



memorandum

Date: January 13, 2022

To: George Tsakoff, PE; Nicholas Bailey, PE

cc: John Katers, PE

From: Stephen Dearing, PE, PTOE

Re: The Downs Site Development
Commentary on Dan Burden's Walkability and City Mobility Suggestions

We have reviewed the matrix which summarized the various suggestions and recommendation from Dan Burden, Blue Zones LLC for the redesign of the Northville Downs site (The Downs development). We find that the proposed development site plan already encompasses many of the concepts Mr. Burden is promoting. However, we offer the following opinions regarding some of his ideas.

Speed limits

There seems to be some confusion regarding the difference between operating speeds and speed limits. We agree with Dan Burden that operating speeds in the range of 15-20 mph is desirable. However, operating speeds should be construed to be the normal or prevailing speed of traffic. That is not the same as a speed limit. In Michigan, Act 300 of P.A. 1949 (amended), also known as the Michigan Vehicle Code (MVC), precludes the posting of any public road at a speed limit less than 25 mph. An excerpt of this law is provided as an attachment.

Regarding changing the speed limit on S. Center St south of Cady from 35 to 25 mph, this segment does not meet the legal definition of a business district. As such, Sect. 257.627 of MVC provides that a speed limit must either be based on the number of vehicle access points within the segment or based on the 85th percentile speed of free-flowing traffic. As such, an engineering study would be required to justify any changes.

Regarding the proposed alleys, as we assume that they are private, they are not eligible for a public posted speed limit. If the owners of the alleys were to post them, such a speed posting would not be eligible for enforcement by the police. If the alleys are public (which we assume is not desirable to City), we note that the MVC is silent about appropriate speed limits. It may be construed that they would be treated as other public roads and subject to the same restrictions noted above for a minimum 25 mph posting. The City Attorney should advise on this issue.

Road Right of Way (ROW)

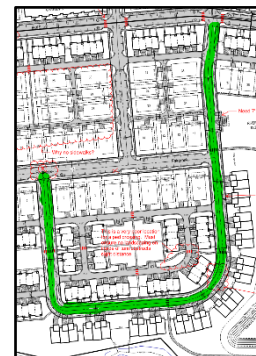
We are relatively sanguine regarding ROW widths, so long as the proposed width can accommodate public interests in these corridors of land. That includes proposed overhead and underground utilities (electric, gas, water, sanitary sewer, storm sewer, telecom, cable TV, fiber optic lines, etc.) and their above ground manifestations (junction boxes, fire hydrants, utility poles, etc.), clear pedestrian paths meeting ADA requirements, and vehicle needs of travel and parking lanes. For most communities in Southeast Michigan, 60' wide ROW for local roads is considered the norm for a local street with only two travel lanes, one in each direction. OHM recommends that streets be configured with a minimum 60' ROW.



Regarding these considerations, the Dan Burden recommendation for 90-degree parking on Cady St and Beal St calls into question if the existing 50' ROW on Cady or planned 60' ROW on Beal is adequate. By our calculations, at least 70' minimum is required, or 80' if dedicated on-street bike lanes are desired. The topic of angle parking will be further discussed below.

Public versus Private Streets

Strictly speaking, this is not an issue that Dan Burden commented upon. We provide this discussion as a follow-up to that of ROW. It appears that Fairbrook, Hutton, and Griswold will be extended as public streets and the balance of the streets and all alleys will be private. But this leaves the public street network a bit disjointed and point up enforcement issues for right of way controls (STOP / YIELD) and speed limits on private streets. OHM recommends that one additional street be considered public jurisdiction, as shown in the adjacent sketch highlighted in green:



Sidewalk Width

Burden has the generic recommendation for 5' widths for residential frontage or 8' for commercial. The development plan conforms to these widths for residential frontages but show widths from 10' to 25' for commercial. To that we would recommend that the minimum width should also depend on if the sidewalk is immediately back of curb or if there is a green belt separation. If the walk is back of curb, then the minimum width should be 7'. The added width would be needed for a variety of reasons: vehicle bumper overhang for angle parking, door swing for parallel parking, a place for snow plowing windrows leaving enough room for the walk, utilities, etc.

Lane width

The current development plan is showing lane widths for streets varying from 11.5' to 14', with the latter being for the extension of an already wide Griswold St. Burden is recommending 10' regardless of on-street parking being provided or not. OHM recommends a minimum of 11' travel lanes along segments with parallel parking to account for door swing. For the proposed local roads without on-street parking and sparse driveway access, 10' travel lanes are acceptable. We concur with the development plans for a standard alley width of 22', as there will not be any sidewalk provided along the alleys and many segments will involve rather numerous driveways with scant spacing between them.

On-street Parking

Where proposed, on-street parking is shown as parallel style based on a parking stall width of 8.5'. This is acceptable. Burden is recommending that most all of this be shifted to 90-degree angle parking. We do not concur. This would require additional land be set aside for ROW. Even for low-speed roadways, 90-degree head-in parking is inhospitable to bicyclists, whether sharing the vehicle travel lane or using dedicated bike lanes. If for some reason it is desired to increase the amount of on-street parking beyond what parallel parking provides, then we recommend 60-degree back-in parking with 12' travel lanes.

