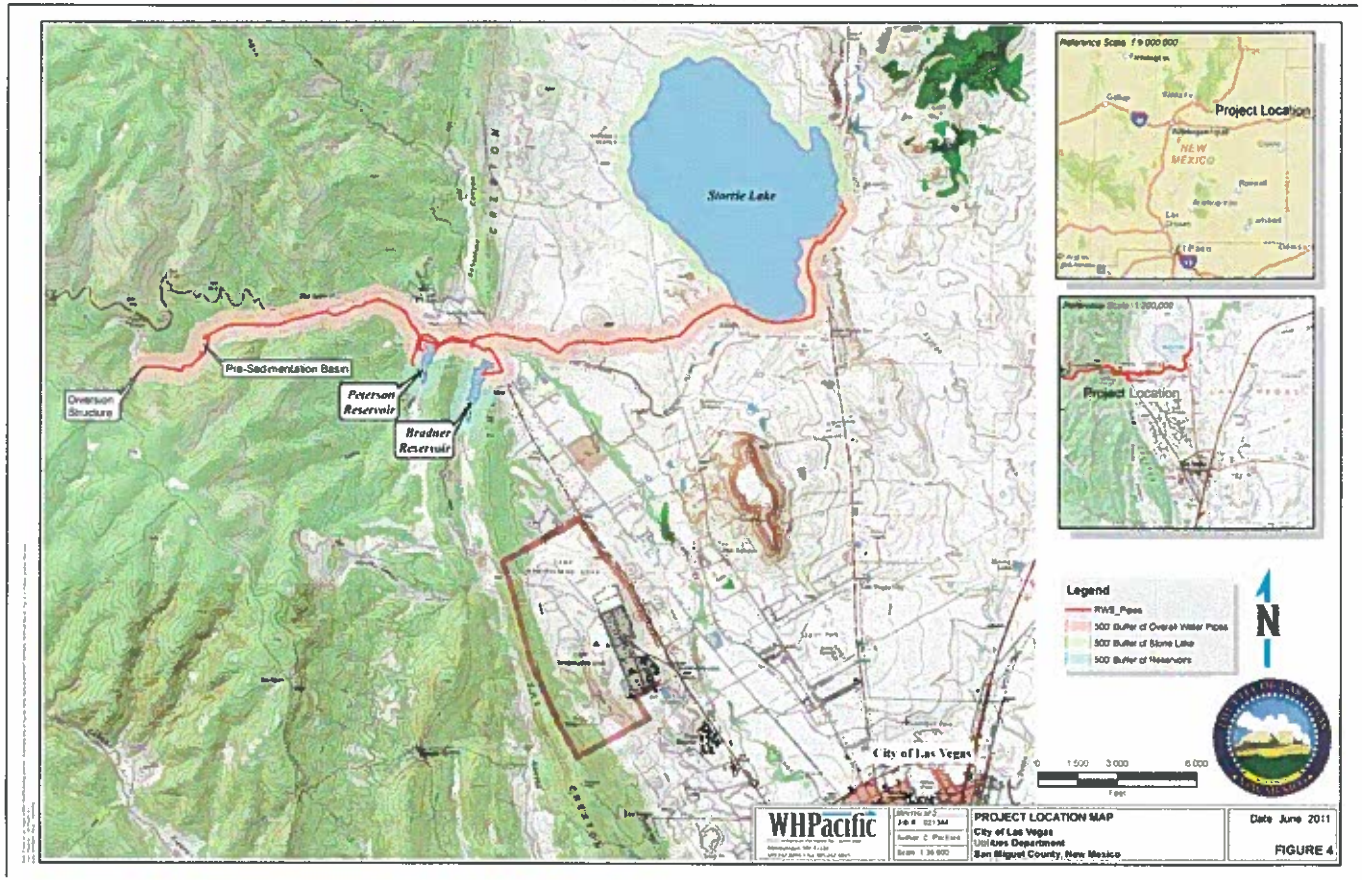
RAW SURFACE WATER SYSTEM RECOMMENDATIONS



