

7.3 Point Source Dischargers

7.3.1 Overview

The Teller County portion of the watershed has one industrial discharger and two municipal dischargers, shown in Table 7-2 and Figure 7-4.

**Table 7-2
Industrial and Municipal Discharge Facilities**

Discharge	Permit No.	Discharge Location	Capacity
<u>Industrial</u>			
Cripple Creek and Victor Gold Mining	CO-0043648	Arequa Gulch	NA
<u>Municipal</u>			
City of Cripple Creek	CO-0039900	Cripple Creek, southern edge of town	1.0
City of Victor	CO-0024201	Intermittent trib. of Wilson Creek at southern edge of Victor	0.087

7.3.2 Future Needs Assessment

Within the City of Cripple Creek service area, a lift station was approved in 2001 to provide service for Phase I of a proposed development at El Doran Village and Western General Mortgage. The City of Cripple Creek is expected to upgrade the wastewater treatment plant in a phase construction to meet demands past the year 2005. Along with this are the replacement of sewer lines, construction of new influent interceptors and chemical feed-headworks modification, and sludge transfer/removal. Growth in the City of Victor is expected to be minimal and no new construction is expected to be necessary.

Upper Arkansas Point Source Discharge Locations

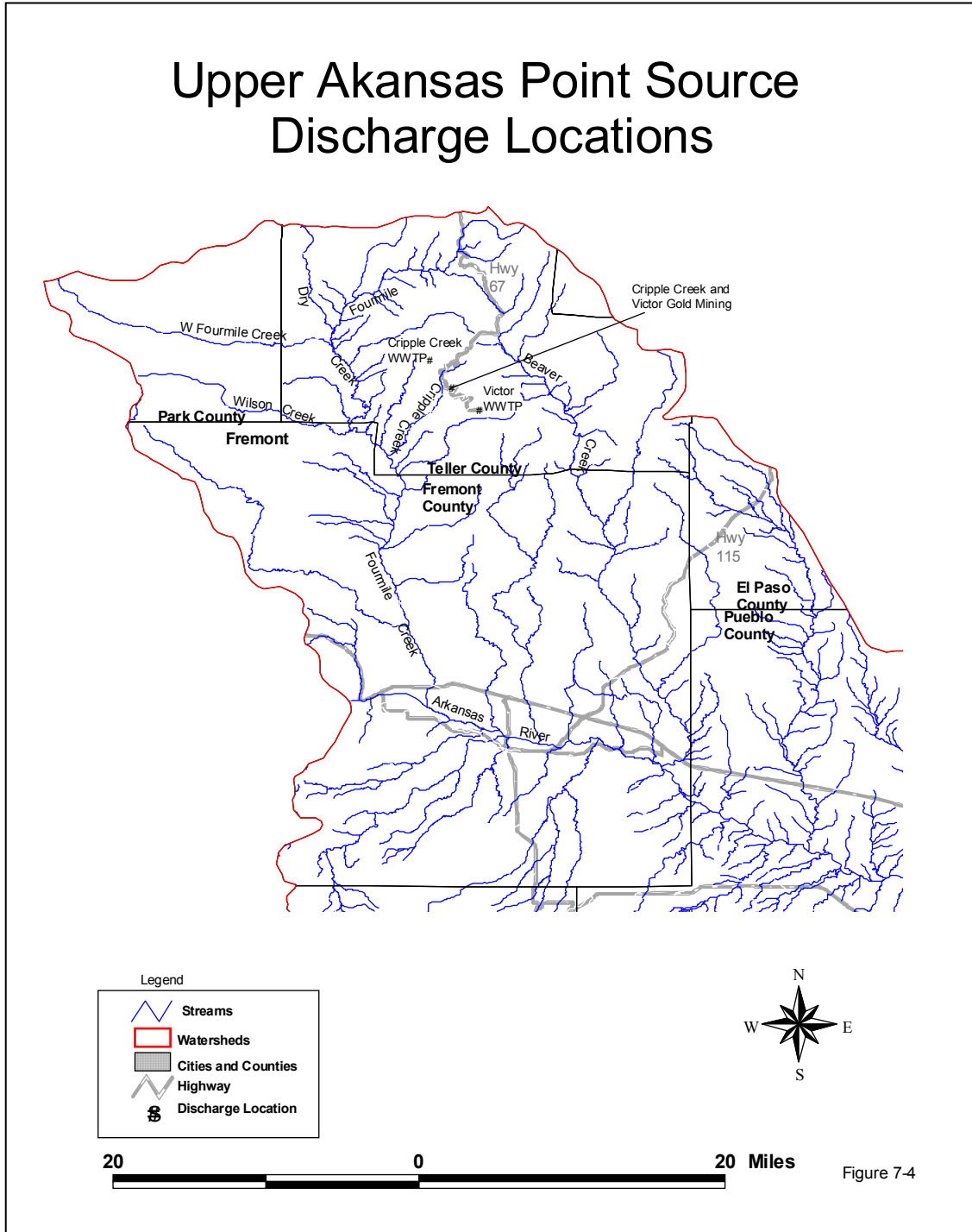


Figure 7-4

Upper Arkansas Point Source Dischargers

7.3.3 Industrial

The only industrial discharge facility in the Teller County portion of the watershed is the Cripple Creek and Victor Gold Mining Company (CC&V).

The Cripple Creek And Victor Gold Mining Company

The Cripple Creek and Victor (CC&V) Gold Mine (Figure 7-5), Colorado's largest gold mine, discharges (CO-0043648) to Arequa Gulch, tributary to Cripple Creek. In addition to the discharge points included in permit CO-0043648, there are several other types of discharges and permits associated with the Cripple Creek and Victor Gold Mining operation. Although there are historic mines in the area, most of them are within what is not CC&V's permit boundary area.

- Several historic drainage tunnels traverse the pit area at depths of 1,000 to 3,000 feet below the ground surface. Discharge from the Carlton tunnel is addressed in a separate permit issued to CC&V- CO-0024562. The Roosevelt Tunnel is owned by others than CC&V and discharge from the Roosevelt Tunnel is regulated separately by CDPHE-WQCD. Other historic drainage tunnels in the Mining District are located at elevations higher than these two tunnels and are generally dry.
- Stormwater discharges are controlled at CC&V through a General Storm Water Permit No. COR-040000 with a site specific certification No. CO-040049.