On-street Bike Lanes

The proposed development is not showing any dedicated on-street bike lanes. Rather the idea is for bicyclists to share the road within the regular travel lanes. The City's Non-Motorized Plan (2014) notes that Cady St, Griswold St, a one-block portion of Beal St, and River St are Priority 2 planned non-motorized routes. Moreover, the Plan (Figure 12) indicates that Cady is to utilize sidewalks and lane sharing, while Griswold, Beal and River are to have on-street bike lanes. If on-street bike lanes are to be required, OHM recommends the following geometrics apply: For streets without on-street parking, use 10' travel lanes and 4.5' bike lanes (measured to face of curb). For streets with on-street parking, use 10' travel lanes, 6' bike lanes, 8.5' parking lanes (measured to face of curb).



Bump Outs (Curb Extensions)

So far as we can tell, the proposed plan provides bump outs in all instances where parallel on-street parking is being provided. However, the ADA ramps need to be adjusted to be placed at the location that minimizes pedestrian crossing distances and allow for desired landscaping. We note that Section 257.674 of the MVC requires that parking be prohibited within 20' of a pedestrian crosswalk, so this needs to be taken into consideration in the redesign of the bump outs.

Streetscaping Elements (Trees, Vegetation, Lighting)

We commend the efforts to add streetscaping elements to the development. However, we caution that the placement of the elements should not compromise other key considerations. For example, placing trees in grates should not constrict sidewalks to less than 5' wide, preserving ADA requirements.

Mid-block Pedestrian Crossings

Burden is recommending that mid-block crossing be provided every 150' regardless of the block spacing or area context. We are not aware of the basis for selecting this 150' dimension, or what latitude should be giving for varying from this stricture. We do not agree with a single, strict rule and believe that the spacing of mid-block crossings should be flexible to accommodate the various competing interests.

We have provided the following table to compare the current state of the development plans for crossings, what Burden's recommendations would translate to, and our recommendations. Please note that the numbers shown are in addition to the crossings that would occur at the recognized street intersections within the development.

<u>Street</u>	<u>Block</u>	<u>The Downs</u>	<u>Burden</u>	<u>OHM Advisors</u>
Cady	Center to Hutton	1	3	1
	Hutton to Church	0	1	0
	Church to Griswold	0	2	1
Beal	Center to Hutton	0	3	1
	Hutton to Pvt Street opposite vacated Church St	0	1	0
	Pvt St (Church St vacated) to Griswold	0	1	0
Fairbrook	Center to Pvt Street east loop*	0	1	1
	Pvt Street east loop to Hutton	0	1	0
	Hutton to Pvt Street west loop (Church St vacated)	0	1	0
Hutton	Cady to Beal	0	3	1
	Beal to Fairbrook	0	2	1
Griswold	Cady to Beal	0	3	0**
Pvt Street	Beal to Fairbrook	0	2	1
	Fairbrook to Fairbrook (loop)	3	7	3

Notes * - Crossing needed at new intersection of Fairbrook and Pvt Street east loop, not mid-block.

** - No pedestrian facilities on east side of Griswold, so no need for crossing.

Speed Table Crossings

The final point to address is the use of speed tables for pedestrian crossings. Recognizing the difficulties in designing, building, and maintaining these types of traffic calming features, we generally concur that they would be valuable. If not provided for every crossing, then priority should be given to crossings at intersections, taking the form of raised intersections.



Extension of Griswold St to 7 Mile Rd/ Hines Dr

One of the keynote recommendations from Dan Burden, is to re-layout the internal streets in The Downs development such that Griswold St would be extended south of Beal St, run alongside the new open space and daylighted river and cross Johnson Creek to form a north connection to the 7 Mile Rd at Hines Dr. intersection. The City Mobility Focus Group echoed a similar concept of connecting the subdivision at 7 Mile Rd and Hines. We understand the basis of this recommendation, given the general goal of providing a grid network pattern for the street system. However, we note that Griswold north of Main St is functioning as a minor arterial and Hines Dr to the south is a principal arterial. Making this connection creates the risk of Griswold operating at a far more intense level than what is desired.

It then comes down to a question of the rationale for making the connection to 7 Mile Rd. If the purpose is the broad goal of redundancy in the **major road network** for Northville, then crossing Johnson Creek and connecting opposite Hines Dr is appropriate. The extension of Griswold should then assume the geometric characteristics of a major road to handle higher volumes, even if traffic calming measures are desired to mitigate speeds. If, however, the goal is adequacy of access from The Downs out to the roadway network, then crossing Johnson Creek and accessing 7 Mile is not needed. The other proposed connections to the existing network are fully adequate.

Needed Improvements for 7 Mile Rd at Sheldon Rd/Center St

Much has already been evaluated and discussed regarding this key intersection. We anticipate that the new TIS for the proposed development will again note that there are pre-existing capacity and safety problems with this location, that will just be further exacerbated with the construction of the development. A key failing is not having adequate NB left turn storage due to the narrow bridge that carries Sheldon Rd over Johnson Creek. This precludes being able to provide left turn signal phasing to address this heavy movement.

One option is to retain the intersection control being a traffic signal and address the lack of turn lane storage. As the existing bridge is an arch-span design, widening it will be difficult. So, a complete replacement of the bridge should be anticipated. While the update for the TIS has not yet been finalized, the preliminary draft suggests that about 500' of left turn storage is needed to handle existing and development traffic. This represents an additional 340' of widening on Sheldon south of the replacement bridge, of which about 75 – 90' will be through wetlands and floodplain. Once achieved, it is anticipated that the overall Level Of Service (LOS) would be 'C' for the a.m. and p.m. peak periods, with certain individual movements seeing LOS D.