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EXISTING RAW WATER SYSTEM

Gallinas River

Diverted flow

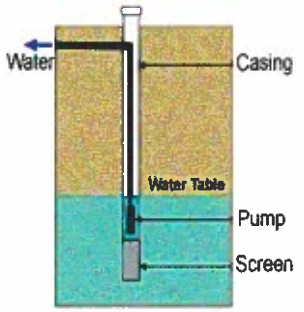
Pre-Sedimentation Basin

Peterson Reservoir

Bradner Reservoir

Filter Plant

Wells



The Las Vegas Community

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GOALS

- Determine existing raw surface water system deficiencies
- Maximize ability to capture and store Gallinas River water
- Improve the likelihood that the City will not run out of water during droughts

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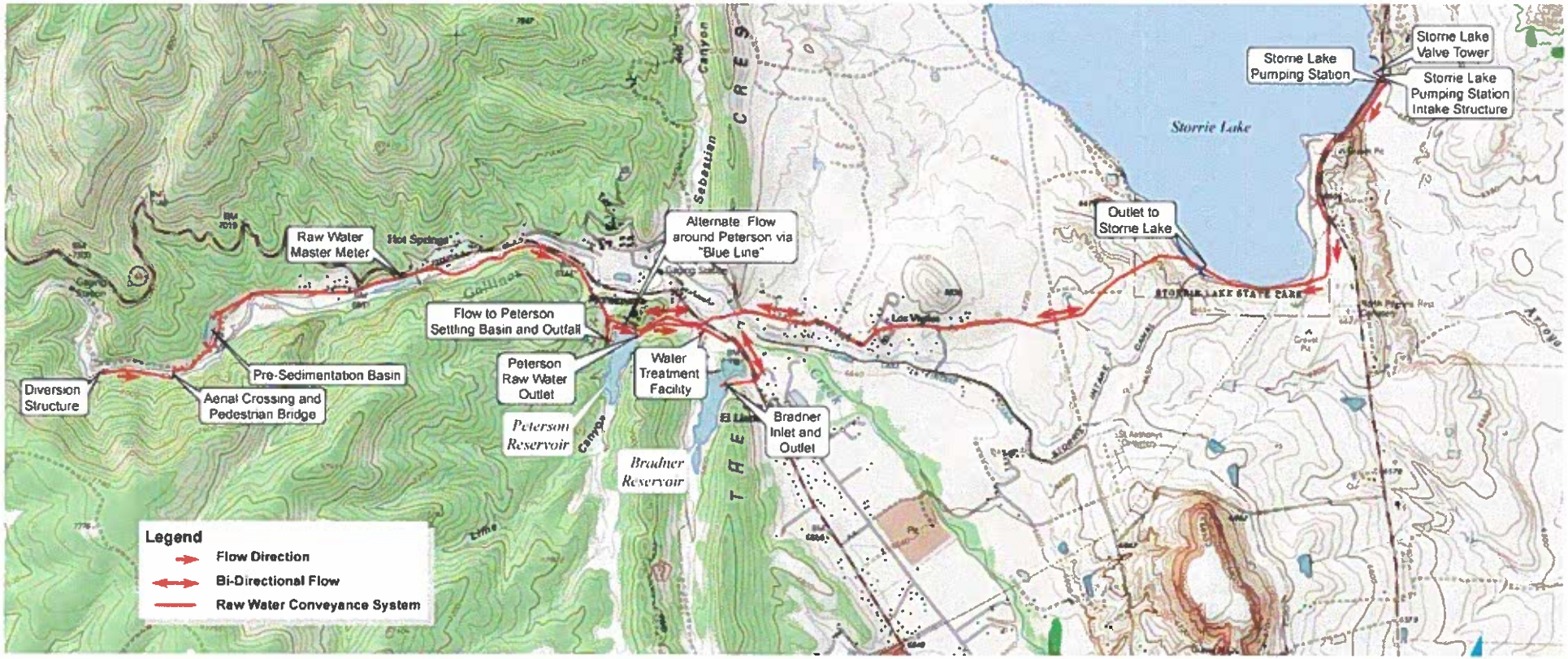
OVERVIEW OF THE SYSTEM



