.5
5310-803-430640-236	FUEL/OIL/DIESEL	4,858.83	4,858.83	2,500.00	(2,358.83)	194.4
5310-803-430640-255	SAFETY & RISK MANAGEMENT	558.97	558.97	2,000.00	1,441.03	28.0
5310-803-430640-334	SUBSCRIPTIONS/DUES	444.88	444.88	750.00	305.12	59.3
5310-803-430640-341	UTILITIES-GAS/ELECTRIC	173,430.74	173,430.74	195,000.00	21,569.26	88.9
5310-803-430640-342	UTILITIES-WTR,SWR,GARB	22.86	22.86	5,000.00	4,977.14	.5
5310-803-430640-343	UTILITIES-PHONES	986.03	986.03	840.00	(146.03)	117.4
5310-803-430640-350	PROFESSIONAL SERVICES	17,278.99	17,278.99	12,000.00	(5,278.99)	144.0
5310-803-430640-355	WATER ANALYSIS & TREATMEN	58,639.42	58,639.42	61,920.00	3,280.58	94.7
5310-803-430640-357	SOFTWARE SERVICES	2,275.87	2,275.87	1,500.00	(775.87)	151.7
5310-803-430640-361	REP & MAINT-GENERAL	19,693.13	19,693.13	20,000.00	306.87	98.5
5310-803-430640-362	REP & MAINT-VEHICLES	165.52	165.52	1,500.00	1,334.48	11.0
5310-803-430640-368	R&M-COMPUTER/OFFICE MACH	4,616.11	4,616.11	5,211.00	594.89	88.6
5310-803-430640-370	TRAVEL/LODGING/MEALS	16.99	16.99	750.00	733.01	2.3
5310-803-430640-380	TRAINING SERVICES	1,125.72	1,125.72	1,500.00	374.28	75.1
5310-803-430640-396	DISPOSAL FEES	26,150.30	26,150.30	7,500.00	(18,650.30)	348.7
5310-803-430640-540	STATE FEE ASSESSMENTS	7,431.50	7,431.50	5,500.00	(1,931.50)	135.1
5310-803-430640-924	BUILDING IMPROV	.00	.00	6,000.00	6,000.00	.0
	TOTAL SEWER TREATMENT PLANT	714,590.21	714,590.21	705,720.00	(8,870.21)	101.3

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2021

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	CUSTOMER ACCTG/COLLECTION					
5310-803-430670-110	SALARIES AND WAGES	31,412.66	31,412.66	37,449.00	6,036.34	83.9
5310-803-430670-120	OVERTIME	229.58	229.58	1,250.00	1,020.42	18.4
5310-803-430670-141	UNEMPLOYMENT INSURANCE	111.79	111.79	213.00	101.21	52.5
5310-803-430670-142	WORKERS' COMPENSATION	330.17	330.17	516.00	185.83	64.0
5310-803-430670-143	HEALTH INSURANCE	8,242.14	8,242.14	10,992.00	2,749.86	75.0
5310-803-430670-144	F.I.C.A.	1,845.33	1,845.33	2,399.00	553.67	76.9
5310-803-430670-145	P.E.R.S.	2,776.01	2,776.01	3,394.00	617.99	81.8
5310-803-430670-151	MEDICARE	431.61	431.61	561.00	129.39	76.9
5310-803-430670-210	OFFICE SUPPLIES	.00	.00	200.00	200.00	.0
5310-803-430670-213	BILLING SUPPLIES	5,694.14	5,694.14	3,600.00	(2,094.14)	158.2
5310-803-430670-310	COMM/TRANS(POSTAGE)	3,439.66	3,439.66	5,600.00	2,160.34	61.4
5310-803-430670-357	SOFTWARE SERVICES	2,299.82	2,299.82	1,860.00	(439.82)	123.7
5310-803-430670-368	R&M-COMPUTER/OFFICE MACH	1,048.27	1,048.27	1,303.00	254.73	80.5
5310-803-430670-370	TRAVEL/LODGING/MEALS	.00	.00	700.00	700.00	.0
5310-803-430670-380	TRAINING SERVICES	199.00	199.00	500.00	301.00	39.8
5310-803-430670-630	PAYING AGENT FEES/SER CHG	5,978.39	5,978.39	3,000.00	(2,978.39)	199.3
	TOTAL CUSTOMER ACCTG/COLLECTION	64,038.57	64,038.57	73,537.00	9,498.43	87.1
	TOTAL PUBLIC WORKS	1,414,299.44	1,414,299.44	1,715,303.00	301,003.56	82.5
SEWER DEPARTMENT - DEBT SERVICE						
	DEBT SERVICE PAYMENTS					
5310-803-490500-610	PRINCIPAL	.00	.00	448,634.00	448,634.00	.0
5310-803-490500-620	INTEREST	326,265.26	326,265.26	331,721.00	5,455.74	98.4
5310-803-490500-630	PAYING AGENT FEES/SER CHG	.00	.00	350.00	350.00	.0
	TOTAL DEBT SERVICE PAYMENTS	326,265.26	326,265.26	780,705.00	454,439.74	41.8
	TOTAL DEBT SERVICE	326,265.26	326,265.26	780,705.00	454,439.74	41.8
SEWER DEPARTMENT - MISCELLANEOUS						
	OTHER UNALLOCATED COSTS					
5310-803-510331-131	COMPENSATED ABSENCES	(6,063.14)	(6,063.14)	.00	6,063.14	.0
5310-803-510331-132	OTHER POST EMPLOYMENT BENEFITS	5,081.00	5,081.00	.00	(5,081.00)	.0
5310-803-510331-511	CLAIMS PAID/DEDUCTIBLE	340.00	340.00	2,500.00	2,160.00	13.6
5310-803-510331-830	DEPRECIATION	1,251,923.74	1,251,923.74	.00	(1,251,923.74)	.0
	TOTAL OTHER UNALLOCATED COSTS	1,251,281.60	1,251,281.60	2,500.00	(1,248,781.60)	50051.
	TOTAL MISCELLANEOUS	1,251,281.60	1,251,281.60	2,500.00	(1,248,781.60)	50051.
SEWER DEPARTMENT - OTHER FINANCING USES						

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	INTERFUND OP TRANSFERS					
5310-803-521000-392	ADMINISTRATIVE COST ALLOC	236,627.28	236,627.28	187,595.00	(49,032.28)	126.1
	TOTAL INTERFUND OP TRANSFERS	236,627.28	236,627.28	187,595.00	(49,032.28)	126.1
	TOTAL OTHER FINANCING USES	236,627.28	236,627.28	187,595.00	(49,032.28)	126.1
	TOTAL SEWER DEPARTMENT	3,228,473.58	3,228,473.58	2,686,103.00	(542,370.58)	120.2
	TOTAL FUND EXPENDITURES	3,228,473.58	3,228,473.58	2,686,103.00	(542,370.58)	120.2
	NET REVENUE OVER EXPENDITURES	34,347.37	34,347.37	(101,612.00)	(135,959.37)	33.8

CITY OF LIVINGSTON
COMBINED CASH INVESTMENT
JUNE 30, 2022

COMBINED CASH ACCOUNTS

CASH ALLOCATION RECONCILIATION

5210	ALLOCATION TO WATER	1,492,133.74
5310	ALLOCATION TO SEWER	698,483.44
	TOTAL ALLOCATIONS TO OTHER FUNDS	2,190,617.18
	ZERO PROOF IF ALLOCATIONS BALANCE	2,190,617.18

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2022

WATER

	ASSETS			
5210-101000	CASH	1,492,133.74		
5210-102190	SYSTEM DEVELOPMENT FEES	818,325.87		
5210-103300	PETTY CASH - WATER DEPT	300.00		
	TOTAL CASH		2,310,759.61	
	SPECIAL ASSESSMENTS REC.			
5210-118014	2014 - ASSESSMENTS RECEIVABLE	154.89		
	TOTAL SPECIAL ASSESSMENTS REC.		154.89	
5210-122000	UTILITIES RECEIVABLE		185,858.50	
5210-122999	ACCOUNTS RECEIVABLE		5,690.97	
5210-141000	PREPAID INSURANCE		2,865.55	
5210-181000	LAND		52,980.00	
5210-182000	BUILDINGS		740,679.13	
5210-182100	ALLOW FOR DEPREC/BUILDINGS		(406,403.59)	
5210-184000	IMPROV OTHER THAN BUILDINGS		8,649.81	
5210-184100	ALLOW FOR DEPR/OTHER		(613.78)	
5210-186000	MACHINERY & EQUIPMENT		927,762.85	
5210-186100	ALLOW FOR DEPR/MACH & EQUIPMEN		(756,106.81)	
5210-188000	CONSTRUCTION IN PROGRESS		669,143.11	
5210-189100	SOURCE OF SUPPLY		1,254,897.33	
5210-189110	ALLOW FOR DEPR/SOURCE OF SUPPL		(934,237.84)	
5210-189300	TREATMENT PLANT		48,164.00	
5210-189310	ALLOW FOR DEPR/TREATMENT		(48,164.00)	
5210-189400	TRANSMISSION & DISTRIBUTION		10,180,536.27	
5210-189410	ALLOW FOR DEPR/TRANS-DISTRIB		(4,092,915.82)	
5210-199901	DEFERRED OUTFLOWS-OPEB		7,174.00	
5210-199905	DEFERRED OUTFLOW OF RESOURCES		82,228.86	
	TOTAL ASSETS			10,239,103.04
	LIABILITIES AND EQUITY			
	LIABILITIES			
5210-201000	PAYROLL PAYABLE		21,441.45	
5210-202000	ACCOUNTS PAYABLE		331,511.63	
5210-202500	UTILITY DEPOSITS PAYABLE		1,369.32	
5210-215100	OPEB LIABILITY		48,454.00	
5210-223805	DEFERRED INFLOWS OF RESOURCES		141,109.96	
5210-223806	DEFERRED INFLOWS OPEB		57,192.00	
5210-237000	NET PENSION LIABILITY		326,117.06	
5210-239000	COMPENSATED ABSENCES PAYABLE		27,036.86	
	TOTAL LIABILITIES			954,232.28
	FUND EQUITY			
5210-272000	UNRESERVED RETAINED EARNINGS		8,793,809.12	

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2022

WATER

UNAPPROPRIATED FUND BALANCE:			
REVENUE OVER EXPENDITURES - YTD	491,061.63		
BALANCE - CURRENT DATE		491,061.63	
TOTAL FUND EQUITY			9,284,870.75
TOTAL LIABILITIES AND EQUITY			10,239,103.03

CITY OF LIVINGSTON
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2022

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	INTERGOVERNMENTAL REVENUES					
5210-335050	STATE SHARE PENSION	27,800.39	27,800.39	.00	(27,800.39)	.0
	TOTAL INTERGOVERNMENTAL REVENUES	27,800.39	27,800.39	.00	(27,800.39)	.0
	CHARGES FOR SERVICES					
5210-342055	BAD DEBT RECOVERY	(104.88)	(104.88)	.00	104.88	.0
5210-343021	METERED WATER SALES	1,752,560.78	1,752,560.78	1,567,784.10	(184,776.68)	111.8
5210-343022	WATER TAPS	7,050.00	7,050.00	7,500.00	450.00	94.0
5210-343024	SALE OF WATER MAT & SUPPL	35,104.26	35,104.26	25,000.00	(10,104.26)	140.4
5210-343026	SYSTEM DEVELOPMENT FEE	234,295.00	234,295.00	293,943.00	59,648.00	79.7
5210-343027	MISC. WATER REVENUES	30,370.63	30,370.63	4,000.00	(26,370.63)	759.3
	TOTAL CHARGES FOR SERVICES	2,059,275.79	2,059,275.79	1,898,227.10	(161,048.69)	108.5
	INVESTMENT EARNINGS					
5210-371010	INTEREST & DIVIDEND	2,245.81	2,245.81	4,000.00	1,754.19	56.2
	TOTAL INVESTMENT EARNINGS	2,245.81	2,245.81	4,000.00	1,754.19	56.2
	OTHER FINANCING SOURCES					
5210-383006	TRANSFER IN FROM FUND	.00	.00	8,040.00	8,040.00	.0
	TOTAL OTHER FINANCING SOURCES	.00	.00	8,040.00	8,040.00	.0
	TOTAL FUND REVENUE	2,089,321.99	2,089,321.99	1,910,267.10	(179,054.89)	109.4

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
WATER DEPARTMENT - PUBLIC WORKS						
	WATER ADMINISTRATION					
5210-802-430510-110	SALARIES AND WAGES	133,659.17	133,659.17	59,262.00	(74,397.17)	225.5
5210-802-430510-120	OVERTIME	528.04	528.04	500.00	(28.04)	105.6
5210-802-430510-141	UNEMPLOYMENT INSURANCE	243.88	243.88	329.00	85.12	74.1
5210-802-430510-142	WORKERS' COMPENSATION	315.26	315.26	328.00	12.74	96.1
5210-802-430510-143	HEALTH INSURANCE	6,234.76	6,234.76	9,123.00	2,888.24	68.3
5210-802-430510-144	F.I.C.A.	3,210.26	3,210.26	3,705.00	494.74	86.7
5210-802-430510-145	P.E.R.S.	67,566.00	67,566.00	4,556.00	(63,010.00)	1483.0
5210-802-430510-151	MEDICARE	750.87	750.87	867.00	116.13	86.6
5210-802-430510-212	COMPUTER SUPPLIES	23.88	23.88	750.00	726.12	3.2
5210-802-430510-220	OPERATING SUPPLIES	812.00	812.00	1,200.00	388.00	67.7
5210-802-430510-224	JANITOR CONTRACT/SUPPLIES	2,035.89	2,035.89	1,500.00	(535.89)	135.7
5210-802-430510-331	LEGAL NOTICES	248.50	248.50	500.00	251.50	49.7
5210-802-430510-333	MEMBER/REGISTRATION FEES	1,187.50	1,187.50	1,500.00	312.50	79.2
5210-802-430510-346	INTERNET SERVICE	2,229.99	2,229.99	2,300.00	70.01	97.0
5210-802-430510-350	PROFESSIONAL SERVICES	4,170.37	4,170.37	25,000.00	20,829.63	16.7
5210-802-430510-357	SOFTWARE SERVICES	2,129.96	2,129.96	3,000.00	870.04	71.0
5210-802-430510-368	R&M-COMPUTER/OFFICE MACH	1,407.85	1,407.85	1,000.00	(407.85)	140.8
5210-802-430510-370	TRAVEL/LODGING/MEALS	12.73	12.73	750.00	737.27	1.7
5210-802-430510-380	TRAINING SERVICES	250.00	250.00	1,000.00	750.00	25.0
5210-802-430510-392	ADMINISTRATIVE COST ALLOC	87,391.00	87,391.00	.00	(87,391.00)	.0
5210-802-430510-394	INTERFUND GOVERNMENTAL SU	8,664.55	8,664.55	8,900.00	235.45	97.4
5210-802-430510-510	LIABILITY INSURANCE	23,388.00	23,388.00	20,991.00	(2,397.00)	111.4
5210-802-430510-512	INSURANCE ON BUILDINGS	5,364.00	5,364.00	513.00	(4,851.00)	1045.6
5210-802-430510-513	INS ON VEHICLES & EQUIP	1,367.00	1,367.00	1,302.00	(65.00)	105.0
5210-802-430510-535	LEASE AGREEMENTS	1,143.00	1,143.00	2,000.00	857.00	57.2
	TOTAL WATER ADMINISTRATION	354,334.46	354,334.46	150,876.00	(203,458.46)	234.9