The alternative is for a roundabout, the center of which would be shifted to the north of the centerline of 7 Mile Rd to avoid impacts to the bridge, Johnson Creek and associated wetlands and floodplain. The concept level design identified back in 2018 had an inscribed circle diameter of about 130'. The anticipated overall LOS was 'A' for both a.m. and p.m., but this was based on the TIS of the anticipated development plan dating back to 2018. This option does not require the widening of the Sheldon bridge over Johnson Creek.

OHM recommends that The Downs development be required to ensure that buildings proposed for their development are adequately set back from the ROW that would be needed to construct a roundabout for 7 Mile Rd at Sheldon Rd / Center St. As it stands, it appears that the proposed townhouse units east of Center St are acceptable. On the west side of Center St, the single southern-most unit facing of a proposed 4 plex, is in question. Whether this unit may need to be eliminated will require a better understanding of how the concept design for a roundabout fit into the dimensioning of the development site.



January 26, 2022

City of Northville

Department of Public Works
215 W Main St,
Northville, MI 48167

Attn: Mr. Michael Domine, DPS Director

Re: The Downs - Preliminary Site Plan Review for Engineering
OHM Job No. 0152-21-1020

Dear Mr. Domine,

On behalf of the City of Northville, we have reviewed the Preliminary Site Plan as submitted by Seiber Keast Lehner, and dated December 5, 2021, and revised plans dated January 20, 2022, for the above referenced project. The revised plans have addressed many of our comments from our letter dated January 14. We have also attached review comments on the revised Traffic Impact Study (as prepared by Applicant's consultant) and provided professional opinions related to Dan Burden recent walkability analysis and The City Mobility Task Force. Based on the information presented, we offer the following comments for your consideration at this preliminary site plan stage:

Preliminary Engineering Level Comments

1. The necessity for utility easements will be reviewed in the future at the final site plan and engineering review stages. Easements for public utilities will be necessary when located outside of a future City-owned Road Right-of-Way. Easement widths to be shown on Final Site Plan submittal.
2. At the Cady St and Griswold St intersection, a small area of Right of Way should be dedicated, where the property line deviates across approximate 260 ft frontage. The portion of the parcel abutting Beal Street should have sufficient ROW to provide a 60 ft width or 30 ft half width as applicable. To be addressed a Final Site Plan submittal.
3. Sufficient grading detail has not been provided on the plans at this time to allow for review and comment. Since mass grading on this site will be changing over existing conditions, the grading will require detailed review at a later stage. We request that prior to final site plan submittal, plans with sufficient proposed grading are provided for cursory grading review. To be addressed on Final Site Plan submittal.
4. We recommend to place water main, sanitary sewer, and storm utilities outside the road pavement whenever possible. To be addressed in Final Site Plan submittal.
5. Hydraulic network analysis of the proposed water system will be necessary during final site plan and engineering review stages to confirm that water main sizing is adequate throughout the development and at connection points. To be addressed in Final Site Plan submittal.



6. The City discourages the use of sanitary pump stations and as such we encourage the Applicant's continued search for a gravity option thru connection(s) to a Oakland/ Wayne County Interceptor.
7. Sanitary sewers shall be extended such that a sanitary lateral servicing each building can connect downstream of the dead-end MH, perpendicular to the building face. Several locations have been addressed but the sanitary sewer needs to be extended to lot 39 and most westerly Townhome on the west end of Beal Street extension.
8. Sufficient sanitary sewer conveyance capacity would need to be verified for Phase 1, Downs North and (utility phase 1) and the Downs South Phase 1 Townhomes west of Center Street. To be addressed in the Final Site Plan submittal.
9. Pedestrian crossings should be located at the narrowest part of the road formed by the curb extensions. Extensively addressed, however the sidewalk from Lots 22-27 shall have a receiving ramp on the north side of the Beal Street as a mid-block crossing.
10. Cost sharing of improvements to Cady St water main upsizing per CIP recommendations have yet to be determined by the City DPS. Once determined, Applicant will be notified of City requirements.
11. Plans shall include the new 8- inch water main extending along Griswold from Beal to Cady per City Water Master Plan and September 2018 Utility Tech memo.
12. Existing 4-inch water main within the vacated Church St ROW, and loops thru to Beal Street shall be shown and called out to be removed.

Walkability Mobility

We have reviewed the recently prepared slide presentation prepared by the City Walkability Consultant and The City Mobility Task Force and have provided our opinion in the attached memorandum. We plan to further engage technical staff from the City and Applicant regarding how these recommendations mesh with current City planning and road design standards, as well as impact to pedestrian circulation goals for this site plan.

Rouge River Daylighting

The Applicant has not begun detailed design for the removal of the box culvert enclosure (which the Rouge River runs through) on the site along the west side of River Street. Separately, the Applicant's Engineer has applied for and received approval from FEMA for a reduction of the floodplain through the site and an EGLE permit for work within the water course. This work specifically consists of removal of the existing Northville owned Sanitary Sewer which crosses the river at the Beal Street Bridge. From the content of the Applicants CLOMR application, (removal of the inlet obstruction to the box culvert), it can be inferred that a future daylighting of the river including removing the top and opening the side slopes will allow for a larger volume of water to be efficiently conveyed through this area. The future design of the river daylighting will determine the proposed river bottom width, channel material and alignment. The revised PSP includes a memo detailing the anticipated tasks and expected time frame for each task. In summary 85 weeks for permitting and 6 month for construction.

