



## Island Park Reservoir Enlargement Project – Land & Real Estate Assessment

IWRB Storage Committee

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## Why Investigate New Water Storage?

“Water use conflicts, continued unprecedented drought, population growth and urban development, conjunctive administration, Endangered Species Act requirements and other additional demands are being placed on the already scarce water resources of the state” (House Joint Memorial No. 8, 2008 Legislature)

Legislative Direction - Idaho Legislature has passed several pieces of legislation directing the IWRB to investigate additional water storage projects across the state, including the enlargement of Island Park Reservoir

- House Joint Memorial No. 8
- Senate Bill 1511
- House Bill 479

State Water Plan - Surface Water Development will continue to play an important role in meeting Idaho’s future water needs.

- Policy 1L Surface Water Supply Enhancement
- Policy 4E Snake River Basin New Storage

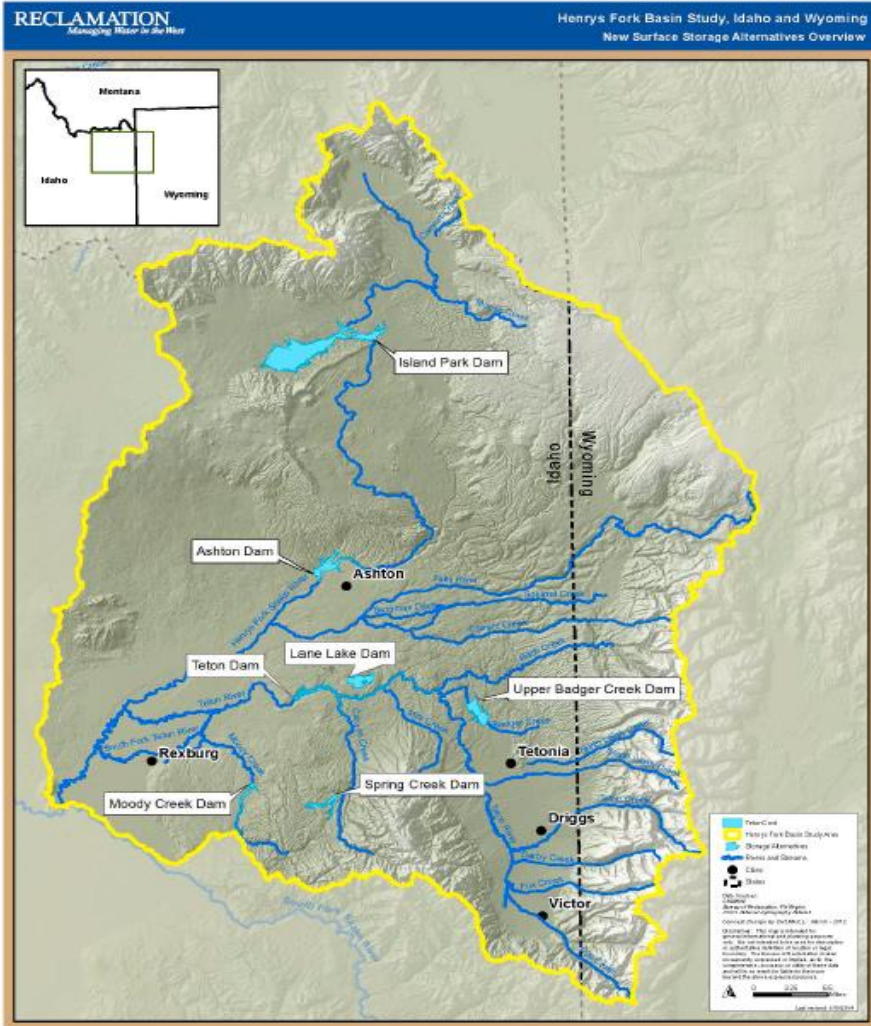
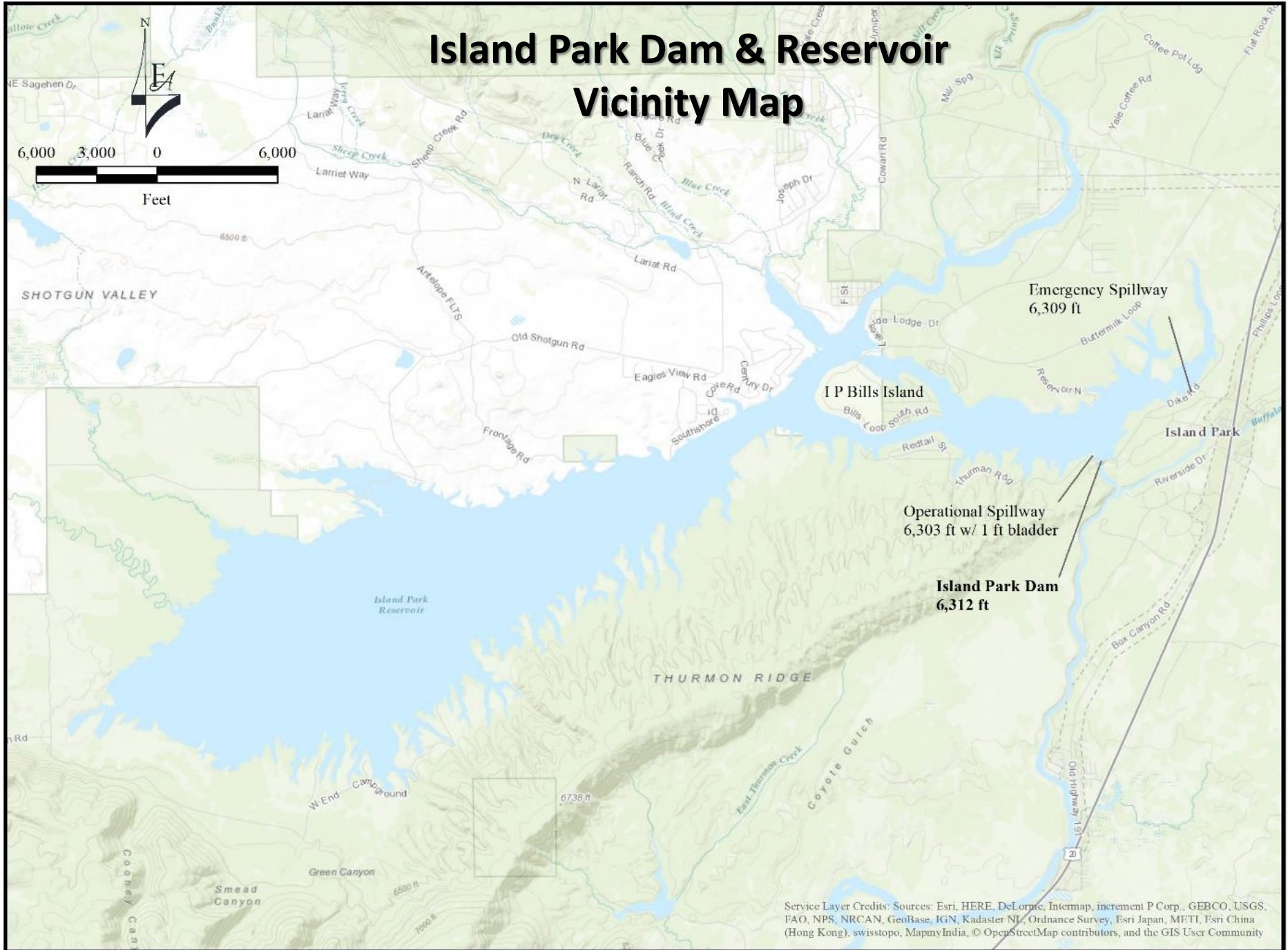
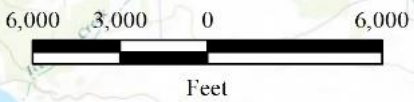


Figure 16. Map of the Henrys Fork River basin and the proposed locations of the seven surface storage alternatives.

