



**AGENDA**  
CHARTER TOWNSHIP OF MERIDIAN  
TOWNSHIP BOARD – REGULAR MEETING  
December 2, 2025 6:00 PM

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1. CALL MEETING TO ORDER
2. PLEDGE OF ALLEGIANCE/INTRODUCTIONS
3. ROLL CALL
4. PRESENTATION
5. CITIZENS ADDRESS AGENDA ITEMS AND NON-AGENDA ITEMS
6. TOWNSHIP MANAGER REPORT
7. BOARD MEMBER REPORTS OF ACTIVITIES AND ANNOUNCEMENTS
8. APPROVAL OF AGENDA
9. CONSENT AGENDA
  - A. Communications
  - B. Minutes
    - (1) November 13, 2025 Listening Session
    - (2) November 18, 2025 Regular Township Board Meeting
  - C. Bills
  - D. Non-Union Wage Schedule
  - E. Disposal of Surplus Equipment
  - F. Set a Public Hearing for the Haslett Village Square Brownfield Plan Amendment #2
  - G. American House Pathway Site Contract Award
  - H. American House Pathway Sheet Pile and Boardwalk Contract Award
  - I. 2026 Local Road Program Preventative Maintenance Contract Award
  - J. 2025 Grounds Maintenance Contract Award
  - K. 2025 Order to Maintain Sidewalk Resolution #4-Set Public Hearing for January 20, 2026
10. HEARING
  - A. Authentix Central Park Project
11. ACTION ITEMS
  - A. Hagadorn Road Land Donation/Acquisition
12. BOARD DISCUSSION ITEMS
  - A. Authentix Central Park Project
  - B. Haslett Road Corridor Study Proposal
13. COMMENTS FROM THE PUBLIC
14. OTHER MATTERS AND BOARD MEMBER COMMENTS
15. ADJOURNMENT

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All comments limited to 3 minutes, unless prior approval for additional time for good cause is obtained from the Supervisor. Appointment of Supervisor Pro Tem and/ or Temporary Clerk if necessary. Individuals with disabilities requiring auxiliary aids or services should contact the Meridian Township Board by contacting: Township Manager Tim Dempsey, 5151 Marsh Road, Okemos, MI 48864 or 517.853.4258 - Ten Day Notice is Required.

Meeting Location: 5151 Marsh Road, Okemos, MI 48864 Township Hall

Providing a safe and welcoming, sustainable, prime community.

A PRIME COMMUNITY  
meridian.mi.us



9.A

**CONSENT AGENDA  
BOARD  
COMMUNICATIONS**

**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** Revenue Sharing Cuts Letter  
**Date:** Friday, November 14, 2025 2:09:19 PM  
**Attachments:** [Letter to Governor, Sen. Brinks and Speaker Hall - Township Funding Cuts - Signed 11-14-25.pdf](#)

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Good Afternoon Senator and Representatives,

Please find attached a letter signed by dozens of Township Supervisors across the state including myself in support of a supplemental budget that replaces the revenue lost due to the FY 2026 budget that was passed in October. Analyses by the Michigan Townships Association show that we stand to lose significant revenue due to the decrease in Constitutional and Statutory Revenue sharing in this budget and the supposed replacements for that revenue, including the public safety money and the road funding will either a) not find its way to Meridian Township or b) not nearly cover the amount that was lost.

As you might imagine, budgets are tight throughout the state including in Meridian Township and we expect that this will be even more difficult in FY26. Personnel costs continue to increase, the impacts of inflationary pressures across the board, and health care costs (which went up over 20% compared to FY 25) are strapping municipalities like ours and across the state. Similarly, our residents do not wish to take on additional costs to fund the core government services that revenue sharing pays for, they are maxed out as well.

And so now that the initial budget fervor has largely passed, I would urge you to work with your colleagues to help solve a real problem that will be felt in communities throughout the state. Local government provides the services that people rely on most in their day to day lives: police, fire, parks, water and more. I believe that is worthy of continued state investment, and I'm sure you agree.

I would be happy to discuss this matter further with you, if you would like!

**Scott Hendrickson**

Supervisor, Meridian Township

[REDACTED]  
5151 Marsh Road | Okemos, MI 48864

## JOINT TOWNSHIP SUPERVISORS' LETTER TO STATE OF MICHIGAN LEADERS

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November 14, 2025

Dear Governor Whitmer, Speaker Hall and Senator Brinks:

The undersigned townships are grateful to each of you for the service that you provide to all of our residents. We are writing today to continue the lines of communication with you and make sure that Michigan's 1,240 townships have a seat at your table as you consider policy and appropriations that impact local government.

As you know, townships govern more than 96% of Michigan's land mass, in which over 58% of Michigan's property values are located. Townships provide essential services to over half of Michigan's population. We are the government closest to these residents and speak to them on a daily basis.

While the budget that you and the legislature have passed has attributes that are beneficial for local governments, such as additional funding for roads and public safety, there are concerns about how the budget will impact the operations of townships.

Please consider these facts on how this enacted budget will impact townships across Michigan:

- The reduction of the constitutional revenue sharing funds by 4.6% for the six-month impact for FY2026, increasing to an estimated \$93 million (8.9%) loss for a full fiscal year, decreases revenue critical to the ability of townships to provide services to residents. Cuts to this revenue will mean reduction to services or higher local taxes. This loss represents a real impact to our residents, such as loss of firefighters to some.
- Statutory revenue sharing was finally returned to all townships, cities and villages in 2025 after nearly two decades and now is not the time to take steps backwards.
- While the estimated annual increase for roads is positive overall, townships will not directly benefit by this increase, as these funds go to county road agencies. There is no requirement that counties spend these funds on local road improvements within townships. Including language to eliminate any requirement for a funding match for road projects would be extremely helpful.

We are grateful for all of your efforts to improve roads and infrastructure in our state. To enhance the budget and policies that you've just enacted, making some adjustments to each would move your end product from good to great and ensure that townships can be equal partners with other local governments in our state.

We strongly encourage you to consider passing a supplemental budget that backfills the sales tax revenue lost due to the redirect at the pump, thereby holding local units of government harmless. We also ask that you include language in the new Neighborhood Roads Fund that ensures that townships are not required to provide a match for projects funded from the new revenue you've created.

Local governments are the most connected to the residents we collectively serve, and we are asking you to work in partnership with us to ensure that we can provide the critical services needed in our communities throughout Michigan.

Sincerely,

DocuSigned by:  
  
84351F6D1BF3492...  
Anne Marie Graham-Hudak  
Canton Township Supervisor

Signed by:  
  
9A4CFCBCFD8A4B7...  
Mark Abbo  
Northville Township Supervisor

Signed by:  
  
CCDE7017E7ED46A...  
Keith Dick  
Aetna Township Supervisor

Joint Township Supervisors' Letter To Michigan Leaders  
November 14, 2025  
Page 2

Signed by:

*Alfred Prieur*

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Alfred Prieur

Bedford Township Supervisor

DocuSigned by:

*Penny Turner*

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Penny Turner

London Township Supervisor

Signed by:

*Craig Ostby*

BC01E142444D4C8...

Craig Ostby

Mikado Township Supervisor

DocuSigned by:

*Sandy Smiley*

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Sandy Smiley

Keene Township Supervisor

Signed by:

*Kelly Trombly*

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Kelly Trombly

Huron Township Supervisor

DocuSigned by:

*Meryl Christensen*

5E78E3B47E13447...

Meryl Christensen

Ontwa Township Supervisor

Signed by:

*Kevin McNamara*

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Kevin McNamara

Van Buren Township Supervisor

Signed by:

*Trish Reilly*

A3ED5BFDC7EA40D...

Trish Reilly

Pittsfield Township Supervisor

Signed by:

*Tamara Edwards*

329ED6502AE34AE...

Tamara Edwards

Ronald Township Supervisor

Signed by:

*Pat McRae*

6F8768DAC1D5414...

Pat McRae

Redford Township Supervisor

Signed by:

*Ginny Dahlin*

09162835FC3643D...

Ginny Dahlin

Bay De Noc Township Supervisor

Signed by:

*Richard Porter*

F6805BF2A79540B...

Richard Porter

Sheridan Township Supervisor

Signed by:

*Georgette Peterson*

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Georgette Peterson

Arlington Township Supervisor

DocuSigned by:

*Tia Kurina-Cooley*

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Tia Kurina-Cooley

Homestead Township Supervisor

Signed by:

*Anthony Bartolotta*

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Anthony Bartolotta

Waterford Township Supervisor

Signed by:

*Larry Gray*

4618AEF34FD948D...

Larry Gray

Commerce Township Supervisor

Signed by:

*Pam Byrnes*

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Pam Byrnes

Lyndon Township Supervisor

Signed by:

*Tom Coleman*

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Tom Coleman

Plainfield Charter Township Supervisor

Signed by:

*Darcia Kelley*

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Darcia Kelly

Oakfield Township Supervisor

Signed by:

*Wesley Peterman*

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Wesley Peterman

Maple Grove Township Supervisor

Signed by:

*Marco Menezes*

56DCCE0F7F4E456...

Marco Menezes

Hersey Township Supervisor

Signed by:

*Thomas Palenick*

D6135B2B10FF4A1...

Thomas Palenick

Paw Paw Township Supervisor

Signed by:

*James Pitsch*

D9E70534F7A2474...

James Pitsch

Salem Township Supervisor

Signed by:

*Kathy Rasmussen*

C9C9BC37B10A4A3...

Kathy Rasmussen

Douglass Township Supervisor

Signed by:

*Christina M. Hutchings*

4F4959FBAA8E4F6...

Christina Hutchings

Ross Township Supervisor

Signed by:

*Carolyn J Fairman*

43D727302BFF4DA...

Carolyn Fairman

Speaker Township Supervisor

Signed by:

*Scott Hendrickson*

06CA6BAE36CB40E...

Scott Hendrickson

Meridian Township Supervisor

DocuSigned by:

*Anna Erickson*

0E8EBC15CC044BC...

Anna Erickson

Skandia Township Supervisor

DocuSigned by:

*Frederick Thorsby*

828063DD58C6467...

Frederick Thorsby

Flushing Township Supervisor

*John Krentz*

John Krentz

Rudyard Township Supervisor

DocuSigned by:

*Rik Kowall*

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Rik Kowall

White Lake Township Supervisor

Signed by:

*Paul Black*

263F9E838146494...

Paul Black

Casnovia Township Supervisor

Signed by:

*Terry Muntz*

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Terry Muntz

Elkland Township Supervisor

Signed by:

*Richard Raffaelli*

34E1208DDADF488...

Richard Raffaelli

Shelby Township Supervisor

Signed by:

*Glenn Youngstedt*

69AE2C6E5D274AC...

Glenn Youngstedt

Lincoln Township Supervisor

Signed by:

*Cindy Stratton*

C462668B3C604C0...

Cindy Stratton

Home Township Supervisor

Signed by:

*Lynn Gierke*  
926E2EE13CE44EA...

Lynn Gierke

Chassell Township Supervisor

DocuSigned by:

*Scott Bennett*  
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Scott Bennett

Grand Blanc Township Supervisor

DocuSigned by:

*David Herlein*  
87B4BA4FB7824A9...

David Herlein

Spring Arbor Township Supervisor

Signed by:

*Marcia Rocheleau*  
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Marcia Rocheleau

Beaumont Township Supervisor

Signed by:

*James F Busch*  
912C92773E6D4F1...

Jim Busch

Atlas Township Supervisor

Signed by:

*Jeff Frahm*  
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Jeff Frahm

Frankenmuth Township Supervisor

Signed by:

*Marge Durm-Hiatt*  
A5F7DD51C4BE4AA...

Marge Durm-Hiatt

Niles Township Supervisor

Signed by:

*Toby Kuznicki*  
67DCFD82A20416...

Toby Kuznicki

Belknap Township Supervisor

DocuSigned by:

*Robert Mateja*  
01F3C7F5BCD247F...

Bob Mateja

Lake Township Supervisor

Signed by:

*Brenda Stumbo*  
117B45BF45BE4F1...

Brenda Stumbo

Ypsilanti Township Supervisor

Signed by:

*Brian Hill*  
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Brian Hill

Gerrish Township

Signed by:

*Chuck Curmi*  
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Chuck Curmi

Plymouth Township Supervisor

Signed by:

*Valerie McCallum*  
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Valerie McCallum

Lake Township Supervisor

*Troy Stroud*

Troy Stroud

Eagle Township Supervisor

*Pamela Ashford*

Pamela Ashford

Gustin Township Supervisor

Signed by:

*Kevin Scramlin*  
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Kevin Scramlin

Groveland Township

Signed by:

*Fred Lewis*  
DF9762D1FD13421...

Fred Lewis

Plainfield Township Supervisor

Signed by:

*Patricia Pergament*  
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Patricia Pergament

White Lake Township Deputy Supervisor

DocuSigned by:  
*Paul Gielegem*  
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Paul Gielegem  
Clinton Township Supervisor

Signed by:  
*Vivian Lee Conner*  
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Vivian Lee Conner  
Orangeville Township Supervisor

Signed by:  
*John M. Lesinski*  
915EDCF2F201497...  
John M. Lesinski  
Grass Lake Township Supervisor

Signed by:  
*Craig Fichtelberg*  
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Craig Fichtelberg  
Alganssee Township Supervisor

Signed by:  
*Robert Loomis*  
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Robert Loomis  
Millington Township Supervisor

Signed by:  
*Bruce Foether*  
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Bruce Foether  
Vassar Township Supervisor

Signed by:  
*Edward Hunt*  
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Edward Hunt  
Arbela Township Supervisor

Signed by:  
*David D. Davis*  
C319CEFB157140B...  
David Davis  
Wayne Township Supervisor

Signed by:  
*Russell Varner*  
FA58908873444AD...  
Russell Varner  
Homer Township Supervisor

Signed by:  
*Frank Viviano*  
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Frank Viviano  
Macomb Township Supervisor

Signed by:  
*Lynne Cavazos*  
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Lynne Cavazos  
Pentwater Township Supervisor

Signed by:  
*Michael Brown*  
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Michael Brown  
Conway Township Supervisor

Signed by:  
*Brad Stilwell*  
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Brad Stilwell  
Rose Township Supervisor

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*Chris Barnett*  
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Chris Barnett  
Orion Township Supervisor

Signed by:  
*Chuck Phyle II*  
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Chuck Phyle II  
Independence Township Supervisor

*Tierney Farhat*  
Tierney Farhat  
Wilmot Township Supervisor

*Barbara Hampel*  
Barbara Hampel  
Martiny Township Supervisor

DocuSigned by:  
*Jack Curtis*  
55E151A22281441...  
Jack Curtis  
Oxford Township Supervisor

Joint Township Supervisors' Letter To Michigan Leaders  
November 14, 2025  
Page 6

Signed by:

*Janet Mooney*

EFE588C19DE34D8...

Janet Mooney

Southfield Township Supervisor

Signed by:

*Jayson W. Rumball*

76B34BD6115040F...

Jayson Rumball

Brandon Township Supervisor

DocuSigned by:

*John Dolan*

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John Dolan

Lyon Township Supervisor

Signed by:

*Michael McCready*

79D8913E784E4F5...

Michael McCready

Bloomfield Township Supervisor

Signed by:

*Richard Davis*

A093034FD3574E2...

Richard Davis

Springfield Township Supervisor

Signed by:

*Jonathan Warshaw*

559C7C443347446...

Jonathan Warshaw

West Bloomfield Township Supervisor

Signed by:

*Rick A. Hamill*

747D2E811B8543C...

Rick Hamill

Highland Township Supervisor

Signed by:

*Robin Buxar*

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Robin Buxar

Oakland Township Supervisor

*Alan Dickerson*

Alan Dickerson

Blissfield Township Supervisor

Signed by:

*Fonda Brewer*

E81F75C8739346D...

Fonda Brewer

Delta Charter Township Supervisor

Signed by:

*Roberta Stemaly*

361C0C8F555E471...

Roberta Stemaly

Tekonsha Township Supervisor

Signed by:

*Chris Weinzapfel*

4B0D66DDC21D4A5...

Chris Weinzapfel

Milton Township Supervisor

Signed by:

*Todd Fletemier*

391AC291E38940B...

Todd Fletemier

Blue Lake Township Supervisor

Signed by:

*Russell Scott*

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Russell Scott

Alamo Township Supervisor

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*Leo Sonck*

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Leo Sonck

Bridgehampton Township Supervisor

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*Bob Baxter*

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Bob Baxter

Fulton Township Supervisor

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*Jamie Stephens*

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Jamie Stephens

Ionia Township Supervisor

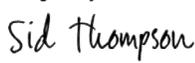
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*Roger Auble*

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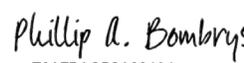
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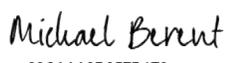
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Sid Thompson  
Moore Township Supervisor

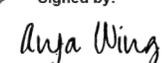
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Cynthia Gadbois  
Cedar Township Supervisor

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Ryan Fewins-Bliss  
Bath Township Supervisor

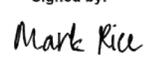
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Rick Jones  
Oneida Township Supervisor

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Phillip Bombrys  
Hamlin Township Supervisor

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Michael Berent  
Alabaster Township

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Anja Wing  
LeRoy Township Supervisor

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Ryan VanSolkema  
Winfield Township Supervisor

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Mark Rice  
Kinross Township

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Bruce Pearson  
Addison Township Supervisor

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Barbara Conley  
Leelanau Township Supervisor

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Susan Morgan  
Bourret Township Supervisor

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Chris Brooks  
Volinia Township Supervisor

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Jess McClaughry  
Greenwood Township Supervisor

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Mark Root  
Paw Paw Township  
Deputy Supervisor

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Mark Eitrem  
Sugar Island Township Supervisor

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Randolph Johnson  
Bedford Charter Township Supervisor

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Robert Kowalski  
Edwards Township Supervisor

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Dave Droscha  
Aurelius Township Supervisor

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Gary Fahndrich  
Saginaw Charter Township Supervisor

Signed by:  
  
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Bobbie Norman  
Parma Township Supervisor

*Ross Stein*

Ross Stein  
South Haven Township Supervisor

*Kris Shaw*

Kris Shaw  
West Branch Township Supervisor

*Keith Merser*

Keith Merser  
Deerfield Township Supervisor

*Beth Shaw*

Beth Shaw  
Windsor Township Supervisor

*Steve Spoelhof*

Steve Spoelhof  
Park Township Supervisor

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** CPE Development - Request to Uphold current Zoning/Variance  
**Date:** Saturday, November 15, 2025 11:57:31 AM

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To: Meridian Township Planning Commission, Meridian Township Board

**I am writing to respectfully urge the Commission to reject the proposed variance change for the proposed CPE development.**

The developers' plan requires much more in-depth review. There are many inconsistencies and unsupported claims.

- The proposal compares unrealistic traffic scenarios - estimating traffic data for a big box type retail store that would not be feasible for that property, as well as undercounting residential traffic.

-Attempts to make statements about stormwater runoff with no supporting data.

-Presents density calculations using gross acreage versus actual buildable acreage.

-Claims economic or public benefits without financial or market data.

**We realize that some type of development will occur on this property. We request that whatever that is, it remains within the scope of the current zoning and variance.**

Regards,  
Paulette Grace

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** Fwd: No to increasing unit density, no to Authentix Okemos  
**Date:** Monday, November 17, 2025 7:39:11 AM

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----- Forwarded message -----

**From:** Vincent Tomanica <[REDACTED]>  
**Date:** Mon, Nov 17, 2025 at 7:37 AM  
**Subject:** No to increasing unit density, no to Authentix Okemos  
**To:** <[REDACTED]>

Dear Planning Commission,

The proposal for the Authentix Okemos apartment development contains flaws and unsupported claims that should remove it from consideration or at least require further study and compliance with the township's goals and Master Plan. As well as a plan that the current residents of Okemos as a whole can support. The plan does not align with the township's standards and goals and does not benefit the current residents of Okemos or shoppers who visit here from elsewhere. The proposal, which seeks to increase the units per acre from 8 to 14, thereby allowing the building of the Authentix Okemos complex, should be rejected in its current form. The township Master Plan calls for reducing congestion and improving pedestrian safety. It is already nearly impossible for a pedestrian to cross CP Drive in this area; it will be much more difficult with the new development. The amount of daily traffic generated by the development could be expected to be double the amount mentioned in the proposal (because outgoing traffic will return same-day), which will create thousands of daily out-in trips. The traffic situation is already congested on the high-speed, narrow Central Park drive, even without Authentix Okemos.

The claim that there won't be an increase in run-off is not adequately supported. The asphalt and concrete footprint of 11 sprawling apartment buildings, a clubhouse, parking lots, interior roads, and sidewalks will necessarily create much runoff (with much-reduced natural areas to drain into and with much of the wetlands buried under the construction). It should be recognized that all the natural land to be built upon is drainage area and that land will be removed. The proposal allows significant encroachments into wetlands and natural areas, while the township's Master Plan is for "no net loss and preservation first."

The township's Master Plan calls for commercial use along Central Park Drive, which the Authentix proposal is in opposition to (by placing an extensive apartment complex directly along Central Park Drive). The Master Plan calls for infill on previously developed sites, not development in wetlands or wetland-adjacent buffer areas. The proposed dense multi-family complex replaces the commercial frontage and replaces wetlands and natural areas. And it does so without adequate evidence of effective drainage. Therefore it is in conflict with the Future Land Use Map and the policy goals of the 2023 Master Plan.

We at Central Park Estates request a thorough analysis of the infrastructure improvements needed to accommodate this development: roads, stormwater runoff, sewage, and a clear explanation of who will pay these costs: the builder or the taxpayers. We are not against

development in principle; we are just for responsible development.

Thank you,

Vincent Tomanica  
CPE resident

**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** Forest Hills Lift Station Project  
**Date:** Monday, November 17, 2025 2:30:32 PM

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Hi Cecelia,

Thank you for your letter dated November 11. The Township would be happy to add plantings around the new electrical panel and the new lift station at the end of the construction.

For context, most, if not all, of the screening around the existing lift station will be lost during construction. Once construction is complete, we will solicit proposals from local landscaping contractors to screen the new lift station and the new electrical panel.

Please let us know if you have any questions.

Thanks,

**Dan Opsommer**

Deputy Township Manager

Director of Public Works & Engineering

[REDACTED]

Work: 517.853.4440 | Fax: 517.853.4099

5151 Marsh Road | Okemos, MI 48864

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** Re: IMPORTANT: Seeking Change, Starting With YOU  
**Date:** Monday, November 17, 2025 9:41:33 PM

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Good Evening Aubrey,

Thank you so much for writing to the Township Board about the concern for our residents and the Meridian Township Community. I share in your concern.

While we cannot offer you a presentation slot, there are two opportunities at each meeting for Public Comment where residents may speak to any issue. Remarks must be limited to 3 minutes, but otherwise there are relatively few restrictions. You are welcome to speak at any meeting at public comment about this issue.

Please feel free to reach out if I may be of service to you!

**Scott Hendrickson**

Supervisor, Meridian Township

[REDACTED]  
5151 Marsh Road | Okemos, MI 48864



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**From:** Aubrey Faith <walkbyfaithaubreyg@gmail.com>  
**Sent:** Monday, November 17, 2025 4:21 PM  
**To:** Board <Board@meridian.mi.us>  
**Subject:** IMPORTANT: Seeking Change, Starting With YOU

Some people who received this message don't often get email from [REDACTED]

Hello! My name is Aubrey Garcia. I'm a 22 year old Preschool Teacher. I live In Okemos.

We need to make a change. Hispanic people are not safe. Especially in Okemos, and the surrounding areas. ICE is a prevalent issue concerning Latino Americans. If you are not informed yet, ICE is now racially profiling Latino people. This causes LEGAL Americans to be "mistaken" as illegal immigrants. This is empowered by the Trump Administration.

I know this is a political issue. I know that politics are not everyone's favorite topic. But people are in DANGER. Moms, Dads, Grandmas, Grandpas, little boys, little girls, Latinos

across America are in danger. You can help.

Please let me speak at the meeting on December 2nd. I have a background in public speaking and very passionate about keeping people, especially my own people, safe. I can read you my speech. I will not use vulgar language and keep it clean and straight to the point- we need to make a change in peoples heads. We are in danger.

I believe that words have power. I believe that we can make a change. My goal is to take this higher- I want to speak to the Trump Administration themselves. You can help me. Please let me speak at the meeting and inspire change. I know that this will do something. I know it. I believe it.

Thank you, so much for listening. I appreciate it.

- Aubrey Garcia

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** Opposition to the Rezoning Requests submitted by Continental Properties  
**Date:** Monday, November 17, 2025 10:00:06 PM

---

Some people who received this message don't often get email from [REDACTED]  
[REDACTED]

To All Members of the Meridian Township Board,

**Please forward this email to all the members of the Meridian Township Board.**

I am writing to express my strong opposition to the rezoning requests submitted by Continental Properties for the proposed Authentix Okemos project. Specifically, I oppose the following requests: 1) To remove the Commercial Service (CS) zoning designation; and 2) To allow multifamily residential uses across the entire site at a density of 10.50 dwelling units per acre.

**How does the proposed rezoning align with the Township's original land-use vision and community priorities?**

**What is the rationale for considering a project with reduced roadway capacity but increased residential density?**

**Are there comparable cases that we can use as references? The answer from Tim Schimit is no. So if there are no comparable cases that we can use as references, it clearly indicates that such a development does not make sense.** These requests represent a major departure from the original settlement agreement and the approved zoning plan, which included both CS and RD designations to maintain a balanced and sustainable mix of land uses. Removing the CS district and introducing high-density residential development across the entire site would disrupt that balance and significantly alter the character and function of the area.

There are many conflicts between the applicant's proposed development proposal and the township's master plan. If the master plan does not correctly reflect the vision of the township, then this plan must be revisited and revised before moving forward with any development proposals and projects. If the master plan correctly reflects the vision of the township, then the applicant's requests should be denied.

I respectfully request that the Township Board stick with the original settlement agreement and zoning plan (including the CS and RC designations). As I mentioned several times at the planning commission meetings, residents at CPE are not against development. We support thoughtful growth in the community. **The question is what types of development are appropriate, and why.**

Please include this email in the packet, and I respectfully request written or oral responses from the Township Board to my questions raised above.

Thank you for your attention and for your continued commitment to responsible, transparent, and community-centered planning for Meridian Township.

Best regards,  
Jade Shi



**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** FW: Petition aims to end property tax in Michigan, local governments oppose  
**Date:** Thursday, November 20, 2025 2:52:54 PM

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Board Members,

Just an FYI related to the AxMiTax proposal that Ciney Rich's email is regarding. The proponents of AxMiTax have passed their 180-day period to gather the signatures. Therefore, they are likely invalidated more signatures each day than they are able to collect. Given this, it would appear to be very unlikely that this AxMiTax will collect the required signatures to make the 2026 ballot.

Here is a recent City Pulse story that covers this issue in greater detail:

<https://www.lansingcitypulse.com/stories/death-has-come-for-the-axmitax-ballot-initiative,164049>

Thanks,

**Dan Opsommer**

Deputy Township Manager  
Director of Public Works & Engineering

[REDACTED]  
Work: 517.853.4440 | Fax: 517.853.4099  
5151 Marsh Road | Okemos, MI 48864

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**From:** Ciney Rich <[REDACTED]>  
**Sent:** Thursday, November 20, 2025 2:47 PM  
**To:** Board <[REDACTED]>  
**Subject:** Fw: Petition aims to end property tax in Michigan, local governments oppose

Some people who received this message don't often get email from [REDACTED]  
[REDACTED]

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**From:** Ciney Rich <[REDACTED]>  
**Sent:** Wednesday, November 19, 2025 9:50 PM  
**To:** Ciney Rich <[REDACTED]>  
**Subject:** Petition aims to end property tax in Michigan, local governments oppose

Petition aims to end property tax in Michigan, local governments oppose  
Source: 22 WSBT  
<https://share.newsbreak.com/fzqodizg?s=i3>

Sent from my phone

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** CPE Development Project  
**Date:** Sunday, November 23, 2025 3:38:28 PM

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Members of the Board:

As the planning commission wasn't able to agree on whether or not this project is beneficial to Meridian Township, I ask that you reject the proposal by Continental. Primarily, their reasons were traffic, zoning problems, and density, which is exactly what CPE residents have been concerned about all along.

Although the development of this property is likely and not opposed by residents, this project is not a good fit for the location and the local community. It appears the Planning Commission also has the same concerns.

Please turn down this proposal in favor of another project that will not have a detrimental effect on the community.

Sincerely,  
Paulette Grace

[REDACTED]

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** Fwd: CPE  
**Date:** Wednesday, November 26, 2025 10:31:47 AM

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----- Forwarded message -----

**From:** Vincent Tomanica <[REDACTED]>  
**Date:** Wed, Nov 26, 2025 at 10:30 AM  
**Subject:** Fwd: CPE  
**To:** <[REDACTED]>

----- Forwarded message -----

**From:** Vincent Tomanica <[REDACTED]>  
**Date:** Wed, Nov 26, 2025 at 10:15 AM  
**Subject:** CPE  
**To:** Angela Demas <[REDACTED]>

Dear Meridian Township Board of Trustees,

Following is a discussion of one aspect of why Meridian Township should reject the Authentix Okemos proposal and redirect its focus, with appropriate zoning that more closely aligns with the township Master Plan, on restoring the option of affordable family homes. The following rationale should inform the process of selecting applicants for the upcoming vacancies on the Planning Commission. We urge the Board of Trustees to follow the Planning Commission's example of not approving the Authentix Okemos proposal; please vote no on the request to increase unit density per acre from the current eight.

Historically, a fundamental aspect of being American is that we as a society have striven to maximize the freedom, autonomy, independence, and happiness of the individual and family. One way this has been manifested is through the right and ability to become landowners. The traditional role of government has included helping citizens to live out this American ideal, to keep open the option for Americans to become masters of their destiny by becoming proud landowners and owners of affordable single-family homes. All other things being equal, everyone I've ever talked to on the topic prefers living in their own home over apartment living. The exceptions are largely people who are temporary residents in an area or the elderly (but they prefer condos if they can afford them). The downsides of apartment living include lack of control over one's immediate environment (noisy neighbors on the other side of thin walls, inability to modify living areas, limited space, lack of garages, to name a few).

What is increasingly missing nowadays is the option of affordable single-family homes. When I talk to experts in the field, such as real estate agencies, I hear them bemoaning the fact that affordable houses in attractive suburbs aren't keeping up with the demand. Not even close. A truly noble goal would be for Meridian Twp to help reestablish the lost American Dream of affordable single-family homes. Single family homes in the \$300,000 price range here in

Meridian Twp would be a very welcome and attractive option for masses of people who are currently being shut out of the market. By taking out mortgages, these properties would be within reach of many. As it is now, the new builds are virtually all luxury homes in the \$600,000 range or apartments and condos. Okemos could help pave the path back to the American Dream by incentivizing affordable single-family homes.

In the past several months we in Central Park Estates (CPE) have presented a multitude of reasons why Authentix Okemos is not a good fit in the proposed location. Perhaps the most important reason is traffic. At the October 27 Planning Commission meeting Continental Properties mentioned that the development would add approx 1300 additional trips along the already busy, narrow and fast-paced Central Park Drive. At the very point where the road takes a sharp bend. For a more realistic total, double that proposed number of daily trips from 1300 to 2600 because all the cars that will be traveling out from Authentix Okemos will also be returning. My own family car was struck by another car at the sharp bend in the road where Authentix is proposed to be built, and that was before the big influx of traffic from the newly built Okemos Grand Reserve condo complex just south of CPE. I believe it is unconscionable to go forward with the Authentix Okemos complex in the worst possible location. If the board approves this plan, it will jeopardize the health, safety, and welfare not only of CPE residents, but of all Okemos, and of the multitude of shoppers who visit from elsewhere and pass along busy Central Park Drive.

At the most recent Planning Commission meeting, Oct 27, Continental Properties presented a revised plan which eliminates one building (building #4), and its adjacent parking lot (with a net reduction of 24 units, from 312 to 288). The project would still leave a large concrete and asphalt footprint, with 10 sprawling apartment buildings, a clubhouse, parking lots, interior roadways, and sidewalks. It should be recognized that all the natural land to be built upon is drainage area. And that land will be removed. The Authentix Okemos proposal asserts that there will be "no net increase in stormwater runoff" and that "wetland buffers will maintain hydrologic balance." But there is no supporting data: no quantitative stormwater model, no analysis of post-development runoff volume, detention capacity, or impervious surface increase. Thus, the assertion is without evidence, implying compliance without demonstrating it. To approve the proposal, as is, would be irresponsible.

We at CPE remain opposed to implementation of the proposal in any form, but if it was approved a more responsible version would eliminate additional buildings that on the old map were identified as #5 and #6. This could be accomplished by further reducing the total number of units from 288 to 240 or by adding third floors to buildings #1,#2, #3, #7 (using the building numbers on the previous site plan). This would reduce the cement footprint, retaining significantly more land for drainage in an expanded buffer zone adjacent to vulnerable homes in CPE. Establishing a wider buffer zone between the Authentix apartments and the CPE homes along Nassau Street would help capture runoff and reduce the drainage impact upon single-family home residents.

With that said, we are still opposed to the project on the basis of traffic, infrastructure and utility ambiguity, erroneous economic equivalencies, incompatibility with the township Master Plan, unit count discrepancy, public benefit claims made without substantiation, misrepresentation on impact upon wetlands, and many other issues. Including the absence of supporting data for drainage claims.

Thank you for your careful and conscientious consideration of these concerns. There are many

other concerns, such as loss of wildlife habitat and numerous unlawful home entry attempts this autumn by reputed nearby apartment dwellers (as captured by many porch camera videos and reported to local police) and which causes justifiable trepidation at the prospect of many more apartment units to be built in very close proximity to already-terrified CPE residents. We didn't invest of life's fortunes in this neighborhood in order to have it disrupted in so many significant ways. For all these reasons and more we urge you to reject the proposal to increase unit density and to reject the Authentix Okemos project at this inappropriate location.

Vincent Tomanica  
CPE resident





**CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY**

**LEGAL AD NOTICE: Settlement Agreement Update**

**Eyde Central Park Property**

**TUESDAY, December 2, 2025**

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**CHARTER TOWNSHIP OF MERIDIAN**

**LEGAL NOTICE**

**Settlement Agreement Update**

**Eyde Central Park Property**

**Public Hearing**

Notice is hereby given that the Township Board of the Charter Township of Meridian will hold a public hearing on Tuesday, December 2, 2025 at 6:30 p.m. in the Meridian Municipal Building, Town Hall Room, 5151 Marsh Road, Okemos, MI, 48864 (phone 517-853-4560) to hear all persons interested in a proposed project. Continental 975 Fund LLC has submitted a request to amend an existing settlement agreement with the Eyde Company to allow the development of a medium density multiple-family community on vacant land along Central Park Drive.

Materials related to the request are available for viewing in the Department of Community Planning and Development office (5151 Marsh Road, Okemos, 48864), Monday-Friday, 8AM-PM. Written comments may be sent prior to the public hearing to the Township Board, Charter Township of Meridian, 5151 Marsh Road, Okemos, Michigan, 48864, or by email to [schmitt@meridian.mi.us](mailto:schmitt@meridian.mi.us).

**Publish:** City Pulse  
November 26, 2025

**Angela Demas**  
Township Clerk

**1 Affidavit, please**

**CHARTER TOWNSHIP OF MERIDIAN  
CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY  
LEGAL AD NOTICE: Brownfield Redevelopment Authority Meeting  
TUESDAY, DECEMBER 2, 2025  
SPECIAL MEETING NOTICE**

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Notice is hereby given that the Charter Township of Meridian will hold a Special Meeting on Tuesday, December 2, 2025, at 9:00 a.m. in the Meridian Township Hall, Town Hall Room, 5151 Marsh Road, Okemos, MI 48864 (phone: 517-853-4568). The purpose of this meeting is to review an amendment to the approved Haslett Village Square Brownfield Plan.

The Meridian Township Brownfield Redevelopment Authority (MTBRA) has received an additional amendment request to the recently adopted Haslett Village Square Brownfield Plan. The Plan seeks to amend the term of the Brownfield Plan and the number of housing units supported through the Housing TIF subsidy from 23 to 30 units.

Details regarding the request to amend the Haslett Village Square Brownfield Plan and the Special Brownfield Redevelopment Meeting, will be made available for public review by Monday December 1, 2025. Written comments may be submitted prior to the public meeting to Amber Clark Economic Development Director, Charter Township of Meridian, 5151 Marsh Road, Okemos, Michigan, 48864, or by email to [Clark@meridian.mi.us](mailto:Clark@meridian.mi.us).

**Publish:**

**Any**

**Angela Demas  
Township Clerk**

**1 Affidavit, please**



**FOR IMMEDIATE RELEASE**  
**November 19, 2025**

**CONTACT:** Katie Love, Human Services Specialist  
517.853.4204 | [klove@meridian.mi.us](mailto:klove@meridian.mi.us)

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**Blondie's Barn to Offer Free Meals on Thanksgiving**  
*Annual Tradition Continues for 13<sup>th</sup> Consecutive Year*

**Meridian Township, MI** – Blondie's Barn in Haslett will open for limited hours on Thanksgiving Day to provide free meals to community members who may otherwise go without a holiday meal.

Blondie's Barn (5640 Marsh Road, Haslett) will be open for a dine-in only option on Thursday, November 27, from 12:00 pm to 2:00 pm. All are welcome to participate in this event, and no reservations or signups are required for community members to enjoy their meal.

Diners should note that this will be first come, first served, and they may need to wait outside until they can be seated. Tables will be pushed together for a community style meal.

For more information, please contact Blondie's Barn at 517.339.4600.

###

The community of Meridian Township is in close proximity to the Michigan State Capitol and Michigan State University. The Township serves the community through exceptional services, beneficial amenities and an outstanding quality of life. It is a welcoming community that celebrates quality education, recreation and lifestyles.





**FOR IMMEDIATE RELEASE**  
**November 24, 2025**

**CONTACT:** Tom Cary, Market Manager  
517.712.2395 | [farmersmarket@meridian.mi.us](mailto:farmersmarket@meridian.mi.us)

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**Meridian Township Year-Round Farmers' Market to Move Indoors**  
*Market to be Held in the Meridian Mall Through April*

**Meridian Township, MI** – Beginning Saturday, November 29, the Meridian Township Farmers' Market will move indoors to the JCPenney corridor of the Meridian Mall (1982 W. Grand River Avenue, Okemos).

Leading up to Christmas, the market will be held every Saturday. Starting on **January 3, 2026**, the market will be held on the **first, third, and fifth Saturdays of each month**, and will run from 10:00 am to 2:00 pm through the end of April.

The indoor market days are as follows:

- 2025
  - November 29
  - December 6, 13, 20
- 2026
  - January 3, 17, 31
  - February 7, 21
  - March 7, 21
  - April 4, 18

Supplemental Nutrition Assistance Program (SNAP) recipients can use their Michigan Bridge Card at the market. SNAP tokens and Double Up Food Bucks will be disbursed and accepted year-round.

For additional information, please contact Market Manager Tom Cary at 517.712.2395 or email [farmersmarket@meridian.mi.us](mailto:farmersmarket@meridian.mi.us). The complete vendor list is located at [www.meridian.mi.us/FarmersMarket](http://www.meridian.mi.us/FarmersMarket) and is updated before each market.

###

The community of Meridian Township is in close proximity to the Michigan State Capitol and Michigan State University. The Township serves the community through exceptional services, beneficial amenities and an outstanding quality of life. It is a welcoming community that celebrates quality education, recreation and lifestyles.





9.B

**CONSENT AGENDA  
PROPOSED BOARD MINUTES**

**PROPOSED MOTION:**

- (1) Move to approve and ratify the minutes of the Regular Meeting of November 18, 2025 and Special Meeting of November 13, 2025 as submitted. (1)**

**ALTERNATE MOTION:**

- (1) Move to approve and ratify the minutes of the Regular Meeting of November 18, 2025 and Special Meeting of November 13, 2025 with the following amendment(s):[insert amendments]**

CHARTER TOWNSHIP OF MERIDIAN  
LISTENING SESSION TOWNSHIP BOARD **-DRAFT-**  
2630 Bennett Road, Okemos, Michigan 48864  
517.853.4000, 2|42 Community Center  
THURSDAY, November 13, 2025, 6:00PM

PRESENT: Supervisor Hendrickson, Clerk Demas, Trustee Lentz, Trustee Sundland, Trustee Trezise, and Trustee Wilson

ABSENT: Treasurer Burghardt

STAFF: Township Manager Dempsey, Township Executive Assistant Prinz, Police Chief Grillo, IT Director Gebes, Parks and Recreation Director Wisinski, Community Planning and Development Director Schmitt

1. OPENING REMARKS & INTRODUCTIONS

Supervisor Hendrickson began the November 13, 2025, Township Board Listening Session and provided opening remarks at 6:04 PM.

Board members provided introductions.

2. PRESENTATIONS FROM STAFF

A. Director Schmitt presented information on the following project plans: Senior Center, Haslett Village Square, and Village of Okemos.

B. Manager Dempsey presented information on the 2025 Local Road Program, pathways and trails projects, and pedestrian safety.

3. QUESTIONS & ANSWERS

Supervisor Hendrickson opened Q&A at 6:25 PM.

Supervisor Hendrickson read questions submitted by the public about community-related topics including development projects, the Senior Center, the Meridian Mall, local businesses, roads, pathways and trails, pedestrian safety, traffic and speed enforcement, taxes, police, local ballot proposals, the environment, housing and apartments, the Lake Lansing dam, the Township budget, and meeting livestreams.

Board members and staff responded to questions from the public. Residents were informed that the additional submitted questions will be answered in the Listening Session Summary.

Supervisor Hendrickson closed Q&A at 7:28 PM.

4. FINAL COMMENTS & ADJOURNMENT

Supervisor Hendrickson thanked staff and attendees on behalf of the Board.

The Listening Session ended at 7:28 PM.

CHARTER TOWNSHIP OF MERIDIAN  
REGULAR MEETING TOWNSHIP BOARD **-DRAFT-**  
5151 Marsh Road, Okemos MI 48864-1198  
517.853.4000, Township Hall Room  
TUESDAY, November 18, 2025, 6:00PM

PRESENT: Supervisor Hendrickson, Clerk Demas, Trustee Lentz, Trustee Sundland, Trustee Trezise, and Trustee Wilson.

ABSENT: Treasurer Burghardt

STAFF: Township Manager Dempsey, Deputy Manager Opsommer, Chief Grillo, Chief Hamel, IT Director Gebes

1. CALL MEETING TO ORDER

Supervisor Hendrickson called the November 18, 2025, Regular Township Board meeting to order at 6:00 pm.

2. PLEDGE OF ALLEGIANCE/INTRODUCTIONS

Supervisor Hendrickson led the Pledge of Allegiance.

Supervisor Hendrickson asked for a moment of silence for Tom Klunzinger, former Township Trustee.

3. ROLL CALL

Clerk Demas called the roll of the Board. Six Board members present at 6:01 pm.

Treasurer Burghardt was absent.

4. PRESENTATION

None

5. CITIZENS ADDRESS AGENDA ITEMS AND NON-AGENDA ITEMS

Supervisor Hendrickson opened public comment at 6:02 pm.

Brad Shaw spoke about the Dobie Road Rezoning

David Batten spoke about the Meridian Township Farmer’s Market Gleaning Project.

Supervisor Hendrickson closed public comment at 6:08 pm.

6. TOWNSHIP MANAGER REPORT

Manager Dempsey gave updates on:

- November 13 Listening Session summary will be available online next week.
- Noted that Item 9.E is not statutorily required and has been recommended because of

significant community interest.

- Thanked Principal Planner Shorkey and Community Planning and Development Director Schmitt for compiling extensive information for the Continental/Eyde Land Holdings Consent Judgement Amendment.
- Announced upcoming Township office closures on Thursday, November 27 for Thanksgiving and Friday, November 28 for the day after Thanksgiving.

7. BOARD MEMBER REPORTS OF ACTIVITIES AND ANNOUNCEMENTS

Clerk Demas announced her first year serving in local office has occurred.

Trustee Wilson congratulated Dave Batten and the team on the Gleaning Program.

Supervisor Hendrickson thanked residents for attending the November 13 Listening Session and noted that dates will be announced for 2026 in the future.

8. APPROVAL OF AGENDA

**Trustee Wilson moved to approve the Agenda as amended. Supported by Trustee Lentz.**

**VOICE VOTE: YEAS: Supervisor Hendrickson, Clerk Demas, Trustee Lentz, Trustee Sundland, Trustee Trezise, and Trustee Wilson.**

**NAYS: NONE**

**Motion carried: 6-0**

9. CONSENT AGENDA

**Trustee Trezise moved to approve the Consent Agenda as presented. Supported by Trustee Sundland.**

**ROLL CALL VOTE: YEAS: Supervisor Hendrickson, Clerk Demas, Trustee Lentz, Trustee Sundland, Trustee Trezise, and Trustee Wilson.**

**NAYS: NONE**

**Motion carried: 6-0**

10. ACTION ITEMS

A. Township Manager Review

Board Members thanked Manager Dempsey for his leadership.

**Trustee Wilson moved to approve the 2025 Township Manager Performance Review as presented. Supported by Trustee Trezise.**

**VOICE VOTE: YEAS: Supervisor Hendrickson, Clerk Demas, Trustee Lentz, Trustee Sundland, Trustee Trezise, and Trustee Wilson.**

**NAYS: NONE**

**Motion carried: 6-0**

- B. Ordinance 2025-025 – Franchise Agreement with the Lansing Board of Water and Light – Final Adoption

Deputy Manager Opsommer outlined the discussion that has occurred to date and noted changes been made since the last discussion. Township attorney, Tammy Sordo-Viera was present to answer Board questions.

Questions were asked by Board members regarding a previous clerical error, the indemnification clause, and if any questions were received in response to the public notice.

**Trustee Lentz moved to adopt the resolution approving Ordinance No. 2025-05, an ordinance to adopt the franchise agreement with the Lansing Board of Water and Light into the Township’s Code of Ordinances. Supported by Trustee Wilson.**

**ROLL CALL VOTE: YEAS: Supervisor Hendrickson, Clerk Demas, Trustee Lentz, Trustee Sundland, Trustee Trezise, and Trustee Wilson.**

**NAYS: NONE**

**Motion carried: 6-0**

- C. Ingham County Materials Management Planning Committee Appointment

Deputy Manager Opsommer gave an overview of the functions of the committee.

Trustee Trezise volunteered for the appointment.

**Trustee Wilson moved to appoint Peter Trezise to apply as Meridian Township’s applicant to serve on the Ingham County Materials Management Planning Committee. Supported by Trustee Lentz.**

**VOICE VOTE: YEAS: Supervisor Hendrickson, Clerk Demas, Trustee Lentz, Trustee Sundland, Trustee Trezise, and Trustee Wilson.**

**NAYS: NONE**

**Motion carried: 6-0**

11. BOARD DISCUSSION ITEMS

- A. District Court Affiliation

Manager Dempsey gave an overview of the topic. Prosecuting Attorney Cullen Harkness and Chief Grillo gave additional information and answered Board questions.

Questions were asked by Board members regarding how residents would be impacted, the caseload for 54B District Court, and financial considerations.

Discussion was had by the Board regarding inmate transfer, judicial district boundaries and legislative action, and how the city of East Lansing and Meridian Township would be impacted.

The Board decided not to take action based on lack of interest, with Board members noting the change would not be beneficial to the Township.

B. Hagadorn Road Land Donation/Acquisition

Deputy Manager Opsommer gave an overview of the proposed acquisition and changes made since the last discussion.

Questions were asked by Board members regarding the ownership of surrounding parcels, pathway easements, environmental reviews, receipt of donation and donations options, location of parcels, and amount of wetlands on the property.

Board members indicated their support.

12. COMMENTS FROM THE PUBLIC

Supervisor Hendrickson opened public comment at 7:01 pm.

Supervisor Hendrickson closed public comment at 7:01 pm.

13. OTHER MATTERS AND BOARD MEMBER COMMENTS

None

14. ADJOURNMENT

**Trustee Wilson moved to adjourn. Supported by Trustee Lentz.**

**VOICE VOTE                      YEAS: Supervisor Hendrickson, Clerk Demas, Trustee Lentz, Trustee Sundland, Trustee Trezise, and Trustee Wilson.**

**NAYS: NONE**

**Motion carried: 6-0**

**The meeting adjourned at 7:02 pm.**

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Scott Hendrickson  
Township Supervisor

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Angela Demas  
Township Clerk



To: Board Members  
From: Tim Dempsey, Township Manager  
Date: December 02, 2025

Charter Township of Meridian  
Board Meeting  
12/2/2025

MOVE THAT THE TOWNSHIP BOARD APPROVE THE TOWNSHIP INVOICES/EXPENSES AS FOLLOWS:

COMMON CASH	\$	327,021.99
PUBLIC WORKS	\$	453,933.75
TRUST & AGENCY	\$	6,268.31
<b>TOTAL CHECKS:</b>	<b>\$</b>	<b>787,224.05</b>
<b>CREDIT CARD TRANSACTIONS</b> 11/14/2025 to 11/25/2025	<b>\$</b>	<b>8,328.44</b>
<b>TOTAL PURCHASES:</b>	<b>\$</b>	<b><u>795,552.49</u></b>
<b>ACH PAYMENTS</b>	<b>\$</b>	<b><u>858,800.24</u></b>

11/26/2025 11:35 AM  
 User: LEE  
 DB: Meridian

INVOICE APPROVAL BY INVOICE REPORT FOR CHARTER TOWNSHIP OF MERIDIAN  
 EXP CHECK RUN DATES 12/02/2025 - 12/02/2025  
 JOURNALIZED OPEN AND PAID  
 BANK CODE: GF53 - CHECK TYPE: PAPER CHECK  
 CHECK #

Vendor Name	Description	Amount
1. A T & T	NOV 9 - DEC 8 - INTERNET F1 327775054 - 2025	205.24
	NOV 15 - DEC 14 - INTERNET S1 327950862 - 2025	205.24
	TOTAL	410.48
2. ACCRUE, LLC	REISSUE-DEPOSIT:BRUSH MULCHER ATTACHMENT FOR TOOLC	7,000.00
3. AIS CONSTRUCTION EQUIPMENT	MP - WATER - 690 - SERVICE AND REPAIRS	4,785.98
	MP - WATER - 6 - 3000 HOURS INSPECTION AND SERVICE	3,598.60
	TOTAL	8,384.58
4. AKT PEERLESS ENVIRONMENTAL SERV LLC	PHASE I ESA - PROSPECTIVE PATHWAY LAND DONATION ON	2,800.00
	PHASE I ESA - PROSPECTIVE PATHWAY LAND DONATION ON	6,925.00
	TOTAL	9,725.00
5. ALLGRAPHICS CORP	LOGO WEAR FOR ALEX ZEGARZEWSKI IN PARKS	57.00
6. APPLIED CONCEPTS	RADAR UNIT KITS	4,150.00
7. AT & T	OCT 11 - NOV 10 - INTERNET ASE 8310008214218 - 202	3,763.02
8. AVALON TECHNOLOGIES INC	VMWARE VSPHERE SUPPORT RENEWAL 11/7/2025-12/31/202	20,976.00
9. BLAINE ANDERSON	GAS REIMBURSEMENT FOR CONFERENCE	136.68
10. BLUE CROSS BLUE SHIELD OF MICHIGAN	2025 BCBS PPO RETIREE HEALTH INSURANCE	1,295.28
11. BOUNDTREE MEDICAL	CURAPLEX FIELD CRIC KIT W/ET TUBE	23.49
12. BRIGHTLINE TECHNOLOGIES	PALO ALTO RENEWAL 2025	68,290.00
13. CGS SAFETY TRAINING INC	UTILITY WORKER TRAINING - FORKLIFT AND OVERHEAD CR	1,139.17
14. CINTAS CORPORATION #725	MOTOR POOL - MECHANICS UNIFORMS 2025	54.89
15. CITY PULSE	INDOOR FARMERS' MARKET AD FOR CITY PULSE	239.00
16. COMCAST	DEC 2025 - INTERNET + TV M1 8529114160156422	656.58
	NOV 29 - DEC 28 - TELEPHONE + INTERNET S2 85291141	286.39
	NOV 29 - DEC 28 - TV P1 8529114160257253 - 2025	38.43
	NOV 19 - DEC 18 - INTERNET SCADA 8529114160296749	309.90
	TOTAL	1,291.30
17. COMCAST	NOV 14 - DEC 13 - INTERNET + TV HOMTV 852901001000	483.61
18. CONSUMERS ENERGY	EMERGENCY UTILITY: 1000-0868-3813	756.00
19. CRYSTAL FLASH	MOTOR POOL - FLEET FUEL 2025 - 2ND PO	13,772.52
20. CUMMINS INC	MP - FIRE - 150	648.21
21. DINGES FIRE COMPANY	FIRE BOOTS	350.00
22. ELECTRICAL TERMINAL SERVICE	MP - ELECTRICAL LIGHTING	712.90
23. FORESIGHT GROUP	WATER BILLS AND POSTAGE FOR 2025	639.45

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Vendor Name	Description	Amount
24. GLADSTONE PRINTING	PAPER FOR BILLING	58.00
25. GRANGER WASTE SERVICES	RUBBISH & RECYCLING DISPOSAL SERVICES 2025	74.76
	RUBBISH & RECYCLING DISPOSAL SERVICES 2025	33.63
	RUBBISH & RECYCLING DISPOSAL SERVICES 2025	173.80
	RUBBISH & RECYCLING DISPOSAL SERVICES 2025	33.97
	RUBBISH & RECYCLING DISPOSAL SERVICES 2025	143.38
	RUBBISH & RECYCLING DISPOSAL SERVICES 2025	358.83
	RUBBISH & RECYCLING DISPOSAL SERVICES 2025	104.15
	RUBBISH & RECYCLING DISPOSAL SERVICES 2025	136.33
	TOTAL	1,058.85
26. HAILEY COLLINS	FARMERS MARKET VENDOR	91.00
	FARMERS MARKET VENDOR	58.00
	TOTAL	149.00
27. HASLETT PUBLIC SCHOOLS	4TH QTR 2025 MAINTENANCE REIMB	4,434.39
28. JEFFORY BROUGHTON	RADIO REPAIRS (SIGTRONICS SE-2 REPAIR, POTENTIOMET	109.95
29. KEBS INC	BOUNDARY SURVEY AND LINE STAKES FOR ENCROACHING IS	9,600.00
30. KIESLER'S POLICE SUPPLY INC	AMMUNITION	1,630.40
	AMMUNITION	7,192.80
	TOTAL	8,823.20
31. LAFONTAINE FORD OF LANSING	MP - FIRE 134	300.70
	MP - POLICE - 694	12.00
	MP - POLICE 715	85.57
	MP - POLICE 720	732.00
	MP - POLICE 715	24.95
	MP - POLICE 678	55.19
	TOTAL	1,210.41
32. LANSING UNIFORM COMPANY	FIRE UNIFORMS (FARHAT, HARRISON, THOMAS, HEDRICK,	1,230.05
	FIRE UNIFORMS (THOMAS, IRELAND)	121.90
	FIRE UNIFORMS (CONNERS, THOMAS, SELLEN, MCNALLEY,	1,381.95
	UNIFORM BOOTS	219.95
	UNIFORM ITEMS	179.90
	TOTAL	3,133.75
33. LISKEY'S AUTO & TRUCK SERVICE INC	MP - FIRE - 134	1,396.40
34. MACQUEEN EMERGENCY GROUP	EXTRICATION TOOLS - ANNUAL PREVENTIVE MAINTENANCE	2,510.00
	TRAVEL FEE FOR EXTRICATION TOOL REPAIR (DATA CABLE	90.00
	TOTAL	2,600.00
35. MADISON NATIONAL LIFE INS CO	2025 LIFE/DISABILITY INSURANCE DECEMBER	4,397.92
36. MARSH POINTE APARTMENTS	EMERGENCY RENTAL ASSISTANCE	451.00
37. MICHIGAN ASSESSORS ASSOCIATION	MI ASSESS ASSOC MEMBERSHIP APPLICATION	380.00

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Vendor Name	Description	Amount
38. MICHIGAN CAT		
	MP - WATER - 6	2,146.69
39. MICHIGAN MUNICIPAL LEAGUE		
	MEMBERSHIP RENEWAL 09/01/25-08/31/26	10,314.00
40. MICHIGAN PAVING		
	2025 CRUSH & SHAPE LOCAL ROAD PROGRAM CONTRACT	13,330.23
41. MID MICHIGAN EMERGENCY EQUIPMENT		
	MP - POLICE DEPT - MAG MICS	175.00
	MP - POLICE - 723	300.00
	MP - POLICE 715	300.00
	TOTAL	775.00
42. MIDWEST POWER EQUIPMENT		
	MP - FIRE 140	2.29
43. MITA		
	MITA AD FOR NEWTON ROAD PARK PATHWAY PROJECT RFP	75.00
	MITA AD FOR THE AMERICAN HOUSE PATHWAY SHEET PILE	150.00
	TOTAL	225.00
44. MORRISON INDUSTRIAL EQUIPMENT		
	MP - FORK TRUCK SERVICE	222.79
45. MY GREEN MICHIGAN LLC		
	REISSUE-COMPOST SERVICE AT MARKETPLACE SEPT 2025	177.00
46. NATIONAL WILDLIFE CONTROL		
	BUILDINGS - C. FIRE - PEST TREATMENT	75.00
47. NORTHSIDE SERVICE		
	MP - WATER - TOW BILL	350.00
48. PAWSOME PETS OKEMOS LLC		
	K9 DOG FOOD	107.16
49. PITNEY BOWES		
	2025 QUARTERLY LEASE ON POSTAGE MACHINE	955.47
50. PRO-TECH MECHANICAL SERVICES		
	EMERGENCY FURNACE REPAIR IN HISTORICAL VILLAGE - B	1,290.28
	BUILDINGS - POLICE - HEATING ISSUE IN SCHAEDINGS O	358.40
	TOTAL	1,648.68
51. SPALDING DEDECKER ASSOCIATES		
	2025 LOCAL ROAD PROGRAM ENGINEERING & INSPECTION C	54,918.47
	2026 LOCAL ROAD PROGRAM ENGINEERING & INSPECTION C	46,526.01
	TOTAL	101,444.48
52. ST MARTHA CONFERENCE OF		
	EMERGENCY RENTAL ASSISTANCE	750.00
	EMERGENCY RENTAL ASSISTANCE	750.00
	EMERGENCY RENTAL ASSISTANCE	500.00
	TOTAL	2,000.00
53. STACEY BAZAN		
	REIMBURSEMENT FOR MEALS AT CONFERENCE	70.75
54. STATE OF MICHIGAN		
	RENEWAL OF MCAT CERTIFICATION FOR 2026 - MULIETT	50.00
55. STRYKER MEDICIAL		
	HEART SAFE AED PROGRAM PURCHASE FOR NICKI LAMAJ WE	1,959.00
56. THE HARKNESS LAW FIRM PLLC		
	PROSECUTING SERVICES CONTRACT	7,978.36
57. THE ROSSOW GROUP LLC		
	BASIC FOIA TRAINING	215.00
58. ULINE		
	EVIDENCE SUPPLIES	232.82

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Vendor Name	Description	Amount
59. WASTE MANAGEMENT		
	2025 CARCASS REMOVAL DUMPSTER (DEAD DEER REMOVAL A	358.32
60. WEST SHORE FIRE INC		
	SERVICE CALL FOR SIREN AT 3998 VAN ATTA RD	282.50
TOTAL - ALL VENDORS		327,021.99

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Vendor Name	Description	Amount
1. BLACKBURN MFG CO	STAKES FOR STAKING WATER LINES	1,006.61
	PAINT FOR MARKING WATER AND SEWER LINES	1,351.40
	TOTAL	<u>2,358.01</u>
2. CGS SAFETY TRAINING INC	UTILITY WORKER TRAINING - FORKLIFT AND OVERHEAD CR	1,480.83
3. CHEN, LARRY	UB Receipt Refund for Account #: PKLK-00	144.88
4. CITY OF EAST LANSING	ELMWSA OPERATING, INTERCONNECT & DEBT SHARING 2026	418,914.58
5. CUMMINS INC	SEWER - TOWAR LIFT STATION - ATS REPAIRS	1,513.96
	GENERATOR MAINTENANCE 2025	1,020.17
	TOTAL	<u>2,534.13</u>
6. FERGUSON WATERWORKS #3386	WATER - 1", 1.5", 2", AND 2" COMPOUND METERS AND GA	7,036.48
	WATER - 3 - 2" T10'S	3,706.63
	TOTAL	<u>10,743.11</u>
7. HAMMOND FARMS	WATER - STONE	235.00
8. HYDROCORP	AUG 2024 TO AUG 2026 CROSS CONNECTION PROGRAM SERV	2,735.00
	AUG 2024 TO AUG 2026 CROSS CONNECTION PROGRAM SERV	2,735.00
	TOTAL	<u>5,470.00</u>
9. KENNEDY INDUSTRIES INC	SEWER - MUD LAKE LIFT STATION - PUMP REPAIR	1,948.00
10. MADISON NATIONAL LIFE INS CO	2025 LIFE/DISABILITY INSURANCE DECEMBER	598.26
11. MITA	MITA AD FOR FOREST HILLS LIFT STATION REPLACEMENT	75.00
12. SAK CONSTRUCTION LLC	CHANGE ORDER #1 TO PO # 58923 - E LAKE DR SEWER RE	6,220.00
13. WELLS INVESTMENT PROPERTIES	PERF GUARANTEE-PATHWAY COMPLETE-5789 OKEMOS RD	3,211.95
TOTAL - ALL VENDORS		453,933.75

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Vendor Name	Description	Amount
1. CORELOGIC CENTRALIZED REFUNDS		
	2025 Sum Tax Refund 33-02-02-03-478-015	3,189.77
2. LERETA, LLC		
	2025 Sum Tax Refund 33-02-02-26-202-007	2,971.80
3. SAPUTO, MOLLY		
	2025 Sum Tax Refund 33-02-02-25-201-012	106.74
TOTAL - ALL VENDORS		6,268.31

Credit Card Report 11/14/2025 - 11/25/2025

Transaction Date	Account Name	Transaction Amount	Transaction Merchant Name
2025/11/19	LAWRENCE BOBB	\$15.99	TRACTOR SUPPLY #1149
2025/11/18	LAWRENCE BOBB	\$120.57	THE HOME DEPOT #2723
2025/11/19	LAWRENCE BOBB	\$20.78	THE HOME DEPOT #2723
2025/11/18	ROBERT STACY	\$272.81	THE HOME DEPOT 2723
2025/11/18	TYLER KENNEL	\$689.78	GRAINGER
2025/11/19	TYLER KENNEL	\$79.14	GRAINGER
2025/11/18	TYLER KENNEL	\$70.66	THE HOME DEPOT #2723
2025/11/21	TYLER KENNEL	\$135.00	A & L LOCKSMITH
2025/11/20	TYLER KENNEL	\$31.22	THE HOME DEPOT #2723
2025/11/20	TYLER KENNEL	\$112.47	THE HOME DEPOT #2723
2025/11/18	MICHAEL HAMEL	\$20.00	BARYAMES CLEANERS INC 05
2025/11/19	MICHAEL HAMEL	\$49.35	AMAZON MKTPL*B025A7J10
2025/11/19	MICHAEL HAMEL	\$35.61	AMAZON.COM*B03W54EV2
2025/11/21	MICHAEL HAMEL	\$1.15	AMAZON.COM*B09LL5MS0
2025/11/14	KYLE FOGG	\$47.92	THE HOME DEPOT #2723
2025/11/19	KYLE FOGG	\$62.56	THE HOME DEPOT #2723
2025/11/20	KYLE FOGG	(\$27.27)	THE HOME DEPOT #2723
2025/11/20	KYLE FOGG	\$134.47	THE HOME DEPOT #2723
2025/11/20	KYLE FOGG	\$34.08	THE HOME DEPOT #2723
2025/11/17	RYAN CAMPBELL	\$42.42	COMPLETE BATTERY SOURCE
2025/11/17	JACOB FLANNERY	\$30.96	GRAINGER
2025/11/21	ASHLEY WINSTEAD	\$53.90	AMAZON MKTPL*B09P80DY2
2025/11/21	JEFFREY ROMMECK	\$84.94	THE HOME DEPOT 2723
2025/11/14	COURTNEY WISINSKI	\$59.96	OFFICEMAX/OFFICEDEPT#3379
2025/11/16	COURTNEY WISINSKI	\$52.12	AMAZON MKTPL*B86KY5141
2025/11/15	COURTNEY WISINSKI	\$55.92	THE HOME DEPOT #2723
2025/11/19	COURTNEY WISINSKI	\$40.00	HOBBY LOBBY #360
2025/11/21	COURTNEY WISINSKI	\$80.62	QUALITY DAIRY#31
2025/11/20	COURTNEY WISINSKI	\$9.46	MEIJER STORE #025
2025/11/24	COURTNEY WISINSKI	\$191.97	AMAZON MKTPL*B26BZ2042
2025/11/23	KATIE LOVE	\$29.83	MEIJER STORE #025
2025/11/22	KATIE LOVE	\$45.90	MEIJER STORE #025
2025/11/17	JUSTIN C CAROEN	\$71.09	OFFICEMAX/OFFICEDEPT#3379
2025/11/19	STEPHEN GEBES	\$481.85	ZOOM.COM 888-799-9666
2025/11/15	RICHARD GRILLO	\$24.99	GANNETT MEDIA CO
2025/11/19	RICHARD GRILLO	\$319.67	AMAZON RETA* B07MD73U2
2025/11/21	RICHARD GRILLO	\$695.39	N-EAR, INC
2025/11/23	RICHARD GRILLO	\$82.99	GOOGLE *YOUTUBE TV
2025/11/14	KEITH HEWITT	\$110.00	HAMMOND FARMS E LANSING
2025/11/17	KEITH HEWITT	\$121.51	MIDWEST POWER EQUIPMENT
2025/11/21	KEITH HEWITT	\$110.00	HAMMOND FARMS E LANSING
2025/11/15	MICHELLE PRINZ	\$19.99	GANNETT MEDIA CO
2025/11/17	MICHELLE PRINZ	\$72.36	AMAZON.COM*B81AS42V2
2025/11/19	MICHELLE PRINZ	\$19.99	GANNETT MEDIA CO
2025/11/19	MICHELLE PRINZ	\$24.99	GANNETT MEDIA CO
2025/11/23	MICHELLE PRINZ	\$20.56	AMAZON MKTPL*B01A73RJ0
2025/11/17	CATHERINE ADAMS	\$69.28	TOP HAT CRICKET FARM INC
2025/11/19	CATHERINE ADAMS	\$252.49	SMARTSIGN
2025/11/25	CATHERINE ADAMS	\$157.79	AMAZON MKTPL*B29Z53VE2
2025/11/14	ED BESONEN	\$363.30	SQ *STR8-4WARD TRAINING C
2025/11/15	ED BESONEN	\$70.97	AMAZON MKTPL*B84HS6850
2025/11/17	ED BESONEN	\$212.48	ONLINE LABELS, INC.
2025/11/18	ED BESONEN	\$313.69	OPTICSPLANET, INC.
2025/11/18	ED BESONEN	\$27.88	AMAZON MKTPL*B08PX8N52
2025/11/19	ED BESONEN	\$795.00	MIDWAYUSA COM
2025/11/21	ED BESONEN	(\$17.76)	OPTICSPLANET, INC.
2025/11/24	ED BESONEN	\$793.94	OPTICSPLANET, INC.
2025/11/19	BART CRANE	\$75.00	MSU PAYMENT ONLINE
2025/11/24	BART CRANE	\$193.45	COMCAST / XFINITY
2025/11/19	ALLISON GOODMAN	\$68.15	MEIJER STORE #025
2025/11/19	ALLISON GOODMAN	\$44.95	PETSMART # 0724
2025/11/21	ALLISON GOODMAN	\$35.98	FEEDERS SUPPLY COMPANY #4
2025/11/18	ROBERT MACKENZIE	\$9.99	AMAZON MKTPL*B04IK8NC0
2025/11/20	CURT SQUIRES	\$1.47	CITY OF LANSING, MI
2025/11/20	CURT SQUIRES	\$0.72	CITY OF LANSING, MI
<b>TOTAL</b>		<b>\$8,328.44</b>	

ACH Transactions

Date	Payee	Amount	Purpose
11/14/2025	Alerus	\$ 61,939.87	Payroll Deductions 11/14/2025
11/14/2025	Nationwide	\$ 11,112.03	Payroll Deductions 11/14/2025
11/17/2025	ELAN	\$ 25,082.32	Credit Card Payment
11/25/2025	Various Financial Institutions	\$ 531,894.25	Payroll Deductions 11/28/2025
11/25/2025	IRS	\$ 228,771.77	Payroll Taxes 11/28/2025

**Total ACH Payments**

**\$ 858,800.24**



**To: Township Board**  
**From: Abigail Tithof, Human Resources Director**  
**Date: November 26, 2025**  
**Re: Non-Union Wage Schedule**

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The 2026 Budget includes a 3% wage adjustment to the pay ranges for department directors and other non-union staff.

The following motion has been prepared for Board consideration:

**MOVE TO APPROVE THE 2026 NON-UNION WAGE SCHEDULE, WITH A 3% WAGE ADJUSTMENT, AS PRESENTED.**

Attachment: 2026 Proposed Non-Union Wage Schedule

**2026 Salaries for Non-Union Employees  
Effective January 1, 2026**

		<u>2026 Salary</u>
<b>Township Manager</b>	Step 1	\$165,647.69
	Step 2	\$170,534.30
	Step 3	\$175,565.06
	Step 4	\$180,744.22
	Step 5	\$186,076.18
	Step 6	\$191,565.43
	Step 7	\$201,143.70
<b>Deputy Township Manager/ Director of Public Works</b>	Step 1	\$121,191.91
	Step 2	\$124,827.62
	Step 3	\$128,571.53
	Step 4	\$132,428.96
	Step 5	\$136,402.03
	Step 6	\$140,494.99
	Step 7	\$147,518.15
<b>Executive Assistant*</b> <small>*Employee entitled to OT Salary listed = base pay</small>	Step 1	\$50,216.64
	Step 2	\$54,134.54
	Step 3	\$58,051.39
	Step 4	\$61,966.11
	Step 5	\$65,888.26
	Step 6	\$69,805.10
	Step 7	\$73,300.76
<b>Human Resources Director</b>	Step 1	\$104,642.93
	Step 2	\$109,355.45
	Step 3	\$114,061.60
	Step 4	\$118,769.88
	Step 5	\$123,482.39
	Step 6	\$128,189.61
	Step 7	\$134,599.57
<b>Human Resources Administrator</b>	Step 1	\$85,686.77
	Step 2	\$86,991.68
	Step 3	\$88,315.68
	Step 4	\$89,641.81
	Step 5	\$90,985.97
	Step 6	\$92,350.28
	Step 7	\$96,968.38
<b>Finance Director</b>	Step 1	\$109,557.02
	Step 2	\$112,844.75
	Step 3	\$116,229.02
	Step 4	\$119,716.20
	Step 5	\$123,308.41
	Step 6	\$127,006.70
	Step 7	\$133,357.25

**2026 Salaries for Non-Union Employees  
Effective January 1, 2026**

		<u><b>2026 Salary</b></u>
<b>Assessor</b>	Step 1	\$104,642.93
	Step 2	\$109,355.45
	Step 3	\$114,061.60
	Step 4	\$118,769.88
	Step 5	\$123,482.39
	Step 6	\$128,189.61
	Step 7	\$134,599.57
<b>Community Planning &amp; Development Director</b>	Step 1	\$104,642.93
	Step 2	\$109,355.45
	Step 3	\$114,061.60
	Step 4	\$118,769.88
	Step 5	\$123,482.39
	Step 6	\$128,189.61
	Step 7	\$134,599.57
<b>Neighborhoods &amp; Economic Development Director</b>	Step 1	\$93,250.99
	Step 2	\$97,624.02
	Step 3	\$101,997.05
	Step 4	\$106,366.89
	Step 5	\$110,734.62
	Step 6	\$115,103.41
	Step 7	\$120,858.79
<b>EMS/Fire Chief</b>	Step 1	\$104,642.93
	Step 2	\$109,355.45
	Step 3	\$114,061.60
	Step 4	\$118,769.88
	Step 5	\$123,482.39
	Step 6	\$128,189.61
	Step 7	\$134,599.57
<b>Chief of Police</b>	Step 1	\$104,642.93
	Step 2	\$109,355.45
	Step 3	\$114,061.60
	Step 4	\$118,769.88
	Step 5	\$123,482.39
	Step 6	\$128,189.61
	Step 7	\$134,599.57
<b>Assistant Chief of Police</b>	Step 1	\$99,410.45
	Step 2	\$103,887.67
	Step 3	\$108,358.52
	Step 4	\$112,831.38
	Step 5	\$117,308.28
	Step 6	\$121,780.12
	Step 7	\$127,869.59

**2026 Salaries for Non-Union Employees  
Effective January 1, 2026**

		<u><b>2026 Salary</b></u>	
<b>Information Technology Director</b>	Step 1	\$104,642.93	
	Step 2	\$109,355.45	
	Step 3	\$114,061.60	
	Step 4	\$118,769.88	
	Step 5	\$123,482.39	
	Step 6	\$128,189.61	
	Step 7	\$134,599.57	
<b>Parks and Recreation Director</b>	Step 1	\$104,785.09	
	Step 2	\$107,929.60	
	Step 3	\$111,166.41	
	Step 4	\$114,501.88	
	Step 5	\$117,936.01	
	Step 6	\$121,474.11	
	Step 7	\$133,312.69	
<b>Part-Time Paramedic/FF</b>		\$17.57-\$21.48 per hour	<b>January 1, 2026</b>



**To: Board Members**  
**From: Stephen Gebes, IT Director**  
**Date: November 25, 2025**  
**Re: Authorization of Surplus Property Disposal**

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Over recent months, the following Township equipment has been identified as inadequate to meet operational needs:

- A. Three (3) Dell rugged tablet 7212, purchased in 2019: JWDZSG2, BWDZSG2, & GWDZSG2.
- B. Two (2) Dell Optiplex 7040, purchased in 2017: HT3Y3F2, 55V76F2.
- C. Twenty-two (22) Dell Optiplex 7050, purchased in 2018: BH1Y0S2, BH3T0S2, BH0X0S2, BH0Z0S2, BGZT0S2, BH2W0S2, BGYZ0S2, BH1Z0S2, 375Q7F2, BH4T0S2, BH0V0S2, BH2X0S2, BH3X0S2, BH3Y0S2, BH3Z0S2, BGY0S2, 5J5M652, BH2Y0S2, BH1T0S2, BGZZ0S2, BGZX0S2, BH0Y0S2.
- D. One (1) Dell Latitude laptop E6530, purchased in 2013: 4LLWKX1
- E. Eight (8) Remington 870 shotguns: D447567M, B252379M, D447493M, C752344M, C753056M, C447567M, A915362M, C750009M
- F. Forty-eight (48) five-year lifespan AVI ballistic plates purchased by the Fire Department in 2018: twelve (12) chest plates, twelve (12) back plates, and twenty-four (24) side plates.

