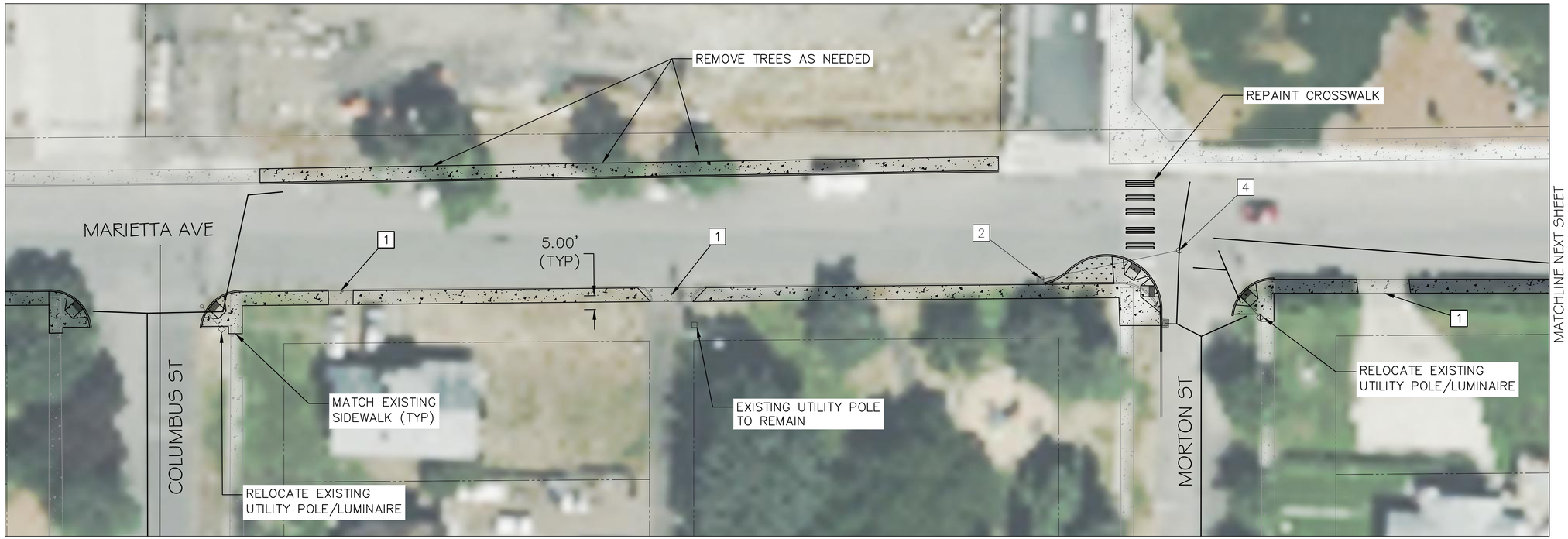
District 1, Logan: Marietta Avenue from Columbus Street to Perry Street
Estimate: $410,000



LEGEND

- PROPERTY LINE
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB
- INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
- INSTALL NEW CURB PER COS STD PLAN F-106B
- INSTALL CURB RAMP PER COS STD PLAN F-105
- INSTALL CROSSWALK PER COS STD PLAN G-61
- INSTALL LANDSCAPING, NATIVE PLANTINGS

CONSTRUCTION NOTES

1. LOCATION WHERE SIDEWALK INTERSECTS DRIVEWAY. MATCH EXISTING ELEVATIONS AT DRIVEWAY LIMITS
2. INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO EXISTING MANHOLE WHERE SHOWN.
3. EXISTING MANHOLE TO REMAIN IN PLACE.

PRELIMINARY
NOT FOR CONTRUCTION

N

1
1 of 10

Plotted On: May 14, 2023 – 7:09pm

DATE	BY	PROJ.	DESCRIPTION
REVISIONS			

DATE	BY	PROJ.	E.F.N. - U.S.N.	FROM	TO
AS BUILT					

COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
GRADE ORDINANCE LIST					

NAVD88 = (OLD CBM ELEV.) - (13.13) — AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVD88 ELEV.: None Given

CBM NO.: None Given

NAVD88 DATUM

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

HORIZONTAL PLAN/PROFILE: 1" = 20'