It is also worth noting that the preliminary site plan shows a proposed sanitary sewer re-alignment south of the Beal Street Bridge connecting to the Oakland County arm of the Huron-Rouge Interceptor on River Street. This sanitary sewer work at the river crossing is proposed to be phased.



The Downs North sanitary sewer is proposed to connect to the existing 10-inch diameter sewer on the west side of the Beal Street bridge as part of the first utility phase. It is proposed during a second utility phase that this sanitary sewer be constructed to cross under the river and connect to the interceptor. The new connection to the interceptor would provide a lower elevation for the sanitary sewer allowing it to be separated from the river flow. The Applicant's Engineer, City DPS and City Engineer are in active talks with the applicable regulatory agencies for approval of this proposed connection. This revised connection would be beneficial for the City by providing an improved sanitary sewer crossing of the river, where the sewer pipe would be protected from river flow and freezing temperatures.

Phasing

The future phasing of the site utilities will be an important aspect for future final site plan stage, engineering review, and construction of The Downs site improvements. It is our understanding that the final site plans will be submitted under two phases a north phase of The Downs (area north of Beal extension, and west of Center Street) and a south phase of The Downs (area south of Beal extension thru to Center Street). It is our understanding that the engineering plans and utility construction will be similarly phased. The revised plans dated January 20 reflect 3 phases within the South Downs: Phase 1 west of Center, Phase 2 the perimeter of the Private Road "A" end and up along the east side of Center Street, Phase 3 area within Private Road "A" and area south of Beal extension. The North and South phasing reflect independent sanitary sewer service systems. North Downs is proposed to be connected to via a new connection the 30-inch Oakland Interceptor via Beal. South Downs Phase 1 will be connected to the existing sanitary sewer on Center Street. South Downs Phase 2&3 is proposed to be connected to a new sanitary pump station which will discharge via a new connection to the Wayne County 18-inch Interceptor.

The River Park is proposed to be constructed mid-way thru South Downs Phase 2 and completed before South Downs Phase 3 begins.

Traffic Impact Study

OHM has reviewed the F&V traffic impact study dated December 14, 2021, and the synchro database from which the study was prepared. Additionally, we met with F&V via a zoom meeting on January 4th to outline our preliminary comments. Revised comments were provided in a memo dated January 11, 2022. We have subsequently meet with the applicant's team via zoom on January 12, 2022 and from that meeting sent revised review comments dated Jan 14, 2022. The Applicant's Traffic Engineer revised the study based on all the feedback received and resubmitted their TIS dated January 20, 2022. Our current comments dated January 26, reflect the review on this latest TIS submittal.

Summary of Necessary Future Permits and/or Approvals

1. Future approval and permit from the Wayne County Department of Public Services will be required for stormwater management, including any proposed underground detention system, infiltration swales, and detention basins. An initial review on The Downs North site (R21-315) was already performed by OHM Advisors, and on The Downs South site (R21-316) by Spicer Group, on behalf of



Wayne County DPS on November 1st and September 1st, 2021, respectively. Detailed comments could not be provided at that time due to the level of engineering detail provided on the plans. We anticipate that another stormwater review could be completed during final site plan stage if further engineering detail is provided.

2. Future approval and permit from Wayne County Department of Environment for Soil Erosion and Sedimentation Control will be required.
3. Future review and approval from Wayne County Department of Environment will be required for connections of the public sanitary sewer to the existing Wayne County Sewer Interceptor.
4. City of Northville Fire Department review and approval will be required for proposed fire hydrant locations. This review will typically take place at final site plan stage or early in the engineering review stage.
5. Concurrence with the approved CLOMR by FEMA for the removal of the sanitary sewer at Beal Street bridge is required by the Applicant prior to submittal of the LOMR to FEMA for final approval. The Applicant is required to construct the improvement shown on the already approved CLOMR unless otherwise amended by Applicant.
6. Future review and permits for Michigan EGLE Public Act 399 and Part 41 for water main and sanitary sewer construction will be required during the engineering review stage.
7. We recommend to the City that most outside agency permits be **reasonably assured** by the Applicant prior to Final Site Plan approval (except for the EGLE PA 399 and Part 41 permits which can take place during engineering review stage). Therefore, Wayne County DPS review and EGLE Joint Permit reviews (if required) are recommended to **make significant progress** during the final site plan stage.

Should you have any questions regarding our review comments outlined above, please do not hesitate to contact Nicholas at (734) 466-4538 or via email at nicholas.bayley@ohm-advisors.com.

Sincerely,
OHM Advisors

Nicholas Bayley, PE
Client Representative

George Tsakoff, PE
Principal

Attachment: OHM TIS review Memo, January 26, 2022
OHM response to D. Burden Suggestions, January 13, 2022

cc: Patrick Sullivan, City Manager, via email
Sally Elmiger, CWA, City of Northville Planner, via email
Dianne Massa, City Clerk, via email
Brent Strong, City Chief Building Official, via email
Matthew Samhat, City Fire Marshall, via email
Randy Wertheimer, Hunter Pasteur, via email

Omar Eid, Hunter Pasteur, via email
Seth Herkowitz, Hunter Pasteur, via email
Tim O'Brian, Applicant's consultant, via email
Bob Emerson, SKL Applicant Engineer, via email
Julie Kroll, F&V Traffic Engineer, via email
Stephen Dearing, OHM, via email

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memorandum

Date: January 26, 2022

To: George Tsakoff, PE; Nicholas Bayley, PE

CC: John Katers, PE

From: Stephen Dearing, PE, PTOE

Re: The Downs Site Development, City of Northville
Traffic Impact Study Review

We have completed our review of the revised traffic impact study for the proposed development study in City of Northville, Michigan. The Downs project site is located adjacent to the south side of Cady Street, between Center Street and Griswold Street on the property that was previously occupied by Northville Downs. The proposed development includes the construction of a mixed-use retail and multi-family residential units.

