



Priority Site

John Downey Drive - Xtreme Rides





Priority Site

Extreme Rides
John Downey Drive
New Britain
(concept design)

Alternate Measure:
Property buyout, bridge
removal, floodplain
bench excavated to 2.5 ft



Proposed Measure:
Replace undersized
culverts with bridge,
widen channel

Cost Opinion:
~\$ 2,100,000

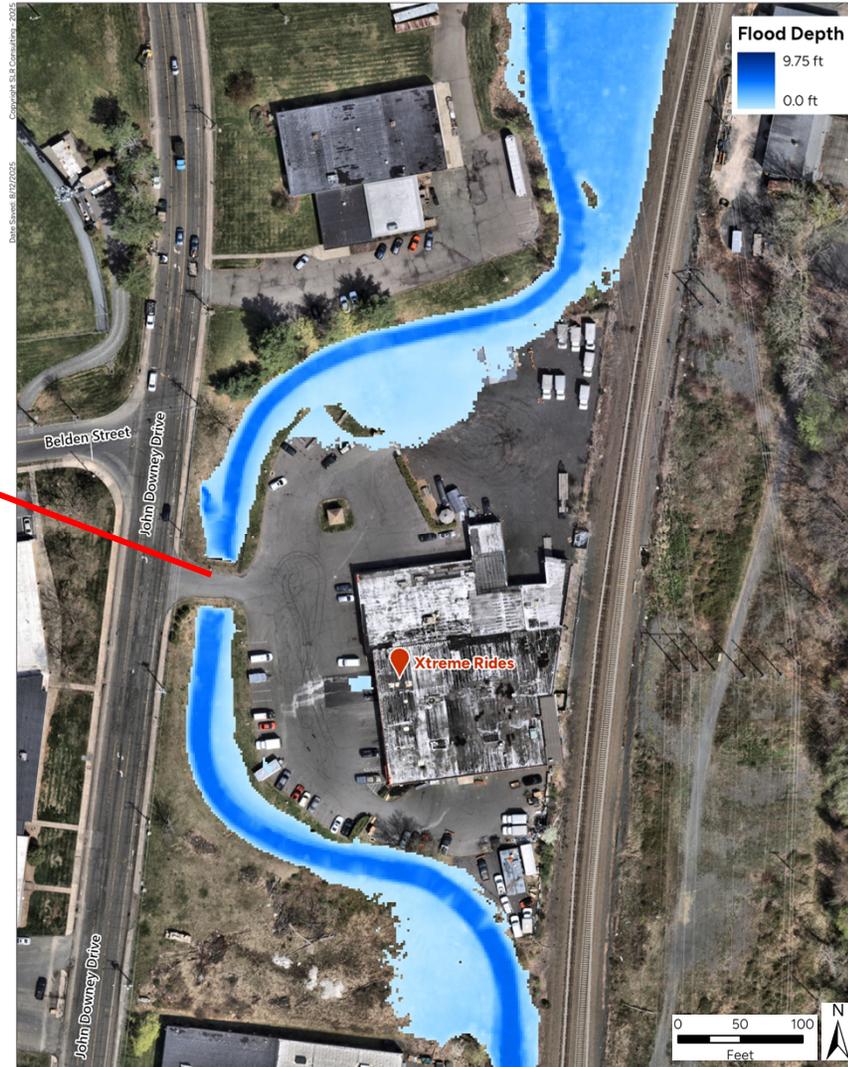


Priority Site

Extreme Rides
John Downey Drive
New Britain

Existing Conditions
10yr Flood

EXISTING
DRIVEWAY
CULVERT





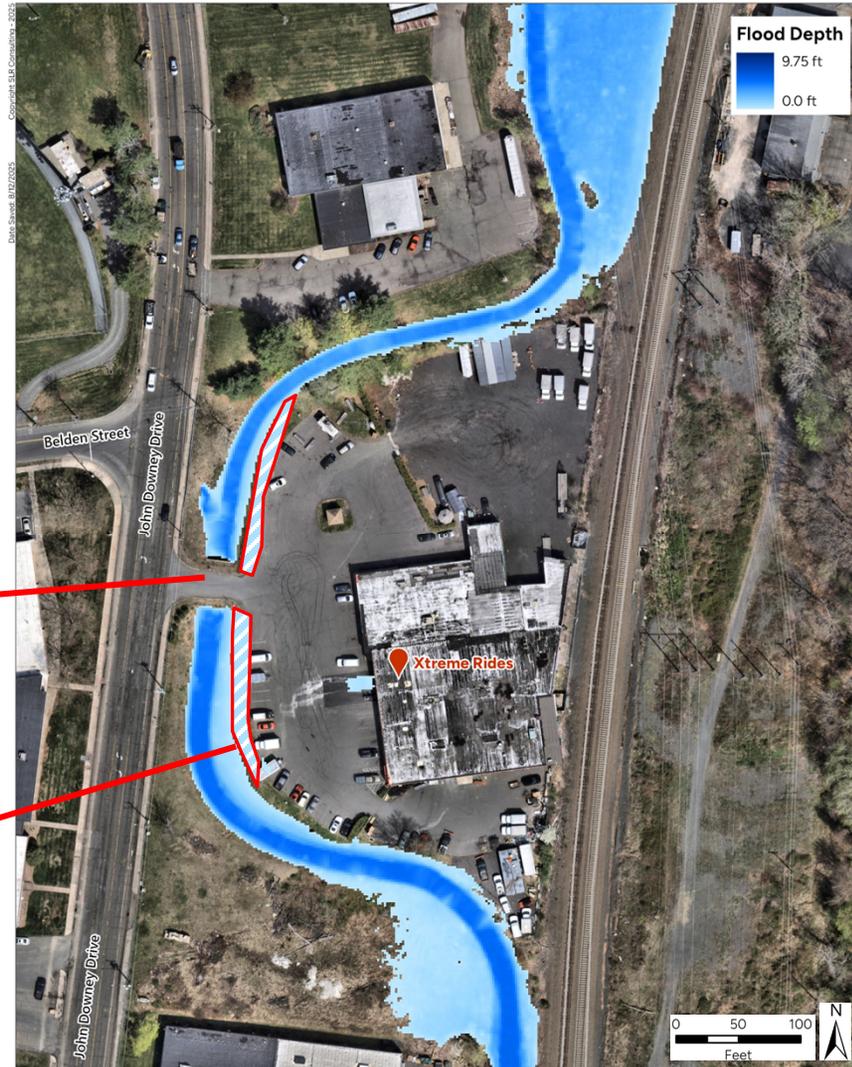
Priority Site

Extreme Rides
John Downey Drive
New Britain

Proposed Bridge
Replacement and
Chanel Widening
10yr Flood

PROPOSED
BRIDGE
REPLACEMENT

PROPOSED
CHANNEL
WIDENING



Alternate Measure:
*Property buyout,
bridge removal,
floodplain bench
excavated to 2.5 ft.
Water surface
elevation similar to
bridge
replacement.*



Priority Site

New Britain Road and Pedestrian Crossings at Veterans Stadium
Willowbrook Park, New Britain/Berlin town line





Priority Site

Veterans Stadium, New Britain (concept design)

Proposed Measures

Option 1:

Replace undersized arch bridge + Floodplain Bench

Cost Opinion:

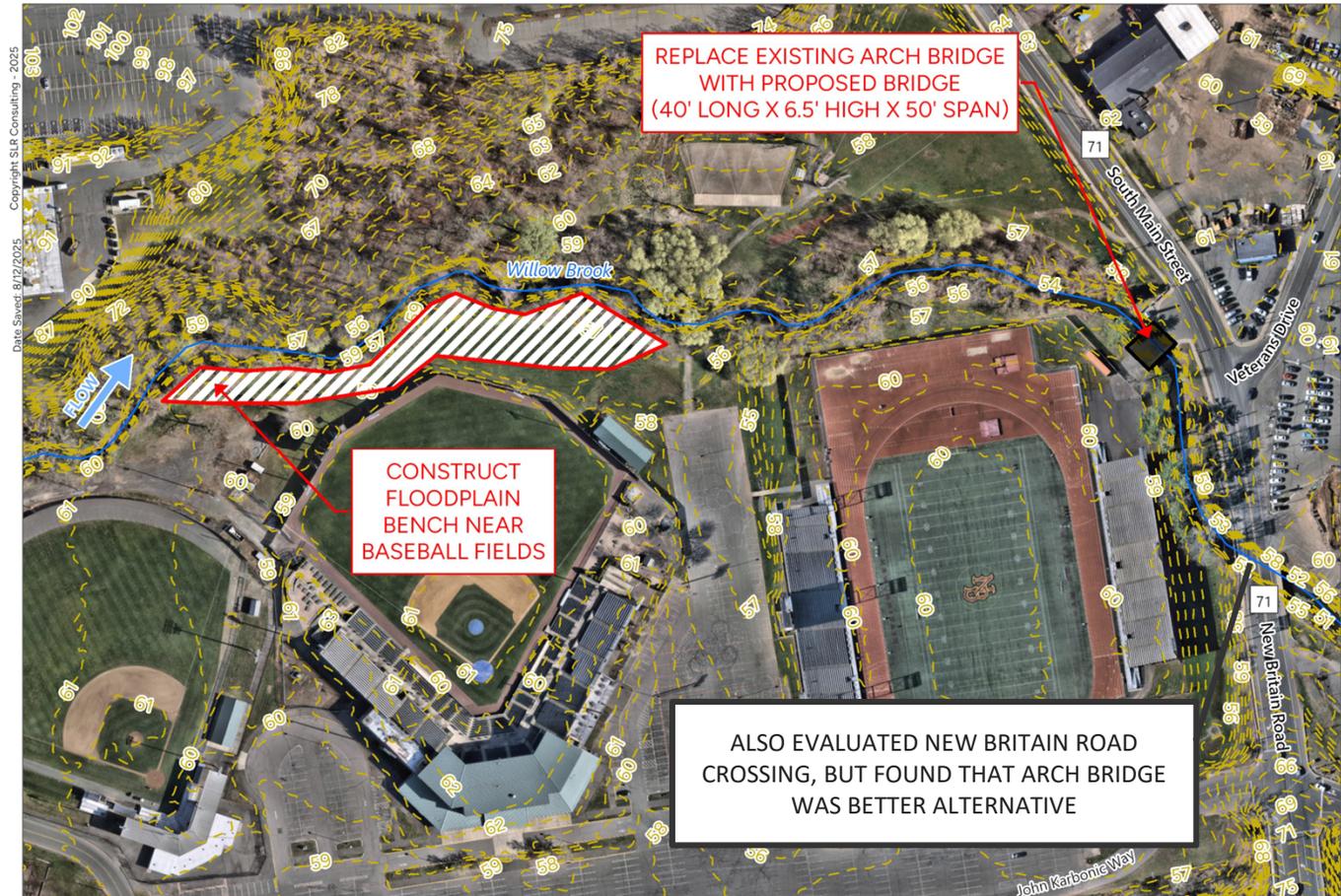
~\$3,150,000

Option 2:

Arch bridge removal,
Floodplain Bench

Cost Opinion:

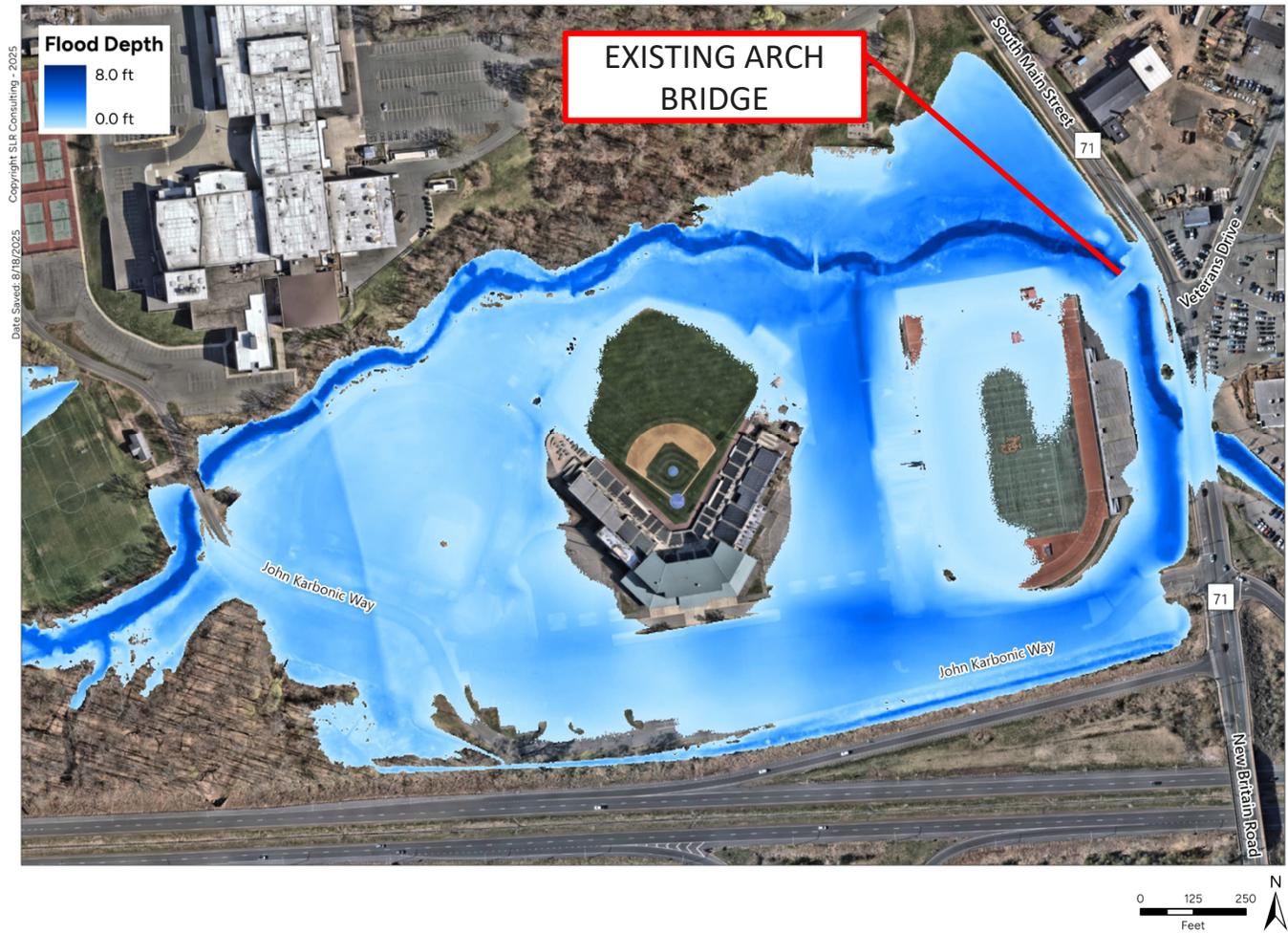
~\$ 1,850,000





Priority Site Veterans Stadium, New Britain

Existing Conditions
10yr Flood

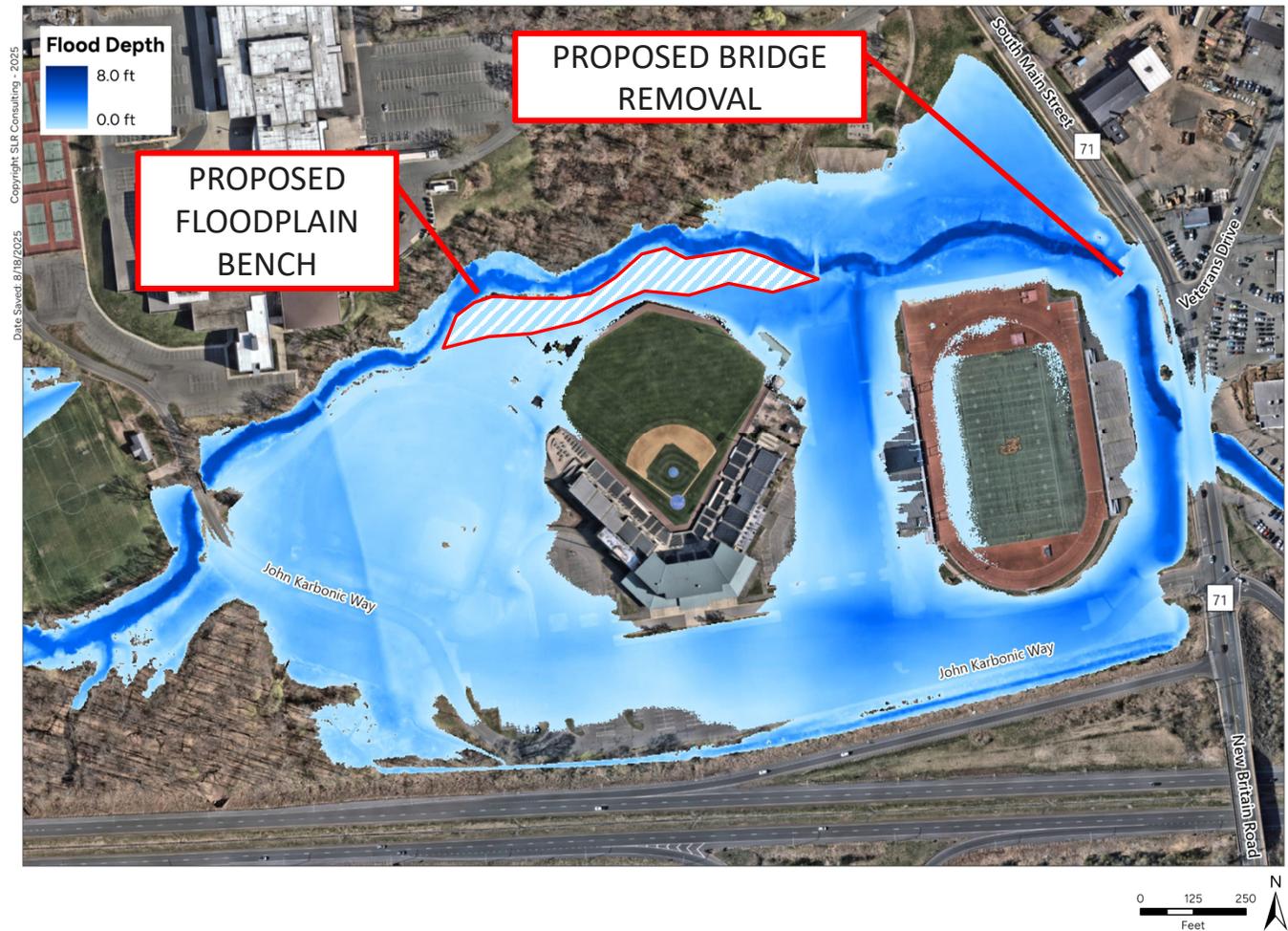




Priority Site Veterans Stadium, New Britain

Option 1
Proposed Floodplain
Bench and Bridge
Replacement
10yr Flood

*Option 2
Floodplain bench and
removal of arch bridge
yield similar results*





Benefit-Cost Analysis (BCA)