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2022

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	WATER SERVICES					
5210-802-430515-110	SALARIES AND WAGES	286,606.24	286,606.24	266,053.00	(20,553.24)	107.7
5210-802-430515-120	OVERTIME	33,662.21	33,662.21	26,000.00	(7,662.21)	129.5
5210-802-430515-141	UNEMPLOYMENT INSURANCE	1,470.49	1,470.49	1,643.00	172.51	89.5
5210-802-430515-142	WORKERS' COMPENSATION	18,006.33	18,006.33	17,498.00	(508.33)	102.9
5210-802-430515-143	HEALTH INSURANCE	58,630.47	58,630.47	60,456.00	1,825.53	97.0
5210-802-430515-144	F.I.C.A.	19,661.58	19,661.58	18,516.00	(1,145.58)	106.2
5210-802-430515-145	P.E.R.S.	28,436.55	28,436.55	26,840.00	(1,596.55)	106.0
5210-802-430515-148	CLOTHING ALLOWANCE	6,701.60	6,701.60	6,600.00	(101.60)	101.5
5210-802-430515-151	MEDICARE	4,598.31	4,598.31	4,330.00	(268.31)	106.2
5210-802-430515-231	REP & MAINT SUPPLIES	13,827.51	13,827.51	15,000.00	1,172.49	92.2
5210-802-430515-232	REP & MAINT-VEHICLES	16,392.77	16,392.77	5,000.00	(11,392.77)	327.9
5210-802-430515-236	FUEL/OIL/DIESEL	16,039.61	16,039.61	16,320.00	280.39	98.3
5210-802-430515-237	MAIN/HYDRANT/WELL PARTS	52,465.79	52,465.79	45,900.00	(6,565.79)	114.3
5210-802-430515-238	METER PARTS	47,566.32	47,566.32	80,000.00	32,433.68	59.5
5210-802-430515-255	SAFETY & RISK MANAGEMENT	344.31	344.31	500.00	155.69	68.9
5210-802-430515-317	UTILITY LOCATE SERVICES	884.42	884.42	1,000.00	115.58	88.4
5210-802-430515-341	UTILITIES-GAS/ELECTRIC	141,017.10	141,017.10	127,500.00	(13,517.10)	110.6
5210-802-430515-347	CELLULAR PHONE	2,737.48	2,737.48	3,200.00	462.52	85.6
5210-802-430515-350	PROFESSIONAL SERVICES	.00	.00	20,000.00	20,000.00	.0
5210-802-430515-355	WATER ANALYSIS & TREATMEN	15,168.17	15,168.17	15,000.00	(168.17)	101.1
5210-802-430515-361	REP & MAINT-GENERAL	6,896.22	6,896.22	9,000.00	2,103.78	76.6
5210-802-430515-362	REP & MAINT-VEHICLES	11,928.22	11,928.22	10,000.00	(1,928.22)	119.3
5210-802-430515-368	R&M-COMPUTER/OFFICE MACH	8,005.17	8,005.17	6,500.00	(1,505.17)	123.2
5210-802-430515-370	TRAVEL/LODGING/MEALS	263.80	263.80	1,275.00	1,011.20	20.7
5210-802-430515-380	TRAINING SERVICES	1,065.56	1,065.56	2,500.00	1,434.44	42.6
5210-802-430515-540	STATE FEE ASSESSMENTS	9,211.50	9,211.50	8,000.00	(1,211.50)	115.1
	TOTAL WATER SERVICES	801,587.73	801,587.73	794,631.00	(6,956.73)	100.9
	FACILITIES/CAPITAL OUTLAY					
5210-802-430520-220	OPERATING SUPPLIES	8,035.68	8,035.68	3,500.00	(4,535.68)	229.6
5210-802-430520-227	CAPITAL OUTLAY LESS THAN	.00	.00	7,500.00	7,500.00	.0
5210-802-430520-341	UTILITIES-GAS/ELECTRIC	3,000.34	3,000.34	2,500.00	(500.34)	120.0
5210-802-430520-342	UTILITIES-WTR,SWR,GARB	1,330.64	1,330.64	2,500.00	1,169.36	53.2
5210-802-430520-361	REP & MAINT-GENERAL	9,334.62	9,334.62	25,000.00	15,665.38	37.3
5210-802-430520-924	BUILDING IMPROV	.00	.00	93,000.00	93,000.00	.0
5210-802-430520-940	CAPITAL OUTLAY	.00	.00	99,000.00	99,000.00	.0
5210-802-430520-960	INFRASTRUCTURE/WATER/SEWE	.00	.00	1,015,000.00	1,015,000.00	.0
5210-802-430520-995	WELL REHAB	.00	.00	15,000.00	15,000.00	.0
	TOTAL FACILITIES/CAPITAL OUTLAY	21,701.28	21,701.28	1,263,000.00	1,241,298.72	1.7

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	CUSTOMER ACCTG/COLLECTION					
5210-802-430570-110	SALARIES AND WAGES	33,861.82	33,861.82	39,471.00	5,609.18	85.8
5210-802-430570-120	OVERTIME	458.68	458.68	1,250.00	791.32	36.7
5210-802-430570-141	UNEMPLOYMENT INSURANCE	154.40	154.40	224.00	69.60	68.9
5210-802-430570-142	WORKERS' COMPENSATION	110.18	110.18	130.00	19.82	84.8
5210-802-430570-143	HEALTH INSURANCE	9,914.95	9,914.95	10,992.00	1,077.05	90.2
5210-802-430570-144	F.I.C.A.	2,120.17	2,120.17	2,525.00	404.83	84.0
5210-802-430570-145	P.E.R.S.	2,935.42	2,935.42	3,612.00	676.58	81.3
5210-802-430570-151	MEDICARE	495.85	495.85	590.00	94.15	84.0
5210-802-430570-213	BILLING SUPPLIES	1,690.85	1,690.85	4,800.00	3,109.15	35.2
5210-802-430570-310	COMM/TRANS(POSTAGE)	7,199.23	7,199.23	7,500.00	300.77	96.0
5210-802-430570-357	SOFTWARE SERVICES	1,865.21	1,865.21	1,900.00	34.79	98.2
5210-802-430570-368	R&M-COMPUTER/OFFICE MACH	1,843.77	1,843.77	1,200.00	(643.77)	153.7
5210-802-430570-370	TRAVEL/LODGING/MEALS	.00	.00	500.00	500.00	.0
5210-802-430570-380	TRAINING SERVICES	304.33	304.33	500.00	195.67	60.9
5210-802-430570-630	PAYING AGENT FEES/SER CHG	7,851.34	7,851.34	6,000.00	(1,851.34)	130.9
	TOTAL CUSTOMER ACCTG/COLLECTION	70,806.20	70,806.20	81,194.00	10,387.80	87.2
	TOTAL PUBLIC WORKS	1,248,429.67	1,248,429.67	2,289,701.00	1,041,271.33	54.5
WATER DEPARTMENT - MISCELLANEOUS						
	OTHER UNALLOCATED COSTS					
5210-802-510331-131	COMPENSATED ABSENCES	5,490.48	5,490.48	.00	(5,490.48)	.0
5210-802-510331-132	OTHER POST EMPLOYMENT BENEFITS	1,631.00	1,631.00	.00	(1,631.00)	.0
5210-802-510331-511	CLAIMS PAID/DEDUCTIBLE	.00	.00	1,500.00	1,500.00	.0
5210-802-510331-830	DEPRECIATION	342,709.21	342,709.21	.00	(342,709.21)	.0
	TOTAL OTHER UNALLOCATED COSTS	349,830.69	349,830.69	1,500.00	(348,330.69)	23322.
	TOTAL MISCELLANEOUS	349,830.69	349,830.69	1,500.00	(348,330.69)	23322.
WATER DEPARTMENT - OTHER FINANCING USES						
	INTERFUND OP TRANSFERS					
5210-802-521000-392	ADMINISTRATIVE COST ALLOC	.00	.00	175,430.00	175,430.00	.0
	TOTAL INTERFUND OP TRANSFERS	.00	.00	175,430.00	175,430.00	.0
	TOTAL OTHER FINANCING USES	.00	.00	175,430.00	175,430.00	.0
	TOTAL WATER DEPARTMENT	1,598,260.36	1,598,260.36	2,466,631.00	868,370.64	64.8
	TOTAL FUND EXPENDITURES	1,598,260.36	1,598,260.36	2,466,631.00	868,370.64	64.8
	NET REVENUE OVER EXPENDITURES	491,061.63	491,061.63	(556,363.90)	(1,047,425.53)	88.3

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2022

SEWER

	ASSETS			
5310-101000	CASH	698,483.44		
5310-102170	RESERVED - INTERCAP LOAN	14,174.00		
5310-102171	RESERVE - DNRC	533,261.00		
5310-102172	RESERVE - USDA DEBT SERVICE	162,600.00		
5310-102190	SYSTEM DEVELOPMENT FEES	731,800.58		
5310-102240	SHORT-LIVED ASSET RESERVE	426,915.00		
	TOTAL CASH		2,567,234.02	
	SPECIAL ASSESSMENTS REC.			
5310-118014	2014 - ASSESSMENTS RECEIVABLE	115.97		
	TOTAL SPECIAL ASSESSMENTS REC.		115.97	
5310-122000	UTILITIES RECEIVABLE		287,153.03	
5310-132003	DUE FROM STATE REVOLVING FUND		22,500.00	
5310-141000	PREPAID INSURANCE		3,136.54	
5310-182000	BUILDINGS		4,366,269.51	
5310-182100	ALLOW FOR DEPREC/BUILDINGS		(3,410,632.87)	
5310-184000	IMPROV OTHER THAN BUILDINGS		8,649.81	
5310-184100	ALLOW FOR DEPR/OTHER		(613.78)	
5310-186000	MACHINERY & EQUIPMENT		1,280,777.92	
5310-186100	ALLOW FOR DEPR/MACH & EQUIPMEN		(994,823.39)	
5310-188000	CONSTRUCTION IN PROGRESS		127,542.96	
5310-189300	TREATMENT PLANT		23,532,236.34	
5310-189310	ALLOW FOR DEPR/TREATMENT		(5,005,329.73)	
5310-189400	TRANSMISSION & DISTRIBUTION		9,384,374.01	
5310-189410	ALLOW FOR DEPR/TRANS-DISTRIB		(3,694,290.95)	
5310-199901	DEFERRED OUTFLOWS-OPEB		7,113.00	
5310-199905	DEFERRED OUTFLOW OF RESOURCES		86,807.41	
	TOTAL ASSETS			28,568,219.80
	LIABILITIES AND EQUITY			
	LIABILITIES			
5310-201000	PAYROLL PAYABLE		25,601.57	
5310-202000	ACCOUNTS PAYABLE		59,435.59	
5310-215100	OPEB LIABILITY		48,045.00	
5310-223805	DEFERRED INFLOWS OF RESOURCES		148,967.03	
5310-223806	DEFERRED INFLOWS OPEB		56,709.00	
5310-231000	BONDS PAYABLE		14,307,835.24	
5310-231301	BONDS PAYABLE - ARRA B		148,000.00	
5310-237000	NET PENSION LIABILITY		344,275.44	
5310-239000	COMPENSATED ABSENCES PAYABLE		29,277.09	
	TOTAL LIABILITIES			15,168,145.96
	FUND EQUITY			

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2022

SEWER

5310-250410	RESERVE FOR DNRC		710,035.00	
5310-250600	RESERVE FOR REPLACEMENT AND DE		426,915.00	
5310-272000	UNRESERVED RETAINED EARNINGS		12,287,209.09	
	UNAPPROPRIATED FUND BALANCE:			
	REVENUE OVER EXPENDITURES - YTD	(24,085.26)		
	BALANCE - CURRENT DATE		(24,085.26)	
	TOTAL FUND EQUITY			13,400,073.83
	TOTAL LIABILITIES AND EQUITY			28,568,219.79

CITY OF LIVINGSTON
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2022

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	INTERGOVERNMENTAL REVENUES					
5310-335050	STATE SHARE PENSION	29,348.33	29,348.33	.00	(29,348.33)	.0
	TOTAL INTERGOVERNMENTAL REVENUES	29,348.33	29,348.33	.00	(29,348.33)	.0
	CHARGES FOR SERVICES					
5310-343031	SEWER SERVICE CHARGES	2,606,448.92	2,606,448.92	2,685,359.00	78,910.08	97.1
5310-343032	SEWER TAPS	7,640.00	7,640.00	5,000.00	(2,640.00)	152.8
5310-343036	MISC SEWER REVENUE	12,845.00	12,845.00	5,000.00	(7,845.00)	256.9
5310-343038	SYSTEM DEVELOPMENT FEE	293,566.00	293,566.00	373,953.00	80,387.00	78.5
	TOTAL CHARGES FOR SERVICES	2,920,499.92	2,920,499.92	3,069,312.00	148,812.08	95.2
	INVESTMENT EARNINGS					
5310-371010	INTEREST & DIVIDEND	2,421.66	2,421.66	6,500.00	4,078.34	37.3
	TOTAL INVESTMENT EARNINGS	2,421.66	2,421.66	6,500.00	4,078.34	37.3
	OTHER FINANCING SOURCES					
5310-383006	TRANSFER IN FROM FUND	.00	.00	8,050.00	8,050.00	.0
	TOTAL OTHER FINANCING SOURCES	.00	.00	8,050.00	8,050.00	.0
	TOTAL FUND REVENUE	2,952,269.91	2,952,269.91	3,083,862.00	131,592.09	95.7

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
SEWER DEPARTMENT - PUBLIC WORKS						
	SEWER ADMINISTRATION					
5310-803-430610-110	SALARIES AND WAGES	164,421.95	164,421.95	52,262.00	(112,159.95)	314.6
5310-803-430610-120	OVERTIME	544.91	544.91	500.00	(44.91)	109.0
5310-803-430610-141	UNEMPLOYMENT INSURANCE	250.41	250.41	290.00	39.59	86.4
5310-803-430610-142	WORKERS' COMPENSATION	324.62	324.62	311.00	(13.62)	104.4
5310-803-430610-143	HEALTH INSURANCE	6,351.47	6,351.47	9,343.00	2,991.53	68.0
5310-803-430610-144	F.I.C.A.	3,295.41	3,295.41	3,271.00	(24.41)	100.8
5310-803-430610-145	P.E.R.S.	(76,093.23)	(76,093.23)	4,680.00	80,773.23	(1625.
5310-803-430610-151	MEDICARE	770.87	770.87	765.00	(5.87)	100.8
5310-803-430610-210	OFFICE SUPPLIES	633.79	633.79	1,000.00	366.21	63.4
5310-803-430610-224	JANITOR CONTRACT/SUPPLIES	1,347.17	1,347.17	1,500.00	152.83	89.8
5310-803-430610-331	LEGAL NOTICES	512.00	512.00	400.00	(112.00)	128.0
5310-803-430610-346	INTERNET SERVICE	2,486.14	2,486.14	2,570.00	83.86	96.7
5310-803-430610-350	PROFESSIONAL SERVICES	14,750.00	14,750.00	.00	(14,750.00)	.0
5310-803-430610-352	CONSULTANT SERVICES	13,450.51	13,450.51	20,000.00	6,549.49	67.3
5310-803-430610-357	SOFTWARE SERVICES	1,219.72	1,219.72	1,500.00	280.28	81.3
5310-803-430610-368	R&M-COMPUTER/OFFICE MACH	1,442.90	1,442.90	1,010.00	(432.90)	142.9
5310-803-430610-392	ADMINISTRATIVE COST ALLOC	116,521.00	116,521.00	.00	(116,521.00)	.0
5310-803-430610-394	INTERFUND GOVERNMENTAL SU	8,664.55	8,664.55	8,900.00	235.45	97.4
5310-803-430610-510	LIABILITY INSURANCE	33,140.00	33,140.00	31,324.00	(1,816.00)	105.8
5310-803-430610-512	INSURANCE ON BUILDINGS	36,185.00	36,185.00	35,280.00	(905.00)	102.6
5310-803-430610-513	INS ON VEHICLES & EQUIP	2,428.00	2,428.00	2,300.00	(128.00)	105.6
5310-803-430610-535	LEASE AGREEMENTS	1,901.50	1,901.50	2,000.00	98.50	95.1
	TOTAL SEWER ADMINISTRATION	334,548.69	334,548.69	179,206.00	(155,342.69)	186.7
	FACILITIES					
5310-803-430620-220	OPERATING SUPPLIES	1,154.92	1,154.92	1,000.00	(154.92)	115.5
5310-803-430620-341	UTILITIES-GAS/ELECTRIC	3,000.35	3,000.35	2,500.00	(500.35)	120.0
5310-803-430620-342	UTILITIES-WTR,SWR,GARB	.00	.00	1,500.00	1,500.00	.0
5310-803-430620-347	CELLULAR PHONE	2,364.31	2,364.31	3,200.00	835.69	73.9
5310-803-430620-361	REP & MAINT-GENERAL	2,722.51	2,722.51	2,500.00	(222.51)	108.9
5310-803-430620-924	BUILDING IMPROV	.00	.00	93,000.00	93,000.00	.0
	TOTAL FACILITIES	9,242.09	9,242.09	103,700.00	94,457.91	8.9