Due to a combination of wear & tear, excessive use of consumables, poor performance, sub-optimal reliability, and other forms of obsolescence, the assets listed above are being replaced with newer equipment. Moreover, there is no foreseeable use for any of the listed legacy resources. This being the case, the items are being removed from the Township's inventory to make way for updated assets.

Technology inventory items A through D are intended to be traded in to Dell to partially offset the cost of 2025 workstation replacements.

Additionally, the Meridian Township Police Department (MTPD) has received a quote to update the aging fleet of Remington 870 patrol shotguns with Beretta 1301 Tactical shotguns. The quote for two (2) new Beretta shotguns, for use solely by MTPD police officers, is partially offset by the anticipated trade-in of eight (8) old Remington 870 shotguns. The above item "E" is a list of serial numbers for the equipment the PD request to be turned-in to Acme Sports, Inc. to finalize the purchase agreement.

Finally, the Meridian Township Fire Department (MTFD) is disposing of ballistic plates listed in item "F" that are beyond the manufacturer's specified lifespan.

A motion is prepared for Board consideration:

**MOVE TO AUTHORIZE THE DIRECTOR OF INFORMATION TECHNOLOGY, THE CHIEF OF POLICE, AND THE FIRE CHIEF TO HAVE OBSOLETE EQUIPMENT IDENTIFIED IN THE MEMORANDUM WITH SUBJECT "AUTHORIZATION OF SURPLUS PROPERTY DISPOSAL", DATED NOVEMBER 25, 2025, TO BE TRADED IN AND DISPOSED OF AS SPECIFIED IN SAID MEMORANDUM.**



**To: Board Members**  
**From: Amber Clark Neighborhood & Economic Development Director**  
**Date: November 24, 2025**  
**Re: Notice to Set a Public Hearing Haslett Village Square  
1655 and 1621 Haslett Road - Brownfield Redevelopment Plan  
Amendment #2**

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**Board Summary:**

The Meridian Township Brownfield Redevelopment Authority (MTBRA) has received an amendment request for the Brownfield Plan for 1621 and 1655 Haslett Road, commonly referred to as “Haslett Village Square” redevelopment project.

In accordance with the provisions of the Brownfield Redevelopment Financing Act, Public Act 90 of 2023, the Township Board must notice and hold a public hearing to receive public comment prior to approval of the Brownfield Redevelopment Plan from SP Holding LLC, a group out of Holland, MI. SP Holding LLC will propose an amendment to the approved Brownfield Redevelopment Plan for 1655 and 1621 Haslett road. The Township board will set the public hearing to receive comments on **Tuesday December 16, 2025** at 6:00 PM in Meridian Township Hall room, 5151 Marsh Road, Okemos MI 48864. At which time the representatives of the project and the Township may be heard regarding their amendment request to the Brownfield Redevelopment Plan. After the Board’s action setting the public hearing, Staff will distribute the required legal notice to the taxing units as outlined in the State law.

**The following motion have been prepared for Board consideration:**

**MOVE TO SET THE PUBLIC HEARING REGARDING THE BROWNFIELD REDEVELOPMENT PLAN AMENDMENT #2 FROM SP HOLDING LLC FOR DECEMBER 16, 2025 REGULAR MEETING OF THE TOWNSHIP BOARD. AUTHORIZE THE PUBLICATION OF THE NOTICE, ITS DISSEMINATION TO THE PUBLIC, AND ALL REQUIRED TAXING JURISDICTIONS.**

**Attachments:**

1. Public Hearing Notice- Haslett Village Square Brownfield Redevelopment Plan



**CHARTER TOWNSHIP OF MERIDIAN- INGHAM COUNTY, MICHIGAN  
LEGAL AD NOTICE: Public Hearing  
Brownfield Redevelopment Plan Haslett Village Square  
1655 and 1621 Haslett Road TUESDAY December 16, 2025**

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**CHARTER TOWNSHIP OF MERIDIAN LEGAL NOTICE:  
Brownfield Redevelopment Plan Haslett Village Square 1655 and 1621 Haslett  
Road Public Hearing  
December 16, 2025**

Notice is hereby given that the Township Board of the Charter Township of Meridian will hold a public hearing on Tuesday, December 16, 2025, at 6:00 p.m. in the Meridian Municipal Building, Town Hall Room, 5151 Marsh Road, Okemos, MI 48864 to hear all persons interested in the discussion to authorize by resolution the approval of the second amendment to the Brownfield Redevelopment Plan for 1655 and 1621 Haslett Road, as a part of the approved plan to redevelop 19.5 acres of land at Haslett Village Square.

SP HOLDINGC COMPANY, LLC of Holland, MI has proposed a Brownfield Redevelopment Plan for 1655 and 1621 Haslett Road in support of demolition, asbestos abatement, and removal of contaminated soils due to previous business operations at the project site. The developer has proposed a 29-year Brownfield plan with the inclusion housing as an eligible cost through Public Act 90 of 2023, to cover the estimated cost of contamination removal, site infrastructure, and the construction of housing units to support workforce incomes at or below 120% of the area median income. Total investment is estimated at \$62M with a reimbursement of \$17.1M to the developer for eligible costs. The following parcels are included in the proposed project:

1655 Haslett Road; 33-02-02-10-401-008 and 1621 Haslett Road 33-02-02-10-401-009.

Information may be examined at the Department of Community Planning and Development, 5151 Marsh Road, Okemos, Michigan 48864-1198, (phone 517-853-4568) between the hours of 8:30 a.m. and 4:30 p.m., Monday through Friday.

Written comments may be sent prior to the public hearing to Amber Clark Neighborhoods & Economic Development Director, Charter Township of Meridian, 5151 Marsh Road, Okemos, Michigan, 48864, or by email to [clark@meridian.mi.us](mailto:clark@meridian.mi.us).

**Publish:**

**Lansing State Journal  
Wednesday December 3, 2025**

**Angela Demas  
Township Clerk**

**1 Affidavit, please**



**To: Board Members**

**From: Dan Opsommer, Deputy Township Manager  
Director of Public Works and Engineering**

**Date: November 18, 2025**

**Re: American House Pathway Site Contract Award**

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Township staff recently requested proposals for the construction of a concrete pathway along the west side of the American House Meridian Senior Living Center.

The low bid for this contract was \$181,565 from Prime Construction & Excavation LLC. This contractor has not been awarded a contract from the Township before, but we have checked their references and have no concerns contracting with them. Township staff recommend awarding this contract in the amount of \$181,565 to the low bidder, Prime Construction & Excavation LLC.

The Board approved funding for this project in the 2026 Township Budget. This project shall be funded out of account #: 216-440.450-974.000. The contract calls for the contractor to complete construction by June 12, 2026.

We are happy to answer any questions the Board may have.

**The following motion has been prepared for the Board's consideration:**

**MOVE TO APPROVE THE CONTRACT WITH PRIME CONSTRUCTION & EXCAVATION LLC IN THE AMOUNT OF \$181,565 AND DIRECT THE TOWNSHIP SUPERVISOR TO EXECUTE THE AGREEMENT.**

**Attachments:**

1. American House Pathway Site Contract Bid Tab
2. [American House Pathway - Site Contract Book -Addendum# 1](#)
3. [American House Pathway - Site Work Plans Addendum #1](#)
4. [American House Pathway - Site Work - Addendum #1](#)

### American House Pathway - Site Contract

ITEM	DESCRIPTION	QTY	Prime Construction & Excavation 12660 Mansfield St. Detroit, MI 48227		Lopez Concrete Construction 4711 Birchfield Ave. Lansing MI 48910		Gordon Construction Services 227 Maple St. Portland MI 48875		M-K Construction CO., INC. 18388 Dix Toledo Rd. Browstown, MI 48193		LAUX Construction 1018 Hogback Road Mason, MI 48854		Davis Construction, INC. 5236 Dumond Ct. Suite A Lansing, MI 48917		LD Clark Company 7707 Rickle St. Lansing MI 48911		Fonson Company, INC. 7644 Whitmore Lake Road Brighton, MI 48116		Miller IS Bridge Construction 7030 Industrial Drive Portland, MI 48875		Able Concrete INC. 11323 S US 27 Dewitt, MI 48820		Leavitt & Stark Excavating INC. 16220 National Parkway Lansing, MI 48906		Vesta Companies INC. 31400 Kendall Ave. Suite A Fraser, MI 48026		
			PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE
1	Traffic Control	1	LS	\$3,500.00	\$3,500.00	\$2,000.00	\$2,000.00	\$6,075.00	\$6,075.00	\$15,940.00	\$15,940.00	\$5,600.00	\$5,600.00	\$10,000.00	\$10,000.00	\$4,914.00	\$4,914.00	\$42,652.00	\$42,652.00	\$74,553.00	\$74,553.00	\$2,500.00	\$2,500.00	\$3,150.00	\$3,150.00	\$6,150.00	\$6,150.00
2a	Pavement Replacement	100	TONS	\$190.00	\$19,000.00	\$190.00	\$19,000.00	\$184.00	\$18,400.00	\$459.00	\$45,900.00	\$340.00	\$34,000.00	\$34,000.00	\$34,000.00	\$147.42	\$14,742.00	\$364.99	\$36,499.00	\$239.00	\$23,900.00	\$465.50	\$46,550.00	\$372.00	\$37,200.00	\$239.85	\$23,985.00
10a	Mobilization, Max \$30,000	1	LS	\$25,000.00	\$25,000.00	\$15,000.00	\$15,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$78,800.00	\$78,800.00	\$30,000.00	\$30,000.00	\$29,543.61	\$29,543.61	\$30,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$22,750.00	\$22,750.00
10b	Pavement Removal	95	SYD	\$17.00	\$1,615.00	\$27.00	\$2,565.00	\$45.00	\$4,275.00	\$38.91	\$3,696.45	\$7.00	\$665.00	\$70.00	\$6,650.00	\$15.93	\$1,513.35	\$2.38	\$226.10	\$19.50	\$1,852.50	\$21.00	\$1,995.00	\$38.73	\$3,679.35	\$51.66	\$4,907.70
10c	Excavation, Earth	115	CY	\$14.00	\$1,610.00	\$33.00	\$3,795.00	\$50.00	\$5,750.00	\$69.74	\$8,020.10	\$45.00	\$5,175.00	\$60.00	\$6,900.00	\$187.48	\$1,513.35	\$200.00	\$2,000.00	\$23.34	\$2,684.10	\$289.00	\$3,235.00	\$177.38	\$20,398.70	\$203.22	\$23,370.30
10d	Embankment, LM	200	CY	\$35.00	\$7,000.00	\$42.00	\$8,400.00	\$88.92	\$17,784.00	\$67.59	\$13,518.00	\$83.00	\$16,600.00	\$65.00	\$13,000.00	\$648.80	\$38,928.00	\$70.00	\$14,000.00	\$43.19	\$8,638.00	\$55.00	\$11,000.00	\$165.00	\$33,000.00	\$135.30	\$27,060.00
10e	Bench	1	EA	\$1,400.00	\$1,400.00	\$2,400.00	\$2,400.00	\$3,750.00	\$3,750.00	\$4,125.12	\$4,125.12	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$2,260.00	\$2,260.00	\$3,100.00	\$3,100.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$2,362.50	\$2,362.50	\$2,420.00	\$2,420.00
10f	Wheel Stop	11	EA	\$180.00	\$1,980.00	\$160.00	\$1,760.00	\$750.00	\$8,250.00	\$176.73	\$1,944.03	\$170.00	\$1,870.00	\$250.00	\$2,750.00	\$139.05	\$1,529.55	\$326.10	\$3,587.10	\$200.00	\$2,200.00	\$125.00	\$1,375.00	\$210.00	\$2,310.00	\$510.00	\$5,610.00
10g	Detectable Warning Surface, 7 Foot	14	FT	\$35.00	\$490.00	\$133.00	\$1,862.00	\$150.00	\$2,100.00	\$81.00	\$1,134.00	\$46.00	\$644.00	\$70.00	\$980.00	\$164.19	\$2,298.66	\$75.00	\$1,050.00	\$75.00	\$1,050.00	\$130.00	\$1,820.00	\$157.50	\$2,205.00	\$123.00	\$1,722.00
10h	Manhole Cover and Frame	1	EA	\$1,100.00	\$1,100.00	\$1,960.00	\$1,960.00	\$1,500.00	\$1,500.00	\$1,220.91	\$1,220.91	\$1,120.00	\$1,120.00	\$1,200.00	\$1,200.00	\$1,001.00	\$1,001.00	\$1,859.14	\$1,859.14	\$2,000.00	\$2,000.00	\$1,645.00	\$1,645.00	\$1,300.00	\$1,300.00	\$2,575.00	\$2,575.00
10i	Curb Ramp, Conc, 6 inch	345	SF	\$27.00	\$9,315.00	\$9.00	\$3,105.00	\$9.45	\$3,260.25	\$12.96	\$4,471.20	\$11.00	\$3,795.00	\$13.00	\$4,485.00	\$10.87	\$3,750.15	\$12.00	\$4,140.00	\$16.00	\$5,520.00	\$17.50	\$6,037.50	\$11.03	\$3,805.35	\$51.66	\$17,822.70
40	Shared Use Path, Concrete	790	SYD	\$66.00	\$52,140.00	\$81.00	\$63,990.00	\$70.88	\$55,991.25	\$54.00	\$42,660.00	\$70.00	\$55,300.00	\$61.00	\$48,190.00	\$97.85	\$77,301.50	\$50.00	\$39,500.00	\$55.00	\$43,450.00	\$101.52	\$80,200.80	\$60.90	\$48,111.00	\$236.16	\$186,566.40
44	Shared Use Path, Aggregate	100	TON	\$30.00	\$3,000.00	\$43.00	\$4,300.00	\$5.20	\$520.00	\$29.11	\$2,911.00	\$45.00	\$4,500.00	\$175.00	\$17,500.00	\$78.72	\$7,872.00	\$59.80	\$5,980.00	\$208.14	\$20,814.00	\$54.85	\$5,485.00	\$127.00	\$12,700.00	\$24.60	\$2,460.00
46a	Shared Use Path, Grading	665	FT	\$15.00	\$9,975.00	\$19.30	\$12,834.50	\$7.80	\$5,187.00	\$37.50	\$24,937.50	\$7.00	\$4,950.00	\$40.00	\$26,600.00	\$12.38	\$8,232.70	\$28.31	\$18,826.15	\$50.00	\$33,250.00	\$58.65	\$39,002.25	\$145.00	\$96,425.00	\$10.90	\$7,248.50
51	Fence, Aluminum	635	FT	\$52.00	\$33,020.00	\$65.00	\$41,275.00	\$98.88	\$62,664.00	\$77.80	\$49,458.80	\$92.00	\$58,420.00	\$110.00	\$69,850.00	\$102.15	\$64,865.25	\$111.47	\$70,783.45	\$110.00	\$69,850.00	\$109.38	\$69,456.30	\$86.35	\$54,832.25	\$63.80	\$40,805.00
53a	Erosion Control, Gravel Access Approach	1	EA	\$950.00	\$950.00	\$4,320.00	\$4,320.00	\$4,800.00	\$4,800.00	\$2,536.81	\$2,536.81	\$3,600.00	\$3,600.00	\$3,000.00	\$3,000.00	\$12,808.63	\$12,808.63	\$3,620.74	\$3,620.74	\$1,000.00	\$1,000.00	\$5,865.00	\$5,865.00	\$5,000.00	\$5,000.00	\$16,146.25	\$16,146.25
53c	Erosion Control, Silt Fence	620	FT	\$3.50	\$2,170.00	\$4.10	\$2,542.00	\$6.00	\$3,720.00	\$2.26	\$1,401.20	\$5.00	\$3,100.00	\$4.00	\$2,480.00	\$4.74	\$2,938.80	\$3.50	\$2,170.00	\$3.50	\$2,170.00	\$6.00	\$3,720.00	\$4.00	\$2,480.00	\$8.00	\$4,960.00
53b	Erosion Control, Filter Bag	3	EA	\$100.00	\$300.00	\$190.00	\$570.00	\$262.50	\$787.50	\$432.00	\$1,296.00	\$200.00	\$600.00	\$200.00	\$600.00	\$145.37	\$436.11	\$218.00	\$654.00	\$150.00	\$450.00	\$167.00	\$501.00	\$750.00	\$2,250.00	\$307.50	\$922.50
54	Site Restoration	1	LS	\$6,000.00	\$6,000.00	\$8,600.00	\$8,600.00	\$14,000.00	\$14,000.00	\$16,504.97	\$16,504.97	\$18,400.00	\$18,400.00	\$25,000.00	\$25,000.00	\$20,891.45	\$20,891.45	\$36,524.26	\$36,524.26	\$36,125.00	\$36,125.00	\$34,128.00	\$34,128.00	\$15,000.00	\$15,000.00	\$13,071.25	\$13,071.25
54a	Tree Planting	1	LS	\$2,000.00	\$2,000.00	\$4,600.00	\$4,600.00	\$2,000.00	\$2,000.00	\$5,400.00	\$5,400.00	\$17,300.00	\$17,300.00	\$18,000.00	\$18,000.00	\$13,205.04	\$13,205.04	\$9,360.00	\$9,360.00	\$9,890.00	\$9,890.00	\$9,260.33	\$9,260.33	\$23,100.00	\$23,100.00	\$19,680.00	\$19,680.00
<b>Total:</b>				\$181,565.00	\$181,565.00	\$204,878.50	\$204,878.50	\$250,814.00	\$250,814.00	\$276,563.09	\$276,563.09	\$317,144.00	\$317,144.00	\$325,185.00	\$325,185.00	\$330,592.04	\$330,592.04	\$355,131.94	\$355,131.94	\$372,396.60	\$372,396.60	\$386,336.18	\$386,336.18	\$397,809.15	\$397,809.15	\$429,432.60	\$429,432.60

Indicates corrected figure

Bidder used pre-addendum embankment Qty of 60 Tons



**To: Board Members**

**From: Dan Opsommer, Deputy Township Manager  
Director of Public Works and Engineering**

**Date: November 18, 2025**

**Re: American House Pathway Sheet Pile and Boardwalk Contract Award**

---

Township staff recently requested proposals for the construction of sheet pile retaining wall and boardwalk along the west side of the American House Meridian Senior Living Center.

The low bid for this contract was \$442,599.04 from MK Construction Co., Inc. This contractor has not been awarded a contract from the Township before, but we have checked their references and have no concerns contracting with them. Township staff recommend awarding this contract in the amount of \$442,599.04 to the low bidder, MK Construction Co., Inc.

The Board approved funding for this project in the 2026 Township Budget. This project shall be funded out of account #: 216-440.450-974.000. The contract calls for the contractor to complete construction by April 1, 2026.

We are happy to answer any questions the Board may have.

**The following motion has been prepared for the Board's consideration:**

**MOVE TO APPROVE THE CONTRACT WITH MK CONSTRUCTION CO., INC. IN THE AMOUNT OF \$442,599.04 AND DIRECT THE TOWNSHIP SUPERVISOR TO EXECUTE THE AGREEMENT.**

**Attachments:**

1. American House Pathway Sheet Pile and Boardwalk Contract Bid Tab
2. [American House Pathway - Sheet Pile and Boardwalk Plans Addendum #1](#)
3. [American House Pathway - Sheet Pile and Boardwalk Contract Book Addendum #1](#)
4. [American House Pathway - Sheet Pile and Boardwalk - Addendum #1](#)

## American House Pathway - Sheet Pile and Boardwalk

ITEM	DESCRIPTION	QTY	M-K Construction Co., Inc. 18388 DIX Toldedo Rd. Brownstown, MI 48193		Davis Constructions, Inc. 5236 Dumond Ct. Suite A Lansing, MI 48917		Miller LS Bridge Construction 7030 Industrial Drive Portland, MI 48875		Laux Construction 1018 Hoggsback Road Mason, MI 48854		Vesta Companies Inc. 31400 Kendall Ave. Suite A Fraser, MI 48026		E. C. Korneffel Co. 2691 Veterans Parkway Trenton, MI 48183-2626		
			PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	
1	Traffic Control	1	LSUM	\$11,890.00	\$11,890.00	\$15,000.00	\$15,000.00	\$116,261.00	\$116,261.00	\$ 8,300.00	\$ 8,300.00	\$7,380.00	\$7,380.00	\$13,500.00	\$13,500.00
8a	Concrete Abutment	2	EA	\$26,189.38	\$52,378.76	\$27,500.00	\$55,000.00	\$30,930.00	\$61,860.00	\$ 13,350.00	\$ 26,700.00	\$19,341.79	\$38,683.58	\$40,000.00	\$80,000.00
8b	Treated Timber Boardwalk	37	FT	\$931.08	\$34,449.96	\$825.00	\$30,525.00	\$1,060.00	\$39,220.00	\$ 805.00	\$ 29,785.00	\$549.11	\$20,317.07	\$1,500.00	\$55,500.00
8c	Boardwalk Structural Piles	1	LS	\$22,551.88	\$22,551.88	\$34,500.00	\$34,500.00	\$14,601.00	\$14,601.00	\$ 16,230.00	\$ 16,230.00	\$26,322.00	\$26,322.00	\$59,000.00	\$59,000.00
8d	Steel Sheet Piling, Permanent	775	SY	\$301.44	\$233,616.00	\$325.00	\$251,875.00	\$275.00	\$213,125.00	\$ 240.00	\$ 186,000.00	\$467.90	\$362,622.50	\$580.00	\$449,500.00
8e	Safety Sheet Pile Cap	465	FT	\$35.46	\$16,488.90	\$87.00	\$40,455.00	\$75.00	\$34,875.00	\$ 68.00	\$ 31,620.00	\$81.25	\$37,781.25	\$75.00	\$34,875.00
8f	Underdrain, Pipe, Open-Graded, 4 inch	520	FT	\$7.30	\$3,796.00	\$12.50	\$6,500.00	\$27.22	\$14,154.40	\$ 20.00	\$ 10,400.00	\$ 11.44	\$5,948.80	\$15.00	\$7,800.00
8h	Geotextile Fabric	275	SY	\$1.72	\$473.00	\$6.00	\$1,650.00	\$5.00	\$1,375.00	\$ 14.00	\$ 3,850.00	\$ 19.80	\$5,445.00	\$24.00	\$6,600.00
10a	Mobilization, Max \$30,000	1	LS	\$30,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$30,000.00	\$ 262,935.00	\$ 262,935.00	\$ 28,248.00	\$28,248.00	\$30,000.00	\$30,000.00
10c	Retaining Wall, Removal	1	LS	\$11,608.06	\$11,608.06	\$7,500.00	\$7,500.00	\$3,700.00	\$3,700.00	\$ 1,110.00	\$ 1,110.00	\$ 15,300.00	\$15,300.00	\$19,500.00	\$19,500.00
10e	Tree and Stump Removal 6 to 18 inch	10	EA	\$168.00	\$1,680.00	\$1,100.00	\$11,000.00	\$500.00	\$5,000.00	\$ 670.00	\$ 6,700.00	\$ 1,845.00	\$18,450.00	\$832.50	\$8,325.00
10f	Embankment, LM	175	CY	\$19.76	\$3,458.00	\$60.00	\$10,500.00	\$33.08	\$5,789.00	\$ 83.00	\$ 14,525.00	\$ 145.50	\$25,462.50	\$30.00	\$5,250.00
53a	Erosion Control, Gravel Access Approach	1	EA	\$5,247.69	\$5,247.69	\$3,000.00	\$3,000.00	\$1,000.00	\$1,000.00	\$ 3,600.00	\$ 3,600.00	\$ 15,278.52	\$15,278.52	\$2,000.00	\$2,000.00
53c	Erosion Control, Silt Fence	110	FT	\$2.69	\$295.90	\$4.00	\$440.00	\$3.50	\$385.00	\$ 5.00	\$ 550.00	\$ 98.18	\$10,799.80	\$2.00	\$220.00
53b	Erosion Control, Filter Bag	3	EA	\$202.92	\$608.76	\$200.00	\$600.00	\$150.00	\$450.00	\$ 200.00	\$ 600.00	\$ 307.50	\$922.50	\$50.00	\$150.00
54	Site Restoration	1	LS	\$14,056.13	\$14,056.13	\$18,500.00	\$18,500.00	\$19,564.00	\$19,564.00	\$ 26,700.00	\$ 26,700.00	\$ 12,203.52	\$12,203.52	\$7,500.00	\$7,500.00
<b>Total:</b>				\$442,599.04	<b>Total:</b>	\$517,045.00	<b>Total:</b>	\$561,359.40	<b>Total:</b>	\$ 629,605.00	<b>Total:</b>	\$631,165.04	<b>Total:</b>	\$779,720.00	

Indicates corrected figure



**To: Board Members**

**From: Dan Opsommer, Deputy Township Manager  
Director of Public Works and Engineering**

**Date: November 18, 2025**

**Re: 2026 Local Road Program Preventative Maintenance Contract Award**

---

Township staff recently requested proposals for the following major bid item(s), for approximately 20.50 miles of local roads, 5.39 miles of off-road trails and nine (9) parks and facilities:

- Approximately 10.75 Centerline Miles of HMA Crack Treatment, With Previous Crack Treatment
- Approximately 2.90 Centerline Miles of HMA Crack Treatment, Without Previous Crack Treatment
- Approximately 6.85 Centerline Miles of HMA Crack Treatment, 2023 Overlay Roads
- Approximately 0.49 Centerline Miles of HMA Crack Treatment, Towner Road Park Trails
- Approximately 4.90 Centerline Miles of HMA Crack Treatment, Pathways and Off-Road Trails
- Approximately 23,700 Syd of HMA Crack Treatment, Park Facilities
- Approximately 30,050 Syd of HMA Crack Treatment, General Fund Facilities

The lone bid received for this contract was in the amount of \$172,717.50 from Wolverine Sealcoating, LLC. This contractor has successfully completed very similar contracts with the Township. It is not unusual for the Township to only receive 1-2 bids for contracts such as this as there are very few contractors who specialize in crack fill and have the capacity to complete a contract of this size. One of the Township staff and one of the Township's engineering firms reviewed the bid pricing with similar contracts and the bid is competitive. Township staff recommend awarding this contract in the amount of \$172,717.50 to the low bidder, Wolverine Sealcoating, LLC.

The Board approved funding for this project in the 2026 Township Budget. This project shall be funded out of account #: 204-000.000-974.000. The contract calls for the contractor to complete construction by August 1, 2026.

We are happy to answer any questions the Board may have.

**The following motion has been prepared for the Board's consideration:**

**MOVE TO APPROVE THE CONTRACT WITH WOLVERINE SEALCOATING, LLC IN THE AMOUNT OF \$172,717.50 AND DIRECT THE TOWNSHIP SUPERVISOR TO EXECUTE THE AGREEMENT.**

**Memo to Township Board**

**November 18, 2025**

**Re: 2026 Local Road Program Preventative Maintenance Contract Award**

**Attachments:**

1. 2026 Preventative Maintenance Contract Bid Tab
2. [2026 Preventative Maintenance Contract Book](#)

## 2025 Preventative Maintenance Contract

**Wolverine Sealcoating LLC  
3235 County Farm Road  
Jackson, MI 49201**

ITEM	DESCRIPTION	QTY		PRICE	AMOUNT
1500001	Mobilization, Max \$30,000	1	LSum	\$10,000.00	\$10,000.00
5027003	<i>HMA Crack Treatment:</i>				
	With Previous Crack Treatment	10.75	CL Mi	\$6,750.00	\$72,562.50
	Without Previous Crack Treatment	2.9	CL Mi	\$6,750.00	\$19,575.00
	2023 Overlay Roads (Not Previously crack filled. These roads were overlayed with 1.5" of 36A HMA in 2023)	6.85	CL Mi	\$6,000.00	\$41,100.00
	Towner Road Park Trails (Green trails on page A-2)	1	LSum	\$900.00	\$900.00
	Pathways and Off-Road Trails (Red trails on page A-2)	1	LSum	\$10,780.00	\$10,780.00
	Park Facilities (refer to the green stars on page A-2)	1	LSum	\$4,100.00	\$4,100.00
	General Fund Facilities (refer to the red stars on page A-2)	1	LSum	\$13,200.00	\$13,200.00
8127051	Traffic Control	1	LSum	\$500.00	\$500.00
				<b>TOTAL:</b>	<b>\$172,717.50</b>

Letting Date: 11/06/2025, 10:30a

Correction from Proposal sheet:





**To: Board Members**

**From: Dan Opsommer, Deputy Township Manager  
Director of Public Works and Engineering**

**Date: November 21, 2025**

**Re: 2025 Grounds Maintenance Contract Award**

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Township staff recently requested proposals for mowing the Glendale Cemetery. While this contract contains bided pricing for mowing other Township facilities, we currently do not anticipate having to use these other bided prices contained in the contract. We secure these prices in the event that we have staffing challenges that might require us to use these other bid prices.

The low bid for mowing the Glendale Cemetery was from Lansing Real Green Lawn Care Inc. in the amount of \$1,150 per mow. We typically have about 26 mows per year, so the contract will cost about \$29,900 per year. We currently pay \$1,293.45 per mow, or about \$33,630 per year. Therefore, we will save approximately \$3,730 per year.

Lansing Real Green Lawn Care Inc. performs mowing and grounds work for the city of Lansing and their references at the city speak highly of their responsiveness and quality of service. Township staff recommend awarding this contract to the low bidder, Lansing Real Green Lawn Care Inc.

The Board approved funding for this contract in the 2026 Township Budget. This project shall be funded out of account #: 101-170.567-820.000. The contract contains an option to renew the contract for an additional four years (i.e. five years in total) and each bidder was required to bid the percentage increases for each renewal year. These bided percentage increases are also contained in the attached bid tab. The lower bidder submitted a bid for 0% increases over the four optional renewal years.

We are happy to answer any questions the Board may have.

**The following motion has been prepared for the Board's consideration:**

**MOVE TO APPROVE THE CONTRACT WITH LANSING REAL GREEN LAWN CARE INC.  
AND DIRECT THE TOWNSHIP SUPERVISOR TO EXECUTE THE CONTRACT.**

**Attachments:**

1. 2026 Preventative Maintenance Contract Bid Tab
2. [2026 Preventative Maintenance Contract Book](#)

**2025 Grounds Maintenance Contract Bid Tab**

Bid Item	Unit	Lawn Stars Group, LLC	R&D Landscape	Cherry Oak Landscaping	Lansing Real Green Lawn Care Inc	Professional Grounds Services
		2150 Tomlinson Rd Mason, MI 48854	194 S Michigan Rd Eaton Rapids, MI 48827	2299 Grand River Ave Williamston, MI 48895	7845 E Vermontville Hwy Dimondale, MI 48821	15201 E 11 Mile Rd Roseville, MI 48066
Municipal & Police Buildings	Per Mow	\$449.00	No Bid	\$1,000.00	\$390.00	No Bid
Central Fire Station	Per Mow	\$90.00	No Bid	\$400.00	\$80.00	No Bid
Okemos Library	Per Mow	\$78.00	No Bid	\$350.00	\$70.00	No Bid
South Fire Station	Per Mow	\$63.00	No Bid	\$200.00	\$57.00	No Bid
Service Center	Per Mow	\$300.00	No Bid	\$450.00	\$198.00	No Bid
North Fire Station	Per Mow	\$74.00	No Bid	\$200.00	\$62.00	No Bid
Haslett Rental & Storage	Per Mow	\$63.00	No Bid	\$100.00	\$57.00	No Bid
Hickory Island Easement	Per Mow	\$40.00	No Bid	\$100.00	\$35.00	No Bid
Mack & Reynolds Easement	Per Mow	\$52.00	No Bid	\$100.00	\$45.00	No Bid
Glendale Cemetery	Per Mow	\$1,332.00	\$1,520.93	\$2,800.00	\$1,150.00	\$1,960.00
Riverside Cemetery	Per Mow	\$104.00	No Bid	\$750.00	\$89.00	No Bid
<b>All Facilities</b>	<b>Per Mow</b>	<b>\$2,645.00</b>	<b>No Bid</b>	<b>\$6,450.00</b>	<b>\$2,233.00</b>	<b>No Bid</b>
2027 Renewal Percent Increase	Percentage	3.0%	3.0%	4.0%	0.0%	3.0%
2028 Renewal Percent Increase	Percentage	3.0%	3.0%	4.0%	0.0%	3.0%
2029 Renewal Percent Increase	Percentage	3.0%	3.0%	4.0%	0.0%	2.0%
2030 Renewal Percent Increase	Percentage	3.0%	3.0%	4.0%	0.0%	2.0%
Mulch Landscape Beds	Per Hour	\$68.00	No Bid	\$100.00	\$68.00	N/A
Landscape Mulch (Material)	Per Cyd	\$25.00-\$45.00	No Bid	\$35.00	\$25.00-\$45.00	\$85.00
Winterize Irrigation	Per Hour	\$95.00	No Bid	\$100.00	\$90.00	\$25.00
Lawn Restoration (Mobilization)	Per Day	\$260.00	No Bid	\$1,000.00	\$265.00	\$2,500.00
Lawn Restoration (Topsoil, Hydroseed & Loose Mulch)	Per Syd	\$56.00	No Bid	\$120.00	\$56.00	\$13.50
Lawn Restoration (Topsoil, Seed & Mulch Blankets)	Per Syd	\$69.00	No Bid	\$200.00	\$70.00	\$9.25
Snow Plowing Lots and Shoveling Walks	Per Hour	\$148.00-\$195.00	No Bid	\$150.00	\$70.00	\$175.00
Salting of Lots and Walks	Per Hour	\$220/ton	No Bid	\$150.00	\$70.00	\$135.00
Certified for Applying Pesticides and Insecticides to Grounds?	N/A	Yes	Yes	Did not respond	No	Yes



**To: Board Members**

**From: Dan Opsommer, Deputy Township Manager  
Director of Public Works and Engineering**

**Younes Ishraidi, P.E., Township Engineer**

**Date: November 18, 2025**

**Re: 2025 Order to Maintain Sidewalk Resolution #4 - Set Public Hearing for  
January 20, 2026**

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Since 1999, the Township has developed a proactive approach to minimize residential sidewalk hazards and potential liability to the Township by adopting a sidewalk replacement program. In accordance with ordinance Section 58-32b, and Section 58-32d, the Township Board may order the repair of defective sidewalks. If the property owner fails to repair the sidewalk within 20 days after written notification, the Township may repair or replace the sidewalk and bill the cost of construction to the property owner.

The Township Board approved the 2025 Order to Maintain Sidewalks Special Assessment District #21 - Resolution #3 on June 17, 2025, which approved the improvement to repair the sidewalks in the following areas:

Bird Strawberry Farm Estates, Bird Strawberry Farm Estates #2, Bird Strawberry Farm Estates #3, Chippewa Woods, Country Green, Country Place, Country Place #2, Country Place #3, Georgetown, Georgetown #2, Trails at Lake Lansing #3, Wood Valley #3, Wilkshire, Wilkshire #1, Wilkshire #2, Wood Valley, Wood Valley #2, Wood Valley #3, Wood Valley #4, Woodside Estates, Woodside Estates #2, Woodside Estates #4, Woodside Estates #5, and Woodside Estates #6, which are located in Sections 2, 11, 12, and 14 of Meridian Township, Ingham County, Michigan.

Notices were sent to each property owner with a defective sidewalk. Work then began after the 20 day period.

All work has been completed, and the assessments have been calculated for each impacted parcel. The assessment for each property varies with the amount of sidewalk that was repaired.

The attached 2025 Order to Maintain Sidewalk SAD #21 - Resolution #4, files the proposed final special assessment roll with the Township Clerk and sets the date for a public hearing on Tuesday, January 20, 2026. The purpose of the public hearing is to hear comments in favor and/or objections to the proposed 2025 Order to Maintain Sidewalk Special Assessment District #21 Special Assessment Roll.

**Proposed Motion:**

**Memo to Township Board**

**October 28, 2025**

**Re: 2025 Order to Maintain Sidewalk Resolution #4 - Set Public Hearing for January 20, 2026**

**MOVE TO APPROVE THE 2025 ORDER TO MAINTAIN SIDEWALK SPECIAL ASSESSMENT DISTRICT #21 RESOLUTION #4, WHICH FILES THE PROPOSED SPECIAL ASSESSMENT ROLL WITH THE OFFICE OF THE TOWNSHIP CLERK AND SETS THE DATE FOR A PUBLIC HEARING ON TUESDAY, JANUARY 20, 2026.**

**Attachments:**

1. Resolution #4 - Set Public Hearing for January 20, 2026
2. Notice of Public Hearing
3. Proposed Special Assessment Roll Legal Description
4. Certificate of Supervisor
5. Affidavit of Mailing
6. 2025 Order to Maintain Brochure
7. 2025 Order to Maintain Sidewalk SAD #21 Maps
8. Proposed Special Assessment Roll

**2025 ORDER TO MAINTAIN SIDEWALK  
SPECIAL ASSESSMENT DISTRICT #21**

**RESOLUTION NO. 4**

At a regular meeting of the Township Board of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Township Municipal Building, 5151 Marsh Road, Okemos, Michigan 48864-1198, (517) 853-4000, on Tuesday, December 2, 2025, at 6:00 p.m.

**PRESENT:** \_\_\_\_\_  
\_\_\_\_\_

**ABSENT:** \_\_\_\_\_

The following resolution was offered by \_\_\_\_\_ and supported by \_\_\_\_\_.

**WHEREAS**, by resolution adopted June 17, 2025, the Township Board of the Charter Township of Meridian, determined to construct the more particularly hereinafter described public improvements to repair sidewalk and assess the cost thereof to the property deemed benefited by said improvements, all in accordance with Act 188, Public Acts of Michigan, 1954, as amended; and

**WHEREAS**, the Supervisor has prepared and reported to the Township Board a special assessment roll assessing the cost of said improvements to the property benefited thereby with the proper certificate attached thereto.

**NOW, THEREFORE, BE IT RESOLVED BY THE TOWNSHIP BOARD OF THE CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN, as follows:**

1. Said special assessment roll shall be filed with the Office of the Township Clerk and shall be available for public examination during regular working hours on regular working days.
2. The Township Board shall meet at 6:00 p.m. on Tuesday, January 20, 2026, at the Meridian Township Municipal Building, 5151 Marsh Road, Okemos, Michigan, in the Charter Township of Meridian, for the purpose of reviewing and hearing objections to the special assessment roll.
3. The Township Clerk shall cause notice of such hearing and the filing of the assessment roll to be published twice in a newspaper of general circulation in the Township, prior to the date of the hearing. The first publication shall be at least ten (10) days before the hearing pursuant to Act 162, Public Acts of 1962. The Clerk shall also cause notice of such hearing to be mailed by first class mail to all property owners in the special assessment district shown on the current assessment rolls of the Township, at least ten (10) full days before the date of said hearing. Said notice as published and mailed shall be in substantially the following form: (SEE ATTACHED)

**CHARTER TOWNSHIP OF MERIDIAN**

**2025 ORDER TO MAINTAIN SIDEWALK  
SPECIAL ASSESSMENT DISTRICT #21**

**NOTICE OF PUBLIC HEARING**

**TO THE RECORD OWNERS OF, OR PARTIES IN INTEREST IN, THE FOLLOWING PROPERTY  
CONSTITUTING THE PROPOSED SPECIAL ASSESSMENT DISTRICT:**

**(SEE OTHER SIDE FOR LEGAL DESCRIPTION)**

**PLEASE TAKE NOTICE** that a special assessment roll for the 2025 Order to Maintain Sidewalk Special Assessment District #21 (maintain by removal and replacement of sidewalk in various locations in the Township) has been prepared and is on file in the Office of the Township Clerk for public examination.

Said special assessment roll has been prepared for the purpose of assessing the cost of the above described public improvements to the property benefited therefrom. All questions and/or concerns should be directed to Meridian Township Department of Public Works & Engineering at (517) 853-4440.

**TAKE FURTHER NOTICE** that the Township Board will meet on **Tuesday, January 20, 2026, at 6:00 p.m.** at the Meridian Township Municipal Building, 5151 Marsh Road, Okemos, MI 48864-1198, for the purpose of reviewing said special assessment roll and hearing objections thereto.

An owner or party in interest, or his or her agent, may appear in person at the hearing to protest the special assessment, or shall be permitted to file his or her appearance or protest by letter with the Township Clerk before the close of this hearing, and his or her personal appearance is not required. The owner or any person having an interest in the real property who protests in person or in writing at the hearing may file a written appeal of the special assessment with the Michigan Tax Tribunal within 30 days after the confirmation of the special assessment roll.

Your special assessment is proposed to be \$ \_\_\_\_\_.

Date: \_\_\_\_\_

\_\_\_\_\_  
Angela Demas, Township Clerk  
Charter Township of Meridian

**CHARTER TOWNSHIP OF MERIDIAN  
2025 ORDER TO MAINTAIN SIDEWALK  
SPECIAL ASSESSMENT DISTRICT #21**

**LEGAL DESCRIPTION**

**Bird Strawberry Farm Estates:** Lot 33

**Bird Strawberry Farm Estates #2:** Lot 68

**Bird Strawberry Farm Estates #3:** Lots 79, 80, 82, 83, 87, 92, 93, 99, 103, 104, 109, 111,

**690 Piper Road:** COM @ THE N 1/4 COR SEC 13 -S 89 DEG 50'39" W ON N SEC LN 1319.62 FT -S 0 DEG 17'33" W ALONG THE W LN OF E 1/2 OF NW 1/4 754.61 FT TO C/L PIPER RD -S 73 DEG 44'07" E ON C/L 390.55 FT TO THE POB -N 16 DEG 15'53" E 233 FT -S 73 DEG 44'07" E 200 FT -S 16 DEG 15'53" W 233 FT -N 73 DEG 44'07" W ON C/L RD 200 FT TO POB, SEC 13 T4NR1W 1.07 AC M/L

**Chippewa Woods:** Lots 4, 7, 27, 28,

**Chippewa Woods #2:** Lots 37, 57, LOT 39, & THE SW'LY 10 FT. OF LOT 38, CHIPPEWA WOODS NO. 2 SUB. SEC. 11 T4NR1W

**Country Green:** Lot 14

**Country Place:** Lots 6, 7, 14

**Country Place #2:** Lots 40, 47

**Country Place #3:** Lot 72, LOT 54 COUNTRY PLACE SUBDIVISION #3, ALSO A PART OF LOT 53 COUNTRY PLACE SUB #2 DESC AS BEG @ THE MOST NE'LY COR LOT 53 -SW'LY ON LOT LN 7 FT -NW'LY TO THE MOST N'LY LN OF LOT 53 @ A PT 50 FT NW'LY OF POB -SE'LY ON N'LY LOT LN 50 FT TO POB SEC 12 T4NR1W, LOT 65 COUNTRY PLACE SUBDIVISION #3 EXC- BEG @ THE NE COR LOT 65 -S 25 DEG 42'10"W, 183.13 FT TO SE COR LOT 65 -ON CURVE LEFT 6.33 FT HAVING A 503.23 FT RADIUS & A CHORD OF 6.33 FT BRG N 68 DEG 54'09"W, -N 25 DEG 42'10"E, 180.63 FT TO N LN LOT 65 -S 89 DEG 47'31"E, 6.99 FT TO POB SEC 12 T4NR1W

**Georgetown:** LANGDON PARK, GEORGETOWN, MERIDIAN TOWNSHIP, SEC 14 T4NR1W. BRENTWOOD PARK, GEORGETOWN, MERIDIAN TOWNSHIP, SEC 14 T4NR1W.

**Georgetown #2:** (M 14-6) COPLEY PARK (PRIVATE) GEORGETOWN NO 2 SEC 14 T4N R1W

**Trails at Lake Lansing #3:** Lots 91, 92, 110, LOT 105 & W 1.0 FT OF THE S 116.19 FT OF LOT 106 TRAILS AT LAKE LANSING #3

**Wood Valley #3:** Lot 132

**Wilkshire:** Lots 1 and 2.

**Wilkshire #1:** Lots 19, 21, 26, 27, 31, 32

**Wilkshire #2:** Lots 52, 54 and 58

**Wood Valley:** Lots 33, 41, 61, 74, 75, LOT 22 WOOD VALLEY SUB ALSO A PCL DESC AS COM @ THE N 1/4 COR SEC 12 -N 89 DEG 45'27"W, ON N SEC LN 407.61 FT TO C/L GREEN RD S 33 DEG 02'05"W, ON C/L 812.69 FT TO THE POB -S 90 DEG E, 224.84 FT -S32 DEG 45'37"W, 36.79 FT TO NE COR SAID LOT 22 -N 89 DEG 49'59"W, 224.63 FT TO C/L GREEN RD -N 33 DEG 02'05"E, ON C/L 36.13 FT TO THE POB SEC 12 T4NR1W

**Wood Valley #2:** Lots 85, 89, 104,

**Wood Valley #3:** Lots 119, 120, 122, 132, 134, 138, 141,

**Wood Valley #4:** Lot 164

**Woodside Estates:** Lots 3, 5, 8, 15

**Woodside Estates #2:** Lots 16, 19, 21, 25, 28, 29, 30

**Woodside Estates #4:** Lots 55, 59, 60, 62, 65

**Woodside Estates #5:** Lots 73, LOT 81 WOODSIDE ESTATES NO 5 ALSO TEAKWOOD COMMONS IN WOODSIDE ESTATES NO. 5 SEC 11 & 14 T4N, R1W

**Woodside Estates #6:** Lots 90, 91

**2025 Order to Maintain Sidewalk  
Special Assessment District #21  
Resolution No. 4  
Page 2**

4. All resolutions and parts of resolutions insofar as they conflict with the provisions of this resolution are hereby rescinded.

**ADOPTED:**

**YEAS:** \_\_\_\_\_

\_\_\_\_\_

**NAYS:** \_\_\_\_\_

Resolution declared adopted.

**STATE OF MICHIGAN )**

**) ss.**

**COUNTY OF INGHAM )**

I, the undersigned, the duly qualified and acting Clerk of the Charter Township of Meridian, Ingham County, **DO HEREBY CERTIFY**, that the foregoing is a true and complete copy of proceedings taken by the Township Board at a regular meeting held on Tuesday, December 2, 2024.

\_\_\_\_\_  
Angela Demas, Township Clerk  
Charter Township of Meridian

**2025 ORDER TO MAINTAIN SIDEWALK  
SPECIAL ASSESSMENT DISTRICT NO. 21**

**-- CERTIFICATE OF SUPERVISOR --**

STATE OF MICHIGAN     )  
  ) ss.  
COUNTY OF INGHAM     )

I, Scott Hendrickson, Supervisor of the Charter Township of Meridian, Ingham County, Michigan, hereby certify that the attached 2025 Order to Maintain Sidewalk Special Assessment District #21 Special Assessment Roll was made by me pursuant to the resolution of the Township Board of said Charter Township of Meridian heretofore adopted on December 2, 2025, and that in making such assessment roll, to the best of my judgment, I conformed in all respects to the directions contained in such resolution and the Statutes of the State of Michigan.

\_\_\_\_\_  
Scott Hendrickson, Supervisor

DATED:

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 202\_\_.

\_\_\_\_\_  
Notary Public, Ingham County, MI  
My Commission expires: \_\_\_\_\_  
Acting in Ingham County

**AFFIDAVIT OF MAILING**

STATE OF MICHIGAN )

) ss.

COUNTY OF INGHAM )

I, the undersigned, the duly qualified and acting Clerk of the Charter Township of Michigan, Ingham County, Michigan, depose and say that I personally prepared for mailing and mailed by first class mail, on \_\_\_\_\_, a notice of hearing, a true copy of which is attached hereto and made a part hereof, to each property owner of or party in interest in property located within the special assessment district described in the attached notice, whose name appears upon the last local tax assessment records for ad valorem tax purposes, which has been reviewed by the local board of review as supplemented by any subsequent changes in the names or the addresses of such owners or parties listed thereon; that I personally checked each envelope against the list of such owners or parties in interest shown by said tax assessment roll and that each envelope was properly addressed to each owner or party in interest as shown on said tax assessment roll; that each such envelope had contained therein the appropriate notice of the aforesaid hearing, was securely sealed, with postage fully prepaid thereon for first-class delivery, and was properly addressed; that I personally placed all of said envelopes in a United States Post Office receptacle in Okemos, Michigan, on said date; that said notice referred to a hearing scheduled for **January 20, 2026**, before the Board of the Charter Township of Meridian.

IN WITNESS WHEREOF, I have hereunto affixed my official signature this \_\_\_\_\_  
day of \_\_\_\_\_, 202\_\_.

\_\_\_\_\_  
Angela Demas, Township Clerk  
Charter Township of Meridian

\_\_\_\_\_  
Notary Public, Ingham County, MI  
My Commission expires: \_\_\_\_\_  
Acting in Ingham County



## 2025 ORDER TO MAINTAIN SIDEWALK SPECIAL ASSESSMENT DISTRICT #21

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### DEPARTMENT OF PUBLIC WORKS ORDER-TO-MAINTAIN SIDEWALK PROGRAM

#### **Why has my sidewalk been chosen for replacement?**

Township inspectors found certain sections of the sidewalk abutting your property need to be replaced to make the sidewalk safer. This inspection is part of a yearly program created to replace defective sidewalk. Sidewalk maintenance is important because it may save a pedestrian from injury and you from an expensive lawsuit.

#### **Why is replacement necessary?**

Removal and replacement is necessary to provide reasonably safe and accessible sidewalks.

#### **How can I replace the sidewalk?**

You have three options:

1. Take no action and allow the Township's contractor to replace the sidewalk as part of the sidewalk maintenance program.
2. Hire your own contractor.
3. Perform the work yourself.

If you elect to hire a contractor or do the work yourself, you must obtain a permit from the Department of Public Works. Application for a permit is free of charge for both contractors and homeowners. All work must be completed in accordance with the standards and specifications of Meridian Township. Copies of the standards and specifications are available from the Department of Public Works. An inspection is required when forms are ready and at pour.

If you do nothing, the Township's contractor will be in your area and will replace the sidewalk at your expense, and you will be billed as explained in this brochure. You do not have to obtain a permit if the work is done by the Township's contractor.

#### **Can I make temporary repairs instead of replacement or leveling?**

No, filling vertical or horizontal gaps or displacements by placing mortar or asphalt is not considered a permanent repair.

#### **How much will replacing the defective sidewalk cost?**

Your exact cost will be determined **after** completion of the work; however your estimated cost is indicated on the enclosed "Notice of Public Hearing", and is on file with the Township Clerk. You may contact the Department of Public Works for a detailed breakdown of your costs and the location of the sidewalk to be replaced.

You are responsible for 100% of the sidewalk across your frontage. If you own a residential corner lot, the Township will pay for 40% of the cost of the sidewalk replacement along the street to which the house is not addressed. The Township will pay 100% for ramp replacement at the street intersection.



## 2025 ORDER TO MAINTAIN SIDEWALK SPECIAL ASSESSMENT DISTRICT #21

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### **How will I be billed?**

You will receive a bill, called a special assessment, in **June 2026, with a due date of July 1, 2026**. The assessment may be paid in full with one payment (in 2026), or over 5 years at 5% interest per year. *Please do not make any payments until after you receive this bill.*

The Township sidewalk contractor will complete the work over the Summer/Fall of 2025. Once the sidewalk repairs have been completed, a Township inspector will measure the exact dimensions of the replaced sidewalk. Your special assessment will be based on these measurements.

(Please note you will receive a second Township Board "Notice of Hearing" in early 2026 after the contractor has completed all of the sidewalk replacements. It will state the exact cost of your sidewalk repairs. The purpose of the second hearing is for the public to comment on the proposed assessments.)

### **What about damage caused by trees or utility structures?**

Where tree roots have displaced the sidewalk they will be removed prior to new sidewalk installation. A healthy tree should survive this process.

Property owners are responsible for replacement of all sidewalk damaged by tree roots whether the tree is on public or private land. The Township will pay for 100% of the cost for sidewalk directly damaged by Township manhole covers or water valves.

### **Will the contractor restore my lawn after the work?**

Usually only a few inches of grass adjacent to the replaced sidewalk is uprooted. This strip will be filled with topsoil, seeded, and mulched after the concrete forms are removed.

### **How do I protect my sprinkler system?**

If you have a sprinkler system or private underground wires (i.e. invisible fence) they must be marked prior to construction. Contact the person that installed your lines for a detailed layout.

### **May I have private work done by the Township's contractor?**

You may have additional work (driveways, approaches, patios, etc.) performed under a private agreement between you and the Township contractor. You also must be sure that you are not paying the Township contractor directly for work to be done under their contract with the Township.

The Township will not become involved in disputes between you and the contractor for private work. You and the contractor must negotiate the price, timing, restoration, and payment terms for all private work.

### **What about tree branches and other vegetation that obstruct the sidewalk?**

The property owner is responsible for removal of all obstructions; including vegetation such as tree limbs, branches, shrubs, and bushes and other objects; that interfere with the safe use of the sidewalk. The area to be kept clear is one (1) foot from the edges of the sidewalk and eight (8) feet above the sidewalk.

### **If I still have questions, whom should I contact?**

Department of Public Works at (517) 853-4440 or [DPW@MERIDIAN.MI.US](mailto:DPW@MERIDIAN.MI.US).



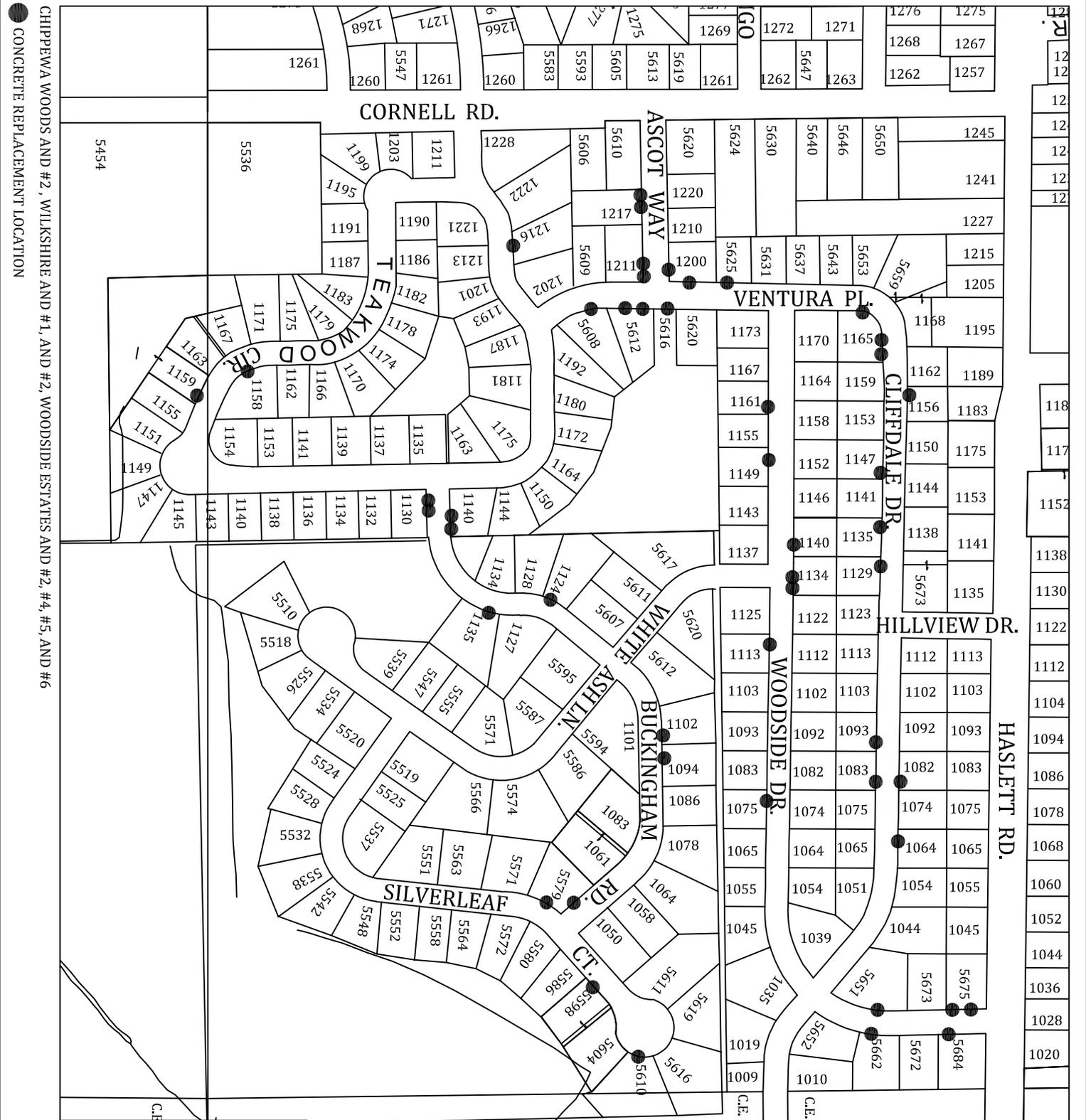


BIRD STRAWBERRY FARM ESTATES AND #2 AND #3

● CONCRETE REPLACEMENT LOCATION



<b>Meridian Charter Township</b> Ingham County, Michigan <b>ENGINEERING DEPARTMENT</b>			
Bird Strawberry Farm Estates Sidewalk Repair Locations			
DRAWN BY:		CHECKED BY:	
REVISIONS:			
DATE	BY:	COMMENTS:	
4.30.25	CH	Map for Res #1 & 2.	
SCALE:	PAGE:		
NTS			



CHIPPewa WOODS AND #2, WILKSHIRE AND #1, AND #2, WOODSIDE ESTATES AND #2, #4, #5, AND #6  
 CONCRETE REPLACEMENT LOCATION

Meridian Charter Township  
 Ingham County, Michigan  
**ENGINEERING DEPARTMENT**

Chippewa Woods, Wilkshire, and  
 Woodside Estates Sidewalk  
 Repair Locations

DRAWN BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_

REVISIONS:

DATE	BY	COMMENTS
4/30/25	CH	Map for Res #1 & 2

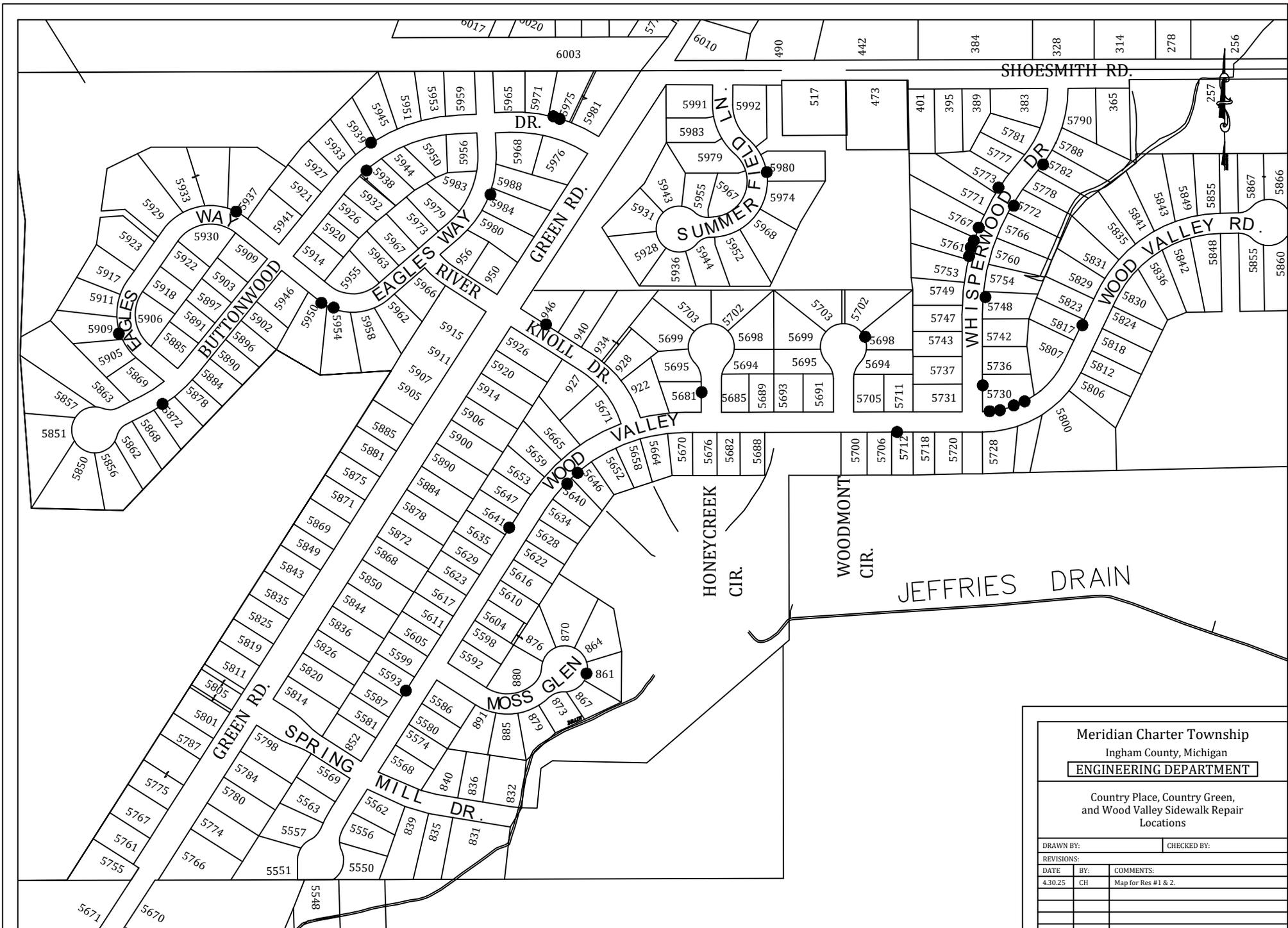
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NTS

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NTS



COUNTRY PLACE AND #2 AND #3, COUNTRY GREEN, WOOD VALLEY AND #2, #3, AND #4

● CONCRETE REPLACEMENT LOCATION

<b>Meridian Charter Township</b> Ingham County, Michigan <b>ENGINEERING DEPARTMENT</b>			
Country Place, Country Green, and Wood Valley Sidewalk Repair Locations			
DRAWN BY:		CHECKED BY:	
REVISIONS:			
DATE:	BY:	COMMENTS:	
4.30.25	CH	Map for Res #1 & 2.	
SCALE:	PAGE:		
NTS			



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		5250

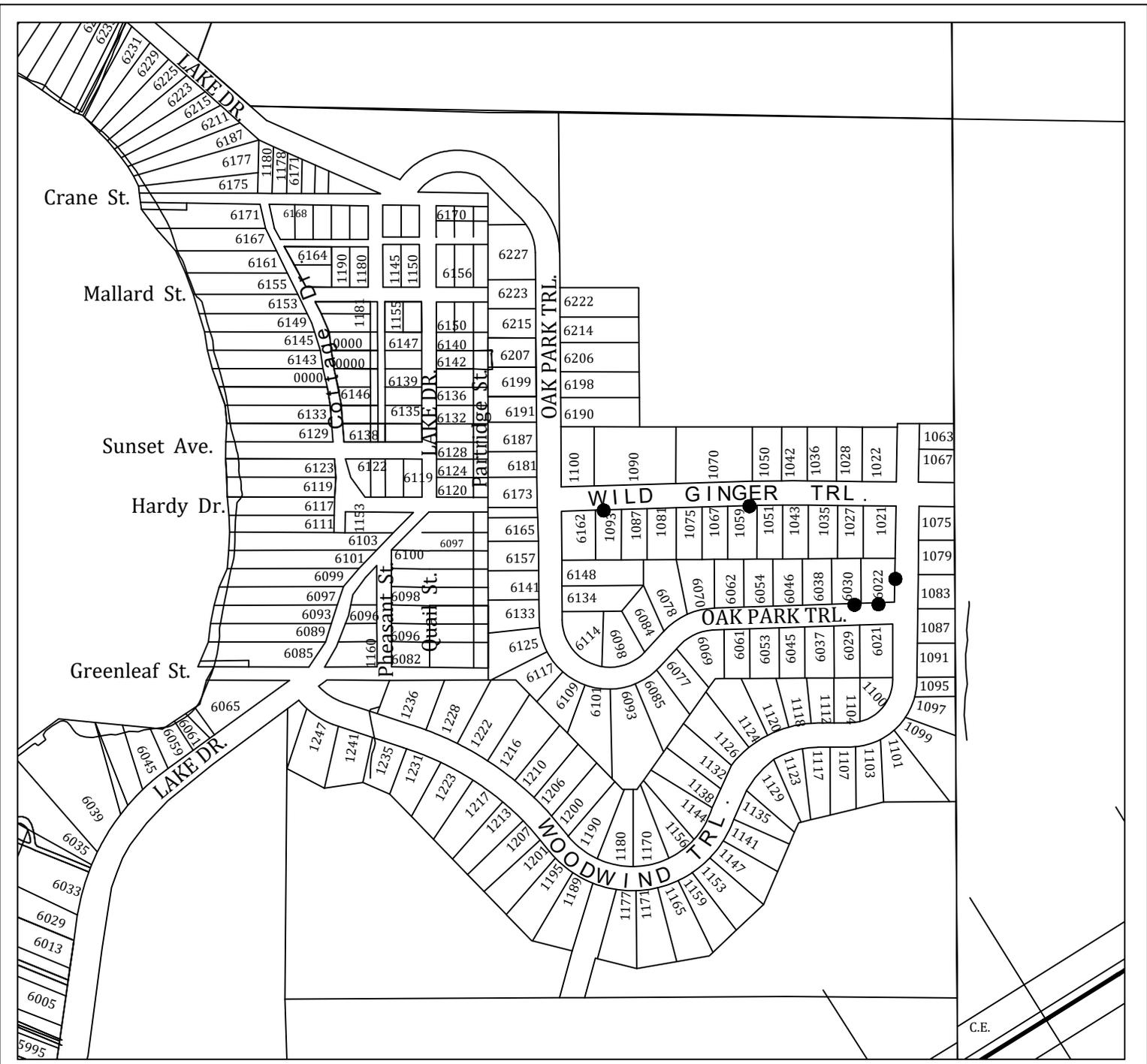
5215	5214	51
		5160
		5140
		5120
		5080
		5004

**Meridian Charter Township**  
 Ingham County, Michigan  
**ENGINEERING DEPARTMENT**

Georgetown Sidewalk Repair Locations

DRAWN BY:		CHECKED BY:	
REVISIONS:			
DATE	BY:	COMMENTS:	
4.30.25	CH	Map for Res #1 & 2.	
SCALE:	PAGE:		
NTS			

GEORGETOWN  
 ● CONCRETE REPLACEMENT LOCATION



C.E.

