ATTENTION

The City Council meeting will be held in a hybrid format that may include both in-person AND virtual attendance via Zoom. Unless they have cause to appear virtually, Councilmembers will attend the meeting in person in Council Chambers, second floor of City Hall, 220 N. 27th Street. In order to honor the Right of Participation and the Right to Know in Article II, Sections 8 and 9, of the Montana Constitution, the City of Billings and City Council are making every effort to meet the requirements of the open meeting laws.

Citizens are invited to:

- Review the Agenda Packet on the City's website at: www.billingsmt.gov and click on "Your Government," "City Council," and "Agendas & Minutes".
- View the meeting:
  - On Community 7 TV - Channel 7 or Channel 507 -- Spectrum Cable. *(On evenings when there is a conflict with School District No. 2 Board meetings, the City Council meeting will be broadcast on Channel 8 - Spectrum Cable.)* Channel 7 or Channel 978 - TDS Fiber.
  - Online at www.comm7tv.com and click on the "Watch Live" icon. Community 7 also has links to their Facebook page and YouTube channel.
  - On the City's website at www.billingsmt.gov and click on "Watch Meetings Online" on the homepage.
  - In-Person.

Citizens may submit public comment via the following methods:

- Mail: City Clerk, P.O. Box 1178, Billings, MT 59103
- Email: Council@billingsmt.gov.
  - Emails received after 3:00 PM on the day of the meeting, may be posted on the Council's webpage the following day for public viewing.
- Attend the meeting in person

Please contact Denise Bohlman, City Clerk, at bohlmand@billingsmt.gov, or at 406.657.8210, with any questions.

CITY OF Billings

VISION STATEMENT:
"The Magic City: A diverse, welcoming community where people prosper and business succeeds."

WORK SESSION AGENDA

COUNCIL CHAMBERS | APRIL 1, 2024 | 5:30 P.M.

CALL TO ORDER: Mayor Cole

PUBLIC COMMENT ON ALL ITEMS. This is the time to comment on any matter (Agenda or Non-Agenda) falling within the scope of the Billings City Council. There will also be time in conjunction with each agenda item for public comment relating to that item. You may only speak once for each item during the meeting.

Please note, the City Council cannot take action on any item of significant interest to the public that does not appear on the agenda. Comments are limited to three (3) minutes during each public comment period or as set by the Mayor. **Speaker sign-in required.** Please sign the roster at the cart located at the back of the Council chambers or at the podium.

1. **Chase Hawks Memorial Association.**

   Public Comment

2. **Heroes 4 Hoodies MOU.**

   Public Comment

3. **Unmanned Aerial System (Drone) Program.**

   Public Comment

4. **Safe Routes to School Plan Update, Phase 2.**

   Public Comment

5. **Parks and Recreation Spring and Summer 2024 Programs.**

   Public Comment

6. **Highlight Upcoming Agenda Items of Council Interest.**

   Public Comment

COUNCIL DISCUSSION:

PUBLIC COMMENT on "NON-AGENDA ITEMS". Speaker Sign-in required. (*Restricted to ONLY items not on this printed agenda. Comments are limited to 3 minutes or as set by the Mayor. Please sign the roster at the cart located at the back of the Council chambers or at the podium.)*

ADJOURN:

Note:

- This meeting is an "informal" meeting of the City Council. The content of the Agenda is subject to change at the meeting.
- In the event there is a Closed Executive Session, the sole purpose is to discuss litigation strategy. The other parties to the case(s) discussed are not public bodies or associations as described in Section 2-3-203(1) and (2), MCA. The meeting is closed, as allowed by Section 2-3-203(4)(a), MCA, "to discuss a strategy to be followed with respect to litigation when an open meeting would have a detrimental effect on the litigating position" of the City of Billings.

City Council Work Session

Date:	04/01/2024
Title:	Chase Hawks Memorial Association
Presented by:	Chris Kukulski, City Administrator
Department:	City Hall Administration
Presentation:	Yes
Legal Review:	Not Applicable
Project Number:	N/A

RECOMMENDATION

Council review the full Chase Hawks Memorial Association (CHMA) Economic Impact Analysis attached to this staff memo.

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

In September of 1994, a six-year-old Montana cowboy, Chase Hawks, was killed in a tragic accident. Family and friends gathered to form the Chase Hawks Memorial Association with the goal of helping others facing crisis situations so something positive could come from the loss they felt.

The Foundation's annual fundraising effort is anchored in volunteer events including the Annual Rough Stock Rodeo, and the Labor Day weekend "Burn the Point" parade and car show. These events, combined with the Foundation's annual expenditures, produce a significant local economic impact. The full Chase Hawks Memorial Association (CHMA) Economic Impact Analysis is attached.

STAKEHOLDERS

Alex Tyson with Visit Billings will speak, along with Jennifer Sayler, one of the CHMA Board Members.

ALTERNATIVES

N/A

FISCAL EFFECTS

N/A

Attachments

CHMA Impact Analysis

2023

CHASE HAWKS Memorial Association

An Economic Impact Report Prepared for Chase Hawks October 2023

CIRCLE ANALYTICS

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General Project Description

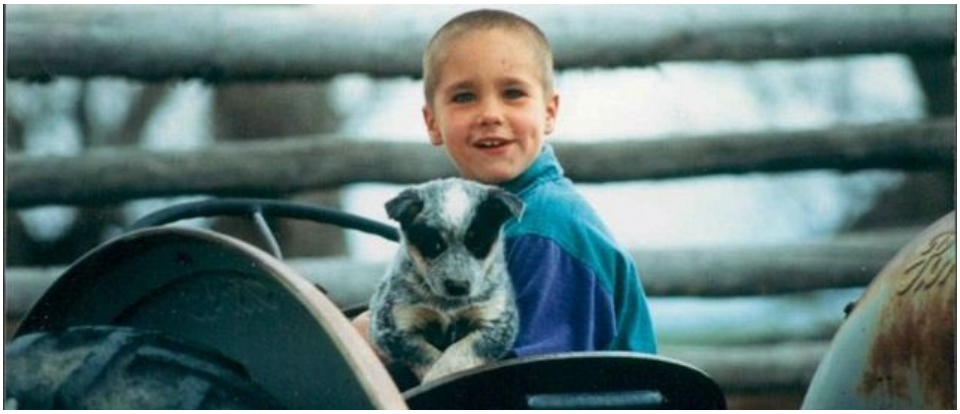
This analysis seeks to measure the economic contributions of events and programs related to the Chase Hawks Memorial Foundation. In September of 1994, a six-year-old Montana cowboy, Chase Hawks, was killed in a tragic accident. Family and friends gathered to form the Chase Hawks Memorial Association with the goal of helping others facing crisis situations so something positive could come from the loss they felt.

The Foundation's annual fundraising effort is anchored in volunteer events including the Annual Rough Stock Rodeo, and the Labor Day weekend "Burn the Point" parade and car show. These events, combined with the Foundation's annual expenditures, produce a significant local economic impact.

The Association serves as a viable resource for families in crisis that have needs which are not addressed by larger charities or insurance because of immediacy or circumstances.

Many requests for assistance come from local charities and agencies that recognize a family in crisis, but are unable to help because of fiscal, geographic, or time constraints imposed by their own criteria or regulations.

The Foundation's ability to compliment larger, more established and need-specific organizations has made Chase Hawks Memorial Association a valuable community partner.



Description of Reports

This analysis is divided into 6 reports as described below:

1. Gross Economic Output: The aggregated market value of goods and services produced by businesses and government enterprises in the economy. It is essentially equal to the revenue collected by businesses (including indirect taxes) within the County or impact area.

2. Gross County Product: The total of value added created by the production of goods and services in the economy. It represents the sum of labor compensation, capital type income and indirect business taxes. Gross County Product is best described as new money added because of the combined activities of this project.

3. Total Labor Income: The compensation to employees and self-employed proprietors including both wages and indirect payments such as retirement benefits, health insurance and other similar fringe benefits.

4. Total Employment: The number of jobs generated within the impact area including full-time and part-time positions, salaried workers and sole proprietors.

5. Capital Income: The sum of income such as business profits, interest and rental income. Capital Income is best described as non-labor benefits.

6. Indirect Business Tax: Taxes and fees not based in the businesses' income. It may represent sales taxes (if any) levied by the state and county and property taxes levied against businesses as well as federal, state and local fees.



Background and Methodology:

Several assumptions were made in preparation of this analysis, they are as follows:
The Chase Hawks Memorial Foundation annual program expenditure is $683,712, but in addition, a local survey of past grant recipients showed that grants made to special need families have a multiplier benefit of x 2.5. This study includes a separate analysis of the $277,603 multiplier benefit that was applied to the Program's grant and scholarship expenditures.

Locals and out of area visitors attracted to the Foundation's annual events contribute to the local economy. This year over 13,000 locals and visitors joined in the activities. In 2023, a physical head count was made of the parade/car show attendees and it tallied a total 13,771 attendees.

A review of the 5,875 Rodeo attendee credit card purchases showed 78% of the attendees were local and 22% originated from out of area. These percentages were applied to both the rodeo and parade attendance counts; the results are summarized below:

13,771	local attendees to the rodeo and parade
3,854	out of area attendees to the rodeo and the parade

Assumptions made for visitors and expenditures:

- In this analysis local visitors are valued at $120 per visitor day.
- Out of area visitors are valued at $180 per day with an estimated attendance average of 2.0 days per stay.

The report that follows represents a broader view than the direct expenditures or employment. For example, the analysis measures the economic "footprint" as dollars multiply inside and outside of the market area and include both direct and indirect impacts. This analysis seeks to quantify the economic benefits within the project area. The results of this report are based on datasets that are historically-representative of the local market.

Summary of Economic Impacts

- The analysis shows that the economic impact of one year of Chase Hawks 2023 events and operational expenses exceeds $5.6 million. These impacts include $4.0 million in direct benefits and $1.6 in spin-off, multiplier benefits, as the dollars circulate throughout the local economy.

- Of the total $5.6 million in total impacts, approximately $3.4 million are retained within the local county.

- The events and operational expenses benefit $2.0 million in local payroll and 80 jobs.

- Capital Income, or non-labor benefits, total $964,745.

- Local indirect business taxes are estimated at $442,749 (taxes are derived from direct and indirect sources).

The Economic Impact Report (attached below) provides greater detail**.** The impact categories referenced are described at page 3 in the "Description of Reports" section.

The following total economic benefits are described in the attached economic impact report:

- *$5.6 million in Gross Economic Output*
- *$3.4 million in Gross County Product.*
- *$2 million in Total Labor Income*
- *80 total jobs (full and part-time).*
- *$964,745 in Capital Income.*
- *$442,749 in Indirect Business Taxes and Fees.*



An Economic Impact Report – Chase Hawks 2023

Prepared by Circle Analytics, October 2023

Gross Economic Output

The aggregated market value of goods and services produced by firms and government enterprises in the County's economy. It is essentially equal to the revenue collected by businesses (including indirect taxes) within the County.

Sector / Industry	Frequency	Direct Impact	Indirect and Induced Impact	Total Impact
Program Impacts				
Foundation Expenditures	On Going	$683,712	$301,594	$985,306
Foundation Grants – Mulitplier benefits	On Going	$277,603	$122,454	$400,057
Attendee Expenditures				
Visitor and Local - Gasoline stations	One Time	$790,390	$270,460	$1,060,850
Visitor - Hotels and motels, including casino hotels	One Time	$485,604	$198,754	$684,358
Visitor and Local - Miscellaneous store retailers	One Time	$1,070,698	$471,777	$1,542,475
Visitor and Local - Food services and drinking places	One Time	$693,269	$310,759	$1,004,028
Totals:		$4,001,276	$1,675,798	$5,677,074

Gross County Product

The total value added created by the production of goods and services in the local economy. It is analogous to the concept of Gross Domestic Product at the national level. It represents the sum of labor compensation, capital type income (profits, interests and rents), and indirect business taxes (which are mainly sales taxes, but also include property taxes and government mandated fees).

Sector / Industry	Frequency	Initial Purchase	Total Impact
Program Impacts			
Foundation Expenditures	On Going	$683,712	$577,686
Foundation Grants – Mulitplier benefits	On Going	$277,603	$234,554
Attendee Expenditures			
Visitor and Local - Gasoline stations	One Time	$790,390	$689,931
Visitor - Hotels and motels, including casino hotels	One Time	$485,604	$407,947
Visitor and Local - Miscellaneous store retailers	One Time	$1,070,698	$1,066,868
Visitor and Local - Food services and drinking places	One Time	$693,269	$485,556
Totals:		$4,001,276	$3,462,543

Total Labor Income

The compensation to employees and self-employed proprietors including both wages and indirect payments such as retirement benefits, health insurance and other similar fringe benefits.

Sector / Industry	Frequency	Initial Purchase	Total Impact
Program Impacts			
Foundation Expenditures	On Going	$683,712	$343,420
Foundation Grants – Mulitplier benefits	On Going	$277,603	$139,437
Attendee Expenditures			
Visitor and Local - Gasoline stations	One Time	$790,390	$326,068
Visitor - Hotels and motels, including casino hotels	One Time	$485,604	$228,807
Visitor and Local - Miscellaneous store retailers	One Time	$1,070,698	$708,302
Visitor and Local - Food services and drinking places	One Time	$693,269	$309,015
Totals:		$4,001,276	$2,055,049

Total Employment

The number of jobs generated within the County and includes: * full-time and part-time positions * salary workers *sole proprietors.

Sector / Industry	Frequency	Initial Purchase	Total Impact
Program Impacts			
Foundation Expenditures	On Going	$683,712	7
Foundation Grants – Mulitplier benefits	On Going	$277,603	3
Attendee Expenditures			
Visitor and Local - Gasoline stations	One Time	$790,390	11
Visitor - Hotels and motels, including casino hotels	One Time	$485,604	10
Visitor and Local - Miscellaneous store retailers	One Time	$1,070,698	31
Visitor and Local - Food services and drinking places	One Time	$693,269	17
Totals:		$4,001,276	80

Capital Income

The sum of all property type income (such as business profits, interest income and rental income) generated within the County.

Sector / Industry	Frequency	Initial Purchase	Total Impact
Program Impacts			
Foundation Expenditures	On Going	$683,712	$211,126
Foundation Grants – Mulitplier benefits	On Going	$277,603	$85,722
Attendee Expenditures			
Visitor and Local - Gasoline stations	One Time	$790,390	$237,006
Visitor - Hotels and motels, including casino hotels	One Time	$485,604	$125,975
Visitor and Local - Miscellaneous store retailers	One Time	$1,070,698	$180,102
Visitor and Local - Food services and drinking places	One Time	$693,269	$124,814
Totals:		$4,001,276	$964,745

Indirect Business Tax

Are taxes and fees that are not based in the businesses' income. For the most part they represent sales taxes levied by the State and the county, but also include property taxes levied against businesses as well as fees imposed by federal, state and local governments.

Sector / Industry	Frequency	Initial Purchase	Total Impact
Program Impacts			
Foundation Expenditures	On Going	$683,712	$23,140
Foundation Grants – Mulitplier benefits	On Going	$277,603	$9,395
Attendee Expenditures			
Visitor and Local - Gasoline stations	One Time	$790,390	$126,857
Visitor - Hotels and motels, including casino hotels	One Time	$485,604	$53,165
Visitor and Local - Miscellaneous store retailers	One Time	$1,070,698	$178,465
Visitor and Local - Food services and drinking places	One Time	$693,269	$51,727
Totals:		$4,001,276	$442,749



About Circle Analytics

The Principals at Circle Analytics have prepared hundreds of economic impact reports for state agencies, cities, counties, economic development districts and private corporations. Each report is based on datasets specific to the project's location and unique industry sectors.

Robert Gilmore, the report's author, is the recipient of the Ford Foundation's Award for Innovations in American Government and the Council of State Government's Award for Innovation.

City Council Work Session

Date:	04/01/2024
Title:	Hoodies 4 Heroes presentation about Memorial proposed placement at Dehler Park
Presented by:	Pigg Michael, Superintendent
Department:	Parks/Rec/Public Lands
Presentation:	Yes
Legal Review:	Not Applicable
Project Number:	N/A

RECOMMENDATION

Parks will be bringing a Memorandum of Understanding between the Hoodies 4 Heroes organization and the City at the April 8th Council meeting. Hoodies 4 Heroes wanted to present the idea and concept to the City Council before the MOU is presented.

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

The Parks Department Staff have been working with Hoodies 4 Heroes for an acceptable location for the memorial and all parties have agreed on the location at Dehler Park. The Parks Board approved recommending to City Council to approve the MOU.

STAKEHOLDERS

Hoodies 4 Heroes and the City

ALTERNATIVES

City Council may:

- Approve; or,
- Not Approve

FISCAL EFFECTS

There are no fiscal effects.

Attachments

Hoodies 4 Heroes presentation


HOODIES
FOR
HEROES
SSGT
TERRY LYNCH
6.09
HONORING ALL WHO
SERVED

Rick Baker
Infantry Combat Soldier





Served - Operation Enduring Freedom







Soldiers returning home





Soldiers KIA



Hoodies 4 Heroes

Veteran's Monument Project

Creating a place for Families to reflect, recognize, and remember









Mission

Finding the right group of individuals to help bring the Hoodies for Heroes mission to life.



Mission

There is No physical location to honor Montana's Fallen Heroes from the Iraq and Afghanistan campaigns

1

Solution 1

Sell Hoodies for Hero’s shirts and hoodies and build awareness.

2

Solution 2

A core group formed, with a vision for a Memorial to recognize all Veterans who have served.

3

Solution 3

Build a Memorial for our Veterans, Service Members, Families, and the public to view our killed in action (KIA)



Hoodies for Heroes Fundraiser Veteran Day November 11, 2022 Texas Roadhouse

1st Official Event

Rick met Ken Callahan

Past project – Freedom Monument in Williston ND

Completed project on schedule under budget





Served Airborne Ranger 1981 – 1984

Ken Callahan

Ken Callahan

Experience with other projects (Project manager)

- Community Builders Playground & Splash Pad ($650,000 project) 2009-2010
- Rotary Pavilion Project $50,000 2017-2018
- Freedom Monument $250,000 2018-2020
- The Tomb of the Unknown Soldier reconstructed
- Served as a Park Board Commission VP 2010 – 2014
- Served on numerous boards including, as president:
- Rotary, Chamber, Western Region Economic Development, Williston Home Builders, Toastmasters, and Community Builders.
- Served as a rep for the City of Williston WDEA Western Dakota Energy Alliance

Williston Community Builders Playground Project in Davidson Park Williston ND



Ken Callahan



Rededication of the oldest Tomb of the Unknown Soldier in the US. An Old Guard showed up in Williston.

Later in Arlington DC Ken presented them with a Patriot Award provided from the Williston Basin (MAC) Military Affairs Committee in Williston ND



HOODIES FOR HEROES

Monument with changes for Montana



Enlarge State of Montana

(Move to the left)

Shrink the world Atlas

Flower holders on bottom

List the names of KIA Soldiers

Hoodies 4 Heroes
Veteran's Monument Project


ALL GAVE SOME, SOME GAVE ALL
OPERATION IRAQI FREEDOM
OPERATION ENDURING FREEDOM
FIRST LAST
FIRST LAST
FIRST LAST

The Goal

- Create a gathering area for Veterans, Service Personal, their families, and the public to recognize our soldiers.
- Complete a Monument that brings the city together and fosters area pride
- Create a safe place for people to gather for events

FUNDRAISING STARTED
2020

501C3 & BOARD FORMED
2023

MONUMENT CONSTRUCTION
2024

HOODIES FOR HEROES

Project Team Progress - 2023



Obtained 501c3 with the IRS



Created Board of Directors



Created Board By-Laws



Voted on Board of Directors

HOODIES FOR HEROES

Board Members



(Photos L-R)
Ken Callahan – President
Wanda (Bo) Smith – Secretary
Randy Stiles
Sandra Gebhardt
Cathy Kuhr - Treasurer
Rick Baker – Vice President

Project Team Progress



Voted on Committees



Created a Design Team



Project Reorganization and Restructuring



Created specialty Bank Account

HOODIES FOR HEROES

Committee Members

Events committee – Rick Baker

Project committee – Ken Callahan

Veterans Committee – Randy Stiles

Communications Committee - Sandra Gebhardt

Design Committee – Eric Simonsen &
Thom Greenwood (Simonsen Architect)

Fundraising committee – Bill Kennedy

Hoodies for Heroes Board of Directors

HOODIES FOR HEROES

- Project Manager (Ken Callahan)
- Fund Raising Chair (Bill Kennedy)
- Vision & Idea Person (Rick Baker)

Project Management Team

- Construction Super
- Contractors, Members & Volunteers

Veteran Chairman (Randy Stiles)

- Veterans & Volunteers

Simonsen Architect (Eric Simonsen & Thom Greenwood)

- Landscape
  - Contractors, Members & Volunteers

4GSE 4Ground Structural Engineering (Geoff Wendt)

- Resources

Performance Engineering (Scott Aspenlieder)

- Resources

Project Team Progress



Met & Gained Support from various Veterans groups.



Met with Billings Mayor for Direction and Support April 4, 2023



Worked on gathering letters of support. The Mayor recommended we meet with Thom MacLean, Mike Pigg, and Tom Rupsis.



Project Scope - Including Adding in all KIA Montanans since the Vietnam War

HOODIES FOR HEROES

Letters of Support

- Big Sky Economic Development
- Billings Chamber of Commerce
- Texas Roadhouse
- Williston Military Affairs Committee
- Adaptive Performance Center –

  Serves Veterans and Military Service Members
- Randy Stiles –

  Commander VFW 3rd District of Montana

Project Team Progress



Met Mike Walters from Senator Daines office several times throughout the last two years



Met with Concerned Veterans gained their support



Worked with Senator Tester office on the List of Montana KIA



Project Scope – Continued to work with Simensen Architect on the design and Career Center of Billings

HOODIES FOR HEROES

Park Site Selection



Step 1

Work with Billings Park and Recreation for Location



Step 2

Finalize a park with the City of Billings and Parks and Recreation, including final monument size.



Step 3

Create a site plan and budget.

Project Team Progress



Project Scope –
Met with Mike Pigg, Thom MacLean, Tom Rupsis, Chris Kukulski, and Kevin Iffland. Members of the Parks and Rec and the City of Billings
Worked on Park locations



Visited several parks around Billings and made a list for the Parks and Rec small group



Met with Parks and Rec group again on Dehler Park



Mike Pigg Vetted Dehler Park
Created MOU and set up meeting to present to Billings City Council

HOODIES FOR HEROES

Park Research

- Our team started with Veterans Park – loved the name, we wanted to redo the corner of 13th and Poly to make it ADA assessable.
- Then we met with Parks and Rec small committee suggested we look at the following parks because of the warming house and every few years they flood the field for ice skaters.

- Dehler Park
- North Park
- South Park
- Founders Park
- Swords Park
- Grandview Park
- Veterans Park (Again with a different location in the park)

- We loved Dehler Park and working with Parks & Rec and the city.

Dehler Park

- Location is nice and well-established area of Billings
- Centrally located, close to downtown and the airport
- The parking is the best of all the parks
- The lighting is very good
- We don’t have any work to do on the street or curb
- It next to a beautiful ballfield and will have more people viewing it than any other park because of the thousands of people attending the baseball games
- Low Maintenance Park
- This is the best park we found to date it checks all the boxes



HOODIES FOR HEROES

SSGT TERRY LYNCH 6.09

Dehler Park Aerial

HoodiesForHeros.org



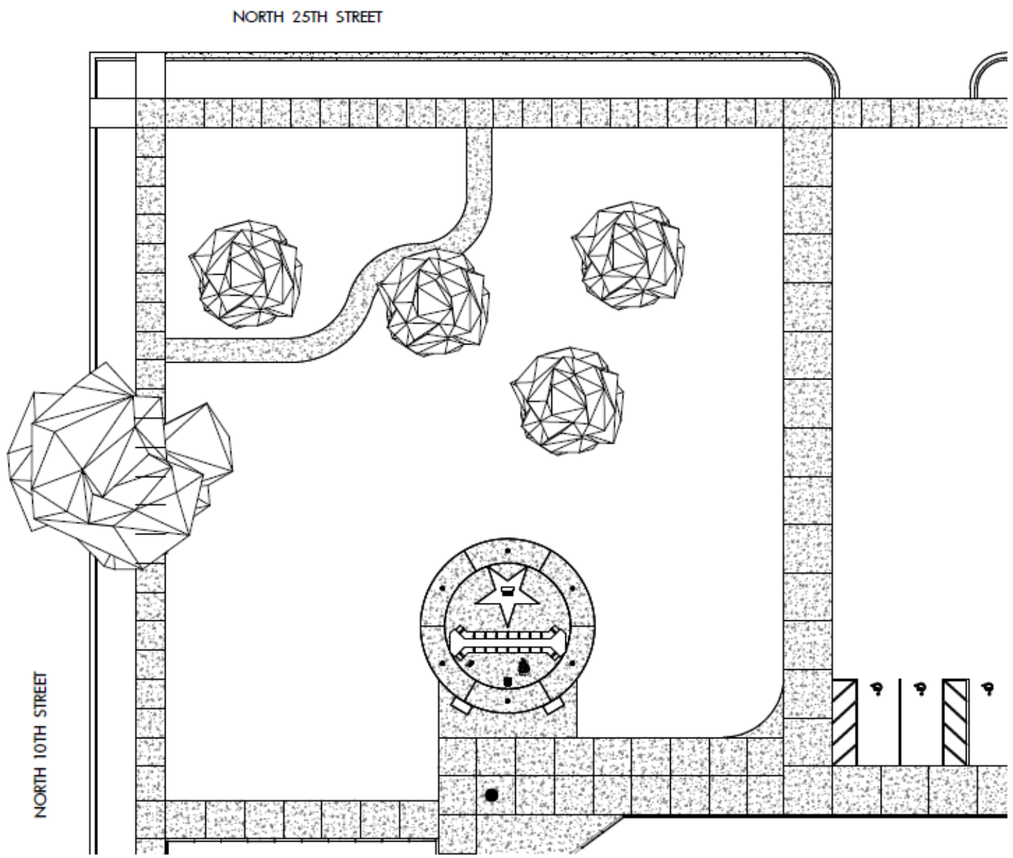
HOODIES FOR HEROES

SSGT TERRY LYNCH 6.09

Dehler Park Aerial

HoodiesForHeros.org

Dehler Park Plat



SITE PLAN @ DEHLER PARK

NORTH

SIMONSEN ARCHITECT

A1.0

New Design - Kiosk and World Map



New Design - List of Montanans KIA



Next steps

- Spent 2023 gathering letters of Support and securing a park location for the Veteran's Monument – Done
- Need Parks and Rec Approval November 8, 2023 – Done
- Create and agree upon a Memorandum of Understanding (MOU) – Done
- Present to City Council April 1st, & April 8th, 2024, sign the MOD -

- Create marketing plan
- Create flyers, PPT, and set up fund raising plan
- Once funds levels are reached – order materials
- Start construction –
- Once completed, ribbon cutting ceremony

Hoodies for Heroes

- H4H will update the Kiosk when needed
- H4H will maintain the upkeep on the monument
- H4H will work with the Parks & Rec on any issues going forward with the monument
- H4H will organize events at monument
  - Memorial Day
  - 911 day
  - Veterans' Day
  - And any other events

Future Project Team Objectives



Budget - Developed Comprehensive Preliminary Budget



Project Team – Assignments and Responsibilities



Project Plan working with the City, Parks & Rec, and Veterans groups



Fundraising Plan Waiting on project plan and budget

HOODIES FOR HEROES

Thank You

HOODIES FOR HEROES



City Council Work Session

Date: 04/01/2024
Title: Unmanned Aerial System (drone) Program update
Presented by: Pepper Valdez, Fire Chief
Department: Fire
Presentation: Yes
Legal Review: Not Applicable
Project Number: N/A

RECOMMENDATION

No formal action is needed.

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

The Billings Fire Department and the Billings Police Department would like to present the Honorable Mayor and City Council with an executive update on our departments' existing Unmanned Aerial System (drone) Programs. These programs help ensure the safety of our community and personnel while respecting our citizens' civil rights and privacy. So far, these programs have been successfully used to search for lost or missing people, assist in geological monitoring of the changes in the BBWA canal, apprehend fugitives, assist other City offices, and observe crime scenes from a safe distance. We believe that UAS systems will have untold positive effects in the future and represent smart, budget-minded use of technology.

STAKEHOLDERS

Community Members - City of Billings

ALTERNATIVES

Council action will not be required at this time. Information presented at this time is for informational and discussion purposes.

FISCAL EFFECTS

There are no fiscal impacts associated at this time. Information presented at this meeting is for informational and discussion purposes.

Attachments

UAS Presentation

Billings Public Safety Drone Programs



April 2024

Billings FIRE DEPARTMENT

BILLINGS Police

Background

Drones are increasingly common within public safety agencies as a low-cost tool to enhance situational awareness and responder safety on emergency scenes



Background

Billings Fire

- Program started in 2020 upon receipt of a $300,000 Federal Homeland Security grant
- 4 drones, each with a different use case

Billings Police

- Program began in 2020 using drug forfeiture money to purchase drones
- 5 drones, for rapid deployment

Both Fire and Police departments hold special authorizations from the FAA to operate drones for public safety



Public Safety Drone Uses

- Structure and Wildland fire
- Search and Rescue
- Police standoff overwatch
- Hazmat response
- Suspect searches
- Crime scene documentation
- Arson investigation
- Pre-incident planning
- Video trainings and exercises for review





Training

- Each drone pilot is certified through the FAA as a Remote Pilot
- Recertification required every two years
- Drone pilots maintain proficiency with monthly flights and trainings

Inter-agency Cooperation

- Fire and Police department drone pilots train together
- Both teams work together to back each other up on significant incidents



Notable Deployments

- June 2022 – Drones were used to survey the Yellowstone River and affected infrastructure during unprecedented flooding.
- August 2022 – A drone was deployed to assist in finding an elderly dementia patient who wandered away from home in the Alkali Creek area.
- March 2023 – Drones used to search for a missing mountain biker in the area of Zimmerman Park, allowing fewer responders to cover more area faster than they would on the ground.
- October 2023 – Multiple drones were used to provide overwatch while BPD and other local, state, and federal law enforcement agencies served a high-risk warrant regarding explosive manufacturing, enhancing situational awareness and responder safety on the incident.
- November 2023 – A drone with thermal camera and spotlight was flown at night to search for a shooting suspect over a large area of midtown.

July 2023

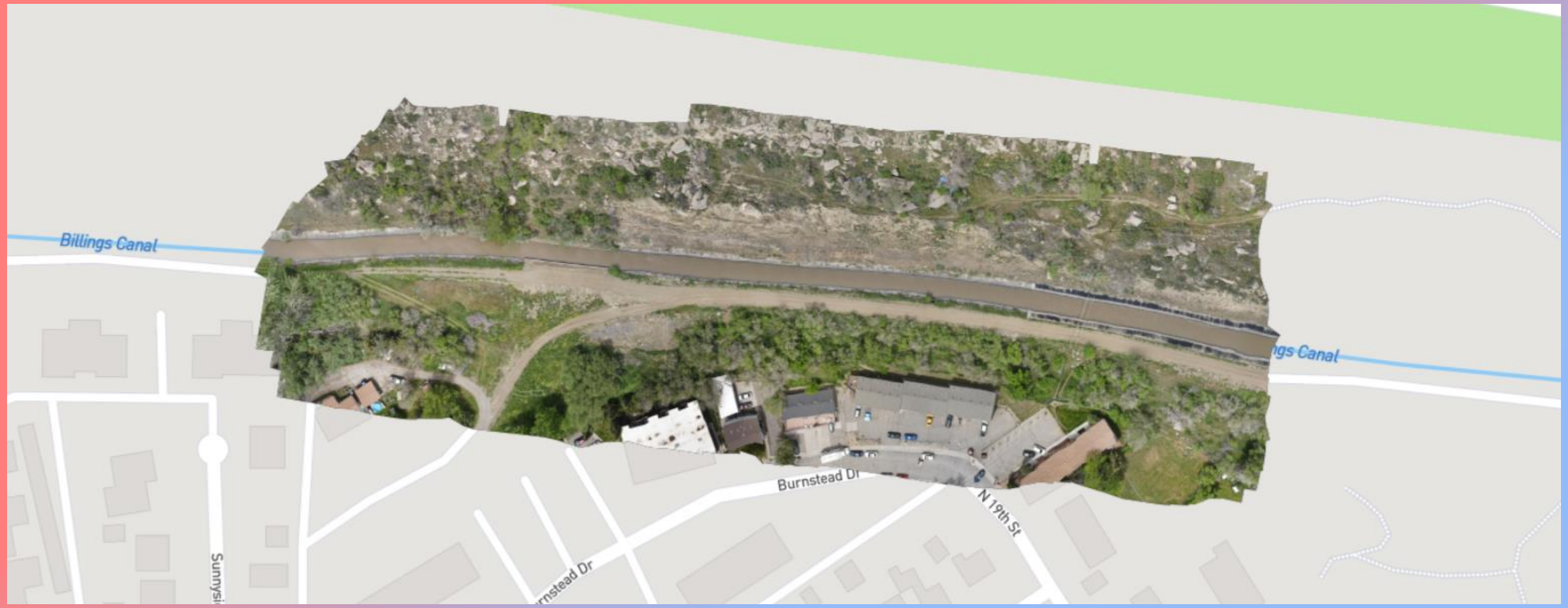
During a night-time river rescue call, a drone with a thermal camera was used to locate three people stranded in on an island in Yellowstone River. The drone then guided BFD and YCSO water rescue technicians to their location using an onboard lighting system.



August 2023

Drones were deployed to the scene of a disturbance involving a suspect who set brush piles on fire that threatened neighboring property. When fire crews arrived, the suspect threatened firefighters and law enforcement with a skid steer he was driving. Drones were used to monitor his movements and distract the suspect using the onboard lighting system, allowing deputies to safely take him into custody.





BBWA Ditch Monitoring

Weekly flights over the ditch helped keep City officials informed.





Questions

City Council Work Session

Date: 04/01/2024
Title: Safe Routes to School Plan Update, Phase 2, Presentation
Presented by: Elyse Monat
Department: Planning & Community Services
Presentation: Yes
Legal Review: Not Applicable
Project Number: N/A

RECOMMENDATION

Staff recommends that the City Council receive a presentation of the Safe Routes to School Plan Update, Phase 2 (the Plan). On April 8, 2024, the City Council will take formal action to forward a recommendation on the Plan to the Policy Coordinating Committee (PCC).

The Technical Advisory Committee at its meeting on February 29th and the Planning Board at its meeting on March 26 both forwarded recommendations for approval of the Plan to the governing bodies and the Policy Coordinating Committee.

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

The Billings Metropolitan Planning Organization conducted a Safe Routes to School Plan, Phase 2 with Sanderson Stewart as the consultant. The Plan was developed as a result of Council's request to study middle schools and County and private schools in the Billings Urbanized area for Safe Routes to School improvements. The funding for the Plan was part of the approved 2023 Unified Planning Work Program, for which the Council forwarded a recommendation of approval to the Policy Coordinating Committee.

This plan looked at a mix of Billings Public Schools, County schools within the MPO area, and private schools. Schools in the plan include:

- Ben Steele Middle School
- Billings Central Catholic High School
- Billings Christian Elementary School
- Billings Christian High School
- Castle Rock Middle School
- Elysian School
- Grace Montessori Academy
- Independent Elementary School
- Lewis & Clark Middle School
- Lockwood Schools Campus (K-8)
- Medicine Crow Middle School
- Mount Olive Lutheran School
- Pioneer Elementary School
- Riverside Middle School
- St. Francis Catholic School
- Sunrise Montessori School
- Will James Middle School

The Plan evaluates current walking and biking conditions at the schools above, identifies barriers or issues that might discourage students from walking or biking, develops a list of recommended projects ranked by impact, and develops walking route maps for schools where walking and bicycle infrastructure is currently available (excludes Billings Christian School Elementary, Grace Montessori Academy, and Pioneer Elementary). The 105 infrastructure recommendations were developed by considering several sources, including public input from open houses or tabling sessions at school events, public comment from an interactive website that included a survey and interactive map, on-the-ground walking audits of all of the schools, surveys from principals, discussions with crossing guards, GIS data, and staff expertise. Recommended projects are generally within one mile of the school. Project impact was evaluated using four categories, including traffic safety, (project) feasibility, demand, and equity.

The Plan also identified programmatic recommendations to advance Safe Routes to School.

STAKEHOLDERS

The public was engaged throughout the plan through the steering committee, in-person events (open houses or tabling events), yard signs advertising the plan on school property, an interactive mapping website and survey, and the ability to participate in walk audits.

There was a public hearing during the March 12, 2024 Planning Board meeting. There was no public comment received during the public hearing. This Council Work Session and the City Council Meeting on April 8 both also provide opportunity for public comment on the Plan.

ALTERNATIVES

City Council may:

- Send a recommendation of approval of the Plan to the Policy Coordinating Committee
- Not send a recommendation of approval of the Plan to the Policy Coordinating Committee. Not approving the Plan at this stage would not be in alignment with both the Council's desire to complete this SRTS, Phase 2 effort and approving funding of the effort through the UPWP for the MPO in 2023.

FISCAL EFFECTS

There are no direct fiscal effects from adopting the plan. However, the City, County, schools, or other parties, may choose to program funds to implement project recommendations in the future. Given the City Council's significant support for SRTS and its coordination with Public Works and Planning to budget for SRTS improvements over time, it is expected that this plan will inform future projects it evaluated and that may be considered.

Attachments

Safe Routes to School Plan, Phase 2



Billings Safe Routes to School

PLAN UPDATE: PHASE 2

REVIEW DRAFT, FEBRUARY 2024

Acknowledgments

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BILLINGS - YELLOWSTONE COUNTY MPO METROPOLITAN PLANNING ORGANIZATION

SANDERSON STEWART a sanderson bellecci company

This is a planning level document only. It is not intended to obligate or mandate development of the projects in the plan or obligate any jurisdiction to implement any or the entire document. In addition, this document does not assume prioritization or commitment of any local funds unless authorized by local government agency.

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Executive Summary

"What are we without children? What is our community? Why aren't we focusing on keeping them safe so… parents don't have to be stressed or worry, "Is my kid going to make it to school safe today?"

-Johnna Jablonski
Mother of Ben Jablonski, SD2 Student injured by a car crash while biking to school on 10/4/2022
KTVQ 05/11/2023

Why SRTS?

The Safe Routes to School (SRTS) program is founded on the simple idea that together, we can make our streets safe for children to walk and bike to school, and when we do that, we all benefit. Communities with higher rates of walking and biking have lower per-capita crash injury rates[1], lower rates of childhood and adult obesity[2], higher student performance[3], and spend less of their local wealth on transportation[4]. Yellowstone County, meanwhile, has obesity rates 14% higher than the state overall[5], and a walking and biking commute share about one third that of Bozeman or Missoula[6]. The median Billings household spends nearly 20% of its income on transportation[7], 28% higher than the national average[8]. Consistent with national trends, fatal and serious injury non-motorized crashes in Billings rose by 25% from 2016 to 2020[9].

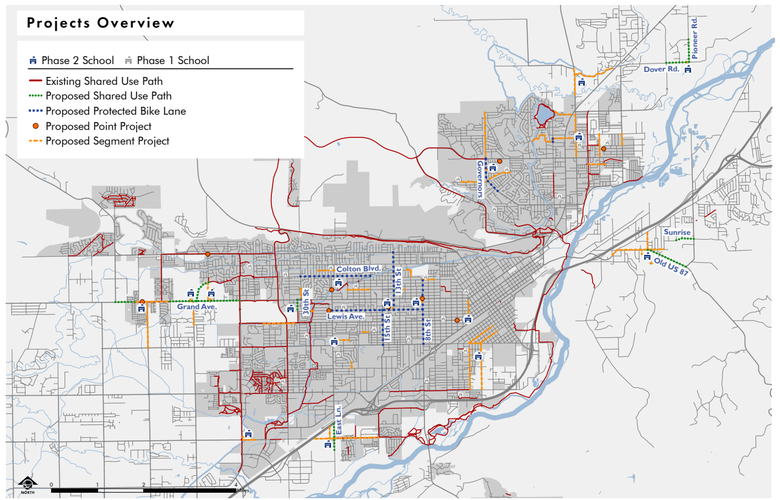
SRTS is an effective way to reduce transportation cost burden and protect the health and safety of our children. This plan, and the Billings MPO's Safe Routes to School (SRTS) program, is an affirmation of our community's commitment to prevent crashes and it is an important step toward realizing the adopted *Vision Zero* goal of a Billings with zero traffic fatalities or injuries.

This Plan

This plan, Phase 2 of the Billings Safe Routes to School Plan Update, focuses on 17 private and public schools not previously evaluated by prior Safe Routes Plans. The recommendations contained within Chapters 2 and 3 are informed by an extensive public input process. Throughout the project, over 200 community members and school administrators gave comment and completed surveys. The Project Advisory Committee, made up of representatives from City and County departments, City Council, school districts, Yellowstone County Planning Board, and advocacy groups collaborated on this plan.

Many of the schools within this project's review share two important characteristics.

Student Potential for Walking and Biking: The middle school students that this plan serves have greater potential for independent, active transportation across greater distances compared to elementary school populations.



Schools on the Edge: Many of the schools in this plan sit on the city's urban fringe, surrounded by a patchwork of City and County rights-of-way, where walking and biking infrastructure may be scarce, street connectivity low, and traffic congestion acute during pick-up and drop-off.

Projects

Public input received during this project indicates that many Billings area parents perceive the streets surrounding their schools as "dangerous," "terrifying," and "unsafe." When asked what would encourage them to let their children walk or bike more, most mentioned improved safety, improved pedestrian and bicycle facilities and crossings, and reducing the hazard of motor vehicles. The overwhelming majority of parents and guardians surveyed also identified themselves as "not willing to ride in traffic but interested in bicycling more."

The 105 project recommendations within Chapter 3 therefore focus on calming vehicular traffic, separating and protecting bike and pedestrian facilities, and improved safety at crossings. Many can be built as pilot projects, quickly and at relatively low cost. These concepts are further explained in Chapter 4, the Infrastructure Toolbox.

Several projects in this plan propose protected bike lanes on city streets, a first for Billings. Many protected bicycle facilities already exist in Billings as shared-use paths, which are mostly confined to areas of new development and relative affluence, an equity issue this plan seeks to address.

Over the next five years, the City of Billings has allocated about $3.3 million specifically for SRTS projects and $7.1 million in other funds for which the projects in this plan may qualify. Even so, that isn't enough to fund all projects identified in the Phase 1 and Phase 2 plans at once, which are estimated to cost $23 million. This plan uses the Project Impact formula developed during Phase 1 (with slight modifications) to prioritize projects. An in-depth explanation of that formula is included in Appendix B. The top ten priority projects are listed here.

TOP 10 PROJECTS

	School	Location	Project Type
1	Lewis & Clark	Area Surrounding Lewis & Clark	School Speed Zone surrounding Lewis & Clark.
2	Riverside	Jackson St.	Traffic calming. Crossing improvements. Missing sidewalk.
3	Riverside	State Ave.	Crossing improvements at State Ave. & Washington St. and State Ave. & Jackson St.
4	Riverside	Area Surrounding Riverside	School Speed Zone surrounding Riverside.
5	St. Francis Catholic School	Colton Blvd.	Traffic calming. Protected bicycle facility from 17th to Rehberg. Missing sidewalk. Crossing improvements.
6	Lewis & Clark	Main Entry, Lewis Ave.	ADA-Compliant route from Lewis Ave. to main entry
7	Castle Rock	Wicks Ln. at Castle Rock Park	Remote Drop off at Castle Rock Park parking lot.
8	Riverside	Madison Ave.	ADA-Compliant crossing at main entry. Crossing improvements at Madison Ave.
9	Medicine Crow	Jerrie Ln. / Key City Dr.	Main St. crossing improvements, route improvements from Lake Hills neighborhood to Medicine Crow.
10	Lewis & Clark	Lewis Ave.	Traffic calming. Protected bicycle facility from 8th to 24th. Sidewalk repair. Crossing improvements.

This plan is not a legal document. There is no requirement or guarantee that its proposals become real. The Billings community has shown great support for SRTS. City Council has dedicated new funds toward SRTS Phase 1 projects. Several have already been built. Continued progress will require staff, elected officials, and community members to work together, making judgments of value as well as engineering to ensure that our streets provide for the safety of children walking and biking to school.

"Once we found out Ben was going to recover, the one thing I felt in my heart was just that I don't want any parent to have to witness that, to have to go through that."

-Johnna Jablonski
Mother of Ben Jablonski, SD2 Student injured by a car crash while biking to school on 10/4/2022
KTVQ 10/12/2022

1.0 Introduction

1.1 Overview

1.2 Recent Progress

NOTE ON SIDEWALKS

While sidewalks are not considered bike-only facilities, children can and do ride their bicycles on them to get to school. According to the National Highway Traffic Safety Administration, under the age of 10, children riding alone should ride on them to get to school. Over the age of 10, the child and their parent/guardian should discuss where is the safest place to ride based on several factors such as the student's route to school, their maturity level, and demonstrated on-street riding skills.



1. 1 OVERVIEW

Safe Routes to School (SRTS)

The Safe Routes to School (SRTS) program is founded on the simple idea that together, the City of Billings, Billings MPO, Billings-area School Districts, Yellowstone County, MDT, and parents can make our streets safe for children to walk and bike to school.

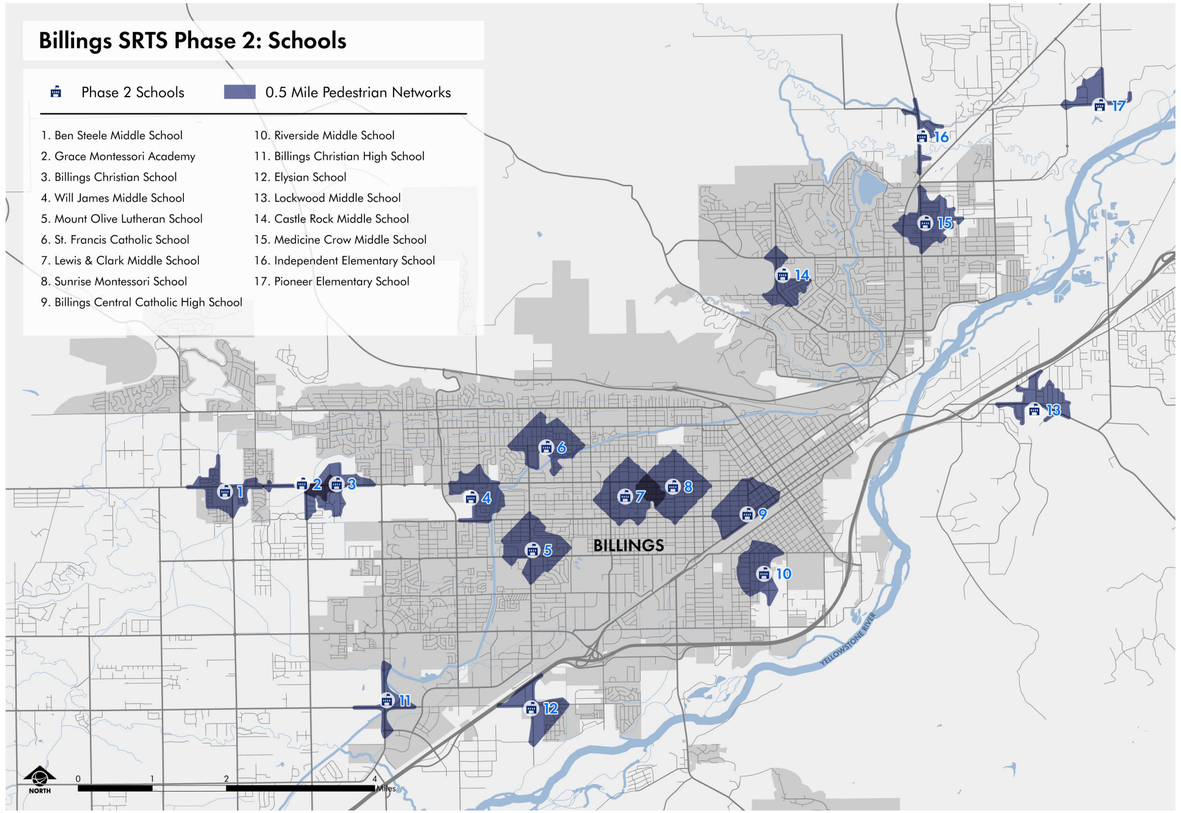
Phase 2 of The Billings Safe Routes to School Plan Update, "this plan," expands the Safe Routes program from the 2011 and 2022 plan schools to include schools that have not been studied before. The project team, made up of local government staff, representatives, practitioners, and constituents, made this plan to serve the children and families of our community and to guide local governments when identifying and prioritizing capital improvement projects.

Public Engagement

Meaningful public input is the basis of any legitimate planning effort. To inform this plan, the project team engaged with students, school staff, and community members to identify unsafe conditions that may prevent students from walking or biking to school. Team members attended school athletic and social events at each participating school to raise awareness for the plan. Community members also gave comments on the project website with online map and survey questionnaires. School administrators and staff were also interviewed and surveyed. A more in-depth summary of that input is included in Appendix A.2 of this plan.

Nearly three quarters of survey respondents identified as parents or guardians. When asked what would encourage them to let their children walk or bike more, most mentioned improved safety, improved pedestrian and bicycle facilities and crossings, and reducing the hazard of motor vehicles.





The overwhelming majority of parents and guardians surveyed also identified themselves as “not willing to ride in traffic but interested in bicycling more.”

Historical Document Review

The project team reviewed existing plans that the Billings community has adopted so this plan can incorporate and build on those efforts. Summaries of those plans are included in Appendix A.

School Walk Audits

Team members and volunteers walked and biked the neighborhoods around each school and observed arrival and dismissal to document the unique assets and barriers each school faces in improving safety for its students.

Project ID and Prioritization

All the information gathered from existing plans and policies, public input, the project website, and walk audits was analyzed by the project team to create a list of priority projects for each school. That list was then collaboratively vetted by a Project Advisory Committee (PAC), made up of representatives from City and County departments, City Council, school districts, Yellowstone County Planning Board, and advocacy groups.

The city’s recent dedication of $500,000 annually to safe routes projects, combined with additional funding earmarked for traffic calming and sidewalks, in the Capital Improvement Plan, means that SRTS projects are becoming a reality throughout Billings. Still, this is not enough funding for all identified SRTS projects to be built at once. Yellowstone County does not have a similar funding source identified for capital



projects or ongoing maintenance. The project team established a formula that prioritizes proposed projects based on how much public benefit each project creates, sorting projects into high, medium, and low impact categories. Details on that formula are available in Appendix B. Anyone implementing the recommendations of this plan should view the Phase 1 and 2 documents more as “Volumes 1 and 2,” and should consider each phase’s high, medium, and low priority projects together.

Project Characteristics

The 105 recommendations in this plan propose projects that will enhance safety along segments of popular routes to school by means of:

- Traffic calming (4.1.4)
- Separation and protection of bike and pedestrian facilities (4.1.3)
- Improved safety at crossings (4.3)

These concepts are further explained in Chapter 4 - Infrastructure Toolbox.

Several projects propose protected bike lanes on city streets—a first for Billings. Many protected bicycle facilities already exist in Billings as Shared Use Paths, which are mostly confined to areas of new development and relative affluence, an equity issue this plan seeks to address.

While SRTS projects do cost money, there are ways to make them more affordable. Many of the projects in this plan are designed to be built as pilot, or pop-up, projects. Pilot projects can be built in days or months, not years, and yield an adequate standard of safety at pop-up prices. Constructing SRTS projects with other road reconstruction projects can help create efficiencies and save money.

Purpose of the Plan

Parents are most likely to let children walk or bike to school where there is a safe route to do so. The purpose of this plan is, therefore, to

provide parents, local government staff, and decision-makers with the information they need to make our community safer for children to walk and bike to school. Like all Safe Routes plans, this plan encourages families to make more walking and biking trips by identifying safety issues that students face, recommending physical changes to streets, shared use paths, and school sites, and recommending changes to the Billings SRTS program.

Phase 2 Schools

Because Phase 1 of Billings Safe Routes studied the 22 elementary schools in School District 2 (SD2), the Billings MPO selected the remaining 21 elementary, middle, and private schools within its jurisdiction to study for Phase 2. Of those 21 schools, 17 opted into the study: 6 SD2 middle schools, 4 public county schools, and 7 private schools.

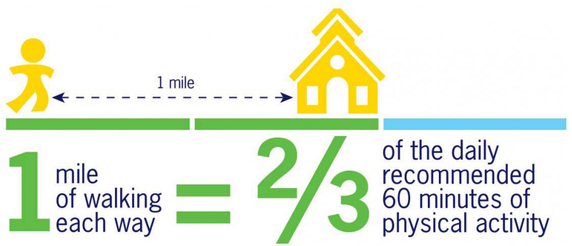
This plan represents the first time the Billings MPO has studied these schools, many sharing two characteristics that the plan should consider:

- ***Student Potential for Walking and Biking:*** The middle school students that this plan serves have greater potential for independent, active transportation across greater distances compared to elementary school populations.
- ***Schools on the Edge:*** Many of the schools in this plan sit on the city's urban fringe, surrounded by a patchwork of city and county-controlled rights-of-way, where walking and biking infrastructure may be scarce, street connectivity low, and traffic congestion acute during pick-up and drop-off.

How to Use This Plan

This plan is for everyone who wants to make Billings' streets safer for our children:

- Local government staff and decision makers can use this plan to fund and implement project and programmatic recommendations. (Chapter 2 *Programmatic Recommendations* and Chapter 3 *Project Recommendations*)
- Parents, school staff, advocates, families, and students can all use this plan to learn what improvements are recommended to improve their school (Chapter 3 *Project Recommendations* and Chapter 5 *Recommended Route Maps*)
- Anyone using this plan will notice numeric references (4.1.1) to Chapter 4, the Infrastructure Toolbox. There, readers will find street lights, flashing beacons, traffic circles and all the tools of the Safe Routes trade. Users can learn how each tool, or facility, can calm traffic (4.1.4), separate and protect kids (4.1.3) from traffic, make a crossing safer (4.3.1), and how quickly they can be installed (4.1.5).



History of Safe Routes to School

Birds need to fly. Fish need to swim. People need to walk. But since the 1960's the share of US children walking and biking to school has dropped by almost 75% with many of our nation's streets having become risky for children to walk or bike on.

The Safe Routes to School (SRTS) program is founded on the idea that together we can make our streets safe for children to walk and bike to school. When we do that, we all benefit. Communities with higher rates of walking and biking have lower per-capita crash injury rates, lower rates of childhood and adult obesity, higher student performance, and spend less of their local wealth on transportation (Litman, 2023) (Campbell, Wittgens, 2004).

Yellowstone County, meanwhile, has obesity rates 14% higher than the state overall, and a walking and biking commute share about one third that of Bozeman or Missoula. The median Billings household spends nearly 20% of its income on transportation, 28% higher than the national average. Consistent with national trends, fatal and serious injury non-motorized crashes in Billings rose by 25% from 2016 to 2020. SRTS is an effective way to reduce transportation cost burden and to fulfill the basic function of government to protect the health and safety of our children.

To that end, SRTS uses "the 6 E's" of Engagement, Equity, Engineering, Encouragement, Education, and Evaluation to make walking and biking a safe, comfortable, and feasible transportation option for Billings area families.

In Billings, SRTS was first planned for in 2011, when the 22 elementary schools of School District 2 were studied. This study also recommended programmatic and engineering improvements to improve safety of students during active transportation to and from School.

In 2018 the City of Billings updated the walking maps for each of the 22 schools from the 2011 SRTS plan. These maps included recommended routes, signals, speed zones and crossings along each route.

The 2011 SRTS plan was updated in the 2022 SRTS Plan Update. That plan includes program and infrastructure recommendations, as well as suggested walking routes for each school.

1.2 RECENT PROGRESS

At the time of the drafting of this plan, progress toward completing the project recommendations adopted in the Phase 1 Safe Routes to School Program is as follows:

Completed Projects

- Bench: School speed zone (4.4.1) installed on Lake Elmo Dr.
- Orchard: Vegetation overgrowth and mitigation reviewed on Jackson St.
- Poly: Rectangular Rapid Flashing Beacons (4.5.5) installed at 32nd St. W. and Poly Dr.
- Alkali Creek: Installed 3000 linear feet of missing sidewalk (4.2.1) on Alkali Creek Rd.
- Big Sky: Installed RRFB's (4.5.5) at Lampman Dr. and 32nd St. W.

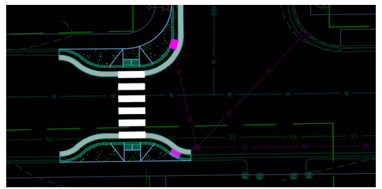
Design in Progress

- Rose Park: Curb extensions (4.3.1) at the intersection of 19th St. W. & Ave. E.
- Eagle Cliff: Curb extensions (4.3.1) at the intersection of Governors Blvd. & Constitution Ave.
- Orchard: Curb extensions (4.3.1) at the intersection of Jackson St. & Francis Ave.
- Broadwater: Curb extensions (4.3.1) at the intersection of Wyoming Ave. & 8th St. W.