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2022

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	SEWER SERVICES					
5310-803-430625-110	SALARIES AND WAGES	157,479.61	157,479.61	152,749.00	(4,730.61)	103.1
5310-803-430625-120	OVERTIME	12,448.26	12,448.26	13,500.00	1,051.74	92.2
5310-803-430625-141	UNEMPLOYMENT INSURANCE	776.78	776.78	931.00	154.22	83.4
5310-803-430625-142	WORKERS' COMPENSATION	9,663.39	9,663.39	9,916.00	252.61	97.5
5310-803-430625-143	HEALTH INSURANCE	25,717.01	25,717.01	27,480.00	1,762.99	93.6
5310-803-430625-144	F.I.C.A.	10,479.60	10,479.60	10,493.00	13.40	99.9
5310-803-430625-145	P.E.R.S.	15,022.66	15,022.66	15,012.00	(10.66)	100.1
5310-803-430625-148	CLOTHING ALLOWANCE	2,956.60	2,956.60	3,000.00	43.40	98.6
5310-803-430625-151	MEDICARE	2,450.86	2,450.86	2,454.00	3.14	99.9
5310-803-430625-223	MAINTENANCE CLOTHING	(33.00)	(33.00)	.00	33.00	.0
5310-803-430625-231	REP & MAINT SUPPLIES	6,624.58	6,624.58	8,000.00	1,375.42	82.8
5310-803-430625-232	REP & MAINT-VEHICLES	1,464.28	1,464.28	5,000.00	3,535.72	29.3
5310-803-430625-236	FUEL/OIL/DIESEL	8,678.52	8,678.52	8,160.00	(518.52)	106.4
5310-803-430625-237	MAIN/HYDRANT/WELL PARTS	4,335.65	4,335.65	20,000.00	15,664.35	21.7
5310-803-430625-255	SAFETY & RISK MANAGEMENT	324.31	324.31	500.00	175.69	64.9
5310-803-430625-317	UTILITY LOCATE SERVICES	884.43	884.43	1,000.00	115.57	88.4
5310-803-430625-344	UTILITIES-GAS/ELECTRIC	8,256.58	8,256.58	9,500.00	1,243.42	86.9
5310-803-430625-361	REP & MAINT-GENERAL	8,899.75	8,899.75	12,000.00	3,100.25	74.2
5310-803-430625-362	REP & MAINT-VEHICLES	6,902.27	6,902.27	8,000.00	1,097.73	86.3
5310-803-430625-368	R&M-COMPUTER/OFFICE MACH	3,308.40	3,308.40	3,000.00	(308.40)	110.3
5310-803-430625-370	TRAVEL/LODGING/MEALS	185.72	185.72	750.00	564.28	24.8
5310-803-430625-380	TRAINING SERVICES	59.00	59.00	500.00	441.00	11.8
5310-803-430625-531	EQUIP RENTAL	7,296.00	7,296.00	6,000.00	(1,296.00)	121.6
5310-803-430625-983	MAINLINE REPLACEMENT	.00	.00	20,000.00	20,000.00	.0
	TOTAL SEWER SERVICES	294,181.26	294,181.26	337,945.00	43,763.74	87.1
	COLLECTION AND TRANSMISSION					
5310-803-430630-940	CAPITAL OUTLAY	.00	.00	23,500.00	23,500.00	.0
5310-803-430630-960	INFRASTRUCTURE/WATER/SEWE	.00	.00	605,000.00	605,000.00	.0
	TOTAL COLLECTION AND TRANSMISSION	.00	.00	628,500.00	628,500.00	.0

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2022

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	SEWER TREATMENT PLANT					
5310-803-430640-110	SALARIES AND WAGES	208,840.35	208,840.35	201,371.00	(7,469.35)	103.7
5310-803-430640-120	OVERTIME	20,511.75	20,511.75	13,000.00	(7,511.75)	157.8
5310-803-430640-141	UNEMPLOYMENT INSURANCE	1,050.56	1,050.56	1,199.00	148.44	87.6
5310-803-430640-142	WORKERS' COMPENSATION	3,184.89	3,184.89	3,119.00	(65.89)	102.1
5310-803-430640-143	HEALTH INSURANCE	32,174.95	32,174.95	43,968.00	11,793.05	73.2
5310-803-430640-144	F.I.C.A.	14,161.37	14,161.37	13,514.00	(647.37)	104.8
5310-803-430640-145	P.E.R.S.	20,363.72	20,363.72	19,334.00	(1,029.72)	105.3
5310-803-430640-148	CLOTHING ALLOWANCE	4,200.00	4,200.00	3,600.00	(600.00)	116.7
5310-803-430640-151	MEDICARE	3,311.95	3,311.95	3,161.00	(150.95)	104.8
5310-803-430640-222	CHEMICALS	42,511.09	42,511.09	28,500.00	(14,011.09)	149.2
5310-803-430640-225	LABORATORY SUPPLIES	13,818.88	13,818.88	14,500.00	681.12	95.3
5310-803-430640-231	REP & MAINT SUPPLIES	19,761.14	19,761.14	18,600.00	(1,161.14)	106.2
5310-803-430640-232	REP & MAINT-VEHICLES	840.45	840.45	775.00	(65.45)	108.5
5310-803-430640-236	FUEL/OIL/DIESEL	2,171.46	2,171.46	3,500.00	1,328.54	62.0
5310-803-430640-255	SAFETY & RISK MANAGEMENT	2,436.54	2,436.54	2,100.00	(336.54)	116.0
5310-803-430640-334	SUBSCRIPTIONS/DUES	50.00	50.00	775.00	725.00	6.5
5310-803-430640-341	UTILITIES-GAS/ELECTRIC	210,722.23	210,722.23	200,100.00	(10,622.23)	105.3
5310-803-430640-342	UTILITIES-WTR,SWR,GARB	.00	.00	6,000.00	6,000.00	.0
5310-803-430640-343	UTILITIES-PHONES	856.16	856.16	866.00	9.84	98.9
5310-803-430640-350	PROFESSIONAL SERVICES	26,301.70	26,301.70	25,000.00	(1,301.70)	105.2
5310-803-430640-355	WATER ANALYSIS & TREATMEN	14,885.19	14,885.19	15,000.00	114.81	99.2
5310-803-430640-357	SOFTWARE SERVICES	6,271.25	6,271.25	5,000.00	(1,271.25)	125.4
5310-803-430640-361	REP & MAINT-GENERAL	48,069.39	48,069.39	20,600.00	(27,469.39)	233.4
5310-803-430640-362	REP & MAINT-VEHICLES	6,546.06	6,546.06	1,545.00	(5,001.06)	423.7
5310-803-430640-368	R&M-COMPUTER/OFFICE MACH	7,578.25	7,578.25	5,500.00	(2,078.25)	137.8
5310-803-430640-370	TRAVEL/LODGING/MEALS	55.92	55.92	1,500.00	1,444.08	3.7
5310-803-430640-380	TRAINING SERVICES	1,064.80	1,064.80	1,600.00	535.20	66.6
5310-803-430640-396	DISPOSAL FEES	.00	.00	25,000.00	25,000.00	.0
5310-803-430640-540	STATE FEE ASSESSMENTS	4,040.00	4,040.00	7,500.00	3,460.00	53.9
5310-803-430640-924	BUILDING IMPROV	.00	.00	26,000.00	26,000.00	.0
5310-803-430640-940	CAPITAL OUTLAY	.00	.00	60,000.00	60,000.00	.0
	TOTAL SEWER TREATMENT PLANT	715,780.05	715,780.05	772,227.00	56,446.95	92.7

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	CUSTOMER ACCTG/COLLECTION					
5310-803-430670-110	SALARIES AND WAGES	33,826.16	33,826.16	39,471.00	5,644.84	85.7
5310-803-430670-120	OVERTIME	457.77	457.77	1,250.00	792.23	36.6
5310-803-430670-141	UNEMPLOYMENT INSURANCE	154.24	154.24	224.00	69.76	68.9
5310-803-430670-142	WORKERS' COMPENSATION	110.08	110.08	130.00	19.92	84.7
5310-803-430670-143	HEALTH INSURANCE	9,904.92	9,904.92	10,992.00	1,087.08	90.1
5310-803-430670-144	F.I.C.A.	2,118.15	2,118.15	2,525.00	406.85	83.9
5310-803-430670-145	P.E.R.S.	2,932.19	2,932.19	3,612.00	679.81	81.2
5310-803-430670-151	MEDICARE	495.37	495.37	590.00	94.63	84.0
5310-803-430670-210	OFFICE SUPPLIES	.00	.00	200.00	200.00	.0
5310-803-430670-213	BILLING SUPPLIES	1,690.85	1,690.85	4,600.00	2,909.15	36.8
5310-803-430670-310	COMM/TRANS(POSTAGE)	7,199.20	7,199.20	5,600.00	(1,599.20)	128.6
5310-803-430670-357	SOFTWARE SERVICES	1,865.16	1,865.16	1,860.00	(5.16)	100.3
5310-803-430670-368	R&M-COMPUTER/OFFICE MACH	1,858.76	1,858.76	1,200.00	(658.76)	154.9
5310-803-430670-370	TRAVEL/LODGING/MEALS	.00	.00	700.00	700.00	.0
5310-803-430670-380	TRAINING SERVICES	324.14	324.14	500.00	175.86	64.8
5310-803-430670-630	PAYING AGENT FEES/SER CHG	7,851.37	7,851.37	6,000.00	(1,851.37)	130.9
	TOTAL CUSTOMER ACCTG/COLLECTION	70,788.36	70,788.36	79,454.00	8,665.64	89.1
	TOTAL PUBLIC WORKS	1,424,540.45	1,424,540.45	2,101,032.00	676,491.55	67.8
SEWER DEPARTMENT - DEBT SERVICE						
	DEBT SERVICE PAYMENTS					
5310-803-490500-610	PRINCIPAL	.00	.00	458,985.00	458,985.00	.0
5310-803-490500-620	INTEREST	316,311.60	316,311.60	321,667.00	5,355.40	98.3
5310-803-490500-630	PAYING AGENT FEES/SER CHG	.00	.00	350.00	350.00	.0
	TOTAL DEBT SERVICE PAYMENTS	316,311.60	316,311.60	781,002.00	464,690.40	40.5
	TOTAL DEBT SERVICE	316,311.60	316,311.60	781,002.00	464,690.40	40.5
SEWER DEPARTMENT - MISCELLANEOUS						
	OTHER UNALLOCATED COSTS					
5310-803-510331-131	COMPENSATED ABSENCES	(21,024.85)	(21,024.85)	.00	21,024.85	.0
5310-803-510331-132	OTHER POST EMPLOYMENT BENEFITS	(22,677.00)	(22,677.00)	.00	22,677.00	.0
5310-803-510331-830	DEPRECIATION	1,279,204.97	1,279,204.97	.00	(1,279,204.97)	.0
	TOTAL OTHER UNALLOCATED COSTS	1,235,503.12	1,235,503.12	.00	(1,235,503.12)	.0
	TOTAL MISCELLANEOUS	1,235,503.12	1,235,503.12	.00	(1,235,503.12)	.0
SEWER DEPARTMENT - OTHER FINANCING USES						

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	INTERFUND OP TRANSFERS					
5310-803-521000-392	ADMINISTRATIVE COST ALLOC	.00	.00	233,906.00	233,906.00	.0
	TOTAL INTERFUND OP TRANSFERS	.00	.00	233,906.00	233,906.00	.0
	TOTAL OTHER FINANCING USES	.00	.00	233,906.00	233,906.00	.0
	TOTAL SEWER DEPARTMENT	2,976,355.17	2,976,355.17	3,115,940.00	139,584.83	95.5
	TOTAL FUND EXPENDITURES	2,976,355.17	2,976,355.17	3,115,940.00	139,584.83	95.5
	NET REVENUE OVER EXPENDITURES	(24,085.26)	(24,085.26)	(32,078.00)	(7,992.74)	(75.1)

CITY OF LIVINGSTON
COMBINED CASH INVESTMENT
JUNE 30, 2023

COMBINED CASH ACCOUNTS

CASH ALLOCATION RECONCILIATION

5210	ALLOCATION TO WATER	1,160,925.05
5310	ALLOCATION TO SEWER	805,856.85
	TOTAL ALLOCATIONS TO OTHER FUNDS	1,966,781.90
	ZERO PROOF IF ALLOCATIONS BALANCE	1,966,781.90

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2023

WATER

	ASSETS			
5210-101000	CASH	1,160,925.05		
5210-102190	SYSTEM DEVELOPMENT FEES	931,507.35		
5210-103300	PETTY CASH - WATER DEPT	300.00		
	TOTAL CASH		2,092,732.40	
5210-122000	UTILITIES RECEIVABLE		253,719.27	
5210-122999	ACCOUNTS RECEIVABLE		4,576.67	
5210-132200	DUE FROM OTHER GOVERNMENTS		15,000.00	
5210-181000	LAND		52,980.00	
5210-182000	BUILDINGS		740,679.13	
5210-182100	ALLOW FOR DEPREC/BUILDINGS		(422,748.38)	
5210-184000	IMPROV OTHER THAN BUILDINGS		8,649.81	
5210-184100	ALLOW FOR DEPR/OTHER		(1,478.76)	
5210-186000	MACHINERY & EQUIPMENT		966,869.73	
5210-186100	ALLOW FOR DEPR/MACH & EQUIPMEN		(789,658.13)	
5210-188000	CONSTRUCTION IN PROGRESS		39,350.75	
5210-189100	SOURCE OF SUPPLY		1,257,879.68	
5210-189110	ALLOW FOR DEPR/SOURCE OF SUPPL		(963,653.30)	
5210-189300	TREATMENT PLANT		48,164.00	
5210-189310	ALLOW FOR DEPR/TREATMENT		(48,164.00)	
5210-189400	TRANSMISSION & DISTRIBUTION		11,568,189.17	
5210-189410	ALLOW FOR DEPR/TRANS-DISTRIB		(4,342,186.01)	
5210-199901	DEFERRED OUTFLOWS-OPEB		5,301.00	
5210-199905	DEFERRED OUTFLOW OF RESOURCES		72,896.27	
	TOTAL ASSETS			10,559,099.30
	LIABILITIES AND EQUITY			
	LIABILITIES			
5210-201000	PAYROLL PAYABLE		18,255.53	
5210-202000	ACCOUNTS PAYABLE		29,688.94	
5210-202500	UTILITY DEPOSITS PAYABLE		1,369.32	
5210-215100	OPEB LIABILITY		45,016.00	
5210-223805	DEFERRED INFLOWS OF RESOURCES		27,621.51	
5210-223806	DEFERRED INFLOWS OPEB		43,058.00	
5210-237000	NET PENSION LIABILITY		377,295.80	
5210-239000	COMPENSATED ABSENCES PAYABLE		32,564.92	
	TOTAL LIABILITIES			574,870.02
	FUND EQUITY			
5210-272000	UNRESERVED RETAINED EARNINGS		9,284,870.75	
	UNAPPROPRIATED FUND BALANCE:			
	REVENUE OVER EXPENDITURES - YTD	699,358.53		
	BALANCE - CURRENT DATE		699,358.53	

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2023

WATER

TOTAL FUND EQUITY	9,984,229.28
TOTAL LIABILITIES AND EQUITY	10,559,099.30

CITY OF LIVINGSTON
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2023

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	INTERGOVERNMENTAL REVENUES					
5210-334122	RRGL	15,000.00	15,000.00	.00	(15,000.00)	.0
5210-335050	STATE SHARE PENSION	11,712.05	11,712.05	.00	(11,712.05)	.0
	TOTAL INTERGOVERNMENTAL REVENUES	26,712.05	26,712.05	.00	(26,712.05)	.0
	CHARGES FOR SERVICES					
5210-342055	BAD DEBT RECOVERY	(143.29)	(143.29)	.00	143.29	.0
5210-343021	METERED WATER SALES	2,050,521.07	2,050,521.07	1,753,258.00	(297,263.07)	117.0
5210-343022	WATER TAPS	13,963.09	13,963.09	7,500.00	(6,463.09)	186.2
5210-343024	SALE OF WATER MAT & SUPPL	17,545.06	17,545.06	25,000.00	7,454.94	70.2
5210-343026	SYSTEM DEVELOPMENT FEE	113,181.48	113,181.48	194,810.00	81,628.52	58.1
5210-343027	MISC. WATER REVENUES	19,324.45	19,324.45	5,000.00	(14,324.45)	386.5
	TOTAL CHARGES FOR SERVICES	2,214,391.86	2,214,391.86	1,985,568.00	(228,823.86)	111.5
	MISCELLANEOUS REVENUES					
5210-363010	SPECIAL ASSESSMENTS	(154.89)	(154.89)	.00	154.89	.0
	TOTAL MISCELLANEOUS REVENUES	(154.89)	(154.89)	.00	154.89	.0
	INVESTMENT EARNINGS					
5210-371010	INTEREST & DIVIDEND	11,244.87	11,244.87	850.00	(10,394.87)	1322.9
	TOTAL INVESTMENT EARNINGS	11,244.87	11,244.87	850.00	(10,394.87)	1322.9
	TOTAL FUND REVENUE	2,252,193.89	2,252,193.89	1,986,418.00	(265,775.89)	113.4