## Henrys Fork Basin Study

- Partnership between Reclamation & IWRB – purpose to evaluate water management and supply options for the Henry’s Fork Basin and the Eastern Snake Plain
- Identified 51 alternatives which were reduced to 11 alternatives for further evaluation (managed recharge, water conservation, and surface water storage)
- The study provided the information necessary to prioritize projects based on costs, and physical, social and environmental characteristics.
- IWRB committed to continue to pursue existing programs and coordinate/support projects driven by stakeholder interest.
- **Island Park Reservoir Enlargement concept identified as most promising near-term option for new surface water storage**

# Island Park Dam & Reservoir Vicinity Map



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapnyIndia, © OpenStreetMap contributors, and the GIS User Community

# Island Park Dam & Reservoir Existing Facility

Emergency Spillway

8000' Dike

Operational Spillway

Island Park Dam

Powerhouse

Main Dam

## Existing Facility

- Dam: zoned earthen embankment constructed between 1935 and 1938
- Top of Dam Elevation: 6,312 feet (raised 3 feet in 1985)
- Structural/Hydraulic Height: 94 ft / 75 ft
- Length of Crest: 1,607-foot-long crest and 7,950-foot-long dike
- Owned by Bureau of Reclamation; operated by FMID



## Existing Facility

### Existing Reservoir

- Full Pool Elevation: 6,303 feet w/ 1 ft inflatable bladder (otherwise 6,302 ft)
- Full Pool Capacity: 135,205 acre-feet
- Flood Surcharge: 6,306.6 feet elevation (approx. 29,610 acre-feet)
- Maximum Reservoir Surface Area: approx. 8,000 acres

### Existing Spillways/Outlet

- Outlet Tunnel: low-level intake at bottom of reservoir through base of dam; 3,400 cfs capacity
- Operational Spillway: 6,303 feet (top of concrete weir and bladder); uncontrolled overflow “bathtub spillway”
- Emergency Spillway: 6,309 feet elevation along dike



## Existing Facility

### Hydropower

- Existing plant added in 1994  
– 20,000 megawatts per year
- Owned and operated by Fall River Rural Electric Cooperative
- Water piped through 720 ft penstock to powerhouse
- Tailrace includes aeration basin
- 1 ft adjustable rubber collar constructed on overflow spillway to maximize power generation

