

Resilient Piper and Webster Brook

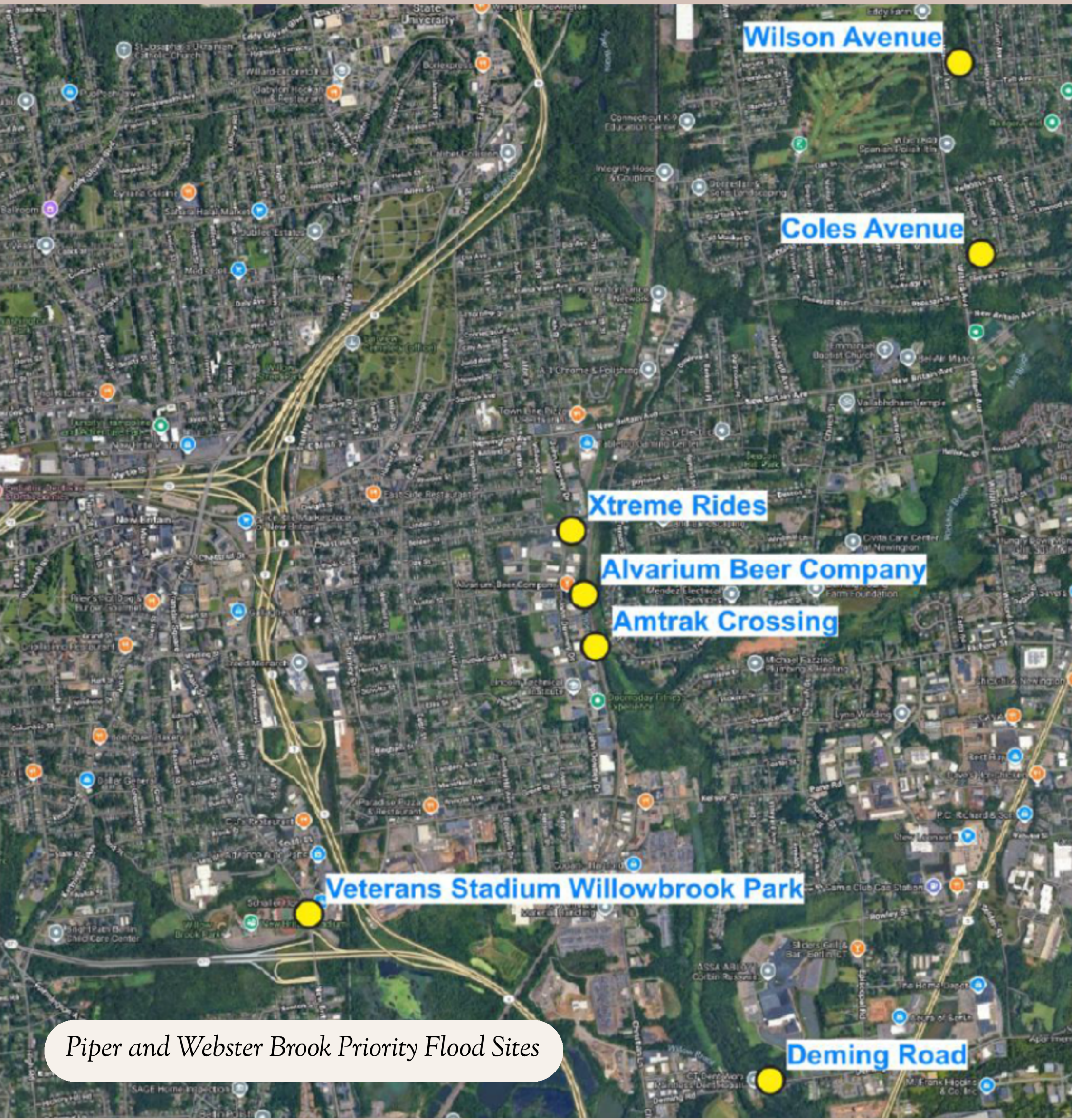
SLR CONSULTING



BERLIN, NEWINGTON & NEW BRITAIN

PROJECT SITE OVERVIEW

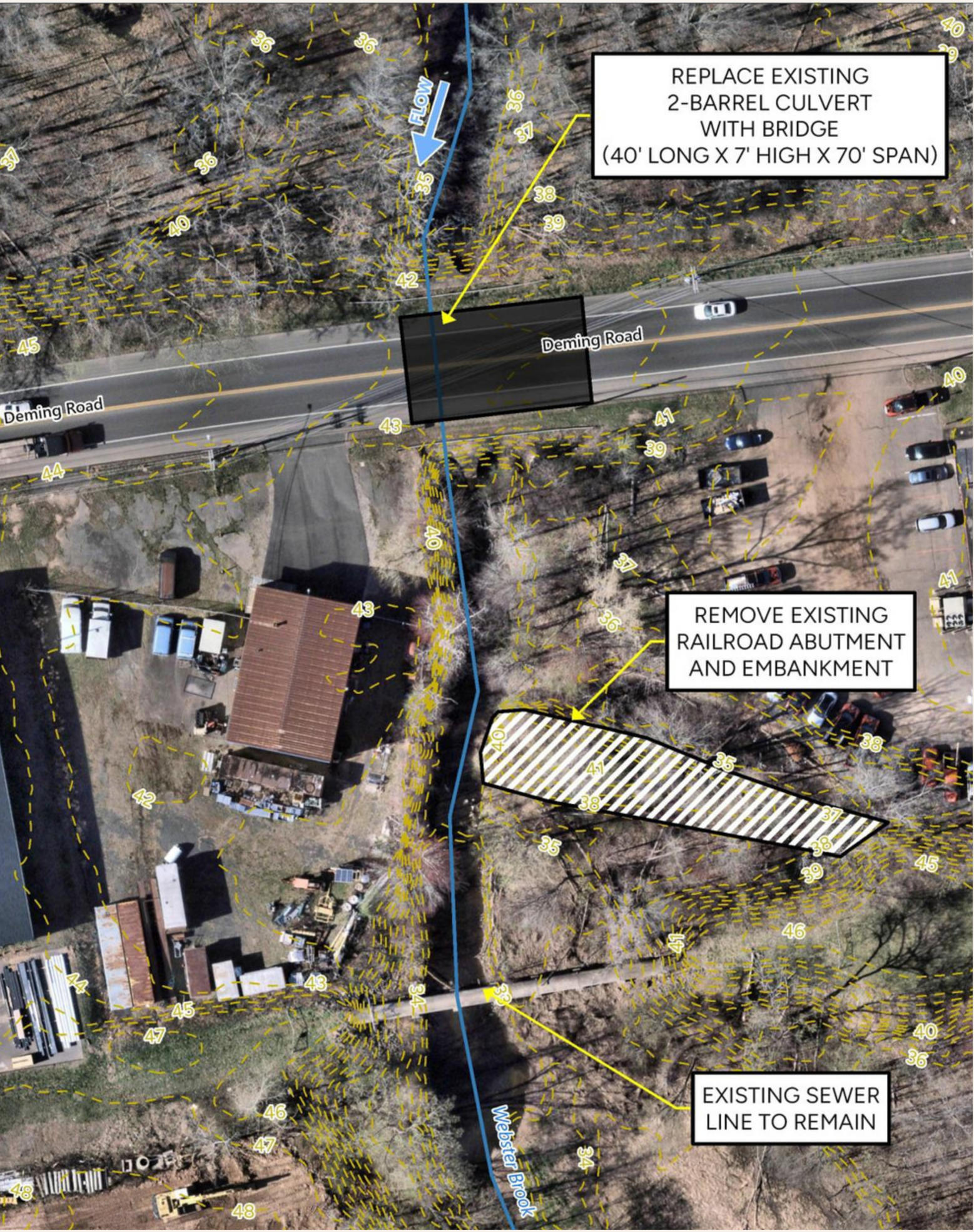
The Piper Brook and Webster Brook corridors flow through Berlin, New Britain, and Newington. Along these waterways, flooding intersects with critical facilities, transportation networks, and flood-prone development, impacting both residential and commercial properties. Aging drainage systems and major infrastructure such as Route 9 and the Amtrak rail line further constrain natural drainage, worsening flood conditions. This effort focused on identifying and addressing six critical flood pinch points within the corridor, in addition to assessing the role of the Amtrak crossing on flood conditions.