7.3.4 Municipal

There are two municipal discharge facilities located within the Upper Arkansas Watershed portion of Teller County: Cripple Creek and Victor.

City of Cripple Creek

The City of Cripple Creek WWTP (Figure 7-6) has a rated capacity of 1.0 million gallons per day (mgd) and is currently loading at approximately 0.4 mgd. The maximum hydraulic throughput capacity is 1.35 mgd with further potential to upgrade to 1.75 mgd.

The wastewater treatment plant will consist of two aeration basins constructed in the former lagoons, referred to as cell no. 2 and cell no. 3. These aeration basins, no. 1 and no. 2, are equipped with submerged fine bubble diffused air operating in an extended aeration type of process. The design and operation of the activated sludge system is to accomplish a significant degree of nitrification in order to meet very stringent ammonia effluent limits for the plant. The City plans to cooperate with the Pikes Peak Mining Company for beneficial use of the biosolids in reclamation of disturbed areas in the mining district.

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The expansion and upgrading to the City's wastewater treatment plant has been required by change in the economic development of the community. Since the legalization of limited stakes gambling within the corporate limits of Cripple Creek, a significant amount of commercial development has occurred.

The wastewater collection system has historically received a significant amount of extraneous flows at various times of the year. During spring and summer, areas of high ground water cause infiltration to enter the collection system resulting in a weak waste with high hydraulic loadings at the treatment plant. During freezing weather, bleeding of water services, to prevent freezing, directed a significant amount of extraneous water into the system. The City has made a concerted effort to replace portions of the collection system which were found to be subject to excessive infiltration. Several segments have been completely replaced in the last two years and there are a few segments remaining which will receive attention over the next five years. It is believed that the majority of the excessive infiltration has been removed from the system. The City has also accomplished water system improvements which will result in a reduction in the amount of bleeding of water services. A number of water mains have been replaced at a depth to prevent freezing. In addition, the City has instituted a program for upgrading water service lines and installing water meters for all customers.