Key Components:

- Raw Water Supply
- Raw Water Conveyance
- Raw Water Storage

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SELECT FACILITY PHOTOS

Raw Waterline
Aerial Crossing

Pre-Sedimentation
Basin

Peterson Dam

Peterson Reservoir

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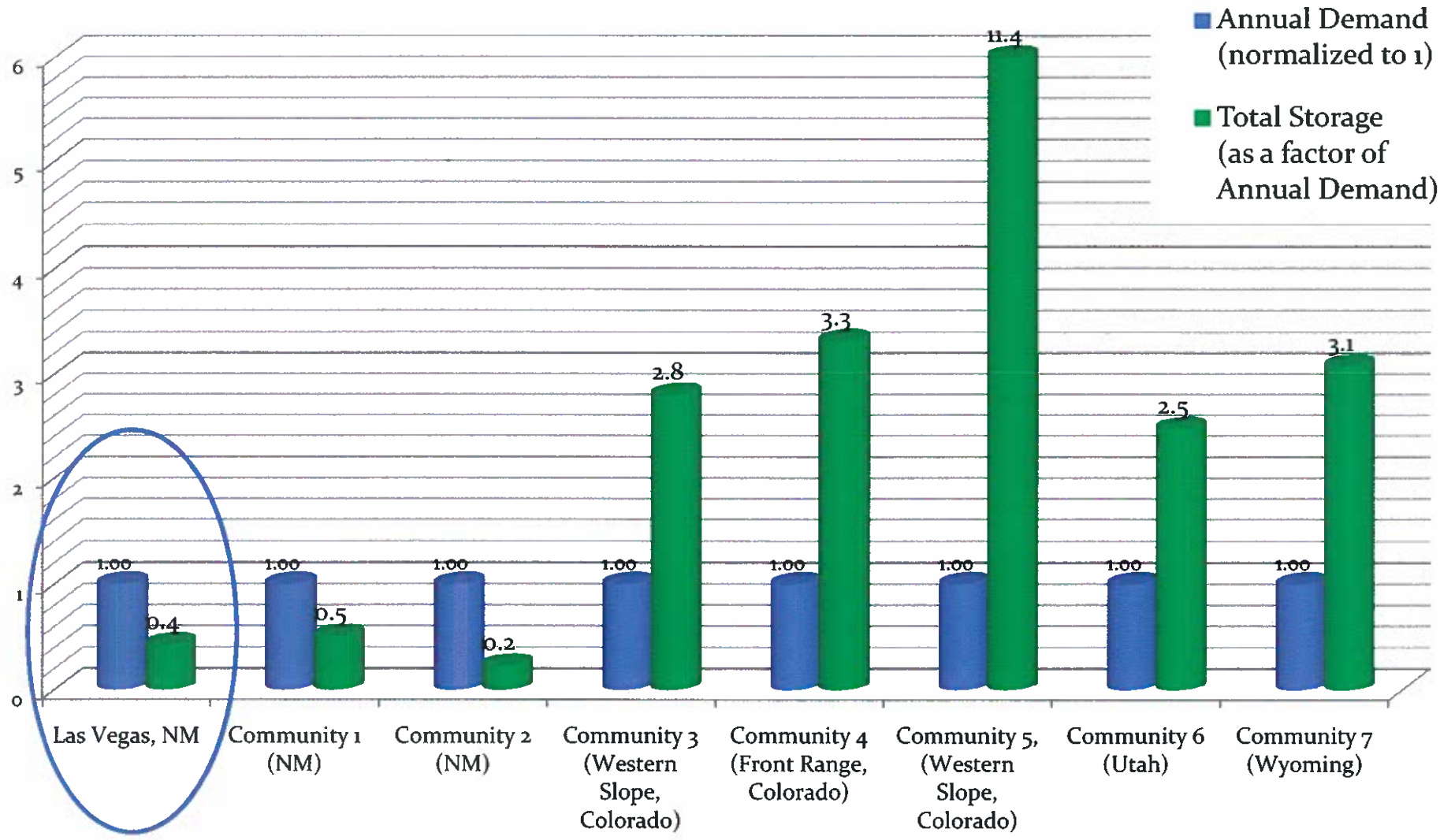
EXISTING RAW WATER STORAGE