VERTICAL PROFILE ONLY: N/A

SCALE

CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007

	BY	DATES
DRAWN:	DRV	2/2022
REVISED:	DRV	05/2023
CHECKED:	JS	2/2022
APPROVED:	AM	2/2022

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN

SEGMENT LIMITS: MARIETTA AVENUE
COLUMBUS STREET TO PERRY STREET

PROJECT LIMITS: LOGAN NEIGHBORHOOD

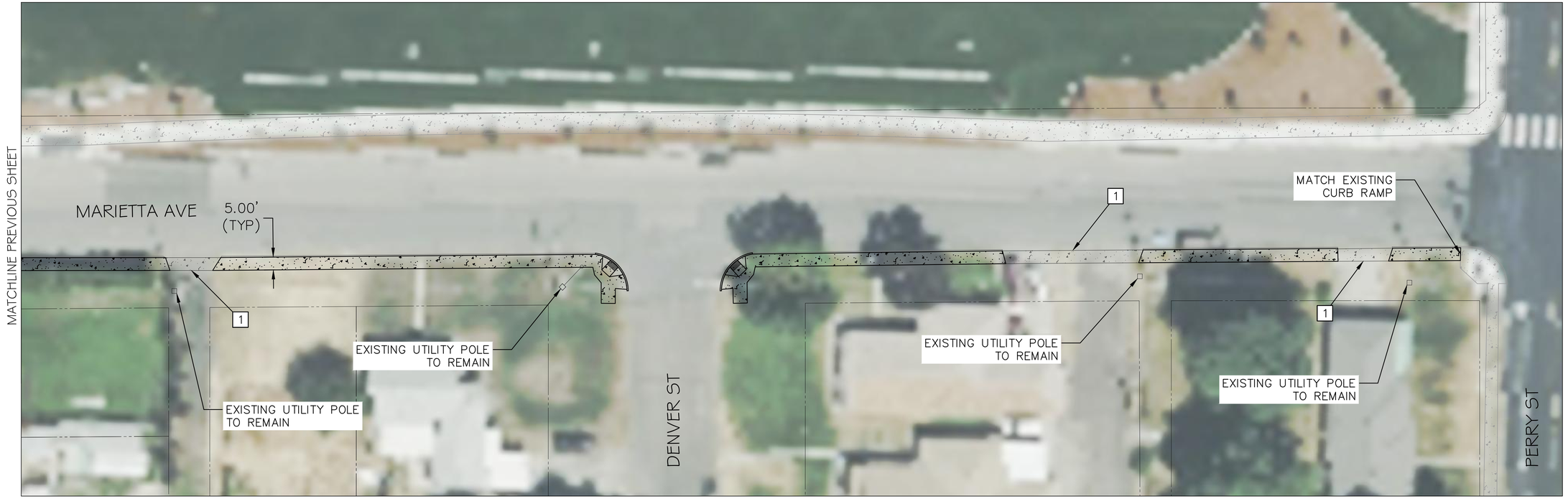
TYPE OF IMPROVEMENT: TRAFFIC

CITY PROJECT NUMBER

CITY PLAN NUMBER

EFN: TRAFFIC DESIGN

CALL BEFORE YOU DIG 1-800-424-5555



LEGEND

- PROPERTY LINE
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB
- INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
- INSTALL NEW CURB PER COS STD PLAN F-106B
- INSTALL CURB RAMP PER COS STD PLAN F-105

CONSTRUCTION NOTES

1. LOCATION WHERE SIDEWALK INTERSECTS DRIVEWAY, MATCH EXISTING ELEVATIONS AT DRIVEWAY LIMITS

PRELIMINARY

NOT FOR CONTRUCTION

N

2
2 of 10

Plotted On May 14, 2023 – 7:10pm

DATE	BY	PROJ.	DESCRIPTION	FROM	TO
REVISIONS					

DATE	BY	PROJ.	E.F.N. - U.S.N.	FROM	TO
AS BUILT					

COUNCIL ACCEPT DATE

FROM	TO	ORD. NO.	DATE	FILE NO.
GRADE ORDINANCE LIST				

NAVD88 = (OLD CBM ELEV.) - (13.13) | AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVD88 ELEV: None Given

CBM NO.: None Given

NAVD88 DATUM

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

HORIZONTAL PLAN/PROFILE 1" = 20'