Studies in Progress

- Rose Park: 19th St. W. speed and traffic calming study (4.1.4)
- Poly: Intersection of Rimrock Rd. & Arvin Rd. speed and traffic calming study (4.1.4)
- Broadwater: Broadwater Ave. from 3rd St. W. to 6th St. W. speed and traffic calming study (4.1.4)
- Orchard: Intersection of State Ave. & Jackson St. speed and traffic calming study (4.1.4)
- Orchard: Francis Ave. arrival and dismissal operations study (4.6.2)







2.0 Programmatic Recommendations

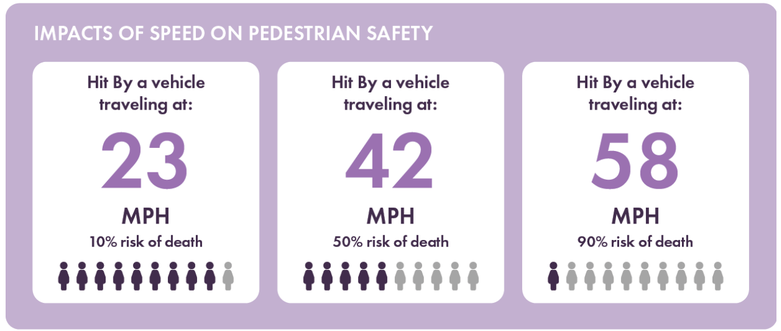
2.1 Continue Programmatic Recommendations from Phase 1

2.2 Adopt an Updated School Zone Traffic Control Policy

2.3 Develop a Snow Removal Policy

2.4 Use Durable Marking Materials in School Zones

2.5 Pursue All Available Funding Sources



While Chapter 3 of this plan contains the bulk of the work that needs to be done to make biking and walking to school safer for more students, this chapter holds the programmatic and policy recommendations that should be adopted to ensure that work gets done in a way that is comprehensive and sustained over time.

These programmatic recommendations were created by reviewing existing plans relevant to SRTS, analysis of the public input received through the project website and in-person events, school administrator interviews, best practices and guidance published by national organizations like NACTO and the FHWA, and the deliberation and consent of the Project Advisory Committee.

2.1 CONTINUE PROGRAMMATIC RECOMMENDATIONS FROM PHASE 1

Phase 1 of the Billings Safe Routes to School plan was adopted less than one year prior to the drafting of this plan. Therefore, modest progress has been made toward meeting those recommendations. Per Phase 1 programmatic strategy 3, the Billings MPO has applied for funding of an education campaign over the next three years.

This plan therefore recommends the continuation of the programmatic recommendations and summarizes them here for ease of reference:

1. Build, Define, and Leverage Partnerships

The Billings SRTS program is a collective effort between multiple organizations and individuals. While this diversity in groups, expertise, and individuals brings strength and depth to the program, it can also cause confusion about who does what, especially to school staff, parents, and students.

2. Create a Billings SRTS Toolkit

A toolkit is a document, or series of documents, that outline how to implement a safe routes to school project or program. They come in a variety of forms – some are for specific events (e.g., International Walk and Roll to School Day) while some are a "one-stop-shop" for all the programs' offerings. Either way, toolkits are clear communication tools for staff, stakeholders, families, and students to help them learn about the program and how they can get involved. A toolkit is an important documentation tool for SRTS program staff and can reduce issues due to staff turnover and/or consistency of program expectations. Toolkits can save time and money by eliminating the need for redundant work.

3. Build an Inclusive Education Campaign to Encourage Walking and Biking to School

Branding and education campaigns are essential ways to make an organization visible and recognizable to students, families, school staff, and the Billings community as a whole. This task would help to solidify knowledge of the program by stakeholders and would be used as a tool for all aspects of the SRTS program.

4. Consider Impacts on Students Walking and Biking When Creating and Updating School Policies

If a community wants more of its students to walk or bike to school, walking and biking must be easy and convenient, as well as safe. Some of the Billings School District policies may inadvertently make walking and biking difficult or, at minimum, less convenient for parents deciding whether their children should walk and/or bike. For further details, see p. 11 of the Billings Safe Routes To School Plan Update, phase 1 published July 2022.

2.2 ADOPT AN UPDATED SCHOOL ZONE TRAFFIC CONTROL POLICY

A School Zone Traffic Control Policy establishes standards for local governments when designing streets around schools. It supplements the FHWA's Manual on Uniform Traffic Control Devices (MUTCD) and guides decisions about what schools should have school speed zones, where crosswalks are located, what the speed limit is within a school zone, the role of crossing guards, etc.

Yellowstone County has no School Zone Traffic Control Policy. The City of Billings' policy was adopted in 2001, and no longer represents current standard practices. Therefore, both City and County governments should adopt updated School Zone Traffic Control Policies to reflect current standard practice and improve safety for children in School Zones.

The policies should include:

- Standards for establishing which schools qualify for a school speed zone, according to

the Manual on Uniform Traffic Control Devices (MUTCD).

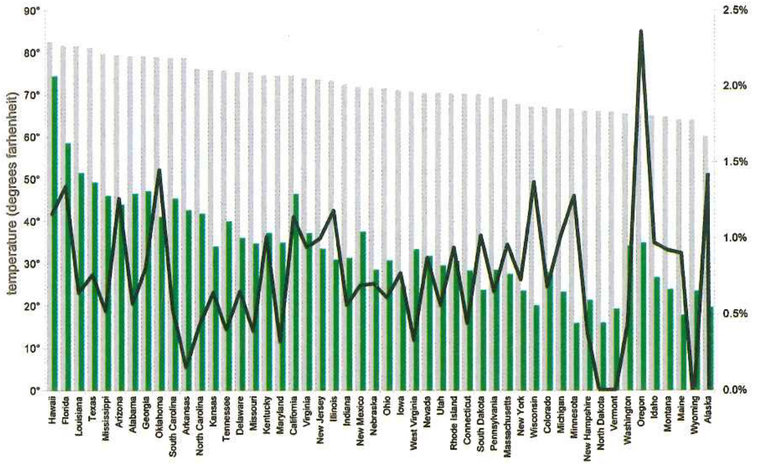
- Standards establishing the distance from a school a speed zone should begin and end according to the Manual on Uniform Traffic Control Devices (MUTCD)..
- Standards for determining the speed limit within a school zone.
- Recommended traffic calming measures within school speed zones.

2.3 USE DURABLE MARKING MATERIALS IN SCHOOL ZONES

The City of Billings currently uses water-based paint to mark crosswalks within its jurisdiction. Crosswalks are re-striped annually as weather allows. This method of maintaining crosswalk markings requires significant expenditure of staff-hours and results in crossings which are often faded during the school year.

Using more durable marking materials, such as thermoplastics, two-component resins, or preformed markings, within school zones greatly improves visibility and durability. The City of Billings should analyze total life cycle costs and savings associated these materials and determine if their use is feasible and beneficial to student safety.

2.4 PURSUE ALL AVAILABLE



Speck, Walkable City Rules

Investment has more bearing on bicycling than weather

FUNDING SOURCES

Multiple funding sources are available and should be explored to implement SRTS projects. Depending on the location of a project, different funding sources may be available. For projects within the Billings City limits, the city has created four funds for which Safe Routes to School projects may qualify:

- SRTS (non-sidewalks)
- Curb, Gutter, Sidewalk
- Traffic Calming
- ADA Replacement fund

In addition to the above sources, some projects in City limits, such as missing sidewalks, will be built partially with property owner assessments. Other projects may be built by developers as development occurs, such as during the subdivision process.

For projects in Yellowstone County, one way to fund Safe Routes to School projects is through the creation of a Rural Special Improvement District (RSID). RSID's are created through the petitioning and consent of 60% of the property owners within the proposed district and financed through the sale of bonds.

The Billings-Yellowstone County Metropolitan Planning Organization (MPO) administers the Transportation Alternatives (TA) program to distribute federal funds for non-motorized transportation improvements to local governments, school districts, or other local agencies within the urbanized area. In 2023, the MPO awarded funding to the City of Billings for the Stagecoach Trail and to Yellowstone County for the Old Hardin Road Sidewalk Connector projects. The Billings Capital Improvement Plan (CIP) currently identifies the TA program as a funding source for many upcoming shared use path projects but it could be used to fund SRTS projects if needed.

City of Billings FY 2024 - FY 2028 CIP						
	FY2024	FY2025	FY2026	FY2027	FY2028	TOTAL
SRTS (Non-sidewalk)	$500,000	$700,000	$700,000	$700,000	$700,000	$3,300,000

3.0 Project Recommendations

3.1 Using This Chapter

3.2 Project Intent

3.3 Project Impact

3.4 Project Recommendations by School

Ben Steele Middle School....21
Billings Central Catholic High....33
Billings Christian Elementary....45
Billings Christian High School....53
Castle Rock Middle School....61
Elysian School....75
Grace Montessori Academy....87
Independent School....99
Lewis & Clark Middle School....111
Lockwood Schools....129
Medicine Crow Middle School....141
Mount Olive Lutheran School....155
Pioneer Elementary School....165
Riverside Middle School....173
St. Francis Catholic School....185
Sunrise Montessori School....195
Will James Middle School....205

3.1 USING THIS CHAPTER

In this chapter, readers will find the projects recommended at each school and the information that lead to them. Each school summary contains:

- A table and a map of existing conditions
- A summary of community safety concerns
- A summary of observations gathered during arrival or dismissal
- A list of priority concerns
- A list of proposed projects

Each "Proposed Projects" table lists the topic, issue the project is intended to solve, a description of the project recommendation, the corresponding Infrastructure Toolbox ID numbers (x.x.x) of the proposed facilities, the party responsible for executing a project, and the estimated cost. More information can be found in Chapter 4.

This study makes a fundamental assumption that geography and proximity to nearby residences drives attendance and therefore adjacent infrastructure for biking and walking

3.2 PROJECT INTENT

The Importance of Parent/ Guardian Sentiment

Until parents perceive that their child's route to school is safe, they are unlikely to allow their children to walk or bike to school. The public input received during this plan indicates that many parents in the Billings area are interested in active transportation but have concerns about the safety of existing facilities.

When asked what would encourage them to let their children walk or bike more, most mentioned improved safety, improved pedestrian and bicycle facilities and crossings, and reducing the hazard of motor vehicles. The overwhelming majority of parents and guardians surveyed also identified themselves as "not willing to ride in traffic but interested in bicycling more."

School Population & Site Characteristics

Many schools share two important characteristics.

Student Potential for Walking and Biking: The middle school students that this plan serves have greater potential for independent, active transportation across greater distances compared to elementary school populations.

Schools on the Edge: Many of the schools in this plan sit on the city's urban fringe, surrounded by a patchwork of City and County rights-of-way, where walking and biking infrastructure may be scarce, street connectivity low, and traffic congestion acute during pick-up and drop-off.

Project Characteristics

The 105 project recommendations of this plan therefore propose physical changes to streets, shared use paths, and school sites which are designed to create safety along segments of popular routes to school by means of:

- Traffic calming (4.1.4)
- Separation and protection of bike and pedestrian facilities (4.1.3)
- Improved safety at crossings (4.3)

These concepts are further explained in Chapter 4, the Infrastructure Toolbox.

Several projects in this plan propose protected bike lanes on city streets. Many protected bicycle facilities already exist in Billings as Shared Use Paths, which are mostly confined to areas of new development and relative affluence, an equity issue this plan seeks to address.

Streets are expensive. Concrete, asphalt, and labor cost our local governments millions every year. Many of the projects in this plan are designed to be built as pilot, or pop-up, projects. Pilot projects can be built in days or months, and yield a high standard of safety at pop-up prices.

This Plan also proposes the creation of ADA-accessible routes on several school sites, projects which school districts would fund.

The projects listed in this chapter were vetted by the Project Advisory Committee (PAC), made up of representatives from City and County departments, City Council, school districts, Yellowstone County Planning Board, and advocacy groups, who met monthly to collaboratively created this plan.

3.3 PROJECT IMPLEMENTATION

Projects listed in this chapter have not been designed. Final design and implementation may be subject to further data collection including, but not limited to, a speed study, a traffic or pedestrian count, a warrant study, ROW acquisition, or a public input process. This process may make a project infeasible. For example, the Manual on Uniform Traffic Control Devices (MUTCD) requires an engineering study prior to marking a crosswalk at an uncontrolled intersection with 14 different criteria to consider. As such, many crossing recommendations require a study prior to implementation.

Gathering public input from all parties affected by a proposed project, including parents, students, staff, as and nearby residents will be required for many of the projects in this chapter.

Estimated costs in this chapter are intended to represent a planning-level cost estimate and do not represent a detailed Engineer's Opinion of Probable Cost. Due to variations in land costs, estimates do not include costs related to right-of-way acquisition.

3.4 PROJECT IMPACT

The City of Billings has dedicated about 3.3 million dollars in its CIP to spend on SRTS over the next five years. The City has also allocated $7.1 million in other funding sources for which the projects in this plan may qualify (See Programmatic Recommendation 2.5) Even so, that funding isn't enough to complete all the projects identified in the Phase 1 and Phase 2 plans at once. Therefore, it is necessary to prioritize projects based on how much public benefit, or impact, they will create. The Project Impact formula attempts to model that impact as accurately as possible. Projects were scored based on four criteria:

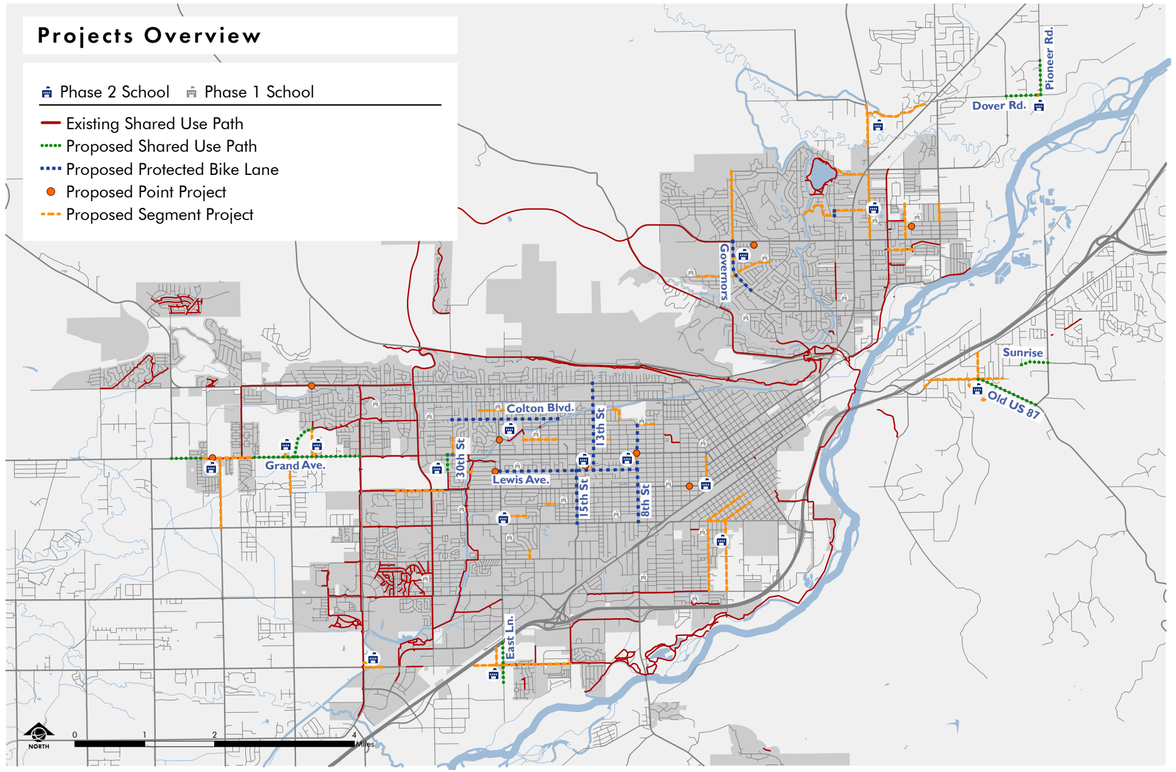
- Traffic Safety
- Feasibility
- Demand
- Equity

Once each project's scores were calculated, they were ranked and divided into the categories of high, medium, and low priority based on their overall score.

The project rankings are not intended as a strict ordering of project construction. Factors like availability of funding, feasibility, or timing of other projects at the same location could affect the actual timing of project construction. Anyone implementing the recommendations of this plan should view the Phase 1 and Phase 2 documents more as "Volumes 1 and 2," and should consider each phase's high, medium, and low priority projects together.

More on the project prioritization methods can be found in Appendix B.

Project Rankings by School					
	High	Medium	Low	# of Students in 2023	Cost of Recommended Projects
Ben Steele Middle School	1	4	1	795	$1,193,000
Billings Central Catholic High	1	3	1	325	$723,000
BCS Elementary	1	1	2	340	$2,535,000
BCS High School	0	2	1	100	$61,000
Castle Rock Middle School	4	2	1	711	$815,800
Elysian School	0	3	3	400	$1,350,700
Grace Montessori Academy	0	2	4	184	$567,000
Independent School	1	2	3	304	$1,877,500
Lewis & Clark Middle School	8	2	1	685	$3,548,000
Lockwood Schools	2	1	4	617	$1,179,000
Medicine Crow Middle School	4	3	1	521	$2,346,000
Mount Olive Lutheran	3	3	1	67	$434,7000
Pioneer Elementary	0	2	3	70	$1,096,500
Riverside Middle School	6	0	0	537	$1,451,500
St. Francis Catholic School	2	1	3	620	$2,115,000
Sunrise Montessori	0	3	2	93	$473,500
Will James Middle School	3	2	2	618	$1,357,500



High Impact Projects

					Impact Scoring Criteria Category														
					Traffic Safety				Feasibility				Demand			Equity		
Project Ranking	School	Project Number	Location	Project Type	Posted Speed Limit	Roadway Classification	High Injury Network	Total Traffic Safety Score	Ped Crossing, Sidewalk, ADA	In the location of a project specified in the 5-year CIP	In the location of a project documented in Adopted Plan	Total Feasibility Score	# of Household Routes Benefiting	Attendance	Total Demand Score	Free/Reduced Lunch % @ School	Total Equity Score	Overall Score
1	Lewis & Clark	1	Area Surrounding Lewis & Clark	School Speed Zone	35	Principal Arterial	Low	**69**	N	N	Y	**20**	18,080	685	**100**	50%	**50**	**239**
2	Riverside	3	Jackson St.	Crossing/ School Speed Zone/ Bicycling	25	Collector	Medium-High	**56**	Y	N	Y	**50**	7,553	537	**33**	100%	**100**	**239**
3	Riverside	4	State Ave.	Crossing/ CPTED	35	Minor Arterial	Medium-Low	**69**	Y	N	Y	**50**	4,129	537	**18**	100%	**100**	**237**
4	Riverside	1	Area Surrounding Riverside	School Speed Zone	25	Collector	Medium-High	**56**	N	N	Y	**20**	12,583	537	**55**	100%	**100**	**231**
5	St. Francis Catholic School	1	Colton Blvd.	Bicycling/ Crossing/ Sidewalk/ Speeding	35	Collector	No Data	**47**	Y	Y	Y	**100**	12,119	620	**61**	15%	**15**	**223**
6	Lewis & Clark	7	Main Entry, Lewis Ave.	ADA Compliance	25	Collector	Low	**42**	Y	N	N	**30**	18,080	685	**100**	50%	**50**	**222**
7	Castle Rock	4	Wicks Ln. at Castle Rock Park	Vehicle Congestion	35	Principal Arterial	Low	**69**	N	Y	Y	**70**	9,630	700	**54**	28%	**28**	**221**
8	Riverside	2	Madison Ave.	Crossing	25	Street	Low	**34**	Y	N	N	**30**	12,583	537	**55**	100%	**100**	**219**
9	Medicine Crow	2	Jerrie Ln. / Key City Dr.	Crossing/ Bicycling	45	Principal Arterial	Medium-Low	**88**	Y	N	Y	**50**	4,867	521	**20**	55%	**55**	**213**
10	Lewis & Clark	2	Lewis Ave.	Speeding/ Bicycling/ Crossing	25	Collector	Medium-Low	**50**	Y	N	Y	**50**	10,259	685	**57**	50%	**50**	**207**
11	Castle Rock	2	Governors Blvd. at Castle Rock School	Crossing/ Congestion	35	Principal Arterial	Low	**69**	Y	N	Y	**50**	9,630	700	**54**	28%	**28**	**201**
12	St. Francis Catholic School	2	Colton Blvd. & 24th St. W.	Crossing	35	Principal Arterial	Low	**69**	Y	Y	Y	**100**	3,433	620	**17**	15%	**15**	**201**
13	Riverside	6	South Park Neighborhood	ADA Compliance	25	Street	Low	**34**	Y	N	Y	**50**	3,719	537	**16**	100%	**100**	**200**
14	Lewis & Clark	11	Broadwater Ave. & 12th St. W.	Crossing	35	Principal Arterial	High	**88**	Y	N	Y	**50**	1,618	685	**9**	50%	**50**	**197**
15	Mount Olive Lutheran	4	Central Ave. & 24th St. W.	Crossing	35	Principal Arterial	Medium-High	**83**	Y	N	Y	**50**	5,393	67	**3**	59%	**59**	**195**
16	Medicine Crow	1	Area Surrounding Medicine Crow	School Speed Zone	35	Principal Arterial	Medium-Low	**77**	N	N	Y	**20**	10,167	521	**43**	55%	**55**	**195**
17	Castle Rock	3	Governors Blvd. from Wicks Ln. to Babcock Blvd.	Congestion/ Crossing/ Bicycling	35	Principal Arterial	Low	**69**	Y	N	Y	**50**	7,965	700	**45**	28%	**28**	**192**
18	Lockwood	1	Area surrounding Lockwood Schools	School Speed Zone	45	Principal Arterial	Low	**80**	N	N	Y	**50**	3,075	617	**15**	46%	**46**	**191**

High Impact Projects

					Impact Scoring Criteria Category														
					Traffic Safety				Feasibility				Demand			Equity		
Project Ranking	School	Project Number	Location	Project Type	Posted Speed Limit	Roadway Classification	High Injury Network	Total Traffic Safety Score	Ped Crossing, Sidewalk, ADA	In the location of a project specified in the 5-year CIP	In the location of a project documented in Adopted Plan	Total Feasibility Score	# of Household Routes Benefiting	Attendance	Total Demand Score	Free/Reduced Lunch % @ School	Total Equity Score	Overall Score
19	Lewis & Clark	4	15th St. W.	Speeding/ Bicycling/ Crossing/ ADA Compliance	35	Principal Arterial	Low	**69**	Y	N	Y	**50**	3,910	685	**22**	50%	**50**	**191**
20	Lockwood	3	Old US 87 E	Speeding/ Traffic/ Sidewalks/ Crossing	45	Principal Arterial	Low	**80**	Y	N	Y	**50**	2,548	617	**13**	46%	**46**	**189**
21	Riverside	5	Washington St.	Crossing/ Sidewalk	25	Street	Low	**34**	Y	N	N	**30**	4,643	537	**20**	100%	**100**	**184**
22	Medicine Crow	3	Bench Blvd.	Crossing	35	Principal Arterial	Low	**69**	Y	N	Y	**50**	2,348	521	**10**	55%	**55**	**184**
23	Independent	2	Hwy 87	Crossing/ Sidewalk	45	Principal Arterial	High	**99**	Y	N	Y	**50**	5,248	304	**13**	17%	**17**	**179**
24	Mount Olive Lutheran	3	St. Johns Ave. & 24th St. W.	Crossing	35	Principal Arterial	Medium-Low	**83**	Y	N	N	**30**	11,748	67	**6**	59%	**59**	**178**
25	Will James	1	Area Surrounding Will James	School Speed Zone	25	Street	Low	**34**	N	N	Y	**20**	17,104	618	**85**	38%	**38**	**177**
26	Lewis & Clark	3	13th St. W.	Speeding/ Bicycling/ Crossing/ Congestion/	35	Collector	Low	**53**	Y	N	Y	**50**	4,397	685	**24**	50%	**50**	**177**
27	Will James	5	Broadwater Ave.	Crossing/ Sidewalk	35	Principal Arterial	Low	**69**	Y	N	Y	**50**	3,804	618	**19**	38%	**38**	**176**
28	Billings Central Catholic High	3	Division St. & Broadwater Ave.	Crossing	35	Principal Arterial	High	**88**	Y	N	Y	**50**	11,600	325	**30**	7%	**7**	**175**
29	Medicine Crow	7	Bitterroot Dr.	Sidewalks/ Lighting	35	Principal Arterial	Low	**69**	Y	N	Y	**50**	46	521	**0**	55%	**55**	**174**
30	Lewis & Clark	6	Broadwater & 14th St. W.	Crossing	35	Principal Arterial	High	**88**	Y	N	N	**30**	558	685	**3**	50%	**50**	**171**
31	Mount Olive Lutheran	7	Berthound Ave.	ADA Compliance	35	Minor Arterial	Low	**61**	Y	N	Y	**50**	186	67	**0**	59%	**59**	**170**
32	BCS Elementary	2	Grand Ave.	Sidewalk/ Crossing	45	Principal Arterial	No Data	**74**	Y	N	Y	**50**	10,032	340	**28**	17%	**17**	**169**
33	Ben Steele	2	Grand Ave.	Crossing/ Sidewalks	45	Principal Arterial	No Data	**74**	Y	N	Y	**50**	3,762	795	**24**	19%	**19**	**167**
34	Will James	3	30th St. W.	Crossing	25	Street	No Data	**39**	Y	N	Y	**50**	7,752	618	**39**	38%	**38**	**166**
35	Castle Rock	1	Area Surrounding Castle Rock	School Speed Zone	35	Principal Arterial	Low	**63**	N	N	Y	**20**	9,630	700	**54**	28%	**28**	**165**
36	Lewis & Clark	5	8th St. W.	Speeding/ Bicycling/ Crossing	25	Collector	Medium-High	**56**	Y	N	Y	**50**	1,552	685	**9**	50%	**50**	**165**

Total cost of high impact projects: $12,976,90

*Cost estimates are planning level estimates. Not all projects have cost estimates as some are not defined enough to develop an estimate. Others have costs that may be includeded in other major reconstruction projects and may not require additional funding above what is planned for the larger construction project.

Medium Impact Projects

					Impact Scoring Criteria Category															
					Traffic Safety				Feasibility					Demand			Equity			
Project Ranking	School	Project Number	Location	Project Type	Posted Speed Limit	Roadway Classification	High Injury Network	Total Traffic Safety Score	Ped Crossing Sidewalk, ADA	In the location of a project specified in the 5-year CIP	In the location of a project documented in Adopted Plan	In the location of a project documented in Adopted Plan	Total Feasibility Score	# of Household Routes Benefiting	Attendance	Total Demand Score	Free/Reduced Lunch %@ School	Total Equity Score	Overall Score
37	Lewis & Clark	10	Area Surrounding Lewis & Clark	Sidewalk	25	Street	Low	**34**	Y	N	Y	**50**	5,236	685	**29**	50%	**50**	**163**
38	Ben Steele	3	Main Entry, Grand Ave.	Crossing	45	Principal Arterial	No Data	**74**	Y	N	Y	**50**	3,004	795	**19**	19%	**19**	**162**
39	Sunrise Montessori	3	8th St. W. & Grand Ave.	Crossing	35	Principal Arterial	Medium-High	**83**	Y	N	Y	**50**	4,705	93	**4**	25%	**25**	**162**
40	St. Francis Catholic School	4	24th St. W. & Solomon Ave.	Crossing	35	Principal Arterial	Medium-Low	**77**	Y	N	Y	**50**	3,578	620	**18**	15%	**15**	**160**
41	Will James	2	Grand Ave.	Speeding/ Crossing/ ADA Compliance	35	Principal Arterial	No Data	**63**	Y	N	Y	**50**	1,545	618	**8**	38%	**38**	**159**
42	Billings Central Catholic High	2	Division St.	Crossing/ Speeding/ Sidewalks	25	Principal Arterial	Low	**58**	Y	N	Y	**50**	15,960	325	**42**	7%	**7**	**157**
43	Billings Central Catholic High	1	Area surrounding Central Catholic High	School Speed Zone	35	Principal Arterial	High	**88**	N	N	Y	**20**	15,960	325	**42**	7%	**7**	**157**
44	Ben Steele	4	56th St. W.	Crossing/ Sidewalk	45	Principal Arterial	Low	**80**	Y	N	Y	**50**	970	795	**6**	19%	**19**	**155**
45	BCS High School	1	Hesper Rd.	Sidewalks	45	Principal Arterial	Low	**80**	Y	N	Y	**50**	137	340	**0**	24%	**24**	**154**
46	Medicine Crow	4	Hawthorne Ln.	Crossing/ Sidewalks/ Lighting	25	Collector	Low	**42**	Y	N	Y	**50**	1,429	521	**6**	55%	**55**	**153**
47	Independent	1	Hwy 87/ Area Surrounding Independent	School Speed Zone	45	Principal Arterial	High	**99**	N	N	Y	**20**	5,248	304	**13**	17%	**17**	**149**
48	Independent	3	Hwy 87 & Independent Ln.	Traffic/ Congestion	45	Principal Arterial	High	**99**	N	N	Y	**20**	5,248	304	**13**	17%	**17**	**149**
49	Will James	4	Rehberg Ln.	Crossing/ Bicycling	35	Collector	Low	**53**	Y	N	Y	**50**	1,545	618	**8**	38%	**38**	**149**
50	Medicine Crow	8	Pemberton Ln.	Sidewalks/ Light	25	Collector	Low	**42**	Y	N	Y	**50**	301	521	**1**	55%	**55**	**148**
51	Castle Rock	7	Constitution Ave.	Crossing	25	Collector	Low	**42**	Y	N	Y	**50**	4,897	700	**28**	28%	**28**	**148**
52	Pioneer	2	Dover Rd.	Sidewalks	55	Minor Arterial	No Data	**66**	Y	N	Y	**50**	1,026	70	**1**	31%	**31**	**148**
53	Pioneer	4	Dover Rd.	Crossing	55	Minor Arterial	No Data	**66**	Y	N	Y	**50**	1,026	70	**1**	31%	**31**	**148**
54	Castle Rock	6	Gleneagles Blvd.	Sidewalk	35	Principal Arterial	No Data	**63**	Y	N	Y	**50**	1,133	700	**6**	28%	**28**	**147**

Medium Impact Projects

					Impact Scoring Criteria Category															
					Traffic Safety				Feasibility					Demand			Equity			
Project Ranking	School	Project Number	Location	Project Type	Posted Speed Limit	Roadway Classification	High Injury Network	Total Traffic Safety Score	Ped Crossing Sidewalk, ADA	In the location of a project specified in the 5-year CIP	In the location of a project documented in Adopted Plan	In the location of a project documented in Adopted Plan	Total Feasibility Score	# of Household Routes Benefiting	Attendance	Total Demand Score	Free/Reduced Lunch %@ School	Total Equity Score	Overall Score
55	Ben Steele	1	Area Surrounding Ben Steele	School Speed Zone	45	Principal Arterial	Low	**80**	N	N	Y	**20**	4,257	795	**27**	19%	**19**	**146**
56	Mount Olive Lutheran	1	Area surrounding Mount Olive Lutheran	School Speed Zone	35	Principal Arterial	Medium-Low	**77**	N	N	Y	**0**	17,176	67	**9**	59%	**59**	**145**
57	Lewis & Clark	9	14th St. W.	Congestion	35	Street	Low	**45**	Y	N	N	**30**	3,414	685	**19**	50%	**50**	**144**
58	Medicine Crow	6	Maurine St. & Primrose Dr.	Crossing	25	Street	Low	**34**	Y	N	Y	**50**	968	521	**4**	55%	**55**	**143**
59	Mount Olive Lutheran	6	Miles Ave.	ADA Compliance	25	Street	Low	**34**	Y	N	Y	**50**	86	67	**0**	59%	**59**	**143**
60	Elysian	3	Elysian Rd. at Elysian School	Crossing/ Congestion	40	Collector	No Data	**47**	Y	N	Y	**50**	6,315	400	**20**	25%	**25**	**142**
61	Sunrise Montessori	1	Area Surrounding school	School Speed Zone	35	Principal Arterial	Medium-High	**83**	N	N	Y	**20**	18,827	93	**14**	25%	**25**	**142**
62	Billings Central Catholic High	4	Broadwater Ave. from Division St. to 5th Ave. W.	Crossing/ Speeding	35	Principal Arterial	Medium-High	**83**	Y	N	Y	**50**	534	325	**1**	7%	**7**	**141**
63	Elysian	5	East Ln.	Sidewalks/ Lighting/ Speeding	40	Collector	No Data	**47**	Y	N	Y	**50**	5,775	400	**19**	25%	**25**	**141**
64	Lockwood	2	Piccolo Ln.	Speeding/ Traffic/ Sidewalks	25	Collector	Low	**42**	Y	N	Y	**50**	448	617	**2**	46%	**46**	**140**
65	BCS Elementary	1	Grand Ave.	School Speed Zone	45	Principal Arterial	No Data	**74**	N	N	Y	**20**	10,032	340	**28**	17%	**17**	**139**
66	Sunrise Montessori	2	8th St. W.	Crossing/ Speeding/ ADA Compliance	25	Collector	Medium-High	**56**	Y	N	Y	**50**	8,148	93	**6**	25%	**25**	**137**
67	BCS High School	3	Shiloh Rd. at BCS HS Campus	Crossing	45	Principal Arterial	Low	**80**	Y	N	N	**30**	1,047	340	**3**	24%	**24**	**137**
68	Grace Montessori Academy	2	Grand Ave.	Sidewalks/ Crossings/ Speeding/ Congestion	45	Principal Arterial	No Data	**74**	Y	N	Y	**50**	7,582	184	**11**	N/A	**0**	**135**
69	Elysian	4	Elysian Rd. west of West Ln.	Sidewalks/ Lighting	45	Collector	No Data	**58**	Y	N	Y	**50**	529	400	**2**	25%	**25**	**135**
70	Grace Montessori Academy	3	48th St. W.	Sidewalks/ Crossings/ Speeding	45	Principal Arterial	Low	**80**	Y	N	Y	**50**	2,484	184	**4**	N/A	**0**	**134**
71	Mount Olive Lutheran	2	St. Johns Ave.	Speeding/ Crossing/ ADA Compliance	25	Street	Medium-Low	**34**	Y	N	N	**30**	17,176	67	**9**	59%	**59**	**132**
72	Ben Steele	5	Rimrock Rd. & 46th St. W.	Crossing/ Speeding	45	Principal Arterial	Low	**80**	Y	N	N	**30**	146	795	**1**	19%	**19**	**130**

Total cost of medium impact projects: $6,021,800

*Cost estimates are planning level estimates. Not all projects have cost estimates as some are not defined enough to develop an estimate. Others have costs that may be included in other major reconstruction projects and may not require additional funding above what is planned for the larger construction project. Sunrise Montessori Project 2 has been excluded from cost as the cost is also included in Lewis & Clark #5.

Low Impact Projects

Project Ranking	School	Project Number	Location	Project Type	Impact Scoring Criteria Category: Traffic Safety: Posted Speed Limit	Traffic Safety: Roadway Classification	Traffic Safety: High Injury Network	Traffic Safety: Total Traffic Safety Score	Feasibility: Ped Crossing, Sidewalk, ADA	Feasibility: In the location of a project specified in the 5-year CIP	Feasibility: In the location of a project documented in Adopted Plan	Feasibility: Total Feasibility Score	Demand: # of Household Routes Benefiting	Demand: Attendance	Demand: Total Demand Score	Equity: Free/Reduced Lunch %@ School	Equity: Total Equity Score	Overall Score
73	Elysian	2	Elysian Rd. & East Ln.	Crossing	40	Collector	No Data	**47**	Y	N	Y	**50**	2,235	400	**7**	25%	**25**	**129**
74	Pioneer	3	Pioneer Rd.	Sidewalks	55	Minor Arterial	No Data	**66**	Y	N	N	**30**	110	70	**0**	31%	**31**	**127**
75	Will James	7	Lewis Ave. & 25th St. W.	ADA Compliance	25	Street	Low	**34**	Y	N	Y	**50**	951	618	**5**	38%	**38**	**127**
76	Castle Rock	5	Castle Rock Parking Lot and Bus Loop	ADA Compliance	N/A	N/A	Low	**14**	Y	N	N	**30**	9,630	700	**54**	28%	**28**	**126**
77	St. Francis Catholic School	6	Rose Park Neighborhood	ADA Compliance	25	Street	Low	**34**	Y	N	Y	**50**	4,478	620	**22**	15%	**15**	**121**
78	Lewis & Clark	8	Ave. D	ADA Compliance	N/A	N/A	Low	**14**	Y	N	Y	**50**	1,081	685	**6**	50%	**50**	**120**
79	ioneer	1	Area Surrounding Pioneer School	School Speed Zone	55	Minor Arterial	No Data	**66**	N	N	Y	**20**	1,026	70	**1**	31%	**31**	**118**
80	ockwood	4	Hillner Ln.	Lighting/ CPTED	35	Street	Low	**45**	N	N	Y	**20**	614	617	**3**	46%	**46**	**114**
81	Sunrise Montessori	5	Parkhill Dr. from 6th to 8th St. W.	Speeding/ Crossing/ ADA Compliance	25	Collector	No Data	**36**	Y	N	Y	**50**	1,491	93	**1**	25%	**25**	**112**
82	Grace Montessori Academy	1	Area Surrounding Grace Montessori	School Speed Zone	45	Principal Arterial	Low	**80**	N	N	Y	**20**	7,582	184	**11**	N/A	**0**	**111**
83	Will James	6	Lewis Ave. BBWA bridge and trail connection	Shared Use Path/ ADA Compliance	N/A	N/A	Low	**14**	Y	N	Y	**50**	1,268	618	**6**	38%	**38**	**108**
84	Billings Central Catholic High	5	North and west of school	Sidewalks/ ADA Compliance	25	Street	Medium-High	**48**	Y	N	Y	**50**	572	325	**2**	7%	**7**	**107**
85	Medicine Crow	5	Victory Ave.	Shared Use Path	25	Street	No Data	**28**	N	N	Y	**20**	650	521	**3**	55%	**55**	**106**
86	Independent	4	Independent Ln.	Sidewalk/ Shared Use Path	45	Street	Low	**56**	Y	N	N	**30**	640	304	**2**	17%	**17**	**105**
87	Lockwood	5	Primary School parking lot	Crossing/ Bicycling/ ADA Compliance	N/A	N/A	N/A	**0**	Y	N	Y	**50**	1,667	617	**8**	46%	**46**	**104**
88	St. Francis Catholic School	3	Lyman Ave.	Speeding/ Sidewalks/ ADA Compliance	25	Street	No Data	**28**	Y	N	Y	**50**	1,956	620	**10**	15%	**15**	**103**
89	Elysian	1	Area Surrounding Elysian	School Speed Zone	40	Collector	Low	**53**	N	N	Y	**0**	6,336	400	**20**	25%	**25**	**98**
90	St. Francis Catholic School	5	Colton Blvd. at St Francis School	Congestion	N/A	N/A	N/A	**0**	N	N	N	**0**	15,937	620	**80**	15%	**15**	**95**

Low Impact Projects

Project Ranking	School	Project Number	Location	Project Type	Impact Scoring Criteria Category: Traffic Safety: Posted Speed Limit	Traffic Safety: Roadway Classification	Traffic Safety: High Injury Network	Traffic Safety: Total Traffic Safety Score	Feasibility: Ped Crossing, Sidewalk, ADA	Feasibility: In the location of a project specified in the 5-year CIP	Feasibility: In the location of a project documented in Adopted Plan	Feasibility: Total Feasibility Score	Demand: # of Household Routes Benefiting	Demand: Attendance	Demand: Total Demand Score	Equity: Free/Reduced Lunch %@ School	Equity: Total Equity Score	Overall Score
91	Elysian	6	West Ln.	Sidewalks/ Lighting/ Speeding	35	Street	No Data	**39**	Y	N	N	**30**	20	400	**0**	25%	**25**	**94**
92	BCS Elementary	3	Campus parking lot	Crossing/ ADA Compliance	N/A	N/A	N/A	**0**	Y	N	N	**30**	10,032	340	**28**	17%	**17**	**75**
93	BCS High School	2	Shiloh Rd. at BCS HS Campus	ADA Compliance/ Sidewalks	N/A	N/A	N/A	**0**	Y	N	N	**30**	6,513	340	**18**	24%	**24**	**72**
94	Sunrise Montessori	4	Alderson Ave.	Speeding	25	Street	Low	**34**	N	N	N	**0**	14,111	93	**11**	25%	**25**	**70**
95	Lockwood	6	Sunrise Ave. / Johnson Ln.	Trail	N/A	N/A	N/A	**0**	N	N	Y	**20**	319	617	**2**	46%	**46**	**68**
96	Mount Olive Lutheran	5	Mt. Olive Lutheran campus	CPTED	N/A	N/A	N/A	**0**	N	N	N	**0**	5,427	67	**3**	59%	**59**	**62**
97	Lockwood	7	Stonehaven Tr.	Trail	N/A	N/A	N/A	**0**	N	N	N	**0**	49	617	**0**	46%	**46**	**46**
98	Grace Montessori Academy	6	Grace Montessori Parking Lot	ADA Compliance	N/A	N/A	N/A	**0**	Y	N	N	**30**	7,582	184	**11**	N/A	**0**	**41**
99	BCS Elementary	4	Rimrock West Park & The Big Ditch	Trail/ Street Connections	N/A	N/A	N/A	**0**	N	N	Y	**20**	1,263	340	**3**	17%	**17**	**40**
100	Pioneer	5	Dover Rd. at Campus	Arrival/ Dismissal Behavior	N/A	N/A	No Data	**8**	N	N	N	**0**	1,026	70	**1**	31%	**31**	**40**
101	Ben Steele	6	Surrounding Undeveloped Land	Trail/ Street Connections	N/A	N/A	N/A	**0**	N	N	Y	**20**	N/A	795	**0**	19%	**19**	**39**
102	Independent	6	Neighborhoods Surrounding Independent School	Trail/ Street Connections	N/A	N/A	N/A	**0**	N	N	Y	**20**	N/A	304	**0**	17%	**17**	**37**
103	Grace Montessori Academy	4	Big Ditch Right-of-way/ Surrounding Undeveloped Lands	Trail/ Street Connections	N/A	N/A	N/A	**0**	N	N	Y	**20**	2,373	184	**4**	N/A	**0**	**24**
104	Grace Montessori Academy	5	Grace Montessori Parking Lot	Vehicle Congestion	N/A	N/A	No Data	**8**	N	N	N	**0**	7,582	184	**11**	N/A	**0**	**19**
105	Independent	5	East Ditch Crossing	Trail/ Street Connections	N/A	N/A	N/A	**0**	N	N	N	**0**	30	304	**0**	17%	**17**	**17**

Total cost of low impact projects: $3,929,700

*Cost estimates are planning level estimates. Not all projects have cost estimates as some are not defined enough to develop an estimate. Others have costs that may be includeded in other major reconstruction projects and may not require additional funding above what is planned for the larger construction project. Sunrise Montessori projects # 2 and #3 have been excluded from cost as the cost is also included in Lewis & Clark #5.

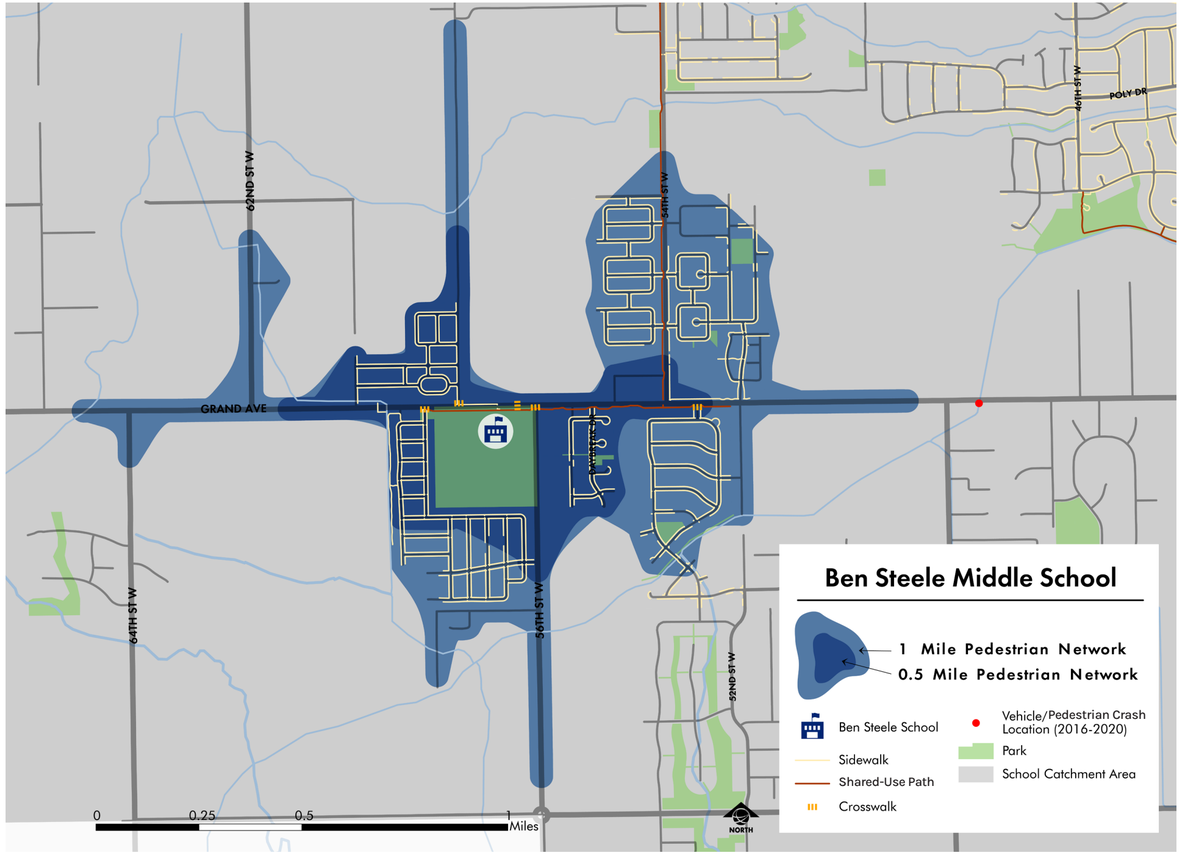

Billings MPO, Ben Steele

Ben Steele Middle School

Existing Conditions at Ben Steele Middle School

ABOUT THE SCHOOL	
Address	5640 Grand Ave, Billings, MT 59106
Number of Students (Grade Levels)	795 (6-8)
% of Students Eligible for Free & Reduced Lunch	19%
Arrival/Dismissal Times	8:10 AM / 3:10 PM

MAJOR STREETS & HIGHWAYS	AADT
Grand Ave.	6,650 (west of 56th St. W.)
56th St. W.	4,070 (north of Central Ave.)



Community Safety Concerns at Ben Steele Middle School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Students crossing 56th from church parking lot to school outside of crosswalk.
School Staff	› Some families park on the north side of Grand Ave. during pick up, creating visibility problems at crosswalks.
Webmap Survey (24 comments)	› Parts of Grand Ave. have no walking or biking facilities or are poorly maintained during winter months. Speeding vehicles, lack of lighting, and lack of visibility for crossings make Grand Ave. hazardous for walking and biking. › Missing walking and biking connections on surrounding streets. › Higher speed limits and speeding vehicles and trucks on surrounding streets. › Long distances between crossings, lack of crossing guards, insufficient visibility and signals at crossings at many intersections surrounding the school. › Intersection of Rimrock Rd. and 46th St. W. unsafe to cross. Lack of safe means to cross Rimrock Rd. and lack of connections to schools on Grand Ave.
Crossing Guard	› School staff was plowing sidewalk and has since stopped doing snow removal.
Safety Busing*	› Ben Steele operates 12 bus routes, 6 of which include safety busing stops. The neighborhoods of Rimrock West, Granite Park, Circle 50, Copper Ridge, Twin Pines and Shiloh Estates are served by safety busing.

** Safety Busing options are noted at schools where safety busing is provided. Safety Busing is provided to students living within 3 miles of a school if a barrier, such as an arterial, may prevent students from walking to school.*

Arrival Observations at Ben Steele Middle School: April 12th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› School Buses use a separated drop off on the east side of the school site.
Vehicles	› Most drop off occurs on the north side of the school site in the dedicated, one-way drop off lanes located off of Grand Ave. › Many parents wait in the drop off queue until their child can disembark directly in front of the front door, their vehicles blocking the crosswalk in the drop off loop. › Some families used the parking lot north of the dedicated drop off lanes for drop off. › Some families drop off their children in the event parking lot south of the auditorium. › Parents parking in the shoulders of Grand Ave. during drop off.
School Staff Roles	› Principal and several staff monitored drop off at the main entrance.
Adult crossing Guards	› A crossing guard is posted at 56th St. W. and Grand Ave.
Students Walking and Biking	› Many students observed walking and bicycling to school; most from the east, on the separated, protected shared use path on the south side of Grand Ave. › Some students observed walking and biking from the west and 58th St. W. › A small number of students observed walking to school on the shared use paths that connect the school to the neighborhood to the south and southwest. › Students observed crossing 56th St. W. outside of any crosswalk toward the Connections Church parking lot.

Priority Concerns at Ben Steele Middle School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Ben Steele	› Inconsistently located School Zone signage on streets surrounding Ben Steele. › Many public comments reporting apparent speeding vehicles in school zone.	Yes
2	Grand Ave.	› Many public comments report speeding in school zone. › Missing sidewalk and sidewalks which are not shoveled during winter months along north side of Grand Ave. › Unmarked and faded crosswalk markings at intersections and parking lots from Shiloh to 62nd St. W. › Difficulty accessing Grand Ave. from 56th St. W. causes people in cars to block the crosswalk on the south leg of the intersection.	Yes
3	Grand Ave. at Ben Steele main entry	› Parked vehicles on the shoulders of Grand Ave. during drop off obstructs view of students in the crosswalk. › Vehicles block crosswalk in drop off loop.	Yes
4	56th St. W.	› Students crossing 56th St. W. at Connections Church parking lot access. Lot also used as overflow event parking for school. › Missing sidewalks south of Stockman Ave. › Missing sidewalks on the east side of 56th St. W.	Yes
5	Rimrock Rd. & 46th St. W.	› No marked crossing exists on Rimrock Rd. from Shiloh Rd. to 54th St. W, a distance of 8,700 feet. › A posted speed limit of 45 mph on Rimrock Rd. increases the likelihood of serious injury in crashes. › Public comments reporting apparent speeding.	Yes
6	Surrounding Undeveloped Land	› Lack of shared use path or street connections from surrounding neighborhoods increases travel distances and requires students to travel along higher speed, higher traffic roadways.	Yes

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Proposed Projects at Ben Steele Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUES	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding Ben Steele	School Speed Zone	› Public comments report apparent speeding vehicles school zone. › School Speed Zone is 35 mph.	1	› Design the street to a speed limit that provides for the safety and access of people walking and biking within the school zone.	4.1.4	City	$-
2	Grand Ave.	Crossing/ Sidewalks	› Many public comments report speeding in school zone. › Missing sidewalk and sidewalks which are not shoveled during winter months along north side of Grand Ave. › Unmarked and faded crosswalk markings at intersections and parking lots from Shiloh to 62nd St. W. › Difficulty accessing Grand Ave. from 56th St. W. causes people in cars to block the crosswalk on the south leg of the intersection.	2	› Install protection for existing shared use path. Possible solutions include; curb, bollards, street trees, boulders, or guard rails. › Install lighting along the shared use path on Grand Ave. › When Grand Ave. is rebuilt, complete all missing sidewalks. › When the intersection of Grand Ave. and 54th St. W. is rebuilt, design it to prioritize the safety of students walking and biking to school. › When this segment of Grand Ave. is re-built, if a signal is warranted, design the signalized intersection at 56th and Grand to prioritize the safety of students walking and biking to school.	4.1.3, 4.2.6 4.2.7 4.2.1 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.5.1, 4.5.2, 4.5.3 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.5.1, 4.5.2, 4.5.3	City	$440,000
3	Main Entry, Grand Ave.	Crossing	› Parked vehicles on the shoulders of Grand Ave. during drop off obstructs view of students in the crosswalk. › Vehicles block crosswalk in drop off loop.	3	› Install advanced yield marking and Yield Here to Pedestrians signage ahead of the crossing in the drop off loop. › Install curb extensions in the shoulders and a pedestrian refuge in the median of Grand Ave. to improve visibility and safety of crossing students.	4.4.3 4.2.7, 4.3.1, 4.3.4	City/ School	$38,000

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Here, advanced traffic control signals refer to a range of options from pedestrian activated Rectangular Rapid Flashing Beacons, to Pedestrian Hybrid Beacons, to full signals. Each location will need to be evaluated based on traffic volumes, speeds, and pedestrian crossing volumes to determine the correct treatment.

Estimated costs shown are intended to represent a planning-level cost estimate and do not represent a detailed Engineer's Opinion of Probable Cost.

Proposed Projects at Ben Steele Middle School *(Continued across to next page)*

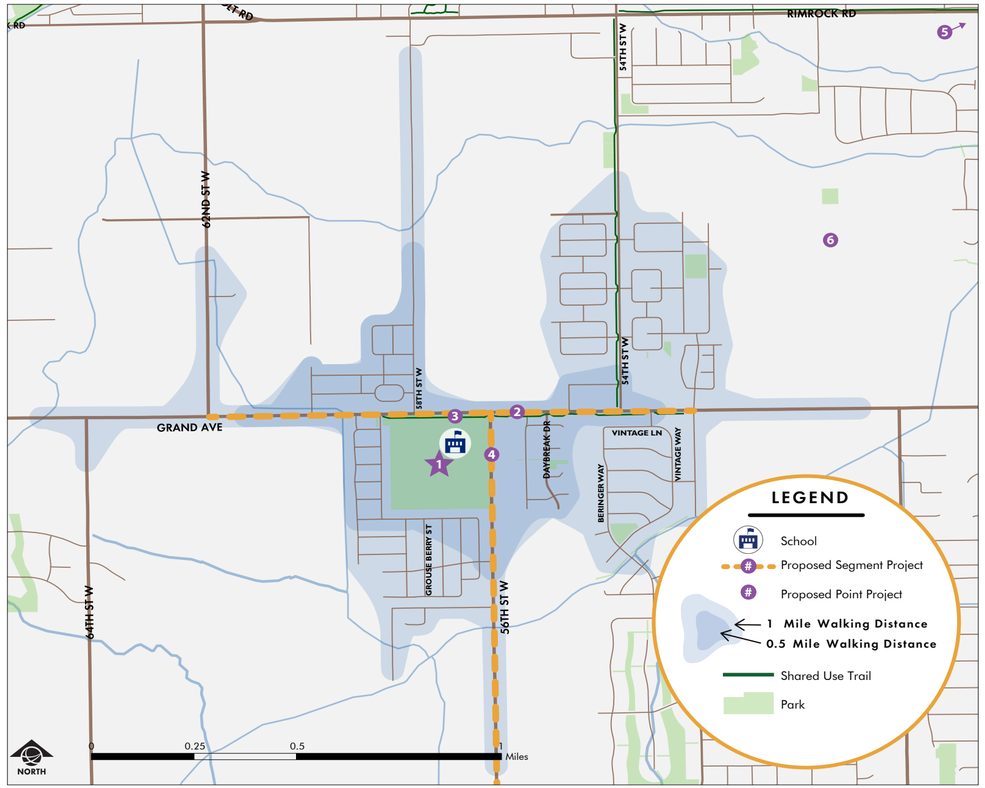
#	LOCATION	TOPIC	ISSUES	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
4	56th St. W.	Crossing/ Sidewalk	› Students crossing 56th St. W. at Connections Church parking lot access. Lot also used as overflow event parking for school. › Missing sidewalks south of Stockman Ave. › Missing sidewalks on the east side of 56th St. W.	4	› Study and install a high visibility crosswalk no less than 300 feet south of the intersection of Grand Ave. and 56th St. W. to serve students crossing 56th St. W. from the Connections Church parking lot. Study whether to include curb extensions, advanced traffic control signals, or a pedestrian refuge island. If studies find that a crosswalk is not warranted at this location, evaluate alternatives including potential church property changes. › When the segment of 56th St. W. from Grand Ave. to Central Ave. is re-built, design the right of way to include separated, protected sidewalks and shared-use paths.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.4.4, 4.5.5 4.2.1, 4.2.6, 4.2.7	City/ County	$180,000
5	Rimrock Rd. & 46th St. W.	Crossing/ Speeding	› No marked crossing exists on Rimrock Rd. from Shiloh Rd. to 54th St. W, a distance of 8,700 feet. › A posted speed limit of 45 mph on Rimrock Rd. increases the likelihood of serious injury in crashes › Public comments reporting apparent speeding.	5	› Study and install a high visibility crosswalk, bulb out, and advanced traffic control signal across Rimrock Rd.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.4.3, 4.5.5	City	$535,000
6	Surrounding Undeveloped Land	Shared Use Path/ Street Connections	› Lack of shared use path or street connections from surrounding neighborhoods increases travel distances and requires students to travel along higher speed, higher traffic roadways.	6	› Secure right of way connections and well-connected streets in any future development on lands within the 1.5-mile area surrounding Ben Steele. › Secure right-of-way to continue connections along the Big Ditch. Aquiring right-of-way may have a cost associated with it.	4.2.1, 4.2.6 4.2.6, 4.2.7	County/ City/ Developer	$-

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Proposed Projects Map at Ben Steele Middle School



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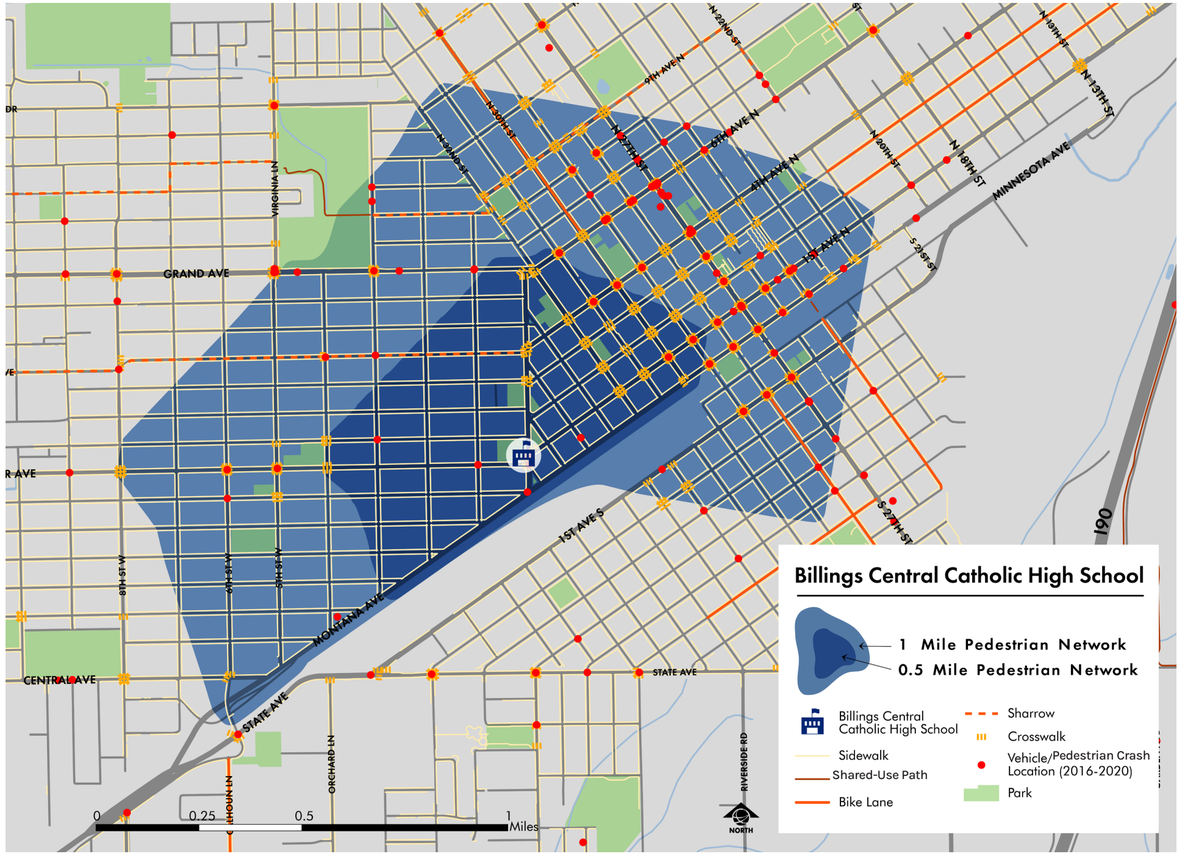
Billings Central Catholic High School



Existing Conditions at Billings Central Catholic High School

ABOUT THE SCHOOL	
Address	3 Broadwater Ave, Billings, MT 59101
Number of Students (Grade Levels)	325 (9-12)
% of Students Eligible for Free & Reduced Lunch	7%
Arrival/Dismissal Times	8:10 AM / 3:05 PM

MAJOR STREETS & HIGHWAYS	AADT
Broadwater Ave.	15,060
Division St.	18,340



Community Safety Concerns at Billings Central Catholic High School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Vehicle congestion at the intersection of Division St. & Wyoming Ave.
Webmap Survey (5 comments)	› Signal timing at the intersection of Broadwater Ave. & Division St. is too short for people walking to safely cross. › Students parking on Yellowstone Ave. cross mid-block, outside of a crosswalk. › Unsafe intersection for students crossing 6th at Wyoming.
Safety Busing	› Two bus routes that serve the Heights and West End are shared by Central High and St. Francis.

