



YELLOWSTONE COUNTY BOARD OF PLANNING

CITY OF BILLINGS AND
YELLOWSTONE COUNTY, MONTANA



AGENDA

MAY 9, 2023 MEETING TIME: 6:00 p.m.
1st Floor Large Conference Room, Miller Building
2825 3rd Avenue North, Billings, Montana 59101

NOTICE TO THE PUBLIC

Citizens are invited to:

- Review the Agenda Packet on the City's website at: <https://ci.billings.mt.us/117/Agendas-Minutes>
 - View the meeting live online at Facebook: <https://tinyurl.com/yckr478k>
 - Public comment will be taken only during the Public Comment periods as indicated on the agenda and during the Public Hearings, if any are scheduled, under the Regular agenda. Comments may be sent to Board via email before 10:00 AM on the meeting date. All emails received prior to this time will be read into the record for the public hearing. Comments may be submitted by:
 - Mail: City/County Planning Division, 2825 3rd Ave N 4th Floor, Billings, MT 59101
 - Email: deinest@billingsmt.gov
 - Call in during the Public Comment periods as indicated on the agenda:
 - Citizens may call in during specific Public Comment periods at **406.237.6165**. All callers will be placed in a queued system and are asked to remain on hold and be patient. Calls will be taken in the order in which they are received. Callers will be limited to 3 minutes of testimony as is customary. Future delivery methods may be explored as best practice is learned.
- **In the event a quorum of the Council is present, no City-related decisions will be made during this meeting or event.**
- Please direct questions to Tammy Deines, Planning Clerk at deinest@billingsmt.gov or 406-247-8610. Thank you!

1. **CALL TO ORDER - Planning Board President:** Welcome and Introduction of new and returning Board Members.
2. **APPROVAL OF AGENDA*** - including any additions or deletions to agenda. The agenda for a regular meeting will be closed at 5:00 p.m. three (3) working days prior to the date of the meeting.
3. **MOTION. MEETING MINUTES: APRIL 25, 2023**
Attachments
PLNB_2023_04_25_MIN_DRAFT.pdf
4. **PUBLIC COMMENT PERIOD** -- As required (3 minute maximum per person). *Any member of the public may be heard on any subject that is not on the agenda. The Planning Board will not take any action on these items at this time, but could choose to add an item to the next meeting's agenda for discussion.*
4a) Comments on items not on agenda and requests to add items to future agendas
4b) Comments on items on the non-public hearing agenda items
5. **DISCLOSURE OF CONFLICT OF INTEREST:**
6. **DISCLOSURE OF EX PARTE COMMUNICATION:** Ex Parte Communication Binder is available at the Sign-In and Agenda station.
7. **OLD BUSINESS**
 - a. **PUBLIC HEARINGS/PUBLIC HEARING PARTICIPATION GUIDELINES.** The County Planning Board welcomes public input on matters brought before the Board. To ensure a fair and effective public comment process, we ask that you consider the following guidelines when presenting your comments: Address the Planning Board directly. You must state your name and address before commenting. This is an opportunity to explain how you will be affected by the decision and why that is an important consequence. By state law, the Planning Board must consider only certain criteria when reviewing subdivisions (76-3-608(a), MCA). Please see the attached

guidelines for the criterion. Thank you for participating!

1. **(Continued from March 28, 2023). Motion/Recommendation to BOCC. Peila Subdivision Tract1-2-A of C/S 3443.** Matt Peila, Sam Peila, Prairie Builders, applicants, Dave Green, Planner II, presenting.

Attachments

- Findings of Fact
- Proposed Plat
- SIA Draft
- Extension Request
- Peila TIS report
- Yellowstone County TIS from 12 Mile and Yeoman

8. **NEW BUSINESS:** (Agenda items new to this meeting).
 - a. **Plat Review. Discussion Amended Highlands Ranch Subdivision, Lots 4-5, (PZX-23-00006)** County Major Subdivision, Tom and Kim Troop, Applicants. Aaron Redland, WWC, Agent. Dave Green, Planner II, presenting.

Attachments

- Findings of Fact
- Proposed Plat
- SIA Draft

9. **OTHER BUSINESS:**
 - a. (Standing Item) Long Range Strategic Issues and an overview of future City and County issues and projects.

10. **ADJOURNMENT**

FUTURE AGENDA ITEMS FOR TUESDAY, MAY 23, 2023

- a. **Public Hearing. Motion/Recommendation to BOCC> Amended Highlands Ranch Subdivision, Lots 4-5, (PZX-23-00006)** County Major Subdivision, Tom and Kim Troop, Applicants. Aaron Redland, WWC Engineering, Agent. Dave Green, Planner II, presenting.

Public Hearing Participation Guidelines

The County Planning Board welcomes public input on matters brought before the Board. To ensure a fair and effective public comment process, we ask that you consider the following guidelines when presenting your comments: **Address the Planning Board directly. You must state your name and address before commenting.** This is an opportunity to explain how you will be affected by the decision and why that is an important consequence.

1. Be informed of the process and the requirements of the Board. If you are commenting about a subdivision, please limit your comments to the review criteria.

By state law, the Planning Board must consider only certain criteria when reviewing subdivisions (76-3-608(a), MCA). These criteria include:

-Effect on agriculture and agricultural water user facilities

-Effect on local services

-Effect on the natural environment

-Effect on wildlife and wildlife habitat

-Effect on public health and safety

2. Provide specific information about why you are concerned about the pending application, how the decision will impact the review criteria listed above, and provide suggestions on how to minimize or eliminate the impact.
3. Respect the right of others to participate. Wait until the previous speaker has completed their comments before making your own comments. Do not talk over the person commenting or with other people in attendance.
4. The public hearing is not an opportunity to question or accuse the applicant or their agent. If you have questions of the Board, the applicant or the agent, ask the question directly to the Board during the public hearing portion of the meeting. The Board will respond or request the applicant or agent to respond after the public comment portion of the hearing is closed.
5. After the public comment portion of the hearing is closed, no further comments are allowed unless you are addressed directly by a Board member.
6. You should expect the Board to make a balanced recommendation in accordance with its statutory responsibilities. The Board's ability to make reasonable and thoughtful recommendations is dependent on a fair consideration of everyone's interests.

Thank you for participating.

Planning Board Meeting I (2nd Tuesday)

3.

Meeting Date: 05/09/2023

Information

Subject

MOTION. MEETING MINUTES: APRIL 25, 2023

Attachments

PLNB_2023_04_25 MIN_DRAFT.pdf

CITY/COUNTY PLANNING BOARD

“Serving Billings, Broadview, and Yellowstone County”

Board Attendance Roster: Please note: “E” stands for excused absence, “A” stands for un-excused absence, “1” stands for present, “Z” stands for Zoom participation. **BYLAWS, YELLOWSTONE COUNTY BOARD OF PLANNING, (Amended. May 25, 2004) Section 4. Absences and Removal** A. Each member shall inform the Planning Director at least one day before the meeting of his/her inability to attend a Board or Committee meeting. Such an absence shall be considered an excused absence. If any Board member accrues three (3) or more consecutive unexcused absences from regular meetings, notice of which has been given at his/her usual place of work or residence, or by announcement at a meeting attended by him/her, the President may call such absences to the attention of the Board which may then recommend to the appointing authority that such member be asked to resign and that another person be appointed to serve out the unexpired term. Schedule: (** denotes a Wednesday meeting)

	Position	01/10/2023	01/24/2023	02/14/2023	02/28/2023	03/14/2023	03/28/2023	04/11/2023	04/25/2023	05/09/2023	05/23/2023	06/13/2023	06/27/2023	07/11/2023	07/25/2023	08/08/2023	08/22/2023	09/12/2023	09/26/2023	10/10/2023	10/24/2023	11/14/2023	11/28/2023	12/12/2023
Jim Ronquillo	Mayor/Billings Ward I	1	1	1	1	1	1	E	1															
Roger Gravgaard	Mayor/Billings Ward II	1	1	1	1	1	1	1	1															
Dennie Stephenson	Mayor/Billings Ward III	1	1	1	1	1	1	1	1															
John Staley	Mayor/Billings Ward IV	1	1	1	1	1	1	1	1															
David Nordel	Mayor/Billings Ward V	1	E	E	1	1	1	1	1															
Troy Boucher	YC District 1	A	A	A	A	A	1	A	1															
Dennis Cook	YC District 2	1	1	1	1	1	1	1	1															
Vacant	YC District 3	-	-	-	-	-	-	-	-															
Vacant	YC District 4	-	-	-	-	-	-	-	-															
Woody Woods	YC District 5	1	1	1	1	1	1	1	1															
Vacant	YC District 6	-	-	-	-	-	-	-	-															
Vacant	YC District 7	-	-	-	-	-	-	-	-															
Vacant	Y County Cons. District	-	-	-	-	-	-	-	-															
Scott Reiter	Ex-Officio SD2	E	E	E	E	A	1	E																

CITY/COUNTY PLANNING BOARD

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APRIL 25, 2023

DRAFT- To be approved by a motion on May 9, 2023

PUBLIC HEARINGS/PUBLIC HEARING PARTICIPATION GUIDELINES

As legally advertised, The Yellowstone County Board of Planning met on April 25, 2023 in the Miller Building 1st Floor Conference Room.

Citizens are invited to:

→Review the Agenda Packet on the City's website at: <https://ci.billings.mt.us/117/Agendas-Minutes>

→View the meeting live online at Facebook: <https://www.facebook.com/Billings-Planning-Community-Services-Department-1738982159659260>

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1. Call the Meeting to Order: President Cook called the meeting to order at 6:00 p.m. on Tuesday, April 11, 2023.

Introduction of Planning Board Members and Planning Department Staff

President Cook called for introductions of the members of the Planning Board and staff. Board member Staley is participating virtually this evening.

Participating Planning staff members: Monica Plecker, Planning Division Manager; Hunter Kelly, Planner II, Tammy Deines, Planning Clerk; Mike Pigg, Superintendent of Parks, City of Billings Parks and Recreation Department

Others in Attendance: John Bruckner, WWC Engineering; Travis Copper, KLJ, Steve Grabill, KLJ; Michael Christensen, applicant; Maya Burton, Floberg Realty

2. Approval of Agenda – Board member Woods made a motion and it was seconded by Board member Ronquillo to approve the agenda as submitted. The motion carried with a unanimous voice vote.

3. Approval of Minutes: April 11, 2023

Motion by Board member Stephenson and seconded by Board member Woods to approve the April 11, 2023 meeting minutes as submitted. The motion carried with a unanimous voice vote.

4. Public Comment: President Cook asked if there was anyone wishing to speak during the public comment portion of the meeting. He stated any member of the public might be heard on any subject that is not on the agenda; the Planning Board will not take any action on these items at this time, but could choose to add an item to the next meeting agenda for discussion. There is no public comment.

5- 6. Disclosure of Outside (Ex Parte) Communication or Conflicts of Interest– Board Members and Planning Staff. There were no disclosures of outside communication or conflicts of interest. There was none.

7. OLD BUSINESS

7a. Public Hearing. Motion/Recommendation City Council. Discussion. Lake Hills Subdivision, 40th Filing. City Major Subdivision. Ron Hill, applicant. John Bruckner, WWC Engineering, agent. Hunter Kelly, Planner I, presenting.

Hunter Kelly opened this agenda item with the staff presentation.

RECOMMENDATION

Staff proposes the Planning Board recommend to City Council that the preliminary plat of Lake Hills Subdivision, 40th Filing be conditionally approved and the Findings of Fact adopted as presented in the staff report.

BACKGROUND

On March 1, 2023, WWC Engineering, on behalf of Ron S. Hill, applied for preliminary subsequent Major plat approval for Lake Hills Subdivision, 40th Filing. The proposed subdivision creates 13 lots for development. The subject property is generally located

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South of Greenbriar Road and East of Clubhouse Way. The property is zoned N3 – Suburban Neighborhood Residential. The land is currently vacant.

VARIANCES No variances are requested.

PROPOSED CONDITIONS OF APPROVAL

1. To minimize the effects on local service prior to final plat approval, the applicant will coordinate with the USPS to determine what type of delivery system is preferred and to locate and provide the correct amount of space for safely delivering the mail to the residents.
2. Minor changes may be made in the SIA and final documents, as requested by the Planning, Legal or Public Works Departments to clarify the documents and bring them into the standard acceptable format.
3. The final plat shall comply with all requirements of the City of Billings Subdivision Regulations, rules, regulations, policies, and resolutions of the City of Billings, and the laws and Administrative Rules of the State of Montana.

Discussion

President Cook called for questions and discussion from the members of the Board. There was no discussion or questions.

President Cook opened the public hearing and asked if there is anyone present wishing to speak in favor or against Lake Hills Subdivision, 40th Filing. There was none. President Cook closed the public hearing and called for a motion.

Motion

Board member Ronquillo made a motion and Board member seconded the motion that Planning Board recommend to City Council that the preliminary plat of Lake Hills Subdivision, 40th Filing be conditionally approved and the Findings of Fact adopted as presented in the staff report.

Discussion

President Cook called for questions and discussion from the members of the Board. There was none.

The motion carries with a unanimous voice vote. This project will be considered by City Council on April 22, 2023.

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7b. Public Hearing. Motion/Recommendation to City Council. 54 West Subdivision. City Major. Mike Christensen, applicant. Ryan Welsh, KLJ Engineering. Travis Copper, KLJ Engineering, agents. Hunter Kelly, Planner I, presenting.

Planner Hunter Kelly opened this agenda item with a staff presentation. : Members of the City of Billings Parks Department are in attendance this evening to clarify the parkland requirements for this project.

RECOMMENDATION

Staff proposes the Planning Board recommend to City Council that the preliminary plat of Fifty Four West Subdivision be conditionally approved and the Findings of Fact adopted as presented in the staff report.

BACKGROUND (On March 1, 2023, KLJ Engineering, on behalf of Michael Christensen , applied for preliminary subsequent Major plat approval for Fifty Four West Subdivision. The Proposed subdivision creates 66 lots for residential development. The subject property is generally located North of Rimrock Road and East of 54th Street West. The property is currently zoned N3. Per the zoning code, the property will need to be rezoned to a Planned Neighborhood Development. Additionally, in order for this land to develop in the City, annexation is required. Both an annexation and zone change are being reviewed by staff and will be considered concurrently with this application. The land is currently vacant.

VARIANCES No variances are requested.

Note: Staff has further revised the staff recommended conditions of approval since the plat review meeting after further researching outcomes related easements and their impact on the concurrent zoning application and possible outcomes. These referenced conditions are supported in the attached Findings of Fact.

PROPOSED CONDITIONS OF APPROVAL

1. To minimize the effects on local service prior to final plat approval, the applicant will coordinate with the USPS to determine what type of delivery system is preferred and to locate and provide the correct amount of space for safely delivering the mail to the residents.

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2. To minimize the effect on local services, to be compliant with Planned Neighborhood Development zoning regulations, and because of the location in proximity to Cottonwood Park, the subdivider shall provide a combination of 2% (.33 acres) developed park and 9% (1.46 acres) cash-in-lieu. The dollar value shall be determined based on methods outlined in Section 23-1007 of the City of Billings Subdivision Regulations. The payment shall be made prior to final plat approval.

3. In order to protect public health and safety and provide for future park maintenance, all required parkland shall be privately owned and maintained. Prior to final plat approval, the subdivider shall submit for review and comment, documents outlining how the maintenance will occur.

4. Minor changes may be made in the SIA and final documents, as requested by the Planning, Legal or Public Works Departments to clarify the documents and bring them into the standard acceptable format.

5. The final plat shall comply with all requirements of the City of Billings Subdivision Regulations, rules, regulations, policies, and resolutions of the City of Billings, and the laws and Administrative Rules of the State of Montana.

6. In order to protect public health and safety and adhere to Crime Prevention Through Environmental Design (CPTED) principles; fences within the rear yard setback of Lots 1-7, Block 8, and Lot 9, Block 7 and side yard fences adjacent to the 30' wide ROW for the shared used path shall be limited to 4 feet in height. The Covenants, Codes, and Restrictions (CC&Rs) filed with the final plat shall include this language. In addition, the following language shall be placed into the Subdivision Improvements Agreement under Section II. Titled Property Conditions and Information for Lot Purchasers F. Rear yard fences of Lots 1-7, Block 8, and Lot 9, Block 7 and side yard fences adjacent to the 30' wide ROW for the shared used path shall be limited to 4 feet in height. The aforementioned fences may be constructed up to the maximum height allowable by zoning, if the fence is constructed of materials that are permitted by the zoning code and allows for transparency.

7. In order to protect public health and safety and adhere to Crime Prevention Through Environmental Design (CPTED) principles and per the City of Billings Subdivision Regulations Section 23-406 A. 3. The subdivider shall install plantings within the open space area and future easements adjacent to the shared use path. The landscaping shall include at least 1 tree and 6 shrubs or ornamental grasses every 40'. The trees should be of a variety included in the City's preferred tree planting list.

Discussion

President Cook called for questions and discussion from the members of the Board. Board member Woods asked about Condition of Approval #8 which was struck from the record, and Planner Kelly and Division Manager Plecker provided an explanation. In response to question by Board member Staley staff said Cottonwood Park is located across Rimrock road, south of this parcel.

President Cook called for presentation by the applicant.

Steve Grabel, KLJ Engineering, 2611 Gabel Road, Billings, MT

Mr. Grabel represents applicant, Michael Christensen. He spoke regarding Condition of Approval #2 requiring the developer to provide a combination of 2% (.33 acres) developed park and 9% (1.46 acres) cash-in-lieu. and fencing in the private area. He said that question was asked during the last Planning Board meeting as to whether fencing would be provided along the Cove Ditch and the detention area. Mr. Grabel stated that the subdividor agrees to install a 4-foot tall ditch adjacent to the proposed private park along the north side of the Cove Ditch. The detention pond will be designed and constructed to comply with all City of Billings storm water regulations. Additionally, consideration will be given to flattening the embankment slopes.

He continued regarding Condition of Approval 6: "...Design (CPTED) principles; fences within the rear yard setback of Lots 1-7, Block 8, and Lot 9, Block 7 and side yard fences adjacent to the 30' wide ROW for the shared used path shall be limited to 4 feet in height..." The developer agrees with this condition with the exception of the back lot lines of the lots located along Rimrock Road. The developer is requesting a 6-ft fence height which would be in concur with CPTED guidelines for natural surveillance between homes and neighborhood streets and meeting the criterion for secure backyards. In addition, this would provide noise attenuation and give the landowners the feel of a more secure backyard. Mr. Grabel said that the criterion for a 4-ft fence does not apply in this instance as opposite this subdivision is a 6-ft fence following along the south side of Rimrock Road. They are asking that the requirement either be removed or changed from a 4-foot to a 6-foot fence height. Other than that, the applicant concurs with the stipulations and the Conditions of Approval.

President Cook asked the Boards if they have questions for Mr. Grabel. Board member Gravgaard asked if the 6-ft fencing would apply to the walkway between Lot 7 and Lot 9.

Mike Christensen, 3936 Avenue B, Billings, MT

Mr. Christensen is the applicant/developer. He said they are open to suggestions for the pathway but he doesn't feel it would be gated. He said having the 6-ft fence would create privacy on the back yard of the lots. Board member Ronquillo asked about material fencing. Mr. Christensen said it would be a contiguous fence and he is considering using cinder block, very similar to the fence located on the opposite site of the road. Board member Woods asked about fencing along Cove Ditch to provide a separation for children who tend to wander. Mr. Christensen said the developer plans to install a fence on the north side of the Cove Ditch on the 30-ft easement line.

President Cook opened the public hearing and asked if there is anyone present wishing to speak in favor or against the 54 West Subdivision. President Cook closed the public hearing and called for a motion from the Board.

Motion

Board member Ronquillo made a motion and Board member Nordel seconded the motion that the Planning Board recommend to City Council that the preliminary plat of Fifty Four West Subdivision be conditionally approved and the Findings of Fact adopted as presented in the staff report, and amend Condition of Approval #6 to require a 6-ft fence instead of the 4-foot fence.

Discussion

President Cook called for discussion on the motion. Board member Stephenson asked Staff for background information on the CPTED Conditions of Approval.

Division Manager Plecker said this started with a City Council initiative that was passed last year. This initiative is making it a priority for staff to consider insertion of CPTED language for recommendations for subdivisions, especially for public walking paths to avoid a tunnel effect. She noted the Boards' discussion on the need to balance the safety of the residents and safety of the public using infrastructure. Board member Stephenson pointed out that in this case, the walking path is adjacent to Rimrock Road and fronts the rear yards. Division Manager Plecker said a CPTED training for staff is scheduled for staff in May and this can be discussed more holistically during a future Planning Board meeting. Planner Hunter Kelly provided clarification on Condition of Approval #6 and said the under current zoning code, the maximum rear yard fencing height is 6 feet and the proposed amendment would strike Condition of Approval #6 as a whole. Division Manager Plecker clarified and said instead of striking the condition, updates to the statistics and the Findings of Fact would be acceptable. Board member Woods

commented it would be beneficial if Council would make Boards and Commissions aware of these types of initiatives so they can make informed decisions. He is in favor of a 6-ft fence along the lots for a number of reasons especially along Rimrock Road, and it meets present zoning code.

Board member Staley asked why the applicant’s proposed internal parkland is not sufficient and the City is asking the applicant to pay for a Cottonwood Park instead, which requires children walking across a very busy street to get there. Ms. Plecker said there is a City resolution stating if parks are located within ½ mile of Cottonwood Parks there should be cash-in lieu dedication.

Mike Pigg, 7335 Whitetail Run, Shepherd, MT

Mr. Pigg is the City of Billings Parks Superintendent. He said the parkland dedication is a state statute. Ms. Plecker said the parkland requirements in the subdivision regulations are percentage based on the size of lots. There is separate City resolution stating that any time parks are located within either ½ mile or 1 mile, contributions would have to be made to Cottonwood Park. Mr. Pigg provided clarification on the City policy and stated this parcel this is within a 1-mile radius of a public park and the cash-in-lieu funds for this subdivision will be required to go to fund Cottonwood Park. He pointed out there is a stop light with a crosswalk on Rimrock Road, and a paved path down 54th Street West to Cottonwood Park which is designed to be a community park for this area.

Board member Staley said there is no sidewalk on the south side of Rimrock Road. He asked if a variance could be given to allow use of the available ground within the subdivision for parkland. Division Manager Plecker said parkland serving as storm water retention or detention does not count towards the required percentage for contribution of parkland; and the City can express its preference for cash-in lieu of parkland. Board member Staley voiced concern that the only option for children living in this subdivision wanting to access the park is to cross a very busy street and put themselves in harm’s way. He said he is having difficulty recommending this as the applicant is having to pay for a park he isn’t going to use and it is unsafe for children to access the public parkland. Division Manager Plecker clarified and said there is an existing avenue for pedestrians when crossing 54th Street West on the north side of Grand and traveling south. After exiting the crosswalk, there is a shared use path that will take pedestrians down to Cottonwood Park. Per request of Board member Gravgaard, Division Manager Plecker clarified the location of the shared use path and the way of using existing infrastructure to stay on crosswalks and sidewalks in order to access Cottonwood Park.

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President Cook called for a vote on the motion.

The motion carried with a unanimous voice vote. This application will be considered during the May 22, 2023 City Council meeting.

9a. (Standing Item) Long Range Strategic Issues and an overview of future City and County issues and projects. Planning Division Manager Monica Plecker

9a1. Zoning Code Amendments: Staff is moving three bundles of zoning code amendments through the review process. The City Council initiated requests for amendments will address language for garage entries, NX zoning, changes for multi-tenant buildings and signing, fence materials, PND requirements for open space, rebuilding residential and community mixed zones, building set back requirements in multi-family developments, and landscape plan language. Staff will send the Planning Board a summary of the amendments. The City Zoning Commission hold a hearing on the first set of amendments during the May 2, 2023 meeting.

9a2. Follow-up on Peila Subdivision. Peila Subdivision will return to the Planning Board for action during the May 9, 2023 Planning Board meeting. Yellowstone County Public Works Director Tim Miller has been invited to speak to the Planning Board regarding maintenance of County roadways and Traffic Impact Studies.

9a3. Announcement: The May 9, 2023 meeting will be held as legally announced and advertised.

ADJOURNMENT: 6:54 PM

DRAFT—TO BE APPROVED BY A MOTION May 9, 2023

Tamara L. Deines, Planning Clerk



YELLOWSTONE COUNTY BOARD OF PLANNING

CITY OF BILLINGS AND
YELLOWSTONE COUNTY, MONTANA



AGENDA

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 1. **Public Hearing. Motion/Recommendation to City Council.** Lake Hills 40th Filing. A 17-lot City Major Subdivision. Ron Hill, Applicant, John Bruckner, WWC Engineering, agent. Hunter Kelly, Planner I, presenting.
 2. **Public Hearing. Motion and Recommendation to City Council.** 54 West AKA Fifty-Four West Subdivision Being C/S 1834, PARCEL 2B. A 68-lot City Major Subdivision. Mike Christensen, Christensen

Homes, applicant. Travis Copper, KLJ Engineering, agent. Hunter Kelly, Planner I, presenting.

8. **NEW BUSINESS:** There is no New Business.
9. **OTHER BUSINESS:**
 - a. (Standing Item) Long Range Strategic Issues and an overview of future City and County issues and projects.
10. **ADJOURNMENT**

FUTURE AGENDA ITEMS FOR TUESDAY, MAY 9, 2023

- a. **Plat Review. Discussion Amended Highlands Ranch Subdivision, Lots 4-5, (PZX-23-00006) County Major Subdivision, Tom and Kim Troop, Applicants. Aaron Redland, WWC Engineering, Agent. Dave Green, Planner II, presenting.**

Public Hearing Participation Guidelines

The County Planning Board welcomes public input on matters brought before the Board. To ensure a fair and effective public comment process, we ask that you consider the following guidelines when presenting your comments: Address the Planning Board directly. You must state your name and address before commenting. This is an opportunity to explain how you will be affected by the decision and why that is an important consequence.

1. Be informed of the process and the requirements of the Board. If you are commenting about a subdivision, please limit your comments to the review criteria.

By state law, the Planning Board must consider only certain criteria when reviewing subdivisions (76-3-608(a), MCA). These criteria include:

- Effect on agriculture and agricultural water user facilities
- Effect on local services
- Effect on the natural environment
- Effect on wildlife and wildlife habitat
- Effect on public health and safety

2. Provide specific information about why you are concerned about the pending application, how the decision will impact the review criteria listed above, and provide suggestions on how to minimize or eliminate the impact.
3. Respect the right of others to participate. Wait until the previous speaker has completed their comments before making your own comments. Do not talk over the person commenting or with other people in attendance.
4. The public hearing is not an opportunity to question or accuse the applicant or their agent. If you have questions of the Board, the applicant or the agent, ask the question directly to the Board during the public hearing portion of the meeting. The Board will respond or request the applicant or agent to respond after the public comment portion of the hearing is closed.
5. After the public comment portion of the hearing is closed, no further comments are allowed unless you are addressed directly by a Board member.
6. You should expect the Board to make a balanced recommendation in accordance with its statutory responsibilities. The Board's ability to make reasonable and thoughtful recommendations is dependent on a fair consideration of everyone's interests.

Thank you for participating.

<i>Printed Name</i>	<i>Address/email</i>
Mike Pigg	pigg.m@billingsmt.gov
Travis Copper	travis.copper@kljeng.com
Steve Grabill	steve.grabill@KLJeng.com
John Bruckner	Jbruckner@wucengineering.com
Mike Chstka	m.l.chstka@michaelchstka.com

Planning Board

Date: 05/09/2023
Title: Peila Subdivision - Preliminary Major Plat
Presented by: Monica Plecker
Department: Planning & Community Services
Presentation: Yes

Information

RECOMMENDATION

Staff recommends the Planning Board forward to the Board of County Commissioners a recommendation to conditionally approve the preliminary plat of Peila Subdivision, and adopt the Findings of Fact as presented in the staff report.

BACKGROUND (Consistency with Adopted Plans and Policies, if applicable)

On February 1, 2023, WWC Engineering, agent for Matt and Sam Peila, applied for preliminary major plat approval of Peila Subdivision. The subject property is generally located on the south of Yeoman Road and west of Twelve Mile Road. This parcel of land is outside of zoning. It is surrounded by residential uses and wild land grass acreage.

On March 28, 2023 at the public hearing for this subdivision there were concerns and questions from the public and Board about traffic impacts in the area. A traffic study was not available at the time of the public hearing but was required to be submitted, reviewed and approved by the County Public Works Department before final plat. The Planning Board requested a traffic study be available for its review to know if neighborhood concerns were being addressed by the traffic study and what recommendations were being made by the traffic study. The board asked for a delay before proceeding with a recommendation to the Board of County Commissioners giving it time to see recommendations of the study. The applicants' agent believed the TIS would be available by the May 9 planning board meeting. Staff determined after the public hearing that there was also a TIS done for the intersection of 12 Mile and Yeoman Road for Yellowstone County in October 2022 with recommendations for the County. Both traffic studies are attached to this staff report for review.

Below is the conclusion of the TIS completed for Peila Subdivision. These conclusions and recommendations are also on page 17 of the Peila TIS, attached to this staff report. The conclusion of the TIS specific to the 12 Mile and Yeoman Road intersection that was completed for Yellowstone County is on Page 15, attached to this staff report. The findings are not significant, in that the study found that immediate work is not required for the intersection.

CONCLUSIONS & RECOMMENDATIONS

The Peila Subdivision development would not substantially impact the safety and efficiency of any of the study roads and intersections. However, site traffic would incrementally increase exposure to crash potential at the intersection of 12 Mile Road and Yeoman Road. This impact would need to be mitigated to some degree. Since the safety concern involves vehicles exceeding the existing 55 mph speed limit, efforts should be directed at reducing travel speeds through the intersection area. The following recommendations are made in an effort to mitigate the sight distance and speed related concerns at the 12 Mile Road and Yeoman Road intersection:

1. Add sign-mounted intelligent transportation systems using lights that could be radar activated to flash only when traffic is exceeding the advisory speeds. These signs would require periodic enforcement of the speed limit so that daily travelers would not become complacent over time.
2. Add transverse rumble strips to 12 Mile Road, especially on the 12 Mile Road southbound approach.
3. Prune the tree limbs south of the intersection to improve visibility and cut grass and weeds along the shoulders of the roadway.

VARIANCES REQUESTED

No variances from the City Subdivision Regulations have been requested.

PROPOSED CONDITIONS OF APPROVAL

Pursuant to Section 76-3-608(4), MCA, the following conditions are recommended to reasonably minimize potential adverse impacts identified within the Findings of Fact.

1. To protect public health and safety, prior to final plat approval, the applicant will receive approval from the MDEQ for the proposed water systems, septic systems and the proposed storm water management.
2. To protect public health and safety and provide for future road maintenance, prior to final plat approval, the applicant will create an RSID for the new public roads within the subdivision.
3. To protect the existing private easement and also to provide for the requirement of two means of ingress and egress from a major subdivision, prior to final plat approval, the applicant will either need to show documentation they are allowed to use the private road easement of Molly Drive West which connects to Yeoman Road. Or, they will need to

dedicate it to the public, build the road to a county standard and include it in the RSID they are creating for the other public roads with in this subdivision.

4. To protect the safety of drivers in the area of this newly proposed subdivision and manage the increased traffic this subdivision may cause, prior to final plat approval, the applicant will provide to County Public Works a Traffic Impact Study (TIS) for its review and approval. Any mitigation of the traffic impacts identified in the TIS will be assessed by County Public Works to be included in the SIA for installation prior to final plat approval.
5. To protect public health and safety with proper fire suppression, prior to final plat approval, the applicant will submit construction drawings to Shepherd Volunteer Fire Department for review and approval of the dry hydrant system. Once installed the applicant will request Shepherd Volunteer Fire Department to test the system to ensure it works correctly and get a sign off from Shepherd Fire Department. The applicant will also create an RSID for the dry hydrant system that is expandable with each new phase.
6. To minimize the effects on local service, prior to final plat approval, the applicant will coordinate with the USPS for locating and providing the correct amount of space for safely delivering the mail to the residents.
7. To minimize effects on the natural environment, prior to final plat approval a weed management plan and property inspection shall be completed by the County Weed Department.
8. Minor changes may be made in the SIA and final documents, as requested by the Planning, Legal or Public Works Departments to clarify the documents and bring them into the standard acceptable format.
9. The final plat shall comply with all requirements of the Yellowstone County Subdivision Regulations, rules, regulations, policies, and resolutions of Yellowstone County, and the laws and Administrative Rules of the State of Montana.