FEMA BCA Toolkit

Hazard Probability Parameters - Flood

Enter the Lowest Floor Elevation of the Property (ft):

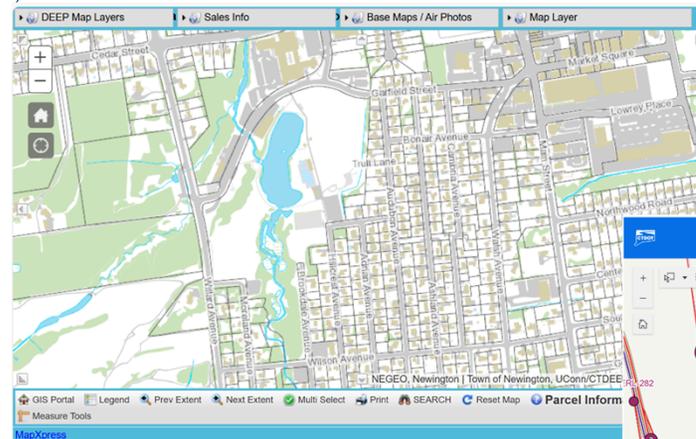
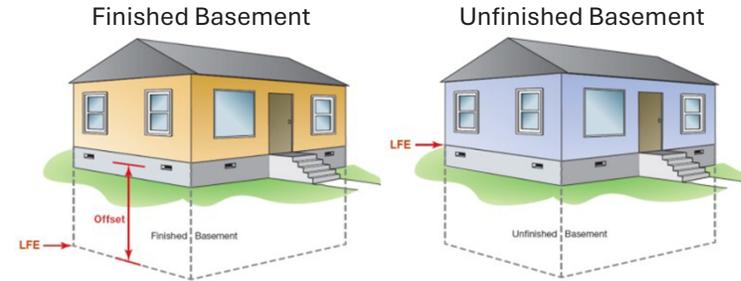
Enter the Streambed Elevation at the Property Location (ft):

Enter below the Recurrence Interval, corresponding Water Surface Elevation, and Discharges:

Use Default Recurrence Intervals? Yes

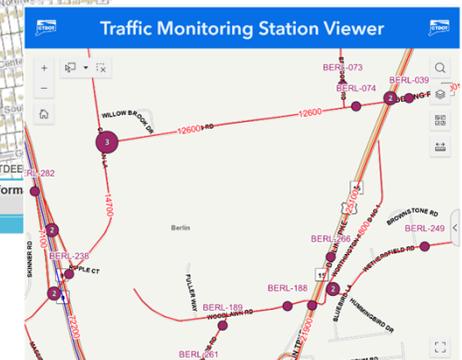
BEFORE MITIGATION		
Recurrence Interval (years)	Water Surface Elevation (ft)	Discharge (cfs)
10	76.5	219
50	78.2	416
100	78.8	515
500	79.8	875

AFTER MITIGATION		
Recurrence Interval (years)	Water Surface Elevation (ft)	Discharge (cfs)
10	76	219
50	77.1	416
100	77.4	515
500	79	875



2024 Connecticut Parcel and CAMA Data

Connecticut DOT Traffic Monitoring





Wilson Avenue, Newington (BCA)

FEMA BCA Inputs:

- Water Surface Elevation from HEC-RAS Model
- Lowest Floor Elevation = DEM LIDAR + Google Maps + CAMA
- Building details = CAMA



