ROCK SPRINGS WATER SYSTEM
SUMMARY OF PROBLEMS

1) INADEQUATE SUPPLY CAPACITY (INTAKE & TRANSMISSION LINE)
   - PRESENT GROWTH LIMITATION
   - 12 1/2% OF POPULATION NOT SERVED
   - INABILITY TO ACCOMMODATE ECONOMIC EXPANSION

2) EXCESSIVE PUMPING COSTS
   - UNDERSIZED EXISTING TRANSMISSION LINE
   - DOUBLE PUMPING/CONTINUOUS PUMPING
   - 18 PUMP STATIONS – ONLY 7 NEEDED
   - LACK OF DEDICATED TRANSMISSION/PEAKING STORAGE

3) POOR SYSTEM RELIABILITY/ POTENTIAL SERVICE INTERRUPTION
   - LACK OF SYSTEM BACK-UP
   - LACK OF ADEQUATELY SIZED & LOCATED BACK-UP STORAGE
   - RELIANCE ON CONTINUOUS PUMP OPERATION
   - AGING & DETERIORATION SYSTEM COMPONENTS
   - NO STANDBY POWER (2 DAYS WITHOUT WATER LAST SUMMER)
PUMPING VS CAPACITY
EXISTING 20" AC PIPELINE

2020 PEAK DAY - 15.14 MGD
(VEL - 10.7 fps)

2020 AVE. SUMMER DAY - 13.14 MGD
(VEL - 9.3 fps)

1988 PEAK DAY INCLUDING AREAS NOT SERVED - 11.01 MGD
(VEL - 7.8 fps)

1988 PRESENT PEAK DAY - 9.78 MGD
(VEL - 6.9 fps)

DESIRABLE OPERATING RANGE
(VEL - 2.8 TO 5.0 fps)

1988 AVE. SUMMER DAY - 8.52 MGD (VEL - 6.8 fps)

FIGURE 5.2
ROCK SPRINGS LEVEL II
SUMMARY OF RECOMMENDED IMPROVEMENTS

* NEW 30" ROCK SPRINGS PIPELINE
  - SUPPLY FOR ENTIRE ROCK SPRINGS AREA
  - 4 MG PEAKING STORAGE – ELIMINATE 6 PUMP STATIONS

* NORTHSIDE WATER SUPPLY
  - SUPPLY AREAS NOT SERVED – ALLOW FUTURE GROWTH
  - 2 MG STORAGE TANK – ELIMINATE 3 PUMP STATIONS

* STASSINOS WATER SUPPLY
  - SUPPLY 10-MILE DISTRICT – 150,000 GALLON STORAGE

* EAST SIDE WATER SUPPLY
  - SUPPLY EASTSIDE AREAS – ELIMINATE 5 PUMP STATIONS
  - 3 MG STORAGE TANK

* NEW RAW WATER INTAKE FACILITY
  - ABANDON EXISTING – SEDIMENTATION POND
  - INCREASED CAPACITY – BETTER LOCATION & MAINTENANCE
ROCK SPRINGS PIPELINE LEVEL II STUDY
RECOMMENDED PROJECT OVERVIEW

PROPOSED FACILITY LEGEND

- PROPOSED PIPELINE
- TANK
- PUMP STATION

ROCK SPRINGS PIPELINE
LEVEL II STUDY
RECOMMENDED PROJECT OVERVIEW

PROPOSED FACILITY

LEGEND

PROPOSED PIPELINE
TANK
PUMP STATION

ROCK SPRINGS

STASSINOS

RELIANCE

WHITE MOUNTAIN

CLEARVIEW

GREEN RIVER

TREATMENT PLANT
NEW INTAKE FACILITY

ROCK SPRINGS

STASSINOS

RELIANCE

WHITE MOUNTAIN

CLEARVIEW

GREEN RIVER

TREATMENT PLANT
NEW INTAKE FACILITY
ROCK SPRINGS LEVEL II RECOMMENDATIONS
PROJECT BUDGET

* CONSTRUCTION COSTS:
  - 30" ROCK SPRINGS PIPELINE/BLAIRTOWN STORAGE $ 9,248,000
  - NORTHSIDE WATER SUPPLY 2,113,000
  - STASSINOS WATER SUPPLY 2,830,000
  - EASTSIDE WATER SUPPLY 596,000
  - GREEN RIVER INTAKE FACILITY 2,417,000
  SUBTOTAL $ 17,204,000