City of Victor

The City of Victor's WWTP (Figure 7-7) was designed for a maximum average daily flow of 0.087 MGD. The plant's efficiency is expected to be 91% for BOD and TSS removal. The flow first travels through a comminutor that grinds rags into small pieces. It then travels through a grit chamber which removes 95% of the grit larger than 59 mesh and 85% of the grit larger than 70 mesh. Sludge then enters the extended aeration basin where it is mixed with return activated sludge to stabilize the BOD. From there it flows to the secondary or final clarifier, with a surface area of three hundred eighty square feet. Return sludge is handled with one of two screw pumps that run continuously, and waste activated sludge is drawn from the RAS pipeline with a positive displacement diaphragm pump controlled by a timer set by the operator. The clarifier effluent flows through an ultraviolet radiation tank for disinfection and then out to Wilson Creek.

This wastewater treatment project was completed and on line in December of 1995. Officials from cities across the country have visited and reviewed the performance of this plant.

Upper Arkansas Point Source Dischargers

PPACG 2003 WATER QUALITY PLAN UPDATE MAJOR POINT SOURCE INVENTORY DATA

MANAGEMENT AREA: Teller County OPERATING AGENCY: Cripple Creek & Victor Mining Company
DATE OF UPDATE: 2003
DATE PERMIT EXPIRES: Feb 1, 2008 NPDES Permit #: CO-0043648
DESCRIPTION OF TREATMENT FACILITY: Settling Pond .
DISCHARGE LOCATION: To Arequa Gulch (tributary to Cripple Creek) segments 22a of the Upper Arkansas Sub-basin.
WQCD STREAM SEGMENT CLASSIFICATION: Segment 22a is use protected. Recreation Class 2; Aquatic Life Class 2 (cold); Agriculture.

DISCHARGE LIMITATIONS

Maximum Concentrations

There is one primary discharge point at AG 1.5 or Outfall 001A. There are two water quality monitoring sites on Arequa Gulch (AG-1.5 and, AG-02) and three water quality monitoring sites on Cripple Creek (CC-01 – CC-03). The locations of these monitoring stations are shown on Figure 7-3.

ESTIMATED 5 YEAR CONSTRUCTION NEEDS: Current life span of CC&V is mining through 2012, processing through 2015 and reclamation through 2020. CC&V is continuing to conduct exploration and continues to find economic gold deposits, therefore there is a very good possibility that the life of the Cresson Project will extend beyond 2020.