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2023

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
WATER DEPARTMENT - PUBLIC WORKS						
	WATER ADMINISTRATION					
5210-802-430510-110	SALARIES AND WAGES	154,552.87	154,552.87	63,892.00	(90,660.87)	241.9
5210-802-430510-120	OVERTIME	567.05	567.05	750.00	182.95	75.6
5210-802-430510-141	UNEMPLOYMENT INSURANCE	247.23	247.23	356.00	108.77	69.5
5210-802-430510-142	WORKERS' COMPENSATION	350.86	350.86	379.00	28.14	92.6
5210-802-430510-143	HEALTH INSURANCE	6,554.72	6,554.72	9,412.00	2,857.28	69.6
5210-802-430510-144	F.I.C.A.	3,297.89	3,297.89	4,008.00	710.11	82.3
5210-802-430510-145	P.E.R.S.	(36,609.22)	(36,609.22)	4,989.00	41,598.22	(733.8)
5210-802-430510-151	MEDICARE	771.23	771.23	937.00	165.77	82.3
5210-802-430510-191	STATE PENSION EXPENSE	367.06	367.06	.00	(367.06)	.0
5210-802-430510-210	OFFICE SUPPLIES	633.45	633.45	1,500.00	866.55	42.2
5210-802-430510-220	OPERATING SUPPLIES	88,701.69	88,701.69	1,000.00	(87,701.69)	8870.2
5210-802-430510-224	JANITOR CONTRACT/SUPPLIES	2,011.63	2,011.63	1,500.00	(511.63)	134.1
5210-802-430510-331	LEGAL NOTICES	41.50	41.50	700.00	658.50	5.9
5210-802-430510-333	MEMBER/REGISTRATION FEES	522.00	522.00	1,500.00	978.00	34.8
5210-802-430510-346	INTERNET SERVICE	2,147.29	2,147.29	2,300.00	152.71	93.4
5210-802-430510-350	PROFESSIONAL SERVICES	4,748.95	4,748.95	25,000.00	20,251.05	19.0
5210-802-430510-352	CONSULTANT SERVICES	6,426.44	6,426.44	.00	(6,426.44)	.0
5210-802-430510-357	SOFTWARE SERVICES	881.23	881.23	3,000.00	2,118.77	29.4
5210-802-430510-368	R&M-COMPUTER/OFFICE MACH	2,020.31	2,020.31	1,700.00	(320.31)	118.8
5210-802-430510-370	TRAVEL/LODGING/MEALS	133.23	133.23	1,000.00	866.77	13.3
5210-802-430510-380	TRAINING SERVICES	.00	.00	1,000.00	1,000.00	.0
5210-802-430510-394	INTERFUND GOVERNMENTAL SU	7,852.34	7,852.34	9,000.00	1,147.66	87.3
5210-802-430510-510	LIABILITY INSURANCE	24,531.75	24,531.75	26,525.00	1,993.25	92.5
5210-802-430510-512	INSURANCE ON BUILDINGS	6,622.00	6,622.00	5,364.00	(1,258.00)	123.5
5210-802-430510-513	INS ON VEHICLES & EQUIP	1,553.00	1,553.00	1,379.00	(174.00)	112.6
5210-802-430510-535	LEASE AGREEMENTS	1,143.00	1,143.00	2,000.00	857.00	57.2
	TOTAL WATER ADMINISTRATION	280,069.50	280,069.50	169,191.00	(110,878.50)	165.5

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2023

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	WATER SERVICES					
5210-802-430515-110	SALARIES AND WAGES	257,313.17	257,313.17	310,815.00	53,501.83	82.8
5210-802-430515-120	OVERTIME	28,810.47	28,810.47	27,500.00	(1,310.47)	104.8
5210-802-430515-141	UNEMPLOYMENT INSURANCE	1,287.98	1,287.98	1,897.00	609.02	67.9
5210-802-430515-142	WORKERS' COMPENSATION	15,717.06	15,717.06	19,868.00	4,150.94	79.1
5210-802-430515-143	HEALTH INSURANCE	49,239.07	49,239.07	62,370.00	13,130.93	79.0
5210-802-430515-144	F.I.C.A.	17,589.51	17,589.51	21,385.00	3,795.49	82.3
5210-802-430515-145	P.E.R.S.	26,023.17	26,023.17	30,997.00	4,973.83	84.0
5210-802-430515-148	CLOTHING ALLOWANCE	5,183.40	5,183.40	6,600.00	1,416.60	78.5
5210-802-430515-151	MEDICARE	4,113.75	4,113.75	5,001.00	887.25	82.3
5210-802-430515-231	REP & MAINT SUPPLIES	12,931.56	12,931.56	20,000.00	7,068.44	64.7
5210-802-430515-232	REP & MAINT-VEHICLES	5,193.36	5,193.36	10,000.00	4,806.64	51.9
5210-802-430515-236	FUEL/OIL/DIESEL	14,718.06	14,718.06	15,000.00	281.94	98.1
5210-802-430515-237	MAIN/HYDRANT/WELL PARTS	64,831.51	64,831.51	50,000.00	(14,831.51)	129.7
5210-802-430515-238	METER PARTS	94,176.39	94,176.39	80,000.00	(14,176.39)	117.7
5210-802-430515-255	SAFETY & RISK MANAGEMENT	1,660.71	1,660.71	750.00	(910.71)	221.4
5210-802-430515-317	UTILITY LOCATE SERVICES	863.25	863.25	1,000.00	136.75	86.3
5210-802-430515-341	UTILITIES-GAS/ELECTRIC	186,911.84	186,911.84	145,000.00	(41,911.84)	128.9
5210-802-430515-347	CELLULAR PHONE	2,752.86	2,752.86	3,200.00	447.14	86.0
5210-802-430515-350	PROFESSIONAL SERVICES	171.00	171.00	15,000.00	14,829.00	1.1
5210-802-430515-355	WATER ANALYSIS & TREATMEN	19,100.11	19,100.11	20,000.00	899.89	95.5
5210-802-430515-361	REP & MAINT-GENERAL	9,376.82	9,376.82	10,000.00	623.18	93.8
5210-802-430515-362	REP & MAINT-VEHICLES	7,493.82	7,493.82	15,000.00	7,506.18	50.0
5210-802-430515-368	R&M-COMPUTER/OFFICE MACH	7,222.84	7,222.84	7,150.00	(72.84)	101.0
5210-802-430515-370	TRAVEL/LODGING/MEALS	151.58	151.58	1,275.00	1,123.42	11.9
5210-802-430515-380	TRAINING SERVICES	121.80	121.80	2,500.00	2,378.20	4.9
5210-802-430515-540	STATE FEE ASSESSMENTS	7,994.00	7,994.00	9,100.00	1,106.00	87.9
	TOTAL WATER SERVICES	840,949.09	840,949.09	891,408.00	50,458.91	94.3
	FACILITIES/CAPITAL OUTLAY					
5210-802-430520-220	OPERATING SUPPLIES	124.19	124.19	2,500.00	2,375.81	5.0
5210-802-430520-227	CAPITAL OUTLAY LESS THAN	123.46	123.46	5,000.00	4,876.54	2.5
5210-802-430520-341	UTILITIES-GAS/ELECTRIC	4,489.34	4,489.34	2,700.00	(1,789.34)	166.3
5210-802-430520-342	UTILITIES-WTR,SWR,GARB	.00	.00	2,500.00	2,500.00	.0
5210-802-430520-361	REP & MAINT-GENERAL	4,899.99	4,899.99	25,000.00	20,100.01	19.6
5210-802-430520-940	CAPITAL OUTLAY	.00	.00	144,000.00	144,000.00	.0
5210-802-430520-960	INFRASTRUCTURE/WATER/SEWE	.00	.00	572,215.00	572,215.00	.0
5210-802-430520-976	VEHICLES	.00	.00	40,000.00	40,000.00	.0
5210-802-430520-995	WELL REHAB	.00	.00	25,000.00	25,000.00	.0
	TOTAL FACILITIES/CAPITAL OUTLAY	9,636.98	9,636.98	818,915.00	809,278.02	1.2

WATER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	CUSTOMER ACCTG/COLLECTION					
5210-802-430570-110	SALARIES AND WAGES	41,267.09	41,267.09	42,674.00	1,406.91	96.7
5210-802-430570-120	OVERTIME	132.55	132.55	1,250.00	1,117.45	10.6
5210-802-430570-141	UNEMPLOYMENT INSURANCE	182.85	182.85	242.00	59.15	75.6
5210-802-430570-142	WORKERS' COMPENSATION	124.63	124.63	130.00	5.37	95.9
5210-802-430570-143	HEALTH INSURANCE	11,037.86	11,037.86	11,340.00	302.14	97.3
5210-802-430570-144	F.I.C.A.	2,568.41	2,568.41	2,723.00	154.59	94.3
5210-802-430570-145	P.E.R.S.	3,715.38	3,715.38	3,896.00	180.62	95.4
5210-802-430570-151	MEDICARE	600.61	600.61	637.00	36.39	94.3
5210-802-430570-213	BILLING SUPPLIES	2,989.57	2,989.57	4,800.00	1,810.43	62.3
5210-802-430570-310	COMM/TRANS(POSTAGE)	8,636.85	8,636.85	8,000.00	(636.85)	108.0
5210-802-430570-357	SOFTWARE SERVICES	2,202.12	2,202.12	2,000.00	(202.12)	110.1
5210-802-430570-368	R&M-COMPUTER/OFFICE MACH	1,127.38	1,127.38	1,600.00	472.62	70.5
5210-802-430570-370	TRAVEL/LODGING/MEALS	843.45	843.45	500.00	(343.45)	168.7
5210-802-430570-380	TRAINING SERVICES	369.66	369.66	500.00	130.34	73.9
5210-802-430570-630	PAYING AGENT FEES/SER CHG	9,710.58	9,710.58	8,000.00	(1,710.58)	121.4
	TOTAL CUSTOMER ACCTG/COLLECTION	85,508.99	85,508.99	88,292.00	2,783.01	96.9
	TOTAL PUBLIC WORKS	1,216,164.56	1,216,164.56	1,967,806.00	751,641.44	61.8
WATER DEPARTMENT - MISCELLANEOUS						
	OTHER UNALLOCATED COSTS					
5210-802-510331-131	COMPENSATED ABSENCES	5,528.06	5,528.06	.00	(5,528.06)	.0
5210-802-510331-132	OTHER POST EMPLOYMENT BENEFITS	(15,699.00)	(15,699.00)	.00	15,699.00	.0
5210-802-510331-511	CLAIMS PAID/DEDUCTIBLE	.00	.00	1,500.00	1,500.00	.0
5210-802-510331-830	DEPRECIATION	346,841.74	346,841.74	.00	(346,841.74)	.0
	TOTAL OTHER UNALLOCATED COSTS	336,670.80	336,670.80	1,500.00	(335,170.80)	22444.
	TOTAL MISCELLANEOUS	336,670.80	336,670.80	1,500.00	(335,170.80)	22444.
WATER DEPARTMENT - OTHER FINANCING USES						
	INTERFUND OP TRANSFERS					
5210-802-521000-392	ADMINISTRATIVE COST ALLOC	.00	.00	187,444.00	187,444.00	.0
	TOTAL INTERFUND OP TRANSFERS	.00	.00	187,444.00	187,444.00	.0
	TOTAL OTHER FINANCING USES	.00	.00	187,444.00	187,444.00	.0
	TOTAL WATER DEPARTMENT	1,552,835.36	1,552,835.36	2,156,750.00	603,914.64	72.0
	TOTAL FUND EXPENDITURES	1,552,835.36	1,552,835.36	2,156,750.00	603,914.64	72.0
	NET REVENUE OVER EXPENDITURES	699,358.53	699,358.53	(170,332.00)	(869,690.53)	410.6

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2023

SEWER

	ASSETS			
5310-101000	CASH	805,856.85		
5310-102170	RESERVED - INTERCAP LOAN	14,174.00		
5310-102171	RESERVE - DNRC	533,261.00		
5310-102172	RESERVE - USDA DEBT SERVICE	162,600.00		
5310-102190	SYSTEM DEVELOPMENT FEES	871,243.90		
5310-102240	SHORT-LIVED ASSET RESERVE	523,575.00		
	TOTAL CASH		2,910,710.75	
5310-122000	UTILITIES RECEIVABLE		319,237.01	
5310-122999	ACCOUNTS RECEIVABLE		1,730.00	
5310-182000	BUILDINGS		4,366,269.51	
5310-182100	ALLOW FOR DEPREC/BUILDINGS		(3,491,173.72)	
5310-184000	IMPROV OTHER THAN BUILDINGS		8,649.81	
5310-184100	ALLOW FOR DEPR/OTHER		(1,478.76)	
5310-186000	MACHINERY & EQUIPMENT		1,296,251.49	
5310-186100	ALLOW FOR DEPR/MACH & EQUIPMEN		(1,058,145.77)	
5310-188000	CONSTRUCTION IN PROGRESS		164,202.27	
5310-189300	TREATMENT PLANT		23,546,291.94	
5310-189310	ALLOW FOR DEPR/TREATMENT		(5,881,196.18)	
5310-189400	TRANSMISSION & DISTRIBUTION		10,168,093.64	
5310-189410	ALLOW FOR DEPR/TRANS-DISTRIB		(3,953,353.10)	
5310-199901	DEFERRED OUTFLOWS-OPEB		6,839.00	
5310-199905	DEFERRED OUTFLOW OF RESOURCES		97,279.16	
	TOTAL ASSETS			28,500,207.05
	LIABILITIES AND EQUITY			
	LIABILITIES			
5310-201000	PAYROLL PAYABLE		23,438.92	
5310-202000	ACCOUNTS PAYABLE		30,755.82	
5310-215100	OPEB LIABILITY		58,076.00	
5310-223805	DEFERRED INFLOWS OF RESOURCES		36,860.56	
5310-223806	DEFERRED INFLOWS OPEB		55,550.00	
5310-231000	BONDS PAYABLE		13,866,584.71	
5310-231301	BONDS PAYABLE - ARRA B		130,000.00	
5310-237000	NET PENSION LIABILITY		503,496.52	
5310-239000	COMPENSATED ABSENCES PAYABLE		38,970.08	
	TOTAL LIABILITIES			14,743,732.61
	FUND EQUITY			
5310-250410	RESERVE FOR DNRC		710,035.00	
5310-250600	RESERVE FOR REPLACEMENT AND DE		523,575.00	
5310-272000	UNRESERVED RETAINED EARNINGS		12,166,463.83	

CITY OF LIVINGSTON
BALANCE SHEET
JUNE 30, 2023

SEWER

UNAPPROPRIATED FUND BALANCE:			
REVENUE OVER EXPENDITURES - YTD	356,400.61		
BALANCE - CURRENT DATE		356,400.61	
TOTAL FUND EQUITY			13,756,474.44
TOTAL LIABILITIES AND EQUITY			28,500,207.05

CITY OF LIVINGSTON
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2023

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	INTERGOVERNMENTAL REVENUES					
5310-334121	DNRC GRANTS	312,727.00	312,727.00	313,000.00	273.00	99.9
5310-335050	STATE SHARE PENSION	15,629.59	15,629.59	.00	(15,629.59)	.0
	TOTAL INTERGOVERNMENTAL REVENUES	328,356.59	328,356.59	313,000.00	(15,356.59)	104.9
	CHARGES FOR SERVICES					
5310-342055	BAD DEBT RECOVERY	(62.28)	(62.28)	.00	62.28	.0
5310-343031	SEWER SERVICE CHARGES	2,696,011.84	2,696,011.84	2,703,741.00	7,729.16	99.7
5310-343032	SEWER TAPS	16,769.84	16,769.84	5,000.00	(11,769.84)	335.4
5310-343036	MISC SEWER REVENUE	2,105.00	2,105.00	5,000.00	2,895.00	42.1
5310-343038	SYSTEM DEVELOPMENT FEE	139,443.32	139,443.32	247,830.00	108,386.68	56.3
	TOTAL CHARGES FOR SERVICES	2,854,267.72	2,854,267.72	2,961,571.00	107,303.28	96.4
	MISCELLANEOUS REVENUES					
5310-363010	SPECIAL ASSESSMENTS	(115.97)	(115.97)	.00	115.97	.0
5310-365050	DONATIONS	15,000.00	15,000.00	.00	(15,000.00)	.0
	TOTAL MISCELLANEOUS REVENUES	14,884.03	14,884.03	.00	(14,884.03)	.0
	INVESTMENT EARNINGS					
5310-371010	INTEREST & DIVIDEND	13,168.86	13,168.86	1,000.00	(12,168.86)	1316.9
	TOTAL INVESTMENT EARNINGS	13,168.86	13,168.86	1,000.00	(12,168.86)	1316.9
	OTHER FINANCING SOURCES					
5310-383006	TRANSFER IN FROM FUND	400,000.00	400,000.00	.00	(400,000.00)	.0
	TOTAL OTHER FINANCING SOURCES	400,000.00	400,000.00	.00	(400,000.00)	.0
	TOTAL FUND REVENUE	3,610,677.20	3,610,677.20	3,275,571.00	(335,106.20)	110.2