CONCEPT DESIGNS

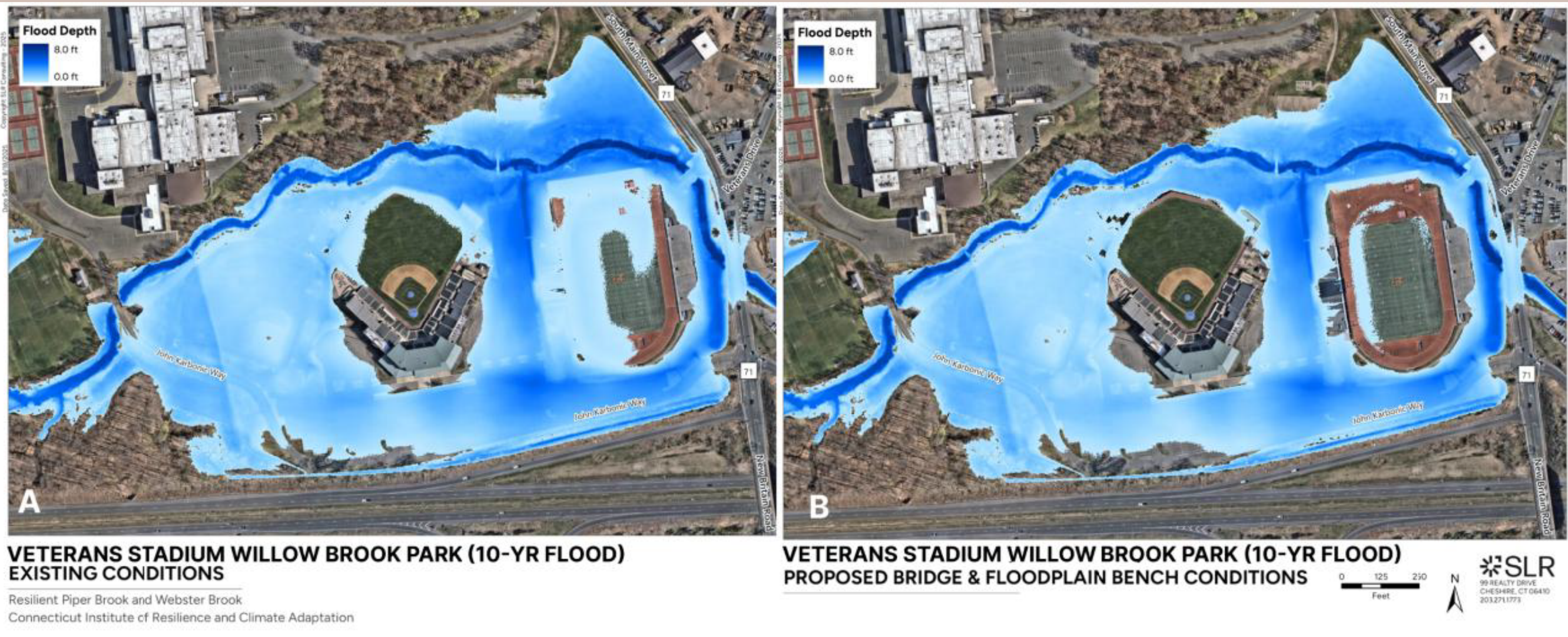
Flood mitigation measures and concept designs were prepared for six priority sites along the Piper and Webster Brook Corridor, across the three municipalities.

| Site | Proposed Measure |
|------------------------------------|---|
| Wilson Avenue | Bridge Replacement |
| Coles Avenue | Culvert Replacement |
| Xtreme Rides | Bridge Replacement, Channel Widening, Buyout |
| Alvarium Beer Company | Floodplain Bench |
| Veterans Stadium Willow Brook Park | Bridge replacement/removal, Floodplain Bench |
| Deming Road | Railroad Abutment /Embankment removal, Bridge Replacement |



TECHNICAL ANALYSIS

The project team carried out a comprehensive review of municipal plans and data, acquired available Federal Emergency Management Agency (FEMA) models for the region, and conducted on-site field visits to assess flood risks and identify critical hydraulic pinch-points across the Piper Brook and Webster Brook corridors. These field assessments were used to provide essential ground-truth information for hydraulic model development, to validate modeling assumptions, and to identify gaps requiring further data collection. Where FEMA HEC-RAS hydraulic models were available (on portions of Mill Brook, Webster Brook, and Deming Road) the field measurements and elevation data collected were used to update the FEMA models to represent current conditions. In the absence of FEMA modeling on Willow Brook, a HEC-RAS hydraulic model was created based on field measurements and elevation data collected during the site visits in combination with 2023 State of Connecticut LiDAR elevation data. Coles Avenue over Mill Brook was evaluated using HY-8 culvert analysis software from the Federal Highway Administration. Hydrologic and hydraulic analysis was conducted for six priority locations to evaluate potential flood mitigation strategies.



Example: Water Depth for 10-year Flood for A) Existing Conditions and B) Proposed Bridge Removal and Floodplain Bench at the Veterans Stadium Willow Brook Park.

PROJECT OBJECTIVES



Identify flood vulnerabilities through field visits and models of current and future flood conditions.



Develop and model concept alternatives for flood mitigation along the river corridor.



Engage community stakeholders to understand flooding vulnerabilities and potential mitigation strategies.

RECOMMENDATIONS AND NEXT STEPS

Next steps for advancing the project include:

- Advance priority flood mitigation concepts into detailed design, engineering, and permitting phases.
- Refine BCAs with updated property, elevation, and damage data.
- Continue collaboration among municipalities, COG, and Amtrak.
- Compile local flood impact and cost data
- Engage property owners.

STAKEHOLDER ENGAGEMENT



- 2 public open houses
- 3 Advisory Committee Meetings
- Monthly Project Team Meetings



For more information visit: <https://resilientconnecticut.uconn.edu/resilient-newington-berlin/>