



West Main Street Bridge

Update & Next Steps

June 29, 2021



Bridge History

- 1888, the Bridge was built by the Berlin Iron Bridge Co. at a cost of \$13,000. The bridge consists of a two-span wrought iron lenticular truss construction. Around 1900, the City's trolley system began to utilize the bridge and additional concrete piers were added.
- **1970, Tresser Blvd. was designated as part of Route 1, and in 1982, the construction of the Mall effectively cut off Main Street. These developments significantly reduced the vehicle use of the bridge.**
- 1987 the bridge was added to the National Register of Historic Places.
- **2002, for safety reasons, ConnDOT closed the bridge for vehicles** due to structural deterioration. Continued pedestrian usage was allowed. After the closing, the Engineering Bureau embarked on a series of designs for a replacement bridge. The Engineering Bureau subsequently added aluminum gangways to span deteriorated pier sections.
- Utilities were added at various times. **The loss of the current telephone conduits would be extremely disruptive to the City.**
- **2004, The Urban Renewal Commission (URC) amended the Mill River Corridor project Plan (MRCP) to change the use designation of the Bridge from vehicular to a “pedestrian bridge capable of providing emergency access.”** As it was deemed a “substantial change to the Plan, an affirmative vote by the BOR was required.
- **2008, the BoReps approved the amended URC Plan by a vote of 25-9.**
- **2008, the City received a federal \$1.5 million grant (SAFETEA-LU) for a pedestrian/walking bridge. Grant funds are still available** subject to FHWA and ConnDOT requirements and administration.
- 2012, The City received a second federal grant for \$850,000 (TCSP) for a pedestrian bridge. Shortly after receiving this \$850K TCSP grant for a pedestrian bridge, current Mayor Pavia indicated uncertainty about the future of the bridge and little progress was made on either a pedestrian or vehicular bridge. This grant was eventually rescinded due to sunset clause in original grant, and delays by the administration and extensive approval delays by ConnDOT.





Bridge History – Replace Bridge Plan

- **2014, work resumed on the original pedestrian bridge plan that included preserving the historic trusses.** Staff held a series of meetings with historic preservation advocates to review options to preserve and integrate the old trusses into the bridge. An engineering firm, specializing in historic bridge restoration was employed.
- 2015 (January), the engineering consultant, Ryan Biggs Clark Davis issued their report, which determined that the historic trusses could be repaired and “integrated” into the replacement bridge.
- 2015, the Stamford West Side Transportation Study Report was issued. The Study prepared by Fitzgerald & Halliday, Inc. recommended the replacement of the Bridge with a new pedestrian bridge realigned with the intersection of Mill River and Smith Streets.
- 2015, the City informed ConnDOT and FHWA that it wanted to move forward with the historic replacement of the Bridge. (Note, federal bridge funds are managed by ConnDOT.)
- **2015 (November), ConnDOT held the Assignment meeting with the City and engineering consultants. The City was charged with developing a scope of services for review and approval by ConnDOT.**
- **2017 (November), after 2 years ConnDOT finally completed their review of the scope of services.**

	A. Replace Bridge; Remove Piers; Keep Existing Trusses
Cost (\$M)	5.5
Construction Start	5
Construction Duration	2
Lifespan	50
Flood Risk	reduced
Temp Pedestrian Cost	0.5

The Mayor was informed that it would take an additional 5 years to start the bridge replacement.

The City started looking for an alternative plan that could be implemented in less than 7 years.

Bridge History – Rehabilitate Plan



	New Plan	
	A. Replace Bridge; Remove Piers; Keep Existing Trusses	B. Rehabilitate Existing Bridge; Recondition Trusses
Cost (\$M)	5.5	2.0
Construction Start	5	1
Construction Duration	2	1
Lifespan	50	20+
Flood Risk	reduced	Risk Remains
Temp Pedestrian Cost	0.5	0.3
Total Cost	~6.0	~2.3

Early 2018, City determined it could rehabilitate the bridge more quickly,

- at much less cost,
- but with a reduced life span, and
- leaving the existing piers in the water (continuing the existing flood risk).