The traffic impact study was prepared by Fleis & VandenBrink Engineering, Inc., the original TIS reviewed was dated December 14, 2021. This review includes the most recently revised TIS dated January 20, 2022. Synchro traffic modeling files were also provided for review.

Fleis & VandenBrink Engineering, Inc. has addressed many of the concerns raised in our previous memo dated January 13th. There are a variety of minor issues that remain and need to be addressed in our opinion. **We recommend that the study be updated based on the following summary/comments.**

1. Page iv & Table E2: There are several items that need to be addressed.
 - a. As a holdover from the earlier version of the report, this table shows that installing a traffic signal for the following locations and scenarios are recommended. However, subsequent signal warrant analysis shows that these locations do not meet warrants, so signals should not be installed:
 - i. Randolph at Center – Scenario 1
 - ii. Cady at Center – Scenarios 1 & 3
 - b. Moreover, the table also shows that Randolph at Center should have an all-way stop control even though the analysis of pg. 16 Table 3-3 indicates that the warrant for all-way stop is not met.
2. Pages 1 to 15: Existing conditions for the scenarios. **This remains a point of concern.** As we previously indicated, the three scenarios are based on different volume counting and adjustment regimes, and as such do not facilitate direct comparisons. For Scenario 1, 2019 counts (pre-covid pandemic) were used and expanded to a 2021 horizon year. These volumes result in intersections and road segments that have significantly more traffic loadings than Scenario 2 or 3, which are based on the 2021 turning movement counts where no COVID adjustment factors were applied.

In their report, F&V implies that at a scoping meeting held on October 1, 2021 that OHM and the City fully endorsed the proposed methodology for utilizing the traffic counts to run Scenarios 2&3 (closure of Center and Main remaining in place). The concept was agreed to, but as this meeting pre-dates the actual data collection, it was impossible to know how large the discrepancies would be in the traffic counts at the various locations and throughout the network. If known at the time of the scoping meeting, or if we had been updated soon after the counts were taken, we would have advised that counts be adjusted to bring



them in line with the pre-pandemic data, prior to being used to run Scenario 2 and 3 analyses. As it stands, in our opinion, these scenarios present an overly optimistic prediction for the impacts to traffic for these options.

3. Page 17, Section 3.4.3: This may be a holdover error, the summary and recommendation incorrectly suggest that this location meets traffic signal warrants for scenario 1 and all-way stop warrants for scenario 2.
4. Page 17, Section 3.4.3: Please revise recommendation based on signal warrants for scenarios 1& 3
5. Page 18, Table 3.4: This table needs to be corrected to reflect the changes noted above in our items # 3 & 4.
6. Page 19, Table 3.5: This table needs to be corrected to reflect the changes noted above in our items # 3 & 4.
7. Page 20, Section 3.4.6:
 - a. Option 3 please provide more clarification regarding sight distance issues for the roundabout alternative
 - b. In our previous review, we questioned the impacts of eliminating existing on-street bike lanes for SB Center St under Options 1 and 2. This comment was not addressed in the revised TIS. Specifically, what SB left turn lane storage is needed for these options? Please provide the length of queuing required which will reflect the length of on-street bike lanes that will need to be removed.
8. Page 28, Section 4.4.2, Table 4.3: The intersection of Center at Randolph does not meet warrants for an all-way stop. F&V recommendation shall reflect warrants being met.
9. Page 29, Table 4.4: Similar to Table 3.4, this table needs to be corrected to reflect improvements meeting warrants for installing signals and all-way stop controls.
10. Page 30, Table 4.5: Similar to Table 3.5, this table needs to be corrected regarding average delay and LOS for improvements meeting warrants for installing signals and all-way stop controls.
11. Page 40, Section 7.4.2, Table 7.3: Similar to comment #8 revise recommendation meeting warrants.
12. Page 41, Table 7.4: Similar to Tables 3.4 and 4.4, this table needs to be revised to reflect improvements meeting warrants.
13. Page 42, Table 7.5: Similar to Tables 3.5 and 4.5, this table needs to be corrected regarding average delay and LOS for improvements meeting warrants.
14. Page 46, Table 8.1: Similarly, this table needs to be corrected regarding the various items noted above.

MICHIGAN VEHICLE CODE (EXCERPT)
Act 300 of 1949

257.627 Speed limits.

Sec. 627. (1) A person operating a vehicle on a highway shall operate that vehicle at a careful and prudent speed not greater than nor less than is reasonable and proper, having due regard to the traffic, surface, and width of the highway and of any other condition existing at the time. A person shall not operate a vehicle upon a highway at a speed greater than that which will permit a stop within the assured, clear distance ahead. A violation of this subsection shall be known and may be referred to as a violation of the basic speed law or "VBSL".