PROCEDURAL HISTORY

- Pre-application meeting September 22, 2022
- Preliminary plat application submitted to Planning Division on February 1, 2023
- Departmental review meeting February 16, 2023
- Preliminary plat resubmittal February 23, 2023
- Planning Board plat review March 14, 2023
- Planning Board public hearing March 28, 2023
- The Planning Board delayed action at its March 28 meeting to receive more information on traffic impacts
- Planning Board further consideration and recommendation at its May 9, 2023 meeting.
- Preliminary plat to Board of County Commissioners, May 23, 2023
- 60 working-day preliminary plat review period ended April 27, 2023, but an extension to this review period was mutually agreed upon between the County and the applicant.

PLAT INFORMATION

General location:	South of Yeoman Road and west of Twelve Mile Road
Legal Description:	Being Tract A-2-A of COS 3443
Owner/Subdivider:	Matt Peila and Sam Peila
Engineer and Surveyor:	WWC Engineering
Existing Zoning:	Outside of zoning
Existing land use:	Vacant native grassland / Farmland
Proposed land use:	Residential
Gross and Net area:	86.31 acres / 78.13 acres
Proposed number of lots:	41
Lot size:	Max: 5.35 acres Min: 1.2 acres
Parkland requirements:	Parkland dedication required is 3.23 acres, the applicant is providing the 5.57 acres.

STAKEHOLDERS

On March 28th there was a public hearing for this proposed subdivision. At that public hearing, some surrounding property owners stood to voice their concerns about the proposed subdivision. The major concerns voiced at the public hearing were

increased traffic on the roads increasing the possibilities of accidents. Many voiced that the intersection of 12 Mile Road and Yeoman Road will become more dangerous. Residents stated there are already concerns with visibility at this intersection and the speed limit on 12 mile road are problematic. Yeoman Road and Molly Road are not paved, this proposed subdivision will not have paved roads either, there is a concern with dust control and an increase in dust with more houses being built in the area. Another concern was the conflict between resident drivers and children walking on the road.

After everyone that wished to speak on the proposed subdivision had completed, Planning Board President Cook asked the applicant or agent if they wish to address concerns raised by the public. Ms. Aaron Redland, WWC Engineering, stood to address the board. She asked Mike Black from Yellowstone County Public Works if he would explain how an RSID works. He explained that an RSID can provide the level of service the residents are willing to pay for. The RSID will cover costs of the public roads within the subdivision and the county takes care of collector roads.

There was quite a bit of discussion from some board members about requiring the roads to be paved. It was explained that subdivision regulations allow for gravel surface roads when they connect to existing gravel surface roads. The consistent topic was safety on the existing roads and the increased traffic. Some members of the Planning Board wanted to know what information a TIS would provide for solutions to the impacts on the roads and the intersection of 12 Mile Road and Yeoman Road. The traffic study was not provided at the hearing, but is a condition of final approval requirement before the developer can receive final plat approval.

Discussion continued on about the lack of the TIS, and a motion was proposed to delay the action on the subdivision until the May 9, 2023, Planning Board meeting when there would be a TIS available. The motion was seconded, the board voted and the motion passed. Attached to this staff report are two traffic analysis. One completed for the County specific to the intersection of 12 Mile Road and Yeoman Road and the other being the TIS specific to this subdivision. Some additional information also has been provided in the background section of this report.

ALTERNATIVES

In accordance with state law, the Board of County Commissioners has 60 working days to act upon this major preliminary plat. The 60 working day review period for the proposed plat ended on April 27, 2023. However, the applicant agreed to extend the preliminary plat review period so the Traffic Impact Study information could be provided to the Planning Board before it made a recommendation to the Board of County Commissioners. State and County subdivision regulations also require that preliminary plats be reviewed using specific criteria, as stated within this report. The County may not unreasonably restrict an owner's ability to develop land if the subdivider provides evidence that any identified adverse effects can be mitigated. Within the 60 working day review period, or within a period agreed upon between the County and the applicant as in this case, the Board of County Commissioners is required to:

1. Approve;
2. Conditionally Approve; or
3. Deny the Preliminary Plat

FISCAL EFFECTS

This plat will have no fiscal impacts on the City/County Planning Division.

SUMMARY

One of the purposes of the County's subdivision review process is to identify potential negative effects of property being subdivided. When negative effects are identified it is the subdivider's responsibility to mitigate those effects. Various County departments, private service/utility providers and the affected school district(s), have reviewed this application and provided input on effects and mitigation. The Findings of Fact, which are presented as an attachment, discuss potential negative impacts of the subdivision and conditions of approval are recommended as measures to further mitigate any impacts. In this case, there were found to be some impacts from this proposed subdivision and conditions have been drafted to address these impacts.

Attachments

Findings of Fact
Proposed Plat
SIA Draft
Extension Request
Peila TIS report
Yellowstone County TIS from 12 Mile and Yeoman

FINDINGS OF FACT

The City-County Planning Division Staff has prepared the Findings of Fact for Peila Subdivision. These findings are based on the preliminary plat application and supplemental documents addressing the review criteria required by the Montana Subdivision and Platting Act (76-3-608, MCA) and the Yellowstone County Subdivision Regulations (YCSR).

A. What are the effects on agriculture, local services, the natural environment, wildlife and wildlife habitat and public health and safety (76-3-608 (3) (a) MCA) (Section 3.2 (H) (2) YCSR)

1. Effect on agriculture and agricultural water users' facilities

The subject property is currently open grass land with farm uses. There are no water rights or shares that will be available for the future property owners in this subdivision. Any surrounding ditches will be left in place with access to them for maintenance purposes. This proposed subdivision will have minimal impact on water users' facilities.

2. Effect on local services

a. **Water** – The applicant is proposing this subdivision will have individual cisterns for each lot. They will be installed meeting the requirements outlined in Section 4.9 of the Yellowstone County Subdivision Regulations and the DEQ. The operation and maintenance of the cistern will be the responsibility of the lot owner to maintain.

b. **Septic** - The applicant is proposing each lot will have its own septic system. They will be built in compliance with the requirements outlined in Section 4.8 of the Yellowstone County Subdivision Regulations and the DEQ. Each system will be maintained by the individual lot owner.

Both the proposed water and septic systems will be reviewed and approved by MDEQ with a copy of the approval provided with the final plat. **(Condition #1)**

All private utilities, power, telephone, gas and cable television will be installed in the public right of way or easements identified on the plat.

c. **Streets and roads** – Roads within the subdivision will be built in 60-foot-wide right of ways with a 24-foot gravel surface and 2-foot-wide shoulders on each side. Drainage ditches will be installed along the sides as required by MDEQ for stormwater management. The applicant will be required to create an RSID for maintenance of roads within the subdivision. **(Condition #2)**

At the north west corner of the subdivision the applicant shows the use of a private road, Molly Drive West, to gain access to Yeoman Road. The applicant will either need to show documentation they are allowed to use the private road easement, or they will need to dedicate it to the public, build the road to a county standard and include it in the RSID they are creating for the other public roads with in this subdivision. **(Condition #3)**

The applicant is required to submit a TIS to the Yellowstone County Public Works department for their review and comment. Any corrections or clarifications will be worked out between Public Works and the applicant for a complete and acceptable TIS. Any information in the TIS that needs to be included in the SIA will be added to the final SIA for the subdivision. **(Condition #4)**

d. **Fire and Police services** – The property is within the Shepherd Volunteer Fire Department firefighting area. Subdivision regulations require that major subdivisions have a 30,000-gallon dry hydrant system for the subdivision. The proposed location of the dry hydrant is on the north west corner of Lot 8, Block 2 along High Noon Drive. They will be providing a public easement for it and creating an RSID for its maintenance. The applicant will provide drawings and specification to the Shepherd Volunteer Fire Department for review and approval prior to installation. This information is outlined in the SIA under the heading IV. Emergency Service.

The Yellowstone County Sheriff's Department will provide law enforcement services to this subdivision.

e. **Solid Waste disposal** – The Billings Landfill has capacity for solid waste disposal. Solid waste will be collected and disposed of by a private garbage collection company. Each lot owner will be responsible for arranging for collection.

f. **Storm water drainage** – The storm water drainage will be collected onsite using a combination of swales, culvers, and the natural slope of the land. It will be directed to onsite stormwater detentions facilities. All storm detention facilities will have access easements to them for maintenance. Proposed storm water drainage shall be submitted to the MDEQ for review and approval prior to final plat. All proposed stormwater systems shall meet the requirements of Section 4.7 of Yellowstone County Subdivision Regulation's and the requirements of MDEQ. **(Condition #1)**

g. **School facilities** – The proposed subdivision is located within Shepherd School District for K through 12. Shepherd School indicates they have additional capacity for students. This subdivision is also on an existing bus route.

h. **Parks and recreation** – This proposed subdivision is required to provide parkland. The amount the applicant is required to provide is 3.23 acres, they are proposing to provide 5.59 acres. They will be creating an RSID for the maintenance of the parkland. This information is outlined in the SIA under the heading VII. Parks/Open Space.

i. **Postal Service** – The applicant will coordinate with the USPS to provide areas for Central Box Units for the subdivision and enough area for the postal delivery person to safely deliver the mail. **(Condition #6)**

j. **Historic features** – No known historic or cultural assets exist on the site.

k. **Phasing of Development** - The applicant is not proposing to develop this subdivision in phases.

3. Effects on the natural environment

The development will use noxious weed control measures to prevent the spread of noxious weeds to adjacent developed or agricultural land. As required by County Subdivision Regulations Section 4.15 all county subdivisions are required to apply for and obtain a weed management plan with the County Weed Department. That plan will be submitted with final plat approval. **(Condition #7)**

There are no apparent or known natural hazards on the property.

4. Effects on wildlife and wildlife habitat

There are no known endangered or threatened species on the property. A paragraph in the ‘Conditions that Run with the Land’ section of the SIA warns future lot owners of the likely presence of wildlife in the area and their potential to damage residential landscaping.

5. Effects on public health and safety

Plans and designs for the water and septic system will be reviewed and approved by MDEQ prior to final plat approval to ensure public health and safety.

Fire and emergency services are provided for this proposed subdivision from Shepherd Volunteer Fire Department and the Yellowstone County Sheriff’s department.

B. Was an environmental assessment required? If yes, what, if any, significant adverse impacts were identified? (76-3-603 MCA) (Chapter 9, YCSR)

An environmental assessment was required for this subdivision. Because the current use of the land is for farming / grazing purposes the natural habitat has been disrupted long ago. There are no known endangered species on the land. Impact to habitat should be minimal. There were no other impacts identified on the land.

C. Does the subdivision conform to the Yellowstone County 2008 Growth Policy, the 2018 Urban Area Transportation Plan and the Billings Area Bikeway and Trail Master Plan Update? [BMCC 23-302.H.4.]

1. Yellowstone County - 2008 Growth Policy

The subdivision is consistent with the following goals of the Growth Policy:

- Goal: Predictable land use decisions that are consistent with neighborhood character and land use patterns.

There is existing residential development on the land east and south of the proposed subdivision. With large lots residential development to the north.

- Goal: New developments that are sensitive and compatible with the character of adjacent County town sites.

This proposal is consistent with the type of development in the surrounding area.

- Goal: Controlled weed populations.

The developer shall complete a weed management plan and shall provide a re-vegetation plan as required by County Subdivision Regulations.

2. 2018 Billings Urban Area Long Range Transportation Plan

The subject property maintains the road study area of the Transportation Plan. As proposed, the internal streets are neighborhood streets associated with this subdivision.

3. Billings Area Bikeway and Trail Master Plan (BABTMP)

This subdivision is outside the BABTMP boundaries for trails. They will not be required to build any trail as part of the development.

D. Does the subdivision conform to the Montana Subdivision and Platting Act (MSPA) and to local subdivision regulations? [MCA 76-3-608 (3) (b) and Section 3.2 (3) (a) YCSR]

The proposed subdivision meets the requirements of the MSPA and the YCSR. The subdivider and the local government have complied with the subdivision review and approval procedures that are set forth by local and state subdivision regulations.

E. Does the subdivision conform to sanitary requirements? [Section 4.8 (C) and 4.9 (C), YCSR]

The subdivider must receive approval from the MDEQ prior to final approval. New parcels, without existing septic systems, are subject to MDEQ review.

F. Does the proposed subdivision meet any applicable Zoning Requirements? [Section 3.2 (H) (3) (e), YCSR]

The proposed subdivision is outside County Zoning Jurisdiction. There are no Yellowstone County zoning regulations on the subject property.

G. Does the subdivision provide for necessary planned utilities? [MCA 76-3-608 (3) (c) and Section 3.2 (H) (3) (b), YCSR]

Should the private utility companies require easements the applicant will be required to coordinate the easements needed with the private utility companies.

H. Does the proposed subdivision provide for Legal and Physical Access to all lots? [MCA 76-3-608 (3) (d) and Section 3.2 (H) (3) (c) (d), YCSR]

Legal and physical access will be provided for the subdivision by 12 Mile Road, Yeoman Road and Molly Drive.

CONCLUSIONS OF FINDINGS OF FACT

- This subdivision does not create adverse impacts that warrant denial of the subdivision.

- Impacts to agriculture, agriculture water user facilities, local services, public health and safety, the natural environment, and wildlife should be minimal, and can be mitigated by reasonable conditions of final plat approval.
- The subdivision conforms to some of the goals of the Growth Policy.
- The applicant has complied with the MSPA and YCSR processes and the subdivision conforms to the law requirements.

RECOMMENDATION

Staff recommends the Planning Board forward to the Board of County Commissioners, the preliminary plat of Peila Subdivision, recommending conditional approval and adopt the Findings of Fact as presented in the staff report.

PEILA SUBDIVISION

BEING TRACT A-2-A OF CERTIFICATE OF SURVEY NO. 3443, DOCUMENT NO. 3555853
 WITHIN THE N1/2 OF SECTION 17, T.2N., R.27E., P.M.M.
 YELLOWSTONE COUNTY, MONTANA

PREPARED FOR: MATT PEILA
 DATE SURVEYED: JULY 2022
 PREPARED BY: WWC ENGINEERING

LEGAL DESCRIPTION AND PROPERTY OWNER CERTIFICATE OF DEDICATION

State of Montana)
)
 County of Yellowstone)

KNOW ALL BY THESE PRESENTS: That we, the undersigned owners, do hereby certify that we, have caused to be surveyed, subdivided, and platted into lots blocks roads and alleys and other divisions and dedications, as shown by this plat hereunto included, the following described tract of land, to wit:

The parcel situated within the N1/2 of Section 17, T.2N., R.27E., P.M.M., Yellowstone County, Montana, and more particularly described as Tract A-2-A of Certificate of Survey No. 3443, Document No. 3555853; said tract containing 66.31 acres in gross and 77.66 acres net, more or less, exclusive of the dedicated 60' rights-of-way for High Noon Drive, Rio Lobo Circle, True Grit Street, Trumbo Circle, and the extension of Molly Drive and Molly Drive West.

The above described tract of land is to be known and designated as PEILA SUBDIVISION, Yellowstone County, Montana. The undersigned do hereby grant unto all utility companies, as such are defined and established by Montana Law, and cable television companies, an easement for the location, maintenance, repair, removal of lines over, under and across the areas designated on the plat as Utility Easement to have and hold forever. The lands designated as public right-of-way are hereby granted and dedicated to the use of the public forever shall include High Noon Drive, Rio Lobo Circle, True Grit Street, Trumbo Circle, and the extension of Molly Drive and Molly Drive West, as shown on the plat.

I also hereby certify that Lot 1, Block 1 and Lot 6, Block 4 are exempt from review by Montana DEQ pursuant to 17.36.605(2)(a).
 DATED THIS _____ DAY OF _____, 20____.

Matt Peila ACKNOWLEDGMENTS

State of Montana)
)
 County of Yellowstone)

On this _____ day of _____, 20____, before me, the undersigned a notary public for the State of _____, personally appeared _____ as Matt Peila, known to me to be the persons whose names are subscribed to the within instrument and acknowledged to me that he executed the same.

Notary Public for the State of _____

CERTIFICATE OF APPROVAL STATE OF MONTANA

County of YELLOWSTONE)

We do hereby certify that we have examined the plat of PEILA SUBDIVISION, and find that said plat conforms with the requirements of the laws of the State of Montana and that the requirements for park donation have been met to the satisfaction of the Yellowstone County Board of Planning. It is therefore approved and the dedication to the public use of any and all lands shown on this plat as being dedicated to such use are accepted.

IN WITNESS WHEREOF, we have set our hands and the seal of Yellowstone County, Montana, this _____ day of _____, 20____.

Commissioner _____

Commissioner _____

Chairman _____

Affiant: _____

Clerk and Recorder _____

NOTICE OF APPROVAL STATE OF MONTANA

County of YELLOWSTONE)

This plat has been approved for filing by the Yellowstone County Board of Planning and conforms to the recommendations of this board.

President _____ Date _____

Executive Secretary _____ Date _____

CERTIFICATE OF SURVEYOR

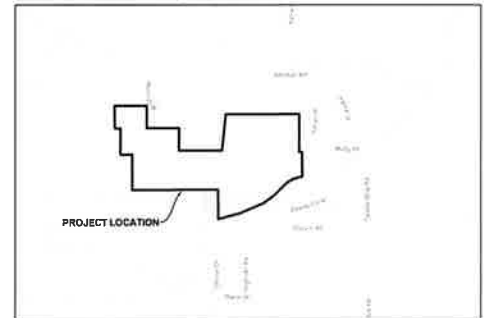
I, John Bruckner, a Montana Registered Land Surveyor being first duly sworn, deposes and says that during the month of July 2022, a survey was performed under my supervision of a tract of land to be known as PEILA SUBDIVISION, in accordance with the request of the owner thereof and in conformance with Montana Subdivision and Platting Act, said subdivision being in accordance with the Landowner's Certificate and as shown on the plat that the monuments found and set are of the character and occupy the positions hereon.

Dated the _____ day of _____, 20____.

John Bruckner
 Registration Number 63052 LS



VICINITY MAP



LEGEND

- ⊞ NOTHING SET OR FOUND
- ⊞ FOUND REBAR
- ⊞ FOUND IRON PIPE
- ⊞ FOUND PLASTIC CAP - TREETZ 2525 UNLESS NOTED OTHERWISE
- ⊞ FOUND ALUMINUM CAP - ESSEX 14184LS
- ⊞ SET PURPLE PLASTIC CAP ON 5/8" REBAR (BRUCKNER LS-63052)
- ⊞ SET ALUMINUM CAP ON 5/8" REBAR (WWC ENGINEERING PLS 63052)

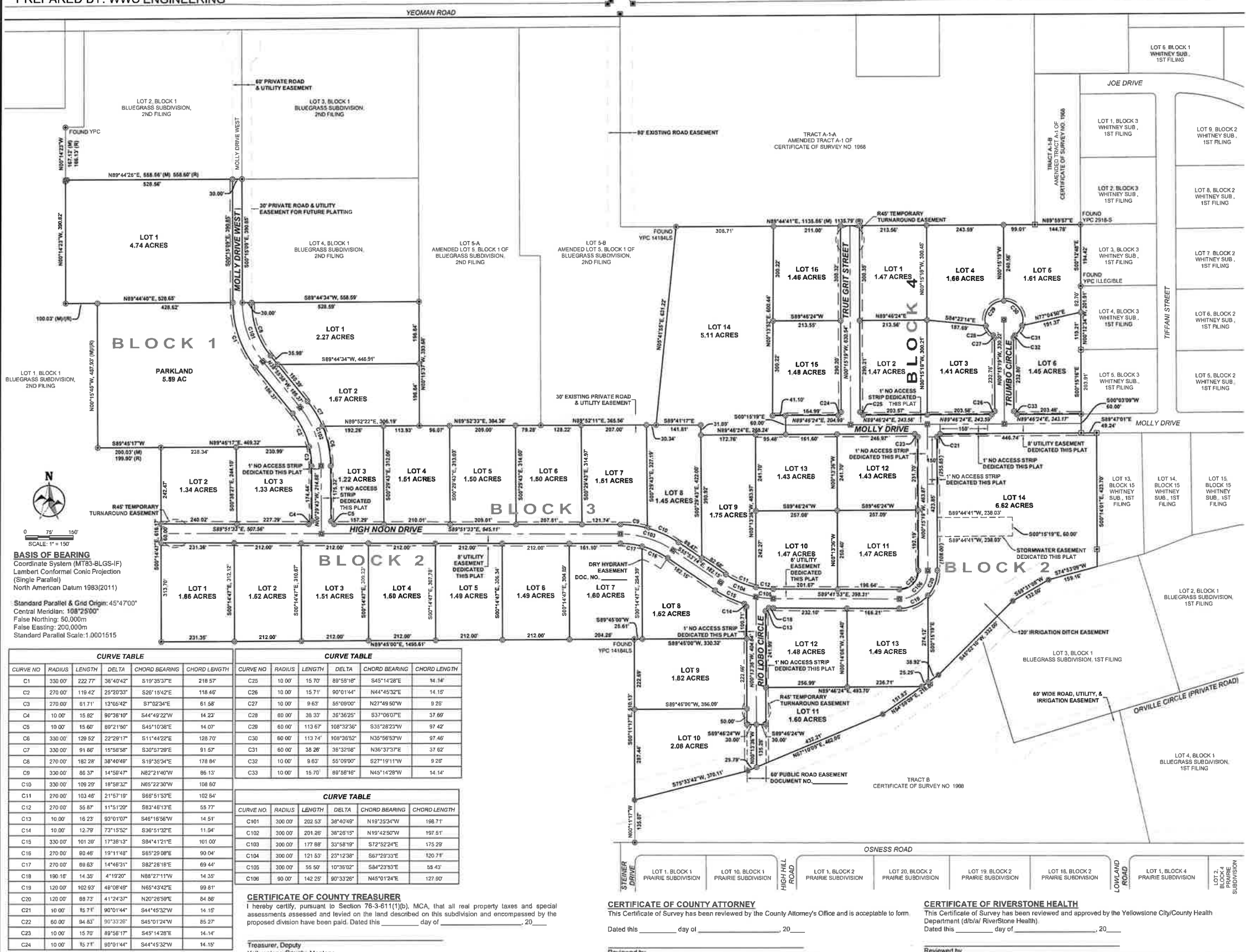
TRACT A-2-A OF CERTIFICATE OF SURVEY NO. 3443
PEILA SUBDIVISION
 YELLOWSTONE COUNTY, MONTANA

PREPARED FOR: MATT PEILA
 2202 MAIN STREET
 BILLINGS, MT 59105

PREPARED BY: **WWC ENGINEERING**
 550 N. 15TH ST., SUITE 201
 BILLINGS, MT 59102
 (406) 243-2210
 WWW.WWCENGINEERING.COM

PROJECT NO: 2022-001
 DATE: _____ BY: _____ DATE: _____

1



BASIS OF BEARING
 Coordinate System (MT83-BLGS-IF)
 Lambert Conformal Conic Projection
 (Single Parallel)
 North American Datum 1983(2011)
 Standard Parallel & Grid Origin: 45°47'00"
 Central Meridian: 108°25'00"
 False Northing: 50,000m
 False Easting: 200,000m
 Standard Parallel Scale: 1.0001515

CURVE TABLE					CURVE TABLE						
CURVE NO	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD LENGTH	CURVE NO	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
C1	330.00'	222.77'	38°40'42"	S19°35'37"E	218.57'	C25	10.00'	15.70'	89°58'18"	S45°14'28"E	14.14'
C2	270.00'	119.42'	25°20'33"	S26°15'42"E	118.46'	C26	10.00'	15.71'	90°01'44"	N44°45'32"E	14.15'
C3	270.00'	61.71'	13°05'42"	S7°02'34"E	61.58'	C27	10.00'	9.63'	85°09'00"	N27°49'50"W	9.29'
C4	10.00'	15.82'	90°38'10"	S44°49'22"W	14.23'	C28	80.00'	38.33'	36°38'25"	S37°09'07"E	37.69'
C5	19.00'	15.60'	80°21'50"	S45°10'36"E	14.07'	C29	60.00'	113.67'	108°32'36"	S35°28'23"W	97.42'
C6	330.00'	126.52'	22°29'17"	S11°44'22"E	128.70'	C30	60.00'	113.74'	108°36'52"	N35°56'53"W	97.46'
C7	330.00'	91.66'	15°58'58"	S30°57'29"E	91.57'	C31	60.00'	38.26'	36°32'08"	N36°37'37"E	37.62'
C8	270.00'	182.28'	38°40'48"	S19°35'34"E	178.84'	C32	10.00'	9.63'	55°09'00"	S27°19'11"W	9.26'
C9	330.00'	86.37'	14°58'47"	N82°21'40"W	86.13'	C33	10.00'	15.70'	80°58'18"	N45°14'28"W	14.14'
C10	330.00'	109.29'	18°58'32"	N65°22'30"W	108.80'						
C11	270.00'	103.46'	21°57'19"	S66°51'53"E	102.84'						
C12	270.00'	55.87'	11°51'20"	S83°46'13"E	55.77'						
C13	10.00'	16.23'	93°01'07"	S46°18'58"W	14.51'						
C14	10.00'	12.79'	73°15'52"	S36°51'32"E	11.94'						
C15	330.00'	101.59'	17°38'13"	S84°41'21"E	101.00'						
C16	270.00'	80.46'	19°11'48"	S65°29'08"E	90.04'						
C17	270.00'	89.63'	14°46'31"	S82°28'18"E	89.44'						
C18	190.16'	14.35'	4°19'20"	N88°27'11"W	14.35'						
C19	120.00'	102.97'	48°08'49"	N65°43'42"E	99.81'						
C20	120.00'	88.72'	41°24'37"	N20°26'59"E	84.86'						
C21	10.00'	15.71'	90°01'44"	S44°45'32"W	14.15'						
C22	60.00'	84.63'	90°33'28"	S45°01'24"W	85.27'						
C23	10.00'	15.70'	89°58'17"	S45°14'28"E	14.14'						
C24	10.00'	15.71'	90°01'44"	S44°45'32"W	14.15'						

CERTIFICATE OF COUNTY TREASURER
 I hereby certify, pursuant to Section 76-3-611(1)(b), MCA, that all real property taxes and special assessments assessed and levied on the land described on this subdivision and encompassed by the proposed division have been paid. Dated this _____ day of _____, 20____.

Treasurer, Deputy
 Yellowstone County, Montana

CERTIFICATE OF COUNTY ATTORNEY
 This Certificate of Survey has been reviewed by the County Attorney's Office and is acceptable to him.
 Dated this _____ day of _____, 20____.

Reviewed by _____

CERTIFICATE OF RIVERSTONE HEALTH
 This Certificate of Survey has been reviewed and approved by the Yellowstone City/County Health Department (d/b/a RiverStone Health).
 Dated this _____ day of _____, 20____.

Reviewed by _____

PEILA SUBDIVISION
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(Yellowstone County)

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PEILA SUBDIVISION

This agreement is made and entered into this ____ day of _____, 20__, by and between *Matt Peila*, whose address for the purpose of this agreement is **2202 Main Street, Billings, MT 59105**, hereinafter referred to as “Subdivider,” and YELLOWSTONE COUNTY, Montana, hereinafter referred to as “County.”

WITNESSETH:

WHEREAS, at a regular meeting conducted on ____ day of _____, 20__, the Board of Planning recommended conditional approval of a preliminary plat of *PEILA SUBDIVISION*; and

WHEREAS, at a regular meeting conducted on ____ day of _____, 20__, the Yellowstone County Board of County Commissioners conditionally approved a preliminary plat of *PEILA SUBDIVISION*; and

WHEREAS, a Subdivision Improvements Agreement is required by the County prior to the approval of the final plat.

WHEREAS, the provisions of this agreement shall be effective and applicable to *PEILA SUBDIVISION* upon the filing of the final plat thereof in the office of the Clerk and Recorder of Yellowstone County, Montana. The Subdivision shall comply with all requirements of the Yellowstone County Subdivision Regulations, the rules, regulations, policies, and resolutions of Yellowstone County, and the laws and administrative rules of the State of Montana.

THEREFORE, THE PARTIES TO THIS AGREEMENT, for and in consideration of the mutual promises herein contained and for other good and valuable consideration, do hereby agree as follows:

I. VARIANCES

There are no variances being requested with this subdivision.

II. CONDITIONS THAT RUN WITH THE LAND

- A. Lot owners should be aware that this subdivision is being built in close proximity to prime deer and antelope habitat and it is likely that homeowners will experience problems with damage to landscaped shrubs, flowers, and gardens. The Montana Fish, Wildlife, and Parks Department does not provide damage assistance unless there is damage to commercial crops and/or a threat to public health and safety.
- B. Lot owners should be aware that soil characteristics within the area of this subdivision, as described in the 1972 Yellowstone County Soil Survey, indicate that there could be potential limitations for proposed construction on the lots, which may require a geotechnical survey prior to construction.

- C. No water rights have been transferred to the lot owners. Irrigation ditches that exist on the perimeter of this development are for the benefit of other properties. Perimeter ditches and drains shall remain in place and shall not be altered by the Subdivider or subsequent owners.
- D. There is attached hereto a Waiver waiving the right to protest the creation of the special improvement district or districts which by this reference is expressly incorporated herein and made as much a part hereof as though fully and completely set forth herein at this point. The Waiver will be filed with the plat, shall run with the land, and shall constitute the guarantee by the Subdivider and property owner or owners of the developments described herein. Said Waiver is effective upon filing and is not conditioned on the completion of the conditions set forth in this Agreement. The Subdivider and owner specifically agree that they are waiving valuable rights and do so voluntarily.
- E. Culverts and associated drainage swales shall not be filled in or altered by the subdivider or subsequent lot owners.
- F. When required by road improvements, all fences and irrigation ditches in the public right-of-way adjacent to this subdivision shall be removed or relocated outside of the public right-of-way and any relocation outside of the public right-of-way shall be subject to securing and recording easements.
- G. Future maintenance of all public (or common) improvements shall be done through one (1) or more RSID(s) created as part of the SIA for this subdivision.
- H. Lot owners or their agent will obtain an Access Permit from County Public Works prior to any construction on any lot within the subdivision. The application will include a site plan showing the desired location of the access and show that it meets the requirements outlined by the DEQ storm water requirements for the subdivision. Failure to do so will result in the lot owner or their agent removing what has been installed and locating the access in an approved location at the lot owners' expense.

III. TRANSPORTATION

The subdivider agrees to guarantee all improvements for a period of one (1) year from the date of final acceptance by Yellowstone County.

A. Streets

High Noon Drive, Rio Lobo Circle, True Grit Street, Trumbo Circle, and the continuation of Molly Drive and Molly Drive West shall be built to county gravel road standards with a satisfactory subbase, base course, and gravel surface. High Noon Drive, Rio Lobo Circle, True Grit Street, Trumbo Circle, and the continuation of Molly Drive and Molly Drive West shall be a 60' right-of-way. The design cross-section shall be a 24-foot gravel width street with 2-foot-wide gravel shoulders and shoulder drainage swales. These portions will be dedicated county road.

The entire length of High Noon Drive, Rio Lobo Circle, True Grit Street, Trumbo Circle, and the continuation of Molly Drive and Molly Drive West will be maintained by a county road RSID.

B. Traffic Control Devices

Street name and stop signs for streets within the subdivision, or located immediately adjacent thereto, shall be furnished and installed in accordance with the specifications of the Yellowstone County Public Works Departments. A stop sign will be located at the intersections Molly Drive and Trumbo Circle, Molly Drive and True Grit Street, High Noon Drive and Molly Drive, Rio Lobo Circle and High Noon Drive, and Molly Drive West and High Noon Drive.

C. Access

Access into the subdivision will be provided from Molly Drive and Yeoman Road which are both previously improved and dedicated county roads.

D. Billings Area Bikeways and Trail Master Plan (BABTMP)

This subdivision is not located within the area of the BABTMP.