Arrival Observations at Billings Central Catholic High School: March 17th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› Buses drop students off on Wyoming Ave. at no parking strip.
Vehicles	› Most private vehicle drop off occurred in the lot to the rear of the building, accessed from Broadwater Ave. and Wyoming Ave. › Many students park private vehicles on the streets in the neighborhood north of Broadwater Ave. and west of Division St. › Some students were observed parking in the Dahl Funeral Chapel parking lot. › Private vehicles dropping students off and looking for parking were stacking on Wyoming Ave. from Division St. to 1st St. W. › Vehicles were observed mounting the curb and encroaching on the sidewalk to enter the south-bound turn lane at Broadwater Ave. & Division St.
School Staff Roles	› No staff were observed to have any role in the arrival period.
Adult crossing Guards	› No crossing guards were observed to be posted in the area around the school.
Students Walking and Biking	› Students were observed approaching the school from the north via 1st St. W. › Students were observed approaching the school from the west via Wyoming Ave. possibly from vehicles parked further west on Wyoming Ave. › A student was observed approaching the school from the east, via the crosswalk at Division St. and 1st Ave. N.

Priority Concerns at Billings Central Catholic High School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Central Catholic High	› No school zone signage exists in the area around the school.	No
2	Division St.	› There are only three marked crossings on Division St., all of which are faded and are about 1,000 feet apart from each other. › Relatively wide travel lanes encourage speeding. › Missing crosswalks at Division and N. 34th St. and N. 33rd St.	No
3	Division St. & Broadwater Ave.	› Crosswalk markings are faded on all legs of this intersection. › Crossing distances are relatively long on all legs of this intersection. Large curb radii increase crossing distances. › Crosswalk signal timing appeared to be inadequate to accommodate all ages and abilities.	Yes
4	Broadwater Ave.	› There are no marked crossings of Broadwater Ave. from Division St. to 5th St. W, a distance of about 3,100 feet. › Curbwalk sidewalk along Broadwater Ave. puts students very close to 35 MPH traffic, reducing comfort and creating hazard for people walking. › Side streets along Broadwater Ave. do not have marked crossings.	Yes
5	North and west of school	› Many sidewalks in this neighborhood are uneven or have deteriorating surfaces. › Many curb cuts in this neighborhood are missing or are non-ADA compliant.	No

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Proposed Projects at Billings Central Catholic High School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area surrounding Central Catholic High	School Speed Zone	› No school zone signage exists in the area around the school.	1	› Study and establish a School Zone and School Speed Zone surrounding Central High School in accordance with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design the streets within the school zone to a speed limit that provide for the safety and access of children walking and biking.	4.4.1 4.1.4	City	$24,000
2	Division St.	Crossing/ Speeding/	› There are only three marked crossings on Division St., all of which are faded and are about 1,000 feet apart from each other. › Travel lanes between 11 and 14 feet wide encourage speeding. › Missing crosswalks at Division and N. 34th St. and N. 33rd St.	2	› Study speeds on Division St. and reconfigure Division St. to calm traffic and prioritize safety and access for people walking and biking. This may include reducing curb radii, reconfiguring travel lanes, eliminating slip lanes, and eliminating lanes on side streets. › Replace all crossings of Division St. and its side streets with high visibility crossings. › Install high visibility crossings, missing sidewalk, and curb extensions and ADA ramps at N. 34th St. and N. 33rd St. › Install a contra-flow bicycle crossing and lane along Clark Ave. from 3rd Ave. N & Division St. to Clark Ave. & 1st St. W. Educate public on contraflow lane.	4.1.4, 4.2.3, 4.3.1 4.3.1, 4.3.2, 4.4.4 4.3.1, 4.3.2, 4.3.3, 4.4.4 4.2.5	City	$122,000
3	Division St. & Broadwater Ave.	Crossing	› Crosswalk markings are faded on all legs of this intersection. › Crossing distances are relatively long on all legs of this intersection. Large curb radii increase crossing distances. › Crosswalk signal timing appeared to be inadequate to accommodate all ages and abilities.	3	› Study and install high visibility crossings on all legs of the intersection of 1st Ave. N, Broadwater Ave. & Division St. › Study and install leading pedestrian interval and verify adequate crossing signal timing. › Reduce curb radii at this intersection.	4.3.2 4.5.2 4.3.1	City	$45,000

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Proposed Projects at Billings Central Catholic High School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
4	Broadwater Ave. from Division St. to 5th Ave. W.	Crossing/ Speeding	› There are no marked crossings of Broadwater Ave. from Division St. to 5th St. W, a distance of about 3,100 feet. › Curbwalk sidewalk along Broadwater Ave. puts students very close to 35 MPH traffic, reducing comfort and creating hazard for people walking. › Side streets along Broadwater Ave. do not have marked crossings.	4	› Study and install a high visibility crossing and advanced traffic control signal Broadwater Ave. between 5th St. W and Division. › If studies find that a crosswalk is not warranted at this location, evaluate alternatives.	4.3.2, 4.3.3, 4.5.5	City	$67,000
5	North and west of school	Sidewalks/ ADA Compliance	› Many sidewalks in this neighborhood are uneven or have deteriorating surfaces. › Many curb cuts in this neighborhood are missing or are non-ADA compliant.	5	› Install ADA-compliant curb cuts and repair sidewalks where needed at intersections in the area from Wyoming Ave. & Division St. to Lewis Ave. and 5th St. W. › Install high visibility crossing, ADA compliant ramps, and curb extensions on all legs of the intersection of 1st St. W. and Wyoming Ave.	4.2.1, 4.3.1, 4.3.2 4.2.1, 4.3.1, 4.3.2	City	$465,000

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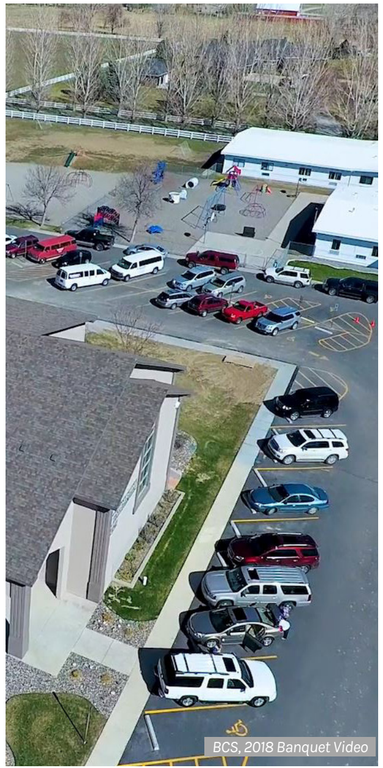
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Proposed Projects Map at Billings Central Catholic High School



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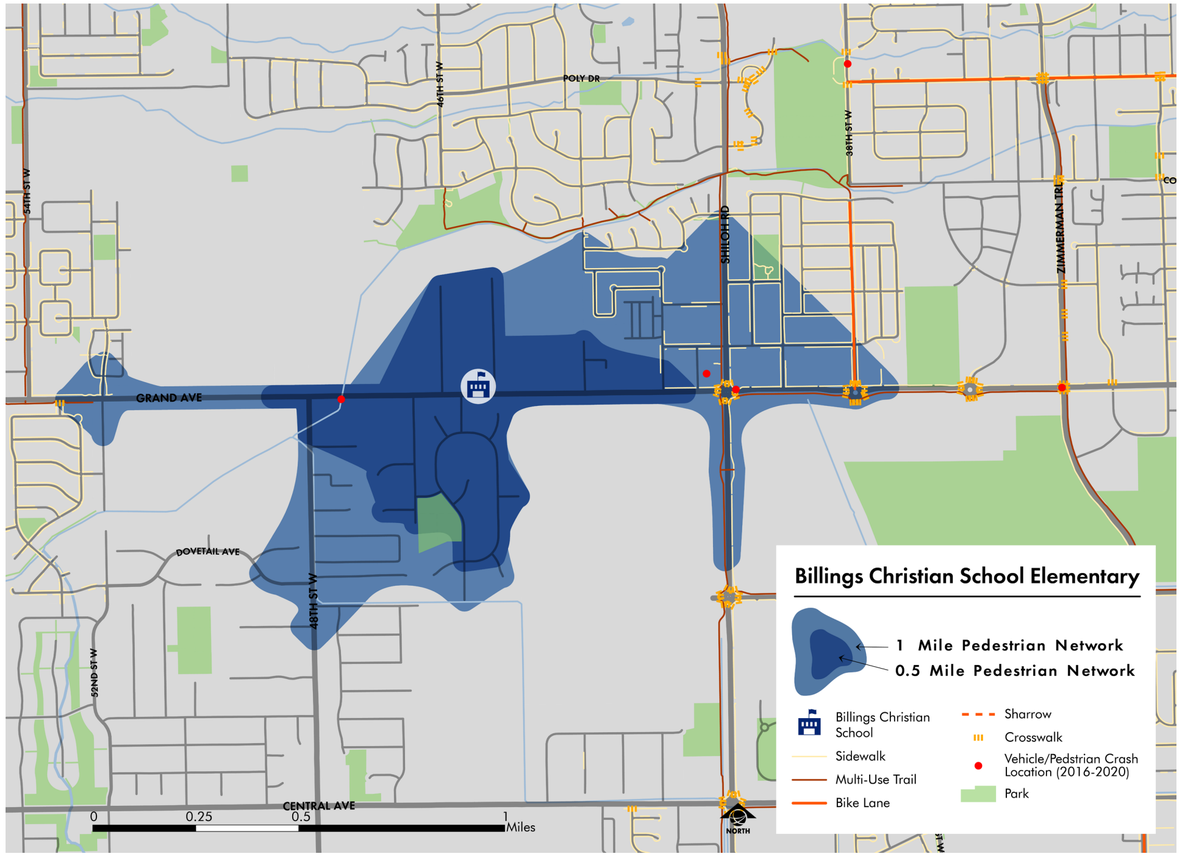

BCS, 2018 Banquet Video

Billings Christian Elementary School

Existing Conditions at Billings Christian Elementary School

ABOUT THE SCHOOL	
Address	4519 Grand Ave, Billings, MT 59106
Number of Students (Grade Levels)	340 (PK-8)
% of Students Eligible for Free & Reduced Lunch	17%
Arrival/Dismissal Times	8:15 -8:30 AM / 12:00-3:15 PM

MAJOR STREETS & HIGHWAYS	AADT
Grand Ave.	11,060



Community Safety Concerns at Billings Christian Elementary School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Traffic congestion during pick up and drop off presents a safety hazard.
Webmap Survey (16 comments)	› Speeding vehicles, congestion, missing sidewalks, inconsistent School Zones, and a desire for a shared-use path on Grand Ave. › Lack of shared use path or street connections from neighborhoods north of the school, and a desire for continuing the shared use path along the BBWA westward.

Arrival Observations at Billings Christian Elementary School: June 12th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› No busing is provided.
Vehicles	› Private vehicle drop off traffic increases at 7:45 AM with moments of significant stacking on Grand Ave. for vehicles waiting to turn left into school lot. › Irregular and unpredictable vehicle movements observed while stacking exists on Grand Ave. › Westbound vehicles turning right into parking lot yield to east-bound vehicles turning left into the lot. › Drop off occurred mostly at the entry of the elementary building on the eastern portion of the site.
School Staff Roles	› Staff received students at the elementary building and monitored the playground before school began.
Adult crossing Guards	› No crossing guards were observed.
Students Walking and Biking	› No students were observed walking or biking to school.

Priority Concerns at Billings Christian Elementary School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Grand Ave.	› Inconsistently-located school zone signage along Grand Ave. › The posted speed limit on Grand Ave. is 45 mph. › Several public comments about speeding vehicles.	Yes
2	Grand Ave.	› The nearest marked crossings on Grand Ave. are over 3,000 feet to the east and and 5,300 feet to the west. › The nearest sidewalks or bike infrastructure on Grand Ave. are 2,400 feet to the east and 4,300 feet to the west.	Yes
3	Campus parking lot	› No direct, marked walking or biking route exists from Grand Ave. through the parking lot, to the main entry.	No
4	Rimrock West Park & The Big Ditch	› Lack of shared use path or street connections from neighborhoods north of BCS Elementary to Grand Ave. increases travel distances and requires students to travel along higher speed, higher volume roadways.	Yes

Proposed Projects at Billings Christian Elementary School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Grand Ave.	School Speed Zone	› Inconsistently-located school zone signage along Grand Ave. › The posted speed limit on Grand Ave. is 45 mph. › Several public comments about speeding vehicles.	1	› Relocate existing school speed zone signage to comply with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design the street to a speed limit that provides for the safety and access of children walking and biking within the school zone.	4.1.4 4.4.1	County/ City	$129,000
2	Grand Ave.	Sidewalk/ Crossing	› The nearest marked crossings on Grand Ave. are over 3,000 feet to the east and and 5,300 feet to the west. › The nearest sidewalks or bike infrastructure on Grand Ave. are 2,400 feet to the east and 4,300 feet to the west.	2	› When the segment of Grand Ave. west of Shiloh is re-built, design the right of way to include separated, protected sidewalks and shared use paths. › Install street lighting along the installed sidewalks and shared use paths. › When the segment of Grand Ave. west of Shiloh is re-built, further study installation of a high visibility crossing, advanced traffic control signal at the intersection of Grand Ave. & Bluegrass Dr.	4.2.1, 4.2.6 4.2.7 4.2.7, 4.3.2, 4.3.3, 4.4.3, 4.5.1, 4.5.2, 4.5.3, 4.5.5	City/ County/ Land Owner	$2,375,000
3	Campus parking lot	Crossing/ ADA Compliance	› No direct, marked walking or biking route exists from Grand Ave. through the parking lot, to the main entry.	3	› Install a direct, marked, ADA compliant path from Grand Ave. through the parking lot, to the main entry of each building.	4.3.3	School	$31,000
4	Rimrock West Park & The Big Ditch	Shared Use Path/ Street Connections	› Lack of shared use path or street connections from neighborhoods north of BCS Elementary to Grand Ave. increases travel distances and requires students to travel along higher speed, higher volume roadways.	4	› Secure right-of-way connections from the neighborhoods north of BCS Elementary to Grand Ave. Possible connections include 43rd, 48th, Lenhardt, and Nansel Ln. Accesses may be dedicated during the subdivision process, or as funds are available. › Secure right-of-way to continue connections westward along the Big Ditch	4.2.1, 4.2.6, 4.2.7 4.2.6, 4.2.7	County/ City	$-

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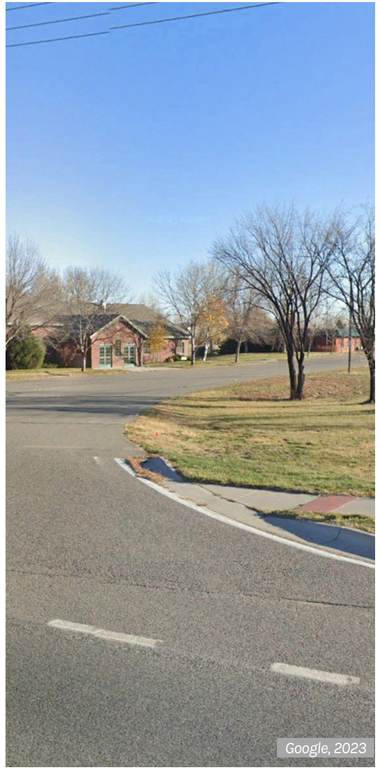
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Proposed Projects Map at Billings Christian Elementary School



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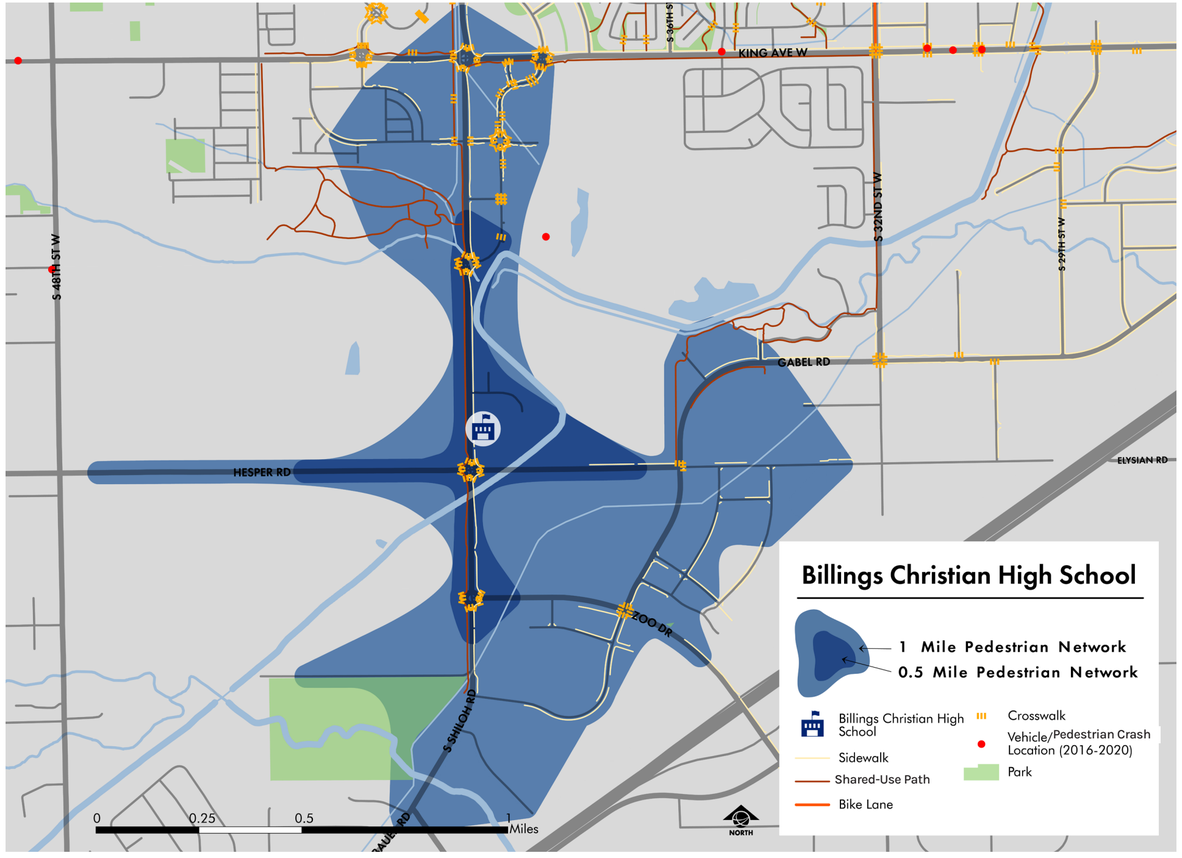
Billings Christian High School



Existing Conditions at Billings Christian High School

ABOUT THE SCHOOL	
Address	1515 S Shiloh Rd, Billings, MT 59106
Number of Students (Grade Levels)	100 (9-12)
% of Students Eligible for Free & Reduced Lunch	24%
Arrival/Dismissal Times	8:25 AM / 3:25 PM

MAJOR STREETS & HIGHWAYS	AADT
Shiloh Rd	14,560
Hesper Rd	5,390



Community Safety Concerns at Billings Christian High School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Dangerous pedestrian crossings at the roundabout intersection of Shiloh Rd. & Hesper Rd.
Webmap Survey (0 comments)	› N/A

Arrival Observations at Billings Christian High School: May 5th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› No buses were observed during the arrival period.
Vehicles	› Some students arrived by private vehicle at or before 8 AM, most from the informal dirt road from Hesper Rd. No congestion was observed.
School Staff Roles	› No staff were observed to have any role in the arrival period.
Adult crossing Guards	› No crossing guards were observed during the arrival period.
Students Walking and Biking	› No students were observed walking or biking to school.

Priority Concerns at Billings Christian High School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area surrounding BCS High School	› No School Zone exists in the area surrounding BCS High School.	No
2	Shiloh Rd. & Hesper Rd.	› Faded crosswalk markings on all legs of this intersection. › The posted speed limit on Shiloh Rd. is 45 MPH.	Yes
3	Hesper Rd.	› Hesper Rd. has no walking or bicycling facilities.	No
4	Shiloh Rd. at BCS HS Campus	› No direct, marked, ADA compliant route exists from Shiloh Rd. to the campus' internal sidewalk network.	No
5	Shiloh Rd. at BCS HS Campus	› Faded or unmarked crossings at campus primary Shiloh Rd. vehicle access.	No

Proposed Projects at Billings Christian High School *(Continued across to next page)*

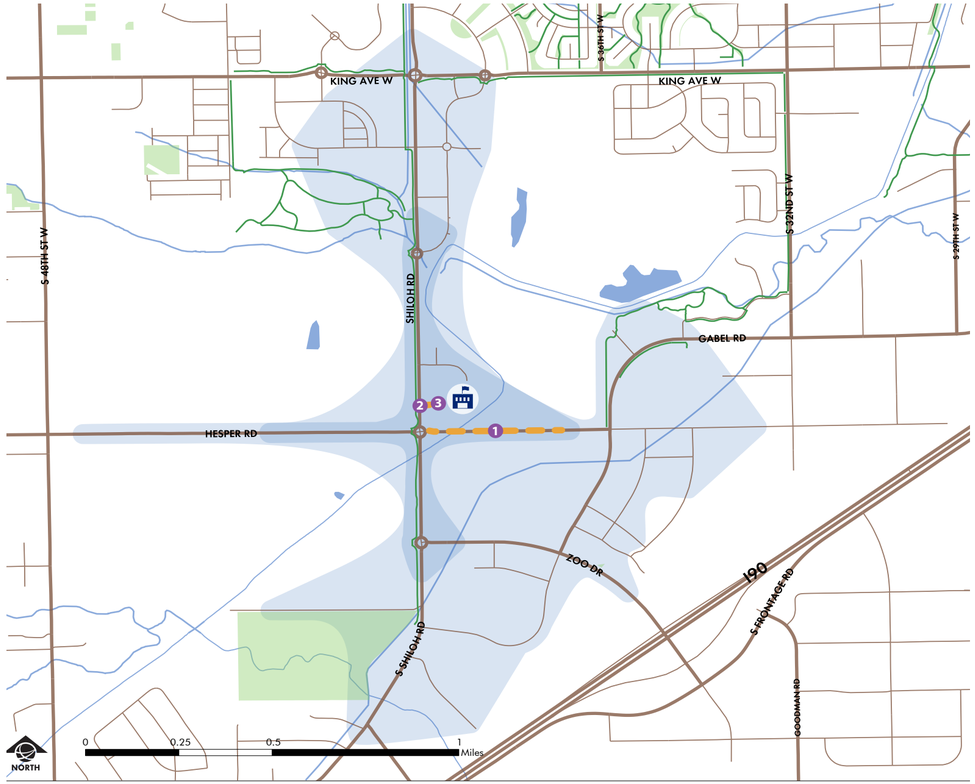
#	LOCATION	TOPIC	ISSUES	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Hesper Rd.	Sidewalks	› Hesper Rd. has no walking or biking facilities.	1	› When the segment of Hesper Rd. in front of the school is rebuilt, install separated, protected walking and bicycling facilities.	4.2.1, 4.2.6, 4.2.7	Developer	$22,000
2	Shiloh Rd. at BCS HS Campus	ADA Compliance/ Sidewalks	› No direct, marked, ADA compliant route exists from Shiloh Rd. to the campus' internal sidewalk network.	2	› Install a direct, well-marked, ADA compliant route from Shiloh Rd. to the campus' internal sidewalk network.	4.2.1, 4.3.3	School	$15,500
3	Shiloh Rd. at BCS HS Campus	Crossing	› Faded or unmarked crossings at campus primary Shiloh Rd. vehicle access.	3	› Install high visibility crossings across the vehicular accesses to the campus from Shiloh Rd. to improve safety of people walking along Shiloh. Rd.	4.3.2, 4.2.2, 4.2.7	County/ City	$23,500

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Proposed Projects Map at Billings Christian High School



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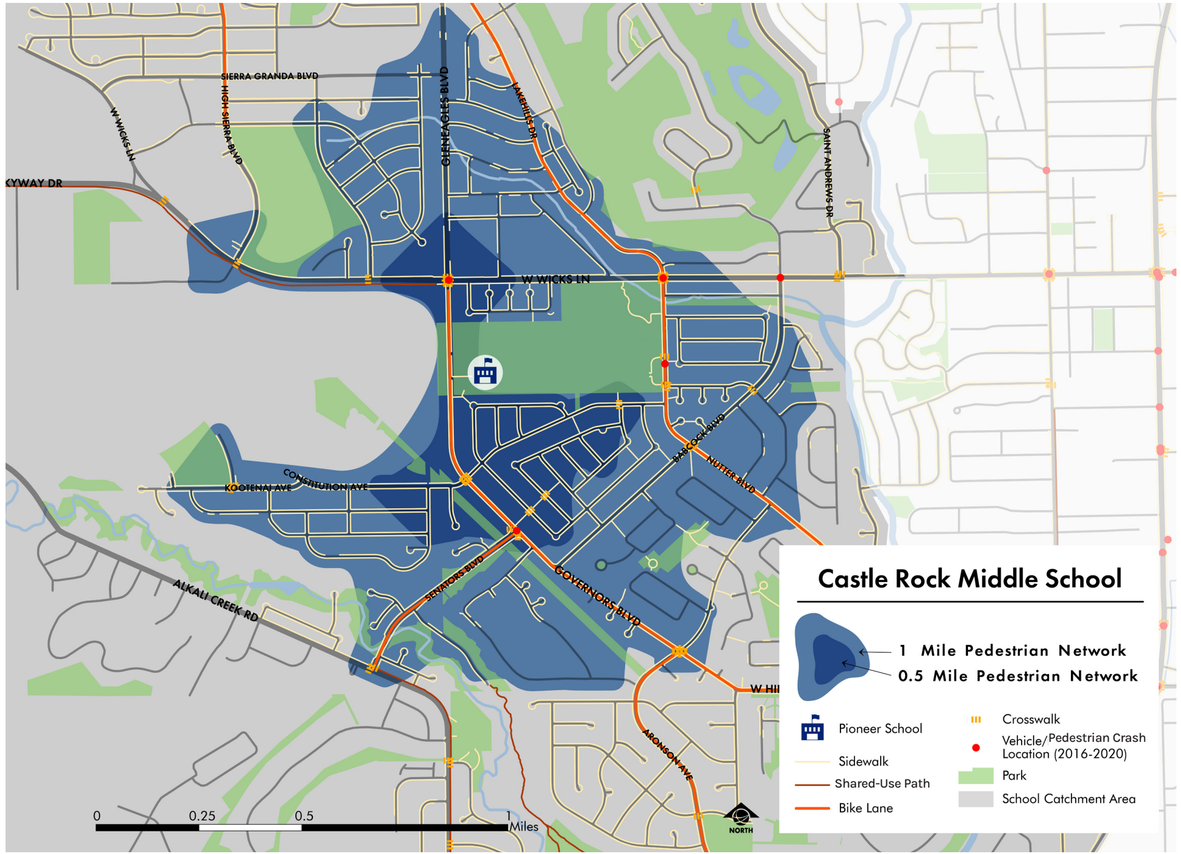
Castle Rock Middle School



Existing Conditions at Castle Rock Middle School

ABOUT THE SCHOOL	
Address	1441 Governors Blvd, Billings, MT 59105
Number of Students (Grade Levels)	711 (6-8)
% of Students Eligible for Free & Reduced Lunch	28%
Arrival/Dismissal Times	8:10 AM / 3:10 PM

MAJOR STREETS & HIGHWAYS	AADT
Governors Blvd	6,350
Wicks Ln	5,700



Community Safety Concerns at Castle Rock Middle School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Private vehicle drop off on west side of Governors Blvd, students then cross outside of crosswalk. General concern regarding congestion during morning drop off.
School Staff	› Lack of safe street crossings. › Concerns about high school students driving unsafely. › Lack of consistent snow clearing on sidewalks. › Lack of protected facilities.
Webmap Survey (44 comments)	› Numerous public comments report that Governors Blvd. at Castle Rock is “terrifying,” and “very dangerous,” for student crossing during pick up and drop off. › Several public comments of witnessing children and parents nearly being struck by vehicles while crossing Governors Blvd. at Castle Rock. › Lack of safe, on site, walking or biking routes to building’s main entry. › Vehicles using bicycle lanes to pass left-turning vehicles on the right along Governors Blvd. › Lack of safe crossings at intersections along Governors Blvd. from Senators Blvd. to Wicks Ln. › Vehicles speed, fail to yield to walking students, run red lights at Governors Blvd. and Wicks Ln. › Faded or unmarked crossings and need for traffic calming in the Centennial neighborhood. › Need for better street and shared use path connections in future development surrounding Castle Rock.
Safety Busing	› No safety busing provided.

Arrival Observations at Castle Rock Middle School: April 14th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› School Buses drop students off in a dedicated loop via a single access onto Governors Blvd. Contrary to school policy, some parents use the bus loop for drop off. › MET Transit drops off a significant number of students at Wicks Ln. & Governors Blvd. who then walk to Castle Rock.
Vehicles	› Red light running and apparent speeding observed at Wicks Ln. & Governors Blvd. › Drop off traffic causes significant stacking along Governors Blvd. in front of Castle Rock. › Vehicles stacking onto Wicks Ln. from Governors Blvd. › Left-turning traffic from school parking lot causes stacking in lot. Vehicles then making unpredictable maneuvers to get onto Governors Blvd. › North-bound vehicles on Governors Blvd. move into the bike land to pass left-turning vehicles at Constitution Ave. and Babcock Blvd. › Apparent speeding along Governors Blvd.
School Staff Roles	› Principal reports that staff had enforced ban on private vehicles in bus drop off, but stopped due to rude remarks and harassment from drivers.
Adult crossing Guards	› No crossing guards were observed to be on duty. Principal reports difficulty hiring crossing guards.
Students Walking and Biking	› Students were observed walking from north, south, and east. › Students use several paths to access the school through the neighborhood to the south.

Priority Concerns at Castle Rock Middle School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Castle Rock	› Inconsistently located School Zone signage.	Yes
2	Governors Blvd. at Castle Rock	› Student drop off in the south-bound parking lane causes students to cross Governors Blvd. in front of the school, stepping out from between vehicles, where their visibility is obstructed and no marked crossings exist. › Governors Blvd. is an arterial, is the only street from which to access Castle Rock by vehicle and, as one of the only streets in the area with through connection, also carries significant through traffic. › Significant vehicular stacking during drop off in both directions on Governors Blvd. › Vehicles observed making unpredictable, quick maneuvers in school zone. › Left turns to and from the school access points worsen congestion, and cause vehicles to make quick, sudden movements.	Yes
3	Governors Blvd. from Wicks Ln. to Senators Blvd.	› Governors Blvd. has a posted speed limit of 35 MPH. › Public input indicates that, despite the existence of sidewalks and bike lanes, Governors Blvd. is perceived by many guardians as unsafe for children to walk or bike. › The average distance between marked crosswalks on Governors Blvd. between Wicks Ln. and Aronson Ave. is 3,000 feet. › The bike lane along Governors Blvd. is narrow, unprotected, and positioned in the door zone of parked vehicles. Community members report that the bike lane is often used by vehicles to pass left-turning vehicles on the right. › Sidewalks along Governors Blvd. have no buffer from the curb, and accessible paths are often obstructed by mailboxes or trash cans. › Several intersections have curb radii in excess of 50 feet. › Several crosswalks have faded markings. › Apparent speeding and red light running observed at the intersection of Wicks Ln. and Governors Blvd. › Faded crosswalk markings at the intersection of Wicks and Governors Blvd.	Yes
4	Castle Rock Parking Lot and Bus Loop	› Because Governors Blvd. is the only street from which to access Castle Rock by vehicle, and because Governors Blvd also carries significant morning commute traffic, stacking and congestion occur during morning drop off. › This stacking and congestion causes drivers to make unpredictable, quick maneuvers on Governors Blvd. in front of the school, where many students are disembarking vehicles and crossing to access the school. › The existing remote parking lot off of Constitution Ave. was not observed to be well-used for drop off.	Yes
5	Castle Rock Parking Lot and Bus Loop	› No accessible routes exist from the several sidewalk and shared use path access points, through the parking lot, to the main entry.	Yes
6	Gleneagles Blvd.	› Many segments of Gleneagles Blvd. have no sidewalk.	No
7	Constitution Ave.	› Several pedestrian access points from this neighborhood to the Castle Rock School site and park have no crosswalks or ADA-compliant facilities along their route. › Faded crosswalk markings or unmarked crossings at many intersections. › Speeding vehicles reported throughout. › Sidewalks along streets have no buffer from the curb, and accessible paths are often obstructed or lack curb ramps.	Yes

Proposed Projects at Castle Rock Middle School *(Continued across to next page)*

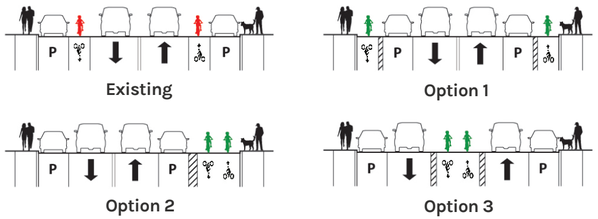
#	LOCATION	TOPIC	ISSUES	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding Castle Rock	School Speed Zone	› Inconsistently located School Zone signage.	1	› Relocate existing school speed zone signage to comply with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design the street to a speed limit that provides for the safety and access of children walking and biking within the school zone.	4.4.1 4.1.4	City	$72,800
2	Governors Blvd. at Castle Rock School	Crossing/ Congestion	› Student drop off in the south-bound parking lane causes students to cross Governors Blvd. in front of the school, stepping out from between vehicles, where their visibility is obstructed and no marked crossings exist. › Because Governors Blvd is the only street from which to access Castle Rock by vehicle, and because Governors Blvd also carries significant morning commute traffic, stacking and congestion occur during morning drop off. › This stacking and congestion causes drivers to make unpredictable, quick motions on Governors in front of the school, where many students are disembarking vehicles and crossing to access the school.	2	› Study and Install high-visibility crosswalks, curb extensions and advanced traffic control signals at each vehicular site access point. › Evaluate and re-configure vehicular and bus drop off operations and facilities to relieve congestion. Possible interventions include restricting access to the parking lot to right-in, right-out, re-striping the existing parking lot, and reconfiguration of the existing accesses to one-way travel.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.5.5 4.6.2	City/ School	$166,000

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Proposed Projects at Castle Rock Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
3	Governors Blvd. from Wicks Ln. to Babcock Blvd.	Congestion/ Crossing/ Bicycling	› Public input indicates that, despite the existence of sidewalks and bike lanes, Governors Blvd. is perceived by many guardians as unsafe for children to walk or bike. › The bike lane along Governors Blvd. is unprotected and positioned next to the vehicular travel lane, which reduces the visual friction and traffic calming benefits that the on-street parking would otherwise provide. This encourages speeding and allows people driving to use the bike lane to pass on the right. See Section 4.1.4 for more information. › Sidewalks along Governors Blvd. have no buffer from the curb, and accessible paths are often obstructed by mailboxes or trash cans. › Several intersections have curb radii in excess of 50 feet. Large turning radii encourage faster turning motions by people driving. › Several crosswalks have faded markings. › Apparent speeding and red light running observed at the intersection of Wicks Ln. and Governors Blvd. › Faded crosswalk markings at the intersection of Wicks and Governors Blvd.	3	› Reconfigure Governors Blvd. to install a protected bicycle facility and place the existing on-street parking lanes next to the travel lanes. Public input required.  › Ensure that existing street lighting is on during pre-dawn and after dark student commute times. › Reduce curb radii and calm turning traffic at the intersections of Governors Blvd and; Wicks Ln, Senators Blvd, and Babcock Blvd. › At the intersection of Wicks Ln. and Governors Blvd, Install high visibility crossings and a Leading Pedestrian Interval (LPI).	4.2.3, 4.2.5 4.2.7 4.3.1, 4.2.10 4.3.1, 4.3.2, 4.5.2	City	$131,000

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Proposed Projects at Castle Rock Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
4	Wicks Ln. at Castle Rock Park	Vehicle Congestion	› Because Governors Blvd is the only street from which to access Castle Rock by vehicle, and because Governors Blvd also carries significant morning commute traffic, stacking and congestion occur during morning drop off. › This stacking and congestion causes drivers to make unpredictable, quick maneuvers on Governors Blvd. in front of the school, where many students are disembarking vehicles and crossing to access the school. › The existing remote parking lot off of Constitution Ave. was not observed to be well-used for drop off.	4	› Coordinate with the Parks Department to create remote drop off in the Castle Rock Park Splash Park parking lot with accessible path to Castle Rock School. Consider an incentive program to encourage use of new remote lot and existing remote lot.	4.2.6, 4.2.7, 4.6.3	School	$60,000
5	Castle Rock Parking Lot and Bus Loop	ADA Compliance	› No accessible routes exist from the several sidewalk and shared use path access points, through the parking lot, to the main entry.	5	› Install well-marked, direct, ADA compliant routes from Governors Blvd. and other paths through or around the school parking lot and to the main entry.	4.2.1, 4.2.7, 4.3.3	School	$94,000
6	Gleneagles Blvd.	Sidewalk	› Many segments of Gleneagles Blvd. have no sidewalk.	6	› Install missing sidewalks to achieve a continuous sidewalk along at least one side of Gleneagles Blvd. from its northern extent to Wicks Ln.	4.2.1, 4.2.7	City/ Land Owner	$78,000
7	Constitution Ave.	Crossing	› Several pedestrian access points from this neighborhood to the Castle Rock School site and park have no crosswalks or ADA-compliant facilities along their route. › Faded crosswalk markings or unmarked crossings at many intersections. › Speeding vehicles reported throughout.	7	› Install a high visibility crosswalk, curb extensions, and ADA ramps at of Constitution Avenue's intersections with Patriot St., N Church St., the access to the parking lot east of the track and field, Breeds Hill St. and Nutter Blvd. Install advanced traffic control signals as appropriate. › Install curb ramps where missing along Constitution Ave.	4.2.7, 4.3.1, 4.3.2, 4.5.4, 4.3.3, 4.5.4, 4.5.5 4.3.3	City	$214,000

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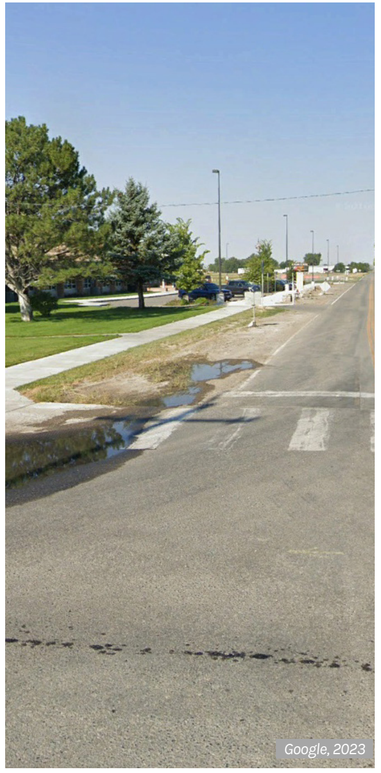
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Proposed Projects Map at Castle Rock Middle School



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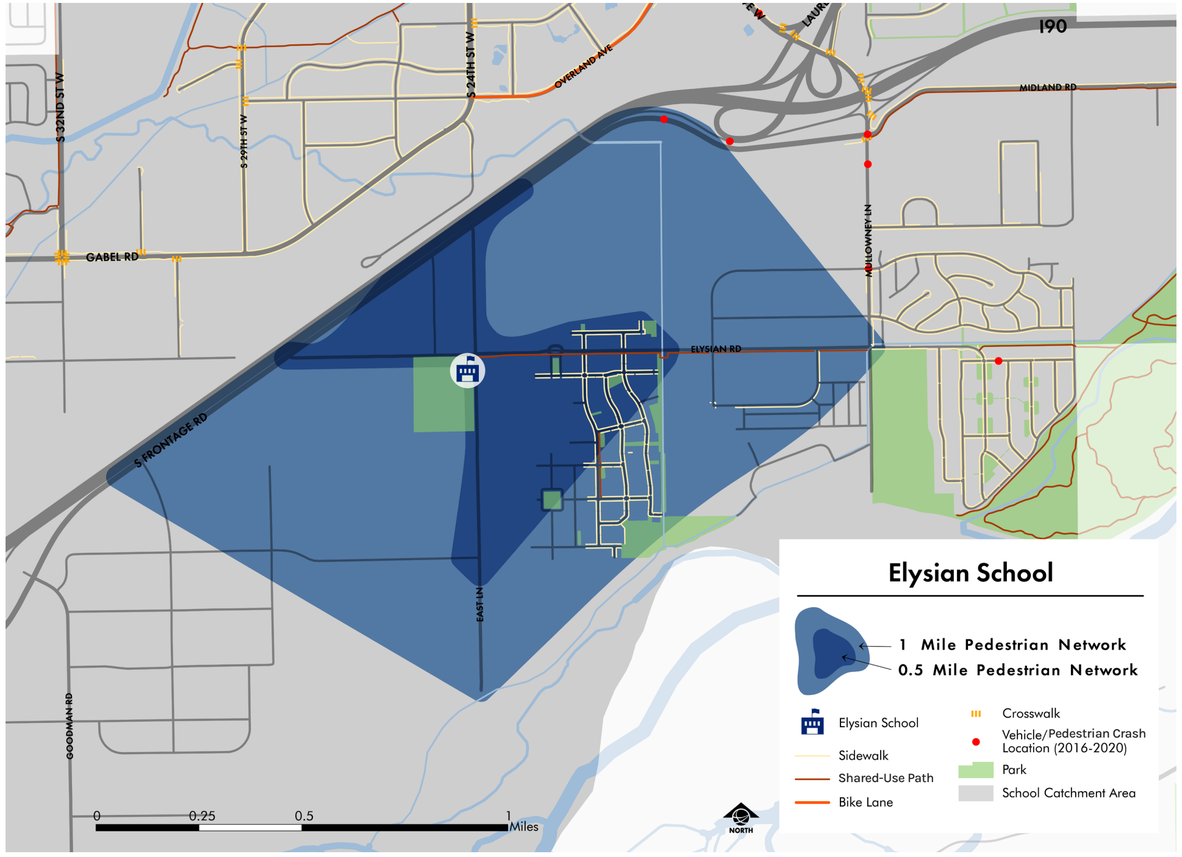
Elysian School



Existing Conditions at Elysian School

ABOUT THE SCHOOL	
Address	6416 Elysian Rd, Billings, MT 59101
Number of Students (Grade Levels)	400 (PK-8)
% of Students Eligible for Free & Reduced Lunch	25%
Arrival/Dismissal Times	8:10 AM / 3:20 PM

MAJOR STREETS & HIGHWAYS	AADT
Elysian Rd.	3,409
East Ln. north of Elysian Rd.	1,215
S. Frontage Rd.	3,705



Community Safety Concerns at Elysian School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Commercial traffic speeds through the school zone. › Drop off loop looks directly into morning sun, which can obscure visibility of students being dropped off.
Webmap Survey (102 comments)	› Speeding vehicles, high vehicle and student traffic volumes, a poorly maintained roadway surface which fails to drain during significant weather events, and congestion during pick up and drop off at the intersection of Elysian Rd. & East Ln. › East Ln. lacks walking or bicycling facilities and has no street lighting. › Lack of ADA path or marked walking route in eastern parking lot. › Roof drainage and ice build up obstructs walking route to east entry. › The existing drop off loop on Elysian Rd. has many issues including: parked vehicles on Elysian Rd. obstruct the vision triangle for vehicles exiting the drop off; lack of safe, direct, ADA compliant walking and biking route from Elysian Rd. to school entrance; poor student visibility in drop off loop. › High vehicle and student traffic volumes, poorly marked crossings and insufficient lighting at the intersection of Elysian Rd. & West Ln. › Speeding vehicles, missing safe walking or biking route and lack of lighting along West Ln. › Poorly marked crossings, and vehicles blocking the way of people using the shared-use path at Elysian Rd. & Walter Creek Blvd. › Long distances between crossings on Elysian Rd. between Walter Creek Blvd. and Mullowney Ln. › Insufficient lighting and ice build up on the shared-use path along Elysian Rd. › Lack of safe walking and bicycle routes, lack of lighting, and poor visibility at intersections along S Frontage Rd.
Crossing Guard	› Crossing guard posted at Elysian Rd. and East lane. Vehicles obstruct crosswalks at intersection while attempting to get onto Elysian Rd. from East Ln.
Safety Busing	› Safety busing is provided for all students living east of the Annafeld subdivision.

Arrival Observations at Elysian School: May 15th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› Buses drop students off in the loop northwest of the building.
Vehicles	› Vehicles drop students off in the loop directly north of the main entrance and in the eastern gravel lot. › Some vehicles dropped students off in the south shoulder of Elysian Rd. in front of the school.
School Staff Roles	› Staff receive students at the main north entry.
Adult crossing Guards	› Staff are posted as crossing guards on Elysian Rd. at East Ln. & West Ln.
Students Walking and Biking	› Most students walking and biking to school were observed approaching from the east along the shared-use path on Elysian Rd. › Some students walking and biking to school were observed approaching from the north along West Ln.

Priority Concerns at Elysian School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Elysian	› Inconsistently located School Zone signage. › Vehicles appear to exceed the posted speed limit. › Public Comments reporting speeding.	Yes
2	Elysian Rd. & East Ln.	› Apparent speeding vehicles, high vehicle and student traffic volumes, a poorly maintained roadway surface which fails to drain during significant weather events, and congestion during pick up and drop off at the intersection of Elysian Rd. & East Ln.	Yes
3	Elysian Rd. at Elysian School	› The existing drop off loop on Elysian Rd. has many issues including: parked vehicles on Elysian Rd. obstruct the clear vision triangle for vehicles exiting the drop off; lack of safe, direct, ADA compliant walking and biking route from Elysian Rd. to school entrance; poor student visibility in drop off loop. › Lack of walking and biking infrastructure on either side of Elysian Rd.	Yes
4	Elysian Rd. west of West Ln.	› Lack of lighting. › Lack of walking and biking infrastructure. › Vehicles appear to exceed the posted speed limit.	Yes
5	East Ln.	› Lack of lighting. › Lack of walking and biking infrastructure. › Vehicles appear to exceed the posted speed limit.	Yes
6	West Ln.	› Lack of lighting. › Lack of walking and biking infrastructure. › Vehicles appear to exceed the posted speed limit.	Yes

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Proposed Projects at Elysian School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding Elysian	School Speed Zone	› Inconsistently located School Zone signage. › Vehicles appear to exceed the posted speed limit. › Public Comments reporting speeding.	1	› Relocate existing school speed zone signage to comply with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.2. › Design the streets within the school zone to a speed limit that provides for the safety and access of children walking and biking within the school zone.	4.4.1 4.1.4	City	$58,000
2	Elysian Rd. & East Ln.	Crossing	› Apparent speeding vehicles, high vehicle and student traffic volumes, a poorly maintained roadway surface which fails to drain during significant weather events, and congestion during pick up and drop off at the intersection of Elysian Rd. & East Ln.	2	› When Elysian Rd. is rebuilt, design the intersection of Elysian Rd. & East Ln. to prioritize the safety of students walking and biking to school. › Install protection for existing shared use path. Possible solutions include; curb, bollards, street trees, boulders, or guard rails. › Install lighting along the existing shared-use path.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.5.1, 4.5.2, 4.5.3 4.1.3, 4.2.6 4.2.7	City/ Land Owner	$121,000
3	Elysian Rd. at Elysian School	Crossing/ Congestion	› The existing drop off loop on Elysian Rd. has many issues including: parked vehicles on Elysian Rd. obstruct the clear vision triangle for vehicles exiting the drop off; lack of safe, direct, ADA compliant walking and biking route from Elysian Rd. to school entrance; poor student visibility in drop off loop. › Lack of walking and biking infrastructure on either side of Elysian Rd.	3	› Install curb extensions and a pedestrian table crossing in drop off loop to improve visibility and safety of crossing students. › Install curb extensions at drop off loop exit to improve visibility for exiting vehicles. › Construct shared use path from East Ln. across Elysian School site, along existing parking medians on the south side of Elysian Rd. with high visibility crossings at drop off loop entry and exit, to western extent of school site.	4.2.2, 4.3.1, 4.3.1 4.2.6, 4.2.7, 4.3.2	City/ School	$78,500
4	Elysian Rd. west of West Ln.	Sidewalks/ Lighting	› Lack of lighting. › Lack of walking and biking infrastructure.	4	› When the segment of Elysian Rd. from West Ln. to S. Frontage Rd. is rebuilt, design the right-of-way to include a separated, protected shared use path and lighting.	4.2.6, 4.2.7	City/ County/ Land Owner	$176,200

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Estimated costs shown are intended to represent a planning-level cost estimate and do not represent a detailed Engineer's Opinion of Probable Cost.

Proposed Projects at Elysian School *(Continued across to next page)*

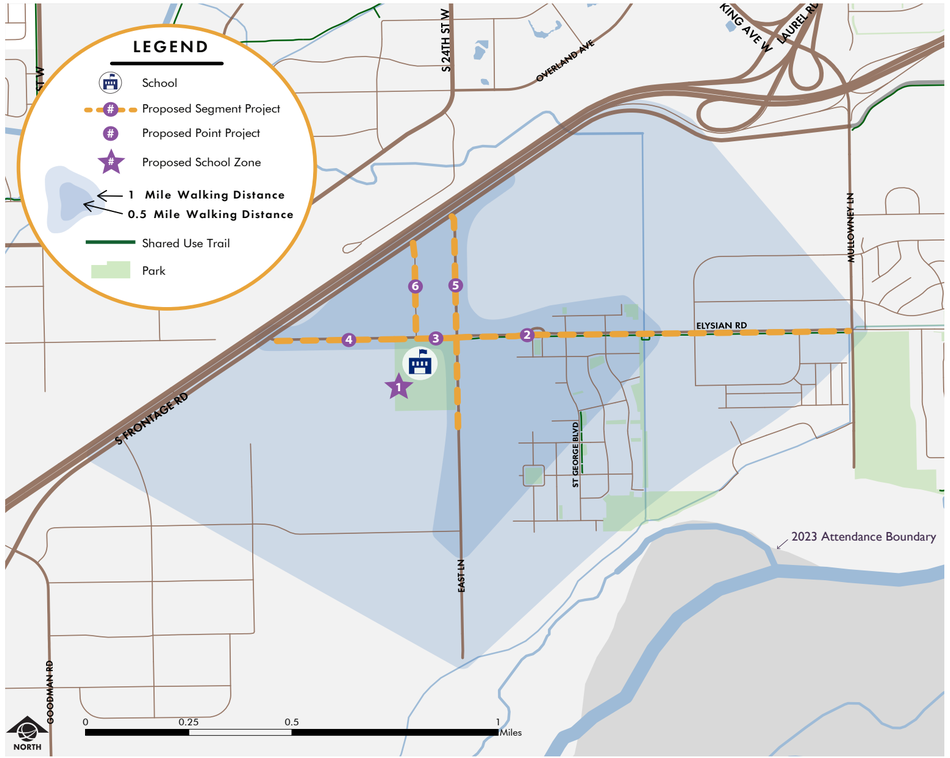
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
5	East Ln.	Sidewalks/ Lighting/ Speeding	› Lack of lighting. › Lack of walking and biking infrastructure. › Vehicles appear to exceed the posted speed limit.	5	› When the segment of East Ln. from S Frontage Rd. to Eva Marie Ln. is re-built, design it to include lighting, safe walking and biking infrastructure. › Install high visibility crossings at the intersection of East Ln. and Eva Marie Ln.	4.2.1, 4.2.6, 4.2.7, 4.3.1, 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.4.4, 4.5.4	City/ County	$265,000
6	West Ln.	Sidewalks/ Lighting/ Speeding	› Lack of lighting. › Lack of walking and biking infrastructure. › Vehicles appear to exceed the posted speed limit.	6	› Install curb, gutter, lighting and separated, protected walking and biking facilities along West Ln. › Design the street to a speed limit that prioritizes the safety and access of children walking and biking within the school zone.	4.2.1, 4.2.7 4.1.4	County	$652,000

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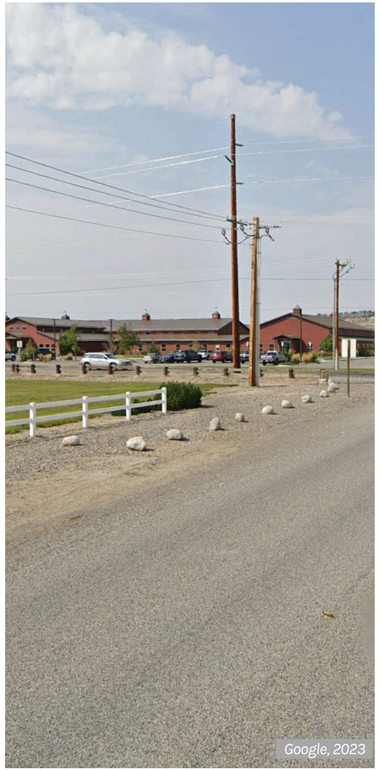
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Proposed Projects Map at Elysian School



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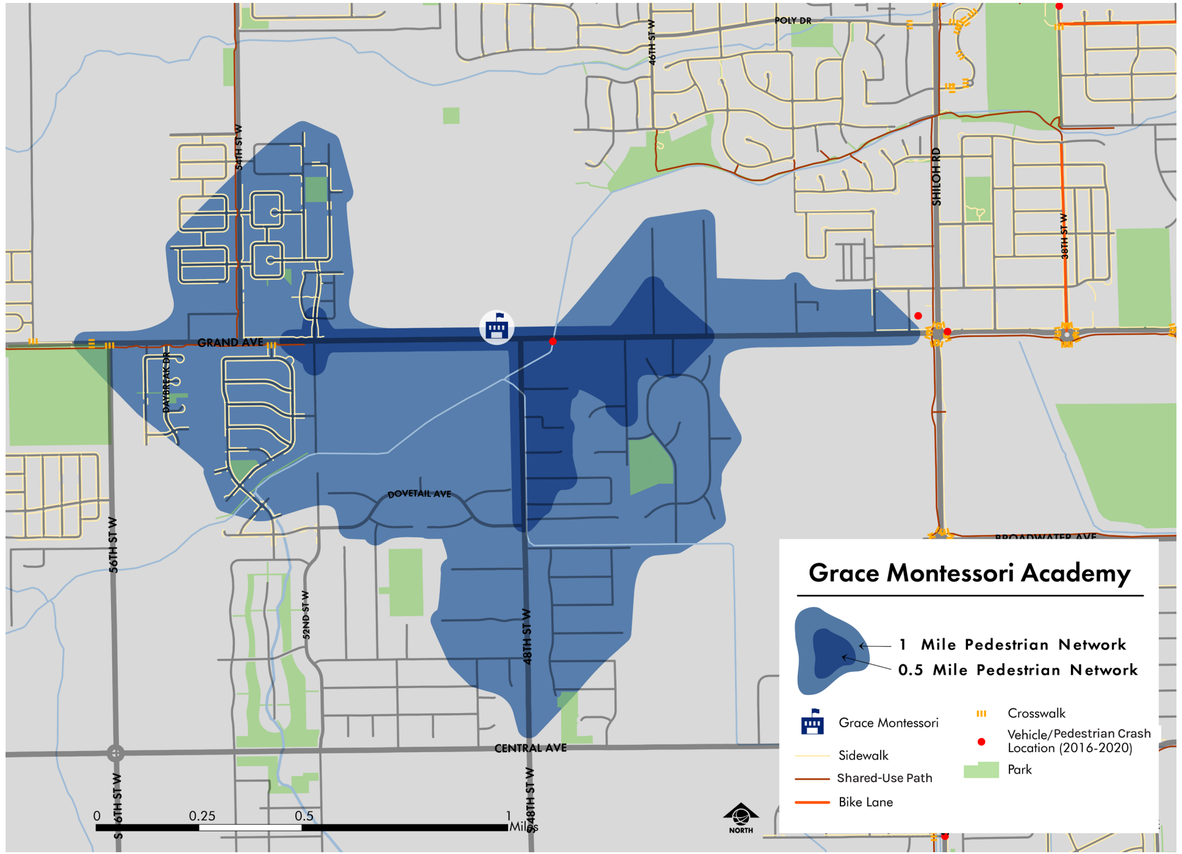
Grace Montessori Academy



Existing Conditions at Grace Montessori Academy

ABOUT THE SCHOOL	
Address	4809 Grand Ave, Billings, MT 59106
Number of Students (Grade Levels)	184 (PK-8)
% of Students Eligible for Free & Reduced Lunch	N/A
Arrival/Dismissal Times	8:00 AM / 2:50 PM

MAJOR STREETS & HIGHWAYS	AADT
Grand Ave.	9,200
N. 48th St. W.	4,090



Community Safety Concerns at Grace Montessori Academy

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Traffic congestion on Grand Ave. during arrival and dismissal. › Design of arterials is unsupportive of walking and bicycling and do not connect to safer streets like Colton Blvd.
Webmap Survey (6 comments)	› Lack of safe bicycling route along Grande Ave. from Shiloh to 54th St. W. › Vehicle traffic congestion at the intersection of Grand Ave. & 48th St. W. › Vehicles do not comply with school zone speed limits. › Safety concerns for vehicles exiting school parking lot in winter conditions.