TRAILS AT LAKE LANSING #3

● CONCRETE REPLACEMENT LOCATION



<b>Meridian Charter Township</b> Ingham County, Michigan <b>ENGINEERING DEPARTMENT</b>			
Trails at Lake Lansing Sidewalk Repair Locations			
DRAWN BY:		CHECKED BY:	
REVISIONS:			
DATE	BY:	COMMENTS:	
4.30.22	CH	Map for Res #1 & 2.	
SCALE:		PAGE:	
NTS			

Repair Address				Mailing Address						Repair Quantity				Property Owner Cost
Parcel #	Subdivision	Lot No.	Repair Address	Primary Name	Street Address	City	ST	Zip	4"	6"	4"	6"		
1	33-02-02-12-379-005	Bird Strawberry Farm Estates	33	5586 Canoga Lane	FORTIER, RYAN P & JAMIE L	5586	Haslett	Canoga Lane	48840	25				\$ 285.42
2	33-02-02-12-383-004	Bird Strawberry Farm Estates #2	68	5592 Earliglow Lane	ROST, CHARLES & ALBURO, MELISSA	5592	Haslett	Earliglow Lane	48840	25				\$ 285.42
3	33-02-02-13-126-002	Bird Strawberry Farm Estates #3	80	5504 Earliglow Lane	DICKMANN, DONALD I & MC KEVITT, KATHLEEN V	5504	Haslett	Earliglow Lane	48840	25				\$ 285.42
4	33-02-02-13-126-004	Bird Strawberry Farm Estates #3	82	5488 Earliglow Lane	BROWN, RUTH NICOLE & WORKENHE, GETU T	5488	Haslett	Earliglow Lane	48840	25				\$ 285.42
5	33-02-02-13-126-005	Bird Strawberry Farm Estates #3	83	5480 Earliglow Lane	SCHAIBLY, JIM & GAILE	5480	Haslett	Earliglow Lane	48840	25				\$ 285.42
6	33-02-02-13-127-002	Bird Strawberry Farm Estates #3	87	690 Emily Lane	KELLY, DOUG & KIRSTEN	690	Haslett	Emily Lane	48840	25				\$ 285.42
7	33-02-02-13-127-007	Bird Strawberry Farm Estates #3	92	654 Emily Lane	IDE, NATHAN JOHN & AMY LYN TRUSTEES	654	Haslett	Emily Lane	48840	25				\$ 285.42
8	33-02-02-13-127-009	Bird Strawberry Farm Estates #3	93	648 Emily Lane	HANSEN, JACQUELYN & KEVIN	648	Haslett	Emily Lane	48840	25				\$ 285.42
9	33-02-02-13-129-012	Bird Strawberry Farm Estates #3	111	5485 Earliglow Lane	SUNDEEN, STEVEN & KELLY	5485	Haslett	Earliglow Lane	48840	50				\$ 570.85
10	33-02-02-13-129-010	Bird Strawberry Farm Estates #3	109	697 Emily Lane	LIU, DI & YAN, YING	697	Haslett	Emily Lane	48840	50				\$ 570.85
11	33-02-02-13-129-005	Bird Strawberry Farm Estates #3	104	629 Emily Lane	SHAH, SANJEEV K & TOGANI, NEETU	629	Haslett	Emily Lane	48840	15				\$ 171.25
12	33-02-02-13-129-004	Bird Strawberry Farm Estates #3	103	623 Emily Lane	SHAUH, RICHARD	623	Haslett	Emily Lane	48840	50				\$ 570.85
13	33-02-02-13-128-003	Bird Strawberry Farm Estates #3	99	602 Emily Lane	PARCELLS, LISA D & FREDERICK R	602	Haslett	Emily Lane	48840			50		\$ 342.51
14	33-02-02-13-126-001	Bird Strawberry Farm Estates #3	79	5510 Earliglow Lane	RIDDLE, MARGARET & JOHN	5510	Haslett	Earliglow Lane	48840	37.5				\$ 428.14
15	33-02-02-11-481-004	Chippewa Woods	28	1094 Buckingham Road	ROSS, LAURA M & TODD D	1094	Haslett	Buckingham Road	48840	50				\$ 570.85
16	33-02-02-11-481-003	Chippewa Woods	27	1102 Buckingham Road	TULEY, JEFFREY T & JILL E	1102	Haslett	Buckingham Road	48840	25				\$ 285.42
17	33-02-02-11-477-004	Chippewa Woods	4	1124 Buckingham Road	BUSCH, EDWARD G & WHITE, LEIGH ANNE	1124	Haslett	Buckingham Road	48840	25				\$ 285.42
18	33-02-02-11-478-001	Chippewa Woods	7	1135 Buckingham Road	FOSTER, RICHARD	1135	Haslett	Buckingham Road	48840	25				\$ 285.42
19	33-02-02-11-480-006	Chippewa Woods #2	57	5579 Silverleaf Court	MONTES, FERNANDO & URIBE, MONICA	5579	Haslett	Silverleaf Court	48840	50		100		\$ 1,255.86
20	33-02-02-11-481-030	Chippewa Woods #2	39	5598 Silverleaf Court	HERALD, KIRK	5598	Haslett	Silverleaf Court	48840	30				\$ 342.51
21	33-02-02-11-481-013	Chippewa Woods #2	37	5610 Silverleaf Court	WEI, GUOWEI & CHEN, LIJUN	5610	Haslett	Silverleaf Court	48840	50				\$ 570.85
22	33-02-02-12-126-016	Country Green	14	5980 Summerfield Lane	HIRPO, WAKGARI & TADESSE, ALTAYE	5980	Haslett	Summerfield Lane	48840	70				\$ 799.19
23	33-02-02-12-101-014	Country Place	14	5872 Buttonwood Drive	ASHLEY, ROBERT D & LORNA A TRUSTEES	5872	Haslett	Buttonwood Drive	48840		25			\$ 317.05
24	33-02-02-12-101-007	Country Place	7	5950 Eagles Way	VLASICH, LOUIS M & BAKER, MARGOT	5950	Haslett	Eagles Way	48840	25				\$ 285.42
25	33-02-02-12-101-006	Country Place	6	5954 Eagles Way	LIEDER, ROBERT L & MARY E TRUST	5954	Haslett	Eagles Way	48840	25.00				\$ 285.42
27	33-02-02-12-102-011	Country Place #2	47	5937 Eagles Way	HENRY, STACY L & JESSICA A	5937	Haslett	Eagles Way	48840	125				\$ 1,427.12
28	33-02-02-12-129-004	Country Place #3	60	5984 Eagles Way	BATES, JEREMY M & PASSAGE, ANNA M	5984	Haslett	Eagles Way	48840	50				\$ 570.85
29	33-02-02-12-130-003	Country Place #3	65	5975 Buttonwood Drive	CONWAY, THOMAS J	5975	Haslett	Buttonwood Drive	48840	50				\$ 570.85
30	33-02-02-12-104-005	Country Place #3	72	5939 Buttonwood Drive	BLACKMAN, ROBERT W & KAREN TRUSTEES	5939	Haslett	Buttonwood Drive	48840	25				\$ 285.42
31	33-02-02-12-105-016	Country Place #3	54	5938 Buttonwood Drive	VIGOR, DAVID & JOAN	5938	Haslett	Buttonwood Drive	48840	25				\$ 285.42
32	33-02-02-14-301-001	Georgetown		Twining Drive	GEORGETOWN HOMEOWNERS ASSOCIATION, C/O SPARTAN SERVICES		Lansing	PO Box 25125	48909	25				\$ 285.42
33	33-02-02-14-302-017	Georgetown		Tihart Road	GEORGETOWN HOMEOWNERS ASSOCIATION, C/O SPARTAN SERVICES		Lansing	PO Box 25125	48909	25				\$ 285.42
34	33-02-02-02-431-001	Trails at Lake Lansing #3	91	6022 Oak Park Trail	KUEFFNER, CRAIG M & LAURA C	6022	Haslett	Oak Park Trail	48840	20		20		\$ 365.34
35	33-02-02-02-431-020	Trails at Lake Lansing #3	110	1059 Wild Ginger Trail	MAVERS, HENRY L & BONNEY B	1059	Haslett	Wild Ginger Trail	48840	45				\$ 513.76
36	33-02-02-02-431-026	Trails at Lake Lansing #3	105	1093 Wild Ginger Trail	ROOT REVOCABLE TRUST	1093	Haslett	Wild Ginger Trail	48840	25				\$ 285.42
37	33-02-02-02-431-002	Trails at Lake Lansing #3	92	6030 Oak Park Trail	PARKER, ANN L	6030	Haslett	Oak Park Trail	48840	25				\$ 285.42
38	33-02-02-11-429-001	Wilshire	1	5684 Woodside Drive	WISEMAN, JON W	5684	Haslett	Woodside Drive	48840	16				\$ 182.67
39	33-02-02-11-427-009	Wilshire	2	5675 Woodside Drive	GINGERY, JOSEPH STEVEN	5675	Haslett	Woodside Drive	48840	32				\$ 365.34
40	33-02-02-11-427-019	Wilshire #1	27	5651 Woodside Drive	JOSEPH, MICHAEL TOD & KATRINA L	5651	Haslett	Woodside Drive	48840	28				\$ 319.67
41	33-02-02-11-429-003	Wilshire #1	26	5662 Woodside Drive	DUTCH VOLZ, JESSICA &	5662	Haslett	Woodside Drive	48840	16				\$ 182.67
42	33-02-02-11-427-013	Wilshire #1	19	1082 Cliffdale Drive	SABO, MATT & KRISTA	1082	Haslett	Cliffdale Drive	48840	16				\$ 182.67
43	33-02-02-11-427-015	Wilshire #1	21	1064 Cliffdale Drive	BAUMGARTNER, RICHARD A TRUST	1064	Haslett	Cliffdale Drive	48840	16				\$ 182.67
44	33-02-02-11-428-005	Wilshire #1	32	1083 Cliffdale Drive	STEWART, ANGELA & PARKS, COURTNEY	1083	Haslett	Cliffdale Drive	48840	16				\$ 182.67
45	33-02-02-11-428-004	Wilshire #1	31	1093 Cliffdale Drive	OLSEN, JAN F TRUSTEE	1093	Haslett	Cliffdale Drive	48840	16				\$ 182.67
46	33-02-02-11-430-002	Wilshire #2	58	1113 Woodside Drive	DAVENPORT, JOHN F & JANET M	1113	Haslett	Woodside Drive	48840	16				\$ 182.67
47	33-02-02-11-430-006	Wilshire #2	54	1075 Woodside Drive	CAMPBELL, JOSHUA K	1075	Haslett	Woodside Drive	48840	32				\$ 365.34
48	33-02-02-11-428-009	Wilshire #2	52	1134 Woodside Drive	REESE, SHARON BANDLOW TRUSTEE	1134	Haslett	Woodside Drive	48840	40				\$ 456.68
49	33-02-02-12-178-003	Wood Valley	75	5646 Wood Valley Drive	COTTER, C MARK & PATRICIA A	5646	Haslett	Wood Valley Drive	48840	25				\$ 285.42
50	33-02-02-12-178-004	Wood Valley	74	5640 Wood Valley Drive	PRUDDEN, ARIC & HOLLY	5640	Haslett	Wood Valley Drive	48840	25				\$ 285.42
51	33-02-02-12-177-028	Wood Valley	33	5641 Wood Valley Drive	OLSEN, JACK & PATRICIA	5641	Haslett	Wood Valley Drive	48840	25				\$ 285.42
52	33-02-02-12-178-017	Wood Valley	61	861 Moss Glen Circle	ONEILL, CRAIG E & MARSHA M TRUSTEES	861	Haslett	Moss Glen Circle	48840	25				\$ 285.42
53	33-02-02-12-127-012	Wood Valley	22	946 River Knoll Drive	BEGHEIN, PAMELA R TRUST	946	Haslett	River Knoll Drive	48840	75				\$ 856.27
54	33-02-02-12-177-020	Wood Valley	41	5593 Wood Valley Drive	SELBY, SANDRA	5593	Haslett	Wood Valley Drive	48840	25				\$ 285.42
55	33-02-02-12-202-003	Wood Valley #2	85	5712 Wood Valley Drive	SWITZER, MICHAEL & CAMIE	5712	Haslett	Wood Valley Drive	48840	12.5				\$ 142.71
56	33-02-02-12-201-002	Wood Valley #2	89	5698 Woodmont Circle	DECKER, STEPHEN J & BARBARA E	5698	Haslett	Woodmont Circle	48840	30				\$ 342.51
57	33-02-02-12-127-006	Wood Valley #2	104	5681 Wood Valley Drive	DYER, BENJAMIN & LAUREN	5681	Haslett	Wood Valley Drive	48840			25		\$ 171.25
58	33-02-02-12-204-010	Wood Valley #3	122	5773 Whisperwood Drive	MCGREGOR, CAMERON & CHRISTINA	5773	Haslett	Whisperwood Drive	48840	50				\$ 570.85
59	33-02-02-12-204-008	Wood Valley #3	120	5767 Whisperwood Drive	MORRIS, KEITH A & ERIKA A	5767	Haslett	Whisperwood Drive	48840	15				\$ 171.25
60	33-02-02-12-204-007	Wood Valley #3	119	5761 Whisperwood Drive	BLUE, DANIEL JR & MELISSA	5761	Haslett	Whisperwood Drive	48840	127.50				\$ 1,455.66
61	33-02-02-12-205-013	Wood Valley #3	141	5730 Whisperwood Drive	JONES, SUSAN E	5730	Haslett	Whisperwood Drive	48840	25		100		\$ 970.44
62	33-02-02-12-205-010	Wood Valley #3	138	5748 Whisperwood Drive	HICKS, STANLEY D & GAIL S	5748	Haslett	PO Box 333	48840	60				\$ 685.02
63	33-02-02-12-205-006	Wood Valley #3	134	5772 Whisperwood Drive	SCOTT, MICHELLE	5772	Haslett	Whisperwood Drive	48840	50				\$ 570.85
64	33-02-02-12-205-004	Wood Valley #3	132	5782 Whisperwood Drive	HARVEY GARY E & DEBRA K	5782	Haslett	Whisperwood Drive	48840	75				\$ 856.27
65	33-02-02-12-205-015	Wood Valley #4	164	5817 Wood Valley Drive	TAYLOR, ASHLIE L & DONALD A	5817	Haslett	Wood Valley Drive	48840	22.5				\$ 258.88
66	33-02-02-11-404-019	Woodside Estates	8	5625 Ventura Place	SAUER, BRIEANN & MONIZ, JEREMY	5625	Haslett	Ventura Place	48840	20				\$ 228.34
67	33-02-02-11-406-003	Woodside Estates	5	1161 Woodside Drive	PARENT, KRISTIN	1161	Haslett	Woodside Drive	48840	20				\$ 228.34
68	33-02-02-11-406-005	Woodside Estates	3	1149 Woodside Drive	HUGHES, MICHAEL R & LINDA S	1149	Haslett	Woodside Drive	48840	115				\$ 1,312.95
69	33-02-02-11-405-006	Woodside Estates	15	1140 Woodside Drive	MACY, LISA M	1140	Haslett	Woodside Drive	48840	16				\$ 182.67
70	33-02-02-11-453-007	Woodside Estates #2	25	1216 Buckingham Road	RASHER, PAMELA O	1216	Haslett	Buckingham Road	48840	34				\$ 388.18
71	33-02-02-11-452-004	Woodside Estates #2	16	1200 Ascot Place	HARMAN, SAMUEL & GOLEN, AMANDA	1200	Haslett	Ascot Place	48840	16		20		\$ 319.67
72	33-02-02-11-451-008	Woodside Estates #2	28	5616 Ventura Place	HETHERINGTON, MARJORIE E & JACK H	5616	Haslett	Ventura Place	48840			16		\$ 202.91
73	33-02-02-11-453-003	Woodside Estates #2	21	1217 Ascot Place	ZEIGLER, TIMOTHY & KIMBERLY	1217	Haslett	Ascot Place	48840	54				\$ 616.52
74	33-02-02-11-453-004	Woodside Estates #2	19	1211 Ascot Place	MEANS, ELIZABETH & KRALAPP, KYLE	1211	Haslett	Ascot Place	48840	42				\$ 479.51
75	33-02-02-11-451-010	Woodside Estates #2	30	5608 Ventura Place	NAMIE, ELIZABETH	5608	Haslett	Ventura Place	48840	16				\$ 182.67
76	33-02-02-11-451-009	Woodside Estates #2	29	5612 Ventura Place	ROGAN, KATHLEEN K TRUSTEE	5612	Haslett	Ventura Place	48840	66				\$ 753.52
77	33-02-02-11-403-009	Woodside Estates #4	55	1156 Cliffdale Drive	HALINSKI, SANDRA A	1156	Haslett	Cliffdale Drive	48840	20				\$ 228.34

78	33-02-02-11-405-007	Woodside Estates #4	59	1129	Cliffdale Drive	BLOOMER, DIANE K	1129	Haslett	Cliffdale Drive	48840	16				\$ 182.67
79	33-02-02-11-405-008	Woodside Estates #4	60	1135	Cliffdale Drive	MARCOUX, JOHN P & JANICE M	1135	Haslett	Cliffdale Drive	48840	48				\$ 548.01
80	33-02-02-11-405-010	Woodside Estates #4	62	1147	Cliffdale Drive	METEYER FAMILY TRUST #1, BRETT L & CYNTHIA C	1147	Haslett	Cliffdale Drive	48840	20				\$ 228.34
81	33-02-02-11-405-013	Woodside Estates #4	65	1165	Cliffdale Drive	BECHTEL, BETH A TRUST	1165	Haslett	Cliffdale Drive	48840	36		24		\$ 575.41
82	33-02-02-14-201-010	Woodside Estates #5	81	1159	Teakwood Circle	GRIFFITH, DALE A & VICKI TRUST	1159	Haslett	Teakwood Circle	48840	16.00				\$ 182.67
83	33-02-02-11-454-017	Woodside Estates #5	73	1158	Teakwood Circle	KERLEY, GEOFFREY & ELIZABETH TRST	1158	Haslett	Teakwood Circle	48840	36				\$ 411.01
84	33-02-02-11-451-031	Woodside Estates #6	90	1140	Buckingham Road	KIMMERLY, GEOFFREY C & OXENDER, NATASHA L	1140	Haslett	Buckingham Road	48840	50				\$ 570.85
85	33-02-02-11-456-001	Woodside Estates #6	91	1130	Teakwood Circle	EVON, DANIEL T & MORGAN, SUZANNE I	1130	Haslett	Teakwood Circle	48840			122.5		\$ 839.15
86	33-02-02-13-100-044			690	Piper Road	PORTER, DOUGLAS A & AMY S	690	Haslett	Piper Road	48840	50				\$ 570.85

Total      3281.50      41.00      TOTAL      \$ 35,877.02



**To:** Board Members

**From:** Timothy R. Schmitt, *AICP*  
Community Planning and Development Director

**Date:** November 21, 2025

**Re:** Settlement Agreement Amendment Request - Eyde Land Holdings (owner) Central Park Property/Continental Properties acting as developer (Parcel IDs 15-400-031, 22-203-001, 22-202-001)

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In July of this year, Staff presented an initial concept plan to the Township Board from Continental Properties for the vacant property on the east side of Central Park Drive, owned by Eyde Land Holdings. The subject properties has substantial litigation history and is currently under a settlement agreement that allows for multi-family residential on the property between Belvedere and Columbus, up to eight dwelling units per acre (RD Zoning), along with commercial uses along the Central Park frontage in that area (CS Zoning). The property north of Belvedere and south of Columbus are still zoned commercial (CS Zoning). The applicant is requesting to change the zoning designations on the site, through a settlement agreement amendment, to RC, multi-family residential up 14 dwelling units per acre, while limiting the overall density and increasing setbacks, among other conditions.

The Planning Commission held a discussion on the topic on September 8, 2025, a public hearing on the proposal at its October 13, 2025 meeting, and discussed the matter at both the October 27, 2025 and November 17, 2024 meetings. At each meeting, there was substantial public input, both in person and submitted in writing, nearly all opposed to the development on the site. The Planning Commission ultimately recommended to the Township Board that the property should be rezoned, at the November 17, 2025 meeting. There was no consensus on what it should be rezoned to.

The Township Board has requested to hold their own public hearing on the matter. After that public hearing, the Township Board can take action at a future meeting. Attachments and links to the Planning Commission meeting information regarding the project can be found under agenda item 12.A.



**To: Board Members**

**From: Dan Opsommer, Deputy Township Manager  
Director of Public Works and Engineering**

**Date: November 25, 2025**

**Re: Hagadorn Road Land Donation**

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As the Board knows, Township staff were recently approached by the owners of 4344 Hagadorn Rd and parcel # 33-02-02-20-105-005 to see if the Township would be interested in acquiring portions of these two parcels. In total, the Township would be acquiring approximately 22.4 acres.

Since the November 18 Board meeting, Township staff have discussed obtaining easements for the future pathway that would be constructed parallel to Hagadorn Road with the property owners. This will require four easements as there are four parcels owned by this ownership group on the east side of Hagadorn Rd. The property owners do not have any objections to granting these four additional easements to the Township. The property owners have also applied for the parcel splits that are necessary to execute this land donation. The Planning Department is in the process of reviewing and approving these parcel splits, which is an administrative function that should be completed on Monday, December 1.

The Township attorneys are currently working to draft the real estate purchase agreement and the closing paperwork.

This evening, we are ready for the Board to approve the acquisition of this land.

The November 18 and October 21 packets are attached to this cover memorandum for background information. We are happy to answer any questions the Board may have.

**The following motion has been prepared for the Board's consideration:**

**MOVE TO APPROVE THE ATTACHED RESOLUTION TO ACQUIRE THE PORTIONS OF PARCEL # 33-02-02-29-105-005 AND 33-02-02-29-151-004 SHOWN ON EXHIBIT A OF THE RESOLUTION, CONSISTING OF 22.4 ACRES OF ENVIRONMENTALLY VALUABLE LAND IN THE AMOUNT OF \$1 FROM SHANGRI LA REAL ESTATE LLC AND AND AUTHORIZE TOWNSHIP SUPERVISOR AND CLERK TO EXECUTE THE PURCHASE AGREEMENT ON BEHALF OF THE TOWNSHIP.**

**Attachments:**

1. Resolution to Approve
2. November 18, 2025 Packet Materials
3. October 21, 2025 Packet Materials

**RESOLUTION TO APPROVE ACQUITION OF PORTIONS OF  
PARCEL # 33-02-02-29-105-005 AND 33-02-02-29-151-004**

At a regular meeting of the Township Board of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Township Municipal Building, 5151 Marsh Road, Okemos, Michigan 48864-1198, (517) 853-4000, on Tuesday, December 2, 2025, at 6:00 p.m.

**PRESENT:** \_\_\_\_\_  
\_\_\_\_\_

**ABSENT:** \_\_\_\_\_

The following resolution was offered by \_\_\_\_\_ and supported by \_\_\_\_\_.

**WHEREAS,** The Shangri La Real Estate LLC wishes to sell to the Charter Township of Meridian approximately 22.4 acres of undeveloped real estate in Meridian Township, as described in the attached materials; and

**WHEREAS,** the Charter Township of Meridian desires to acquire such real estate; and

**WHEREAS,** This land acquisition will further the Township’s pathway system by create a new route and course for an off-road trail to be constructed, consistent with the Township’s Pathway Master Plan; and

**WHEREAS,** The Charter Township of Meridian agree to acquire the land by purchase from Shangri La Real Estate LLC; and

**NOW, THEREFORE, BE IT RESOLVED THAT THE TOWNSHIP BOARD OF THE CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN, AUTHORIZES THE TOWNSHIP SUPERVISOR AND CLERK TO EXECUTE AN AGREEMENT BETWEEN SHANGRI LA REAL ESTATE LLC FOR THE ACQUISITION OF THE PORTIONS OF PARCEL # 33-02-02-29-105-005 AND 33-02-02-29-151-004 SHOWN ON EXHIBIT A OF THE RESOLUTION, CONSISTING OF 22.4 ACRES OF ENVIRONMENTALLY VALUABLE LAND, AND TO TAKE ALL FURTHER ACTION DEEMED NECESSARY TO CLOSE SUCH TRANSACTION FOR ACCEPTANCE OF THIS LAND.**

**ADOPTED:**

**YEAS:** \_\_\_\_\_  
\_\_\_\_\_

**NAYS:** \_\_\_\_\_

Resolution declared adopted.

**STATE OF MICHIGAN )**

**)ss.**

**COUNTY OF INGHAM )**

I, the undersigned, the duly qualified and acting Clerk of the Charter Township of Meridian, Ingham County, **DO HEREBY CERTIFY**, that the foregoing is a true and complete copy of proceedings taken by the Township Board at a regular meeting held on Tuesday, December 2, 2025.

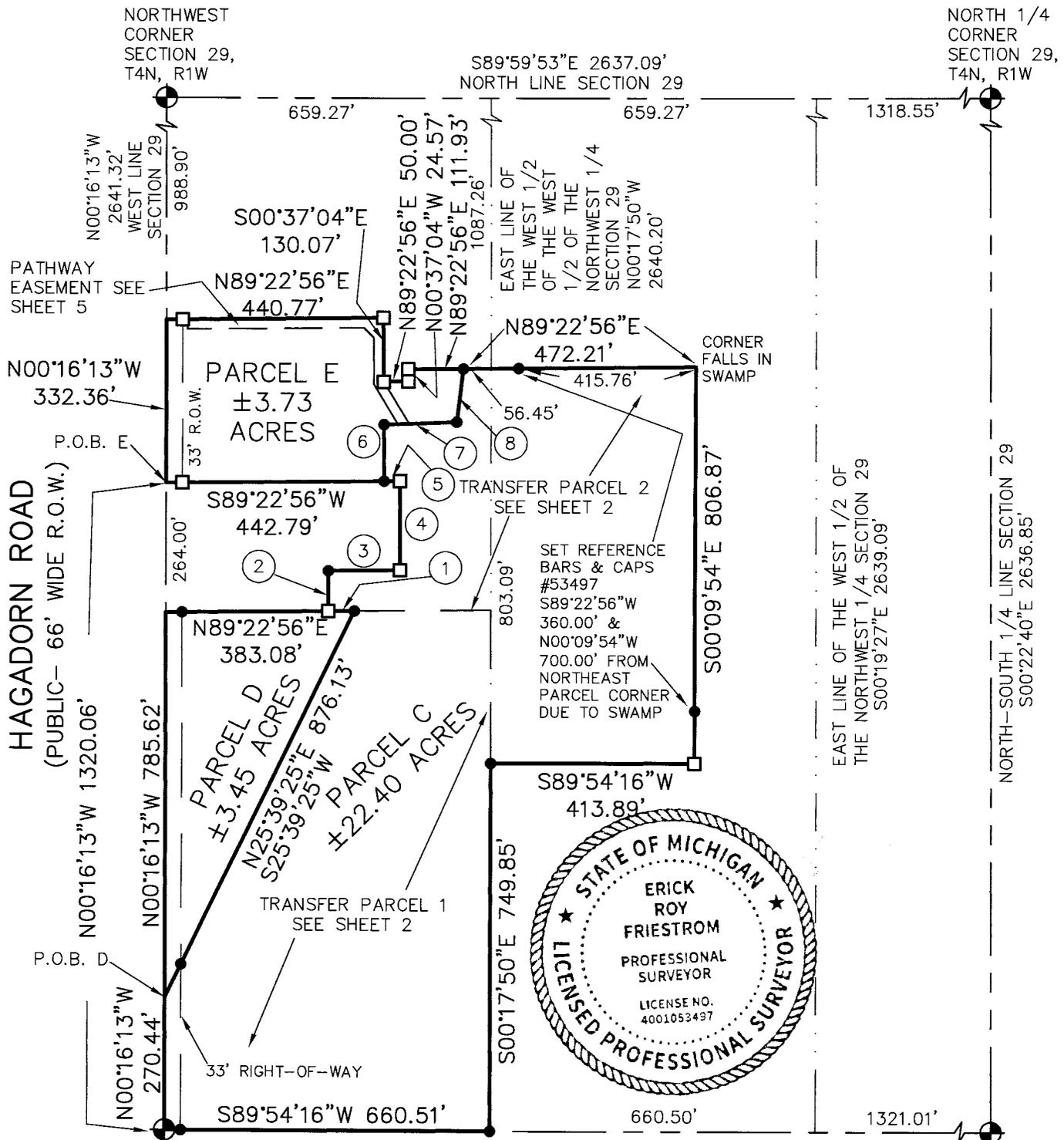
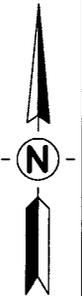
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Angela Demas, Township Clerk  
Charter Township of Meridian

# **EXHIBIT A**

# CERTIFIED BOUNDARY SURVEY

FOR: SHANGRI-LA REAL ESTATE, LLC



WEST 1/4  
CORNER  
SECTION 29,  
T4N, R1W &  
P.O.B. C

1	S89°22'56"W 53.08'
2	N00°16'13"W 82.00'
3	N89°22'56"E 145.00'
4	N00°16'13"W 182.00'
5	S89°22'56"W 32.21'
6	N00°37'04"W 115.23' S00°37'04"E
7	N87°52'34"E 147.97' S87°52'34"W
8	N06°47'35"E 108.65' S06°47'35"W

- NOTES:
1. ALL EASEMENTS MAY NOT BE SHOWN
  2. ALL DIMENSIONS ARE AS MEASURED UNLESS NOTED OTHERWISE
  3. SEE SHEET 2 FOR TRANSFER PARCELS
  4. SEE SHEET 3 FOR RECORDED DIMENSIONS
  5. SEE SHEET 4 FOR EXISTING EASEMENT DETAILS
  6. SEE SHEET 5 FOR PATHWAY EASEMENT

SCALE 1" = 300'



### LEGEND

- = Set 1/2" Bar with Cap
  - = Found Bar & Cap #25832 Unless Noted
  - = Survey Boundary Line
  - = Distance Not to Scale
- All Dimensions are in Feet and Decimals Thereof.  
All Improvements Not Shown.

**KEBS, INC.** KYES ENGINEERING  
BRYAN LAND SURVEYS

2116 HASLETT ROAD, HASLETT, MI 48840  
PH. 517-339-1014 FAX. 517-339-8047

13432 PRESTON DRIVE, MARSHALL, MI 49068  
PH. 269-781-9800 FAX. 269-781-9805

DRAWN BY AN	SECTION 29, T4N, R1W
FIELD WORK BY AE	JOB NUMBER:
SHEET 1 OF 8	104912.BND



**To:** Board Members  
Principal Planner

**From:** Dan Opsommer, Deputy Township Manager  
Director of Public Works and Engineering

**Date:** November 14, 2025

**Re:** Hagadorn Road Land Donation

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As discussed during Township Board meeting on October 21, Township staff were recently approached by the owners of 4344 Hagadorn Rd and parcel # 33-02-02-20-105-005 to see if the Township would be interested in acquiring portions of these two parcels. In total, the Township would be acquiring approximately 22.5 acres.

The current owners wish to donate the land to the Township by the end of the calendar year as the tax benefits they will receive for this donation will be reduced on or after January 1, 2026 due to changes to the federal tax code that will take effect.

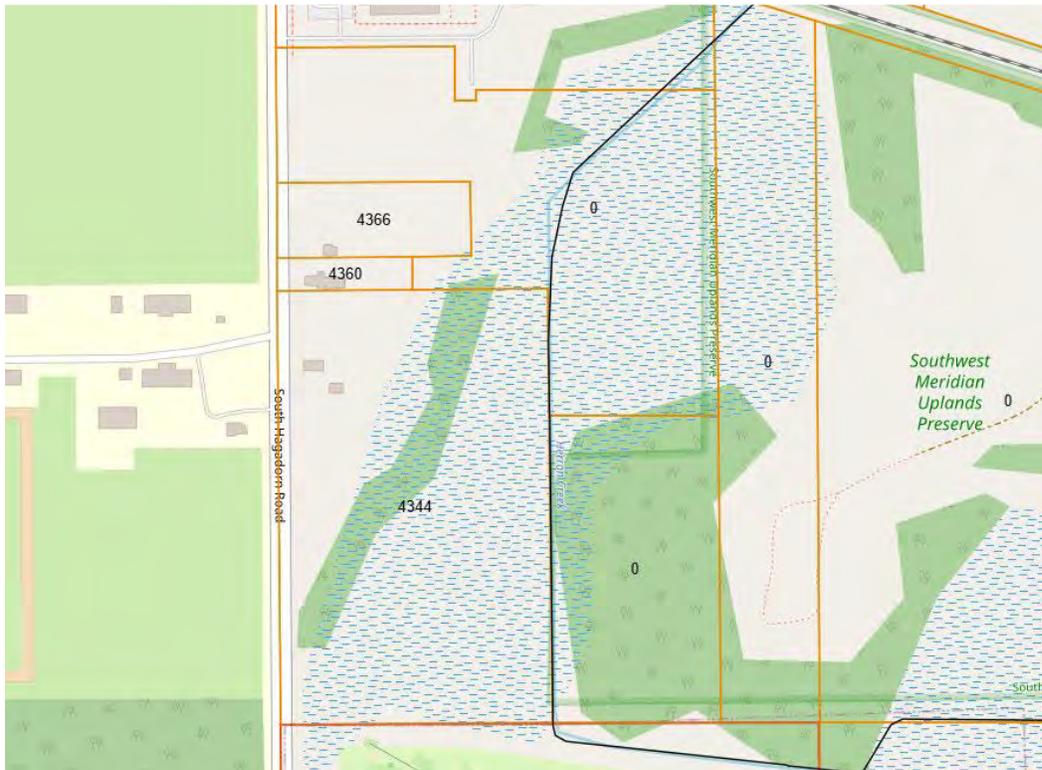
In addition to donating this land, the property owners will be granting the Township an easement over the land they retain for future prospective development, to allow the Township the ability to construct this trail in the event that a development does not get approved for this site.

The Township Department of Public Works & Engineering would recommend acquiring these properties as the opportunity to secure the entirety of this proposed off-road trail route is a very unique opportunity as we continue to build out the Pathway Master Plan.

Historically, the Township has not acquired land for the pathway system. However, the only way to acquire the land in question in the timeframe that the current owners have requested is to acquire this as a pathway property as the Land Preservation acquisition process would extend well past January 1, 2026. The land is being donated, so the only costs that will be incurred are for our due diligence (surveying, environmental assessments, etc.).

Current options being discussed in concept include:

1. Donating the land to the Township's land preservation program.
2. Donating the land to the Ingham County Drain Commissioner's Office as the Herron Creek Drain does run along the eastern property line of 4344 Hagadorn Rd and runs through parcel # 33-02-02-20-105-005. The route and course of the Herron Creek Drain is shown by the black line below and the land the Township is acquiring is shown approximately in yellow. The land is largely covered by wetlands and most of it is within the 100-year floodplain. Therefore, the land is already used for stormwater detention.



Since the October Board meeting, Township staff met again with the property owners and our consultant completed Phase II Environmental Site Assessment (ESA), which showed no existing issues on the subject sites. The owners, however, requested a minor modification to the donated land area, which staff agreed to provided the pathway easement be modified accordingly. As such, the final survey of proposed land acquisition areas, and pathway easement are attached for Township Board discussion and approval.

The purpose of the agenda item this evening is to discuss the modified land acquisition areas and easement, with the goal of acting on this item during the first December meeting in order to meet the owners' goal of executing this acquisition by December 31, 2025.

We are happy to answer any questions the Board may have.

**Attachments:**

[Survey of Existing Parcels](#)

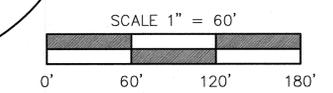
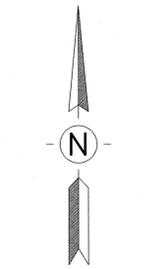
[Survey of Proposed Parcels Split & Donated Areas](#)

[New Parcels splits & Pathway Easement](#)

[Phase II ESA](#)

# ALTA/NSPS LAND TITLE SURVEY

## "VACANT- HAGADORN ROAD, OKEMOS, MI 48864"



### SURVEYOR'S NOTES:

- This plan was made at the direction of the parties named hereon and is intended solely for their immediate use.
- All bearings are Michigan State Plane South Zone grid bearings obtained from GPS observations using corrections obtained from the nearest National Geodetic Survey C.O.R.S. station.
- All dimensions shown are as-measured unless otherwise noted.
- All dimensions are in feet and decimals thereof.
- No building tie dimensions are to be used for establishing the property lines.
- There are no observable potential encroachments onto the subject property from adjoining lands, or from the subject property onto adjoining lands, except as shown hereon.
- Parcel has direct access to public Hagadorn Road.
- No wetlands were formally delineated as part of this survey. Edges of swamp are shown hereon.

### ALTA/NSPS LAND TITLE SURVEY - TABLE "A" REQUIREMENTS:

- Item 1: Shown on the survey map.
- Item 2: Address of the surveyed property: Vacant - Hagadorn Road, Okemos, Michigan 48864.
- Item 3: By scaled map location and graphic plotting only, this property lies partially within Flood Zone "X", areas outside the 1.0% annual chance floodplain, and partially within Flood Zone "AE", areas within the 1.0% annual chance floodplain, according to the National Flood Insurance Program, Flood Insurance Rate Map for the Charter Township of Meridian, Ingham County, Michigan, Community Panel No. 260093 0154 D, dated August 16, 2011. Location of the 1.0% annual chance floodplain is graphically shown hereon from FEMA mapping and is subject to map scale uncertainty.
- Item 4: ±13.53 Acres (589,636 square feet)
- Item 7a: None observed.
- Item 8: Shown on the survey map.
- Item 9: Parking:  
Regular Parking Spaces: 0  
Disabled Parking Spaces: 0  
Total on-site Parking Spaces: 0

### LEGAL DESCRIPTION:

(As provided by Diversified National Title Agency, agents for WFG National Title Insurance Company, Commitment No. DNT-25-16684-1, dated September 16, 2025)  
Parcel B  
Part of the Northwest 1/4, Section 29, Town 4 North, Range 1 West, Meridian Charter Township, Ingham County, Michigan, described as: Commencing at the Northwest corner of said Section 29; thence S00°01'25"E, along the West line of said Section 29, a distance of 988.90 feet to the Point of Beginning of this description; thence N89°37'45"E 440.77 feet; thence S00°22'15"E 130.07 feet; thence N89°37'45"E 50.00 feet; thence N00°22'15"W 24.57 feet; thence N89°37'45"E 584.14 feet; thence S00°04'55"W 806.87 feet; thence N89°50'55"W 414.06 feet; thence N00°01'25"W, parallel with the West line of said Section 29, a distance of 312.23 feet; thence S89°37'45"W 330.00 feet; thence N00°01'25"W, parallel with said West line, 82.00 feet; thence N89°37'45"E 145.00 feet; thence N00°01'25"W, parallel with said West line 182.00 feet; thence S89°37'45"W 475.00 feet to said West line; thence N00°01'25"W, along said West line, 332.36 feet to the Point of Beginning.

### SCHEDULE B, SECTION II, EXCEPTIONS:

- (As provided by Diversified National Title Agency, agents for WFG National Title Insurance Company, Commitment No. DNT-25-16684-1, dated September 16, 2025)
- Item 10: Area as described in Liber 2344, Page 809; does not cross parcel and is not shown hereon.
- Item 11: Easements in favor of Meridian Charter Township as recorded in Liber 2539, Page 175; & Liber 2539, Page 177; cross parcel, are plottable and shown hereon. Easement in favor of Meridian Township as recorded in Liber 2539, Page 179; does not cross parcel, therefore not shown hereon.
- Item 12: Easements in favor of the Ingham County Drain Commission as recorded in Liber 3238, Page 279; cross parcel, are plottable and shown hereon.

### CERTIFICATION:

To Meridian Charter Township; Diversified National Title Agency; & WFG National Title Insurance Company.

This is to certify that this map or plot and the survey on which it is based were made in accordance with the 2021 "Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys," jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 7a, 8, and 9 of Table A thereof. The fieldwork was completed on September 19, 2025.

*Erick R. Friestrom* 09-30-2025  
Erick R. Friestrom Date of Plot or Map:  
Professional Surveyor No. 53497  
efriestrom@kebs.com



### LEGEND

- (M) = MEASURED DIMENSION
- (R) = RECORDED DIMENSION
- = SET 1/2" BAR WITH CAP UNLESS NOTED
- = FOUND IRON AS NOTED
- = DEED LINE
- = DISTANCE NOT TO SCALE
- ▨ = ASPHALT
- ▩ = CONCRETE
- ⊗ = CATCH BASIN
- ⊙ = SIGN
- ⊙ = POST
- ⊙ = SANITARY MANHOLE

### WITNESSES TO SECTION CORNERS:

- West 1/4 corner Section 29, T4N, R1W, Liber 8, Page 449  
Found Remon bar & cap in monument box in C/L of Hagadorn Road  
Found nail & tag in East side utility pole, S20°W, 89.39'  
Found nail & tag in East side fence post, N55°W, 57.23'  
Found nail & tag in East side utility pole, N20°W, 125.61'  
Found nail & tag in Southwest side 4" maple tree, West, 40.06'
- Northwest corner Section 29, T4N, R1W, Liber 8, Page 447  
Found Remon bar & cap in monument box in C/L of Hagadorn & Mt Hope Roads  
Found nail & tag #18994 Northwest side power pole, N42°E, 70.08'  
Found nail & tag #25832 Northwest side power pole, N65°E, 69.26'  
Centerline of fire hydrant, S57°E, 75.86'  
Centerline of gas valve, S55°W, 56.45'
- North 1/4 corner Section 29, T4N, R1W, Liber 8, Page 453  
Found remon bar & cap in mon box, centerline of Mt. Hope Road  
Found dimple mark in East side of 2" steel anchor post, N05°E, 33.56'  
Found nail & tag #18994 in East side of 28" Oak, S02°W, 28.00'  
Found nail & tag #25832 in Southeast side of power pole, S82°W, 105.16'  
Found nail & tag #25832 in Southwest side of power pole, S75°E, 125.40'
- Center of Section 29, T4N, R1W, Liber 8, Page 252  
Found 1/2" bar at base of fallen down railroad tie post  
Found nail & tag North side 48" Maple, S75°E, 5.06'  
Found nail & tag West side 6" Maple, S15°W, 22.79'  
Found nail & tag North side 6" Elm, West, 25.28'  
Found nail & tag in West side of 6" Elm, N29°E, 31.57'

REVISIONS	COMMENTS	KEBS, INC. ENGINEERING AND LAND SURVEYING	
09/30/2025	ORIGINAL	2118 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX 517-339-8047 WWW.KEBS.COM	
		Marshall Office - Ph. 269-781-9800	
		DRAWN BY: AN	SECTION 29, T4N, R1W
		FIELD WORK BY: AE	JOB NUMBER:
		SHEET 1 OF 1	104682.ALT

# ALTA/NSPS LAND TITLE SURVEY

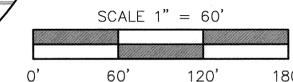
## "4344 HAGADORN ROAD, OKEMOS, MI 48864"

### SURVEYOR'S NOTES:

1. This plan was made at the direction of the parties named hereon and is intended solely for their immediate use.
2. All bearings are Michigan State Plane South Zone grid bearings obtained from GPS observations using corrections obtained from the nearest National Geodetic Survey C.O.R.S. station.
3. All dimensions shown are as-measured unless otherwise noted.
4. All dimensions are in feet and decimals thereof.
5. No building tie dimensions are to be used for establishing the property lines.
6. There are no observable potential encroachments onto the subject property from adjoining lands, or from the subject property onto adjoining lands, except as shown hereon.
7. Parcel has direct access to public Hagadorn Road.
8. No wetlands were formally delineated as part of this survey. Edges of swamp are shown hereon.

### WITNESSES TO SECTION CORNERS:

- West 1/4 corner Section 29, T4N, R1W, Liber 8, Page 449**  
 Found Remon bar & cap in monument box in C/L of Hagadorn Road  
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 Found nail & tag in East side utility pole, N20°W, 125.61'  
 Found nail & tag in Southwest side 4" maple tree, West, 40.06'
- Northwest corner Section 29, T4N, R1W, Liber 8, Page 447**  
 Found Remon bar & cap in monument box in C/L of Hagadorn & Mt Hope Roads  
 Found nail & tag #18994 Northwest side power pole, N42°E, 70.08'  
 Found nail & tag #25832 Northwest side power pole, N65°E, 69.26'  
 Centerline of fire hydrant, S57°E, 75.86'  
 Centerline of gas valve, S55°W, 56.45'
- North 1/4 corner Section 29, T4N, R1W, Liber 8, Page 453**  
 Found remon bar & cap in mon box, centerline of Mt. Hope Road  
 Found dimple mark in East side of 2" steel anchor post, N05°E, 33.56'  
 Found nail & tag #18994 in East side of 28" Oak, S02°W, 28.00'  
 Found nail & tag #25832 in Southeast side of power pole, S82°W, 105.16'  
 Found nail & tag #25832 in Southwest side of power pole, S75°E, 125.40'
- Center of Section 29, T4N, R1W, Liber 8, Page 252**  
 Found 1/2" bar at base of fallen down railroad tie post  
 Found nail & tag North side 48" Maple, S75°E, 5.06'  
 Found nail & tag West side 6" Maple, S15°W, 22.79'  
 Found nail & tag North side 6" Elm, West, 25.28'  
 Found nail & tag in West side of 6" Elm, N29°E, 31.57'



### LEGAL DESCRIPTION:

(As provided by Diversified National Title Agency, agents for WFG National Title Insurance Company, Commitment No. DNT-25-16684-1, dated September 16, 2025)  
 Parcel A  
 Part of the Northwest 1/4, Section 29, Town 4 North, Range 1 West, Meridian Charter Township, Ingham County, Michigan, described as: Commencing at the Southwest corner of the Northwest 1/4, Section 29; thence North 72 rods; thence West 40 rods; thence South 72 rods to beginning. EXCEPT the 2 acres sold to Elijah Kieppe Off the North end of said premises.

### AS SURVEYED:

(The following legal description describes the same parcel of land as the provided description)

A parcel of land in the Northwest 1/4 of Section 29, T4N, R1W, Meridian Township, Ingham County, Michigan, said parcel described as: Beginning at the West 1/4 corner of said Section 29; thence N00°16'13"W along the West line of said Section 29 a distance of 1056.06 feet; thence N89°22'56"E 660.02 feet to the East line of the West 1/2 of the West 1/4 of said Section 29; thence S00°17'50"E along said East line 1062.08 feet to the East-West 1/4 line of said Section 29; thence S89°54'16"W along said East-West 1/4 line 660.51 feet to the point of beginning; said parcel containing 16.05 acres, more or less, including 0.80 acre, more or less, presently in use as public right-of-way for Hagadorn Road; said parcel subject to all easements and restrictions, if any.

### SCHEDULE B. SECTION II. EXCEPTIONS:

(As provided by Diversified National Title Agency, agents for WFG National Title Insurance Company, Commitment No. DNT-25-16684-1, dated September 16, 2025)

Item 9: Easement for Consumers Power Company as recorded in Liber 791, Page 635; crosses parcel, is plottable and shown hereon.

### LEGEND

- |      |                                      |   |                  |
|------|--------------------------------------|---|------------------|
| (M)  | = MEASURED DIMENSION                 | ⊠ | = GAS METER      |
| (R)  | = RECORDED DIMENSION                 | ⊙ | = WELL           |
| •    | = SET 1/2" BAR WITH CAP UNLESS NOTED | ⊖ | = SIGN           |
| □    | = FOUND IRON AS NOTED                | • | = POST           |
| —    | = DEED LINE                          | ⊘ | = UTILITY POLE   |
| —    | = DISTANCE NOT TO SCALE              | — | = GUY WIRE       |
| ▨    | = ASPHALT                            | ⊠ | = ELECTRIC METER |
| ▩    | = CONCRETE                           |   |                  |
| ▧    | = DECK                               |   |                  |
| ---  | = BUILDING OVERHANG                  |   |                  |
| —EO— | = OVERHEAD WIRES                     |   |                  |

### CERTIFICATION:

To Meridian Charter Township; Diversified National Title Agency; & WFG National Title Insurance Company;

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 "Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys," jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 7a, 8, and 9 of Table A thereof. The fieldwork was completed on September 19, 2025.

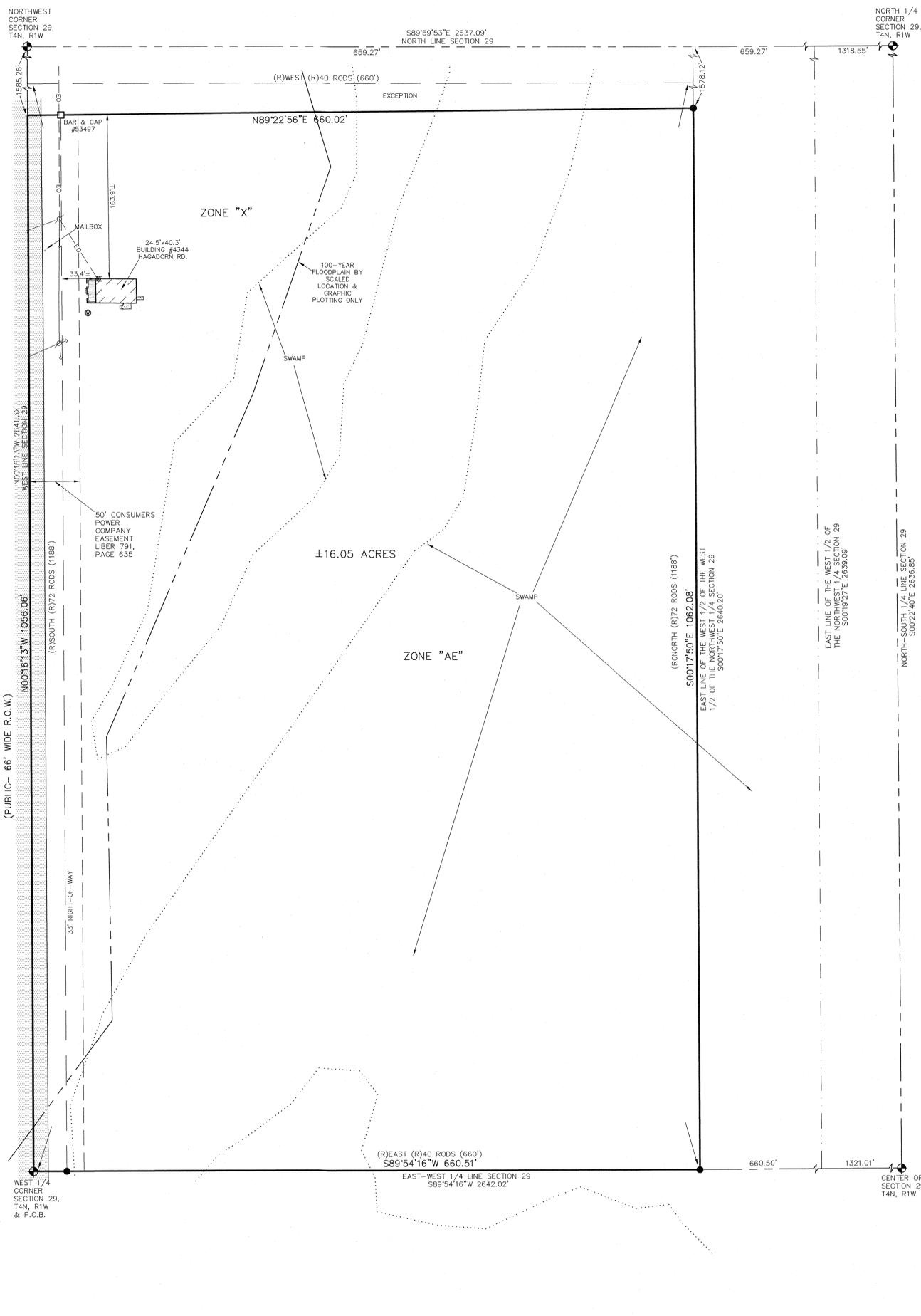
*Erick R. Friestrom*

09-30-2025



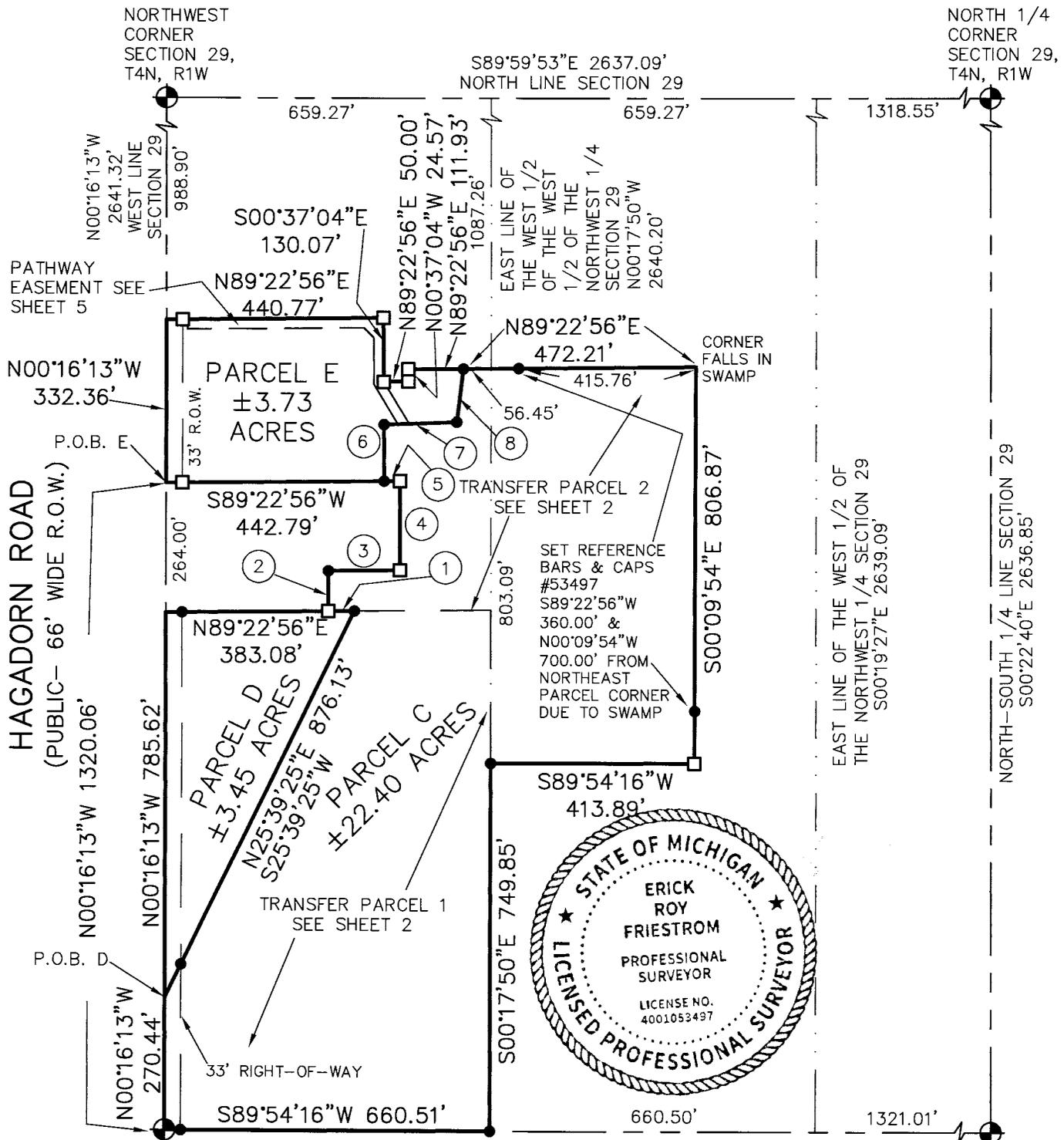
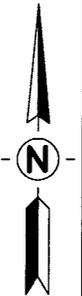
Erick R. Friestrom Date of Plat or Map:  
 Professional Surveyor No. 53497  
 erfriestrom@kebs.com

REVISIONS	COMMENTS	KEBS, INC. ENGINEERING AND LAND SURVEYING	
09/30/2025	ORIGINAL	2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX 517-339-8047 WWW.KEBS.COM	
		Marshall Office - Ph. 269-781-9800	
		DRAWN BY: AN	SECTION 29, T4N, R1W
		FIELD WORK BY: AE	JOB NUMBER:
		SHEET 1 OF 1	104681.ALT



# CERTIFIED BOUNDARY SURVEY

FOR: SHANGRI-LA REAL ESTATE, LLC



WEST 1/4  
CORNER  
SECTION 29,  
T4N, R1W &  
P.O.B. C

1	S89°22'56"W 53.08'
2	N00°16'13"W 82.00'
3	N89°22'56"E 145.00'
4	N00°16'13"W 182.00'
5	S89°22'56"W 32.21'
6	N00°37'04"W 115.23' S00°37'04"E
7	N87°52'34"E 147.97' S87°52'34"W
8	N06°47'35"E 108.65' S06°47'35"W

- NOTES:
1. ALL EASEMENTS MAY NOT BE SHOWN
  2. ALL DIMENSIONS ARE AS MEASURED UNLESS NOTED OTHERWISE
  3. SEE SHEET 2 FOR TRANSFER PARCELS
  4. SEE SHEET 3 FOR RECORDED DIMENSIONS
  5. SEE SHEET 4 FOR EXISTING EASEMENT DETAILS
  6. SEE SHEET 5 FOR PATHWAY EASEMENT

SCALE 1" = 300'



### LEGEND

- = Set 1/2" Bar with Cap
  - = Found Bar & Cap #25832 Unless Noted
  - = Survey Boundary Line
  - = Distance Not to Scale
- All Dimensions are in Feet and Decimals Thereof.  
All Improvements Not Shown.



**KEBS, INC.** KYES ENGINEERING  
BRYAN LAND SURVEYS

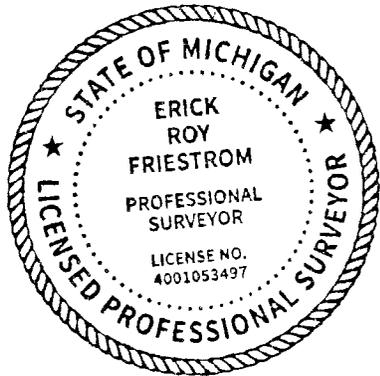
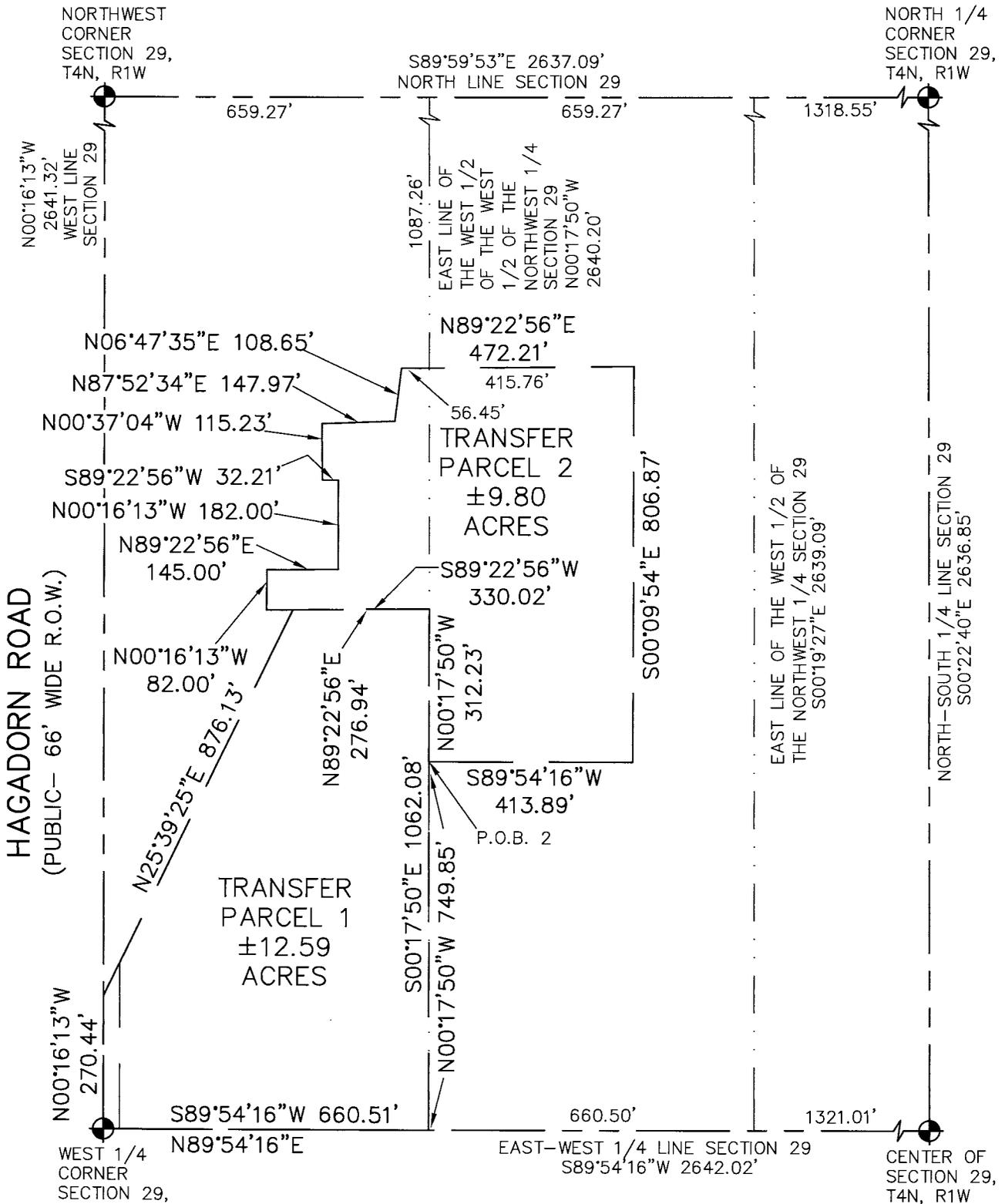
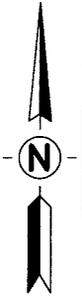
2116 HASLETT ROAD, HASLETT, MI 48840  
PH. 517-339-1014 FAX. 517-339-8047

13432 PRESTON DRIVE, MARSHALL, MI 49068  
PH. 269-781-9800 FAX. 269-781-9805

DRAWN BY	AN	SECTION	29, T4N, R1W
FIELD WORK BY	AE	JOB NUMBER:	104912.BND
SHEET	1 OF 8		

# CERTIFIED BOUNDARY SURVEY DETAIL OF TRANSFER PARCELS

FOR: SHANGRI-LA REAL ESTATE, LLC



- NOTES:
1. ALL EASEMENTS MAY NOT BE SHOWN
  2. ALL DIMENSIONS ARE AS MEASURED UNLESS NOTED OTHERWISE
  3. SEE SHEET 3 FOR RECORDED DIMENSIONS
  4. SEE SHEET 4 FOR EXISTING EASEMENT DETAILS
  5. SEE SHEET 5 FOR PATHWAY EASEMENT

SCALE 1" = 300'



### LEGEND

- = Set 1/2" Bar with Cap
  - = Found Iron as Noted
  - = Survey Boundary Line
  - = Distance Not to Scale
- All Dimensions are in Feet and Decimals Thereof.  
All Improvements Not Shown.

	<b>KEBS, INC.</b> KYES ENGINEERING BRYAN LAND SURVEYS	
	2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014    FAX. 517-339-8047 13432 PRESTON DRIVE, MARSHALL, MI 49068 PH. 269-781-9800    FAX. 269-781-9805	
DRAWN BY <b>AN</b>	SECTION <b>29, T4N, R1W</b>	
FIELD WORK BY <b>AE</b>	JOB NUMBER:	
SHEET <b>2</b> OF <b>8</b>	<b>104912.BND</b>	

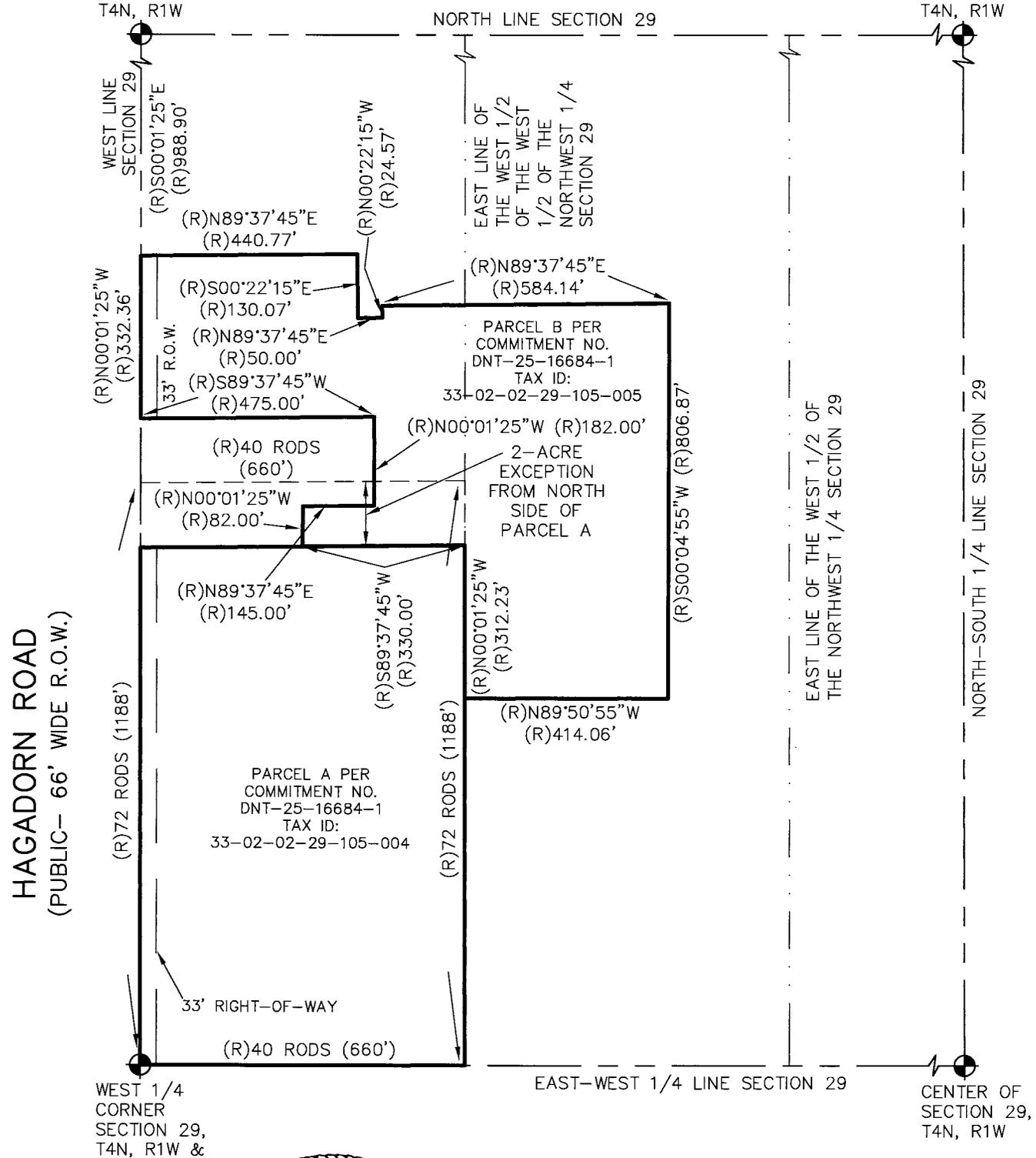
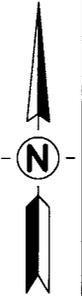
# CERTIFIED BOUNDARY SURVEY

## DETAIL OF PREVIOUSLY RECORDED DIMENSIONS

FOR: **SHANGRI-LA REAL ESTATE, LLC**

NORTH 1/4  
CORNER  
SECTION 29,  
T4N, R1W

NORTHWEST  
CORNER  
SECTION 29,  
T4N, R1W



- NOTES:
1. ALL EASEMENTS MAY NOT BE SHOWN
  2. ALL DIMENSIONS ARE AS MEASURED UNLESS NOTED OTHERWISE
  3. SEE SHEET 2 FOR TRANSFER PARCELS
  4. SEE SHEET 4 FOR EXISTING EASEMENT DETAILS
  5. SEE SHEET 5 FOR PATHWAY EASEMENT

SCALE 1" = 300'



### LEGEND

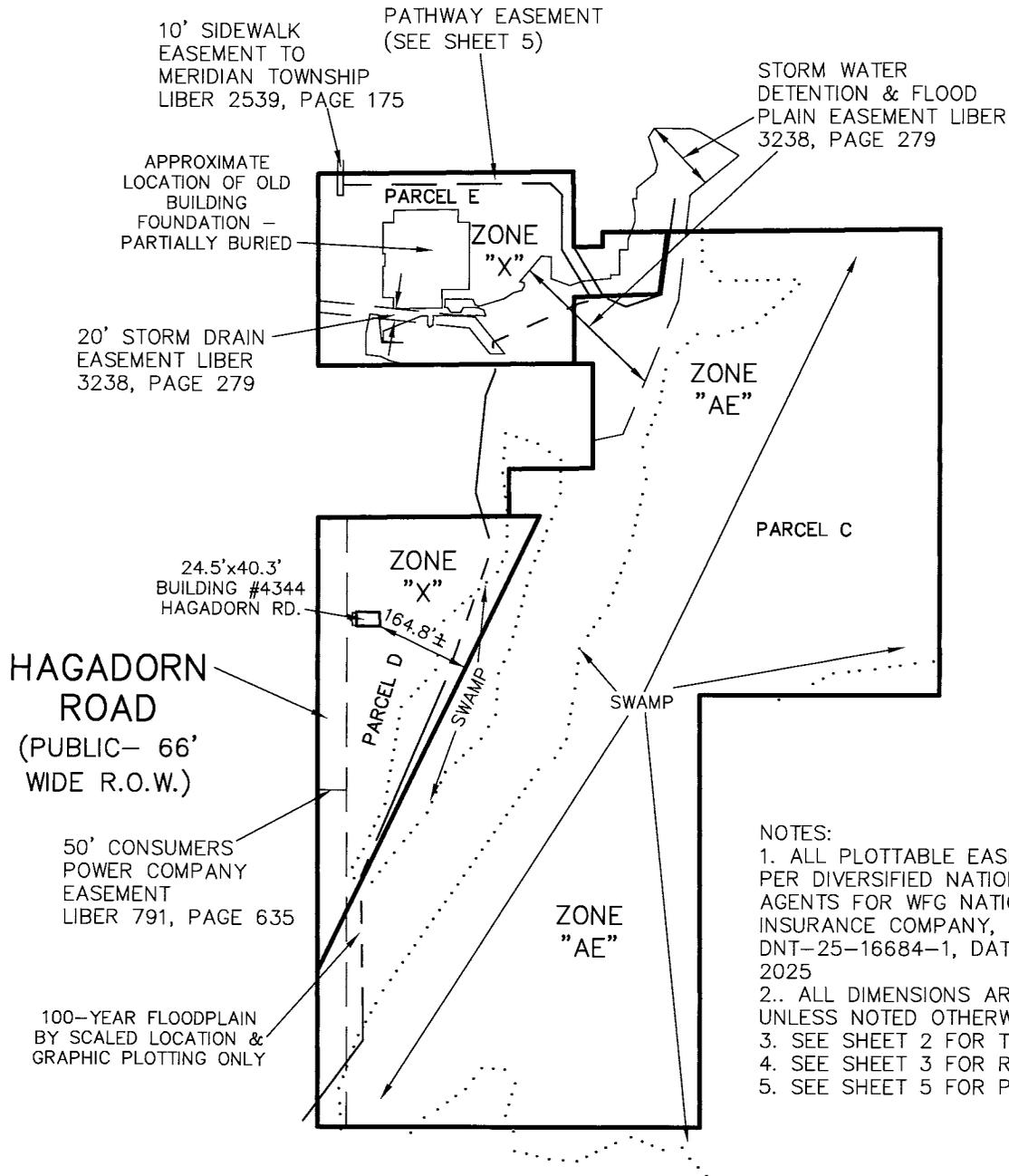
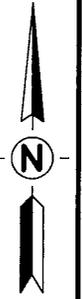
- (R) = Recorded Dimension
  - = Set 1/2" Bar with Cap
  - = Found Iron as Noted
  - = Survey Boundary Line
  - = Distance Not to Scale
- All Dimensions are in Feet and Decimals Thereof.
- All Improvements Not Shown.

	<b>KEBS, INC.</b>	<b>KYES ENGINEERING</b> <b>BRYAN LAND SURVEYS</b>
	2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX. 517-339-8047 13432 PRESTON DRIVE, MARSHALL, MI 49068 PH. 269-781-9800 FAX. 269-781-9805	
DRAWN BY <b>AN</b>	SECTION <b>29, T4N, R1W</b>	
FIELD WORK BY <b>AE</b>	JOB NUMBER:	
SHEET <b>3</b> OF <b>8</b>	<b>104912.BND</b>	

# CERTIFIED BOUNDARY SURVEY

## DETAIL OF EASEMENTS, SWAMP, & FLOODPLAIN

FOR: SHANGRI-LA REAL ESTATE, LLC

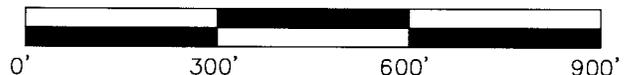


**NOTES:**

1. ALL PLOTTABLE EASEMENTS ARE SHOWN PER DIVERSIFIED NATIONAL TITLE AGENCY, AGENTS FOR WFG NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NO. DNT-25-16684-1, DATED SEPTEMBER 16, 2025
2. ALL DIMENSIONS ARE AS MEASURED UNLESS NOTED OTHERWISE
3. SEE SHEET 2 FOR TRANSFER PARCELS
4. SEE SHEET 3 FOR RECORDED DIMENSIONS
5. SEE SHEET 5 FOR PATHWAY EASEMENT



SCALE 1" = 300'



**LEGEND**

- = Set 1/2" Bar with Cap
  - = Found Iron as Noted
  - = Survey Boundary Line
  - = Distance Not to Scale
- All Dimensions are in Feet and Decimals Thereof.  
All Improvements Not Shown.



**KEBS, INC.** KYES ENGINEERING  
BRYAN LAND SURVEYS

2116 HASLETT ROAD, HASLETT, MI 48840  
PH. 517-339-1014 FAX. 517-339-8047

13432 PRESTON DRIVE, MARSHALL, MI 49068  
PH. 269-781-9800 FAX. 269-781-9805

DRAWN BY <b>AN</b>	SECTION <b>29, T4N, R1W</b>
FIELD WORK BY <b>AE</b>	JOB NUMBER:
SHEET <b>4</b> OF <b>8</b>	<b>104912.BND</b>



# CERTIFIED BOUNDARY SURVEY

CERTIFICATE OF SURVEY:

I hereby certify only to the parties named hereon that we have surveyed and divided into three parcels, at the direction of said parties, two parcels of land previously described as:

(As provided by Diversified National Title Agency, agents for WFG National Title Insurance Company, Commitment No. DNT-25-16684-1, dated September 16, 2025)

**Parcel A**

Part of the Northwest 1/4, Section 29, Town 4 North, Range 1 West, Meridian Charter Township, Ingham County, Michigan, described as: Commencing at the Southwest corner of the Northwest 1/4, Section 29; thence running East 40 rods; thence North 72 rods; thence West 40 rods; thence South 72 rods to beginning. EXCEPT the 2 acres sold to Elijah Kieppe Off the North end of said premises.

**Parcel B**

Part of the Northwest 1/4, Section 29, Town 4 North, Range 1 West, Meridian Charter Township, Ingham County, Michigan, described as: Commencing at the Northwest corner of said Section 29; thence S00°01'25"E, along the West line of said Section 29, a distance of 988.90 feet to the Point of Beginning of this description; thence N89°37'45"E 440.77 feet; thence S00°22'15"E 130.07 feet; thence N89°37'45"E 50.00 feet; thence N00°22'15"W 24.57 feet; thence N89°37'45"E 584.14 feet; thence S00°04'55"W 806.87 feet; thence N89°50'55"W 414.06 feet; thence N00°01'25"W, parallel with the West line of said Section 29, a distance of 312.23 feet; thence S89°37'45"W 330.00 feet; thence N00°01'25"W, parallel with said West line, 82.00 feet; thence N89°37'45"E 145.00 feet; thence N00°01'25"W, parallel with said West line 182.00 feet; thence S89°37'45"W 475.00 feet to said West line; thence N00°01'25"W, along said West line, 332.36 feet to the Point of Beginning.

and that we have found or set, as noted hereon, permanent markers to all corners and angle points of the boundaries of said parcels and that the more particular legal descriptions of said parcels are as follows:

**Parcel C**

A parcel of land in the Northwest 1/4 of Section 29, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Beginning at the West 1/4 corner of said Section 29; thence N00°16'13"W along the West line of said Section 29 a distance of 270.44 feet; thence N25°39'25"E 876.13 feet; thence S89°22'56"W 53.08 feet; thence N00°16'13"W parallel with said West line 82.00 feet; thence N89°22'56"E 145.00 feet; thence N00°16'13"W parallel with said West line 182.00 feet; thence S89°22'56"W 32.21 feet; thence N00°37'04"W 115.23 feet; thence N87°52'34"E 147.97 feet; thence N06°47'35"E 108.65 feet; thence N89°22'56"E 472.21 feet; thence S00°09'54"E 806.87 feet; thence S89°54'16"W parallel with the East-West 1/4 line of said Section 29 a distance of 413.89 feet to the East line of the West 1/2 of the West 1/2 of the Northwest 1/4 of said Section 29; thence S00°17'50"E along said East line 749.85 feet to said East-West 1/4 line; thence S89°54'16"W along said East-West 1/4 line 660.51 feet to the point of beginning; said parcel containing 22.40 acres, more or less, including 0.23 acre, more or less, presently in use as public right-of-way for Hagadorn Road; said parcel subject to all easements and restrictions, if any.

**Parcel D**

A parcel of land in the Northwest 1/4 of Section 29, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the West 1/4 corner of said Section 29; thence N00°16'13"W along the West line of said Section 29 a distance of 270.44 feet to the point of beginning of this description; thence N00°16'13"W continuing along said West line 785.62 feet; thence N89°22'56"E 383.08 feet; thence S25°39'25"W 876.13 feet to the point of beginning; said parcel containing 3.45 acres, more or less, including 0.56 acre, more or less, presently in use as public right-of-way for Hagadorn Road; said parcel subject to all easements and restrictions, if any.