- Due to continued deteriorating of the bridge piers, the City began closing the bridge when storms were forecast that might impact bridge integrity.
- **2018, The State Bonding Commission awarded a \$2 million grant to the Mill River Collaborative for the pedestrian rehabilitation of the Bridge.** An MOU between the City and the Collaborative was executed (November) for the design, engineering and construction of the bridge project.
- 2018, the City informed ConnDOT and FHWA that the City will no longer continue with the “5-year start” replacement Bridge project. Instead, the City would move forward with a Rehabilitation Bridge project utilizing the \$2 million Mill River/State grant.
- 2018, the BoReps held a public hearing on the proposed bridge project. ~ 27 members of the public spoke in favor, ~ 7 spoke against (primarily desiring a vehicular bridge instead of a pedestrian bridge) and 2 others spoke.
- **In September, The BoReps, by a 21 to 19 vote, approved the Engineering Bureau to execute a contract for engineering work associated with the rehabilitation of the Bridge.**



Bridge - Rehabilitate Plan Bid

	A. Replace Bridge; Remove Piers; Keep Existing Trusses	B. Rehabilitate Existing Bridge; Recondition Trusses	
		Plan	Bid
Cost (\$M)	5.5	2.0	3.5
Construction Start	5	1	1
Construction Duration	2	1	1
Lifespan	50	20+	20+
Flood Risk	reduced	Risk Remains	Risk Remains
Temp Pedestrian Cost	0.5	0.3	0.3
Total Cost	~6.0	~2.3	~3.8

2019, the Rehabilitation Bridge project was bid. The lowest bid received was \$3.5 million, substantially greater than the estimate.

- The City administration determined that the much higher cost than anticipated for a rehabilitated bridge, coupled with the reduced lifespan and the continued flood risk made this an undesirable alternative. The original alternative for ~\$6M that had much longer lifespan and reduced the flood risk was a better option – although it would take 5-7+ years to complete.
- ***Given the anticipated delays of 5 to 7 or more years, and the increasing possibility of a future collapse of the deteriorating existing bridge, the administration shifted priority to construction of a less costly “temporary” pedestrian bridge.***
 - *This bridge would also accommodate relocation of utilities, particularly phone service lines.*
 - *This “temporary” bridge needed a lifespan of a least a decade, which in practice meant it had the same structural requirements as a “permanent” bridge.*

Bridge History – Pedestrian/Ambulance Pre-Fab Bridge



- The first pre-fabricated bridge design required ramps & stairs on the west side of the bridge, could not accommodate emergency vehicles, and was deemed unacceptable.
- May 2021, Engineering determined that it could build a long-lasting pre-fabricated pedestrian bridge, that could accommodate utilities and emergency vehicles, for ~\$1.5 million, and that would not interfere with the 100-year flood levels.

	A. Replace Bridge; Remove Piers; Keep Existing Trusses	B. Rehabilitate Existing Bridge; Recondition Trusses		C. Pedestrian /Ambulance Pre-Fab Bridge	
		Plan	Bid		
Cost (\$M)	5.5	2.0	3.5	1.5	
Construction Start	5	1	1	1	
Construction Duration	2	1	1	<1	
Lifespan	50	20+	20+	50	Long Life
Flood Risk	reduced	Risk Remains	Risk Remains	na	
Temp Pedestrian Cost	0.5	0.3	0.3	none	
Total Cost	~6.0	~2.3	~3.8	~1.5	Less than half the cost

Pre-Fab Pedestrian/Ambulance Bridge



Pre-Fab Pedestrian/Ambulance Bridge Characteristics:

- Provides a 10 foot wide pedestrian bridge with weight capacity to support emergency vehicles.
- Does not require switchbacks or stairs on either side of the bridge
- Located just north of current bridge (to avoid potential damage from possible failure of existing bridge)
- Can accommodate existing telephone conduit utilities. Eversource is also interested in utilizing this bridge.



Example

	C. Pedestrian /Ambulance Pre-Fab Bridge
Cost (\$M)	~1.5
Construction Start	1
Construction Duration	<1
Lifespan	50
Flood Risk	na
Temp Pedestrian Cost	none

- Low cost compared with other options
- Rapid construction
- Long Lifespan
- Is above the 100 Year Flood Mark – does not change current flood risk since current bridge piers are still in place

Future

What Happens to the Existing Bridge?