VERTICAL PROFILE ONLY N/A

SCALE

CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007

	BY	DATES
DRAWN:	DRV	2/2022
REVISED:	DRV	05/2023
CHECKED:	JS	2/2022
APPROVED:	AM	2/2022

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN

SEGMENT LIMITS: MARIETTA AVENUE
PERRY STREET TO COLUMBUS STREET

PROJECT LIMITS: LOGAN NEIGHBORHOOD

TYPE OF IMPROVEMENT: TRAFFIC

CITY PROJECT NUMBER | CITY PLAN NUMBER

EFN: TRAFFIC DESIGN

CALL BEFORE YOU DIG 1-800-424-5555

District: 1
Neighborhood: Logan
Project Extent: North Foothills Drive from Division Street to Hamilton Street
Estimate: $317,000

Problem Statement: Residents of the Logan neighborhood raised concerns over speeding and pedestrian crossing safety on North Foothills Drive between Division Street and Hamilton Street (0.68 miles). North Foothills Drive is classified as minor arterial with a speed limit of 30 mph. There are existing rectangular rapid flashing beacon (RRFB) crosswalks at both the east and west legs of the North Foothills Drive and Cincinnati Street intersection, and an RRFB under construction across the west leg of the North Foothills Drive and Astor Street intersection.

Traffic Analysis:

The table below shows estimated 2022 daily traffic volumes and 85th percentile speeds on North Foothills Drive (west of Standard Street). As shown in the table, there are about 15,400 vehicles per day on North Foothills Drive with an 85th percentile speed of 34 to 38 mph (4 to 8 mph higher than the posted speed limit).

2022 Daily Traffic and 85th Percentile Speeds on North Foothills Drive (West of Standard Street)

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) [a]	85th Percentile Speed (mph)	Posted Speed (mph)
EB	2	8,249	34	30
WB	2	7,181	38	30
Both Dir.	4	15,430		

[a] Traffic data collected on April 9, 2019. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions. A seasonal adjustment factor of 0.98 was applied to the traffic count, based on historical traffic data from the city to estimate average daily traffic.

The table below shows the severity and types of crashes occurring on North Foothills Drive between Division Street and Hamilton Street over the last five years. There were a total of 45 crashes, with 18 injury crashes. Turning-related crashes were the most common, representing 51% of all crashes.

Crashes on North Foothills Drive, between Division Street and Hamilton Street (2017 to 2021)

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Property Damage Only	Unknown	
Rear End	-	-	3	5	-	8
Turning	-	-	8	14	1	23
Fixed Object	-	1	2	4	-	7
Sideswipe	-	-	1	3	-	4
Pedestrian	-	-	2	-	-	2
Head On	-	-	1	-	-	1
Total	0	1	17	26	1	45

Given the relatively high 85th percentile speed and the high number of turning crashes, a road diet was considered as means to reduce travel speeds and enhance safety on this stretch of North Foothills Drive. With an estimated 15,400 vehicles per day, North Foothills Drive could be reduced to a three-lane cross section with a center two-way left-turn lane. As a point of reference, the planning level capacity of a two-lane urban arterial is 18,300 vehicles per day (assuming left-turn lanes are provided on the mainline at signalized intersections).[1]

A road diet is expected to reduce crashes by 29%, per the Crash Modification Factors Clearinghouse.[2] A road diet on North Foothills Drive may also result in more uniform travel speeds on the corridor and is expected to reduce the average travel speed by 3 mph.[3] Road diets are more successful when implemented on longer stretches of roadway; therefore it is recommended that the lane reduction continue further east of the study area (of note, the street name changes from North Foothills Drive to Euclid Avenue east of Crestline Street). When analyzing the cross section and daily traffic volumes east of the study area, it is recommended that the road diet extend 2.6 miles, from North Foothills Drive and Division Street (at the west end) to Euclid Avenue and Freya Street (at the east end). Freya Street is a logical terminus on the east end because Euclid Avenue transitions to a two-lane cross section east of this intersection. Division Street was recommended as the western terminus because North Foothills Drive transitions to a three-lane cross section west of this intersection.

The need for enhanced pedestrian crossing treatments (across North Foothills Drive) was analyzed based on the National Cooperative Highway Research Program (NCHRP) Report 562.[4] This report uses four main criteria to identify appropriate crossing treatment: peak hour pedestrian volumes, conflicting vehicle volumes, conflicting vehicle speed, and crossing distance/number of travel lanes to be crossed. Outside of the signalized intersections on the east and west ends, three north-south crosswalks are provided across North Foothills Drive at Cincinnati Street and Astor Street with RRFBs. This analysis shows that, with the installation of a road diet and median islands at potential pedestrian crossings, only a signed crossing would be required if there are 20 or more pedestrians during the peak hour. It is recommended that pedestrian volumes be evaluated at the Cincinnati Street intersection during the summer months to determine if the existing RRFBs are still warranted with the road diet. The recommended improvements maintain the existing RRFBs, pending an updated pedestrian count.