Wilson Avenue Impacted Structures



All Finished Basements

Unfinished Basements

Map Marker ▲	Mitigation Title	Property Type	Hazard	Discount Rate (%)	Benefits (B)	Costs (C)	BCR (B/C)
1	Drainage Improvement @ 200-246 Wilson Ave, Newington, CT, 06111, USA		DFA - Riverine Flood	7.0	\$ 37,103	\$ 2,324,090	0.02
2	Drainage Improvement @ 98 Brookdale Ave, Newington, CT, 06111, USA		Riverine Flood	7.0	\$ 201,511	\$ 0	0.00
3	Drainage Improvement @ 3 Greenlawn Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 61,586	\$ 0	0.00
4	Drainage Improvement @ 154 Robbins Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 320	\$ 0	0.00
5	Drainage Improvement @ 9 Greenlawn Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 47,918	\$ 0	0.00
6	Drainage Improvement @ 35 Greenlawn Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 60,145	\$ 0	0.00
7	Drainage Improvement @ 30 Greenlawn Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 96,417	\$ 0	0.00
8	Drainage Improvement @ 6 Greenlawn Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 52,831	\$ 0	0.00
9	Drainage Improvement @ 115 Taft Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 129,009	\$ 0	0.00
10	Drainage Improvement @ 139 Wilson Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 714	\$ 0	0.00
11	Drainage Improvement @ 29 Greenlawn Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 15,910	\$ 0	0.00
12	Drainage Improvement @ 26 Mohawk Cir, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 57,493	\$ 0	0.00
13	Drainage Improvement @ 245 Hillcrest Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 61,193	\$ 0	0.00
14	Drainage Improvement @ 263 Hillcrest Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 47,415	\$ 0	0.00
15	Drainage Improvement @ 84 Moreland Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 115	\$ 0	0.00
16	Drainage Improvement @ 221 Hillcrest Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 134,319	\$ 0	0.00
17	Drainage Improvement @ 237 Hillcrest Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 152,380	\$ 0	0.00
18	Drainage Improvement @ 147 Wilson Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 1,196	\$ 0	0.00
19	Drainage Improvement @ 100 Moreland Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 100,468	\$ 0	0.00
20	Drainage Improvement @ 98 Moreland Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 91,902	\$ 0	0.00
21	Drainage Improvement @ 92 Moreland Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 116,570	\$ 0	0.00
22	Drainage Improvement @ 104 Brookdale Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 223,779	\$ 0	0.00
23	Drainage Improvement @ 103 Brookdale Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 444,900	\$ 0	0.00
24	Drainage Improvement @ 1055 Willard Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 81,608	\$ 0	0.00
25	Drainage Improvement @ 1061 Willard Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 79,242	\$ 0	0.00
26	Drainage Improvement @ 1065 Willard Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 33,389	\$ 0	0.00
27	Drainage Improvement @ 1051 Willard Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 43,571	\$ 0	0.00
28	Drainage Improvement @ 291 Hillcrest Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 96,420	\$ 0	0.00
29	Drainage Improvement @ 283 Hillcrest Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 49,257	\$ 0	0.00
30	Drainage Improvement @ 97 Brookdale Ave, Newington, Connecticut, 06111		Riverine Flood	7.0	\$ 396,550	\$ 0	0.00
31	Drainage Improvement @ 1056 Willard Ave, Newington, Connecticut, 06111		Riverine Flood	7.0			
TOTAL (SELECTED)					Benefits	Costs	BCR
TOTAL					\$3,350,322	\$2,324,090	1.44

ite (%)	Benefits (B)	Costs (C)	BCR (B/C)
	\$ 37,103	\$ 2,324,090	0.02
	\$ 15,978	\$ 0	0.00
	\$ 47,964	\$ 0	0.00
	\$ 320	\$ 0	0.00
	\$ 10,610	\$ 0	0.00
	\$ 1,508	\$ 0	0.00
	\$ 1,281	\$ 0	0.00
	\$ 2,729	\$ 0	0.00
	\$ 3,969	\$ 0	0.00
	\$ 714	\$ 0	0.00
	\$ 2,288	\$ 0	0.00
	\$ 23	\$ 0	0.00
	\$ 2,122	\$ 0	0.00
	\$ 33,793	\$ 0	0.00
	\$ 115	\$ 0	0.00
	\$ 2,995	\$ 0	0.00
	\$ 2,312	\$ 0	0.00
	\$ 1,196	\$ 0	0.00
	\$ 86,846	\$ 0	0.00
	\$ 78,280	\$ 0	0.00
	\$ 102,948	\$ 0	0.00
	\$ 210,157	\$ 0	0.00
	\$ 16,529	\$ 0	0.00
	\$ 110	\$ 0	0.00
	\$ 65,620	\$ 0	0.00
	\$ 517	\$ 0	0.00
	\$ 173	\$ 0	0.00
	\$ 82,798	\$ 0	0.00
	\$ 338	\$ 0	0.00
	\$ 382,928	\$ 0	0.00
	\$ 471	\$ 0	0.00
Benefits			BCR
\$1,296,065			0.56
Costs			
\$2,324,090			



Deming Road Impacted Structures

- Deming Road
- Artisan Building and Remodeling, LLC
- Residence + Outbuilding at 244 Deming Rd





Deming Road Impacted Structures (BCA)

