
CT Hydro

Run of River Hydro Developments

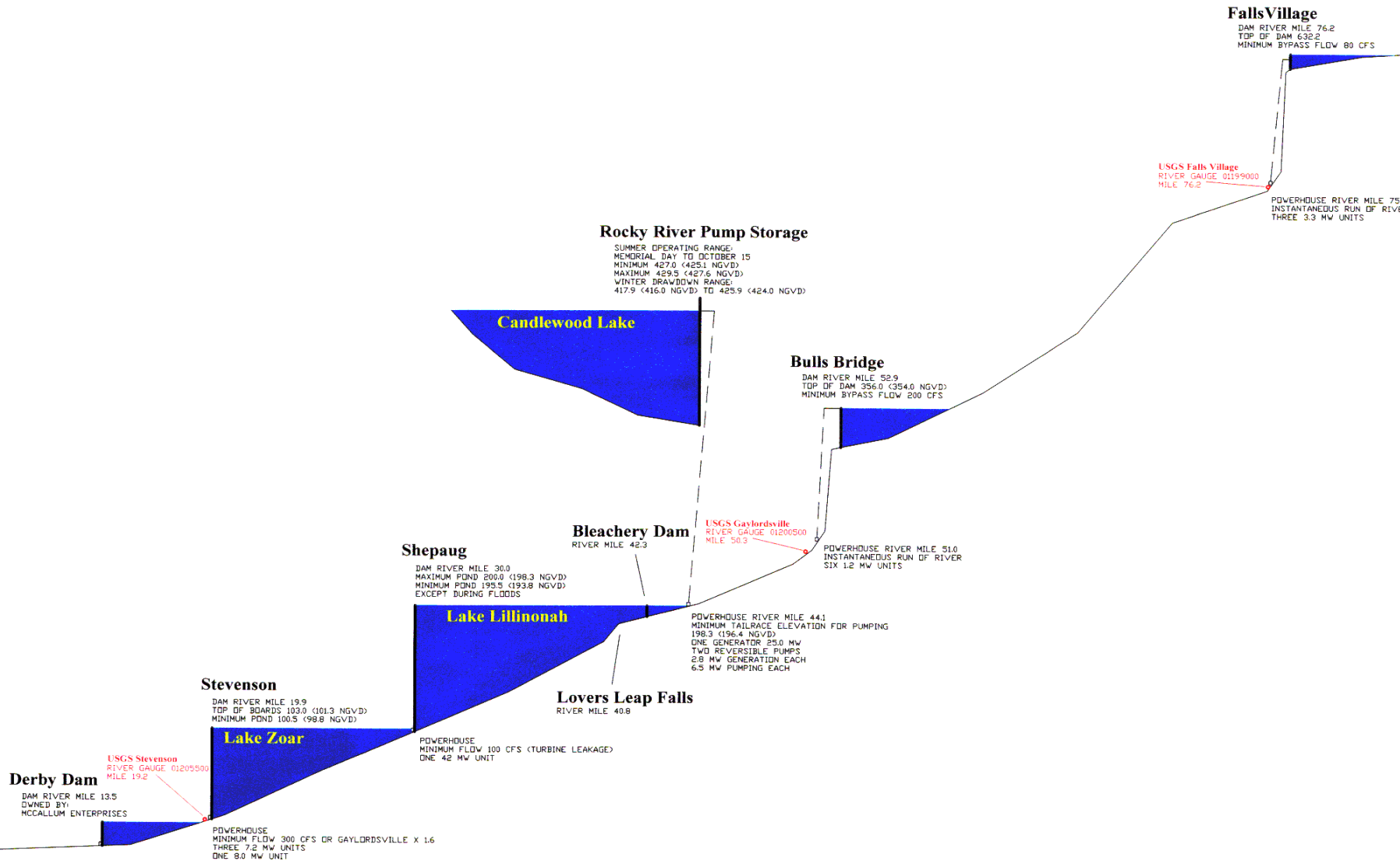
November 16, 2010



Connecticut Hydro Fleet

- 380,000 MWH/year
 - 28 Hydro Units in 10 developments
 - Rocky River Control Center
 - Housatonic Hydro
 - Eastern Hydro
 - Combustion Turbine Management
 - Waterbury LMS100
 - Tunnel FT-4
-

Housatonic Hydro System



Falls Village Hydro Development



- Water St., Falls Village, CT
- 10.5 MW of capacity/1800 cfs
- 3 generating units
- 40,000 MWH/yr
- 1/2 mile power canal
- Natural flow regime
- Great Falls overlook
- Two trail systems
- Canoe/kayak and picnic area

Bulls Bridge Hydro Development



- Rte 7, New Milford & Kent, CT
- 8.2 MW of capacity/1200 cfs
- 6 generating units
- 45,000 MWH/yr
- 2+ mile long earthen canal, remote & manual operation of headgates
- Natural flow regime
- Island/canal/tailrace recreation areas

Rocky River Hydro Development



- Rte 7, New Milford, CT
- First pumped-storage station in this country
- Candlewood Lake – state's largest
- 32,000 MW of capacity/2120 cfs
- 1 generator 25 MW/1620 cfs
- 2 pump turbines 6 MW/500 cfs
- 14,000 MWH/yr
- 1/2 mile long Earthen canal

Shepaug Hydro Development



- River Rd., Southbury, CT
- Largest hydro unit in NE
- 43 MW of capacity
- 1 generating unit/6200 cfs
- 130,000 MWH/yr
- Habitat for wildlife, including bald eagles
- 9,500 people visit annually for recreation
- Forms Lake Lillinonah – Weekly storage facility

Stevenson Hydro Development



- Rte 34, Monroe, CT
- 28.9 MW of capacity
- 4 generating units, but 3 run together/6000 cfs
- 100,000 MWH/yr
- Stevenson Dam creates Lake Zoar, Reacts to Shepaug runs
- Derby Dam downstream



Agencies Relicensing Goals: FV/BB

- Run of River Outcome
 - IFIM results vs. Trout Mgmt. Area Needs
 - Limited Storage
 - Existing Accommodations

- Higher Bypass Flow (FV 317cfs; BB 492cfs)
 - IDF Results vs. Bypassed Reach Opportunities
 - Appalachian Trail Visual Benefits
 - Aesthetic Flow over Falls and in Gorge

CT Hydro Relicensing Goals – FV/BB

- \$\$: Low Bypass Flow Conditions
- Use Studies & Economic Model to Drive Talks
- Ensure Conditioning is Manageable
- Minimize Compliance Failure Risk

Falls Village Development - Results

Operations Before

- Store and Release
- Minimum Flow 120 cfs
- By Pass Flow ~ 20 cfs
(drain gate leakage)

Operations After

- Instantaneous ROR:
Compliance Elevation Based
- No Minimum Flow
- Bypass flow 80 cfs

Bulls Bridge Development - Results

Operations Before

- Store and Release
- Minimum Flow 150 cfs
- By Pass Flow ~ 81 cfs

Operations After

- Instantaneous ROR:
Compliance Elevation Based
- No Minimum Flow
- Bypass flow 200 cfs

Compliance Plan

- Remote Level Sensing – alarms/shutdown
- Off-site Historian/Logging
- Maintenance of Pond Level
 - Falls Village > Elevation 631.70 ft
 - Bulls Bridge > Elevation 355.75 ft
- Transients allowed
- Outage Notification
 - Planned: 20 days Notice
 - Unplanned: < 1 hr, still compliant
- 3 Year Assessment of Compliance Plan

Falls Village Run of River