(CONTINUED ON SHEET 7)



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DRAWN BY	AN	SECTION	29, T4N, R1W
FIELD WORK BY	AE	JOB NUMBER:	
SHEET	6 OF 8	104912.BND	

# CERTIFIED BOUNDARY SURVEY

(CONTINUED FROM SHEET 6)

**Parcel E**

A parcel of land in the Northwest 1/4 of Section 29, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the West 1/4 corner of said Section 29; thence N00°16'13"W along the West line of said Section 29 a distance of 1320.06 feet to the point of beginning of this description; thence N00°16'13"W continuing along said West line 332.36 feet; thence N89°22'56"E 440.77 feet; thence S00°37'04"E 130.07 feet; thence N89°22'56"E 50.00 feet; thence N00°37'04"W 24.57 feet; thence N89°22'56"E 111.93 feet; thence S06°47'35"W 108.65 feet; thence S87°52'34"W 147.97 feet; thence S00°37'04"E 115.23 feet; thence S89°22'56"W 442.79 feet to the point of beginning; said parcel containing 3.73 acres, more or less, including 0.25 acre, more or less, presently in use as public right-of-way for Hagadorn Road; said parcel subject to all easements and restrictions, if any.

**Pathway Easement**

An area of land in the Northwest 1/4 of Section 29, T4N, R1W, Meridian Township, Ingham County, Michigan, the limits of said area described as: Commencing at the West 1/4 corner of said Section 29; thence N00°16'13"W along the West line of said Section 29 a distance of 1652.42 feet; thence N89°22'56"E 43.00 feet to the East line of an existing sidewalk easement as recorded in Liber 2539, Page 175 of Ingham County, Michigan, records and the point of beginning of this description; thence continuing N89°22'56"E 397.77 feet; thence S00°37'04"E 130.07 feet; thence S31°18'55"E 99.69 feet; thence S87°52'34"W 22.91 feet; thence N31°18'55"W 94.54 feet; thence N00°27'14"W 95.10 feet; thence N45°37'13"W 28.29 feet; thence S89°22'56"W 357.89 feet; thence N00°16'13"W parallel with said West line of Section 29 a distance of 20.00 feet to the point of beginning; said area containing 0.28 acre, more or less; said area subject to all other easements and restrictions, if any.

**Transfer Parcel 1**

A parcel of land in the Northwest 1/4 of Section 29, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Beginning at the West 1/4 corner of said Section 29; thence N00°16'13"W along the West line of said Section 29 a distance of 270.44 feet; thence N25°39'25"E 876.13 feet; thence N89°22'56"E 276.94 feet to the East line of the West 1/2 of the Northwest 1/4 of said Section 29; thence S00°17'50"E along said East line 1062.08 feet to the East-West 1/4 line of said Section 29; thence S89°54'16"W along said East-West 1/4 line 660.51 feet to the point of beginning; said parcel containing 12.59 acres, more or less, including 0.23 acre, more or less, presently in use as public right-of-way for Hagadorn Road; said parcel subject to all easements and restrictions, if any.

**Transfer Parcel 2**

A parcel of land in the Northwest 1/4 of Section 29, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the West 1/4 corner of said Section 29; thence N89°54'16"E along the East-West 1/4 line of said Section 29 a distance of 660.51 feet to the East line of the West 1/2 of the Northwest 1/4 of said Section 29; thence N00°17'50"W along said East line 749.85 feet to the point of beginning of this description; thence N00°17'50"W continuing along said East line 312.23 feet; thence S89°22'56"W 330.02 feet; thence N00°16'13"W parallel with the West line of said Section 29 a distance of 82.00 feet; thence N89°22'56"E 145.00 feet; thence N00°16'13"W parallel with said West line 182.00 feet; thence S89°22'56"W 32.21 feet; thence N00°37'04"W 115.23 feet; thence N87°52'34"E 147.97 feet; thence N06°47'35"E 108.65 feet; thence N89°22'56"E 472.21 feet; thence S00°09'54"E 806.87 feet; thence S89°54'16"W parallel with said East-West 1/4 line 413.89 feet to the point of beginning; said parcel containing 9.80 acres, more or less; said parcel subject to all easements and restrictions, if any.



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FIELD WORK BY	<b>AE</b>	JOB NUMBER:
SHEET	<b>7 OF 8</b>	<b>104912.BND</b>

# CERTIFIED BOUNDARY SURVEY

SCHEDULE B, SECTION II, EXCEPTIONS:

(As provided by Diversified National Title Agency, agents for WFG National Title Insurance Company, Commitment No. DNT-25-16684-1, dated September 16, 2025)

Item 9: Easement for Consumers Power Company as recorded in Liber 791, Page 635; crosses parcel, is plottable and shown hereon.

Item 10: Area as described in Liber 2344, Page 809; does not cross parcel and is not shown hereon.

Item 11: Easements in favor of Meridian Charter Township as recorded in Liber 2539, Page 175; & Liber 2539, Page 177; cross parcel, are plottable and shown hereon. Easement in favor of Meridian Township as recorded in Liber 2539, Page 179; does not cross parcel, therefore not shown hereon.

Item 12: Easements in favor of the Ingham County Drain Commission as recorded in Liber 3238, Page 279; cross parcel, are plottable and shown hereon.

**WITNESSES TO SECTION CORNERS:**

West 1/4 corner Section 29, T4N, R1W, Liber 8, Page 449  
 Found Remon bar & cap in monument box in C/L of Hagadorn Road  
 Found nail & tag in East side utility pole, S20°W, 89.39'  
 Found nail & tag in East side fence post, N55°W, 57.23'  
 Found nail & tag in East side utility pole, N20°W, 125.61'  
 Found nail & tag in Southwest side 4" maple tree, West, 40.06'

Northwest corner Section 29, T4N, R1W, Liber 8, Page 447  
 Found Remon bar & cap in monument box in C/L of Hagadorn & Mt Hope Roads  
 Found nail & tag #18994 Northwest side power pole, N42°E, 70.08'  
 Found nail & tag #25832 Northwest side power pole, N65°E, 69.26'  
 Centerline of fire hydrant, S57°E, 75.86'  
 Centerline of gas valve, S55°W, 56.45'

North 1/4 corner Section 29, T4N, R1W, Liber 8, Page 453  
 Found remon bar & cap in mon box, centerline of Mt. Hope Road  
 Found dimple mark in East side of 2" steel anchor post, N05°E, 33.56'  
 Found nail & tag #18994 in East side of 28" Oak, S02°W, 28.00'  
 Found nail & tag #25832 in Southeast side of power pole, S82°W, 105.16'  
 Found nail & tag #25832 in Southwest side of power pole, S75°E, 125.40'

Center of Section 29, T4N, R1W, Liber 8, Page 252  
 Found 1/2" bar at base of fallen down railroad tie post  
 Found nail & tag North side 48" Maple, S75°E, 5.06'  
 Found nail & tag West side 6" Maple, S15°W, 22.79'  
 Found nail & tag North side 6" Elm, West, 25.28'  
 Found nail & tag in West side of 6" Elm, N29°E, 31.57'

I certify that the requirements for 1970 PA 132, MCL 54.213 have been met. The relative positional precision of the corners identified for this survey and shown on the map are within the limits accepted by the professional practice of surveying.

All bearings are Michigan State Plane South Zone grid bearings obtained from GPS observations using corrections obtained from the nearest National Geodetic Survey C.O.R.S. station.



Erick R. Friestrom                      Date:  
 Professional Surveyor No. 53497

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DRAWN BY <b>AN</b>	SECTION <b>29, T4N, R1W</b>
FIELD WORK BY <b>AE</b>	JOB NUMBER:
SHEET <b>8</b> OF <b>8</b>	<b>104912.BND</b>



# PHASE II ENVIRONMENTAL SITE ASSESSMENT

4344 Hagadorn Road, Meridian Charter Township, Ingham County,  
Michigan

**PREPARED FOR** Meridian Charter Township  
5151 Marsh Road  
Okemos, Michigan 48864

**PROJECT #** 20532s-2-20

**DATE** November 11, 2025

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Figure 2	Sample Location Map

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# PHASE II ENVIRONMENTAL SITE ASSESSMENT

4344 Hagadorn Road, Meridian Charter Township, Michigan

AKT Peerless Project No. 20532s-2-20

## 1.0 Introduction

Meridian Charter Township retained AKT Peerless Environmental & Energy Services (AKT Peerless) to conduct a Phase II Environmental Site Assessment (Phase II ESA) at 4344 Hagadorn Road in Meridian Charter Township, Michigan (subject property). This Phase II ESA was conducted in accordance with AKT Peerless' Proposal for a Phase II ESA (Proposal Number PS-38333), dated October 17, 2025, and is based on American Society for Testing and Materials (ASTM) Designation E 1903-19 "Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process."

This Phase II ESA scope of work is intended to evaluate the recognized environmental condition (REC) presented in Section 2.5 which was limited to 4344 Hagadorn Road, Meridian Township. This Phase II ESA scope of work does not evaluate other properties (a portion of 4366 Hagadorn Road and a portion of Parcel 33-02-02-29-105-005) which were the subject of AKT Peerless' Phase I ESA dated October 14, 2025. Specifically, no RECs were identified at 4366 Hagadorn Road or a portion of Parcel 33-02-02-29-105-005, therefore further assessment of those properties was not warranted.

AKT Peerless' Phase II ESA report documents the field activities, sampling protocols, and laboratory results conducted as part of this assessment. AKT Peerless' Phase II ESA was performed for the benefit of Meridian Charter Township, who may rely on the contents and conclusions of this report.

## 2.0 Background

### 2.1 Site Description and Physical Setting

The subject property (properties intended to be acquired by Meridian Charter Township) is located at 4344 Hagadorn Road, a portion of 4366 Hagadorn Road, and a portion of Parcel 33-02-02-29-105-005, Meridian Charter Township, Michigan, and comprises three parcels (Parcel Identification Numbers 33-02-02-29-151-004, 33-02-02-29-151-002, and 33-02-02-29-105-005) consisting of approximately 26.54 acres. The subject property contains one 1,680 square foot residential building that is currently unoccupied. Exterior portions of the subject property consist of grassy areas, overgrown vegetation, wooded areas, and lowland areas.

The subject property is zoned Research Park (RP). The subject property is situated in the northwest  $\frac{1}{4}$  of Section 29 in Meridian Charter Township (T.04N. /R.01W.), Ingham County, Michigan.

Refer to **Figure 1** for a Topographic Location Map. See **Figure 2** for a Sample Location Map.

### 2.2 Subject Property History and Land Use

By 1938, the northwestern portions of Parcel A and Parcel B were utilized for agricultural purposes, with the remainder of the subject property consisting of undeveloped land with Parcel C being transected by Herron Creek from north to south. In 1939, the subject building had been moved onto Parcel A. By 1950,

two outbuildings were constructed on Parcel A. By 1963, portions of the eastern outbuilding were demolished. By 1981, agricultural activities had ceased. By 2018, the northwestern portion of Parcel A was utilized again for agricultural purposes. The subject building has been vacant since at least 2016.

The subject property is unoccupied with no apparent use.

### 2.3 Adjacent Property Land Use

The following table describes the current occupants of the adjoining properties, as identified during the October 2025 Phase I ESA:

**Adjoining Properties**

Direction	Address	Occupant Name
North	4440 Hagadorn Road	Unoccupied commercial
East	None assigned	Undeveloped
Southeast	None assigned	Undeveloped
South	3800 Hagadorn Road	College Fields Golf Club
West	4345 Hagadorn Road	Michigan State University Veterinary Research Farm
	4360 Hagadorn Road	Residential
	4366 Hagadorn Road (Parent parcel to Parcel B)	Residential
	None assigned (Parent parcel to Parcel C)	Undeveloped

### 2.4 Previous Environmental Investigations

AKT Peerless was not provided with copies of reports that document previous investigations or assessments of the subject property, nor did AKT Peerless identify the existence of such documents during this assessment.

### 2.5 Summary of Recognized Environmental Concerns

AKT Peerless conducted a Phase I ESA ,dated October 14, 2025, for the subject property. The Phase I ESA was conducted in accordance with USEPA Standards and Practices for All Appropriate Inquires [(AAI), 40 CFR Part 312] and the ASTM International Standard Practice E 1527-21 (ASTM Practice E 1527) on behalf of Meridian Charter Township in connection with the aquisition of the subject property. The following REC was identified in connection with the subject property:

**REC 1** - AKT Peerless observed a pipe entering the basement on the northeastern exterior of the subject building (4344 Hagadorn Road). Purpose of this pipe was not determined; however, the subject

building has been located on the subject property since 1939 and natural gas was not available to the area of the subject property until 1959. This pipe may have been associated with the storage and/or transfer to fuel oil used as a heating fuel source prior to the connection of natural gas. The possibility exists that a release of fuel oil may have occurred over time and represents a REC.

### 3.0 Phase II Environmental Site Assessment Activities

The following sections summarize the site assessment activities conducted by AKT Peerless.

#### 3.1 Scope of Assessment

To further evaluate the REC, AKT Peerless conducted a subsurface investigation of 4344 Hagadorn Road that included: (1) the advancement of three soil borings and (2) the collection of three soil samples. The following samples were submitted for laboratory analyses:

- Three soil samples for benzene, toluene, ethylbenzene, and xylenes (collectively BTEX), trimethylbenzene (TMBs), and polynuclear aromatic hydrocarbons (PNAs).

The following table summarizes each REC, the site investigation activities performed to address each REC, and the laboratory parameters used to address each REC.

**Summary of Investigation Activity**

REC #	Environmental Concern	Investigation Activity	Analytical Parameters
1	Pipe entering the basement of the subject building with unknown purpose, the potential for alternative historical heating fuel source, and the possible release of any former fuel oil.	AKT-1, AKT-2, AKT-3	BTEX, TMBs, PNAs

##### 3.1.1 Soil Evaluation

On October 27, 2025, AKT Peerless advanced three soil borings at the subject property. AKT Peerless used hydraulic drive/direct-push (Geoprobe®) and hand auger sampling techniques and followed the guidance outlined in ASTM publication E1903-19 “Standard Practice of Environmental Site Assessments: Phase II Environmental Site Assessment Process.” AKT Peerless collected continuous soil samples from the soil borings in four-foot intervals to the maximum depth explored of eight feet below ground surface (bgs). AKT Peerless personnel inspected, field-screened, and logged the samples collected at each soil boring location. Refer to **Figure 2** for a site map depicting the soil boring locations. Boring logs are provided in **Appendix A**.

#### 3.2 Quality Assurance/Quality Control

To ensure the accuracy of data collected during on site activities, AKT Peerless implemented proper quality assurance/quality control (QA/QC) measures. The QA/QC procedures included, but were not limited to, (1) decontamination of sampling equipment before and between sampling events, (2)

calibration of field equipment, (3) documentation of field activities, and (4) sample preservation techniques.

### 3.2.1 Decontamination of Equipment

During sample collection, AKT Peerless adhered to proper decontamination procedures. Sampling equipment was decontaminated using the following methods to minimize potential cross-contamination of soil samples:

- Steam-cleaning or washing and scrubbing the equipment with non-phosphate detergent
- Rinsing the equipment
- Air-drying the equipment

### 3.2.2 Calibration of Field Equipment

All field instruments were calibrated prior to first use on-site to ensure accuracy. Field instruments utilized during investigation activities at this subject property were a photoionization detector (PID) and a sample scale.

During AKT Peerless' Phase II ESA, a PID was used to screen all soil samples. The PID was maintained in a calibrated condition using 100 ppm isobutylene span gas prior to subsurface investigations.

A sample scale was utilized during soil sampling activities to weigh approximately 10 grams of soil for the methanol preserved samples (i.e., soil samples designated for volatile organic compounds (VOCs) analysis). The scale was maintained in a calibrated condition using calibration weights in accordance with the manufacturer's specifications.

### 3.2.3 Documentation of Activities

During AKT Peerless' Phase II ESA activities, subject property conditions (i.e. soil boring locations, weather conditions) were documented. AKT Peerless visually inspected the soil samples and prepared a geologic log for each soil boring. The logs include soil characteristics such as (1) color, (2) composition (e.g., sand, clay, or gravel), (3) soil moisture and water table depth, and (4) signs of possible contamination (i.e., stained or discolored soil, odors). Soil types were classified in accordance with ASTM publication D-2488 "Unified Soil Classification System." All soil samples were delivered to Quantum Laboratories, Inc. under chain-of-custody documentation. See **Appendix A** for AKT Peerless' Soil Boring logs. See **Figure 2** for Sample Location Maps.

### 3.2.4 Sample Preservation Techniques

AKT Peerless collected soil samples according to USEPA Publication SW-846, "Test Methods for Evaluating Solid Waste." Soil samples were collected in laboratory-supplied containers, stored on ice or at approximately 4 degrees Celsius, and submitted under chain-of-custody documentation.

Soil samples collected for volatile analyses were field preserved with methanol in accordance with U.S. EPA Method 5035. Soil samples collected for polynuclear aromatic hydrocarbons (PNAs) analyses were stored in unpreserved, 4-ounce wide-mouth jars.

## 3.3 Laboratory Analysis and Methods

AKT Peerless submitted three soil samples for laboratory analyses. The following table summarizes the location, depth, matrix, and laboratory analysis for each sample.

## Sample Collection Summary

Sample Identification	Sample Matrix	Soil Sample Interval (feet bgs)	Laboratory Analytical Parameter(s)
AKT-1	Soil	3.5-4.0'	BTEX, TMBs, PNAs
AKT-2	Soil	6.5-7.0'	BTEX, TMBs, PNAs
AKT-3	Soil	4.5-5.0'	BTEX, TMBs, PNAs

The laboratory analyzed the samples for: (1) VOCs (BTEX/TMBs) in accordance with USEPA Methods 8260B/5035; (2) PNAs in accordance with USEPA Methods 8270C.

## 4.0 Evaluation and Presentation of Results

### 4.1 Subsurface Conditions

The following sections summarize the physical soil and groundwater conditions at the subject property.

#### 4.1.1 Soil and Groundwater Conditions based on Published Material

According to the United States Department of Agriculture Web Soil Survey, the soil in the area is classified as approximately 59% Houghton muck, 0 to 1 percent slopes, described as very poorly drained muck on depressions on moraines on outwash plains and depressions on outwash plains. Approximately 11% Edwards muck, 0 to 1 percent slopes, described as very poorly drained muck on lakebeds on glacial drainage channels, lakebeds on outwash plains, and lakebeds on moraines.

According to the Michigan Geological Survey Division's publication, "*Quaternary Geology of Southern Michigan*," the soil in the area is end moraines of medium-textured till, described as gray, grayish brown or reddish brown, nonsorted glacial debris; matrix is dominantly loam and silt loam texture, variable amounts of cobbles and boulders. Occurs in narrow linear belts of hummocky relief marking former standstills of ice-sheet margin. Includes areas small areas of ground moraine as well as outwash. Soil thickness tends to be somewhat greater than adjacent ground moraine areas. Typically, end moraines of medium-textured till are associated with moderate hydraulic permeability.

No groundwater was encountered during the advancement of the three soil borings at the subject property.

#### 4.1.2 Soil and Groundwater Conditions based on Field Observations

During drilling activities, AKT Peerless encountered the following soil types:

- SAND from below the surface cover to approximately seven feet below ground surface. This sand was fine to medium grain and brown in color.
- CLAYEY SAND from below the surface cover to approximately five feet bgs. This sand was fine to medium grain and brown in color and had trace gravel in soil boring AKT-3.
- CLAY from below the surface cover to approximately eight feet bgs, the maximum depth explored. This clay was medium to high stiffness and gray in color.

The subsurface soils at the property are consistent with the description of end moraines of medium-textured till as described in the *Quaternary Geology of Southern Michigan*. See **Figure 2** for a site map depicting the soil boring locations. See **Appendix A** for AKT Peerless' Soil Boring Logs.

## 4.2 Laboratory Analytical Results

AKT Peerless collected soil samples for the purpose of evaluating general site environmental conditions and support future land use planning. When appropriate, analytical results were compared with Michigan Department of Environment, Great Lakes, & Energy (EGLE) Generic Residential Cleanup Criteria (RCC) provided in Michigan Administrative Rules 299.1 through 299.50. AKT Peerless also compared the soil laboratory analytical results to the EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels.

### 4.2.1 Soil Analytical Results

AKT Peerless submitted three soil samples for laboratory analysis of BTEX, TMBs, and PNAs. The laboratory analytical results from soil samples collected at the subject property did not indicate the presence of target compounds above all EGLE Part 201 RCC. Furthermore, laboratory analytical results were reported below laboratory target detection limits (TDLs) for all constituents.

Based on laboratory analytical results, the subject property does not meet the definition of a *facility*, as defined in Part 201 of the Natural Resources and Environmental Protection Act (NREPA), Michigan Public Act (PA) 451, 1994, as amended.

Refer to **Figure 2** for the Sample Location Map depicting soil boring locations. Refer to **Table 1** for a Summary of Soil Analytical Results. Refer to **Appendix B** for the Laboratory Analytical Report.

## 5.0 Summary, Conclusions, and Recommendations

The following sections summarize the investigation conducted by AKT Peerless at the subject property.

### 5.1 Summary of Environmental Concerns

Based on AKT Peerless' October 14, 2025, Phase I ESA, the following environmental concerns were identified:

- Pipe entering the basement of the subject building with unknown purpose, the potential for alternative historical heating fuel source, and the possible release of any former fuel oil.

### 5.2 Summary of Subsurface Investigation

On October 27, 2025, AKT Peerless conducted a subsurface investigation at the subject property to further evaluate environmental concerns identified during previous environmental investigations. AKT Peerless (1) drilled three soil borings and (2) collected soil samples for laboratory analyses. AKT Peerless submitted soil samples for laboratory analyses of BTEX, TMBs, and PNAs.

### 5.3 Conclusions

AKT Peerless conducted soil sampling in areas most likely to be impacted by contaminants based on the past use of the subject property. Laboratory analytical results from soil samples collected at the subject property during AKT Peerless' Phase II ESA did not indicate the presence of target compounds above

EGLE Part 201 RCC. Therefore, the subject property does not meet the definition of a facility, as defined in Part 201 of the NREPA, Michigan PA 451, 1994, as amended.

#### 5.4 Recommendations

No further assessment is recommended.

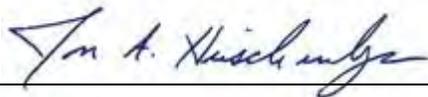
#### 6.0 Limitations

The information and opinions obtained in this report are for the exclusive use of Meridian Charter Township. No distribution to or reliance by other parties may occur without the express written permission of AKT Peerless. AKT Peerless will not distribute this report without your written consent or as required by law or by a Court order. The information and opinions contained in the report are given in light of that assignment. The report must be reviewed and relied upon only in conjunction with the terms and conditions expressly agreed upon by the parties and as limited therein. Any third parties who have been extended the right to rely on the contents of this report by AKT Peerless (which is expressly required prior to any third-party release), expressly agrees to be bound by the original terms and conditions entered into by AKT Peerless and Meridian Charter Township.

Subject to the above and the terms and conditions, AKT Peerless accepts responsibility for the competent performance of its duties in executing the assignment and preparing reports in accordance with the normal standards of the profession, but disclaims any responsibility for consequential damages. Although AKT Peerless believes that results contained herein are reliable, AKT Peerless cannot warrant or guarantee that the information provided is exhaustive or that the information provided by Meridian Charter Township or third parties is complete or accurate.

#### 7.0 Signatures of Environmental Professionals

The following individuals contributed to the completion of this report.



---

**Jon Hirschenberger, CPG**  
**Group Leader**  
AKT Peerless  
Saginaw, Michigan Office  
Phone: 989-754-9896  
hirschenbergerj@aktpeerless.com

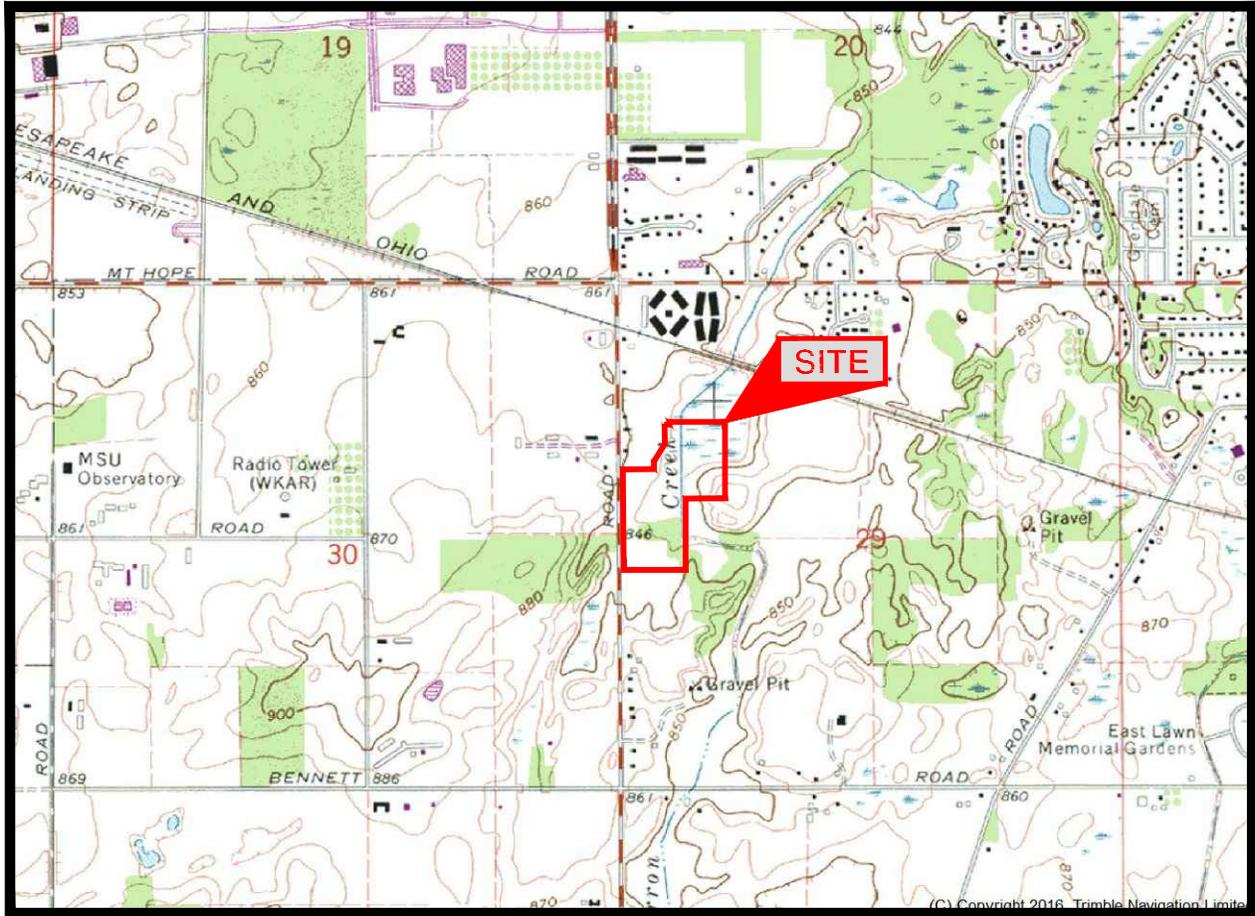


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**Norman Ferguson**  
**Environmental Consultant**  
AKT Peerless  
Saginaw, Michigan Office  
Phone: 989-798-9711  
fergusonn@aktpeerless.com

## FIGURES

EAST LANSING QUADRANGLE  
 MICHIGAN - INGHAM COUNTY  
 7.5 MINUTE SERIES (TOPOGRAPHIC)



T.4 N.-R.1 W.

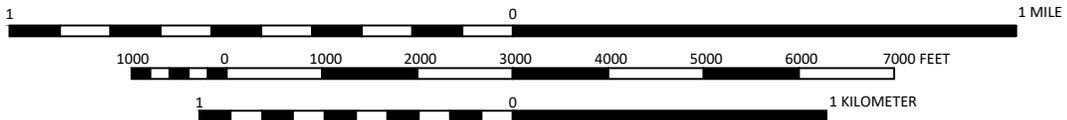


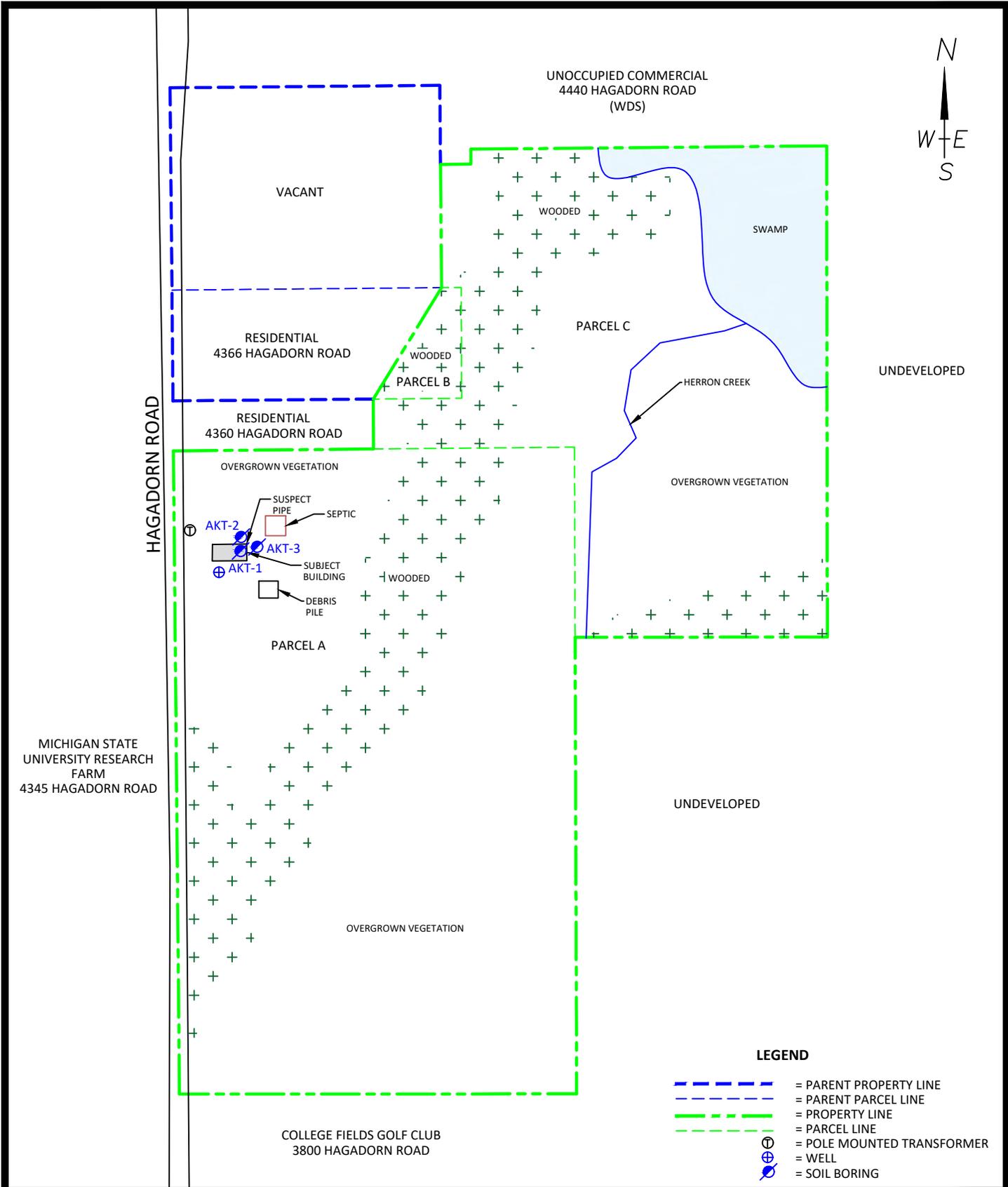
IMAGE TAKEN FROM 1970 U.S.G.S. TOPOGRAPHIC MAP  
 PHOTOREVISED 1976



**TOPOGRAPHIC LOCATION MAP**  
 4344 HAGADORN ROAD AND  
 0.37 ACRES OF 4366 HAGADORN ROAD AND  
 10.17 ACRES PARCEL 33-02-02-29-105-005  
 MERIDIAN CHARTER TOWNSHIP, MICHIGAN  
 PROJECT NUMBER: 20532s-2-20

DRAWN BY: SES  
 DATE: 09/18/2025

**FIGURE 1**



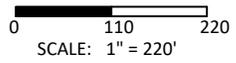
**LEGEND**

- = PARENT PROPERTY LINE
- = PARENT PARCEL LINE
- = PROPERTY LINE
- = PARCEL LINE
- = POLE MOUNTED TRANSFORMER
- = WELL
- = SOIL BORING



**SAMPLE LOCATION MAP**  
 4344 HAGADORN ROAD AND  
 0.37 ACRES OF 4366 HAGADORN ROAD AND  
 10.17 ACRES PARCEL 33-02-02-29-105-005  
 MERIDIAN CHARTER TOWNSHIP, MICHIGAN  
 PROJECT NUMBER: 20532s-2-20

DRAWN BY: SES  
 DATE: 10/27/2025



**FIGURE 2**

## **TABLES**

**Table 1: Summary of Soil Analytical Results**  
**4344 Hagadorn Road**  
**Meridian Charter Township, Michigan**  
**AKT Peerless Project No. 20532s-2-20**

													Lab ID	14461-1	14461-2	14461-3
Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Soil Volatilization to Indoor Air Inhalation Criteria	Residential Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Residential Finite VSIC for 5 Meter Source Thickness	Residential Finite VSIC for 2 Meter Source Thickness	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria & RBSLs	Soil Saturation Concentration Screening Levels	Residential Volatilization to Indoor Air Pathway (VIAP) Soil	Sample ID	AKT-1	AKT-2	AKT-3
													Collection Date	10/27/25	10/27/25	10/27/25
*(Refer to detailed laboratory report for method reference data)													Depth	3.5-4.0'	6.5-7.0'	4.5-5.0'
<b>Semivolatiles, PNAs, ug/Kg</b>																
Acenaphthene	83-32-9	NA	3.00E+05	8,700	1.90E+08	8.10E+07	8.10E+07	8.10E+07	1.40E+10	4.10E+07	NA	2.0E+05 nc	< 330	< 330	< 330	
Acenaphthylene	208-96-8	NA	5,900	ID	1.60E+06	2.20E+06	2.20E+06	2.20E+06	2.30E+09	1.60E+06	NA	DATA	< 330	< 330	< 330	
Anthracene	120-12-7	NA	41,000	ID	1.0E+9 (D)	1.40E+09	1.40E+09	1.40E+09	6.70E+10	2.30E+08	NA	1.3E+07 nc	< 330	< 330	< 330	
Benzo(a)anthracene (Q)	56-55-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	ID	20,000	NA	1.6E+05 (MM) mut	< 330	< 330	< 330	
Benzo(b)fluoranthene (Q)	205-99-2	NA	NLL	NLL	ID	ID	ID	ID	ID	20,000	NA	NA	< 330	< 330	< 330	
Benzo(k)fluoranthene (Q)	207-08-9	NA	NLL	NLL	NLV	NLV	NLV	NLV	ID	2.00E+05	NA	NA	< 330	< 330	< 330	
Benzo(g,h,i)perylene	191-24-2	NA	NLL	NLL	NLV	NLV	NLV	NLV	8.00E+08	2.50E+06	NA	NA	< 330	< 330	< 330	
Benzo(a)pyrene (Q)	50-32-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	1.50E+06	2,000	NA	NA	< 330	< 330	< 330	
Chrysene (Q)	218-01-9	NA	NLL	NLL	ID	ID	ID	ID	ID	2.00E+06	NA	NA	< 330	< 330	< 330	
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	ID	2,000	NA	NA	< 330	< 330	< 330	
Fluoranthene	206-44-0	NA	7.30E+05	5,500	1.0E+9 (D)	7.40E+08	7.40E+08	7.40E+08	9.30E+09	4.60E+07	NA	NA	< 330	< 330	< 330	
Fluorene	86-73-7	NA	3.90E+05	5,300	5.80E+08	1.30E+08	1.30E+08	1.30E+08	9.30E+09	2.70E+07	NA	4.7E+05 nc	< 330	< 330	< 330	
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	NLL	NLL	NLV	NLV	NLV	NLV	ID	20,000	NA	NA	< 330	< 330	< 330	
2-Methylnaphthalene	91-57-6	NA	57,000	4,200	2.70E+06	1.50E+06	1.50E+06	1.50E+06	6.70E+08	8.10E+06	NA	1,700 nc	< 330	< 330	< 330	
Naphthalene	91-20-3	NA	35,000	730	2.50E+05	3.00E+05	3.00E+05	3.00E+05	2.00E+08	1.60E+07	NA	67 (M) ca	< 330	< 330	< 330	
Phenanthrene	85-01-8	NA	56,000	2,100	2.80E+06	1.60E+05	1.60E+05	1.60E+05	6.70E+06	1.60E+06	NA	1,700 nc	< 330	< 330	< 330	
Pyrene	129-00-0	NA	4.80E+05	ID	1.0E+9 (D)	6.50E+08	6.50E+08	6.50E+08	6.70E+09	2.90E+07	NA	2.5E+07 nc	< 330	< 330	< 330	
<b>Volatiles, VOCs, ug/Kg</b>																
Benzene (I)	71-43-2	NA	100	4,000 (X)	1,600	13,000	34,000	79,000	3.80E+08	1.80E+05	4.00E+05	1.7 (M) ca	< 50	< 50	< 50	
Ethylbenzene (I)	100-41-4	NA	1,500	360	87,000	7.20E+05	1.00E+06	2.20E+06	1.00E+10	2.2E+7 (C)	1.40E+05	12 (M) ca	< 50	< 50	< 50	
Toluene (I)	108-88-3	NA	16,000	5,400	3.3E+5 (C)	2.80E+06	5.10E+06	1.20E+07	2.70E+10	5.0E+7 (C)	2.50E+05	3,700 nc	< 100	< 100	< 100	
1,2,4-Trimethylbenzene (I)	95-63-6	NA	2,100	570	4.3E+6 (C)	2.10E+07	5.00E+08	5.00E+08	8.20E+10	3.2E+7 (C)	1.10E+05	150 (JT) nc	< 100	< 100	< 100	
1,3,5-Trimethylbenzene (I)	108-67-8	NA	1,800	1,100	2.6E+6 (C)	1.60E+07	3.80E+08	3.80E+08	8.20E+10	3.2E+7 (C)	94,000	100 (JT) nc	< 100	< 100	< 100	
Xylenes (I)	1330-20-7	NA	5,600	980	6.3E+6 (C)	4.60E+07	6.10E+07	1.30E+08	2.90E+11	4.1E+8 (C)	1.50E+05	280 (J) nc	< 150	< 150	< 150	

**Appendix A**  
**Soil Boring Logs**







**Appendix B**  
**Laboratory Analytical Report**

## ANALYTICAL REPORT

For: AKT Peerless  
214 Janes Ave.  
Saginaw MI 48607

**Report Number: 14462**  
Report Date: November 7, 2025  
Project Name: -  
Project Number: 20532s-2-20  
Page: 1 of 6

Attn: Mr. Norman Ferguson  
Mr. Jon Hirschenberger

989-754-9896 Fax: 989-754-3804

### Sample Description

Three (3) samples reported to be Soil and identified as "20532s-2-20", 10/27/25, Grab and:

1. AKT-1
2. AKT-2
3. AKT-3

### Analysis Requested

Chemical Analysis per SW-846 (SW) for:

1. Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) plus Trimethylbenzenes, Methods 8260B and 5035
2. Polynuclear Aromatic Hydrocarbons (PNA), Method 8270C

## Analytical Results

Sample Description:		AKT-1, 10/27/25				
Laboratory ID:	14462-1	Reporting Limit	Units of Measure	Date of Analysis	Analyst	Data Qualifiers
<b>Volatile Organic Compounds</b>						
Benzene	Not Detected	50	µg/Kg, dry wt.	11/03/25	BD	
Ethylbenzene	Not Detected	50	µg/Kg, dry wt.	11/03/25	BD	
Toluene	Not Detected	100	µg/Kg, dry wt.	11/03/25	BD	
1,2,4-Trimethylbenzene	Not Detected	100	µg/Kg, dry wt.	11/03/25	BD	
1,3,5-Trimethylbenzene	Not Detected	100	µg/Kg, dry wt.	11/03/25	BD	
Xylene (Total)	Not Detected	150	µg/Kg, dry wt.	11/03/25	BD	
<b>Surrogate Standards</b>						
1,2-Dichloroethane-d4	110%	-	% Recovery	11/03/25	BD	
Toluene-d8	107%	-	% Recovery	11/03/25	BD	
4-Bromofluorobenzene	121%	-	% Recovery	11/03/25	BD	
<b>PNAs</b>						
Acenaphthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Acenaphthylene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Anthracene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(a)anthracene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(b)fluoranthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(k)fluoranthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(g,h,i)perylene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(a)pyrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Chrysene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Dibenzo(a,h)anthracene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Fluoranthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Fluorene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Indeno(1,2,3-cd)pyrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
2-Methylnaphthalene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Naphthalene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Phenanthrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Pyrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
<b>Surrogate Standards</b>						
Nitrobenzene-d5	78.0%	-	% Recovery	11/03/25	DS	
2-Fluorobiphenyl	84.6%	-	% Recovery	11/03/25	DS	
Terphenyl-d14	101%	-	% Recovery	11/03/25	DS	
<b>Analysis Information</b>						
Dry Weight Solids	96.7%	-	% by weight	10/31/25	LB	
PNA Extraction	Completed	-	-	11/03/25	SO/BN	

Sample Description:		AKT-2, 10/27/25				
Laboratory ID:	14462-2	Reporting Limit	Units of Measure	Date of Analysis	Analyst	Data Qualifiers
<b>Volatile Organic Compounds</b>						
Benzene	Not Detected	50	µg/Kg, dry wt.	11/03/25	BD	
Ethylbenzene	Not Detected	50	µg/Kg, dry wt.	11/03/25	BD	
Toluene	Not Detected	100	µg/Kg, dry wt.	11/03/25	BD	
1,2,4-Trimethylbenzene	Not Detected	100	µg/Kg, dry wt.	11/03/25	BD	
1,3,5-Trimethylbenzene	Not Detected	100	µg/Kg, dry wt.	11/03/25	BD	
Xylene (Total)	Not Detected	150	µg/Kg, dry wt.	11/03/25	BD	
<b>Surrogate Standards</b>						
1,2-Dichloroethane-d4	111%	-	% Recovery	11/03/25	BD	
Toluene-d8	107%	-	% Recovery	11/03/25	BD	
4-Bromofluorobenzene	120%	-	% Recovery	11/03/25	BD	
<b>PNAs</b>						
Acenaphthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Acenaphthylene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Anthracene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(a)anthracene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(b)fluoranthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(k)fluoranthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(g,h,i)perylene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(a)pyrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Chrysene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Dibenzo(a,h)anthracene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Fluoranthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Fluorene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Indeno(1,2,3-cd)pyrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
2-Methylnaphthalene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Naphthalene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Phenanthrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Pyrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
<b>Surrogate Standards</b>						
Nitrobenzene-d5	64.4%	-	% Recovery	11/03/25	DS	
2-Fluorobiphenyl	68.5%	-	% Recovery	11/03/25	DS	
Terphenyl-d14	96.8%	-	% Recovery	11/03/25	DS	
<b>Analysis Information</b>						
Dry Weight Solids	95.2%	-	% by weight	10/31/25	LB	
PNA Extraction	Completed	-	-	11/03/25	SO/BN	

Sample Description:		AKT-3, 10/27/25				
Laboratory ID:	14462-3	Reporting Limit	Units of Measure	Date of Analysis	Analyst	Data Qualifiers
<b>Volatile Organic Compounds</b>						
Benzene	Not Detected	50	µg/Kg, dry wt.	11/03/25	BD	
Ethylbenzene	Not Detected	50	µg/Kg, dry wt.	11/03/25	BD	
Toluene	Not Detected	100	µg/Kg, dry wt.	11/03/25	BD	
1,2,4-Trimethylbenzene	Not Detected	100	µg/Kg, dry wt.	11/03/25	BD	
1,3,5-Trimethylbenzene	Not Detected	100	µg/Kg, dry wt.	11/03/25	BD	
Xylene (Total)	Not Detected	150	µg/Kg, dry wt.	11/03/25	BD	
<b>Surrogate Standards</b>						
1,2-Dichloroethane-d4	113%	-	% Recovery	11/03/25	BD	
Toluene-d8	107%	-	% Recovery	11/03/25	BD	
4-Bromofluorobenzene	121%	-	% Recovery	11/03/25	BD	
<b>PNAs</b>						
Acenaphthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Acenaphthylene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Anthracene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(a)anthracene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(b)fluoranthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(k)fluoranthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(g,h,i)perylene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Benzo(a)pyrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Chrysene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Dibenzo(a,h)anthracene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Fluoranthene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Fluorene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Indeno(1,2,3-cd)pyrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
2-Methylnaphthalene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Naphthalene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Phenanthrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
Pyrene	Not Detected	330	µg/Kg, dry wt.	11/03/25	DS	
<b>Surrogate Standards</b>						
Nitrobenzene-d5	74.7%	-	% Recovery	11/03/25	DS	
2-Fluorobiphenyl	78.1%	-	% Recovery	11/03/25	DS	
Terphenyl-d14	107%	-	% Recovery	11/03/25	DS	
<b>Analysis Information</b>						
Dry Weight Solids	93.1%	-	% by weight	10/31/25	LB	
PNA Extraction	Completed	-	-	11/03/25	SO/BN	

## Quality Control

### **VOC Matrix Spike Data**

Spiked Sample: 14452-1		Matrix: Soil		Units: ppb in extract				Data
Parameter	Sample Result	Spike Added	MS Result	MSD Result	MS % Rec.	MSD % Rec.	RPD	Qualifiers
1,1-Dichloroethene	0.0	25	24	23	96	92	4.3	
Benzene	0.0	25	23	22	92	88	4.4	
Trichloroethene	0.0	25	18	17	72	68	5.7	
Toluene	0.0	25	20	20	80	80	0.0	
Chlorobenzene	0.0	25	18	18	72	72	0.0	

### **PNA Matrix Spike Data**

Spiked Sample: 14462-1		Matrix: Soil		Units: ppm in extract				Data
Parameter	Sample Result	Spike Added	MS Result	MSD Result	MS % Rec.	MSD % Rec.	RPD	Qualifiers
Acenaphthene	0.0	20	13	13	65	65	0.0	
Phenanthrene	0.0	20	15	15	75	75	0.0	
Fluoranthene	0.0	20	14	14	70	70	0.0	
Pyrene	0.0	20	16	16	80	80	0.0	
Chrysene	0.0	20	15	15	75	75	0.0	

## Case Narrative

All method protocols and quality control requirements were satisfied for all samples.

## Notes

- (1) Quality Control Limits available upon request.
- (2) Results are applicable only to the sample tested.
- (3) All samples will be discarded after 30 days unless the laboratory receives other instructions.
- (4) Chain of Custody document attached.

QUANTUM LABORATORIES, INC.



David W. Starr  
Analytical Chemistry Manager

**QUANTUM LABORATORIES, INC.**  
 28221 Beck Road | Suite A-11  
 Wixom, MI 48393  
 248-348-TEST or 248-348-8378

Women's Business Enterprise  
 National Council  
**WBENC**  
 Cert. No. 2005111505

**Quantum Laboratories, Inc.**

**CHAIN OF CUSTODY RECORD**

**CLIENT INFO**

COMPANY: AKT Peerless  
 ADDRESS: 214 James Ave  
 CITY, STATE, ZIP: Saginaw, MI 48607  
 TELEPHONE: 989-798-9896  
 FAX:  
 CONTACT: Norman Ferguson / Jon Hirschenberger  
 ADDITIONAL PHONE: 989-798-9711  
 EMAIL ADDRESS: Fergusonn@aktpeerless.com / jon@aktpeerless.com

\* SAMPLE TYPE: S=Soil, W=Water, D=Drinking Water, O=Oil/Organic, M=Mixed, V=Vapor, A=Air  
 U=Unknown or Other

\*\* GRAB/COMP: G=Grab Sample, C=Composite Sample

**PROJECT INFO**

REPORT NO. (LAB USE): 14462 Page of  
 P.O. NUMBER:  
 PROJECT NUMBER: 20532s-2-20  
 PROJECT NAME:  
 SAMPLING LOCATION:  
 SAMPLES COLLECTED BY: Norman Ferguson  
 TURN AROUND TIME:  Standard  Rush  By Date:

**ANALYSIS REQUESTED**

BTEX+TMS  
 PNAS

LINE NO.	LAB USE	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	TIME SAMPLED	DATE SAMPLED	SAMPLE TYPE *	GRAB / COMP **	REMARKS / PRESERVATIVES
1		AKT-1	2		10/27	S	G	
2		AKT-2	2		10/27	S	G	
3		AKT-3	2		10/27	S	G	
4								
5								
6								
7								
8								
9								
10								

XFER	RELINQUISHED BY	TIME / DATE	ACCEPTED BY	SAMPLE RECEIVED
1	<i>M.A.</i>	10/27/25 @ 1:12	AKT cold storage	<input type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice
2	AKT cold storage	10.31.25 12:30	<i>P. Ferguson</i>	
3	<i>P. Ferguson</i>	10.31.25 2:00	<i>Norman Ferguson</i>	

Distribution: White - Lab Copy Yellow - Client Report Pink - Sampler

Data Qualifiers: I Internal Standard results outside of acceptance limits  
 S QC spike recovery outside of acceptance limits  
 R RPD outside of acceptance limits

E Reporting limit is elevated  
 D Result is from a dilution  
 J Result should be considered estimated

M Matrix interference observed  
 F Matrix Spike four times rule applied  
 C See Case Narrative



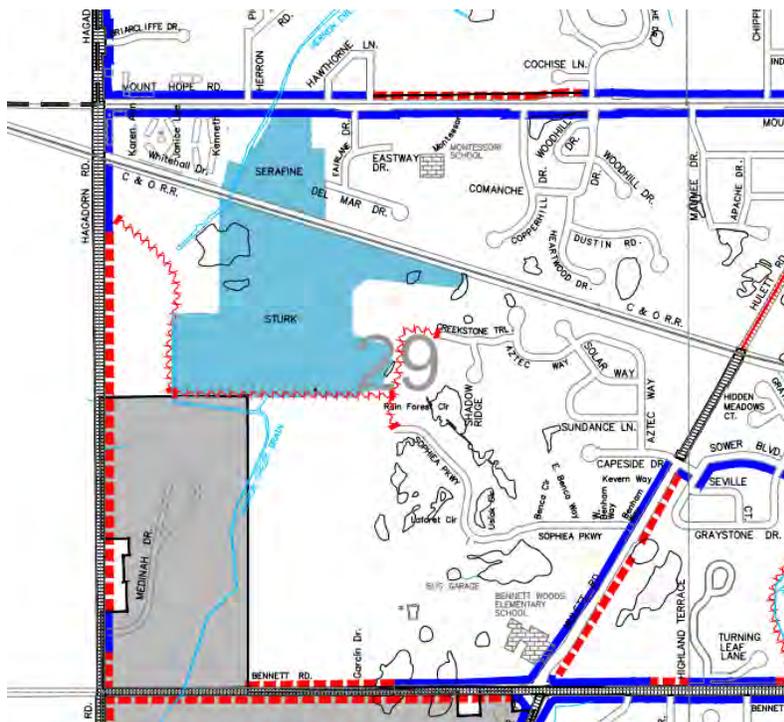
**To:** Board Members  
**From:** Dan Opsommer, Deputy Township Manager  
Director of Public Works and Engineering  
**Date:** October 14, 2025  
**Re:** Hagadorn Road Land Donation

---

Township staff were recently approached by the owners of 4344 Hagadorn Rd and parcel # 33-02-02-20-105-005 to see if the Township would be interested in acquiring portions of these two parcels (please refer to the property boundary survey attached to this cover memo for a map of the parcels in question). In total, the Township would be acquiring approximately 22.75 acres.

The current owners wish to donate the land to the Township by the end of the calendar year as the tax benefits they will receive for this donation will be reduced on or after January 1, 2026 due to changes to the federal tax code that will take effect.

The Township's Pathway Master Plan includes a future pathway connection over and across these parcels to connect the Silverleaf, Champion Woods, Sundance Estates and Herron Creek neighborhoods to the existing pathway on Hagadorn Rd just south of the CSX railroad crossing as shown below:

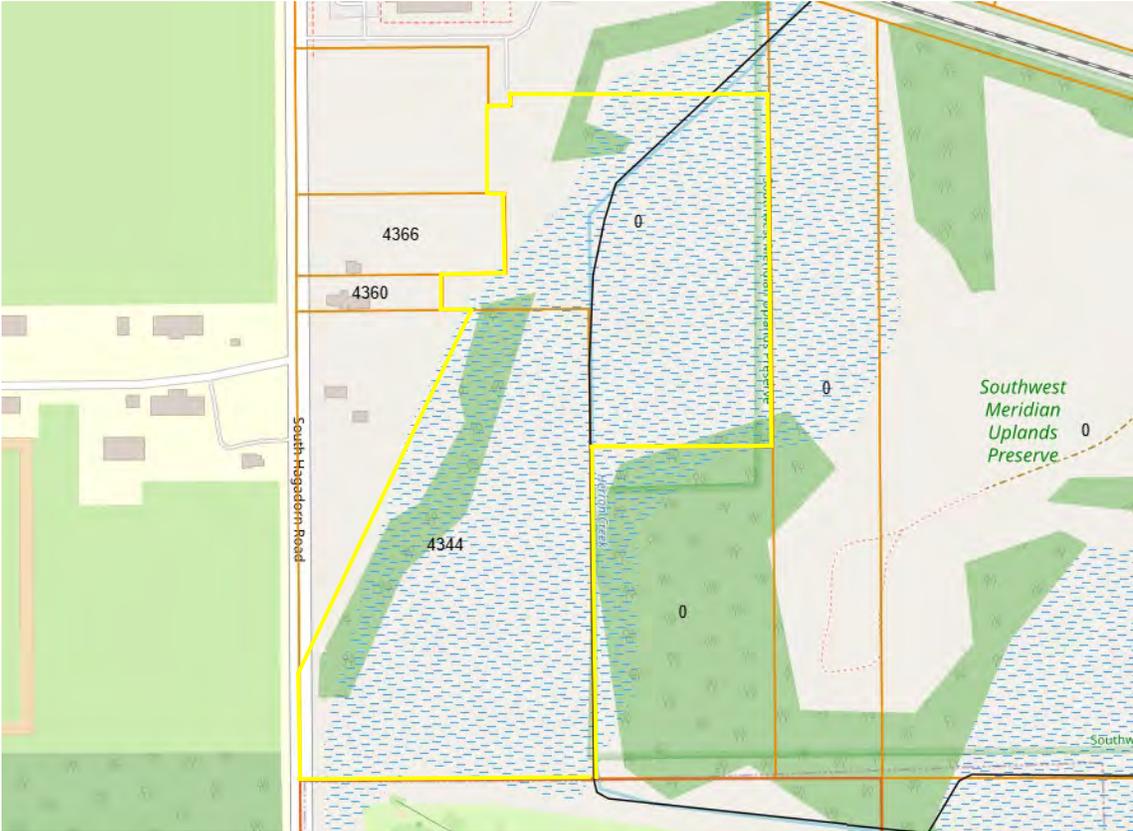


In addition to donating this land, the property owners will be granting the Township an easement over the land they retain for future prospective development so we have the ability to construct this trail in the event that a development does not get approved for this site. The Township Department of Public Works & Engineering would recommend acquiring these properties as the opportunity to secure the entirety of this proposed off-road trail route is a very unique opportunity as we continue to build out the Pathway Master Plan.

Historically, the Township has not acquired land for the pathway system. However, the only way to acquire the land in question in the timeframe that the current owners have requested is to acquire this as a pathway property as the Land Preservation acquisition process would extend well past January 1, 2026. The land is being donated, so the only costs that will be incurred are for our due diligence (surveying, environmental assessments, etc.).

Township staff will discuss at a future date what the long-term use of these parcels are. Current options being discuss in concept include:

1. Donating the land to the Township’s land preservation program.
2. Donating the land to the Ingham County Drain Commissioner’s Office as the Herron Creek Drain does run along the eastern property line of 4344 Hagadorn Rd and runs through parcel # 33-02-02-20-105-005. The route and course of the Herron Creek Drain is shown by the black line below and the land the Township is acquiring is shown in yellow. The land is largely covered by wetlands and most of it is within the 100-year floodplain. Therefore, the land is already used for stormwater detention.



Township staff have hired a consultant to complete a Phase I Environmental Site Assessment (ESA). Our consultant did observe a pipe entering the basement on the northeastern exterior of the subject building (4344 Hagadorn Road). Purpose of this pipe was not determined; however, the subject building has been located on the subject property since 1939 and natural gas was not available to the area of the subject property until 1959. This pipe may have been associated with the storage and/or transfer to fuel oil used as a heating fuel source prior to the connection of natural gas. The possibility exists that a release of fuel oil may have occurred over time. Therefore, the Township is have a Phase II ESA conducted on the subject site to further examine this. This was the potential issue identified during the course of the Phase I ESA.

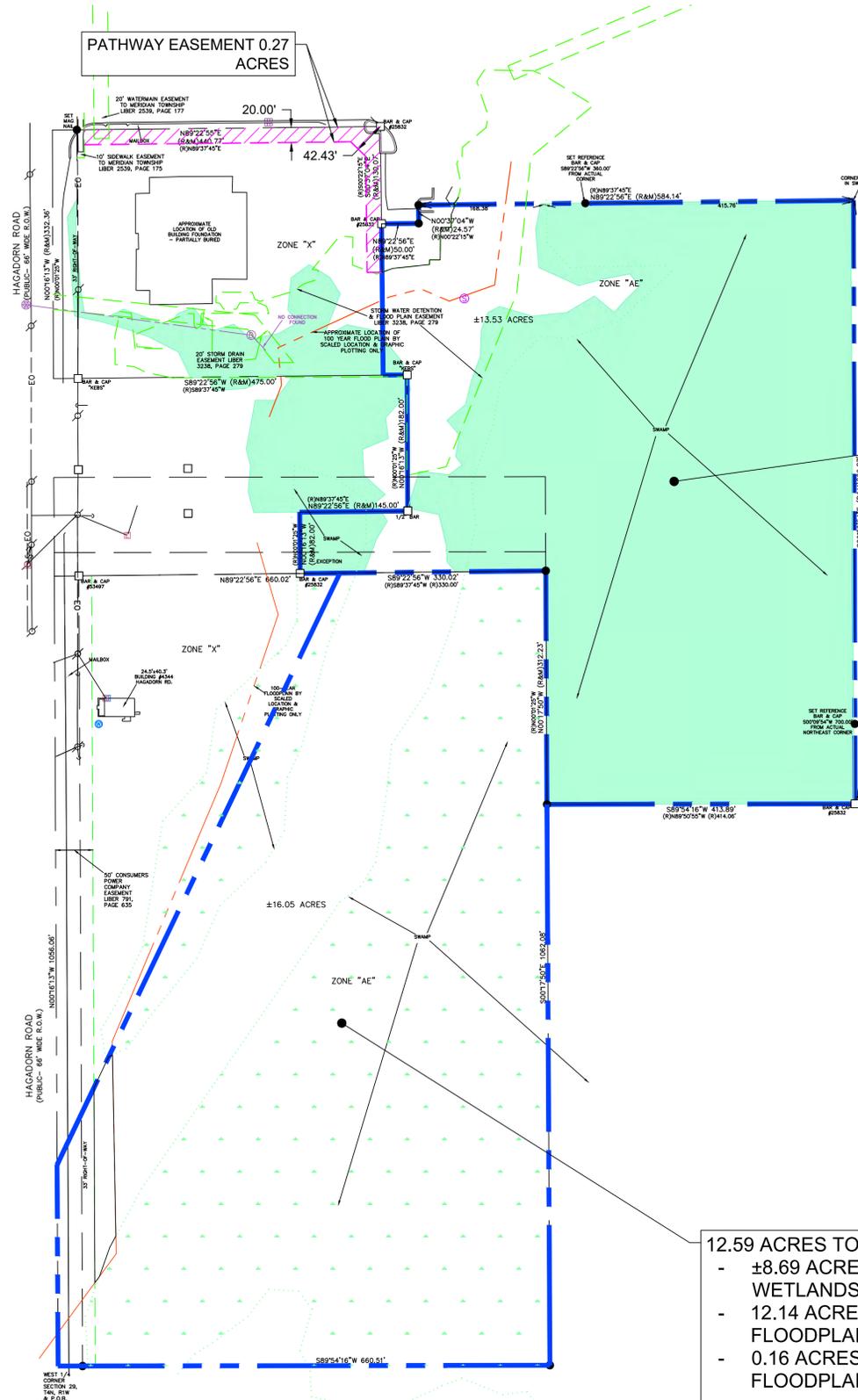
The Phase II ESA will be completed before we bring this agenda item back to the Board for approval at your November 6 or November 18 meeting. The Phase II ESA may even be available prior to October 21.

The purpose of the agenda item this evening is to introduce this prospective land acquisition to the Township Board and determine, based on what we currently know, if the Board would like to acquire this land.

We are happy to answer any questions the Board may have.

**Attachments:**

1. Property Boundary Survey
2. [2024 Pathway Master Plan](#)
3. [Phase I Environmental Site Assessment](#)



**LEGEND**

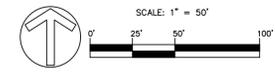
	EXISTING PROPERTY LINE
	PROPERTY LINE FOR LAND TO BE DONATED
	EXISTING EASEMENT
	PROPOSED PATHWAY EASEMENT
	DELINEATED WETLAND AREA
	APPROXIMATE LOCATION OF WETLANDS / SWAMP
	FLOODPLAIN BOUNDARY

**10.16 ACRES TO BE DONATED**

- 8.69 ACRES COVERED BY WETLANDS
- 9.76 ACRES COVERED BY 100-YR FLOODPLAIN
- 0.97 ACRES COVERED BY STORM WATER DETENTION AND FLOODPLAIN EASEMENT
- 0.13 ACRES FREE OF WETLANDS, FLOODPLAINS AND EASEMENTS

**12.59 ACRES TO BE DONATED**

- ±8.69 ACRES COVERED BY WETLANDS / SWAMP
- 12.14 ACRES COVERED BY 100-YR FLOODPLAIN
- 0.16 ACRES FREE OF WETLANDS, FLOODPLAINS AND EASEMENTS



Meridian Charter Township  
Ingham County, Michigan  
**LAND ACQUISITION EXHIBIT**

HAGADORN ROAD  
33-02-02-29-105-005  
NE 1/4 SECTION 29, T4N, R1W, MERIDIAN TOWNSHIP,  
INGHAM COUNTY, MICHIGAN

DRAWN BY: CH CHECKED BY:

REVISIONS:

DATE	BY:	COMMENTS:
10.10.25	CH	LAND ACQUISITION AND EASEMENT

SHEET:



**To:** Board Members

**From:** Timothy R. Schmitt, AICP  
Community Planning and Development Director

**Date:** November 25, 2025

**Re:** Settlement Agreement Amendment Request – Eyde Land Holdings (owner) Central Park Property/Continental Properties acting as developer (Parcel IDs 15-400-031, 22-203-001, 22-202-001)

In July of this year, Staff presented an initial concept plan to the Township Board from Continental Properties for the vacant property on the east side of Central Park Drive, owned by Eyde Land Holdings. The subject properties has substantial litigation history and is currently under a settlement agreement that allows for multi-family residential on the property between Belvedere and Columbus, up to eight dwelling units per acre (RD Zoning), along with commercial uses along the Central Park frontage in that area (CS Zoning). The property north of Belvedere and south of Columbus are still zoned commercial (CS Zoning). The applicant is requesting to change the zoning designations on the site, through a settlement agreement amendment, to RC, multi-family residential up 14 dwelling units per acre, while limiting the overall density and increasing setbacks, among other conditions.

At the August 7, 2025 Township Board meeting, after having discussed the matter at the previous meeting, the Township Board referred the matter to the Planning Commission for review, asking the Planning Commission for its recommendation as to whether those court orders governing the zoning, permitted uses, and development of the parcels that are subject to the resolutions should be amended to change the zoning designations.

There has been extensive discussion on this matter at the Planning Commission over the past three months. At the direction of Staff, the applicant held a meeting for the Central Park Estates neighborhood that was well attended on August 20th at the Okemos library. They made changes to the initial concept plan that the Township Board was presented in July and the matter was then presented to the Planning Commission. The Planning Commission has held a total of four meetings on the topic. Rather than attempt to recreate the information and discussion that occurred, the packets, minutes, and video for each meeting is linked below.

September 8, 2025 meeting - This meeting was a discussion between the Planning Commission and Staff regarding the background history of the property and project. There was no formal memo created and the proposal had not been submitted yet. Staff provided no cover memo, instead seeking to have more of a Q and A session, so no packet is linked. [VIDEO MINUTES](#)

October 13, 2025 meeting - This was the formal public hearing meeting for the project. Although a public hearing is not required, Staff had recommended one, based on how the 2004 settlement agreement amendment was handled. There was extensive public input at this meeting and the Planning Commission had a number of items that they asked Staff to follow up on prior to the next meeting. [PACKET VIDEO MINUTES](#)

## **Memo to Township Board**

**November 25, 2025**

**Re: Settlement Agreement Amendment Request-Eyde Land Holdings (owner) Central Park Property/Continental Properties acting as developer (Parcel IDs 15-400-031, 22-203-001, 22-202-001)**

**Page 2**

October 27, 2025 meeting - There was both extensive public input and extensive Planning Commission discussion at this meeting, in response to the follow up information that Staff provided in the packet, responding to questions from the October 14th meeting. Given the volume of new information and additional requests, it was decided to hold an additional meeting to discuss the matter, before any potential recommendation to the Township Board. [PACKET VIDEO MINUTES](#)

Before the November 17th meeting, the applicant made a modification to the Plan, which is the current plan that the Board is being asked to discuss and review, to reduce the number of units on site from 312 to 288 and increase the setback from Central Park Estates from 100 feet to 110 feet. Details on those changes can be found in the applicant's letter in the November 17, 2025 Planning Commission packet.

November 17, 2025 meeting - After substantial deliberation, the Planning Commission deadlocked 3-3 on recommending to the Township Board that the property be rezoned to RC, subject to a series of 12 conditions. They then voted 6-0 to answer the Board's direct question, with a motion that said the property should be rezoned, but did not specify the zoning designation it should be rezoned to. Lastly, they voted down a motion, by a 2-4argin, to recommend RD zoning across the site. [PACKET VIDEO](#) (Minutes are not yet available for this meeting and will be provided at the next Township Board meeting)

During the November 17th meeting, the Planning Commission wanted to make sure that Staff fully relayed the breadth of their discussion to the Township Board. The most efficient way of doing that, without leaving something out or changing context, is the links to each of the videos. This project has been substantially vetted and Staff cannot adequately summarize the Planning Commission discussion, except to highlight the topics that were discussed:

- Overall project density
- The Future Land Use Map and how it applies here given the litigation
- Traffic impacts
- Nonmotorized access and traffic impacts
- Wetland impacts
- Special Use Permit requirements given that the buildings are greater than 25,000 sq. ft.
- Comparisons to similar projects
- Historical rezoning comparisons
- Future review by the Ingham County Drain Commissioner
- Future review by the Ingham County Road Department
- Affordability of units in relation to the Township
- Access points to the site
- Accident data for the surrounding area
- Further information on the clearing violation that occurred on the property
- Height and location of the buildings, in relation to the Central Park Estates
- Potential parking reductions

For the Board's discussion, the following eleven conditions were recommended by Staff, with the 12 condition added by the Planning Commission at the November meeting. Additionally, condition 5 was

**Memo to Township Board**

**November 25, 2025**

**Re: Settlement Agreement Amendment Request-Eyde Land Holdings (owner) Central Park Property/Continental Properties acting as developer (Parcel IDs 15-400-031, 22-203-001, 22-202-001)**

**Page 3**

reduced to 288 units and condition 8 was increased to 110 feet, in conjunction with the applicant's proposed modification that was presented at the meeting.

1. No buildings taller than 2 stories shall be permitted south of Belvedere Avenue.
2. The sidewalk along Belvedere Avenue shall be built in place of the proposed offroad pathway on the Township's Pathway Master Plan and shall be constructed a minimum of eight feet wide, subject to Engineering approval.
3. A pedestrian connection from the project north to the sidewalk at the southwest corner of the Walmart site shall be provided, subject to acquisition of easements.
4. Pedestrian connections from the project to the surrounding sidewalk/pathway system shall be provided wherever feasible.
5. No more than 312 dwelling units shall be permitted across the northern two parcels only.
6. No dwelling units shall be permitted south of Columbus Avenue.
7. Full-time access points shall be permitted on Central Park and Times Square Drives only, subject to the review and approval of the Ingham County Road Department.
8. A minimum of 100 feet of setback shall be provided from the western lot lines of the nearest units in Central Park Estates.
9. Parking on the site shall be reduced to a maximum of 1.75 spaces per dwelling unit.
10. The applicant shall provide a detailed grading plan, showing preservation of natural areas along all property lines, where feasible, with a focus on limited all grading activities along the eastern project boundaries.
11. All lighting on the site shall meet Meridian Township standards, including no visible light sources along the eastern project boundaries.
12. A minimum of 96% of the wetlands on the site are required to be maintained.

Staff looks forward to discussing this proposal with the Board and further following up on items that need additional clarification.

**Attachment:**

1. Letter from applicant, summarizing current proposal



Continental 975 Fund LLC  
W134N8675 Executive Parkway  
Menomonee Falls, WI 53051  
November 13<sup>th</sup>, 2025

Meridian Township  
Township Board  
5151 Marsh Road  
Okemos, MI 48864

Dear Meridian Township Board,

Since Continental 975 Fund LLC (“Continental”) first presented its original plan to amend the existing consent judgment to allow for a multi-family housing community on July 22, 2025, we have amended our proposal to address concerns and incorporate suggestions from neighbors and other community stakeholders.

On August 20<sup>th</sup>, 2025, Continental held a neighborhood outreach meeting with the Central Park Estates as well as all other property owners within 300’ of the subject property at which Continental received valuable feedback from the surrounding neighbors. In addition, on October 13<sup>th</sup>, 27<sup>th</sup>, and November 17<sup>th</sup>, 2025, the Planning Commission and adjacent residents considered our proposal and provided additional suggestions.

Please see the additional information provided herein summarizing the changes. Thank you very much for your consideration of our proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen Dorn". The signature is written in a cursive style with a large, stylized "S" and "D".

Stephen Dorn  
Continental 975 Fund LLC

## Continental's Request

- The subject property's zoning and land use is governed by the existing consent judgment. Continental submitted an application to Meridian Township with a request to amend the judgment in order to remove the commercial zoning and instead support medium-density multi-family uses across the entire site.

## Executive Summary

- Continental's request to amend the consent judgment will:
  - i. Result in a down-zone with less intense uses permitted with the removal of the commercial zoning
  - ii. Not cause adverse impacts to the existing roadway network or traffic patterns, and produce fewer trips than by-right uses will generate
  - iii. Increase pedestrian connectivity from the residential areas to the commercial corridors
  - iv. Result in a more logical and orderly transition of land uses in the area
  - v. Respects the commercial and residential communities adjacent to or near the subject property
  - vi. Preserve the integrity of high-quality wetland features on the subject property
  - vii. Provide new high quality and affordable housing opportunities in Meridian Township

## Concept Plan Modifications

- In response to Township Board, Planning Commission, and community feedback, Continental proposes the following adjustments to the July 22, 2025 concept plan (see exhibits A and B for concept plan comparisons)
  - Pedestrian Connections (subject to ICRD approval)- In addition to internal connections to existing sidewalk network and Walmart, we are proposing to fill gaps in the existing public sidewalk network by extending public sidewalks and implementing the masterplan-identified Cross County Pathway.
    - An 8'-0" wide public Cross County Pathway is proposed on the south side of Belvedere Ave from Central Park Drive to the existing walk terminus west of Nassau Street
    - A 5'-0" wide public sidewalk is proposed on the north side of Columbus Ave from Central Park Drive to the existing walk terminus west of Nassau Street
    - Central Park Pedestrian Crossing- Continental is proposing a crosswalk with rectangular rapid flashing beacons ("RRFBs") at the Central Park Drive and Columbus Avenue intersection, allowing Central Park Estates residents to safely cross Central Park Drive and enter the retail corridor.

- Modified/Restricted Access- We are proposing only one access point on Central Park Drive that is roughly in the middle of Columbus Avenue and Belvedere Avenue. In addition, due to neighbor concerns of traffic along Belvedere Avenue and Columbus Avenue, we are proposing to restrict those access points to be emergency access only. Subject to Ingham County Road Department review and approval.
- Building Placement along Central Park Drive- Modified the layout to have the building fronting Central Park Drive with parking behind for a more pedestrian friendly and walkable aesthetic.
- Wetland Impact Minimization - Committing to preserving a minimum of 96% of the existing jurisdictional wetlands and a no-net loss on wetland buffers. (see Exhibit C)
- Revised Trash/Recycle Location- Revised the trash/recycling location to be screened from the adjacent community and more internal to the proposed site.
- Density- Reduced the allowable density from 312 homes to a maximum of 288 homes for a density to ~9.4 UN/AC.
- Building Setback from Central Park Estates- Increased the building setback from the Central Park Estates lot line to 110' (**2.44x** the code required setback).
- Parking- Decreased the proposed parking on site to 1.75 stalls per unit. Along with a density reduction, we are decreasing the impervious pavement required to serve the site.