IV. EMERGENCY SERVICE

A 30,000-gallon water storage tank/dry hydrant shall be located within the northwest corner of Lot 8, Block 2. The dry hydrant will be located in a dry hydrant easement and will be maintained and serviced by an RSID. The Subdivider shall submit the dry hydrant system plans and specifications to the Shephard Volunteer Fire Department for review and approval prior to construction. The dry hydrant system shall be installed by the Subdivider and inspected and approved by the Shephard Volunteer Fire Department prior to Final Plat approval.

V. STORM DRAINAGE

All drainage improvements shall comply with the provisions of the Section 4.7, Yellowstone County Subdivision Regulations, and a stormwater management plan shall be submitted to and approved by MDEQ, or its designee.

Stormwater will be collected onsite using a combination of swales, culverts, and the natural slope of the land and delivered to onsite stormwater detention facilities. All stormwater facilities will have access easements for providing maintenance.

VI. UTILITIES

A. Water

In accordance with Section 4.9 Yellowstone County Subdivision Regulations, all proposed water systems must obtain approval by MDEQ, or its designee.

- The subdivision will be serviced by individual cisterns.
- Department of Environmental Quality approval letter to be submitted with final plat.
- Lot 1, Block 1 and Lot 6, Block 4 shall not be permitted by MDEQ for water supply.

B. Septic System

In accordance with Section 4.8 Yellowstone County Subdivision Regulations, all proposed sanitary sewer systems must obtain approval by MDEQ, or its designee.

- The subdivision will be serviced by individual drainfields.
- Department of Environmental Quality approval letter to be submitted with final plat.
- Lot 1, Block 1 and Lot 6, Block 4 shall not be permitted by MDEQ for a septic system.

C. Power, Telephone, Gas, and Cable Television

The private utilities shall be installed within the provided easements. 10-foot-wide utility easements have been shown on the plat adjacent to all streets within the subdivision per the request of the utility companies.

VII. PARKS/OPEN SPACE

- A total of 3.23 acres is required for parkland in this subdivision and 5.59 acres will be provided by park dedications on the subdivision. Therefore, there is surplus of 2.36 acres.
- The parkland will be finished graded as identified in the COSA and seeded with native prairie grass mixture.
- An RSID will be created for the maintenance of the parkland.

VIII. IRRIGATION

- All internal irrigation facilities will remain within the subdivision. No water rights will be transferred to the lot owners.

IX. WEED MANAGEMENT

All noxious weeds on the latest Yellowstone County Noxious Weed List shall be controlled on all properties in the subdivision.

- A Weed Management Plan must be filed and updated as needed for approval by the Yellowstone County Weed Department. Said weed management plan shall contain the noxious weeds being addressed and the plan for the control of those weeds. All associated cost for noxious weed control is the responsibility of the owner of record.
- A revegetation plan shall be submitted as part of the management plan. A seeding recommendation can be obtained from the Yellowstone County Weed Department pursuant to Section 7-22-2152, MCA. The Yellowstone County Weed Department reserves the right to revise these recommendations based on the required site inspection.

X. SOILS/GEOTECHNICAL STUDY

A geotechnical study is not required for the subdivision.

XI. FINANCIAL GUARANTEES

Except as otherwise provided, Subdivider shall install and construct said required improvements by private contracts secured by bonds, irrevocable letters of credit, sequential development, or any other method that may be acceptable to the Planning Board and Board of County Commissioners. All engineering and legal work in connection with such improvements shall be paid by the contracting parties pursuant to said special improvement district or private contract, and the improvements shall be designed by and constructed under the supervision of a professional engineer competent in civil engineering, licensed in the state of Montana. Upon completion of the improvements, the consulting Engineer shall file with the Public Works Department, a statement certifying that the improvements have been completed in accordance with approved, seal stamped, record drawings, along with all required post-construction certification per Section 4.6.C. of the Yellowstone County Subdivision Regulations.

(In the event that all required improvements are not installed and constructed prior to final plat approval, the Subdivider shall provide a monetary security guarantee in the amount of 125% of the estimated total cost by one (1) of the methods listed in Chapter 5 of the Yellowstone County Subdivision Regulations. If using a security, describe the method in this section)

XII. LEGAL PROVISIONS

- A. Subdivider agrees to guarantee all public improvements for a period of one year from the date of final acceptance by Yellowstone County.
- B. The owners of the properties involved in this proposed Subdivision by signature subscribed herein below agree, consent, and shall be bound by the provisions of this Agreement.
- C. The covenants, agreements, and all statements in this Agreement apply to and shall be binding on the heirs, personal representatives, successors and assigns of the respective parties.
- D. In the event it becomes necessary for either party to this Agreement to retain an attorney to enforce any of the terms or conditions of this Agreement or to give any notice required herein, then the prevailing party or the party giving notice shall be entitled to reasonable attorney fees and costs.
- E. Any amendments or modifications of this Agreement or any provisions herein shall be made in writing and executed in the same manner as this original document and shall after execution become a part of this Agreement.
- F. Subdivider shall comply with all applicable federal, state, and local statutes, ordinances, and administrative regulations during the performance and discharge of its obligations. Subdivider acknowledges and agrees that nothing contained herein shall relieve or exempt it from such compliance.
- G. Subdivider agrees to create any required (or expansion of existing) RSID(s) for future

Waiver of Right to Protest

FOR VALUABLE CONSIDERATION, the undersigned, being the Subdivider and all of the owners of the hereinafter described real property, do hereby waive the right to protest the formation of one or more Rural Special Improvement Districts (RSID's), for a period of no more than twenty years from the recording of this waiver, which Yellowstone County may require.

This Waiver and Agreement is independent from all other agreements and is supported by sufficient independent consideration to which the undersigned are parties, and shall run with the land and shall be binding upon the undersigned, their successors and assigns, and the same shall be recorded in the office of the County Clerk and Recorder of Yellowstone County, Montana.

The real property hereinabove mentioned is more particularly described as follows:

PEILA SUBDIVISION

Signed and dated this _____ day of _____, 20__.

Matt Peila Subdivision

By: _____

Its: _____

STATE OF MONTANA)
 : ss
County of Yellowstone)

On this ___ day of _____, 20__, before me, a Notary Public in and for the State of Montana, personally appeared Matt Peila, known to me to be the representative of the person who executed the forgoing instrument and acknowledged to me that he/she executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year hereinabove written.

Notary Public in and for the State of Montana
Printed name: _____
Residing in Billings, Montana
My commission expires: _____



550 S. 24th STREET W., SUITE 201, BILLINGS, MT 59102 | 406.894.2210

April 6, 2023

Yellowstone County Planning Board
Attn: Dennis Cook, President
2825 3rd Avenue North, 4th Floor
Billings, MT 59101

Re: Peila Subdivision - Planning Board Extension

Dear Mr. Cook and Board Members:

The purpose of this letter is to request an extension from the Yellowstone County Planning Board's recommendation of approval for the Peila Subdivision on behalf of the owner, Matt Peila. Based on the meeting on March 28, the Planning Board members are requesting information on safety concerns regarding the 12 Mile Road and Yeoman Road intersection and specifically requested that the TIS be completed before they could support the subdivision. Mr. Peila is requesting his project timeline to be extended past the originally scheduled timeline to help address these concerns.

After the meeting, it was brought to our attention that the county public works department had requested a study be completed on that intersection, due to the number of calls on safety concerns they were receiving. The study was completed October 3, 2022, and a copy of the final report is attached to this letter. According to Tim Miller, Yellowstone County Public Works, a number of the recommendations provided in the report were completed by his department, such as speed limit reduction, tree trimming, and mowing. As homes are constructed within the area, the tax base will increase to potentially provide the funds to complete the remaining recommendations without putting the entire financial burden on the existing property owners. If additional questions or concerns pertain to the intersection and report, please contact Mr. Miller directly. As part of the additional information presented to the Planning Board, we will include this report to help answer the Board members' questions pertaining to that intersection.

Sincerely,

A handwritten signature in blue ink that reads "Aaron Redland".

Aaron Redland
Project Manager

Cc: Matt Peila, Owner
Dave Green, Billings Planning Division Planner

Attach: Yellowstone County 12 Mile Yeoman Intersection_100322_REDUCED.pdf

TRAFFIC IMPACT STUDY REPORT

for

Peila Subdivision

Yellowstone County, Montana

Prepared for

WWC Engineering

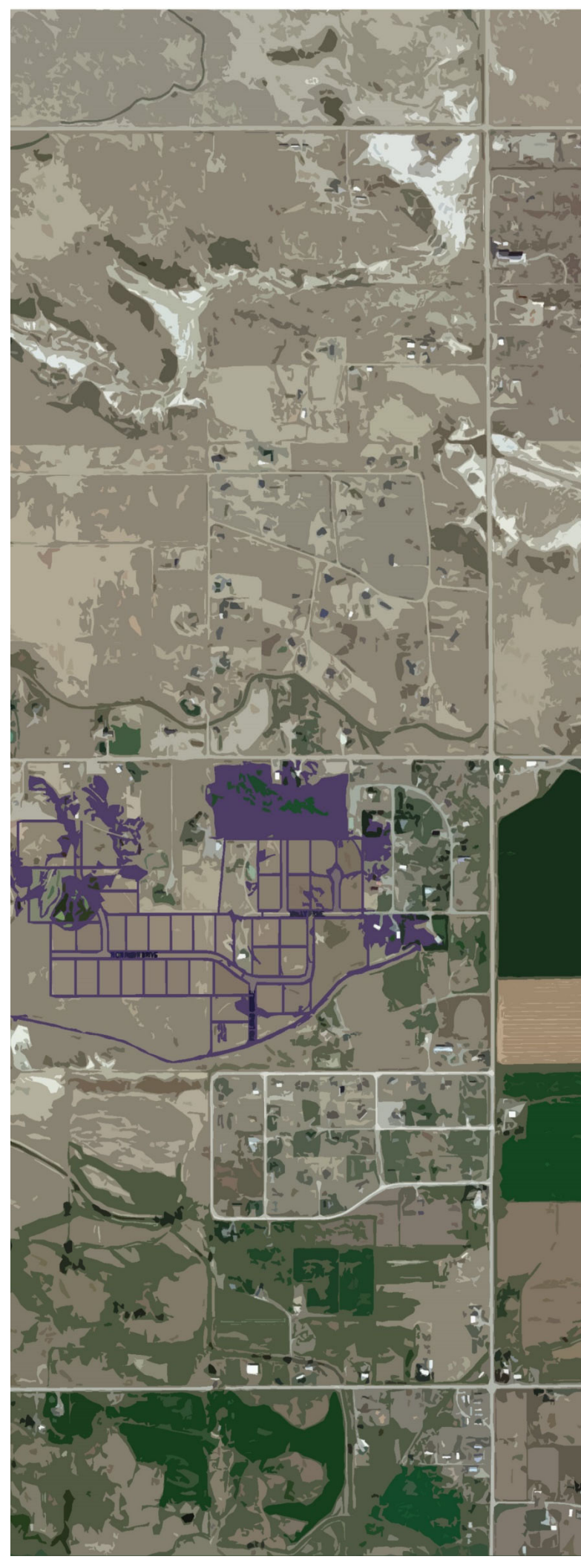
Prepared by



Marvin & Associates

Billings, MT 59102

April 27, 2023



TRAFFIC IMPACT STUDY REPORT

for

Peila Subdivision

Yellowstone County, Montana

Prepared for

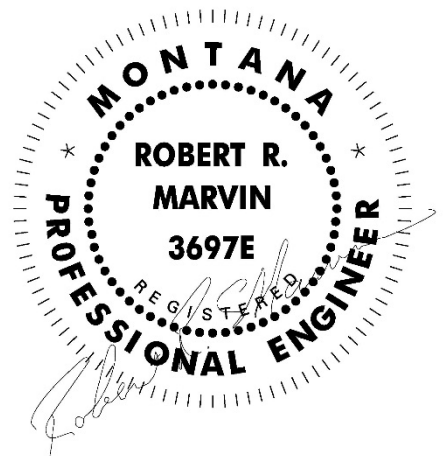
WWC Engineering

Prepared by



Marvin & Associates

1300 North Transtech Way
Billings, MT 59102



April 27, 2023
P.T.O.E. # 259

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Marvin & Associates

Peila Subdivision Property Development TIS

INTRODUCTION

This report summarizes a traffic impact study (TIS) performed for a new residential development in Yellowstone County. The following figures, tables, and narratives summarize the analysis of potential traffic impacts that could be associated with the proposed development. The Peila Subdivision development would involve 38 residential lots. The lots range in size from approximately 1.2 acres to 6.6 acres. One of the lots is located on a piece of land that does not have soil and drainage conditions that are considered suitable for building a structure.

This TIS focuses on potential impacts on key intersections within a one-mile radius of the development property along with the proposed site access intersections. Since this site is located within Yellowstone County with no direct access to a Montana Department of Transportation (MDT) route, it was assumed that review of impacts associated with the development would be solely by Yellowstone County

PROPOSED SITE DEVELOPMENT

The development property is located south of Yeoman Road and west of 12 Mile Road. The property is surrounded by large acreage residential tracts in the Bluegrass Subdivision on the north, south and west borders. The eastern border is adjacent to the Whitney Subdivision (see Figure 1 on the following page). The proposed subdivision development plan includes two accesses. The eastern access would be accommodated by a connection to Molly Drive, an existing gravel roadway that intersects with 12 Mile Road, approximately 1,200 feet south of Yeoman Road. An access to the north would be provided by connecting the subdivision street to Yeoman Road using Molly Drive West, an existing gravel road located approximately 3,700' west of 12 Mile Road. The development plan would have internal street alignments allowing street connections to adjacent properties to the west and south, should future development occur on those properties.

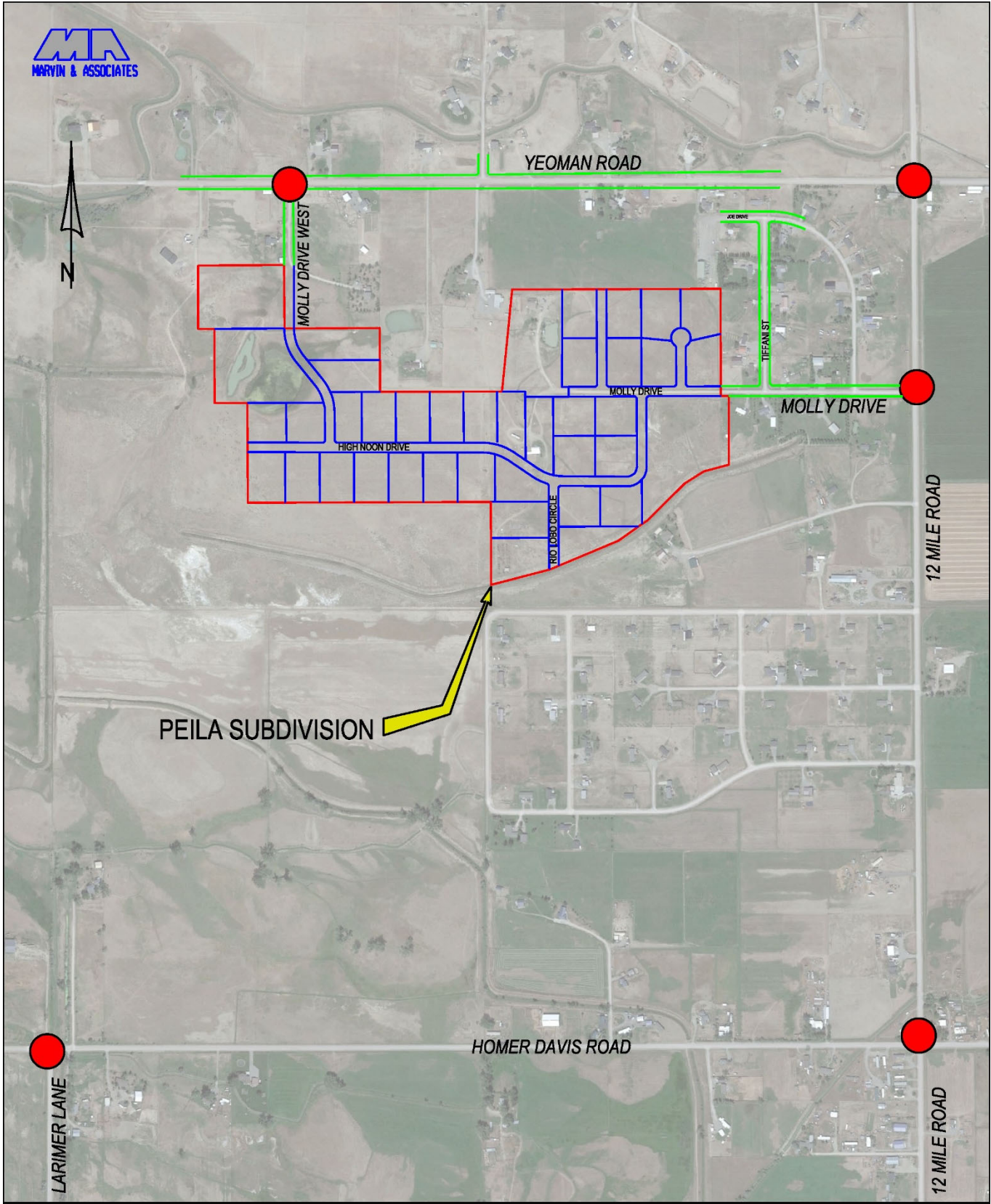


Figure 1. Peila Subdivision Site and Study Intersections

EXISTING CONDITIONS

Roads & Intersections

Potentially impacted intersections within a one-mile radius of the site development are on Yeoman Road, 12 Mile Road, and Homer Davis Road. Since site generated traffic would directly access Yeoman at the existing intersection with Molly Drive West and on 12 Mile Road at the existing intersection with Molly Drive there would also be potential impacts at those intersections. Both intersections are currently three-legged intersections with stop control on Molly Drive West and on Molly Drive. The following narratives describe the roads included within this TIS:

- 12 Mile Road is a County Road classified as a Minor Rural Collector route that extends from Old Highway 312 north to Mailbox Road, a distance of approximately 5 miles. It has a 24' paved surface with a standard Yellowstone County Roadway cross section, within a 60' right-of-way.
- Yeoman Road is classified as a County Road that extends from a point approximately one mile west of 12 Mile Road to Frey Road on the east, a distance of approximately 4.5 miles. It has a 22' gravel surface west of 12 Mile Road and a 22' wide paved surface east of 12 Mile Road with a standard Yellowstone County Roadway cross section, within a 60' right-of-way.
- Homer Davis Road is classified as a County Road that extends from US 87 on the west to Shepherd Road on the east, a distance of approximately 6.1 miles. It has a 24' paved surface with a standard Yellowstone County Roadway cross section, within a 60' right-of-way.
- Larimer Road is a County Road that extends from Old Highway 312 on the south to Homer Davis Road on the north, a distance of approximately 2.0 miles. It has a 20' paved surface with a standard Yellowstone County Roadway cross section, within a 60' right-of-way.

The intersection of Yeoman Road and 12 Mile Road is near the apex of a vertical curve on 12 Mile Road. The Yeoman Road eastbound approach to the intersection is on relatively flat topography, while the westbound approach drops away from the intersection to the east. The high point of the vertical curve on 12 Mile Road is slightly north of the intersection and the northbound approach is on an upgrade to the intersection area. Yellowstone County commissioned a study of this intersection which was summarized in a report by Sanderson Stewart engineering on October 3, 2022. This report provides a detailed summary of physical and operational measures at this intersection. It was concluded that there is sufficient sight distance available at the intersection for the 55 mph speed limit, but the 85th % speeds are approximately 62 mph. A number of safety improvement alternatives were proposed, from new signing to lowering of the vertical curve. Further safety discussions are included within the Impact Mitigation section of this report.

The intersections of Molly Drive West & Yeoman Road; Molly Drive & 12 Mile Road; and Homer Davis Road & Larimer Drive are all “T” intersections. More than sufficient sight distance is available at all three intersections. The intersection of Homer Davis Road and 12 Mile Road has four approaches and is stop controlled on Homer Davis Road. Sight distance at this intersection is unrestricted in all directions.

Existing Traffic Volumes

Both AM and PM turning movement counts were taken in March 2023 using Mio-Vision cameras at four existing study intersections (see Appendix A). Manual counts were taken at the intersection of Yeoman Road and Molly Drive West. Graphic summaries of those counts can be seen in Figure 2. In addition, current Average Weekday Traffic (AWT) volumes were calculated based on hourly variation data from a 12-hour count at the intersection of 12 Mile Road and Homer Davis Road (Appendix A). Montana Department of Transportation (MDT) count station records indicate that the Average Weekday Traffic (AWT) in March is approximately 1.06% of the annual average weekday traffic.

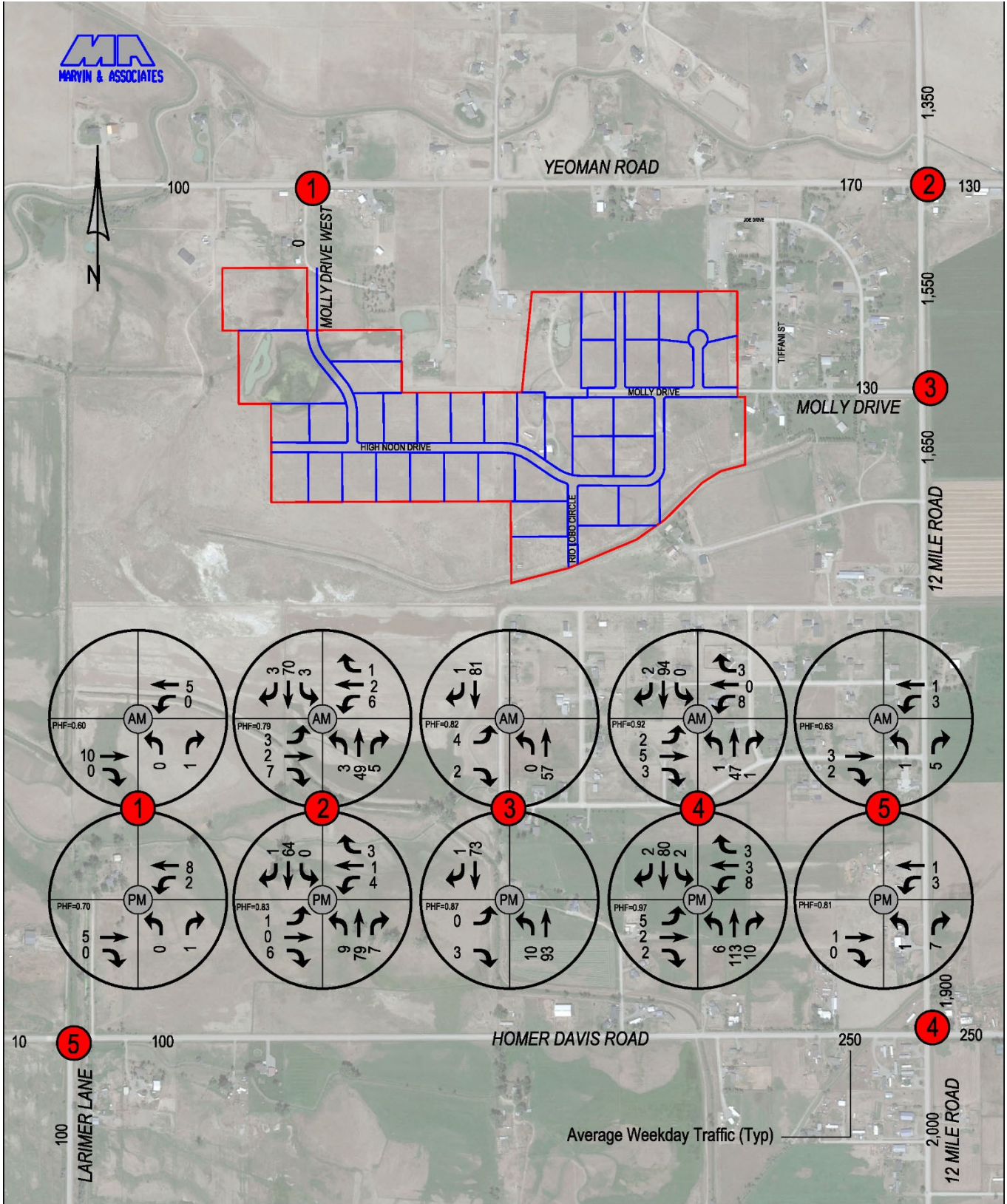


Figure 2. Year 2023 Existing Traffic Volumes

Speeds

A spot speed study was conducted on 12 Mile Road immediately north of the intersection with Molly Drive using a radar gun. The study was performed between 3:20 PM and 4:45 PM on April 12, 2023. Speed statistics can be found in Appendix B of this report. The 85th percentile speed in the southbound direction was approximately 58 mph while the northbound direction was approximately 60 mph. The 10 mph pace speeds were between 51 mph and 60 mph with approximately 71% of the vehicles within the pace. The mean speed for both directions of travel was approximately 55 mph. A speed study contained within the October 3, 2022, report for the Yeoman Road intersection with 12 Mile Road indicated that the 85th percentile speed in the southbound direction was 64 mph and was 62 mph in the northbound direction at a location immediately south of Yeoman Road. Since the earlier study was based on data collected over a period of several days the influence of off-peak hour travel would skew the statistical calculations higher than the spot speeds taken near the peak hour traffic period in this study.

The posted speed limit on 12 Mile Road is 55 mph from a point north of Yeoman Road south to its intersection with Homer Davis Road. South of Homer Davis Road, the speed limit is 45 mph to its intersection with Old Highway 312. The speed limit on Yeoman Road is 35 mph west of 12 Mile Road and 45 mph to the east of the intersection. The posted speed limit on Homer Davis Road is 55 mph while Larimer Road is posted at 50 mph.

Existing Capacity

Capacity calculations (see Appendix C) were completed for the study intersections based upon current operating conditions and the AM and PM hour traffic volumes shown in Figure 2. It was determined that all approaches and movements currently operate at Level of Service (LOS) “A” during both the AM and PM peak hour periods at all of the study intersections. Table 1 shows that the westbound approach on Homer Davis Road has the highest average vehicle delay at 9.9 seconds in the peak PM hour.

Table 1. Existing Traffic - Capacity Calculation Summary

Intersection	Int/App	PEAK AM HOUR			Int/App	PEAK PM HOUR		
		Delay	LOS	Max Q		Delay	LOS	Max Q
Yeoman Road & Molly Drive West								
	NB- Worst	8.4	A	0	NB- Worst	8.4	A	0
12 Mile Road & Yeoman Road								
	WB- Worst	9.7	A	0	WB- Worst	9.5	A	0
12 Mile Road & Molly Drive								
	EB- Worst	9.2	A	0	EB- Worst	8.7	A	0
12 Mile Road & Homer Davis Road								
	EB- Worst	9.6	A	0	WB- Worst	9.9	A	1
Homer Davis Road & Larimer Road								
	NB-Worst	8.4	A	1	NB-Worst	8.4	A	0

DEVELOPMENT TRAFFIC PROJECTIONS

Trip Generation

The proposed subdivision’s residential land use is represented by the ITE Trip Generation Report, 11th Edition, Land Use Code 210 “Single Family Residential”. Table 2 presents the average weekday trips (AWT) along with the AM and PM hour rates that were used within the TIS analysis. There would be 427 trips on the average weekday with 32 in the peak AM hour and 40 in the peak PM hour. Trips entering and exiting the site are indicated in Table 2 for both peak hour periods.

Table 2. Peila Subdivision Trip Generation Summary

ITE Trip Generation Report - 10th Edition			Average Weekday		Peak AM Hour				Peak PM Hour			
Development Area	No. of Units	Rate Units	Rate	Total Trips	Rate	Trips	Enter	Exit	Rate	Trips	Enter	Exit
Code 210 Single Family	38	DUs	1	427	2	32	8	24	3	40	25	15
Totals =	38			427	32	8	24		40	25	15	

1 - $Ln(T) = 0.92 Ln(X) + 2.71$

2 - $T = 0.71(X) + 4.80$ (25% enter)

3 - $Ln(T) = 0.96 Ln(X) + 0.20$ (63% enter)

Since this development would be somewhat isolated from nearby trip attractors, it was assumed that pedestrian and bike trips would not contribute appreciably to the total number of trips. Thus, no reduction in the number of vehicular trips for alternate transportation modes can be made.

This subdivision development would not be conducive to attracting trips from existing traffic on adjacent roadways. Thus, it is unlikely that passerby trips would occur and no reductions in overall trip generation would be justified.

Trip Distribution

There are various methods available for determining the directional distribution of trips to and from site developments. For developments within large, urbanized areas, the task is best accomplished through the creation of a computerized transportation model of the urban street system, which includes the proposed development changes. When the creation of a model is not feasible, realistic estimates can be made by determining the distribution of existing traffic volumes on the surrounding street system. The existing distribution can then be applied to newly generated trips, with adjustments made based upon the likely trip origins and destinations associated with the particular development land use or uses. For Peila Subdivision, an existing conditions distribution was developed based upon area traffic patterns and an area of influence method, which considers the least travel time routing to external trip producers/attractors beyond the boundaries of the development. Results of the distribution analysis are summarized in Figure 3. It should also be noted that trips were divided between the two subdivision accesses based on a least travel time from internal residential units to and from external origins and destinations. The model resulted in approximately 80% of the site traffic would utilize the Molly Drive access while the remaining 20% would use the Molly Drive West access.

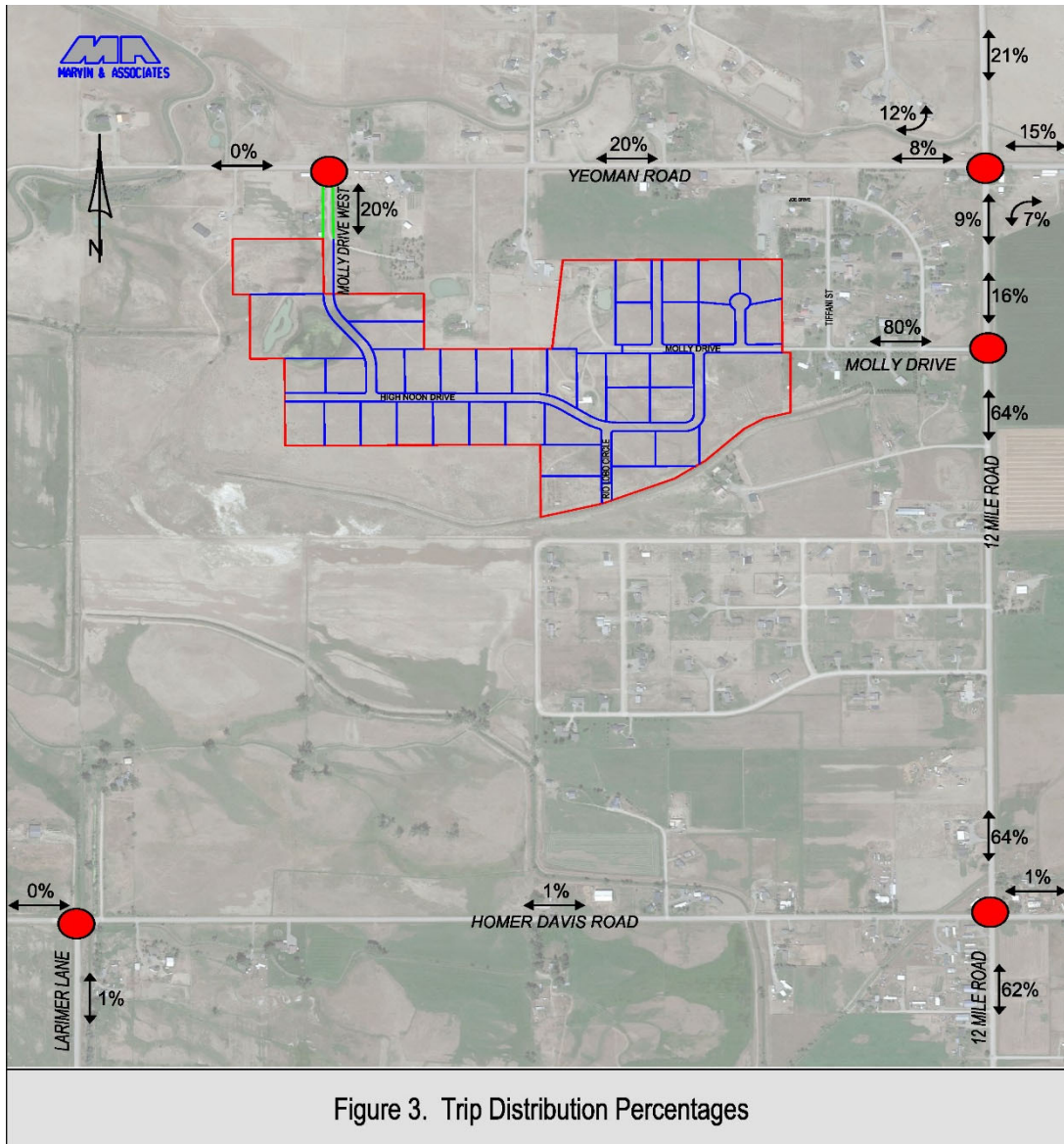


Figure 3. Trip Distribution Percentages

Traffic Assignment

Site traffic assignments were completed using the trip generation projections in Table 2 and the trip distribution percentages discussed in the preceding section. Traffic assignments shown in Figure 4 illustrate the peak AM and PM hour site traffic at the potentially impacted intersections and at site accesses, along with the average weekday vehicular site traffic assigned to the road system links. The traffic volumes shown in Figure 4 represent unconstrained conditions, which do not consider the effect capacity restrictions may have on movements into and out of the site.

