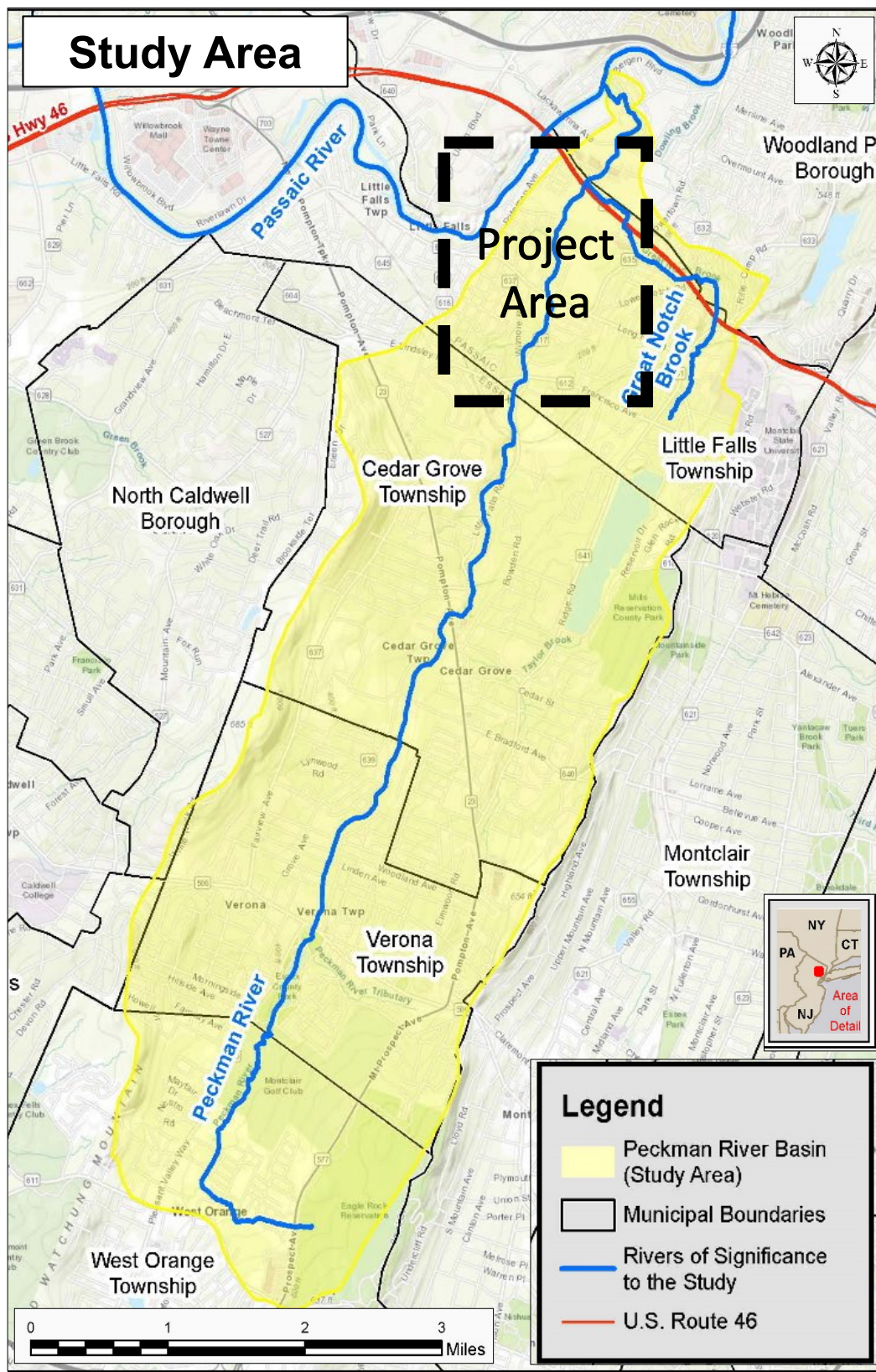



# Peckman River Basin, New Jersey, FRM Feasibility Study




### Study Area Facts

- 9.8 square mile study area.
- Flooding in Peckman River is primarily caused by flash flooding and backwater flooding from the Passaic River.
- The most significant flooding problems occur in the municipalities of Woodland Park & Little Falls. Study only focuses on flash flooding from the Peckman River.
- These two townships have a combined 558 structures in the 100-year floodplain and 632 structures in the 500-year flood plain that are impacted from Peckman River Basin flash flooding.