## Traffic/Density

- Various commercial traffic generation scenarios allowed under the current zoning associated with the settlement agreement were provided to the Planning Commission. All scenarios are considerably higher traffic generators (~4,500 to ~8,400 daily trips compared to the proposed 1,862 daily trips) and would likely require more access points on the road network to serve those different uses than what is being proposed.
- With the main concern of density from the adjacent neighbors translating to more traffic, our proposal would generate much less traffic than allowed under the current settlement agreement. (see exhibit E for various scenarios and associated traffic volumes-full report provided by Fleis and Vandenbrink and included with settlement amendment application).

## Storm Drainage

- We are proposing 2 stormwater management devices to capture and treat our stormwater on the subject property.
- Continental will comply with all Ingham County Drain Commission and Township requirements throughout the review process with staff. All stormwater controls will be designed and regulated per the Standards for Stormwater Management Systems, Procedures and Design Criteria as required by the Ingham County Drain Commission.

## Continental's Reputation

- Michigan Testimonials
  - See exhibit D – Continental Properties Testimonials for letters of support from three other municipalities in Michigan where Continental Properties has developed: Charter Township of Commerce, Grand Rapids Charter Township, and the City of Wyoming. These letters of support showcase Continental's commitment to public engagement, professionalism, follow-through, and ability to deliver quality market-rate housing in Michigan.

## Summary

- The proposed multi-family community, at a maximum of 288 units, is a much less intense use than what would be allowed under the current settlement agreement. Furthermore, it provides many public benefits and aligns with the master plan by:
  - Preserving the character of the existing neighborhood, while providing transitional land use from the existing commercial uses and providing additional increase in building setbacks exceeding the ordinance requirements.
  - Eliminating obsolete zoning regulations
  - Improving walkability for existing neighborhoods by providing additional pedestrian connections and filling sidewalk gaps.
  - Preserving 96% of the jurisdictional wetlands balancing growth and wetland preservation
  - Developing with the Urban Service Boundary intended for development with utilities adequate to serve the property
  - Restricting additional traffic on Belvedere and Columbus Avenue thus minimizing traffic for the adjacent single-family community
  - Providing additional housing opportunities at different price points for the community

Our proposal balances new development with existing community character and preserves existing wetlands areas. Although the Planning Commission voted 3-3 in recommending approval of amending the consent judgment, they were mostly aligned that commercial was not the most appropriate use for the property, and they appreciated the compromises being made by Continental. As the Planning Commission Chair noted, the current proposal is a much better option for the residents and a decent compromise when compared against the commercial uses the consent judgment currently allows.

Continental respectfully requests approval from the Township Board to amend the consent judgment from a commercial and residential use to a residential-only use up to 288 multi-family units with site specific conditions as previously outlined.

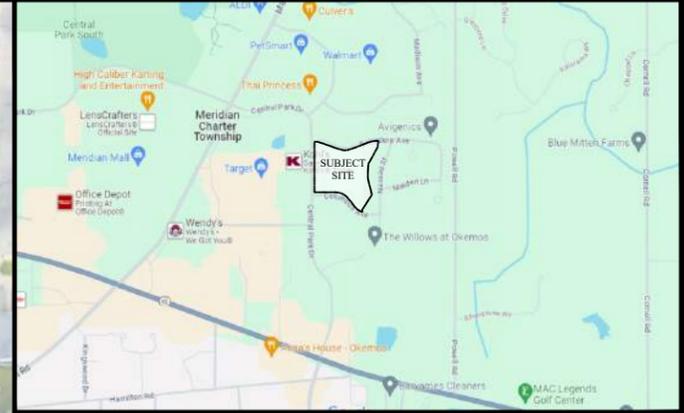
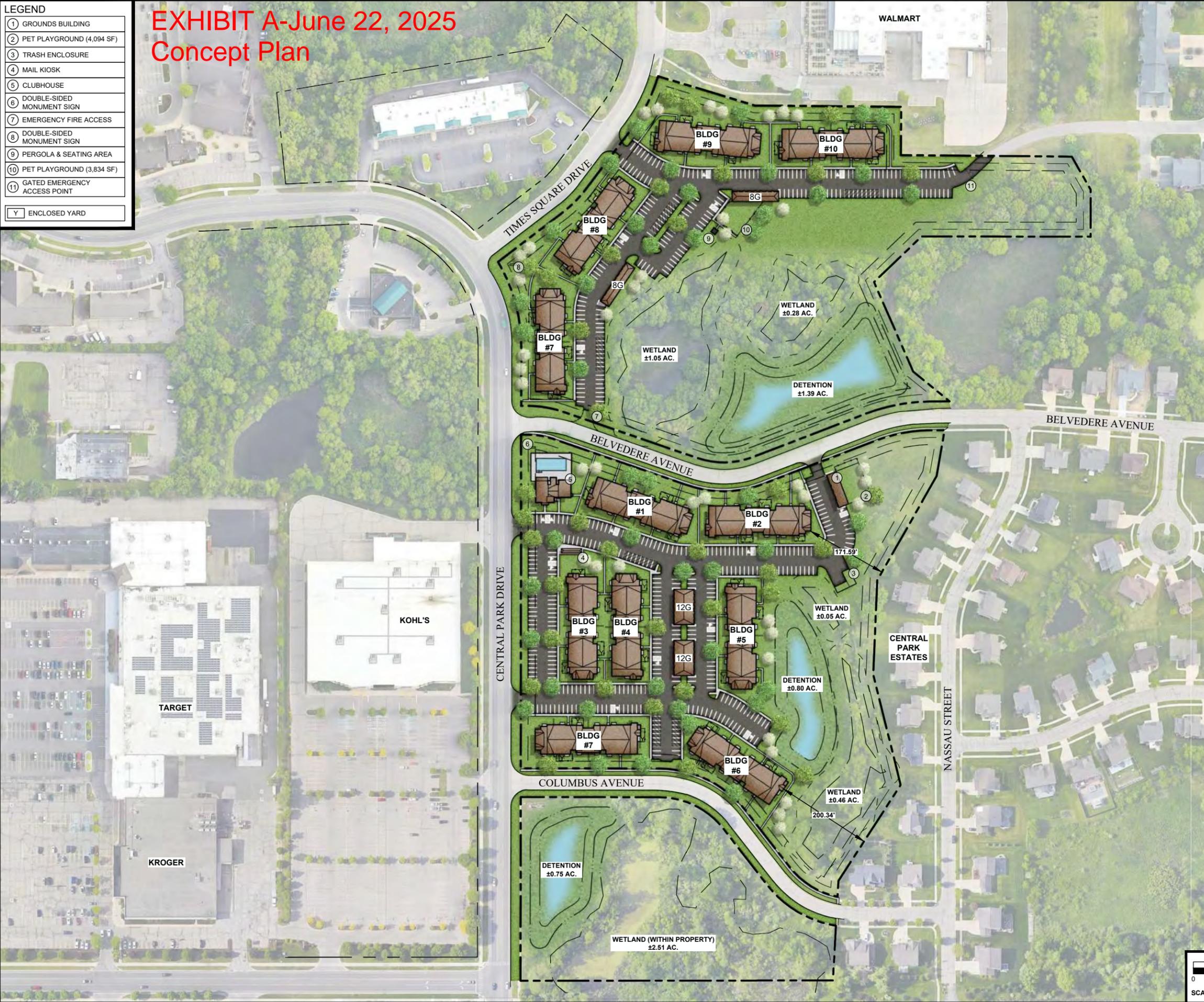
## **Attachments**

- A. June 22 Concept Plan presented to the Township Board
- B. Current Concept Plan illustrating various adjustments based on feedback from Township Board, Planning Commission, and the adjacent property owners.
- C. Wetland Impact Exhibit
- D. Michigan Testimonials
- E. Comparative Trip Generation Summary Table

Thursday, July 10, 2025 10:32:23 AM  
 C:\Users\jason\OneDrive\Documents\Projects\CAD - Documents\Meridian\Meridian\Central Park Dr - Columbus Ave - Belvedere Ave\DWG - D1-1.0.dwg

# EXHIBIT A-June 22, 2025 Concept Plan

LEGEND	
1	GROUNDS BUILDING
2	PET PLAYGROUND (4,094 SF)
3	TRASH ENCLOSURE
4	MAIL KIOSK
5	CLUBHOUSE
6	DOUBLE-SIDED MONUMENT SIGN
7	EMERGENCY FIRE ACCESS
8	DOUBLE-SIDED MONUMENT SIGN
9	PERGOLA & SEATING AREA
10	PET PLAYGROUND (3,834 SF)
11	GATED EMERGENCY ACCESS POINT
Y	ENCLOSED YARD



SITE INFORMATION	
NORTHERN PARCEL	13.19 ACRES
MIDDLE PARCEL	12.80 ACRES
SOUTHERN PARCEL	4.66 ACRES
TOTAL AREA	30.65 ACRES
DENSITY	10.18 D.U. / ACRES
BUILDING / LANDSCAPE SETBACKS	NORTH 30'/15'
	SOUTH 30'/15'
	EAST 30'/15'
	WEST 30'/15'
BUILDING INFORMATION	
CLUBHOUSE	XCH-A - 2,795 S.F.
RESIDENT BUILDINGS	QUANTITY HEIGHT
X24 (24 D.U. / BUILDING)	7 2-STORY
X36 (36 D.U. / BUILDING)	4 3-STORY
TOTAL RESIDENT BUILDINGS	11
GENERAL HOME MIX	HOMES PERCENTAGE
STUDIO	26 8%
1-BEDROOM	104 33%
2-BEDROOM	156 50%
3-BEDROOM	26 8%
TOTAL	312 100%
PARKING INFORMATION	
PARKING	QUANTITY
DETACHED GARAGES	40
8G (8-BAY)	2
12G (12-BAY)	2
CARPORTS	72
GROUNDS BUILDING (MG-PL)	1
TOTAL COVERED PARKING	113
SURFACE PARKING	532
TOTAL UNCOVERED PARKING	532
TOTAL PARKING PROVIDED	645
HOME PARKING RATIO	2.07
OVERALL GARAGES / HOME	0.13
COVERED PARKING RATIO	0.18
CLUBHOUSE PARKING	17
ADA PARKING	15
PARKING DIMENSIONS	9w x18'd
STANDARD STALL	9w x18'd
ADA STALL	9w x18'd
DRIVE WIDTH	24w
SITE AMENITIES	
AMENITY	QTY / SF / NOTES
SWIMMING POOL	INCLUDED
FITNESS CENTER	INCLUDED
CAR CARE CENTER	INCLUDED
PET PLAYGROUND TYPE A	4,094 SF
PET PLAYGROUND TYPE C	3,834 SF
ENCLOSED YARDS	30
STORAGE LOCKERS	N/A
PARCEL PICKUP	INCLUDED
PROPERTY BOUNDARY	SURVEY

VICINITY MAP  
 SCALE: NTS

**CONTINENTAL PROPERTIES**  
 W134 N8675 EXECUTIVE PARKWAY  
 MENOMONEE FALLS, WI 53051  
 262.502.5500 • FAX 262.502.5522

CONTINENTAL 975 FUND LLC

PROJECT INFORMATION

**AUTHENTIX OKEMOS**  
 CENTRAL PARK DR\_COLUMBUS AVE\_BELVEDERE AVE | MERIDIAN CHARTER TOWNSHIP, MI  
 CONTINENTAL 975 FUND LLC

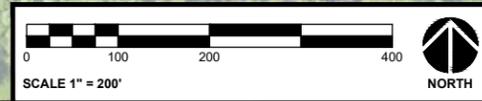
SHEET INFORMATION

**SITE PLAN**

DRAWN DATE: 07/08/2025  
 DRAWN BY: JWG

SHEET NUMBER

**D1-1.0**

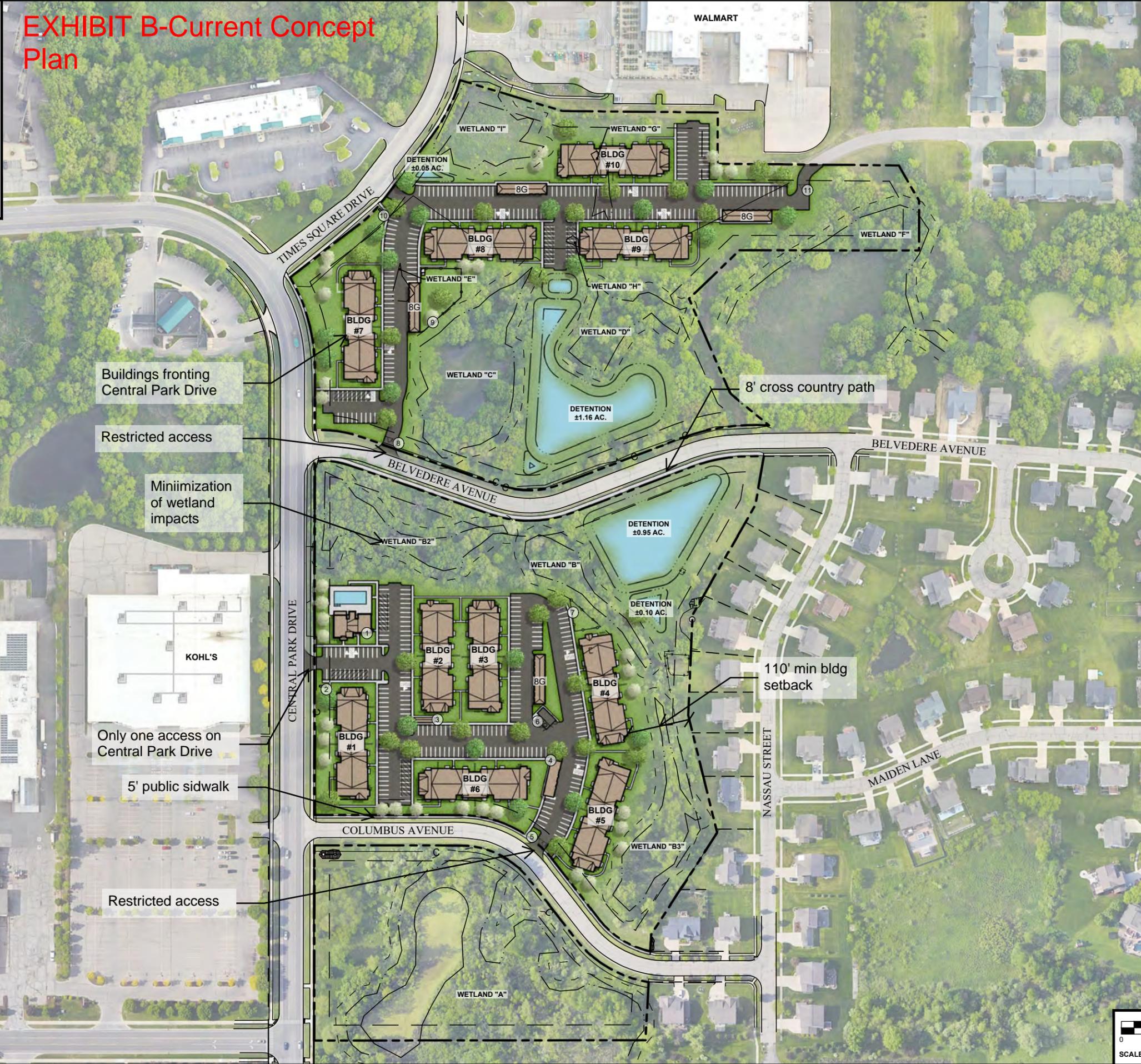


Monday, November 24, 2025 2:26:15 PM  
 C:\Users\jgust\OneDrive\Documents\Continental Properties\CAD - Documents\Meridian\Meridian\Central Park Dr - Columbus Ave - Belvedere Ave - D1-2.1.dwg

**LEGEND**

- 1 CLUBHOUSE
- 2 DOUBLE-SIDED MONUMENT SIGN
- 3 MAIL KIOSK
- 4 GROUND BUILDING
- 5 EGRESS ONLY WITH GATE
- 6 TRASH ENCLOSURE
- 7 PET PLAYGROUND 1,435 SF
- 8 EGRESS ONLY WITH GATE
- 9 PET PLAYGROUND 7,412 SF
- 10 DOUBLE-SIDED MONUMENT SIGN
- 11 EMERGENCY ONLY ACCESS POINT

# EXHIBIT B-Current Concept Plan



Buildings fronting Central Park Drive

Restricted access

Minimization of wetland impacts

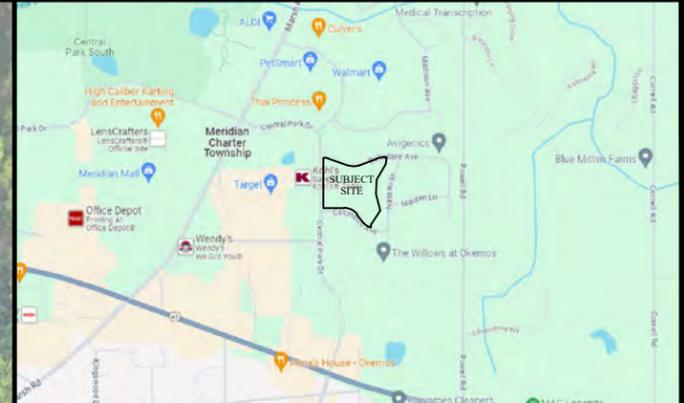
Only one access on Central Park Drive

5' public sidewalk

Restricted access

8' cross country path

110' min bldg setback



SITE INFORMATION		
NORTHERN PARCEL	13.18 ACRES	
MIDDLE PARCEL	12.80 ACRES	
SCOUT CTRN PARCEL	4.66 ACRES	
TOTAL AREA	30.64 ACRES	
DENSITY	94.0 DU / ACRES	
BUILDING / LANDSCAPE SETBACKS	NORTH 56.1' ± N SIDE 30.1' ± SOUTH N/A	
BUILDING INFORMATION		
CLUBHOUSE	KC-1A - 2,795 SF	
RESIDENT BUILDINGS		
X24 (24 U / BUILDING)	5	
X36 (36 U / BUILDING)	4	
TOTAL RESIDENT BUILDINGS	10	
GENERAL HOME MIX		
STUDIO	24	8%
1-BEDROOM	96	33%
2-BEDROOM	44	15%
3-BEDROOM	24	8%
TOTAL	288	100%
PARKING INFORMATION		
PARKING	QUANTITY	
DETACHED GARAGES	32	
8G (8.94%)	4	
CARPPOITS	48	
GROUND BUILDING (MG-PL)	1	
TOTAL COVERED PARKING	85	
SURFACE PARKING	403	
TOTAL UNCOVERED PARKING	403	
TOTAL PARKING PROVIDED	484	
HOME PARKING RATIO	1.68	
OVERALL GARAGES / HOME	0.11	
COVERED PARKING RATIO	0.17	
CLUBHOUSE PARKING	17	
ADA PARKING	17	
PARKING DIMENSIONS	9'w x 11'fd	
STANDARD STALL	9'w x 18'fd	
ADA STALL	24' NORTH - 26' MIDDLE	
DRIVE WIDTH		
SITE AMENITIES		
AMENITY	QTY / SF / NOTES	
SWIMMING POOL	INCLUDED	
FITNESS CENTER	INCLUDED	
CAR CARE CENTER	INCLUDED	
PET PLAYGROUND TYPE A	1,435 SF	
PET PLAYGROUND TYPE C	7,412 SF	
ENCLOSED YARDS	37	
STORAGE LOCKERS	N/A	
PACKAGE PICKUP	INCLUDED	
GRILLING AREA	INCLUDED	
PROPERTY BOUNDARY	SURVEY	

VICINITY MAP  
SCALE: NTS

**CONTINENTAL PROPERTIES**  
 W134 N8675 EXECUTIVE PARKWAY  
 MENOMONEE FALLS, WI 53051  
 262.502.5500 \* FAX 262.502.5522  
 ON BEHALF OF  
 CONTINENTAL 975 FUND LLC

PROJECT INFORMATION

**AUTHENTIX OKEMOS**  
 CENTRAL PARK DR\_COLUMBUS AVE\_BELVEDERE AVE | MERIDIAN CHARTER TOWNSHIP, WI  
 CONTINENTAL 975 FUND LLC

SHEET INFORMATION

**SITE PLAN**

DRAWN DATE: 10/30/2025  
 DRAWN BY: JWG

SHEET NUMBER

**D1-2.1**

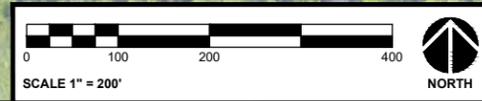


EXHIBIT C

- WETLANDS NO IMPACTS
- NON JURISDICTIONAL WETLAND IMPACTS
- JURISDICTIONAL WETLAND IMPACTS



**WETLAND IMPACT EXHIBIT**  
OKEMOS - MICHIGAN

11/24/2025



# EXHIBIT D MICHIGAN TESTIMONIALS

## THE CHARTER TOWNSHIP OF COMMERCE

LARRY E. GRAY  
SUPERVISOR  
MELISSA CREECH  
CLERK  
MOLLY B. PHILLIPS  
TREASURER

2009 TOWNSHIP DRIVE  
COMMERCE TOWNSHIP, MICHIGAN 48390  
(248) 624-0110  
www.commercetwp.com

TRUSTEES  
BOB BERKHEISER  
RICK SOVEL  
ROBERT LONG  
GEORGE WEBER

February 25, 2025

Mr. Jordan Teichen  
Continental Properties Company, Inc.  
W134 N8675 Executive Parkway  
Menomonee Falls, WI 53051

Re: Springs at Five & Main

Mr. Teichen:

I am pleased to provide this letter in recognition of Continental Properties' commitment and professionalism in working with Commerce Township on the development of Springs at Five & Main. Throughout the approval process and ongoing construction, your team has demonstrated transparency, responsiveness, and a strong commitment to quality in both project execution and management.

From the initial approvals in the fall of 2023 to the present, Continental Properties has consistently upheld its commitments, ensuring that the development aligns with the Township's vision and community needs. Your company's proactive engagement with municipal staff, stakeholders, and the broader community has been a testament to your dedication to responsible and high-quality development. Perhaps most notably, you were humble and gracious in your acquiescence to the superiority of the Detroit Lions relative to your Green Bay Packers.

Based on our direct experience, I am pleased to recommend Continental Properties to other communities seeking well-managed, high-quality rental housing. Your firm has been forthright in its commitments and has delivered on its mission to provide essential housing options that serve both new and existing residents.

Best regards,



David Campbell, AICP  
Planning Director – The Charter Township of Commerce

MICHAEL J. DeVRIES  
SUPERVISOR

EDWARD J. ROBINETTE  
CLERK

DAVID A. VAN DYKE  
TREASURER



LEE VANPOPERING  
TRUSTEE  
DAVID M. PIERANGELI  
TRUSTEE  
BEVERLY S. WALL  
TRUSTEE  
PHILIP D. YEITER  
TRUSTEE

November 29, 2017

Mr. Erik Hahn  
Director of Multifamily Acquisitions  
Continental Properties Company Inc  
W134 N8675 Executive Parkway  
Menomonee Falls, WI 53051

RE: Springs at Knapp's Crossing, Grand Rapids Township, MI

Dear Erik,

Now that major construction has been completed, I wanted to express my appreciation to you and the development staff related to the Springs at Knapp's Crossing project. The Continental team was forthright and professional in every way during the planning approval and construction process. I am especially grateful for the consideration given to the neighborhood residents from the outset which resulted in a harmonious atmosphere at each step in the process.

Our community includes the world class Meijer Gardens and Sculpture Park, high-quality retail, office, and single-family housing options and now the addition of Continental Properties Springs at Knapp's Corner apartment complex that will provide a first class rental housing option for the area.

Continental Properties has been steadfast in their commitments expressed during the early meetings held between the company and staff and as the project evolved through the formal approval process. The high-quality building design, amenities, and landscaping will serve to enhance compatibility with the surrounding uses and help make it an integral part of the neighborhood.

Township staff appreciated your attention to detail and that Continental Properties did what they said they would do. It was a pleasure working with you and your team and we look forward to working with you and your company should other opportunities occur in the future.

Sincerely,

A handwritten signature in black ink that reads "Michael J. DeVries". The signature is written in a cursive style.

Michael J. DeVries, Supervisor  
Grand Rapids Charter Township

May 23, 2022

Mr. Erik Hahn  
Continental Properties Company, Inc.  
W134 N8675 Executive Parkway  
Menomonee Falls, WI 53051

Re: Springs at the Reserve – Letter of Support

Dear Mr. Hahn:

Please accept this letter of support and feel free to provide it to any other municipalities you are working with. Working with you and with the larger Continental team has been a very positive experience for our city and our staff. From the very beginning, you and your company have taken the time to communicate your intentions with staff and various city stakeholders regarding the apartment development, known as The Springs at the Reserve. To this day, these apartments remain some of the highest quality apartments Wyoming has to offer residents.

The City of Wyoming is proud to support Continental's ability to deliver high-quality and necessary housing developments for new and existing residents alike, and our team would look forward to working with Continental on other development projects in the future.

Best regards,



Nicole Hofert, AICP  
Director of Planning & Economic Development

community • safety • stewardship

CITY COUNCIL

Sheldon DeKryger   John Fitzgerald   Kent Vanderwood   Marissa Postler   Robert Postema   Sam Bolt

**Jack A. Poll, Mayor**

# EXHIBIT E

## Comparative Trip Generation Table

Land Use	ITE Code	Amount	Units	Average Daily Traffic (vpd)
Shopping Plaza (40-150k SF) Not a Supermarket	821	118,000	SF	7,715
Multi-Family Housing (Low-Rise)	220	99	DU	678
Consent Judgement-Alt 1				8,393
Shopping Plaza (40-150k SF) Not a Supermarket	821	59,000	SF	3,857
Multi-Family Housing (Low-Rise)	220	99	DU	678
Consent Judgement-Alt 2				4,535
Shopping Plaza (40-150k SF) Supermarket	821	43,496	SF	4,110
Strip Retail Plaza (<40k SF)	821	32,533	SF	1,832
Multi-Family Housing (Low-Rise)	220	99	DU	678
Consent Judgement-Alt 3				6,620
Proposed: Multi-Family Housing (Low-Rise)	220	288	D.U.	1,862



**To:** Board Members

**From:** Dan Opsommer, Deputy Township Manager  
Director of Public Works and Engineering

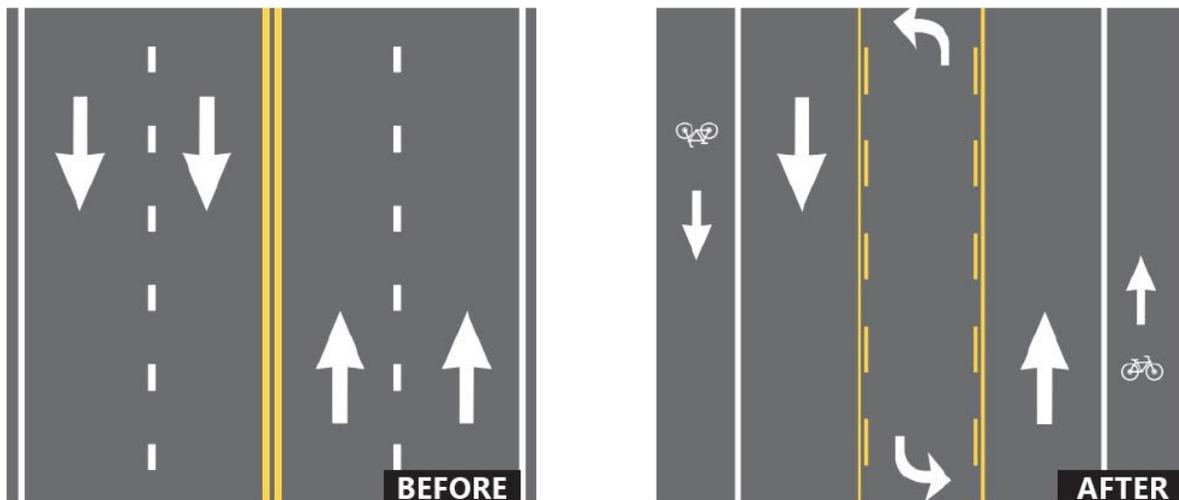
**Date:** November 25, 2025

**Re:** Haslett Road Corridor Study Proposal

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As the Board is aware, we have had two serious vehicle and pedestrian accidents on Haslett Rd between the Okemos Rd and Park Lake Rd intersections in 2023 and 2025. The 2023 accident occurred near the Haslett Rd/Westminster Way intersection and the 2025 accident occurred along the frontage of the Parkwood YMCA on Haslett Rd.

In response, Township staff from the Police Department and the Department of Public Works & Engineering asked the Ingham County Road Department to consider implementing a road diet on Haslett Rd from the Marsh Rd intersection to the city limit of East Lansing just west of Park Lake Rd. [Road diets improve safety by reducing vehicle-to-vehicle conflicts, calming traffic, and creating a safer environment for pedestrians and bicyclists.](#) A road diet converts an undivided four-lane road to a three-lane configuration with two through lanes, a center two-way left-turn lane, and paved bike lanes/shoulders as shown below:



Board members can learn more about road diets by reviewing these two videos from the FHWA and reading the FHWA literature attached to this cover memo:

[Road Diets: A Proven Safety Countermeasure](#)

[Safe Transportation for Every Pedestrian: Road Diets](#)

**Memo to Township Board**  
**November 25, 2025**  
**Re: Haslett Road Corridor Study Proposal**

Road diets have successfully been completed on many roads in the Township, including: Lake Lansing Rd, Haslett Rd, Jolly Rd, Central Park Dr, Newman Rd, and most recently, Mount Hope Rd.

Another primary reason for the Township wishing to pursue a road diet is that this is the only portion of Haslett Rd that has not received a road diet. Haslett Rd east of Marsh Rd in the Township received a road diet treatment in the 2000s. The city of East Lansing is currently completing a road diet on their portion of Haslett Rd.

In response to the Township's request, the Ingham County Road Department explained to Township staff that they do not currently have any plans or funding to perform a road diet on this portion of Haslett Rd. However, they are willing to consider a road diet project if funding can be identified and a corridor study is completed to assess the impacts that a road diet would have. The data captured through the completion of this corridor study would then be used to apply for a Safety Grant. Safety Grants provide 80% of the funding for eligible projects. A Safety Grant was successfully obtained by the Ingham County Road Department for the Mount Hope Rd Diet Project.

This corridor study would also examine various infrastructure that could be constructed along the Haslett Rd corridor from Park Lake Rd to Copper Creek Dr/Bird Farm Ln to enhance pedestrian safety. For instance, the distance between the existing crosswalks at Park Lake Rd and Okemos Rd is about 1 mile. There are no ADA facilities for pedestrians to use to cross Haslett Rd between these two intersections on Haslett Rd. Additionally, the distance between existing crosswalks and Okemos Rd and Marsh Rd is also about 1 mile, with no ADA facilities for pedestrians to use to cross Haslett Rd between these two intersections. Lastly, there are many existing crosswalks on Haslett Rd that could be enhanced to improve pedestrian safety by adding refuge islands, RRFBs, hawk signals, and/or other infrastructure.

Ideas that will be explored through the corridor study include, but are not limited to:

1. Adding pedestrian crosswalks on Haslett Rd at:

- Westminster Way
- Near the Parkwood YMCA
- Boise Ile Dr
- Bayonne Ave
- Benson Dr (Where there will be a future off-road trail that crosses Haslett Rd. This off-road trail will go from Lake Lansing Rd through Hillbrook Park, cross Haslett Rd, and then connect to the existing Inter Urban Trail. Construction of the portion of this off-road trail south of Haslett Rd is about to begin with the construction of the American House Pathway, also on the Board's agenda this evening under Consent.)
- Green Rd
- Copper Creek Dr/Bird Farm Ln

2. Enhancing pedestrian safety at existing crosswalks on Haslett Rd at:

- Shaw St

**Memo to Township Board**  
**November 25, 2025**  
**Re: Haslett Road Corridor Study Proposal**

- School St
  - Babbitt St
  - Academic Way
  - 1028 Haslett Rd
3. Use of mini pedestrian refuge islands, similar to the one recently constructed by the city of East Lansing on Burcham Dr and Hagadorn Rd.

Also related to this corridor study, in 2026 or 2027, the Township will be constructing the pathway along the south side of Haslett Rd between Park Lake Rd and Okemos Rd. This project is being funded in part by a federal TAP grant that the Township received in October of this year. Once this pathway is constructed, there will be contiguous pathway on the north and south side of Haslett Rd from the city limit of East Lansing to Copper Creek Dr/Bird Farm Ln.

As part of the Local Road Program, the Township is working with Spalding DeDecker to design a project to resurface Academic Way and address traffic congestion during peak hours at the Haslett Rd/Academic Way intersection. In order to address the traffic congestion at this intersection, work will have to occur on Haslett Rd. Given the overlapping work involved in these two projects, Township staff are recommending that we utilize Spalding DeDecker for the Haslett Road Corridor Study. Spalding DeDecker was retained by the Township for road engineering services through a competitive 2023 RFP process based on the firm's qualifications. The project team from Spalding DeDecker also includes a recently retired engineer who worked at the Ingham County Road Department for over 22 years.

Township staff recommend that this project be funded 70% by the Township's Capital Project Fund (i.e. GF), 20% by the Township's Pathway Millage, and 10% by the Township's Local Road Program (LRP). The largest benefit of the study is the potential to implement a road diet, which would reduce accidents along the Haslett Rd corridor, reducing demand on first responders (i.e. Police, Fire and EMS). This is why we are proposing 70% funding from the Township GF. The study will examine new pathway facilities, which is why we are recommending a 20% contribution from the Township's Pathway Millage; however, we have not historically needed studies of this nature for pathway projects. Therefore, there is relatively little benefit to the Pathway system. The LRP would receive a small benefit in that the data captured by the study can be used to help with the design of the Academic Way LRP project, which is why we are recommending a 10% contribution from the LRP.

Once Phase I is completed, we would have further discussions with the Ingham County Road Department regarding the viability of a road diet before proceeding to Phase II of the study. The estimated cost of Phase I of the study is \$14,600 to complete the traffic data collection, crash analysis, and traffic report that the Ingham County Road Department has requested to determine the viability of implementing a road diet on Haslett Rd from the city limit with East Lansing to the Marsh Rd intersection.

**Memo to Township Board**  
**November 25, 2025**  
**Re: Haslett Road Corridor Study Proposal**

If approved by the Board, Phase I of the study would commence immediately to in hope that we are able to apply at the earliest available grant deadline. For 2026, we currently anticipate the next call for projects for Safety Grants to be in:

- Call for Projects – Announced around February 1, 2026
- Applications Due – May 1, 2026
- Grants Awarded – Fall 2026
- Design - 2027
- FY 2028 Project Obligation Deadline – October 2028
- Construction – 2027 or 2028 Season

Two team members from Spalding DeDecker, Dan Troia, PE and Steve Stramsak, PE, PTOE, will also be in attendance at the December 2 Board meeting. We are happy to answer any questions the Board may have.

**The following motion has been prepared for the Board’s consideration:**

**MOVE TO APPROVE THE CONTRACT WITH SPALDING DEDECKER AND DIRECT THE TOWNSHIP SUPERVISOR TO EXECUTE THE CONTRACT.**

**Attachment:**

1. Spalding DeDecker’s Haslett Road Corridor Study Proposal
2. Initial Comments from the Ingham County Road Department and Reply Comments from the Township
3. U.S. DOT FHWA Road Diet Report
4. U.S. DOT Road Diet Informational Guide

November 21, 2025

Dan Opsommer  
Deputy Township Manager  
Director of Public Works & Engineering  
Meridian Township  
5151 Marsh Road  
Okemos, MI 48864

Re: Haslett Road Corridor Study

Dear Mr. Opsommer:

Spalding DeDecker, Inc (SD) is pleased to have the opportunity to provide traffic engineering services for proposed changes to the Haslett Rd corridor from Hagadorn Rd to Marsh Rd. Proposed changes include a road diet and other traffic calming improvements with the goal of creating a safer corridor for pedestrians. We understand that the proposed changes will change the capacity of the corridor and potentially alter traffic patterns to the surrounding area. Traffic calming and pedestrian improvements will be investigated as part of this study. The following is our scope of work and fees for the project.

**Traffic Data Collection and Site Observation**

We will direct our traffic data collection vendor, Quality Counts, LLC, to collect turning movement counts during the AM and PM weekday peak hours (7:00am-9:00am, 4:00pm-6:00pm). The count times will capture the standard peak hour traffic as well as the start and end times for the high school and middle school located next to the proposed development. Turning movement counts will be collected at the following locations:

1. Hagadorn Rd and Haslett Rd
2. Park Lake Rd and Haslett Rd
3. Westminster Way and Haslett Rd
4. Parkwood YMCA driveway and Haslett Rd
5. Okemos Rd and Haslett Rd
6. Bois Ile Dr and Haslett Rd
7. Bayonne Ave and Haslett Rd
8. Benson Dr and Haslett Rd
9. Marsh Rd and Haslett Rd
10. Shaw St and Haslett Rd
11. School St and Haslett Rd
12. Babbit St and Haslett Rd
13. N Woodside Dr and Haslett Rd
14. Copper Creek Dr/Bird Farm Ln and Haslett Rd

The intersections at Cornell Rd and Green Rd will be included in this analysis, however the traffic counts will be included with a concurrent traffic study for the Wilkshire Early Childhood Center.

24-hour volume, classification, and speed counts will be collected on two segments of Haslett Rd. Gap counts will be collected at each mile segment including Park Lake Rd to Okemos Rd, Okemos Rd to Marsh Rd, and Marsh Rd to Green Rd.

### **Corridor Analysis**

Utilizing Synchro 12 traffic analysis, which incorporates the use of the Highway Capacity Manual, traffic operations analyses will be performed for the existing operations at the intersections listed above. Traffic will be evaluated for the morning and afternoon peak hours. The existing conditions will be modeled and compared to the proposed lane reduction cross section. Timing plans for all traffic signals within the study limits will be evaluated to identify possible optimization improvements.

Existing pedestrian accommodations will be evaluated and recommendations for improvements will be provided based on existing pedestrian count data. A gap study will be performed within the study area. Type and spacing of pedestrian accommodations will be considered, including RRFBs, HAWK signals, refuge islands, and other pedestrian treatments.

### **Crash Analysis and Safety Review**

SD will compile and analyze the latest available five-year crash history to identify crash patterns associated with non-motorized road users, including bicyclists and pedestrians. Results from the safety analysis will be used to inform the design and implementation of safety improvements throughout the Haslett Rd corridor. A speed study will also be conducted as part of the safety review.

### **Phasing**

SD will perform the study in phases as follows:

- Phase 1 – perform traffic counts and crash analysis for entire Haslett Rd corridor from Hagadorn Rd to Copper Creek Dr/Bird Farm Ln
- Phase 2 – perform signal optimization and traffic analysis for Haslett Rd corridor between Hagadorn Rd and Marsh Rd
- Phase 3– perform signal optimization and traffic analysis for Haslett Rd corridor between Marsh Rd and Copper Creek Dr/Bird Farm Ln

Phases 2 and 3 will include recommendations for pedestrian accommodations within the relevant segments.

### **Grant Application**

SD staff will assist the Township with the grant application process to fund potential improvement projects. A project narrative will be developed that describes the proposed project, why the project is needed, a description of the safety risk that will be mitigated by the proposed project, and safety risks will be mitigated.

### **Traffic Report**

A traffic report including methodology, traffic analyses, and any applicable recommendations and mitigation options (if needed) will be compiled for review and feedback by Meridian Township for each Phase.

### Review Meeting

Five virtual review meetings are included in this fee; one for Phase 1, two for Phase 2, and two for Phase 3 of the study. It is expected that meetings will be held as an iterative process with in developing the traffic study. It is intended that these meetings include representatives from the Township, Ingham County Road Department (ICRD), Spalding DeDecker.

### Schedule

Upon Notice to Proceed, traffic data collection will occur within two weeks. SD will deliver a draft report for client review 90 days after receipt of the traffic data. Once client comments have been received, a draft report will be delivered to the Township for review and approval within one week. The review meetings (if required) will be scheduled at the Township’s discretion. Revisions resulting from these meetings will be made within two weeks for delivery of the final report.

### Fee Summary

The scope of work described in this proposal will be separated into three phases. Phase I will perform traffic count collection throughout the Haslett Rd corridor, along with a crash analysis of the whole corridor. We propose to do the specified work for this phase for the lump-sum fee of \$14,600.

#### Phase I Fee:

Task	Fee
Traffic Data Collection Phase I	\$5,800
Traffic Data Collection Phase II	\$4,200
Crash Analysis Phase I	\$1,200
Crash Analysis Phase II	\$900
Traffic Report	\$2,500
<b>Total</b>	<b>\$14,600</b>

Phase II of the work will be from Hagadorn Rd to Marsh Rd. The fee for Phase II includes the traffic analysis and corridor analysis, the two referenced review meetings, and delivery of a final report. We propose to do the specified work for this phase for the lump-sum fee of \$24,000.

#### Phase II Fee:

Task	Fee
Corridor Optimization	\$2,000
Analysis (crash, traffic, gap)	\$7,400
Traffic Report	\$7,300
Review Meetings	\$3,300
Grant Application	\$4,000
<b>Total</b>	<b>\$24,000</b>

Phase III of the work will be from Marsh Rd to Copper Creek Dr/Bird Farm Ln. The fee for Phase III includes traffic data collection, crash analysis, the traffic analysis and corridor analysis, the two referenced review meetings, and delivery of a final report. We propose to do the specified work for this phase for the lump-sum fee of \$18,000.

**Phase III Fee:**

Task	Fee
Corridor Optimization	\$2,000
Analysis (crash, traffic, gap)	\$3,800
Traffic Report	\$4,900
Review Meetings	\$3,300
Grant Application	\$4,000
<b>Total</b>	<b>\$18,000</b>

Should additional meetings be required, they will be invoiced at SD's standard rates. If this proposal is acceptable, please sign and return it as our notice to proceed.

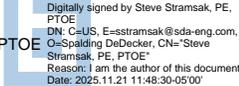
We look forward to working with you on this project to make it a success.

Sincerely,

**SPALDING DEDECKER**

**MERIDIAN TOWNSHIP**

Steve Stramsak, PE, PTOE



Digitally signed by Steve Stramsak, PE, PTOE  
 DN: C=US, E=sstramsak@sda-eng.com, O=Spalding DeDecker, CN="Steve Stramsak, PE, PTOE"  
 Reason: I am the author of this document  
 Date: 2025.11.21 11:48:30-05'00'

Steve Stramsak, P.E., PTOE  
 Senior Project Manager

\_\_\_\_\_

Date: \_\_\_\_\_

**From:** Dan Opsommer

**Sent:** Wednesday, November 26, 2025 1:47 PM

**To:** Neal Galehouse <NGalehouse@ingham.org>

**Cc:** Daniel Troia <dtroia@sda-eng.com>; Jeremy Schrot <jschrot@sda-eng.com>; Kyle Bassett <kbassett@sda-eng.com>; Younes Ishraidi <ishraidi@meridian.mi.us>; Tim Dempsey <dempsey@meridian.mi.us>; Gregg Todd <GTodd@ingham.org>; Becky Bennett <BBennett@ingham.org>

**Subject:** RE: Haslett Road Corridor Study Proposal for your Review

Thank you for your comments, Neal. Could you provide us with copies of all of your records pertaining to the evaluations that were done prior to the safety grant application for the Haslett Rd/Park Lake Rd intersection?

I have also provided some comments below in blue.

County staff are invited to attend the 12/2 Township Board where this item will appear before the Township Board if you wish to. I know there are County mtgs on 12/2, so I recognize some may have conflicts.

Please let us know if you have any questions.

Take care,



**Dan Opsommer**

Deputy Township Manager

Director of Public Works & Engineering

**A Prime Community** [opsommer@meridian.mi.us](mailto:opsommer@meridian.mi.us)

Work: 517.853.4440 | Fax: 517.853.4099

5151 Marsh Road | Okemos, MI 48864

**From:** Neal Galehouse <NGalehouse@ingham.org>

**Sent:** Wednesday, November 26, 2025 9:44 AM

**To:** Dan Opsommer <[opsommer@meridian.mi.us](mailto:opsommer@meridian.mi.us)>

**Cc:** Steve Stramsak <[sstramsak@sda-eng.com](mailto:sstramsak@sda-eng.com)>; Daniel Troia <[dtroia@sda-eng.com](mailto:dtroia@sda-eng.com)>; Jeremy Schrot <[jschrot@sda-eng.com](mailto:jschrot@sda-eng.com)>; Kyle Bassett <[kbassett@sda-eng.com](mailto:kbassett@sda-eng.com)>; Younes Ishraidi <[ishraidi@meridian.mi.us](mailto:ishraidi@meridian.mi.us)>; Tim Dempsey <[dempsey@meridian.mi.us](mailto:dempsey@meridian.mi.us)>; Gregg Todd <[GTodd@ingham.org](mailto:GTodd@ingham.org)>; Becky Bennett <[BBennett@ingham.org](mailto:BBennett@ingham.org)>

**Subject:** RE: Haslett Road Corridor Study Proposal for your Review

Dan,

As stated during our Teams meeting on October 13<sup>th</sup>, ICRD has no issues with Meridian Township funding and conducting a corridor study through its consultant on Haslett Road; however, we did mention that there are concerns with the existing traffic volume on Haslett Road and that the corridor may not be conducive to a road diet due to a combination of reduced level of service and/or potential loss of capacity. To that point, we received safety funding to widen Haslett Road at Park Lake Road to 5 lanes and install a new traffic signal in 2022. Our records indicate an evaluation was done prior to the safety grant application with our traffic consultant against alternatives including a road diet on Haslett Road. The outcome was that the best course of action was to widen the Haslett/Park Lake intersection and proceed with the safety grant application. We also mentioned during the call that there are options to address pedestrian concerns and create crossings at uncontrolled locations that do not involve a road diet (e.g. HAWK signal).

In performing the corridor study the following should be kept in mind:

- We do not have a recent traffic count in this area. Our latest traffic count from 2017 shows a count of 16,400 on Haslett between Park Lane Rd and Okemos Rd. For comparison, the count on the section of Haslett Rd west of Park Lake (in East Lansing) that is in the process of being road dieted has a traffic count of 13,825. Our recent Mt. Hope road diet also had traffic counts around 14,000. At some point within the 15,000-20,000 ADT range, road diets often become infeasible. Current counts will need to be collected within the study corridor. If tube counters are used, a time will need to be identified where there is a break in winter weather so they aren't impacted by snowplows.

Current counts will be collected during Phase I of the study. We will reach out to meet with the ICRD after Phase I is complete. Noted as it relates to your comment re: use of tubes and snow plows.

If approved by the Township Board, part of the corridor study would also include looking at the portion of Hagadorn Rd (Grand River Ave to Burcham Dr) that the city of East Lansing performed a road diet on.

There was a 2024 AADT taken on this stretch of Hagadorn Rd near Albert St: 19,962. There was a 2025 AADT taken on this stretch of Hagadorn Rd just south of Burcham Dr: 15,336. Through the study, we can learn from this road diet that was performed on a road with AADT in the 15k-20k range.

- The corridor study will need to perform traffic counts as well as a current and future traffic analysis and level of service for intersecting streets including Park Lake Road, Okemos Road, and Marsh Road.

Yes, this is included in Phase I.

- Known and anticipated growth within the area needs to be taken into account (e.g. Haslett Village- 290 units plus commercial/retail space, City of East Lansing future redevelopment within the Park Lake/Haslett/Merritt area, Costco outlots, etc.).

Yes, we have already provided our consultant with the traffic studies for Haslett Village and American House as a start.

- Any recommendations in the corridor study for pedestrian crossings should be in accordance with our Pedestrian Crossings at Uncontrolled Locations Policy (RD2025-1) that you were provided earlier this year.

Yes, we will conform with the policy. As it relates to all ICRD policies, it would be great if the ICRD could provide for a comment period on all future policies so stakeholders have the

opportunity to give input before the policies are presented to public bodies for discussion and adoption.

With respect to a safety grant:

- ICRD has made no commitment at this time (for or against) proceeding with a safety grant application.  
We understand. We would simply ask that the ICRD remain open minded in terms of scope of the project and finding funding sources given the two vehicle/pedestrian accidents that have occurred on this stretch of Haslett Rd.
- Funding for HSIP safety grants are generally capped at \$750,000. All costs exceeding the capped amount are the responsibility of the local agency. For comparison, our construction cost for the Mt. Hope road diet was \$1,000,000. Haslett Road between Park Lake and Marsh is a longer road segment than Mt. Hope and may require a more significant scope of work (particularly pavement repair on the south side of Haslett east of Park Lake Road). I would expect any estimated construction cost to be in excess of \$1,000,000.

I don't believe the entire segment of Haslett Rd from Park Lake Rd to Marsh Rd would need to receive a mill & fill resurfacing treatment. The pavement conditions at the Park Lake Rd and Okemos Rd intersections are in good to excellent condition from very recent resurfacing and signal replacements projects in 2019 (Okemos Rd) and 2022 (Park Lake Rd). Additionally, ELMWSA replaced a portion of the asphalt full-depth at the Okemos Rd intersection in 2024.

Haslett Rd from the Okemos Rd intersection to Marsh Rd is in good condition and simply needs crack fill and a chip seal. A chip seal could be used to extend the life of the existing pavement that is in good condition and to cover the existing pavement markings to avoid the cost of removing the existing pavement markings.

The segment of Haslett Rd between the 2022 Park Lake Rd project limit and the 2019 Okemos Rd project limit that is in fair-poor condition is 0.6 miles of centerline road, which is less than the Mount Hope Road Diet, which was 1.54 miles. Based on this approach, the tonnage of asphalt used on Haslett Rd would be about 39% of the tonnage used on Mount Hope Rd.

The portions of Haslett Rd that do not need to be resurfaced could simply have new pavement markings applied. This is the process the ICRD used to perform a road diet on the portion of Lake Lansing Rd immediately west of the Marsh Rd intersection. No resurfacing occurred when this portion of Lake Lansing Rd was dieted, it was simply a removal of existing pavement markings and applying new pavement markings.

The Township and/or ICRD could also look at applying for TAP funding through Tri-County to fund crosswalks, RRFBs, HAWK signals, bike lanes, and other pedestrian pay items that may be included in a project that results from this study. Clinton County Road Commission was very aggressive in applying for TAP funds for seven different projects that included pathways/sidewalks/bike lanes and road improvements in the TAP round that was announced last month (see attached).

While we can't count the TAP funds as local match for the HSIP grant, I believe we could use both grant sources on a Haslett Rd corridor project so long as we're meeting the local match for both grants. Both are 80:20 grants, so a combination of both grant sources can still produce a project that only requires 20% local funding.

- Our TIP cycle is from 2026-2029 and our funding is currently programmed. We cannot make a commitment at this time for any local agency match funding. We understand. We would simply ask that the ICRD remain open minded in terms of scope of the project and finding funding sources given the two vehicle/pedestrian accidents that have occurred on this stretch of Haslett Rd.

If you have any further questions, please let me know. Thanks

Neal

Neal Galehouse, P.E.

Director of Engineering

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**From:** Dan Opsommer <[opsommer@meridian.mi.us](mailto:opsommer@meridian.mi.us)>

**Sent:** Friday, November 21, 2025 1:25 PM

**To:** Kelly Jones <[KJones2@ingham.org](mailto:KJones2@ingham.org)>; Neal Galehouse <[NGalehouse@ingham.org](mailto:NGalehouse@ingham.org)>

**Cc:** Steve Stramsak <[sstramsak@sda-eng.com](mailto:sstramsak@sda-eng.com)>; Daniel Troia <[dtroia@sda-eng.com](mailto:dtroia@sda-eng.com)>; Jeremy Schrot <[jschrot@sda-eng.com](mailto:jschrot@sda-eng.com)>; Kyle Bassett <[kbassett@sda-eng.com](mailto:kbassett@sda-eng.com)>; Younes Ishraidi <[ishraidi@meridian.mi.us](mailto:ishraidi@meridian.mi.us)>; Tim Dempsey <[dempsey@meridian.mi.us](mailto:dempsey@meridian.mi.us)>

**Subject:** Haslett Road Corridor Study Proposal for your Review

Hi Kelly and Neal,

We are following up based on our discussion in late October re: completing a study of the Haslett Rd corridor to assess the impacts that a road diet would have, as well as ways to improve safety for pedestrians and bicyclists.

I have attached Spalding DeDecker's proposal and the related materials we would bring before the Township Board for your review.

Given that the call for projects for the next round of Safety Grants will likely come in February, Township staff are hoping to take this to the Township Board on 12/2 and get their approval the same night if possible.

In order to get this on the 12/2 Township Board agenda, I need to submit packet materials next Wednesday. Do you think you could review and provide your comments by Tuesday at 5 p.m.?

Please let me know if you have any questions.

Thanks,



**Dan Opsommer**

Deputy Township Manager

Director of Public Works & Engineering

**A Prime Community**

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# ROAD DIET



Safety | Livability | Low Cost

## P · O · L · I · C · I · E · S

### Expanding Beyond a Single Implementation

Road Diets reallocate travel lanes and utilize the space for other uses and travel modes. The most common type of Road Diet reduces the number of through lanes from four to two and adds a center two-way left-turn lane (TWLTL). Other uses for the reallocated space include:

- Facilities for alternate modes of transportation (e.g., bicycle lanes, transit lanes, and bus turnouts)
- Physical safety barriers (e.g., raised medians, pedestrian refuge islands, and curb extensions)
- On-street parking
- Wider shoulders

This document describes the benefits and highlights real-world examples of agencies including Road Diets within new or revised transportation policies and guidance.

#### POLICY BENEFITS

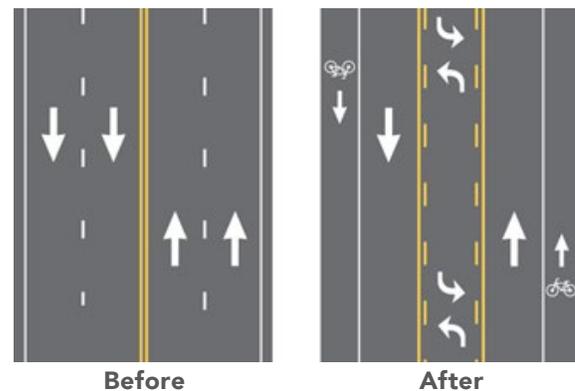
A single Road Diet project can yield numerous safety, operational, and multimodal benefits. Additionally, developing Road Diet-related policies and guidance – and therefore encouraging implementation on a large scale – can result in widespread advantages:

**Improve Safety.** Increasing Road Diet implementation can translate to more lives saved. An FHWA study<sup>1</sup> found that converting a road from four to two through lanes with a center TWLTL can reduce overall crashes by 19 to 47 percent.

**Save Time.** Agency-standardized guidance or policy allows engineers to use an approved Road Diet template, framework, or set of design criteria that can jumpstart the design and implementation process. Non-standardized or “first time” designs tend to require more levels of management scrutiny and approval.

**Save Money.** Road Diets are already a relatively inexpensive countermeasure, but incorporating them into policies can provide the foundation for combining Road Diets with other efforts (e.g., resurfacing) to reduce costs further.

Example of a Road Diet



<sup>1</sup> FHWA “Evaluation of Lane Reduction ‘Road Diet’ Measures on Crashes.” FHWA Report No. FHWA-HRT-10-053. (Washington, D.C.: 2010).

**Increase Multimodal Use.** Road Diets can raise property values and improve the “livability” of an area by reallocating space for bicycle or pedestrian facilities along a corridor. Systemic or wide-spread Road Diet implementation can create safer and more convenient pedestrian and bicyclist transportation networks.

**Facilitate Public Acceptance.** A Road Diet policy can build public confidence in the treatment. Such documentation can set a foundation for communication between the agency and the public and convey the Road Diet’s benefits.

## EXAMPLES OF ROAD DIET POLICIES AND GUIDANCE

Many agencies across the United States have already incorporated Road Diets into their policies and guidance documents. Some developed standalone Road Diet documentation, while others chose to incorporate Road Diets into broader, pre-existing policies. The following sections provide examples of different types of Road Diet policy integration.

### Standalone Policies

Standalone policies turn Road Diets into one of an agency’s first-tier solutions. The following resources are examples of standalone Road Diet policies and guidance documents developed by State and local agencies.

**Florida Department of Transportation’s (FDOT) Statewide Lane Elimination Guidance<sup>2,3</sup>** provides Road Diet and space reallocation guidance (referred to as lane elimination). These documents include examples and impacts of Road Diets in Florida, guidance for development of a Road Diet review process, and discussion of issues associated with the improvement.

**Maine Department of Transportation’s (MaineDOT) Guidelines to Implement a Road Diet or Other Features Involving Traffic Calming<sup>4</sup>** provides Road Diet guidance for Maine municipalities. The document includes a brief overview of the treatment, Maine specific implementation guidance, an overview of the countermeasure’s limitations, and a list of minimum study requirements.

**Michigan Department of Transportation’s (MDOT) Road Diet Checklist<sup>5</sup>** is a step-by-step list used by agency personnel when considering the applicability of a Road Diet in a given situation.



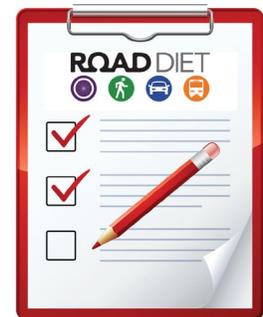
Source: NYCDOT

A painted center median with left-turn bays and pedestrian safety islands were installed along Luten Avenue in New York City to calm traffic and enhance safety for all road users.



Source: PeopleForBikes

This roadway configuration, incorporating a protected bike lane and a raised bus stop, could be achieved by implementing a Road Diet.



2 Florida Department of Transportation, *Phase 1: Resource Document – Statewide Lane Elimination Guidance*, February 2014. Available at: <http://www.dot.state.fl.us/rddesign/CSI/Files/Lane-Elimination-Guide-Part1.pdf>.  
 3 Florida Department of Transportation, *Statewide Lane Elimination Guidance*, December 2014. Available at: <http://www.dot.state.fl.us/rddesign/CSI/Files/Lane-Elimination-Guide-Part2.pdf>.  
 4 Maine Department of Transportation, *Guidelines to Implement a Road Diet or Other Features Involving Traffic Calming*, April 2016. Available at: [http://safety.fhwa.dot.gov/road\\_diets/guidance/docs/maineDOTroad\\_diet.pdf](http://safety.fhwa.dot.gov/road_diets/guidance/docs/maineDOTroad_diet.pdf).  
 5 Michigan Department of Transportation, “Road Diet Checklist,” MDOT 1629 (02/15). Available at: [http://safety.fhwa.dot.gov/road\\_diets/guidance/docs/mdot\\_chklist.pdf](http://safety.fhwa.dot.gov/road_diets/guidance/docs/mdot_chklist.pdf).

**St. Louis County's (Missouri) Road Diet Policy<sup>6</sup>** provides factors to consider when determining if a Road Diet is feasible for a location, including average weekly traffic (AWT) volumes, directional peak hour volumes, left turns, intersection impacts, alternate bypass routes, bus transit, bicyclists, and pedestrians.

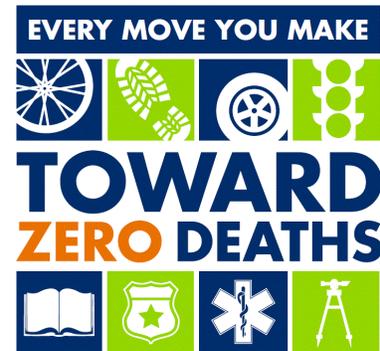
### Incorporating Road Diets into Existing Agency Plans and Practices

Including Road Diets into an agency's Strategic Highway Safety Plan (SHSP), overall transportation planning process, or design guidance distinguishes the countermeasure as a broader safety improvement strategy. The following are examples of how States have incorporated Road Diets into agency plans, guidance and practices.

#### Road Diets in Strategic Highway Safety Plans

Strategic Highway Safety Plans (SHSPs) can facilitate and promote Road Diets within an agency by incorporating the treatment into the agency's safety improvement approach. Several States refer directly to Road Diets in their SHSPs while others use a different name for the same improvement, including:

- ✓ Lane Conversion
- ✓ Lane Narrowing
- ✓ Road Narrowing
- ✓ Road Reconfiguration
- ✓ Lane Elimination
- ✓ Lane Reduction
- ✓ Road Re-channelization



Source: Ohio Department of Transportation

The table below lists State SHSPs that include Road Diets, the alternate terminology used, and the SHSP emphasis or focus area where it is discussed. All States' SHSPs can be found on FHWA's Office of Safety website.<sup>7</sup>

**Road Diets in SHSPs**

State	Terminology	Emphasis or Focus Area
Alabama	Lane Conversion	Highways
Arkansas	Road Diet	Bicyclists, Pedestrians
District of Columbia	Road Narrowing	Pedestrian
Idaho	Lane Narrowing	Intersection
Michigan	Lane Conversion	Intersection
Minnesota	Road Diet	Bicyclists, Pedestrians
Missouri	Lane Narrowing	Intersection
New Jersey	Road Diet	Lane Departures, Bicyclists, Pedestrians
Ohio	Road Diet	Bicyclists, Pedestrians
Rhode Island	Road Diet	Achievements
South Dakota	Road Diet	Intersections
Washington	Road Diet	Bicyclists

<sup>6</sup> St. Louis County, MO, Department of Transportation, "St. Louis County Road Diet Policy," (St. Louis County, MO: September 2015). Available at: [https://www.stlouisco.com/Portals/8/docs/document%20library/highways/publications/Road\\_Diet\\_Policy.pdf](https://www.stlouisco.com/Portals/8/docs/document%20library/highways/publications/Road_Diet_Policy.pdf).

<sup>7</sup> FHWA. Office of Safety, "Web-links to State SHSPs" web page. Available at: [http://safety.fhwa.dot.gov/hsip/shsp/state\\_links.cfm](http://safety.fhwa.dot.gov/hsip/shsp/state_links.cfm).

## Incorporating Road Diets into Planning Processes and Design Guidance

Many State and local agencies incorporate Road Diets into broader policies and guidance like design manuals, Complete Street plans, bicycle and pedestrian plans, or speed management and traffic calming plans. The legend below indicates the types of plans in which agencies have incorporated Road Diets for the following examples.



**B** **American Association of State Highway and Transportation Officials' (AASHTO) Guide for the Development of Bicycle Facilities, 4th Edition<sup>8</sup>** provides information on how to accommodate bicycle travel and operations in most riding environments. Road Diets are one of the solutions that the guide recommends to expand a bicycle network and it contains several pages about this countermeasure. The guide presents sound guidelines enabling agencies to meet the needs of bicyclists and other highway users.

**CS B P** **Charlotte (North Carolina) Department of Transportation's (NCDOT) Urban Street Design Guidelines<sup>9</sup>** contain guidance for designing complete streets in urban and suburban environments with the goal of providing mobility for motorists while improving the safety and comfort of pedestrians, cyclists, and neighborhood residents. Road Diets are one of the tools that CDOT uses to accomplish this goal. Information and high-level guidance about implementing Road Diets is included within the USDG's glossary, and design details that can be used to define resulting cross-sections are found in Chapter 4.

**B** **Chicago Department of Transportation's (CDOT) Streets for Cycling Plan 2020<sup>10</sup>** outlines the city's plan to install 100 miles of separated bike lanes that are comfortable for people of all ages and abilities, using Road Diets as a primary tool to meet this goal.

**CS B P TC** **University of Delaware Institute for Public Administration's Complete Streets in Delaware: A Guide for Local Governments<sup>11</sup>** references Road Diets as a roadway-narrowing treatment. It is one of the tools that Delaware's Department of Transportation (DelDOT) recommends local governments use to calm traffic, increase pedestrian safety, and add space for bicyclists.



Source: PeopleforBikes

<sup>8</sup> AASHTO, *Guide for the Development of Bicycle Facilities, 4th Edition* (Washington, DC: 2012). This publication is available for purchase at: [https://bookstore.transportation.org/item\\_details.aspx?ID=1943](https://bookstore.transportation.org/item_details.aspx?ID=1943) or 1-800-231-3475.

<sup>9</sup> Charlotte Department of Transportation, *Urban Street Design Guidelines*, adopted October 22, 2007. Available at: <http://charmack.org/city/charlotte/Transportation/PlansProjects/pages/urban%20street%20design%20guidelines.aspx>.

<sup>10</sup> Chicago Department of Transportation, *Chicago Streets for Cycling Plan 2020* (n.d.). Available at: <http://www.cityofchicago.org/content/dam/city/depts/cdot/bike/general/ChicagoStreetsforCycling2020.pdf>.

<sup>11</sup> Scott, Beck, Rabidou. *Complete Streets in Delaware: A Guide for Local Governments*. (Newark, DE: University of Delaware Institute for Public Administration), prepared for the Delaware Department of Transportation. Available at: <http://www.ipa.udel.edu/publications/CompleteStreetsGuide-web.pdf>.

DS Design Guide  
 CS Complete Street  
 B Bicycle  
 P Pedestrian  
 TC Traffic Calming

**B P** **Evansville (Indiana) Metropolitan Planning Organization’s Bicycle and Pedestrian Connectivity Master Plan**<sup>12</sup> outlines a vision for walking and bicycling within the city and recommends Road Diets as a tool to accomplish this goal. The plan discusses the operational and safety benefits of Road Diets and recommends city roads that would be good candidates for Road Diets.

**CS B P** **Genesee County (Michigan) Metropolitan Planning Commission’s (GCMPC) Complete Streets Program**<sup>13</sup> uses a systemic approach to assess every four-lane road within GCMPC’s jurisdiction with ADTs under 20,000. Roads with under 10,000 ADT are likely candidates for a Road Diet, while roads with 10,000 – 20,000 ADT may be good candidates, but require further study to make a determination. Level of Service (LOS) is used to determine on a 1 to 4 scale whether a road segment is suitable for four-to-three lane conversion.

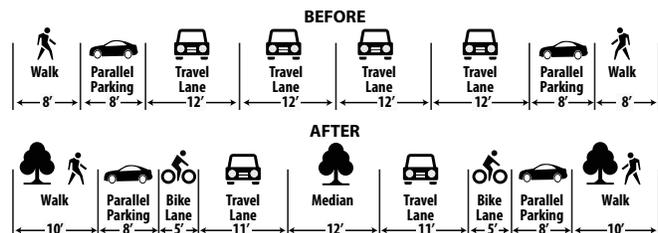
**DS CS B P TC** **Los Angeles County’s (California) Model Design Manual for Living Streets**<sup>14</sup> recommends Road Diets as a solution for calming traffic, improving pedestrian safety at crossings, adding space for bicyclists, and accommodating large volumes of mid-block left-turning vehicles. It also provides maximum ADT recommendations.

**B P** **Minnesota Department of Transportation’s (MnDOT) Best Practices for Pedestrian-Bicycle Safety (2013)**<sup>15</sup> presents Road Diets as a solution to improve safety for pedestrians and bicyclists on roadways and stresses the treatment’s ability to lower crash rates for all users. The document provides Road Diet-related guidance about ADT, typical construction costs, associated crash reduction rates, and common design features.



Source: NYCDOT

Road Diet on West Sixth Street, Brooklyn, NY.



12 City of Evansville, Indiana and the Evansville Metropolitan Planning Organization, Evansville, Indiana Bicycle and Pedestrian Connectivity Master Plan (n.d.). Available at: [http://www.evansvillempo.com/Docs/BikePed/Evansville\\_BPCMP\\_Final\\_Plan.pdf](http://www.evansvillempo.com/Docs/BikePed/Evansville_BPCMP_Final_Plan.pdf).

13 Genesee County Metropolitan Planning Commission, Genesee County Complete Streets Technical Report (n.d.). Available at: [http://gcmpec.org/wp-content/uploads/pdf/Complete\\_Streets/Complete\\_Streets\\_Technical\\_Report\\_Approved\\_withAppendix.pdf](http://gcmpec.org/wp-content/uploads/pdf/Complete_Streets/Complete_Streets_Technical_Report_Approved_withAppendix.pdf).

14 Los Angeles County, Model Design Manual for Living Streets (Los Angeles County: December 2011), funded by the Department of Health and Human Services through the Los Angeles County Department of Public Health and the UCLA Luskin Center for Innovation. Available at: [http://modelstreetdesignmanual.com/model\\_street\\_design\\_manual.pdf](http://modelstreetdesignmanual.com/model_street_design_manual.pdf).

15 MnDOT Office of Traffic, Safety and Technology, Minnesota’s Best Practices for Pedestrian/Bicycle Safety, Report No. 2013-22 (September 2013). Available at: <http://www.dot.state.mn.us/stateaid/trafficsafety/reference/ped-bike-handbook-09.18.2013-v1.pdf>.

DS Design Guide  
 CS Complete Street  
 B Bicycle  
 P Pedestrian  
 TC Traffic Calming

- DS CS B P TC **New York City Department of Transportation’s (NYCDOT) *Street Design Manual***<sup>16</sup> recommends Road Diets (referred to as lane narrowing and lane removal) as solutions for calming traffic, adding space for bicycle lanes, improving pedestrian safety at crossings, installing extra parking, and assigning turn lanes. The manual discusses benefits, considerations, appropriate applications, and design guidelines for Road Diets.
- CS B P **New York State Department of Transportation’s (NYSDOT) *Complete Streets Planning Checklist***<sup>17</sup> helps determine Road Diet applicability for four-lane undivided urban or suburban roads with annual average daily traffic (AADT) less than 15,000.
- DS **Ohio Department of Transportation’s (ODOT) *Location and Design Manual, Volume 1: Roadway Design***<sup>18</sup> serves as an example of how Road Diets can be incorporated into a DOT’s design standards. Road Diet guidance is discussed in Section 300: Cross Section Design.
- DS TC **Pennsylvania Department of Transportation’s (PennDOT) *Traffic Calming Handbook***<sup>19</sup> proposes lane narrowing as a traffic calming countermeasure and highlights its effectiveness at reducing motor vehicle speeds.
- B **Salisbury’s (North Carolina) *Comprehensive Bicycle Plan***<sup>20</sup> recommends Road Diets as an effective solution for expanding the city’s bicycle lane network. The document describes a Road Diet, outlines its benefits, proposes a potential geometric configuration, and identifies city roads where the treatment can be applied.
- P **Seattle Department of Transportation’s (SDOT) *Pedestrian Master Plan***<sup>21</sup> considers Road Diets as one of the tools in their Pedestrian Design and Engineering toolbox. SDOT is currently updating their plan, but information about it can be found on SDOT’s website. SDOT also developed a flow chart for considering Road Diet conversion feasibility.



Source: NYCDOT

Road Diet on Ninth Avenue, Manhattan, NY.



Source: Brian Chandler

Road Diet on Nickerson Street, Seattle, WA.

16 New York City Department of Transportation, *Street Design Manual*, Updated 2nd Edition, (New York: January 2016). Available at: <http://www.nyc.gov/html/dot/downloads/pdf/nycdot-streetdesignmanual-interior-iores.pdf>.

17 New York Department of Transportation, Engineering Division, Office of Design, *Highway Design Manual*, “Chapter 18, Appendix A - Capital Projects Complete Streets Checklist (18a-2)” (New York: 2015). Available at: [https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm/hdm-repository/chapt\\_18a.pdf](https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm/hdm-repository/chapt_18a.pdf).

18 Ohio Department of Transportation, *Location & Design Manual Volume 1, “300 Cross Section Design,”* (Columbus, OH: January 2016). Available at: [http://www.dot.state.oh.us/Divisions/Engineering/Roadway/DesignStandards/roadway/Location%20and%20Design%20Manual/Section\\_300\\_Jan\\_2016.pdf](http://www.dot.state.oh.us/Divisions/Engineering/Roadway/DesignStandards/roadway/Location%20and%20Design%20Manual/Section_300_Jan_2016.pdf).

19 Pennsylvania Department of Transportation, *Pennsylvania’s Traffic Calming Handbook*, Publication No. 383 (July 2012). Available at: <http://www.dot.state.pa.us/public/PubsForms/Publications/PUB%20383.pdf>.

20 City of Salisbury Department of Land Management and Development and the NCDOT Division of Bicycle and Pedestrian Transportation, *Salisbury Comprehensive Bicycle Plan*, (Salisbury, NC: July 2009). Available at: [http://www.salisburync.gov/Departments/CommunityPlanning/DevelopmentServices/Documents/SalBikePlan\\_FINALSUBMITTAL.pdf](http://www.salisburync.gov/Departments/CommunityPlanning/DevelopmentServices/Documents/SalBikePlan_FINALSUBMITTAL.pdf).

21 Seattle Department of Transportation, “*Road Diets*”, Seattle.gov. Accessed May 2016. Available at: [http://www.seattle.gov/transportation/pedestrian\\_masterplan/pedestrian\\_toolbox/tools\\_deua\\_diets.htm](http://www.seattle.gov/transportation/pedestrian_masterplan/pedestrian_toolbox/tools_deua_diets.htm).

## Incorporating Road Diets into Resurfacing

Incorporating Road Diets into resurfacing efforts can significantly reduce costs associated with the treatment. When a Road Diet includes shifting pavement markings within the existing right-of-way during a resurfacing project, internal planning and design costs are the only expenses incurred. Consequently, some State and local agencies have incorporated Road Diets into their routine review of all roads scheduled for repaving.

**City of Oakland's Checklist for Complete Streets/Paving Project Coordination<sup>22</sup>** is completed for each roadway segment proposed for paving. Road Diets are one of the main elements considered on the checklist.