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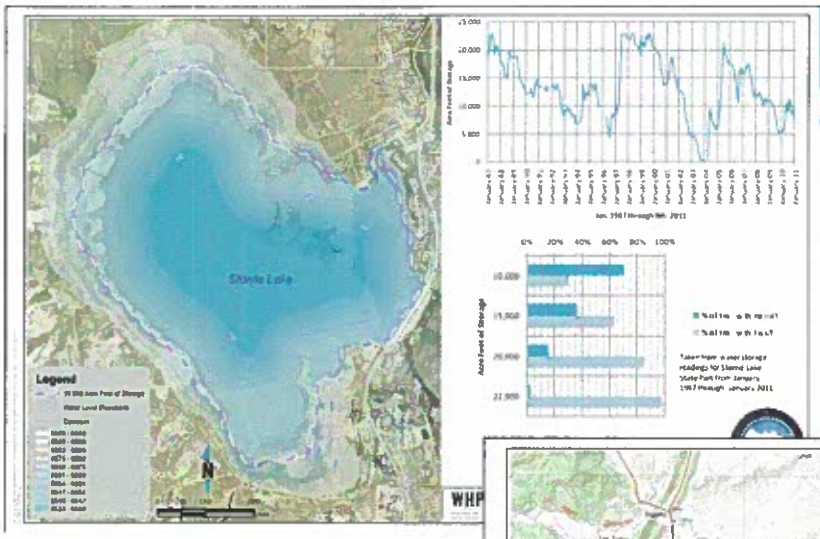
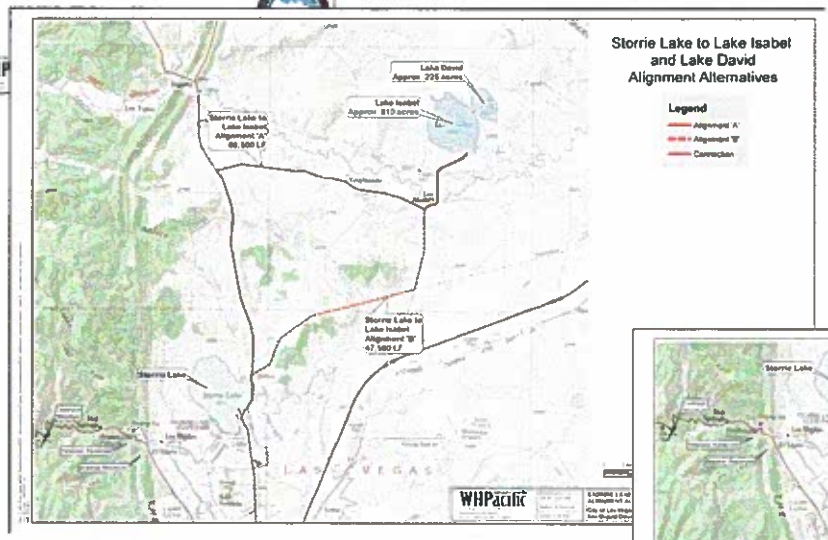
ADDITIONAL STORAGE AND CONVEYANCE FACILITIES CONSIDERED





- Storrie Lake – Storage Increases
- Lake Isabel and Lake David – Alternative Facility
- McAllister Lake – Alternative Facility