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[1] *Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis.* Page 16-30, Exhibit 16-16. Washington, DC: The National Academies Press.

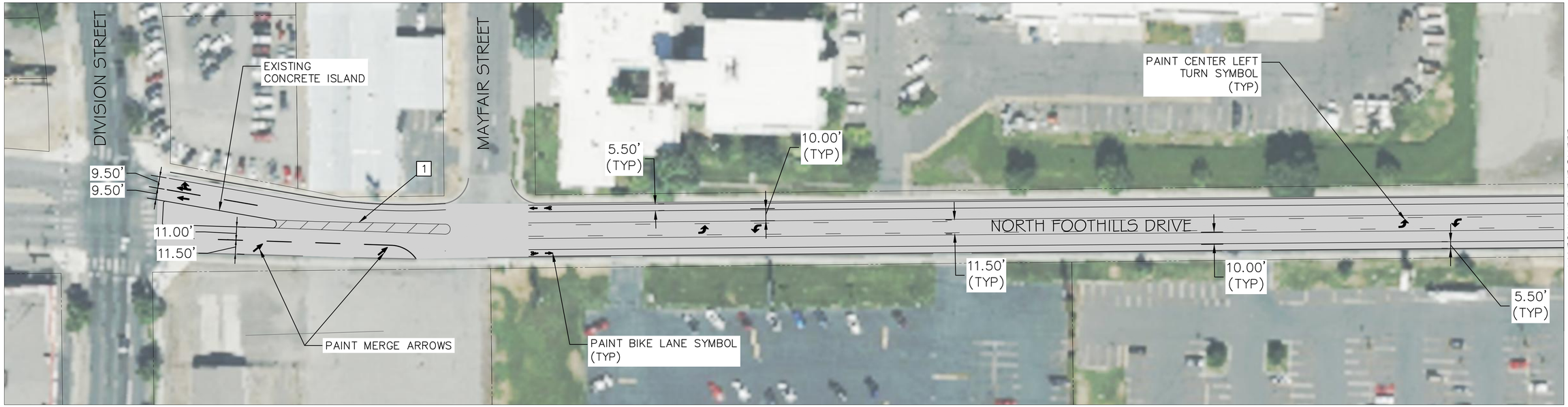
[2] *Crash Modification Factors Clearinghouse, https://www.cmfclearinghouse.org/detail.cfm?facid=199*

[3] *Engineering Speed Management Countermeasures: A Desktop Reference of Potential Effectiveness in Reducing Speed. Federal Highway Administration. July 2014.*

[4] *NCHRP Report 562: Improving Pedestrian Safety and Unsignalized Crossings.* National Cooperative Highway Research Program, 2006. https://nacto.org/wp-content/uploads/2010/08/NCHRP-562-Improving-Pedestrian-Safety-at-Unsignalized-Crossings.pdf

Recommended Solution:

It is recommended that a road diet be considered on North Foothills Drive, reducing the current four-lane cross section to a three-lane cross section with a center turn-lane and bike lanes. The addition of a center turn-lane is expected to reduce crashes, while the lane reduction is expected to reduce vehicle speeds. It is recommended that the City of Spokane further study the expected impacts of the road diet. The road diet can be considered along the 2.6 mile segment from North Foothills Drive and Division Street (at the west end) to Euclid Avenue and Freya Street (at the east end).



LEGEND

- PROPERTY LINE
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB
- EXISTING ASPHALT PAVEMENT
- INSTALL CENTER LEFT TURN LANE MARKING
- INSTALL BIKE LANE MARKING

CONSTRUCTION NOTES

1 REPLACE EXISTING YELLOW STRIPING WITH PROPOSED YELLOW STRIPING SHOWN

PRELIMINARY
NOT FOR CONTRUCTION

3
3 of 10

Plotted On May 14, 2023 – 7:03pm

REVISIONS					AS BUILT						GRADE ORDINANCE LIST				
DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	E.F.N. - U.S.N.	FROM	TO	COUNCIL ACCEPT DATE	TO	ORD. NO.	DATE	FILE NO.