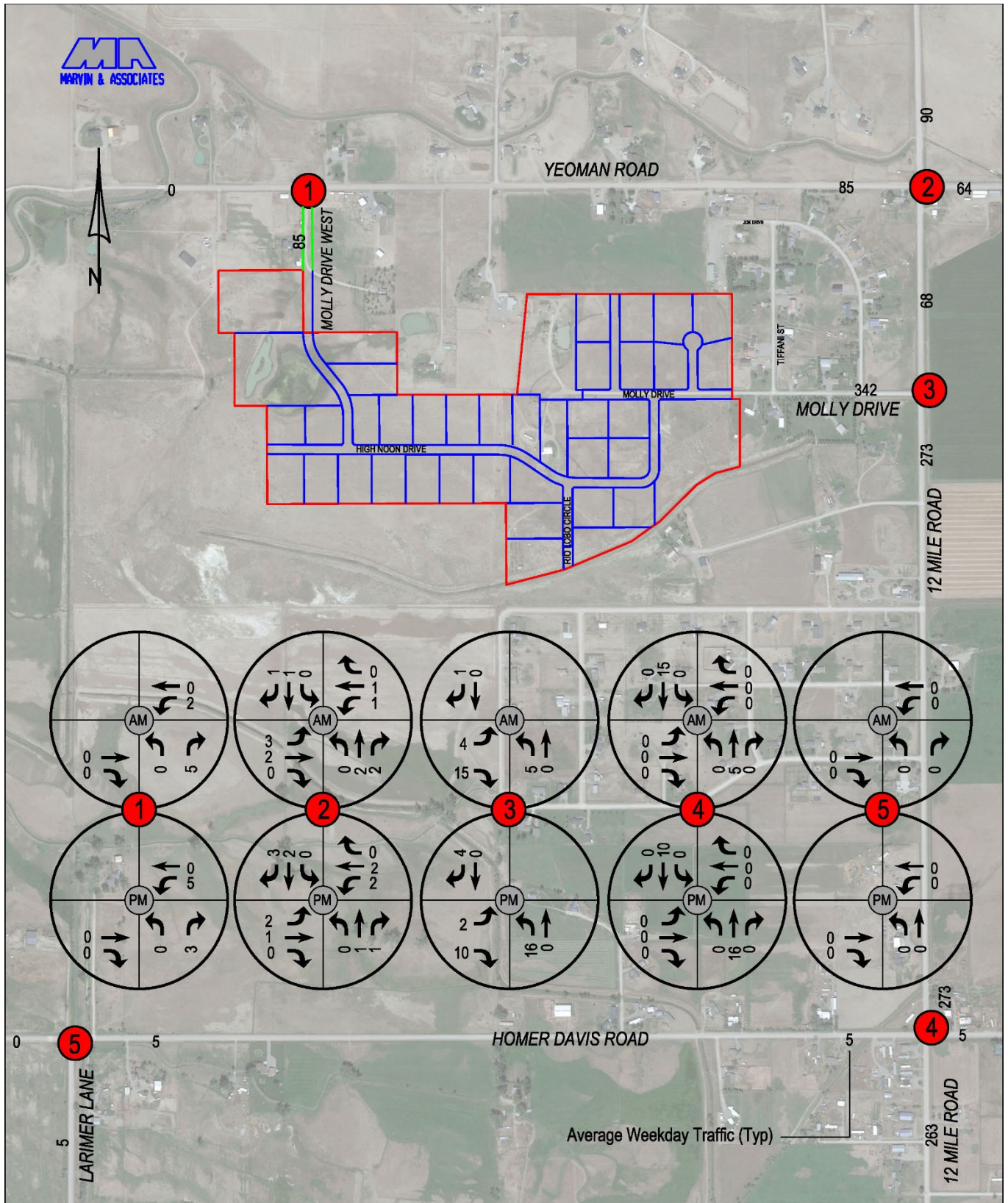


Figure 4. Site Generated Traffic Volume Assignment

TRAFFIC IMPACTS

Existing Plus Development Traffic Volumes

Figure 5 illustrates the combination of existing AM and PM design hour traffic volumes and development generated traffic at the potentially impacted intersections and site access intersections. Also shown in Figure 5 are the resultant AWT volumes and the relative percentage increase over existing traffic that would be attributable to this development. In this case, Molly Drive at its intersection with 12 Mile road would have the highest volume of site generated traffic and also the highest percentage increase of any of the area roads at 260% of existing volumes. Yeoman Road would have a 50% increase in traffic at its intersection with 12 Mile Road. The highest traffic increase on 12 Mile Road would be 17% immediately south of Molly Road.

It should be noted that traffic impacts on roads and streets that are less than 10% are not normally considered to be significant because daily traffic variations on any street or road routinely exceed 10%. In light of that, traffic increases on all of the other roads within the study area would be appreciably less than 10%, which indicates that any impacts on those streets would not be substantial or significant.

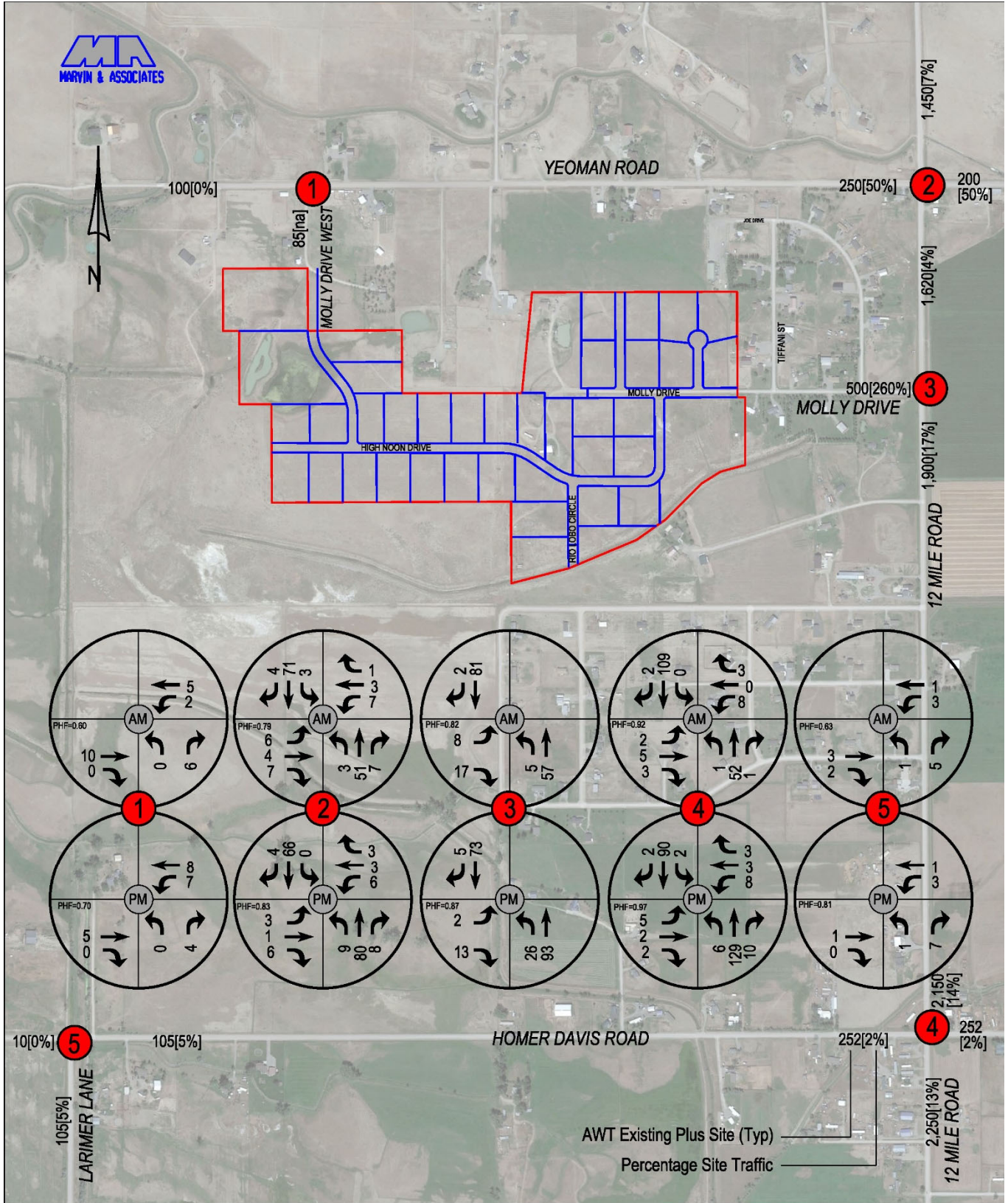


Figure 5. Existing 2023 Plus Site Generated Traffic Volumes

Existing Plus Site Traffic Capacity

Capacity calculations (see Appendix C) indicate that all approaches and all movements at the study intersections and at the site access intersections would still operate at LOS “A” during both the AM and PM hour periods if the development existed today. The only exception would be the intersection of Home Davis Road and 12 Mile Road where the westbound approach would operate at LOS “B” during the peak PM hour period. Table 3 indicates that all of the other intersections would remain at the same LOS in both the AM and PM peak hours with slight variations in delay and maximum vehicle queues.

Table 3. Existing Plus Site Traffic - Capacity Calculation Summary

		PEAK AM HOUR				PEAK PM HOUR		
Intersection	Int/App	Delay	LOS	Max Q	Int/App	Delay	LOS	Max Q
Yeoman Road & Molly Drive West								
	NB- Worst	8.4	A	0	NB- Worst	8.4	A	0
12 Mile Road & Yeoman Road								
	WB- Worst	9.8	A	1	WB- Worst	9.8	A	1
12 Mile Road & Molly Drive								
	EB- Worst	9.1	A	1	EB- Worst	9.0	A	1
12 Mile Road & Homer Davis Road								
	EB- Worst	9.7	A	0	WB- Worst	10.1	B	1
Homer Davis Road & Larimer Road								
	NB-Worst	8.4	A	0	NB-Worst	8.4	A	0

Safety Considerations

An evaluation of available sight distance for each of the new site accesses was completed based upon geometric conditions. It was determined that there is adequate intersection sight distance for all of the site traffic movements at the new site accesses based on the 85th percentile speeds. The only intersection with sight distance concerns is the 12 Mile Road and Yeoman Road intersection as previously mentioned within this report.

Geometric guidelines for right turn lane warrants on street facilities with 2 traffic lane facilities were used to determine if right turn entry movements would create potential safety issues. Since the number of right turn movements at all of the accesses and study intersections would be substantially less than 40 vehicles in the peak hours, warrants were not met.

Figure 28.4C in MDT's Traffic Engineering Manual provides warrant nomographs for left turn lanes on two lanes highways with speed limits of 60 mph or greater. By inspection, it is apparent that none of the study intersections would have near enough traffic to warrant an auxiliary left turn lane.

Future Traffic

An examination of MDT traffic count data indicates that historic traffic volumes on Old Highway 312 provided the only documented historical traffic volume information near the study area. The average annual traffic growth on that facility was less than 1% over a 10-year period. Thus, a 1% annual traffic increase was used to determine future traffic increases in the background traffic. It was assumed that the study subdivision could be fully developed within a 10-year period and future traffic volumes were calculated for the year 2033. Figure 6 presents the calculated traffic volumes for the year 2033 based on an annual growth rate of 1%, which was applied to existing traffic with site generated traffic volumes added for the AM, PM, and average weekday conditions.

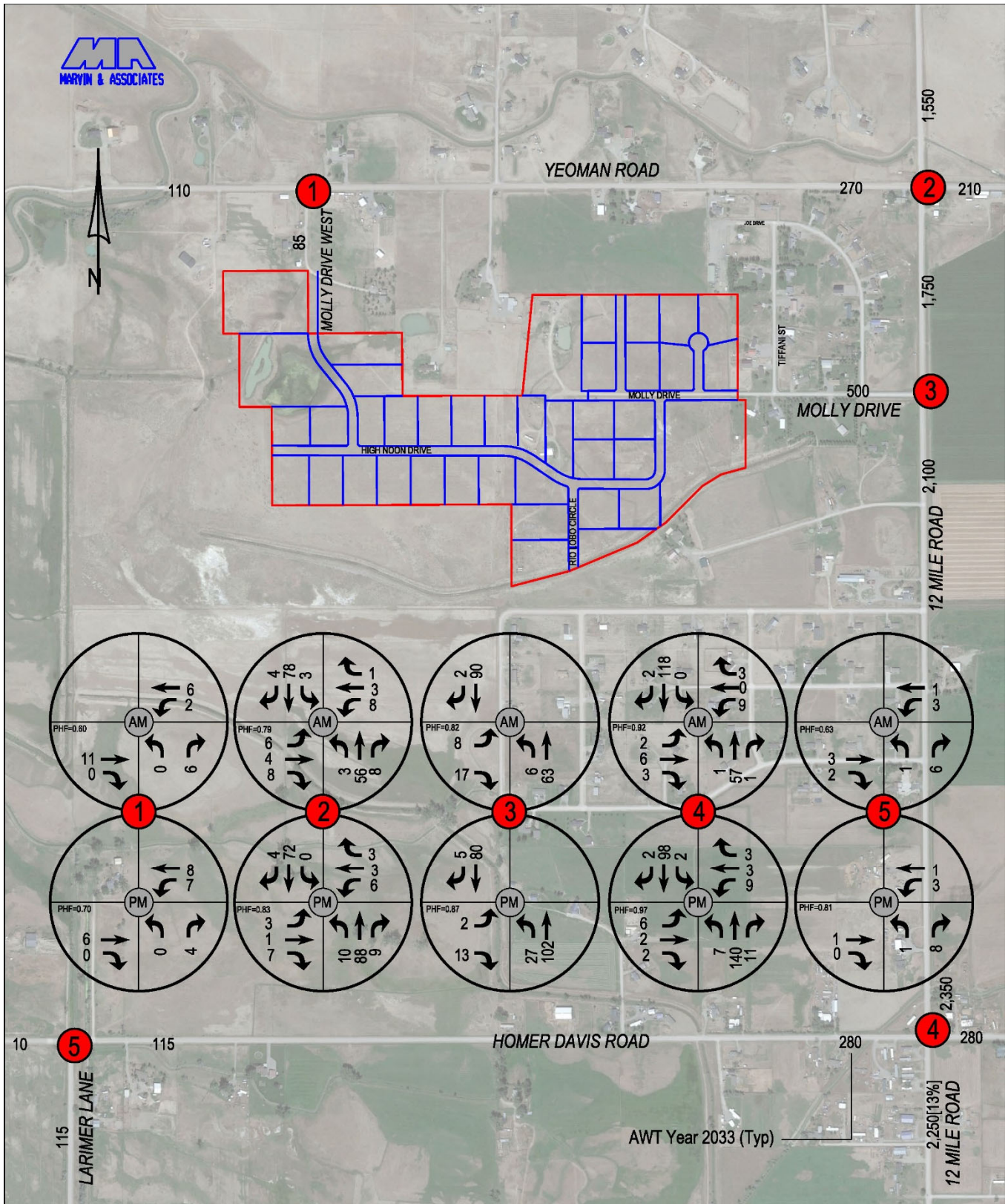


Figure 6. Year 2033 Plus Site Generated Traffic Volumes

Future Capacity

Table 4 present future capacity calculations based on the future traffic volumes shown in Figure 6. Two of the study intersections would only gain 1 or 2 vehicles at the assumed growth rate, by the year 2033, and there would be no difference in operations from the existing plus site traffic analysis. The three intersections shown in Table 4 would all operate at a LOS “B” or better in the year 2033 and there would be ample capacity remaining to accommodate much larger growth in the future.

Table 4. Year 2033 Traffic - Capacity Calculation Summary

		PEAK AM HOUR			PEAK PM HOUR			
Intersection	Int/App	Delay	LOS	Max Q	Int/App	Delay	LOS	Max Q
12 Mile Road & Yeoman Road								
	WB- Worst	10.0	B	1	WB- Worst	10.0	B	1
12 Mile Road & Molly Drive								
	EB- Worst	9.2	A	1	EB- Worst	9.0	A	1
12 Mile Road & Homer Davis Road								
	EB- Worst	9.8	A	0	WB- Worst	10.3	B	1

Future Safety

Additional traffic at the study intersections in the year 2033 would not be sufficient to increase the warrant values for auxiliary turn lanes at the study intersections. The 12 Mile Road and Yeoman intersections would experience incremental increases in the likelihood of crashes related to insufficient sight distance based on 85th percentile speeds that exceed the posted speed limit.

MITIGATING MEASURES

The only intersection that would have the potential to be impacted by site development within the near future would be the 12 Mile Road and Yeoman Road intersection. In order to reduce the potential for increased crash experience, alternative improvements would need to be implemented. The October 3, 2022, intersection study by Sanderson Stewart outlined a number of potential alternatives ranging from oversized signing to reconstruction of the vertical curve. Since reconstruction represents the highest cost alternative, it should be considered the ultimate improvement. The other alternatives should be considered since one or a combination of alternatives could result in reduced crash potential until substantial traffic increases are seen in future years.

CONCLUSIONS & RECOMMENDATIONS

The Peila Subdivision development would not substantially impact the safety and efficiency of any of the study roads and intersections. However, site traffic would incrementally increase exposure to crash potential at the intersection of 12 Mile Road and Yeoman Road. This impact would need to be mitigated to some degree. Since the safety concern involves vehicles exceeding the existing 55 mph speed limit, efforts should be directed at reducing travel speeds through the intersection area. The following recommendations are made in an effort to mitigate the sight distance and speed related concerns at the 12 Mile Road and Yeoman Road intersection:

1. Add sign-mounted intelligent transportation systems using lights that could be radar activated to flash only when traffic is exceeding the advisory speeds. These signs would require periodic enforcement of the speed limit so that daily travelers would not become complacent over time.
2. Add transverse rumble strips to 12 Mile Road, especially on the 12 Mile Road southbound approach.
3. Prune the tree limbs south of the intersection to improve visibility and cut grass and weeds along the shoulders of the roadway.

APPENDIX A

Traffic Count Volumes

Study Name 12 Mile Road and Homer Davis Road

Start Date 03/23/2023

Start Time 7:00 AM

Site Code

Project Peila Subdivison TIS

Type Road

Classification Totals

Start Time	12 Mile Road Southbound			Homer Davis Road Westbound			12 Mile Road Northbound			Homer Davis Road Eastbound			Total Entering
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	28	1	0	0	1	0	3	0	1	0	0	34
7:15 AM	1	28	1	0	0	3	0	5	0	1	1	1	41
7:30 AM	2	14	0	2	0	5	1	10	1	1	1	1	38
7:45 AM	0	24	1	0	1	1	1	8	0	1	1	2	40
8:00 AM	1	24	0	0	0	4	0	14	0	0	1	1	45
8:15 AM	0	23	0	3	0	2	0	12	0	1	0	0	41
8:30 AM	0	24	0	0	0	0	1	10	1	1	2	0	39
8:45 AM	1	23	0	0	0	2	0	11	0	1	2	1	41
Peak AM Hour =	2	94	0	3	0	8	1	47	1	3	5	2	166
PHF =	0.92												
4:00 PM	0	17	0	1	1	1	2	22	2	0	0	0	46
4:15 PM	2	23	0	0	0	3	3	27	0	1	0	1	60
4:30 PM	0	24	1	0	0	2	1	27	2	1	1	2	61
4:45 PM	0	16	0	2	1	1	1	29	1	0	1	2	54
5:00 PM	0	17	1	1	2	2	5	30	3	0	0	0	61
5:15 PM	1	7	3	1	0	2	4	30	0	0	0	2	50
5:30 PM	0	18	0	0	0	2	2	32	3	0	0	0	57
5:45 PM	0	14	0	2	0	2	3	22	1	0	0	0	44
Peak PM Hour =	2	80	2	3	3	8	10	113	6	2	2	5	236
PHF =	0.97												

Study Name Homer Davis and Larimer Lane

Start Date 03/23/2023

Start Time 7:00 AM

Site Code

Project Peila Subdivision TIS

Type Road

Classification Totals

Start Time	n/a Southbound			Homer Davis Road Westbound			Larimer Lane Northbound			Homer Davis Road Eastbound			Total Enteing
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM				0	1		0		0	0	0		1
7:15 AM				0	1		0		1	1	1		4
7:30 AM				1	2		2		0	1	0		6
7:45 AM				0	0		2		0	1	0		3
8:00 AM				0	1		0		0	0	1		2
8:15 AM				0	0		1		1	0	2		4
8:30 AM				0	1		2		1	0	1		5
8:45 AM				3	0		1		0	0	0		4
Peak AM Hour =	0	0	0	0	1	3	5	0	1	2	3	0	15
PHF =	0.63												
4:00 PM				1	0		0		0	0	0		1
4:15 PM				0	2		0		0	1	1		4
4:30 PM				0	1		2		0	0	0		3
4:45 PM				0	0		3		0	0	0		3
5:00 PM				1	2		0		0	0	0		3
5:15 PM				0	0		2		1	0	1		4
5:30 PM				0	0		1		0	1	0		2
5:45 PM				0	0		0		0	0	0		0
Peak PM Hour =	0	0	0	0	1	3	7	0	1	0	1	0	13
PHF =	0.81												

12 Mile Road Hourly Traffic Volumes				
Beginning Hour	NB	SB	NB + SB	% AWT
7:00 AM	29	100	129	6.7%
8:00 AM	49	96	145	7.5%
9:00 AM	41	49	90	4.6%
10:00 AM	44	46	90	4.6%
11:00 AM	65	67	132	6.8%
12:00 PM	49	53	102	5.3%
1:00 PM	61	59	120	6.2%
2:00 PM	70	49	119	6.1%
3:00 PM	93	60	153	7.9%
4:00 PM	117	83	200	10.3%
5:00 PM	135	61	196	10.1%
6:00 PM	125	46	171	8.8%
12 Hr Totals	878	769	1647	85.0%
AWT Calculated	1033	905	1938	100.0%

APPENDIX B
Spot Speed Study

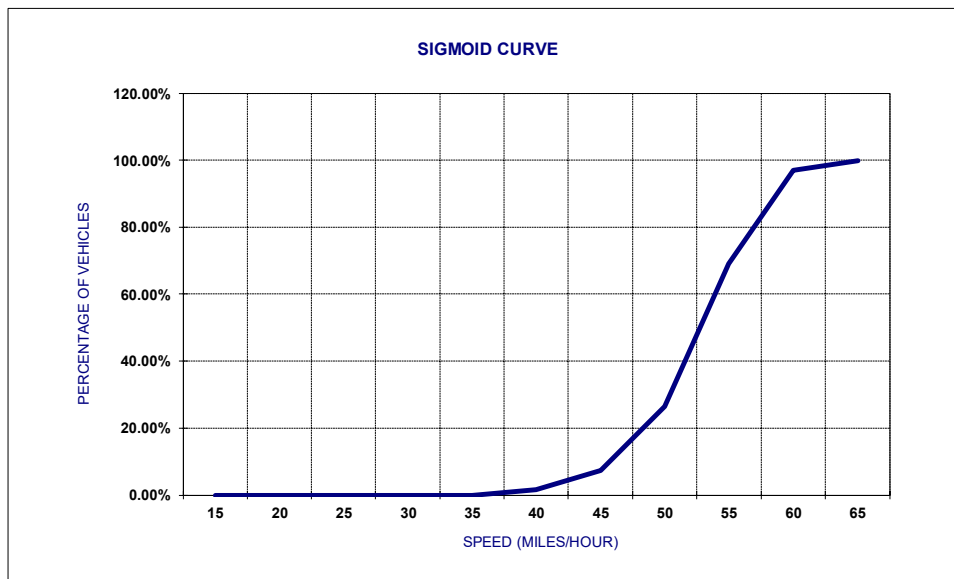
SPOT SPEED STUDY ANALYSIS (Counter)



SITE : 12 Mile Road North of Molly Drive
DIRECTION: Southbound
DATE: 4/12/23
TIME: 1.4 Hours

SPEED RANGE	SPEED VALUE	SPEED FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE FREQ (%)	CUMULATIVE FREQ (%)
0 to 15	15	0	0	0.00%	0.00%
16 to 20	20	0	0	0.00%	0.00%
21 to 25	25	0	0	0.00%	0.00%
26 to 30	30	0	0	0.00%	0.00%
31 to 35	35	0	0	0.00%	0.00%
36 to 40	40	1	1	1.47%	1.47%
41 to 45	45	4	5	5.88%	7.35%
46 to 50	50	13	18	19.12%	26.47%
51 to 55	55	29	47	42.65%	69.12%
56 to 60	60	19	66	27.94%	97.06%
61 to 65	65	2	68	2.94%	100.00%
66 to 70	70	0	68	0.00%	100.00%

TOTAL VEHICLES =	68
MEAN SPEED =	54.93 mph
85TH PERCENTILE =	57.84 mph
PACE SPEED =	51 mph TO 60 mph
Number of Vehicles in Pace =	48
% of Total Vehicles in Pace =	70.6%

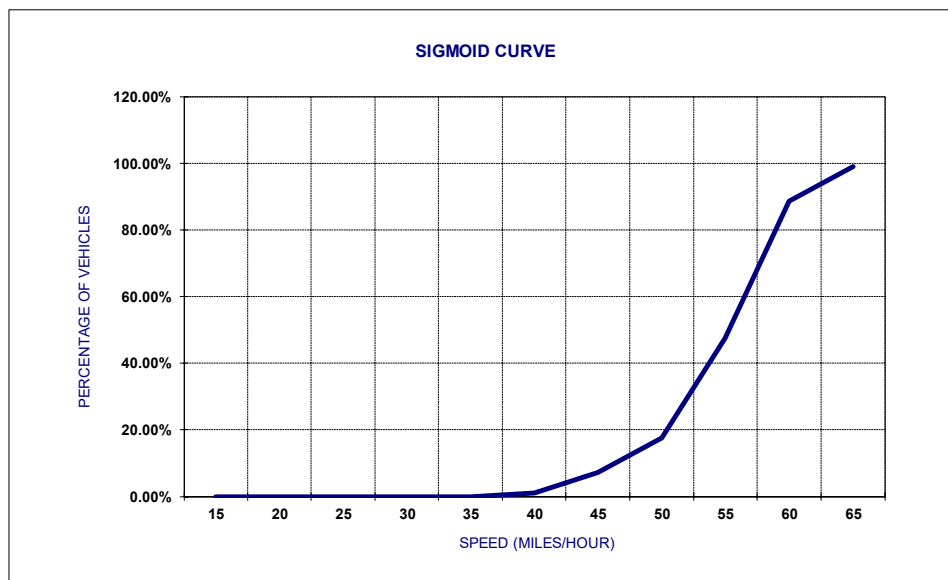


SPOT SPEED STUDY ANALYSIS (Counter)



SITE : 12 Mile Road North of Molly Drive
DIRECTION: Northbound
DATE: 4/12/23
TIME: 1.4 Hours

SPEED RANGE	SPEED VALUE	SPEED FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE FREQ (%)	CUMULATIVE FREQ (%)
0 to 15	15	0	0	0.00%	0.00%
16 to 20	20	0	0	0.00%	0.00%
21 to 25	25	0	0	0.00%	0.00%
26 to 30	30	0	0	0.00%	0.00%
31 to 35	35	0	0	0.00%	0.00%
36 to 40	40	1	1	1.03%	1.03%
41 to 45	45	6	7	6.19%	7.22%
46 to 50	50	10	17	10.31%	17.53%
51 to 55	55	29	46	29.90%	47.42%
56 to 60	60	40	86	41.24%	88.66%
61 to 65	65	10	96	10.31%	98.97%
66 to 70	80	1	97	1.03%	100.00%
				0.00%	
TOTAL VEHICLES =		97			
MEAN SPEED =		56.24		mph	
85TH PERCENTILE =		59.56		mph	
PACE SPEED =		51		mph	
				TO 60 mph	
		Number of Vehicles in Pace = 69			
		% of Total Vehicles in Pace = 71.1%			



SPOT SPEED STUDY ANALYSIS (Counter)



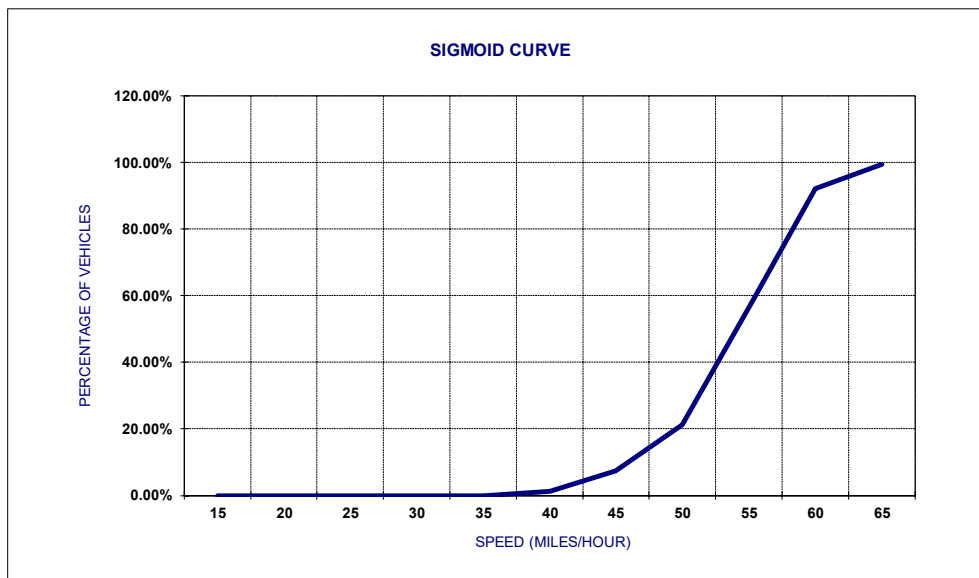
SITE : 12 Mile Road North of Molly Drive

DIRECTION: NB & SB

DATE: 4/12/23

TIME: 1.4 Hours

SPEED RANGE	SPEED VALUE	SPEED FREQUENCY	CUMULATIVE FREQUENCY	RELATIVE FREQ (%)	CUMULATIVE FREQ (%)
0 to 15	15	0	0	0.00%	0.00%
16 to 20	20	0	0	0.00%	0.00%
21 to 25	25	0	0	0.00%	0.00%
26 to 30	30	0	0	0.00%	0.00%
31 to 35	35	0	0	0.00%	0.00%
36 to 40	40	2	2	1.21%	1.21%
41 to 45	45	10	12	6.06%	7.27%
46 to 50	50	23	35	13.94%	21.21%
51 to 55	55	58	93	35.15%	56.36%
56 to 60	60	59	152	35.76%	92.12%
61 to 65	65	12	164	7.27%	99.39%
66 to 70	70	1	165	0.61%	100.00%
TOTAL VEHICLES =		165	750		
MEAN SPEED =		56.12	mph		
85TH PERCENTILE =		59.00	mph		
PACE SPEED =		51	mph	TO	60 mph
		Number of Vehicles in Pace =	117		
		% of Total Vehicles in Pace =	70.9%		

