

# Hogback Watershed Recreation Committee Special Meeting – April 11, 2019 Presentation Materials



# Hogback Watershed Recreation Committee (HWRC) Overview

- Authorized under Section 7-16 of MDC Charter
- Regulatory oversight of recreation on West Branch lands and water
- Seven (7) Members
  - Watershed Towns (4)
  - CT DEEP (1)
  - CT DPH (1)
  - MDC (1)
    - Water Bureau Member

# HWRC – Last Meeting

- Requested by the MDC in October 2016
- Extended drought conditions
- “Emergency Water Supply Source” not available
  - Statutory requirement to release 50 CFS (32 MGD)
  - Measured inflow of 7-8 CFS at that time
- Statutory releases led to significant water deficit in Colebrook River Lake

# MDC Water Storage at Colebrook



September, 21 2016 – Inflow 8 cfs measured at New Boston gauge

# HWRC – Current Meeting

- United States Army Corps of Engineers (ACOE) has informed MDC of proposed Sluice Gate Repair Project
  - Project requires ~70-foot drawdown of West Branch Reservoir to allow for sluice gate repair
  - Drawdown will take 30 days to achieve, and similar duration to restore
  - Project duration expected to be several months
  - MDC's Colebrook Hydro facility can not be operated through most of project
    - ACOE project will require complete removal of hydroelectric turbines from intake tower

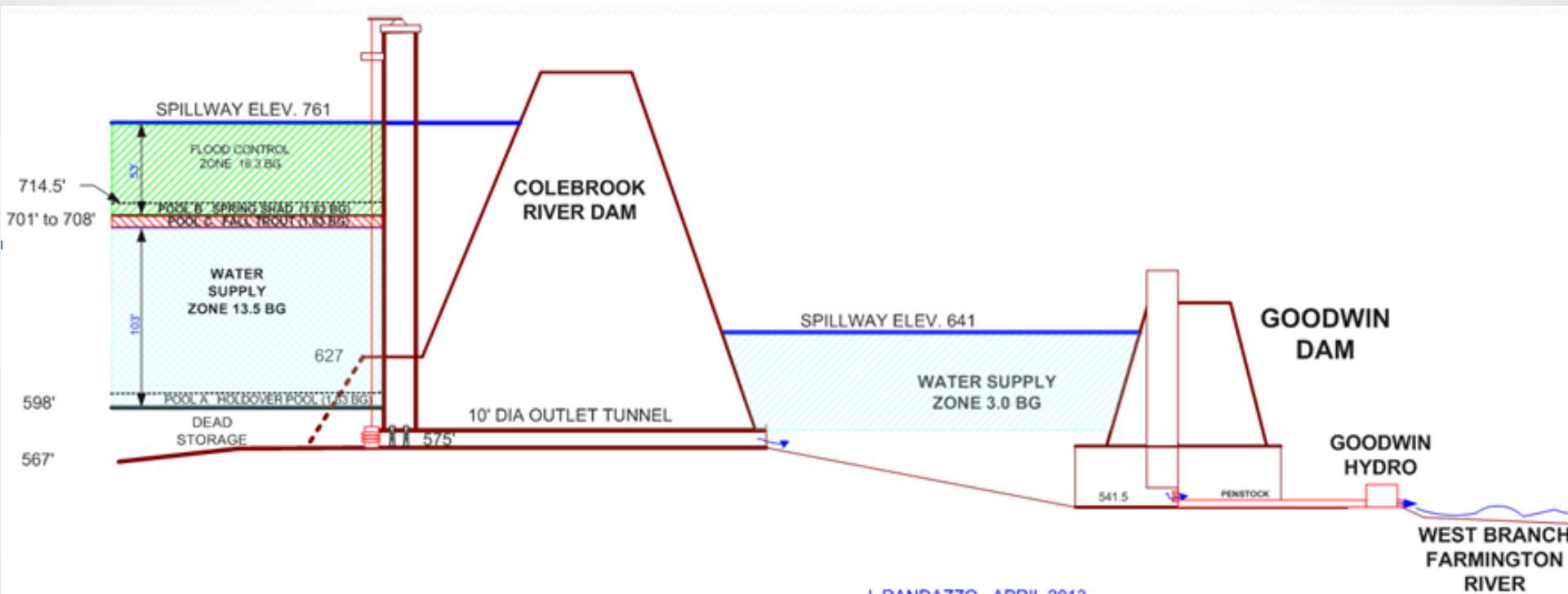
# Colebrook River Lake Background

## Partnership between MDC and USA

- Authorized by Connecticut General Assembly (CGA) *Special Act 122* - June 6, 1963
- Agreement between MDC and USA - February 11, 1965
  - Grants the MDC rights to **10 Billion Gallons** water storage space.
  - MDC pays for **35%** of Dam construction cost
  - MDC pays **35%** of annual O&M Costs for the Project
- Modification to Agreement - December 11, 1984
  - Allows for hydroelectric generation at Dam