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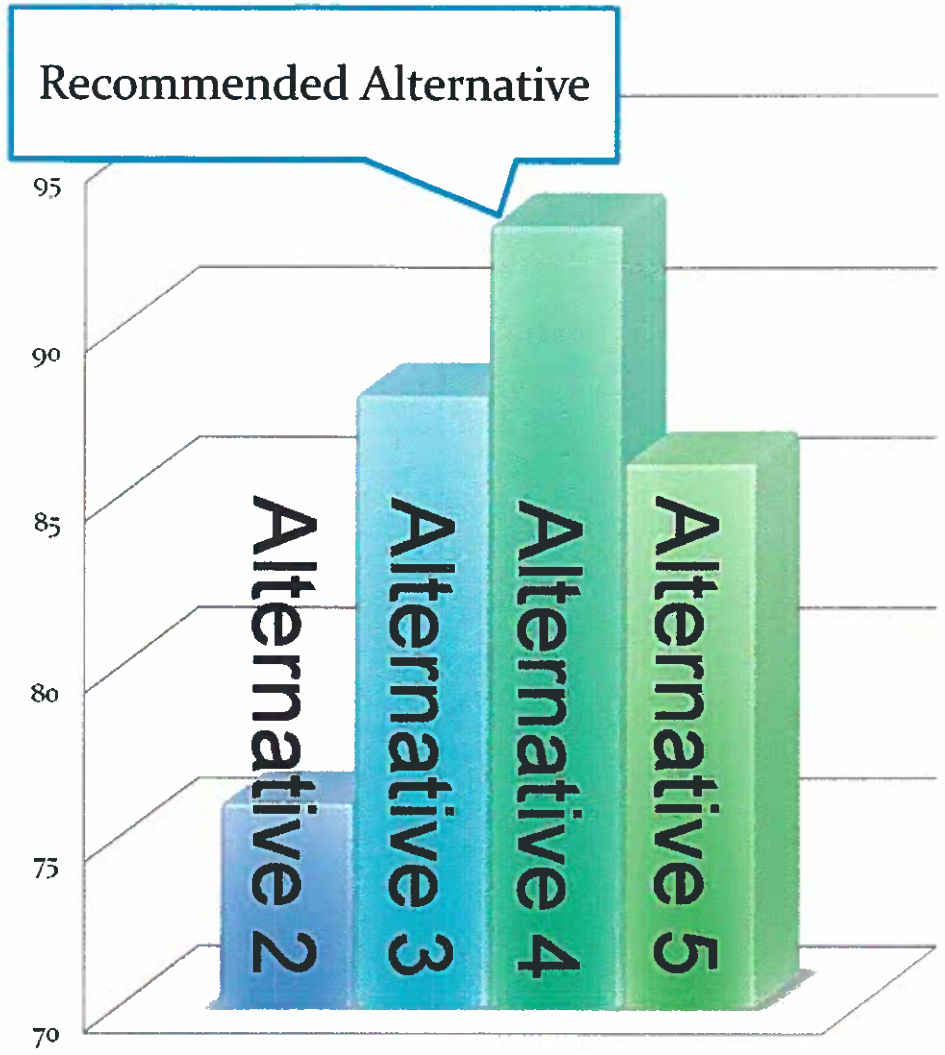
ALTERNATIVES CONSIDERED

Key Differences Between Alternatives:

- Additional Water Supply Source Volume
  - Groundwater
  - Misc. Sources
- Conveyance System Upgrades
  - Pipelines
  - Pre-Sedimentation Basin
- Water Storage Facility Locations and Upgrades
  - Peterson Dam
  - Bradner Dam
  - Storrie Lake



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Recommended Projects

(Alternative 4)

Priority 1 (Implementation Period 1-5 Years)

Additional Source Water Development

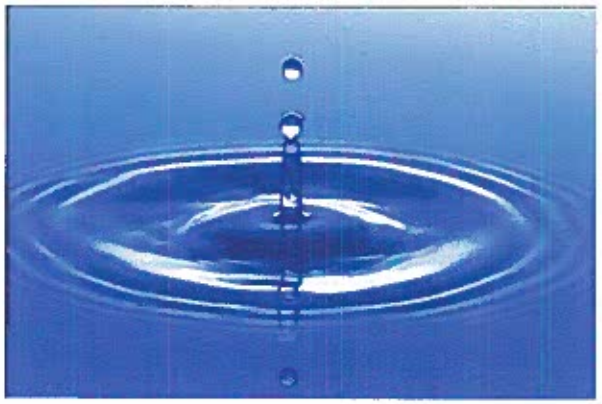
- Groundwater Development

  (Daniel B. Stephens and Associates)

