

Harmoni Traffic Management Improvements: Proposed Actions

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Subject: Proposed traffic and transportation Improvements to Historic North Meridian Street and 56th Street to address safety, connectivity and livability issues. (See support document: *HNTB Meridian Street Corridor Traffic Engineering Review*).

Purpose

The Harmoni transportation improvement project is intended to restore and enhance mobility options and improve livability of the Historic North Meridian Street corridor residential neighborhoods through a comprehensive application of appropriate traffic calming/management actions. It will do so in a way that does not induce significant shift of existing regional traffic to adjacent residential/local streets.

Reason for Change (general)

North Meridian Street between 38th Street and Kessler Boulevard is perceived as being unsafe by both through-traveling and local motorists, as well as by pedestrians and bicyclists. Reasons cited include high vehicular volume, excessive speed for roadway geometrics, deficient and variable lane configurations within a common land use district and neighborhood, and hazardous intersection turning movements. Absence of or inappropriate location of some sidewalks relative to adjacent high-speed (40 mph or greater) travel lanes, and absence of protected crossings along pedestrian desire lines are collectively viewed as critical issues to safety and livability.

Additionally, there is a cultural as well as City of Indianapolis policy shift towards walking and bicycling for personal mobility and active lifestyle which is measurably placing more citizens at increased risk at points of conflict with high volume high speed thoroughfares such as North Meridian Street. The proposed changes address this concern by utilizing tested and accepted traffic calming measures appropriate to this category of thoroughfare.

Justification for Changes: The proposed changes are justified based on warrants from the *Indiana Design Manual* and the *Indiana Manual on Uniform Traffic Control Devices, 2008 Edition* as interpreted by two principal sources: the *HNTB Meridian Street Corridor Traffic Engineering Review – Summary Report (SR)* and an ancillary study of the 56th Street and Central Avenue intersection (**56C**).

Proposed Actions

The interdependent actions proposed for North Meridian Street and 56th Street will be accomplished by this federally funded project and are proposed to be supported by concurrent city actions.

A description of each action, its purpose, need and justification occurs on the following pages.

Traffic Management Summary Table

| Action | Description | Purpose | Need | Justification | Reference |
|--|---|---|--|--|---|
| 1 Traffic Management/Signalization/Intersection Control | | | | | |
| 1a | Reduce Meridian Street posted speed from 40 mph to 35 mph from Kessler Boulevard to 52 nd Street | Reduce operating speed to be consistently 35 mph through extents of urban residential area of North Meridian Street. | Current posted speed (40) is perceived to be excessive for urban built-up area with frequent driveways, pedestrian demand; technically deemed a high speed facility. | | HNTB TE Analysis |
| 1b | Reduce Design Speed to 35 mph | Allows traffic calming measures and roadway geometric design as appropriate to a low speed facility (<40 mph) | Current conditions do not meet design standards for high speed facility. | | FHWA allows posted speed=design speed for urban arterials |
| 1c | Retime Meridian Street traffic signals from 38th to Kessler from 40 mph to 35 mph | More effectively align signal progressions with desired speed. | Poor signal progression | | HNTB TE Analysis |
| 1 d | Add traffic signal control at Meridian and 54th Street | Major E-W crossing for local vehicular and pedestrian traffic, improved progression and speed control | Variable distances between existing signals impairs progression; poor distribution of protected crosswalks | HNTB TE Analysis May meet Signal Warrants 1B, 2, 7 | HNTB TE Analysis |
| 1 d | Add traffic signal control at Meridian and 43rd Street | Possible speed control and pedestrian crossing. May be needed for 35mph traffic speed progression. | | HNTB TE Analysis Signal Warrantt 6. | HNTB TE Analysis |
| 1e | No left turn from NB and SB Meridian to Westfield and related geometric changes | Eliminate turn lane to achieve ped refuge; Eliminate four vehicle/vehicle conflicts to improve intersection efficiency and safety | 100' oblique crosswalk(25 second) places high volume of pedestrians at risk of not clearing five lanes of traffic | Turning counts very low; 30 degree turn angle difficult to negotiate; High volume intersection merits reduction of conflict points. | HNTB TE oversight |
| 1f | No right turn from WB Westfield to NB Meridian and closure of turning channel | Increase pedestrian-bicycle refuge area, reduce crossing distance, eliminate right turn on red hazard for pedestrians and improve overall intersection efficiency | Channelized turn lane leaves little room between bridge end and travel lanes for high volume of bike-ped crossings. | Turning counts very low; 30 degree turn angle difficult to negotiate; Oblique sight line angles of oncoming traffic; Conflicts with ped signal phase. | HNTB TE oversight |
| 1g | Addition of 4-way stop at 56 th & Central | Create safe pedestrian crossing for major E-W pedestrian and school route | SKA site observation of sightlines and pedestrian crossing time indicates hazard at unprotected crossing | Empirical evidence of deficiency for pedestrian crossings | SKA video analysis |

| 2 Geometric Configuration/Pedestrian Accommodation | | | | | |
|---|---|---|--|---|--|
| 2a | Addition of full intersection crosswalks and enhancement of Canal Towpath crosswalk at Meridian Street-Westfield Boulevard intersection. Related completion of sidewalk between east and west ends of Meridian lane | Serve pedestrian desire lines and logical sidewalk termini, enhance pedestrian safety, and enhance safe access to and along high volume Canal Towpath Trail. | Neighborhoods have poor access to Canal Towpath Trail at high volume intersection. Canal Towpath Crosswalk poorly marked. | | HNTB TE oversight |
| 2b | Addition of Meridian Street raised median from north end of Central Canal Bridge to south of east 57 th Street (made possible by Action 1, elimination of left turn lanes on Meridian at Westfield). | Traffic calming and pedestrian refuge. Mitigate vehicular speed through a visual narrowing of pavement as transition between the wider pavement north of the bridge and the narrow 4-lane section south of 54 th Street (friction). Provide crosswalk pedestrian refuge at multilane high volume intersections | Wide pavement areas and large undifferentiated oblique intersection area encourages high speeds inappropriate to a residential-pedestrian area and makes pedestrian crossings difficult. | Published research and guidance by FHWA affirms the beneficial effect of raised medians for traffic calming and supports their use for pedestrian safety at multilane pedestrian crosswalks preliminary | HNTB TE oversight |
| 2c | Pedestrian crosswalk with Rapid Flashing Rectangular Beacons (RFRB) at the Meridian Street-East 57th Street 'T' intersection, with high visibility flashing beacons and pedestrian median refuge. | Provide pedestrian access across Meridian Street to new Alice Carter Place park entry and an adjacent restaurant and destinations beyond. | New pedestrian demand will be generated by concurrent park development and sidewalk extensions to the Central Canal Towpath Trail, Meridian-on-Meridian restaurant, Illinois Street Business District, and the Riviera Club. East 57 th Street connects to two schools that generate ped/bicycle traffic to Riviera Club. | 1000' and 500' distances from nearest protected Meridian Street crosswalks currently encourage ad hoc unprotected crossings. Median and high visibility flasher system will provide safety equal to or better than similar crossings (Monon-38 th , S. Emerson (Beech Grove) | FHWA study of RFRB MUTCD interim approval of RFRB 7/2008 HNTB TE oversight |

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