History and Deferred Maintenance of the South Branch Park River Flood Control System

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Natural Resources Conservation Service

- A Voluntary Federal Technical Agency

- 1954 PL 566 Allowed NRCS to do Flood Control Projects
Why the South Branch Park River Watershed Flood Control Channels Were Constructed

- Flooding and Loss of Life from 1955 Hurricane Diane
- $3.69 Million in damages ($49 Million today)
- West Hartford, Newington, and the City of Hartford request assistance.
- State applied for NRCS help after the 1955 flood.
South Branch Park River Flood Control Channels

- Part of the Park River Watershed, a large complex system including
  - 5 SBPR Watershed Dams
  - 10+ miles of Channels with many channel types
- Largest NRC S Project in CT
- Took 30 years to build
- Cost $29M in Federal Dollars
NRCS planned, designed, and built SBPR dams and channels over the 30 year period ending in 1993.

DEEP as sponsor signed an Operations & Maintenance (O&M) Agreement with NRCS.

1985 Dedication

Trout Brook upstream of Farmington Ave. 1985
SBPR Channels Benefits

- Protect Lives, Property, and Businesses surrounding the SBPR
- $2.6 million Flood Damage Savings/year
- Flood Insurance not required
- Walking trails and Parks along the stream.
O&M Problems (2010)

- Large trees and brush on the banks
- Sediment accumulations in the channels
- Full sediment ponds
- Earthen bank and concrete wall failure
Trees and Brush are a Problem!
- Dislodged trees could plug bridges and culverts
- A plugged bridge could fail catastrophically
- A plugged bridge is Public Safety threat!!!

Rockledge Brook after a storm

Annual accumulation of branches on Farmington Ave culverts on Trout Brook
Other Problems with Trees and Brush

- Not designed for brush and trees on the banks
- Reduce channel capacity by blocking/slowing storm water flow
- Slowed water causes upstream floodwaters to rise
- Uprooted trees cause channel bank failure

Mowing banks of Piper Brook a few years after construction

Unmaintained banks Piper Brook in 2014

Trout Brook Channel near New Britain Ave in 2014
Sediment is a Problem!

- Sediment obstructs the channel and reduces its capacity
- Vegetation grows in the sediment reducing capacity
- Reduced capacity causes upstream rise in floodwaters

Trout Brook Sediment Pond 5 in 2014
Trout Brook Design Condition
Trout Brook Current Condition
When there is No Regular Maintenance at SBPR Flood Control Channels

- Maintenance work grows exponentially and becomes a large job to return it to design conditions
- It is a violation of the O&M Agreement
- NRCS sends Notice of O&M Violation to DEEP requiring it to be done
Why Is Maintenance Required?

- Public Safety and Flood Protection
- Low or no flood insurance rates to local residents and businesses
- Maintain NRCS Certification
Consequences of Decertification

- CT would lose future Federal funds for 26 High Hazard Dams across the State – $75M est.
- Increased flood insurance premiums
- Require DEEP to reimburse the Federal Government $15M or more
Why Us?
Why now?
CT Dam Safety Programs

Two programmatic areas:

- **Statewide dam safety regulatory program** (IWRD)
  - 3086 regulated dams
- **Oversight of state-owned dams** (IWRD and Support Services Division)
  - 265 state-owned dams
What does that mean?

- CTDEEP is responsible for operation and maintenance of 239 of these dams, which includes 28 flood control dams/dikes protecting towns such as Bloomfield, Hamden, Hartford, Stafford, Torrington, and Waterbury.

- DEEP is responsible for day-to-day operations and maintenance, as well as overseeing repairs, upgrades & construction contracts.
South Branch of the Park River (SBPR)

- 1961 - Agreement between the SCS, the State and the municipalities (West Hartford, Newington and Hartford) in response to the flood of '55
- 1964 - Agreement with Hartford to make channel improvements
- 1972 - Agreement with West Hartford to include channel improvements
- 1986 - Agreement with Newington to make channel improvements to Piper Brook
- Towns to incur costs to maintain vegetation and the state to incur costs to make future capital improvements
- Last major maintenance project occurred in 1999-2000
**South Branch Park River Overview**

- Includes maintenance in Hartford, West Hartford and Newington – all three towns received copies of this as well as previous and subsequent annual inspection reports