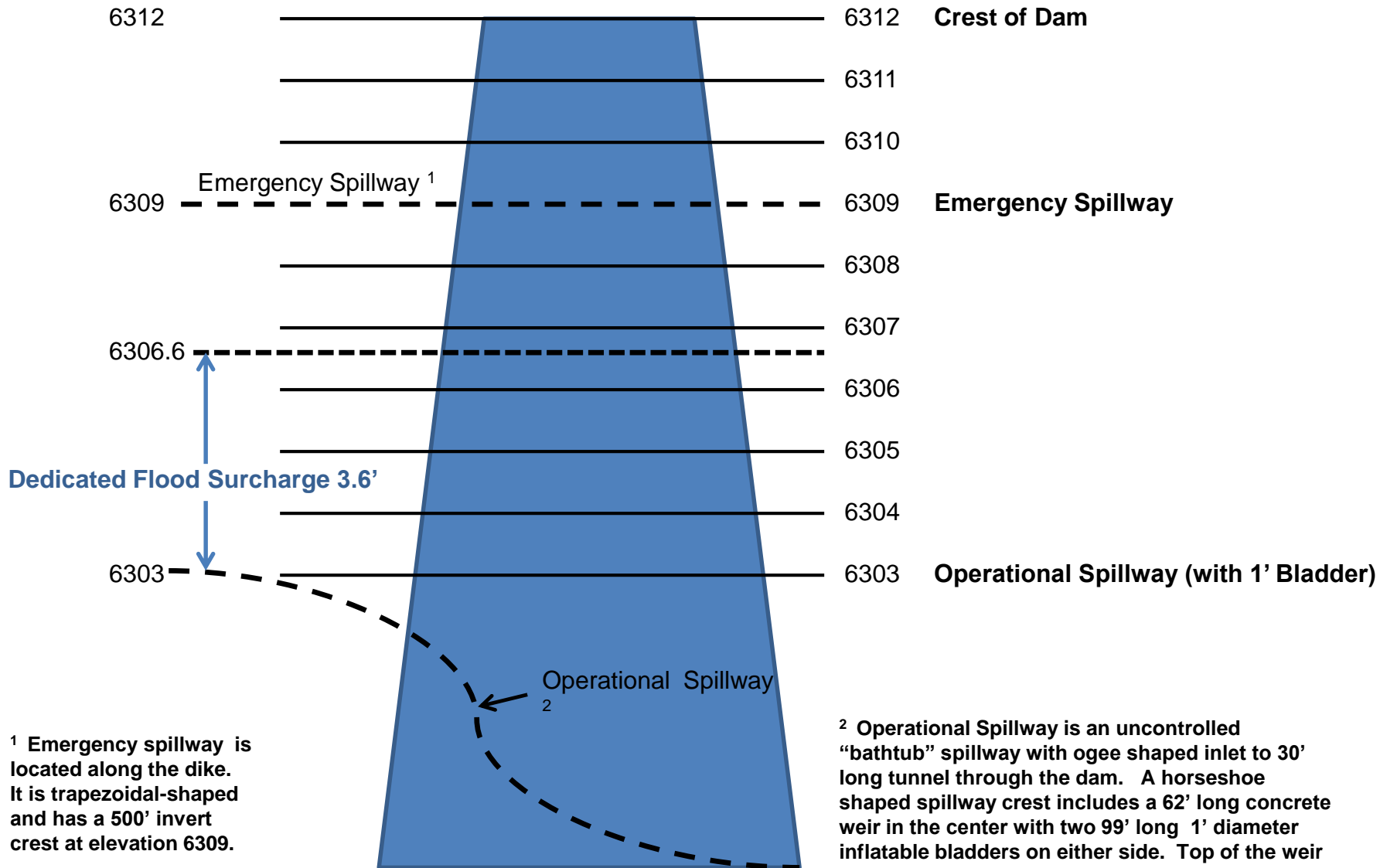




## Reservoir Enlargement Concept

- Reclamation holds “flowage or flood easements” up to approximately elevation 6306.6
- Concept proposed in the Basin Study: convert existing flood surcharge space to additional water storage capacity by increasing the normal operating water surface elevation up to 4 feet (normal operating pool 6303 ft; increased full pool elevation approx 6307 ft)
- Additional pool capacity: 26,700 – 35,000 acre-feet per Basin Study
- Limited Potential Modifications:
  - Assume limited change to dam embankment (verification required)
  - Increase height of bladder on Operational Spillway
  - Potential modification of Emergency Spillway to provide additional discharge capacity and offset current flood storage space in reservoir
  - Additional modifications to dike may be required
- Cost Estimate as per Basin Study (4 ft Enlargement)
  - 4-foot enlargement = \$240 per acre-foot
  - Total Relative Construction Cost: \$6,400,000

**HENRYS FORK BASIN STUDY - ISLAND PARK DAM  
EXISTING CONFIGURATION SCHEMATIC**  
(not to scale)



<sup>1</sup> Emergency spillway is located along the dike. It is trapezoidal-shaped and has a 500' invert crest at elevation 6309.

<sup>2</sup> Operational Spillway is an uncontrolled "bathtub" spillway with ogee shaped inlet to 30' long tunnel through the dam. A horseshoe shaped spillway crest includes a 62' long concrete weir in the center with two 99' long 1' diameter inflatable bladders on either side. Top of the weir and bladders elevation is 6303 ft.

## Land & Real Estate Assessment

- Limited analysis of effects to property and infrastructure performed in Basin Study (limited available elevation data)
- Evaluate and quantify effects to land, real estate, roads, utilities, septic systems, easements, shoreline and other appurtenant structures resulting from a 1 to 4-foot raise of the reservoir water surface elevation
- Results intended to help determine how and whether to proceed with the enlargement of the Island Park Reservoir



# Land & Real Estate Assessment Results