Arrival Observations at Grace Montessori Academy: May 25th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› A 15-passenger van parked in front of the school with about 5 students disembarking.
Vehicles	› Vehicle traffic on Grand Ave. flowed freely until about 7:50 AM when left turning vehicles created intermittent congestion. › Elementary level student drop off began at about 7:50 AM. Vehicles enter the school site via 48th St. W. and line up facing south in the northeastern parking lot. Students disembark once vehicle reaches front of the queue. › Early Childhood drop off occurs at the front entry to the school. Vehicles arrive and wait in queue for about 10-15 minutes. Stacking momentarily blocked the elementary drop off queue. › All vehicles exit the school site via the western parking lot access. Exiting vehicles stacked to the point of blocking the Early Childhood drop off queue. Exiting vehicles were prevented from accessing Grand Ave. by stacking that resulted from vehicles waiting to make eastbound lefts into the school site from Grand Ave.
School Staff Roles	› Staff received students when they disembark their vehicles.
Adult Crossing Guards	› No crossing guards were observed.
Sudents Walking and Biking	› No students were observed walking or bicycling to school.

Priority Concerns at Grace Montessori Academy

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Grace Montessori	› Inconsistently located School Zone signage.	Yes
2	Grand Ave.	› Grand Ave. from 41st St. W. to 52nd St. W. has no walking or biking facilities. › Grand Ave. is currently the only street from which to access Grace Montessori by vehicle and, as one of the only streets in the area with through connection, also carries significant through traffic. › Significant vehicular stacking during drop off in both directions on Grand Ave. › Vehicles observed making unpredictable, quick maneuvers in the school zone. › Significant congestion at the intersection of Grand Ave. & 48th St. W. during morning drop off.	Yes
3	48th St. W	› 48th St. W. has no walking or biking infrastructure.	No
4	Big Ditch right-of-way/ Surrounding Undeveloped Lands	› Lack of shared use path or street connections from neighborhoods surrounding Grace Montessori to Grand Ave. increases travel distances and requires students to walk and bike along higher speed, higher volume roadways.	Yes
5	School Parking Lot	› All vehicles exit the school site via the western parking lot access. Exiting vehicles stacked to the point of blocking the Early Childhood drop off queue. Exiting vehicles were prevented from accessing Grand Ave. by stacking that resulted from vehicles waiting to make eastbound lefts into the school site from Grand Ave.	Yes
6	School Parking Lot	› No direct, marked walking or biking route exists from Grand Ave. through the parking lot, to the main entry.	No

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Proposed Projects at Grace Montessori Academy *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding Grace Montessori	School Speed Zone	› Inconsistently located School Zone signage	1	› Relocate existing school speed zone signage to comply with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design streets within the school zone to a speed limit that provides for the safety and access of children walking and biking.	4.4.1 4.1.4	County/ City	$134,000
2	Grand Ave.	Sidewalks/ Crossings/ Speeding/ Congestion	› Grand Ave. from 41st St. W. to 52nd St. W. has no walking or biking facility. › Grand Ave. is currently the only street from which to access Grace Montessori by vehicle and, as one of the only streets in the area with through connectivity, also carries significant through traffic. › Significant vehicular stacking during drop off in both directions on Grand Ave. › Vehicles observed making unpredictable, quick motions in the school zone. › Significant vehicular stacking during drop off at the intersection of Grand Ave.& 48th St. W.	2	› When the segment of Grand Ave. in front of this school is rebuilt, design it to include a separated, protected shared-use path. › Install lighting along the proposed shared-use path. › When this intersection is rebuilt, design it to prioritize the safety of students walking and biking to school.	4.1.3, 4.2.6 4.2.7 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.5.2, 4.5.3	County/ City	$203,000
3	48th St. W.	Sidewalks/ Crossings/ Speeding	› 48th St. W. has no walking or biking infrastructure.	3	› When 48th St. W. is rebuilt and connected northward, design it to include separated, protected walking and biking routes.	4.2.1, 4.2.5, 4.2.6	County/ City/ Developer	$99,000

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Proposed Projects at Grace Montessori Academy *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
4	Big Ditch right-of-way/ Surrounding Undeveloped Lands	Shared use path/ Street Connections	› Lack of shared use path or street connections from neighborhoods surrounding Grace Montessori to Grand Ave. increases travel distances and requires students to walk and bike along higher speed, higher volume roadways.	4	› Secure right-of-way way to continue connections westward along the Big Ditch. › As land around the school continues to develop, ensure streets are connected between neighborhoods and that shared use path connections are also made.	4.2.6, 4.2.7	County/ City/ Developer	$-
5	Grace Montessori Parking Lot	ADA Compliance	› Significant vehicular stacking during drop off in both directions on Grand Ave.	5	› Further study and re-configure vehicular drop off operations and facilities to relieve congestion. Possible interventions include restricting access to the parking lot to right-in, right-out, re-striping the existing parking lot, and reconfiguration of the existing accesses to one-way travel. › When Grand Ave. is reconstructed, evaluate removal of the approaches to Grace Montessori nearest to the intersection of Grand Ave. and 48th St. W.	4.3.3	School/ City	$107,000
6	Grace Montessori Parking Lot	ADA Compliance	› No direct, well-marked, ADA compliant walking or biking route exists from Grand Ave. through the parking lot, to the main entry, reducing visibility of children walking through the lot.	6	› Grace Montessori should install a direct, marked, ADA compliant path from Grand Ave. through the parking lot, to the main entry of the building.	4.3.3	School	$24,200

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Proposed Projects Map at Grace Montessori Academy



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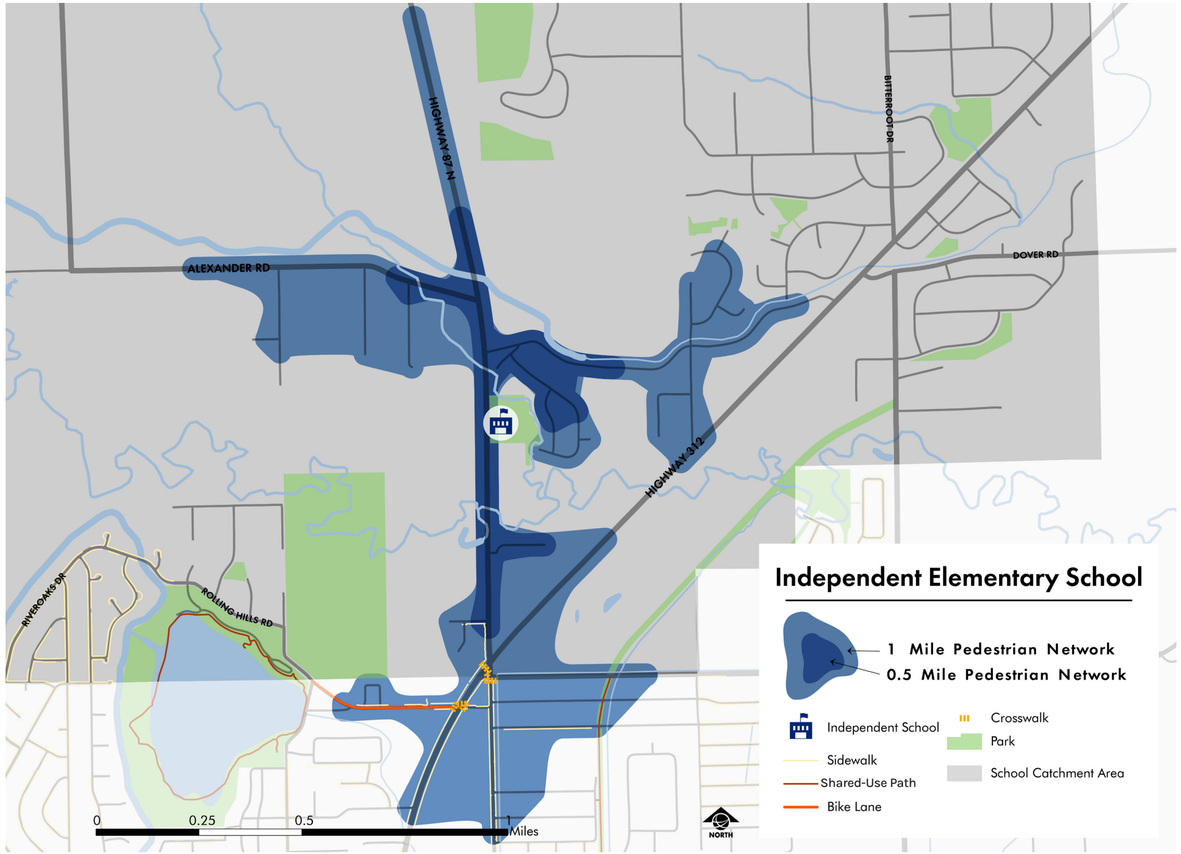
Independent Elementary School



Existing Conditions at Independent Elementary School

ABOUT THE SCHOOL	
Address	2907 Roundup Rd. Billings, MT 59105
Number of Students (Grade Levels)	304 (PK-6)
% of Students Eligible for Free & Reduced Lunch	17%
Arrival/Dismissal Times	8:15 AM / 3:00 PM M-TH, 2:00 PM Fri

MAJOR STREETS & HIGHWAYS	AADT
Highway 87	5,780
Old Hwy 312	11,240 (north of Mary St.)



Community Safety Concerns at Independent Elementary School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Lack of pedestrian facilities on Hwy 87, Hwy 312, Independent Ln. and Alexander Rd. › Lack of safe route to school from Lake Elmo neighborhood. › Lack of safety busing due to financial constraints.
Webmap Survey (2 comments)	› Vehicular traffic congestion during pick up and drop off causes vehicles to stack onto Hwy 87. › Private vehicles park on the west side of Hwy 87 for pick up and drop off, causing students to cross the road outside of any cross walk. › Missing sidewalks on Hwy 87. › Posted speed limit of 40 mph on Hwy 87 “hazardous” and unobserved by many vehicles. › Missing sidewalks on Independent Ln. Students walk along top of drainage ditch. › Missing sidewalks on Hwy 312.
Crossing Guard	› No crossing guards.
Safety Busing	› No safety busing is provided.
Neighbors	› Neighbors report observing students bullying in vacated area of the Independent Ln. right of way where some informal drop off/ pick up occurs.

Dismissal Observations at Independent Elementary School: May 4th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› School buses load and unload in teacher lot north of primary access and parking lot.
Vehicles	› Vehicles queued onto hwy 87 to narrow bridge over Five Mile Creek, approximately 900 feet south of parking lot access point. › Stacking vehicles block crossings at school parking lot entry and exit. › Several vehicles observed picking up children on both sides of Hwy 87, requiring students to cross the road without a marked crosswalk, often emerging from between parked vehicles where their visibility is obstructed. › Private vehicles observed using vacated right of way near Independent Ln. as informal remote pick up. › Many vehicles appeared to be speeding in the school zone and did not yield to students using the crosswalk at Independent Ln. & Hwy 87.
School Staff Roles	› Two staff in school parking lot direct traffic and attempt to direct students to designated crossings in the parking lot.
Adult Crossing Guards	› No crossing guards were observed.
Students Walking and Biking	› Students were observed leaving school going north toward Independent Ln. Others were observed using a small foot bridge over a creek at the southeast corner of the school site. › Students were observed walking along the ditch right of way along Independent Ln. accompanied by an adult.

Priority Concerns at Independent Elementary School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Hwy 87 Main entry pick up/ drop off	› Hwy 87 is currently the only street from which to access Independent by vehicle and also carries significant through traffic. › Significant vehicular stacking occurs during dismissal in both directions on Hwy 87. › Vehicles observed making unpredictable, quick motions in school zone. › Faded crosswalk markings in parking lot and lack of well-marked, direct, ADA compliant route through parking lot to main entry.	Yes
2	Hwy 87	› High speed vehicular through traffic which does not yield to pedestrians in crosswalk or adhere to flashing school zone signage. › Missing sidewalks along Hwy 87. › Faded crosswalk markings at Independent Ln. › Flashing 40 mph School Zone sign unaccompanied by traffic calming measures to encourage compliance. School zone signage misaligned along roadway.	Yes
3	Independent Ln	› Missing sidewalks cause students to use path within ditch ROW.	Yes

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Proposed Projects at Independent Elementary School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Hwy 87/ Area Surrounding Independent	School Speed Zone	› Apparent speeding. Public comment reporting speeding. › Through traffic reported and observed not yielding to students in crosswalk. › The existing School Zone speed limit is 40 mph.	1	› Coordinate with Yellowstone County and MDT to bring the School Zone and School Speed Zone surrounding Independent School into accordance with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design the segment of Hwy 87 within the school zone to a speed limit that prioritizes the safety and access of children walking and biking within the school zone.	4.4.1 4.1.4	County	$94,500
2	Hwy 87	Crossing/ Sidewalk	› Student drop off in the west shoulder of Hwy 87 causes students to cross outside of any crosswalk to access parked vehicles or walk home. › Vehicles fail to yield to students in crosswalk at Independent Ln. and Hwy 87. › Lack of Sidewalks from Independent Ln to planned 5-Mile Creek shared use path.	2	› Install a high visibility crosswalk and advanced traffic control signal at Independent School with an accessible, well-marked, direct and protected route to the school's main entry. › Install advanced traffic control signal and curb extensions at the existing high visibility crosswalk at Independent Ln. and Hwy 87. › Install separated, protected shared use paths or sidewalks within the Hwy 87 right-of-way to provide access from Alexander Rd. to the planned shared use path along 5-Mile Creek to the south.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.4.3, 4.5.5 4.3.1, 4.5.5 4.2.1, 4.2.6, 4.2.7	County	$931,500
3	Hwy 87 & Independent Ln.	Traffic/ Congestion	› Because Hwy 87 is the only street from which to access Independent by vehicle, and because Hwy 87 also carries significant morning commute traffic, stacking and congestion occur during afternoon dismissal. › Congestion and vehicle stacking at dismissal cause people driving to make unpredictable and sudden maneuvers and are sometimes rude to staff in the school parking lot.	3	› Construct remote drop off facilities within the vacated right-of-way of Independent Ln. where an informal remote drop off exists now. Design this drop off to comply with CPTED principals and connect it to the school with separated, protected pedestrian facilities.	4.2.7, 4.2.1, 4.6.3	School	$183,500

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Proposed Projects at Independent Elementary School *(Continued across to next page)*

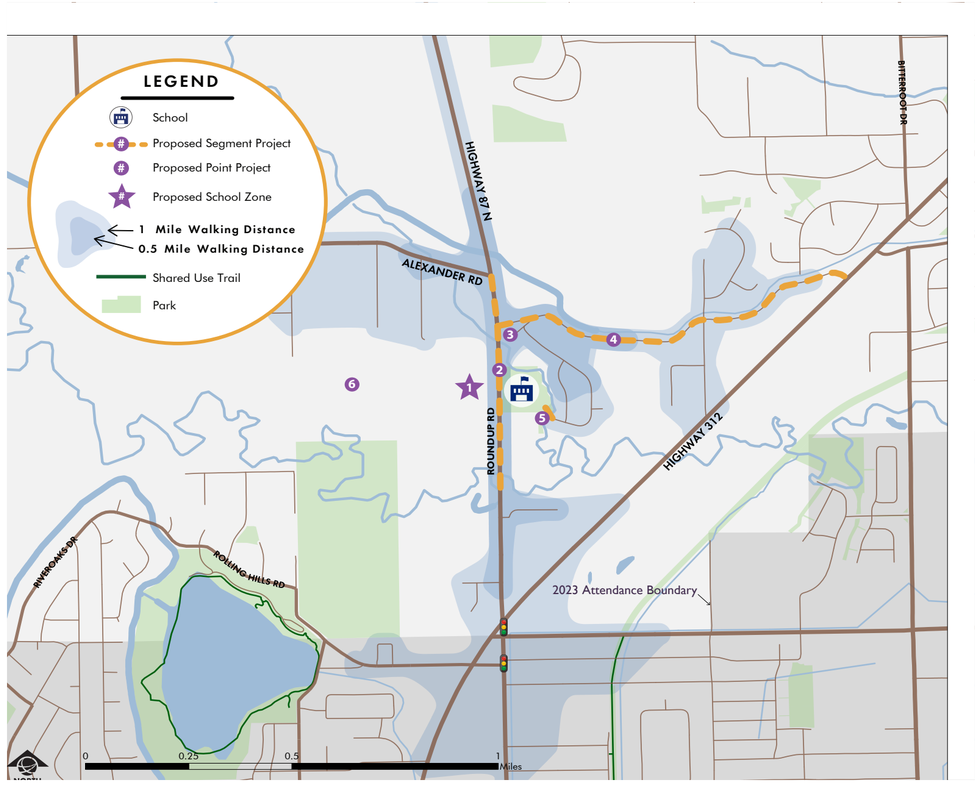
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
4	Independent Ln.	Sidewalk/ Shared Use Path	› Lack of walking facilities causes students to use path within ditch ROW.	4	› Dedicate access and install a shared-use path along the BBWA canal.	4.2.6, 4.2.7	County	$538,000
5	East Ditch Crossing	Shared Use Path/ Street Connections	› Student use informal shared use path and bridge to access Saratoga Tr. and residences to the east. Bridge and access are maintained at the discretion of the abutting homeowner.	5	› Formalize access and maintenance of a shared use path and bridge across ditch at eastern edge of school site.	4.2.6, 4.2.7	County	$130,000
7	**Neighborhoods Surrounding Independent School**	Shared Use Path/ Street Connections	› Students living in the Lake Elmo area walk to school via a privately-owned parcel where access is maintained at the discretion of the property owner. › Lack of shared use path or street connections from neighborhoods west of school increases travel distances and requires students to travel along higher speed, higher volume roadways.	6	› Secure other rights of way for walking and biking from surrounding neighborhoods including those near Lake Elmo. › As land around the school continues to develop, ensure streets are connected between neighborhoods and that shared use path connections are also made.	4.2.6, 4.2.7	County	$-

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Proposed Projects Map at Independent Elementary School



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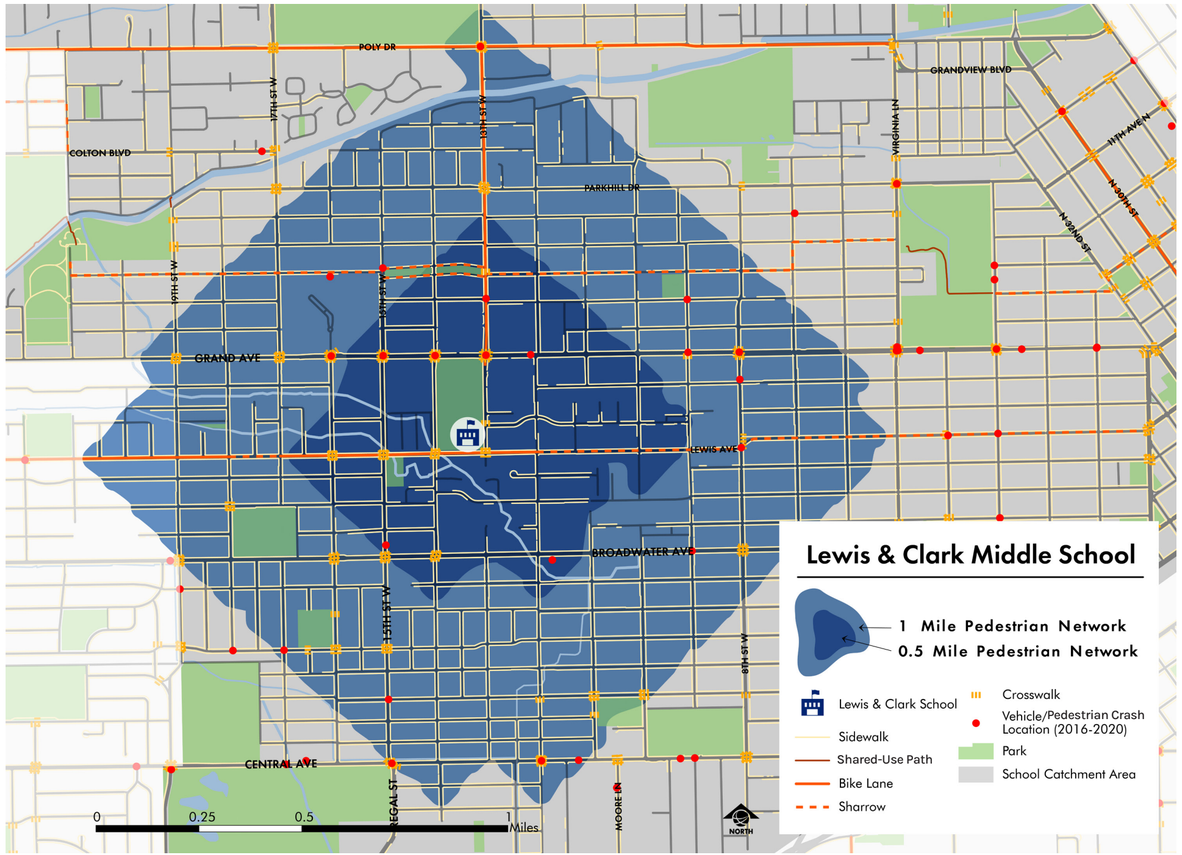
Lewis & Clark Middle School



Existing Conditions at Lewis & Clark Middle School

ABOUT THE SCHOOL	
Address	1315 Lewis Ave, Billings, MT 59102
Number of Students (Grade Levels)	685 (6-8)
% of Students Eligible for Free & Reduced Lunch	50%
Arrival/Dismissal Times	8:10 AM / 3:10 PM

MAJOR STREETS & HIGHWAYS	AADT
Lewis Ave.	6,100
Grand Ave.	22,630
14th St. W.	5,800
13th St. W.	4,460



Community Safety Concerns at Lewis & Clark Middle School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Traffic congestion on 13th St. W. and 14th St. W. St during pick up and drop off. › Vehicles do not yield to students using the crossing at Burlington Ave. and 13th St. W.
Staff	› Lack of clear wayfinding for students. › Lack of crossing guards at intersections. › Unsafe crossings at Lewis and 8th.
Webmap Survey (25 comments)	› Speeding vehicles, quick left-turning vehicle movements, and low-visibility crosswalks at the intersection of 13th St. W. and Lewis Ave. create hazards for student crossings. › Long distances between crossings on Lewis Ave. › Several comments reporting that the intersection of Lewis Ave. and 8th St. W. is “one of the most dangerous intersections in the whole neighborhood,” with high student and vehicle volumes. › Lane widths on 8th St. W. are overly wide, encourage speeding, and make crossings dangerous. › Parked vehicles obstruct the visibility of crossing students on Lewis Ave. near the school. › Some sidewalks are in poor condition and are not ADA compliant along 13th St. W. › The intersection of Grand Ave. & 13th St. W. handles higher volumes of both vehicular and student walking and biking traffic, reports of vehicles speeding. Faded crosswalk markings. › Speeding vehicles, obstructed sidewalks and poor bicycle lane markings on 13th St. W. creates hazard for students walking and biking. › The intersection of Grand Ave. & 14th St. W. handles high volumes of both vehicular and student walking and biking traffic where vehicles speed and cross walks are poorly marked.
Safety Busing	› No safety busing is provided.

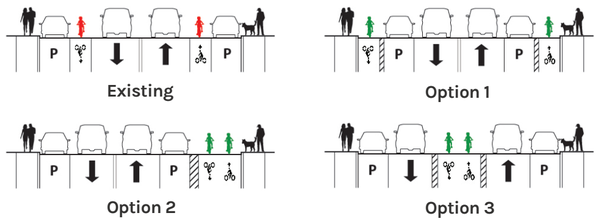
Arrival Observations at Lewis & Clark Middle School: April 27th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› A large number of students got off the MET bus at 15th St. W. and Lewis Ave.
Vehicles	› Private vehicles dropped students off in the northbound parking lane of 14th St. W. › Numerous vehicles appeared to exceed the posted speed limit, red light running was observed, and drop off occurred in bicycle lanes at the intersection of Lewis Ave. & 14th St. W. › Students dropped off in Lewis Ave. westbound parking lane navigate through parking lot and main entry loop to main entry without dedicated walking path. › Vehicles stack on 14th St. W. while waiting to make east-bound left onto Lewis Ave. › Vehicles appeared to exceed the posted speed limit at Lewis and 13th St. W › Vehicles blocking the crosswalk at 13th St. W. attempting to turn left onto Lewis Ave. › Vehicles observed making unpredictable, sudden motions in school zone.
School Staff Roles	› Staff received students at the school entries.
Adult Crossing Guards	› A crossing guard is posted at the intersection of Burlington Ave. & 13th St. W.
Students Walking and Biking	› Students were observed walking and biking from all directions.

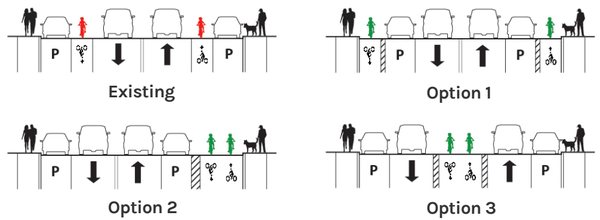
Priority Concerns at Lewis & Clark Middle School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Lewis & Clark	› No school zone exists in the area surrounding Lewis & Clark.	Yes
2	Lewis Ave.	› Although there have been no documented crashes between 9th St. W. and 19th St. W. (2016-2020) on Lewis Ave., the bike lanes along Lewis Ave. are unprotected and positioned next to the vehicular travel lane, which reduces the visual friction and traffic calming benefits that the on-street parking would otherwise provide. See Section 4.1.4 for more information. › Vehicles appear to exceed the posted speed limit of 25 mph on Lewis Ave. and several comments were received reporting apparent speeding. › Sidewalks in many locations along Lewis Ave. are spalled and obstructed by trash cans. › Observed red light running at the intersection of Lewis Ave. & 14th St. W. › Faded crosswalk markings on all legs of the intersection of Lewis Ave. & 14th St. W.	Yes
4	15th St. W.	› Higher vehicle speeds and volumes, higher student walking and bicycling volumes. › Relatively wide travel lanes. › Faded crosswalk markings.	No
5	8th St. W.	› Relatively wide street and travel lanes encourage speeding. › Vehicles appear to exceed the posted speed limit of 25 mph on 8th St. W. and several comments were received reporting apparent speeding. › Unmarked crosswalks on all legs of the intersection of Lewis Ave. and 8th St. W. › Misaligned roadways at the intersection of Lewis Ave. and 8th St. W.	Yes
6	Broadway & 14th St. W.	› Faded crosswalk markings on all legs of this intersection.	No
7	Main Entry, Lewis Ave.	› No direct, well-marked, ADA compliant route exists from Lewis Ave. through the parking lot to the main building entry.	Yes
8	Ave. D	› No ADA compliant curb ramps exist at the intersections of Ave. D and 12th and 11th St. W.	No

Proposed Projects at Lewis & Clark Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding Lewis & Clark	School Speed Zone	› No school zone exists in the area surrounding Lewis & Clark.	1	› Study and establish a school zone surrounding the school in compliance with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design the streets within the school zone to a speed limit that provides for the safety and access of children walking and biking to school.	4.4.1 4.1.4	City	$522,500
2	Lewis Ave.	Speeding/ Bicycling/ Crossing	› The bike lanes along Lewis Ave. are unprotected and positioned next to the vehicular travel lane, which reduces the visual friction and traffic calming benefits that the on-street parking would otherwise provide. See Section 4.1.4 for more information. › Vehicles appear to exceed the posted speed limit of 25 mph on Lewis Ave. and several comments were received reporting apparent speeding. › Sidewalks in many locations along Lewis Ave. are spalled and obstructed by trash cans. › Observed red light running at the intersection of Lewis Ave. & 14th St. W. › Faded crosswalk markings on all legs of the intersection of Lewis Ave. & 14th St. W.	2	› Reconfigure Lewis Ave. to install a protected bicycle facility from 8th St. W to 24th St. W. Public input required.  › Repair spalled sidewalk surfaces and install curb ramps where missing. Install missing sidewalk from 8th St. W. to 9th St. W. › Coordinate with Billings Solid Waste to collect all bins from alleys where possible and encourage residents to place bins in appropriate locations. › Design the street to a speed limit that provides for the safety and access of children walking and biking to school. › Study and install advanced traffic control signals, high-visibility crosswalks and curb extensions at Lewis Ave. & 13th St. W. › Study and install high-visibility crosswalks and curb extensions at Lewis Ave. & 14th St. W. › Coordinate with SD2 and BPD to enforce parking restrictions along Lewis Ave. at the school or install curb extensions at critical locations.	4.2.5, 4.2.6, 4.2.7 4.2.1, 4.3.3 4.2.2, 4.2.4, 4.2.7, 4.2.8, 4.3.1, 4.3.2, 4.2.7, 4.3.1, 4.3.2 4.2.7, 4.3.1, 4.3.2, 4.3.3 4.3.1	City	$963,500

Proposed Projects at Lewis & Clark Middle School *(Continued across to next page)*

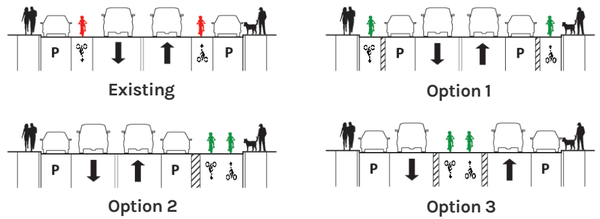
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
3	13th St. W.	Speeding/ Bicycling/ Crossing/ Congestion	› The bike lanes along 13th St. W. are unprotected and positioned next to the vehicular travel lane, which reduces the visual friction and traffic calming benefits that the on-street parking would otherwise provide. See Section 4.1.4 for more information. › Higher vehicle speeds and volumes, higher student walking and biking volumes, › Relatively wide travel lanes encourage speeding. › Faded crosswalk marking and bike lane markings. › Unmarked or faded crosswalks at the intersection of Grand Ave. & 13th St. W. › Vehicles fail to yield to students in the crosswalk at 13th St. W. & Burlington Ave. › Stacking and quick, unpredictable vehicle movements at the intersection of Lewis Ave. and 13th St. W. › Parked vehicles obstruct the visibility of students in the crosswalk of Lewis Ave. and 13th St. W. › Faded crosswalk markings at the intersection of Lewis Ave. and 13th St. W.	3	› Reconfigure 13th St. W. to install a protected bicycle facility from Rimrock Rd. to Lewis Ave. Public input required.  › Study and install high-visibility crosswalks on all legs of the intersection of Grand Ave. & 13th St. W. › Study and install curb extensions, high visibility crosswalk, and advanced traffic control signal at the intersection of 13th St. W. and Burlington Ave.	4.2.5, 4.2.7 4.2.7, 4.3.1, 4.3.2, 4.3.3 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.5.4	City	$255,000

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Here, advanced traffic control signals refer to a range of options from pedestrian activated Rectangular Rapid Flashing Beacons, to Pedestrian Hybrid Beacons, to full signals. Each location will need to be evaluated based on traffic volumes, speeds, and pedestrian crossing volumes to determine the correct treatment.

Estimated costs shown are intended to represent a planning-level cost estimate and do not represent a detailed Engineer's Opinion of Probable Cost.

Proposed Projects at Lewis & Clark Middle School *(Continued across to next page)*

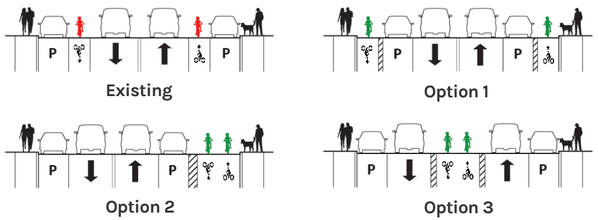
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
4	15th St. W.	Speeding/ Bicycling/ Crossing/ ADA Compliance	› Higher vehicle speeds and volumes, higher student walking and bicycling volumes. › Relatively wide travel lanes. › Faded crosswalk markings.	4	› Reconfigure 15th St. W to install a protected bicycle facility froms from Lewis Ave. to Central Ave. Public input required.  › Study and install high-visibility crosswalks on all legs of the intersection of Broadwater Ave. & 15th St. W. › Install ADA compliant curb ramps where missing from Lewis Ave. to Central Ave.	4.2.5, 4.2.7 4.3.2 4.3.3	City	$209,500

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Proposed Projects at Lewis & Clark Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
5	8th St. W.	Speeding/ Bicycling/ Crossing	› Relatively wide street and travel lanes encourage speeding. › Vehicles appear to exceed the posted speed limit of 25 mph on 8th St. W and several comments were received reporting apparent speeding. › Unmarked crosswalks on all legs of the intersection of Lewis Ave. and 8th St. W. › Misaligned roadways at the intersection of Lewis Ave. and 8th St. W.	5	› Reconfigure 8th St. W. to install a protected bicycle facility from Parkhill Dr. to Central Ave. Public input required.  › Design of the intersection of 8th St. W. and Lewis Ave. to calm traffic and provide for the safety of students walking and bicycling to school. › Study and install curb extensions, high visibility crosswalks, and advanced traffic control signals on all legs of the intersection of Parkhill Dr. & 8th St. W.	4.2.3, 4.2.5, 4.2.7 4.2.7, 4.3.1, 4.3.2, 4.3.3 4.2.7, 4.3.1, 4.3.2, 4.3.3	City	$584,500

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Proposed Projects at Lewis & Clark Middle School *(Continued across to next page)*

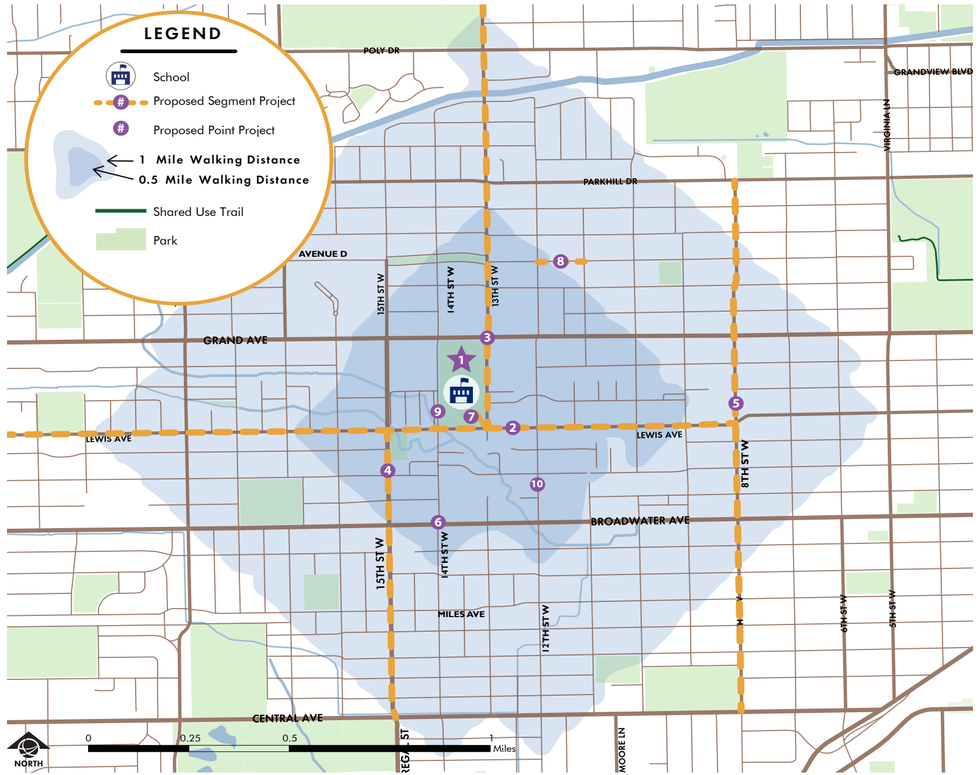
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
6	Broadwater & 14th St. W.	Crossing	› Faded crosswalk markings on all legs of this intersection.	6	› Install high visibility crosswalks on all legs of this intersection.	4.3.1, 4.3.2	City	$13,000
7	Main Entry, Lewis Ave.	ADA Compliance	› No direct, well-marked, ADA compliant route exists from Lewis Ave. through the parking lot to the main building entry.	7	› Install a direct, well-marked, ADA compliant route from Lewis Ave. though the parking lot, to the main entry.	4.3.3	School	$14,500
8	Ave. D	ADA Compliance	› No ADA compliant curb ramps exist at the intersections of Ave. D and 12th and 11th St. W.	8	› Install ADA compliant curb ramps on all corners of the intersections of Ave. D & 11th and 12th St. W.	4.3.3	City	$26,000
9	14th St. W.	Congestion	› Illegally parked vehicles on 14th St. W. during arrival and dismissal.	9	› Coordinate with SD2 and BPD to enforce parking restrictions along 14th St. W at the school or install curb extensions at critical locations.	4.3.1	City	$17,000
10	Area Surrounding Lewis & Clark	Missing sidewalks	› Missing sidewalks.	10	› Install missing sidewalk segments at: › 12th St. W. from Yellowstone Ave. to Parkhill Dr. › Public through streets between Broadwater Ave, Lewis Ave, 9th St. W. and 15th St. W. › Clark from 8th St. W. to 9th St. W. › 10th St. W. from Yellowstone Ave. to Parkhill Dr. › 9th St. W. from Wyoming Ave. to Lewis Ave.	4.2.1	City	$520,000
11	Broadwater & 12th St. W.	Crossing	› The nearest marked crossings on Broadwater Ave. are 1,200 to the west and 2,500 feet to the east.	11	› Study and install a high visibility crosswalk at the intersection of Broadwater Ave. and 12th St. W. to serve students living south of Broadwater Ave. Study whether to include curb extensions, advanced traffic control signals, or a pedestrian refuge island.	4.3.1, 4.3.2, 4.3.4, 4.5.1, 4.5.5	City	$422,500

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Proposed Projects Map at Lewis & Clark Middle School



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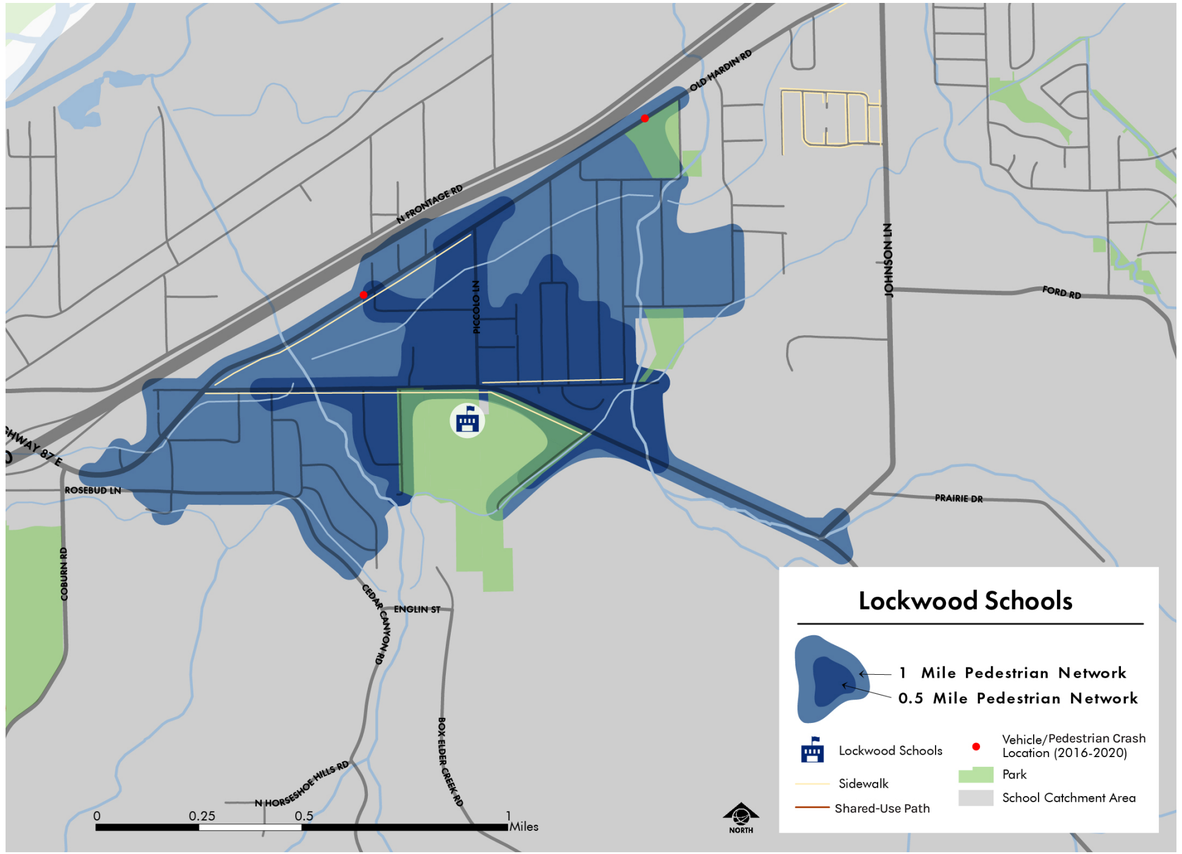
Lockwood Schools



Existing Conditions at Lockwood Schools

ABOUT THE SCHOOL	
Address	1932 U.S. Hwy 87 E, Billings, MT 59101
Number of Students (Grade Levels)	617 (K-8)
% of Students Eligible for Free & Reduced Lunch	46%
Arrival/Dismissal Times	8:00 AM / 2:00 PM (k-2) 8:00 AM / 3:00 PM (3-5) 9:00 AM / 3:55 PM (6-12)

MAJOR STREETS & HIGHWAYS	AADT
Hwy 87 E	5,570
Piccolo	880



Community Safety Concerns at Lockwood Schools

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Missing sidewalks in the area surrounding Lockwood Schools campus.
Webmap Survey (10 comments)	› Missing sidewalks on Johnson Ln. › Piccolo Ln. is major student route. › Missing sidewalks and speeding vehicles on neighborhood streets north of Lockwood Schools campus. › Safety/ CPTED concerns on Hillner Ln. › Vehicle congestion during pick up and drop off on Hwy 87. › Vehicles do not comply with stop signs at the intersection of Hwy 87 E & Old Hardin Rd. › Missing sidewalks along Old US 87 to serve students walking from Eastgate neighborhood.
Crossing Guard	› Crossing guard at Piccolo Ln. and Old US 87 reports that a dog in the neighborhood north of Lockwood School may have bitten several students.

Arrival Observations at Lockwood Schools: April 24th, 2023

OBSERVATION TYPE	OBSERVATIONS
Vehicles	› Private vehicle drop off occurred in the loops off Old US 87 E and Peters St. › Some vehicle drop off in the Primary School lot occurred in the parking lot stalls, requiring students to walk through the lot and drop off lane, where no marked walking route exists. › Apparent high vehicle volume and speeds on Piccolo Ln. › Congested vehicle traffic on Old US 87 E at front drop off loop during peak drop off times. › Vehicles waiting to access Old US 87 E stack on Peters St. to primary school parking lot access. › Many vehicles on Old US 87 E appeared not to reduce speed at flashing school zone sign. › Vehicle failed to yield to student in crosswalk at Old US 87 E and Rock Hill Dr. › Vehicles moved through the slip lane crosswalk at Old Hardin Rd. & Hwy 87 E at high speed.
School Staff Roles	› Staff received students at the elementary and middle school entrances off Old US 87 E and Peters St.
Adult Crossing Guards	› A crossing guard was posted at the crosswalk on Old US 87 E & Piccolo Ln.
Students Walking and Biking	› Many students were observed walking and bicycling from the north and using the crosswalk at Old US 87 E. and Piccolo Ln. › Many children were observed walking in the street on Piccolo Ln. where no safe walking or bicycling route exists. › Children were observed running through the slip lane at Old Hardin Rd. & Hwy 87 E without activating the beacon.

Priority Concerns at Lockwood Schools

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area surrounding Lockwood Schools	› Inconsistently located School Zone signage.	Yes
2	Piccolo Ln.	› Piccolo Ln. is a well-used route for both vehicles and students walking and biking. › Piccolo Ln. has no sidewalks or lighting.	Yes
3	Old US 87 E	› Missing sidewalk on segment of Old US 87 E near front of school. › Missing sidewalk on segment of Old US 87 E west of Old Hardin Rd. › Old US 87 has few marked crossing locations. The distance between the crosswalk at Old Hardin Rd. and the crosswalk at Piccolo Ln. is over 3,400 feet. › No marked crossings exist east of Piccolo Ln. on Old US 87 E. › Congested vehicle traffic on Old US 87 E at front drop off loop during drop off period.	Yes
4	Hillner Ln.	› Hillner Ln. has no marked crossings. › Hillner Ln. has no lighting. CPTED concerns. › Overgrown vegetation obstructs the sidewalk.	Yes
5	Primary School entry	› No direct, ADA compliant route exists from Old US 87 E to the primary school entry. › No marked route exists through the primary school parking lot to the main entry.	No
6	Sunrise Ave. / Johnson Ln.	› Students living in the Johnson Ln. neighborhood have no safe walking or biking route to school.	No
7	Stonehaven Tr.	› Staff and parents report students using Stonehaven Tr. to walk to school from the Hillside Village neighborhood despite lack of legal access between them.	Yes

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Proposed Projects at Lockwood Schools *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area surrounding Lockwood Schools	School Speed Zone	› Inconsistently located School Zone signage.	1	› Relocate School Zone signage surrounding Lockwood schools to comply with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design streets within the school zone to a speed limit that prioritizes the safety and access of children walking and biking to school.	4.4.1 4.1.4	County	$236,500
2	Piccolo Ln.	Speeding/ Traffic/ Sidewalks	› Piccolo Ln. is a well-used route for both vehicles and students walking and biking. › Piccolo Ln. has no sidewalks or lighting.	2	› Study means of calming traffic and creating safe walking and biking routes on Piccolo Ln. From Old Hardin Rd. to Old US 87. Possible solutions may include: acquiring right of way, installing sidewalk, Bicycle Boulevard classification, or woonerf configuration. › Install a high visibility crossing and advanced traffic control signal across Piccolo Ln. at Old US 87 E. › Install a pedestrian waiting area and ADA ramps at the northwest corner or the intersection of Piccolo Ln. & Old US 87 E.	4.1.4, 4.2.1, 4.2.7, 4.2.8, 4.2.9 4.2.7, 4.3.1, 4.3.2, 4.4.3, 4.5.5 4.3.3	County	$464,500
3	Old US 87 E	Speeding/ Traffic/ Sidewalks/ Crossing	› Missing sidewalk segment near front of school. › Missing sidewalk segment west of Old Hardin Rd. › Missing sidewalk segment from school property to Johnson Ln. › Old US 87 has few marked crossing locations. The distance between the crosswalk at Old Hardin Rd. and the crosswalk at Piccolo Ln. is over 3,400 feet. › Congested vehicle traffic on Old US 87 E at front drop off loop during drop off period.	3	› Install high visibility crossings of all side streets along the south side of Old US 87 E from Old Hardin Rd. to Stonehaven Tr. including school parking lot accesses. › Install a high visibility crossing, curb extensions, and advanced traffic control signal across Old US 87 E. at Peters St. › Install ADA ramps at the high school access point from Old US 87 E. › Install sidewalk along the northwest side of Old US 87 from Melody Ln. to Conoco property. › Install sidewalk at missing segment at Piccolo Ln. and Old US 87 E. › Continue shared use path on south side of Old US 87 E. to Johnson Ln.	4.2.2, 4.2.7, 4.3.1, 4.3.2, 4.3.3 4.2.7, 4.3.1, 4.3.2, 4.4.3, 4.5.5 4.3.3 4.2.1, 4.2.7 4.2.1, 4.2.7 4.2.6, 4.2.7	County	$403,500

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Proposed Projects at Lockwood Schools *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
4	Hillner Ln.	Lighting/ CPTED	› Hillner Ln. has no marked crossings. › Hillner Ln. has no lighting. CPTED concerns reported in public comment. › Overgrown vegetation obstructs the sidewalk.	4	› Install lighting and control vegetation along the sidewalk of Hillner Ln.	4.2.7	County	$58,500
5	Primary School parking lot	Crossing/ Bicycling/ ADA Compliance	› No direct, ADA compliant facility exists from Old US 87 E to the primary school entry. › No marked route exists through the primary school parking lot to the main entry.	5	› Install a direct, well-marked, ADA compliant route from Old US 87 E. through the parking lot, to the main entry of the Primary School.	4.2.7, 4.3.3	School	$16,000
6	Sunrise Ave. / Johnson Ln.	Shared Use Path	› Students living in the Johnson Ln. neighborhood have no safe walking or biking route to school.	6	› Dedicate access from the Johnson Ln. area to Sunrise Ave. per the recommendation of the Lockwood Non-motorized Transportation plan.	4.2.6, 4.2.7	County	$-
7	Stonehaven Tr.	Shared Use Path	› Staff and parents report students using Stonehaven Tr. to walk to school from the Hillside Village neighborhood despite lack of legal access between them.	7	› Acquire a formal access easement or dedication of a shared use path connection from the Hillside Village neighborhood's southern boundary to Lockwood School campus' southern boundary.	4.2.6, 4.2.7	County	$-

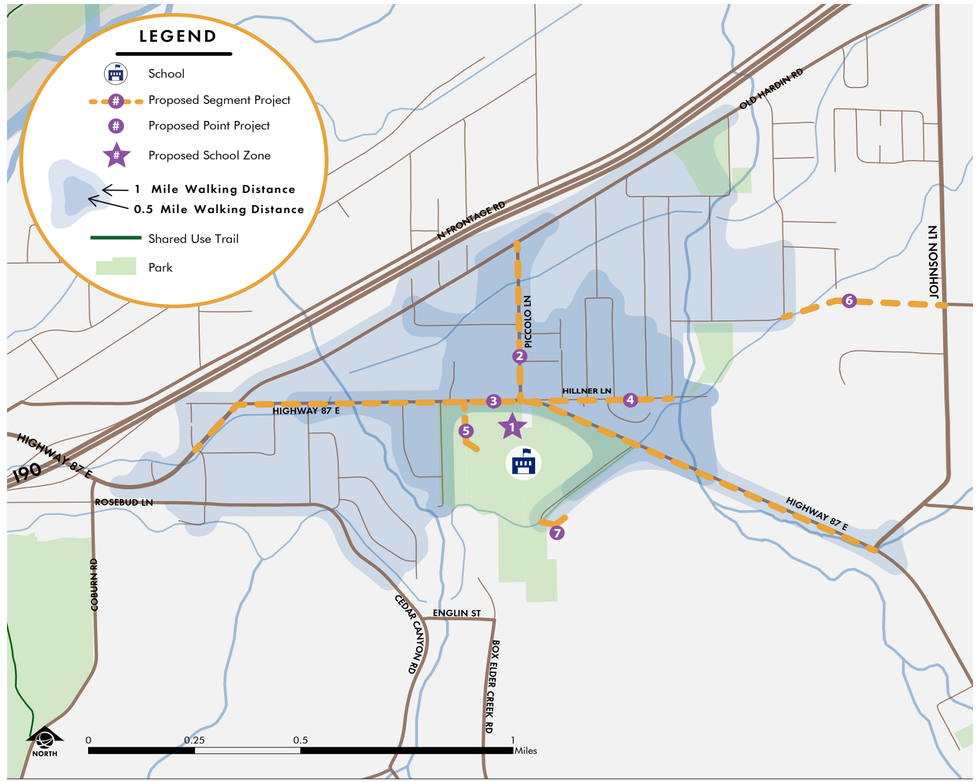
Projects listed here will require coordination with the Lockwood Pedestrian Safety District.

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Proposed Projects Map at Lockwood Schools



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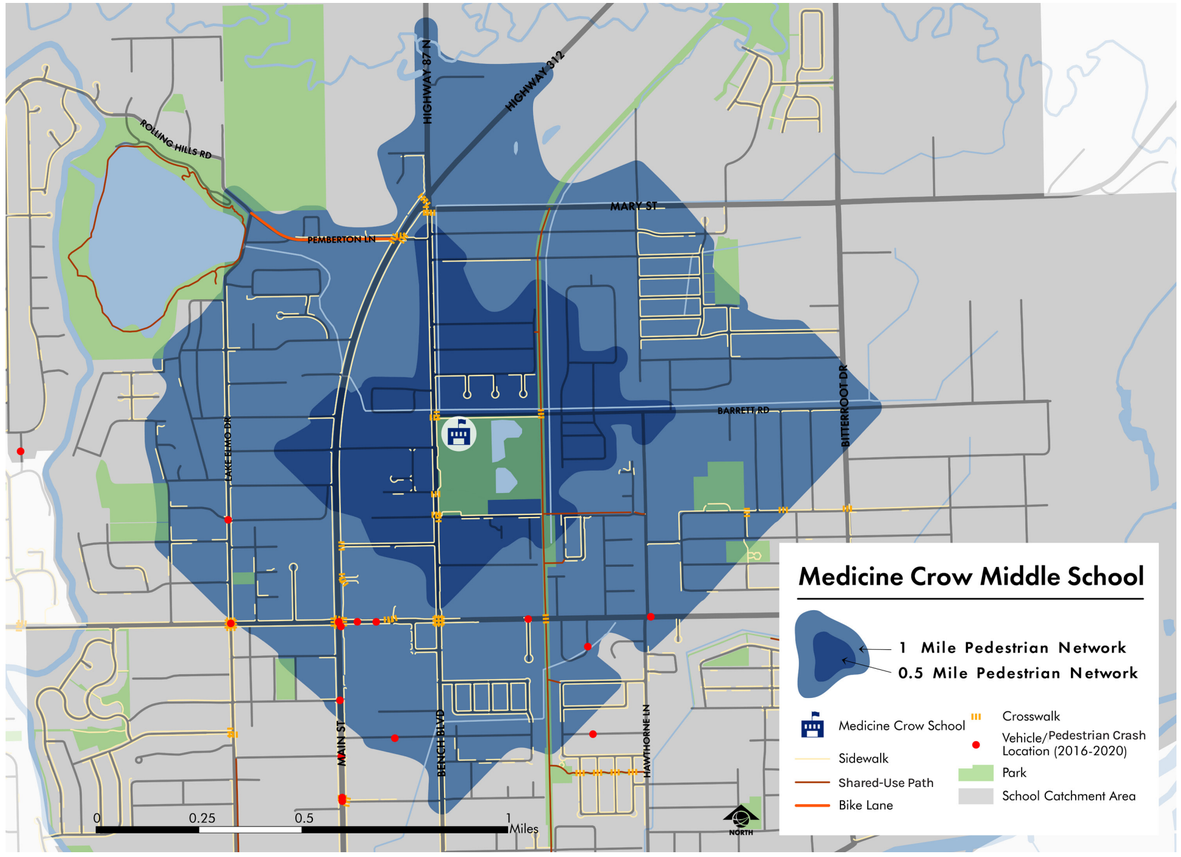
Medicine Crow Middle School



Existing Conditions at Medicine Crow Middle School

ABOUT THE SCHOOL	
Address	900 Barrett Rd, Billings, MT 59105
Number of Students (Grade Levels)	521 (6-8)
% of Students Eligible for Free & Reduced Lunch	55%
Arrival/Dismissal Times	8:10 AM / 3:10 PM

MAJOR STREETS & HIGHWAYS	AADT
Barrett Rd.	1,210
Bench Blvd.	7,090
Hwy 87/ Main St.	17,940



Community Safety Concerns at Medicine Crow Middle School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Webmap Survey (23 comments)	› Lack of sidewalks and insufficient lighting on Barret Rd. › Insufficient lighting on Bitterroot Rd. › Lack of sidewalks on Wicks Ln. between Bitterroot Dr. & Hawthorne Ln. › Lack of marked crossings at the intersection of Bitterroot Dr. & Wicks Ln. › Lack of Sidewalks on Hawthorne Ln. › Insufficient lighting on Hawthorne Ln. › Intersection of Maurine St. & Primrose Dr. is a common student route, has bus stop for Skyview, is uncontrolled and vehicles do not yield to students. › High vehicle volumes, high student walking and biking volumes at Hawthorne Ln. & Kyhl Ln.
Crossing Guard	› Bitterroot Elementary Crossing guard posted at Wicks Ln. & Kiwanis Shared Use Path crossing reports: › Speeding vehicles › Vehicles fail to yield to students in crosswalk › Vehicles do not stop at bus stops › Insufficient lighting at crossing › Fences on adjacent properties obstruct view of students approaching crossing.
Safety Busing	› Safety busing is provided to students living west of Main St.