(2) Except as provided in subsection (1), it is lawful for the operator of a vehicle to operate that vehicle on a highway at a speed not exceeding the following:

(a) 15 miles per hour on a highway segment within the boundaries of a mobile home park, as that term is defined in section 2 of the mobile home commission act, 1987 PA 96, MCL 125.2302.

(b) 25 miles per hour on a highway segment within a business district.

(c) 25 miles per hour on a highway segment within the boundaries of a public park. A local authority may decrease the speed limit to not less than 15 miles per hour in a public park under its jurisdiction.

(d) 25 miles per hour on a highway segment within the boundaries of a residential subdivision, including a condominium subdivision, consisting of a system of interconnected highways with no through highways and a limited number of dedicated highways that serve as entrances to and exits from the subdivision.

(e) 25 miles per hour on a highway segment with 60 or more vehicular access points within 1/2 mile.

(f) 30 miles per hour on a highway segment with not less than 50 vehicular access points but no more than 59 vehicular access points within 1/2 mile.

(g) 35 miles per hour on a highway segment with not less than 45 vehicular access points but no more than 49 vehicular access points within 1/2 mile.

(h) 40 miles per hour on a highway segment with not less than 40 vehicular access points but no more than 44 vehicular access points within 1/2 mile.

(i) 45 miles per hour on a highway segment with not less than 30 vehicular access points but no more than 39 vehicular access points within 1/2 mile.

(3) A person operating a truck with a gross weight of 10,000 pounds or more, a truck-tractor, a truck-tractor with a semi-trailer or trailer, or a combination of these vehicles shall not exceed a speed of 35 miles per hour during the period when reduced loadings are being enforced in accordance with this chapter.

(4) Where the posted speed limit is greater than 65 miles per hour, a person operating a school bus, a truck with a gross weight of 10,000 pounds or more, a truck-tractor, or a truck-tractor with a semi-trailer or trailer or a combination of these vehicles shall not exceed a speed of 65 miles per hour on a limited access freeway or a state trunk line highway.

(5) All of the following apply to the speed limits described in subsection (2):

(a) A highway segment adjacent to or lying between 2 or more areas described in subsection (2)(a), (b), (c), or (d) shall not be considered to be within the boundaries of those areas.

(b) A highway segment of more than 1/2 mile in length with a consistent density of vehicular access points equal to the number of vehicular access points described in subsection (2)(e), (f), (g), (h), or (i) shall be posted at the speed limit specified in the adjoining segment. A separate determination shall be made for each adjoining highway segment where vehicular access point density is different.

(c) A speed limit may be posted on highways less than 1/2 mile in length by prorating in 1/10 mile segments the vehicular access point density described in subsection (2)(e), (f), (g), (h), or (i).

(6) A person operating a vehicle on a highway, when entering and passing through a work zone described in section 79d(a) where a normal lane or part of the lane of traffic has been closed due to highway construction, maintenance, or surveying activities, shall not exceed a speed of 45 miles per hour unless a different speed limit is determined for that work zone by the state transportation department, a county road commission, or a local authority, based on accepted engineering practice. The state transportation department, a county road commission, or a local authority shall post speed limit signs in each work zone described in section 79d(a) that indicate the speed limit in that work zone and shall identify that work zone with any other traffic control devices necessary to conform to the Michigan manual of uniform traffic control devices. A person shall not exceed a speed limit established under this section or a speed limit established under section 628.

(7) The state transportation department, a county road commission, or a local authority shall decrease the speed limit in a hospital highway zone by up to 10 miles per hour upon request of a hospital located within that hospital highway zone. The state transportation department, county road commission, or local authority

may decrease the speed limit in a hospital highway zone by more than 10 miles per hour if the decrease is supported by an engineering and safety study. The state transportation department, county road commission, or local authority shall post speed limit signs in a hospital highway zone that indicate the speed limit in that hospital highway zone and shall identify that hospital highway zone with any other traffic control devices necessary to conform to the Michigan manual of uniform traffic control devices. If a change in a sign, signal, or device, is necessitated by a speed limit decrease described in this subsection, the hospital requesting the decrease shall pay the cost of doing so. As used in this subsection, "hospital highway zone" means a portion of state trunk line highway maintained by the state transportation department that has a posted speed limit of at least 50 miles per hour and has 2 or fewer lanes for travel in the same direction, traverses along property owned by a hospital, contains an ingress and egress point from hospital property, and extends not more than 1,000 feet beyond the boundary lines of hospital property in both directions in a municipality.

(8) Subject to subsection (17), the maximum speed limit on all limited access freeways upon which a speed limit is not otherwise fixed under this act is 70 miles per hour, which shall be known as the "limited access freeway general speed limit". The minimum speed limit on all limited access freeways upon which a minimum speed limit is not otherwise fixed under this act is 55 miles per hour.

(9) Subject to subsection (17), the speed limit on all trunk line highways and all county highways upon which a speed limit is not otherwise fixed under this act is 55 miles per hour, which shall be known as the "general speed limit".