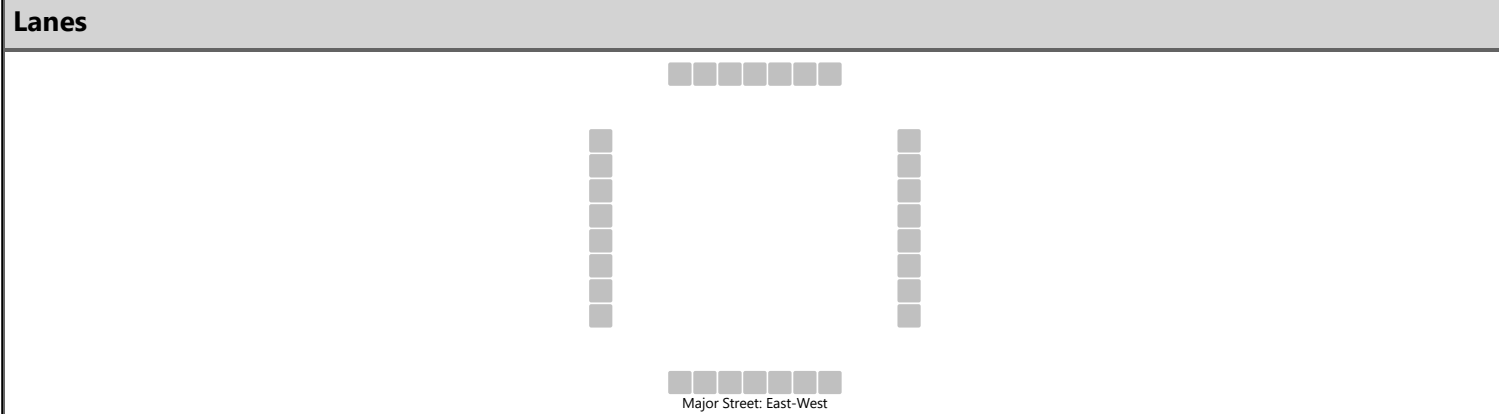


APPENDIX C-1

Existing Capacity Calculations

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	Yeoman & W Molly		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	West Molly Drive		
Time Analyzed	AM Existing			Peak Hour Factor	0.60		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			10	0		0	5			0		1				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

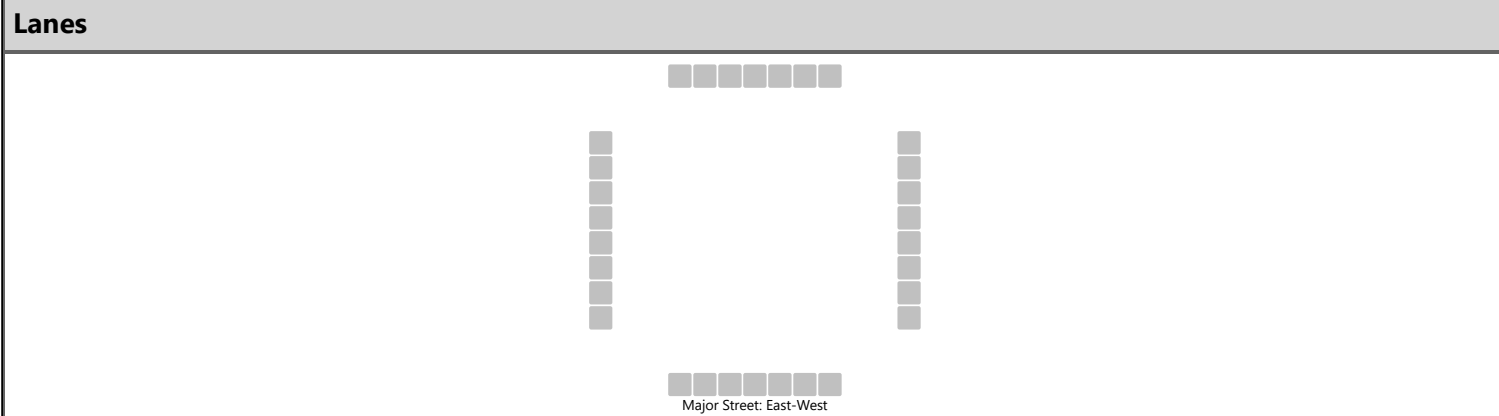
Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.13					6.43		6.23			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					0						2					
Capacity, c (veh/h)					1594						1059					
v/c Ratio					0.00						0.00					
95% Queue Length, Q ₉₅ (veh)					0.0						0.0					
Control Delay (s/veh)					7.3	0.0					8.4					
Level of Service (LOS)					A	A					A					
Approach Delay (s/veh)					0.0				8.4							
Approach LOS					A				A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	Yeoman & W Molly		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	West Molly Drive		
Time Analyzed	PM Existing			Peak Hour Factor	0.60		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			5	0		2	8			0		1				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

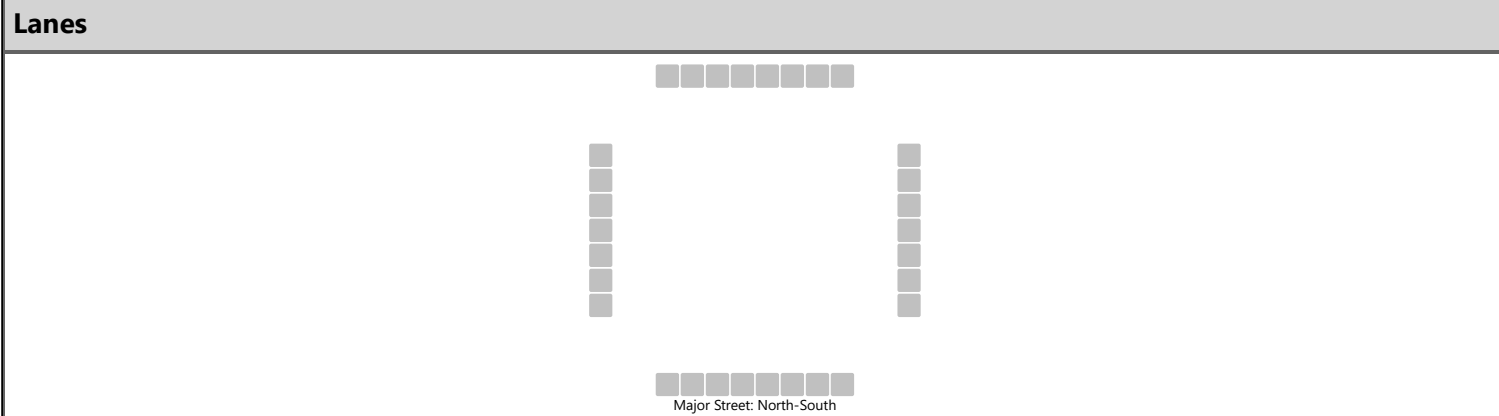
Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.13					6.43		6.23			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					3						2					
Capacity, c (veh/h)					1605						1071					
v/c Ratio					0.00						0.00					
95% Queue Length, Q ₉₅ (veh)					0.0						0.0					
Control Delay (s/veh)					7.2	0.0					8.4					
Level of Service (LOS)					A	A					A					
Approach Delay (s/veh)					1.5				8.4							
Approach LOS					A				A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Yeoman Rd		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	AM Existing			Peak Hour Factor	0.79		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		3	2	7		6	2	1		3	49	5		3	70	3
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

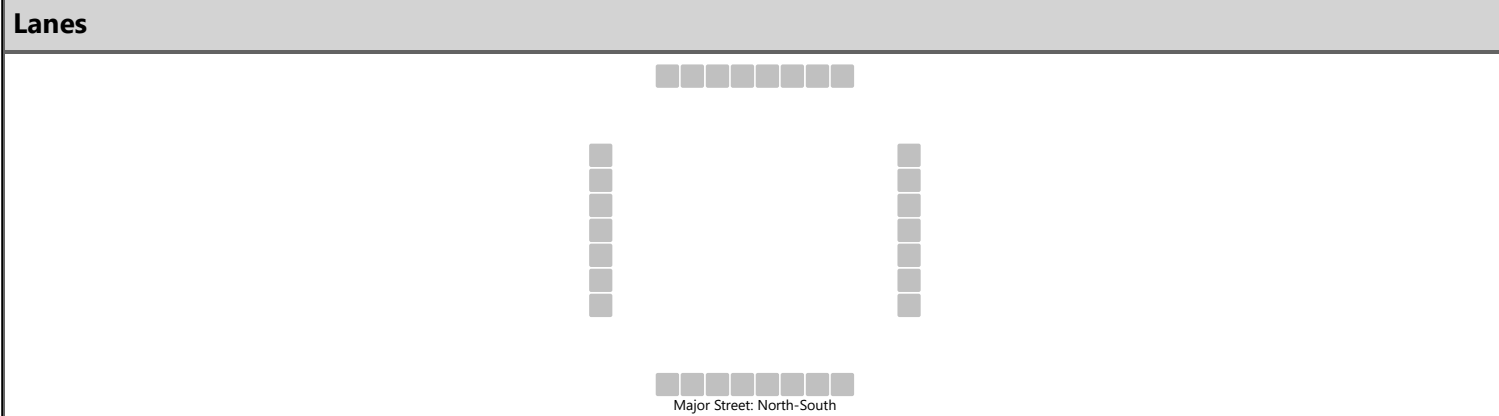
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			15				11			4				4		
Capacity, c (veh/h)			863				776			1496				1526		
v/c Ratio			0.02				0.01			0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.1				0.0			0.0				0.0		
Control Delay (s/veh)			9.2				9.7			7.4	0.0	0.0		7.4	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.2				9.7				0.4				0.3			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Yeoman Rd		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	PM Existing			Peak Hour Factor	0.83		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		1	0	6		4	1	3		9	79	7		0	64	0
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

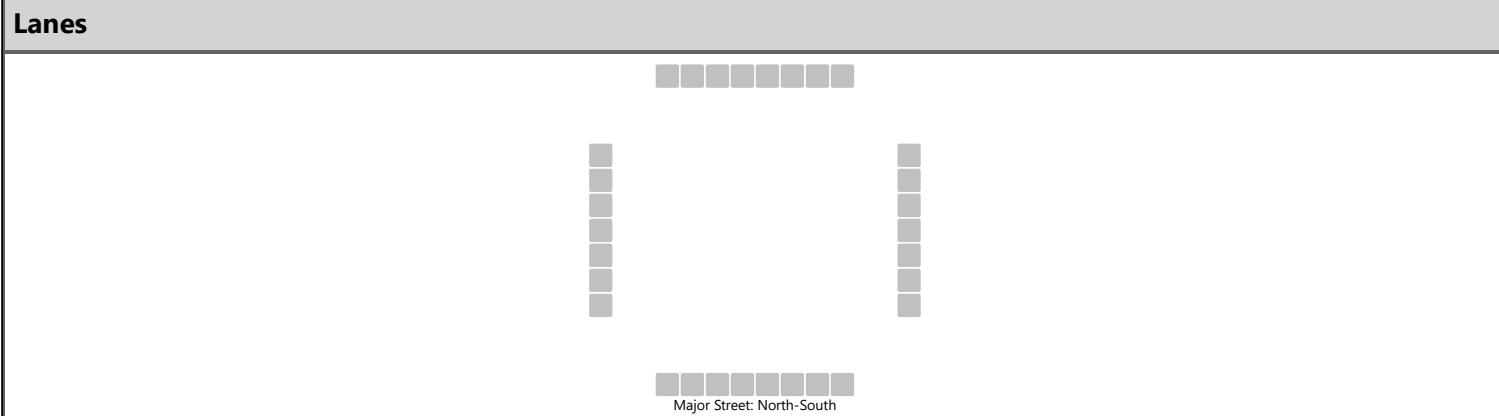
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			8				10				11				0	
Capacity, c (veh/h)			939				802				1515				1482	
v/c Ratio			0.01				0.01				0.01				0.00	
95% Queue Length, Q ₉₅ (veh)			0.0				0.0				0.0				0.0	
Control Delay (s/veh)			8.9				9.5			7.4	0.1	0.1		7.4	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	8.9				9.5				0.8				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Molly Dr		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Molly Drive		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	AM Hour Existing			Peak Hour Factor	0.82		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0		0	1	0		0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		4		2						0	57				81	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

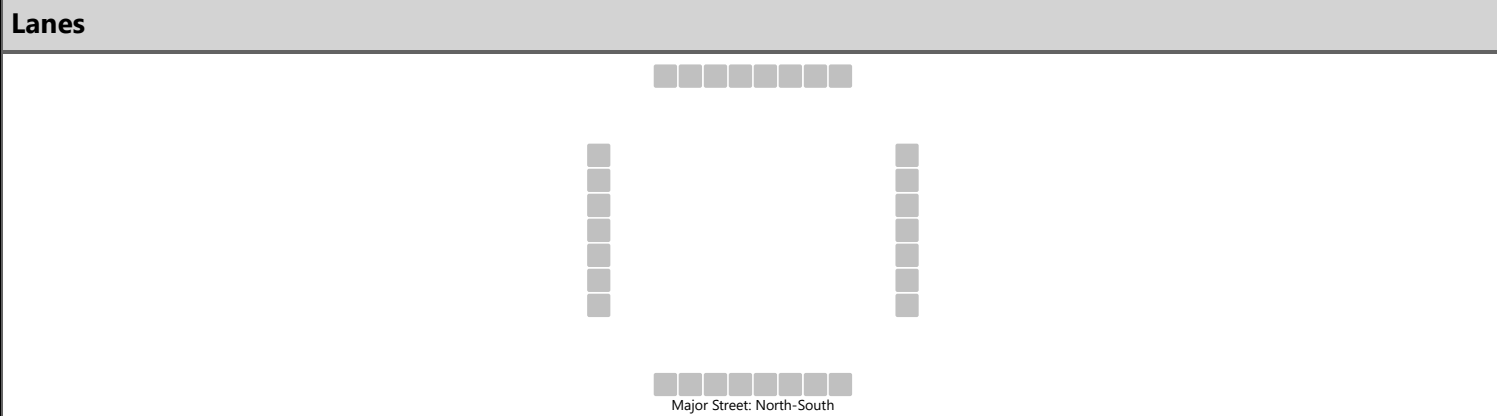
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			7							0						
Capacity, c (veh/h)			859							1486						
v/c Ratio			0.01							0.00						
95% Queue Length, Q ₉₅ (veh)			0.0							0.0						
Control Delay (s/veh)			9.2							7.4	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.2								0.0							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Molly Dr		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Molly Drive		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	PM Hour Existing			Peak Hour Factor	0.87		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0		0	1	0		0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		0		3						10	93				73	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

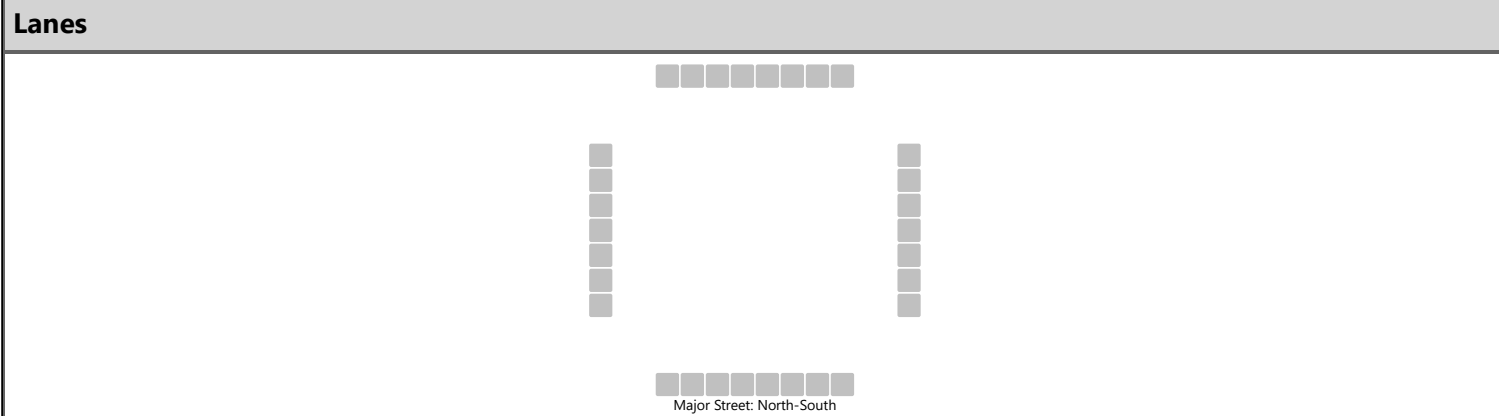
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			3							11						
Capacity, c (veh/h)			972							1505						
v/c Ratio			0.00							0.01						
95% Queue Length, Q ₉₅ (veh)			0.0							0.0						
Control Delay (s/veh)			8.7							7.4	0.1					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	8.7								0.8							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Homer Davis		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	AM Hour Existing			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		2	5	3		8	0	3		1	47	1		0	94	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

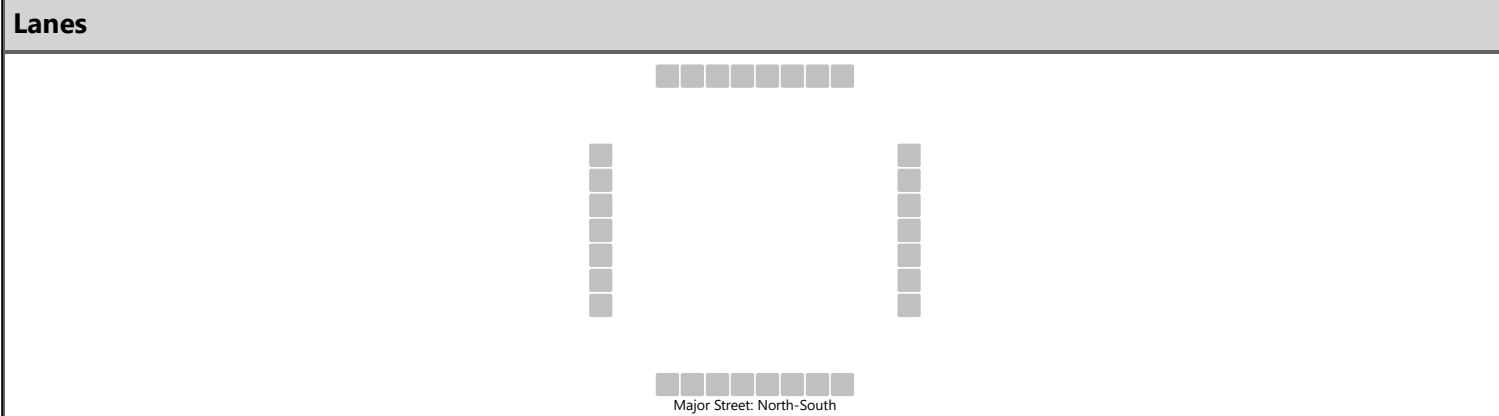
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			11				12			1				0		
Capacity, c (veh/h)			801				842			1481				1547		
v/c Ratio			0.01				0.01			0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0				0.0			0.0				0.0		
Control Delay (s/veh)			9.6				9.3			7.4	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.6				9.3				0.2				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Homer Davis		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	PM Hour Existing			Peak Hour Factor	0.97		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		5	2	2		8	3	3		6	113	10		2	80	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

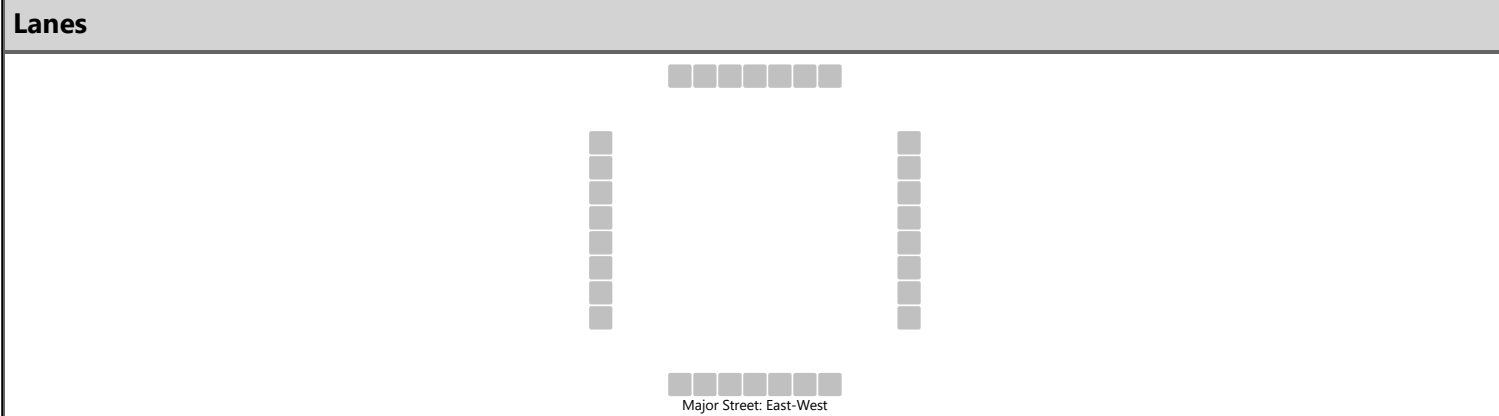
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9			14				6				2		
Capacity, c (veh/h)			749			745				1506				1453		
v/c Ratio			0.01			0.02				0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0			0.1				0.0				0.0		
Control Delay (s/veh)			9.9			9.9			7.4	0.0	0.0		7.5	0.0	0.0	
Level of Service (LOS)			A			A			A	A	A		A	A	A	
Approach Delay (s/veh)	9.9				9.9				0.4				0.2			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	Homer Davis & Larimer		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	Larimer Road		
Time Analyzed	AM Existing			Peak Hour Factor	0.63		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			3	2		3	1			1		5				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

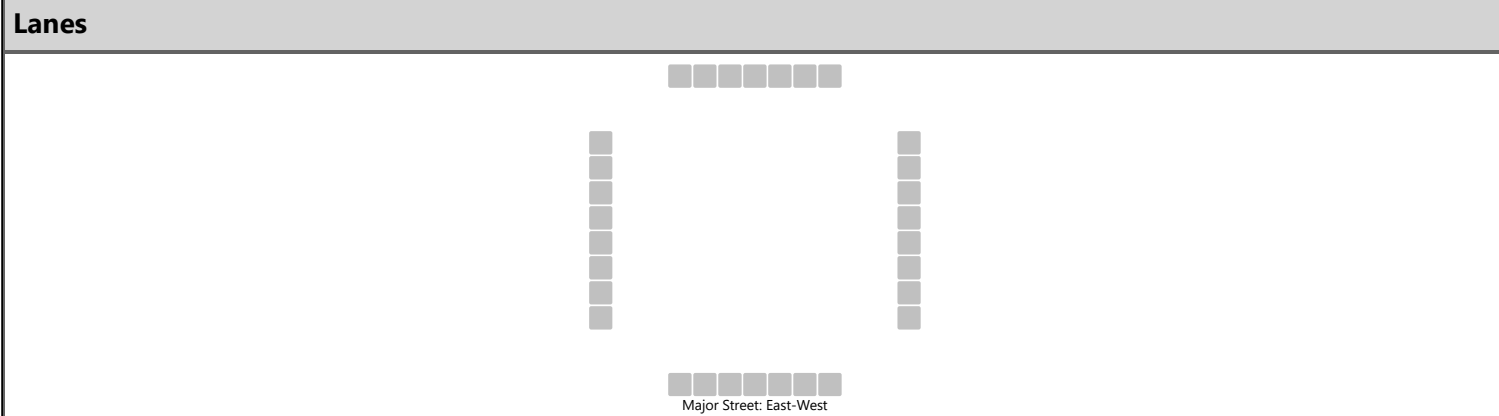
Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.13					6.43		6.23			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					5						10					
Capacity, c (veh/h)					1606						1059					
v/c Ratio					0.00						0.01					
95% Queue Length, Q ₉₅ (veh)					0.0						0.0					
Control Delay (s/veh)					7.2	0.0					8.4					
Level of Service (LOS)					A	A					A					
Approach Delay (s/veh)					5.4				8.4							
Approach LOS					A				A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	Homer Davis & Larimer		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	Larimer Road		
Time Analyzed	PM Existing			Peak Hour Factor	0.81		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			1	0		3	1			1		7				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.13					6.43		6.23			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

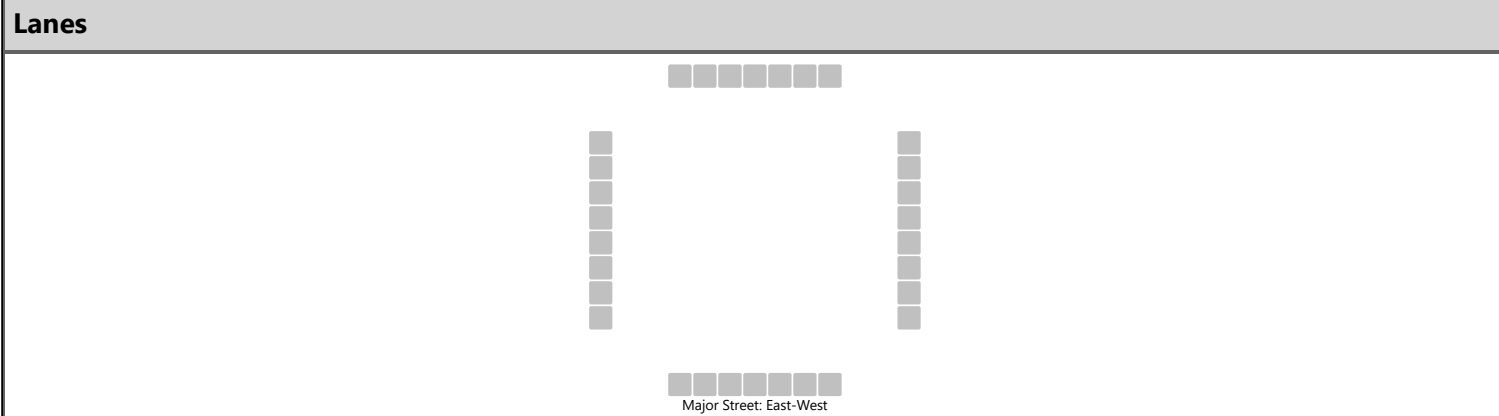
Flow Rate, v (veh/h)					4						10					
Capacity, c (veh/h)					1615						1070					
v/c Ratio					0.00						0.01					
95% Queue Length, Q ₉₅ (veh)					0.0						0.0					
Control Delay (s/veh)					7.2	0.0					8.4					
Level of Service (LOS)					A	A					A					
Approach Delay (s/veh)					5.4				8.4							
Approach LOS					A				A							

APPENDIX C-2

Existing Plus Site Traffic Capacity Calculations

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	Yeoman & W Molly		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	West Molly Drive		
Time Analyzed	AM Existing Plus			Peak Hour Factor	0.60		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			10	0		2	5			0		6				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

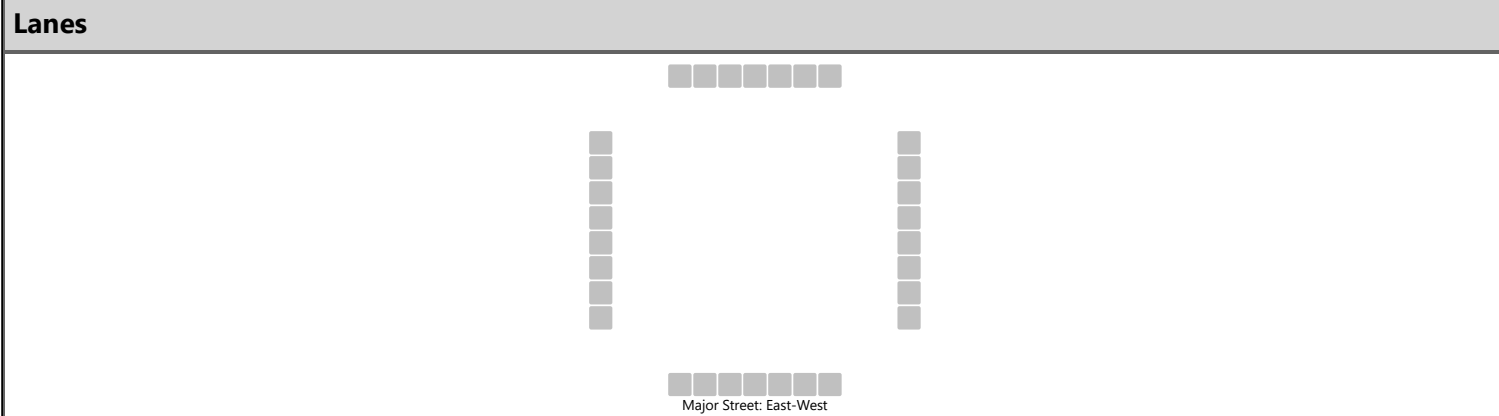
Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.13					6.43		6.23			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					3						10					
Capacity, c (veh/h)					1594						1059					
v/c Ratio					0.00						0.01					
95% Queue Length, Q ₉₅ (veh)					0.0						0.0					
Control Delay (s/veh)					7.3	0.0					8.4					
Level of Service (LOS)					A	A					A					
Approach Delay (s/veh)					2.1				8.4							
Approach LOS					A				A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	Yeoman & W Molly		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	West Molly Drive		
Time Analyzed	PM Existing Plus			Peak Hour Factor	0.70		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			5	0		7	8			0		4				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

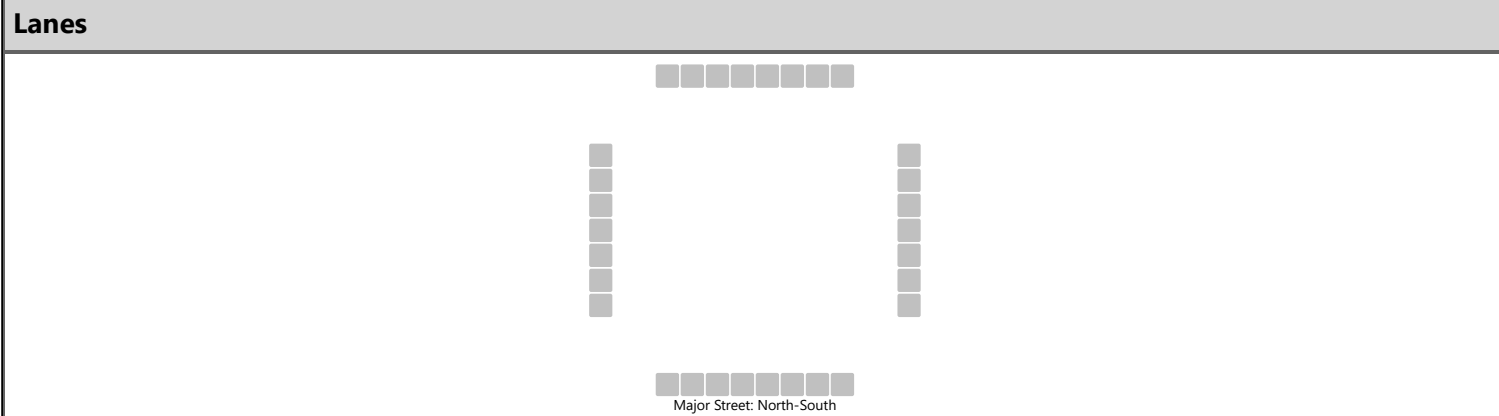
Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.13					6.43		6.23			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					10						6					
Capacity, c (veh/h)					1607						1072					
v/c Ratio					0.01						0.01					
95% Queue Length, Q ₉₅ (veh)					0.0						0.0					
Control Delay (s/veh)					7.3	0.0					8.4					
Level of Service (LOS)					A	A					A					
Approach Delay (s/veh)					3.4				8.4							
Approach LOS					A				A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Molly Dr		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Molly Drive		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	AM Hour Existing Plus			Peak Hour Factor	0.82		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		8		17						5	57				81	2
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