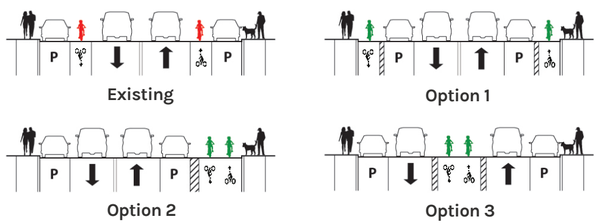
Arrival Observations at Medicine Crow Middle School: May 2nd, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› Buses dropped students off in the loop at the northeast corner of the school site.
Vehicles	› Private vehicle drop off was observed in the two drop off loops on Barret Rd. as well as in the parking lanes of both Barret Rd. and Bench Blvd. › Barret Rd. was under construction at time of observation. Re-constructed segment is planned to include sidewalks.
School Staff Roles	› No staff were observed during the arrival period.
Adult Crossing Guards	› A crossing guard from Bitterroot Elementary is posted at the Wicks Ln. crossing of the Kiwanis shared use path, which is also a common route for Medicine Crow students.
Students Walking and Biking	› Many students were observed walking and biking to school along the Kiwanis shared use path.

Priority Concerns at Medicine Crow Middle School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Medicine Crow	› Inconsistently located School Zone signage.	No
2	Main St. from Pemberton Ln. to Wicks Ln.	› There are no marked crossings on Main St. from Pemberton Ln. to Wicks Ln. a distance of over 5,000 feet. › Faded crosswalk markings at Pemberton Ln. and Wicks Ln. › The posted speed limit on Main St. is 45 mph.	No
3	Bench Blvd. From Wicks Ln. to Pemberton Ln.	› Faded crosswalk markings throughout.	No
4	Hawthorne Ln.	› Many segments have no walking or biking infrastructure. › Insufficient lighting. › Faded crosswalk markings at Hawthorne Ln. & Barrett Rd. › Faded or unmarked crossings at Wicks Ln. Hawthorne Ln.	Yes
5	Cherry Creek Neighborhood	› Students living in the Cherry Creek neighborhood have no continuous walking or biking facilities on any route to school.	Yes
6	Maurine St. & Primrose Dr.	› Intersection of Maurine St. & Primrose Dr. is a common student route. › A bus stop for Skyview High exists at this intersection. › The intersection is uncontrolled, with reports of vehicles which do not yield to students.	Yes
7	Bitterroot Dr.	› No walking or biking facilities exists from Elaine St. to Barrett Rd. › Insufficient lighting. › Faded or unmarked crossings at the intersection of Wicks Ln. & Bitterroot Dr.	Yes
8	Pemberton Ln.	› There are no marked crossings on Main St. from Pemberton Ln. to Wicks Ln. a distance of over 5,000 feet. › Pemberton Ln. west of Main St. has no continuous sidewalk on either side.	No

Proposed Projects at Medicine Crow Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding Medicine Crow	School Speed Zone	› Inconsistently located School Zone signage.	1	› Relocate School Zone and School Speed Zone signage surrounding Medicine Crow in accordance with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design streets within the school zone to a speed limit that provides for the safety and access of children walking and biking to school.	4.4.1 4.1.4	City	$178,000
2	Jerrie Ln. / Key City Dr.	Crossing/ Bicycling	› Conditions on Main St. prevent students living west of Main St. from walking or biking to school. › There are no marked crossings on Main St. from Pemberton Ln. to Wicks Ln. a distance of over 5,000 feet. › Faded crosswalk markings at Pemberton Ln. to Wicks Ln. › The posted speed limit on Main St. is 45 mph.	2	› Coordinate with MDT to study and install high visibility crossing and advanced traffic control signal at Main St. & Jerrie Ln. › Design Jerrie Ln. and Key City Dr. to a speed limit that prioritizes the safety and access of children walking and biking within the school zone. Public input required. › Install sidewalks along the Jerrie Ln. and Key City Dr. › Install a protected bike facility on Lake Elmo Dr. from Meadowlark Ln. to Jerrie Ln. Public input required.  › When the subdivision to the east of the BBWA develops, study and install a shared-use bridge of minimum 14 feet width to give students living west of the BBWA access to the crossing at Main St. and Jerrie Ln.	4.2.7, 4.3.2, 4.3.3, 4.3.4, 4.4.3, 4.5.5 4.2.1, 4.2.2, 4.2.4, 4.2.7, 4.2.8, 4.3.1 4.2.1, 4.2.7 4.2.5, 4.2.7 4.2.7, 4.3.5	City/ Land Owner	$967,000

Proposed Projects at Medicine Crow Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
3	Bench Blvd.	Crossing	› Faded crosswalk markings on Bench Blvd. from Wicks Ln. to Pemberton Ln.	3	› Study and install high visibility crossings on Bench Blvd. at: › Pemberton Ln. / Christ Dr. › Barrett Rd. › Kyhl Ln. › Lynch Dr. › Wicks Ln.	4.2.7, 4.3.1, 4.3.2, 4.3.4, 4.4.3, 4.5.4	City	$16,500
4	Hawthorne Ln.	Crossing/ Sidewalks/ Lighting	› No walking or biking infrastructure exists on segments of Hawthorne Ln. › Insufficient lighting. › Faded crosswalk markings at Hawthorne Ln. & Barrett Rd.	4	› Coordinate with county to install boulevard sidewalk and street lights along Hawthorne Ln. as right-of-way and funding allows. › Study the feasibility of dedicating right-of-way along this corridor to accommodate boulevard sidewalk. › Construct the intersection of Hawthorne Ln. & Barrett Rd. to prioritize the safety of students walking and biking to school. › Study and Install an advance traffic control signal at Hawthorne Ln. & Kyhl Ln.	4.2.1, 4.2.7 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.5.1, 4.5.2, 4.5.3 4.2.7, 4.5.5	City/ County	$689,500
5	Victory Ave.	Shared Use Path	› Students living in the Cherry Creek neighborhood have no continuous walking or biking facilities on any route to school.	5	› Design Victory Ln. from the Kiwanis Trail to Hawthorne Ln. to a speed limit that provides for the safety and access of children walking and biking to school. › Acquire right of way from the intersection of Victory Ave. & Hawthorne Ln. to the shared-use path behind Tania Cir. › Study and install a high visibility crosswalk across Hawthorne Ln. at Victory Ave. › Study and install a high visibility crosswalk across Bitterroot Dr. at the shared use path between Wicks Ln. and Anchor Ave.	4.2.2, 4.2.7, 4.2.8, 4.3.1, 4.2.6, 4.2.7 4.2.7, 4.3.2, 4.4.3, 4.5.5 4.2.7, 4.3.2, 4.4.3, 4.5.5	City/ Developer	$58,500

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Here, advanced traffic control signals refer to a range of options from pedestrian activated Rectangular Rapid Flashing Beacons, to Pedestrian Hybrid Beacons, to full signals. Each location will need to be evaluated based on traffic volumes, speeds, and pedestrian crossing volumes to determine the correct treatment.

Estimated costs shown are intended to represent a planning-level cost estimate and do not represent a detailed Engineer's Opinion of Probable Cost.

Proposed Projects at Medicine Crow Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE
6	Maurine St. & Primrose Dr.	Crossing	› Intersection of Maurine St. & Primrose Dr. is a common student route. › A bus stop for Skyview High exists at this intersection. › The intersection is uncontrolled, with reports of vehicles which do not yield to students.
7	Bitterroot Dr.	Sidewalks/ Lighting	› No walking or biking facilities exists from Elaine St. to Barrett Rd. › Insufficient lighting. › Faded or unmarked crossings at the intersection of Wicks Ln. & Bitterroot Dr.
8	Pemberton Ln.	Sidewalks/ Lighting	› There are no marked crossings on Main St. from Pemberton Ln. to Wicks Ln. a distance of over 5,000 feet. › Pemberton Ln. West of Main St. has no continuous sidewalk on either side.

Proposed Projects at Medicine Crow Middle School

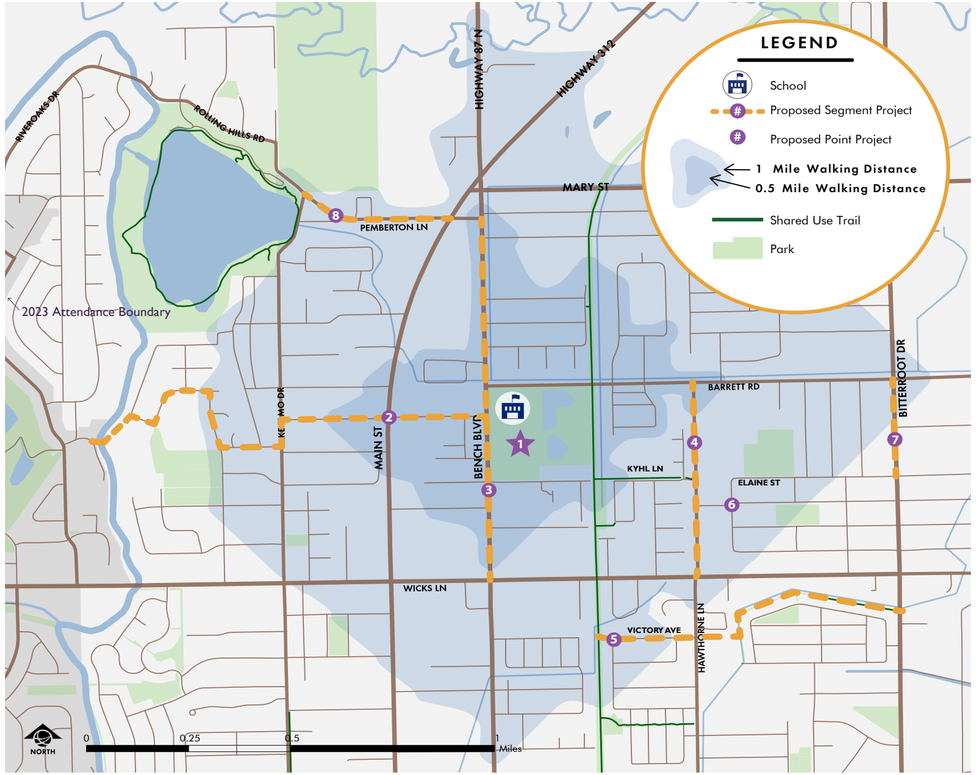
#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
6	› Reconfigure intersection to prioritize the safety of students walking and biking to school.	4.2.2, 4.2.4, 4.2.7, 4.3.1, 4.3.2	City	$23,500
7	› Coordinate with County to install boulevard sidewalk and street lights along Bitterroot Dr. from Elaine St. to Barrett Rd. › Study the feasibility of dedicating right-of-way along this corridor to accommodate boulevard sidewalk.	4.2.1, 4.2.6, 4.2.7 4.3.2	City	$274,000
8	› Install missing sidewalk to achieve a continuous facility on at least one side of the street from Main St. to Lake Elmo Dr. › Study and install high visibility crossings at the intersection of Hwy 87/ Main St. & Pemberton Ln. Coordination with MDT required. The US 87/Main Street intersection will be relocated/reconstructed with the Billings Bypass project.	4.2.1, 4.2.6, 4.2.7 4.3.2	City	$139,000

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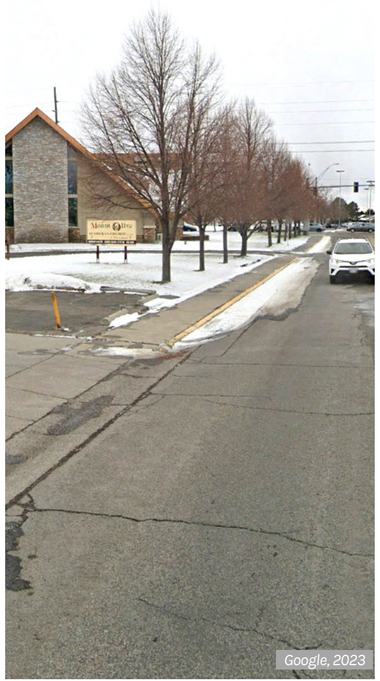
Estimated costs shown are intended to represent a planning-level cost estimate and do not represent a detailed Engineer's Opinion of Probable Cost.

Proposed Projects Map at Medicine Crow Middle School



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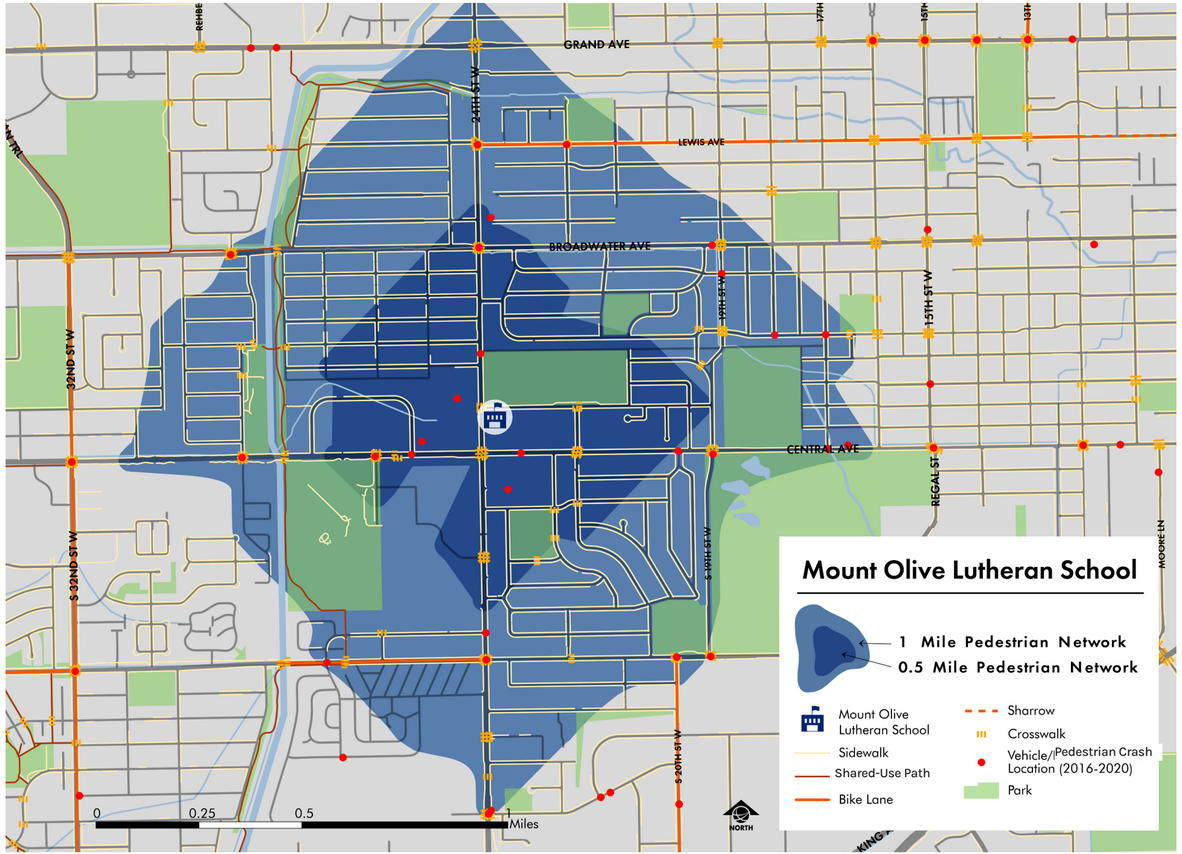
Mount Olive Lutheran School



Existing Conditions at Mount Olive Lutheran School

ABOUT THE SCHOOL	
Address	2336 St Johns Ave, Billings, MT 59102
Number of Students (Grade Levels)	67 (PK-5)
% of Students Eligible for Free & Reduced Lunch	59%
Arrival/Dismissal Times	8:10 AM / 11:30 AM (pre-k) 8:10 AM / 3:45 PM (1-5)

MAJOR STREETS & HIGHWAYS	AADT
24th St. W.	21,280
Central Ave.	16,400



Community Safety Concerns at Mount Olive Lutheran School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› The intersection of Central Ave. & 24th St. W. has high vehicle and student walking traffic volumes and is one of the most dangerous intersections in Billings. › Curb walk along Central Ave. puts walking students very close to high speed vehicle traffic. › Short crossing times and poorly marked crosswalks at the intersection of Central Ave. & Santa Fe Dr. make that intersection hazardous. › Students from West High use Mount Olive campus to access restaurants on Central Ave. This leads to CPTED concerns, with several fights known to have occurred on church property.
Webmap Survey (9 comments)	› Curb walk along 24th St. W. puts walking students very close to high speed vehicle traffic. › Lack of safe bicycle routes on surrounding streets. › Missing safe walking or biking routes through parking lot in commercial development west of the intersection at 24th St. W. and St. Johns Ave.

Arrival Observations at Mount Olive Lutheran School: May 17th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› No bus drop off was observed.
Vehicles	› Vehicle drop off occurred in the parking lot and drop off loop on site. No visible spike in Mount Olive drop off occurred during the arrival period.
School Staff Roles	› Staff were not observed to have any role during the arrival period.
Adult Crossing Guards	› No crossing guards were observed.
Students Walking and Biking	› No students were observed walking or biking to school.

Priority Concerns at Mount Olive Lutheran School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area surrounding Mount Olive Lutheran	› No School Zone exists in the area surrounding Mount Olive Lutheran.	Yes
2	St. Johns Ave.	› Higher vehicle traffic volumes and speeds during arrival and dismissal at neighboring West High School. › The distance between marked crossings on St. Johns Ave. is about 1,200 feet. This causes high volumes of student traffic from West High to cross St. Johns Ave. outside of crosswalks. › No parking strip along church side of St. John's effectively widens travel lane and encourages speeding. › Unmarked crossings, faded crosswalk markings and wide travel lanes which encourage speeding create hazard for students walking or biking to school.	Yes
3	Mt. Olive Lutheran campus	› Higher vehicle and student walking traffic volumes, red light running, and conflicting vehicle and walking motions, observed. › Faded crosswalk markings, on all legs of this intersection. › Relatively wide travel lanes encourage speeding.	Yes
4	St. Johns Ave. & 24th St. W.	› High vehicle and student walking traffic volumes, faded crosswalk markings, red light running, conflicting vehicle and walking motions, and wide travel lanes make the intersection of 24th and St. Johns Ave. hazardous for students walking to school.	Yes
5	Central Ave. & 24th St. W.	› Long crossing distances and faded crosswalk markings on all legs of this intersection make it hazardous for students walking or biking to school.	Yes
6	Miles Ave.	› Missing curb ramps at Miles Avenue's intersections with Glen Dr. and Nelson Dr.	No
7	Berthound Ave.	› Missing curb ramps at Berthound Drive's intersections with Beloit Dr. and Monad Rd.	No

Proposed Projects at Mount Olive Lutheran School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area surrounding Mount Olive Lutheran	School Speed Zone	› No School Zone exists in the area surrounding Mount Oliver Lutheran.	1	› Study and establish a School Zone and School Speed Zone surrounding Mount Olive in accordance with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design streets within the school zone to a speed limit that provides for the safety and access of children walking and biking to school.	4.4.1 4.1.4	City	$84,500
2	St. Johns Ave.	Speeding/ Crossing/ ADA Compliance	› Higher vehicle traffic volumes and speeds during arrival and dismissal at neighboring West High School. › The distance between marked crossings on St. Johns Ave. is about 1,200 feet. This causes high volumes of pedestrian traffic to cross St. Johns Ave. outside of crosswalks. › No parking strip along church side of St. John's effectively widens travel lane and encourages speeding. › Unmarked crossings, faded crosswalk markings and wide travel lanes which encourage speeding at the intersection of St. Johns Ave. & Santa Fe Dr. › Missing curb ramps at the intersection of St. Johns Ave. and 21st St. W.	2	› Study and install curb extensions, a high visibility crossing, and advanced traffic control signal at the eastern access to the West High student parking lot to calm traffic and encourage students to cross St Johns Ave. in a designated crosswalk. › Install a curb extension along the no parking strip in front of Mount Olive Lutheran to narrow travel lane and calm traffic. Public input required. › Study and install high visibility crossings and curb extensions on all legs of the intersection of St. Johns Ave. & Santa Fe Dr. › Install missing curb ramps at the intersection of St. Johns Ave. and 21st St. W.	4.3.1, 4.3.2, 4.3.3, 4.5.4 4.3.1 4.3.1, 4.3.2, 4.3.3 4.3.3	City	$151,000
3	St. Johns Ave. & 24th St. W.	Crossing	› Higher vehicle and student walking traffic volumes, red light running, and conflicting vehicle and walking motions, observed. › Faded crosswalk markings, on all legs of this intersection. › Relatively wide travel lanes encourage speeding.	3	› Reconfigure intersection to provide for the safety of students walking and bicycling to school. › Study and install high visibility crosswalks and leading pedestrian intervals on all legs of this intersection.	4.3.1, 4.3.2, 4.3.3, 4.5.2, 4.5.3	City	$46,500
4	Central Ave. & 24th St. W.	Crossing	› Long crossing distances and faded crosswalk markings on all legs of this intersection.	4	› Study and install high visibility crossings on all legs of the intersection of Central Ave. & 24th St. W. › Study and modify signalization to ensure adequate crossing times and leading pedestrian interval.	4.3.2 4.5.1, 4.5.2	City	$13,000

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Estimated costs shown are intended to represent a planning-level cost estimate and do not represent a detailed Engineer's Opinion of Probable Cost.

Proposed Projects at Mount Olive Lutheran School *(Continued across to next page)*

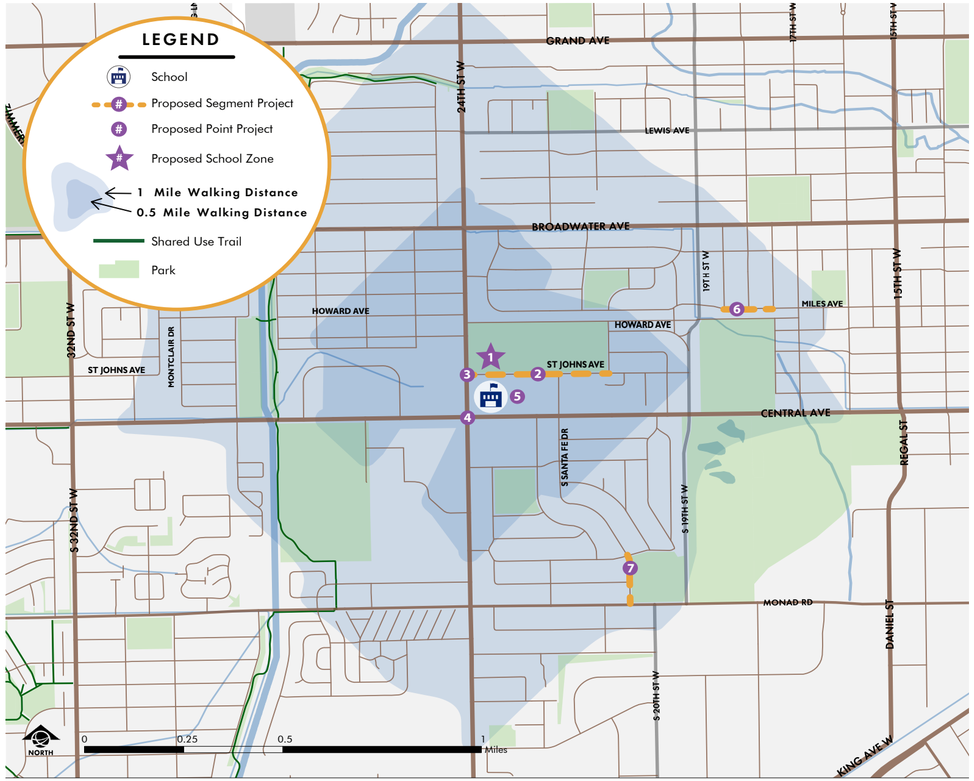
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
5	Mt. Olive Lutheran campus	CPTED	› Students from West High use Mount Olive campus to access restaurants on Central Ave. This leads to CPTED concerns, with several fights occurring on church property.	5	› Further investigate CPTED modifications to the church property to discourage illicit activities. This may include alternate connection locations, lighting, introducing active use of the eastern portion of the site, or fencing off access to the property as a route to Central Ave.	4.2.7	School	$110,500
6	Miles Ave.	ADA Compliance	› Missing curb ramps at Miles Avenue's intersections with Glen Dr. and Nelson Dr.	6	› Install curb ramps where Miles Ave. intersects Glen Dr. and Nelson Dr.	4.3.3	City	$14,600
7	Berthound Ave.	ADA Compliance	› Missing curb ramps at Berthound Drive's intersections with Beloit Dr. and Monad Rd.	7	› Install curb ramps where Berthound Drive intersects Beloit Dr. and Monad Rd.	4.3.3	City	$14,600

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Proposed Projects Map at Mount Olive Lutheran School



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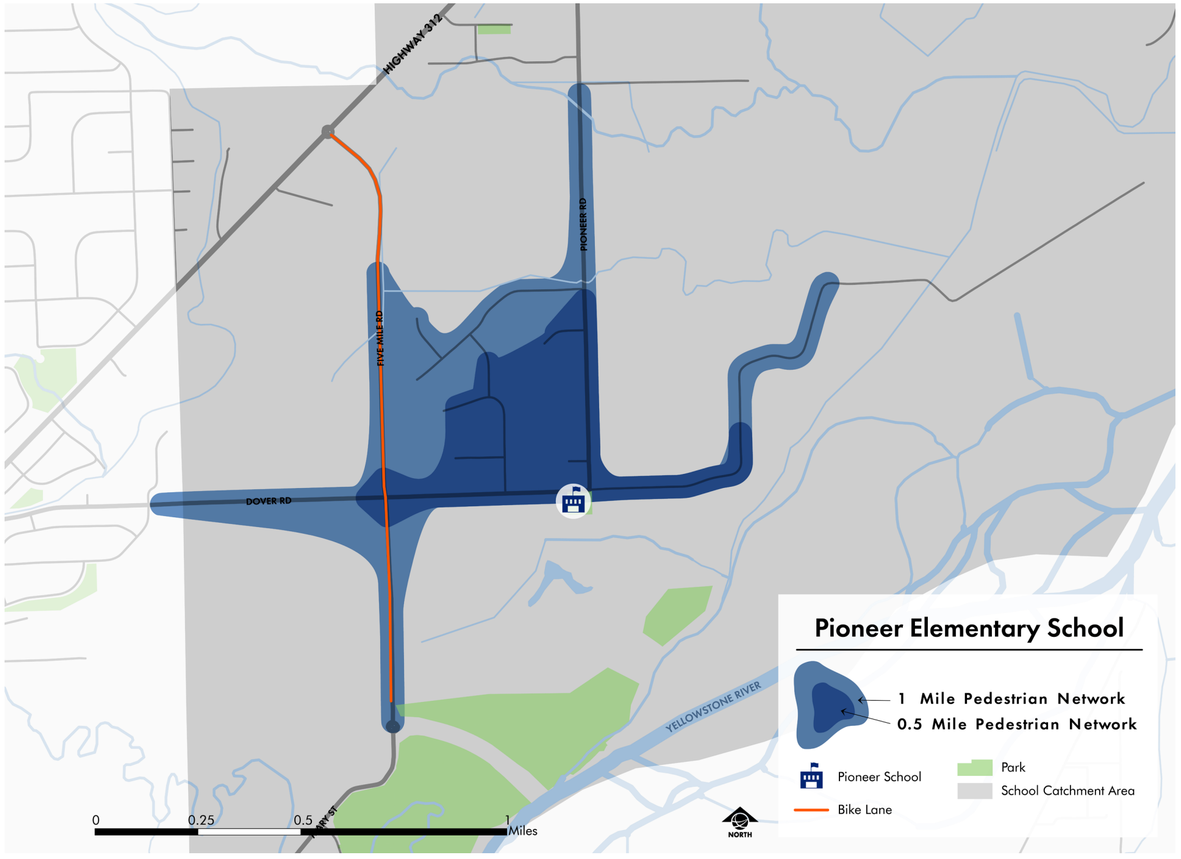
Pioneer Elementary School



Existing Conditions at Pioneer Elementary School

ABOUT THE SCHOOL	
Address	1937 Dover Rd, Billings, MT 59105
Number of Students (Grade Levels)	70 (PK-8)
% of Students Eligible for Free & Reduced Lunch	31%
Arrival/Dismissal Times	8:00AM / 4:00PM

MAJOR STREETS & HIGHWAYS	AADT
Dover Rd	1,402
Pioneer Rd	836



Community Safety Concerns at Pioneer Elementary School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Speeding vehicles on Dover Rd. and Pioneer Rd. that do not observe the posted School Zone signage.
Webmap Survey (0 comments)	› N/A
Safety Busing	› No safety busing is provided.

Arrival Observations at Pioneer Elementary School: March 18th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› Bus drop off occurs in front of the school in the same gravel turn-around that private vehicles use.
Vehicles	› Vehicular access to the school is provided in the form of a mostly gravel lot. As there is no curb, the Dover Rd. access is 130' long, and vehicles pull off of Dover Rd. at high speed and use the loop to decelerate. › Vehicles access the school both from Dover Rd. and Pioneer Rd. which can cause conflict. › Private vehicles and buses use the same access loop, creating conflict. › Frequent truck traffic from adjacent gravel pit.
School Staff Roles	› Staff welcomed students within the schoolyard fence and organized them for entering the building.
Adult Crossing Guards	› No adult crossing guards were observed.
Students Walking and Biking	› No students were observed walking or biking.

Priority Concerns at Pioneer Elementary School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Pioneer School	› Inconsistently located School Zone signage on Dover Rd. and Pioneer Rd. › Apparent vehicle speeding in school zone.	Yes
2	Dover Rd.	› Dover Rd. has no walking or biking facilities.	No
3	Pioneer Rd.	› Pioneer Rd. has no walking or biking facilities.	No
4	Dover Rd.	› Dover Rd. has no marked crossings.	No
5	Dover Rd. at Campus	› Vehicles using parking lot access as deceleration lane and two-way drop off loop with buses creates conflict.	No

Proposed Projects at Pioneer Elementary School *(Continued across to next page)*

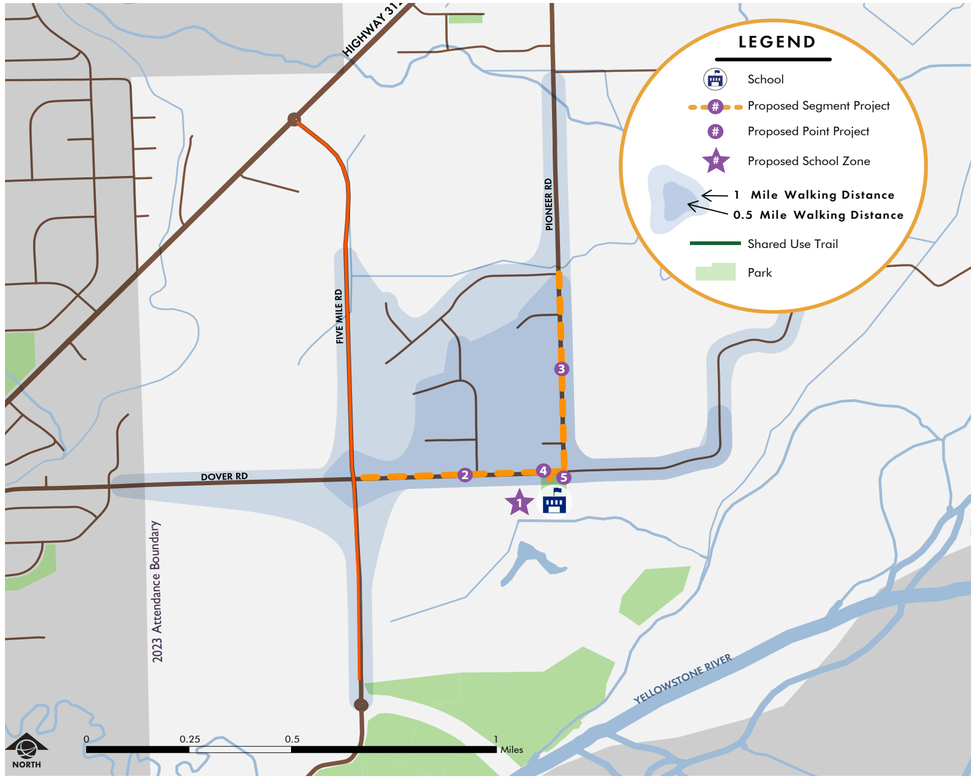
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding Pioneer School	School Speed Zone	› School Zone signage is inconsistently located on Dover Rd. and Pioneer Rd. › Apparent vehicle speeding in school zone.	1	› Install School Zone and School Speed Zone signage surrounding Pioneer in accordance with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design streets within the school zone to a speed limit that prioritizes the safety and access of people walking and biking within the school zone.	4.4.1 4.1.4	County	$179,000
2	Dover Rd.	Sidewalks	› Dover Rd. has no walking or biking facilities.	2	› Install a separated, protected shared use path along Dover Rd. from 5 Mile Rd. to Pioneer Rd.	4.2.6, 4.2.7	County	$338,000
3	Pioneer Rd.	Sidewalks	› Pioneer Rd. has no walking or biking infrastructure.	3	› Construct separated, protected shared use path along Pioneer Rd. from Clearwater Way to Dover Rd.	4.2.6, 4.2.7	County	$325,000
4	Dover Rd.	Crossing	› Dover Rd. has no marked crossings.	4	› Install a high visibility crosswalk with curb extensions and advanced traffic control signals in front of the school. › Continue route from crosswalk to main building via direct, well-marked, ADA compliant path.	4.2.7, 4.3.1, 4.3.2, 4.5.4 4.3.3	County	$39,500
5	Dover Rd. at Campus	Arrival/ Dismissal Behavior	› Vehicles using parking lot access as deceleration lane and two-way drop off loop with buses creates conflict.	5	› Study and reconfigure vehicular and bus drop off operations to reduce speeds and conflicts in parking lot. › Study the feasibility of constructing a parking lot and drop off loop on adjacent YRPA-owned lands.	4.6.2 4.2.1, 4.2.7, 4.6.3	County	$215,000

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Proposed Projects Map at Pioneer Elementary School



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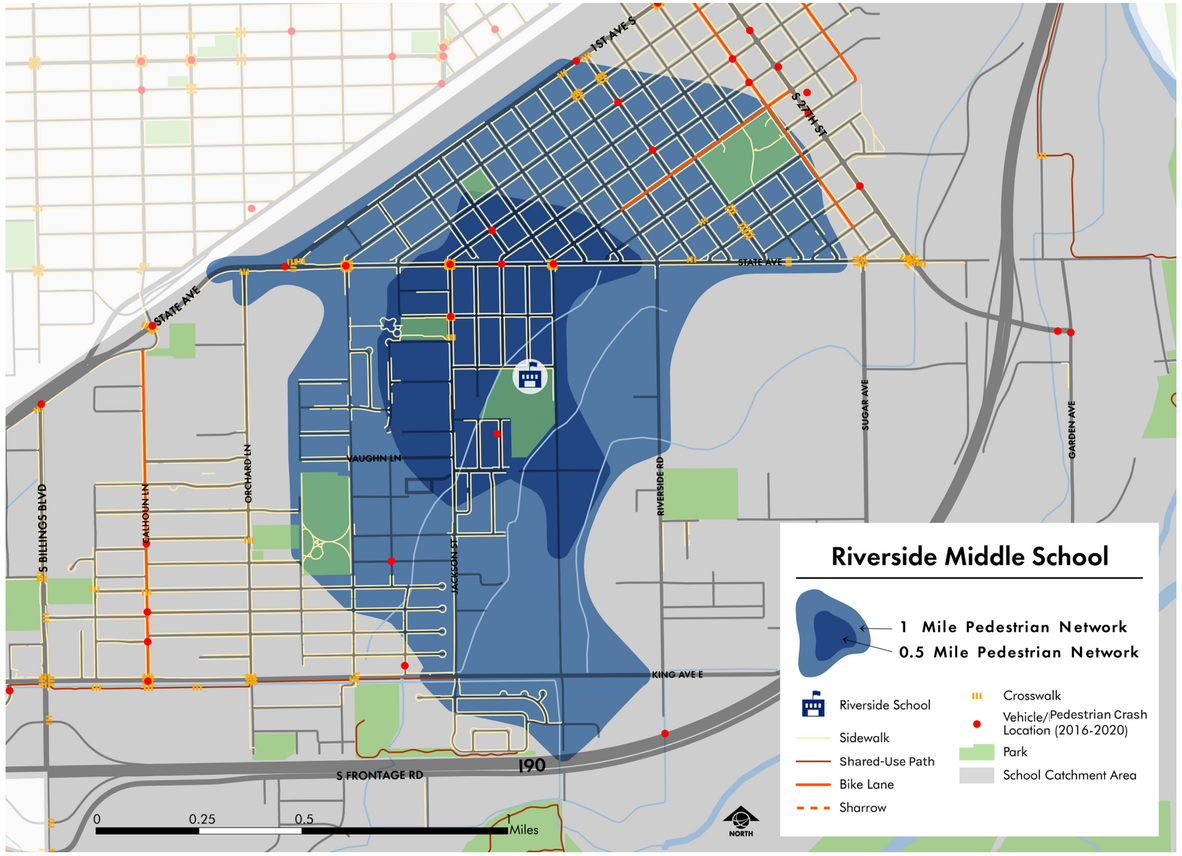
Riverside Middle School



Existing Conditions at Riverside Middle School

ABOUT THE SCHOOL	
Address	3700 Madison Ave, Billings, MT 59101
Number of Students (Grade Levels)	537 (6-8)
% of Students Eligible for Free & Reduced Lunch	100%
Arrival/Dismissal Times	8:10 AM / 3:10 PM

MAJOR STREETS & HIGHWAYS	AADT
Jackson	4,200
State	8,560



Community Safety Concerns at Riverside Middle School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Lack of School Zone signage. › Need for a crosswalk across Madison Ave. at the school's front entry.
Webmap Survey (4 comments)	› South Billings Blvd. has higher vehicle volumes and speeds than are safe for the volume of students walking and bicycling traffic that it also carries. › Need for traffic calming, sidewalks, and safe crossings at E King Ave. & Jackson/ Washington St. › Missing sidewalks on Washington St. south of Riverside School. › Lack of safe walking and bicycling route to bus stop at Blue Creek Rd. & Old Blue Creek Rd. bus stop.
Safety Busing	› 4 bus routes serve Riverside. All have safety busing stops that serve the East Billings/Downtown, Buena Vista, North Park, Sugar Avenue, Agri-Center Subdivision, and Murphy Avenue neighborhoods.

Arrival Observations at Riverside Middle School: May 4th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› Buses drop off students in the loop on Madison Ave. and pick up students in the lots east of the school on Washington St.
Vehicles	› Most private vehicles drop students off in the loop on Madison Ave. Some drop off occurs in the lot on Washington St.
School Staff Roles	› 2 Staff are usually posted at the main entry during arrival. No staff were present on the day of observation.
Adult Crossing Guards	› Orchard Elementary posts crossing guards at Jackson St. & State Ave. and at Jackson St. and Frances Ave.
Students Walking and Biking	› High volumes of students walking and biking were observed on Jackson St. › Some students were observed walking and biking to school from the north at State Ave. and Washington St.

Priority Concerns at Riverside Middle School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Riverside	› No School Zone exists in the area surrounding Riverside.	Yes
2	Madison Ave.	› The crosswalk in the drop off loop in front of the school is non ADA compliant, it's marking is faded, and it and does not continue across Madison Ave. › Observed vehicles exiting left from the drop off loop that may not have seen and did not yield to children crossing Madison Ave. at Adams St. › Madison Ave. has no marked crossings.	Yes
3	Jackson St.	› Jackson St. appears to be a primary student walking and biking route. › Missing, uneven, or curbwalk sidewalks in several places. › Accessible routes obstructed by mailboxes, parked cars, vegetation or non-compliant curb cuts. › There are no marked crossings on Jackson St. › Faded or unmarked crossings on all legs of the intersection of Jackson St. and King Ave E. › Vehicles blocking crosswalks to merge onto King Ave. E traffic. › CPTED concerns at vacant lots, trash, homes in disrepair, and abandoned vehicles.	No
4	State Ave.	› Faded crosswalk markings on all legs of the intersection of State Ave. & Washington St. › Faded crosswalk markings on all legs of the intersection of State Ave. & Jackson St. › CPTED concerns at abandoned homes and aggressive dogs.	No
5	Washington St.	› No School Zone signage on Washington St. › Missing sidewalk within the County-owned portions of the Washington St. South of Riverside. › The crossing at Grey Eagle Ditch is uneven and is not ADA compliant.	Yes

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
6	South Park Neighborhood	› Many intersections in this neighborhood do not have ADA compliant curb ramps.	No

Proposed Projects at Riverside Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding Riverside	School Speed Zone	› No School Zone exists in the area surrounding Riverside.	1	› Study and establish a School Zone and School Speed Zone surrounding Riverside in accordance with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design streets within the school zone to a speed limit that provides for the safety and access of people walking and biking within the school zone.	4.4.1 4.1.4	City	$522,500
2	Madison Ave.	Crossing	› Vehicles block the crosswalk in drop off loop. The crosswalk does not continue north across Madison Ave. making frequent student crossings and vehicle conflicts unsafe. › Madison Ave. has no marked crossings.	2	› Study and install a direct, well-marked, ADA compliant route with raised pedestrian table and curb extensions from main entry across drop off loop to north sidewalk of Madison Ave. › Study and install high visibility crosswalks and curb extensions at Madison Ave. intersections with; Jackson, Jefferson, and Washington Streets. Install School Zone Crossing signage at all intersections.	4.2.2, 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.2.2, 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.4.1	City	$46,000
3	Jackson St.	Crossing/ School Speed Zone	› Jackson St. appears to carry much of the student bicycling and walking traffic for both Riverside and Orchard Schools, but has missing, uneven, or curbwalk sidewalks, and no bicycle facilities. › Accessible routes obstructed by mailboxes, parked cars, vegetation or non-compliant curb cuts. › There are no marked crossings on Jackson St. › Faded or unmarked crossings on all legs of the intersection of Jackson St. and King Ave E. › Vehicles blocking crosswalks to merge onto King Ave. E traffic. › CPTED concerns at vacant lots, trash, homes in disrepair, and abandoned vehicles.	3	› Design the street to a speed limit that provides for the safety and access of people walking and biking. › Evaluate and install curb extensions and high visibility crosswalks at Jackson Street's intersections with; *Roosevelt Ave., Frances Ave., Orrel Dr., Vaughn Ln., Morgan Ave. , King Ave. East* › Install missing segments of sidewalk from King Ave. E. to Madison Ave.	4.1.4, 4.2.2, 4.2.4, 4.2.7, 4.2.8, 4.3.1 4.2.2, 4.2.7, 4.3.2, 4.3.3, 4.4.4, 4.5.4 4.2.1	City	$546,000

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Estimated costs shown are intended to represent a planning-level cost estimate and do not represent a detailed Engineer's Opinion of Probable Cost.

Proposed Projects at Riverside Middle School *(Continued across to next page)*

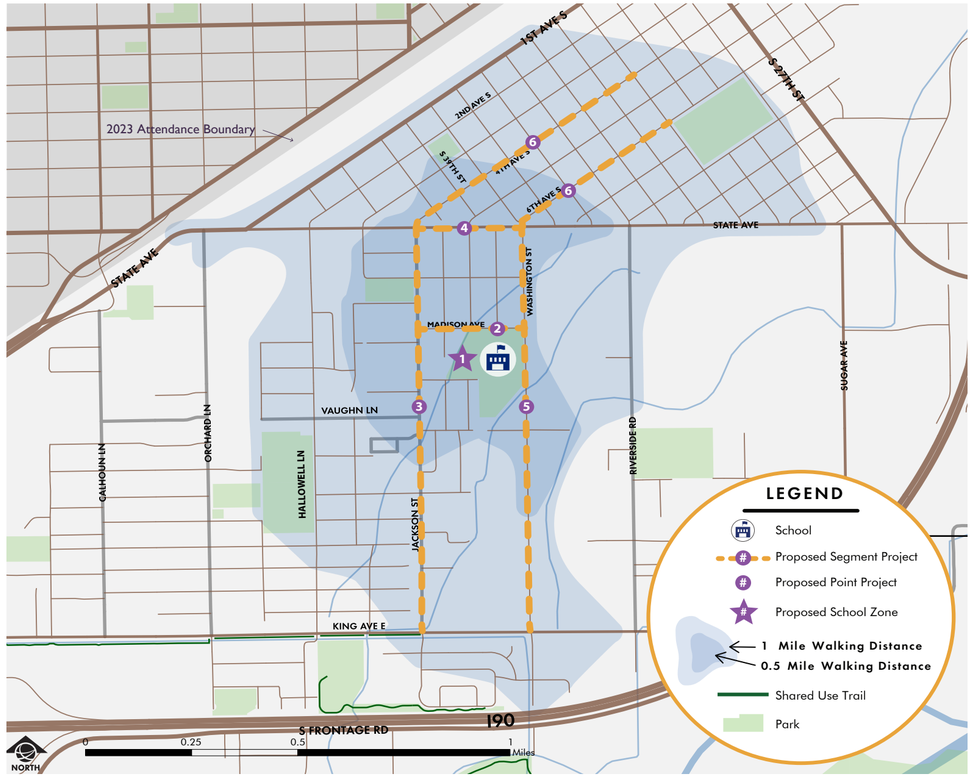
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
4	State Ave.	Crossing/ CPTED	› Faded crosswalk markings on all legs of the intersection of State Ave. & Washington St. › Faded crosswalk markings on all legs of the intersection of State Ave. & Jackson St. › CPTED concerns at abandoned homes and aggressive dogs.	4	› Install high visibility crossings on the west leg of the intersection of State Ave. & Washington St. › Install high visibility crossings on the east and west legs of the intersection of State Ave. & Jackson St.	4.3.1, 4.3.2, 4.3.3, 4.5.2, 4.5.3 4.3.1, 4.3.2, 4.3.3, 4.5.2, 4.5.3	City	$19,500
5	Washington St.	Crossing/ Sidewalk	› Many students cross King Ave. at Washington St. where faded crosswalk markings create hazard. › Much of Washington has no walking or biking facilities, which creates hazard when walking or biking for students living east of the school.	5	› Install curb extensions, pedestrian refuge island and high visibility crosswalks at the intersection of Washington Street & King Ave. E › Install missing sidewalks along Washington St.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.5.2 4.2.1, 4.2.7	City/ County	$315,000
6	South Park Neighborhood	ADA Compliance	› Many intersections in this neighborhood do not have ADA compliant curb ramps.	6	› Install ADA compliant curb ramps where missing at intersections along 4th Ave. S and 6th Ave. S. Evaluate installation of curb extensions when installing ramps.	4.3.1, 4.3.3	City	$26,000

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Proposed Projects Map at Riverside Middle School



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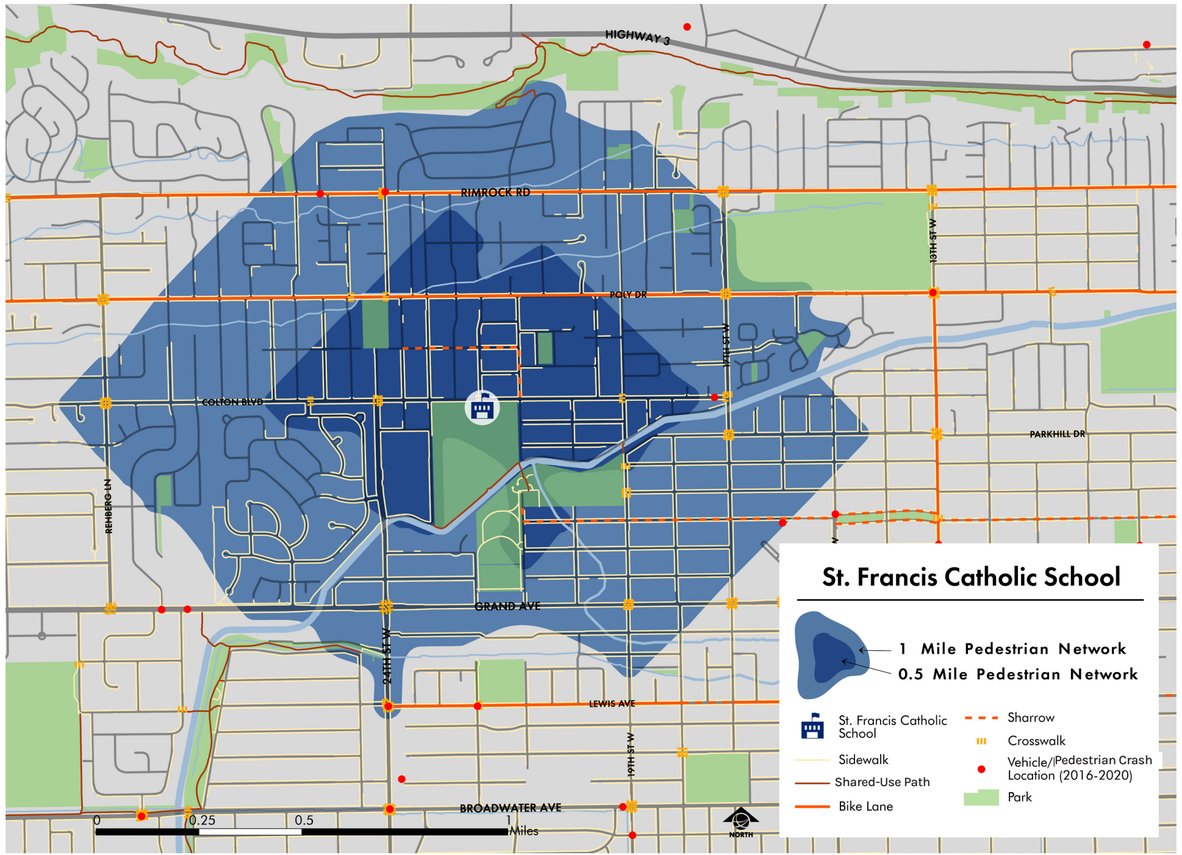
St. Francis Catholic School



Existing Conditions at St. Francis Catholic School

ABOUT THE SCHOOL	
Address	2202 Colton Blvd, Billings, MT 59102
Number of Students (Grade Levels)	620 (K-8)
% of Students Eligible for Free & Reduced Lunch	15%
Arrival/Dismissal Times	8:00 AM / 2:50 PM (K-4) 8:00 AM / 3:10 PM (5-8)

MAJOR STREETS & HIGHWAYS	AADT
Colton Blvd	5,070
24th St	6,780



Community Safety Concerns at St. Francis Catholic School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Crosswalk on Colton Blvd. and 22nd St. W. Thomas parking lot at dismissal and arrival; speed of traffic on Colton during dismissal and arrival; people parking on north side of Colton and walking across middle of street in between cars to get to SFC sidewalk.
Webmap Survey (4 comments)	› Unsafe Crossing at Poly Dr. & Downer Ln. › High vehicle and student traffic volumes at Colton Blvd. & 24th St. W., which is an unsafe intersection. › Unsafe intersections along Lyman Ave.
Crossing Guard	› Frequent speeding vehicles on Colton Blvd. Vehicles fail to yield to crossing guard and students in crosswalk.

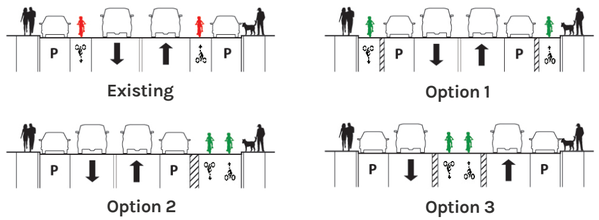
Arrival Observations at St. Francis Catholic School: March 19th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› St. Francis operates two bus routes for students living downtown and on Billings' West End. Drop off occurs in the east-bound parking lane of Colton Blvd. in front of the school.
Vehicles	› Private vehicles dropped off students in the loop between the school and parking lot. Vehicles were also seen dropping students off on Colton Blvd. on both sides of the street. › Vehicle observed running a stop sign at Lyman Ave. and Woody Dr.
School Staff Roles	› Staff are posted at the drop off to act as crossing guards for students crossing the drop off westward toward the parking lot.
Adult Crossing Guards	› A crossing guard is posted at the crosswalk in front of the school at 22nd St. W. and Colton Blvd.
Students Walking and Biking	› Students were observed walking to school from the east and west along Colton Blvd. and from the north via the crosswalk at 22nd St. W.