**Rhode Island DOT<sup>23</sup>** recognized that during resurfacing and restriping, there would be no additional cost to alter pavement markings within the existing right-of-way to incorporate a Road Diet. They now plan their Road Diet installations as part of the overlay.

**Seattle DOT<sup>24</sup>** monitors the city's resurfacing projects to see whether streets scheduled for upcoming roadway overlay projects are good candidates for Road Diets.

**Virginia DOT's Northern District<sup>25</sup>** considers roads that are scheduled for repaving as opportunities to reallocate road space for bicycle lanes and other purposes before new pavement markings are installed.

**Federal Highway Administration's (FHWA) Workbook for Building On-Road Bike Networks through Routine Resurfacing Programs<sup>26</sup>** assists communities in jump-starting their bicycle network development by utilizing Road Diets and capturing space reallocation opportunities as part of routine resurfacing.



Source: Randy Dittberner, VDOT



Source: Richard Retting



Source: Randy Dittberner, VDOT

Resurfacing project incorporating Road Diets on Oak St. in Dunn Loring, VA.

<sup>22</sup> City of Oakland, *City of Oakland Checklist for Complete Streets / Paving Project Coordination* (unpublished). Available at: [http://safety.fhwa.dot.gov/road\\_diets/guidance/docs/oakland\\_chklist.pdf](http://safety.fhwa.dot.gov/road_diets/guidance/docs/oakland_chklist.pdf).

<sup>23</sup> For additional details and information, please contact Sean Raymond, [Sean.Raymond@dot.ri.gov](mailto:Sean.Raymond@dot.ri.gov).

<sup>24</sup> For additional details and information, please contact Dongho Chang, [Dongho.Chang@seattle.gov](mailto:Dongho.Chang@seattle.gov).

<sup>25</sup> For additional details and information, please contact Randy Dittberner, [Randy.Dittberner@VDOT.Virginia.gov](mailto:Randy.Dittberner@VDOT.Virginia.gov).

<sup>26</sup> Federal Highway Administration, *Incorporating On-Road Bicycle Networks into Resurfacing Projects*, FHWA-HEP-16-025 (Washington, DC: 2016). Available at: [http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/resurfacing/resurfacing\\_workbook.pdf](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/resurfacing/resurfacing_workbook.pdf).

## Road Diet Guidance Research and Development

A few State DOTs have partnered with their local State university to further their Road Diet policy development. Iowa, Kentucky, and Michigan DOTs used the findings from State-specific Road Diet studies to improve Road Diet guidance within their respective agencies.

**Michigan State University's Safety and Operational Analysis of 4-lane to 3-lane Conversions (Road Diets) (2012)**<sup>27</sup> was developed for the Michigan Department of Transportation. The study examines the safety- and delay-related impacts of Road Diet conversions in Michigan. It includes guidelines for determining Road Diet feasibility based on ADT and peak hour volume. The study found that four- to three-lane Road Diet conversions could cause delays on roads with ADTs greater than 10,000 and peak hour volumes over 1,000. In almost all instances, crashes reduced after the Road Diet was implemented. This enabled researchers to develop a Michigan-specific Road Diet crash modification factor (CMF).

**University of Kentucky's Guidelines for Road Diet Conversion (2011)**<sup>28</sup> was developed for the Kentucky Transportation Cabinet. The study focused on evaluating and comparing the operation of three- and four-lane roads at signalized intersections. Out of the four Road Diets studied, three demonstrated a safety improvement. Based on this and other findings, the researchers developed operational and safety guidance targeted at helping agencies determine when a Road Diet conversion is appropriate, and increased their recommended maximum ADT threshold from 17,000 to 23,000. The guidance also provides suggested cross-section designs, recommendations for designing the transition to and from a Road Diet configuration, and a flow chart for determining appropriate implementation actions.

**Iowa State University's Guidelines for the Conversion of Urban Four-Lane Undivided Roadways to Three-Lane Two-way Left-Turn Lane Facilities (2001)**<sup>29</sup> was developed for the Iowa Department of Transportation. During the study, researchers summarized previous research on Road Diet conversions located both throughout the United States and in Iowa, analyzed the operational impacts along an idealized conversion corridor, and provided guidelines for Road Diet conversion feasibility. Before-and-after crash results indicated that four- to three-lane Road Diets can increase safety without yielding a reduction in LOS. Based on the analysis, the researchers developed feasibility determination factors including roadway function, traffic volume, and LOS.

## ADDITIONAL INFORMATION

For more information about any of these resources or for technical assistance related to Road Diets, please contact FHWA's Road Diet Program Manager:

**Rebecca Crowe**  
**FHWA Office of Safety**  
**(804) 775-3381**  
[Rebecca.Crowe@dot.gov](mailto:Rebecca.Crowe@dot.gov)

<sup>27</sup> Lyles, R. W. , Safety and Operational Analysis of 4-Lane to 3-Lane Conversions (Road Diets) in Michigan, Michigan State University, RC-1555 (Lansing, MI: 2012). Available at: [http://nacto.org/wp-content/uploads/2015/04/safety\\_and\\_operation\\_analysis\\_lyles.pdf](http://nacto.org/wp-content/uploads/2015/04/safety_and_operation_analysis_lyles.pdf).

<sup>28</sup> Stamatiadis, N. Guidelines for Road Diet Conversions, University of Kentucky, KTC-11-19/SPR-415-11-1F (Lexington, KY: November 2011). Available at: [http://www.ktc.uky.edu/files/2012/06/KTC\\_11\\_19\\_SPR\\_11\\_415\\_1F.pdf](http://www.ktc.uky.edu/files/2012/06/KTC_11_19_SPR_11_415_1F.pdf).

<sup>29</sup> Knapp, K. K., et al. , Guidelines for the Conversion of Urban Four-lane Undivided Roadways to Three-lane Two-way Left-turn Lane Facilities, Center for Transportation Research and Education, CTRE Management Project 99-54 (Ames, IA: 2001). Available at: <http://www.ctre.iastate.edu/reports/4to3lane.pdf>.

U.S. Department of Transportation

# Federal Highway Administration

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202-366-4000

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## [Safety](#)

### Road Diet Informational Guide

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## 2. Why Consider a Road Diet?

Road Diets have the potential to improve safety, convenience, and quality of life for all road users. Road Diets can be relatively low cost if planned in conjunction with reconstruction or simple overlay projects since applying Road Diets consists primarily of restriping.<sup>11</sup>

### 2.1 Benefits of Road Diets

For roads with appropriate traffic volumes, there is strong research support for achieving safety benefits through converting four-lane undivided roads to three-lane cross sections with TWLTLs. Operational and design changes associated with Road Diets that promote safety include reduced vehicle speeds, reduced vehicle-pedestrian, -bicycle, and -vehicle conflicts. For detailed information about the research behind the safety impacts of Road Diets, see Appendix A.

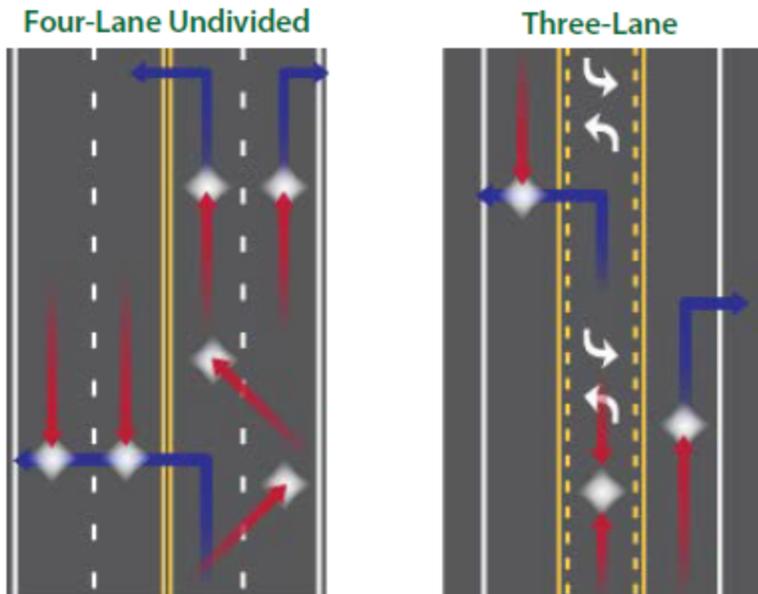
#### 2.1.1 Improved Safety

As noted previously, Road Diets reduce vehicle-to-vehicle conflicts that contribute to rear-end, left-turn, and sideswipe crashes by removing the four-lane undivided inside lanes serving both through and turning traffic. Studies indicate a 19 to 47 percent reduction in overall crashes when a Road Diet is installed on a previously four-lane undivided facility as well as a decrease in crashes involving drivers under 35 years of age and over 65 years of age.<sup>12, 13</sup>

Road Diets improve safety by reducing the speed differential. On a four-lane undivided road, vehicle speeds can vary between travel lanes, and drivers frequently slow or change lanes due to slower or stopped vehicles (e.g., vehicles stopped in the left lane waiting to turn left). Drivers may also weave in and out of the traffic lanes at high speeds. In contrast, on three-lane roads with TWLTLs the vehicle speed differential is limited by the speed of the lead vehicle in the through lane, and through vehicles are separated from left-turning vehicles. Thus, Road Diets can reduce the vehicle speed differential and vehicle interactions, which can reduce the number and severity of vehicle-to-vehicle crashes. Reducing operating speed decreases crash severity when crashes do occur.

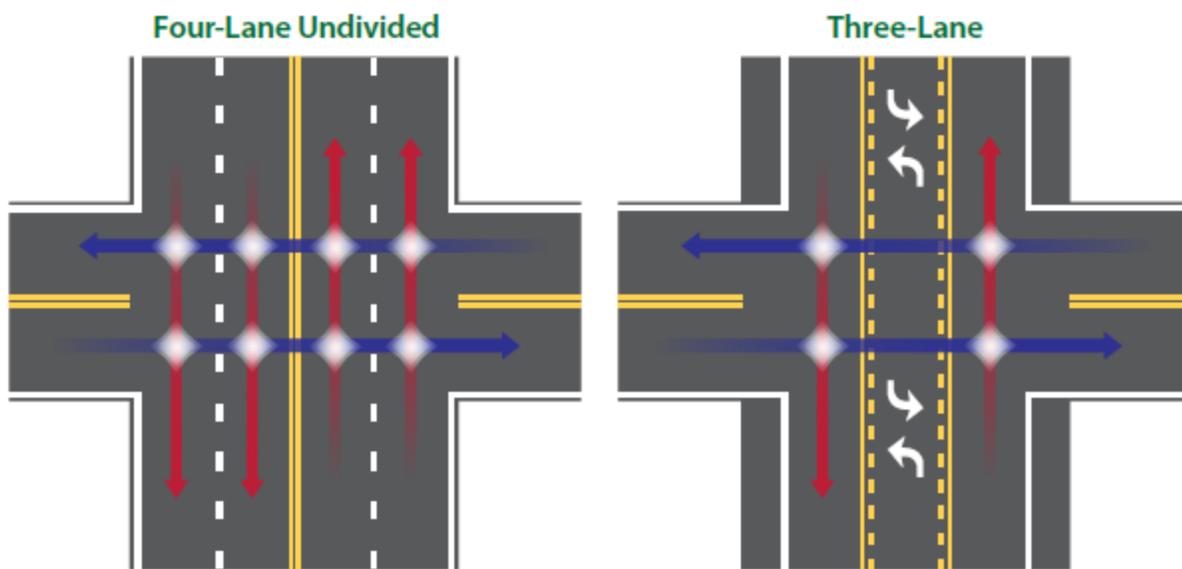
The figures below illustrate conflict points and safety issues related to turning movements for four-lane undivided roadways and three-lane cross sections.

**Figure 4. Mid-Block Conflict Points for Four-Lane Undivided Roadway and Three-Lane Cross Section**



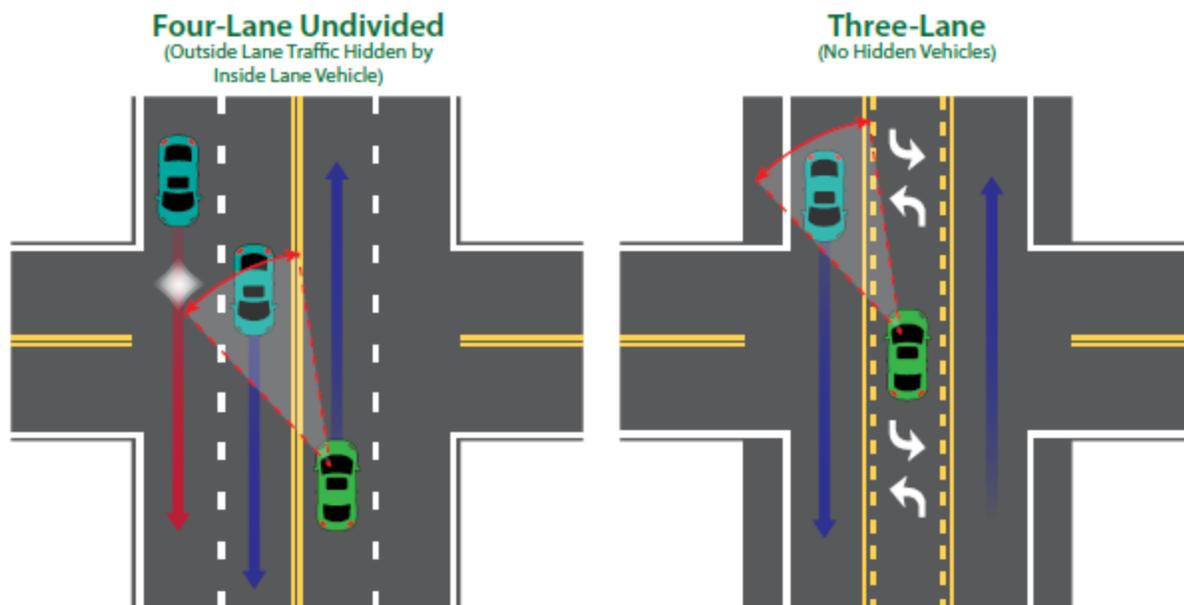
*(Adapted from Welch, 1999)*

**Figure 5. Crossing and Through Traffic Conflict Points at Intersections for a Four-Lane Undivided Roadway and a Three-Lane Cross Section**



*(Adapted from Welch, 1999)*

**Figure 6. Major-Street Left-Turn Sight Distance for Four-Lane Undivided Roadway and Three-Lane Cross Section**



(Adapted from Welch, 1999)

### 2.1.2 Operational Benefits

Additionally, a Road Diet can provide the following operational benefits:

- **Separating Left Turns.** Separating left-turning traffic has been shown to reduce delays at signalized intersections.
- **Side-street Traffic Crossing.** Side-street traffic can more comfortably enter the mainline roadway because there are fewer lanes to cross. This can reduce side-street delay.
- **Speed Differential Reductions.** The reduction of speed differential due to a Road Diet provides more consistent traffic flow and less "accordion-style" slow-and-go operations along the corridor.

### Lessons Learned

In one case in Grand Rapids, Michigan, the transit agency moved a bus route that had become too slow and unpredictable after a Road Diet.

On some corridors the number and spacing of driveways and intersections leads to a high number of turning movements. In these cases, four-lane undivided roads can operate as de facto three-lane roadways. The majority of the through traffic uses the outside lanes due to the high number of left-turning traffic in the inside shared through and left-turn lane. In these cases a conversion to a three-lane cross section may not have much effect on operations.

### 2.1.3 Pedestrian and Bicyclist Benefits

Road Diets can be of particular benefit to nonmotorized road users. They reallocate space from travel lanes—space that is often converted to bike lanes or in some cases sidewalks, where these facilities were lacking previously. These new facilities have a tremendous impact on the mobility and safety of bicyclists and pedestrians as they fill in a gap in the existing network. Even the most basic Road Diet has benefits for pedestrians and bicyclists, regardless of whether

**Figure 7. Addition of a Bike Lane Creates a Buffer between Pedestrians and Moving Vehicles**

specific facilities are provided for these modes. As mentioned above, the speed reductions that are associated with Road Diets lead to fewer and less severe crashes. The three-lane cross-section also makes crossing the roadway easier for pedestrians, as they have one fewer travel lanes to cross and are exposed to moving traffic for a shorter period of time.

Uncontrolled and midblock pedestrian crossing locations tend to experience higher vehicle travel speeds, contributing to increased injury and fatality rates when pedestrian crashes occur. Midblock crossing locations account for more than 70 percent of pedestrian fatalities.<sup>14</sup> Zegeer et al. (2001) found a reduction in pedestrian crash risk when crossing two- and three-lane roads compared to roads with four or more lanes.<sup>15</sup> With the addition of a pedestrian refuge island – a raised island placed on a street to separate crossing pedestrians from motor vehicles (see Figure 8) – the crossing becomes shorter and less complicated. Pedestrians only have to be concerned with one direction of travel at a time. Refuge islands have been found to provide important safety benefits for pedestrians.<sup>16</sup>

Road Diets often include either on-street parking or a bike lane, which create a buffer between pedestrians and moving vehicles. This is especially beneficial in central business districts if officials desire to improve the pedestrian experience.

For bicyclists, the biggest benefit of Road Diets is through the addition of bicycle facilities. A Road Diet can transform a street that was formerly difficult for a bicyclist to travel along to a comfortable route that attracts many more bicyclists. When bicycle lanes are striped, bicyclists are more visible and motorists know where to look for them, speeds are reduced, and bicycle safety can be improved. In some cases, buffered bicycle lanes are added by providing a visual or even physical barrier between modes of travel (e.g., adding flexible delineators on the lane line between motor vehicles and bicycles.) This further enhances the comfort of the route and may encourage increased usage.

Even without a dedicated bicycle lane or buffer, a motorist on a three-lane roadway is able to move over closer to the center lane on a three-



*Photo Credit: Jennifer Atkinson*

**Figure 8. Mid-block Pedestrian Refuge Island**



*Photo Credit: Jennifer Atkinson*

**Figure 9. Pedestrian Refuge Island on a Road Diet Corridor in Chicago**

lane roadway when approaching a bicycle. A motorist on a four-lane undivided roadway will have less opportunity to move over to the left as it is an active travel lane.

### 2.1.4 Livability Benefits

Added to the direct safety benefits, a Road Diet can improve the quality of life in the corridor through a combination of bicycle lanes, pedestrian improvements, and reduced speed differential, which can improve the comfort level for all users. Livability is, "about tying the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safer streets and roads."<sup>17</sup> Road Diets can help achieve desired livability on certain roadways.



Photo Credit: Stacey Meekins

## 2.2 Synergies and Trade-offs

Interviews with agencies that have implemented

### Pedestrian Refuge

Pedestrian refuge islands can reduce pedestrian-related crashes by up to 46 percent.<sup>18</sup>

Road Diets found many synergies between improvements for one mode and their impacts on another. The City of Chicago found that the addition of pedestrian refuge islands, as illustrated in Figure 9, was a significant benefit of their Road Diets. In some cases, improving pedestrian safety was the main objective of the Road Diet, but in other cases, the original intent was to add bicycle lanes or to simply address general traffic safety and/or operations issues.

Table 2 summarizes the positive and negative potential impacts of various features of Road Diets based on findings from researcher field visits and agency interviews.

Some of the treatments for one mode have obvious synergies with other modes, such as bicycle lanes that not only provide added comfort for bicyclists, but also for pedestrians by increasing their separation from vehicles. Other relationships are not as obvious. For instance, Road Diets in Iowa and Chicago generated increased vehicular traffic on the corridor, indicating an increase in demand after installation. In Pasadena, the unexpected benefit of a Road Diet to a pedestrian crossing (the pedestrians were able to safely cross more easily) eliminated the need for a pedestrian traffic signal, resulting in cost savings and the potential impacts of the traffic signal on traffic flow.

**Table 2. Practitioner Interview Results Summary: Road Diet Installation Observations**

Road Diet Feature	Primary/Intended Impacts	Secondary/Unintended Positive Impacts	Secondary/Unintended Negative Impacts
Bike lanes	<ul style="list-style-type: none"> <li>Increased mobility and safety for bicyclists, and</li> </ul>	<ul style="list-style-type: none"> <li>Increased property values</li> </ul>	<ul style="list-style-type: none"> <li>Could reduce parking, depending on design</li> </ul>

	<p>higher bicycle volumes</p> <ul style="list-style-type: none"> <li>• Increased comfort level for bicyclists due to separation from vehicles</li> </ul>		
Fewer travel lanes	<ul style="list-style-type: none"> <li>• Reallocate space for other uses</li> </ul>	<ul style="list-style-type: none"> <li>• Pedestrian crossings are easier, less complex</li> <li>• Can make finding a gap easier for cross-traffic</li> <li>• Allows for wider travel lanes</li> </ul>	<ul style="list-style-type: none"> <li>• Mail trucks and transit vehicles can block traffic when stopped</li> <li>• May reduce capacity.</li> <li>• In some jurisdiction, maintenance funding is tied to the number of lane-miles, so reducing the number of lanes can have a negative impact on maintenance budgets.</li> <li>• Similarly, some Federal funds may be reduced.</li> <li>• If travel lanes are widened, can encourage increased speeds</li> </ul>
Two-Way Left Turn Lane	<ul style="list-style-type: none"> <li>• Provide dedicated left turn lane</li> </ul>	<ul style="list-style-type: none"> <li>• Makes efficient use of limited roadway area</li> </ul>	<ul style="list-style-type: none"> <li>• Could be difficult for drivers to access left turn lane if demand for left turns is too high</li> </ul>
Pedestrian refuge island	<ul style="list-style-type: none"> <li>• Increased mobility and safety for pedestrians</li> </ul>	<ul style="list-style-type: none"> <li>• Makes pedestrian crossings safer and easier</li> <li>• Prevents illegal use of the TWLTL to pass slower traffic or access an upstream turn lane</li> </ul>	<ul style="list-style-type: none"> <li>• May create issues with snow removal</li> <li>• Can effectively increase congestion by preventing illegal maneuvers</li> </ul>
Buffers (grass, concrete median, plastic delineators)	<ul style="list-style-type: none"> <li>• Provide barriers and space between travel modes</li> </ul>	<ul style="list-style-type: none"> <li>• Increases comfort level for bicyclists by increasing separation from vehicles</li> <li>• Barrier can prevent users entering a lane reserved for another mode.</li> </ul>	<ul style="list-style-type: none"> <li>• Grass and delineator buffers will necessitate ongoing maintenance.</li> </ul>

The impacts on transit varied among the Road Diets studied. In some cases, the Road Diet was seen as a positive by the transit agency. In other cases, particularly in less urban areas, the reduction of travel lanes caused congestion as traffic backed up behind buses loading and unloading at the curb. A similar consequence as a result of mail delivery was also found in less urban areas. Prior to the Road Diet, vehicles were able to pass stopped buses or mail carrier vehicles using the inside lane. The back-ups that occurred after the conversion resulted in some vehicles making illegal maneuvers to pass the bus in the two-way left turn lane (TWLTL). Some Road Diets include measures to address this issue, such as shoulders or dedicated pull-outs that allow buses and mail trucks to make their stops outside the travel lane.

Road Diets can also introduce some traffic safety concerns. One concern is the use by pedestrians of TWLTLs as a refuge, which could make pedestrians vulnerable to being struck by vehicles traveling in the TWLTL. However, as evidenced in published assessments of Road Diet implementations, pedestrian safety is generally enhanced by this type of roadway reconfiguration, especially if a pedestrian refuge island is included.

### Benefits for Buses

A Road Diet on Ingersoll Avenue in Des Moines, IA provided a benefit to buses: instead of stopping in a through lane and blocking traffic as they had done before the reconfiguration, the new design accommodated transit buses with a bus turn out.

Some impacts are seen as a positive by some agencies and a negative by others, which may be dependent on the context and users of the roadway. In Iowa, a Road Diet along a truck route narrowed lanes from 13 feet to 10 feet; these seemed too narrow to commercial vehicle drivers. Meanwhile, in Chicago and Michigan, shoulders and buffers between bicycle lanes and travel lanes were added primarily to keep travel lanes to 12 feet wide or less. In these cases, the wider lanes were undesirable because they encourage faster speeds.

In addition, a common concern in implementing Road Diets is that drivers on cross-streets or driveways may have difficulty finding a suitable gap in traffic to enter the main roadway because through traffic is now using a single through lane. However, in Chicago it was found that some side street traffic had an easier time crossing the corridor after the Road Diet was installed because the traffic patterns were simpler and gaps were easier to find.

In some States maintenance funding can be affected. Lane-miles are sometimes used as the measurement to calculate budgets for maintenance activities, defined only as those miles used for motor vehicle traffic – not bicycle lanes, parking, or other uses. When a Road Diet is introduced, one-quarter of the motor vehicle lane-miles are removed, which can equate to a similar reduction in maintenance funds. Discussions are underway in affected states to address this situation.

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Page last modified on November 24, 2014



# ROAD DIET



Safety | Livability | Low Cost

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## Myth: Road Diets Make Traffic Worse

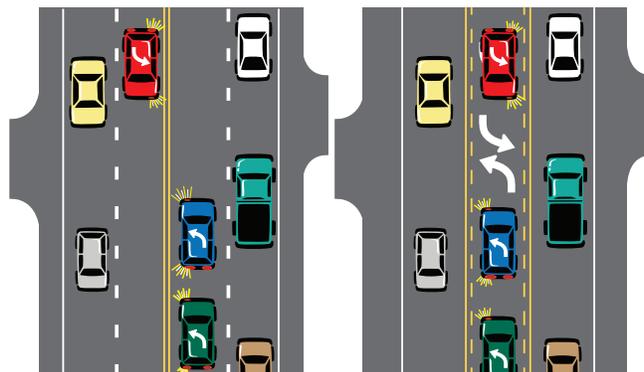
A common misconception is that reducing the number of through lanes by installing a Road Diet will cause traffic to become more congested. However, when applied correctly in the right locations, Road Diets can maintain a roadway's effective capacity. Several scenarios provided below bust this myth.

### A four-lane roadway may already operate like a three-lane road.

When a corridor contains a large number of access points (driveways) the majority of through traffic will tend to utilize the outside lanes to avoid being delayed by left-turning vehicles slowing and stopping in the inside lanes. These four-lane corridors essentially behave like a three-lane road (one through lane in each direction and one two-way left turn lane), so when they are converted to a three-lane section they are unlikely to experience a change in capacity.

### Road Diets can be successful for a broad range of traffic volumes.

FHWA and several other transportation agencies have developed guidelines for selecting candidate Road Diet locations to ensure that the effect on traffic operations is minimized. These volume guidelines for four-lane undivided roadways are summarized below.<sup>1, 2, 3</sup>



#### Before

A four-lane undivided road operating as a de facto three-lane cross section.

#### After

A Road Diet providing a two-way left-turn lane.

#### **LESS THAN 10,000 ADT**

*Great candidate for Road Diets in most instances. Capacity will most likely not be affected.*

#### **10,000 – 15,000 ADT**

*Good candidate for Road Diets in many instances. Agencies should conduct intersection analysis and consider signal retiming to determine any effect on capacity.*

#### **15,000 – 20,000 ADT**

*Good candidate for Road Diets in some instances. Agencies should conduct a corridor analysis. Capacity may be affected at this volume depending on the "before" condition.*

#### **GREATER THAN 20,000 ADT**

*Agencies should complete a feasibility study to determine whether this is a good location for a Road Diet. There are several examples across the country where Road Diets have been successful with ADTs as high as 26,000. Capacity may be affected at this volume.*

<sup>1</sup> FHWA, Road Diet Informational Guide, FHWA-SA-14-028 (Washington, DC: FHWA, 2014). Available at: [http://safety.fhwa.dot.gov/road\\_diets/case\\_studies/roaddiet\\_cs.pdf](http://safety.fhwa.dot.gov/road_diets/case_studies/roaddiet_cs.pdf).

<sup>2</sup> City of Seattle Modeling Flow Chart for Road Diet Feasibility Determination. Available at: [http://safety.fhwa.dot.gov/road\\_diets/info\\_guide/ch3.cfm#f1](http://safety.fhwa.dot.gov/road_diets/info_guide/ch3.cfm#f1).

<sup>3</sup> MnDOT Office of Traffic, Safety and Technology, Minnesota's Best Practices for Pedestrian/Bicycle Safety, Report 2013-22 (Roseville, MN: MNDOT, 2013). Available at: <http://www.dot.state.mn.us/stateaid/trafficsafety/reference/ped-bike-handbook-09.18.2013-v1.pdf>.

## Intersections may determine true capacity.

Often, signalized intersections are the most significant constraint on roadway capacity. Converting four through lanes to two through lanes makes it possible to install dedicated turn lanes at the intersection. If the intersection experiences a large number of turning vehicles, this design can help reduce intersection delay. Alternative intersection configurations, like roundabouts, can offer even more opportunities for enhanced traffic operations.

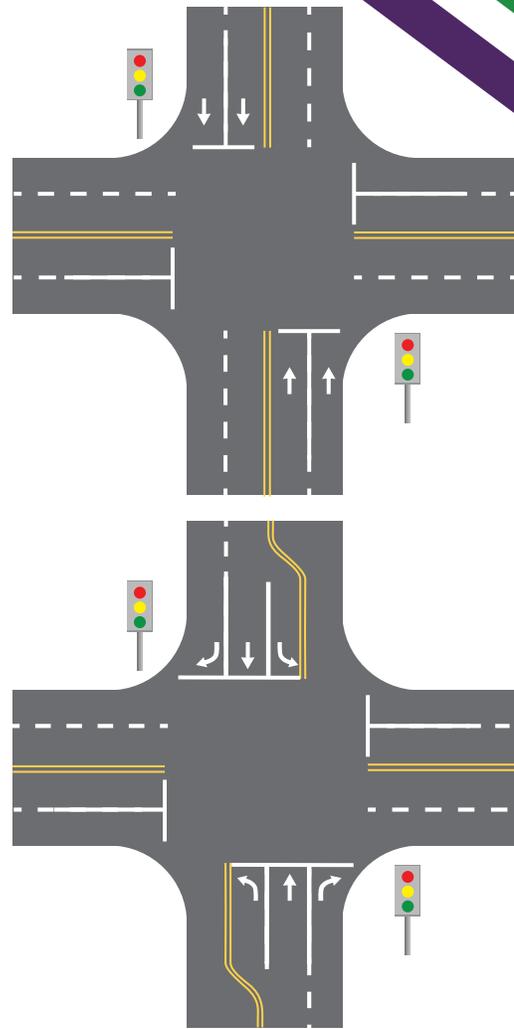
## Level of service (LOS) isn't just for motorists.

Maintaining a satisfactory LOS for motorists is important, but people who walk or bike also appreciate efficient road networks. Road Diets can improve travel conditions for these users, too. In most cases, these travelers' usage is linked directly to perceived safety and comfort. When these factors improve, non-motorized and transit usage tend to increase.<sup>4</sup> Factors that affect travelers' perceptions of safety and comfort and are improved by Road Diets include:<sup>5</sup>

- Reduced motor-vehicle speeds
- Increased space and/or barriers between motor-vehicle lanes and pedestrians and bicyclists
- Shorter crossing length for pedestrians
- Pedestrian refuge islands and dedicated bicycle lanes at intersections
- Safer and more comfortable access to transit stops

## Trading a little capacity can be worth it.

It is important to consider the big picture when selecting a Road Diet location. The countermeasure's primary objective is to improve safety for all roadway users. Occasionally, this can require accepting a small decrease in mobility to gain a large increase in safety. Additionally, Road Diets can increase livability by creating a friendly bicycle and pedestrian environment as well as encourage economic growth by increasing property values and attracting businesses.



Example of intersection with added turning movements.



Source: PeopleForBikes

Intersection in Chicago, IL after Road Diet Installation.



Source: PeopleForBikes

Dexter Ave, Seattle, WA after Road Diet Installation.

<sup>4</sup> FHWA, Road Diet Case Studies, FHWA-SA-15-052 (Washington, DC: FHWA, 2015). Available at: [http://safety.fhwa.dot.gov/road\\_diets/case\\_studies/roaddiet\\_cs.pdf](http://safety.fhwa.dot.gov/road_diets/case_studies/roaddiet_cs.pdf).

<sup>5</sup> Transportation Research Board of the National Academies, *Highway Capacity Manual 2010* (Washington, DC: TRB, 2010).

# Road Diet Informational Guide



FHWA Safety Program



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16. Abstract  A classic Road Diet converts an existing four-lane undivided roadway segment to a three-lane segment consisting of two through lanes and a center two-way left turn lane (TWLTL). A Road Diet improves safety by including a protected left-turn lane for mid-block left-turning motorists, reducing crossing distance for pedestrians, and reducing travel speeds that decrease crash severity. Additionally, the Road Diet provides an opportunity to allocate excess roadway width to other purposes, including bicycle lanes, on-street parking, or transit stops. This Informational Guide includes safety, operational, and quality of life considerations from research and practice, and guides readers through the decision-making process to determine if Road Diets are a good fit for a certain corridor. It also provides design guidance and encourages post-implementation evaluation.					
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Upper Right: City of Seattle

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## Acronyms

3R	Resurfacing, Restoration, and Rehabilitation
AASHTO	American Association of State Highway and Transportation Officials
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
CRF	Crash Reduction Factor
CSS	Context Sensitive Solutions
DOT	Department of Transportation
GCMPC	Genesee County Metropolitan Planning Commission
FDF	Feasibility Determination Factor
FHWA	Federal Highway Administration
HSM	Highway Safety Manual
ITE	Institute of Transportation Engineers
KTC	Kentucky Transportation Center
LOS	Level of Service
MPH	Miles Per Hour
MUTCD	Manual on Uniform Traffic Control Devices
NACTO	National Association of City Transportation Officials
NCHRP	National Cooperative Highway Research Program
NHS	National Highway System
PDO	Property Damage Only
TCRP	Transit Cooperative Research Program
TRB	Transportation Research Board
TWLTL	Two Way Left Turn Lane
VPHPD	Vehicles Per Hour Per Day
VPD	Vehicles Per Day

## Executive Summary

Four-lane undivided highways have a history of relatively high crash rates as traffic volumes increase and as the inside lane is shared by higher-speed through traffic and left-turning vehicles.

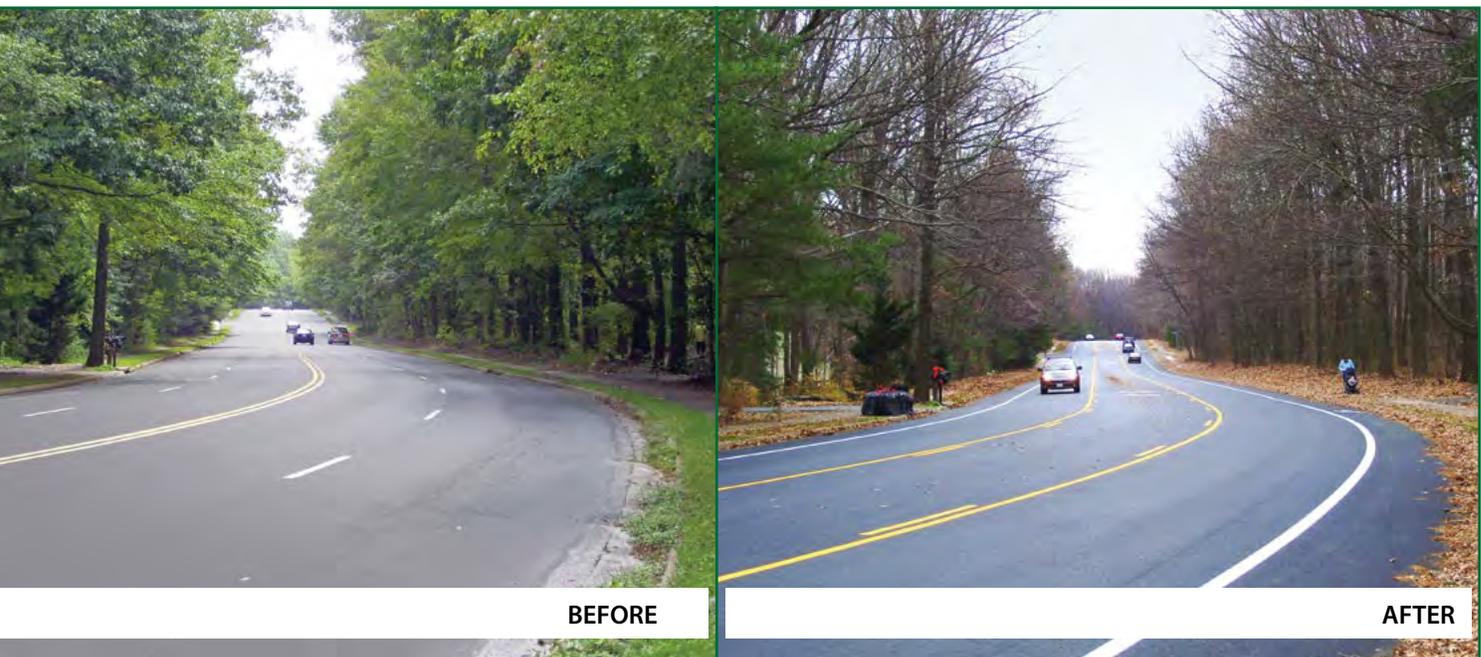
One option for addressing this safety concern is a “Road Diet.” A Road Diet involves converting an existing four-lane undivided roadway segment to a three-lane segment consisting of two through lanes and a center two-way left-turn lane (TWLTL). The reduction of lanes allows the roadway cross section to be reallocated for other uses such as bike lanes, pedestrian refuge islands, transit stops, or parking (see Figure 1).<sup>1</sup>

### Road Diet Definition

Conversion of a four-lane undivided road to a three-lane undivided road made up of two through lanes and a center two-way-left-turn-lane.

Benefits of Road Diet installations may include:

- An overall crash reduction of 19 to 47 percent.
- Reduction of rear-end and left-turn crashes through the use of a dedicated left-turn lane.
- Fewer lanes for pedestrians to cross and an opportunity to install pedestrian refuge islands.
- The opportunity to install bicycle lanes when the cross-section width is reallocated.



**Figure 1.** Road Diet  
Photo Credit: Virginia Department of Transportation

- Reduced right-angle crashes as side street motorists must cross only three lanes of traffic instead of four.
- Traffic calming and reduced speed differential, which can decrease the number of crashes and reduce the severity of crashes if they occur.
- The opportunity to allocate the “leftover” roadway width for other purposes, such as on-street parking or transit stops.
- Encouraging a more community-focused, “Complete Streets” environment.
- Simplifying road scanning and gap selection for motorists (especially older and younger drivers) making left turns from or onto the mainline.

A Road Diet can be a low-cost safety solution, particularly in cases where only pavement marking modifications are required to make the traffic control change. In other cases, the Road Diet may be planned in conjunction with reconstruction or simple overlay projects, and the change in cross section allocation can be incorporated at no additional cost.

Geometric and operational design features should be considered during the design of a Road Diet. Intersection turn lanes, traffic volume, signing, pavement markings, driveway density, transit routes and stops, and pedestrian and bicyclist facilities should be carefully considered and appropriately applied during the reconfiguration for appropriate Road Diet implementation.<sup>2</sup> As with any roadway treatment, determining whether a Road Diet is the most appropriate alternative in a given situation requires data analysis and engineering judgment.

Once installed, it is important to monitor the safety and operational effects of the roadway, and to make changes as necessary to maintain acceptable traffic flow and safety performance for all road users. Evaluation of Road Diets will provide practitioners the information needed to continue implementing reconfiguration projects in their jurisdictions.

**Table 1.** Problems Potentially Correctable by Road Diet Implementation

Category	Problem	Rationale
Safety	Rear-end crashes with left-turning traffic due to speed discrepancies	Removing stopped vehicles attempting to turn left from the through lane could reduce rear-end crashes
	Sideswipe crashes due to lane changes	Eliminating the need to change lanes reduces sideswipe crashes
	Left-turn crashes due to negative offset left turns from the inside lanes	Eliminating the negative offset between opposing left-turn vehicles and increasing available sight distance can reduce left-turn crashes
	Bicycle and pedestrian crashes	Bicycle lanes separate bicycles from traffic; pedestrians have fewer lanes to cross and can use a refuge area, if provided
Operational	Delays associated with left-turning traffic	Separating left-turning traffic has been shown to reduce delays at signalized intersections
	Side street delays at unsignalized intersections	Side-street traffic requires shorter gaps to complete movements due to the consolidation of left turns into one lane
	Bicycle operational delay due to shared lane with vehicles or sidewalk use	Potential for including a bike lane eliminates such delays
Other	Bicycle and pedestrian accommodation due to lack of facilities	Opportunity to provide appropriate or required facilities, increasing accessibility to non-motorized users
	Unattractive aesthetic	Provisions can be made for traversable medians and other treatments
	Vehicles speeds discourage pedestrian activity	Potential for more uniform speeds; opportunity to encourage pedestrian activity

Adapted from Kentucky Transportation Center’s Guidelines for Road Diet Conversions<sup>3</sup>

# 1 Introduction

Improving safety is a top priority for the U.S. Department of Transportation, and the Federal Highway Administration (FHWA) remains committed to reducing highway fatalities and serious injuries on our Nation's roadways through the use of proven safety countermeasures, including Road Diets.

Four-lane, undivided highways experience a number of crash types as traffic volumes increase, including:

- Rear-end and sideswipe crashes caused by speed differential between vehicles;
- Sideswipe crashes caused by frequent and sudden lane changing between two through lanes;
- Rear-end crashes caused by left-turning vehicles stopped in the inside travel lane;
- Left-turn crashes caused by mainline left-turning motorists feeling pressure to depart the shared through/left lane by following motorists and making a poor gap judgment;
- Angle crashes caused by side street traffic crossing four lanes to make a through movement across an intersection, or turning left across two lanes;
- Bicycle crashes due to a lack of available space for bicyclists to ride comfortably; and
- Pedestrian crashes due to the high number of lanes for pedestrians to cross with no refuge.

As traffic volumes and turning movements (at intersections and driveways) increase, more and more four-lane, undivided roadways experience the above safety concerns. Additionally, as active transportation increases, communities desire more livable spaces, pedestrian and bicycle facilities, and transit options. One solution that benefits all modes is a Road Diet.

## 1.1. What is a Road Diet?

A Road Diet is generally described as “removing travel lanes from a roadway and utilizing the space for other uses and travel modes.”<sup>4</sup> This informational guide will focus on the most common Road Diet reconfiguration, which is the conversion of an undivided four lane roadway to a three-lane undivided roadway made up of two through lanes and a center two-way left-turn lane (TWLTL). The reduction of lanes allows the roadway cross section to be reallocated for other uses such as bike lanes, pedestrian refuge islands, transit uses, and/or parking (see Figure 2).<sup>5</sup>

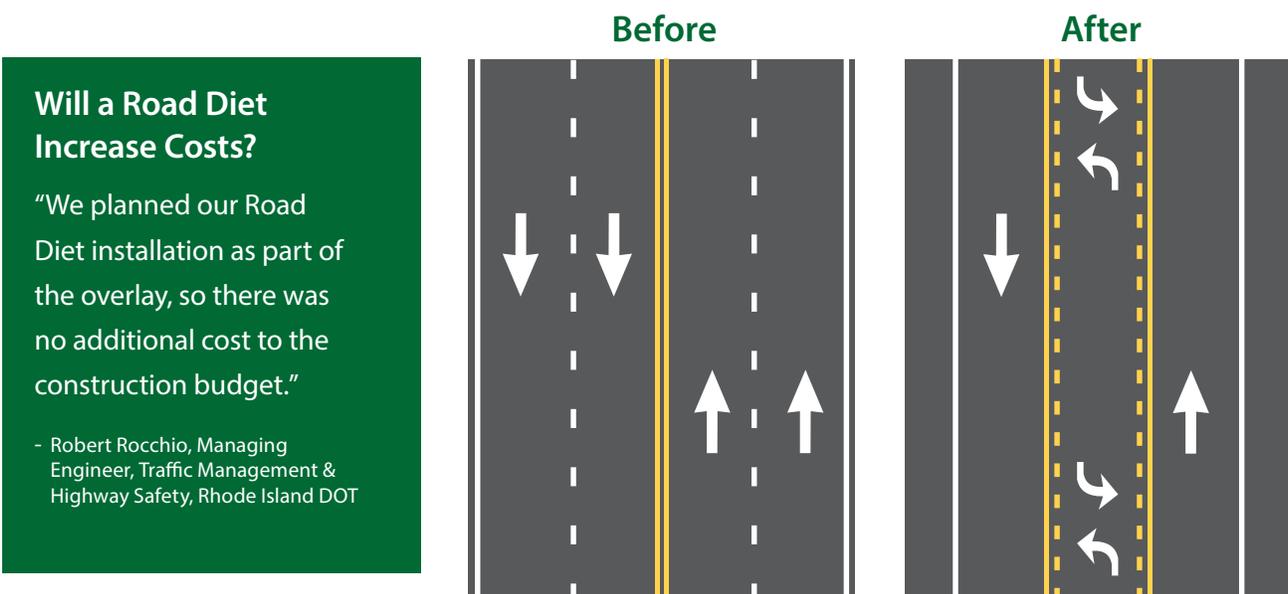
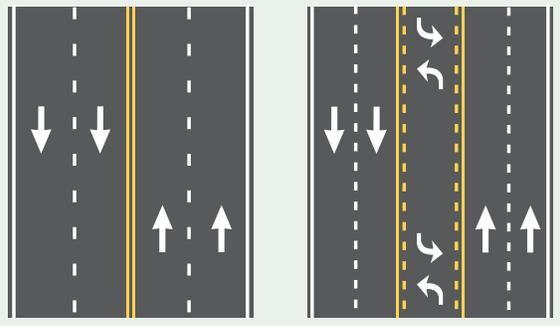
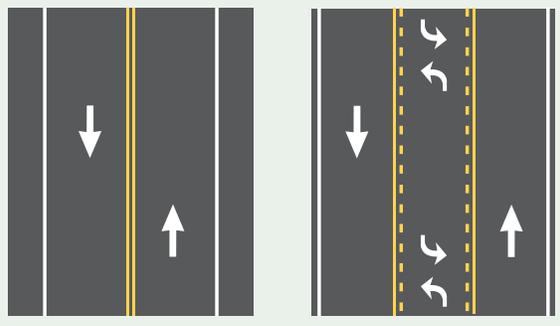
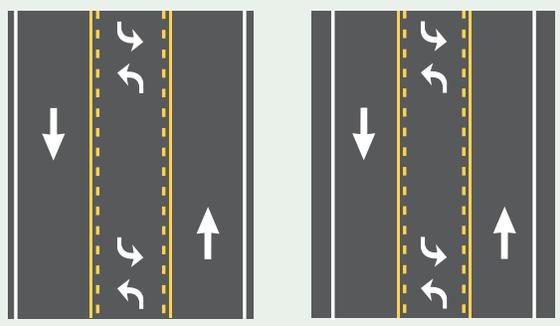
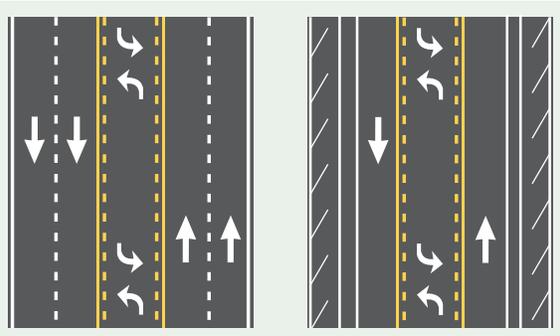


Figure 2. Typical Road Diet Basic Design

## Other Roadway Reconfigurations

In addition to four- to three-lane configurations, other roadway reconfigurations, such as those depicted below, can also provide safety benefits:

<p><b>4-lane to 5-lane:</b> In some cases it is necessary to keep two lanes in each direction for capacity purposes. Narrowing lane width to provide a TWLTL introduces the benefits of separating turning vehicles and reducing operating speeds.</p>	
<p><b>2-lane to 3-lane:</b> If a capacity expansion of an existing two-lane road is desired, in some cases a three-lane cross section can provide similar operational benefits to a four-lane cross section while maintaining the safety benefits of the three-lane configuration.</p>	
<p><b>3-lane to 3-lane:</b> In some cases practitioners could reduce the width of each lane instead of reducing the number of lanes. Converting an existing three-lane roadway to a three-lane cross section with narrowed lanes can accommodate bicycle lanes or parking, and provide some traffic calming benefit.</p>	
<p><b>5-lane to 3-lane</b> In some cases jurisdictions have reconfigured five-lane sections to three lanes, adding features such as diagonal parking and protected bicycle lanes with the extra cross section width.</p>	

**Other Combinations:** Some cases may require allocating the cross section differently by providing unbalanced lane splits (e.g., two in one direction, one in the other), separated left turn lanes for opposite directions, or providing shoulders for other uses (e.g., parking, bicycle lanes, sidewalks). The basic concepts of Road Diets still apply, although in some cases there may be different safety and operational effects than with a classic 4-to-3 Road Diet.

## 1.2 History of Road Diets

The focus of roadway projects during the 1950s and 1960s was on system and capacity expansion, not contraction. Whenever and wherever traffic volumes on a section of road outgrew what a 2-lane road could accommodate efficiently, the next step in roadway design in most cases was to increase the cross-section to 4 lanes. No engineering guidance during that period encouraged consideration of a three-lane alternative.

Consequently, four-lane roadways became the norm throughout the country. Some of these roadways accommodated high traffic volumes requiring four-lane cross-sections; but many accommodated much less traffic for which a smaller cross-section simply had not been considered.

### 1.2.1 History of Road Diet Installations

Lane reduction projects have occurred for many years; they simply have not been recorded or studied. One of the first known installations of a Road Diet occurred in 1979 in Billings, Montana. Here, 17th Street West was converted from a four-lane undivided highway to three lanes (including a two-way left-turn lane, or TWLTL). The roadway width was 40 feet, and the average daily traffic (ADT) was approximately 10,000 vehicles. An unpublished report referenced in a number of previous studies indicated a reduction in crashes with no appreciable change to vehicle delay.<sup>6</sup>

Road Diets increased in popularity in the 1990s, with installations occurring in Iowa, Minnesota, and Montana, among many other states.<sup>7</sup> In some instances the appreciation for Road Diets was shown first in urban areas, such as Seattle, Washington, and Portland, Oregon. More recently, FHWA deemed Road Diets and other roadway reconfigurations a “Proven Safety Countermeasure” and promoted it as a safety-focused alternative cross section to a four-lane undivided roadway.

### 1.2.2 History of Road Diet Safety Evaluations

Numerous studies have examined the estimated safety effects of converting four-lane undivided roads to three-lane cross sections with TWLTLs. The majority of treatment sites and crash data in these studies come from California, Iowa, and Washington, with additional analysis of Road Diets in Florida, Georgia, Michigan, Minnesota, and New York. Several studies used the same, or virtually the same, treatment sites in Iowa. Average Daily Traffic (ADT) for treatment sites in these studies ranged from 2,000 to 26,000, with most sites having an ADT below 20,000.

In the late 1970s, Nemeth conducted a research study focused on TWLTLs that included one field study location that was a four-lane undivided highway converted to three lanes in a commercial district. Results included a reduction in operating speed and increased delay.<sup>8</sup>

The safety analysis methods and the reliability of the findings vary widely. Some studies considered multiple treatment sites and used advanced statistical techniques such as the empirical Bayes methodology to estimate the change in total crashes and crash rates. Other studies were conducted using simple before-and-after analysis without controls, did not account for potential regression-to-the-mean effects, and examined crash data at a single treatment site for only several months following Road Diet implementation.

Pawlovich, et al., (2005) conducted a Bayesian data analysis of 15 Iowa Road Diet treatment sites and 15 control sites over a 23-year period. Traffic volumes ranged from approximately 2,000 to 15,000 vehicles per day. The study concluded that a Road Diet produced a 25.2 percent reduction in crashes per mile of roadway and an 18.8 percent reduction in the crash rate.<sup>9</sup>

A study by Noyce et al. (2006) first analyzed data using traditional approaches, which involved a comparison of before-and-after crashes. Crash data were analyzed by yoked-pair comparison analysis and the empirical Bayes approach. The traditional before-and-after approach estimated a reduction in total crashes of approximately 42 percent. A yoked-pair comparison analysis found a 37 percent reduction in total crashes and a 46 percent reduction in property damage only (PDO) crashes (both statistically significant). The estimated reductions in crash rates (per vehicle mile traveled) were 47 percent for total crashes and 45 percent for PDO crashes (both statistically significant), and the empirical Bayes approach estimated a 44 percent reduction in total crashes.

In 2010, FHWA conducted an empirical Bayes evaluation of total crash frequency before-and-after Road Diet implementation. Results indicated a statistically significant reduction in crashes due to the Road Diet treatment in two separate data sets (one data set for 15 sites in Iowa and one set for 30 sites in California and Washington), as well as for the results of all 45 sites combined. The Iowa data indicate a 47 percent reduction in total crashes while the California and Washington data indicate a 19 percent decrease. Combining both data sets results in an estimated 29 percent reduction in total crashes.<sup>10</sup>

The FHWA report indicated that differences between the Iowa sites and those in California and Washington may be a function of traffic volumes and characteristics of the urban environments where the Road Diets were implemented. Annual average daily traffic (AADT) for the Iowa sites ranged from 3,718 to 13,908 and locations were predominately on U.S. or State routes passing through small towns; AADT for the sites in California and Washington ranged from 6,194 to 26,376 and were predominately on corridors in suburban environments that surrounded larger cities. Sites with lower crash modification factors (CMFs) generally had higher traffic volumes, suggesting the possibility of diminishing safety benefits as traffic volumes increase. The authors recommended that the choice of which CMF to use should be based on characteristics of the site being considered. If the proposed treatment site is more like the small-town Iowa sites, then the 47 percent reduction found in Iowa should be used. If the treatment site is part of a corridor in a suburban area of a larger city, then the 19 percent reduction should be used. If the proposed site matches neither of these site types, then the combined 29 percent reduction is most appropriate.

Based on the history of safety studies presented in this section, installing a Road Diet can lead to an expected crash reduction of 19 to 47 percent. Variables affecting safety effectiveness include pre-installation crash history, installation details, traffic volumes, and the urban or rural nature of the corridor.

Appendix A provides summaries of the key findings from Road Diet safety assessments and additional detail about the individual studies.

### 1.3 Purpose and Objectives of the Informational Guide

The *Road Diet Informational Guide* provides safety, operational, and quality-of-life considerations from research and practice that may impact all users along a corridor – motorists, commercial vehicles, and non-motorized traffic. This document will guide readers through the decision-making process to determine if Road Diets are a good fit for a certain corridor. The guide will also discuss Road Diet feasibility, design, and post-implementation evaluation.

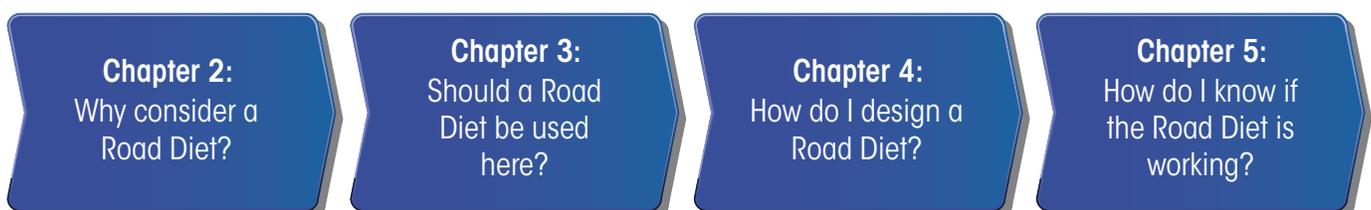


Figure 3. Focus of Each Informational Guide Chapter

### 1.4 Organization of the Guide

The *Road Diet Informational Guide* is organized in the following manner, as illustrated in Figure 3 and described below:

**Chapter 2** presents a high-level overview of how a Road Diet can improve safety and maintain operations for motorized and non-motorized road users along a corridor, enhance the quality of life and livability, and be implemented at a low cost.

**Chapter 3** takes an in-depth look at impacts that a Road Diet may have on safety and operations for motorists, pedestrians, bicyclists, and transit along a corridor. This chapter includes feasibility determination factors that assist practitioners with selecting corridors that may be candidates for Road Diets and presents guidance for discussing Road Diets with a community.

**Chapter 4** leads practitioners through the Road Diet design process. This chapter provides geometric design, operational design, and both Complete Street and system-wide considerations. The intent of this chapter is to walk a practitioner through the design process for the corridor that will be converted to a Road Diet design.

**Chapter 5** details post-implementation evaluation processes to measure Road Diet performance. Several evaluations exist for determining the effect a Road Diet has on safety, operations, non-motorized transportation modes, and transit.

## 2 Why Consider a Road Diet?

Road Diets have the potential to improve safety, convenience, and quality of life for all road users. Road Diets can be relatively low cost if planned in conjunction with reconstruction or simple overlay projects since applying Road Diets consists primarily of restriping.<sup>11</sup>

### 2.1 Benefits of Road Diets

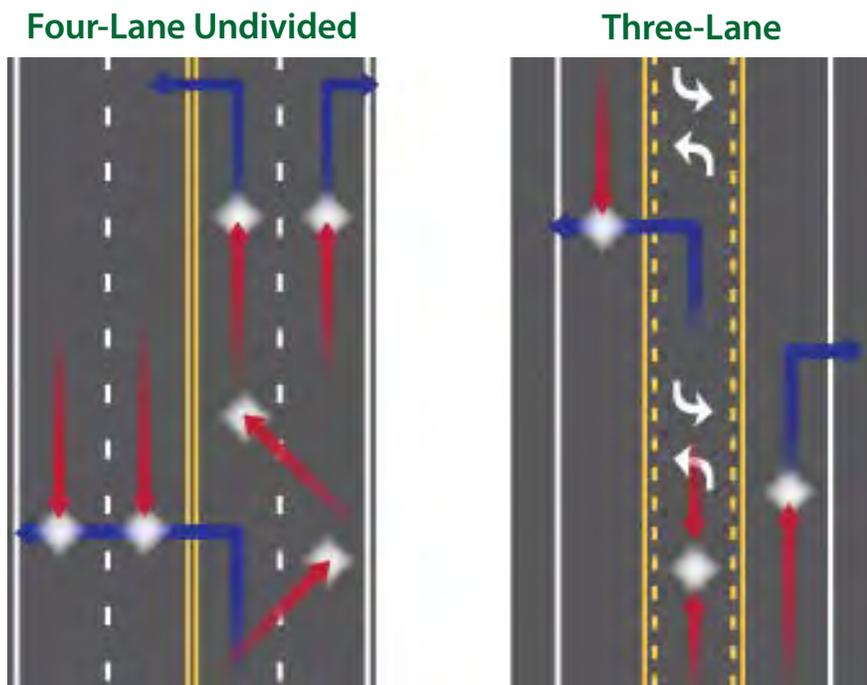
For roads with appropriate traffic volumes, there is strong research support for achieving safety benefits through converting four-lane undivided roads to three-lane cross sections with TWLTLs. Operational and design changes associated with Road Diets that promote safety include reduced vehicle speeds, reduced vehicle-pedestrian, -bicycle, and -vehicle conflicts. For detailed information about the research behind the safety impacts of Road Diets, see Appendix A.

#### 2.1.1 Improved Safety

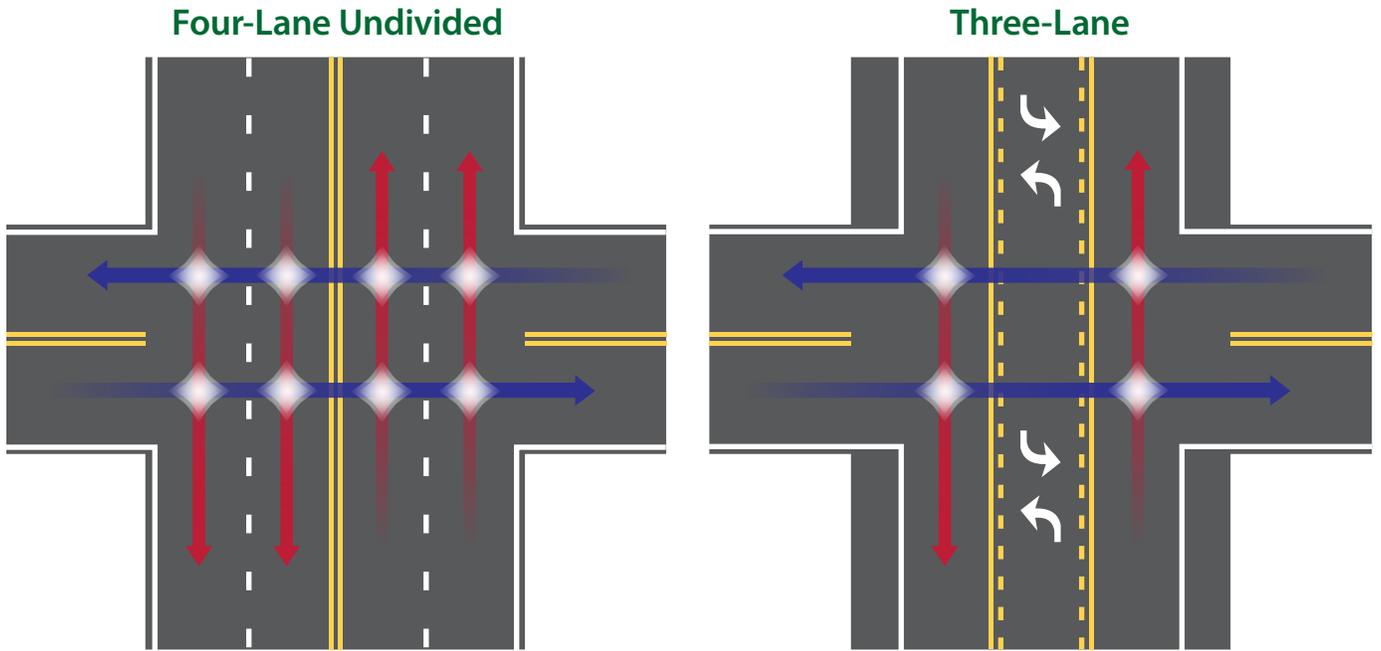
As noted previously, Road Diets reduce vehicle-to-vehicle conflicts that contribute to rear-end, left-turn, and sideswipe crashes by removing the four-lane undivided inside lanes serving both through and turning traffic. Studies indicate a 19 to 47 percent reduction in overall crashes when a Road Diet is installed on a previously four-lane undivided facility as well as a decrease in crashes involving drivers under 35 years of age and over 65 years of age.<sup>12,13</sup>

Road Diets improve safety by reducing the speed differential. On a four-lane undivided road, vehicle speeds can vary between travel lanes, and drivers frequently slow or change lanes due to slower or stopped vehicles (e.g., vehicles stopped in the left lane waiting to turn left). Drivers may also weave in and out of the traffic lanes at high speeds. In contrast, on three-lane roads with TWLTLs the vehicle speed differential is limited by the speed of the lead vehicle in the through lane, and through vehicles are separated from left-turning vehicles. Thus, Road Diets can reduce the vehicle speed differential and vehicle interactions, which can reduce the number and severity of vehicle-to-vehicle crashes. Reducing operating speed decreases crash severity when crashes do occur.

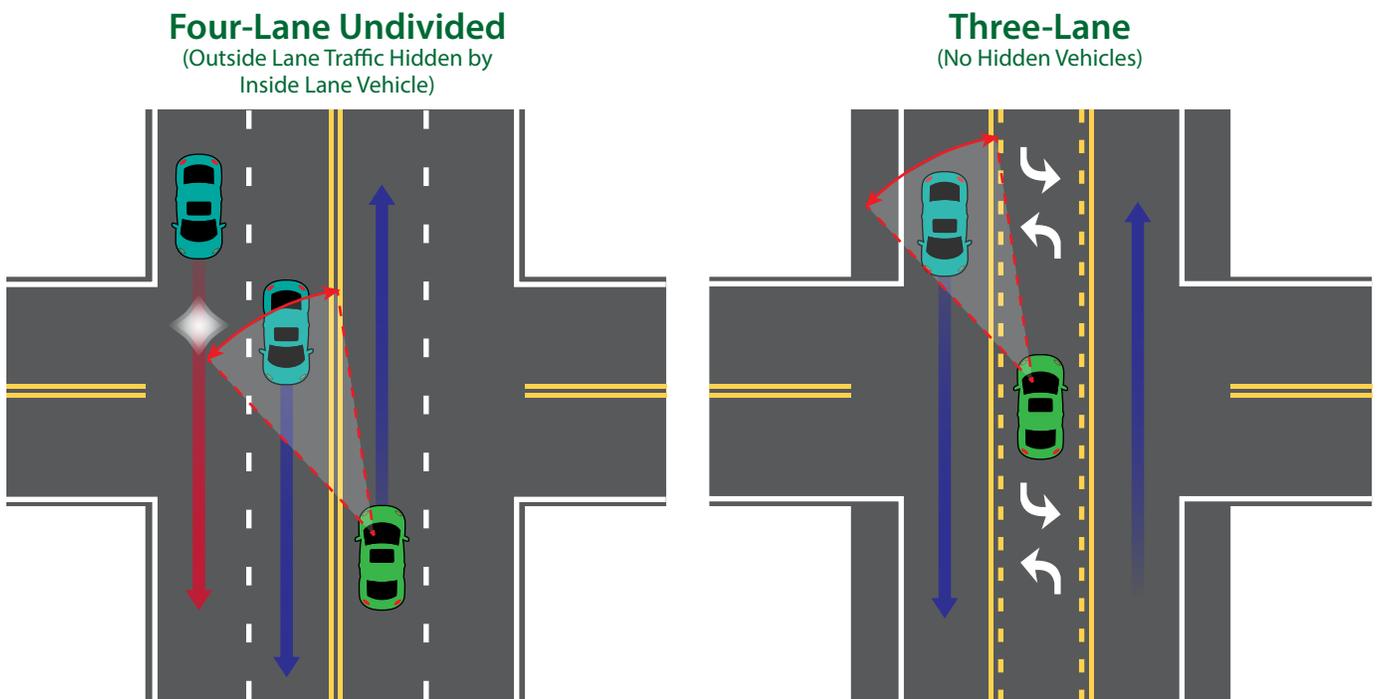
The figures below illustrate conflict points and safety issues related to turning movements for four-lane undivided roadways and three-lane cross sections.



**Figure 4.** Mid-Block Conflict Points for Four-Lane Undivided Roadway and Three-Lane Cross Section (Adapted from Welch, 1999)



**Figure 5.** Crossing and Through Traffic Conflict Points at Intersections for a Four-Lane Undivided Roadway and a Three-Lane Cross Section (Adapted from Welch, 1999)



**Figure 6.** Major-Street Left-Turn Sight Distance for Four-Lane Undivided Roadway and Three-Lane Cross Section (Adapted from Welch, 1999)

## 2.1.2 Operational Benefits

Additionally, a Road Diet can provide the following operational benefits:

- **Separating Left Turns.** Separating left-turning traffic has been shown to reduce delays at signalized intersections.
- **Side-street Traffic Crossing.** Side-street traffic can more comfortably enter the mainline roadway because there are fewer lanes to cross. This can reduce side-street delay.
- **Speed Differential Reductions.** The reduction of speed differential due to a Road Diet provides more consistent traffic flow and less “accordion-style” slow-and-go operations along the corridor.

On some corridors the number and spacing of driveways and intersections leads to a high number of turning movements. In these cases, four-lane undivided roads can operate as de facto three-lane roadways. The majority of the through traffic uses the outside lanes due to the high number of left-turning traffic in the inside shared through and left-turn lane. In these cases a conversion to a three-lane cross section may not have much effect on operations.



**Figure 7.** Addition of a Bike Lane Creates a Buffer between Pedestrians and Moving Vehicles  
Photo Credit: Jennifer Atkinson



**Figure 8.** Mid-block Pedestrian Refuge Island  
Photo Credit: Jennifer Atkinson

## 2.1.3 Pedestrian and Bicyclist Benefits

Road Diets can be of particular benefit to non-motorized road users. They reallocate space from travel lanes— space that is often converted to bike lanes or in some cases sidewalks, where these facilities were lacking previously. These new facilities have a tremendous impact on the mobility and safety of bicyclists and pedestrians as they fill in a gap in the existing network. Even the most basic Road Diet has benefits for pedestrians and bicyclists, regardless of whether specific facilities are provided for these modes. As mentioned above, the speed reductions that are associated with Road Diets lead to fewer and less severe crashes. The three-lane cross-section also makes crossing the roadway easier for pedestrians, as they have one fewer travel lanes to cross and are exposed to moving traffic for a shorter period of time.

Uncontrolled and midblock pedestrian crossing locations tend to experience higher vehicle travel rates, contributing to increased injury and fatality rates when pedestrian crashes occur. Midblock crossing locations account for more than 70 percent of pedestrian fatalities.<sup>14</sup> Zegeer et al. (2001) found a reduction in pedestrian crash risk when crossing two- and three-lane roads compared to roads with four or more lanes.<sup>15</sup> With the addition of a pedestrian refuge island – a raised island placed on a street to separate crossing pedestrians from motor vehicles (see Figure 8) – the crossing becomes shorter and less complicated. Pedestrians only have to be concerned with one direction of travel at a time. Refuge islands have been found to provide important safety benefits for pedestrians.<sup>16</sup>

## Lessons Learned

In one case in Grand Rapids, Michigan, the transit agency moved a bus route that had become too slow and unpredictable after a Road Diet.

Road Diets often include either on-street parking or a bike lane, which create a buffer between pedestrians and moving vehicles. This is especially beneficial in central business districts if officials desire to improve the pedestrian experience.

For bicyclists, the biggest benefit of Road Diets is through the addition of bicycle facilities. A Road Diet can transform a street that was formerly difficult for a bicyclist to travel along to a comfortable route that attracts many more bicyclists. When bicycle lanes are striped, bicyclists are more visible and motorists know where to look for them, speeds are reduced, and bicycle safety can be improved. In some cases, buffered bicycle lanes are added by providing a visual or even physical barrier between modes of travel (e.g., adding flexible delineators on the lane line between motor vehicles and bicycles.) This further enhances the comfort of the route and may encourage increased usage.

Even without a dedicated bicycle lane or buffer, a motorist on a three-lane roadway is able to move over closer to the center lane on a three-lane roadway when approaching a bicycle. A motorist on a four-lane undivided roadway will have less opportunity to move over to the left as it is an active travel lane.

### 2.1.4 Livability Benefits

Added to the direct safety benefits, a Road Diet can improve the quality of life in the corridor through a combination of bicycle lanes, pedestrian improvements, and reduced speed differential, which can improve the comfort level for all users. Livability is, “about tying the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safer streets and roads.”<sup>17</sup> Road Diets can help achieve desired livability on certain roadways.

## 2.2 Synergies and Trade-offs

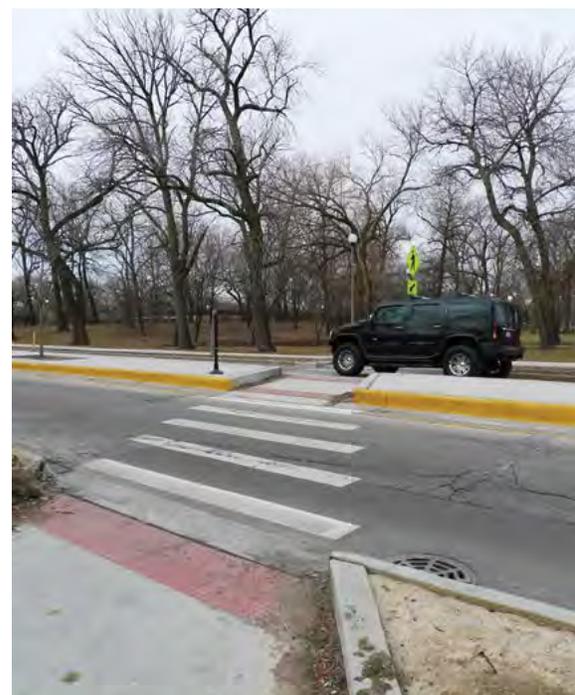
Interviews with agencies that have implemented Road Diets found many synergies between improvements for one mode and their impacts on another. The City of Chicago found that the addition of pedestrian refuge islands, as illustrated in Figure 9, was a significant benefit of their Road Diets. In some cases, improving pedestrian safety was the main objective of the Road Diet, but in other cases, the original intent was to add bicycle lanes or to simply address general traffic safety and/or operations issues.

Table 2 summarizes the positive and negative potential impacts of various features of Road Diets based on findings from researcher field visits and agency interviews.

Some of the treatments for one mode have obvious synergies with other modes, such as bicycle lanes that not only provide added comfort for bicyclists, but also for pedestrians by increasing their separation from vehicles. Other relationships are not as obvious. For instance, Road Diets in Iowa and Chicago generated increased vehicular traffic on the corridor, indicating an increase in demand after installation. In Pasadena, the unexpected benefit of a Road Diet to a pedestrian crossing (the pedestrians were able to safely cross more easily) eliminated the need for a pedestrian traffic signal, resulting in cost savings and the potential impacts of the traffic signal on traffic flow.