Upper Arkansas Point Source Dischargers

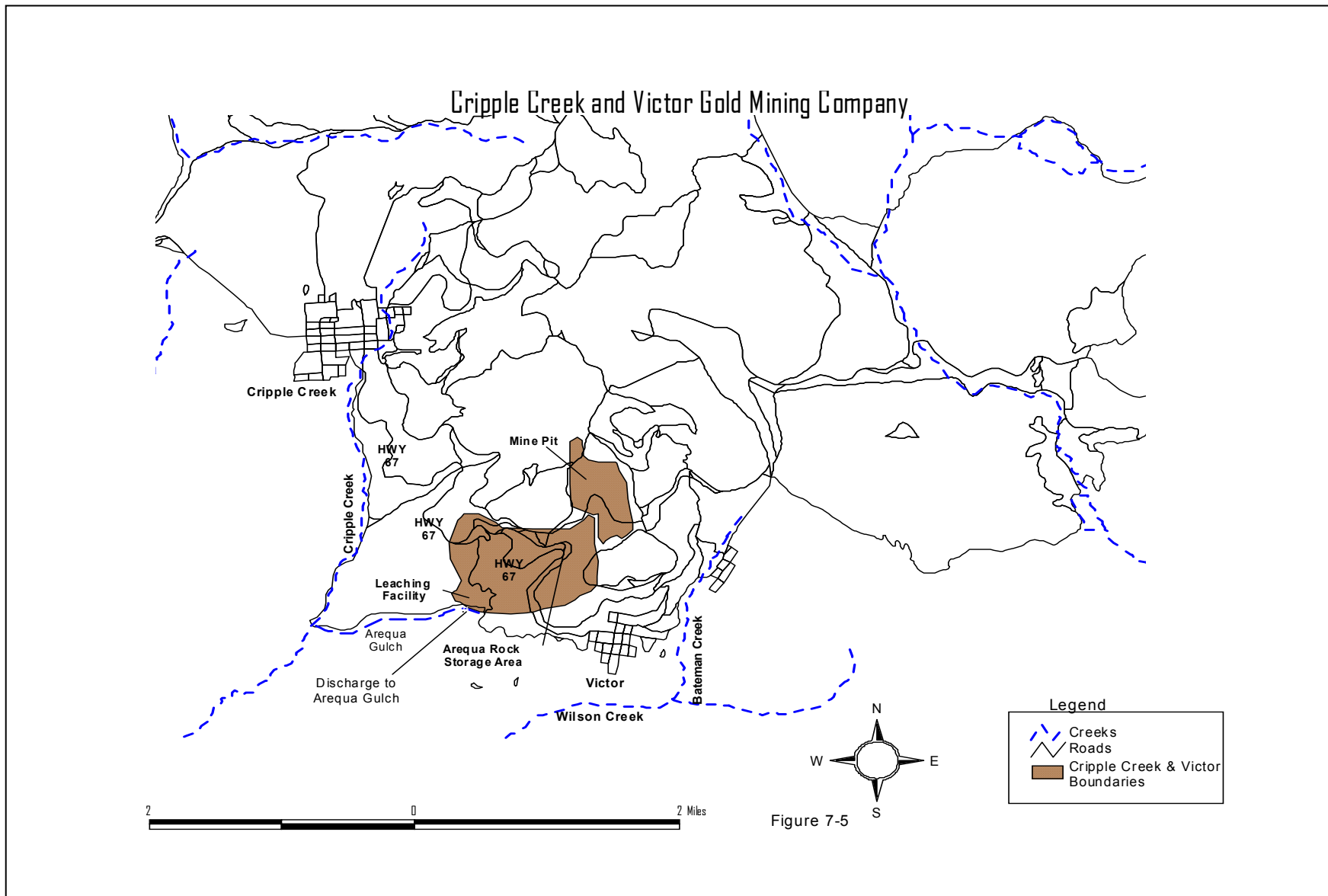
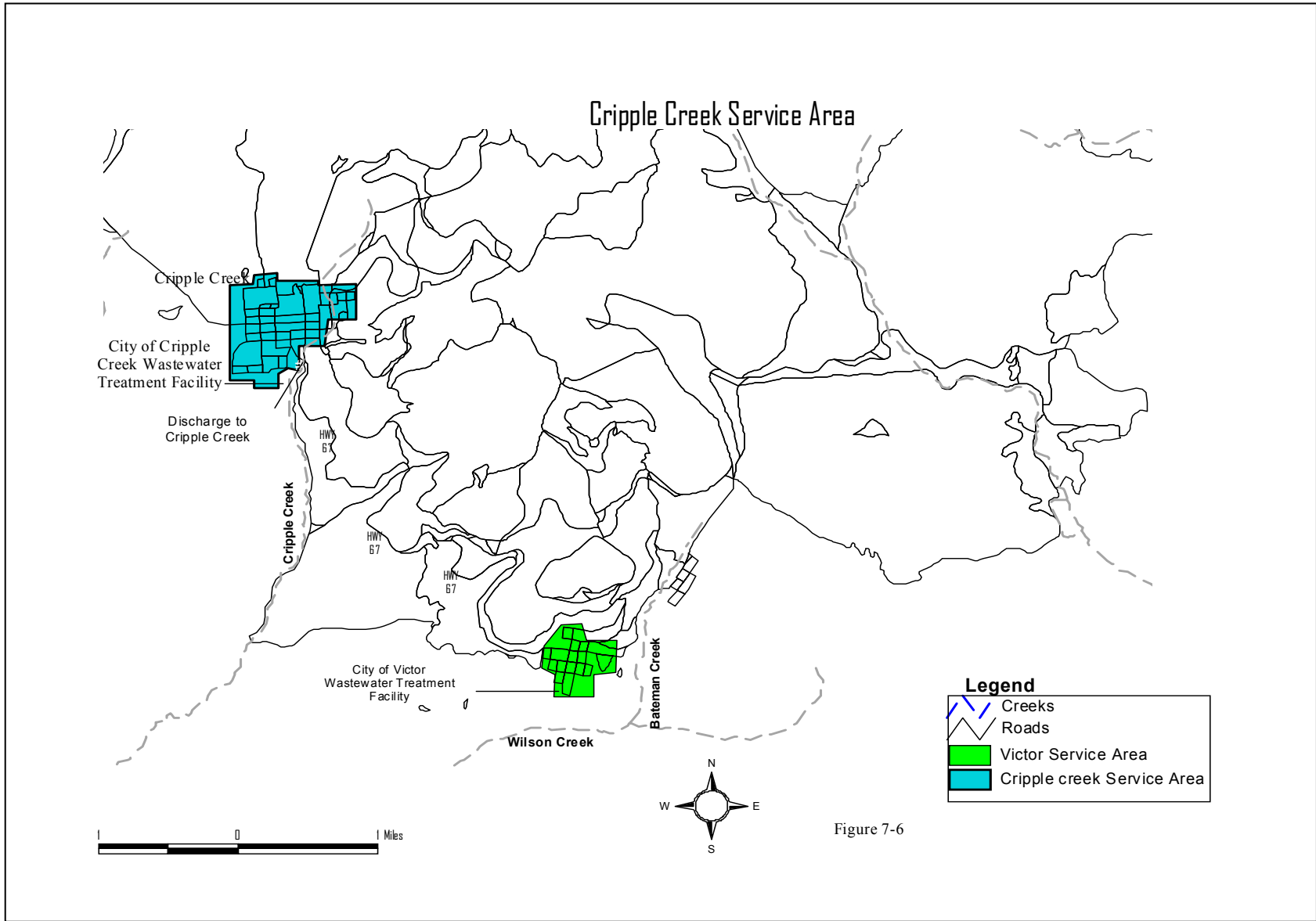