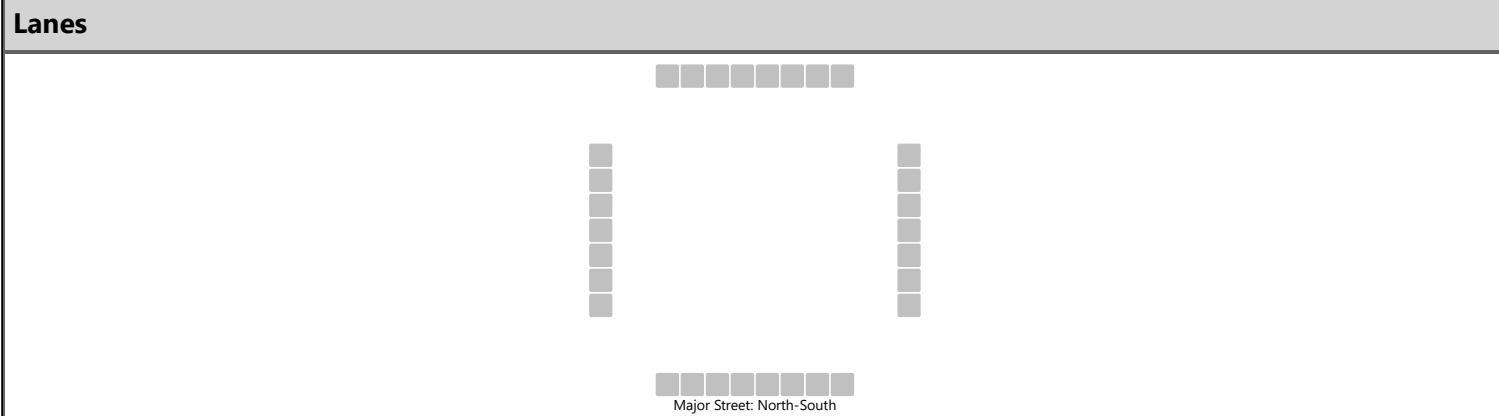
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			30							6						
Capacity, c (veh/h)			899							1485						
v/c Ratio			0.03							0.00						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
Control Delay (s/veh)			9.1							7.4	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.1								0.6							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Molly Dr		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Molly Drive		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	PM Hour Existing Plus			Peak Hour Factor	0.87		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		2		13						26	93				73	5
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

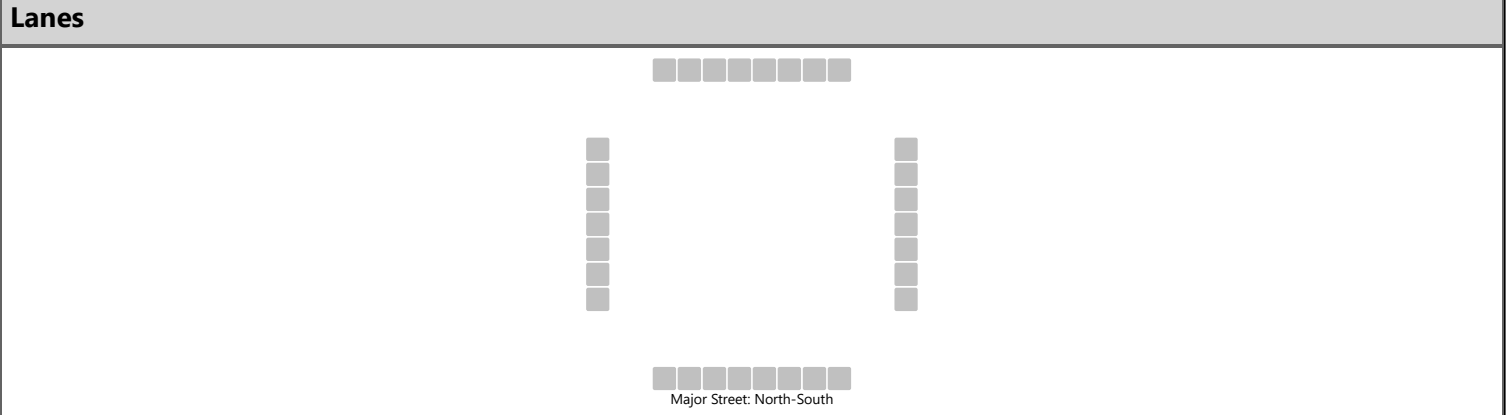
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			17							30						
Capacity, c (veh/h)			926							1499						
v/c Ratio			0.02							0.02						
95% Queue Length, Q ₉₅ (veh)			0.1							0.1						
Control Delay (s/veh)			9.0							7.4	0.2					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.0								1.8							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Yeoman Rd		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	AM Existing Plus			Peak Hour Factor	0.79		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		6	4	7		7	3	1		3	51	7		4	71	3
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

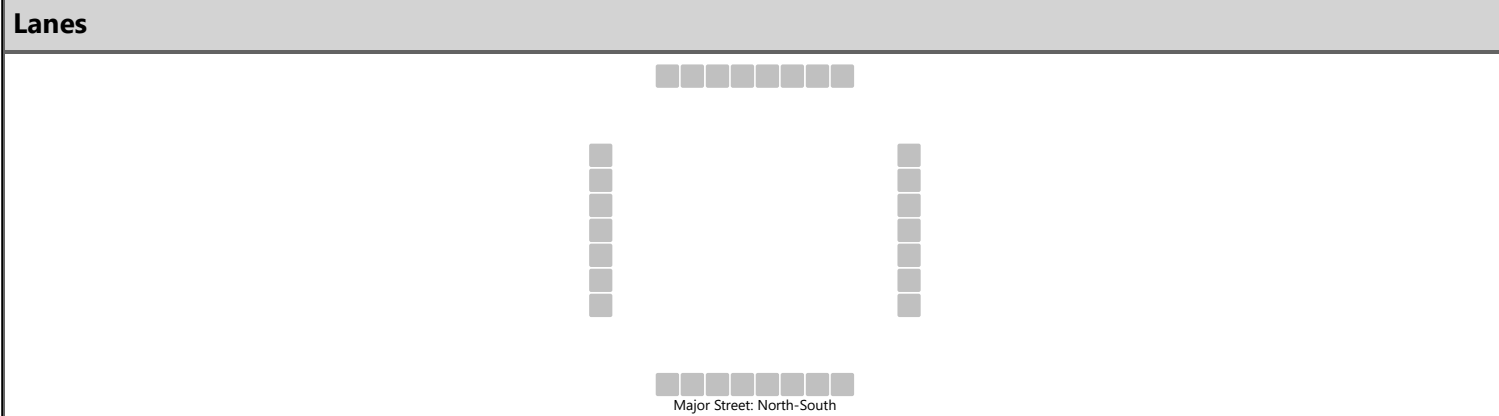
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			22			14				4				5		
Capacity, c (veh/h)			819			758				1494				1520		
v/c Ratio			0.03			0.02				0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.1			0.1				0.0				0.0		
Control Delay (s/veh)			9.5			9.8				7.4	0.0	0.0		7.4	0.0	0.0
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	9.5				9.8				0.4				0.4			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Yeoman Rd		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	PM Existing Plus			Peak Hour Factor	0.83		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		3	1	6		6	3	3		9	80	8		0	66	4
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

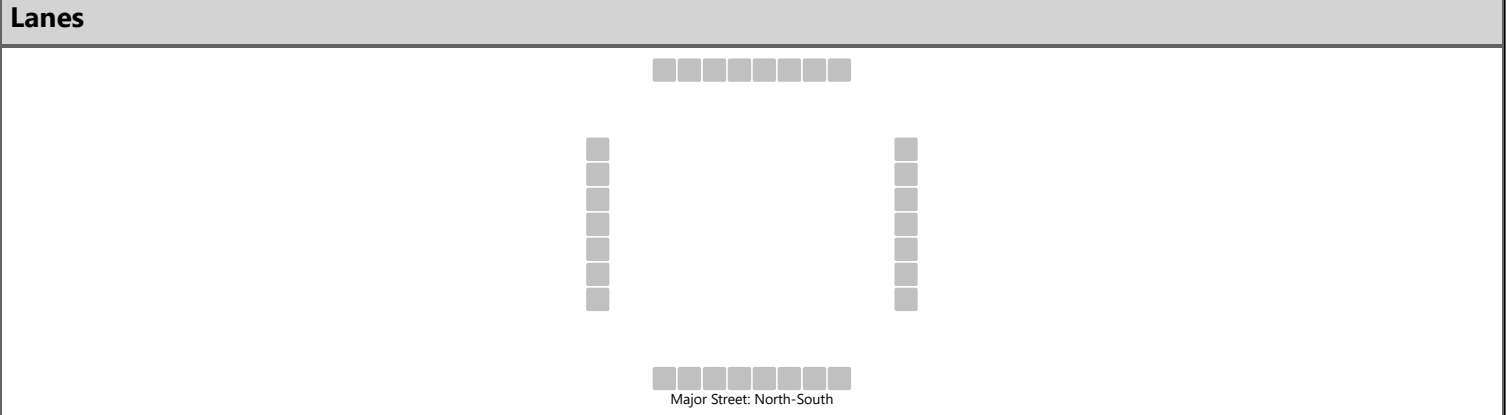
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			12				14				11				0	
Capacity, c (veh/h)			854				763				1506				1479	
v/c Ratio			0.01				0.02				0.01				0.00	
95% Queue Length, Q ₉₅ (veh)			0.0				0.1				0.0				0.0	
Control Delay (s/veh)			9.3				9.8			7.4	0.1	0.1		7.4	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.3				9.8				0.7				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Homer Davis		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	AM Hour Existing Plus			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		2	5	3		8	0	3		1	52	1		0	109	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

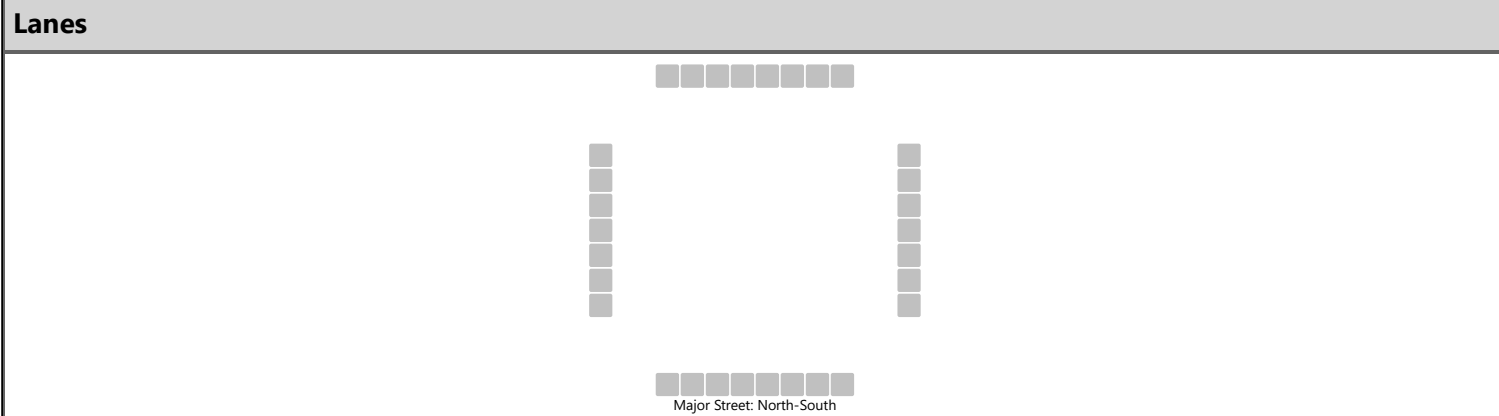
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			11				12				1					0	
Capacity, c (veh/h)			780				820				1461					1540	
v/c Ratio			0.01				0.01				0.00					0.00	
95% Queue Length, Q ₉₅ (veh)			0.0				0.0				0.0					0.0	
Control Delay (s/veh)			9.7				9.5				7.5	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A				A				A	A	A		A	A	A
Approach Delay (s/veh)	9.7				9.5				0.1				0.0				
Approach LOS	A				A				A				A				

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Homer Davis		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	PM Hour Existing Plus			Peak Hour Factor	0.97		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		5	2	2		8	3	3		6	129	10		2	90	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

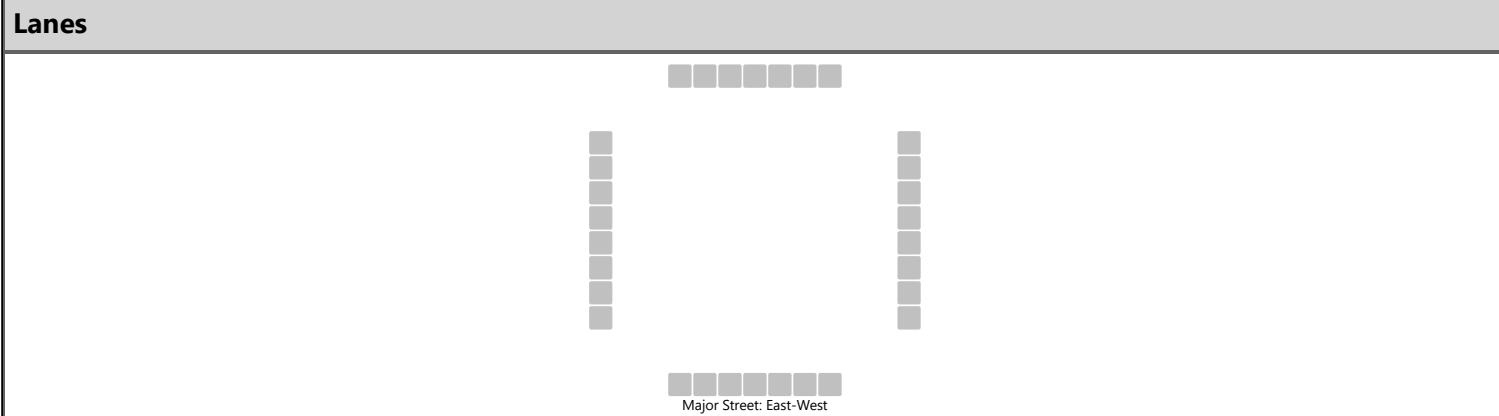
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9			14				6				2		
Capacity, c (veh/h)			724			719				1493				1433		
v/c Ratio			0.01			0.02				0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0			0.1				0.0				0.0		
Control Delay (s/veh)			10.0			10.1				7.4	0.0	0.0		7.5	0.0	0.0
Level of Service (LOS)			B			B				A	A	A		A	A	A
Approach Delay (s/veh)	10.0				10.1				0.3				0.2			
Approach LOS	B				B				A				A			

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	Homer Davis & Larimer		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	Larimer Road		
Time Analyzed	AM Existing Plus			Peak Hour Factor	0.63		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			3	2		3	1			1		5				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

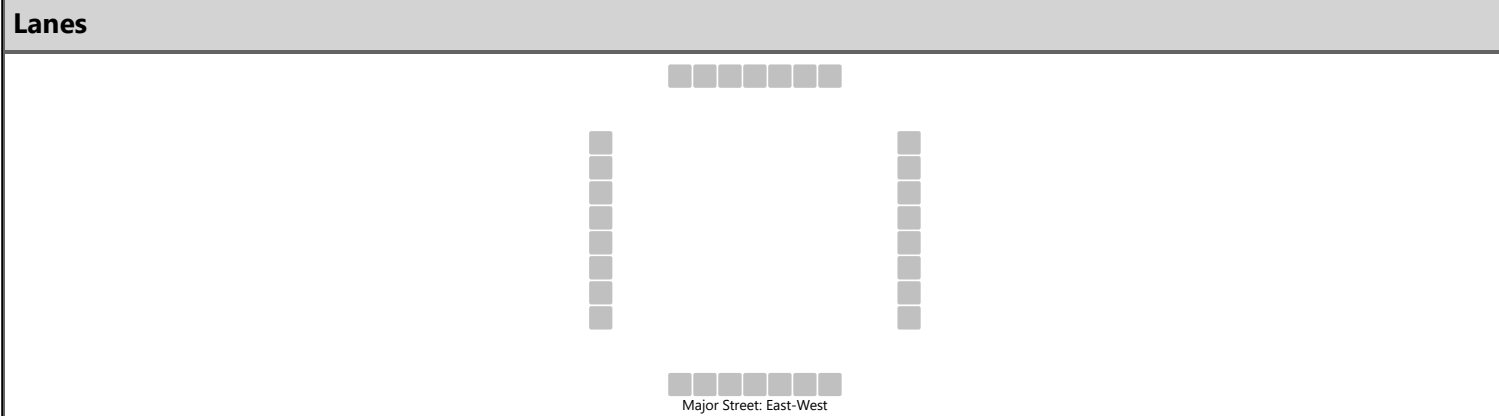
Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.13					6.43		6.23			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					5						10					
Capacity, c (veh/h)					1606						1059					
v/c Ratio					0.00						0.01					
95% Queue Length, Q ₉₅ (veh)					0.0						0.0					
Control Delay (s/veh)					7.2	0.0					8.4					
Level of Service (LOS)					A	A					A					
Approach Delay (s/veh)					5.4				8.4							
Approach LOS					A				A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	Homer Davis & Larimer		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	Larimer Road		
Time Analyzed	PM Existing Pus			Peak Hour Factor	0.81		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			1	0		3	1			1		7				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.13					6.43		6.23			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

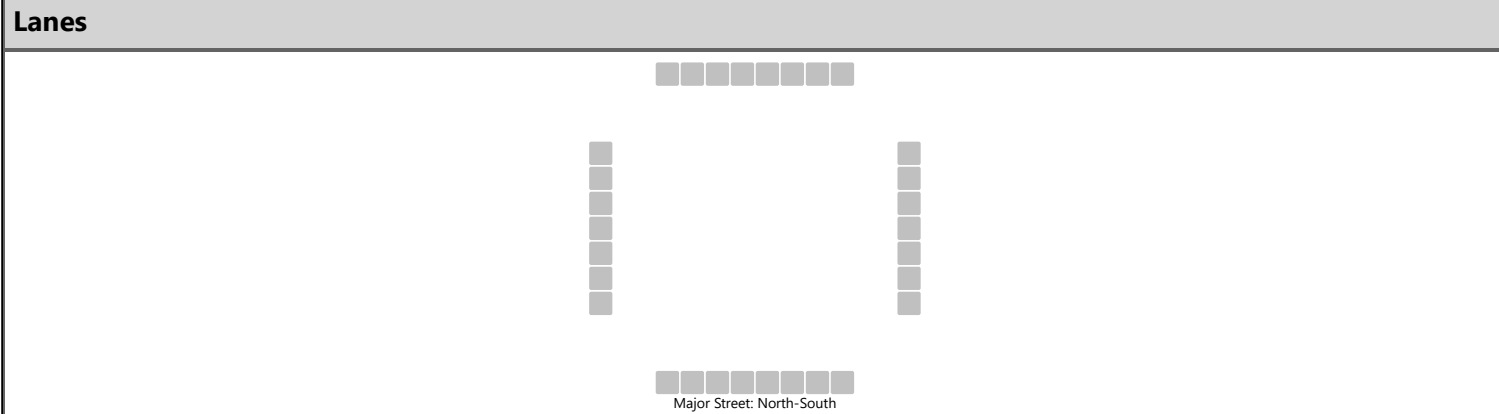
Flow Rate, v (veh/h)					4						10					
Capacity, c (veh/h)					1615						1070					
v/c Ratio					0.00						0.01					
95% Queue Length, Q ₉₅ (veh)					0.0						0.0					
Control Delay (s/veh)					7.2	0.0					8.4					
Level of Service (LOS)					A	A					A					
Approach Delay (s/veh)					5.4				8.4							
Approach LOS					A				A							

APPENDIX C-3

Year 2033 Traffic Capacity Calculations

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Yeoman Rd		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	AM Year 2033			Peak Hour Factor	0.79		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		7	5	8		8	3	1		3	56	8		4	78	3
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

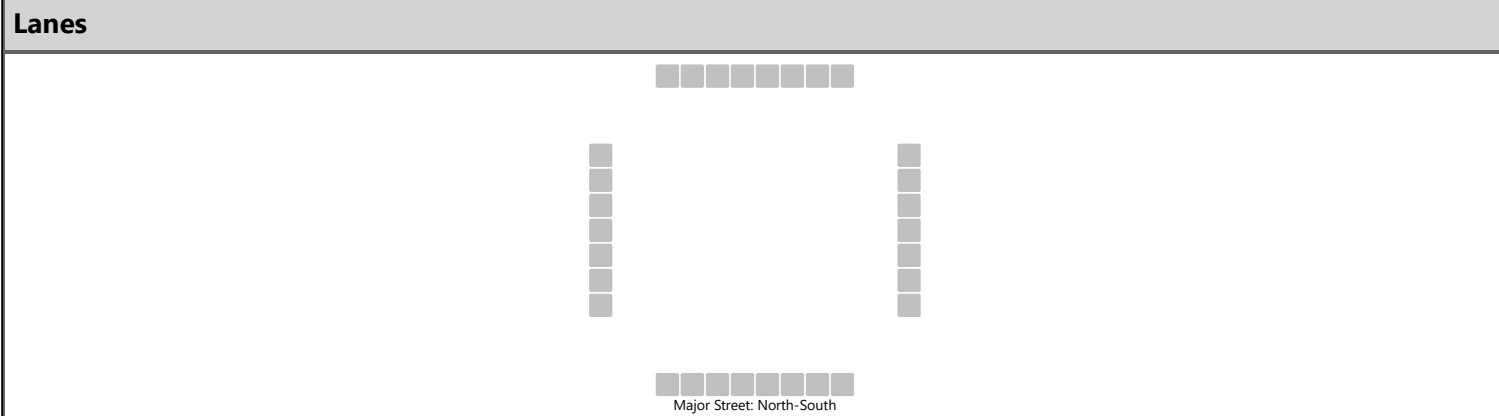
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			25				15			4				5		
Capacity, c (veh/h)			801				739			1483				1510		
v/c Ratio			0.03				0.02			0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.1				0.1			0.0				0.0		
Control Delay (s/veh)			9.6				10.0			7.4	0.0	0.0		7.4	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.6				10.0				0.4				0.4			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Yeoman Rd		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Yeoman Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	PM Year 2033			Peak Hour Factor	0.83		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		3	1	7		7	3	3		10	88	9		0	73	4
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

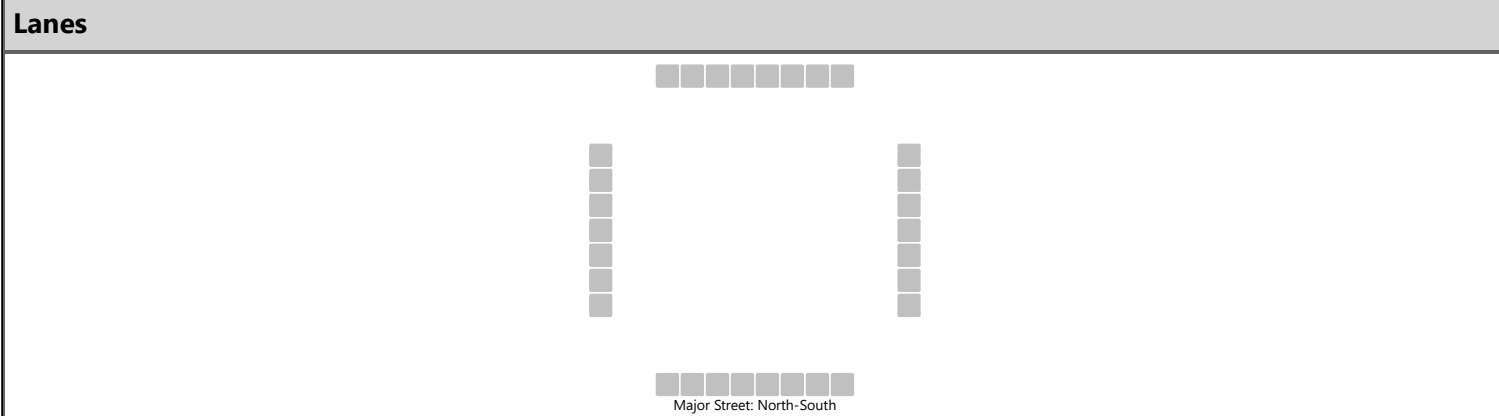
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			13				16				12				0		
Capacity, c (veh/h)			847				739				1495				1465		
v/c Ratio			0.02				0.02				0.01				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0				0.1				0.0				0.0		
Control Delay (s/veh)			9.3				10.0				7.4	0.1	0.1		7.5	0.0	0.0
Level of Service (LOS)			A				A				A	A	A		A	A	A
Approach Delay (s/veh)	9.3				10.0				0.8				0.0				
Approach LOS	A				A				A				A				

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Molly Dr		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Molly Drive		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	AM Year 2033			Peak Hour Factor	0.82		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		9		19						6	63				89	2
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

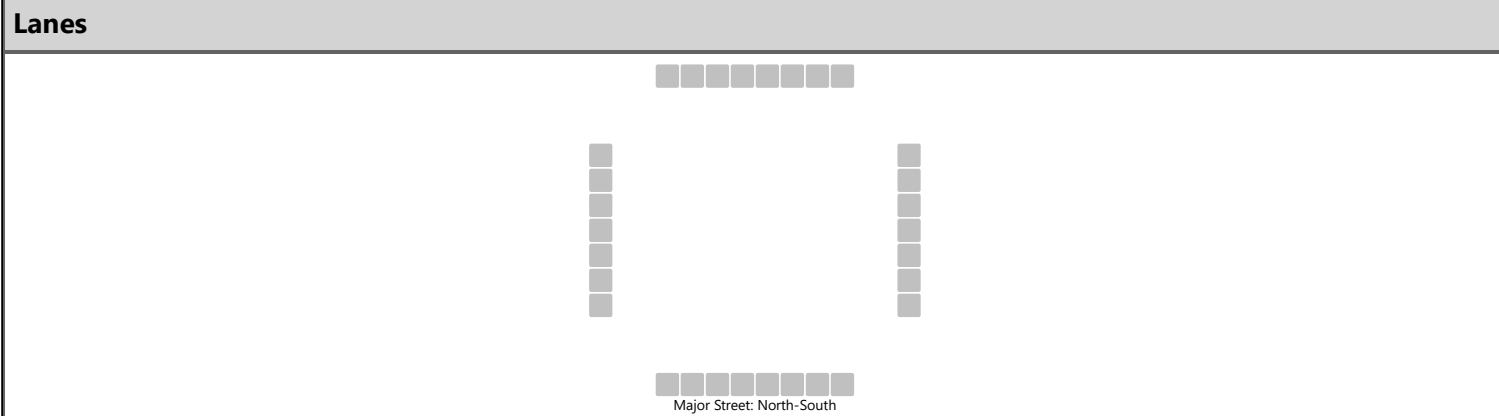
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			34							7						
Capacity, c (veh/h)			883							1473						
v/c Ratio			0.04							0.00						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
Control Delay (s/veh)			9.2							7.5	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.2								0.7							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Molly Dr		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Molly Drive		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	PM Hour Year 2033			Peak Hour Factor	0.87		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		2		14						29	102				80	6
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

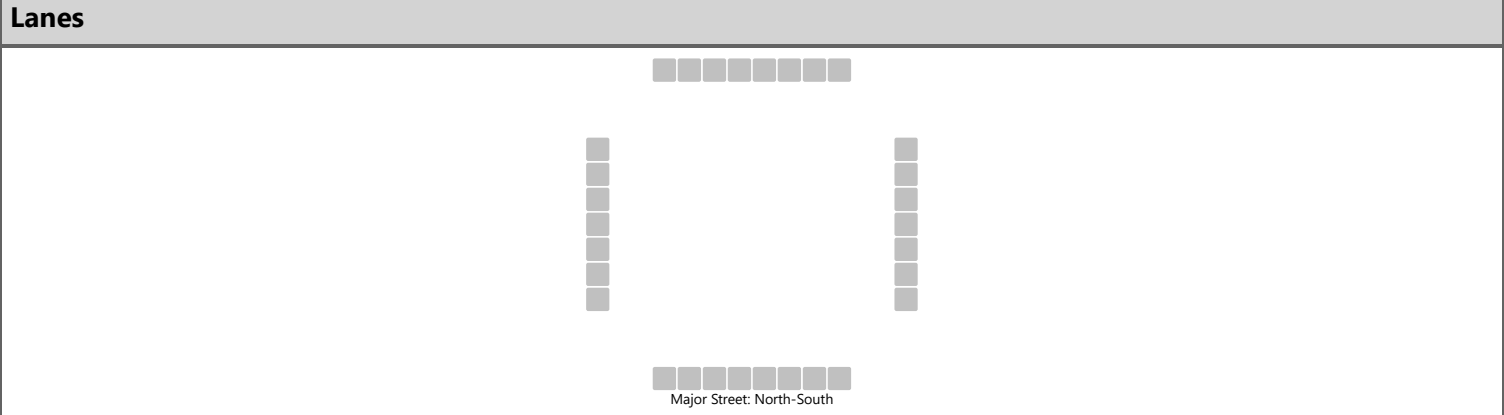
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			18							33						
Capacity, c (veh/h)			914							1488						
v/c Ratio			0.02							0.02						
95% Queue Length, Q ₉₅ (veh)			0.1							0.1						
Control Delay (s/veh)			9.0							7.5	0.2					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.0								1.8							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Homer Davis		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	AM Hour Year 2033			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		2	6	3		9	0	3		1	57	1		0	120	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

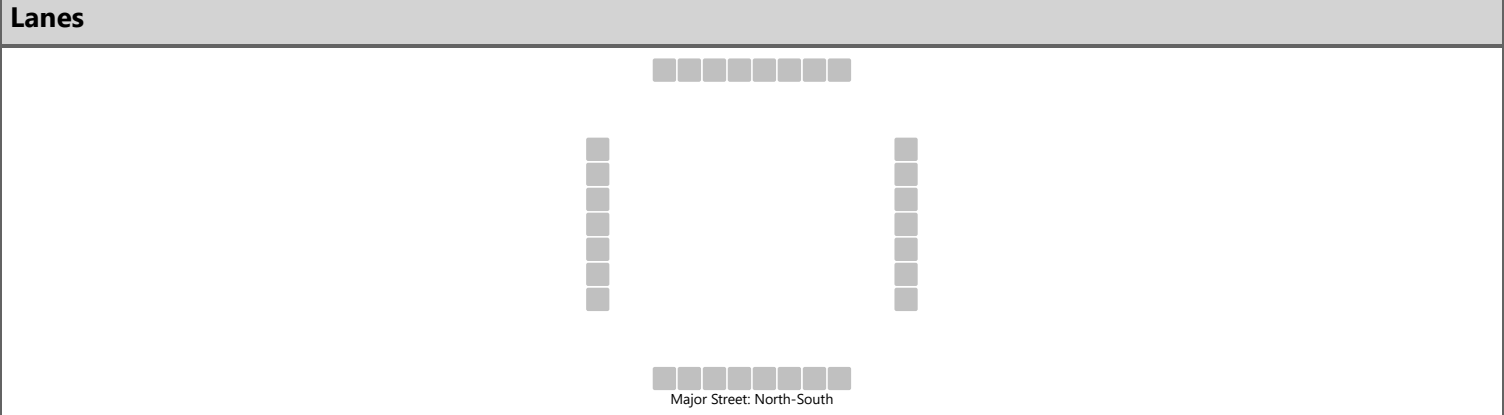
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			12				13			1				0		
Capacity, c (veh/h)			757				795			1446				1533		
v/c Ratio			0.02				0.02			0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0				0.0			0.0				0.0		
Control Delay (s/veh)			9.8				9.6			7.5	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.8				9.6				0.1				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information				Site Information			
Analyst	R Marvin			Intersection	12 Mile Rd & Homer Davis		
Agency/Co.	Marvin Associates			Jurisdiction	Yellowstone County		
Date Performed	4/17/2023			East/West Street	Homer Davis Road		
Analysis Year	2023			North/South Street	12 Mile Road		
Time Analyzed	PM Hour Year 2033			Peak Hour Factor	0.97		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Peila Subdivision TIS						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		6	2	2		9	3	3		7	134	11		2	99	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			10				15			7				2		
Capacity, c (veh/h)			703				701			1481				1426		
v/c Ratio			0.01				0.02			0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0				0.1			0.0				0.0		
Control Delay (s/veh)			10.2				10.3			7.4	0.0	0.0		7.5	0.0	0.0
Level of Service (LOS)			B				B			A	A	A		A	A	A
Approach Delay (s/veh)	10.2				10.3				0.4				0.2			
Approach LOS	B				B				A				A			

October 3, 2022

Mr. Tim Miller
Yellowstone County
PO Box 35024
Billings, MT 59107

Reference: Yellowstone County – Traffic Engineering Services
Task Order No. 8 – 12 Mile Road & Yeoman Road Intersection Study
Project No. 21001.08

Dear Tim:

The purpose of this letter is to summarize the results of the study that evaluated sight distance, speed, and general safety conditions of the intersection of 12 Mile Road & Yeoman Road located southwest of Shepherd in Yellowstone County. Yellowstone County has received numerous complaints through the years about the safety at this intersection due to (what is perceived to be) limited visibility to the north (from both the east and west approaches) and to the south (from the east approach). Previous improvements installed by the County to improve safety, including installation of intersection advisory signs and lowering of the grade of 12 Mile Road, have not alleviated the concerns from the public. As such, the purpose of this study is to evaluate safety and operations at this intersection to determine what improvements could be constructed to mitigate the sight distance restrictions and any other issues identified in the study.