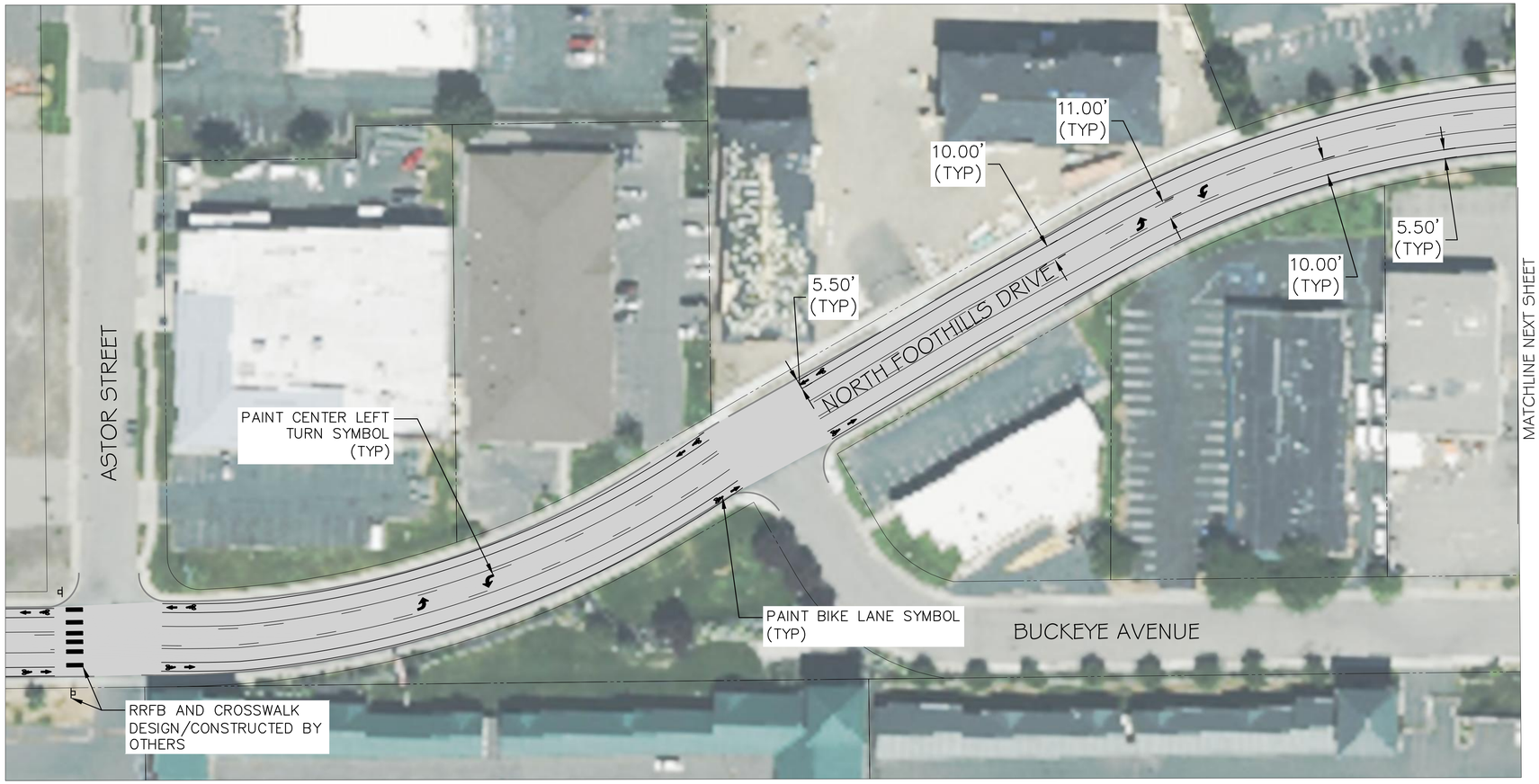
NAVD88 = (OLD CBM ELEV.) - (13.13)	AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)		
BENCH MARK LOCATION: None Given		CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007	
NAVD88 ELEV.: None Given	BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	HORIZONTAL FLAN&PROFILE: 1" = 40'	BY / DATES
CBM NO.: None Given		VERTICAL PROFILE ONLY: N/A	DRAWN: DRV / 2/2022
NAVD88 DATUM		SCALE	REVISED: DRV / 05/2023
			CHECKED: JS / 2/2022
			APPROVED: AM / 2/2022