Prefab bridge already provides pedestrian access and emergency vehicle access

	C. Pedestrian /Ambulance Pre-Fab Bridge
Cost (\$M)	~1.5
Construction Start	1
Construction Duration	<1
Lifespan	50
Flood Risk	na
Temp Pedestrian Cost	none

Options

1

2

3

	Remove Old Bridge; Save Trusses; Remove Piers
Cost	0.8
Construction Start	2.5
Construction Duration	1
Lifespan	na
Flood Risk	reduced
Construction Ped Cost	none

Old Plan B	Rehabilitate Existing Bridge
Cost	3.5
Construction Start	1
Construction Duration	1
Lifespan	20+
Flood Risk	Risk Remains
1 year Temp Ped Cost	none

Old Plan A	Replace Bridge; Remove Piers; Keep Existing Trusses
Cost (\$M)	5.0
Construction Start	5
Construction Duration	2
Lifespan	50
Flood Risk	reduced
Temp Pedestrian Cost	none

#2 costs ~\$2.5M more to preserve bridge, but flood risk remains

#3 costs ~\$4.0M more to preserve trusses



Future

What About a Vehicular Bridge?

Prefab bridge already provides pedestrian access and emergency vehicle access

	C. Pedestrian /Ambulance Pre-Fab Bridge
Cost (\$M)	~1.5
Construction Start	1
Construction Duration	<1
Lifespan	50
Flood Risk	na
Temp Pedestrian Cost	none

- 1 Remove Old Bridge; Save Trusses; Remove Piers
- 2 B. Rehabilitate Existing Bridge
- 3 A. Replace Bridge; Remove Piers; Keep Existing Trusses

	Vehicular Only Replace Bridge; Remove Piers; Keep Existing Trusses
Cost (\$M)	6.5
Construction Start	5
Construction Duration	2
Lifespan	50
Flood Risk	reduced
2 year Temp Ped Cost	none

Similar to Old Plan A, but since a long lasting pedestrian bridge is already in place, this is a vehicular only option.

More expensive than pedestrian only, but a bit less than a combined ped/vehicle bridge.

Long Lead Time.

May require more time to alter URC plan.

Future

What About a Vehicular Bridge as a future option?

Prefab bridge already provides pedestrian access and emergency vehicle access

	C. Pedestrian /Ambulance Pre-Fab Bridge
Cost (\$M)	~1.5
Construction Start	1
Construction Duration	<1
Lifespan	50
Flood Risk	na
Temp Pedestrian Cost	none

Remove Old Bridge	Save Trusses; Remove Piers
Cost	0.8
Construction Start	2.5
Construction Duration	1
Lifespan	na
Flood Risk	reduced
Construction Ped Cost	none

Removal of the bridge would always be done before a new bridge is constructed. Subsequent vehicular bridge remains an option.

	Vehicular Only Replace Bridge; Remove Piers; Keep Existing Trusses	Vehicular Only After Removal of Existing Bridge (incremental)
Cost (\$M)	6.5	~ 6.0
Construction Start	5	3
Construction Duration	2	1
Lifespan	50	50
Flood Risk	reduced	na
2 year Temp Ped Cost	none	none

Some net savings
Lead and Construction Time post-removal is much shorter.