- Work includes:
  - Tree and vegetation removal
  - Sediment removal
  - Structural repair to floodwalls and flap gate structures.
Connecticut Department of Energy and Environmental Protection

State Funding
- April 27, 2012
  State Bond Commission funding for design and permitting of necessary repairs and maintenance
- July 25, 2014
  State Bond Commission funding of $4.5M for construction

State Permitting
- October 23, 2014
  Notice of Tentative Determination to Issue a Dam Safety Permit published
- December 19, 2014
  Dam Safety Permit Issued

Contracting
- June 11, 2015
  Bid advertisement

Awarding Contract
- June 25, 2015
  Mandatory Pre-bid Meeting
- July 30, 2015
  Bid opening. Paganelli Construction corporation selected

Outreach
- September 16, 2015
  Letter to local abutting residents and businesses regarding project status.

Project Start
- October 1, 2015
  Preconstruction meeting with contractor, CTDEEP and towns
Project Scale

Overall project:
Vegetation Removal Type I – 15.2 acres
Vegetation Removal Type II – 36.2 acres

Sediment removal:
16 dewatering/stockpile sites
Approximately: 25,000 cubic yards

26 Construction entrances/exits
When work began
September 17, 2015

Dear Resident/Business Owner,

The State of Connecticut Department of Energy and Environmental Protection (DEEP) under the direction of the United States Department of Agriculture’s (USDA) Natural Resource Conservation Service (NRCS) will be performing required maintenance and repairs to the South Branch of the Park River (SBPR) which includes Trout, Rockledge and Piper Brook in West Hartford; Piper and Mill Brook in Newington and Park River down to Hamilton Avenue in Hartford. DEEP is required to perform this deferred maintenance in order for the flood control system to remain certified by NRCS.

The $4.5 million dollar project will involve clearing trees and vegetation as well as sedimentation removal from the floodway along all reaches of these watercourses. Some concrete work will be performed on the floodwalls in various locations. This will require contractors to work in and along the existing watercourses. You may see equipment and workers in and next to watercourses as work progresses. This may include truck traffic on roads near your home. DEEP owns or has access easements along the watercourse through all properties to perform this work and will attempt to minimize the length of time the contractors will be performing work.

The SBPR flood control system was constructed starting in Hartford back in 1964 and the final (Piper/Mill Brook) section completed in 1991. The waterways involved were engineered to alleviate flooding in the upper reaches of the watershed by quickly moving flood waters out of the impacted areas. Removing decades old trees, vegetation and obstructions from these channels allows the system to function as designed. This work benefits all residents and businesses that live along the flood channel.

DEEP expects the work to commence daily (approximately 7 am to 4:30 pm) mid-October 2015 and continue through June 2016 (weather dependent). Dredging operations will involve working in the watercourse to remove accumulated sediments from existing sedimentation ponds. This work was last performed in 1999.

Please contact Dan Biron at (860) 424-3892 or dan.biron@ct.gov with any questions or concerns. Thank you.

Information, plans, photos and updates are available on the DEEP State Dam website:

http://www.ct.gov/deep/cwp/view.asp?a=2720&Q=554158&PM=1
South Branch Park River Flood Control System Maintenance
Public Information Meeting
West Hartford

November 4, 2015
South Branch Park River Overview

- Work commenced in Fall/Winter 2015
- Work completed August 2016
Park River in Hartford
Circa 1964

- New Britain Avenue
- New Park Avenue
- Flatbush Avenue
- Hamilton Street Bridge
Pond #5 Trout Brook at Linbrook and Linard Roads
Sawcutting of Existing Floodwall on Trout Brook
Floodwalls – Before and After Repairs
Park River Upstream of Newfield Avenue Bridge in Hartford

BEFORE Maintenance

AFTER Maintenance
Final Cost to State Taxpayers- $5,560,000.00

- Type I and II Vegetation Removal – 260,000 yd² → $462,033.05
- Sediment Testing, Excavation and Disposal – 27,423 yd³ → $2,902,447.18
- Concrete Floodwall Repairs - $76,900
- 2 Week Project Shutdown - $182,285.26
- West Hartford Neighborhood Enhancements –
  - Tree Plantings Linbrook/Linard Neighborhood - $36,802.50
  - Southwood Neighborhood Field Underdrain - $51,683.75
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Questions?