Priority Concerns at St. Francis Catholic School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Colton Blvd.	› Relatively wide streets and travel lanes encourage speeding. › Distances between crossings on Colton Blvd. are 1,400 feet on average. › Unmarked or faded crosswalk markings on Colton Blvd.	Yes
2	Colton Blvd. & 24th St. W.	› Higher vehicle and student traffic volumes. › Faded crosswalk markings.	Yes
3	Lyman Ave.	› A vehicle struck a child biking on this route in October of 2022. › Segments of Lyman Ave. have no walking or biking facilities. › The intersection of Lyman Ave. & Woody Dr. has no curb ramps.	Yes
4	24th St. W. & Solomon Ave.	› There are no marked crossings on 24th St. W. between Colton Blvd. and Grand Ave. a distance of about 2,500 feet. › No marked crossing exists on 24th St. W. to connect the shared use path along the BBWA canal.	No
5	Colton Blvd. at St Francis School	› Congestion and stacking during pick up and drop off observed. › Irregular and unpredictable vehicle movements observed while stacking exists.	Yes
6	Rose Park Neighborhood	› Many intersections in this neighborhood are missing curb ramps.	No

Proposed Projects at St. Francis Catholic School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Colton Blvd.	Bicycling/ Crossing/ Sidewalk/ Speeding	› Relatively wide streets and travel lanes encourage speeding. › Distances between crossings on Colton Blvd. are 1,400 on average. › Unmarked or faded crosswalk markings on Colton Blvd. › Missing curb ramps at many intersections along Colton Blvd. › Administrator reports safety concerns at the crosswalk of Colton Blvd. at 22nd St. W.	1	› Reconfigure Colton Blvd. from 17th St. W to Rehberg Ln. to install a protected bicycle facility and place the existing on-street parking lanes next to the travel lanes. Public input required. 	4.2.3, 4.2.5	City/ Land Owner	$875,500
					› Design Colton Blvd. to a speed limit that provides for the safety and access of children walking and biking within the school zone.	4.1.4		
					› Install a high visibility crossing, curb extensions, and an advanced traffic control signal at Colton Blvd. & 21st St. W.	4.3.1, 4.3.2, 4.3.3		
					› Install lighting along Colton Blvd. from 17th St. W. to Rehberg Ln. Public input required.	4.2.7		
					› Install curb ramps where missing along Colton Blvd.	4.3.3		
					› Install missing segment of sidewalk along the north side of Colton Blvd. between 21st St. W. and Woody Dr.	4.2.1		

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Proposed Projects at St. Francis Catholic School *(Continued across to next page)*

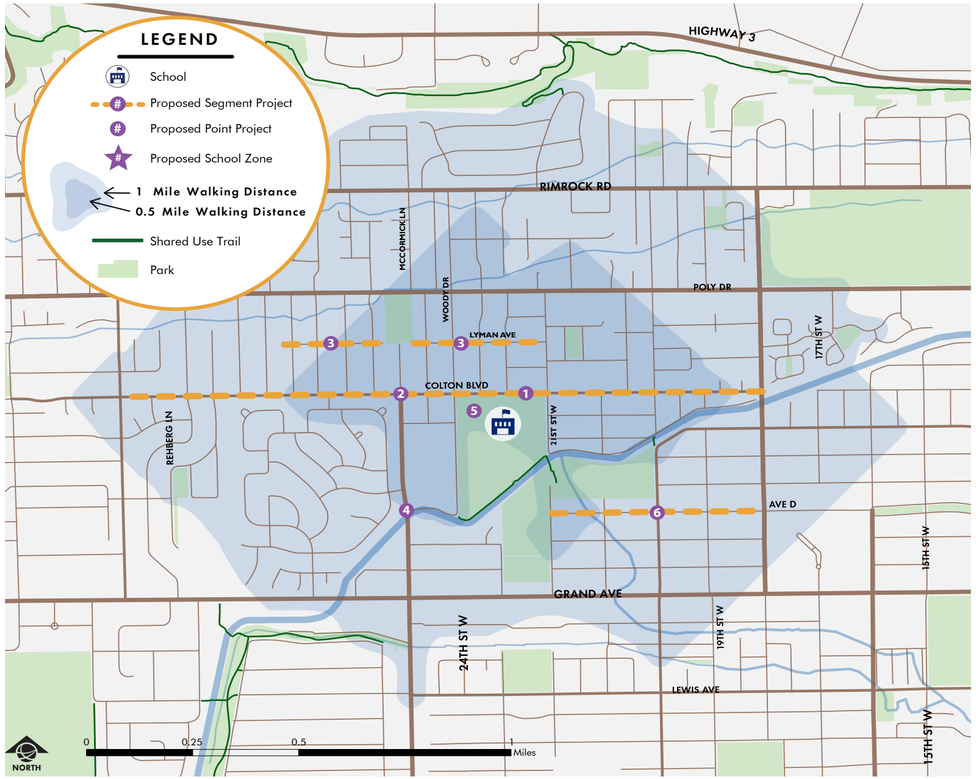
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
2	Colton Blvd. & 24th St. W.	Crossing/ School Speed Zone/ Bicycling	› Higher vehicle and student traffic volumes. › Faded crosswalk markings.	2	› Reconfigure this intersection to provide for the safety of students walking and biking to school, including recommendations from the phase 1 SRTS plan regarding this intersection. › Install bulb outs on the south leg of the intersection with lane width reduction. › Design intersection and future signal timing to accommodate protected bicycle facility per project #1 above.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.5.2, 4.5.3 4.3.1 4.2.5	City	$708,500
3	Lyman Ave. from Elizabeth St. to 21st St. W.	Speeding/ Sidewalks/ ADA Compliance	› A vehicle struck a child biking on this route in October of 2022. › Segments of Lyman Ave. have no walking or biking facilities. › The intersection of Lyman Ave. & Woody Dr. has no curb ramps.	3	› Install missing segments of sidewalk along Lyman Ave. › Install curb ramps at the intersection of Lyman Ave. & Woody Dr.	4.2.1, 4.2.7 4.3.3	City	$81,500
4	24th St. W. & Solomon Ave.	Crossing	› There are no marked crossings on 24th St. W between Colton Blvd. and Grand Ave. a distance of about 2,500 feet. › No marked crossing exists on 24th St. W to connect the shared use path along the BBWA canal.	4	› Study and install a high visibility crosswalk, curb extensions, and advanced traffic control signals at the intersection of 24th St. W & Solomon Ave.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.5.5	City	$377,000
5	Colton Blvd. at St Francis School	Congestion	› Congestion and stacking during pick up and drop off observed. › Irregular and unpredictable vehicle movements observed while stacking exists.	5	› Further evaluate dispersed drop off locations in the parking lot of St Thomas or the school-owned property south of St. Thomas.	4.6.2, 4.6.3, 4.3.3	School	$-
6	Rose Park Neighborhood	ADA Compliance	› Many intersections in this neighborhood are missing curb ramps.	6	› Install Curb ramps along Ave. D and 19th St. W. where missing.	4.3.3	City	$73,000

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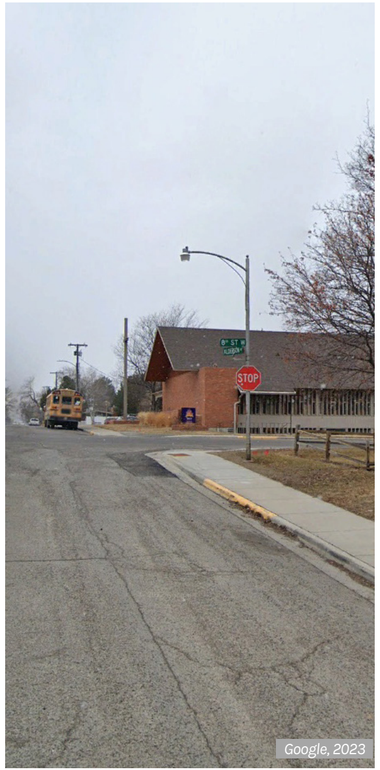
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Proposed Projects Map at St. Francis Catholic School



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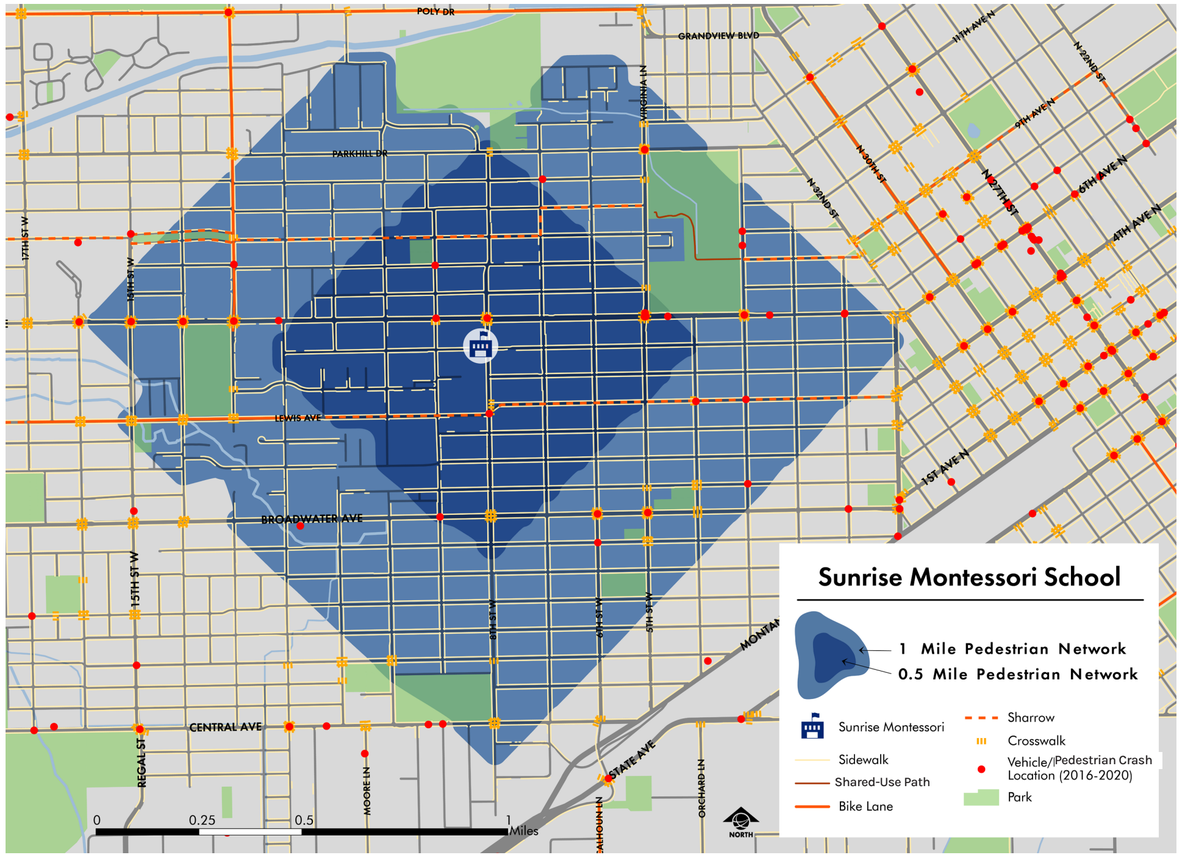
Sunrise Montessori School



Existing Conditions at Sunrise Montessori School

ABOUT THE SCHOOL	
Address	805 Alderson Ave, Billings, MT 59101
Number of Students (Grade Levels)	93 (PK-6)
% of Students Eligible for Free & Reduced Lunch	25%
Arrival/Dismissal Times	8:00 AM / 3:00 PM

MAJOR STREETS & HIGHWAYS	AADT
Grand Ave.	21,950
8th St. W.	6,010



Community Safety Concerns at Sunrise Montessori School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Students walking home cross 8th St. W. which has high speed vehicles that do not stop for students.
Webmap Survey (50 comments)	› Speeding vehicles, long distances between crossings, and poor visibility on the hill at 8th St. W. & Burlington Ave. make 8th St. W. dangerous for students walking and biking to school. › Speeding vehicles on Alderson Ave. between 8th St. W. and 9th St. W. › Lack of School Zone signage on streets surrounding the school. › Lack of curb cuts throughout neighborhood surrounding the school. › The majority of comments received were on Parkhill Dr. including; speeding and reckless vehicles, unsafe crossings, ADA violations, and congestion.
Crossing Guard	› A crossing guard is posted at 8th St. W. and Alderson at dismissal.
Safety Busing	› No safety busing is provided.

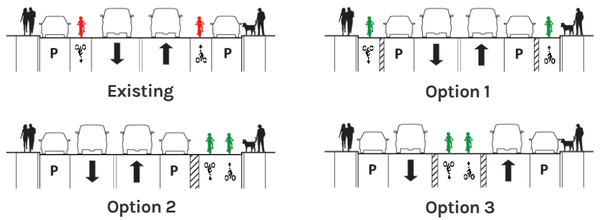
Arrival Observations at Sunrise Montessori School: March 11th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› No buses were observed during the arrival period.
Vehicles	› Private vehicle drop off occurs on both curbs of Alderson Ave. between 8th and 9th St. W. Others are dropped off in the parking lot west of the school, where vehicles stack through the lot and into Alderson Ave. Students wait in stacked vehicles until reaching the front of the line. › Apparent speeding on 8th St. W. and people driving who do not look for pedestrians when merging from side streets.
School Staff Roles	› Staff receive students as they disembark from their vehicles in the school parking lot. Staff then direct or accompany students to the playground or entry.
Students Walking and Biking	› Students were observed walking to school from the east along Alderson Ave.

Priority Concerns at Sunrise Montessori School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area surrounding the school	› Lack of school zone signage on streets surrounding the school.	Yes
2	8th St. W.	› There are no marked crossings on 8th St. W. from Parkhill Dr. to Grand Ave. a distance of 2,000 feet. › There are no marked crossings on 8th St. from Grand Ave. to Broadwater Ave., a distance of 2,400 feet. › Relatively wide travel lanes and street encourage speeding. › Many public comments of safety concerns at the intersection of 8th St. W. and Lewis Ave. › Missing curb ramps at many intersections along 8th St. W.	Yes
3	8th St. W. & Grand Ave.	› Faded crosswalk markings and relatively long crossing distances.	Yes
4	Alderson Ave.	› Reports of speeding vehicles use Alderson Ave. from 8th St. W. to 9th St. W. as a cut through to access commercial uses on Grand Ave. › Missing segment of sidewalk along the south side of the 700 block of Alderson Ave.	Yes
5	Parkhill Dr. from 6th to 8th St. W.	› Numerous public comments received reporting speeding and reckless vehicles, unsafe crossings, ADA violations, and congestion.	Yes
6	O Malley Dr. and Azelia Ln.	› Missing sidewalk along one side of O Malley Dr. and Azelia Ln.	No

Proposed Projects at Sunrise Montessori School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding School	School Speed Zone	› Lack of school zone and signage on streets surrounding the school.	1	› Study and establish a School Zone and School Speed Zone surrounding Sunrise Montessori in accordance with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design the streets within the school zone to a speed limit that provides for the safety and access of children walking and biking to school.	4.4.1 4.1.4	City	$55,000
2	8th St. W.	Crossing/ Speeding/ ADA Compliance	› There are no marked crossings on 8th St. W. from Parkhill Dr. to Grand Ave. a distance of 2,000 feet. › There are no marked crossings on 8th St. from Grand Ave. to Broadwater Ave., a distance of 2,400 feet › Relatively wide travel lanes and street encourage speeding. › Many public comments of safety concerns at the intersection of 8th St. W. and Lewis Ave. › Missing curb ramps at many intersections along 8th St. W.	2	› Reconfigure 8th St. W. to install protected bicycle facilities. Public input required.  › Design the street to a speed limit that provides for the safety and access of children walking and biking to school. › Ensure that existing street lighting is on during predawn and after dark student commute times. › Design of the intersection of 8th St. W. and Lewis Ave. to calm traffic and create safe crossing conditions.	4.2.3, 4.2.5 4.1.4 4.2.7 4.2.7, 4.3.1, 4.3.2	City/ Land Owner	$314,000

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Proposed Projects at Sunrise Montessori School *(Continued across to next page)*

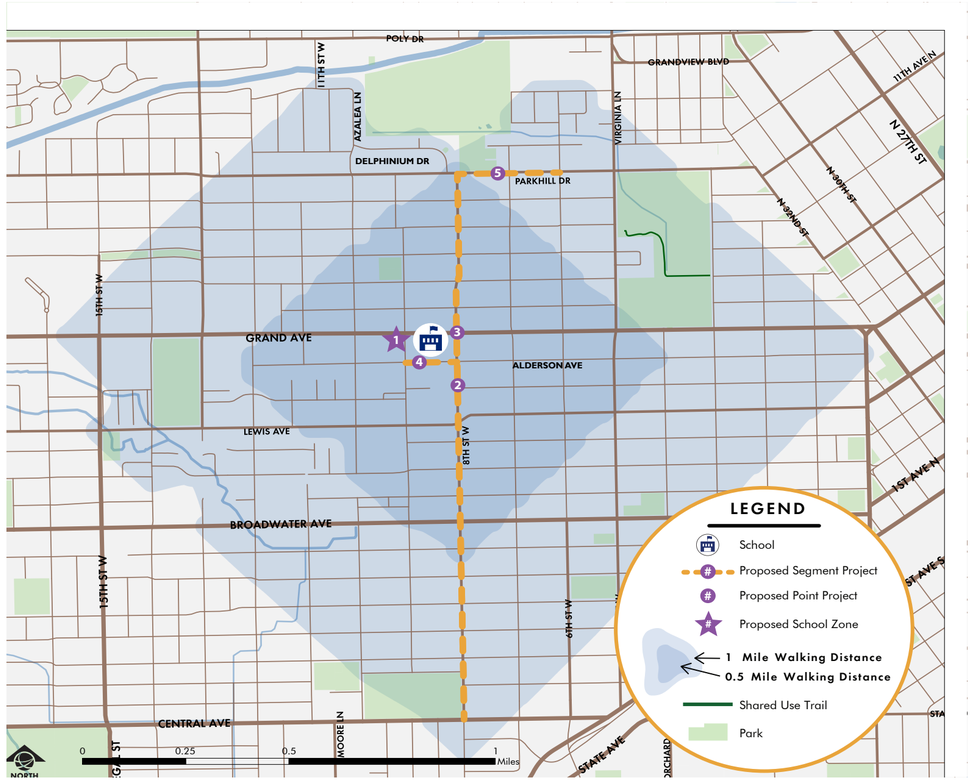
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
3	8th St. W. & Grand Ave.	Crossing	› Faded crosswalk markings and relatively long crossing distances.	3	› Study and install high visibility crosswalks on all legs of this intersection. › Further investigate lane width reductions, mid-crossing pedestrian refuge islands on the Grand Ave. legs, reducing curb radii and elimination of turning lanes on 8th St. W. to calm traffic and reduce crossing distances. Public input required.	4.3.2 4.2.3, 4.3.1, 4.3.3, 4.3.4, 4.5.2, 4.5.3	City	$224,000
4	Alderson Ave.	Speeding	› Reports of speeding vehicles use Alderson Ave. from 8th St. W. to 9th St. W. as a cut through to access commercial uses on Grand Ave. › Missing segment of sidewalk along the south side of the 700 block of Alderson Ave.	4	› Install curb extensions and high visibility crossings at the intersections at Alderson Ave. and 8th and 9th St. W. › Design the street to a speed limit that provides for the safety and access of children walking and biking on this street. › Install missing segment of sidewalk along the south side of the 700 block of Alderson Ave.	4.2.2, 4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.5.4 4.1.4 4.2.1	City	$104,500
5	Parkhill Dr. from 6th to 8th St. W.	Speeding/ Crossing/ ADA Compliance	› Numerous public comments received reporting speeding and reckless vehicles, unsafe crossings, ADA violations, and congestion.	5	› Install high visibility crosswalks and curb extensions at these intersections.	4.3.1, 4.3.2, 4.5.4	City	$117,000

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Proposed Projects Map at Sunrise Montessori School



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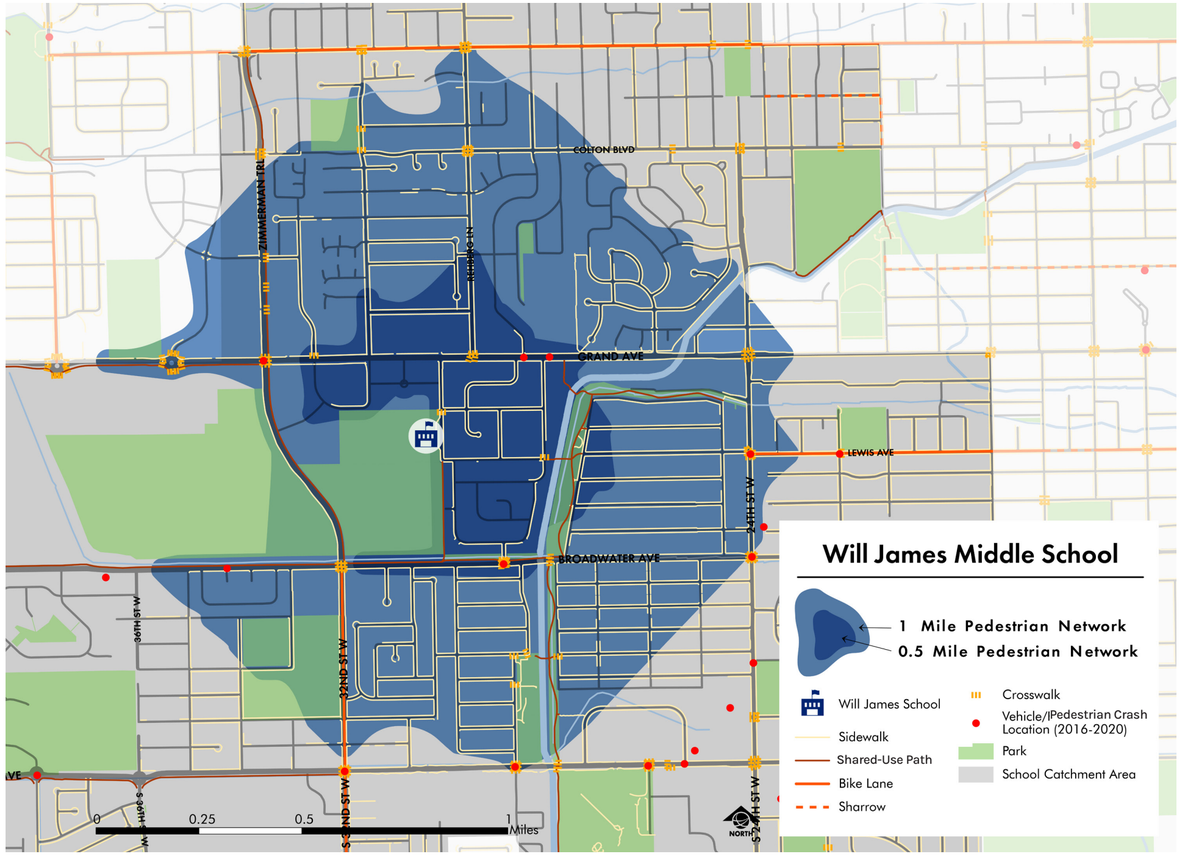
Will James Middle School



Existing Conditions at Will James Middle School

ABOUT THE SCHOOL	
Address	1200 30th St W, Billings, MT 59102
Number of Students (Grade Levels)	618 (6-8)
% of Students Eligible for Free & Reduced Lunch	38%
Arrival/Dismissal Times	8:10 AM / 3:10 PM

MAJOR STREETS & HIGHWAYS	AADT
Grand Ave.	18,760
Broadwater Ave.	11,070
Rehberg Ln.	7,160



Community Safety Concerns at Will James Middle School

SOURCE OF CONCERN	SAFETY CONCERN OF COMMENT
Principal	› Students crossing Grand Ave. at 30th St. W. rather than at signalized intersection at Rehberg Ln.
Webmap Survey (12 comments)	› Crossings on Rimrock Rd. are "few and far between." With poor pedestrian visibility at Rehberg Ln. › Vehicles fail to yield to pedestrians in the crosswalk at Zimmerman Trl. and Colton Blvd. › Insufficient lighting on Zimmerman Trl. between Broadwater Ave. and Grand Ave. › Vehicles fail to yield to pedestrians in the crosswalk at 24th St. W. and Lewis Ave. › High student walking and biking traffic volumes at Belvedere Dr. & 28th St. W. where parked vehicles obstruct view of crossing students, and vehicles speed. Missing School Zone signage. › Long distances between crossings and low visibility crossings along Broadwater Ave. Vehicles fail to yield to crossing students at Broadwater & 31st St. W. › Poor bicycle route connection at Broadwater Ave. and Lillis Park.
Safety Busing	› No safety busing provided.

Arrival Observations at Will James Middle School: May 8th, 2023

OBSERVATION TYPE	OBSERVATIONS
Busing	› A MET bus dropped off a large group of students on the west sidewalk of 30th St. W. north of Belvedere Dr. Many of these students walked in the roadway because of the narrow sidewalk.
Vehicles	› Fast-moving vehicles turning onto or off of Grand Ave. often make unpredictable, quick movements and do not yield to pedestrians in crosswalks of 30th St. W. Golden Valley Cir. and N. Meadowview Rd. › Significant stacking of vehicles turning left from Grand Ave. to 30th St. W. › Vehicular stacking and congestion on 30th St. W. during drop off. › Vehicles drop off at MET stop on 30th St. W. block bus stop. › Informal remote drop off observed in parking lot of Church of Jesus Christ of Latter-day Saints. › Vehicles dropping off students in crosswalk at 30th St. W. & Belvedere Dr. › Vehicles dropping off students in 30th St. W. south-bound parking lane and then turning left onto Belvedere Dr. › Vehicles stacked in north-bound travel lane of 30th St. W. to turn left into school drop off loop.
School Staff Roles	› No staff were observed to have any role in student arrival.
Adult crossing Guards	› No crossing guards were observed.
Students Walking and Biking	› Students were observed walking southward on the west sidewalk of Rehberg Ln. › Students were observed walking and biking to school via the crossing at Broadwater and 31st St. W. › Students were observed biking to school on the bridge crossing of the BBWA at Lillis Park and Lewis Ave.

Priority Concerns at Will James Middle School

#	LOCATION	OBSERVATIONS	COMMUNITY COMMENTS?
1	Area Surrounding Will James	› No School Zone exists in the area surrounding Will James.	Yes
2	Grand Ave.	› Students cross Grand Ave. at 30th St. W. rather than detour to crosswalk at Rehberg Ln. & Grand Ave. › Vehicles turning onto 30th St. W from Grand Ave. fail to yield to pedestrians in crosswalk. › Public comments report apparent speeding. › Ramp locations prolong pedestrian crossing time and exposure. › No bicycle facilities exist on Grand Ave. connecting 30th St. W. to recently-installed bike lanes on Rehberg Ln. › Curb walk along Grand Ave. puts students very close to 35 mph traffic, reducing their comfort and safety. › No bicycle facility exists connecting 30th St. W to the recently installed bike lanes on Rehberg Ln. › Multiple ADA violations on Grand Ave. southern sidewalk; spalling, obstructions.	Yes
3	30th St. W	› Faded crosswalk markings on all legs of the intersection of 30th St. W. & Belvedere Dr. › Visibility of students in crossing is reduced by parked vehicles near the intersection and vehicles dropping off in the intersection of 30th St. W. & Belvedere Dr. › Private vehicle drop off blocks crosswalks in the intersection of 30th St. W. & Belvedere Dr. › 30th St. W. has no bicycle facilities.	Yes
4	Rehberg Ln.	› Faded crosswalk markings on all legs of the intersection of Rehberg Ln. & Grand Ave. Vehicles block crossings. › Missing curb ramps at the intersection of Rehberg Ln. and Ave. E.	Yes
5	Broadwater Ave.	› The crossing at Broadwater Ave. & 31st St. W. has no markings. The nearest marked crossings are 840 feet to the west and 1,200 feet to the east. › Missing sidewalk along the south side of Broadwater Ave. 3500 block.	Yes
6	Lewis Ave. BBWA bridge and shared use path connection	› The shared use path connection from Lillis Park to 28th St. W. is non ADA compliant. › High vegetation, a narrow passage, and tall fencing exist on either side of this segment of shared use path. › The bridge is narrow, measuring about 6 feet wide, which is too narrow for two people to walk past each other comfortably and is not wide enough to serve as a bicycle facility. › Fencing on bridge appears to be in disrepair.	No
7	Lewis Ave. & 25th St. W.	› The intersection of Lewis Ave. & 25th St. W. has no curb ramps.	No

Proposed Projects at Will James Middle School *(Continued across to next page)*

#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
1	Area Surrounding Will James	School Speed Zone	› No School Zone exists in the area surrounding Will James.	1	› Study and establish a School Zone and School Speed Zone surrounding Will James in accordance with MUTCD standards and an updated School Zone Traffic Control Policy per programmatic recommendation 2.1. › Design streets within the school zone to a speed limit that provides for the safety and access of people walking and biking within the school zone.	4.4.1 4.1.4	City	$106,000
2	Grand Ave.	Speeding/ Crossing/ ADA Compliance	› Students cross Grand Ave. at 30th St. W, where no marked crossing exists, rather than detour to crosswalk at Rehberg Ln. & Grand Ave. › Vehicles turning onto 30th St. W. from Grand Ave. fail to yield to pedestrians in crosswalk. › Public comments report apparent speeding. › Ramp locations prolong pedestrian crossing time and exposure. › Curb walk along Grand Ave. puts students very close to 35 MPH traffic, reducing comfort and safety of people using sidewalk. › No bicycle facility exists connecting 30th St. W to the recently-installed bike lanes on Rehberg Ln. › Multiple ADA violations on Grand Ave. southern sidewalk; spalling, obstructions.	2	› Study and install high-visibility crosswalks and advanced traffic control signal for students crossing Grand Ave. at the intersection of Grand Ave. and 30th St. W. If studies find that a crosswalk is not warranted at this location, evaluate alternatives. › Install a high-visibility crosswalk and curb extensions across 30th St. W. at the intersection of Grand Ave. and 30th St. W. › Study the feasibility of eliminating full access across Grand Ave. at 30th St. W. & Grand Ave. and installing pedestrian refuge at mid-crossing. › Reconfigure Grand Ave. from Rehberg Ln. to 30th St. W. to install a protected bicycle facility and crossing to connect from 30th St. W. to Rehberg Ln. › Repair sidewalks surrounding the intersection of Grand Ave. & Rehberg Ln.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.4.3, 4.5.5 4.2.7, 4.3.1, 4.3.2, 4.3.3 4.3.4 4.2.3, 4.2.5, 4.2.7 4.2.1	City	$527,500
3	30th St. W.	Crossing	› Faded crosswalk markings on all legs of the intersection of 30th St. W. & Belvedere Dr. › Visibility of students in crossing at 30th St. W. & Belvedere Dr. is reduced by parked vehicles near the intersection and vehicles dropping off in intersection. › Private vehicle drop off blocks crosswalks at the intersection of 30th St. W. & Belvedere Dr. › 30th St. W has no bicycle facilities.	3	› Study and install curb extensions, high visibility crosswalks, and curb ramps at the intersection of 30th St. W. & Belvedere Dr. including the parking lot access and the existing crosswalk south of the school parking lot access. › Acquire right of way to install shared use path along 30th St. W. between the school and Grand Ave. if feasible.	4.2.7, 4.3.1, 4.3.2, 4.3.3, 4.5.4 4.2.6, 4.2.7	City	$65,000

Projects listed here have not been designed. Final design and implementation may be subject to further data collection including, but not limited to, a speed study, a traffic or pedestrian count, a warrant study, ROW acquisition, or a public input process. This process may make a project infeasible. The availability of funding for both initial construction and ongoing maintenance also contributes to project feasibility.

Here, advanced traffic control signals refer to a range of options from pedestrian activated Rectangular Rapid Flashing Beacons, to Pedestrian Hybrid Beacons, to full signals. Each location will need to be evaluated based on traffic volumes, speeds, and pedestrian crossing volumes to determine the correct treatment.

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Proposed Projects at Will James Middle School *(Continued across to next page)*

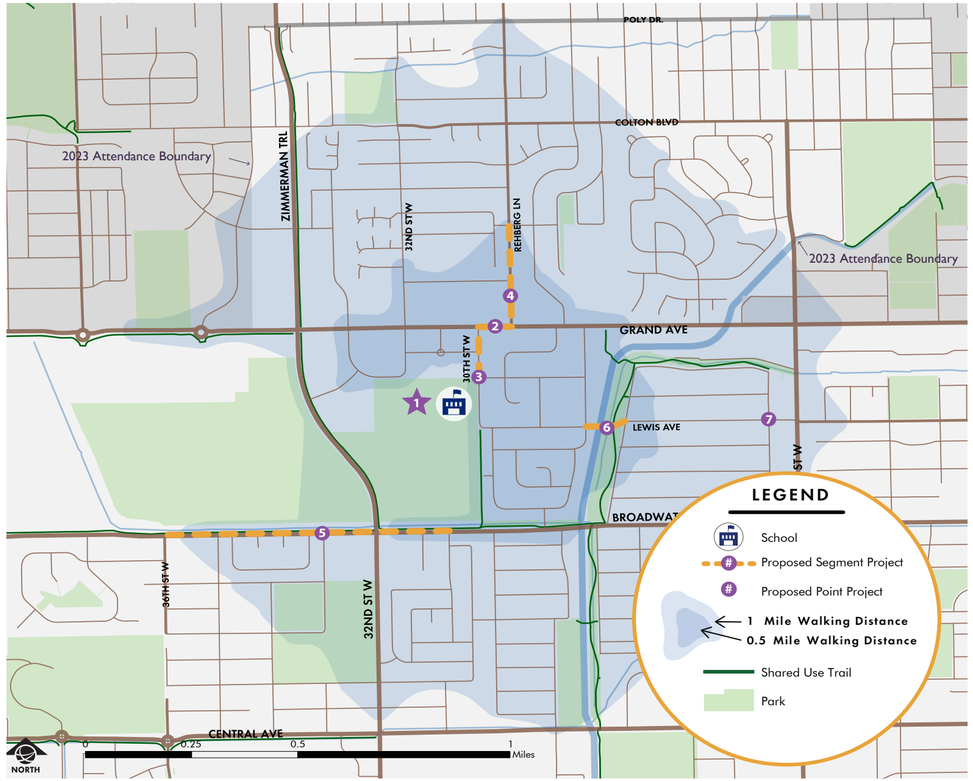
#	LOCATION	TOPIC	ISSUE	#	RECOMMENDATION	TOOLBOX ID	RESP PARTY	EST COST
4	Rehberg Ln.	Crossing/ Speeding/ ADA Compliance	› Faded crosswalk markings on all legs of the intersection of Rehberg Ln. & Grand Ave. Vehicles block crossings. › Missing curb ramps at the intersections of Rehberg Ln. and Ave. E, and Rehberg Ln. and Parkhill Dr.	4	› Study and install high-visibility crosswalks on all legs of the intersection of Rehberg Ln. & Grand Ave. › Install curb ramps at the at the intersections of Rehberg Ln. and Ave. E, and Rehberg Ln. and Parkhill Dr.	4.2.7, 4.3.1, 4.3.2, 4.4.3 4.3.3	City	$49,000
5	Broadwater Ave.	Crossing/ Sidewalk	› The crossing at Broadwater Ave. and 31st St. W. has no markings. › The nearest marked crossings to the unmarked crossing at Broadwater Ave. and 31st St. W. are 840 feet to the west and 1,200 feet to the east. › The 3500 block of Broadwater Ave. has no sidewalk on its south side.	5	› Study and install high-visibility crossing, curb extensions and advanced traffic control signal for students crossing Broadwater Ave. at this location in conjunction with improvements planned in CIP. › Install sidewalk along the south side of the 3500 block of Broadwater Ave.	4.2.7, 4.3.1, 4.3.2, 4.4.3, 4.5.5 4.2.1. 4.2.7	City	$415,000
6	Lewis Ave. BBWA bridge and shared use path connection	Shared Use Path/ ADA Compliance	› The shared use path connection from Lillis Park to 28th St. W. is non ADA compliant › High vegetation, a narrow passage, and tall fencing on either side of this shared use path. › The bridge is narrow, measuring about 6 feet wide, which is too narrow for two people to walk past each other comfortably and is not wide enough to serve as a bicycle facility. › Fencing on bridge appears to be in disrepair.	6	› Widen the Lewis Ave. pedestrian bridge and shared use path connection from Lillis Park to 28th St. W. › Improve the shared use path connection from Lillis Park to 28th St. W. to make it compliant with ADA and CPTED guidelines.	4.3.5 4.2.7, 4.3.3	City	$143,000
7	Lewis Ave. & 25th St. W.	ADA Compliance	› The intersection of Lewis Ave. & 25th St. W. has no curb ramps.	7	› Install ADA compliant curb ramps and curb extensions at this intersection.	4.3.1, 4.3.3	City	$52,000

Projects listed here have not been designed. Final design and implementation may be subject to further data collection including, but not limited to, a speed study, a traffic or pedestrian count, a warrant study, ROW acquisition, or a public input process. This process may make a project infeasible. The availability of funding for both initial construction and ongoing maintenance also contributes to project feasibility.

Here, advanced traffic control signals refer to a range of options from pedestrian activated Rectangular Rapid Flashing Beacons, to Pedestrian Hybrid Beacons, to full signals. Each location will need to be evaluated based on traffic volumes, speeds, and pedestrian crossing volumes to determine the correct treatment.

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Proposed Projects Map at Will James Middle School



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4.0 Infrastructure Toolbox

4.1 Introduction and Key Concepts

4.1.1 Purpose of This Chapter
4.1.2 Weighing Value, Balancing Interests
4.1.3 Separation and Protection
4.1.4 Traffic Calming
4.1.5 Pilot Projects

4.2 Street Treatments

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4.2.2 Speed Humps
4.2.3 Lane Reconfiguration
4.2.4 Traffic Circles
4.2.5 Protected Bike Lane
4.2.6 Shared Use Path
4.2.7 Lighting
4.2.8 Bicycle Boulevard
4.2.9 Woonerf
4.2.10 Right-Turn Design

4.3 Crossing Treatments

4.3.1 Curb Bulb-outs/Extensions
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4.3.3 ADA Ramp/ADA Compliant Route
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4.3.5 Bridges and Tunnels

4.4 Signs and Markings

4.4.1 School Zones
4.4.2 Stop Signs
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4.4.4 Parking Restriction Signs

4.5 Signals

4.5.1 Traffic Signals
4.5.2 Leading Pedestrian Interval (LPI)
4.5.3 No RTOR
4.5.4 Pedestrian Hybrid Beacons
4.5.5 Rectangular Rapid Flashing Beacons

4.6 Other

4.6.1 Bicycle Parking
4.6.2 Arrival-Dismissal Traffic Safety Plan
4.6.3 Remote Drop Off Facility



Volunteers, consultant and staff at Lewis and Clark Middle School

4.1 INTRODUCTION AND KEY CONCEPTS

4.1.1 Purpose of This Chapter

The purpose of this chapter is to help execute the projects outlined in Chapter 3 and inform future decisions of what gets built where.

While speeding and safety issues can be addressed through education, encouragement, and enforcement, the design of a roadway is the most effective tool to communicate 24 hours-a-day, 7 days-a-week how a street should be safely used.

Each project proposed in Chapter 3 has a "Toolbox ID" number that corresponds to the "tools," or engineering treatments, described in this chapter. These treatments can improve safety for all street users and for students walking and biking to school. When completed, the intent of these tools is to meet the standard of safety that a parent must perceive to allow their child to walk or bike to school.

The project recommendations and infrastructure toolbox contained in this plan do not include every possible engineering solution. Further analysis by City staff may be needed to adapt this plan's proposals to their specific locations. All projects should use applicable City, State, and Federal design guidelines and manuals such as the NACTO Urban Bikeway Design Guide, the Manual on Uniform Traffic Control Devices (MUTCD), or Federal Highway Administration (FHWA) publications.

4.1.2 Weighing Value, Balancing Interests

Whether we call it a street, an avenue, a road, or a right-of-way (ROW), one thing is almost always true: street space is limited.

The decision of whether to use that space for people to drive, park, ride bikes, walk, or plant trees is more than a straight forward engineering problem; it is a decision that must be made by weighing value and balancing interests. The projects proposed in Chapter 3 will require those who execute them gather public input and make value judgments about how to use the limited space on the streets where they are proposed. For example, seven feet of street width can either be a buffered bike lane or street parking, but it cannot be both. People who live on that street might have an interest in that space being used for parking. On the other hand, students using that street to bike to school might have an interest in the added safety that a bike lane provides. In this case, the value of street parking must be weighed against the value of students' increased safety on the street in question. If the public process finds a project recommendation infeasible and if another route is available with less impact to home owners or businesses with the same level of protection and safety, then a project could be adjusted to accommodate a solution that fits the needs of the area. Accessibility for emergency services is also a consideration.

Completing the projects in Chapter 3 will require similar value judgments, often weighing speed, capacity, parking, and safety against each other to maximize public benefit. The engineers, staff, elected officials, and community members who execute this plan will have to decide what use of our public street space has greatest value.

- Many of the tools described in this chapter were developed during Phase 1 of the Safe Routes to School Plan Update by Toole Design and are recreated here for ease of reference with permission of the Billings MPO.
- Costs listed in this chapter account for initial construction/ installation costs. Operations, maintenance, and secondary costs must also be considered when engineering and design occurs.

4.1.3 Separation and Protection

This plan uses the terms ***"separated"*** and ***"protected"*** to describe street treatments like sidewalks, paths, and bike lanes, also known as facilities. Different facilities may need more separation or protection than others to feel safe depending on the road. Ideally, all facilities would have both separation and protection, but in many cases, increased protection can make up for lack of separation.

A ***Separated*** walking or biking route is set apart from the roadway and is buffered from vehicular traffic by some horizontal distance, usually five feet or more. The most common form of separation is a boulevard, or strip of landscape between the street and sidewalk.

A ***Protected*** walking or biking route has some kind of verticle obstacle between it and vehicular traffic that physically prevents a vehicle from entering the facility. Examples include curbs, bollards, street trees, large rocks, guard rails or parked cars.

Infrastructure tools that provide separation or protection are marked with this badge:

SP



Crossing guard at pedestrian refuge island



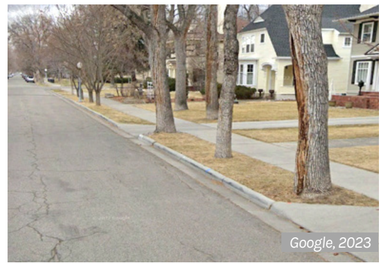
This bike lane on Lewis Ave. is neither separated nor protected.



This sidewalk on Broadwater Ave. has some protection because of the curb, but is not separated. This is called "curbwalk" and should be avoided as an SRTS solution whenever possible.



This multiuse path on Wicks Lane is separated, but not protected.



This sidewalk on Clark Ave. is separated and, because of the curb and frequent street trees, has a higher level of protection.

4.1.4 Traffic Calming

Many of the tools and projects in this plan are intended to reduce traffic speeds, or calm traffic. Some traffic calming tools change the configuration of a roadway, and others change a person's perception of a street, causing them to reduce their speed.

According to the Federal Highway Administration (FHWA) controlling traffic speed is one of the most important tools for reducing fatal and serious injury crashes. A person hit by a car traveling at 35 MPH is five times more likely to die than a person hit by a car traveling at 20 MPH.

The National Association of City Transportation Officials or NACTO, recommends speeds of 25 miles per hour or less on streets with significant student traffic.

Roadside features that produce visual friction, like on-street parking, sidewalks, or buildings, are associated with lower speeds, while roadways with wide shoulders, large building setbacks, and residential-type land development were associated with higher speeds (Ivan, Garrick, and Hanson 2009). Creating visual friction through roadside design can be an effective way to slow traffic, particularly on low-speed roadways with pedestrian and bicyclist activity.

Infrastructure tools that provide traffic calming are marked with this badge:

TC



Figure 2.01 - Median:
Medians create a pinch-point for traffic in the center of the roadway and, when they include pedestrian refuge islands, can reduce crossing distances



Figure 2.02 - Pinch-point:
Pinch-points restrict vehicles from moving at high speeds and can expand the sidewalk for pedestrians at intersections as curb extensions or at mid-block locations.

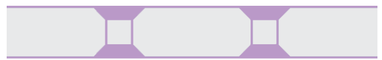


Figure 2.03 - Speed Hump:
Speed humps vertically deflect vehicles and improve safety and visibility of people walking when they are combined with a crosswalk.



Figure 2.03 - On Street Parking
Parking on the street effectively narrows the street, slows traffic by creating "visual friction", and is one of the easiest, cheapest things community members can do to calm traffic in their neighborhoods.

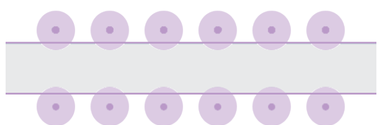


Figure 2.02 - Street Trees
Trees narrow a driver's visual field and, when included in boulevard sidewalk configurations, protect people on the sidewalk.



Figure 2.01 - Traffic Circles
Traffic Circles reduce traffic speeds at intersections by requiring motorists to move with caution through conflict points.

The traffic calming measures to the left are adapted from the NACTO Urban Street Design Guide, can be used to calm traffic in many rural settings.

4.1.5 Pilot Projects

A ***Pilot Project***, also known as a ***Pop-Up Project***, is a low-cost, temporary way to test projects' affects on behavior and safety of all street users.

Pop-up projects are low-cost, low-risk ways for citizens and agencies to work together to collect data on, and demonstrate safer street designs for all people using the street.

Infrastructure tools that can be built as a pilot project are marked with this badge:

P

References and Resources:

- NACTO Speed Reduction Mechanisms
- FHWA Safe System Approach for Speed Management

- More Pilot Projects can be found here.



Western Transportation Institute

4.2.1 - Sidewalks SP

Sidewalks are the foundation of our pedestrian network. While many neighborhoods in Billings have built-out sidewalk networks, many areas in the city do not have sidewalks at all. Sidewalks provide the greatest benefit to people when they are wide enough for two people to walk side-by-side, maintained in good condition with few bumps or cracks, kept clear of debris and overgrowing plants, and built with curbs.



New sidewalk remains level across driveway



Severe cracking creates uneven and hazardous walking surfaces


Misplaced bins can block sidewalks

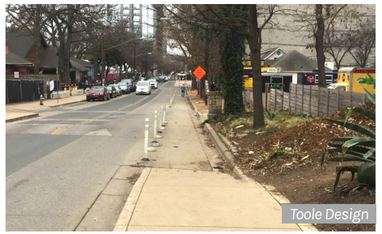
What is the purpose of Sidewalks?

- Improves safety and comfort of people walking by separating them from faster-moving bikes and cars.
- Provides a dedicated space away from vehicular traffic for children to walk, play, or learn to ride a bike.

Where can they be installed?

- The Billings Urban Area Long-Range Transportation Plan, the Safe Routes to School Plan, and the Capital Improvement Plan identify locations for new sidewalk construction and existing sidewalk repair and rehabilitation projects.
- Developers often have to build new sidewalks or repair existing sidewalks with new development.
- Ideally, existing neighborhoods should have sidewalks on at least one side of residential streets. New developments in the City, (with the exception of parcels developed via master site plans i.e. apartments or condos all on the same lot) are required to have sidewalks on both sides of the street. School routes may be locations where sidewalks should be installed on both sides of residential streets to provide for direct access from homes to school, as well as to areas used for off-site drop-off and pick-up.
- Along existing sidewalks, opportunities are identified to remove barriers such as light poles or other obstructions, aiming to maintain a 4-ft clear path. Opportunities to limit or narrow driveways (aka curb cuts) may also be identified, which can create conflicts between people walking and people driving.

How much does it cost?



Alternative sidewalk design


Accessible routes should have 4 feet minimum clear width


Vegetation should be trimmed to maintain minimum clear width

$$-$$$$: Building new sidewalks can be an expensive and challenging engineering project. It can require coordinating with nearby property owners, redesign and reconstruction of driveways, removal of encroaching private improvements, and building new stormwater infrastructure.

How long does it take to install?

1–2 Years: Design and outreach must be completed before construction can begin.

Additional Information:

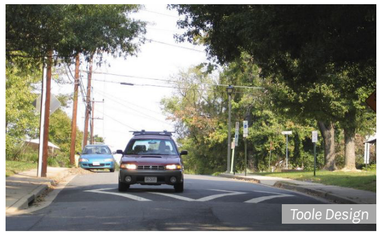
» When building conventional sidewalks is not feasible, other strategies may be considered for creating safer walking routes to school, such as Shared Streets, reallocating road space to create dedicated walking space, and alternative surfacing materials.

References and Resources:

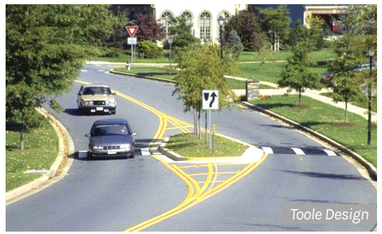
» United States Access Board Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)

4.2.2 - Speed Humps P TC

Speed humps are a raised area that extends across the street to slow traffic by vertically deflecting vehicles. Speed humps can be combined with crosswalks at intersections or mid-block locations



Speed Hump



Speed humps installed on hills help slow traffic coming downhill



Speed humps help with traffic calming on streets that have high numbers of bicyclists

What is the purpose of Speed Humps?

- Slow people driving to make streets safer and more comfortable for people walking and biking.
- When combined with a crosswalk, speed humps improve pedestrian visibility.

Where can they be installed?

- Speed humps are usually installed on neighborhood streets.
- There is a City-approved design template for speed humps that should be used to ensure consistency across the City.

How much does it cost?

$: Speed humps are low-cost ways to slow vehicular traffic to safer speeds.

How long does it take to install?

1–2 years: Priority streets with high speeds are usually identified one year and construction happens the next year.

References and Resources:

- NACTO Urban Street Design Guide
- Billings Public Works Traffic Calming
- City Standard Modifications Drawing: Speed Hump

4.2.3 - Lane Reconfiguration SP P TC

A lane reconfiguration changes how a street's width is divided into lanes or uses. It can change the number or width of travel lanes for cars, add or change parking. In some cases lane reconfigurations can repurpose the width of a turn lane for wider sidewalks, street trees, bike lanes, or more efficient transit. When considering a lane reconfiguration, a strong public process and careful analysis should be used to determine the desired function of a street.



Street before lane reconfiguration



Street after lane reconfiguration



Street after lane reconfiguration

What is the purpose of Lane Reconfiguration?

On multi-lane streets, a lane reconfiguration can improve safety for all roadway users.

- Narrowing the width of travel lanes can also slow people driving and create space on the street to make it safer and more comfortable for people walking and biking. A person hit by a car traveling at 35 MPH is five times more likely to die than a person hit by a car traveling at 20 MPH.
- Makes it easier and safer for people to cross busy streets by reducing the number of traffic lanes a person has to cross. When people cross streets with more than one lane in each direction they encounter a 'multiple threat.'
- Slows people driving, which makes the street safer for everyone. When there's one lane in each direction, a person driving can only go as fast as the person in front of them.
- Makes it safer for people driving to make a left turn when a center turn lane is added, and a single lane of traffic helps manage drivers cutting in and out of lanes, which helps reduce collisions.
- Reallocates space on the street to widen sidewalks, plant street trees, add curb extensions, or install protected bike lanes.

Where can a lane reconfiguration be installed?

- For all lane reconfiguration projects, technical traffic analysis and meaningful public input are conducted to determine the desired function of a street.
- When a street is being resurfaced or reconstructed, there is an opportunity to change the configuration of lanes on the street. Traffic conditions and crash records are evaluated to identify whether a road or lane diet is needed and if parking can be modified.
- Streets that are good candidates for lane reconfigurations typically have lower volumes than would be expected for a street with the existing configuration.
- For parking lane reconfigurations, parking use and supply is carefully studied and inform the proposed designs that are vetted through a public process before moving forward.
- Any modifications made for lane reconfigurations are designed by an engineer

4.2.3 - Lane Reconfiguration Continued



A three-lane to two-lane reconfiguration



Lane reconfiguration



Center turn lane narrowed to provide space for bike lanes

How much does a lane reconfiguration cost?

$-$$$$: The cost of a lane reconfiguration is highly variable; it may involve removing the lane lines from the street and repainting new lane lines, which is often done at night or on weekends to minimize traffic disruptions.

When a lane reduction is done as part of a larger project to resurface or reconstruct a street, it can be accomplished for relatively low costs.

How long does a lane reconfiguration take to install?

>1 year: Community input is gathered through presentations and public comment at the local governing bodies which influences design decisions in the first year, and construction typically follows the year after.

References and Resources:

» FHWA Proven Safety Countermeasures

» FHWA Road Diet

4.2.4 - Traffic Circles P TC

Traffic Circles, or mini roundabouts, are circular markings or raised islands that reduce traffic speeds at uncontrolled intersections in residential neighborhoods by horizontally deflecting vehicles and causing people driving to move with caution through conflict points. Neighborhood traffic circles are different than roundabouts in that they do not have channelized lanes or medians to direct incoming lanes.



Traffic Circles can be quickly and cheaply installed as Pilot Projects



Traffic Circles provide opportunities for landscaping and beautification



Traffic Circles in Missoula calm and discourage cut through traffic

What is the purpose of Traffic Circles?

- Slow traffic at uncontrolled intersections to make them safer for all street users.
- Opportunities for landscaping.

Where can they be installed?

- At 4-way, uncontrolled intersections on residential streets; streets with < 30 mph speed limit; intersections that are not offset (all 4 “legs” of the intersection meet at right angles, and the path of travel through the intersection does not require a change in course).
- Streets with little heavy truck or large vehicle traffic.
- Where 15’ minimum of clearance is possible between the edge of the traffic circle to the edge of the curb radius; if curb radii are small, this distance may need to be larger.
- Winter maintenance needs include reflective vertical elements, such as reflective delineators. Traffic circles require more articulation of snow removal equipment.

How much does it cost?

$-$$: Because traffic circles can be installed as either simple markings with reflectors or as raised islands, their cost is relatively low and can be installed as pilot projects.

References and Resources:

» Bike Walk Montana: Pop-up Traffic Calming

» NACTO Urban Street Design Guide

4.2.5 - Protected Bike Lane SP P TC

A protected bike lane, also known as a cycle track, separated bikeway, or on-street bike path is a dedicated one, or two-way bike facility that provides the protection of a separated path within a roadway. Protected bike lanes can be at street level or raised to provide vertical separation from the adjacent vehicle lane.



A protected bike lane created with a lane reconfiguration and re-striping



A protected bike lane at sidewalk level in Missoula, MT



A two-way protected bike lane with temporary pin-down curb

What is the purpose of a Protected Bike Lane?

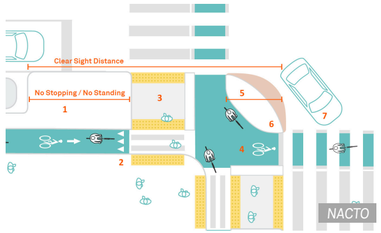
- Dedicates and protects space for bicyclists by improving perceived comfort and safety. Eliminates risk and fear of collisions with overtaking vehicles.
- Reduces risk of 'dooring' compared to an unprotected bike lane if buffer between bike lane and cars is wide enough, and eliminates the risk of a doored bicyclist being run over by a motor vehicle. Risk of dooring from passenger doors may still be present. There is also a continued risk, similar to an unprotected bike lane, of pedestrian/bicycle conflict when pedestrians cross the lane.
- Low implementation cost when making use of existing pavement and drainage and using parking lane or other barrier for protection from traffic.
- More attractive to a wide range of bicyclists at all levels and ages.
- Two-way protected bike lanes are wide enough for snow removal without requiring special equipment.

Where can they be installed?

- On streets where existing bike lanes are not perceived as safe enough to encourage students to use them.
- On streets with relatively few conflicts such as driveways or cross streets on one side of the street.
- On streets with frequent conflicts like driveways or cross streets, a center, two-way protected bike lane can be used.
- On streets where there is not enough room for a one-way protected bike lane on both sides of the street, a two-way lane reduces the street width needed for protection.
- On streets where lane reconfigurations and lane width reductions are desirable for calming traffic.
- On streets for which conflicts at intersections can be effectively mitigated using parking lane setbacks, bicycle markings through the intersection, and other signalized intersection treatments.
- Along streets with high bicycle volumes.



A protected bike lane at a driveway



A protected intersection accommodates curb extensions and protected bike lanes



Planters provide economical beauty and protection

How much does it cost?

$$-$$$$: The cost of a protected bike lane varies widely depending on the kind of protection provided, whether the installation is permanent or temporary, and the length of the protected lane.

The kind of protection; striping and parked cars, temporary pin-down curb, or permanent concrete curb will significantly affect cost.

How long does it take to install?

Varies. Planning, public input, design, engineering, and construction are all components of the installation process.

References and Resources

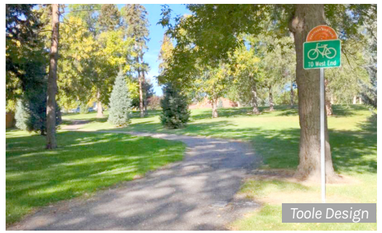
- Billings Area Bikeway and Trail Master Plan
- NACTO Urban Bikeway Design Guide
- AASHTO Guide for the Development of Bicycle Facilities
- City of Billings Subdivision Regulations

4.2.6 - Shared Use Path SP

Also known as multi-use trails, shared use paths are paved paths that are horizontally separated from the roadway and shared by people walking or biking. Ideally, when a shared use path is beside a high speed, high volume roadway, they include vertical protection in the form of curbs, trees, or physical barriers like guard rails.



Shared use paths in Alexandria, VA



Shared use path in Billings



Shared use path in Austin, TX

What is the purpose of a Shared Use Path?

- Provides a high level of safety and user comfort by separating and protecting them from vehicle traffic.
- Serves both transportation and recreation users.
- Can accommodate two-way pedestrian and bicycle use.
- May include connections to the on-street bicycle and sidewalk network.
- Should be aesthetically appealing and feel safe to use.
- May provide opportunities for economic development along the path corridor.

Where can they be installed?

- Shared use paths can be built independent from the road network or alongside a roadway where traffic volumes and speeds are too high, or where there is not enough space for bike lanes in the existing roadway.
- Prioritization criteria based on proximity to destinations, residential populations, connectivity, and community support all contribute to the shared use path-siting process.
- Opportunities to integrate shared use paths in proposed development projects are consistently looked for, as well as outreach and education opportunities for local bicycle, pedestrian, and environmental advocacy groups.
- A 10 ft-wide hard surface path is ideal, but may need to narrow the shared use path under constrained circumstances.

Shared use paths are constructed as part of the construction or reconstruction of arterial roads within the City of Billings. On arterials, shared use path are being built on one side with a standard sidewalk on the other.

How much does it cost?

$$$: Costs for shared use paths vary, but are typically among the most expensive types of bicycle and pedestrian facilities. Components of shared-use path design and construction include:


Recent investments induce demand near Ben Steele Middle School



Shared Use Path along Shiloh Rd.



Shared Use Paths provide great connection to recreational amenities for the whole family

- Right-of-way
- Surface material
- Lighting
- Landscaping
- Terrain grading
- Retaining walls
- Pavement markings
- Fencing/rails
- Shared-use bridges
- Maps and signage
- Trail furniture
- Wayfinding signage

How long does it take to install?

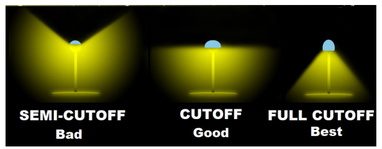
Varies: Planning, public input, design, engineering, and construction are all part of the installation process. Many urban shared use paths will take 5 to 10 years to be fully implemented. However, shorter segments that close gaps in the network or eliminate barriers can often be installed in a shorter timeframe. Public Works constructs about 1 mile of shared use path per year and developers who develop on arterial streets are required to build shared use paths.

References and Resources

- Billings Area Bikeway and Trail Master Plan
- NACTO Urban Bikeway Design Guide
- AASHTO Guide for the Development of Bicycle Facilities
- City of Billings Subdivision Regulations

4.2.7 - Lighting

Street Lighting illuminates areas where students walk or bike. Pedestrian-scaled lighting places light sources lower to the ground and more frequently placed than very tall, auto-oriented street lights to create uniform light levels.



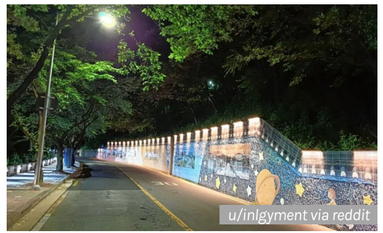
BCFOTS

Cutoffs on street lights prevent light pollution



Adobe Stock

LED lights save energy and money



u/inlgyment via reddit

Lighting contributes to Crime Prevention Through Environmental Design (CPTED)

What is the purpose of Lighting?

- Street lights improve visibility of people walking and biking, as well as providing greater personal security.
- Because it is often dark during winter months when students are walking and biking to school, or returning home from after-school activities, street lighting can significantly affect perceived and actual safety along a route to school.
- Allows people walking and people driving to better see each other.
- Lighting is a key part of Crime Prevention Through Environmental Design (CPTED).

Where can they be installed?