Existing Conditions

The intersection of 12 Mile Road and Yeoman Road sits approximately 2 miles southwest of Shepherd, Montana. Twelve Mile Road is a paved, a continuous, two-lane highway from its intersection with Highway 312 to approximately 4 miles north of the project intersection (where it continues as a gravel road) with a posted speed limit of 60 mph in the vicinity of the intersection. Yeoman Road is paved to the east of 12 Mile Road and is a gravel road that ends approximately one mile to the west. The speed limit on Yeoman Road is 35 mph on the gravel portion of the road to the west and 45 mph on the paved portion to the east. The intersection is two-way, stop-controlled with stop signs on Yeoman Road. There is a crest vertical curve approximately 300-feet to the north of the intersection on 12 Mile Road that limits visibility (more discussion on this later in the letter). There is an existing Intersection Warning sign (W2-1) with a 40-mph speed advisory plaque for southbound traffic 500-feet north of the intersection, and an Intersection Warning sign without a speed advisory plaque for northbound traffic 500-feet south of the intersection.

Traffic Data Collection

Weekday AM and PM peak hour turning movement counts were collected on Thursday, September 8, 2022. The traffic data was collected using Miovision Scout video-based systems. In general, the weekday AM and PM peak hour periods were found to occur from 7:00 to 8:00 AM and 4:15 to 5:15 PM. Raw count data was adjusted for seasonal variation using MDT seasonal adjustment factors. This adjustment normalizes the raw traffic counts from the natural high and low traffic volumes which occur during seasonal variation. Figure 1 on the following page summarizes the seasonally adjusted Existing Conditions (2022) peak hour turning movement volumes for the AM and PM peak hours. Traffic speeds were also measured on both legs of 12 Mile Road using RADAR-based technology. The 85th percentile speeds were calculated based on continuous data collected between September 7th to 12th, 2022. The resulting 85th percentile speeds are also shown in Figure 1. It should also be noted that the existing Intersection Warning sign and speed advisory plaque warn drivers to traverse the vertical curve at a speed that provides adequate sight distance for all. However, the speed analysis on 12 Mile Road determined that the majority of drivers are not adhering to these warning signs. Detailed traffic count data worksheets and speed summaries are included in Appendix A.

Figure 1: Existing Traffic Data Collection



Crash History

Historical crash data for the 12 Mile/Yeoman intersection was obtained from MDT for the 10-year period from January 1, 2011 through December 31, 2020. The data was analyzed for the purposes of calculating intersection crash rate and severity index and for evaluating collision type trends. Table 1 (next page) illustrates the results of the historical crash analysis. The intersection crash rate was calculated on the standard basis of crashes per million vehicles entering (MVE) the intersection. The MVE metric was estimated based on 2022 peak hour traffic counts and collected ADT volumes from the speed cameras. The crash rate for the intersection was 1.51 crashes/MVE, with only five (5) crashes occurring in ten years.

As a means of evaluating the historical crash frequency rate, Sanderson Stewart calculated the predictive crash rate using FHWA’s Safety Performance for Intersection Control Evaluation (SPICE) tool, based on formulas in the American Association of State Highway Transportation Officials (AASHTO) Highway Safety Manual (HSM). The tool calculates the predictive number of crashes in a year based on traffic demand (AADTs) and various physical and traffic environment-based conditions such as lane configurations, traffic control, and approach speeds. The calculations result in a crashes-per-year prediction. Sanderson Stewart then back-calculated a frequency rate on the basis of MVE for the sake of comparison with the actual historical crash rate. The results of the calculations for this study showed that the historical crash rate is equal to the predicted crash rate at the intersection of 12 Mile Road/Yeoman Road. The HSM rate predictions and 5-year crash totals for the intersection are summarized in the table below.

Severity index is defined as the weighted average by crash severity, including fatality, injury, and property damage only (PDO) crashes. The severity index was 1.00 at the intersection due to no injuries resulting from the intersection crashes. Severity index calculation results are also shown in Table 1 below.

Table 1: Crash History – Frequency and Severity Statistics

Intersection	2011-2020 DEV ¹	Reported Crashes ²	Crash Type			Crash Data ³			HSM Predictions ⁴	
			PDO	Injury	Fatality	Average Crash Frequency (Crash/Yr)	Crash Rate (Crash/MVE)	Severity Index	Predicted Average Crash Frequency (Crash/Yr)	Predicted Crash Rate (Crash/MVE)
12 Mile Rd/Yeoman Rd	1812	5	5	0	0	0.50	0.76	1.00	0.50	0.76

¹ Daily Entering Volume (DEV) estimated from 2022 peak hour counts and 2022 collected AADTs

² Crashes reported from January 1, 2011 to December 31, 2020

³ Crash rates expressed as crashes per million vehicles entering (MVE)

⁴ Rates calculated using SPICE tool and Highway Safety Manual (HSM) 1st Edition predictive methodology

Sanderson Stewart performed an analysis of collision classification to determine if any patterns could be identified. Throughout the ten-year crash analysis period, 2 right-angle collisions and 3

fixed object crashes occurred at the study intersection. Table 2 on the following page illustrates the results of the types of crashes in the study intersection.

Right-angle collisions often occur at unsignalized intersections after a driver stops at a stop sign and then proceeds when it is unsafe to do so due to limited sight distance or inadequately judging gaps in vehicles. Both of the right-angle collisions occurred when a vehicle was turning right or proceeding straight from the east west (Yeoman Rd) approaches and was struck by a northbound or southbound vehicle. Both crashes occurred during daylight and on dry pavement. The high speeds on 12 Mile Road may make it difficult for Yeoman Road drivers to determine appropriate gaps to proceed. Additionally, trees on the southeast quadrant of the intersection may impair sight distance on the westbound approach.

All three fixed object crashes that occurred at the study intersection involved northbound vehicles traveling during snowy/icy conditions. One vehicle was reported to land in a ditch, and the other two crashes involved vehicles hitting a traffic sign support (on the west side of the roadway) and a utility pole (also located on the west side of the roadway). This portion of 12 Mile Road has more densely populated roadside objects than other portions of 12 Mile Road.

Table 2: Crash History – Collision Type

	Collision Type		
	Right Angle	Fixed Object	Total
12 Mile Rd/Yeoman Rd	2	3	5

It is important to note that all the above evaluations are speculative, and more detailed information about individual crashes would be needed to determine exact causes for each collision.

Intersection Sight Distance (ISD) via AutoCAD

Based on preliminary site visits and as supported by our Crash History analysis, it was determined that the Intersection Sight Distance (ISD) for the intersection is potentially impacted by two separate obstructions: the vertical crest curve on 12 Mile Road north of the intersection and a line of trees in the southeast corner of the intersection. Each obstruction was analyzed separately.

Vertical Curve: The required ISD was determined for both the east and west legs of the intersection using tables and equations presented in Appendix F – Sight Distance of the MDT Road Design Manual (RDM). Exhibits F-11 and F-12 in the RDM present the Two-Lane

Intersection Sight Distances (ISD) for Left-Turns and Right-Turns from a Minor Road, respectively. The analyses were performed based on three different design speeds: 40-mph, 60-mph, and 65-mph. The 40-mph design was analyzed to represent the southbound advisory speed limit; the 60-mph design was analyzed to represent the posted speed limit; and the 65-mph design was analyzed to represent an “upper-end” design speed that accounts for the 85th percentile speed. All three analyses were then compared against the amount of sight distance available based on the grade of the existing centerline of 12 Mile Road (Sanderson Stewart performed GPS-survey to determine the existing centerline grades along 12 Mile Road). The available sight distance was determined in AutoCAD based on the survey taken. A driver’s eye height and object eye height of 3.5 feet were used for all analysis scenarios, which is consistent with AASHTO procedures for sight distance analysis. The available sight distances measured from Yeoman Road were 637-feet and 656-feet for left- and right-turns, respectively. All measured and calculated ISDs are shown in Table 3 below. Figures 2 through 5 shown on the following pages detail the required sight triangles for the intersection and the calculated sight distance. As shown below in Table 3, the vertical curve north of the intersection does not impact the visibility for an eastbound right turning movement when evaluated at a 40-, 60-, or 65-mph design speed.

However, the vertical curve creates a vision obstruction for the WB left turn movement that renders the ISD sub-standard by 83-feet (for a design speed of 65-mph) and by 28 feet (for a 60-mph design speed). Further analysis of the existing grades has determined that the vertical curve would need to be lowered by approximately 4-inches and 12-inches for a 60- and 65-mph design speed, respectively to meet AASHTO-recommended intersection sight distance values. It should also be noted that there is an existing irrigation ditch crossing/siphon along this stretch of 12 Mile Road that could impact any potential lowering of the street grades. The siphon was not surveyed and crossing depths were unknown at the time of this analysis. Additional information would be required if a redesigned centerline grade is proposed.

Table 3: Summary of Intersection Sight Distance (ISD)

Turning Movement	Design Speed (mph)	Required ISD (ft)	Available ISD (ft)	Add'l ISD Required (ft)
EB Right	40	385	656	0
EB Right	60	575	656	0
EB Right	65	625	656	0
EB Left	60	665	Unobstructed	0
WB Right	60	575	Unobstructed	0
WB Left	40	445	637	0
WB Left	60	665	637	28
WB Left	65	720	637	83

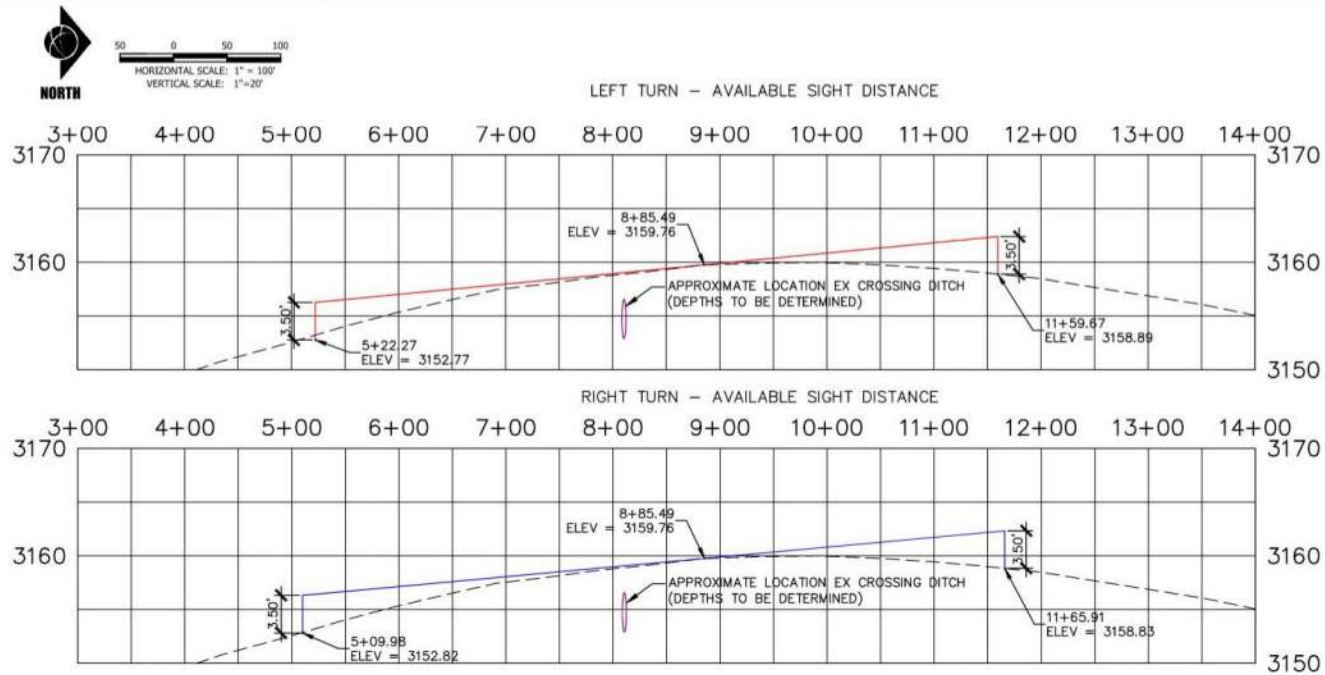


Figure 2: Intersection Sight Distance - Available

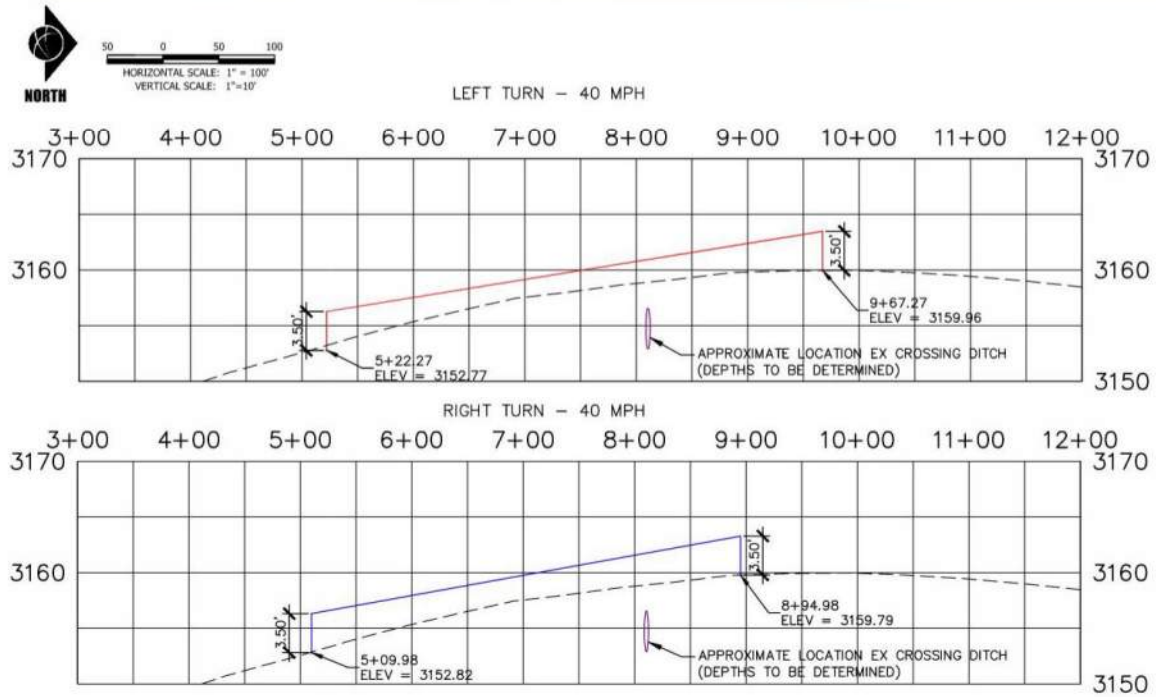
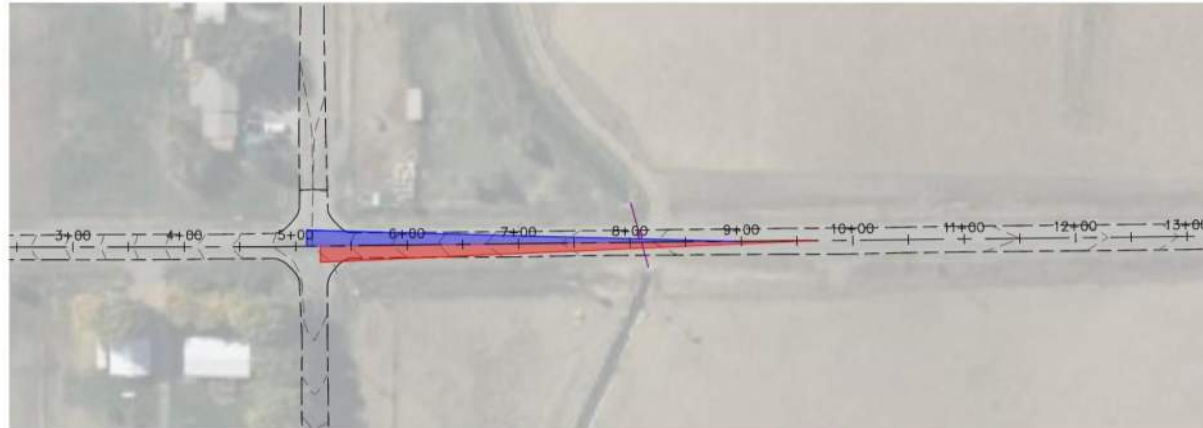


Figure 3: Intersection Sight Distance - 40 mph Design

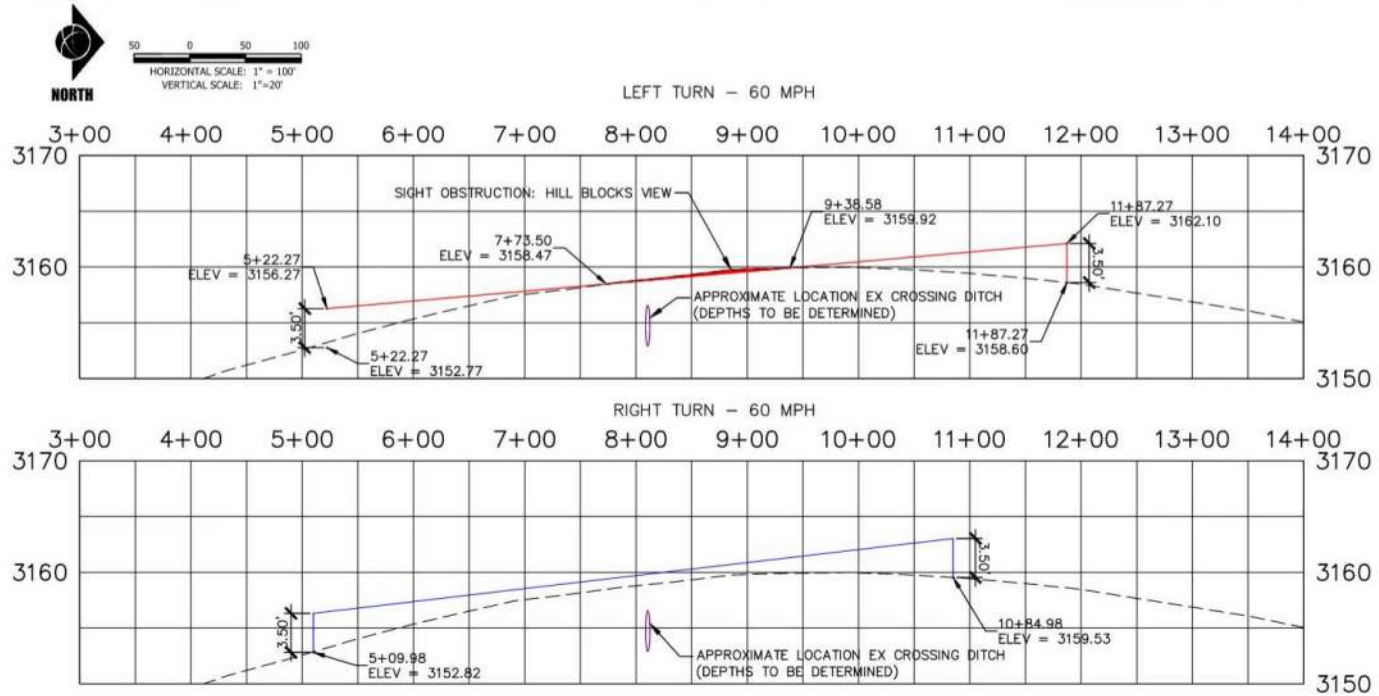


Figure 4: Intersection Sight Distance – 60 mph Design

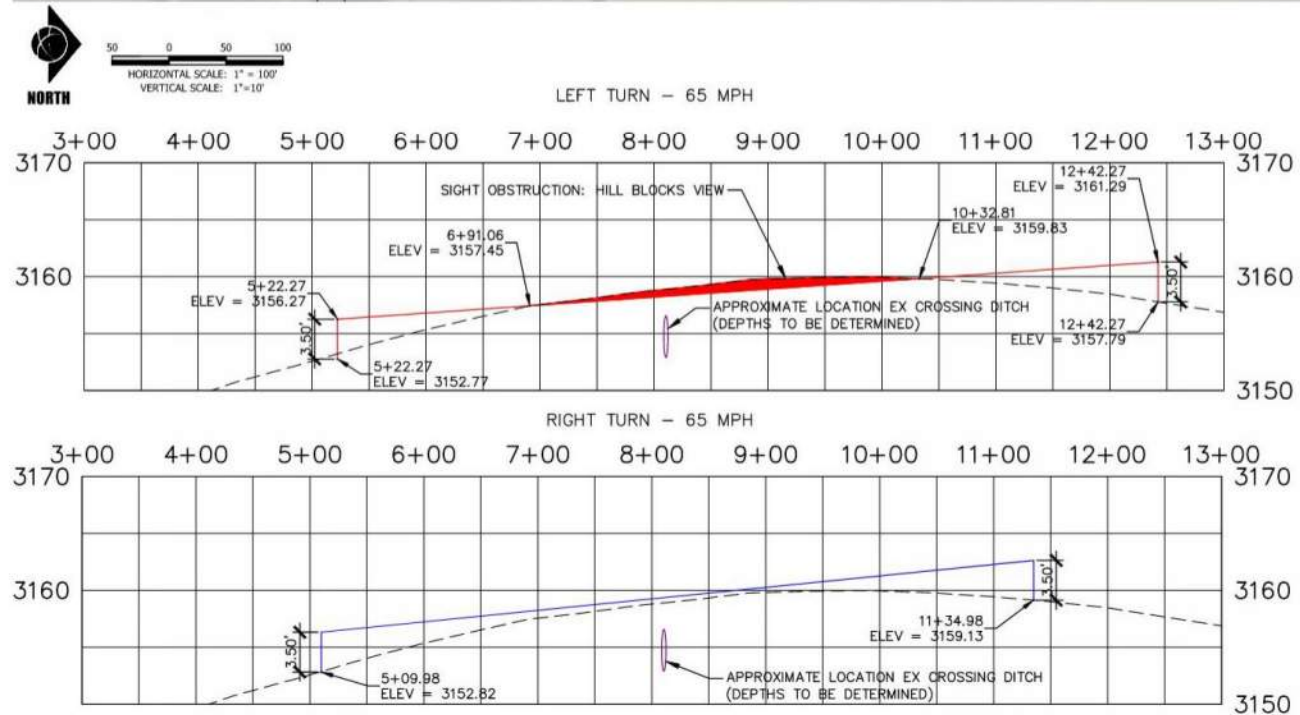


Figure 5: Intersection Sight Distance – 65 mph Design

Figure 6: Tree Branch Obstructions (Westbound, looking South)



Tree Line: The sight distance to the south of the intersection is available for as far as the eye can see (based on the vertical alignment of the roadway) – with slight impacts from overhanging tree limbs. While there is currently adequate sight distance, the sight distance would be greatly improved with minor trimming to a few particular branches that impact visibility. This trimming will provide more than adequate sight distance for both left- and right-turns off Yeoman Road. Figure 6, above, shows the branches requiring removal.

Intersection Sight Distance (ISD) via Field Measurements

In addition to the sight distance analyses performed from the survey data and AutoCAD, Sanderson Stewart performed a check on the same sight distance analyses for each movement utilizing appropriate field measurements. Staff performed the according field measurements for driver's eye positioning and identified the extent at which an object 3.5-foot tall was visible to. The object height and driver's eye were both modeled using a standard traffic control "candle". Figures 7 through 10 on the following pages show the results of these measurements. The distances measured were to the last point of visibility, or the 65-mph design speed distance.

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Figure 7: Field Measurements (Eastbound, looking South at 720-feet)



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Figure 8: Field Measurements (Eastbound, looking North at 600-feet)



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Figure 9: Field Measurements (Westbound, looking South at 625-feet)



Figure 10: Field Measurements (Westbound, looking North at 610-feet)



As shown in the preceding figures (Figs. 7 and 9), visibility to the south is adequate to allow for a design speed beyond that of 65-mph. Conversely, Figures 8 and 10 show the very tops of the object height to be visible at 600-feet and 610-feet when viewed from the eastbound and westbound approaches, respectively, to the north. This determines that the vertical curve north of the intersection creates a vision obstruction for the WB left turn movement that renders the ISD sub-standard by 110-feet (for a design speed of 65-mph) and by 55 feet (for a 60-mph design speed). The available sight distance to the north for an EB right turn is also 25 feet less than the recommended design ISD for a 65-mph design speed. This confirms the analysis performed with survey data and AutoCAD but showed the available sight distance was slightly less than what AutoCAD determined.

Finally, all the sub-standard sight distances measured in the field or with AutoCAD were converted to the corresponding maximum allowable design speeds that would render the distances adequate utilizing the underlying ISD equation documented in Appendix F – Sight

Distance of the MDT Road Design Manual (RDM). These calculations are included in Appendix B and summarized in Table 4 below.

Table 4: Summary of Maximum Design Speeds for Available ISD

Turning Movement	Method of Measurement	Available ISD (ft)	Corresponding Maximum Allowable Speed (mph)
WB Left	ACAD	637	57.8
WB Left	Field	610	55.3
EB Right	Field	600	62.8

Conclusions

The preceding analyses were used to identify safety concerns for the project intersection. Our crash history analysis determined that there were minimal reported crashes and tendencies. Further, the crash rate at this intersection was within the expected crash rate as determined by formulas within the AASHTO Highway Safety Manual. The intersection sight distance analyses performed at the 12 Mile Road and Yeoman Road intersection determined that there is adequate sight distance to the south of the intersection, although additional improvements could be made with minor pruning of tree limbs. The analyses also determined that the vertical curve to the north of the intersection creates a sight obstruction for any design speed over 55 mph. The existing intersection warning sign and supplemental 40 mph speed plaque for the southbound traffic on 12 Mile Road are sufficient for the vertical curve. However, the speed analysis of prevailing traffic indicates that vehicles are not abiding by the advisory speed zone. The following options could be used to help alleviate the speeds and sight obstruction:

- Speed Reduction
 - Increase conspicuity of the existing warning signs. This could include increasing the sign size, adding flags to the signs, adding flashing lights to the signs, or doubling the signs on each side of the road.
 - Add transverse rumble strips to 12 Mile Road. This would increase drivers' awareness of the advisory speed zone.
 - Install an overhead intersection warning beacon. The beacon would be visible from further away, and it would alert drivers to the upcoming intersection.
 - Add sign-mounted intelligent transportation systems. These lights could be RADAR activated to flash only when traffic is exceeding the advisory speeds.
 - Lower the speed limit to 55 mph. It should be noted that adequate enforcement of the speed limit would likely be required to change the drivers' behaviors.

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- Sight Obstruction Removal/Improvements
 - Re-grade the existing centerline along 12 Mile Road. This would require a lowering of approximately 4-inches to meet the 60-mph speed limit, or 12-inches to meet a 65-mph design speed. Impacts to the existing siphon should also be considered with this option.
 - Prune the tree limbs to south of the intersection to improve visibility.
 - Cutting the grasses and weeds along the shoulder of the road – particularly at the crest of the vertical curve to the north – will help improve drivers' ability to see oncoming traffic.

Please feel free to contact me at 406/869-3320 or eclaunch@sandersonstewart.com if you have any questions or would like to discuss this further.

Sincerely,



Erin S. Claunch, PE, PTOE
Municipal Group Manager/Senior Engineer

ESC/hl

Enc.