## Pedestrian Refuge

Pedestrian refuge islands can reduce pedestrian-related crashes by up to 46 percent.<sup>18</sup>



**Figure 9.** Pedestrian Refuge Island on a Road Diet Corridor in Chicago  
Photo Credit: Stacey Meekins

## Benefits for Buses

*A Road Diet on Ingersoll Avenue in Des Moines, IA provided a benefit to buses: instead of stopping in a through lane and blocking traffic as they had done before the reconfiguration, the new design accommodated transit buses with a bus turn out.*

The impacts on transit varied among the Road Diets studied. In some cases, the Road Diet was seen as a positive by the transit agency. In other cases, particularly in less urban areas, the reduction of travel lanes caused congestion as traffic backed up behind buses loading and unloading at the curb. A similar consequence as a result of mail delivery was also found in less urban areas. Prior to the Road Diet, vehicles were able to pass stopped buses or mail carrier vehicles using the inside lane. The back-ups that occurred after the conversion resulted in some vehicles making illegal maneuvers to pass the bus in the two-way left turn lane (TWLTL). Some Road Diets include measures to address this issue, such as shoulders or dedicated pull-outs that allow buses and mail trucks to make their stops outside the travel lane.

Road Diets can also introduce some traffic safety concerns. One concern is the use by pedestrians of TWLTLs as a refuge, which could make pedestrians vulnerable to being struck by vehicles traveling in the TWLTL. However, as evidenced in published assessments of Road Diet implementations, pedestrian safety is generally enhanced by this type of roadway reconfiguration, especially if a pedestrian refuge island is included.

Some impacts are seen as a positive by some agencies and a negative by others, which may be dependent on the context and users of the roadway. In Iowa, a Road Diet along a truck route narrowed lanes from 13 feet to 10 feet; these seemed too narrow to commercial vehicle drivers. Meanwhile, in Chicago and Michigan, shoulders and buffers between bicycle lanes and travel lanes were added primarily to keep travel lanes to 12 feet wide or less. In these cases, the wider lanes were undesirable because they encourage faster speeds.

In addition, a common concern in implementing Road Diets is that drivers on cross-streets or driveways may have difficulty finding a suitable gap in traffic to enter the main roadway because through traffic is now using a single through lane. However, in Chicago it was found that some side street traffic had an easier time crossing the corridor after the Road Diet was installed because the traffic patterns were simpler and gaps were easier to find.

In some States maintenance funding can be affected. Lane-miles are sometimes used as the measurement to calculate budgets for maintenance activities, defined only as those miles used for motor vehicle traffic – not bicycle lanes, parking, or other uses. When a Road Diet is introduced, one-quarter of the motor vehicle lane-miles are removed, which can equate to a similar reduction in maintenance funds. Discussions are underway in affected states to address this situation.

**Table 2.** Practitioner Interview Results Summary: Road Diet Installation Observations

Road Diet Feature	Primary/Intended Impacts	Secondary/Unintended Impacts	
		Positive	Negative
Bike lanes	<ul style="list-style-type: none"> <li>Increased mobility and safety for bicyclists, and higher bicycle volumes</li> <li>Increased comfort level for bicyclists due to separation from vehicles</li> </ul>	<ul style="list-style-type: none"> <li>Increased property values</li> </ul>	<ul style="list-style-type: none"> <li>Could reduce parking, depending on design</li> </ul>
Fewer travel lanes	<ul style="list-style-type: none"> <li>Reallocate space for other uses</li> </ul>	<ul style="list-style-type: none"> <li>Pedestrian crossings are easier, less complex</li> <li>Can make finding a gap easier for cross-traffic</li> <li>Allows for wider travel lanes</li> </ul>	<ul style="list-style-type: none"> <li>Mail trucks and transit vehicles can block traffic when stopped</li> <li>May reduce capacity</li> <li>In some jurisdiction, maintenance funding is tied to the number of lane-miles, so reducing the number of lanes can have a negative impact on maintenance budgets</li> <li>Similarly, some Federal funds may be reduced</li> <li>If travel lanes are widened, can encourage increased speeds</li> </ul>
Two-Way Left Turn Lane	<ul style="list-style-type: none"> <li>Provide dedicated left turn lane</li> </ul>	<ul style="list-style-type: none"> <li>Makes efficient use of limited roadway area</li> </ul>	<ul style="list-style-type: none"> <li>Could be difficult for drivers to access left turn lane if demand for left turns is too high</li> </ul>
Pedestrian refuge island	<ul style="list-style-type: none"> <li>Increased mobility and safety for pedestrians</li> </ul>	<ul style="list-style-type: none"> <li>Makes pedestrian crossings safer and easier</li> <li>Prevents illegal use of the TWLTL to pass slower traffic or access an upstream turn lane</li> </ul>	<ul style="list-style-type: none"> <li>May create issues with snow removal</li> <li>Can effectively increase congestion by preventing illegal maneuvers</li> </ul>
Buffers (grass, concrete median, plastic delineators)	<ul style="list-style-type: none"> <li>Provide barriers and space between travel modes</li> </ul>	<ul style="list-style-type: none"> <li>Increases comfort level for bicyclists by increasing separation from vehicles</li> <li>Barrier can prevent users entering a lane reserved for another mode</li> </ul>	<ul style="list-style-type: none"> <li>Grass and delineator buffers will necessitate ongoing maintenance.</li> </ul>

### 3 Road Diet Feasibility Determination

While Road Diets can improve safety and accommodate motorized and non-motorized transportation modes along a corridor, they may not be appropriate or feasible in all locations. There are many factors to consider before implementing a Road Diet. Agencies should consider the objective of the Road Diet, which could be one or more of the following:

- Improve safety
- Reduce speeds
- Mitigate queues associated with left-turning traffic
- Improve pedestrian environment
- Improve bicyclist accessibility
- Enhance transit stops.

Identifying the objective(s) will help determine whether the Road Diet is an appropriate alternative for the corridor that is being evaluated.

Driveway density, transit routes, the number and design of intersections along the corridor, as well as operational characteristics are some considerations to be evaluated before deciding to implement a Road Diet.

Other considerations include roadway function and access control, turning volumes and 85th percentile speed, crash type and patterns, pedestrian and bicycle activity, and right-of-way availability and cost.<sup>19</sup>

#### 3.1 Safety Factors

One of the primary reasons for a Road Diet installation is to address an identified crash problem. Four-lane undivided highways have inherent design aspects that make them susceptible to crashes. Left-turning and through movements sharing a single lane contributes to rear-end crashes, left-turn crashes, and speed discrepancies. In most cases, current four-lane undivided cross sections do not include accommodations for bicyclists, and most have no refuge for pedestrians to cross four lanes of traffic. When a Road Diet is considered for safety reasons, practitioners must determine if the crash patterns are those that can be addressed with this alternative.

Overall, the statistical analyses of Road Diet conversion safety impacts have shown a range of positive results, with differences often related to whether the installation occurred in a rural or urban area. As such, this difference should be considered when determining Road Diet conversion feasibility. A more detailed discussion of expected safety improvements from a Road Diet conversion is contained in Chapter 2. The reduction in conflict points at intersections, improved sight distance, easier maneuverability for vehicles turning left, and the elimination of weaving are also contributors to the safety improvements at case study Road Diet conversion locations. It is speculated in the Iowa Road Diet guidelines that the only crash type that might increase with this type of conversion would be those related to the additional stop/start conflicts occurring between through and right-turn vehicles and due to the potential increase in congestion.<sup>20</sup>

#### Low-Cost Solution

The vast majority of Road Diets are installed on existing pavement within the right-of-way.



**Figure 10.** Road Diet in Flint, Michigan, Central Business District  
Photo Credit: Jennifer Atkinson

### 3.2 Context Sensitive Solutions and Complete Streets

FHWA defines a context sensitive solution (CSS) as a “collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist.”<sup>21</sup>

The topic of CSS comes into play when determining whether or not a Road Diet is “right” for a specific location. FHWA and the American Association of State Highway and Transportation Officials (AASHTO) have directives and strong policy-level support for context-sensitive design. According to FHWA, CSS includes the following seven qualities of design excellence:

1. The project satisfies the purpose and needs as agreed to by a full range of stakeholders. This agreement is forged in the earliest phase of the project and amended as warranted as the project develops.
2. The project is a safe facility for both the user and the community.
3. The project is in harmony with the community, and it preserves environmental, scenic, aesthetic, historic, and natural resource values of the area.
4. The project exceeds the expectations of both designers and stakeholders and achieves a level of excellence in people's minds.
5. The project involves efficient and effective use of the resources (time, budget) of all involved parties.
6. The project is designed and built with minimal disruption to the community.
7. The project is seen as having added lasting value to the community.<sup>22</sup>

When considering whether to implement a Road Diet, part of the practitioner’s evaluation process should include whether it will meet these qualities.

The concept of Complete Streets is similar to CSS in that it suggests that the street network should be planned, designed, maintained, and operated in a way that accommodates all road users and those who use the surrounding environment; not doing so will result in “incomplete” streets. The concept impacts the planning and design phases of a roadway as well as the day-to-day operations.

What it means for a street to be complete is inherent to the context and will differ depending on how the street is intended to function, what types and volumes of road users it should accommodate, the destinations it serves, and the right-of-way available. Many communities have embraced this concept by adopting Complete Streets policies, establishing the expectation that all future roadway projects will adhere to the principle that streets should be designed with all users in mind rather than simply providing enough capacity for vehicle through-put. To aid in implementing the policy, many communities are also developing Complete Streets design guidelines, which address the examples listed and other intricacies of how the design of a roadway should relate to the surrounding context.

#### **Complete Streets Commitment**

**More than 600 State, regional, and local jurisdictions have adopted Complete Streets policies or have made a written commitment to do so.**

### 3.3 Operational Factors

Consider the following common operational issues when determining the feasibility of a site for a Road Diet.

#### 3.3.1 De Facto Three-Lane Roadway Operation

The traditional definition of a roadway function is based on vehicular mobility and access. The functional goal for a potential Road Diet corridor should consider impacts on the mobility and access of all road users. Practitioners should also consider the adjacent land uses along a corridor. For example, a Road Diet is likely to succeed operationally if the roadway is already operating as a “de facto three-lane roadway.” A de facto three-lane roadway is one in which the left-turning vehicles along the existing four-lane undivided roadway have resulted in the majority of the through traffic using the outside lanes (see Figure 11). The overall objective of the Road Diet is to match the design with the intended or preferred function of the roadway for all road users.

#### 3.3.2 Speed

When possible, match vehicle speed to the context of surrounding land uses, such as through central business districts and neighborhoods, and to all road users. Sometimes this means that lower vehicle speeds are more desirable. These areas often have higher pedestrian and bicycle volumes in addition to younger pedestrians and bicyclists. The need to “calm” or reduce vehicle speeds is often cited as a reason for Road Diet conversions.<sup>23</sup>

Road Diets can reduce speed differential. The case study and simulation results of operational analyses from *Converting Four-Lane Undivided Roadways to a Three-Lane Cross Section - Factors to Consider* show that 85th percentile and average speed along conversions are likely to decrease by 3 to 5 mph.<sup>24</sup> Anecdotal evidence from several case studies has shown that this type of conversion can result in lower vehicle speed variability.

If speeding was documented in the four-lane undivided configuration, a Road Diet can be a useful tool for reducing speeds, especially high-end speeders. Studies have shown a reduction in 85th percentile speed of less than 5 mph<sup>25,26</sup> and in reducing the number of vehicles speeding excessively—defined as those going over 36 mph in a 30 mph speed zone.<sup>27</sup> Another study also reported a 7 percent reduction in vehicles traveling over the posted speed limit.<sup>28</sup> A greater reduction in speed was observed on corridors with higher traffic volumes.<sup>29</sup>

#### 3.3.3 Level of Service (LOS)

Level of Service (LOS) is a qualitative measure of traffic conditions using a quantitative stratification of a performance measure or measures. Consider LOS for two components: intersections and arterial segments. Corridors with closely spaced signalized intersections may have a larger impact on the Road Diet operation due to queuing affecting adjacent signalized intersections. This impact could be mitigated by signal timing and coordination between adjacent signals, allowing the corridor to be “flushed” with each green cycle. The City of Lansing, Michigan, goes a step further, considering updates to everything along a new Road Diet corridor, including potential changes to traffic control (e.g., signal removal, roundabout installation).



**Figure 11.** Four-lane Undivided Roadway Intersection Operating as a de facto Three-lane Cross Section  
Photo Credit: Tom Welch

The LOS on urban arterials would provide a more accurate view of conditions for roads with longer distances between signalized intersections or no signalized intersections in the corridor. The arterial LOS as measured by vehicle speed is affected by signal spacing, access point frequency, number of left turning vehicles, and number of lanes.

The difference in delays and queues should also be considered when determining the feasibility of a Road Diet conversion. After the conversion, the through vehicle delay due to turning traffic should typically decrease. The delays for left-turning vehicles, however, may increase because a similar through volume is now using one through lane rather than two. Through-vehicle delay and queuing along the main line and minor street approaches may also increase and should be considered during detailed analysis of this type of conversion. Once again, the difference in these measures can be small if the existing four-lane undivided roadway is generally operating at or close to that of a de facto three-lane roadway. Several measures that also can be used to mitigate and minimize these operational impacts include, but are not limited to, signal optimization and coordination, turn lane additions, and driveway consolidation. Of particular interest and focus should be minor street delays and queues at signalized intersections and the available gaps at unsignalized intersections or driveways. Practitioners should consider the mitigation of any negative impacts during the more detailed alternative analysis and evaluation and weigh them against benefits for non-motorized road users.

### 3.3.4 Quality of Service

Quality of service is defined as a "quantitative indicator of the operational conditions of a facility or service and users' perception of these conditions."<sup>30</sup> Agencies have used a number of objective and subjective measures, including "perceived level of safety and comfort" in Florida's bicycle and pedestrian level of service methodologies.<sup>31</sup>

Practitioners should consider user quality of service for individual intersections and arterial segments as well as the overall facility. New methodologies for urban street facilities in the 2010 Highway Capacity Manual (HCM) allow analysts to determine quality of service measures for automobiles, pedestrians, bicyclists, and transit.

The HCM 2010 notes that automobile mode quality of service is based on performance measures that are field-measurable, while the pedestrian and bicyclist qualities of service are based on traveler-reported scores based on perceived quality of service. Transit quality of service is based on changes in transit patronage that come from changes in service quality. In this context, a multimodal LOS (MMLOS) analysis is included to evaluate the LOS of each travel mode simultaneously (note that a combined LOS is not calculated). Strengths of the MMLOS analysis include the ability to quantify and assess quality of service trade-offs between modes and to help prioritize possible improvements that may impact each mode differently.<sup>32</sup>

## What about Capacity?

*There is often concern about apparently reducing the capacity of a four-lane undivided roadway in half by converting it to a three-lane cross section with a Road Diet. Practitioners have found some cases of the four-lane undivided road operating as a de facto three-lane roadway due to turning movements and driver behavior. Therefore, the effective capacity reduction is much less than the theoretical reduction assumed before implementation.*

Some of the following general trends are expected.

- Pedestrian LOS scores are likely to improve due to the lane reduction, speed reduction, and the reallocation of traveled way width to bicycle lanes and on-street parking.
- Bicycle LOS scores will improve as a result of some of the same factors, as well as the addition of a bicycle lane.
- Applying a Road Diet configuration on a corridor with frequent signalized intersections will have a larger impact on automobile operations than it would on a corridor with more infrequent signal spacing. Frequently spaced signals are more likely to have queued traffic back up into adjacent signals' effective areas, causing congestion issues at multiple intersections. In some cases this impact can be mitigated by optimizing the signal timing and coordinating between signals. The arterial automobile LOS will provide a more accurate view of conditions when there are longer distances between signalized intersections or only unsignalized intersections in the corridor.
- The following factors will affect automobile LOS, as measured by vehicle speed: signal spacing, access point frequency, number of left-turning vehicles, and number of lanes.

One study conducted a sensitivity analysis to determine at what hourly volume the arterial LOS would decline. It found that a two-way peak hour volume of 1,750 vehicles per hour (875 each direction) was the threshold when a decrease in LOS was observed.<sup>33</sup> It also found this could be mitigated by signal timing optimization.<sup>34</sup>

### 3.3.5 Average Daily Traffic (ADT)

The ADT provides a good first approximation on whether or not to consider a Road Diet conversion. If the ADT is near the upper limits of the study volumes, practitioners should conduct further analysis to determine its operational feasibility. This would include looking at peak hour volumes by direction and considering other factors such as signal spacing, turning volumes at intersections, and other access points. Each practitioner should use engineering judgment to decide how much analysis is necessary and take examples from this report as a guide.

- A 2011 Kentucky study showed Road Diets could work up to an ADT of 23,000 vehicles per day (vpd).<sup>35</sup>
- In 2006, Gates, et al. suggested a maximum ADT of between 15,000 and 17,500 vpd.<sup>36</sup>

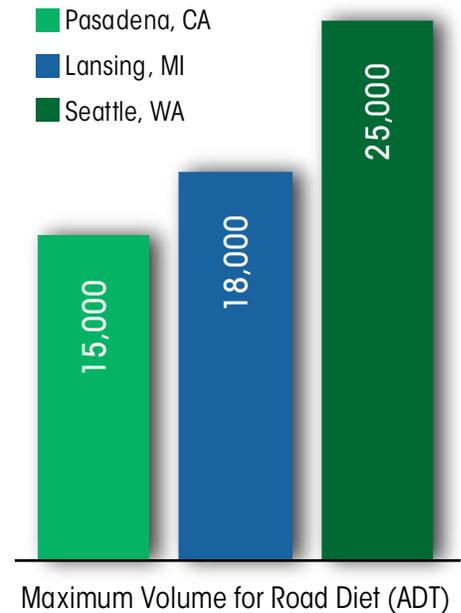
Knapp, Giese, and Lee have documented Road Diets with ADTs ranging from 8,500 to 24,000 vpd.<sup>37</sup> The FHWA advises that roadways with ADT of 20,000 vpd or less may be good candidates for a Road Diet and should be evaluated for feasibility. Figure 12 shows the maximum ADTs used by several agencies to determine whether to install a Road Diet. Road Diet projects have been completed on roadways with relatively high traffic volumes in urban areas or near larger cities with satisfactory results.

### 3.3.6 Peak Hour and Peak Direction

The peak hour volume in the peak direction will be the measure of volume driving the analysis and can determine whether the Road Diet can be feasibly implemented. This is the traffic volume that would be used in calculating LOS analysis for intersections or the arterial corridor.

Peak-hour volumes along urban roadways typically represent 8 to 12 percent of the ADT along a roadway. The Iowa guidelines suggest, from an operational point of view, the following volume-based Road Diet feasibility conclusions (assuming a 50/50 directional split and 10 percent of the ADT during the peak hour):<sup>38</sup>

- Probably feasible at or below 750 vehicles per hour per direction (vphpd) during the peak hour.
- Consider cautiously between 750 – 875 vphpd during the peak hour.
- Feasibility less likely above 875 vphpd during the peak hour and expect reduced arterial LOS during the peak period.



**Figure 12.** Road Diet Implementation Maximum Volume Thresholds by Agency

### 3.3.7 Turning Volumes and Patterns

The volume and pattern of turning vehicles influences roadway safety and operation. Practitioners should assess turn volumes and patterns when considering the feasibility of a Road Diet conversion. In general, four-lane undivided roadways begin to operate in a manner similar to a three-lane roadway as the number of access points and left-turn volumes increase. In this situation the four-lane undivided roadway begins to operate as a de facto three-lane roadway and the operational impacts of a Road Diet conversion may be smaller. This type of situation, if expected during the entire design period, would be more likely to define a feasible Road Diet conversion location.<sup>39</sup> If it is determined that the four-lane undivided to three-lane conversion is a feasible option along a roadway corridor, a more detailed operational analysis of the existing and expected through and turning volumes is necessary (see Chapter 4).

The operation of each corridor is unique and requires an evaluation to determine if a Road Diet cross-section conversion is feasible. For example, if a major driveway exists along the corridor, it could change the potential impacts of a Road Diet by introducing another (often closely-spaced) opportunity for additional vehicular turning movements. If motorists are trying to turn into driveways opposite each other, opposite-direction vehicles could end up in the TWLTL and have potential conflicts.

Offset intersections can cause a similar problem, as vehicular left-turning traffic can enter the TWLTL from opposite directions, desiring the same space from which to make their turn. Depending on the design of intersections and driveways, along with the volume of left turning traffic, this can result in potential conflicts.

### 3.3.8 Frequently Stopping and Slow-Moving Vehicles

The number and frequency of slow-moving and frequently stopping vehicles using a roadway corridor is a factor to consider when evaluating the application of a Road Diet conversion. Some examples of these types of vehicles include agricultural equipment, transit buses, curb-side mail delivery, trash pick-up, and horse-drawn vehicles. These types of vehicles have a greater impact on the operation of a three-lane roadway than a four-lane undivided roadway. The primary reason for this increased impact is the inability of other vehicles to legally pass frequently stopping or slow-moving vehicles. When determining the feasibility of a Road Diet conversion, practitioners should take into account the number and duration of vehicle stops along the corridor (particularly during peak hours), as well as the enforcement levels needed to deter illegal passing. One potential mitigation measure to minimize the impact of frequently stopping vehicles is to provide pull-out areas at specific locations along the corridor. Another potential mitigation is to use some of the existing cross section for these types of vehicles (e.g., a transit lane). Improvements to intersection and driveway radii or pavement markings to serve these types of vehicles should also be considered if the Road Diet is selected as a feasible option.

Simulated comparisons of a quarter-mile, four-lane, undivided roadway with a three-lane roadway, each having different percentages of heavy vehicles, one to two bus stops, and various headways and dwell times (with a set amount of entering volumes, number of access points, and turning volumes) showed that the impact of these vehicles on average arterial travel speed was much higher along the three-lane cross section than that of the four-lane undivided roadways.<sup>40</sup> Vehicles illegally passing stopped or slow-moving vehicles in the TWLTL did not appear to be a regular problem in the Iowa case studies. If this does occur, consider enforcement and education about the use of TWLTLs as appropriate.



**Figure 13.** Bus Loading Zone in Seattle, Washington  
Photo Credit: City of Seattle

### 3.4 Bicycles, Pedestrians, Transit, and Freight Considerations

Embarking on a Road Diet presents an opportunity to dedicate more space to other roadway users and create a more balanced transportation system. For bicyclists in particular, Road Diets often include adding bicycle lanes to a street with little or no accommodation for bicyclists. The bicycle lane makes that route an option for many who would have been too intimidated to use the street previously. For pedestrians, Road Diets help reduce vehicle speeds and speed discrepancies midblock, making crossings easier and safer.<sup>41</sup> Transit vehicles may find more space available for bus stops but may also face new challenges, such as blocking the single through lane along a corridor when stopped. Freight operators have special needs, especially for delivery of goods to businesses, that should be accommodated along the corridor.

Community members feel Road Diet conversions improve their quality of life. Iowa case study results found that pedestrians and bicyclists, along with adjacent land owners, often preferred the three-lane cross section. Conflicts between bicyclists, pedestrians, and vehicles can be reduced and the complexity of crossing maneuvers decreased. Road Diet effects on quality of life are discussed in more detail in *Road Diet Handbook: Setting Trends for Livable Streets*.<sup>42</sup>

If corridors have existing or planned transit routes, the interrelation between transit operations (e.g., number of dedicated stops and frequency of trips) and other roadway users (i.e., vehicles, bicycles, pedestrians) should be assessed before determining whether or not to implement a Road Diet. The following sections present considerations and examples of how Road Diets may be implemented with pedestrians, bicycles, transit, and freight operations in mind.

#### 3.4.1 Bicycle Considerations

Bicycle routes should be part of an overall network. One of the things to consider when determining whether a street is appropriate for a Road Diet is whether it fills in a gap in the overall network, or if it is part of a planned network. Many agencies, including the Los Angeles, Seattle, and Chicago DOTs, have sought out potential locations for Road Diets to complete the networks identified in their bicycle master plans.

If a formal bicycle network has not been identified, the roadway in question may still benefit from bicycle facilities. The street should first be studied to determine if there is any existing bicycle activity along it. If bicyclists are already using the roadway without a facility, significantly more bicyclists will likely use the route after a Road Diet. Whether or not there is existing activity, demand for a bicycle facility should be estimated. In cases where there are already bicycle facilities, a Road Diet may be an opportunity to further enhance the comfort of bicyclists by adding buffer space or converting a standard bicycle lane to a protected bicycle lane. Adding buffers may have additional benefits to other users as well. For instance, where the goal is to lower speeds, adding buffers to narrow travel lanes may accomplish that, which would be a benefit to pedestrians as well as bicyclists (see Figure 14).



**Figure 14.** Buffered Bicycle Lanes on Wabash Avenue in Chicago  
Photo Credit: Stacey Meekins



**Figure 15.** Pedestrians Buffered from Traffic in Reston, VA  
Photo Credit: Richard Retting

### 3.4.2 Pedestrian Considerations

The primary items for consideration for pedestrians are similar in nature to those for bicyclists – is there already a sidewalk available; what is the level of pedestrian activity; could the activity be expected to increase with the addition of facilities? If there are no sidewalks currently lining the roadway, designers should consider adding them with the Road Diet. In rural contexts, a sidewalk may not be necessary, but in these situations, a paved shoulder should at least be considered as a pedestrian accommodation. Along a section of Soapstone Road in Reston, Virginia, a

Road Diet converted the road from two travel lanes in each direction to one lane of travel and a bicycle lane in each direction, separated by a TWLTL. Pedestrians can be observed walking in the road at locations that lacked sidewalks near the transition into the three-lane section, as shown in Figure 15. In this case the Road Diet treatment provides a safety benefit by increasing the separation between pedestrians and motor vehicles.

The history of pedestrian crashes should factor into the decision as to whether to implement a Road Diet and what the components of the Road Diet ought to be. Crashes can be reduced by adding sidewalks or a shoulder, adding pedestrian refuge islands, and simply by slowing cars and reducing the number of lanes pedestrians must cross.

Pedestrian refuge islands should also be considered. The land use and the intended pedestrian environment will also factor into the decision as to whether to implement a Road Diet.

### 3.4.3 Transit Considerations

It is important to consider transit operations along a corridor being evaluated for a Road Diet, and also to consider the impacts of new transit needs that affect all road users. The conversion should not result in transit causing undue additional delay to general purpose traffic, though in many cases buses that stopped in the rightmost through lane before the conversion will stop in the only through lane after the Road Diet is installed. Bus stops are typically located along the curb with on-street parking removed, although some corridors may include pull outs to prevent buses from blocking through traffic. Pull-outs are often not preferred by transit operators due to difficulties with ingress and egress from the mainline.

Agencies should work with transit providers in the corridor to make sure their needs are being addressed. This is also a good time to have the transit provider look at bus stop spacing and location. Some stops could potentially be eliminated or moved from either near-side or far-side locations at intersections to provide a better pedestrian connection or to prevent buses from blocking the line of sight between pedestrians and motorists. If buses end up partially blocking the through lane after a Road Diet conversion, then vehicles may end up passing the bus in the two-way left turn lane. This issue can be remediated by applying physical barriers (e.g., channelizing devices along the outer edge line of the TWLTL) to prevent the maneuver, depending on the frequency and severity of the violation.

On 55th Street in Chicago, the City installed a Road Diet from Cottage Grove Avenue to Woodlawn Avenue. This corridor served as an existing transit route, and the City also wanted to incorporate bicycle facilities. Significant coordination with the Chicago Transit Authority was necessary to address the needs of the transit providers, while also accommodating the new bicycle lanes. Figure 16 shows how transit and bicycle lanes are both accommodated on 55th Street.



**Figure 16.** 55th Street in Chicago: Transit and Bicycles Share an Area at the Intersection (left); Transit Stop and Bicycle Lane (right); Photo Credit: Stacey Meekins

The City of Seattle works closely with transit providers in corridors where Road Diets are proposed. The transit agency reviews the proposed geometry and comments on needed changes to accommodate buses. In addition, Seattle has developed transit priority corridors with the following attributes:

- Bus priority at traffic signals.
- Queue jump lanes for buses at signalized intersections.
- In-lane bus stops for transit efficiency.
- Pedestrian safety treatments for transit users and on-time bus service.

### Road Diet Effects on Seattle's Electric Buses

The City of Seattle has a fleet of electric buses that use overhead wires to provide eco-friendly and cost-effective services. For a proposed Road Diet project on Myrtle Street, King County Metro asked if the bus could continue using the same overhead wires with the new lane configuration. If so, then the Road Diet would be a low-cost solution. If not, it would be very expensive to move the wires. After testing the situation they determined that the buses could reach the wires, so the Road Diet project was installed.

#### 3.4.4 Freight Considerations

There are instances where a corridor proposed for a Road Diet will need to accommodate truck movements. Freight operations on corridors are largely driven by demand-induced truck volumes, the proximity of alternative or parallel corridors, and the land use characteristics along or near the corridor. Freight operations can range from routine deliveries along the corridor to throughput of freight generated within and outside a region. When evaluating a corridor for a Road Diet, current and future freight operations should be considered.

While there is limited information available on freight considerations when compared to other areas addressed in this section, the Complete Streets guide published by The New York State Association of Metropolitan Planning Organizations (NYSAMPO) notes that, "Complete streets are often used to stimulate economic development, ideally as compact mixed-use with retail, commercial, and residential spaces. Designers must consider how stores and restaurants will receive deliveries, and where visitors and residents will park their cars without interfering with the needs of pedestrians, cyclists, or transit. Concepts include rear delivery access and strategically placed loading zones with time restrictions."<sup>43</sup>

Road Diets can appropriately accommodate freight movements while also serving other transportation users if some key factors are considered during the planning process. The NYSAMPO has identified the following considerations that should be factored in when addressing truck movements in complete streets settings.<sup>44</sup>

- 1) **Current Land Use.** Different uses generate different volumes and types of large truck movements. For example, restaurants may generate relatively high volumes of trucks, while lower density residential typically will not. Keeping the land uses along a corridor in mind will help agencies appropriately design Road Diets to meet local needs.
- 2) **Truck Size.** Corridors that serve or connect to larger industrial properties may serve larger trucks that cannot easily maneuver on narrower roads. By contrast, commercial retail stores and offices are often served by smaller unit delivery trucks.
- 3) **Delivery Parking Areas.** Some urban areas can accommodate deliveries via alleys or side streets, thereby avoiding trucks stopping on the main street to deliver. Other options include dedicated curbside delivery parking areas or off-street parking lots. Still other urban areas lack dedicated truck delivery parking areas, making it more difficult for delivery trucks to find parking and increasing conflicts for all users.
- 4) **Intersection Design.** Intersections where large trucks are often making turns should be designed with wider curb radii to accommodate truck movements. Intersections that experience few truck movements, few truck turns, and/or almost exclusively serve smaller trucks have lesser intersection turning radii requirements.

Engaging freight stakeholders early in the project planning and development process provides an opportunity to align freight mobility with the goals of a planned Road Diet. Outreach to stakeholders such as business owners, commercial and industrial property owners, and local carriers can be useful to identify potential issues with a Road Diet implementation. While engagement with freight stakeholders does not guarantee all conflicts will be resolved, it increases the likelihood of agreement on a Road Diet approach that balances freight mobility, safety, economic growth, and community needs to enhance quality of life.

### 3.5 Other Feasibility Determination Factors

The feasibility of converting a four-lane, undivided roadway to a three-lane cross section as a possible alternative along a particular corridor can be evaluated, at least partially, through the consideration of several feasibility determination factors (FDFs), as discussed earlier in this chapter. If the existing or preferred characteristics of the FDFs match the objectives or goals for the corridor under consideration, the Road Diet configuration should be included as one option in a more detailed alternative cross-section analysis and comparison.

Overall, Road Diet feasibility is tied to the ability to design the facility within the existing roadway cross section or right-of-way. However, in some cases, the corridor FDFs may require some mitigation to achieve a desirable outcome after a Road Diet conversion. The acceptability and impacts of this type of mitigation should be considered in general when determining the feasibility of the Road Diet option. A more detailed analysis would need to be completed when all feasible corridor cross section alternatives are evaluated and compared. Planning/policy, geometrics, safety, and operational details for Road Diets are discussed in other sections of this guide.

The factors discussed in this section include the following:

- Right-of-Way availability and cost.
- Parallel parking.
- Public outreach, public relations, and political considerations.
- Parallel roadways.
- At-grade railroad crossings.

The content of the discussion that follows was generally derived from *Converting Four-Lane Undivided Roadways to a Three-Lane Cross Section: Factors to Consider*. Other information has been added based on more recent research efforts and agency experience with Road Diet implementation and evaluation. Appendix B includes a summary table of feasibility factors, their characteristics, and a series of sample evaluative questions.

#### 3.5.1 Right-of-Way Availability and Cost

Practitioners frequently consider the conversion of a four-lane, undivided cross section to three lanes when additional right-of-way or project funding is limited. Many Road Diet conversions can be completed within the existing curb-to-curb or roadway pavement envelope. However, changes in width at specific locations and occasionally additional right-of-way may be necessary (e.g., at intersections for right-turn lanes). A Road Diet conversion may be less feasible when these types of activities increase. In many cases a Road Diet conversion may only consist of changes in pavement markings. The inclusion of a Road Diet conversion as a feasible option for further consideration is more likely if there are limitations on available right-of-way.

#### 3.5.2 Parallel Roadways

Road Diets can cause some diversion of traffic to parallel routes. A determination will be needed to establish whether the parallel routes would be desirable by through vehicle drivers on the corridor of interest. This can be established through discussions with those that travel the roadway or the application of appropriate simulation software. The distance between parallel arterials should also be considered. It is less likely that vehicles will divert to parallel routes that are farther away or that are just as congested. The other consideration is vehicles shifting to parallel non-arterial streets as “cut-through” traffic. Collecting before-and-after traffic data can inform the practitioner if this is occurring. Some community members may be more sensitive to this, so having data can help clearly define whether this is a problem. If there is an increase in cut-through traffic, traffic calming or other mitigation measures on parallel streets may be warranted.

## 3D Visualization

*The use of 3D visualization may serve as an effective tool to help local stakeholders visualize a proposed Road Diet and assess impacts associated with the installation. Design visualization allows viewers to see the corridor from several vantage points, such as a commercial vehicle, a motor vehicle, a bicycle, or a pedestrian.*

### 3.5.3 Parallel Parking

The existence of parallel parking (full-time or only during part of the day) and its impact on the feasibility of a Road Diet conversion should be evaluated. The difference in the impacts of the parking maneuvers on the four-lane undivided versus the three-lane cross section need to be compared. In addition, if a bicycle lane is added after the conversion, the interaction between bicyclists and vehicles being parked should be considered. Parallel parking can be and has been included along three-lane roadways.

### 3.5.4 At-Grade Railroad Crossings

An important consideration in the feasibility of converting four-lane, undivided roadway to three lanes is the existence of railroad crossings. Vehicles queued at an at-grade rail crossing will need to be served by one through lane after the Road Diet conversion. This could result in queues that are approximately twice as long. If this type of queuing is not acceptable along the three-lane cross section, it could affect feasibility. It is also important to consider at-grade crossings for railroads that closely parallel the corridor of interest. In the case of a nearby parallel railroad, the additional queuing due to a train would occur in the TWLTL in one direction and the through lane in the other direction. If operation of the converted corridor is needed while a train passes, the addition of a right-turn lane with adequate storage may be necessary for mitigation. The consideration of the signalization at these intersections (if it exists) also requires special attention both before and after the Road Diet conversion (if it occurs).

### 3.5.5 Public Outreach, Public Relations, and Political Considerations

According to the Delaware Valley Regional Planning Commission's *Regional Road Diet Analysis Feasibility Assessment*, "Education and outreach play a critical role in the success of a Road Diet. Many projects have demonstrated that public opposition can be strong in the early stages of a project. However, with committed stakeholders and an organized education and outreach program, the public can be better informed about the advantages and disadvantages of Road Diets."<sup>45</sup>

Road Diet conversions have been implemented for more than three decades. Their implementation, however, can still be very challenging. This type of conversion is relatively unusual and new to most transportation professionals, local jurisdictions, and the traveling public. In some cases the consideration of or proposal for a Road Diet can lead to some concern due to unfamiliarity.

A temporary trial basis implementation of a Road Diet conversion has been used to address public concerns. This approach requires the restriping of the pavement within the proposed Road Diet area for a period of time before a determination is made to continue with a permanent Road Diet installation. Temporary pavement marking materials similar to those used in construction work zones can be considered for this purpose.

Consider signalization adjustments and any potential issues related to turning vehicles. During the trial basis time period, a series of before-and-after operational studies can be completed; some preliminary crash analysis can be performed; and surveys can be conducted among adjacent land owners, first responders, etc. If the trial yields positive results, consider implementing a more permanent Road Diet conversion. If it is determined that a Road Diet is not the best option for the corridor, the roadway can be changed back to its original lane configuration.

Michigan DOT (MDOT), with support from FHWA, has implemented Road Diets using the trial basis approach to appeal to communities where Road Diets may be feasible but are not embraced locally. In a few localities where citizens or local officials have objected to an MDOT-proposed Road Diet, MDOT has tempered its proposal with a guarantee: the agency will install the Road Diet on a trial basis, and will return the road to four lanes at the end of the trial if the community requests it. The evaluation criterion in this case is simple: what does the community want? As a result, many corridors have retained their Road Diet conversion with only two corridors being returned to four-lane undivided sections in Michigan. MDOT and FHWA believe that this is an effective approach to demonstrate the safety countermeasure to a community.

### 3.6 Case Studies: Feasibility Determination Decision-making

Several agencies apply general “rules of thumb” when first considering Road Diets. This section summarizes the factors and design parameters agencies should use when considering a Road Diet.

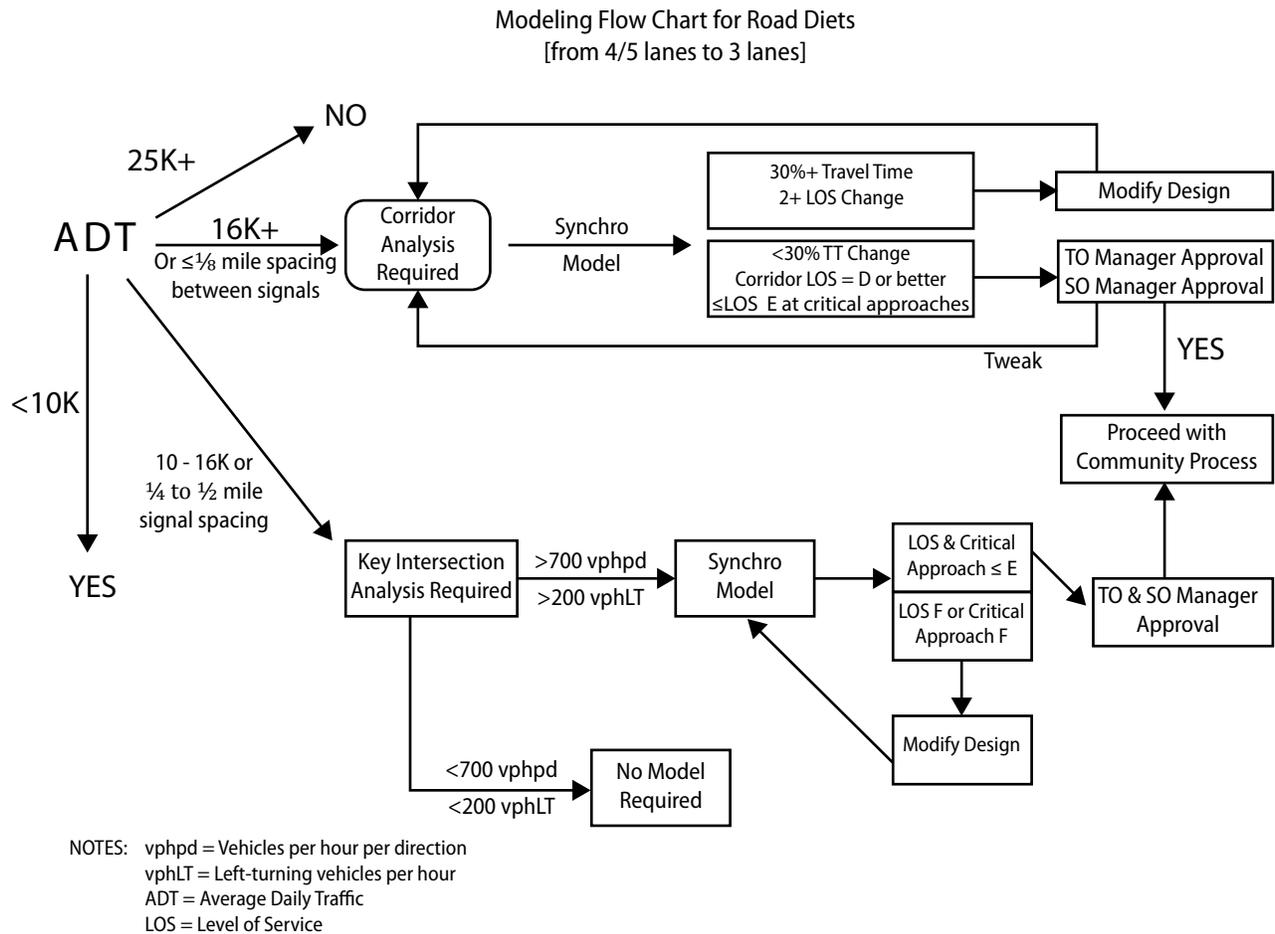
**Seattle DOT** considers the following facets of transportation operations, mobility, and safety in the selection of a Road Diet corridor:<sup>46</sup>

- Volume of traffic – up to 25,000 vehicles per day
- Vehicle speed
- Freight usage
- Travel time
- Number of collisions – all modes (motor vehicle, pedestrian, bicycle)
- Number of lanes
- Bus stops and routing
- Accessibility.

To guide Road Diet implementations, Seattle DOT developed the flow chart shown in Figure 17 to support its Road Diet decision-making process. First, the city calculates the ADT of the roadway segment in question, combined with signal spacing. In some cases this will lead to additional operational analyses of the entire corridor or key intersections. Depending on the results of this additional analysis, further modeling may be required (e.g., via Highway Capacity Software or Synchro). Those results may require modifications to the design to accommodate traffic. Once the simulation results are satisfactory, the Traffic Operations Manager and Signal Operations Manager must formally approve the Road Diet project to move forward.

**Chicago DOT** (CDOT) has started developing guidelines for when and where to implement Road Diets at the time of this writing. Crashes are the most important reason for them to consider a Road Diet, followed by traffic volumes that do not warrant the current number of lanes.

CDOT considers a roadway up to 15,000 – 18,000 ADT to be a good candidate for a Road Diet. However, the agency believes that the design hourly volume (DHV) may be a better parameter to use than ADT. A Road Diet would be feasible with a peak hourly volume of 1,000; at higher volumes, signal modifications may be necessary, and implementing left-turn phases is important where the traffic volumes are high.



**Figure 17.** City of Seattle Modeling Flow Chart for Road Diet Feasibility Determination

**Michigan DOT** gives the following outline for guidance related to reducing lanes when considering implementation of a Road Diet:

1. Planning and Policy – Includes information on the purpose and need for the Road Diet, planning considerations for the local community and regional planning agency, Transportation Improvement Program (TIP) processes, etc.
2. Feasibility Determination Factors – Includes information regarding traffic volumes, traffic modeling, turning movements, level of service, crash analysis, etc.
3. Operational Criteria – Includes information regarding acceptable Level of Service (LOS) and improvements related to certain crash types.
4. Geometric Design Criteria – Describes maintaining proper geometrics using major road standards.
5. Systems Considerations – Includes considerations regarding parking, pedestrian and bicycle issues, school routes, etc.
6. Project Costs – Describes financial arrangements for cost-share projects.
7. Public Involvement – Describes the communication process prior to implementation.<sup>47</sup>

Michigan DOT has chosen to view all existing four-lane, undivided roads as potential implementation sites. Many local Michigan agencies believe that a three-lane cross-section is the desirable road section compared to two-lane and four-lane undivided sections, and they actively work to identify which four-lane undivided roads are good candidates for Road Diets.

**The City of Grand Rapids, MI** takes a holistic view of Road Diet implementations by first identifying all four-lane, undivided facilities within their jurisdiction. For each road or segment identified, the agency then records and tracks traffic volumes, corridor use (whether a commercial route, incident bypass route, neighborhood traffic, school bus/transit route, etc.), and how the corridor operates under existing conditions.<sup>48</sup>

**The City of Lansing, MI** has established the following minimum post-implementation lane width guidance:

- 11-ft. through lanes
- 5-ft. bike lanes<sup>49</sup>
- 10-ft. turn lanes (left and right).

This guidance was established based on the city's experience; at some vehicle lane widths the roadway encourages side-by-side traffic, and some bicycle lane widths can encourage parking. Where undesignated pavement width exists, the city paints a buffer zone between the travel lane and bike lane, as shown in Figure 18. This provides a buffer between vehicles and bicycle traffic and helps allocate unused pavement without creating wide lanes.



**Figure 18.** Painted Buffer Between Through Lane and Bicycle Lane in Lansing, Michigan  
Photo Credit: Jennifer Atkinson

**The Genesee County Metropolitan Planning Commission (GCMPC)** in Michigan is both progressive and aggressive in its approach to installing Road Diets. Although the first Road Diet in the GCMPC area occurred in 1990, the real boost to widespread implementation of Road Diets within this area occurred in 2009. The catalyst was the completion of a technical study in which the GCMPC assessed more than 140 miles of four-lane undivided road in its jurisdiction for potential conversion to three lanes. This study provided a summary of operating features and crash results for eight completed Road Diets in the area and offered a comparative assessment ranking the desirability of all remaining four-lane sections for Road Diet consideration.<sup>50</sup>

The local agencies within the region first targeted routes with low ADTs that would allow for easy conversion and result in safety benefits; routes carrying 6,000 – 8,000 AADT were selected for the first conversions. After several conversions and positive public opinions of Road Diets, GCMPC began selecting implementation sites with higher volumes – up to 15,000 AADT.

Each year, GCMPC selects competitive road improvement projects submitted by its 32 local agencies. Potential Road Diet locations are scored and prioritized on criteria such as the following:

- Existing level of service;
- Lane width (existing and proposed);
- Number of driveway approaches within the Road Diet segment; and
- Crash types that may be mitigated by installation.

The GCMPC involves representatives from all modes of transportation, elected officials, and local agency partners. These stakeholders are involved from the beginning of the planning process and collaborate through the Road Diet installation. GCMPC feels that working together with these stakeholders gives a sense of project awareness and buy-in. It also helps to overcome obstacles or concerns that arise along the way, leading to smoother implementation. GCMPC encourages local agencies within their jurisdiction to restripe existing four-lane undivided segments as three-lane Road Diets as a part of their ongoing annual or bi-annual restriping plans. During the Road Diet study, GCMPC looked at several parameters to determine conversion suitability. Using these criteria, a 4-scale rating system was developed to measure compatibility of each road segment. These included:

- **Crash data.** Rates of traffic crashes for sideswipe, head-on, head-on-left-turn, angle, rear-end, and rear-end-left-turn crashes that are higher than the average for roadways with similar functional classification can be a good indicator for compatibility.
- **Lane width.** Four-lane roadways with lanes widths less than 12 feet may be good candidates as the narrow lanes can cause conflicts for passing vehicles.
- **Speed limits and operating speeds.** A Road Diet may be beneficial where traffic calming is needed.
- **Surface type.** A road that has concrete on the inside lanes and asphalt on the outside lanes (or the other way around) may be a poor candidate as the difference in pavement color may be used to distinguish travel lanes rather than the painted lane markers. This is especially true during inclement weather events or evening/morning driving as a result of sun glare.
- **ADT.** GCMPC considers ADT less than 10,000 feasible, between 10,000 and 20,000 potentially feasible depending on site-specific conditions, and more than 20,000 likely not feasible.
- **Number of traffic signals.** This is one of the many factors used to determine compatibility and is site specific.
- **Land use.** A Road Diet may be beneficial on corridors that have a lot of turning movements such as a block-style street grid, shopping areas, school zones, etc.

Overall, the efforts of GCMPC to install Road Diets have resulted in a number of installations. Four years ago, a Road Diet proposal from a local agency would have been unusual, but they are common now in GCMPC's annual call for projects. From the local agencies' standpoint, they feel that the extraordinary efforts of the planning agency and subsequent educational follow-up by GCMPC have facilitated implementation at the local level.

Based on recent interviews with practitioners, agency considerations for Road Diet implementation are shown in Table 3.

**Table 3.** Road Diet Implementation Considerations by Agency

Road Diet Implementation Considerations														
	Maximum Volume, ADT	Maximum Peak Volumes, DHV	Minimum Lane Width, ft.			Crash History	Vehicle Speed	Number of Lanes	Turning Volumes	Freight Usage	Presence of Transit	Presence of Bicycles	Travel Time or LOS	Accessibility
			Through	Left/Right	Bicycle									
Chicago DOT	•	•	•	•	•	•		•			•	•		
Seattle DOT	•				•	•	•		•	•		•	•	
City of Lansing, MI	•		•	•	•									
Michigan DOT					•			•		•		•	•	
Delaware Valley Regional Planning Commission	•							•				•		
City of Las Vegas, NV						•					•		•	
Genesee County (MI) Metropolitan Planning Commission	•		•		•	•				•		•		

### 3.7 Funding Road Diets

Road Diets can be funded from a number of different sources based on the needs of the agency. Road Diets are typically eligible for Surface Transportation Program (STP), Highway Safety Improvement Program (HSIP) or other Federal-aid funds where data support the expenditure.

However, there are other benefits of Road Diets and other reasons for their installation, so the other funding sources available vary widely from Federal, State, and local sources. For example, the Seattle DOT (SDOT) has used funding from such sources as Safe Routes to School grants, Washington State DOT pedestrian and bicycle funds, and transit grants. The agency also monitors the city’s road resurfacing projects to see whether upcoming streets scheduled for upcoming roadway overlay projects are good candidates for Road Diets. This allows Seattle DOT to use the annual paving program funds for some installations.

## 4 Designing a Road Diet

As with any project development process, practitioners designing a Road Diet should take into account the principles and practices that guide design decisions, including geometric design and operational design.

### 4.1 Geometric Design

Geometric design includes identifying details of the project in plan, profile, and cross section. It is necessary to apply the standard principles and practices of geometric design. Geometric designers are guided by standards and policies that include design criteria. The criteria serve as a guide to design and provide uniformity, but are not intended to be inflexible. Designers need flexibility to achieve context-specific needs and objectives. This is particularly true for Road Diet implementations. FHWA's *Flexibility in Highway Design* illustrates the different methods available to highway engineers and project managers to design roads that move people and goods in a safe, efficient, and reliable way while at the same time fully considering community values for the corridor and broader location.<sup>51</sup> AASHTO's *A Guide for Achieving Flexibility in Highway Design* also shows how community and environmental issues can be integrated into decision-making throughout the project development process.<sup>52</sup> Additional information about design flexibility pertaining to pedestrian and bicyclist facilities can be found in FHWA's August 2013 Bicycle and Pedestrian Facility Design Flexibility memo.<sup>53</sup>

The practice of designing roads geometrically is evolving towards more performance-based approaches to analysis, where the expected transportation outcomes of geometric design decisions are quantified and used to support informed design decision-making. Performance-based analysis complements the ideas of design flexibility, context sensitive design, and practical design. Performance-prediction tools, such as the *Highway Safety Manual*, *Highway Capacity Manual* and others quantify how geometric design decisions impact measures of user accessibility, mobility, quality of service, reliability, and safety. A framework for conducting performance-based analysis is provided in the final report for NCHRP 15-34A, *Performance-Based Analysis of Geometric Design of Highways and Streets*.

#### 4.1.1 Road Function and Context

The functional classification system described by FHWA's *Functional Classification Guidelines and Updated Guidance for the Functional Classification of Highways* often serves as a basis for establishing design criteria for a Road Diet project. AASHTO's *Green Book*, for example, includes chapters organized by functional classification, with arterials divided into freeway and non-freeway facilities (e.g., Chapter 5, Local Roads and Streets; Chapter 6, Collector Roads and Streets; Chapter 7, Rural and Urban Arterials; and Chapter 8, Freeways). Alternative road classifications also exist. These alternative classification systems guide designers towards establishing design criteria that are complimentary to location-specific context where the Road Diet is being implemented. For example, the *Smart Transportation Guidebook*,<sup>54</sup> jointly published by the Pennsylvania and New Jersey DOTs, more explicitly considers project setting by defining seven context areas from least to most developed:

- 1) Rural
- 2) Suburban neighborhood
- 3) Suburban corridor
- 4) Suburban center
- 5) Town/village neighborhood
- 6) Town center
- 7) Urban core.

**Table 4.** Quantifiable Characteristics of Land User Contexts (NJDOT & PennDOT, 2008)

Characteristic	Rural	Suburban Neighborhood	Suburban Corridor	Suburban Center	Town/Village Neighborhood	Town Center	Urban Core
Density Units (DU) <sup>a</sup> per acre (ac)	1 DU/20 ac <sup>b</sup>	1-8 DU/ac	2-30 DU/ac	3-20 DU/ac	4-30 DU/ac	8-50 DU/ac	16-75 DU/ac
Building Coverage	NA <sup>c</sup>	< 20%	20-35%	35-45%	35-50%	50-70%	70-100%
Lot Size/Area in square feet (sf)	20 ac	5,000 - 80,000 sf	20,000-200,000 sf	25,000-100,000 sf	2,000-12,000 sf	2,000-20,000 sf	25,000-100,000 sf
Lot Frontage <sup>d</sup>	NA	50 -200 ft.	100-500 ft.	100-300 ft.	18-50 ft.	25-200 ft.	100-300 ft.
Block Dimensions	NA	400 ft. wide x variable length	200 ft. wide x variable length	300 ft. wide x variable length	200 ft. wide x 400 ft. long	200 ft. wide x 400 ft. long	200 ft. wide x 400 ft. long
Max. Height	1-3 stories	1.5 -3 stories	1 story retail; 3-5 story office	2-5 stories	2-5 stories	1-3 stories	3-60 stories
Min./Max. Setback	Varies	20-80 ft.	20-80 ft.	20-80 ft.	10-20 ft.	0-20 ft.	0-20 ft.

<sup>a</sup>The guidebook does not define a density unit and may instead be referring to a dwelling unit; dwelling units per acre are used in the guidebook to define high-, medium-, and low-density areas.

<sup>b</sup> acre

<sup>c</sup> not applicable

<sup>d</sup> The distance measured between points where side property lines meet road right-of-way lines

The guidebook includes a set of quantifiable characteristics for each of the seven context areas and a recommendation that the land use context be identified based on this information. The quantifiable characteristics are summarized in Table 4. Land use contexts are broadly defined for road segments greater than 600 feet in length due to practical limitations on the frequency of changing the roadway typical section over a short stretch of road.

Once the context area of the Road Diet is defined, the *Smart Transportation Guidebook* includes a “matrix of design values” with design criteria as rows and land use contexts as columns for five different roadway types: 1) regional arterial, 2) community arterial, 3) community collector, 4) neighborhood collector, and 5) local road. An example for regional arterials is shown in Table 5. This roadway typology is different than the existing functional classification system outlined by FHWA and was proposed to capture the actual role of the roadway in the surrounding community. Access, mobility, and speed are considered on the road segment of interest as opposed to using only one functional classification for an entire highway. This alternative approach to classifying the context area of the Road Diet beyond more traditional functional classification will encourage design criteria that are consistent with broader project surroundings and area characteristics.

#### 4.1.2 Design Controls

Design controls are fixed factors outside of the design process, but may dictate the result. Examples include vehicles, environment, traffic (non-motorized and motorized), and others, including applicable financial and regulatory influences. Candidate Road Diet locations may be identified due to the characteristics of these design controls at that location (see, for example, discussion in Chapter 3 of this guidebook). More broadly, designers should understand the intended project outcomes as well as the characteristics of the stakeholders that the Road Diet implementation is intended to serve. A thorough discussion of design controls appears in AASHTO’s *A Policy on Geometric Design of Highways and Streets*.<sup>55</sup> This section summarizes some key points.

**Table 5.** Regional Arterial Design Matrix (NJDOT & PennDOT, 2008)

	Regional Arterial	Rural	Suburban Neighborhood	Suburban Corridor	Suburban Center	Town/Village Neighborhood	Town/Village Center	Urban Core
<b>Roadway</b>	Lane Width	11' to 12'	11' to 12' (14' to 15' outside lane if no shoulder or bike lane)	11' to 12' (14' to 15' outside lane if no shoulder or bike lane)	11' to 12' (14' outside lane if no shoulder or bike lane)	10' to 12' (14' outside lane if not shoulder or bike lane)	10' to 12' (14' outside lane if not shoulder or bike lane)	10' to 12' (14' outside lane if not shoulder or bike lane)
	Paved Shoulder Width	8' to 10'	8' to 10'	8' to 12'	4' to 6' (if no parking or bike lane)	4' to 6' (if no parking or bike lane)	4' to 6' (if no parking or bike lane)	4' to 6' (if no parking or bike lane)
	Parking Lane	NA	NA	NA	8' parallel	8' parallel; see 7.2 for angled	8' parallel; see 7.2 for angled	8' parallel
	Bike Lane	NA	5' to 6' (if no shoulder)	6' (if no shoulder)	5' to 6'	5' to 6'	5' to 6'	5' to 6'
	Curb Return	30' to 50'	25' to 35'	30' to 50'	25' to 50'	15' to 40'	15' to 40'	15' to 40'
	Number of Travel Lanes	2 to 6	2 to 6	4 to 6	4 to 6	2 to 4	2 to 4	2 to 6
<b>Roadside</b>	Clear Sidewalk Width	NA	5'	5' to 6'	5' to 6'	6' to 8'	6' to 10'	6' to 12'
	Buffer	NA	6'+	6' to 10'	4' to 6'	4' to 6'	4' to 6'	4' to 6'
	Shy Distance	NA	NA	NA	0' to 2'	0' to 2'	2'	2'
	Total Sidewalk Width	NA	5'	5' to 6'	9' to 14'	10' to 16'	12' to 18'	12' to 20'
<b>Speed</b>	Desired Operating Speed (mph)	45-55	35-40	35-55	30-35	30-35	30-35	30-35

**Design Vehicles.** Geometric designers “should consider the largest design vehicle that is likely to use [a] facility with considerable frequency or a design vehicle with special characteristics appropriate to a particular location in determining the design of such critical features as radii at intersections and radii of turning roadways.”<sup>56</sup> Given that Road Diets are likely implemented as part of an overlay and restriping project, the design vehicle for the location has likely already been predetermined. Design vehicle characteristics are important when considering the new lane and shoulder widths (including possible traveled way widening on horizontal curves), storage lengths, and turning radii. Given that Road Diet implementation has reduced the number of lanes to one in each direction, design vehicle performance will have a greater impact on overall vehicle operations and the grade and critical length of grade may become more influential features impacting performance than for the four-lane, undivided cross section.

**Drivers.** Considering driver performance remains as critical for Road Diet design as for any other facility type. Road Diet designs should be compatible with driver capabilities and limitations and should be laid out to meet driver expectations. Designers should consider positive guidance to all road users (e.g., pavement marking, signing, delineation) to make the desired path clear. Driver considerations in highway design are covered in FHWA’s *A User’s Guide to Positive Guidance* and NCHRP’s *Human Factors Guidelines for Road Systems*.<sup>57, 58</sup>

Road Diets can be particularly beneficial for older drivers who have slower reaction times and reflexes. According to FHWA’s *Public Roads*, “The safety potential of conversion to a three-lane cross-section (also called Road Diets) was so compelling to Iowa DOT officials, based on studies done in Minnesota, Montana, and Washington, that Iowa DOT made this project type a staple of its agency’s older driver program at the program’s inception in 1999.”<sup>59</sup> Additional guidance on highway design, operational, and traffic engineering features, including Road Diets, for older road users is available in the FHWA *Handbook for Designing Roadways for the Aging Population*.

**Non-motorized Users.** When appropriately applied, Road Diets have generated benefits to users of all modes of transportation, including bicyclists, pedestrians, and motorists. Specific benefits to non-motorized users were covered previously. Pedestrian volumes and characteristics will influence the design of sidewalks, crosswalks, traffic control features, curb cuts, bus stops, and other locations where pedestrian traffic is expected. Guidance for designing roadways to accommodate pedestrians as well as designing pedestrian facilities themselves is contained in AASHTO's *Guide for the Planning, Design, and Operation of Pedestrian Facilities*. Road Diets also provide the opportunity to add bicycle lanes to roads on which bicyclists previously shared lanes with motor vehicles or navigated between travel lanes and the edge of pavement. Bicycle dimensions and operating characteristics influence the design of bicycle facilities, as identified in AASHTO's *Guide for the Development of Bicycle Facilities*.<sup>60</sup>

Furthermore, the FHWA supports the consideration of additional design options found in the National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* and the ITE *Designing Walkable Urban Thoroughfares* manuals in addition to the AASHTO bicycle and pedestrian guides to aid in designing safe and comfortable bicycle and pedestrian facilities. These resources expand practitioners' options in how to accommodate these users.<sup>61</sup>

**Speed.** Speed is one of the most important and complex factors that both influences and is influenced by road geometrics. Drivers select travel speeds based on their perceptions of the road. Sometimes geometric design criteria can lead to operating speeds that are higher than design speeds for design speeds less than 55 mph. Road Diets have the potential to reduce operating speed differentials, but tend to have a modest effect on the average operating speed of the corridor (i.e., about 3 to 5 mph). The reduction in the number of through lanes can affect the speed differential by removing the ability to pass slower moving vehicles. Changes in the road cross section may also influence drivers' perceptions of appropriate free-flow speeds. Geometric designers should seek to achieve speed harmony, defined in FHWA's *Speed Concepts: Informational Guide*, as the condition that results when:

- The designated design speed is within a specified range (i.e.,  $\pm 5$ mph) of the observed 85th percentile operating speed;
- The 85th percentile operating speed is within a specified range (i.e.,  $\pm 5$ mph) of the posted speed limit;
- The inferred design speed is equal to or greater than the designated design speed; and
- The posted speed is less than or equal to the designated design speed.<sup>62</sup>

#### 4.1.3 Elements of Design

Principal elements of geometric design include sight distance, horizontal alignment, superelevation, and vertical alignment. Conversions do not generally involve significant changes in sight distance and alignment, but these characteristics may require additional assessment due to changes in cross-section allocation and use.

**Sight Distance.** Drivers need sufficient sight distance to control the operation of their vehicles and avoid striking unexpected objects in the travel way. Stopping sight distance, decision sight distance, and intersection sight distance are most relevant to Road Diet locations. Stopping sight distance, or the distance required for a vehicle to stop before reaching a stationary object in its path, should be available at all points on the road. Decision sight distance should be provided at complex locations where drivers must make instantaneous decisions, where information is difficult to perceive, or where unexpected maneuvers are needed. Significant changes in alignment are not expected during Road Diet conversions, so changes in sight distance due to the alignment design are likely to be insignificant. Changes in vehicle position due to the cross section changes may have some impact on horizontal sight distance (i.e., available sight distance while traversing a horizontal curve, limited by sight obstructions on the inside of the curve). Critical sight distance analysis for Road Diet conversions will include pedestrian crossings, transit stops, and locations where on-street parked cars serve as possible sight obstructions.

Road Diets can provide sight distance improvements for mid-block, left-turning drivers at entrances due to the conversion of the four-lane, undivided roadway to a TWLTL. Drivers in a four-lane, undivided situation experience negative offset with opposing traffic, which can block their view. In a TWLTL this negative offset is removed, so drivers making left turns have improved sight distance to make a safe movement.

**Grade.** Designers select grades to provide uniform operation and enable operating speeds near the design speed of the roadways. Grades at locations with Road Diet conversions will likely already be determined. Maximum grades typically range from 5 to 12 percent and are determined based on functional classification, design speed, and terrain. The effects of grades on truck speeds are much greater than effects on passenger cars. Given that Road Diet implementation has reduced the cross section to one through lane in each direction, design vehicle performance will have a greater impact on overall vehicle operations and the grade and critical length of grade may become more influential features impacting performance than they were for the four-lane undivided cross section.

**Horizontal Curvature and Superelevation.** Road Diet conversions are not likely to involve any significant changes in horizontal curvature and superelevation. Basic design speed, side friction, and superelevation relationships apply, and guidance is available in AASHTO's *A Policy on Geometric Design of Highways and Streets*.

**Access Management.** Given the operational change that will occur through a lane reduction in each direction of travel as well as the addition of a TWLTL, access management should be analyzed during the Road Diet conversion. Driveways are, in effect, low-volume intersections.

The re-analysis should consider:

- Operations and efficiency of the intersecting roadway (that underwent the Road Diet)
- Ensuring high-volume driveways are not offset in the “wrong direction”
- Access to property
- Sight distance between vehicles and pedestrians
- How driveways are used (e.g., backing out vs. forward-out-only)
- Sidewalk continuity for pedestrians
- Accessibility requirements
- Accommodating bicycle lanes
- Potential conflicts with bus stop locations.

FHWA provides additional resources related to access management, including *Access Management in the Vicinity of Intersections Technical Summary*.<sup>63</sup>

#### 4.1.4 Cross Sectional Elements

There are a number of cross sectional elements to consider for a Road Diet conversion. For example, practitioners need to consider the commonly accepted range of lane widths, but the design must also fit within the existing curb-to-curb distance using flexibility in commonly used design manuals. The sections below discuss individual cross sectional design criteria.

**Lane widths.** Lane width influences operations, safety, quality of service, and the security felt by road users. Widths of 10 to 12 feet are typically used in practice. Auxiliary lanes (i.e., turn lanes) at intersections are often the same width as through lanes, and seldom less than 10 feet. The width of the TWLTL lane provided as part of a lane width conversion typically ranges from 10 to 16 feet. The width for a bus lane along these roadways is usually 11 to 15 feet.<sup>64</sup>

**Median.** A median is defined as the area between opposing travel lanes. Its main purpose is to separate opposing traffic. Design width depends upon the type of roadway and its location. On urban area arterial streets, a TWLTL can effectively accommodate left-turning traffic. When a flush median is used, practitioners should expect crossing and turning movements in and around the median.<sup>65</sup>

**Pedestrian Refuge Island.** A pedestrian refuge island both shortens the time and distance that a pedestrian is exposed to moving traffic while also simplifying the crossing. It provides a protected space in the roadway, allowing the pedestrian to make the crossing in two stages if necessary. In this situation, the pedestrian only has to focus on finding a gap in one direction of travel at a time. The refuge island should be a minimum of 6 feet wide, in the direction of pedestrian travel, with 8 to 10 feet preferred. The island should include detectable warning tiles where it meets the roadway. On streets with a TWLTL, pedestrian refuge islands can use the turn lane space where turns are prohibited, such as at an intersection with a one-way street, or can be installed adjacent to the TWLTL where space allows.

**Cross Slope.** Generally, the crown or highpoint of the converted cross section is located in the center of the TWLTL, with the slope of the pavement the same as the adjacent through lanes. Typical cross slopes are 1.5 to 2 percent, and may be as high as 2.5 percent in areas of intense rainfall. Additional information on minimum accessibility standards is available in the *Draft Public Rights of Way Accessibility Guidelines* (PROWAG).

**Shoulders.** Shoulders are the portions of the roadway adjacent to the traveled way. In most Road Diet applications, curb-to-curb widths and the desire to allocate the space to traffic, bicycle lanes, and parking limit ability to provide shoulders. Painted buffers are sometimes provided between the traveled way and bicycle lanes, and those buffers offer some similar advantages as shoulders. Chapter 3 of this guide includes marking examples for undesignated pavement widths, including painted buffers between the traveled way and bicycle lanes.

**Curbs.** Curbs may already be present at the Road Diet conversion location, as they are commonly used in lower speed urban and suburban areas. Curbs have multiple functions, including drainage, delineation, right-of-way reduction, and delineation of pedestrian walkways.

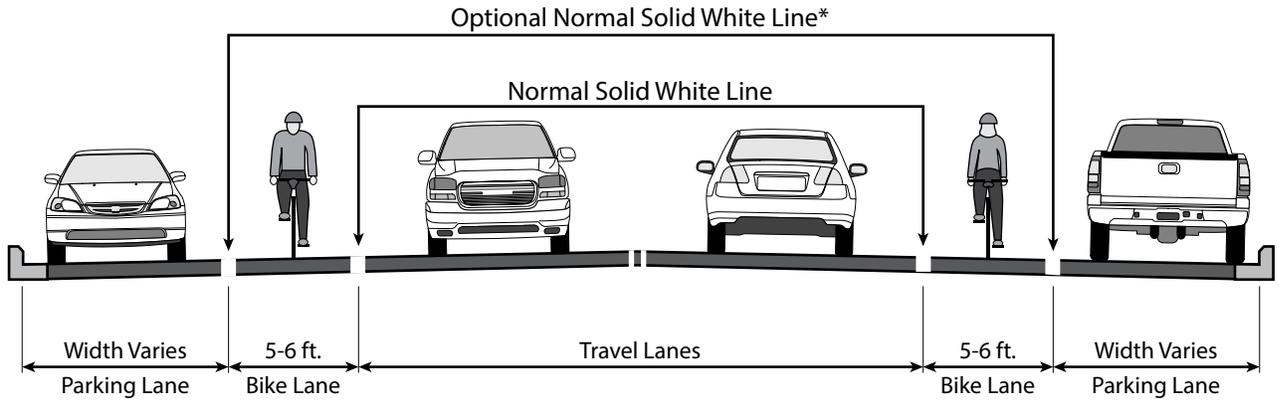
**Drainage.** Drainage facilities include bridges, culverts, channels, curbs, gutters, and various types of drains. Road Diet conversions usually do not require significant changes in drainage design, as pavement widths and slopes remain relatively unchanged. AASHTO's *Highway Drainage Guidelines* and *Model Drainage Manual* are two key drainage references used by designers.<sup>66, 67</sup>

**Pedestrian Facilities.** Road Diet conversions will not typically involve changes to the pedestrian sidewalk facilities outside the curb. They do benefit pedestrian performance in a number of other ways that have been noted throughout this document. For example, Road Diets may introduce the opportunity for on-street parking, creating a buffer between pedestrians and moving vehicles. The change in the roadway cross section also results in fewer travel lanes for pedestrians to cross. Separating opposing directions of travel by a TWLTL can provide space for a refuge island at pedestrian crossing locations, if necessary. Adding dedicated bike lanes to a roadway can positively impact pedestrians by getting bicyclists off the sidewalk and into the street. For any changes to the pedestrian facilities, including the addition of pedestrian refuge islands, designers can reference AASHTO's *Guide for the Planning, Design, and Operation of Pedestrian Facilities* and the *Public Rights-of-Way Accessibility Guidelines*.<sup>68, 69</sup>

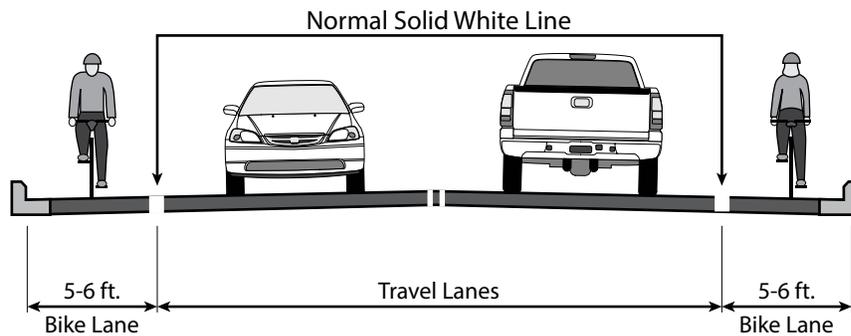
**Bicycle Facilities.** Road Diets allow the addition or expansion of bicycle facilities. On roads where bicyclists previously shared lanes with motor vehicles or navigated between travel lanes and the edge of pavement, the opportunity to provide a separate facility arises. Where bicycle lanes already existed, the Road Diet presents an opportunity to provide even more separation by adding a painted buffer or a physical separation using parked cars, bollards, or curb. Bicycle lane widths should be determined based on context and anticipated use, including the speed, volume, and types of vehicles in adjacent lanes. AASHTO's *Guide for the Development of Bicycle Facilities* covers the design of these bicycle lanes.<sup>70</sup> Under typical circumstances, the width of a one-way bicycle lane is 5 feet. A minimum width of 4 feet can be used on roadways with no curb and gutter. Wider bicycle lanes should be considered when feasible, and especially at locations with narrower parking lanes (e.g., 7 feet), high bicycle volumes, and higher speed roadways or roadways with a significant number of larger vehicles. When 7 feet or more is available for the bicycle facility, a buffered or protected bike facility should be considered. Typical bicycle lane cross sections are illustrated in Figure 20. The presence of a bicycle lane influences the recommended design of on-street parking accommodations as well.