- Along streets and especially at crossings, illumination of areas of pedestrian activity can greatly improve pre-sunrise and after-dark pedestrian safety and security.
- Lighting can be used on streets fronted by schools to reduce vandalism and improve security.
- Lights should use “full cut off” fixtures to reduce light pollution.

How much does it cost?

$$-$$$: Cost vary depending on materials, lighting design, utility service agreements and other factors. There is also a cost to operate lights.

How long does it take to install?

1-2 years: Construction of street lights is usually funded through a Special Improvement District (SID), maintenance and energy are funded through a Special Improvement Lighting Maintenance District (SILMD). Public input and approvals, design, and equipment sourcing all contribute to installation schedules.

Things to Consider

- Install lights on both sides of wide streets to eliminate “dark spots”.
- Use consistent lighting levels
- Consider existing objects in the area to be illuminated that might block light like trees.
- Factors to consider include the number of nighttime pedestrian crashes in an area, the percent of crashed that happen during nighttime hours, the affect that the presence of lighting and pedestrians have on reducing undesirable or criminal behavior.

References and Resources

- Project for Public Spaces Lighting Use and Design
- Billings CPTED Program

4.2.8 - Neighborhood Bikeway

P TC

A Neighborhood Bikeway, also referred to as a Bicycle Boulevard, uses streets with low vehicle traffic volumes and speeds which are designated and designed to give bicycle and pedestrian traffic travel priority. Neighborhood Bikeway use wayfinding signs, pavement markings, and traffic calming tools to discourage excess through trips by vehicles and create safe crossings



Bicycle Boulevards are designed to calm traffic



Google, 2023

A Bicycle Boulevard on Ave. D in Billings



NACTO

Diverters can be used to manage volume on Bicycle Boulevards

What is the purpose of a Neighborhood Bikeway?

- Neighborhood bikeways create safe, comfortable, and slow speed connections with relatively minor changes to existing streets and minimal cost to the public.

Where can they be installed?

- Streets which parallel or already serve as popular bicycle and pedestrian routes are good candidates for Neighborhood Bikeways designation.
- Neighborhood Bikeways should be designated on streets that can feasibly be reduced to 3000 vehicle trips per day and speed limits of no more than 25 mph.
- Route selection for neighborhood bikeways is critical. If routed in illogical ways, require unnecessary stops, or are located on streets that are too busy, they are unlikely to be used as intended.
- A neighborhood bikeway should be considered where streets offer a continuous and direct route along low-traffic streets, or a route with bicycle and pedestrian-only connections.

How much does it cost?

$-$$: Because neighborhood bikeways can be installed using a range of both temporary and permanent elements like signage, paint, bollards, and raised medians, they are a cost effective way to enhance safety for people walking and biking.

How long does it take to install?

6 months-1 year: Planning, public input, design, engineering, and construction are all part of the installation process.

References and Resources

- Billings Area Bikeway and Trail Master Plan
- NACTO Urban Bikeway Design Guide
- AASHTO Guide for the Development of Bicycle Facilities

4.2.9 - Woonerf P TC

Once, all streets were woonerfs, or “living streets.” They are designed for traffic speeds (10 mph) and volumes low enough for people walking, biking, and driving to all share the same space. These kinds of streets usually do not have curbs or sidewalks and vehicles are slowed by placing trees, planters, parking areas and other traffic calming measures in the street.



Space is shared and vehicles move slowly on a woonerf



Alleys are great candidates for woonerf reconfiguration



A recently-built Woonerf in Bozeman, MT

What is the purpose of a Woonerf?

Transforms a street into a space for social interaction, rather than a channel for vehicular mobility.

Where can they be installed?

- Local access streets that have low volume.
- Streets where there is a neighborhood desire to create a public space for social activities and play for local residents.
- A woonerf is generally not appropriate where there is a need to provide for non-local access to services or through streets.
- The design of a woonerf must reduce vehicle speeds to 10 mph or less to make the space safe for children.

How much does it cost?

$$-$$$$: The cost to retrofit a woonerf may be high but there would be no extra cost if designed into original construction.

How long does it take to install?

>1 year: A meaningful public input process and detailed technical analysis should be undertaken to determine the public desire and appropriateness of converting a street into a woonerf before construction can begin.

References and Resources:

» Department of Transportation

4.2.10 - Right-Turn Design P TC

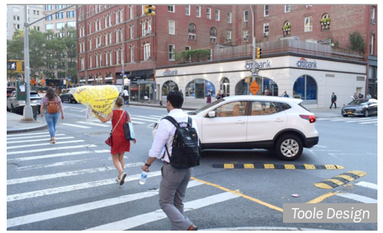
Intersections should be designed to accommodate safe pedestrian crossings using tight curb radii, pedestrian corner islands, and other tools. This is especially the case where right-turn slip lanes are present, many of which were designed to promote fast, and unimpeded vehicles travel, which can be unsafe for crossing pedestrians.



Slip lanes with added signs and raised crosswalks bring attention to pedestrians



Curb radii can be adjusted to lower vehicle turning speeds



Temporary turn wedges can be installed to test turning radii

What is the purpose of a Right Turn Redesign?

- Separate right-turning traffic.
- Slow turning vehicle speeds and improve safety by reducing the likelihood of a “right hook” crash.
- Allow drivers to see approaching cross street traffic more clearly.

Where can they be installed?

- Right lane redesign can be used at intersections with high volumes of pedestrians and conflicting turning vehicles.
- Vehicle turning speeds are evaluated to determine whether a decrease in turning radius would reduce speeds

How much does it cost?

$$-$$$: Depending on the location, right turn redesigns include reconfiguring the roadway, adding striping and/or constructing an island.

How long does it take to install?

1–2 years: Traffic studies must be completed before installation can begin. Additional time may be needed if traffic islands are constructed.

References and Resources:

» AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities

» AASHTO Guide for the Development of Bicycle Facilities

» ITE Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities

4.3.1 - Curb Bulb-outs/Extensions SP P TC

Curb extensions move the curb line out into the parking lane, reducing the distance for people walking across the street and improve visibility between people walking and driving. By visually and physically narrowing the roadway, curb extensions also help reduce speeding. Curb extensions can be temporarily installed with striping, bollards, and pin-down curb or permanently installed in concrete.



Mid-block curb extension



Easy-to-install materials such as paint, turtle bumps, and flex posts may be used to create curb extensions



Curb extensions may provide space for landscaping

What is the purpose of a Curb Extension?

- Improves safety by reducing the distance and time required to cross the street.
- Improves visibility between people driving and people walking across the street.
- Provides additional space in constrained locations for installing curb ramps.
- Improves safety at corners by slowing turning motorists through a tighter turning radius.
- Prevents people from parking too close to a crosswalk, which could limit visibility, or from blocking a curb ramp or crosswalk.
- Provides space for seating, public art, bike racks, rain gardens or other public amenities.

Where can they be installed?

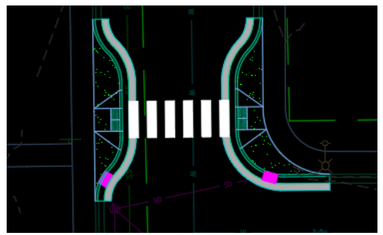
- Curb extensions are considered at locations that would benefit from improved visibility between people walking and driving, such as at school crosswalks.
- Curb extensions can be installed at most locations with a legal crosswalk, whether marked or unmarked, provided there is adequate width, and on streets with all day on-street parking.
- Curb extensions can be installed as part of larger capital improvement projects.



A pilot project curb extension at 6th St. and Lewis Ave.



Curb extensions calm traffic in Josephine Crossing



A curb extension being designed on Jackson St.

How much does it cost?

$-$$$: Permanently installed curb extensions typically involve roadway and sidewalk removal and may require replacement/relocation of stormwater drainage inlets.

Pilot or temporary installations of curb extensions using paint, pin-down curb, and bollards can significantly reduce costs.

How long does it take to install?

3 months - 2 years. Typically, design of a permanent curb extension is completed in 6-12 months and construction is completed by a contractor the following year.

The pilot or temporary installation process includes project team assembly, walking audit, public input, design and implementation usually takes around 3 months.

References and Resources:

- Pedestrian Safety Guide and Countermeasure Selection System: Curb Extensions
- NACTO Urban Street Design Guide: Curb Extensions
- AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities, 2015

4.3.2 - High Visibility Crosswalk P TC

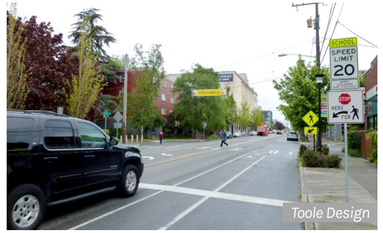
Legal crossings exist at every intersection, (except where prohibited by signage) whether marked or unmarked. Marked crosswalks are used to raise driver awareness of people crossing the street and to direct people who are walking to the best place to cross the street. High visibility crosswalk markings go beyond traditional parallel line crosswalks to include parallel lines, diagonal lines, advances stop markings, and signage.



Marked ladder style crosswalk at an intersection



Raised crosswalks slow drivers



Advanced stop bars increase visibility of people crossing the street

What is the purpose of a High Visibility Crosswalk?

- Make people driving more aware of where to expect students to cross the street.
- Direct people walking to the best place to cross the street.
- Indicate the walking route to school.
- NACTO guidelines state that pedestrian non-compliance increases with detour and delay. Detours of three minutes or more may cause pedestrians to take more direct, but unsafe routes. This suggests a maximum detour distance of 540 feet round trip for a person walking at 3 feet per second, not including wait time at a crossing.

Where can they be installed?

- Crosswalks will generally be marked at signals and at intersections downtown.
- Crosswalks will typically be marked at stop-controlled locations if there is high vehicular volume, and will be marked if feasible at uncontrolled locations if they satisfy the criteria outlined on this page.
- The following factors are considered when deciding whether to mark a crosswalk at uncontrolled locations.
- It should be noted that different jurisdictions (City, County, and MDT) have different policies:
  - Average hourly traffic over 300 vehicles per hour in any hour
  - Adequate stopping or sight distance
  - More than 20 pedestrian crossings in any one hour of the day, or more than 10 children or elderly persons in any one hour
  - There is no existing marked crosswalk within 300-ft of the location in question
  - The crosswalk is located on a trail, shared-use path, designated safe route to school, or provides direct access to a transit stop, or other pedestrian destinations
  - Presence of curb ramps
  - Presence of lighting



Art and crosswalks combine to encourage walking

How much does it cost?

$: If a potential new marked crosswalk location does not require any additional safety treatments, then marking the crosswalk is relatively inexpensive and straightforward.

$$: If other safety improvements, are needed at the crosswalk the cost can be higher.

How long does it take to install?

Varies. In some cases, it can take 1–2 months or less to install a new marked crosswalk. If new curb ramps or other safety improvements need to be installed in addition to the marked crosswalk, then it can take 1–2 years or longer to complete the work.

Raised Crosswalks

- Raised crosswalks keep the crosswalk at the same height as the sidewalk.
- They act as a speed hump and slow vehicles as they approach the crosswalk.
- Make pedestrians more visible to drivers
- Raised crosswalks may require modifications to stormwater drainage structures in the street, increasing construction costs.

Raised Intersections

- Raised intersections slow people driving and encourage them to yield to people walking across the street
- Raised intersections can be installed in neighborhood intersections to make the public space more comfortable and inviting for people to walk and bike.

Other Things to Consider:

- The total distance a person walking would have to cross. If there is more than one lane of traffic in each direction, additional features may be added to supplement the crosswalk and minimize the potential multiple threat. These treatments could include elements like crossing beacons, pedestrian signals, refuge islands, curb extensions, or advanced stop lines.
- Volume and speed of people driving. If the street is very busy and speeds are high, additional features may be added to supplement the marked crosswalk.
- New crosswalks are often accompanied by new crosswalk signs. If it's a crosswalk mostly used by kids, the marked crosswalk will be a school crosswalk with school crosswalk signs. Otherwise, regular crosswalk signs are used. Flexible in-street bollards may also be used to draw additional attention to the crossing.
- Durable and reflective materials are used to mark crosswalks. Over time, the crosswalk markings may need to be refreshed. Crosswalk maintenance is prioritized based on the condition of all the crosswalks in the city. One of the programmatic recommendations of this plan is to mark all school zone crosswalks with durable marking materials (Section 2.5).

Multiple Threat

- A multiple threat is a situation where a driver in one lane (car A) stops for a person crossing the street, but the driver in the next lane (car B) doesn't see the person and doesn't stop. If a crosswalk is marked across more than two lanes of traffic, additional safety improvements like crossing beacons, pedestrian signals, refuge islands, curb extensions, or advanced stop lines may be installed to minimize the multiple threat.

References and Resources:

- Marking and Signing Crosswalks (Safe Routes to School Guide)
- Manual on Uniform Traffic Control Devices (MUTCD) Chapter 7C.03 Crosswalk Markings

4.3.3 - ADA Ramp/ADA Compliant Route

Curb ramps are sloped areas located at intersection corners and crossings that connect the street to the sidewalk. They create a barrier-free environment for everyone when crossing streets that have curbs and sidewalks.



Curbs limit universal accessibility and are barriers for transitioning from the sidewalk to the street



A sidewalk retrofitted with a curb ramp and a tactile warning strip



Each corner should have two curb ramps, one for each crossing

What is the purpose of a Curb Ramp/ADA Compliant Route?

- Provides a comfortable transition from the street to the sidewalk for all people, including people with disabilities, kids on bikes, and caretakers pushing strollers.
- Where recommended in this plan, ADA compliant routes provide safe, accessible paths from the street to a school entry point.
- The Americans with Disabilities Act (ADA) created design standards to ensure equal access to private and public facilities. The Federal Highway Administration (FHWA) issues guidance through its Public Right-of-Way Accessibility Guidelines (PROWAG).

Where can they be installed?

- To the extent that resources are available, new curb ramp installations are coordinated with sidewalk rehabilitation and applicable street alterations. Curb ramps are the standard on all new construction.
- The Billings Urban Area Long-Range Transportation Plan, Safe Routes to School Plan on the ground observations, GIS data, comments from the public, and the Capital Improvement Plan list are all used to select and prioritize curb ramp retrofits.

How much does it cost?

$-$$: The Federal Americans with Disabilities Act (ADA) and Public Right-of-Way Accessibility Guidelines (PROWAG) have very specific requirements for how curb ramps must be constructed, including level landings and gentle grades. The cost of a curb ramp may vary depending on what existing conditions need to be changed to meet these requirements and/or whether cost can be saved by doing multiple curb ramps on the same intersection at a time.

How long does it take to install?

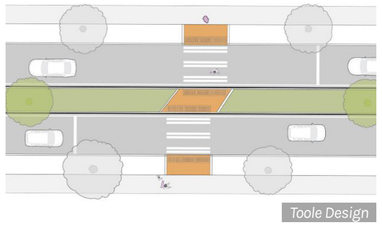
Varies: If a curb ramp is a small scale, stand-alone project, it can be completed within several months. If it is part of a larger resurfacing or reconstruction project, it can take a year or more.

References and Resources:

- US Access Board Public Right-of-Way Accessibility Guidelines (PROWAG)
- ADA Accessibility Survey Instructions: Curb Ramps

4.3.4 - Pedestrian Refuge/Refuge Island SP P TC

Pedestrian refuge islands (also called pedestrian refuges or center islands) are delineated or raised areas in the middle of the street at intersections or mid-block crossings that provide a designated place for people walking and biking to wait for an opportunity to cross the other half of the street.



Typical crossing island



A pedestrian refuge island assists people crossing Broadwater Ave.



Pedestrian refuge islands also help people on bicycles cross the street

What is the purpose of a Pedestrian Refuge/ Refuge Island?

- Makes the crossing more visible to people driving.
- Allows people to cross the street in two stages, making it easier to find gaps in traffic by only having to cross one direction of travel at a time.
- Reduces the amount of time a person crossing the street is exposed to traffic by providing a designated place to wait in the middle of the crossing.
- Makes the street easier to cross for kids, older adults, people with disabilities, and others who may need more time to cross or have more difficulty judging gaps in traffic.
- Reduces speeding due to perceived road width narrowing at the crossing.

Where can they be installed?

- Pedestrian refuge islands may be an effective crossing treatment in situations where it is difficult to cross the street due to long crossing distances or few gaps in traffic.
- There must be adequate width (6-ft minimum) in the middle of the road to install the refuge island.
- Generally, streets with a two-way center turn lane or few or no left turns by people driving provide opportunities to install a pedestrian refuge island.
- Additional safety improvements like crossing beacons are often installed along with the refuge island to make the crossing even more visible to people driving.
- Any added vegetation should be low-lying as to not affect sight distance.
- At crossings frequently used by people on bikes, such as neighborhood bikeway crossings, crossings that separate people biking and people walking may be created.
- Analysis is needed at each intersection before a pedestrian refuge island is installed.

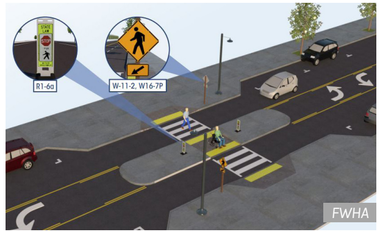
Example in Billings

- BBWA shared use path crossings at Broadwater, Central, Monad, and King Ave.

References and Resources:

- Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE): Refuge islands
- NACTO Urban Bikeway Design Guide: Median Refuge Island
- FHWA Proven Safety Countermeasures: Medians and Pedestrian Refuge islands

4.3.4 - Pedestrian Refuge/Refuge Island Continued



Pedestrian Islands give people the option to wait in the median before crossing



Pedestrian refuge islands can reduce pedestrian crashes by 32%



A pedestrian refuge island on King Ave. in Billings, MT

How much does it cost?

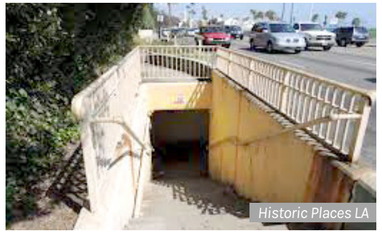
$$–$$$: A small asphalt or concrete pedestrian refuge island can be fairly inexpensive, typically in the range of $10K to $20K to install. Lower cost materials such as flexible posts can also be used to delineate the pedestrian refuge island in certain situations. Larger projects that include landscaping and drainage structures can increase construction and maintenance costs.

How long does it take to install?

1–2 years or less: A simple project can be designed in six months and constructed easily by City crews. More time is required to design larger pedestrian refuge islands or pedestrian refuge islands at busy intersections.

4.3.5 - Bridges and Tunnels SP

A bike or pedestrian bridge or tunnel is a grade separated crossing (separated from ground level) that provides connections across major barriers like rivers, freeways or railroads by routing people walking or bicycling over the barrier on a bridge, or under the barrier in a tunnel.



A pedestrian tunnel in Los Angeles, CA



Pedestrian bridges require significant detour



A pedestrian bridge in Austin, TX

What is the purpose of a Bike/Pedestrian Bridge and Tunnel

- Pedestrian overpasses and underpasses allow for the uninterrupted flow of pedestrian movement separate from vehicle traffic. However, they should be a measure of last resort, and it is usually more appropriate to use traffic-calming measures or install a pedestrian-activated signal that is accessible to all pedestrians because overpasses and underpasses are costly, visually intrusive, and poorly utilized when a more direct at-grade crossing is possible.
- Bridges and tunnels require people walking or biking to make significant detours to use them. Given the choice, people will often risk crossing a roadway at street level rather than climbing ramps or stairs or going under ground into a tunnel where lighting, drainage, graffiti and security are major concerns.

Where can they be installed?

- Bike and pedestrian bridges are often installed at crossings of controlled-access highways. Bridges can be installed to cross water bodies or railways.
- Pedestrian bridges work best when topography allows for a structure without ramps like an overpass over a sunken highway.
- Tunnels or underpasses work best when designed to feel open and accessible.

How much does it cost?

$$$$: Bridges and tunnels are the most expensive solution to create crossings for people walking or biking. They require structural and civil engineering and, often, re-routing of utilities, They are often suggested where a high-visibility crosswalk would be more appropriate.

Underpasses are significantly less expensive when built as part of a construction or reconstruction project and generally offer gentler grade changes than overpasses.

How long does it take to install?

>2 Years: Public input, design, engineering and construction of a bridge or tunnel can be costly both in terms of time and money.

References and Resources:

» Pedestrian Safety Guide and Countermeasure Selection System

4.4.1 - School Zones TC

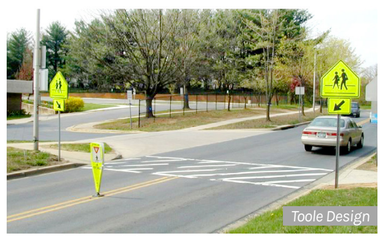
School Zones are designated on the blocks around a school with reduced speed limits and pedestrian crossing signage to facilitate safer crossings for children walking and biking to school.



Trained crossing guards improve school zone safety



School crossing sign



In road signage reinforces pedestrian priority at school crossings

What is the purpose of School Zones?

A School Zone is an area around a school that usually have a reduced speed limit. This lower speed limit and associated signage serves to improve safety and alert drivers that there will be students walking and/or biking in the area.

What treatments define a school zone?

- School zone signs with flashing lights are used to reduce speed limits during school arrival and dismissal hours.
- School crossing signs should be used on key crossings located within the school zone. Other enhanced crossing treatments may be appropriate, depending on the volumes of pedestrian and motor vehicle traffic
- Signs may include School Crossing, Speed Limit, and/or School Bus Stop signs.
- Beacons may be used to supplement signage.

What other treatments should also be considered to improve safety in a school zone?

- Adequate sidewalks and crosswalk markings.
- Crossing guards with proper equipment and training.
- Traffic control devices including pedestrian activated signals.

Where can these be installed?

- The beginning point of a reduced school speed limit zone should be at least 200-ft in advance of the school grounds, a school crossing, or other school related activities; however, this 200-ft distance should be increased if the school zone speed limit is 30 mph or higher.
- School zone locations are governed by MUTCD and engineering evaluation.
- Signage and pavement markings are not frequently used on neighborhood streets, though it does depend on speed of traffic and anticipated number of students walking along the route. This also applies if the approach is a state highway or major arterial.
- Several organizations publish guidance for setting speed limits within school zones. These include the FHWA's "Safe System Approach" and NACTO's "Safe Speed Study."



A variable speed limit sign near Ben Steele Middle School



Current City policy does not require school zones at middle schools



Many cities are adopting lower speed limits to improve safety

- Additional information on school zone signage and markings can be found in the MUTCD.
- Traffic calming measures may need to be installed when a speed limit is reduced to ensure driver compliance.

How much does it cost?

$: Pavement markings and signage are relatively inexpensive. Costs increase if sidewalk construction, road alterations, and traffic signals are also needed.

How long does it take to install?

1-6 months: An engineering study must be completed before signs and signals can be installed.

References and Resources:

- MUTCD Traffic Control for School Areas
- New Jersey School Zone Design Guide
- Arizona Traffic Safety for School Zones Manual
- NACTO City Limits Design Guidelines
- FHWA Safe System Approach

4.4.2 - Stop Signs

Stop signs are a traffic control device used at intersections with three or more approaches, and where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law.



Stop sign with stop line at an all-way stop



Stop sign oriented to traffic crossing a neighborhood bikeway



Stop sign at intersection between a neighborhood street and a busier street

What is the purpose of Stop Signs?

- Controls traffic movements between people driving, walking, and biking by assigning right of way at an intersection.
- May be used to control one direction of traffic while allowing the other direction to flow freely or can be used to control all directions of traffic.

Where can they be installed?

- The MUTCD determines if the safety of an intersection would be improved by controlling one or more directions of traffic with a stop sign. The MUTCD outlines certain minimum thresholds of motorist, pedestrian, and bicyclist traffic and collisions that should be considered before installing a stop sign.
- If the volumes of people driving, walking, and biking at each direction of the intersection are approximately equal and meet the minimum thresholds established in the MUTCD, stop signs may be installed for all directions of travel.
- If the volumes of people driving, walking, and biking from each direction are unequal, the street with the lower volume of people traveling should be stop-controlled unless there are reasons to provide an advantage to one direction of travel (e.g. neighborhood bikeways).
- Other considerations include:
  - » Direction of school walking routes,
  - » Visibility and sight distance on different sides of the intersection, and
  - » Providing advantage to one direction of travel over another, e.g. neighborhood bikeway or major shared use path connection.
  - » Stop signs may increase speeds between stops.
- Stop signs may be accompanied by stop lines, which indicate to people driving where to stop their car before the intersection.



A new stop sign supplements curb extensions in Josephine Crossing



A stop sign where buildings limit visibility in Billings



A four-way stop in Billings

How much does it cost?

$: Stop signs are a relatively low-cost and effective way of controlling traffic at intersections.

How long does it take to install?

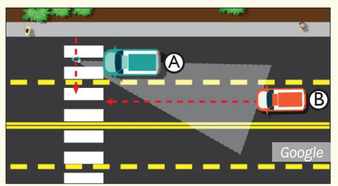
<1 year: If it is determined that an intersection should have one or more new stop signs, they can be installed relatively quickly.

References and Resources:

- » FHWA Manual for Uniform Traffic Control Devices
- » AASHTO Guide for the Development of Bicycle Facilities

Multiple Threat

- » A multiple threat is a situation where a driver in one lane (car A) stops for a person crossing the street, but the driver in the next lane (car B) doesn't see the person and doesn't stop. If a crosswalk is marked across more than two lanes of traffic, additional safety improvements like crossing beacons, pedestrian signals, refuge islands, curb extensions, or advanced stop lines may be installed to minimize the multiple threat.



4.4.3 - Yield Signs and Advanced Yield Markings P

Advance yield lines are pavement markings placed in advance of a crosswalk and are used in conjunction with YIELD HERE TO PEDESTRIANS signs. This treatment increases the distance between where motorists yield and the crosswalk, which improves the visibility of people in the crosswalk and helps reduce multiple-threat crashes. Multiple-threat crashes occur when a driver in one lane yields for a person in the crosswalk and a driver in an adjacent lane does not, striking the person in the crosswalk.



Yield signage in combination with crossing infrastructure increases visibility



Yield signage can vary with application



Bike-specific yield markings and signs may be necessary depending on the situation

What is the purpose of Field Signs and Advanced Yield Markings?

- Increases visibility between people driving, walking, and bicycling.
- Reduces multiple-threat crashes.

Where can they be installed?

- Advance yield markings should be considered on four-lane (or wider) streets at uncontrolled intersections.
- Yield signs and markings are used at mid-block crossings, crosswalks at free-flow ramps, and roundabouts.
- Parking should be prohibited in the area between the yield line and the crosswalk to allow for increased visibility for pedestrians and motorists.

How much does it cost?

$: Yield signs and advanced yield markings are typically added where there is already a marked crosswalk, so the cost is minimal.

How long does it take to install?

<1 year: If it is determined that a crossing needs a yield sign and markings, they can be installed relatively quickly.

Where can they be installed?

Advance yield markings can be installed on two-lane streets, and are required at crossings on multi-lane streets with uncontrolled intersections.

- Yield signs and markings are used at mid-block crossings, crosswalks at free-flow ramps, and roundabouts.
- Parking should be prohibited in the area between the yield line and the crosswalk to allow for increased visibility for pedestrians

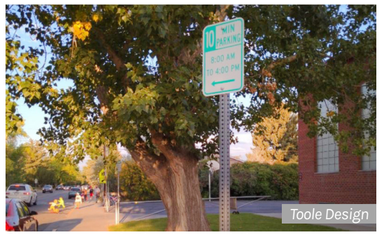
References and Resources:

» AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities

» Zerger, C., C. Lyon, R. Srinivasan, B. Persaud, B. Lan, and S. Smith. 2017. "Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments." Transportation Research Record: Journal of the Transportation Research Board 2636. Transportation Research Board of the National Academies, Washington, D.C.

4.4.4 - Parking Restriction Signs P

Parking provides access to businesses, residences, and other community resources, and it can also have a traffic calming effect by acting as a buffer between moving motor vehicles and people walking or biking. However, on-street parking can reduce visibility between drivers and people walking, especially at intersections and crosswalks.



Signage communicating time restrictions



Parking signage can indicate drop off only instructions



Signage can also be temporary and removable

What is the purpose of Parking Restriction Signs?

- Parking restriction signs can be used to provide space for and communicate the right locations for school drop-off and pick-up activities.
- Removing parking space(s) at an intersection can improve the visibility of the crosswalk.

Where can they be installed?

- Signs are installed on approaches to intersections and crossings where parked vehicles could block visibility of pedestrians, or where stopped motorists block curb ramps or crosswalks.
- In some cases, physical street barriers to prevent motorists from parking near crosswalks, such as curb extensions, or interim measures such as planters or vertical flexible delineators are used to supplement parking restriction signs.
- Parking restrictions can either be implemented on a permanent basis or during certain times of day.
- Parking restrictions intended to improve crossing visibility are tailored to the speed of the street. The Federal Highway Administration (FHWA) recommends extending parking restrictions 20 feet from the crosswalk on 20 to 30 mph streets, 50 feet from the crosswalk on 35 to 45 mph streets, and 100 feet from the crosswalk on streets with posted speeds above 45 mph."

How much does it cost?

$: Parking restriction signs can be quickly fabricated and installed, so the cost is minimal.

How long does it take to install?

<1 year: Once the area and type of parking restriction is decided upon, they can be installed relatively quickly. The amount of time may increase as additional stakeholders (e.g., businesses) are impacted by parking restrictions.

References and Resources:

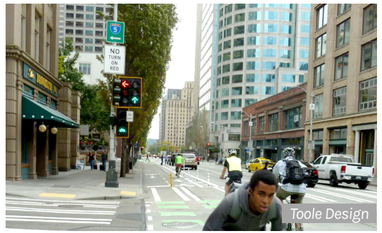
» FHWA MUTCD Chapter 2

4.5.1 - Traffic Signals

Traffic signals coordinate the flow of traffic at intersections, including people driving, walking, and biking.



Bicycle signal detection



Reflective back plate makes the signal more visible



"No Turn on Red" sign

What is the purpose of the Traffic Signal?

- Controls the flow of traffic and provides coordinated movement of people driving, walking, and biking.
- Provides safer conditions for people walking and biking to cross streets with higher traffic volumes or speeds. People driving have to completely stop at red signals when it's the pedestrian's or bicyclist's turn to cross the street.
- When there is a steady stream of traffic, it can be difficult for people walking or biking to find a gap in traffic to cross the street. Traffic signals create gaps in traffic that allow people biking or walking to cross the street.
- Signals should allow adequate crossing time for pedestrians and an adequate clearance interval based upon a maximum walking speed of 3.5 ft/s. In areas where there is a heavy concentration of the elderly or children, a lower speed (typically 3.0 ft/s) should be used in determining pedestrian clearance time.

Where can they be installed?

- The MUTCD is used to determine whether the safety and traffic flow at an intersection would be improved by installing a new traffic signal. The MUTCD outlines minimum thresholds for vehicle and pedestrian traffic and collisions that should be considered before installing a traffic signal.
- A traffic engineering study must be conducted to analyze traffic patterns, determine if a location meets the MUTCD thresholds, and conclude whether a new signal would improve safety or the flow of traffic.
- At some intersections near schools, signal timing and flashing pattern during school arrival and dismissal hours can be adjusted to create fewer conflicts between people walking and people driving.
- Providing a dedicated phase for people to cross the street followed by a separate phase for left turning vehicles reduces potential conflicts between pedestrians and motorists. By prohibiting left turns during the WALK phase, people in the crosswalk do not have to worry about turning vehicles yielding to them.
- At some intersections, including some locations in downtown, people driving aren't allowed to make a right turn when the traffic signal is red. This design makes it safer for people walking across the street by reducing the number of potential conflicts with people turning right on red.
- Traffic signals are more convenient for people walking when the WALK sign is displayed automatically when it's their turn to cross the street, a strategy referred to as automatic recall. Signals in areas of Billings with high pedestrian volumes are programed to show the walk signal automatically. In situations with very low pedestrian volumes, this design may not be appropriate, so many traffic signals have push buttons for people to activate the WALK phase.



Bike traffic signal



Mid-block crossing with traffic signal



Traffic signal at intersection

- At intersections that are frequently used by people on bikes, equipment can be installed to detect when a bicyclist is present. Many new traffic signals in Billings are being controlled by GRIDSMART video controllers that automatically detect bikes in the road. In addition, old induction loops are being replaced with` these new controllers.

How much does it cost?

$$$$: Installing a new traffic signal is a very costly safety improvement. When possible, more cost-effective safety improvements that achieve the same safety objectives are considered so that more can be achieved with limited city resources.

How long does it take to install?

2–4 years: A limited number of new signals are installed every year because they are so costly. They take a long time to design and construct because they are complex systems.

4+ years: If the new signal is on a state route, then the City coordinates with the Montana Department of Transportation, which adds time to the process.

References and Resources:

- FHWA Manual on Uniform Traffic Control Devices
- Federal Highway Administration Proven Safety Countermeasures

4.5.2 - Leading Pedestrian Interval (LPI)

A Leading Pedestrian Interval (LPI) gives people walking the WALK indication 3–5 seconds before people driving in the same direction get a green signal. Because people walking are already in the crosswalk when people driving begin to turn left or right, people driving are more likely to yield to people walking.



With a Leading Pedestrian Interval, motorists have a red signal for the first 3–5 seconds of the WALK phase



Pedestrian WALK push button



An LPI increases visibility of crossing pedestrians

What is the purpose of a Leading Pedestrian Interval (LPI)?

- The LPI signal timing technique allows pedestrians to establish themselves in the intersection in front of turning vehicles, increasing visibility between all modes.

Where can they be installed?

- The LPI can be used at intersections with high volumes of pedestrians and conflicting turning vehicles and at locations with a large population of elderly or school children who tend to walk more slowly.
- The LPI should be at least three seconds to allow pedestrians to cross at least one lane of traffic to establish their position ahead of turning traffic.

How much does it cost?

$: An LPI is typically added where there is already a signal, so the cost is minimal. There may be additional costs to drivers due to cost of intersection efficiency and increased wait times.

How long does it take to install?

A few months. An LPI is typically added where there is already a signal, so this reflects the time to redesign the signal cycle and time for a technician to adjust it at the control center or in the field.

References and Resources:

» FHWA Proven Safety Countermeasures

» NACTO Urban Street Design Guide

4.5.3 - No RTOR

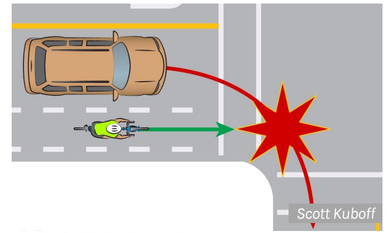
A Right Turn on Red Restriction (RTOR Restriction) prohibits motorists from taking right turns at signals if the light is red. The standard MUTCD sign states “NO TURN ON RED.” For areas were RTOR restrictions may only be needed during certain times of the day (e.g., school arrival and dismissal times), time-of day restrictions may be appropriate.



A combination of Yield and No Right on Red signs



Right turn restriction in Billings



A typical “right hook” crash

What is the purpose of Right Turn on Red Restrictions

- RTOR restrictions allow pedestrians to have a specific phase where they can walk aligned with a green light without conflict from right turning vehicles, also known as a “right hook” crash.
- NO TURN ON RED restrictions remind drivers of their obligation to yield to people walking and biking in the crosswalk.

Where can they be installed?

- RTOR restrictions can be used at intersections with high volumes of pedestrians and conflicting turning vehicles or in areas with visibility concerns.
- Signs should be clearly visible to right-turning motorists stopped in the curb lane at the crosswalk.
- There is no available research to support whether installing NO TURN ON RED signs is an effective tool at decreasing crashes with pedestrians. Therefore, it is recommended that such signs be used in conjunction with LPIs.

How much does it cost?

$: An RTOR restriction is typically added where there is already a signal, so the cost is minimal. If an electronic sign is desired, that can significantly increase the cost.

How long does it take to install?

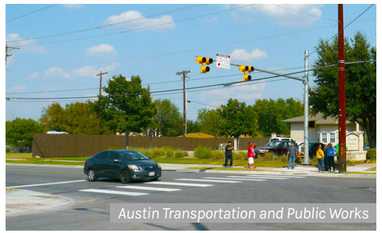
A few months. An RTOR restriction is usually added to an already-existing signal pole, so the timing is dependent on how long the intersection analysis and evaluation would take. More time would be needed for electronic signs to allow a technician to adjust the signal timing at the control center or in the field.

References and Resources:

» FHWA Proven Safety Countermeasures

4.5.4 - Pedestrian Hybrid Beacons

Pedestrian Hybrid Beacons (PHB) are pedestrian-activated traffic control devices which help pedestrians safely cross major roadways where there is no traffic signal. PHBs are also known as High Intensity Activated Crosswalks, or HAWK, signals.



Pedestrian hybrid beacon in Austin, TX



Pedestrian hybrid beacon



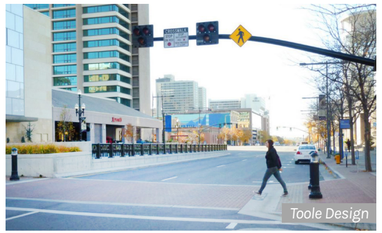
Pedestrian hybrid beacon on a divided roadway

What is the purpose of a Pedestrian Hybrid Beacon?

- Makes the presence of a person trying to cross the street known to people driving, since the beacon is only activated when someone pushes the button.
- The beacon consists of two red lights above a single yellow light. The beacon head is "dark," or un-illuminated, until a pedestrian activates the device. The pedestrian pushes a button that activates the beacon. After displaying brief flashing and then steady yellow intervals, the device displays a steady red indication to drivers and a "WALK" indication to pedestrians, allowing them to cross while traffic is stopped.
- The solid red signal face on a PHB has the same meaning as and should be treated like a traffic signal showing a red light. Once the red light starts flashing it should be treated like a stop sign, where the driver is to stop and make sure it is clear before proceeding.

Where can they be installed?

- The City follows the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD) guidelines and warrants when studying a location for a PHB.
- Data is used to understand the volume and speed of people driving on the street as well as the number of traffic lanes a person has to cross.
- The safety history of the crossing is considered in addition to environmental and community issues at a given location.
- PHB must be located more than 300-ft from existing signals.
- PHB can be installed at crosswalks that have other safety improvements, like a crossing island.



Pedestrian hybrid beacon on a downtown street



A PHB in Phoenix, AZ provides added visibility for pedestrians near a high school



A pedestrian hybrid beacon in Belgrade, MT

How much does it cost?

$$$$: Relatively expensive due to electrical components that often require temporarily removing sidewalk to access underground electrical lines and the reconstruction of any sidewalk removed during construction. The cost can range from $75,000 to $150,000.

How long does it take to install?

1–2 years: Traffic studies and signal design must be completed before installation can begin. Difficulty in equipment sourcing can delay installation timelines.

References and Resources:

- Pedestrian Safety Guide and Countermeasure Selection System: Pedestrian Hybrid Beacon
- FHWA Intersection Safety Technologies
- Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD)

4.5.5 - Rectangular Rapid Flashing Beacons

Rectangular Rapid Flashing Beacons (RRFB) are pedestrian-activated flashing lights on the side of the street that make a crosswalk more visible to people driving and alert them to the presence of a person trying to cross the street.



RRFB with passive detection



RRFB with push button at a school crosswalk



RRFB at a neighborhood bikeway crossing

What is the purpose of a Rectangular Rapid Flashing Beacon?

- Makes the presence of a person trying to cross the street known to people driving, since they only flash when someone pushes the button or activates an automatic sensor.
- Studies have shown that people driving are more likely to stop for people trying to cross the street when they activate a rectangular rapid flashing beacon. The highly visible flash of RRFBs is very eye-catching to motorists.

Where can they be installed?

- The Federal Highway Administration (FHWA) provides guidance for the installation of RRFBs. For more information, see here.
- The City of Billings considers the volume and speed of traffic on the street as well as the total distance a person walking or biking has to cross.
- RRFBs can be installed at crosswalks that have other safety improvements, like a crossing island.

How much does it cost?

$$: RRFBs are a relatively inexpensive ($5k-$8k per crossing) way to improve safety for people crossing the street. The cost to install RRFBs can increase if the crossing doesn't already have a marked crosswalk with curb ramps that meet Federal Americans with Disabilities Act requirements.

How long does it take to install?

Varies. If the existing crossing already has marked crosswalks and curb ramps that meet ADA requirements, RRFB can be installed in a few months. If other improvements are needed at the location, it may take 1–2 years.

References and Resources:

- Interim Approval for Optional Use of RRFBs (FHWA)
- Pedestrian Safety Guide and Countermeasure Selection System: RRFB
- FHWA Intersection Safety Technologies

4.6 OTHER

4.6.1 - Bicycle Parking

Bicycle parking is a device, usually a rack or a group of racks, that allow people to secure their bicycles. Bicycle parking can be installed on school grounds, on the sidewalk, or in the street.



Bike racks on the sidewalk



Bike corral



Covered bike parking

What is the purpose of Bicycle Parking?

- Gives students and school staff a place to secure their bike during the day while they're at school.
- Encourages students and school staff to ride their bikes to school.
- When located near the main entrance, bike parking makes it inviting for people who get to school by bike.
- Sends the message that the school encourages bicycling.

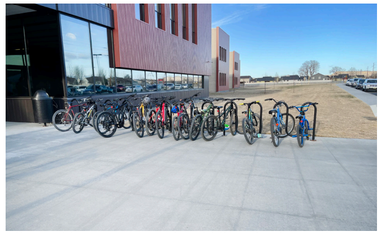
Bike Corrals

- Sometimes the best place to install bike parking is on the street. A bike corral can be installed in place of on-street parking and can provide parking for 6 to 12 bikes in place of one car.
- A corral can also be placed in locations where parking isn't allowed, like 30 feet from an intersection or marked crosswalk. This helps make the crosswalk safer by ensuring no one parks their car illegally and blocks visibility of the crosswalk or intersection, while also adding parking spaces for people on bikes.

4.6.1 - Bicycle Parking Continued



School bicycle parking on grass tiles


Bike parking at Ben Steele Middle School complements shared use paths in the area



Vertical bike racks save space

Where can they be installed?

- Every school should have enough bike parking to meet the day-to-day needs of students and staff. Bike parking at schools is currently the responsibility of the school district.
- When deciding where to install bike racks, the school district facilities group considers locations where the racks will be:
  - » Noticeable upon arriving at school
  - » Visible from nearby windows and the street to ensure bikes are secure
  - » Publicly accessible
- The Billings Area Bikeway and Trail Master Plan specifies three preferred bicycle rack types - the “Inverted U,” coat hanger rack, and post and loop rack.

How much do they cost?

$: Bike parking is relatively inexpensive.

How long does it take to install?

< 1 year: New bike parking can generally be installed at a school in less than one year.

References and Resources:

- » Billings Area Bikeway and Trail Master Plan
- » Safe Routes to School National Partnership
- » City of Billings Bike Parking Guidelines
- » Association of Pedestrian and Bicycle Professionals: Bicycle Parking Guidelines

4.6.2 - Arrival-Dismissal Traffic Safety Plan

Many parents cite traffic and confusion at pick-up and drop-off as one of the reasons they choose to drive their children to and from school. Arrival and dismissal plans formalize procedures for all modes of transportation at pick-up and drop off to limit confusion and conflict. These plans rely on the compliance of students and families and enforcement by staff to work.



Arrival and dismissal plans communicate the preferred locations for buses and personal vehicles



Crossing guards should be involved in creating arrival and dismissal plans



Arrival and dismissal plans can encourage walking and biking to school by managing behavior expectations

What is the purpose of Arrival-Dismissal Traffic Safety Plan?

- Gives guardians consistent expectations of how to behave at drop-off and pick-up to maintain safety for people walking, biking, driving, and busing.
- Allows the school to address campus-specific issues and challenging local street networks.

How are Arrival-Dismissal Traffic Safety Plans developed?

- Currently, each school develops their own Arrival-Dismissal Traffic Safety Plan. These plans, for most schools, were updated for the 2021–2022 school year to address COVID-19 precautions.
- Traffic safety plans should be revised regularly to address changes in travel behaviors, identified safety concerns, availability of staff to supervise, or safety busing changes.
- Arrival-Dismissal Traffic Safety Plans should be revisited prior to the school year and sent to parents and staff with welcome materials. The plans should be revisited throughout the school year to address any issues that arise.

How much does it cost?

$: Plans are a relatively low-cost way to manage drop-off and pick-up times. Additional costs may be incurred implementing the plan, dependent on whether additional staff are needed to assist.

How long does it take to install?

<1 month: The plan is sent to parents and staff via email or as student take-home materials.

Arrival-Dismissal Traffic Safety Plans require staff and administrators to monitor arrival and dismissal and enforce its procedures when necessary.

References and Resources:

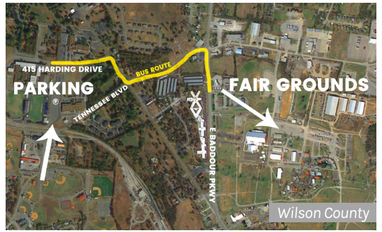
- » Safe Routes to School National Partnership. Keep Calm and Carry on to School: Improving Arrival and Dismissal for Walking and Biking
- » Feet First. Improve your School Arrival and Departure Procedures: A Toolkit for School Safety Committees

4.6.3 - Remote Drop Off Facility

A remote drop off facility, also known as a “park and walk” is a designated site, typically within 1/4 or 1/2 mile of the school it serves, where private vehicles or buses drop off or pick up students, who then walk the remaining distance to school.



Congestion results if all students arrive by vehicle on one street



Airports, stadiums, and county fairs often use remote drop off or parking



Remote facilities work best when they are within 1/4 to 1/2 mile of a school

What is the purpose of a Remote Drop Off Facility?

- Relieve congestion and improve safety at existing school drop off facilities and streets that lead to the school.
- Reduce traffic conflict between students walking or biking and vehicles.
- Reduce inter-personal conflicts between people driving and staff tasked with enforcing Arrival-Dismissal Traffic Safety Plans.
- Reduce the amount of time spent on morning commutes.
- Encourage physical activity for students.

Where can they be installed?

- Remote Drop Off Facilities are most useful at schools where vehicle access to existing drop off is limited by few street connections, where only one street leads to a school, and where congestion raises safety concerns.
- These facilities best located where they do not require a significant detour to use.
- Remote Drop Off Facilities are usually located within 1/4 to 1/2 mile of the school they serve.
- When considering a site for remote drop off, the safety of the site and the route between it and the school should be evaluated for crime prevention and traffic safety. Nearby parks or parking lots are usually good candidates.

How much do they cost?

$-$$$$: In some cases, guardians may already use nearby areas for informal remote drop off. If the site and route from it to the school are found to be safe, establishing a remote drop off there will have little or no cost.

Finding volunteers or by paid staff to monitor the remote drop off or walk with students may be necessary.

If a remote drop off site must be built from scratch or if safety improvements are needed, installation of sidewalk, crosswalks, lighting, paving and curb can become more costly.

How long does it take to install?

<1 month- 2 years: If a suitable site exists near the school, coordinating with the site’s owner and promoting its use can be relatively quick.

If a new facility or improvements are needed, design usually takes a few months and construction happens the following season.

References and Resources:

- Safe Routes to School Guide: Park and Walk
- Opportunities to Walk to School through Remote Drop-off Programs

5.0 Recommended Routes

5.1 School Walking Maps

Ben Steele Middle School....265
Billings Central Catholic High....266
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Sunrise Montessori School....277
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5.1 SCHOOL WALKING MAPS

As part of the Encouragement aspect of SRTS, this plan provides Suggested Walking Route maps for each of the 17 schools included in The Plan. These maps are intended to reduce the mental labor families must do to choose a safe route to school for walking or biking. These routes were selected by evaluating the streets within a mile walking distance of the school and based on factors such as the presence of sidewalks, crossing guards, signals and traffic volumes. The route deemed safest was identified.

These maps can be distributed to students and families to help them choose their route to school, and are intended to function independently of the larger plan document. These maps can also be made available online on City, County, and School websites as appropriate.

These maps are intended for informational purposes only. The City of Billings or Billings Public Schools cannot and does not guarantee the safety of these routes, and assumes no responsibility or liability. We encourage families and students to use this map to explore options for traveling to and from school, but each family is responsible for choosing the most appropriate option based upon their knowledge of route conditions and the specific needs and/or experience level of their student.

Suggested Walking Route maps were not created for some schools because of a lack of walking or biking facilities near those schools. They are:

- BCS Elementary
- Grace Montessori Academy
- Pioneer Elementary

Sidewalk Versus Street Riding

Source: Based on National Highway Traffic Safety Administration information

Children less than 10 years old riding without an adult are not mature enough to make the decisions necessary to safely ride in the street. Children less than 10 years old are better off riding on the sidewalk.

Over the age of 10, the child and their parent/guardian should discuss where is the safest place to ride based on several factors, including the student's route to school, their maturity level, demonstrated on-street riding skills, and understanding that drivers may not expect people traveling as fast as bikes do on the sidewalk.

For anyone riding on a sidewalk:

Check local and state law to make sure sidewalk riding is allowed.

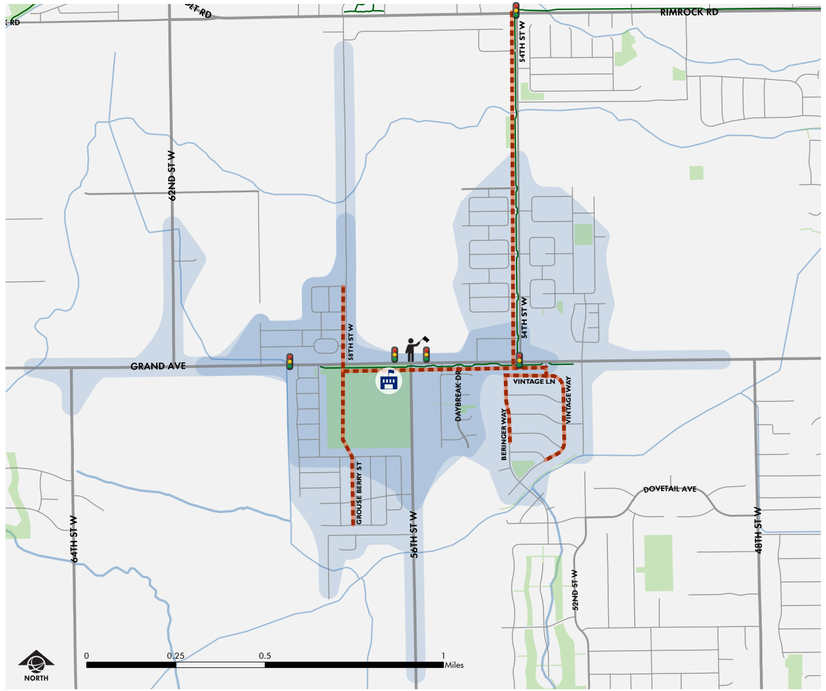
Watch for vehicles coming out of or turning into driveways.

Stop at corners of sidewalks and streets to look for cars and make sure the drivers see you before crossing.

Enter a street at a corner and not between parked cars. Alert Pedestrians that you are near by by saying "Excuse me," or "Passing on your left," or use a bell or horn.