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN
SEGMENT LIMITS: NORTH FOOTHILLS DRIVE
DIVISION STREET TO HAMILTON STREET
PROJECT LIMITS: LOGAN NEIGHBORHOOD

TYPE OF IMPROVEMENT: TRAFFIC	
CITY PROJECT NUMBER	CITY PLAN NUMBER
EFN: TRAFFIC DESIGN	

CALL BEFORE YOU DIG 1-800-424-5555



LEGEND

- PROPERTY LINE
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB
- EXISTING ASPHALT PAVEMENT
- INSTALL CENTER LEFT TURN LANE MARKING
- INSTALL BIKE LANE MARKING

PRELIMINARY

NOT FOR CONTRUCTION

4
4 of 10

Plotted On May 14, 2023 – 7:04pm

DATE	BY	PROJ.	DESCRIPTION	FROM	TO
REVISIONS					

DATE	BY	PROJ.	E.F.N. - U.S.N.	FROM	TO	COUNCIL ACCEPT DATE
AS BUILT						

TO	ORD. NO.	DATE	FILE NO.
GRADE ORDINANCE LIST			

NAVD88 = (OLD CBM ELEV.) - (13.13) | AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVD88 ELEV.: None Given

CBM NO.: None Given

NAVD88 DATUM

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

HORIZONTAL PLAN/PROFILE 1" = 40'

VERTICAL PROFILE ONLY N/A

SCALE

CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007

	BY	DATES
DRAWN:	DRV	2/2022
REVISED:	DRV	05/2023
CHECKED:	JS	2/2022
APPROVED:	AM	2/2022

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN

SEGMENT LIMITS: NORTH FOOTHILLS DRIVE
DIVISION STREET TO HAMILTON STREET

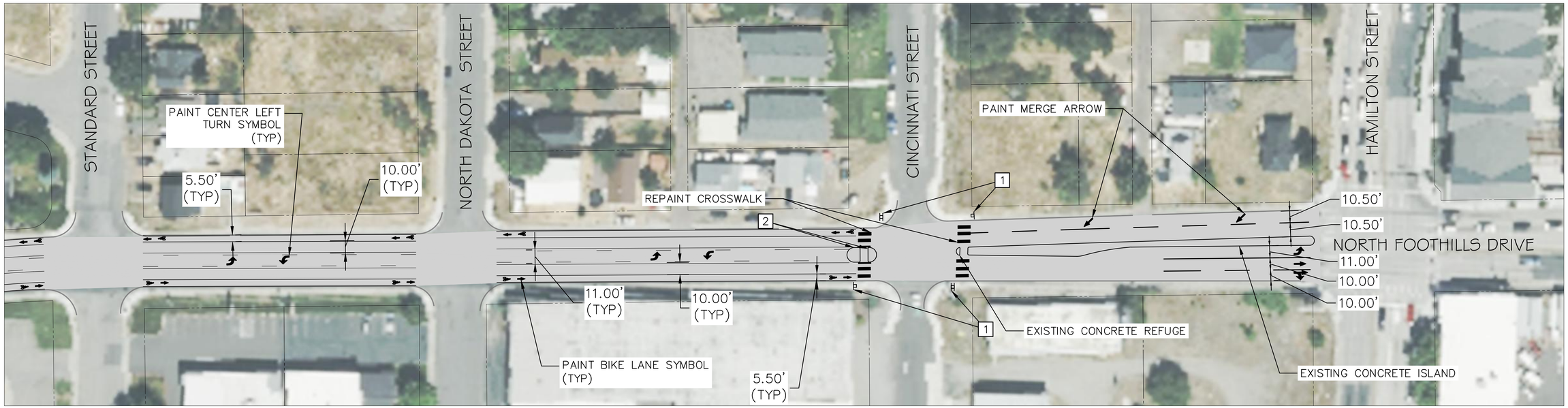
PROJECT LIMITS: LOGAN NEIGHBORHOOD

TYPE OF IMPROVEMENT: TRAFFIC

CITY PROJECT NUMBER | CITY PLAN NUMBER

EFN: TRAFFIC DESIGN

CALL BEFORE YOU DIG 1-800-424-5555



LEGEND

- PROPERTY LINE
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB
- EXISTING ASPHALT PAVEMENT
- INSTALL CENTER LEFT TURN LANE MARKING
- INSTALL BIKE LANE MARKING
- INSTALL CROSSWALK PER COS STD PLAN G-G1