* ENGINEERING COSTS:
  - DESIGN/SURVEY/PERMITTING $ 1,100,000
  - CONSTRUCTION SERVICES (10%) 1,720,000
  SUBTOTAL $ 2,820,000

* 15% CONTINGENCY:

TOTAL PROJECT BUDGET $ 23,024,000

33% LOCAL SHARE

$ 7,597,920

* ANNUAL LOAN PAYMENT (4% - 40 YEAR): $ 383,873.00

* GREEN RIVER SHARE = $ 18,873/YEAR
* ROCK SPRINGS AREA SHARE = $ 365,000/YEAR
**ROCK SPRINGS LEVEL II RECOMMENDATIONS**

**COST – BENEFIT ANALYSIS**

* **NON–QUANTIFIABLE BENEFITS**
  - HEALTH & SAFETY
  - FUTURE ECONOMIC GROWTH
  - PROPERTY VALUE INCREASE
  - CONSTRUCTION SPIN–OFF

* **COST BENEFIT RATIO**

<table>
<thead>
<tr>
<th>30–YEAR, PRESENT WORTH, 1% GROWTH</th>
<th>30–YEAR, PRESENT WORTH, 1/2% GROWTH</th>
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<tr>
<td>ADDITIONAL TREATED WATER DELIVERED</td>
<td>$ 18,960,000</td>
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<td>ELECTRICITY COST DIFFERENCE</td>
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<td>PUMP STATION O &amp; M REDUCTION</td>
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<td>$ 25,647,000 / $ 23,024,000 1.11</td>
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<td>$ 13,411,000</td>
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<td>5,041,000</td>
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<tr>
<td>554,000</td>
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</tr>
<tr>
<td>$ 19,006,000</td>
<td>/ $ 23,024,000 0.83</td>
</tr>
</tbody>
</table>
ROCK SPRINGS LEVEL II
ABILITY TO PAY ANALYSIS
"PRESENT POPULATION"

* PRESENT "EQUIVALENT" WATER USERS
  CITY OF ROCK SPRINGS WATER USERS 11,195
  FUTURE SERVICE AREA WATER USERS 540
  TOTAL EXISTING WATER USERS 11,735

* PROJECTED WATER USER RATES
  EXISTING MONTHLY WATER BILLING $ 22.95
  ROCK SPRINGS PIPELINE PROJECT BILLING 2.59
  TOTAL PROJECTED MONTHLY BILLING $ 25.54

* POTENTIAL ENERGY COST SAVINGS  1.34

* POTENTIAL MONTHLY WATER USER RATE $ 24.20
APPENDIX:
Detailed Information
ROCK SPRINGS LEVEL II RECOMMENDATIONS
ROCK SPRINGS TRANSMISSION LINE

* NEW 30" T.W. STEEL OR D.I. PIPELINE

* PREFERRED NORTHSIDE ROUTING

* ABANDON SIX PUMP STATIONS
  - WEST, MIDDLE, EAST KANDA
  - SWEETS

* REPLACE GREEN RIVER PUMPS

* CONSTRUCT NEW 4 MG BLAIRTOWN TANK
FUTURE 30-YEAR REPLACEMENT OF 20' AC LINE

OPTIMAL PIPE SIZE = 30'