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
SEWER DEPARTMENT - PUBLIC WORKS						
	SEWER ADMINISTRATION					
5310-803-430610-110	SALARIES AND WAGES	189,166.95	189,166.95	57,059.00	(132,107.95)	331.5
5310-803-430610-120	OVERTIME	585.53	585.53	750.00	164.47	78.1
5310-803-430610-141	UNEMPLOYMENT INSURANCE	254.20	254.20	318.00	63.80	79.9
5310-803-430610-142	WORKERS' COMPENSATION	361.96	361.96	365.00	3.04	99.2
5310-803-430610-143	HEALTH INSURANCE	6,681.96	6,681.96	9,639.00	2,957.04	69.3
5310-803-430610-144	F.I.C.A.	3,391.81	3,391.81	3,584.00	192.19	94.6
5310-803-430610-145	P.E.R.S.	56,947.58	56,947.58	5,128.00	(51,819.58)	1110.5
5310-803-430610-151	MEDICARE	793.20	793.20	838.00	44.80	94.7
5310-803-430610-191	STATE PENSION EXPENSE	489.84	489.84	.00	(489.84)	.0
5310-803-430610-210	OFFICE SUPPLIES	118,476.13	118,476.13	1,500.00	(116,976.13)	7898.4
5310-803-430610-224	JANITOR CONTRACT/SUPPLIES	2,011.56	2,011.56	1,500.00	(511.56)	134.1
5310-803-430610-331	LEGAL NOTICES	515.00	515.00	500.00	(15.00)	103.0
5310-803-430610-346	INTERNET SERVICE	3,020.19	3,020.19	2,570.00	(450.19)	117.5
5310-803-430610-352	CONSULTANT SERVICES	11,009.98	11,009.98	15,000.00	3,990.02	73.4
5310-803-430610-357	SOFTWARE SERVICES	463.00	463.00	1,500.00	1,037.00	30.9
5310-803-430610-368	R&M-COMPUTER/OFFICE MACH	1,624.65	1,624.65	1,700.00	75.35	95.6
5310-803-430610-394	INTERFUND GOVERNMENTAL SU	7,852.34	7,852.34	9,000.00	1,147.66	87.3
5310-803-430610-510	LIABILITY INSURANCE	28,336.57	28,336.57	28,581.00	244.43	99.1
5310-803-430610-512	INSURANCE ON BUILDINGS	44,618.00	44,618.00	36,185.00	(8,433.00)	123.3
5310-803-430610-513	INS ON VEHICLES & EQUIP	2,881.00	2,881.00	2,577.00	(304.00)	111.8
5310-803-430610-535	LEASE AGREEMENTS	1,901.50	1,901.50	2,000.00	98.50	95.1
	TOTAL SEWER ADMINISTRATION	481,382.95	481,382.95	180,294.00	(301,088.95)	267.0
	FACILITIES					
5310-803-430620-220	OPERATING SUPPLIES	82.15	82.15	1,000.00	917.85	8.2
5310-803-430620-341	UTILITIES-GAS/ELECTRIC	4,489.35	4,489.35	2,600.00	(1,889.35)	172.7
5310-803-430620-342	UTILITIES-WTR,SWR,GARB	.00	.00	1,500.00	1,500.00	.0
5310-803-430620-347	CELLULAR PHONE	1,856.92	1,856.92	3,200.00	1,343.08	58.0
5310-803-430620-361	REP & MAINT-GENERAL	442.75	442.75	2,500.00	2,057.25	17.7
	TOTAL FACILITIES	6,871.17	6,871.17	10,800.00	3,928.83	63.6

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2023

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	SEWER SERVICES					
5310-803-430625-110	SALARIES AND WAGES	128,628.47	128,628.47	159,808.00	31,179.53	80.5
5310-803-430625-120	OVERTIME	12,653.61	12,653.61	15,000.00	2,346.39	84.4
5310-803-430625-141	UNEMPLOYMENT INSURANCE	630.85	630.85	978.00	347.15	64.5
5310-803-430625-142	WORKERS' COMPENSATION	7,762.14	7,762.14	10,242.00	2,479.86	75.8
5310-803-430625-143	HEALTH INSURANCE	23,679.18	23,679.18	28,350.00	4,670.82	83.5
5310-803-430625-144	F.I.C.A.	8,918.30	8,918.30	11,024.00	2,105.70	80.9
5310-803-430625-145	P.E.R.S.	12,785.27	12,785.27	15,772.00	2,986.73	81.1
5310-803-430625-148	CLOTHING ALLOWANCE	2,538.40	2,538.40	3,000.00	461.60	84.6
5310-803-430625-151	MEDICARE	2,085.66	2,085.66	2,578.00	492.34	80.9
5310-803-430625-223	MAINTENANCE CLOTHING	(8.00)	(8.00)	.00	8.00	.0
5310-803-430625-231	REP & MAINT SUPPLIES	5,745.61	5,745.61	8,000.00	2,254.39	71.8
5310-803-430625-232	REP & MAINT-VEHICLES	3,243.26	3,243.26	5,000.00	1,756.74	64.9
5310-803-430625-236	FUEL/OIL/DIESEL	10,973.43	10,973.43	8,500.00	(2,473.43)	129.1
5310-803-430625-237	MAIN/HYDRANT/WELL PARTS	1,587.45	1,587.45	20,000.00	18,412.55	7.9
5310-803-430625-255	SAFETY & RISK MANAGEMENT	371.13	371.13	500.00	128.87	74.2
5310-803-430625-317	UTILITY LOCATE SERVICES	863.29	863.29	1,000.00	136.71	86.3
5310-803-430625-344	UTILITIES-GAS/ELECTRIC	8,200.94	8,200.94	9,500.00	1,299.06	86.3
5310-803-430625-361	REP & MAINT-GENERAL	155.18	155.18	12,000.00	11,844.82	1.3
5310-803-430625-362	REP & MAINT-VEHICLES	12,576.73	12,576.73	10,000.00	(2,576.73)	125.8
5310-803-430625-368	R&M-COMPUTER/OFFICE MACH	3,387.92	3,387.92	4,050.00	662.08	83.7
5310-803-430625-370	TRAVEL/LODGING/MEALS	204.36	204.36	750.00	545.64	27.3
5310-803-430625-380	TRAINING SERVICES	700.00	700.00	500.00	(200.00)	140.0
5310-803-430625-531	EQUIP RENTAL	.00	.00	3,600.00	3,600.00	.0
5310-803-430625-983	MAINLINE REPLACEMENT	.00	.00	20,000.00	20,000.00	.0
	TOTAL SEWER SERVICES	247,683.18	247,683.18	350,152.00	102,468.82	70.7
	COLLECTION AND TRANSMISSION					
5310-803-430630-225	LABORATORY SUPPLIES	31.91	31.91	.00	(31.91)	.0
5310-803-430630-940	CAPITAL OUTLAY	.00	.00	70,000.00	70,000.00	.0
5310-803-430630-960	INFRASTRUCTURE/WATER/SEWE	.00	.00	586,535.00	586,535.00	.0
	TOTAL COLLECTION AND TRANSMISSION	31.91	31.91	656,535.00	656,503.09	.0

CITY OF LIVINGSTON
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2023

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	SEWER TREATMENT PLANT					
5310-803-430640-110	SALARIES AND WAGES	237,931.89	237,931.89	268,598.00	30,666.11	88.6
5310-803-430640-120	OVERTIME	29,967.07	29,967.07	14,000.00	(15,967.07)	214.1
5310-803-430640-141	UNEMPLOYMENT INSURANCE	1,205.03	1,205.03	1,581.00	375.97	76.2
5310-803-430640-142	WORKERS' COMPENSATION	3,619.59	3,619.59	4,090.00	470.41	88.5
5310-803-430640-143	HEALTH INSURANCE	44,821.20	44,821.20	45,360.00	538.80	98.8
5310-803-430640-144	F.I.C.A.	16,744.98	16,744.98	17,819.00	1,074.02	94.0
5310-803-430640-145	P.E.R.S.	24,458.37	24,458.37	2,592.00	(21,866.37)	943.6
5310-803-430640-148	CLOTHING ALLOWANCE	4,611.00	4,611.00	4,800.00	189.00	96.1
5310-803-430640-151	MEDICARE	3,916.10	3,916.10	4,167.00	250.90	94.0
5310-803-430640-222	CHEMICALS	52,954.59	52,954.59	40,000.00	(12,954.59)	132.4
5310-803-430640-225	LABORATORY SUPPLIES	11,609.92	11,609.92	12,000.00	390.08	96.8
5310-803-430640-231	REP & MAINT SUPPLIES	14,372.71	14,372.71	25,000.00	10,627.29	57.5
5310-803-430640-232	REP & MAINT-VEHICLES	2,122.62	2,122.62	775.00	(1,347.62)	273.9
5310-803-430640-236	FUEL/OIL/DIESEL	1,280.78	1,280.78	3,500.00	2,219.22	36.6
5310-803-430640-255	SAFETY & RISK MANAGEMENT	1,916.30	1,916.30	2,100.00	183.70	91.3
5310-803-430640-334	SUBSCRIPTIONS/DUES	133.50	133.50	775.00	641.50	17.2
5310-803-430640-341	UTILITIES-GAS/ELECTRIC	214,242.30	214,242.30	205,000.00	(9,242.30)	104.5
5310-803-430640-342	UTILITIES-WTR,SWR,GARB	.00	.00	5,000.00	5,000.00	.0
5310-803-430640-343	UTILITIES-PHONES	1,045.25	1,045.25	900.00	(145.25)	116.1
5310-803-430640-350	PROFESSIONAL SERVICES	29,936.28	29,936.28	30,000.00	63.72	99.8
5310-803-430640-355	WATER ANALYSIS & TREATMEN	8,262.15	8,262.15	15,000.00	6,737.85	55.1
5310-803-430640-357	SOFTWARE SERVICES	5,100.00	5,100.00	5,500.00	400.00	92.7
5310-803-430640-361	REP & MAINT-GENERAL	37,708.48	37,708.48	70,000.00	32,291.52	53.9
5310-803-430640-362	REP & MAINT-VEHICLES	9,744.67	9,744.67	3,000.00	(6,744.67)	324.8
5310-803-430640-368	R&M-COMPUTER/OFFICE MACH	5,798.32	5,798.32	7,000.00	1,201.68	82.8
5310-803-430640-370	TRAVEL/LODGING/MEALS	227.84	227.84	600.00	372.16	38.0
5310-803-430640-380	TRAINING SERVICES	561.20	561.20	1,600.00	1,038.80	35.1
5310-803-430640-396	DISPOSAL FEES	52,545.72	52,545.72	30,000.00	(22,545.72)	175.2
5310-803-430640-540	STATE FEE ASSESSMENTS	6,500.00	6,500.00	10,000.00	3,500.00	65.0
5310-803-430640-924	BUILDING IMPROV	.00	.00	29,000.00	29,000.00	.0
5310-803-430640-940	CAPITAL OUTLAY	.00	.00	296,500.00	296,500.00	.0
	TOTAL SEWER TREATMENT PLANT	823,337.86	823,337.86	1,156,257.00	332,919.14	71.2

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	CUSTOMER ACCTG/COLLECTION					
5310-803-430670-110	SALARIES AND WAGES	41,267.09	41,267.09	42,674.00	1,406.91	96.7
5310-803-430670-120	OVERTIME	132.55	132.55	1,250.00	1,117.45	10.6
5310-803-430670-141	UNEMPLOYMENT INSURANCE	182.85	182.85	242.00	59.15	75.6
5310-803-430670-142	WORKERS' COMPENSATION	121.65	121.65	130.00	8.35	93.6
5310-803-430670-143	HEALTH INSURANCE	11,037.86	11,037.86	11,340.00	302.14	97.3
5310-803-430670-144	F.I.C.A.	2,568.41	2,568.41	2,723.00	154.59	94.3
5310-803-430670-145	P.E.R.S.	3,715.38	3,715.38	3,896.00	180.62	95.4
5310-803-430670-151	MEDICARE	600.61	600.61	637.00	36.39	94.3
5310-803-430670-210	OFFICE SUPPLIES	.00	.00	200.00	200.00	.0
5310-803-430670-213	BILLING SUPPLIES	1,930.57	1,930.57	4,800.00	2,869.43	40.2
5310-803-430670-310	COMM/TRANS(POSTAGE)	8,636.85	8,636.85	8,000.00	(636.85)	108.0
5310-803-430670-357	SOFTWARE SERVICES	2,202.12	2,202.12	2,000.00	(202.12)	110.1
5310-803-430670-368	R&M-COMPUTER/OFFICE MACH	1,127.38	1,127.38	1,600.00	472.62	70.5
5310-803-430670-370	TRAVEL/LODGING/MEALS	843.47	843.47	500.00	(343.47)	168.7
5310-803-430670-380	TRAINING SERVICES	369.67	369.67	500.00	130.33	73.9
5310-803-430670-630	PAYING AGENT FEES/SER CHG	9,710.59	9,710.59	8,000.00	(1,710.59)	121.4
	TOTAL CUSTOMER ACCTG/COLLECTION	84,447.05	84,447.05	88,492.00	4,044.95	95.4
	TOTAL PUBLIC WORKS	1,643,754.12	1,643,754.12	2,442,530.00	798,775.88	67.3
SEWER DEPARTMENT - DEBT SERVICE						
	DEBT SERVICE PAYMENTS					
5310-803-490500-610	PRINCIPAL	.00	.00	459,354.00	459,354.00	.0
5310-803-490500-620	INTEREST	306,110.72	306,110.72	306,258.00	147.28	100.0
5310-803-490500-630	PAYING AGENT FEES/SER CHG	.00	.00	400.00	400.00	.0
	TOTAL DEBT SERVICE PAYMENTS	306,110.72	306,110.72	766,012.00	459,901.28	40.0
	TOTAL DEBT SERVICE	306,110.72	306,110.72	766,012.00	459,901.28	40.0
SEWER DEPARTMENT - MISCELLANEOUS						
	OTHER UNALLOCATED COSTS					
5310-803-510331-131	COMPENSATED ABSENCES	9,692.99	9,692.99	.00	(9,692.99)	.0
5310-803-510331-132	OTHER POST EMPLOYMENT BENEFITS	9,146.00	9,146.00	.00	(9,146.00)	.0
5310-803-510331-511	CLAIMS PAID/DEDUCTIBLE	.00	.00	1,500.00	1,500.00	.0
5310-803-510331-830	DEPRECIATION	1,285,572.76	1,285,572.76	.00	(1,285,572.76)	.0
	TOTAL OTHER UNALLOCATED COSTS	1,304,411.75	1,304,411.75	1,500.00	(1,302,911.75)	86960.
	TOTAL MISCELLANEOUS	1,304,411.75	1,304,411.75	1,500.00	(1,302,911.75)	86960.
SEWER DEPARTMENT - OTHER FINANCING USES						

SEWER

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	INTERFUND OP TRANSFERS					
5310-803-521000-392	ADMINISTRATIVE COST ALLOC	.00	.00	249,925.00	249,925.00	.0
	TOTAL INTERFUND OP TRANSFERS	.00	.00	249,925.00	249,925.00	.0
	TOTAL OTHER FINANCING USES	.00	.00	249,925.00	249,925.00	.0
	TOTAL SEWER DEPARTMENT	3,254,276.59	3,254,276.59	3,459,967.00	205,690.41	94.1
	TOTAL FUND EXPENDITURES	3,254,276.59	3,254,276.59	3,459,967.00	205,690.41	94.1
	NET REVENUE OVER EXPENDITURES	356,400.61	356,400.61	(184,396.00)	(540,796.61)	193.3

Report Criteria:

Selected services: Water, Sewer

Rate Number: **101** Description: **Water - R1 - Res 5/8** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	10000	.00351	Rate	11			Rate
2	20000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	15.21
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **102** Description: **Water - R2 - Res 3/4** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	10000	.00351	Rate	11			Rate
2	20000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	15.21
Bill Minimum:	Yes
Minimum Amount:	.00

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	

Bill Maximum:	No	Revenue Non-Taxable:	
Maximum Amount:	.00	Contract A/R:	
Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

Rate Number: **103** Description: **Water - R3 - Res 1in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	15000		Rate	11			Rate
2	15000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0	Cash:	
High Usage Limit:	0	Accounts Receivable:	
Sales Tax:	.000000	Deposits:	
Base Amount:	68.76	Deposit Interest:	
Bill Minimum:	Yes	Write-offs:	
Minimum Amount:	.00	Revenue Taxable:	
Bill Maximum:	No	Revenue Non-Taxable:	
Maximum Amount:	.00	Contract A/R:	
Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

General Ledger Account Override

Rate Number: **104** Description: **Water - R4 - Res 1 1/2in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	25000		Rate	11			Rate
2	5000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate

9	Rate	19	Rate
10	Rate	20	Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	105.66
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **105** Description: **Water - R5 - Res 2in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	42000		Rate	11			Rate
2	28000	.00376	Rate	12			Rate
3	999999999	.00386	Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	169.23
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **106** Description: **Water - R6 - Res 3in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	60000		Rate	11			Rate
2	10000	.00376	Rate	12			Rate
3	999999999	.00386	Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	236.91
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **121** Description: **Water - C1 - Com 5/8** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	10000	.00351	Rate	11			Rate
2	20000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	15.21
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

Rate Number: **122** Description: **Water - C2 - Com 3/4** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	7000		Rate	11			Rate
2	3000	.00351	Rate	12			Rate
3	20000	.00369	Rate	13			Rate
4	40000	.00376	Rate	14			Rate
5	999999999	.00386	Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	39.78
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **123** Description: **Water - C3 - Com 1 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	15000		Rate	11			Rate
2	15000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

General Ledger Account Override

Low Usage Limit:	0	Cash:	
High Usage Limit:	0	Accounts Receivable:	
Sales Tax:	.000000	Deposits:	
Base Amount:	68.76	Deposit Interest:	
Bill Minimum:	Yes	Write-offs:	
Minimum Amount:	.00	Revenue Taxable:	
Bill Maximum:	No	Revenue Non-Taxable:	
Maximum Amount:	.00	Contract A/R:	
Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

