

### Section 2 - Water

#### WATER

There are portions of the existing system that do not meet minimum fire flow requirements and will need to be upgraded. The areas in need of improvement are outlined in the capital facilities plan. The estimated cost for the improvements to the existing system needed at present is \$5.4 million.

The City currently has wells capable of producing 3,065 gpm (4.41 mgd). New wells have typically produced approximately 250 gpm. In order to meet the growth projections identified above a peak flow of 6.48 mgd would be required. This would necessitate the drilling of 6 new wells. It is currently proposed to drill two new wells and upgrade the transmission system in Kanab Creek Canyon to accommodate the eventual production of 6 wells. In the future the parks and golf course may be provided with water from a secondary water system reducing the number of wells required to four.

Based on flow tests, the current gravity flow capacity of the existing 16" and 12" transmission lines from Kanab Creek Canyon are 2,208 gpm and 1,060 gpm respectively or a total combined capacity of 4.71 mgd. However, these lines have velocities of only 3.52 ft/sec and 3.01 ft/sec respectively. Using a booster pump station and increasing the velocities in these lines to approximately 4.5 and 4 ft/sec respectively we can obtain a capacity of 6.1 mgd which would meet the future culinary water demand assuming the golf course and parks were put on the secondary water system. In the future an additional transmission line would be required as pumping costs would be excessive as velocities in the pipe exceed 5 ft/sec.

The additional wells required would be constructed in West Fork Canyon. The City currently has right-of-ways from the BLM to construct two additional wells. The transmission lines in the vicinity of the wells are not adequate for the increased flow from the new wells. Approximately 3,000 feet of 10" pipeline to access the proposed 2 new wells and provide capacity for additional wells will need to be provided for. In addition approximately 4,000 feet of a parallel 12" line will be required to provide for the increased well production.

A probable cost estimate has been prepared for the project which includes other miscellaneous items such as power supply to the wells etc. not itemized above.

The following are the anticipated project costs:

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Immediate requirement:

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Mobilization	L.S.	1	\$44,000.00	\$46,000.00
2	10" PVC C-900 Waterline & Appurtenances	L.F.	3,000	\$22.00	\$66,000.00
3	10" Gate Valve	EACH	2	\$1,500.00	\$3,000.00
4	12" PVC C-900 Waterline & Appurtenances	L.F.	4,000	\$28.00	\$112,000.00
5	12" Gate Valve	EACH	4	\$1,800.00	\$7,200.00
6	New Well	EACH	2	\$225,000.00	\$450,000.00
7	Power Line w/ Appurtenances	L.S.	1	\$150,000.00	\$150,000.00
8	Booster Pump Station	L.S.	1	\$125,000.00	\$125,000.00
SUBTOTAL					\$959,200.00
10% Contingency					\$96,000.00
15% Engineering, Legal, Fiscal					\$144,000.00
<b>TOTAL PROJECT COST</b>					<b>\$1,199,200.00</b>

5 Year Requirement

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	New Well	EACH	1	\$345,000.00	\$345,000.00
<b>TOTAL PROJECT COST</b>					<b>\$345,000.00</b>

10 Year Requirement

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	New Well	EACH	1	\$400,000.00	\$400,000.00
<b>TOTAL PROJECT COST</b>					<b>\$400,000.00</b>

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20 Year Requirement

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
1	Secondary System Connection for Golf Course & Parks	EACH	1	\$2,00,000.00 <sup>1</sup>	\$2,000,000.00
TOTAL PROJECT COST					\$2,00,000.00

<sup>1</sup> Estimated

There would be 2,772 connections generated over the next 20 years based on the projected growth. With a maximum impact fee of \$8,774 there would be revenues of \$24,321,528 collected. The excess revenues will be needed to construct a new transmission line in Kanab Creek Canyon and also secure additional water rights.