TOTAL 30-YEAR P.W. COST

PIPERLINE/PUMP STATION CONSTRUCTION COST

30-YEAR P.W. ENERGY COST

30-YEAR COMPARITIVE O & M

4 MG BLAIRTOWN TANK CONSTRUCTION

30-YEAR PRESENT WORTH COST
(MILLION DOLLARS)

PIPE DIAMETER

ROCK SPRINGS PIPELINE
OPTIMAL PIPE SIZE

FIGURE 8.1
ROCK SPRINGS LEVEL II RECOMMENDATIONS

NEW NORTHSIDE TRANSMISSION

* NEW 14 TO 18 INCH PVC TRANS. LINE TO WHITE MOUNTAIN

* DIRECT SUPPLY FOR CLEARVIEW & WHITE MOUNTAIN DISTRICTS

* SUPPLEMENTAL SUPPLY TO ROCK SPRINGS NORTHSIDE AREA

* NEW 2 MG WHITE MOUNTAIN TANK

* TWO NEW PUMP STATIONS
  - RETROFIT INDUSTRIAL
  - CONSTRUCT WHITE MOUNTAIN

* ABANDON THREE OLD PUMP STATIONS
  - FOOTHILLS
  - ELK STREET
  - OUTLAW

* ABANDON CLEARVIEW TANKS
ROCK SPRINGS LEVEL II RECOMMENDATIONS
10-MILE WATER & SEWER DISTRICT (STASSINOS)

* NEW 8-INCH PVC TRANS. LINE FROM WHITE MOUNTAIN TO STASSINOS

* NEW 0.15 MG STORAGE TANK AT STASSINOS

* GRAVITY-FED SUPPLY – NO PUMP STATIONS
ROCK SPRINGS LEVEL II RECOMMENDATIONS

NEW EASTSIDE TRANSMISSION

* NEW 18" PVC TRANSMISSION

* HIGHWAY 376 ROUTING

* NEW 3 MG EASTSIDE STORAGE

* CONSTRUCT NEW EASTSIDE PUMP STATION

* ABANDON FIVE OLD PUMP STATIONS
  - THOMPSON - D STREET - SUNSET
  - BIGHORN - EDGAR

* ABANDON THREE TANKS
  - EDGAR - SUNSET - PALISADES
ROCK SPRINGS LEVEL II RECOMMENDATIONS
NEW RAW WATER INTAKE FACILITY

* ABANDON EXISTING INTAKE FACILITY

* CONSTRUCT NEW FACILITY NEAR TREATMENT PLANT
  - 90,000 SF SETTLEMENT BASIN
  - 16,000 GPM CAPACITY
  - CUT-OFF WALL/CHANNEL STABILIZATION
  - AUTOMATED MAINTENANCE FEATURES
  - SLUDGE DRYING BEDS
CITY OF ROCK SPRINGS
PRESENT SERVICE ZONES AND SYSTEM COMPONENTS

FIGURE 5.3
CITY OF ROCK SPRINGS
PROPOSED SERVICE ZONES AND SYSTEM COMPONENTS

FIGURE 8.2
CHANNEL STABILIZATION AS REQ. (TYP)

CUT-OFF WALL

INLET ISOLATION GATES (MULTIPLE GATES AT VARIABLE LEVELS)

GRANITE ROAD TO DRYING BENCH

WINTER BYPASS PIPE TO PREVENT BASIN ICING

PUMP DISCHARGE

RAW WATER VENT WELLS & PUMP HOUSE

CLARIFIER TANKS

TRASH COLLECTION THROUGH LOSES TO ACCOMMODATE BOBCAT OR LOADER

TRASH RACK WITH MOVING MECHANICAL RAKE

SECTION A

REVERSION CHANNEL

WEIR WALL

BAFFLE WALL & VALVE V. FIREHOSE CONNECTIONS

SLUICING CHANNEL

PRELIMINARY INTAKE FACILITY LAYOUT

FIGURE 8.3