- Misc. Additional Water Supply Source Acquisition

  (Mustafa D. Chudnoff)

  - Cost:$1.86 Million ±



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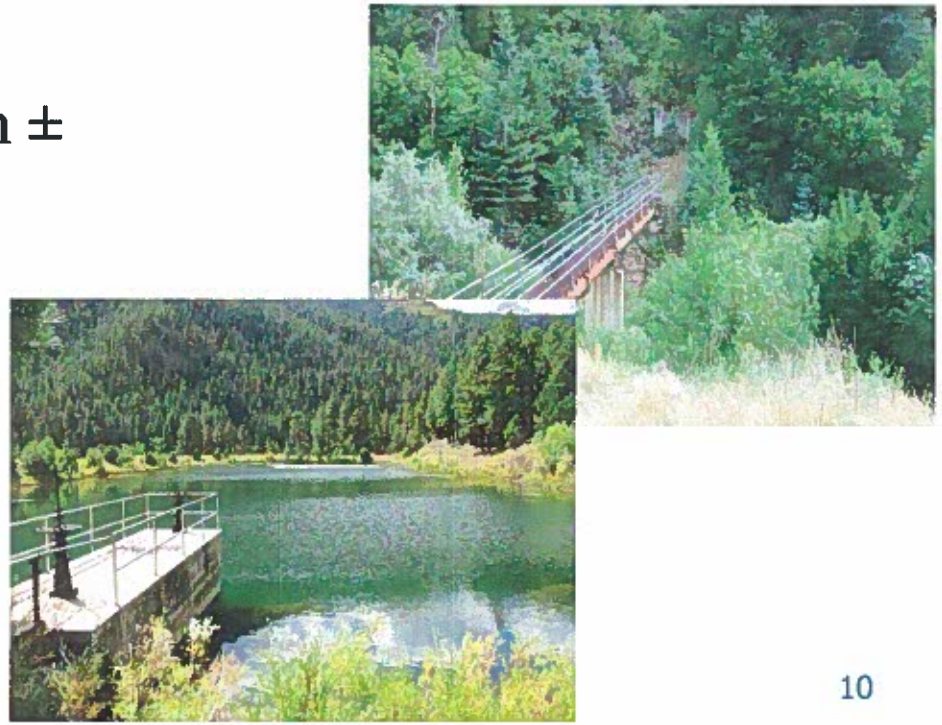
Recommended Projects

(Alternative 4)

Priority 1 (Implementation Period 1-5 Years)

Surface Water Conveyance System

- Includes: pipeline replacement, Pre-Sedimentation Basin improvements, etc.
  - Capital Cost: $12.2 million ±



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Recommended Projects

(Alternative 4)

Priority 1 (Implementation Period 1-5 Years)

Surface Water Storage

- Seepage Loss Rate Study for Bradner and Peterson Reservoirs
  - Cost: $50,000 ±
- Peterson Dam Expansion and Dam Safety Improvements
- Bradner Dam Engineering Stability Analysis
  - Cost: $140,000 ±

Recommended Projects

(Alternative 4)

Priority 2 (Implementation Period 5-15 Years)

- Construct Pump Station at Pre-Sedimentation Basin
  - Capital Cost: $3.5 Million ±

- Install impervious liner in Bradner and Peterson Reservoirs
  - Capital Cost: $4.0 Million ±

    (Dependant on the results of the Seepage Loss Rate Study results)

- Rehabilitate Bradner Dam
  - Capital Cost: $5.1 Million ±

    (Dependent on the results of the Bradner Dam Engineering Stability Analysis report results)

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Recommended Projects

Priority 3 (Implementation Period 15-40 Years)

- Water Quality Project:
  Supplemental Bradner Inlet Pipeline
  - Capital Cost: $1.0 Million ±

- System Automation Project:
  SCADA System Implementation
  - Capital Cost: $1.9 Million ±