



A Place for All People - Established 1968
953 Jenifer Street
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Madison, WI 53704

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Jenifer Street Reconstruction Plan Recommendations

Prepared by Gary Tipler, Chair, MNA Traffic Committee

Approved 1/21/2016 by the MNA Board of Directors

These are recommendations for some of the more important features or aspects of a Jenifer Street reconstruction gleaned from the several public meetings and comments, based on detailed analysis and review of pertinent publications and standards. The proposals marked in **bold** depart from the plan proposed from City Engineering on 1/13/2016.

Goals

- Enhance the utility and appearance of the existing street environment of historic buildings and canopy trees.
- Improve safety and support a balance of the multiple travel functions for Jenifer Street and the neighborhood.
- Promote a healthy and sustainable environment to support the quality of living on the street and in the neighborhood.

Items for Inclusion in the Jenifer Street Reconstruction Plan

The following items are proposed by the MNA Traffic Committee to be integrated and supported in the project plans and installations in the reconstruction of Jenifer and adjacent streets in the project area. There has been strong support for partial-undergrounding to preserve trees, mixed support for narrowing by 2 feet and bump-outs, and strong support for minimization and monitoring of vibrations impacts. Based on inputs from the on-line survey and the neighborhood meetings and previous street reconstructions the following recommendations are made.

Pedestrian, Cyclist and Vehicular Traffic Safety

- 1. Pedestrian crosswalk extensions or bump-outs should be 5 feet, rather than 3 feet.**
- 2. Support a “speed hump” just east of the west-bound bus stop east of Livingston Street.**
 - This will help mitigate the problem of poor visibility of both east-bound vehicular traffic turning from Livingston and west-bound traffic on Jenifer. This has been a dangerous intersection and too many near accidents have occurred. Placing it prior to a bus stop permits a bus slowing to pick up passengers at this frequently used stop.

3. Support the installation of a “traffic table” at the intersection of Brearly and Jenifer.

- This enhances pedestrian safety at this very heavily used intersection that serves the Wil-Mar Neighborhood Center, a playground, farmers markets and bus stops.

4. Support narrowing Jenifer Street by 2 feet.

- This can improve safety by decreasing the distance pedestrians have to cross the street, and by ‘calming’ or slightly slowing through-traffic by encouraging more mindful driving. It would design the street relative to its residential setting and use, rather than for a maximum speed for vehicular use. This was originally supported in the Engineering proposal and in the Urban Assets Report.

In addition:

- This will increase soil areas to enhance tree health.
- It will increase the soil area for storm water storage and for snow storage.
- It will decrease the street paving surface area and the cost relative to its area.

Bus Service

5. Support an alternative to rerouting the bus service to East Washington Avenue for the project.

- East Washington Avenue is far too distant for the heavy bus ridership in the neighborhood.
- The walk through the former industrial and rail area has few “eyes on the street” and has proven to be unsafe, particularly for women after dark.

There are two alternatives that the Traffic Committee proposes:

- A. **Provide a shuttle service for the neighborhood to provide service around the Capitol Square to make connections to other lines. Or,**
- B. **Provide service of existing lines on Williamson Street, with limited designated stops -- three are suggested. The neighborhood will work with business owners to secure approval for the temporary stops.**

6. Support reevaluating the proposed shift of the westbound bus stop on the northwest side of Ingersoll due to its negative impact on traffic visibility and safety for multiple properties.

- The two proposed bus pads west of Ingersoll on the north side of Jenifer would block visibility of vehicles and bikes from drivers exiting driveways west of Ingersoll.

Vibration Damage to Houses

7. Take measures to limit construction machinery vibrations that damages historic buildings.

Prevent damage rather than simply plan for remediation afterward. There is no evidence that post-construction remediation has worked. Adequately determine and prevent damage to buildings from construction machinery vibration.

- A. **The City should specify preventative vibration damage controls in bid specifications and performance criteria in a request for proposals and in bid contracts and comply with**

standards provided in the specifications that are proven effective at preventing damage.
(See notes below.)