Rate Number: **124** Description: **Water - C4 - Com 1 1/2 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	25000		Rate	11			Rate
2	5000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

		General Ledger Account Override	
Low Usage Limit:	0	Cash:	
High Usage Limit:	0	Accounts Receivable:	
Sales Tax:	.000000	Deposits:	
Base Amount:	105.66	Deposit Interest:	
Bill Minimum:	Yes	Write-offs:	
Minimum Amount:	.00	Revenue Taxable:	
Bill Maximum:	No	Revenue Non-Taxable:	
Maximum Amount:	.00	Contract A/R:	
Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

Rate Number: **125** Description: **Water - C5 - Com 2 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	42000		Rate	11			Rate
2	28000	.00376	Rate	12			Rate

3	999999999	.00386	Rate	13		Rate
4			Rate	14		Rate
5			Rate	15		Rate
6			Rate	16		Rate
7			Rate	17		Rate
8			Rate	18		Rate
9			Rate	19		Rate
10			Rate	20		Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	169.23
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **126** Description: **Water - C6 - Com 3 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	60000		Rate	11			Rate
2	10000	.00376	Rate	12			Rate
3	999999999	.00386	Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	236.91
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Demand Quantity: 0
Demand Factor: 0
Custom Options:

Rate Number: **127** Description: **Water - C7 - Com 4 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	100000		Rate	11			Rate
2	999999999	.00386	Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit: 0
High Usage Limit: 0
Sales Tax: .000000
Base Amount: 390.31
Bill Minimum: Yes
Minimum Amount: .00
Bill Maximum: No
Maximum Amount: .00
Activate Units Base: No
Activate Units Usage: No
Use Ascending Block Rate: No
Allow New Billings: Yes
Demand Amount: .0000
Demand Allowed: .00
Demand Quantity: 0
Demand Factor: 0
Custom Options:

General Ledger Account Override

Cash:
Accounts Receivable:
Deposits:
Deposit Interest:
Write-offs:
Revenue Taxable:
Revenue Non-Taxable:
Contract A/R:
Assistance:

Rate Number: **128** Description: **Water - C8 - Com 6 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	275000		Rate	11			Rate
2	999999999	.00386	Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit: 0
High Usage Limit: 0
Sales Tax: .000000
Base Amount: 1,065.81

General Ledger Account Override

Cash:
Accounts Receivable:
Deposits:
Deposit Interest:

Bill Minimum:	Yes	Write-offs:	
Minimum Amount:	.00	Revenue Taxable:	
Bill Maximum:	No	Revenue Non-Taxable:	
Maximum Amount:	.00	Contract A/R:	
Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

Rate Number: **130** Description: **Water - Shut Off NP** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1			Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0	General Ledger Account Override	
High Usage Limit:	0	Cash:	
Sales Tax:	.000000	Accounts Receivable:	
Base Amount:	.00	Deposits:	
Bill Minimum:	No	Deposit Interest:	
Minimum Amount:	.00	Write-offs:	
Bill Maximum:	No	Revenue Taxable:	
Maximum Amount:	.00	Revenue Non-Taxable:	
Activate Units Base:	No	Contract A/R:	
Activate Units Usage:	No	Assistance:	
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

Rate Number: **131** Description: **Water - Outside City 5/8** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	10000	.00351	Rate	11			Rate
2	20000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate

7	Rate	17	Rate
8	Rate	18	Rate
9	Rate	19	Rate
10	Rate	20	Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	15.21
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **132** Description: **Water - Outside City 3/4** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	7000		Rate	11			Rate
2	3000	.00351	Rate	12			Rate
3	20000	.00369	Rate	13			Rate
4	40000	.00376	Rate	14			Rate
5	999999999	.00386	Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	39.78
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **133** Description: **Water - Outside City - 1in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	15000		Rate	11			Rate
2	15000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	68.76
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **140** Description: **Water - I8 - Ind 6 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	275000		Rate	11			Rate
2	999999999	.00386	Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	1,065.81
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	

Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

Rate Number: **145** Description: **Water - Irrigation 5/8 Meter** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	1	15.21	Rate	11			Rate
2	9999	.00351	Rate	12			Rate
3	20000	.00369	Rate	13			Rate
4	40000	.00376	Rate	14			Rate
5	999999999	.00386	Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0	Cash:	
High Usage Limit:	0	Accounts Receivable:	
Sales Tax:	.000000	Deposits:	
Base Amount:	.00	Deposit Interest:	
Bill Minimum:	No	Write-offs:	
Minimum Amount:	.00	Revenue Taxable:	
Bill Maximum:	No	Revenue Non-Taxable:	
Maximum Amount:	.00	Contract A/R:	
Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

General Ledger Account Override

Rate Number: **150** Description: **Water - Snowbird** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	10000	.00351	Rate	11			Rate
2	20000	.00369	Rate	12			Rate
3	40000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	15.21
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **170** Description: **Water - Test Irr 5/8 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	1	15.21	Rate	11			Rate
2	9999	.00351	Rate	12			Rate
3	20000	.00369	Rate	13			Rate
4	40000	.00376	Rate	14			Rate
5	999999999	.00386	Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	.00
Bill Minimum:	No
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **171** Description: **Water - Test Irr 3/4 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	1	39.78	Rate	11			Rate

1	1	39.76	Rate	11	Rate
2	6999		Rate	12	Rate
3	3000	.00351	Rate	13	Rate
4	20000	.00369	Rate	14	Rate
5	40000	.00376	Rate	15	Rate
6	999999999	.00386	Rate	16	Rate
7			Rate	17	Rate
8			Rate	18	Rate
9			Rate	19	Rate
10			Rate	20	Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	.00
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **172** Description: **Water - Test Irr 1 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	1	68.76	Rate	11			Rate
2	14999		Rate	12			Rate
3	15000	.00369	Rate	13			Rate
4	40000	.00376	Rate	14			Rate
5	999999999	.00386	Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	.00
Bill Minimum:	No
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Demand Amount: .0000
Demand Allowed: .00
Demand Quantity: 0
Demand Factor: 0
Custom Options:

Rate Number: **173** Description: **Water - Test Irr 1 1/2 in** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	1	105.66	Rate	11			Rate
2	24999		Rate	12			Rate
3	5000	.00369	Rate	13			Rate
4	40000	.00376	Rate	14			Rate
5	999999999	.00386	Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit: 0
High Usage Limit: 0
Sales Tax: .000000
Base Amount: .00
Bill Minimum: No
Minimum Amount: .00
Bill Maximum: No
Maximum Amount: .00
Activate Units Base: No
Activate Units Usage: No
Use Ascending Block Rate: No
Allow New Billings: Yes
Demand Amount: .0000
Demand Allowed: .00
Demand Quantity: 0
Demand Factor: 0
Custom Options:

General Ledger Account Override

Cash:
Accounts Receivable:
Deposits:
Deposit Interest:
Write-offs:
Revenue Taxable:
Revenue Non-Taxable:
Contract A/R:
Assistance:

Rate Number: **174** Description: **Water - Test Irr 2"** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	1	169.23	Rate	11			Rate
2	41999		Rate	12			Rate
3	28000	.00376	Rate	13			Rate
4	999999999	.00386	Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit: 0
High Usage Limit: 0

General Ledger Account Override

Cash:
Accounts Receivable:

Sales Tax:	.000000	Deposits:	
Base Amount:	.00	Deposit Interest:	
Bill Minimum:	No	Write-offs:	
Minimum Amount:	.00	Revenue Taxable:	
Bill Maximum:	No	Revenue Non-Taxable:	
Maximum Amount:	.00	Contract A/R:	
Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

Rate Number: **199** Description: **Water - None Bill** Service: **1 (Water)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1			Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0	General Ledger Account Override	
High Usage Limit:	0	Cash:	
Sales Tax:	.000000	Accounts Receivable:	
Base Amount:	.00	Deposits:	
Bill Minimum:	No	Deposit Interest:	
Minimum Amount:	.00	Write-offs:	
Bill Maximum:	No	Revenue Taxable:	
Maximum Amount:	.00	Revenue Non-Taxable:	
Activate Units Base:	No	Contract A/R:	
Activate Units Usage:	No	Assistance:	
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

Rate Number: **301** Description: **Sewer - Average** Service: **3 (Sewer)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	999999999	.00841	Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate

5	Rate	15	Rate
6	Rate	16	Rate
7	Rate	17	Rate
8	Rate	18	Rate
9	Rate	19	Rate
10	Rate	20	Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	21.20
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **302** Description: **Sewer - Monthly Residential** Service: **3 (Sewer)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	999999999	.00841	Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	21.20
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Custom Options:

Rate Number: **305** Description: **Sewer - Monthly** Service: **3 (Sewer)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	999999999	.00841	Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	21.20
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **310** Description: **Sewer - Lift Station** Service: **3 (Sewer)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	999999999	.00841	Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	21.20
Bill Minimum:	Yes
Minimum Amount:	.00

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	

Bill Maximum:	No	Revenue Non-Taxable:	
Maximum Amount:	.00	Contract A/R:	
Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

Rate Number: **320** Description: **Sewer - Septic** Service: **3 (Sewer)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1			Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0	Cash:	
High Usage Limit:	0	Accounts Receivable:	
Sales Tax:	.000000	Deposits:	
Base Amount:	.00	Deposit Interest:	
Bill Minimum:	Yes	Write-offs:	
Minimum Amount:	.00	Revenue Taxable:	
Bill Maximum:	No	Revenue Non-Taxable:	
Maximum Amount:	.00	Contract A/R:	
Activate Units Base:	No	Assistance:	
Activate Units Usage:	No		
Use Ascending Block Rate:	No		
Allow New Billings:	Yes		
Demand Amount:	.0000		
Demand Allowed:	.00		
Demand Quantity:	0		
Demand Factor:	0		
Custom Options:			

General Ledger Account Override

Rate Number: **330** Description: **Sewer - Shut Off NP** Service: **3 (Sewer)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1			Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate

9	Rate	19	Rate
10	Rate	20	Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	.00
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **340** Description: **Sewer - SO 3,000** Service: **3 (Sewer)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1	999999999	46.43	Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	46.43
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

Rate Number: **350** Description: **Sewer - Snowbird** Service: **3 (Sewer)**

Rate Levels

Level	Quantity	Rate	Type	Level	Quantity	Rate	Type
1			Rate	11			Rate
2			Rate	12			Rate
3			Rate	13			Rate
4			Rate	14			Rate
5			Rate	15			Rate
6			Rate	16			Rate
7			Rate	17			Rate
8			Rate	18			Rate
9			Rate	19			Rate
10			Rate	20			Rate

Rate Options

Low Usage Limit:	0
High Usage Limit:	0
Sales Tax:	.000000
Base Amount:	.00
Bill Minimum:	Yes
Minimum Amount:	.00
Bill Maximum:	No
Maximum Amount:	.00
Activate Units Base:	No
Activate Units Usage:	No
Use Ascending Block Rate:	No
Allow New Billings:	Yes
Demand Amount:	.0000
Demand Allowed:	.00
Demand Quantity:	0
Demand Factor:	0
Custom Options:	

General Ledger Account Override

Cash:	
Accounts Receivable:	
Deposits:	
Deposit Interest:	
Write-offs:	
Revenue Taxable:	
Revenue Non-Taxable:	
Contract A/R:	
Assistance:	

APPENDIX 4
ALTERNATIVES WATERCAD REPORTS

Appendix 4.1.B - Alternative G2: Green Acres Replacement

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow Status	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Pressure (psi)	Demand (gpm)
J-705	1,000.00	Passed	2,435.34	20	49	J-643	86	2.69
J-747	1,000.00	Passed	2,430.02	20	32	J-643	81	1.79
J-777	1,000.00	Passed	2,435.41	20	45	J-643	85	2.69
J-778	1,000.00	Passed	2,435.32	20	36	J-643	78	2.69
1 - Hydrant Test	1,000.00	Passed	2,435.35	20	36	J-643	78	2.69
J-780	1,000.00	Passed	2,435.31	20	35	J-643	77	2.69
J-781	1,000.00	Passed	2,435.32	20	35	J-643	80	2.69
H-124	1,000.00	Passed	2,420.61	20	20	J-643	76	2.69
H-123	1,000.00	Passed	2,435.35	20	33	J-643	80	2.69
J-787	1,000.00	Passed	2,435.00	20	31	J-643	79	2.69
H-122	1,000.00	Passed	2,309.60	20	20	J-643	74	2.69
J-790	1,000.00	Passed	2,434.81	20	30	J-643	78	2.69
H-121	1,000.00	Passed	2,435.08	20	28	J-643	79	2.69
J-793	1,000.00	Passed	2,435.33	20	31	J-643	78	2.69
H-120	1,000.00	Passed	2,434.86	20	31	J-643	81	2.69
J-798	1,000.00	Passed	2,434.97	20	34	J-643	84	2.69
J-799	1,000.00	Passed	2,435.24	20	40	J-643	85	2.69
H-125	1,000.00	Passed	2,435.45	20	34	J-643	85	2.69
J-876	1,000.00	Passed	2,435.44	20	46	J-643	87	7.11
H-128	1,000.00	Passed	2,435.69	20	39	J-643	86	7.11
J-878	1,000.00	Passed	2,435.63	20	48	J-643	87	7.11
H-131	1,000.00	Passed	2,435.91	20	52	J-643	88	7.11
H-127	1,000.00	Passed	2,435.45	20	38	J-643	88	7.11
H-129	1,000.00	Passed	2,435.37	20	42	J-643	89	7.11
H-126	1,000.00	Passed	2,435.39	20	42	J-643	85	7.11
H-130	1,000.00	Passed	2,435.29	20	35	J-643	85	7.11
J-1084	1,000.00	Passed	2,420.34	20	20	J-1084	83	6.45
J-1096	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1097	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1098	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow Status	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Pressure (psi)	Demand (gpm)
J-1099	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1100	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1101	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1102	1,000.00	Passed	2,424.19	20	20	J-1103	77	2.69
J-1103	1,000.00	Passed	2,146.10	20	20	J-643	77	0.00
J-1104	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	Passed	2,112.67	20	20	J-643	73	0.00
J-1108	1,000.00	Passed	2,421.04	20	23	J-1107	76	0.00
J-1109	1,000.00	Passed	2,435.04	20	30	J-643	83	0.00
J-1110	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1111	1,000.00	Passed	2,436.40	20	58	J-643	91	7.11
J-1112	1,000.00	Passed	2,435.23	20	29	J-643	80	2.69
J-1113	1,000.00	Passed	2,435.42	20	33	J-643	79	0.00
J-1114	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	Passed	2,429.42	20	26	J-643	82	0.00
J-1116	1,000.00	Passed	2,435.10	20	56	J-643	89	7.11
J-1117	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1118	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1119	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1120	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1121	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1122	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1123	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1124	1,000.00	Passed	2,435.77	20	47	J-643	86	0.00
J-1125	1,000.00	(N/A)	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)
J-1126	1,000.00	Passed	2,435.68	20	47	J-643	87	7.11

Appendix 4.1.C - Alternative G3: Green Acres Expansion

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,392.24	20	50	J-643	Passed	86	1.99
J-747	1,000.00	2,386.81	20	33	J-643	Passed	81	1.79
J-777	1,000.00	2,392.11	20	47	J-643	Passed	85	1.99
J-778	1,000.00	2,392.08	20	37	J-643	Passed	78	1.99
1 - Hydrant Test	1,000.00	2,392.03	20	37	J-643	Passed	78	1.99
J-780	1,000.00	2,392.17	20	36	J-643	Passed	77	1.99
J-781	1,000.00	2,392.04	20	38	J-643	Passed	80	1.99
H-124	1,000.00	2,392.21	20	31	J-643	Passed	76	1.99
H-123	1,000.00	2,392.12	20	36	J-643	Passed	80	1.99
J-787	1,000.00	2,392.03	20	35	J-643	Passed	79	1.99
H-122	1,000.00	2,392.15	20	27	J-643	Passed	73	1.99
J-790	1,000.00	2,391.97	20	33	J-643	Passed	78	1.99
H-121	1,000.00	2,391.55	20	31	J-643	Passed	79	1.99
J-793	1,000.00	2,391.97	20	33	J-643	Passed	78	1.99
H-120	1,000.00	2,391.96	20	34	J-643	Passed	81	1.99
J-798	1,000.00	2,392.04	20	37	J-643	Passed	84	1.99
J-799	1,000.00	2,391.97	20	42	J-643	Passed	85	1.99
H-125	1,000.00	2,392.11	20	43	J-643	Passed	85	1.99
J-876	1,000.00	2,392.27	20	48	J-643	Passed	86	7.11
H-128	1,000.00	2,392.25	20	41	J-643	Passed	86	7.11
J-878	1,000.00	2,392.37	20	49	J-643	Passed	86	7.11
H-131	1,000.00	2,392.72	20	53	J-643	Passed	88	7.11
H-127	1,000.00	2,392.18	20	39	J-643	Passed	88	7.11
H-129	1,000.00	2,392.17	20	43	J-643	Passed	89	7.11
H-126	1,000.00	2,392.09	20	44	J-643	Passed	85	7.11
H-130	1,000.00	2,392.27	20	42	J-643	Passed	85	7.11
J-1084	1,000.00	2,414.96	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1097	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1098	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1099	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1100	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1101	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1102	1,000.00	2,392.02	20	31	J-643	Passed	77	1.99
J-1103	1,000.00	2,391.99	20	31	J-643	Passed	77	1.99
J-1104	1,000.00	2,392.02	20	31	J-643	Passed	75	1.99
J-1105	1,000.00	2,392.11	20	29	J-643	Passed	74	1.99
J-1106	1,000.00	2,391.41	20	26	J-643	Passed	73	1.99
J-1107	1,000.00	2,135.96	20	20	J-643	Passed	73	1.99
J-1108	1,000.00	2,391.95	20	25	J-643	Passed	76	0.00
J-1109	1,000.00	2,391.51	20	32	J-643	Passed	83	0.00
J-1110	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1111	1,000.00	2,393.03	20	59	J-643	Passed	90	7.11
J-1112	1,000.00	2,392.10	20	35	J-643	Passed	80	1.99
J-1113	1,000.00	2,392.09	20	36	J-643	Passed	79	1.99
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,386.17	20	28	J-643	Passed	82	0.00
J-1116	1,000.00	2,391.95	20	57	J-643	Passed	89	7.11
J-1117	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1118	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1119	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1120	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1121	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1122	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1123	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1124	1,000.00	2,392.43	20	48	J-643	Passed	86	7.11