### Flood Facts




Woody debris and erosion left in the aftermath of Hurricane Floyd (September 1999).



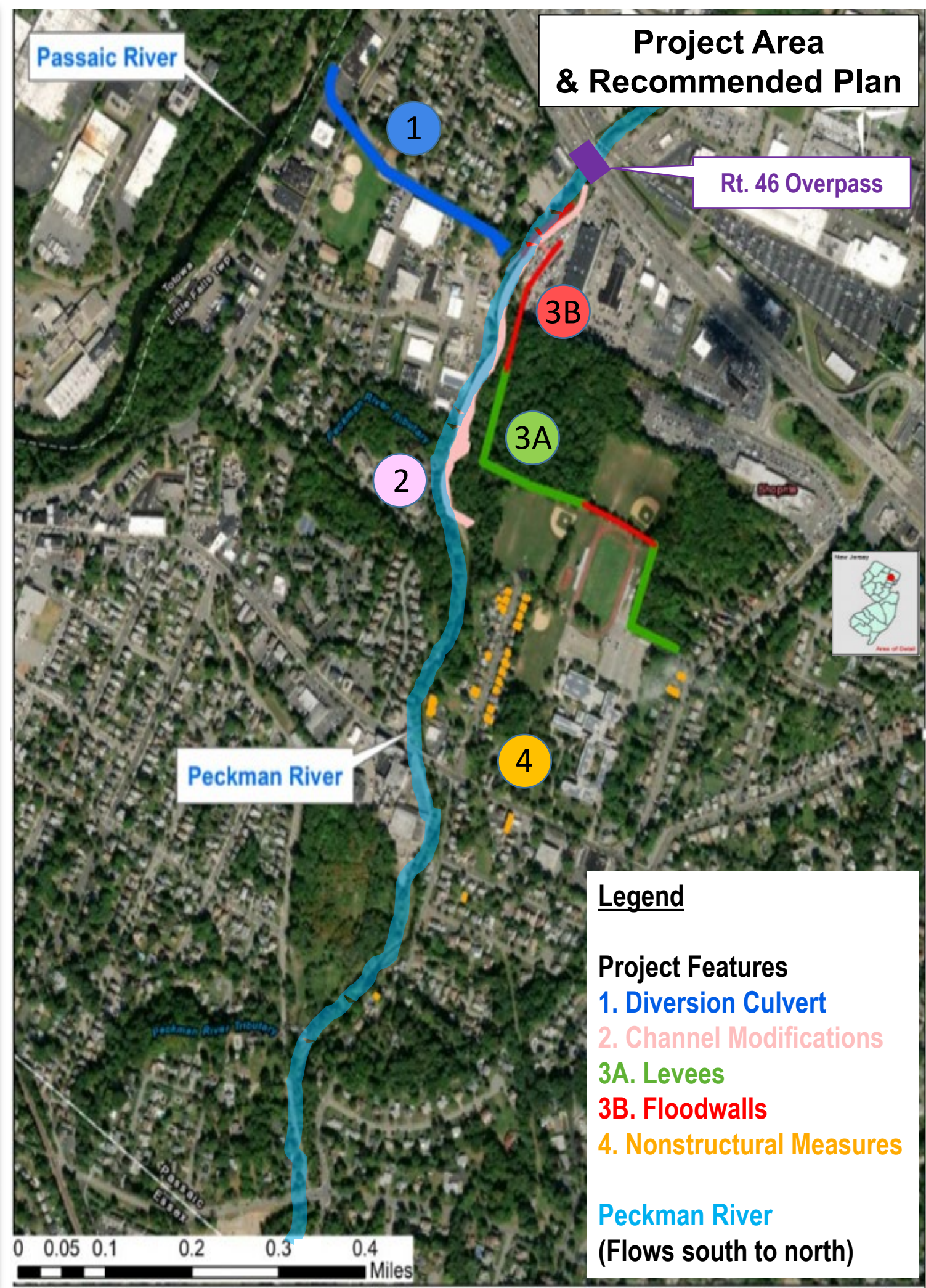
Hurricane Floyd, Sep. 1999 (1 life lost, \$12.1M in damages, 2018 P.L.)