(10) Except as otherwise provided in this subsection, the speed limit on all county highways with a gravel or unimproved surface upon which a speed limit is not otherwise fixed under this act is 55 miles per hour, which shall be known as the "general gravel road speed limit". Upon request of a municipality located within a county with a population of 1,000,000 or more, the county road commission in conjunction with the requesting municipality may lower the speed limit to 45 miles per hour on the requested road segment and if a sign, signal, or device is erected or maintained, taken down, or regulated as a result of a request by a municipality for a speed limit of 45 miles per hour, the municipality shall pay the costs of doing so. If a municipality located within a county with a population of 1,000,000 or more requests a speed different than the speed described in this subsection, the county road commission in conjunction with the department of state police and the requesting municipality may conduct a speed study of free-flow traffic on the fastest portion of the road segment in question for the purpose of establishing a modified speed limit. A speed study conducted under this subsection shall be completed between 3 and 14 days after a full gravel road maintenance protocol has been performed on the road segment. A full gravel road maintenance protocol described in this subsection shall include road grading and the application of a dust abatement chemical treatment. Following a speed study conducted under this subsection, the speed limit for the road segment shall be established at the nearest multiple of 5 miles per hour to the eighty-fifth percentile of speed of free-flow traffic under ideal conditions for vehicular traffic, and shall not be set below the fiftieth percentile speed of free-flow traffic under ideal conditions for vehicular traffic. A speed study conducted under this subsection shall be the responsibility of the department of state police, and if a sign, signal, or device is erected or maintained, taken down, or regulated as a result of a request by a municipality under this subsection, the municipality shall pay the costs of doing so.

(11) A public record of all traffic control orders establishing statutory speed limits authorized under this section shall be filed with the office of the clerk of the county in which the county highway is located or at the office of the city or village clerk or administrative office of the airport, college, or university in which the local highway is located, and a certified copy of the traffic control order shall be evidence in every court of this state of the authority for the issuance of that traffic control order. The public record filed with the county, city, or village clerk or administrative office of the airport, college, or university shall not be required as evidence of authority for issuing a traffic control order in the case of signs temporarily erected or placed at points where construction, maintenance, or surveying activities is in progress. A traffic and engineering investigation is not required for a traffic control order for a speed limit established under subsection (2). A traffic control order shall, at a minimum, contain all of the following information:

- (a) The name of the road.
- (b) The boundaries of the segment of the road on which the speed limit is in effect.
- (c) The basis upon which the speed limit is in effect.
- (d) The section of law, including a reference to the subsection, under which the speed limit is established.

(12) Except for speed limits described in subsections (1), (2)(d), and (9), speed limits established under this section are not valid unless properly posted. In the absence of a properly posted sign, the speed limit in effect is the basic speed law described in subsection (1). Speed limits established under subsection (2)(b), (e), (f), (g), (h), and (i) are not valid unless a traffic control order is filed as described in subsection (11).

(13) Nothing in this section prevents the establishment of a modified speed limit after a speed study as

described in section 628. A modified speed limit established under section 628 supersedes a speed limit established under this section.

(14) All signs erected or placed under this section shall conform to the Michigan manual on uniform traffic control devices.

(15) If upon investigation the state transportation department or county road commission and the department of state police determine that it is in the interest of public safety, they may order city, village, airport, college, university, and township officials to erect and maintain, take down, or regulate speed limit signs, signals, and devices as directed. In default of an order, the state transportation department or county road commission may cause designated signs, signals, and devices to be erected and maintained, removed, or regulated in the manner previously directed and pay the costs for doing so out of the designated highway fund. An investigation, including a speed study, conducted under this subsection shall be the responsibility of the department of state police.

(16) A person who violates a speed limit established under this section is responsible for a civil infraction.

(17) No later than 1 year after the effective date of the amendatory act that added this subsection, the state transportation department and the department of state police shall increase the speed limits on at least 600 miles of limited access freeway to 75 miles per hour if an engineering and safety study and the eighty-fifth percentile speed of free-flowing traffic under ideal conditions of that section contain findings that the speed limit may be raised to that speed, and the department shall increase the speed limit of 900 miles of trunk line highway to 65 miles per hour if an engineering and safety study and the eighty-fifth percentile speed of free-flowing traffic under ideal conditions of that section contain findings that the speed limit may be raised to that speed.

(18) As used in this section:

(a) "Traffic control order" means a document filed with the proper authority that establishes the legal and enforceable speed limit for the highway segment described in the document.

(b) "Vehicular access point" means a driveway or intersecting roadway.

History: 1949, Act 300, Eff. Sept. 23, 1949;—Am. 1957, Act 190, Eff. Sept. 27, 1957;—Am. 1959, Act 76, Eff. Mar. 19, 1960;—Am. 1962, Act 120, Eff. Mar. 28, 1963;—Am. 1966, Act 223, Imd. Eff. July 11, 1966;—Am. 1974, Act 28, Imd. Eff. Mar. 2, 1974;—Am. 1976, Act 190, Imd. Eff. July 8, 1976;—Am. 1978, Act 510, Eff. Aug. 1, 1979;—Am. 1986, Act 92, Eff. June 5, 1986;—Am. 1988, Act 460, Imd. Eff. Dec. 27, 1988;—Am. 1990, Act 165, Imd. Eff. July 2, 1990;—Am. 2003, Act 315, Eff. Apr. 8, 2004;—Am. 2004, Act 62, Imd. Eff. Apr. 13, 2004;—Am. 2006, Act 19, Eff. Nov. 9, 2006;—Am. 2006, Act 85, Eff. Nov. 9, 2006;—Am. 2012, Act 252, Imd. Eff. July 2, 2012;—Am. 2016, Act 445, Imd. Eff. Jan. 5, 2017.