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1126	1,000.00	2,392.40	20	48	J-643	Passed	86	7.11

Appendix 4.1.D -Alternative L2: Tana Lane Connection

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,386.56	20	45	J-643	Passed	86	1.79
J-747	1,000.00	2,385.78	20	53	J-643	Passed	81	1.79
J-777	1,000.00	2,386.71	20	49	J-643	Passed	85	2.69
J-778	1,000.00	2,386.55	20	38	J-643	Passed	83	2.69
1 - Hydrant Test	1,000.00	2,386.66	20	35	J-643	Passed	83	2.69
J-780	1,000.00	2,386.62	20	31	J-643	Passed	80	2.69
J-781	1,000.00	2,309.71	20	21	H-124	Passed	80	2.69
H-124	1,000.00	1,528.12	20	20	J-643	Passed	80	2.69
H-123	1,000.00	2,170.90	20	20	J-643	Passed	80	2.69
J-787	1,000.00	2,120.23	20	23	H-122	Passed	79	2.69
H-122	1,000.00	1,478.81	20	20	J-643	Passed	76	2.69
J-790	1,000.00	2,386.63	20	30	J-643	Passed	80	2.69
H-121	1,000.00	2,011.61	20	20	J-643	Passed	79	2.69
J-793	1,000.00	2,386.50	20	36	J-643	Passed	83	2.69
H-120	1,000.00	2,385.92	20	28	J-643	Passed	81	2.69
J-798	1,000.00	2,386.52	20	46	J-643	Passed	84	2.69
J-799	1,000.00	2,386.69	20	43	J-643	Passed	85	2.69
H-125	1,000.00	2,386.82	20	46	J-643	Passed	85	2.69
J-876	1,000.00	2,387.18	20	58	J-643	Passed	89	7.11
H-128	1,000.00	2,387.34	20	50	J-643	Passed	89	7.11
J-878	1,000.00	2,387.40	20	58	J-643	Passed	89	7.11
H-131	1,000.00	2,387.87	20	57	J-643	Passed	88	7.11
H-127	1,000.00	2,387.10	20	52	J-643	Passed	88	7.11
H-129	1,000.00	2,387.08	20	60	J-643	Passed	89	7.11
H-126	1,000.00	2,386.69	20	47	J-643	Passed	85	7.11
H-130	1,000.00	2,386.79	20	47	J-643	Passed	85	7.11
J-1084	1,000.00	3,499.99	20	25	J-1084	Passed	83	6.45
J-1096	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1097	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1098	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1099	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1100	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1101	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1102	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1103	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1104	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1108	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1109	1,000.00	2,386.36	20	46	J-643	Passed	83	2.69
J-1110	1,000.00	2,386.97	20	56	J-643	Passed	83	7.11
J-1111	1,000.00	2,388.19	20	61	J-643	Passed	91	7.11
J-1112	1,000.00	2,386.75	20	22	J-643	Passed	83	2.69
J-1113	1,000.00	2,377.56	20	20	J-643	Passed	81	2.69
J-1114	1,000.00	2,386.51	20	51	J-643	Passed	83	0.00
J-1115	1,000.00	2,385.93	20	53	J-643	Passed	82	0.00
J-1116	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1117	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1118	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1119	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1120	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1121	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1122	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1123	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1124	1,000.00	2,387.55	20	58	J-643	Passed	89	7.11

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1126	1,000.00	2,387.29	20	58	J-643	Passed	89	7.11

Appendix 4.1.E -Alternative L3: Bickford Lane Connection

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,384.10	20	28	J-643	Passed	86	1.79
J-747	1,000.00	2,379.02	20	33	J-643	Passed	81	1.79
J-777	1,000.00	2,384.44	20	36	J-643	Passed	85	2.69
J-778	1,000.00	2,298.44	20	24	H-122	Passed	83	2.69
1 - Hydrant Test	1,000.00	2,278.00	20	22	H-122	Passed	83	2.69
J-780	1,000.00	2,238.82	20	20	J-643	Passed	80	2.69
J-781	1,000.00	1,984.57	20	21	H-124	Passed	80	2.69
H-124	1,000.00	1,415.13	20	20	J-643	Passed	79	2.69
H-123	1,000.00	1,877.37	20	20	J-643	Passed	80	2.69
J-787	1,000.00	1,809.34	20	23	H-122	Passed	79	2.69
H-122	1,000.00	1,354.32	20	20	J-643	Passed	76	2.69
J-790	1,000.00	2,077.48	20	21	H-121	Passed	80	2.69
H-121	1,000.00	1,721.46	20	20	J-643	Passed	79	2.69
J-793	1,000.00	2,241.33	20	21	H-122	Passed	82	2.69
H-120	1,000.00	1,995.16	20	20	J-643	Passed	81	2.69
J-798	1,000.00	2,045.98	20	20	J-643	Passed	84	2.69
J-799	1,000.00	2,334.50	20	21	H-122	Passed	85	2.69
H-125	1,000.00	2,384.35	20	37	J-643	Passed	85	2.69
J-876	1,000.00	2,384.60	20	53	J-643	Passed	89	7.76
H-128	1,000.00	2,384.76	20	46	J-643	Passed	89	7.76
J-878	1,000.00	2,384.66	20	54	J-643	Passed	89	7.76
H-131	1,000.00	2,385.01	20	54	J-643	Passed	88	7.76
H-127	1,000.00	2,384.55	20	55	J-643	Passed	88	7.76
H-129	1,000.00	2,384.70	20	52	J-643	Passed	89	7.76
H-126	1,000.00	2,384.41	20	36	J-643	Passed	85	7.76
H-130	1,000.00	2,384.55	20	38	J-643	Passed	85	7.76
J-1084	1,000.00	2,412.89	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1097	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1098	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1099	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1100	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1101	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1102	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1103	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1104	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1108	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1109	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1110	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1111	1,000.00	2,385.23	20	59	J-643	Passed	90	7.76
J-1112	1,000.00	2,167.38	20	20	J-643	Passed	83	2.69
J-1113	1,000.00	2,104.35	20	20	J-643	Passed	81	2.69
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,378.61	20	28	J-643	Passed	82	0.00
J-1116	1,000.00	2,384.59	20	58	J-643	Passed	89	7.76
J-1117	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1118	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1119	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1120	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1121	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1122	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1123	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1124	1,000.00	2,384.64	20	54	J-643	Passed	89	7.11

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1126	1,000.00	2,384.55	20	53	J-643	Passed	89	7.76

Appendix 4.1.F -Alternative M2: Montague Streets

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,310.16	20	51	J-643	Passed	86	1.79
J-747	1,000.00	2,304.91	20	35	J-643	Passed	81	1.79
J-777	1,000.00	2,310.18	20	48	J-643	Passed	85	2.83
J-778	1,000.00	2,309.92	20	37	J-643	Passed	83	2.83
1 - Hydrant Test	1,000.00	2,310.01	20	35	J-643	Passed	83	2.83
J-780	1,000.00	2,309.93	20	32	J-643	Passed	80	2.83
J-781	1,000.00	2,242.43	20	21	H-124	Passed	80	2.83
H-124	1,000.00	1,498.57	20	20	J-643	Passed	79	1.79
H-123	1,000.00	2,082.79	20	20	J-643	Passed	80	2.83
J-787	1,000.00	2,006.94	20	23	H-122	Passed	78	2.23
H-122	1,000.00	1,429.33	20	20	J-643	Passed	75	2.83
J-790	1,000.00	2,309.85	20	24	J-643	Passed	80	2.83
H-121	1,000.00	1,877.73	20	20	J-643	Passed	79	2.83
J-793	1,000.00	2,310.02	20	32	J-643	Passed	82	2.83
H-120	1,000.00	2,247.60	20	20	J-643	Passed	80	2.83
J-798	1,000.00	2,308.20	20	20	J-643	Passed	84	2.83
J-799	1,000.00	2,309.96	20	38	J-643	Passed	85	2.83
H-125	1,000.00	2,310.26	20	46	J-643	Passed	84	2.83
J-876	1,000.00	2,310.20	20	50	J-643	Passed	88	7.11
H-128	1,000.00	2,310.14	20	46	J-643	Passed	89	7.11
J-878	1,000.00	2,310.23	20	53	J-643	Passed	89	7.11
H-131	1,000.00	2,310.65	20	54	J-643	Passed	87	7.11
H-127	1,000.00	2,309.97	20	40	J-643	Passed	87	7.11
H-129	1,000.00	2,310.09	20	44	J-643	Passed	89	7.11
H-126	1,000.00	2,310.11	20	45	J-643	Passed	85	7.11
H-130	1,000.00	2,310.21	20	44	J-643	Passed	84	7.11
J-1084	1,000.00	2,392.48	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	2,310.02	20	41	J-643	Passed	83	8.08
J-1097	1,000.00	2,310.13	20	37	J-643	Passed	83	8.08
J-1098	1,000.00	2,309.94	20	34	J-643	Passed	83	8.08
J-1099	1,000.00	2,309.84	20	34	J-643	Passed	83	8.08
J-1100	1,000.00	2,309.91	20	37	J-643	Passed	83	8.08
J-1101	1,000.00	2,310.01	20	39	J-643	Passed	83	8.08
J-1102	1,000.00	2,309.94	20	37	J-643	Passed	83	0.00
J-1103	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1104	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1108	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1109	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1110	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1111	1,000.00	2,311.00	20	59	J-643	Passed	90	7.11
J-1112	1,000.00	2,309.99	20	39	J-643	Passed	82	2.83
J-1113	1,000.00	2,309.94	20	37	J-643	Passed	81	2.83
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,304.64	20	30	J-643	Passed	82	0.00
J-1116	1,000.00	2,310.07	20	58	J-643	Passed	89	7.11
J-1117	1,000.00	2,310.11	20	45	J-643	Passed	83	0.00
J-1118	1,000.00	2,189.94	20	20	J-643	Passed	83	0.00
J-1119	1,000.00	2,310.02	20	38	J-643	Passed	83	8.08
J-1120	1,000.00	2,310.01	20	37	J-643	Passed	83	8.08
J-1121	1,000.00	2,309.95	20	35	J-643	Passed	83	8.08
J-1122	1,000.00	2,310.13	20	35	J-643	Passed	83	8.08
J-1123	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1124	1,000.00	2,310.14	20	52	J-643	Passed	89	7.11

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1126	1,000.00	2,310.31	20	51	J-643	Passed	88	7.11

Appendix 4.1.G -Alternative M3: Montague Alleys

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,309.94	20	51	J-643	Passed	86	1.79
J-747	1,000.00	2,304.91	20	35	J-643	Passed	81	1.79
J-777	1,000.00	2,309.94	20	48	J-643	Passed	85	2.83
J-778	1,000.00	2,310.00	20	37	J-643	Passed	83	2.83
1 - Hydrant Test	1,000.00	2,310.07	20	35	J-643	Passed	83	2.83
J-780	1,000.00	2,310.02	20	32	J-643	Passed	80	2.83
J-781	1,000.00	2,242.71	20	21	H-124	Passed	80	2.83
H-124	1,000.00	1,498.66	20	20	J-643	Passed	79	1.79
H-123	1,000.00	2,082.97	20	20	J-643	Passed	80	2.83
J-787	1,000.00	2,007.09	20	23	H-122	Passed	78	2.23
H-122	1,000.00	1,429.39	20	20	J-643	Passed	75	2.83
J-790	1,000.00	2,309.85	20	24	J-643	Passed	80	2.83
H-121	1,000.00	1,877.82	20	20	J-643	Passed	79	2.83
J-793	1,000.00	2,310.05	20	32	J-643	Passed	82	2.83
H-120	1,000.00	2,247.71	20	20	J-643	Passed	80	2.83
J-798	1,000.00	2,308.30	20	20	J-643	Passed	84	2.83
J-799	1,000.00	2,310.04	20	38	J-643	Passed	85	2.83
H-125	1,000.00	2,310.21	20	46	J-643	Passed	84	2.83
J-876	1,000.00	2,310.16	20	50	J-643	Passed	88	7.11
H-128	1,000.00	2,310.16	20	46	J-643	Passed	89	7.11
J-878	1,000.00	2,310.29	20	53	J-643	Passed	89	7.11
H-131	1,000.00	2,310.62	20	54	J-643	Passed	87	7.11
H-127	1,000.00	2,309.97	20	40	J-643	Passed	87	7.11
H-129	1,000.00	2,310.09	20	44	J-643	Passed	89	7.11
H-126	1,000.00	2,310.12	20	45	J-643	Passed	85	7.11
H-130	1,000.00	2,310.22	20	44	J-643	Passed	84	7.11
J-1084	1,000.00	2,392.48	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	2,310.05	20	41	J-643	Passed	83	8.08
J-1097	1,000.00	2,309.91	20	36	J-643	Passed	83	8.08
J-1098	1,000.00	2,309.97	20	30	J-643	Passed	83	8.08
J-1099	1,000.00	2,309.93	20	30	J-643	Passed	83	8.08
J-1100	1,000.00	2,309.98	20	36	J-643	Passed	83	8.08
J-1101	1,000.00	2,309.96	20	39	J-643	Passed	83	8.08
J-1102	1,000.00	2,310.13	20	38	J-643	Passed	83	0.00
J-1103	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1104	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1108	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1109	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1110	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1111	1,000.00	2,311.00	20	59	J-643	Passed	90	7.11
J-1112	1,000.00	2,309.99	20	39	J-643	Passed	82	2.83
J-1113	1,000.00	2,309.92	20	37	J-643	Passed	81	2.83
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,304.91	20	30	J-643	Passed	82	0.00
J-1116	1,000.00	2,310.11	20	58	J-643	Passed	89	7.11
J-1117	1,000.00	2,310.06	20	45	J-643	Passed	83	0.00
J-1118	1,000.00	2,123.84	20	20	J-643	Passed	83	0.00
J-1119	1,000.00	2,310.15	20	39	J-643	Passed	83	8.08
J-1120	1,000.00	2,309.91	20	38	J-643	Passed	83	8.08
J-1121	1,000.00	2,309.97	20	35	J-643	Passed	83	8.08
J-1122	1,000.00	2,309.90	20	35	J-643	Passed	83	8.08
J-1123	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1124	1,000.00	2,310.36	20	52	J-643	Passed	89	7.11

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1126	1,000.00	2,310.28	20	51	J-643	Passed	88	7.11