Ben Steele Middle School

Suggested Walking Routes to School

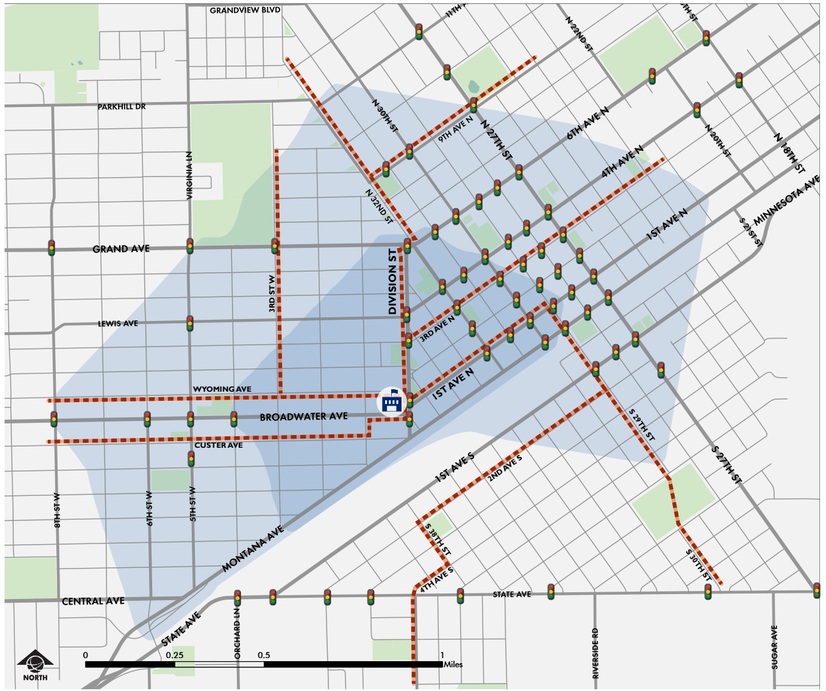




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Billings Central Catholic High School

Suggested Walking Routes to School

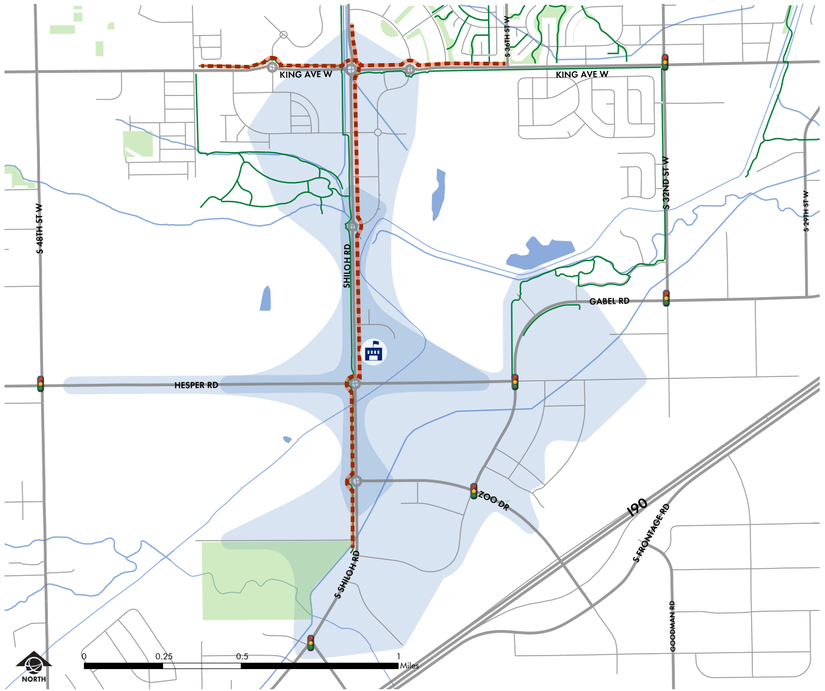




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Billings Christian High School

Suggested Walking Routes to School

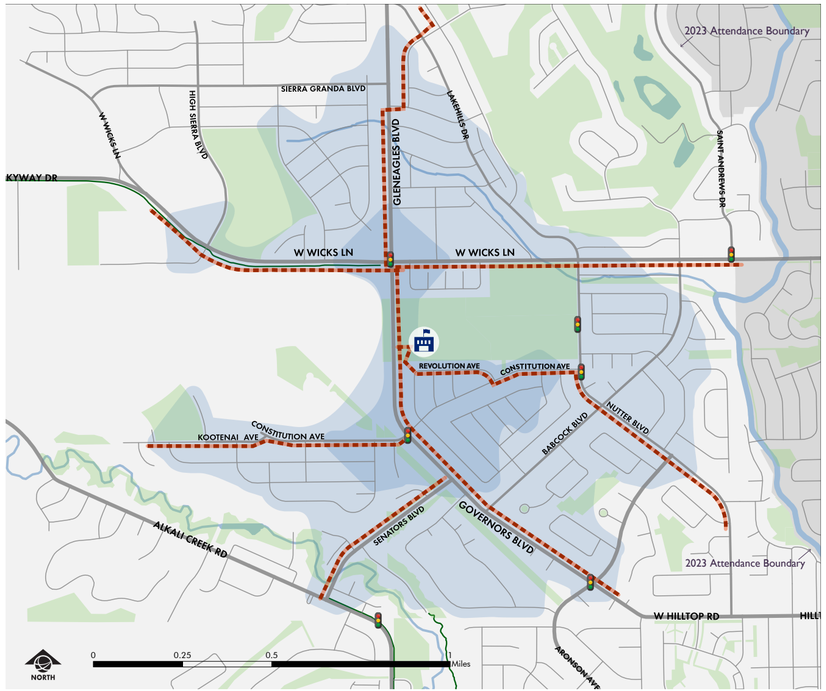




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Castle Rock Middle school

Suggested Walking Routes to School

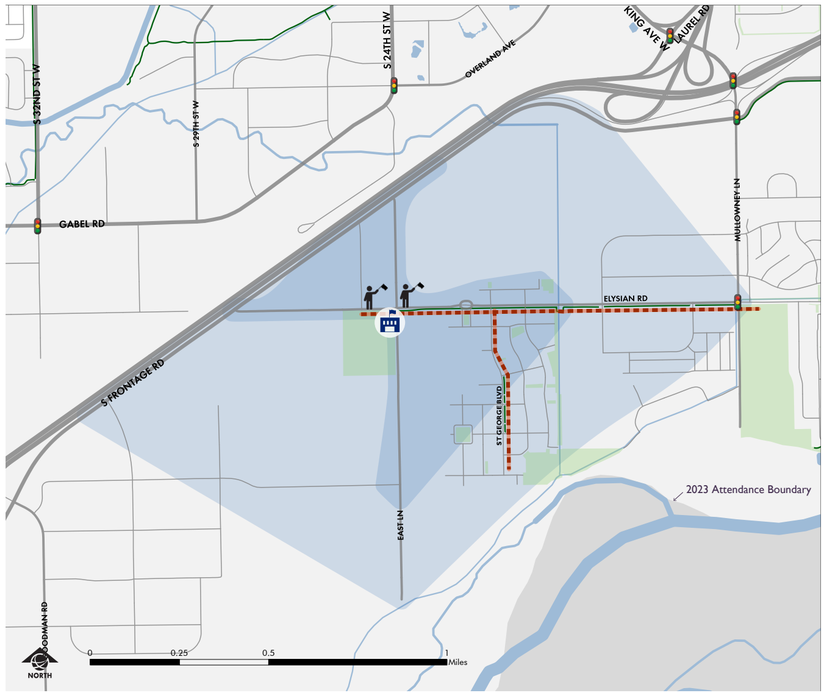




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Elysian School

Suggested Walking Routes to School

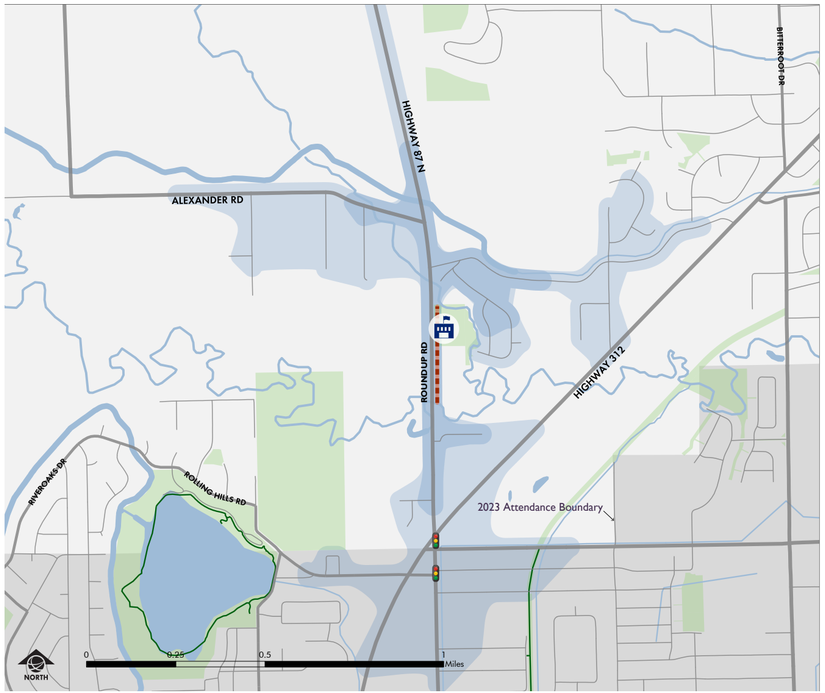




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Independent School

Suggested Walking Routes to School

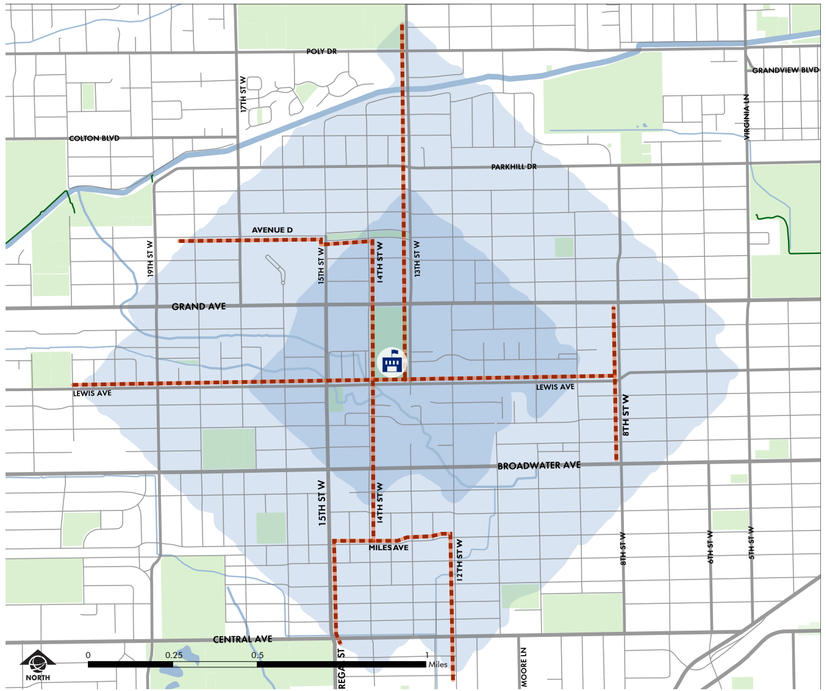




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Lewis and Clark Middle School

Suggested Walking Routes to School

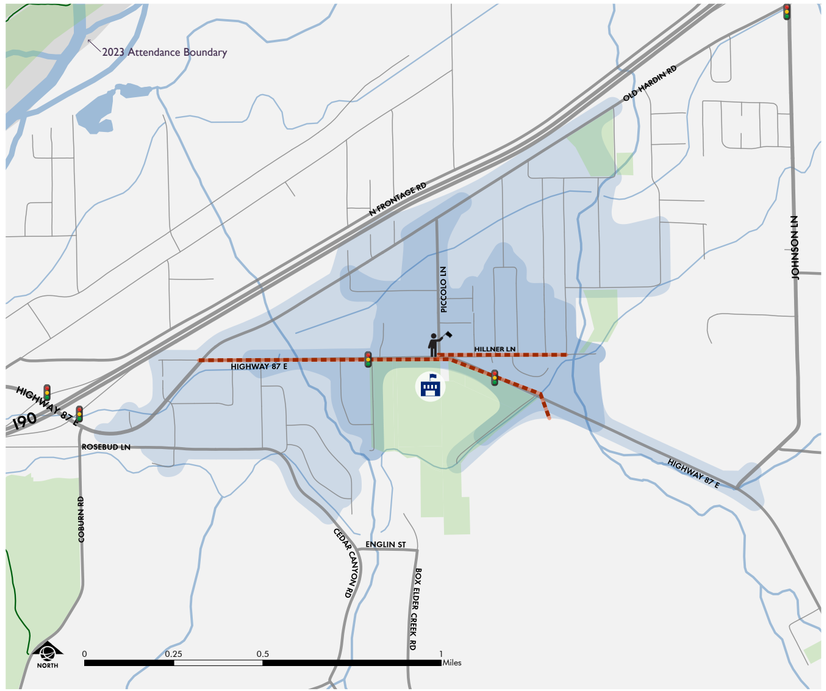




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Lockwood Schools

Suggested Walking Routes to School

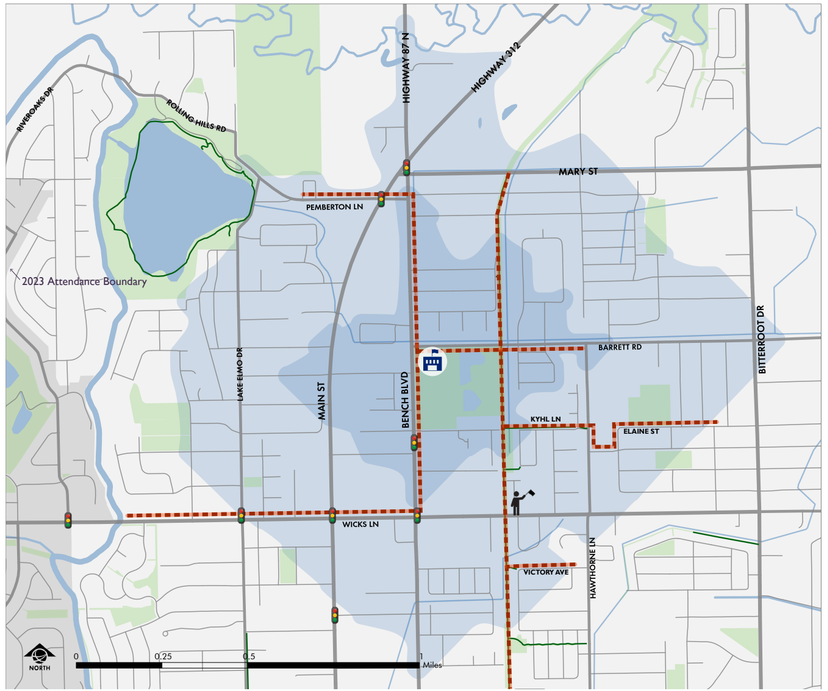




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Medicine Crow Middle School

Suggested Walking Routes to School

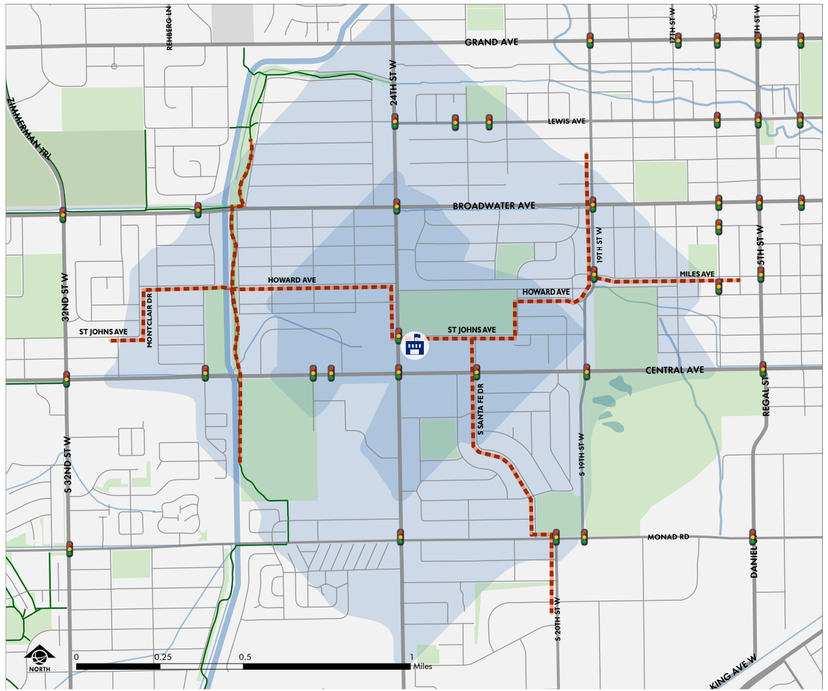




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Mount Olive Lutheran School

Suggested Walking Routes to School

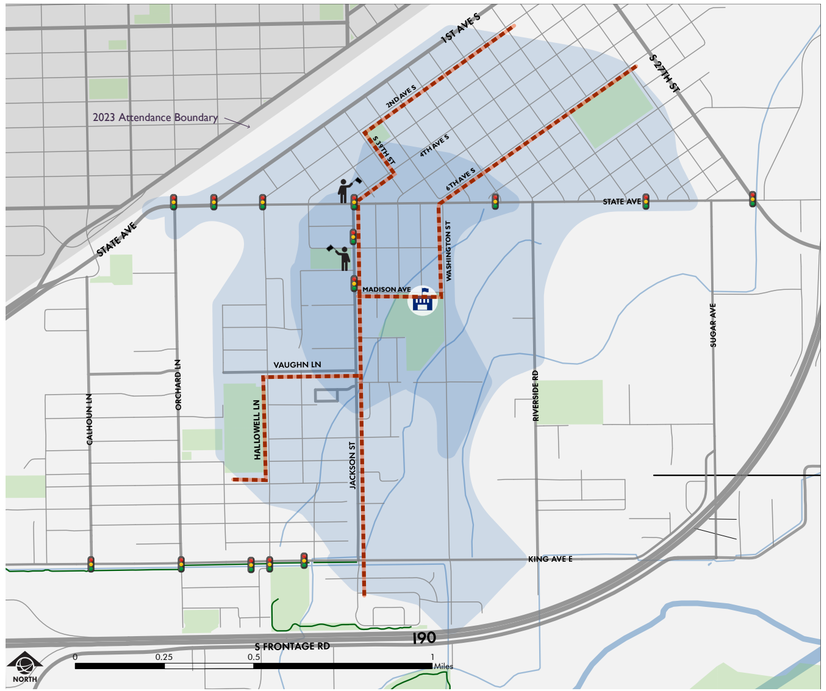




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Riverside Middle School

Suggested Walking Routes to School

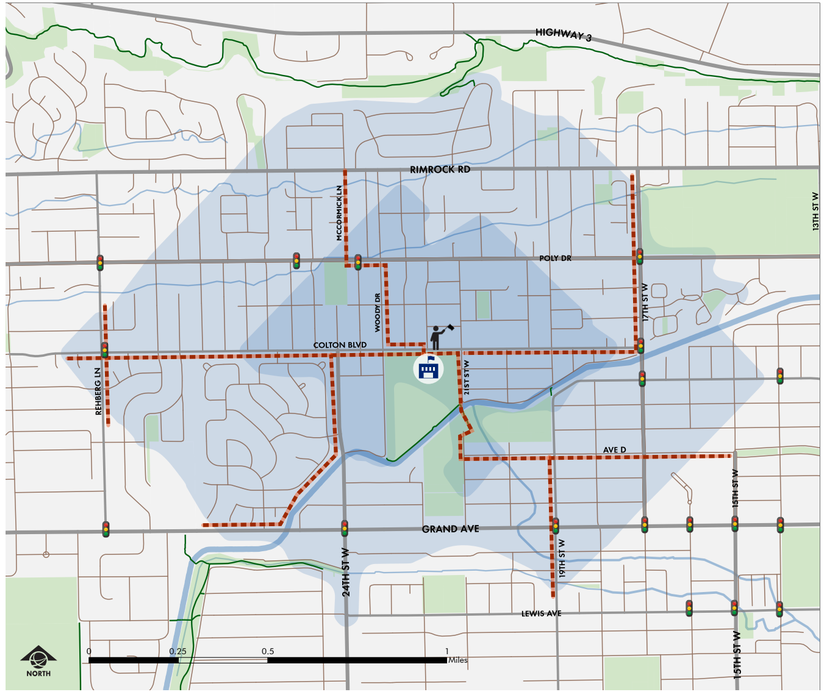




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St. Francis Catholic School

Suggested Walking Routes to School

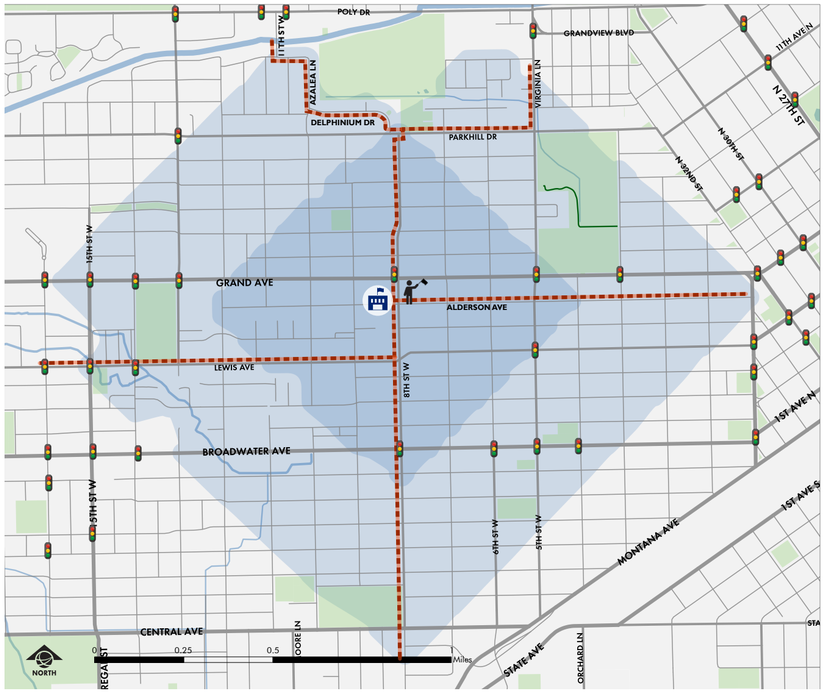




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Sunrise Montessori School

Suggested Walking Routes to School

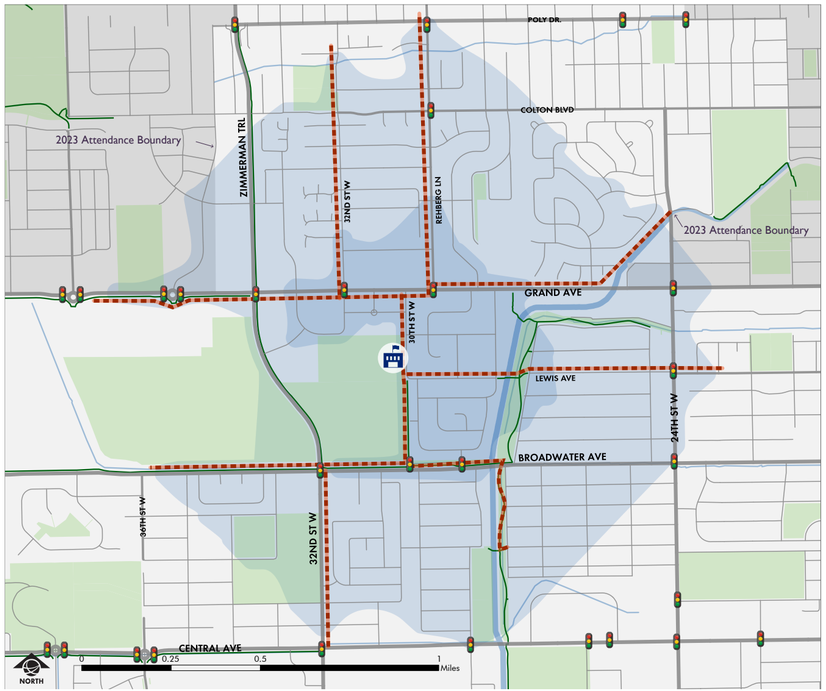


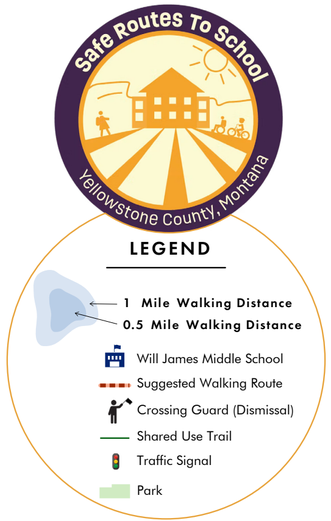


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Will James Middle School

Suggested Walking Routes to School





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Appendix A: Data Collection

To inform the recommendations of this plan, the project team gathered data from many sources including collection of quantitative data on crashes and Average Annual Daily Trips (AADT), as well as qualitative data from the community. This data was collected and analyzed in the spring of 2023.

A.1 Existing Safe Routes to School Plans, Policies and Program Review

A.2 Public Engagement

A.3 Walk Audits

APPENDIX A.1 - EXISTING PLANS, POLICIES AND PROGRAM OVERVIEW

City of Billings School Zone Traffic Control Policy — 2001

The 2001 City of Billings School Zone Traffic Control Policy represents the most recent such policy document adopted. It provides guidance on school crossing location and design, and functions as a supplement to the several other guiding documents published by the Institute of Transportation Engineers (ITE) and the Montana Office of Public Instruction. It cites the City Council's 1989 decision to end the use of reduced speed zones at Middle Schools, using the justification that middle school-aged students are personally responsible for their own safety while traveling to and from school. This document does not represent current standard practices and is recommended to be repealed and replaced as part of this plan's programmatic recommendations chapter.

Link: Microsoft Word - Document2 (billingsmtpublicworks.gov)

City of Billings Safe Routes to School Study — 2011

The 2011 Safe Routes to School study was the first of its kind in Billings. It evaluated conditions at and around the 22 elementary schools of School District Two. Its objectives were to enhance student safety during travel to and from school and to encourage more students to walk and bike. The study takes a holistic approach to Safe Routes with emphasis on engineering improvements. It highlights the collaborative efforts of local jurisdictions. The 2011 plan identified priority projects, planning-level cost estimates, and potential funding sources for those projects.

Link: WASHINGTON (billingsmtpublicworks.gov)

Billings Community Transportation Safety Plan — 2021

The Billings Metropolitan Planning Organization (MPO) partnered with the Montana Department of Transportation (MDT) to create the Community Transportation Safety Plan (CTSP) for Billings. The plan seeks to reduce fatal and serious injury crashes using a data-driven approach like Montana's Comprehensive Highway Safety Plan (CHSP). Led by a Transportation Safety Advisory Committee, the CTSP adopted Vision Zero. Emphasis areas identified were unrestrained occupants, impaired driving, and inattentive driving/ speeding. Strategies and action steps were developed through public input and online surveys to achieve the goal. The CTSP aligns with the CHSP and Vision Zero's objective of eliminating fatalities and serious injuries on Montana's roadways.

Link: Documents – Billings CTSP

Billings Area Bikeway and Trails Master Plan Update — 2017

The Billings Area Bikeway and Trail Master Plan outlines both long-term vision and short-term actions to improve active transportation mobility and recreation in the Billings Area. The plan covers long-range goals, existing conditions, needs assessment, recommendations, and implementation. It emphasizes the importance of evaluating roadways for compatibility with on-street facilities and proposes the creation of bicycle boulevards and on-street bike lanes. The plan promotes consideration of bicycle and trail facilities at all levels of government, inclusion of active transportation facilities in other transportation projects, and securing funding for implementation and maintenance. Short-term projects are identified for inclusion in the 5-year CIP with a focus on key connections and safe routes to schools. The plan also highlights the need to improve programmatic frameworks and resources for maintenance and expansion.

Link: Billings-Bikeway-and-Trails-Master-Plan (billingsmt.gov)

Billings Urban Area Long Range Transportation Plan — 2018

The Billings Urban Area Long Range Transportation Plan is a framework that guides the development and implementation of transportation projects in the Billings urban area. The plan considers land use and transportation conditions, forecasts future needs, and identifies improvements for the Billings region. It touches on topics including streets, highways, rail, freight, transit, sidewalks, and bicycle facilities. It also addresses safety, funding sources and project recommendations. The plan sets goals and performance measures to improve the overall transportation system in the Billings urban area.

The LRTP also enumerates the significant investments that Billings has made to enhance pedestrian and bicycle facilities in the past 25 years. It encourages continued pursuit of Safe Routes to School projects and programs, as well as setting the goal of Billings achieving the "Gold Bicycle Friendly Community" rating by 2030. It integrates several previously recommended SRTS projects into its own project recommendations.

Link: mdt.mt.gov/publications/docs/brochures/billings-tranplan.pdf

Billings Urban Area Long Range Transportation Plan — 2023

The 2023 update was published while this plan was being developed. As elements of the 2023 LRTP were completed, they were used to inform this plan where possible.

The 2023 LRTP included a "Performance Measure Report Card" that tracked the Metropolitan Area's progress on objectives set in the 2018 LRTP. It revealed that, while the 5-year rolling average of fatal and serious injury crashes decreased by 17%, non-motorized fatal and serious injury crashed increased by 25% in the same time.

Link: 2023-Billings-LTRP-Report (billingsmt.gov)

Billings & Yellowstone County MPO Public Participation Plan (PPP) — 2018

The purpose of the Billings and Yellowstone County Public Participation Plan is to establish guidelines and procedures for public engagement in the plan-making process of the Metropolitan Planning Organization (MPO). It serves as a framework for involving the public in transportation planning projects, emphasizing transparency and accessibility. The PPP defines the MPO and its functions, lists the various committees and boards that help create and review plans created by the MPO, outlines the plan production process that the MPO undertakes for each plan, and identifies significant plan documents that the MPO produces. The PPP was used to inform the SRTS phase 2 plan's public participation and review processes.

Link: 21353_Billings-Public-Participation-Plan_FinalDraft-PDF (billingsmt.gov)

Billings Safe Routes to School (SRTS) Plan Update — July 2022

Phase 1 of the Billings Safe Routes to School Plan was created by the MPO to improve safety and accessibility for students walking and biking to school in Billings. It studied 22 School District 2 public elementary schools, evaluating current conditions, identifying barriers, suggesting walking routes, and proposed policy changes and infrastructure projects to promote walking and biking to school. The 2023 SRTS plan followed many of the processes and conventions established in the 2022 plan. It was also used as a reference to inform the project and programmatic recommendations included in the 2023 plan.

Link: billingsmt.gov/DocumentCenter/View/47663/Billings-SRTS-Study-07262022_final

Walking Route Maps for Billings Elementary Schools — 2022

As part of the 2022 Safe Routes to School Plan Update, the original, 2018 "Suggested Walking Routes" maps were updated for the 22 School District 2 elementary schools included in the study. These maps show school locations, traffic signals, crossing guard locations, bike racks, shared use paths, and recommended walking routes. These maps were intended to help families to explore options for walking to and from school under existing conditions. They were referenced by the phase 2 consultant team while creating project recommendations for phase 2 schools near the phase 1 schools.

Link: Walking Route Maps For Billings Elementary Schools | City of Billings, MT - Official Website (billingsmt.gov)

Montana Department of Transportation Crash Data 2011-2020

The Montana Department of Transportation (MDT) offers detailed crash data for different geographies including cities, counties, and reservations. This data is categorized within the "Problem Identification: 2020 Data" crash report, covering aspects like crashes involving no motorists, or street users not in a vehicle. This report serves as a compilation of crash trends, encompassing crash statistics, demographic information, and areas of emphasis related to traffic safety, all part of Montana's Vision Zero initiative. When examining crash data for non-motorists in Yellowstone County, the number of crashes resulting in serious injury or death are somewhat erratic with a slight downward trend. This crash data was used to inform project recommendations.

Link: Crash Data | Montana Department of Transportation (MDT) (mt.gov)

City of Billings Transportation Planning Resources

The City of Billings and MPO regularly update resources for transportation planning that were used to inform this Safe Routes to School Plan Update. These resources include:

- Billings Urbanized Area Traffic Count Map — 2022
- Trail Counts — 2019
- Bikeway Counts — 2019
- Transportation Improvement Plan (TIP) — 2020-2024
- Billings Urban Area Unified Planning Work Program — 2023

Link: Transportation Planning Resources | City of Billings, MT - Official Website (billingsmt.gov)

Billings Area Wayfinding Signage Plan — 2020

The Billings Area Wayfinding Signage Plan provides guidance underscoring the importance and design considerations of wayfinding tailored to Billings, and addressing challenges in pedestrian and bicycle navigation. The plan addresses the unique needs of these modes of transportation by providing a holistic wayfinding system. It elaborates on the advantages of wayfinding, best practices, diverse signage functions and designs, and offers guidance on destination selection, programming, placement, and eventual implementation. Furthermore, the plan adopts a destination hierarchy, designating middle schools as secondary destinations and elementary schools as tertiary ones, contributing to a well-structured wayfinding system for the city.

Link: Final-Billings-Wayfinding-Signage-Plan (billingsmt.gov)

City of Billings Complete Streets Progress Report — 2020

The 2020 City of Billings Complete Streets Policy Progress Report assesses advancements since the adoption of the original 2011 policy and urges further expansion. Complete Streets are intended accommodate diverse transportation needs, from sidewalks to bike lanes, promoting inclusivity for all residents. The progress report discusses the importance of streets as recreational amenities during the COVID-19 pandemic. The Complete Streets Policy seeks to ensure streets are open to everyone, citing research to support that this leads to improved public safety and health outcomes via fiscally responsible means.

Link: https://ci.billings.mt.us/DocumentCenter/View/43311/Final-Complete-Streets-Progress-Report-2020

Kids In Motion — Ongoing

Kids In Motion is a collaborative effort between Intermountain Health (formerly St. Vincent's Healthcare), the Education Foundation for Billings Public Schools, the City of Billings, School District #2, and others. The program includes events held at schools during which volunteers teach students bicycle maintenance and traffic safety fundamentals. The Kids In Motion program is emblematic of the "Encouragement E" of the Six E's of SRTS. It includes lessons and printable materials that educators can download to use in classroom settings.

Link: HOME | kimbillings (kidsinmotionvolunt.wixsite.com)

Lockwood Non-Motorized Transportation Plan

In 2014, the Lockwood community initiated the creation of the Lockwood Pedestrian Safety District, thereby creating a Special Improvement District (SID) to fund sidewalk improvements. The 2023 Lockwood Non-Motorized Transportation Plan serves as the strategic pedestrian and non-motorized plan until 2028. The new plan addresses Lockwood's current conditions and demographic trends, assesses the success of recent pedestrian safety improvements, and ultimately outlines Lockwood's pedestrian improvement work for the next five years. The work plan establishes infrastructure improvements, implementation strategies, and an ongoing approach that will allow Lockwood to continue towards their goal of increasing pedestrian and bike safety and accessibility throughout their community.

APPENDIX A.2 - PUBLIC ENGAGEMENT

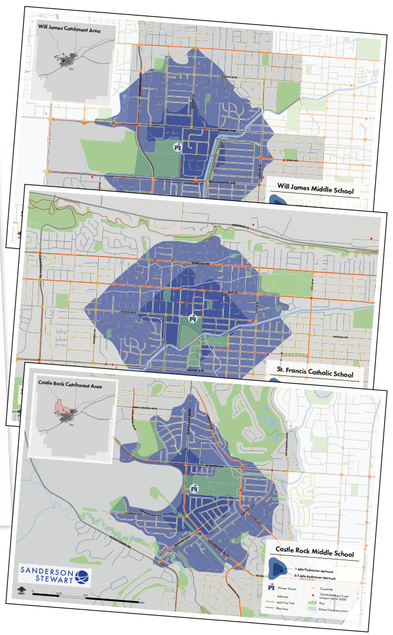
Technical expertise alone is not enough to make a good Safe Routes to School plan. For this plan to be useful to Yellowstone County families and schools, it is recommended to have it be based on the everyday knowledge of the people who live here. To gather the collective knowledge of the community, the project team undertook a public engagement process that included attending school events in the spring of 2023, distributing surveys to school administrators, and publishing a website with an online survey and webmap where community members posted comments.

The SRTS plan and webmap were publicized via:

- Email and correspondence with school administrators
- E-flyers sent out to school email lists
- An article in the Billings Gazette
- A story on local KTVQ news station
- In-person visits and tabling during school events
- Yard signs posted at participating schools

The results of input received are summarized here. Comments about specific schools and their surroundings are summarized in Chapter 3 in each school summary under "Community Safety Concerns."

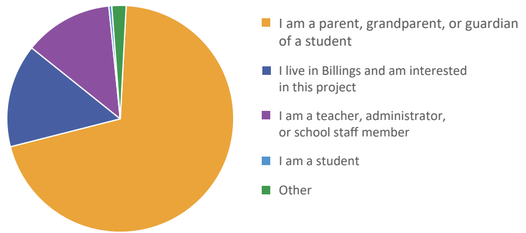




Survey Results

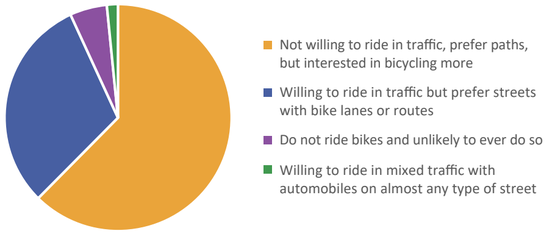
Q1:

Choose the statement that best describes you (Select all that apply)

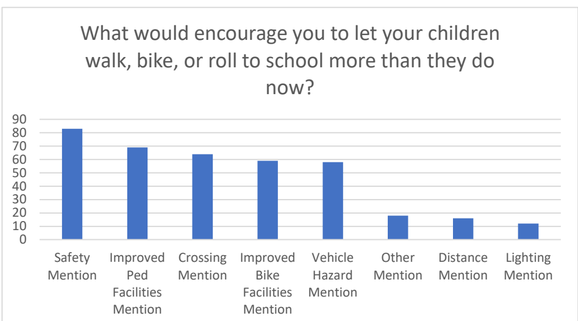


Q2:

How would you describe your and your household's biking habits and comfort level?

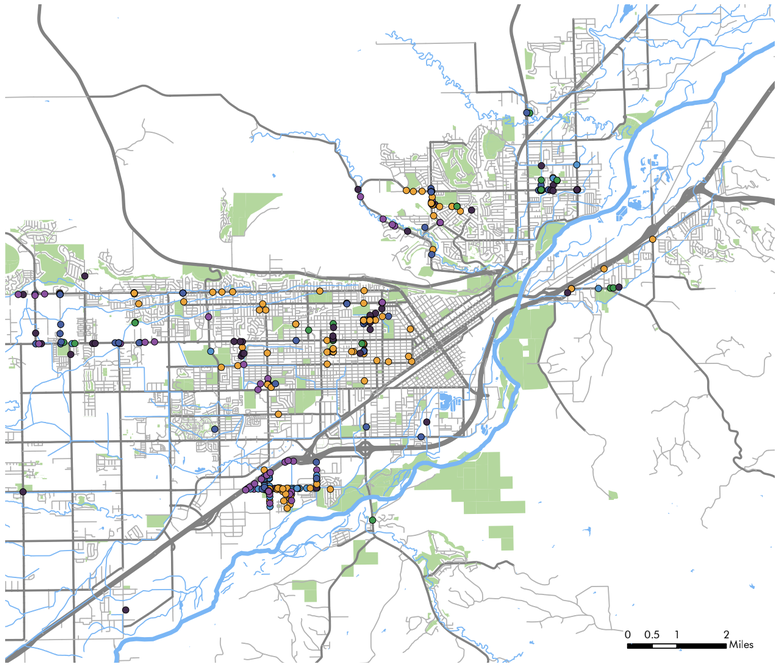


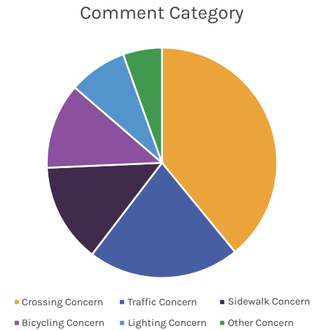
Q3:



Public Input Totals	
Total website visitors	710
Total contributors	216
Surveys completed	193
Webmap comments	365

Webmap Results





APPENDIX A.3 - SCHOOL WALK AUDITS

During the spring of 2023, Sanderson Stewart staff, Billings MPO staff, City staff and volunteers conducted walk audits of the 17 participating schools. These included interviews with staff, administrators and crossing guards. Staff and volunteers walked and biked the streets surrounding each school, using public comments to identify areas of concern. Observations of conditions and behaviors were collected via online tools, photos and paper forms. Summaries of data collected during walk audits about specific schools and their surroundings are summarized in Chapter 3 in each school summary under "Arrival/ Dismissal Observations."

School Neighborhood Walk Audit: INDEPENDENT

What to Look For:

Sidewalks and bike lanes

- Is a sidewalk present? Is it wide enough? yes
- Is the sidewalk cracked, broken, or incomplete? no
- Are there trip hazards or accessibility issues?
- Are there bike lanes? no
- Would children be safe biking? no!!
- Is it easy and safe to cross the street? no

Safety

- Does walking feel safe from cars?
- Does it feel safe from crime and violence? yes
- Is traffic too fast? yes, highway speed too fast!
- Is it well lit?

School Zone

- Are students walking or biking yes separated from car/bus drop offs?
- Are there safe street/driveway crossings when approaching the school entrance? no
- Are there continuous sidewalks/ bike paths from approaches to school entrance?

Neighborhood

- Are buildings well maintained? yes
- Are there vacant buildings?
- Are other people out and about? some in neighborhood behind school
- Are there playgrounds or parks? no
- Are parks unsafe or unmaintained?



For each noteworthy feature that you observe along the route on the map above, write a number at the location on the map. Write a brief description of your observation under Notes at the related number.

Notes:

1. 2 crossing guards in school parking lot
2. directing cars + pedestrians @ crosswalk
3. at school entrance and 2nd parking lot
4. ~~Bike~~ lane closest to road.
5. Kids crossing on their own @ non-
6. designated spots. Crossing guard asking
7. them to use crosswalk!!
8. Limit 4-5 cars to pick up kids. Hold
9. other cars @ front steps.
10. Crossing guard states a few kids cross w/out parent. parents should come across crosswalk to pick up kid @ steps.
11. upset parents who yell/gesture @
12. Crossing guard in far parking lane.
13. because she makes them wait in line. they are
14. no signage about crosswalk use
15.
16. The staff does a good job with their
17. system - parents who park in lot
18. pretty good about complying w/
19. crosswalk use.
20.





Appendix B: Project Prioritization

The City of Billings has dedicated over $3.2 million in its CIP to spend on Traffic Calming, SRTS, sidewalk, and ADA projects over the next five years. Even so, that funding isn't enough to complete all the projects identified in the Phase 1 and Phase 2 plans at once. Therefore, it is necessary to prioritize projects based on how much public benefit, or impact, they will create. The Project Impact formula attempts to estimate, or model that impact.

The project rankings are not intended as a strict ordering of project construction. Factors like availability of funding or timing of other projects at the same location could affect the actual timing of project construction. Anyone implementing the recommendations of this plan should view the Phase 1 and Phase 2 documents more as "Volumes 1 and 2," and should consider each phase's high, medium, and low priority projects together.

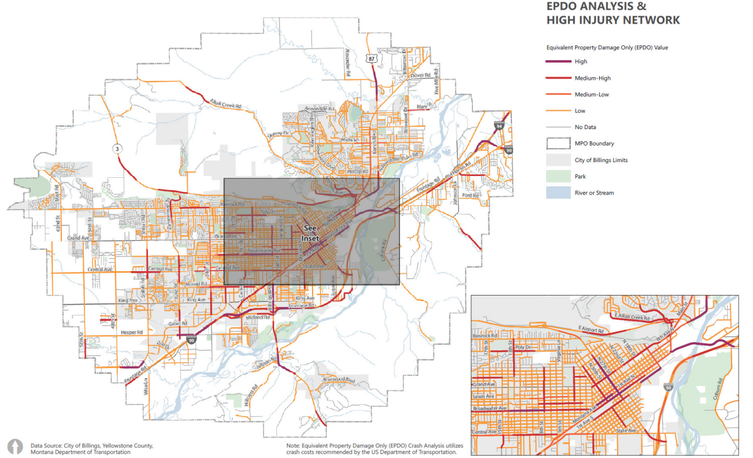
Project Impact Formula Modification Process

Early in the production of this plan, before any projects were created, the Project Advisory Committee (PAC) deliberated over changes to the Project Impact formula developed for the 2022 Phase 1 plan. Because the schools in this plan include private schools which have no attendance boundaries and middle schools whose boundaries are larger than the elementary schools studied in the Phase 1 Plan, the PAC decided to evaluate the Project Impact Formula created in the Phase 1 Plan. Each PAC member completed a form stating how they would modify the formula calculations and weights. After thorough deliberation, the PAC reached consensus on the following Project Impact formula, which is briefly discussed in Chapter 3, Project Recommendations, and is explained in greater detail here.

Traffic Safety (100 pts)

This criterion accounts for the relative safety of the roadway where the proposed project is located. It combines three factors that affect actual and perceived safety:

- The posted speed limit at the project location
- The roadway classification at the project location
- The roadway's category in the 2023 Long Range Transportation Plan's High Injury Network (AKA High EDPO). This factor was not available during the Phase 1 Plan, and was added for the Phase 2 Plan.



Billings MPO, EDPO & High Injury Network

Feasibility (100 pts)

This criterion accounts for the likelihood or ease of completing a project based on dedicated funding and documented support. These factors include:

- Whether a project includes pedestrian crossings, sidewalks, or ADA improvements,
- Whether a project is in the same place as a project listed in the FY2024-2028 Capital Improvement Plan
- Whether a project is in the same place as a project listed in an adopted plan like the 2023 LRTP or the 2017 Bikeway and Trails Master Plan

Demand (100 pts)

This criterion measures how many people might use a project once built. The Phase 1 Project Impact formula counted the number of students living within a quarter mile of a project for this criterion. The PAC changed the calculation of this criterion for several reasons:

- Students may age out of a school before a project is constructed
- Private schools have no attendance boundaries
- Schools often serve as neighborhood recreational amenities

To improve the durability and accuracy of this criterion, the project team used GIS network analysis to count the number of households within two miles of a school whose shortest route to school would take them through the project location. That number was then multiplied by the number of students attending the subject school, and points awarded equal to the that project's score relative to the highest-scoring project.



Example of demand modeling methodology at BCS Elementary

Equity (100 pts)

This criterion accounts for justice and fairness by allotting points based on the percentage of students at the project's school who qualify for free and reduced lunch. This way, the Project Impact formula recognizes both that lower-income schools have been historically under-funded, and that lower-income populations tend to use active transportation at higher rates. Race was not included as in Phase 1 because some schools did not have data.

Once each project's scores were calculated, they were ranked and divided into the categories of high, medium, and low priority based on their overall score.

Criteria	Metric	Maximum Points Per Metric	Point Assignment	Overall Criteria Score
Traffic Safety	Posted Speed Limit[1]	33	25 mph = 11 30-44 mph = 22 45+ mph = 33	100
	Roadway Classification	33	Street = 9 Collector = 17 Minor Arterial = 25 Principal Arterial = 33	
	High Injury Network	33	No Data = 8 Low = 14 Medium-Low = 22 Medium-High = 28 High = 33	
Feasibility	Pedestrian Crossing, Sidewalk, or ADA Improvement	30	Yes = 30 No = 0	100
	In 5-Year Capital Improvement Plan	50	Yes = 50 No = 0	
	Documented in Adopted Plan	20	Yes = 20 No = 0	
Demand	Number of Households Within 2 Miles of School Whose Route to School Benefits From Project * Attendance	100	% of highest-scoring project	100
Equity	Free and Reduced Lunch Percentage at School	100	% = Points	100
			TOTAL POINTS AVAILABLE:	400

[1] Posted speed limits used are not reflective of any "School Zone" temporal speed limit (e.g., 20mph when school speed limit sign is flashing) and only represent the regularly signed speed on the roadway.

Appendix C: Citations

1 Litman, T (2023, November 19) Evaluating Active Transport Benefits and Costs: Guide to Valuing Walking and Cycling Improvements and Encouragement Programs. Victoria Transport Policy Institute

2 Pedestrian and Bicycle Information Center et all (2007) Safe Routes to School Guide

3 Phansikar M, Ashrafi SA, Khan NA, Massey WV, Mullen SP. Active Commute in Relation to Cognition and Academic Achievement in Children and Adolescents: A Systematic Review and Future Recommendations. Int J Environ Res Public Health. 2019 Dec 13;16(24):5103. doi: 10.3390/ijerph16245103. PMID: 31847267; PMCID: PMC6950697.

4 Litman, T (2023, November 19) Evaluating Active Transport Benefits and Costs: Guide to Valuing Walking and Cycling Improvements and Encouragement Programs. Victoria Transport Policy Institute

5 PRC Inc. (2020). 2020 Community Health Needs Assessment Report. Omaha, NE.

6 Social Explorer Tables: ACS 2018 (5-Year Estimates) (SE), ACS 2018 (1-Year Estimates), Social Explorer; U.S. Census Bureau

7 Center for Neighborhood Technology, (2023) H+T Fact Sheet: True Affordability and Location Efficiency
Title : Transportation Statistics Annual Report 2023
Corporate Creator(s) : United States. Department of Transportation. Bureau of Transportation Statistics
Contributor(s) : Robinson, Ramond;Nguyen, Long;Moore, William H.;Culotta, Kalle;Hocevar, Hannah;Kimmel, Sari;Stacey, Mikki;Bricka, Stacey;Bronzini, Michael;Edmonds, Julie;Fang, Bingsong;Firestine, Theresa;Fletcher, Wendell;Greene, David;Kent, Paul;Pisarski, Alan;Rick, Christopher;
Published Date : 2023-12-01
Series : Transportation Statistics Annual Report (TSAR)
DOI : https://doi.org/10.21949/1529944

8 Same as #7

9 Billings – Yellowstone County MPO, 2023, Long Range Transportation Plan

City Council Work Session

Date:	04/01/2024
Title:	City of Billings Recreation Division update for Spring and Summer 2024 programs
Presented by:	Pigg Michael, Superintendent
Department:	Parks/Rec/Public Lands
Presentation:	Yes
Legal Review:	Not Applicable
Project Number:	N/A

RECOMMENDATION

No formal action is needed as this is an information item.

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

The Recreation Division each year unveils new programs and refreshes old programs. Staff will be presenting an overview of the programs that will be offered this Spring and Summer and provide some vision for the new and expanded programs that will be available during the Fall and Winter of 2024.

STAKEHOLDERS

The recreation offerings for spring and summer are intended to provide quality recreational experiences for all the citizens of Billings.

ALTERNATIVES

City Council may:

- Approve; or,
- Not Approve

FISCAL EFFECTS

The Recreation Division aims to recover all direct costs of the programs offered. In 2023 the Rec2U program was offered free of cost. This summer, staff is proposing to expand the program to 4 days/week and 8 locations. Alternative funding sources are being explored but the Rec2U program might require a General Fund request.

Attachments

Recreation Presentation

RECREATION DIVISION

#MAGICCITYMEMORIES



GAME DAY SCHEDULE!

- Starting Lineups!
- 1st half highlights (Past Games and Video Replay)
- Halftime (Department Adjustment)
- 2nd half highlights (New Programs)
- Recruiting New Players (Future Plans)
- Post Game Press Conference (Questions?)

STARTING LINEUP-STAFF

Chris Martin- Recreation Specialist

Austin Bolin-Recreation Specialist

Dan McKinney-Recreation Specialist



What do we do?

-Facilitate all recreation programs from youth to adults

-Hire, train, onboard, supervise, and oversee payroll for over 200 employees each year

-Manage registration software and app

-Publish marketing materials such as flyers/brochure/social media posts

-Coordinate and organize schedules w/SD2 and outside instructors/vendors

-Manage field rentals and over see Aquatic Facility operations

-Create employee, bus, and camp schedules…and more!



1ST HALF HIGHLIGHTS

Adaptive Recreation: The Miracle League of Billings (2 seasons, Spring and Fall)

Aquatics: Swim Lessons @ Rose Park and South Park, Lifeguard Certification, Scuba Classes, First Aid CPR AED Training,

Outdoor Recreation: Learn to Fly Fish, Family & Group Whitewater Rafting, Youth Cycling

Youth Sports Camps: Golf Lessons, Basketball, Soccer, Volleyball, Cheer and Dance, Martial Arts, Flag Football, Racquet Sports

Youth Tennis: Tennis Academy, High Performance Lessons

Special Interest: Rocket Camp, Introduction to Aviation, Character Design Camp, Babysitters Camp, Kids in the Kitchen

Adult Sports: Sand Volleyball League, City League Basketball and Soccer



1ST HALF HIGHLIGHTS

Youth Camps: Adventure, Pioneer Playhouse, Magic City, AquaNutz, Junior AquaNutz, Lifesavers Camp, Girls Ninja Warrior



Music Camps: Rock Band, Keyboard

Adult Fitness: 55+Golf, Sunset Yoga

Adult Racquet Sports: Tennis Lessons, Pickleball Lessons, Pickleball Boot Camps and Table Tennis

Youth Sports: 3rd-5th Grade Girls Volleyball, Tennis Is Elementary, Intro to Martial Arts



1ST HALF HIGHLIGHTS!

Fall Youth Programs: 2nd-5th Grade NFL Flag Football, 3rd-5th Grade Girls & Boys Basketball, Intro to Martial Arts

Fall Adult Sports Leagues: Coed Volleyball and Soccer

Fall Racquet Sports: Tennis Is Elementary, 12U Indoor Tennis Lessons, Pickleball Open Play

Fall Special Interest: Kids in the Kitchen, Table Tennis





MISCELLANEOUS PROGRAMS/OPERATIONS

-Operate and Manage Batting Cages @ Stewart Park

-Oversee Club Baseball Teams @ North and Central Park

-Manage practice schedules for softball and baseball teams at Poly Vista Park

-Rose Park and South Park Pool: Mechanical and Aquatic Operations

-Online Pickleball Court Reservations: Lillis and Central

HALFTIME!

Shift in Recreation Priorities Proposal

-Offer more unique, diverse, and collaborative programs

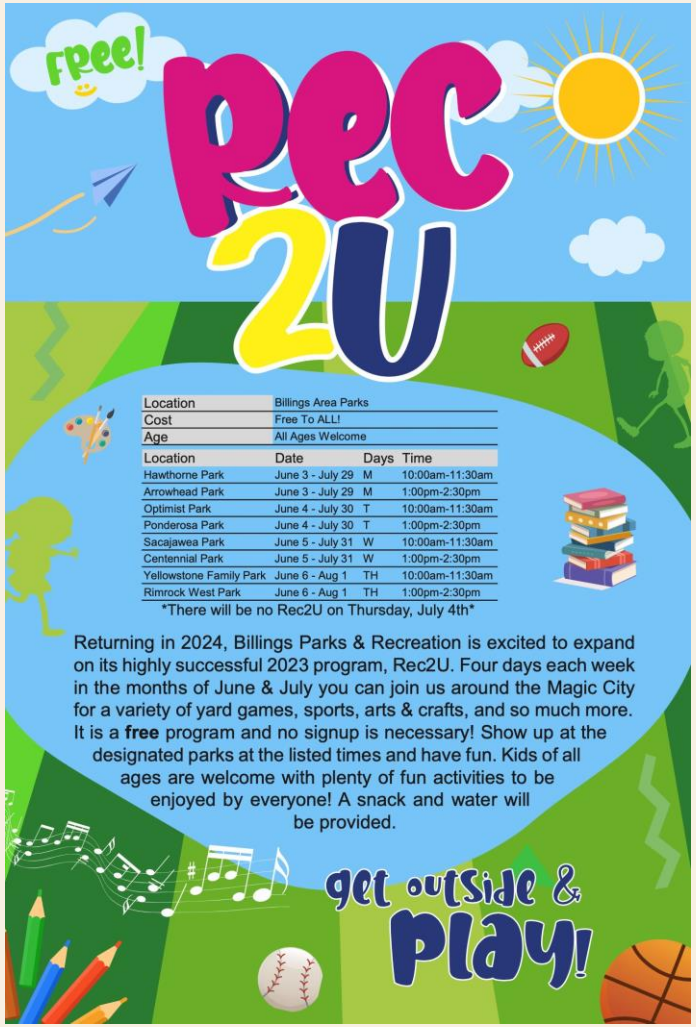
-Expand our reach to cover all demographics

-Be a voice and use our knowledge, experience, and resources in the Public Safety conversation

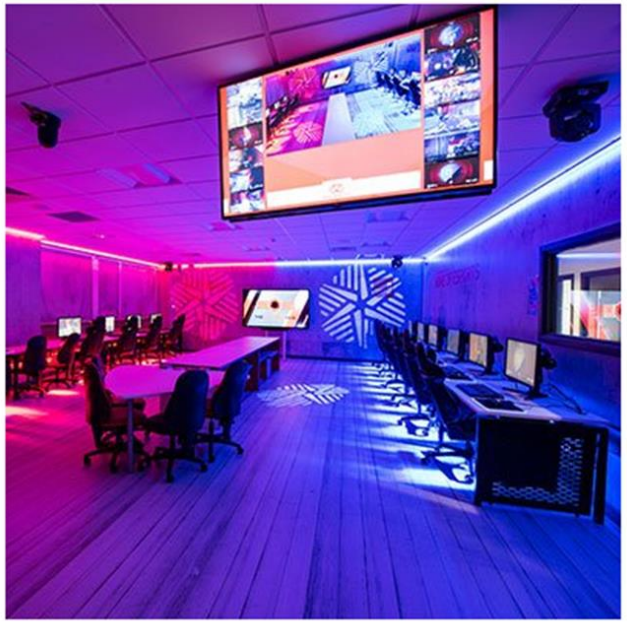
-Create synergy and partnerships with outside businesses and organizations for program assistance (Recently began working with Big Brothers Big Sisters of Yellowstone County)

SECOND HALF! NEW PROGRAMS

- Rec2U
- Love Serving Autism
- Learn to Fly Fish: Catching Fish with a Kid!
- Intro to Yoga
- Adult Piano Lessons
- Intro to Martial Arts
- Free Swim Lessons @ South Park
- Adaptive Therapeutic Swim
- Toddler Talk
- Junior Lifeguard
- Games! Games! Games!
- Parent/Child Intro to Cooking
- Bonus Weeks: Magic City, Pioneer Playhouse, Martial Arts Camp, Pickleball, Keyboard, Kids in the Kitchen, Character Design



RECRUITING! (FUTURE PLANS)



- Expand Rec2U to year-round:
  - More accessibility, more parks (activate), more kids (bigger reach), preschool-specific target, families, more activities

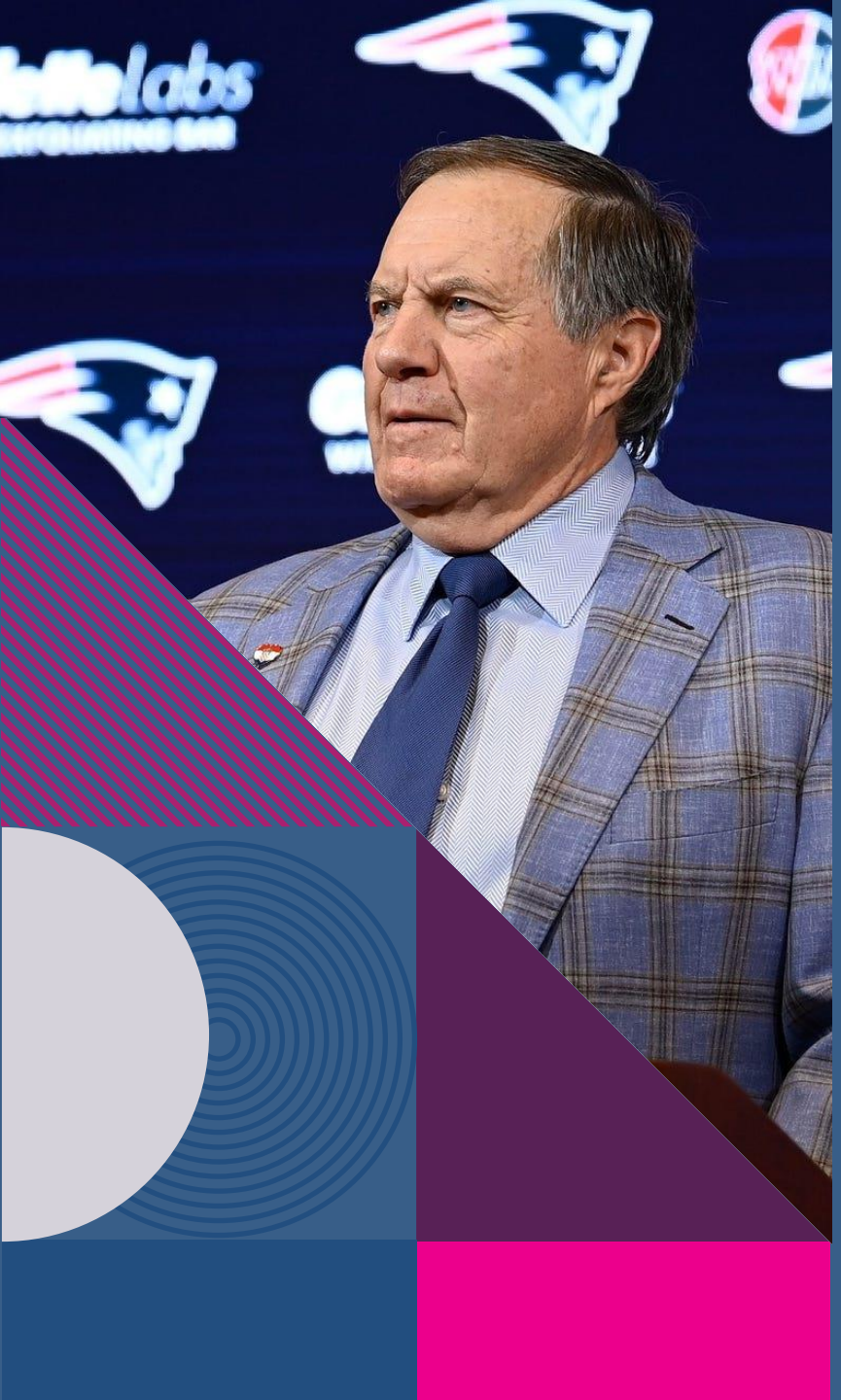
- Create Esports (Electronic Games) Camps/Public Facility:
  - Massively growing trend in Parks and Recreation.
  - Highest demographic reach possible. All ages, skills levels, genders, races
  - 90% of American Teenagers play video games. Host leagues/tournaments

- Implement Enrichment Camps (Recreation/Educational): Partnership with SD2
  - After School STEAM Programs: 6^{th}-8^{th} graders. Examples: Drone Camp, CSI Camp, Rocket Camp, Journalism Camp, Robotics, Mad Science, etc.

- Form Junior Park Board: An advisory board of 9th-12th grade students who want to make a difference in our community. Plan and organize events/projects, help advise, volunteer and community engagement. Planning to partner with Youth Volunteer Corps to offer service learning opportunities.

RECRUITING! (FUTURE PLANS)

 Develop Additional Adaptive, Inclusive, and Therapeutic Recreation Programs:	Swim Lessons, Basketball, Dance, Table Tennis, etc…
 Vacation Station Camps:	Day camps when school is NOT in session. PIR Days, Christmas Break, Spring Break, Holidays, etc. Possibility SD2 or other districts go to a 4-day school week or year-round school
 Educational Classes:	Photography, Pottery, Swing Dancing, Foreign Languages, Poetry, Bird Watching
 More Events: Community Engagement	Trunk or Treat, Movie Night at the Pool, Easter Egg Hunt, Pictures with Santa, Bingo Night, The Great Turkey Hunt, Kids' Nite Out, Canned Food Drive, Senior Dance Night



POST GAME PRESS CONFERENCE

QUESTIONS?