- B. Bid documents should require that contractors have a record of quality experience working with care around historic buildings. Contractors should additionally be made aware of soil and geologic formations so as to adequately prevent damage to buildings.**
- C. Crack-and-damage surveys should be carried out by a contractor independent of the construction contractors and the survey must be shared with the building owners before and after the surveys are done.**

Retain Trees

8. Retain and preserve existing ash trees that are in good health. Halt preemptive removal of the ones in good health and good form, and develop a plan to treat them and protect them against construction damage. A partnership with MNA and property owners could be developed to pay the two-year inoculation costs.

- At least 16 ash trees that are in good health and form are proposed to be removed simply because they are beneath high voltage power lines. In addition, some other ash trees in good health and good form and not beneath high voltage power lines are also proposed to be removed to make construction less complicated and avert removing them, perhaps years from now.
- These trees provide energy savings via reduction in cooling and heating costs, increase air filtration, reduce storm water run-off, create habitat, and reduce noise and wind impacts. They improve livability in the neighborhood and enhance property values. They are an intrinsic part of the street and life of the neighborhood.
- These trees were considered to be able to be retained by Forestry in the plan proposed last year.

Retain Tree Canopy - Undergrounding High Voltage Wires

9. Support Partial Undergrounding of High Voltage Wires. Develop a plan to incorporate the costs into the plan that may be shared by the City, MG&E and the property owners.

- This permits the retention and planting of full sized canopy trees. They provide energy savings via reduction in cooling and heating costs, increase air filtration, reduce storm water run-off, creates habitat, and reduce noise and wind impacts. Retain livability and property values.
- This would result in reduced maintenance, equipment needs and personnel safety issues for exposed high voltage wires that would otherwise remain in place.

Notes:

For more information on some of these topics, please review the links to other MNA Traffic Committee reports, Engineering plans, the MNA-commissioned Urban Assets Report, and other sources of information that can be found on the MNA webpage:

<http://marquette-neighborhood.org/jenny-street-reconstruction/>

Vibration

City Engineering said that there will be vibrational compaction from the specific machines associated with damage: vibratory rollers and compactors.

This reputable data from the State of New Hampshire provided enlightening information:

Vibratory rollers

PPV = .059 at 82 feet.

Damage not expected for a medium to heavy roller at least 40 feet away from the building.

Predicted PPV: .45 (25 feet); .210 (50 ft); .133 (75 ft); .098 (100 ft)

Compactor

PPV = .787 at 16 feet, .0787 at 50 feet, <.0118 at 98 feet.

Ground Vibrations Emanating from Construction Equipment, New Hampshire Department of Transportation (2012), pages 45-46

In- ground conditions affect vibration. Jenifer Street sits atop soils over a rock bluff, sometimes found in basements. "Soil and subsurface conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Experience with ground-borne vibration is that vibration propagation is more efficient in stiff clay soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in ground-borne vibration problems at large distances"

http://www.hmmh.com/cmsdocuments/FTA_Ch_07.pdf \

One easy reference for statistics:

Table 2-5. Swiss Standard for Vibration in Buildings (SN 640 312, Swiss Association for Standardization, 1978).

Building Class	Vibration Source	Frequency Range, Hz	PPV, in./sec
I	Machines, traffic	10-30	0.5
		30-60	0.5-0.7
	Blasting	10-60	1.2
		60-90	1.2-1.6
II	Machines, traffic	10-30	0.3
		30-60	0.3-0.5
	Blasting	10-60	0.7
		60-90	0.1-1.0
III	Machines, traffic	10-30	0.2
		30-60	0.2-0.3
	Blasting	10-60	0.54
		60-90	0.5-0.7
IV	Machines, traffic	10-30	0.12
		30-60	0.12-0.2
	Blasting	10-60	0.3
		60-90	0.3-0.5
<p>I – Buildings of steel or reinforced concrete, such as factories, retaining walls, bridges, steel towers, open channels; underground chambers and tunnels with and without concrete lining</p> <p>II – Foundation walls and floors in concrete, walls in concrete or masonry; stone masonry retaining walls; underground chambers and tunnels with masonry linings; conduits in loose material.</p> <p>III – Buildings as previously mentioned but with wooden ceilings and walls in masonry</p> <p>IV – Construction very sensitive to vibration; objects of historical interest</p>			