1

1+4



Future

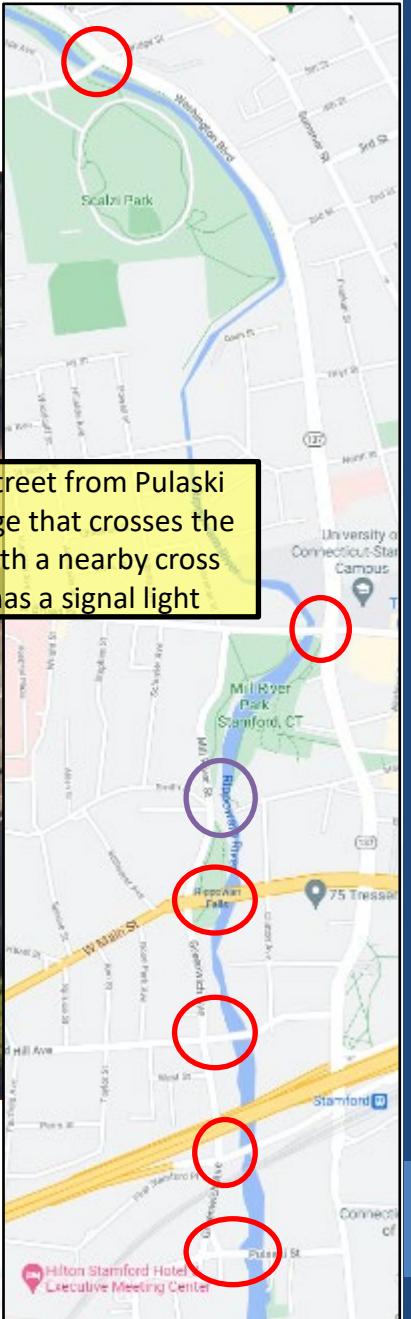
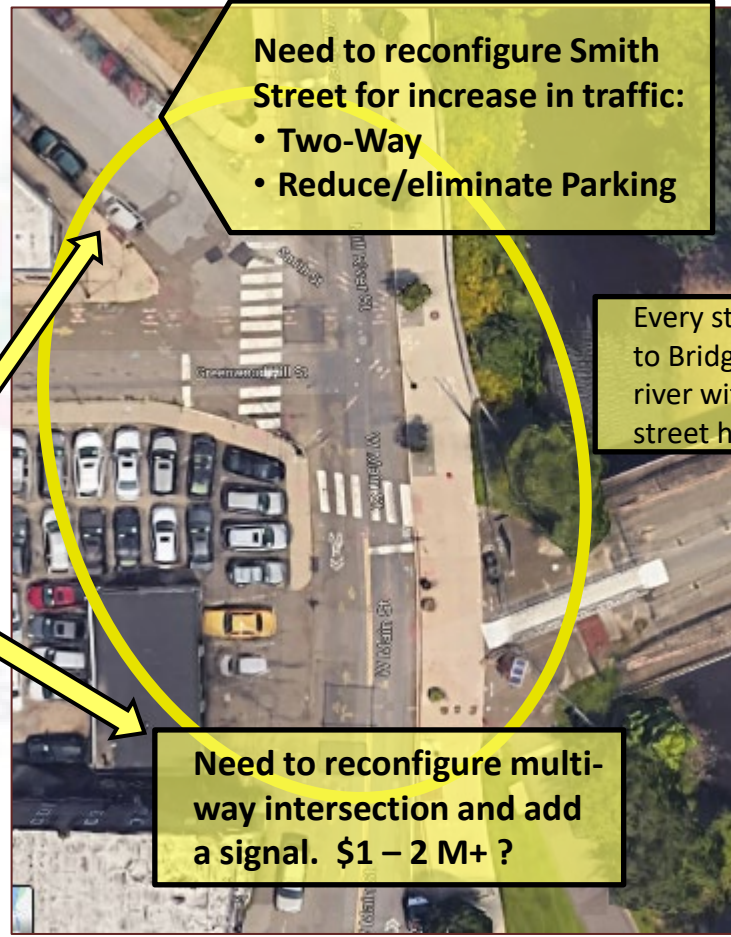
Additional Considerations/Complications of Vehicular Bridge

Vehicular Bridge has not been “needed” for 20 years.

- If new vehicular bridge does not generate material traffic volume then a vehicular bridge is not warranted.
- If, however, a vehicular bridge does generate material traffic volume, then there are other costs and complications.

1	Remove Old Bridge	Save Trusses; Remove Piers	
	Cost	0.8	
	Construction Start	2.5	
	Construction Duration	1	
	Lifespan	na	
	Flood Risk	reduced	
	Construction Ped Cost	none	
		1+4	
	Vehicular Only	Vehicular Only	
	Replace Bridge; Remove Piers; Keep Existing Trusses	After Removal of Existing Bridge (incremental)	
	Cost (\$M)	6.5	~ 6.0
	Construction Start	5	3
	Construction Duration	2	1
	Lifespan	50	50
	Flood Risk	reduced	na
	2 year Temp Ped Cost	none	none

Would forfeit existing pedestrian only grant.
May be able to offset loss with other grants.



These additional complications will further delay necessary action – increasing the need for the immediate installation of a pedestrian bridge.



Next Steps

As the existing bridge continues to deteriorate, and the lead time for any other bridge alternative is long, the chance of current bridge failure escalates.

The construction of this pre-fab pedestrian/ambulance bridge, that can also accommodate utilities, is the priority.

Pre-Fab Pedestrian Bridge – Next Steps:

- Currently checking bridge integrity
- Initiate engineering design work.
- Initiate permitting – since the bridge will be above the 100 year flood level this will be much faster than any other bridge option
- Bid bridge

Goal is to install bridge next construction cycle

There is currently sufficient funding available for this priority.

However, the current specific West Main Street Authorization is limited to “Rehabilitation” of the current bridge. So the City will utilize funding from other city-wide bridge accounts.

Will also work to utilize existing grants:

- Federal \$1.5 million grant (SAFETEA-LU) for a pedestrian/walking bridge. Grant funds are still available subject to FHWA and ConnDOT approval. May be repurposed to another “shovel-ready” eligible bridge project.
- Mill River/State \$2.0 million grant for pedestrian bridge.