Appendix 4.1.G -Alternative S2: McCaw/Garnier Connection

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,391.88	20	54	J-643	Passed	86	1.79
J-747	1,000.00	2,386.68	20	33	J-643	Passed	81	1.79
J-777	1,000.00	2,392.15	20	52	J-643	Passed	85	2.83
J-778	1,000.00	2,391.80	20	37	J-643	Passed	83	2.83
1 - Hydrant Test	1,000.00	2,391.70	20	34	J-643	Passed	83	2.83
J-780	1,000.00	2,391.75	20	29	J-643	Passed	80	2.83
J-781	1,000.00	2,267.37	20	21	H-124	Passed	80	2.83
H-124	1,000.00	1,514.90	20	20	J-643	Passed	80	2.83
H-123	1,000.00	2,118.62	20	20	J-643	Passed	80	2.83
J-787	1,000.00	2,051.54	20	23	H-122	Passed	79	2.83
H-122	1,000.00	1,453.77	20	20	J-643	Passed	76	2.83
J-790	1,000.00	2,391.88	20	23	J-643	Passed	80	2.83
H-121	1,000.00	1,923.24	20	20	J-643	Passed	79	2.83
J-793	1,000.00	2,391.72	20	32	J-643	Passed	83	2.83
H-120	1,000.00	2,317.73	20	20	J-643	Passed	81	2.83
J-798	1,000.00	2,384.85	20	20	J-643	Passed	84	0.00
J-799	1,000.00	2,391.86	20	40	J-643	Passed	85	2.83
H-125	1,000.00	2,392.19	20	47	J-643	Passed	85	2.83
J-876	1,000.00	2,392.32	20	57	J-643	Passed	89	5.69
H-128	1,000.00	2,392.39	20	50	J-643	Passed	89	5.69
J-878	1,000.00	2,392.58	20	57	J-643	Passed	89	5.69
H-131	1,000.00	2,392.69	20	59	J-643	Passed	88	5.69
H-127	1,000.00	2,392.32	20	52	J-643	Passed	88	5.69
H-129	1,000.00	2,392.58	20	61	J-643	Passed	89	5.69
H-126	1,000.00	2,391.99	20	50	J-643	Passed	85	5.69
H-130	1,000.00	2,392.20	20	47	J-643	Passed	85	5.69
J-1084	1,000.00	2,415.71	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1097	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1098	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1099	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1100	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1101	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1102	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1103	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1104	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1108	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1109	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1110	1,000.00	2,392.69	20	56	J-643	Passed	83	5.69
J-1111	1,000.00	2,392.69	20	63	J-643	Passed	91	5.69
J-1112	1,000.00	2,391.72	20	22	J-643	Passed	83	2.83
J-1113	1,000.00	2,386.50	20	20	J-643	Passed	81	2.83
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,385.99	20	28	J-643	Passed	82	0.00
J-1116	1,000.00	2,391.79	20	59	J-643	Passed	89	5.69
J-1117	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1118	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1119	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1120	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1121	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1122	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1123	1,000.00	2,392.43	20	58	J-643	Passed	88	5.69
J-1124	1,000.00	2,392.58	20	57	J-643	Passed	89	5.69

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	2,392.58	20	59	J-643	Passed	89	5.69
J-1126	1,000.00	2,392.32	20	57	J-643	Passed	89	5.69

Appendix 4.1.I -Alternative S3: McCaw/Garnier Connection

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,391.84	20	54	J-643	Passed	86	1.79
J-747	1,000.00	2,386.69	20	33	J-643	Passed	81	1.79
J-777	1,000.00	2,391.92	20	52	J-643	Passed	85	2.83
J-778	1,000.00	2,391.87	20	37	J-643	Passed	83	2.83
1 - Hydrant Test	1,000.00	2,391.92	20	34	J-643	Passed	83	2.83
J-780	1,000.00	2,391.74	20	29	J-643	Passed	80	2.83
J-781	1,000.00	2,268.59	20	21	H-124	Passed	80	2.83
H-124	1,000.00	1,515.31	20	20	J-643	Passed	80	2.83
H-123	1,000.00	2,119.60	20	20	J-643	Passed	80	2.83
J-787	1,000.00	2,052.48	20	23	H-122	Passed	79	2.83
H-122	1,000.00	1,454.14	20	20	J-643	Passed	76	2.83
J-790	1,000.00	2,391.62	20	23	J-643	Passed	80	2.83
H-121	1,000.00	1,923.94	20	20	J-643	Passed	79	2.83
J-793	1,000.00	2,391.87	20	32	J-643	Passed	83	2.83
H-120	1,000.00	2,318.84	20	20	J-643	Passed	81	2.83
J-798	1,000.00	2,385.94	20	20	J-643	Passed	84	0.00
J-799	1,000.00	2,391.75	20	40	J-643	Passed	85	2.83
H-125	1,000.00	2,392.14	20	47	J-643	Passed	85	2.83
J-876	1,000.00	2,392.58	20	58	J-643	Passed	89	5.69
H-128	1,000.00	2,392.49	20	51	J-643	Passed	89	5.69
J-878	1,000.00	2,392.58	20	59	J-643	Passed	89	5.69
H-131	1,000.00	2,392.43	20	59	J-643	Passed	88	5.69
H-127	1,000.00	2,392.32	20	52	J-643	Passed	88	5.69
H-129	1,000.00	2,392.58	20	61	J-643	Passed	89	5.69
H-126	1,000.00	2,392.20	20	50	J-643	Passed	85	5.69
H-130	1,000.00	2,392.08	20	47	J-643	Passed	85	5.69
J-1084	1,000.00	2,415.71	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1097	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1098	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1099	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1100	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1101	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1102	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1103	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1104	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1108	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1109	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1110	1,000.00	2,392.69	20	56	J-643	Passed	83	5.69
J-1111	1,000.00	2,392.69	20	63	J-643	Passed	91	5.69
J-1112	1,000.00	2,391.80	20	22	J-643	Passed	83	2.83
J-1113	1,000.00	2,388.26	20	20	J-643	Passed	81	2.83
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,386.00	20	28	J-643	Passed	82	0.00
J-1116	1,000.00	2,391.79	20	59	J-643	Passed	89	5.69
J-1117	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1118	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1119	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1120	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1121	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1122	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1123	1,000.00	2,392.58	20	59	J-643	Passed	88	5.69
J-1124	1,000.00	2,392.58	20	59	J-643	Passed	89	5.69

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	2,392.58	20	59	J-643	Passed	89	5.69
J-1126	1,000.00	2,392.58	20	58	J-643	Passed	89	5.69

Appendix 4.1.J -Alternative S4: McCaw/Garnier Connection

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,392.04	20	54	J-643	Passed	86	1.79
J-747	1,000.00	2,386.66	20	33	J-643	Passed	81	1.79
J-777	1,000.00	2,392.08	20	52	J-643	Passed	85	2.83
J-778	1,000.00	2,391.77	20	37	J-643	Passed	83	2.83
1 - Hydrant Test	1,000.00	2,391.69	20	34	J-643	Passed	83	2.83
J-780	1,000.00	2,391.86	20	29	J-643	Passed	80	2.83
J-781	1,000.00	2,268.84	20	21	H-124	Passed	80	2.83
H-124	1,000.00	1,515.39	20	20	J-643	Passed	80	2.83
H-123	1,000.00	2,119.78	20	20	J-643	Passed	80	2.83
J-787	1,000.00	2,052.64	20	23	H-122	Passed	79	2.83
H-122	1,000.00	1,454.21	20	20	J-643	Passed	76	2.83
J-790	1,000.00	2,391.98	20	23	J-643	Passed	80	2.83
H-121	1,000.00	1,924.03	20	20	J-643	Passed	79	2.83
J-793	1,000.00	2,391.90	20	32	J-643	Passed	83	2.83
H-120	1,000.00	2,318.95	20	20	J-643	Passed	81	2.83
J-798	1,000.00	2,386.01	20	20	J-643	Passed	84	0.00
J-799	1,000.00	2,391.92	20	40	J-643	Passed	85	2.83
H-125	1,000.00	2,392.29	20	47	J-643	Passed	85	2.83
J-876	1,000.00	2,392.58	20	58	J-643	Passed	89	5.69
H-128	1,000.00	2,392.39	20	49	J-643	Passed	89	5.69
J-878	1,000.00	2,392.58	20	57	J-643	Passed	89	5.69
H-131	1,000.00	2,392.69	20	58	J-643	Passed	88	5.69
H-127	1,000.00	2,392.32	20	52	J-643	Passed	88	5.69
H-129	1,000.00	2,392.58	20	60	J-643	Passed	89	5.69
H-126	1,000.00	2,392.01	20	50	J-643	Passed	85	5.69
H-130	1,000.00	2,392.10	20	47	J-643	Passed	85	5.69
J-1084	1,000.00	2,415.69	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1097	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1098	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1099	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1100	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1101	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1102	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1103	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1104	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1108	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1109	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1110	1,000.00	2,392.69	20	56	J-643	Passed	83	5.69
J-1111	1,000.00	2,392.69	20	63	J-643	Passed	91	5.69
J-1112	1,000.00	2,391.85	20	22	J-643	Passed	83	2.83
J-1113	1,000.00	2,388.88	20	20	J-643	Passed	81	2.83
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,385.97	20	28	J-643	Passed	82	0.00
J-1116	1,000.00	2,391.79	20	59	J-643	Passed	89	5.69
J-1117	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1118	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1119	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1120	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1121	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1122	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1123	1,000.00	2,392.69	20	56	J-643	Passed	88	5.69
J-1124	1,000.00	2,392.43	20	57	J-643	Passed	89	5.69

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	2,392.43	20	56	J-643	Passed	89	5.69
J-1126	1,000.00	2,392.58	20	58	J-643	Passed	89	5.69

Appendix 4.1.K -Alternative S5: McCaw/Garnier Connection

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,391.98	20	54	J-643	Passed	86	1.79
J-747	1,000.00	2,386.66	20	33	J-643	Passed	81	1.79
J-777	1,000.00	2,392.07	20	52	J-643	Passed	85	2.83
J-778	1,000.00	2,391.97	20	37	J-643	Passed	83	2.83
1 - Hydrant Test	1,000.00	2,391.78	20	34	J-643	Passed	83	2.83
J-780	1,000.00	2,391.73	20	29	J-643	Passed	80	2.83
J-781	1,000.00	2,269.28	20	21	H-124	Passed	80	2.83
H-124	1,000.00	1,515.54	20	20	J-643	Passed	80	2.83
H-123	1,000.00	2,120.14	20	20	J-643	Passed	80	2.83
J-787	1,000.00	2,052.98	20	23	H-122	Passed	79	2.83
H-122	1,000.00	1,454.34	20	20	J-643	Passed	76	2.83
J-790	1,000.00	2,391.56	20	23	J-643	Passed	80	2.83
H-121	1,000.00	1,924.30	20	20	J-643	Passed	79	2.83
J-793	1,000.00	2,391.74	20	32	J-643	Passed	83	2.83
H-120	1,000.00	2,319.38	20	20	J-643	Passed	81	2.83
J-798	1,000.00	2,386.44	20	20	J-643	Passed	84	0.00
J-799	1,000.00	2,391.84	20	40	J-643	Passed	85	2.83
H-125	1,000.00	2,392.16	20	47	J-643	Passed	85	2.83
J-876	1,000.00	2,392.58	20	58	J-643	Passed	89	5.69
H-128	1,000.00	2,392.43	20	50	J-643	Passed	89	5.69
J-878	1,000.00	2,392.43	20	57	J-643	Passed	89	5.69
H-131	1,000.00	2,392.69	20	58	J-643	Passed	88	5.69
H-127	1,000.00	2,392.32	20	52	J-643	Passed	88	5.69
H-129	1,000.00	2,392.58	20	60	J-643	Passed	89	5.69
H-126	1,000.00	2,392.22	20	50	J-643	Passed	85	5.69
H-130	1,000.00	2,392.21	20	47	J-643	Passed	85	5.69
J-1084	1,000.00	2,415.70	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1097	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1098	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1099	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1100	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1101	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1102	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1103	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1104	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1105	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1106	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1107	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1108	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1109	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1110	1,000.00	2,392.69	20	56	J-643	Passed	83	5.69
J-1111	1,000.00	2,392.69	20	63	J-643	Passed	91	5.69
J-1112	1,000.00	2,392.00	20	22	J-643	Passed	83	2.83
J-1113	1,000.00	2,389.45	20	20	J-643	Passed	81	2.83
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,385.98	20	28	J-643	Passed	82	0.00
J-1116	1,000.00	2,391.79	20	59	J-643	Passed	89	5.69
J-1117	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1118	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1119	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1120	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1121	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1122	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1123	1,000.00	2,392.43	20	57	J-643	Passed	88	5.69
J-1124	1,000.00	2,392.43	20	58	J-643	Passed	89	5.69

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	2,392.43	20	56	J-643	Passed	89	5.69
J-1126	1,000.00	2,392.58	20	58	J-643	Passed	89	5.69

APPENDIX 6
SELECTED ALTERNATIVE
WATERCAD REPORTS

Appendix 6.1.A - Selected Alternatives

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-705	1,000.00	2,336.85	20	54	J-643	Passed	86	1.99
J-747	1,000.00	2,331.51	20	34	J-643	Passed	81	1.79
J-777	1,000.00	2,336.83	20	53	J-643	Passed	85	1.99
J-778	1,000.00	2,336.72	20	44	J-643	Passed	78	1.99
1 - Hydrant Test	1,000.00	2,336.82	20	44	J-643	Passed	78	1.99
J-780	1,000.00	2,336.81	20	44	J-643	Passed	77	1.99
J-781	1,000.00	2,336.70	20	45	J-643	Passed	80	1.99
H-124	1,000.00	2,336.84	20	39	J-643	Passed	76	1.99
H-123	1,000.00	2,336.78	20	44	J-643	Passed	80	1.99
J-787	1,000.00	2,336.62	20	42	J-643	Passed	78	1.99
H-122	1,000.00	2,336.67	20	34	J-643	Passed	73	1.99
J-790	1,000.00	2,336.79	20	40	J-643	Passed	77	1.99
H-121	1,000.00	2,336.64	20	39	J-643	Passed	79	1.99
J-793	1,000.00	2,336.75	20	40	J-643	Passed	77	1.99
H-120	1,000.00	2,336.58	20	41	J-643	Passed	80	1.99
J-798	1,000.00	2,336.66	20	44	J-643	Passed	84	1.99
J-799	1,000.00	2,336.81	20	48	J-643	Passed	85	1.99
H-125	1,000.00	2,336.91	20	52	J-643	Passed	84	1.99
J-876	1,000.00	2,337.05	20	55	J-643	Passed	86	5.34
H-128	1,000.00	2,337.06	20	48	J-643	Passed	86	5.34
J-878	1,000.00	2,337.10	20	55	J-643	Passed	86	5.34
H-131	1,000.00	2,337.25	20	57	J-643	Passed	87	5.34
H-127	1,000.00	2,337.05	20	49	J-643	Passed	87	5.34
H-129	1,000.00	2,337.14	20	55	J-643	Passed	89	5.34
H-126	1,000.00	2,337.03	20	50	J-643	Passed	85	5.34
H-130	1,000.00	2,337.00	20	50	J-643	Passed	84	5.34
J-1084	1,000.00	2,394.62	20	20	J-1084	Passed	83	6.45
J-1096	1,000.00	2,336.95	20	49	J-643	Passed	83	8.08
J-1097	1,000.00	2,336.79	20	48	J-643	Passed	85	8.08
J-1098	1,000.00	2,336.86	20	46	J-643	Passed	87	8.08
J-1099	1,000.00	2,336.94	20	45	J-643	Passed	86	8.08
J-1100	1,000.00	2,336.81	20	46	J-643	Passed	84	8.08
J-1101	1,000.00	2,336.80	20	45	J-643	Passed	80	8.08
J-1102	1,000.00	2,336.76	20	42	J-643	Passed	77	1.99
J-1103	1,000.00	2,336.76	20	40	J-643	Passed	77	1.99
J-1104	1,000.00	2,336.63	20	39	J-643	Passed	75	1.99
J-1105	1,000.00	2,336.70	20	37	J-643	Passed	74	1.99
J-1106	1,000.00	2,336.59	20	34	J-643	Passed	73	1.99
J-1107	1,000.00	2,248.89	20	20	J-643	Passed	73	1.99
J-1108	1,000.00	2,336.63	20	32	J-643	Passed	75	1.99
J-1109	1,000.00	2,336.69	20	40	J-643	Passed	83	1.99
J-1110	1,000.00	2,337.35	20	59	J-643	Passed	89	5.34
J-1111	1,000.00	2,337.35	20	62	J-643	Passed	90	5.34
J-1112	1,000.00	2,336.94	20	46	J-643	Passed	80	1.99
J-1113	1,000.00	2,336.76	20	45	J-643	Passed	79	1.99
J-1114	1,000.00	(N/A)	20	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-1115	1,000.00	2,331.61	20	29	J-643	Passed	82	0.00
J-1116	1,000.00	2,336.57	20	59	J-643	Passed	89	5.34
J-1117	1,000.00	2,336.99	20	53	J-643	Passed	86	5.34
J-1118	1,000.00	2,336.25	20	28	J-643	Passed	89	8.08
J-1119	1,000.00	2,336.98	20	48	J-643	Passed	84	8.08
J-1120	1,000.00	2,336.91	20	45	J-643	Passed	82	8.08
J-1121	1,000.00	2,336.87	20	44	J-643	Passed	84	8.08
J-1122	1,000.00	2,336.86	20	47	J-643	Passed	86	8.08
J-1123	1,000.00	2,337.25	20	56	J-643	Passed	88	5.34
J-1124	1,000.00	2,337.19	20	55	J-643	Passed	86	5.34

Fire Flow Node FlexTable:
Fire Flow Results Table

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone)	Fire Flow Status	Pressure (psi)	Demand (gpm)
J-1125	1,000.00	2,337.25	20	56	J-643	Passed	88	5.34
J-1126	1,000.00	2,337.06	20	55	J-643	Passed	86	5.34