# Colebrook River Lake Background

## Water Storage Space



J. RANDAZZO APRIL 2013

# The Future of MDC at Colebrook

- Water is not available when needed – not a realistic “Emergency Supply”
  - Proven by 2016 drought
- Declining water consumption
  - MDC has no need for West Branch water now or in future
  - CT DPH Approved Safe Yield does not include West Branch water
- No ability to get water to MDC water supply system
  - Tunnel from West Branch Reservoir to Barkhamsted Reservoir would be required
    - Estimated cost - \$600-\$700 Million
    - CT DEEP Diversion Permit would be needed



# The Future of MDC at Colebrook

- Colebrook River Lake Dam Project is complete
  - Last payment for Dam construction made in 2019
- Eight (8) MDC Member Towns pay 35% of annual O&M costs for a Federal dam project
- Hydroelectric generation issues
  - Turbines are at end of useful life
  - Decreasing annual revenue from power sales
  - Life Cycle Analysis determined continued investment is not financially prudent

**MDC is in discussions with ACOE to leave Colebrook**

# Colebrook Hydro Upgrade Analysis

| <b>Colebrook Dam Financial Summary</b>                |  |  |  |   |
|---|--|--|--|---|
|   | <b>Option 1 -<br/>Refurbishment<br/>of Existing<br/>System -<br/>Obermeyer</b> | <b>Option 2 -<br/>Replacement of<br/>Existing System -<br/>Obermeyer Units</b> | <b>Option 3 -<br/>Replacement of<br/>Existing System -<br/>Amjet Units</b> | <b>Option 4 -<br/>Replacement of<br/>Existing System<br/>Kaplan Units</b> |
| <b>Hydrostation Capacity<br/>(kW)</b>                 | 3,000  | 3,000  | 2,400  | 1,650   |
| <b># of Turbines</b>                                  | 6  | 6  | 4  | 2   |
| <b>Estimated Annual<br/>Generation (kWh)</b>          | 4,429,000  | 4,620,000  | 3,230,000  | 4,819,000   |
| <b>Estimated Project<br/>Costs</b>                    | \$1,282,000  | \$4,169,000  | \$6,615,000  | \$3,470,000   |
| <b>Annual O &amp; M<br/>Specific Turbine Costs</b>    | \$49,000   | \$49,000   | \$68,000   | \$22,000  |
| <b>Annual Property Tax<br/>and Base O&amp;M Costs</b> | \$236,000  | \$236,000  | \$236,000  | \$236,000   |
| <b>Estimated Annual<br/>Revenue Year 1</b>            | \$235,000  | \$245,000  | \$171,000  | \$255,000   |
| <b>50-year Net Earnings</b>                           | (\$2,010,000)  | (\$4,287,000)  | (\$12,404,000)   | (\$1,211,000)   |
| <b>50-year NPV</b>                                    | (\$1,711,000)  | (\$4,262,000)  | (\$8,421,000)  | (\$2,840,000)   |
| <b>Payback (years)</b>                                | 50+  | 50+  | 50+  | 50+   |

# Flow Releases – Current by MDC

|  | FLOW (CFS)   | FLOW (MGD)   | ANNUAL TOTAL    |
|--|--------------|--------------|-----------------|
| STATUATORY MINIMUM FLOW RELEASE          | 50           | 32.3         | 11.8 BG         |
| NATURAL FLOWS BETWEEN 50 CFS AND 150 CFS | 50-150       | 32.3 - 96.9  | 12 BG (Typical) |
| PASS ALL RELEASES FROM OTIS RESERVOIR    | VARIABLES    |              | 7 BG (Typical)  |
| MDC RIPARIAN OBLIGATION                  | AS REQUESTED | AS REQUESTED | 21.7 BG         |
| DEEP FISHERIES RELEASES                  | AS REQUESTED | AS REQUESTED | VARIABLES       |
| FLOOD CONTROL                            | 3000 CFS MAX |              |                 |

# Flow Releases – Future

|  | FLOW (CFS)           | FLOW (MGD)           | ANNUAL TOTAL                              |
|--|----------------------|----------------------|---|
| STATUATORY MINIMUM FLOW RELEASE          | 50                   | 32.3                 | 11.8 BG                                   |
| NATURAL FLOWS BETWEEN 50 CFS AND 150 CFS | 50-150               | 32.3 - 96.9          | 12 BG (Typical)                           |
| PASS ALL RELEASES FROM OTIS RESERVOIR    | VARIABLES            |                      | 7 BG (Typical)                            |
| <b>MDC RIPARIAN OBLIGATION</b>           | <b>AS REQUESTED?</b> | <b>AS REQUESTED?</b> | <b>21.7 BG *OR* Monetary Compensation</b> |
| DEEP FISHERIES RELEASES                  | AS REQUESTED         | AS REQUESTED         | VARIABLES                                 |
| FLOOD CONTROL                            | 3000 CFS MAX         |                      |   |