Figure 7-5

Upper Arkansas Point Source Dischargers



Upper Arkansas Point Source Dischargers

PPACG 2003 WATER QUALITY PLAN UPDATE MAJOR POINT SOURCE INVENTORY DATA

MANAGEMENT AREA: Teller County OPERATING AGENCY: City of Victor

DATE OF UPDATE: 2003

DATE PERMIT EXPIRES: March 2004 NPDES Permit #: CO-0024201

DESCRIPTION OF TREATMENT FACILITY: Extended aeration package plant with ultraviolet radiation.

DISCHARGE LOCATION: To intermittent tributary of Wilson Creek (Upper Arkansas segment 23) via discharge at south edge of Victor.

WQCD STREAM SEGMENT CLASSIFICATION: Recreation Class 1a, Aquatic Life Class 2 (cold), Water Supply, Agriculture.

SERVICE AREA POPULATION

<u>2000</u>	<u>2005</u>	<u>2010</u>	<u>2010</u>
550	600	675	800

CAPACITIES

	<u>Design Capacity</u>	<u>Existing Load</u>	<u>Year at 56% Design</u>	<u>Year at 95% Design</u>
Flow (MGD)	0.087	0.049 (highest)	1997	>2010
Organic	183	70 (highest)	1997	>2010

DISCHARGE LIMITATIONS

<u>Effluent Parameter</u>	<u>Maximum Concentrations</u>	<u>7-Day Average</u>	<u>Daily Maximum</u>
	<u>30-Day Average</u>		
BOD ₅ , mg/l	30	45	
Total Suspended Solids mg/l	30	45	
Fecal Coliforms, #/100ml	876	1752	
Total Residual Cl, mg/l			0.016
Discharge/MGD	0.087		Report
pH Standard Units (min-max)			6.5 to 9.0
Oil and Grease	Shall not exceed 10 mg/l in any grab sample nor shall there be visible sheen.		
Total Ammonia as N, mg/l	December through February = 6.0 mg/l March, April and November = 4.0 mg/l May through October = 2.0 mg/l		

ESTIMATED 5 YEAR CONSTRUCTION NEEDS: Based on a lack of significant growth, no future needs are expected.