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TRAFFIC VOLUME DATA

APPENDIX A

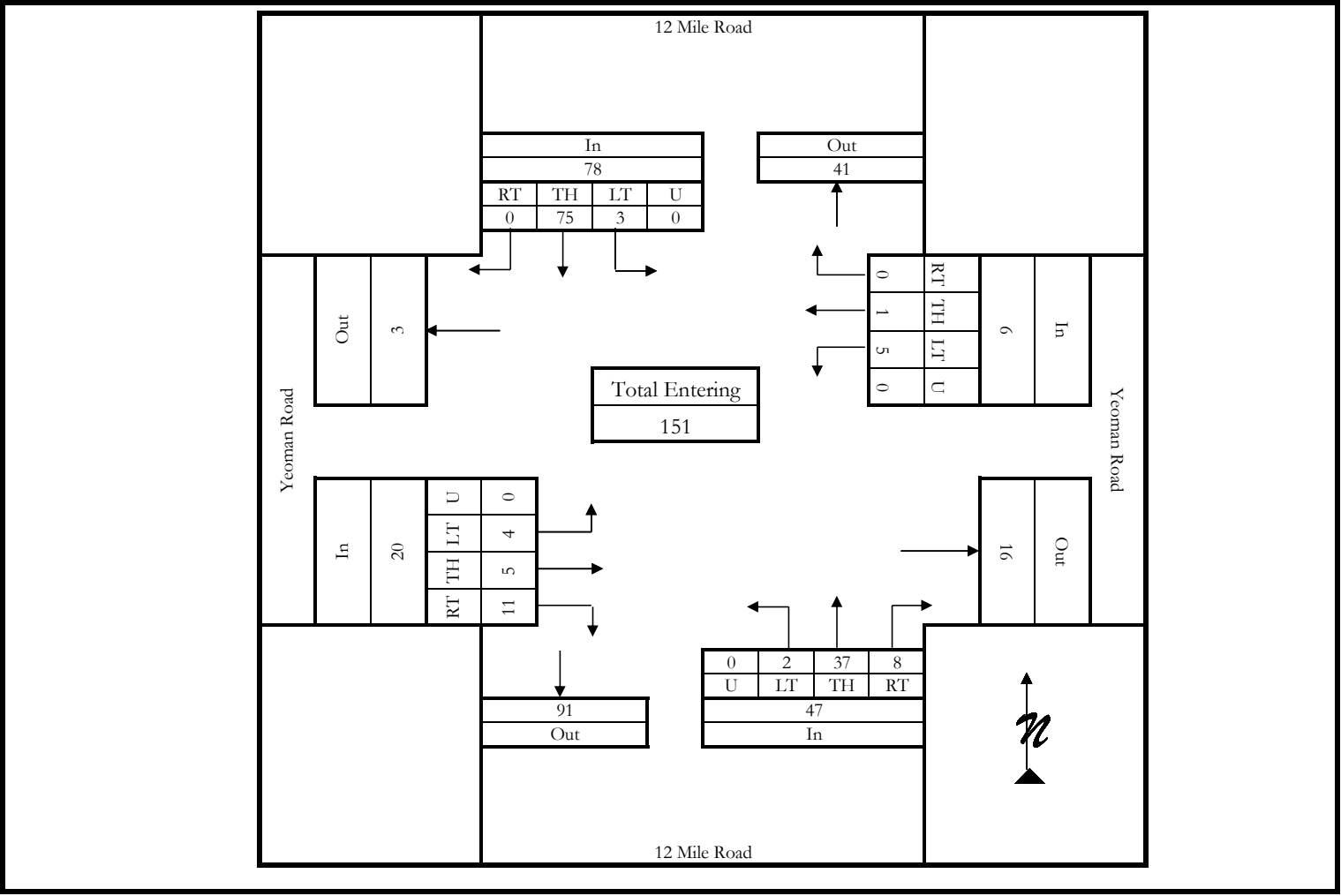
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

General Information

Counted By: Keaton Edam	Intersection: 12 Mile Road and Yeoman Road
Agency/Company: Sanderson Stewart	Jurisdiction: Shepherd/MDT
Date Performed: Thursday, September 8, 2022	Project Description: 12 Mile and Yeoman Intersection Study
Count Time Period: AM Peak Hour (7:00 - 8:00 AM)	Project Number: 21001.08
Project Number: 21001.08	Project Description: 12 Mile and Yeoman Intersection Study
North/South Street: 12 Mile Road	East/West Street: Yeoman Road

Vehicle Volumes and Adjustments

Start Time	12 Mile Road Southbound					12 Mile Road Northbound					Yeoman Road Eastbound					Yeoman Road Westbound					Int. Total
	Right	Thru	Left	U-turn	Total	Right	Thru	Left	U-turn	Total	Right	Thru	Left	U-turn	Total	Right	Thru	Left	U-turn	Total	
Factor	0.94	0.94	0.94	0.94		0.94	0.94	0.94	0.94		0.94	0.94	0.94	0.94		0.94	0.94	0.94	0.94		
7:00 AM	0	19	1	0	20	0	6	1	0	7	4	1	3	0	8	0	0	1	0	1	36
7:15 AM	0	32	0	0	32	1	6	1	0	8	4	0	0	0	4	0	1	0	0	1	45
7:30 AM	0	13	1	0	14	4	9	0	0	13	1	1	0	0	2	0	0	2	0	2	31
7:45 AM	0	11	1	0	12	3	16	0	0	19	2	3	1	0	6	0	0	2	0	2	39
Grand Total	0	75	3	0	78	8	37	2	0	47	11	5	4	0	20	0	1	5	0	6	151
Medium Truck %	0.0	4.0	0.0	0.0	3.8	12.5	8.1	0.0	0.0	8.5	9.1	0.0	0.0	0.0	5.0	0.0	100.0	0.0	0.0	16.7	
Heavy Truck %	0.0	4.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Truck %	0.0	8.0	0.0	0.0	7.7	12.5	8.1	0.0	0.0	8.5	9.1	0.0	0.0	0.0	5.0	0.0	100.0	0.0	0.0	16.7	
Total %	0.0	49.7	2.0	0.0	51.7	5.3	24.5	1.3	0.0	31.1	7.3	3.3	2.6	0.0	13.2	0.0	0.7	3.3	0.0	4.0	100.0
PHF	0.61	0.61	0.61			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			0.84



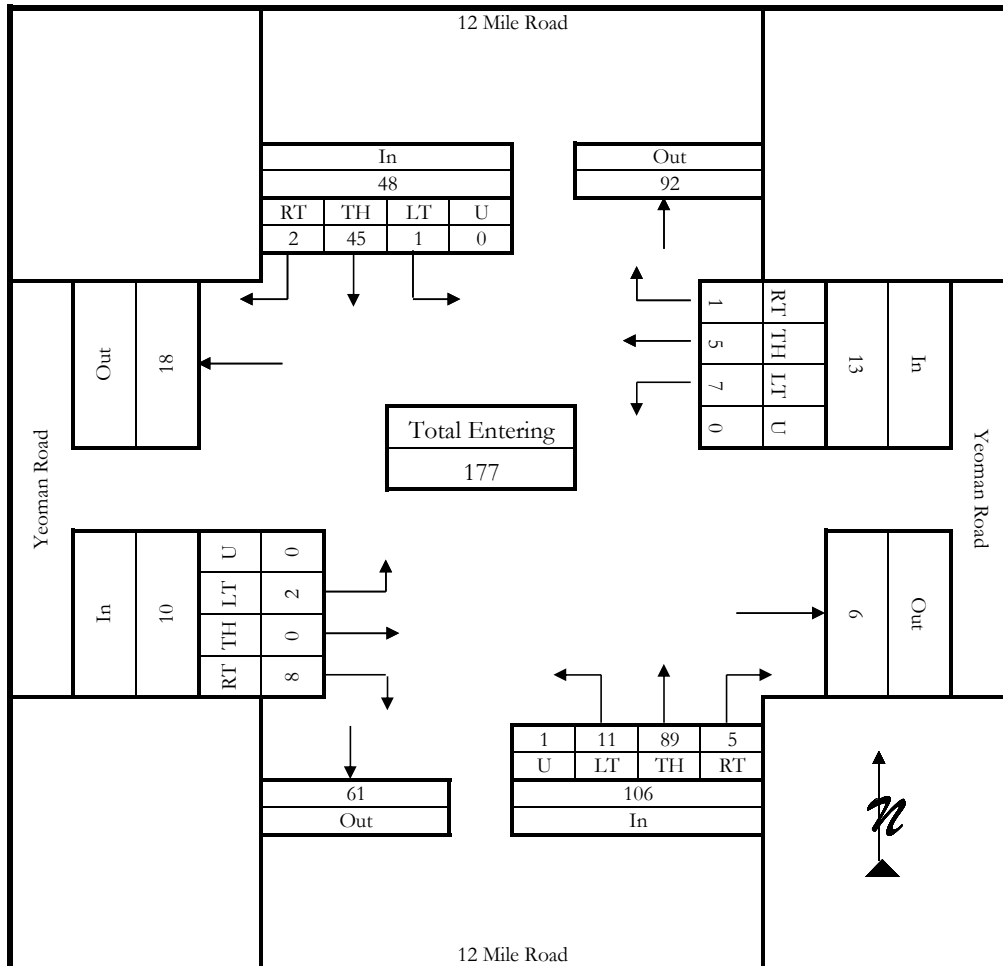
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

General Information

Counted By: Keaton Edam	Intersection: 12 Mile Road and Yeoman Road
Agency/Company: Sanderson Stewart	Jurisdiction: Shepherd/MDT
Date Performed: Thursday, September 8, 2022	Project Description: 12 Mile and Yeoman Intersection Study
Count Time Period: PM Peak Hour (4:15 - 5:15 PM)	Project Number: 21001.08
Project Number: 21001.08	Project Description: 12 Mile and Yeoman Intersection Study
North/South Street: 12 Mile Road	East/West Street: Yeoman Road

Vehicle Volumes and Adjustments

Start Time	12 Mile Road Southbound					12 Mile Road Northbound					Yeoman Road Eastbound					Yeoman Road Westbound					Int. Total
	Right	Thru	Left	U-turn	Total	Right	Thru	Left	U-turn	Total	Right	Thru	Left	U-turn	Total	Right	Thru	Left	U-turn	Total	
Factor	0.94	0.94	0.94	0.94		0.94	0.94	0.94	0.94		0.94	0.94	0.94	0.94		0.94	0.94	0.94	0.94		
4:15 PM	0	11	0	0	11	1	21	2	0	24	1	0	1	0	2	0	4	0	0	4	
4:30 PM	2	11	0	0	13	2	21	3	1	27	4	0	0	0	4	0	0	3	0	3	
4:45 PM	0	14	0	0	14	1	25	5	0	31	1	0	0	0	1	1	1	0	0	2	
5:00 PM	0	9	1	0	10	1	22	1	0	24	2	0	1	0	3	0	0	4	0	4	
Grand Total	2	45	1	0	48	5	89	11	1	106	8	0	2	0	10	1	5	7	0	13	
Medium Truck %	50.0	0.0	0.0	0.0	2.1	0.0	4.5	0.0	0.0	3.8	25.0	0.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0	7.7	
Heavy Truck %	0.0	2.2	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Truck %	50.0	2.2	0.0	0.0	4.2	0.0	4.5	0.0	0.0	3.8	25.0	0.0	0.0	0.0	20.0	0.0	20.0	0.0	0.0	7.7	
Total %	1.1	25.4	0.6	0.0	27.1	2.8	50.3	6.2	0.6	59.9	4.5	0.0	1.1	0.0	5.6	0.6	2.8	4.0	0.0	7.3	
PHF	0.87	0.87	0.87			0.84	0.84	0.84			1.00	1.00	1.00			1.00	1.00	1.00		0.91	



ALLOWABLE DESIGN SPEEDS CALCULATIONS

APPENDIX B



INTERSECTION SIGHT DISTANCE (PER EQN. F.3-1 OF MUT TRAFF. ENG. MAN.)

$$\bullet \quad ISD = 1.47 (V_m) t_G \Rightarrow \frac{ISD}{1.47 t_G} = V_{MAT}$$

$$\rightarrow t_G = 7.5 \text{ SEC FOR LEFT TURNS}$$

$$\rightarrow t_G = 6.5 \text{ SEC FOR RIGHT TURNS}$$

AVAILABLE SIGHT DISTANCES (MEASURED IN CAD):

$$\rightarrow \text{WESTBOUND LEFTS} = 637.40 \text{ FT}$$

$$\rightarrow \text{EASTBOUND RIGHTS} = 655.93 \text{ FT}$$

CALCULATED ALLOWABLE SPEEDS BASED ON ISD:

$$\rightarrow \text{WB LT} \Rightarrow V_{LT} = \frac{(637.40 \text{ FT})}{1.47 (7.5 \text{ SEC})} = 57.81 \text{ MPH}$$

$$\rightarrow \text{EB RT} \Rightarrow V_{RT} = \frac{(655.93 \text{ FT})}{1.47 (6.5 \text{ SEC})} = 68.65 \text{ MPH}$$

INTERSECTION SIGHT DISTANCE (PER EQN. F.3-1 OF MDT TRAFFIC ENG. MANUAL)

$$\bullet \text{ ISD} = 1.47 (V_m) t_G \Rightarrow \frac{\text{ISD}}{1.47 t_G} = V_m$$

$$\rightarrow t_G = 7.5 \text{ SEC FOR LEFT TURNS}$$

$$\rightarrow t_G = 6.5 \text{ SEC FOR RIGHT TURNS}$$

 \bullet AVAILABLE SIGHT DISTANCE (MEASURED IN FIELD)

$$\rightarrow \text{WB LEFTS} = 610 \text{ FT}$$

$$\rightarrow \text{EB RIGHTS} = 600 \text{ FT}$$

 \bullet ALLOWABLE SPEEDS CALCULATED PER ISD

$$\rightarrow \text{WB LEFT} \Rightarrow V_{LT} = \frac{(610 \text{ FT})}{1.47 (7.5 \text{ SEC})} = 55.3 \text{ MPH}$$

$$\rightarrow \text{EB RIGHT} \Rightarrow V_{RT} = \frac{(600 \text{ FT})}{1.47 (6.5 \text{ SEC})} = 62.8 \text{ MPH}$$

Planning Board

Date: 05/09/2023
Title: Highlands Ranch Subdivision, 2nd Filing - Preliminary Major Plat
Presented by: Monica Plecker
Department: Planning & Community Services
Presentation: Yes

Information

RECOMMENDATION

Staff recommends the Planning Board forward to the Board of County Commissioners a recommendation to conditionally approve the preliminary plat of Highlands Ranch Subdivision, 2nd Filing, and adopt the Findings of Fact as presented in the staff report.

BACKGROUND (Consistency with Adopted Plans and Policies, if applicable)

On April 3, 2023, WWC Engineering, Tom and Kim Troop / Highlands Ranch LLC., applied for preliminary major plat approval of Highlands Ranch Subdivision, 2nd Filing. The subject property is generally located on the South of Highlands Ranch Road, southeast of Shorey Road and east of Molt Road. This parcel of land is outside of zoning. The land is currently dryland grass and shrub land.

VARIANCES REQUESTED

No variances from the City Subdivision Regulations have been requested.

PROPOSED CONDITIONS OF APPROVAL

Pursuant to Section 76-3-608(4), MCA, the following conditions are recommended to reasonably minimize potential adverse impacts identified within the Findings of Fact.

1. To protect public health and safety, prior to final plat approval, the applicant will add language in the SIA under the heading "Conditions that run with the land" to alert future lot owners that they must receive approval from the MDEQ for the proposed water systems, septic systems and the proposed storm water management.
2. To provide for the correct cash in lieu contribution, prior to final plat approval, the applicant will follow Section 10.6 Determining Cash Contributions for Parkland, for the correct amount to be paid to Yellowstone County parks department.
3. To minimize the effects on local service, prior to final plat approval, the applicant will coordinate with the USPS for locating and providing the correct amount of space for safely delivering the mail to the residents.
4. To minimize effects on the natural environment, prior to final plat approval a weed management plan and property inspection shall be completed by the County Weed Department.
5. Minor changes may be made in the SIA and final documents, as requested by the Planning, Legal or Public Works Departments to clarify the documents and bring them into the standard acceptable format.
6. The final plat shall comply with all requirements of the Yellowstone County Subdivision Regulations, rules, regulations, policies, and resolutions of Yellowstone County, and the laws and Administrative Rules of the State of Montana.
7. To protect public health and safety, and minimize the effect on local services, prior to Final Plat approval, the applicant shall complete the necessary paperwork with Yellowstone County Public Works and Yellowstone County Finance Departments to expand and include the newly platted lots within the existing RSID which maintains the 30,000 gallon dry hydrant.

PROCEDURAL HISTORY

- Pre-application meeting January 19, 2023
- Preliminary plat application submitted to Planning Division on April 3, 2023
- Departmental review meeting April 20, 2023
- Preliminary plat resubmittal April 27, 2023
- Planning Board plat review May 9, 2023
- Planning Board public hearing May 23, 2023
- Preliminary plat to Board of County Commissioners, June 13, 2023
- 60 working-day preliminary plat review period ends June 27, 2023

PLAT INFORMATION

General location: South of Highlands Ranch Road, southeast of Shorey Road and east of Molt Road

Legal Description: Lots 4 and 5A, Block 1, The Highlands Estates Subdivision
Owner/Subdivider: Tom and Kim Troop / Highlands Ranch LLC
Engineer and Surveyor: WWC Engineering
Existing Zoning: Outside zoning
Existing land use: Vacant native grassland
Proposed land use: Residential
Gross and Net area: 57 acres
Proposed number of lots: 10
Lot size: Max: 10.72 acres
Min: 3.97 acres
Parkland requirements: Parkland dedication required is 0.75 acres, the applicant will be providing a cash in lieu contribution for parkland.

STAKEHOLDERS

There are no stakeholder responses at this time. Stakeholder input will be received at a public hearing scheduled for this subdivision on May 23, 2023.

ALTERNATIVES

In accordance with state law, the Board of County Commissioners has 60 working days to act upon this major preliminary plan. The 60 working day review period for the proposed subdivision ends on June 27, 2023. State and County subdivision regulations also require that preliminary plats be reviewed using specific criteria, as stated within this report. The County may not unreasonably restrict an owner's ability to develop land if the subdivider provides evidence that any identified adverse effects can be mitigated. Within the 60 working day review period, the Board of County Commissioners is required to:

1. Approve;
2. Conditionally Approve; or
3. Deny the Preliminary Plan

FISCAL EFFECTS

This plat will have no fiscal impacts on the City/County Planning Division.

SUMMARY

The purpose of the County's subdivision review process is to identify potential negative effects of property being subdivided. When negative effects are identified it is the subdivider's responsibility to mitigate those effects. Various County departments, private service/utility providers and the affected school district(s), have reviewed this application and provided input on effects and mitigation. The Findings of Fact, which are presented as an attachment, discuss potential negative impacts of the subdivision and conditions of approval are recommended as measures to further mitigate any impacts. In this case, there were found to be some impacts from this proposed subdivision.

Attachments

Findings of Fact
Proposed Plat
SIA Draft

FINDINGS OF FACT

The City-County Planning Division Staff has prepared the Findings of Fact for Highlands Ranch Subdivision, 2nd Filing. These findings are based on the preliminary plat application and supplemental documents addressing the review criteria required by the Montana Subdivision and Platting Act (76-3-608, MCA) and the Yellowstone County Subdivision Regulations (YCSR).

A. What are the effects on agriculture, local services, the natural environment, wildlife and wildlife habitat and public health and safety (76-3-608 (3) (a) MCA) (Section 3.2 (H) (2) YCSR)

1. Effect on agriculture and agricultural water users' facilities

The subject property is not used for farming purposes. There are no irrigation facilities in or around the proposed subdivision. There will be no effect on water user facilities with this subdivision.

2. Effect on local services

a. **Water** – The proposed subdivision is not located within any public water district. The applicant is proposing to have each future property owner receive approval for water on the lot once the house is located and the size of the house is determined. Water systems will be installed meeting the requirements outlined in Section 4.9 of the Yellowstone County Subdivision Regulations and the MDEQ. **(Condition #1)** The operation and maintenance of the water system will be the responsibility of the lot owner to maintain.

b. **Septic** - The proposed subdivision is not located within any public sewer district. The applicant is proposing to have each future property owner receive approval for a septic system on the lot once the house is located and the size of the house is determined. Septic systems will be installed meeting the requirements outlined in Section 4.9 of the Yellowstone County Subdivision Regulations and the MDEQ. **(Condition #1)** The operation and maintenance of the septic system will be the responsibility of the lot owner to maintain.

All private utilities, power, telephone, gas and cable television will be installed in the public right of way or easements identified on the plat.

c. **Streets and roads** – Roads within the subdivision were built in 60-foot-wide right of ways with a 24-foot paved surface and 2-foot-wide shoulders on each side. Drainage ditches will be installed along the sides as required by MDEQ for stormwater management. An RSID for maintenance of roads was created within the subdivision with the first filing of the subdivision.

d. **Fire and Police services** – The property is within the Molt Volunteer Fire Department firefighting area. Subdivision regulations require that major subdivisions have a 30,000-gallon dry hydrant system for the subdivision. The 30,000-gallon water tank was installed with the first filing of the subdivision. RSID #889 was created for

maintenance of the tank. It was created with the first filing of the subdivision and will include the new lots. **(Condition #7)**

The Yellowstone County Sheriff's Department will provide law enforcement services to this subdivision.

e. **Solid Waste disposal** – The Billings Landfill has capacity for solid waste disposal. Solid waste will be collected and disposed of by a private garbage collection company. Each lot owner will be responsible for arranging for collection.

f. **Storm water drainage** – The storm water drainage will be collected onsite using a combination of swales and the natural slope of the land. Proposed storm water drainage shall be submitted to the MDEQ for review and approval prior to final plat. All proposed stormwater systems shall meet the requirements of Section 4.7 of Yellowstone County Subdivision Regulation's and the requirements of MDEQ. **(Condition #1)** Storm water management on each lot will be determined when the home site is chosen, and the size of the house has been decided upon.

g. **School facilities** – The proposed subdivision is located within Broadview School for K-12. At the time of the writing of these findings there was no response from the Broadview School regarding capacity or bus routes.

h. **Parks and recreation** – This proposed subdivision is required to provide parkland. The amount the applicant is required to provide is 0.75 acres. They are proposing to place parkland along the south side of Highlands Ranch Road from the existing dry hydrant location to the east property line.

County parks is not accepting this proposed parkland and has requested a cash in lieu contribution. The proposed parkland is not usable space as a park nor does it provide a desirable natural aesthetic with scenic value. It would not provide any programmable space or a walking path for residents or the public. It would be a roadside maintenance issue for the county.

The applicant will follow Section 10.6 Determining Cash Contributions for Parkland, from the Yellowstone County Subdivision Regulations. **(Condition #2)**

i. **Postal Service** – The USPS responded to request for comments. The USPS has requested a location off the corner of Shorey Road for a centralized box unit. The applicant will be required to coordinate with the USPS to ensure they are providing what has been requested. **(Condition #3)**

j. **Historic features** – No known historic or cultural assets exist on the site.

k. **Phasing of Development** - The applicant is not proposing to develop this subdivision in phases.

3. Effects on the natural environment

The development will use noxious weed control measures to prevent the spread of noxious weeds to adjacent developed or agricultural land. As required by County Subdivision Regulations Section 4.15 all county subdivisions are required to apply for and obtain a weed management plan with the County Weed Department. Any subdivision that has an existing Weed Management Plan are required to get an updated Weed Management Plan. That plan will be submitted with final plat approval. **(Condition #4)**

There are no apparent or known natural hazards on the property.

4. Effects on wildlife and wildlife habitat

There are no known endangered or threatened species on the property. A paragraph in the 'Conditions that Run with the Land' section of the SIA warns future lot owners of the likely presence of wildlife in the area and their potential to damage residential landscaping.

5. Effects on public health and safety

Plans and designs for the water and septic system will be reviewed and approved by MDEQ prior home construction on each lot to ensure public health and safety.

Fire and emergency services are provided for this proposed subdivision from Molt Volunteer Fire Department and the Yellowstone County Sheriff's department.

B. Was an environmental assessment required? If yes, what, if any, significant adverse impacts were identified? (76-3-603 MCA) (Chapter 9, YCSR)

An environmental assessment was required for this subdivision pursuant Section 9.2 C of the County Subdivision Regulations. The impacts to the environment which include, agricultural, water user facilities, natural environment wildlife and habitat, will be minimal. The land is not used for agricultural purposes, it is grassland and shrubs. With the large lots proposed the impacts to the natural environment should be minimal. There are no known endangered species on the land.

C. Does the subdivision conform to the Yellowstone County 2008 Growth Policy, the 2018 Urban Area Transportation Plan and the Billings Area Bikeway and Trail Master Plan Update? [BMCC 23-302.H.4.]

1. Yellowstone County - 2008 Growth Policy

The subdivision is consistent with the following goals of the Growth Policy:

- Goal: Predictable land use decisions that are consistent with neighborhood character and land use patterns. (p. 6)

The subdivision is consistent with the type of residential development in the surrounding area.

- Goal: Controlled weed populations. (p. 9)

The developer shall complete a weed management plan and shall provide a re-vegetation plan for any ground disturbed by development.

2. 2018 Billings Urban Area Long Range Transportation Plan

The subject property maintains the road study area of the Transportation Plan. As proposed, the internal streets are neighborhood streets associated with this subdivision.

3. Billings Area Bikeway and Trail Master Plan (BABTMP)

This subdivision is outside the BABTMP boundaries for trails. They will not be required to build any trail as part of the development.

D. Does the subdivision conform to the Montana Subdivision and Platting Act (MSPA) and to local subdivision regulations? [MCA 76-3-608 (3) (b) and Section 3.2 (3) (a) YCSR]

The proposed subdivision meets the requirements of the MSPA and the YCSR. The subdivider and the local government have complied with the subdivision review and approval procedures that are set forth by local and state subdivision regulations.

E. Does the subdivision conform to sanitary requirements? [Section 4.8 (C) and 4.9 (C), YCSR]

The lot purchaser must receive approval from the MDEQ prior to any home construction on each lot. New parcels, without existing septic systems, are subject to MDEQ review.

F. Does the proposed subdivision meet any applicable Zoning Requirements? [Section 3.2 (H) (3) (e), YCSR]

The proposed subdivision is outside County Zoning Jurisdiction. There are no Yellowstone County zoning regulations on the subject property.

G. Does the subdivision provide for necessary planned utilities? [MCA 76-3-608 (3) (c) and Section 3.2 (H) (3) (b), YCSR]

Should the private utility companies require easements the applicant will be required to coordinate the easements needed with the private utility companies.

H. Does the proposed subdivision provide for Legal and Physical Access to all lots? [MCA 76-3-608 (3) (d) and Section 3.2 (H) (3) (c) (d), YCSR]

Legal and physical access will be provided for Shorey Road and Highland Ranch Road to the new proposed private road, Montrose Road. The internal private street will provide access to individual lots.

CONCLUSIONS OF FINDINGS OF FACT

- This subdivision does not create adverse impacts that warrant denial of the subdivision.
- Impacts to agriculture, agriculture water user facilities, local services, public health and safety, the natural environment, and wildlife should be minimal, and can be mitigated by reasonable conditions of final plat approval.

- The subdivision conforms to some of the goals of the Growth Policy.
- The applicant has complied with the MSPA and YCSR processes and the subdivision conforms to the law requirements.

RECOMMENDATION

Staff recommends the Planning Board forward to the Board of County Commissioners, the preliminary plat of The Highlands Ranch Subdivision, recommending conditional approval and adopt the Findings of Fact as presented in the staff report.

Return to:
WWC Engineering
550 S. 24th St. W. Ste. 201
Billings, MT 59102

THE HIGHLANDS RANCH SUBDIVISION, 2ND FILING
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(Yellowstone County)

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The Highlands Ranch Subdivision, 2nd Filing

This agreement is made and entered into this ____ day of _____, 20____, by and between *The Highlands Ranch, LLC*, whose address for the purpose of this agreement is **2415 Ash Street, Billings, MT 59101**, hereinafter referred to as “Subdivider,” and **YELLOWSTONE COUNTY, Montana**, hereinafter referred to as “County.”

WITNESSETH:

WHEREAS, at a regular meeting conducted on ____ day of _____, 20____, the Board of Planning recommended conditional approval of a preliminary plat of *The Highlands Ranch Subdivision, 2nd Filing*; and

WHEREAS, at a regular meeting conducted on ____ day of _____, 20____, the Yellowstone County Board of County Commissioners conditionally approved a preliminary plat of *The Highlands Ranch Subdivision, 2nd Filing*; and

WHEREAS, a Subdivision Improvements Agreement is required by the County prior to the approval of the final plat.

WHEREAS, the provisions of this agreement shall be effective and applicable to *The Highlands Ranch Subdivision, 2nd Filing* upon the filing of the final plat thereof in the office of the Clerk and Recorder of Yellowstone County, Montana. The Subdivision shall comply with all requirements of the Yellowstone County Subdivision Regulations, the rules, regulations, policies, and resolutions of Yellowstone County, and the laws and administrative rules of the State of Montana.

THEREFORE, THE PARTIES TO THIS AGREEMENT, for and in consideration of the mutual promises herein contained and for other good and valuable consideration, do hereby agree as follows:

I. VARIANCES

There are no variances being requested with this subdivision.

II. CONDITIONS THAT RUN WITH THE LAND

- A.** Lot owners should be aware that this subdivision is being built in close proximity to prime deer and antelope habitat and it is likely that homeowners will experience problems with damage to landscaped shrubs, flowers, and gardens. The Montana Fish, Wildlife, and Parks Department does not provide damage assistance unless there is damage to commercial crops and/or a threat to public health and safety.
- B.** Lot owners should be aware that soil characteristics within the area of this subdivision, as described in the 1972 Yellowstone County Soil Survey, indicate that there could be potential limitations for proposed construction on the lots, which may require a geotechnical survey prior to construction.

- C. No water rights have been transferred to the lot owners. Irrigation ditches that exist on the perimeter of this development are for the benefit of other properties. Perimeter ditches and drains shall remain in place and shall not be altered by the Subdivider or subsequent owners.
- D. There is attached hereto a Waiver waiving the right to protest the creation of the special improvement district or districts which by this reference is expressly incorporated herein and made as much a part hereof as though fully and completely set forth herein at this point. The Waiver will be filed with the plat, shall run with the land, and shall constitute the guarantee by the Subdivider and property owner or owners of the developments described herein. Said Waiver is effective upon filing and is not conditioned on the completion of the conditions set forth in this Agreement. The Subdivider and owner specifically agree that they are waiving valuable rights and do so voluntarily.
- E. Culverts and associated drainage swales shall not be filled in or altered by the subdivider or subsequent lot owners.
- F. When required by road improvements, all fences and irrigation ditches in the public right-of-way adjacent to this subdivision shall be removed or relocated outside of the public right-of-way and any relocation outside of the public right-of-way shall be subject to securing and recording easements.
- G. Future maintenance of all public (or common) improvements shall be done through one (1) or more RSID(s) created as part of the SIA for this subdivision.

III. TRANSPORTATION

A. Streets

The streets within this subdivision, West Montrose Road and East Montrose Road, were constructed with The Highlands Ranch Subdivision. The private roads have a 60-foot-wide easement and constructed to the county road pavement standards. A road maintenance agreement was also created under Document No. 4042894. The lots created with this subdivision shall be a part of the agreement.

B. Traffic Control Devices

There will be no traffic control devices installed with this subdivision.

C. Access

Access to this subdivision shall be from Shorey Road and Highlands Ranch Road which are paved county dedicated roads with 60-foot-wide right-of-way and shall be maintained by the county.

D. Billings Area Bikeways and Trail Master Plan (BABTMP)

This subdivision is not located within the area of the BABTMP.

IV. EMERGENCY SERVICE

A 30,000-gallon water storage tank/dry hydrant was installed as part of The Highlands Ranch Subdivision. The dry hydrant is located in a dry hydrant easement filed under Document No. 4042160. RSID 889 was created to maintain and service the dry hydrant. The dry hydrant system was inspected and approved by the Molt Volunteer Fire Department for final plat approval of The Highlands Ranch Subdivision.

V. STORMDRAINAGE

All drainage improvements shall comply with the provisions of the Section 4.7, Yellowstone County Subdivision Regulations, and a stormwater management plan shall be submitted to and approved by MDEQ, or its designee.

Stormwater improvements for roadway construction were constructed as designed and permitted with Yellowstone County Sanitarian. Stormwater improvements for residential home construction will be completed when the home size and location on lot have been determined by a future lot owner.

VI. UTILITIES

A. Water

Based on the acreage of the lots within this subdivision and unknown location and size of home to be constructed, these will have water supply permitting completed at a future date. The Subdivider will work with the future lot owners on completion of permitting through MDEQ when a home size and location on the lot have been determined.

B. Septic System

Based on the acreage of the lots within this subdivision and unknown location and size of home to be constructed, these will have sanitary permitting completed at a future date. The Subdivider will work with the future lot owners on completion of permitting through MDEQ when a home size and location on the lot have been determined.

C. Power, Telephone, Gas, and Cable Television

The private utilities shall be installed within easements there were dedicated on the plat for The Highlands Ranch Subdivision per the request of the utility companies.

VII. PARKS/OPEN SPACE

- A total of 0.60 acre is required for parkland in this subdivision and will be provided by park dedications on the subdivision.
- The parkland will be finished graded and seeded with native prairie grass mixture.
- An RSID will be created for the maintenance of the parkland.

VIII. IRRIGATION

There are no irrigation systems located within this subdivision.

IX. WEED MANAGEMENT

All noxious weeds on the latest Yellowstone County Noxious Weed List shall be controlled on all properties in the subdivision.

- A Weed Management Plan must be filed and updated as needed for approval by the Yellowstone County Weed Department. Said weed management plan shall contain the noxious weeds being addressed and the plan for the control of those weeds. All associated cost for noxious weed control is the responsibility of the owner of record.
- A revegetation plan shall be submitted as part of the management plan. A seeding recommendation can be obtained from the Yellowstone County Weed Department pursuant to Section 7-22-2152, MCA. The Yellowstone County Weed Department reserves the right to revise these recommendations based on the required site inspection.

X. SOILS/GEOTECHNICAL STUDY

A geotechnical study is not required for this subdivision.

XI. FINANCIAL GUARANTEES

There are no required improvements planned for this subdivision; therefore, a financial guarantee is not required.

XII. LEGAL PROVISIONS

- A. Subdivider agrees to guarantee all public improvements for a period of one year from the date of final acceptance by Yellowstone County.
- B. The owners of the properties involved in this proposed Subdivision by signature subscribed herein below agree, consent, and shall be bound by the provisions of this Agreement.
- C. The covenants, agreements, and all statements in this Agreement apply to and shall be binding on the heirs, personal representatives, successors and assigns of the respective parties.
- D. In the event it becomes necessary for either party to this Agreement to retain an attorney to enforce any of the terms or conditions of this Agreement or to give any notice required herein, then the prevailing party or the party giving notice shall be entitled to reasonable attorney fees and costs.

day of _____, 20__.

“COUNTY”
COUNTY OF YELLOWSTONE
MONTANA

County of Yellowstone
Board of County Commissioners

By: _____
Chairman

Commissioner

Commissioner

Attest: _____
County Clerk and Recorder

STATE OF MONTANA)
 : ss
County of Yellowstone)

On this _____ day of _____, 20__, before me, a Notary Public in and for the State of Montana, personally appeared _____, _____, and _____, known to me to be the Board of County Commissioners and the County Clerk and Recorder, respectively, of Yellowstone County, Montana, whose names are subscribed to the foregoing instrument in such capacity and acknowledged to me that they executed the same on behalf of Yellowstone County, Montana.

Notary Public in and for the State of Montana
Printed Name: _____
Residing at: _____
My commission expires: _____