MICHIGAN VEHICLE CODE (EXCERPT)
Act 300 of 1949

257.674 Prohibited parking; exceptions; bus loading zone; violation as civil infraction.

Sec. 674. (1) A vehicle shall not be parked, except if necessary to avoid conflict with other traffic or in compliance with the law or the directions of a police officer or traffic-control device, in any of the following places:

- (a) On a sidewalk.
- (b) In front of a public or private driveway.
- (c) Within an intersection.
- (d) Within 15 feet of a fire hydrant.
- (e) On a crosswalk.
- (f) Within 20 feet of a crosswalk, or if there is not a crosswalk, then within 15 feet of the intersection of property lines at an intersection of highways.
- (g) Within 30 feet of the approach to a flashing beacon, stop sign, or traffic-control signal located at the side of a highway.
- (h) Between a safety zone and the adjacent curb or within 30 feet of a point on the curb immediately opposite the end of a safety zone, unless a different length is indicated by an official sign or marking.
- (i) Within 50 feet of the nearest rail of a railroad crossing.
- (j) Within 20 feet of the driveway entrance to a fire station and on the side of a street opposite the entrance to a fire station within 75 feet of the entrance if properly marked by an official sign.
- (k) Alongside or opposite a street excavation or obstruction, if the stopping, standing, or parking would obstruct traffic.
- (l) On the roadway side of a vehicle stopped or parked at the edge or curb of a street.
- (m) Upon a bridge or other elevated highway structure or within a highway tunnel.
- (n) At a place where an official sign prohibits stopping or parking.
- (o) Within 500 feet of an accident at which a police officer is in attendance, if the scene of the accident is outside of a city or village.
- (p) In front of a theater.
- (q) In a place or in a manner that blocks immediate egress from an emergency exit conspicuously marked as an emergency exit of a building.
- (r) In a place or in a manner that blocks or hampers the immediate use of an immediate egress from a fire escape conspicuously marked as a fire escape providing an emergency means of egress from a building.
- (s) In a parking space clearly identified by an official sign as being reserved for use by disabled persons that is on public property or private property available for public use, unless the individual is a disabled person as described in section 19a or unless the individual is parking the vehicle for the benefit of a disabled person. In order for the vehicle to be parked in the parking space the vehicle shall display 1 of the following:
 - (i) A certificate of identification or windshield placard issued under section 675 to a disabled person.
 - (ii) A special registration plate issued under section 803d to a disabled person.
 - (iii) A similar certificate of identification or windshield placard issued by another state to a disabled person.
 - (iv) A similar special registration plate issued by another state to a disabled person.
 - (v) A special registration plate to which a tab for persons with disabilities is attached issued under this act.
- (t) In a clearly identified access aisle or access lane immediately adjacent to a space designated for parking by persons with disabilities.
- (u) On a street or other area open to the parking of vehicles that results in the vehicle interfering with the use of a curb-cut or ramp by persons with disabilities.
- (v) Within 500 feet of a fire at which fire apparatus is in attendance, if the scene of the fire is outside a city or village. However, volunteer fire fighters responding to the fire may park within 500 feet of the fire in a manner not to interfere with fire apparatus at the scene. A vehicle parked legally previous to the fire is exempt from this subdivision.
- (w) In violation of an official sign restricting the period of time for or manner of parking.
- (x) In a space controlled or regulated by a meter on a public highway or in a publicly owned parking area or structure, if the allowable time for parking indicated on the meter has expired, unless the vehicle properly displays 1 or more of the items listed in section 675(8).
- (y) On a street or highway in such a way as to obstruct the delivery of mail to a rural mailbox by a carrier of the United States postal service.
- (z) In a place or in a manner that blocks the use of an alley.

(aa) In a place or in a manner that blocks access to a space clearly designated as a fire lane.

(2) A person shall not move a vehicle not owned by the person into a prohibited area or away from a curb a distance that makes the parking unlawful.

(3) A bus, for the purpose of taking on or discharging passengers, may be stopped at a place described in subsection (1)(b), (d), or (f) or on the roadway side of a vehicle illegally parked in a legally designated bus loading zone. A bus, for the purpose of taking on or discharging a passenger, may be stopped at a place described in subsection (1)(n) if the place is posted by an appropriate bus stop sign, except that a bus shall not stop at such a place if the stopping is specifically prohibited by the responsible local authority, the state transportation department, or the director of the department of state police.

(4) A person who violates this section is responsible for a civil infraction.

History: 1949, Act 300, Eff. Sept. 23, 1949;—Am. 1977, Act 19, Eff. Oct. 1, 1977;—Am. 1978, Act 510, Eff. Aug. 1, 1979;—Am. 1978, Act 546, Imd. Eff. Dec. 22, 1978;—Am. 1979, Act 66, Eff. Aug. 1, 1979;—Am. 1980, Act 518, Eff. Mar. 31, 1981;—Am. 1985, Act 69, Imd. Eff. July 1, 1985;—Am. 1986, Act 69, Eff. Mar. 31, 1987;—Am. 1986, Act 222, Eff. Oct. 1, 1986;—Am. 1988, Act 150, Eff. Nov. 11, 1988;—Am. 1994, Act 104, Eff. Oct. 1, 1994;—Am. 1998, Act 68, Imd. Eff. May 4, 1998;—Am. 2000, Act 76, Eff. Oct. 1, 2000;—Am. 2000, Act 268, Eff. Oct. 1, 2000.