CONSTRUCTION NOTES

1. EXISTING RECTANGULAR RAPID FLASHING BEACON
2. PROPOSED CONCRETE REFUGE ISLANDS

PRELIMINARY

NOT FOR CONTRUCTION

5
5 of 10

Plotted On: May 14, 2023 – 7:04pm

REVISIONS										AS BUILT											GRADE ORDINANCE LIST					NAVD88 DATUM	SCALE
DATE	BY	PROJ.	DESCRIPTION					FROM	TO	DATE	BY	PROJ.	E.F.N., U.S.N.			FROM	TO	COUNCIL ACCEPT DATE		TO	ORD. NO.	DATE	FILE NO.			

NAVD88 = (OLD CBM ELEV.) - (13.13) — AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVD88 ELEV: None Given

CBM NO.: None Given

BAR IS ONE INCH ON ORIGINAL DRAWING.

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

HORIZONTAL PLAN/PROFILE 1" = 40'

VERTICAL PROFILE ONLY N/A

CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007

	BY	DATES
DRAWN:	DRV	2/2022
REVISED:	DRV	05/2023
CHECKED:	JS	2/2022
APPROVED:	AM	2/2022

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN

SEGMENT LIMITS: NORTH FOOTHILLS DRIVE
DIVISION STREET TO HAMILTON STREET

PROJECT LIMITS: LOGAN NEIGHBORHOOD

TYPE OF IMPROVEMENT: TRAFFIC

CITY PROJECT NUMBER | CITY PLAN NUMBER

ETM TRAFFIC DESIGN

CALL BEFORE YOU DIG 1-800-424-5555

District:	1
Neighborhood:	Logan
Project Extent:	Upriver Drive from North Center Street to Crestline Street
	Estimate: $136,000

Problem Statement: Residents of the Logan neighborhood raised concerns over speeding and pedestrian crossing safety on Upriver Drive between North Center Street and Crestline Street (0.24 miles). In the project area, Upriver Drive is classified as minor arterial with a speed limit of 30 mph. There are three existing crosswalks across Upriver Drive, located at North Center Street, Granite Street and Crestline Street. These crosswalks connect the residential community on the north side of the roadway with Centennial Trail to the south. Of note, the intersection at Upriver Drive and North Center Street was recently reconfigured, closing the west leg of the intersection and adding a crosswalk.

Traffic Analysis:

The table below shows estimated 2022 daily traffic volumes and 85th percentile speeds on Upriver Drive (west of North Center Street). This traffic data was collected in 2019, before the changes at the Upriver Drive and North Center Street intersection, but still provide a good estimate of volumes and speeds on the corridor. There are about 4,300 vehicles per day on Upriver Drive with an 85th percentile speed of 38 mph (8 mph higher than the posted speed limit).

2022 Daily Traffic and 85th Percentile Speeds on Upriver Drive (West of North Center Street)

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) [a]	85th Percentile Speed (mph)	Posted Speed (mph)
Both Dir.	2	4,297	38	30

[a] Traffic data collected on April 9, 2019. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions. A seasonal adjustment factor of 0.98 was applied to the traffic count, based on historical traffic data from the city to estimate average daily traffic.

The table below shows crashes on Upriver Drive over the last five years. There were only two crashes on Upriver Drive within the project limits. Both crashes were fixed object collisions with one resulting in minor injury and the other resulting in property damage only.

Crashes on Upriver Drive from North Center Street to Crestline Street (2017 to 2021)

Crash Type	Crash Severity				Total
	Fatal	Major Injury	Minor Injury	Property Damage Only	
Stationary Object or Car	-	-	1	1	2
Total	0	0	1	1	2

The need for enhanced pedestrian crossing treatments (across Upriver Drive) was analyzed based on the National Cooperative Highway Research Program (NCHRP) Report 562.[1] This report uses four main criteria to identify appropriate crossing treatment: peak hour pedestrian volumes, conflicting vehicle volumes, conflicting vehicle speed, and crossing distance/number of travel lanes to be crossed.

There are three existing crosswalks within the project limits, located at North Center Drive, Granite Street and Crestline Street. All crosswalks have pedestrian crossing warning signs. Per NCHRP 562, with existing speeds and traffic volumes, a rectangular rapid flashing beacon would be recommended at these crosswalks if there are 14 or more pedestrians during the peak hour. However, if the 85th percentile speeds can be reduced below 35 mph, then the existing crosswalks are considered appropriate treatments. Speed feedback signs are expected to reduce the average travel speed by 2 mph and reduce the 85th percentile speed by 4 mph.[2] In the case of Upriver Drive, speed feedback signs are expected to reduce the 85th percentile travel speed to 34 mph.