Option 1 Bridge Replacement and Railroad Embankment Removal	Map Marker ▲	Mitigation Title	Property Type	Hazard	Discount Rate (%)	Benefits (B)	Costs (C)	BCR (B/C)
	1	Drainage Improvement @ 197-199 Deming Rd, Berlin, CT, 06037, USA		DFA - Riverine Flood	7.0	\$ 346,200	\$ 3,490,090	0.10
	2	Drainage Improvement @ 230 Deming Rd, Berlin, Connecticut, 06037		Riverine Flood	7.0	\$ 50,051	\$ 0	0.00
	3	Drainage Improvement @ 244 Deming Rd, Berlin, Connecticut, 06037		Riverine Flood	7.0	\$ 148,663	\$ 0	0.00
	4	Drainage Improvement @ 244 Deming Rd, Berlin, Connecticut, 06037		Riverine Flood	7.0	\$ 1,305	\$ 0	0.00
TOTAL (SELECTED)						Benefits	Costs	BCR
TOTAL						\$546,219	\$3,490,090	0.16

Option 2 Railroad Abutment/ Embankment Removal only	Map Marker ▲	Mitigation Title	Property Type	Hazard	Discount Rate (%)	Benefits (B)	Costs (C)	BCR (B/C)
	1	Drainage Improvement @ 197-199 Deming Rd, Berlin, CT, 06037, USA		DFA - Riverine Flood	7.0	\$ 320,885	\$ 850,409	0.38
	2	Drainage Improvement @ 230 Deming Rd, Berlin, Connecticut, 06037		Riverine Flood	7.0	\$ 50,600	\$ 0	0.00
	3	Drainage Improvement @ 244 Deming Rd, Berlin, Connecticut, 06037		Riverine Flood	7.0	\$ 145,642	\$ 0	0.00
	4	Drainage Improvement @ 244 Deming Rd, Berlin, Connecticut, 06037		Riverine Flood	7.0	\$ 1,283	\$ 0	0.00
TOTAL (SELECTED)						Benefits	Costs	BCR
TOTAL						\$518,410	\$850,409	0.61



Alvarium Brewery Impacts (BCA)

Interview with Brian Bugnacki, owner Alvarium Brewery, August 2025

- Over the past 3-5 years it has flooded 15-20 times impacting business
- Lost revenue during flood events impacting parking (~\$3,000 per flood event)
- Payroll losses due to drainage issue (~\$1,300 per flood event)

Map Marker ▲	Mitigation Title	Property Type	Hazard	Discount Rate (%)	Benefits (B)	Costs (C)	BCR (B/C)
1	Floodplain and Stream Restoration @ 365 John Downey Dr, New Britain, Connecticut, 06051		DFA - Riverine Flood	7.0	\$ 331,560	\$ 870,409	0.38
TOTAL (SELECTED)					Benefits	Costs	BCR
TOTAL					\$331,560	\$870,409	0.38



BCAs at 3 Priority Sites recap

Proposed Measure	Total cost (\$)	Total benefits (\$)	Benefit-cost ratio (BCR)
Wilson Ave Bridge Replacement	\$2,324,090	\$1,296,065- \$3,350,322	0.55 - 1.44
Deming Road			
Option 1: Bridge Replacement + Railroad Embankment Removal	\$3,490,090	\$546,219	0.16
Option 2: Railroad Embankment Removal	\$812,409	\$518,410	0.64
Alvarium Flood Bench	\$870,409	\$331,560	0.38

Caveats and considerations..

- Need more accurate and properly sourced data (Elevation Certificates for LFEs)
- Expert input on assumptions (annual maintenance costs)
- Company specific data (contact companies)
- Cost estimates based on detailed assessments



Resilient Roads Analysis





Resilient Roads Analysis (Town-level)

Community Features

(1 Point Each)

- Police Stations
- Fire Stations
- EMS Stations
- Urgent Care Centers
- Hospitals
- Grocery Stores
- Pharmacies
- Private and Public Schools
- Senior Housing
- Nursing Homes



Bonus Categories

(1 Point Each)