**Figure 19.** Bicycle Lane on Rural 3-Lane Section, Lawyers Road, Reston, VA  
Photo Credit: Virginia DOT



On Street Parking



Parking Prohibited

Figure 20. Typical Bike Lane Cross Sections (Adapted from AASHTO)

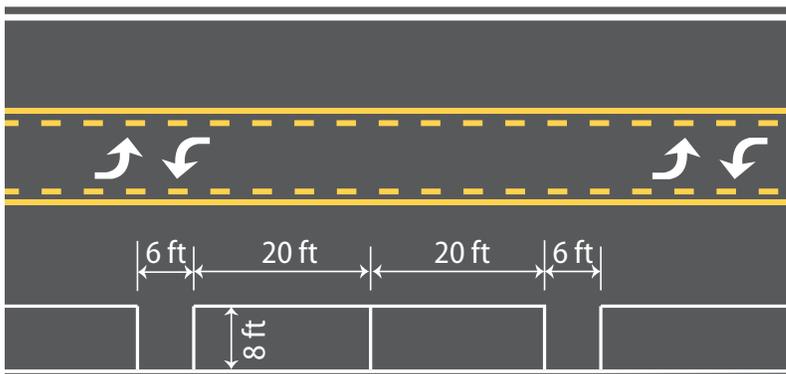
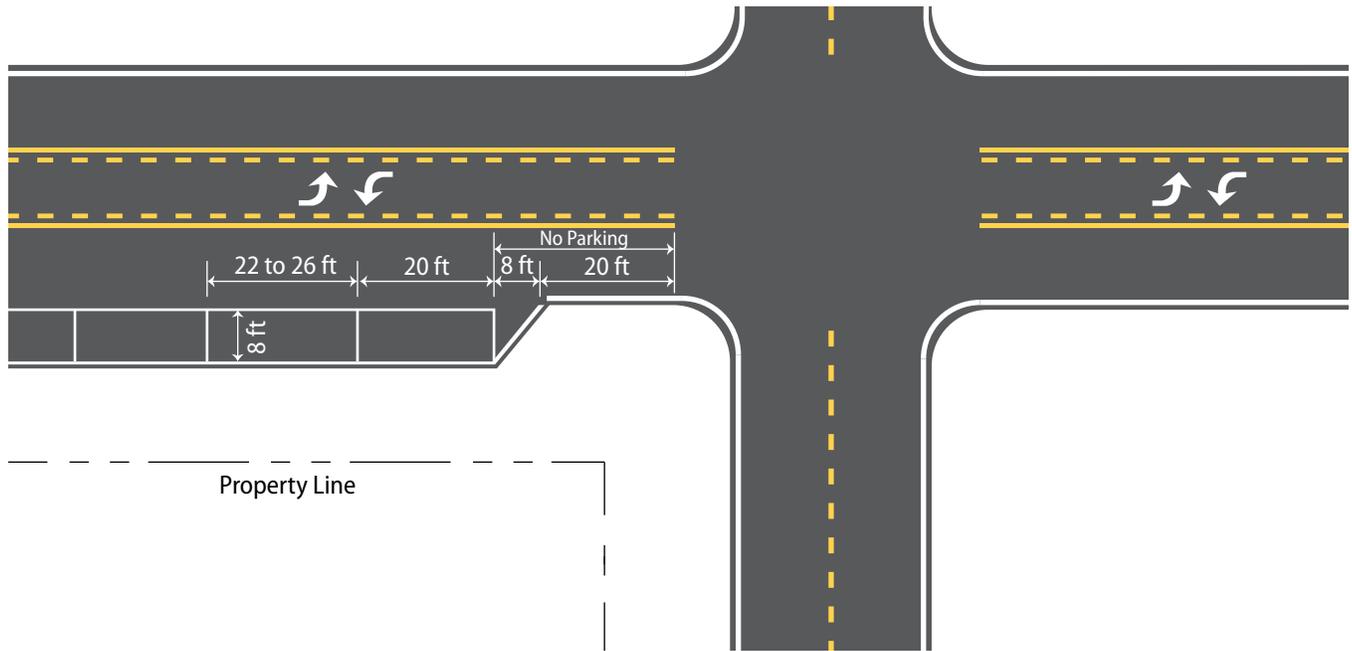


Figure 21. Paired Parking Illustration

**On-street Parking.** Road Diets provide the opportunity for parallel or diagonal on-street parking. The desirable minimum width of a parallel parking lane is 8 feet, as most vehicles will occupy approximately 7 feet of actual street space when parallel parked. A parking lane width of 10 to 12 feet may be desirable to provide additional clearance from the traveled way and accommodate transit operations, though some jurisdictions have used parking lane widths as narrow as 7 feet, particularly where only passenger cars need to be accommodated in the parking lane.<sup>71</sup> As noted, parallel parking lanes may also be separated from

bicycle lanes by an optional solid white line. Where parallel parking and bike lanes are present, but a parking lane line or stall markings are not used, the recommended width of the shared bicycle and parking lane is 13 feet. In addition, practitioners could consider “paired parking” to reduce conflicts and delays with vehicle parking (see Figure 21).

The treatment of a parking lane approaching an intersection requires special consideration. If the lane is carried up to the intersection, right-turning vehicles may use it in the absence of parked vehicles, potentially leading to undesirable operations. However, keeping a parking lane can increase the effective corner radius for large right-turning vehicles. Other options include using a parking lane transition (i.e., a “bulb out,” as shown in Figure 22) or prohibiting parking a certain distance from the intersection.



**Figure 22.** Example Parking Lane Transition at Intersection (Adapted from AASHTO, 2011)

**Bus Turnouts.** One potential concern with a Road Diet installation is that stopped buses in the now-singular through lane block all downstream vehicles while loading and unloading. The paved width available with the installation of a Road Diet provides space for potential accommodations for bus operations (e.g., stopping, loading, unloading) away from the traveled way by using a turnout. Bus stop locations should provide about 50 feet in length for each bus. In some cases, there may be room to provide deceleration and entry tapers using a combination of pavement markings. A taper of about 5:1, longitudinal to transverse, is a desirable minimum. When the stop is on the near or far side of an intersection, the width of the cross street is generally adequate for merging back into traffic or diverging to the bus stop, respectively.

Keep in mind, however, that most transit operators prefer in-lane stops versus turn-outs due to the difficulties of through lane ingress from the turn-out.

Bus stops located at the near side or far side of intersections provide pedestrian access from both sides of the street and connections to intersecting bus routes. The presence of curb extensions also facilitates passenger access. Additional discussion can be found in Transit Cooperative Research Program (TCRP) Report 19, *Guidelines for the Location and Design of Bus Stops*, ITE's *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, and agency guidance on bus stop placement and design. *Guidelines for the Location and Design of Bus Stops* provides additional information on the location and design of bus stops.<sup>72</sup>

**Cross Section Transitions.** The starting point and ending point of a Road Diet conversion may require a transition from or to a different cross section. The design of these locations is typically a function of the width of the lane to be dropped and the posted or design speed at the lane drop locations. The *Manual on Uniform Traffic Control Devices* provides additional detail. Taper ratios for lane additions are typically around 15:1, longitudinal to transverse.

Another important decision with respect to the cross section transitions that are part of the Road Diet is the location of the transitions. Overall, continuity of the two through lanes and one TWLTL lane is important, and transition points should occur at locations where the only decision a driver needs to make is related to the lane drop or addition. The objective when selecting a transition point location is to minimize the complexity of the transition area and the number of decisions or potential conflicts that could occur while a driver is merging or diverging. For this reason, transitions should not occur at or near intersections or major driveways (within their influence area). The Iowa guidelines further propose that Road Diet conversions should be questioned if additional through lanes are needed at the signalized intersections along the corridor. This type of transition may have a negative result on safety and lessen the benefits of the Road Diet conversion.



**Figure 23.** Transition from 3-lane to 2-lane Cross Section, Oak Street, Merrifield, VA  
Photo Credit: Virginia DOT

Some transitions are less complicated than others. For example, the transition from a two-lane undivided roadway to a three-lane roadway is relatively simple and straightforward (see Figure 23). The general concerns noted above about the selection of transition point locations should still be taken into account. The transition from a four-lane undivided to a three-lane roadway requires dropping the outside through lanes in advance of the complete cross section conversion. This type of transition requires closer attention and involves the potential for through-vehicle conflicts. Overall, the lane drop and the introduction of the TWLTL should be installed in close proximity to each other. The transition from a five-lane roadway to a three-lane

roadway is a similar situation but the introduction of a new TWLTL is not necessary. The same issues will also be encountered when transitioning from a three-lane roadway to some other type of cross section.

Overall, it is also important to look at the roadway cross sections near the end of the “project limits” for a Road Diet conversion. The overall objective is to minimize the number of transitions within a short distance. In other words, it may sometimes be more appropriate to extend the “project limits” to avoid this situation. Through lanes should also not be dropped as a turn lane at an intersection. This type of lane drop is not good design. It will often “catch” vehicles that want to continue through the intersection and drivers may then make inappropriate maneuvers.

#### 4.1.5 Intersection Design

Basic principles of intersection design apply to intersections bordering or within the Road Diet area. Given the cross sectional change during Road Diet implementation, practitioners should perform a new operational analysis at each intersection (see Chapter 5). New lane arrangements and signal phasing are also possibilities, as discussed in other sections of this guide. The remainder of this section will include an overview of some design considerations for intersections bordering or within the Road Diet area with references to other documents as appropriate.

**Alignment and Profile of Intersection Approaches.** Intersecting roads should meet at or nearly at right angles and the grades should be as flat as possible. These characteristics are likely predetermined at locations experiencing a Road Diet conversion, but designers should be aware of their negative effects on capacity, sight distance, and safety and look for opportunities to implement possible countermeasures.

**Intersection Sight Distance.** Check intersection sight distance at each intersection bordering or within the Road Diet area. Drivers of approaching vehicles should have an unobstructed view of the entire intersection as well as sufficient lengths along the intersecting road to allow the observance and avoidance of potential conflicts with other vehicles. Drivers of stopped vehicles should also have a sufficient view of the intersecting highway to decide when to enter (with a left or right turn) or cross it. These design objectives are achieved by providing sight triangles. Approach and departure sight triangles are discussed in detail in AASHTO’s *A Policy on Geometric Design of Highways and Streets*. It is likely that the sight distance needs for minor streets intersecting the new three-lane cross section decrease following the Road Diet conversion due to entering vehicles needing to cross fewer lanes. Other sections of this document also note how available sight distance for vehicles turning left from the TWLTL is likely greater than that along a four-lane, undivided cross section.

## State Laws Regarding Driver Use of TWLTLs

Several states have enacted traffic laws that define and govern driver use of TWLTLs. The provisions of these laws vary widely, and most States do not appear to have enacted such traffic laws. Based on an Internet search of key terms related to “two way left turn lanes” and “center turn lanes”, the research team identified laws in 18 States that define and govern driver use of TWLTLs. Six types of laws were identified and are labeled “a” through “g” below. More than half of the 18 States specify the following:

- **(a)** Where a TWLTL is provided, motorists may not turn left from any other lane
- **(b)** Vehicle shall not be driven in a TWLTL except when preparing for or making a left turn/U-turn

Ten States have enacted laws that **(c)** limit the distance a motorist may travel in a TWLTL – either a specified maximum distance, or the shortest distance practicable and safe, as summarized in Table 6:

**Table 6.** Maximum Allowable Travel Distance in TWLTL

Distance	State
150 Feet	Virginia
200 Feet	California, Louisiana, Oklahoma, Rhode Island
300 Feet	Georgia, Washington
500 Feet	Missouri
Shortest practicable distance/safe distance	Maryland, Tennessee

Four States have enacted laws that **(d)** stipulate that TWLTLs shall not be used for passing/overtaking another vehicle.

Tennessee is unique in passing laws that specify the following:

- **(e)** When vehicle enters turn lane, no other vehicle proceeding in opposite direction shall enter that turn lane if that entrance would prohibit the vehicle already in the lane from making the intended turn
- **(f)** When vehicles enter the turn lane proceeding in opposite directions, the first vehicle to enter the lane shall have the right-of-way

Arkansas is the only State to enact the following provision:

- **(g)** It is permissible for vehicle making a left turn from an intersecting street or driveway to utilize TWLTL to gain access to or to merge into the traffic lanes, except not permissible to use the center left-turn lane as an acceleration lane

In terms of guidelines, the six types of TWLTL laws identified in the 18 States provide reasonable instructions to drivers and can help promote safe driver actions on corridors with TWLTLs. Although it is unclear what factors or data the States used to determine the maximum allowable travel distance in TWLTL, limiting the distance drivers are permitted to travel in TWLTLs– if not overly restrictive – can enhance safety by reducing opportunities for opposing-direction crashes, as well as crashes involving pedestrians that use TWLTLs as a crossing refuge. One concern about stipulating short maximum travel distances is the risk of failing to account for the need for drivers to decelerate from highway speeds when entering TWLTLs.

Regardless of the specific TWLTL laws enacted, it is suggested that State driver manuals define proper use of TWLTLs, including information regarding laws that govern TWLTLs.

**Right Turn Lanes.** With the Road Diet conversion, it may be possible and desirable to provide an exclusive lane for right-turning traffic. The delay impact of vehicles turning right should be evaluated and a decision made about whether a right-turn lane is needed. Some cases may require additional right-of-way or pavement width. The volume of turning vehicles and the types of vehicles to be accommodated govern the widths of turning roadways. Always consider pedestrian safety when deciding whether to add a right-turn lane at intersections. If the right-turn lane is free flow, yield controlled, or if right turn on red is allowed at the intersection, then pedestrians will be affected.

Turning radii are functions of turning speed and vehicle type. There are three types of designs for right-turning roadways at intersections: 1) minimum edge of traveled way, 2) design with a corner triangular island, and 3) free-flow design using a simple radius or compound radii. A detailed discussion is provided in AASHTO's *A Policy on Geometric Design of Highways and Streets*. Where pedestrians and bicyclists are present and trucks are only occasionally present, it may be desirable to use smaller turning radii to decrease the intersection area and reduce turning speeds.

However, the designer should analyze likely turning paths and encroachments when a larger vehicle does use the intersection and its effect on traffic operations and safety. Depending on truck volumes, the typical size of trucks using the intersection, and nearby truck traffic generators, practitioners should consider larger radii to accommodate these road users.

Driveway geometrics are also the focus of *NCHRP 659 Guide for the Geometric Design of Driveways*.<sup>73</sup> The inside and outside turning radius of design vehicles should also be considered when the corridor being converted is not straight (e.g., the main designated route that is converted is two legs of an intersection that are at right angles to each other). Pavement marking and corner radii should be designed in combination to serve the left- and right-turn movement of the design vehicle at these locations.

**Roundabouts.** A single-lane roundabout can be a good fit geometrically as part of a Road Diet installation. A roundabout will provide additional opportunities for improved safety by eliminating most angle and head-on crash types, and by reducing intersection operating speeds.

Care should be taken, however, regarding public reaction to installing a Road Diet and roundabout(s) on the same corridor. Depending on public sentiment, adding a roundabout to the discussion could create additional concerns from nearby residents, business owners, and road users if they are not familiar with navigating roundabouts.

**Bicycle Design Considerations.** Where the Road Diet includes on-street bicycle lanes, intersection designs should be modified accordingly. The bicycle facility should be carried up to and through the intersection. Where right- turn lanes are added, lane markings will be needed to channelize and separate bicycles from right-turning vehicles. Additional considerations include provisions for left-turn bicycle movements, use of bicycle boxes, and bicycle-specific traffic signals.

Details related to these intersection design features are contained in AASHTO's *Guide for the Development of Bicycle Facilities* and NACTO *Urban Bikeway Design Guide*.

**Curb Ramp Design.** Pedestrian facilities must also accommodate all users, including those with mobility, vision, cognitive and other impairments. Curb ramps must land within the width of the pedestrian street crossing they serve, and wholly outside the parallel vehicle travel lane. A distinct curb ramp should be provided for each crossing direction. Where possible, aligning the curb ramp with the direction of the crosswalk is preferred. Keeping the curb radius small, including a buffer space between the sidewalk and the curb, and adding curb extensions are all strategies that aid in being able to achieve two distinct ramps at a corner that are compliant with the design requirements per the Americans with Disabilities Act (ADA). Additional guidance on curb ramp design is available from the *Draft Public Rights-of-Way Accessibility Guidelines*. While these guidelines are still in draft form, they and their successors are considered to be the leading guidance on the subject.

**Curb Extensions.** On roadways with on-street parking, curb extensions at intersections can be added to shorten pedestrian crossing distances and make the pedestrian waiting at the corner more visible to drivers. Similarly, it gives the pedestrian a better view of oncoming traffic without having to step into the roadway. Curb extensions should only be used where on-street parking is permitted and should be slightly narrower than the parking lane, so that the extension is not bumping out into the traveled way for either bicyclists or motor vehicles.

**Other Pedestrian Design Considerations.** Intersection design should facilitate safe and convenient crossings. Curb radii should be kept as low as practical in order to slow vehicle speeds as they turn. The radius will also impact the crossing distance, making it shorter as the radii get smaller. The addition of on-street parking or bicycle lanes may enable a smaller curb radii at intersections as the effective radius of the vehicle path gets larger with the separation from the curb that the parking and bike lanes provide. Additional discussion is provided in AASHTO's *Guide for the Planning, Design, and Operation of Pedestrian Facilities* and FHWA's *Maintaining Pedestrian Facilities*.

## 4.2 Operational Design

The success of a Road Diet cross-section conversion is often based on whether the operation and safety of the roadway are maintained or improved for all road users. The operational impacts of a Road Diet conversion, as noted in previous chapters, can be relatively small if properly implemented in an appropriate location (e.g., a four-lane undivided roadway that already operates similar to a “de facto” three-lane roadway). Past experiences with this type of conversion, however, have also shown that there a number of decisions that users of these guidelines may want to consider closely before the design and implementation of a Road Diet conversion in order to increase its potential success.

This section includes a brief description of some of the factors to consider in decisions related to:

- Cross section allocation
- Pedestrian crossings
- Signalization changes
- Transition points
- Pavement marking and signing
- Intersection design elements.

The list above should not be considered exhaustive. Each corridor will have its own unique issues and needs. Engineering judgment and expertise need to be applied to each corridor design in order to respond to these situations. In addition, not all of the situations listed above are applicable to every corridor. The objective of this section, however, is to discuss the subjects above; note what has been learned in the past about how or why they need to be addressed; and, if applicable, identify some of the resources that could be used to respond appropriately. This section assumes that the Road Diet conversion option has already been selected through the input and involvement of all road users, adjacent land owners, and the appropriate public agencies and jurisdictions.

### 4.2.1 Cross-Section Allocation

Road Diet conversions typically require the reallocation of the existing curb-to-curb or pavement-edge-to-pavement-edge distance, and the decision of how to allocate these distances can be complex. In fact, in many cases the Road Diet conversion option is selected because of its minimal impacts on the general “footprint” of the roadway and because there is typically no need for right-of-way acquisition (although spot locations of “widening” may occur). The reallocation of an existing cross section should take into account the objectives for the existing corridor as well as the needs of the road users it serves. In addition, practitioners must choose the type and width of each “lane.” The lane types along three lane roadways have included, but not been limited to, through lanes, TWLTLs, bike lanes, transit lanes, and parking lanes. Each corridor that is being converted should be individually evaluated and designed. Before installation, the TWLTL was used illegally for loading due to lack of other available space. Seattle DOT added “Load Zones” on Dexter Avenue in Seattle, Washington, to address delivery truck needs.

In NCHRP Report 282, the authors suggest that there are situations with high left-turn volumes and lower through volumes in which conversion of a four-lane, undivided roadway to a three-lane cross section might be accomplished without lowering “operational efficiency.”<sup>74</sup> In NCHRP Report 330 the authors suggest an eight-step process to select curb-to-curb cross section design alternatives.<sup>75</sup> Both documents discuss the advantages and disadvantages of different cross-section designs.

## 4.2.2 Crossing Pedestrians

In some cases, pedestrians crossing a three-lane (or five-lane) roadway may use the TWLTL as an unofficial refuge area, which may result in conflicts with motorists who do not expect to see pedestrians in that travel lane. This issue can be mitigated with pedestrian refuge islands. Pedestrian refuge islands should be used with caution, and care should be taken with their design, because they introduce a potential obstacle for vehicles in the TWLTL.

Corner or midblock curb bulb outs can reduce the length of the pedestrian crossing, and this may also allow a reduction in signal timing to serve pedestrians. Care should be taken in the design of the bulb out. Bulb outs should not extend into the path of a bicyclist and, therefore, are best used in conjunction with on-street parking. Also consider the reduction in turning radius at intersections if a pedestrian bulb out is installed.

The addition of a pedestrian refuge island at an intersection may also result in the need for more pavement width. There are a number of other measures that can also be applied to improve the experience of crossing pedestrians. One reference that includes a discussion of several pedestrian crossing treatments at unsignalized locations is *TCRP Report 112/NCHRP Report 562 Improving Pedestrian Safety at Unsignalized Crossings* (a guideline for pedestrian crossing treatments is in the appendix).<sup>76</sup> Another resource that may be of value is the *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities*.<sup>77</sup> The FHWA webpage for Pedestrian and Bicycle Safety also includes many resources – including an article entitled *Proven Countermeasures for Pedestrian Safety* in the March/April 2012 issue of *Public Roads*.<sup>78</sup>

## 4.2.3 Intersection Control Changes

Re-evaluate traffic signal phasing and timing when converting a four-lane undivided roadway to three lanes. Perform an operational analysis to evaluate the acceptability of the potential impacts of the existing and proposed cross section and signalization on major and minor street vehicle and pedestrian delay and queue lengths. This evaluation should also consider the potential impact of heavy vehicles. In general, signal timing and phasing, along with the type and number of lanes on all intersection approaches, may need to be altered to minimize the operational impact of the Road Diet conversion. Specifically, mainline traffic may need additional green time due to the lane capacity reduction, especially during peak hours, to maintain mainline level of service. This could increase side-street delay during those time periods.

It is also important to adjust the positioning of the signal heads for a Road Diet conversion so the signal heads align with the new lane configuration, and there is a minimum of one signal head installed over each traffic lane. The reader is referred to the signalization information in the *Manual on Uniform Traffic Control Devices* (MUTCD), particularly Part 4, which focuses on highway traffic signals and includes a discussion of pedestrian controls. The signing needed for signalized locations is also contained in the MUTCD. Another document that may be of value to the readers is the FHWA *Signalized Intersections Informational Guide*. The FHWA intersection safety website also includes a number of resources.

Experience has indicated that it may not be appropriate to complete a Road Diet conversion when new signalization locations are needed along the same corridor. This is especially true if a Road Diet conversion is a new option within a jurisdiction. In general, it is important for the road users to understand what type of delays, if any, may be due to the Road Diet conversion. The source of additional delays is not clear when a Road Diet conversion is implemented along with new signalization location(s). Each corridor is unique, however, and the success of a Road Diet conversion is based on the objectives for each roadway. The two improvements might also be implemented separately (e.g., the signalization could be done before or after the Road Diet conversion).

Roundabouts can be considered as well. In some cases a mini-roundabout will fit within the existing right-of-way and footprint of the previously stop-controlled or signalized intersection. Roundabouts can provide operational improvements to the intersection by reducing queues and providing more consistent flow. Additional information is available in *NCHRP Report 672, Roundabouts Informational Guide, 2nd Edition*.

#### 4.2.4 Pavement Marking and Signing

The signing and markings for a three-lane roadway should follow the requirements and suggestions in the MUTCD. Many of the parts in the current MUTCD apply to three-lane roadways (e.g., Parts 2, 3, 4, 9). These parts focus on signing (e.g., regulatory, warning, and guide), pavement markings (e.g., lane lines, edge lines, and the TWLTL), signals, bicycles, and pedestrians. It is necessary to provide proper pavement markings and signing for, among other things, the TWLTL, right-turn lanes, pedestrian crossings, and refuge islands.

Pavement markings can also be used to properly position both stopped and turning vehicles so they can safely make turning maneuvers. The proper positioning (e.g., at a stop line) and turning radius of the design vehicle should be considered. Edge lines and/or parking space pavement markings may also sometimes be used to position through vehicles. Finally, if a Road Diet conversion only involves the re-marking of lane lines along an existing roadway cross section, it is extremely important that the old pavement markings are completely removed. More than one Road Diet conversion has resulted in unintended consequences and driver confusion because “ghost markings” (remnants of paint or other material) remained after implementation.

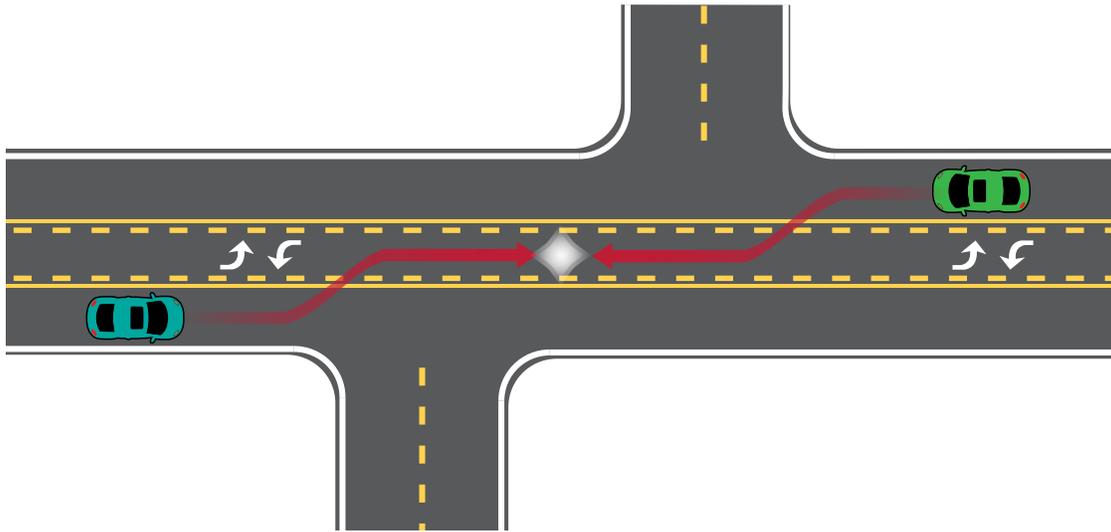
#### 4.2.5 Intersection Design Elements

Intersection design guidance may also be found in the AASHTO *Green Book* and local or State roadway design guidance documents. The guidance contained in these documents should be followed when designing a three-lane roadway. Agencies considering a Road Diet may want to consider several intersection design elements, including traffic signalization, corner radii, and offset intersections.

**Traffic Signalization.** The signalization discussion in this chapter noted that timing, phasing, and approach lane arrangements may need to be adjusted with a Road Diet conversion. Minor street volumes are a critical input to this activity. More generally, the potential impacts of the conversion on traffic entering and exiting all minor streets and driveways need to be closely evaluated. The delay and queuing changes that may occur due to changes in signalization timing and phasing, and the availability of adequate gaps for minor street or driveway traffic (at unsignalized locations), should be well understood. Practitioners should quantify and compare any additional delays and queues to what is considered acceptable along the corridor of interest. The delay, safety, and through-vehicle impacts of vehicles backing on to the converted roadway should also be discussed.

**Corner Radii.** Corner radii and right-turn lanes are both part of intersection design. Right-turn lanes may need to be added along three-lane roadways at intersections and major driveways. Evaluate the delay impact of vehicles turning right and decide if a right-turn lane is needed. Some cases may require additional right-of-way or pavement width. Practitioners should consider the radii or turning radius of the design vehicle at each corridor intersection and driveway. The AASHTO *Green Book* includes information about the proper design of turn lanes and corner radii. Driveway geometrics are also the focus of *NCHRP 659, Guide for the Geometric Design of Driveways*.<sup>79</sup> The inside and outside turning radius of design vehicles should also be considered when the corridor being converted is not straight (e.g., the main designated route that is converted is two legs of an intersection that are at right angles to each other). Design pavement markings and corner radii in combination to serve the left- and right-turn movement of the design vehicle at these locations.

**Offset Intersections and Driveways.** Lastly, it is important to understand the impact of offset intersections and high-volume driveways on turning and through traffic. Operational and safety concerns may be introduced if there is a significant amount of “through” traffic on an offset minor street or major driveways. If the offset is oriented so that the minor street or driveway “through” vehicles turn right onto the main roadway, there is a greater possibility that opposing vehicles may want to travel in the TWLTL for an intersection or driveway offset distance. This situation occurs when one of the minor street vehicles entering the mainline may stop in the TWLTL and negatively impact other vehicles or make another unsafe maneuver.<sup>80</sup>



**Figure 24.** Offset Driveways Causing Conflict Points in the TWLTL  
Source: FHWA-SA-10-002

## 5 Determining if the Road Diet is Effective

Post-implementation evaluation of the Road Diet will determine safety, operational, and livability impacts. Impacts associated with roadway conversions include the following:

- Safety (e.g., crash frequency/type/severity, pedestrian-vehicle conflicts)
- Travel speeds (e.g., average travel time, mean/85th percentile speeds, percent of vehicles traveling at high speeds)
- Arterial level of service, delay, queuing
- Intersection operations (e.g., turn delays; v/c ratios; signal operations)
- Traffic volume, including diversion to parallel routes
- Corridor operations including transit operations and similar, the two-way left-turn lane operations, and the ability to evaluate “stopped traffic” in one through lane
- Pedestrian and bicycle safety and operations
- Economic impact / livability.

For example, Seattle DOT conducts follow-up studies after implementation to determine the effects on each treated corridor. Specifically, the department compares the before-and-after conditions for the following:<sup>81</sup>

- Volume of the principal street's peak hour capacity
- Speed and collisions
- Traffic signal level of service
- Volume of traffic on parallel arterials
- Travel times
- Bicycle volumes.

### 5.1 Safety Analysis of a Road Diet

The process of implementing significant (and often controversial) changes in roadway geometry such as Road Diets often incorporates a formal safety evaluation plan to assess crash effects and other safety impacts.

#### 5.1.1 Data Needs

Practitioners typically use police-reported crashes for periods before and after changes have been implemented to conduct observational before-and-after studies. Typically a minimum of 3 years of crash data before and after treatment is preferred, although shorter time periods may be used to assess initial crash outcomes. Crash data can either come from State or local police agencies, State or local DOTs, or State DMV offices. In addition to crash data, traffic volume data is desirable to account for vehicle exposure, thus allowing the safety analysis to compute crash rates before and after treatment. Beyond crash studies, safety analysis can include field evaluations of pedestrian-vehicle conflicts and bicycle-vehicle conflicts, in which case the data needs include well-defined and reliably collected observational measures of road user behavior.

Two basic types of observational evaluations are used to estimate associated safety impacts:<sup>82</sup>

**Before-and-After Studies.** Observational before-and-after studies are the most common approach used in safety effectiveness evaluation. An observational before-and-after study requires crash data and volume data from both before and after implementation. These studies can be conducted for any site where changes have been made; however, if a site was selected for an improvement because of an unusually high short-term crash frequency, evaluating this site may introduce the regression-to-the mean (RTM) bias. It is likely that even if no improvement was made, the crash experience would decrease (regress to the mean). Thus, RTM effects can be mistaken for the effects of crash countermeasures. Empirical Bayes techniques account for the effect of regression-to-the mean, but require appropriate statistical knowledge to apply.<sup>83</sup> The *Highway Safety Manual* has been developed to assist practitioners and researchers to conduct robust observational before-after studies that provide results to support decision-making.<sup>84</sup>

**Cross-Sectional Studies.** Cross-sectional studies involve studying a treatment where there are few sites where a treatment was implemented, but there are many sites that are similar except they do not have the identified treatment. In some cases, evaluations have been performed only after the fact, and all data were not available for the performance measure during the before period. In such cases, cross-sectional studies may be necessary. These studies might also be necessary when the evaluation needs to account explicitly for effects of roadway geometrics or other related features by creating a CMF function rather than a single value for a CMF. Limitations exist when using a cross-sectional study; for example, confidence in the results may not be high since trends over time are not taken into account, and the inability to account for RTM, which threatens the validity of the results, especially if treated sites were selected because they were identified as high-crash locations. The *Highway Safety Manual* has been developed to assist practitioners and researchers to conduct robust cross-sectional studies.

### 5.1.2 Observational Before-and-After Studies of Road Diets

This section focuses on observational before-and-after studies, which are most applicable to State and local evaluations of Road Diet implementations.

A before-and-after study is used to estimate the crash effects associated with implementation of a traffic safety measure such as a Road Diet. The change in crash occurrence is estimated from the change in crash frequency between the periods before and after the implementation of the Road Diet. Before-and-after safety analyses can also consider changes in crash rates, which account for estimated traffic volumes during the before and after periods. Crash outcomes associated with Road Diet implementation can include the following:

- Change in the annual number of crashes on the corridor
- Change in the crash rate per million vehicle miles traveled
- Change in the severity of crashes that occur (e.g., percent of crashes that involve either any type of injury, or serious injuries)
- Change in certain targeted crash type(s) associated with Road Diet implementation
- Sideswipe
- Left-turn related
- Pedestrian-related or bicycle-related
- Right angle
- Changes in the number of crashes occurring during the peak-hours.

To account for changes in crashes unrelated to the safety treatment (e.g., overall traffic volume trends, changes in traffic laws, weather, economic conditions), a proper before-and-after study should incorporate an untreated comparison group that is similar in nature to the treatment group. For a before-and-after evaluation of a Road Diet, the comparison group might be comprised of one or more similar, untreated (four-lane, undivided) roads located in the same geographic region.

When planning a comparison group before-and-after safety evaluation, it is important to include a sufficient number of crashes to enable the expected change in safety to be statistically detectable. Four variables impact the sample size requirements:

1. The size of the treatment group, in terms of the number of crashes in the before period
2. The relative duration of the before and after periods
3. The likely crash reduction (CR) value (expected crash reduction or desirable reduction)
4. The size of the comparison group in terms of the number of crashes in the before and after periods.

After the treatment and comparison sites have been identified and the before-and-after crash data assembled, the next step is to conduct the crash analysis. A number of methodologies and statistical procedures are available to analyze before-and-after crash data. These range in complexity and ease of use. Note that some basic forms of before-and-after studies (e.g., naïve before/after, before/after with yoked pairs) are not recommended due to issues with the statistical soundness of results.

**Observational Before-and-After Evaluation Using a Comparison Group.** Observational before-and-after studies can incorporate non-treatment sites into the evaluation by using a comparison group (or control sites). A comparison group typically consists of non-treated sites that are comparable in traffic volume, geometrics, and other site characteristics to the treated sites but which do not have the improvement being evaluated. Crash and traffic volume data should be collected for the same time period for both the treated sites and the comparison group.<sup>85</sup>

Safety data analysis statistical techniques are available to address regression-to-the-mean and other limitations of before-and-after evaluations. Regression-to-the-mean is the natural variation in crash data. If regression-to-the-mean is not accounted for, the conclusions of a before-and-after study could be erroneous. Many of the methods in the *Highway Safety Manual* account for regression-to-the-mean and can result in more effectively identifying the safety effect of installing a Road Diet on a particular corridor.<sup>86</sup>

**Empirical Bayes (EB) Before-and-After Safety Evaluation Method.** From the *Highway Safety Manual*, “[This] method can be used to compare crash frequencies at a group of sites before and after a treatment is implemented. The EB method explicitly addresses the regression-to-the-mean issue by incorporating crash information from other but similar sites into the evaluation. This is done by using a Safety Performance Function (SPF) and weighting the observed crash frequency with the SPF-predicted average crash frequency to obtain an expected average crash frequency.”<sup>87</sup> Recommended data include 10-20 sites at which the treatment has been implemented, 3-5 years of before-installation crash and traffic volume data, 3-5 years of after-installation crash and traffic volume data, and Safety Performance Functions for the treatment site types.

### 5.1.3 Surrogate Measures of Safety for Road Diets

In addition to conducting formal safety assessments of Road Diets using data-driven analysis techniques based on pre- and post-installation crash data, surrogate measures of safety can provide valuable feedback to State and local agencies regarding both actual and perceived safety outcomes. A surrogate measure of safety can provide information on the level of safety of a location or system using information other than crash data.

**Traffic Conflicts.** One such surrogate measure involves the analysis of traffic conflicts before and after Road Diets are implemented. A traffic conflict is defined as a traffic event involving the interaction of two or more road users, at least one of whom takes evasive action such as braking or swerving to avoid a collision.<sup>88</sup> Examples of pedestrians taking evasive action to avoid crashes include pedestrians jumping back or running out of the way of an approaching vehicle. A traffic conflict survey is a systematic method of observing and recording traffic conflicts and other events associated with safety and operations. With regard to conducting conflict analyses for Road Diets, agencies might focus on before-after changes in the numbers/rates of rear-end conflicts, sideswipe conflicts, and motor vehicle conflicts involving pedestrians and bicyclists.

**Speed.** Both speed magnitude and speed variability can have an effect on safety and, in the absence of observational crash data, provide information to determine relative safety of the corridor. Because high travel speeds increase the risk of crashes as well as crash severity, it is important to determine whether Road Diets help to reduce speeding. Likewise, because inconsistent travel speeds between vehicles can increase the risk of rear-end and sideswipe crashes, it is important to determine whether Road Diets help to reduce speed variation.

**Level of Comfort.** Another surrogate measure of safety involves “level of comfort,” a subjective measure which is especially applicable for bicyclists and pedestrians for Road Diet projects. The concept of road user comfort in transportation engineering is not new. For example, the parameters used to establish the minimum horizontal curve radius are the maximum side friction factor and maximum rate of superelevation. Values for the maximum side friction factor are based on driver comfort, not on physical side friction supply and demand relationships. The result is a significant “margin of safety.”<sup>89</sup> With regard to assessing the level of comfort for Road Diets, options include conducting systematic visual assessments of pedestrian and bicyclist interaction with motor vehicles and conducting interviews with sufficient samples of non-motorized road users.

## 5.2 Operational Analysis

The operational effects of Road Diets have been summarized to some degree, but the research is limited to a relatively small number of publications. The literature shows that a properly located and designed Road Diet can result in maintained traffic operations. The general objective of this section will be to discuss ways in which Road Diet operation can be measured.

### 5.2.1 Analyzing Vehicle Operations

**Traffic Volumes.** Before-and-after studies should examine if changes occur in daily traffic and peak hour traffic. Evaluate potential changes to determine if there was diversion as a result of a Road Diet installation or if variations from year to year may be the result of background traffic changes. A broader downturn in the economy may result in lower traffic volumes, but patterns going back several years should also be examined for longer-term trends.

**Level of Service.** Evaluate the level of service of arterial segments and intersections. The facility type that carries the most leverage is based on factors such as signal spacing and segment length. For intersections, the overall LOS should be considered, but the analysis should also drill down to determine how LOS changes for individual movements at an intersection approach. Consider the LOS guidelines for each jurisdiction when determining whether a certain level of vehicular LOS degradation is acceptable. This requires weighing safety benefits as well as improved LOS or QOS for pedestrians and bicyclists. Corridor LOS is generally determined by traffic flow. Intersection LOS is measured by average vehicle delay.

**Speed.** Practitioners should evaluate the actual speed change (if any) as a result of the Road Diet. Data are collected through the use of before-and-after speed studies using radar, tubes or a pace car. It is important to collect and compare average speed, 85th percentile speed and speed paces in 10 mph increments. This last group is important to determine if the number of high-end speeders has been reduced.

**Two-Way Left-Turn Lane Operation.** The addition of a TWLTL will improve operations for through vehicles by removing turning vehicle from the through lane and reducing the uncertainty it causes. Left turning traffic may have additional delay since all through vehicles are in one lane, which could result in fewer gaps. This depends on gaps created by traffic signal timing, on-street parking maneuvers, and vehicles stopping for pedestrians crossing the street.

**Queue Lengths.** This measure is closely related to signalized intersection LOS described above. It may increase due to only one through lane, but this could be offset due to left turning vehicles no longer queuing in a through lane. Signal spacing needs to be considered so that queues do not extend to the upstream intersection. This may only be a concern for higher volume corridors with closely spaced signalized intersections. Modeling the before and after conditions can provide guidance as to expectations relating to vehicle queue lengths. Signalized intersections in the corridor may need to be re-timed to provide optimal progression.

**Trucks, Slow-Moving Vehicles, and Buses.** Reducing the number of through lanes from two to one in each direction may create an impact if there are grade changes or if heavy vehicles such as buses, semi-trucks or farm equipment are present. Bus stop placement and the transit policy for whether or not to stop in-lane is also a consideration for Road Diet operation. Give special consideration to these heavy vehicles driving through a corridor and also using the Road Diet corridor circulation to side streets. This is described further in the section below.

**Turning Traffic.** The Road Diet may make it easier for larger vehicles to make right turns with small curb radii by increasing the effective radius due to the addition of a bike lane. The vehicle mix needs to be considered for each location. Some intersections may not need to accommodate larger semi-truck traffic as they may only be present at such an infrequent interval that it is not an issue. The land use type and demand for smaller single unit type vehicles should also be considered.

### 5.2.2 Non-Motorized Operations

Non-motorized operations can be measured with respect to pedestrian accessibility and bicyclist use along the corridor. Three studies reported increased bicycle and pedestrian usage along the corridor after a Road Diet conversion.<sup>90, 91, 92</sup>

**Pedestrian Wait Time.** Study the wait time for pedestrians crossing at unsignalized intersections and pedestrian “comfort” with crossing the corridor. A before-and-after study of pedestrian crossing behavior can be challenging because many pedestrians may avoid crossing a four-lane undivided arterial due to the level of discomfort or perceived safety issues. Pedestrians may choose to cross exclusively at signalized intersections if there are few gaps in traffic.

**Vehicle Yield/Stop Compliance Rate for Pedestrians Crossing the Street.** The Road Diet eliminates the risk of the “multiple vehicle threat” pedestrians can face when crossing two lanes of traffic traveling in the same direction. The term describes a scenario in which the first vehicle stops for the pedestrian but a vehicle in the second adjacent lane does not or fails to see the pedestrian in enough time to stop. The prevalence of this problem can be measured in the before and after conditions.

**Increased Bicyclist and Pedestrian Volumes.** Pedestrians and bicyclists may avoid traveling on a four-lane undivided arterial due to discomfort or perceived safety concerns with no dedicated bicycle lanes or pedestrian facilities. They may switch to a street that has been reconfigured due to increased comfort or perception of improved safety that clearly delineated bicycle lanes and pedestrian facilities (e.g., sidewalks, fewer lanes to cross, or pedestrian refuge islands) can provide.

Some bicyclists may not find a bike lane adjacent to a vehicle lane comfortable enough, which is why the use of a buffered bicycle lane or protected lane is advisable when the street cross section provides enough room. The buffering can come in the form of either a painted barrier between the bike lane and the vehicle lane, a raised barrier, or, in some cases, by placing the bike lane against the curb and placing the parking lane between the bike lane and the vehicle through lane.

### 5.2.3 Tools and Methods to Evaluate Impacts

**Input Requirements.** The data needed for this analysis consists of intersection turning movement counts, daily traffic volumes by direction, and operating speed information. If these volumes have been observed to create delay in the before condition, visually observe delays caused by mid-block, left-turning traffic at driveways. The physical characteristics and complexity of corridor determine how detailed the analysis should be; some corridors may only require corridor analysis while others will need analysis of signalized intersection operations. The traffic volume along the corridor, transit operations, and the number of access points will all help determine whether the analysis procedures presented in the *2010 Highway Capacity Manual* are sufficient or whether a macro- (such as Synchro) or micro-level computer simulation (such as VISSIM) is needed to determine the projected outcome of a Road Diet.

**Output Provided.** The output provided will depend on the tool used for analysis. The factors to consider depend on the type of analysis and the questions posed.

**Complexities with Analyzing Three-lane Sections.** The intersection analysis should be straightforward, but practitioners must ensure field conditions are accurately analyzed between signalized intersections, too. Some of the factors to consider are parallel parking maneuvers using a through lane, buses maneuvering into and out of a bus stop (whether it is along the curb or in the lane), left-turning vehicles (from stopping in the through lane to slowing to enter the two-way, left-turn lane), cross-street traffic looking for a gap to turn or cross the arterial, and pedestrians crossing the street at unsignalized intersections. It is helpful to observe the corridor operating conditions in the four-lane, undivided configuration to determine a “baseline” condition and see where existing conflict points are and what causes them prior to evaluating the corridor in the “after” condition to determine how overall conditions have changed.

## 6 Conclusion

The most common Road Diet involves converting an existing four-lane, undivided roadway segment to a three-lane segment consisting of two through lanes and a center two-way, left-turn lane (TWLTL). Road Diets can be used to address safety concerns with four-lane, undivided highways associated with relatively high crash rates as traffic volumes increase and as the inside lane is shared by high-speed and left-turning vehicles. The reduction of lanes allows the roadway cross section to be reallocated for other uses such as bike lanes, pedestrian refuge islands, or parking.<sup>90</sup>

The benefits of Road Diets include improved safety, traffic calming, and the opportunity to repurpose segments of the roadway to create on-street parking, bike lanes, or transit stops. Based on the history of safety studies presented in this guide, practitioners can expect a crash reduction of 19 to 47 percent after installing a Road Diet. Variables include pre-installation crash history, installation details, and the urban or rural nature of the corridor.

When planning for or designing a Road Diet, it is important to be aware of the opportunities and potential drawbacks that one type of treatment may have on other travel modes. When deciding whether a particular element is appropriate for an individual street, or whether a Road Diet in general is appropriate, the surrounding context should be taken into consideration, including the extended roadway network. Each decision will have to be made on a case-by-case basis and will depend on the desired operation of the street in question. Consider coordinating with non-motorized advocacy groups, transit agencies, freight stakeholders, and emergency responders as necessary to understand their needs through the design of a Road Diet. Common feasibility factors include the following:

- The need for improved safety for all road users
- A desire to incorporate context sensitive solutions and Complete Streets features
- Operational considerations, such as:
  - o Whether the existing roadway operates as a de facto three-lane roadway
  - o The need for reduced speed or traffic calming
  - o Average daily traffic
  - o Multimodal level of service
  - o Peak hour volumes and peak direction
  - o Turning volumes and patterns
  - o The presence of slow-moving or frequently stopping vehicles, such as transit, curbside mail delivery, and others
- A desire to better accommodate bicycles, pedestrians, and transit service
- Right-of-Way availability and cost
- The existence of parallel roadways, parallel parking, and at-grade railroad crossings.
- Public outreach, public relations, and political considerations.

Geometric and operational design features are important during the design of a Road Diet reconfiguration. Geometric design includes identifying details of the project in plan, profile, and cross-section. Important issues include overarching principles of design, design controls, design elements, cross-section design, intersection design, and consideration for all road users. The following list represents just a few of the geometric design considerations one should consider during the Road Diet design phase:

- Road functional classification
- Design vehicles, driver characteristics, and presence of non-motorized users
- Corridor sight distance, grade, horizontal curvature, and superelevation
- Cross-sectional elements, such as lane widths, cross slope, presence of curbs or shoulders, access management, and presence of on-street parking or bus turnouts
- Intersection design elements, such as alignment and profile of intersection approaches and intersection sight distance.

Practitioners must make a number of operational decisions as well, including cross-section allocation, pedestrian accommodations, signalization changes, transition points, and pavement marking and signing. As with any roadway treatment, data analysis and engineering judgment are required to determine whether a Road Diet is the most appropriate alternative in a given situation.

Once implemented, it is important to evaluate the effectiveness of the Road Diet. This typically occurs through studying pre- and post-installation crash data, operating speeds, and operational level of service. Additional tools and methods, both specific and general, should be used to evaluate conversion impacts, including the following:

- Safety (e.g., crash frequency/type/severity, pedestrian-vehicle conflicts)
- Travel speeds (e.g., average travel time, mean/85th percentile speeds, percent of vehicles traveling at high speeds)
- Arterial level of service, delay, queuing
- Intersection operations (e.g., turn delays; volume/capacity ratios; signal operations)
- Traffic volume, including diversion to parallel routes
- Corridor operations including transit operations and similar, the two-way left-turn lane operations, and the ability to evaluate “stopped traffic” in one through lane
- Pedestrian and bicycle safety and operations
- Economic impact / livability.

In conclusion, a Road Diet can be a low-cost safety solution when the installation is coordinated with scheduled pavement marking modifications or planned in conjunction with reconstruction or simple overlay projects. Road Diets have the potential to solve a number of traffic operations and safety issues and to incorporate non-motorized users when applied at the most appropriate locations.

## Appendix A – Road Diet Safety Assessment Studies

The following table provides an overview of recent Road Diet safety analyses, including the number of treatment sites, traffic volume, and key safety results. Following that are synopses for each reference.

Reference	Treatment Sites	ADT	Key Safety Results
FHWA, 2010	45 sites in California, Iowa, and Washington	3,718 to 26,376	Iowa data: 47% reduction in total crashes California and Washington data: 19% reduction in total crashes Combined data: 29% reduction in total crashes
Noyce et al., 2006	7 treatment sites throughout Minnesota	8,900 to 17,400	Traditional before-after approach: 42-43% reduction in crashes. Yoked/group comparison analysis: 37% reduction in total crashes and 47% reduction in crash rates. EB approach: 44% reduction in total crashes.
Pawlovich et al., 2006	15 treatment sites throughout Iowa	4,766 to 13,695	25.2% reduction in crash frequency per mile; 18.8% reduction in crash rate.
Li and Carriquiry, 2005	15 treatment sites throughout Iowa	3,007 to 15,333	29% reduction in the frequency of crashes per mile; 18% reduction in the crash rate.
Huang et al., 2003	12 treatment sites in California and Washington	10,179 to 16,070	6% reduction in total crashes relative to control; no reduction in crash rate.
Lyles et al., 2012	24 treatment sites throughout Michigan	3,510 to 17,020	9% reduction in total crashes (non-significant).
Stout, 2005 Stout et al., 2005 Stout (year unknown)	11 to 15 treatment sites in various Iowa cities	2,000 to 17,400	21 to 38 percent reduction in total crashes; similar reduction in crash rates.
Clark, 2001	One treatment site in Athens-Clarke County, GA	18,000 to 20,000	52.9% reduction in total crashes; 51.1% reduction in crash rate (first 6 months).
City of Orlando, 2002	One treatment site in Orlando, FL	18,000 to 20,000	34% reduction in crash rate; 68% reduction in injury rate (first 4 months).
Preston, 1999	Minnesota	Not Provided	27% lower crash rate on three-lane roads than on four-lane undivided roadways (cross-sectional comparison – not a before-after study)

The table below provides additional details for these Road Diet safety assessments.

Reference	FHWA. 2010. Evaluation of Lane Reduction “Road Diet” Measures on Crashes. FHWA Report No. FHWA-HRT-10-053.
Location	45 treatment sites in California, Iowa, and Washington
ADT	3,718 – 26,376
Safety Analysis Method	The empirical Bayes (EB) methodology was used to estimate the change in total crashes.
Reported Safety Effects	The EB evaluation of total crash frequency indicated a statistically significant effect of the Road Diet treatment in both data sets and when the results are combined. The Iowa data indicate a 47% reduction in total crashes while the California and Washington data indicate a 19% decrease. Combining both data sets results in a 29% reduction in total crashes.
Comments	<p>This is arguably the strongest crash-based evaluations of Road Diet implementation.</p> <p>Two likely reasons the results differ from the original Iowa results (below) is that the re-analysis involved a much larger reference group than was used in the original study, and the re-analysis provided more weight to longer sites (while the original study weighted all treatment sites equally regardless of length).</p> <p>Differences between the IA sites and those in CA/WA may be a function of traffic volumes and characteristics of the urban environments where the Road Diets were implemented. AADT for the IA sites ranged from 3,718 to 13,908 and were predominately on U.S. or State routes passing through small towns; AADT for the sites in CA and WA ranged from 6,194 to 26,376 and were predominately on corridors in suburban environments that surrounded larger cities.</p> <p>Sites with lower crash reduction factors (CRFs) generally had higher traffic volumes, suggesting the possibility of diminishing safety benefits as traffic volumes increase.</p> <p>The authors recommended that the choice of which CRF to use should be based on characteristics of the site being considered. If the proposed treatment site is more like the small-town Iowa sites, then the 47% reduction found in IA should be used. If the treatment site is part of a corridor in a suburban area of a larger city, then the 19% reduction should be used. If the proposed site matches neither of these site types, then the combined 29% reduction is most appropriate.</p>

Reference	Noyce, D.A.; Talada, V.; and Gates T.J. 2006. Safety and Operational Characteristics of Two-Way Left-Turn Lanes. Minnesota DOT Report No. MN/RC 2006-25.
Location	7 treatment sites throughout Minnesota
ADT	8,900 – 17,400
Safety Analysis Method	Crash data were first analyzed using traditional approaches involving a comparison of the before and after crashes. Crash data were also analyzed by yoked/group comparison analysis and the empirical Bayes (EB) approach.
Reported Safety Effects	<p>The traditional before-and-after approach estimated a reduction in total crashes between 42 and 43%.</p> <p>A yoked/group comparison analysis found a 37% reduction in total crashes and a 46% reduction in PDO crashes (both statistically significant). The reductions in crash rates (per vehicle mile traveled) were 47% for total crashes and 45% for PDO crashes (both statistically significant).</p> <p>The empirical Bayes (EB) approach estimated a 44% reduction in total crashes.</p>
Comments	This is one of the stronger crash-based evaluations of Road Diet implementation, although the number of treatment sites (7) is small. One limitation of the authors’ use of the empirical Bayes (EB) approach involves the relatively small group of reference sites (17). By comparison, the EB analysis by FHWA (2010) summarized 296 reference sites.

Reference	Pawlovich, M.D.; Li, W.; Carriquiry, A.; and Welch, T.M. 2006. Iowa's Experience with "Road Diet" Measures: Impacts on Crash Frequencies and Crash Rates Assessed Following a Bayesian Approach. TR Record Issue Number 1953
Location	15 treatment sites throughout Iowa
ADT	4,766 to 13,695
Safety Analysis Method	A before-and-after study implemented from a Bayesian perspective to assess crash history effects. The study used both monthly crash data and estimated volumes over 23 years (1982 to 2004). Crash data were analyzed at each site before and after the conversions were completed.
Reported Safety Effects	Results indicate a 25.2% (23.2% to 27.8%) reduction in crash frequency per mile and an 18.8% (17.9% to 20.0%) reduction in crash rate. The values in parentheses represent the 95% confidence interval.
Comments	<p>This is a relatively strong crash-based evaluation of Road Diet implementation. The methodology is a refinement from the 2005 study by Li and Carriquiry.</p> <p>Unlike the use of linear regression models to estimate expected crash frequencies, this study allowed for different slopes during the "before" and the "after" periods by including a change-point in the model and for the interaction of treatment and slope. As a result, the model allows for a slight increase in crash frequency during the months immediately preceding and following the conversion.</p> <p>The number of comparison sites (15) is much smaller than the number of reference sites (296) used in the EB analysis performed by FHWA (2010).</p>

Reference	Li, W. and Carriquiry, A. 2005. The Effect of Four-Lane to Three-Lane Conversion on the Number of Crashes and Crash Rates in Iowa Roads. Department of Statistics, Iowa State University.
Location	15 treatment sites throughout Iowa
ADT	3,007 – 15,333
Safety Analysis Method	The authors assessed the effectiveness of the four to three lane conversion by comparing the average expected annual crash frequency per mile during years preceding and following the conversion at the site level and also as an average over all sites in each of the two groups (Road Diets and comparison sites).
Reported Safety Effects	<p>In general, with elapsed time, the expected number of crashes per mile at each site in the treatment group continues to decrease faster than the number at the corresponding paired site in the control group.</p> <p>For all treatment sites combined, the frequency of crashes per mile decreased an estimated 34.8%, from 23 pre-treatment to 15 post-treatment, whereas the crash frequency per mile for control sites decreased 6.2%, from 16 pre to 15 post. This would suggest an estimated 29% net reduction in the frequency of crashes per mile associated with the Road Diet treatments.</p> <p>For all treatment sites combined, the annual crash rate per 100MVMT decreased an estimated 43.9%, from 792 pre-treatment to 442 post, whereas the crash rate for control sites decreased 25.5%, from 652 pre to 486 post. This would suggest an estimated 18% net reduction in the crash rate per 100MVMT associated with the Road Diet treatments.</p>
Comments	While the results suggest that traffic safety is significantly improved by converting four lane roads to three lanes, there was significant variability in crash numbers across sites. It is not clear how much of an impact the wide range in ADT (3,007 – 15,333) had on the overall safety analysis. The suitability of the control sites may be questionable given markedly lower crash frequencies and crash rates at the control sites compared with the treatment sites, pre-intervention.

Reference	Huang, H.; Stewart, J. R.; Zegeer, C.; and Tan Esse, C. 2003. How Much Do You Lose When Your Road Goes on a Diet? Submitted to the 2nd Urban Street Symposium.
Location	12 treatment sites in California and Washington
ADT	10,179 to 16,070 pre-conversion
Safety Analysis Method	The authors conducted before-and-after analysis using a yoked comparison study of the Road Diet and comparison sites. Further analysis used a negative binomial model controlling for possible changes in ADT, study period, and other factors.
Reported Safety Effects	After accounting for trends at comparison sites, the number of crashes at Road Diet sites in the after period declined by about 6%. Crash rates, however, did not change significantly from the “before” period to the “after” period.
Comments	Although the authors identified 30 Road Diets and 50 comparison sites in 8 cities, it is unclear why only 12 treatment sites and 25 comparison sites were included in this paper. ADTs were not available for some treatment and comparison sites, and some of the ADTs were of “questionable accuracy.” The selection of comparison sites is a key function of the yoked comparison study design, and little information is provided regarding the criteria used to select comparison sites.

Reference	Lyles, R.; Siddiqui, M.A.; Taylor, W.; Malik, B.; Sivi, G.; and Haan, T. 2012. Safety and Operational Analysis of four-lane to three-lane Conversions (Road Diets) in Michigan. Michigan DOT Report Number RC-1555
Location	24 treatment sites throughout Michigan
ADT	3,510 – 17,020
Safety Analysis Method	Simple before-and-after crash analysis adjusted for trends of an untreated comparison group.
Reported Safety Effects	Average CMFs, adjusted for citywide trends, were calculated across all 24 sites. The result was that the overall naïve (unadjusted) CMF was estimated as 0.63, and 0.91 after adjustment. While the best estimate of a usable CMF is 0.91, this is not statistically different from 1.0 and is an average across all sites. Perhaps more importantly, there is a great deal of variation from site to site.
Comments	The analysis was limited by the fact that good/acceptable comparison sites could be identified for only a few of the 24 sites. The authors caution that Road Diets should not be “oversold” with respect to expected benefits, especially safety benefits. Actual benefits of a Road Diet can vary significantly by site.

Reference	Stout, T.B. 2005. Before and After Study of Some Impacts of Four-lane to Three-lane Roadway Conversions. Unpublished paper: Iowa State University. Stout, T.B.; Pawlovich, M.; Souleyrette, R.R.; and Carriquiry, A. 2005. Safety Impacts of “Road Diets” in Iowa. Unpublished paper: Iowa State University. Stout, T.B. Year unknown. Matched Pair Safety Analysis of Four-Lane to Three-Lane Roadway Conversions In Iowa. Unpublished paper: Iowa State University.
Location	Various Iowa cities
ADT	2,000 – 17,400
Safety Analysis Method	Before-and-after study using yoked comparison pairs and a comparison to the cities in which the sites were located.
Reported Safety Effects	The three sets of analyses examined before-and-after changes at largely the same group of converted sites, with some additional locations added with the passage of time. The studies reported reductions in crash frequency that ranged from 21 to 38 percent. The studies reported somewhat similar reductions in crash rates, as well as reductions in the numbers of crashes related to left turns and stopped traffic.
Comments	The studies reported a greater difference in crash reduction between the study segments and the yoked segments than was found between the study segments and the citywide data, which the author(s) attributed to greater variation in the changes in crashes in the yoked segments. The implied degree of effectiveness for the yoked comparison was larger than for the citywide comparisons, and according to the author, might be an artifact of the selection of the yoked segments. The methodology did not account for possible regression-to-mean effects, and no tests of statistical significance were provided.

Reference	Clark, D.E. 2001. Road Diets: Athens-Clarke County's Experience in Converting Four-lane Roadways into Three-lane Roadways. Washington DC. Proceedings of the Institute of Transportation Engineers Annual Meeting.
Location	One treatment site in Athens-Clarke County, GA
ADT	18 – 20K
Safety Analysis Method	Simple before-and-after
Reported Safety Effects	During the first 6 months after the change in lane configuration there were 40 reported crashes along the treated corridor compared with 85 crashes during the same 6 month period for the previous year. That corresponds to a 52.9% reduction. Crashes per million vehicles declined 51.1%, from 19.74 to 9.65.
Comments	The results of this study support other studies that show safety benefits associated with Road Diet implementation, but the relatively short post-intervention period and the lack of robust safety analysis methodology limit the utility of these findings.

Reference	City of Orlando. 2002. Edgewater Drive Before & After Re-Striping Results. City of Orlando - Transportation Planning Bureau.
Location	One treatment site in Orlando, FL
ADT	18 – 20K
Safety Analysis Method	Simple before-and-after
Reported Safety Effects	During the first 4 months after the change in lane configuration the annualized crash rate per MVM declined 34%, from 12.6 (for 3 years preceding implementation) to 8.4. The injury rate per MVM declined 68%, from 3.6 to 1.2 (for the same time periods).
Comments	The results of this study support other studies that show safety benefits associated with Road Diet implementation, but the relatively short post-intervention period and the lack of robust safety analysis methodology limit the utility of these findings.

Reference	Preston, H. 1999. Access Management – A Synthesis of Research. Report MN/RC – REV 1999-21. Minnesota Department of Transportation.
Location	Minnesota
ADT	N/A
Safety Analysis Method	This was not a before-and-after study. The author presents a simple cross-sectional comparison using 1991-1993 statewide crash data.
Reported Safety Effects	The crash rate per Million VMT for urban four-lane undivided roads was 6.75 versus a crash rate of 4.96 for three-lane roads. This comparison suggests that three-lane roads have a crash rate that is 27% lower than the rate for four-lane undivided roadways.
Comments	The number of miles of three-lane roads was small – 14 miles, versus 299 miles of four-lane undivided roads. The simple cross-sectional comparison does not take into account many confounding factors such as speed limits, pedestrian activity, land use, intersection spacing, driveway access, etc.

## Appendix B – Feasibility Determination Factors, Characteristics, and Sample Evaluative Questions

Factor	Characteristics	Sample Evaluative Questions
Roadway Function and Environment	<ul style="list-style-type: none"> <li>• Actual, Expected, and Desired Primary Function (Access, Mobility, or a Combination of the Two)</li> <li>• Community Objectives or Goals for the Roadway</li> <li>• Available Right-of-Way</li> <li>• Current and Expected Adjacent Land Use</li> <li>• Jurisdictional Plan or Policy for Conversions</li> <li>• Jurisdictional Context Sensitive or Complete Street Policy</li> </ul>	<ul style="list-style-type: none"> <li>• What is the primary current, expected, and desired function of the roadway?</li> <li>• Is the roadway primarily a collector or minor arterial roadway?</li> <li>• Does the current roadway primarily operate as a “de facto” three-lane cross section?</li> <li>• Is the goal for the roadway improvement increased safety with somewhat lower mobility?</li> <li>• Is the right-of-way limited?</li> <li>• Will the adjacent land use remain relatively stable throughout the design period?</li> <li>• Will the proposed cross section match the desired function of the roadway?</li> <li>• Will the answers to the above questions remain the same throughout the design period of the project?</li> <li>• Does the jurisdiction have a plan or policy related to these types of conversions?</li> <li>• Does the jurisdiction have a context sensitive or Complete Streets policy that may apply?</li> </ul>
Crash Types and Patterns	<ul style="list-style-type: none"> <li>• Type of Crashes</li> <li>• Location of Crashes</li> <li>• Number and Location of Pedestrians and Bicyclists</li> <li>• Parallel Parking Needs</li> </ul>	<ul style="list-style-type: none"> <li>• Can the crashes that are occurring be reduced with a conversion?</li> <li>• Will a reduction in speed and speed variability increase safety?</li> <li>• Are there safety concerns related to parallel parking maneuvers?</li> <li>• Do pedestrians and bicyclists have safety concerns?</li> </ul>
Pedestrian and Bike Activity	<ul style="list-style-type: none"> <li>• Number and Location of Pedestrians</li> <li>• Number and Location of Bicyclist Use</li> <li>• Characteristics of Pedestrians and Bicyclists (e.g., Age)</li> <li>• Bicycle and Pedestrian Friendliness of Roadway</li> <li>• Cross-section Width</li> <li>• Parallel Parking Need</li> <li>• Bus Stop Locations</li> </ul>	<ul style="list-style-type: none"> <li>• What is the pedestrian and bicyclist friendliness of the roadway?</li> <li>• Do pedestrians and bicyclists have safety concerns?</li> <li>• Will the addition of a TWLTL assist pedestrians and bicyclists?</li> <li>• How will pedestrians and bicyclists interact with parallel parking?</li> <li>• Can a bike lane be added after the conversion?</li> </ul>

Factor	Characteristics	Sample Evaluative Questions
Overall Traffic Volume and Level of Service	<ul style="list-style-type: none"> <li>• Total Daily Volume</li> <li>• Peak-Hour Volume (Morning/Noon/Evening)</li> <li>• Directional Split</li> <li>• Intersection and Arterial Level of Service</li> <li>• Side Street and Driveway Vehicle Delay</li> <li>• Volume of Frequent-Stop or Slow-Moving Vehicles</li> <li>• Vehicle Classification</li> <li>• Signal Timing or Phasing</li> <li>• Arterial Travel Speeds and Vehicle Delays</li> <li>• Existence of Turn Lanes</li> </ul>	<ul style="list-style-type: none"> <li>• What is an acceptable increase in minor street or signal-related delay due to the conversion?</li> <li>• Is a decrease in arterial travel speed of 5 mph or less acceptable?</li> <li>• What is an acceptable reduction in intersection level of service?</li> <li>• What level of daily traffic volume and peak hour exists or is expected in the design year?</li> <li>• Does the signal timing or phasing need to be changed?</li> <li>• Does the current roadway primarily operate as a “de facto” three-lane cross section?</li> <li>• What is the potential impact during off-peak hours?</li> </ul>
Turning Volumes and Patterns	<ul style="list-style-type: none"> <li>• Number and Location of Turn Volumes and Access Points</li> <li>• Peak Time Period of Turn Volumes</li> <li>• Existence of Left-Turn and Right-Turn Lanes</li> <li>• Design of Access Points and Intersections</li> <li>• Turn Volume of Frequent-Stop or Slow-Moving Vehicles</li> <li>• Minor Street and Access Point Vehicle Delay</li> <li>• Signal Timing or Phasing</li> </ul>	<ul style="list-style-type: none"> <li>• Does the signal timing or phasing need to be changed or optimized?</li> <li>• How important is it that right-turning vehicles quickly enter or exit the roadway?</li> <li>• Do the access point and intersections need to be redesigned (e.g., radii, approach slopes, location)?</li> <li>• Are right-turn lanes needed at particular locations?</li> <li>• Does the proposed marking allow the design vehicle (e.g., tractor-trailer) to turn properly?</li> <li>• What is an acceptable increase in minor street vehicle delay and left-turning vehicle delay?</li> <li>• Does the current roadway primarily operate as a “de facto” three-lane cross section?</li> </ul>
Frequent-Stop and/or Slow-Moving Vehicles	<ul style="list-style-type: none"> <li>• Volume, Location, and Time of Frequent-Stop and/or Slow-Moving Vehicles</li> <li>• Type, Design (Length, Width, Turning Radius, etc.) and Speed of Vehicles</li> <li>• Arterial Travel Speeds and Vehicle Delays</li> <li>• Level of Enforcement for Proper TWLTL Use (i.e., No Passing Allowed)</li> </ul>	<ul style="list-style-type: none"> <li>• What is the acceptable delay with respect to frequent-stop and/or slow-moving vehicles?</li> <li>• Can these vehicles turn properly at the access points and intersections?</li> <li>• Can passing prohibitions be feasibly enforced?</li> <li>• Are there locations for pull-outs for these vehicles?</li> <li>• Can some or all of the stop locations for the frequent-stop vehicles be combined?</li> <li>• What are the potential peak and off-peak impacts?</li> </ul>

Factor	Characteristics	Sample Evaluative Questions
Weaving, Speed, and Queues	<ul style="list-style-type: none"> <li>• Signal Timing or Phasing</li> <li>• Number of Existing Lane Changes</li> <li>• Turn Volume and Location</li> <li>• Arterial Travel Speeds and Vehicle Delays</li> <li>• Level of Enforcement for Proper TWLTL Use (i.e., No Passing Allowed)</li> <li>• Number and Location of Turn Volumes and Access Points</li> <li>• Peak Time Period of Turn Volumes</li> <li>• Existence of Left-Turn and Right-Turn Lanes</li> <li>• Design of Access Points and Intersections</li> <li>• Turn Volume of Frequent-Stop or Slow-Moving Vehicles</li> <li>• Minor Street and Access Point Vehicle Delay</li> <li>• Queue Length</li> <li>• Number of Speeders</li> </ul>	<ul style="list-style-type: none"> <li>• Does the signal timing or phasing need to be changed or optimized?</li> <li>• How important is it that right-turning vehicles quickly enter or exit the roadway?</li> <li>• Do the access point and intersections need to be redesigned (e.g., radii, approach slopes, location)?</li> <li>• Are right-turn lanes needed at particular locations?</li> <li>• What is an acceptable increase in minor street and left-turning vehicle delay?</li> <li>• Is a decrease in arterial travel speed of 5 miles per hour or less acceptable?</li> <li>• What is an acceptable change in queues?</li> <li>• Are there safety concerns related to weaving?</li> <li>• Can no passing be enforced?</li> <li>• Can drivers be educated about proper use of TWLTL?</li> <li>• Is a reduction in speeders and speed variability preferred?</li> <li>• Can all the old markings be completely removed?</li> <li>• Does the current roadway primarily operate as a “de facto” three-lane cross section?</li> </ul>
Right-of-Way Availability, Cost, and Acquisition Impacts	<ul style="list-style-type: none"> <li>• Available Right-of-Way</li> <li>• Cost of Right-of-Way</li> <li>• Existence of Left-Turn and Right-Turn Lanes</li> <li>• Design of Access Points and Intersections</li> <li>• Number of Properties Needed and Environmental Impacts (e.g., Tree Removal)</li> <li>• Cross Section Width</li> <li>• Parallel Parking Needs</li> </ul>	<ul style="list-style-type: none"> <li>• Is the right-of-way limited?</li> <li>• Will the cost of right-of-way acquisition be significant?</li> <li>• Do the access point and intersections need to be redesigned (e.g., radii, approach slopes, location)?</li> <li>• Are right-turn lanes needed at particular locations?</li> <li>• What is necessary in the cross section (e.g., bike lane, parallel parking, etc.)?</li> </ul>

### General Characteristics

Parallel Roadways	<ul style="list-style-type: none"> <li>• Roadway Network Layout</li> <li>• Volume and Characteristics of Through Vehicles Diverted</li> <li>• Impact of Diversion on Parallel Roadways</li> </ul>	<ul style="list-style-type: none"> <li>• Is a decrease in arterial travel speed of 5 miles per hour or less acceptable?</li> <li>• Does the signal timing or phasing need to change or be optimized?</li> <li>• Will conversion divert through vehicles to parallel roadways?</li> <li>• Is it possible to avoid or reroute the diverted traffic?</li> <li>• What is the impact on the parallel roadway environment?</li> </ul>
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Factor	Characteristics	Sample Evaluative Questions
Offset Minor Street Intersections	<ul style="list-style-type: none"> <li>• Volume and Time of Left Turns</li> <li>• Queue Lengths</li> <li>• Distance between Minor Street Approaches</li> </ul>	<ul style="list-style-type: none"> <li>• Do left turns occur into both minor street and access point approaches at a similar time?</li> <li>• Are the left-turn volumes significant?</li> <li>• Will the left-turn volumes produce queues in the through lanes of a three-lane roadway?</li> </ul>
Parallel Parking	<ul style="list-style-type: none"> <li>• Parallel Parking Needs</li> <li>• Number of Parking Maneuvers</li> <li>• Operational and Safety Impacts of Parallel Parking</li> <li>• Design of Existing or Proposed Parallel Parking</li> </ul>	<ul style="list-style-type: none"> <li>• Does parallel parking exist?</li> <li>• How many parking maneuvers occur during peak travel times?</li> <li>• What are the safety and delay concerns related to parallel parking maneuvers?</li> <li>• Is it possible to design these spaces for easy entry or exit (i.e., to minimize delay)?</li> <li>• Will it be necessary to reduce the number of parking spaces?</li> <li>• Does parallel parking reduce the ability of vehicles to turn in and out of minor streets and access points?</li> </ul>
Corner Radii	<ul style="list-style-type: none"> <li>• Design of Access Points and Intersections</li> <li>• Number and Location of Turn Volumes and Access Points</li> <li>• Peak Time Period of Turn Volumes</li> <li>• Existence of Left-Turn and Right-Turn Lanes</li> <li>• Turn Volume of Frequent-Stop or Slow-Moving Vehicles</li> <li>• Minor Street and Access Point Vehicle Delay</li> </ul>	<ul style="list-style-type: none"> <li>• How important is it that right-turning vehicles quickly enter or exit the roadway?</li> <li>• Do the access points and intersections need to be redesigned (e.g., radii, approach slopes, location)?</li> <li>• Are right-turn lanes needed at particular locations?</li> <li>• Does the proposed marking allow the design vehicle (e.g., tractor-trailer) to turn properly?</li> <li>• Do parallel parking spaces need to be removed to allow proper turning?</li> </ul>
At-Grade Railroad Crossing	<ul style="list-style-type: none"> <li>• Volume, Location, and Time of Train Crossing</li> <li>• Length of Crossing Train</li> <li>• Delay Impacts of Train Crossing</li> <li>• Queue Impacts of Train Crossing</li> <li>• Total Daily Vehicle Volume</li> <li>• Peak-Hour Vehicle Volume (Morning/Noon/Evening)</li> <li>• Directional Split of Vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Do trains cross during peak travel periods?</li> <li>• What is the typical delay from a train crossing?</li> <li>• Is double the current queue length (with four-lane undivided cross section) at a railroad at-grade crossing acceptable?</li> <li>• Is there a nearby parallel at-grade intersection where impacts may need to be mitigated?</li> </ul>

Adapted from Knapp, Welch, and Witmer, 1999.

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