Peckman River erosion in Little Falls, New Jersey (August 2018).



11 August 2018 (\$38.6M in damages in Little Falls and \$3.3M in damages in Woodland Park, 2018 P.L.)



### Legend

**Project Features**

- 1. Diversion Culvert
- 2. Channel Modifications
- 3A. Levees
- 3B. Floodwalls
- 4. Nonstructural Measures

**Peckman River**  
(Flows south to north)

## Recommended Plan Features

- 1. Diversion Culvert** (2% AEP Risk Management). A 1,500-foot long, 40-foot diameter double box diversion culvert would be constructed between the Peckman and Passaic Rivers to divert floodwater from the Peckman into the Passaic River. The inlet at the Peckman River includes two weirs to manage flow and create a pool near the inlet.
- 2. Channel Modifications** (2% AEP Risk Management). Channel modification is expected along 1,848 linear feet of shoreline near the inlet to accommodate riprap. Large diameter riprap would eliminate the erosion caused by high velocities during flood events and possible undermining of the proposed levees and floodwalls.
- 3. Levees/Floodwalls** (2% AEP Risk Management). Approximately 2,170 linear feet of levees and or floodwalls would be built upstream and downstream of the ponding weir. 1,207 linear feet of levees and/or floodwalls would be constructed in the vicinity of Little Falls High School, between the track and baseball fields. These levees and/or floodwalls would be constructed at a height up to +145 feet NAVD88.
- 4. Nonstructural Measures** (1% AEP Risk Management). Up to sixteen structures would be elevated so that their main floor elevations would be to a final height of one foot above the base flood elevation. The plan also includes up to 38 structures to be wet floodproofed and four structures to be dry floodproofed. All nonstructural plan elements are situated within the ten percent floodplain, and will be implemented based on the voluntary willingness of owners.
- 5. Compensatory Mitigation.** In order to compensate for the permanent direct impacts to habitat, approximately 1,848 linear feet of river equaling to approximately of 1 acres of open water habitat and 0.85 acres of native streambank vegetation will be restored. Included in the compensatory mitigation is 0.77 of riparian zone restoration.
- 6. Risk Communication.** The project will not eliminate all flood risk to life and property. Because of this, it is essential that flood risk be communicated to residents. USACE, NJDEP, and local municipalities will work together to communicate flood risk, especially residual flood risk.

## Environmental Impacts

Open Water: 1,848 linear feet - Mitigation Directly Upstream of Recommended Plan  
 Riparian Zone: 0.77 acres - Mitigation Directly Upstream of Recommended Plan  
 Forested Wetland: 0.48 acres - Mitigation Credit Purchase or Elsewhere in Watershed

## Feasible

- Plan is technically feasible
- Plan is economically justified
- Cost-shared 65% Federal, 35% Non-Federal

## Acceptable

- Plan would be environmentally acceptable
- NEPA compliance – Environmental Assessment
- ATR and IEPR have been completed
- NJDEP, Township of Little Falls and Borough of Woodland Park are in full support of the Recommended Plan

## Sustainable

- No Federal long-term requirements
- Sponsor OMRR&R; NJDEP

## Suitable

- **Residual Risk** – Residual risk is the flood risk that remains after the selected plan is in place. Not all flood risk to life and property can be eliminated, however flood damage from the Peckman River would be significantly reduced with plan implementation
- **Resiliency** – economic resiliency of businesses
- **Reliability** - based on a proven engineering solution that will be able to withstand multiple storms
- **Adaptability** – structural and nonstructural project features can be modified to address climate change, if required

## Recommended Plan Overview

Level of Flood Risk Management	Structural (diversion culvert, levees, and floodwalls) = 2% AEP Nonstructural (10% floodplain) = 1% AEP
Total First Cost	\$146,188,000
Average Annual Costs	\$6,184,000
Average Annual Benefits	\$9,440,000
Average Annual Net Benefits	\$3,256,000
BCR	1.5 @ 2.75% (0.76 @7%)

## Nonstructural Measures

Treatment	Residential	Non-residential	Subtotal
<b>Wet Floodproofing</b>	29	9	38
<b>Elevation</b>	16	0	16
<b>Dry Floodproofing</b>	4	0	4
<b>Total</b>	49	9	58

## Study Timeline