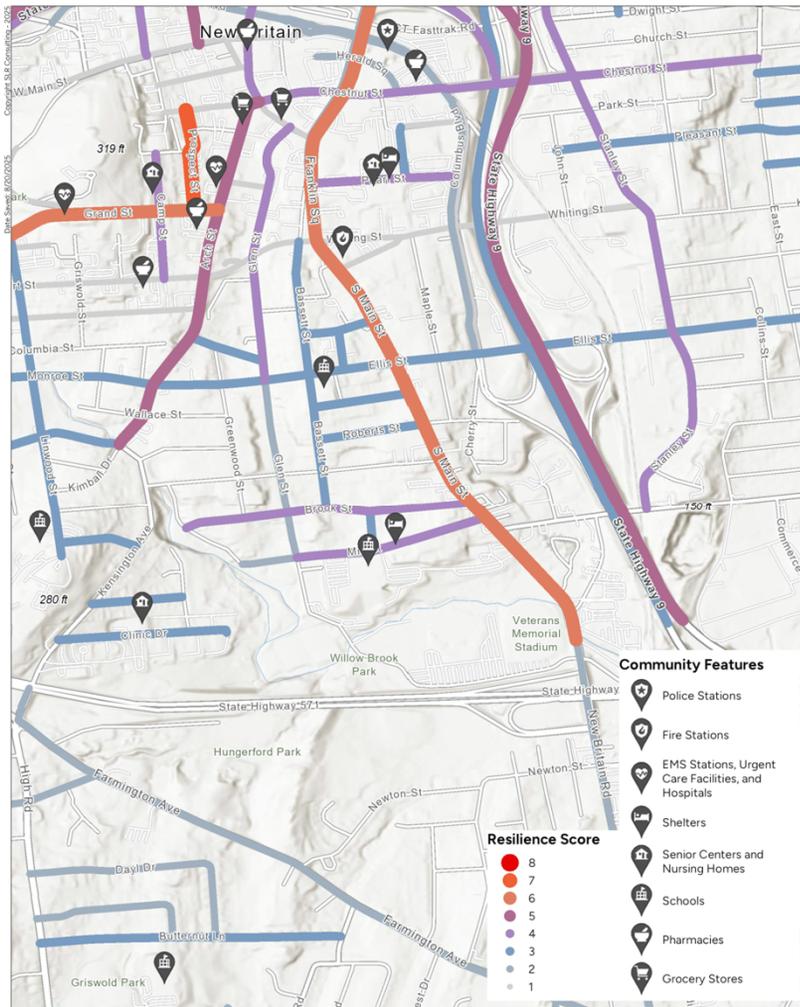
- Vulnerable Populations (serves Senior Housing OR Nursing Homes OR Schools)
- Essential Services (serves Grocery Stores AND Pharmacies)
- Public Transit (serves any community feature through CT Transit Bus Route)



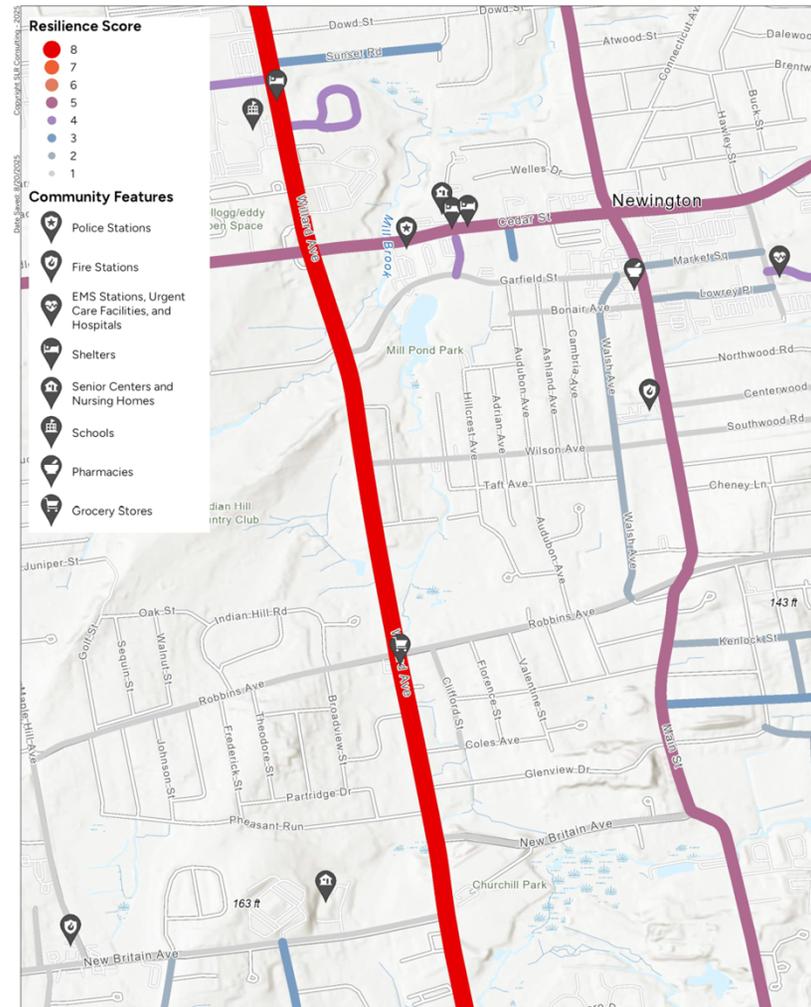
**RESILIENCE
SCORE**



Resilient Roads Analysis (Zoom-ins)



New Britain near Veterans Stadium



Newington near Wilson Road



Key Takeaways

- Many data sources with varying levels of detail, determine best approach for each site
 - Info from residents and municipalities, FEMA, field visits
- A few large structures can control flooding throughout a reach
 - Highway and railroad bridges
- Alternatives may still help with more frequent nuisance floods



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Thank you

November 20, 2025