Upper Arkansas Point Source Dischargers

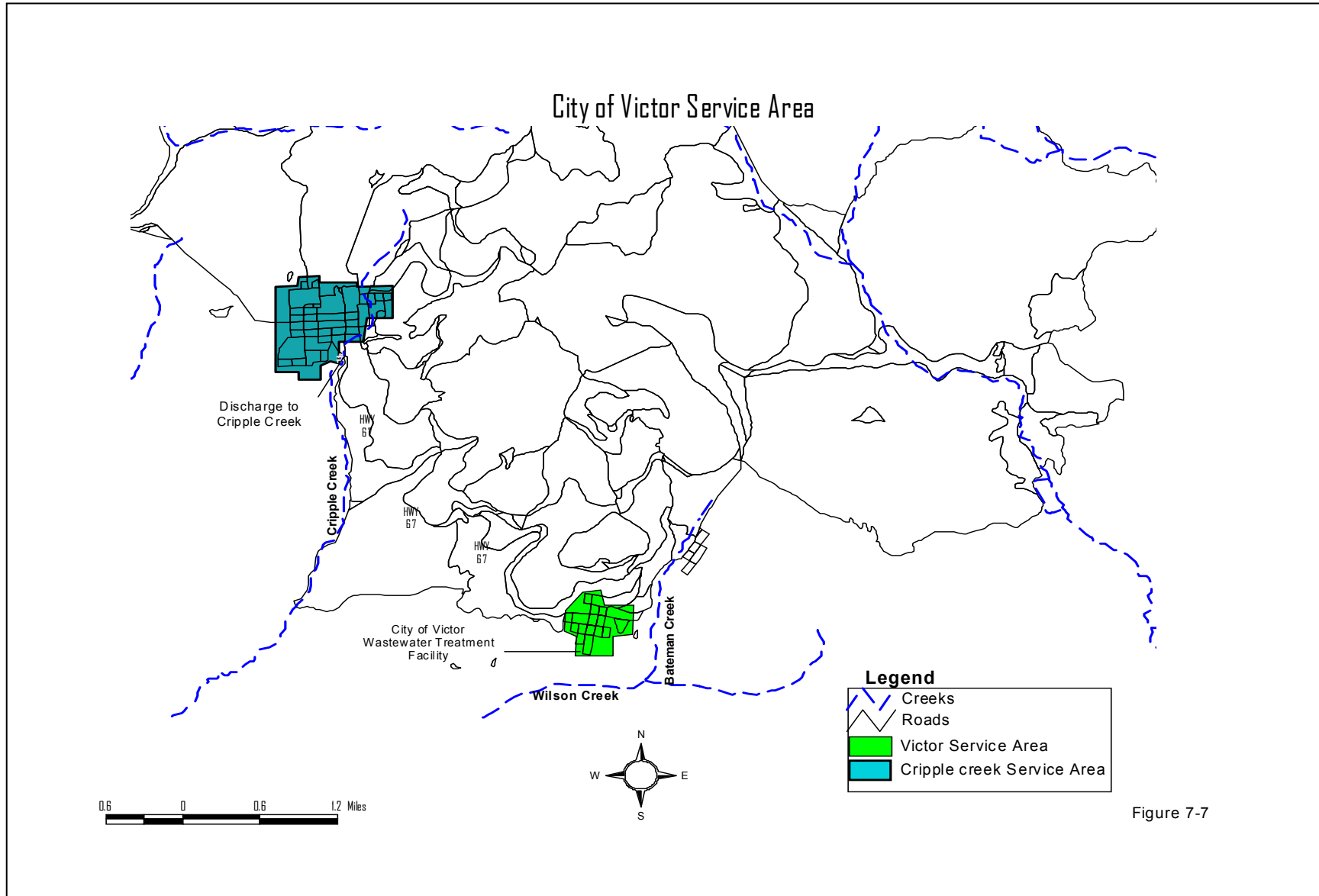


Figure 7-7