Additionally, this project will examine the sidewalk connecting the crosswalk at Crestline Street to the Centennial Trail. The sidewalk will be upgraded to meet Americans with Disabilities Act Standards.

Recommended Solution:

It is recommended that speed feedback signs be installed on Upriver Drive near the project area to reduce speeds and allow for safer pedestrian crossing movements at the marked crosswalks. Speed feedback signs are recommended at the following locations:

- On Upriver Drive, east of North Center Street (for eastbound traffic)
- On Upriver Drive, east of Crestline Street (for westbound traffic)

Additionally, it is recommended that improvements for the sidewalk connecting the Crestline Street crosswalk and Centennial Trail be explored to meet Americans with Disabilities Act standards.

[1] *NCHRP Report 562: Improving Pedestrian Safety and Unsignalized Crossings.* National Cooperative Highway Research Program, 2006. https://nacto.org/wp-content/uploads/2010/08/NCHRP-562-Improving-Pedestrian-Safety-at-Unsignalized-Crossings.pdf

[2] *Engineering Speed Management Countermeasures: A Desktop Reference of Potential Effectiveness in Reducing Speed. Federal Highway Administration. July 2014.*

R02-01

SPEED LIMIT 30

YOUR SPEED [redacted]

PROPOSED SIGNAGE

LEGEND

PROPERTY LINE

SIGN

PRELIMINARY

NOT FOR CONTRUCTION

6

6 of 10

Plotted On May 14, 2023 – 7:05pm

DATE	BY	PROJ.	DESCRIPTION (REVISIONS)	DATE	BY	PROJ.	E.F.N. - U.S.N.	FROM	TO	COUNCIL ACCEPT DATE (AS BUILT)	TO	ORD. NO.	DATE	FILE NO. (GRADE ORDINANCE LIST)

NAVD88 = (OLD CBM ELEV.) - (13.13) — AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVD88 ELEV.: None Given

CBM NO.: None Given

NAVD88 DATUM

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

HORIZONTAL PLAN/PROFILE 1" = 20'

VERTICAL PROFILE ONLY N/A

SCALE

CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007

	BY	DATES
DRAWN:	DRV	2/2022
REVISED:	DRV	05/2023
CHECKED:	JS	2/2022
APPROVED:	AM	2/2022

CITY OF SPOKANE, WASHINGTON

DEPARTMENT OF ENGINEERING SERVICES

808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN

SEGMENT LIMITS: UPRIVER DRIVE
NORTH CENTER STREET TO CRESTLINE STREET

PROJECT LIMITS: LOGAN NEIGHBORHOOD

TYPE OF IMPROVEMENT: TRAFFIC

CITY PROJECT NUMBER

CITY PLAN NUMBER

EFN: TRAFFIC DESIGN

CALL BEFORE YOU DIG 1-800-424-5555

LEGEND

PROPERTY LINE

NOTES:

1. SURVEY DATA AND ELEVATIONS NEEDED FOR ADA COMPLIANT RAMP DESIGN.

PRELIMINARY
NOT FOR CONTRUCTION

7
7 of 10

Plotted On May 14, 2023 – 7:07pm

DATE	BY	PROJ.	DESCRIPTION	FROM	TO
REVISIONS					

DATE	BY	PROJ.	E.F.N. - U.S.N.	FROM	TO
AS BUILT					

COUNCIL ACCEPT DATE

TO	ORD. NO.	DATE	FILE NO.
GRADE ORDINANCE LIST			

NAVD88 = (OLD CBM ELEV.) - (13.13) | AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVD88 ELEV.: None Given

CBM NO.: None Given

NAVD88 DATUM

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

HORIZONTAL PLAN/PROFILE 1" = 10'

VERTICAL PROFILE ONLY N/A

SCALE

CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007

	BY	DATES
DRAWN:	DRV	2/2022
REVISED:	DRV	05/2023
CHECKED:	JS	2/2022
APPROVED:	AM	2/2022

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN

SEGMENT LIMITS: UPRIVER DRIVE
NORTH CENTER STREET TO CRESTLINE STREET

PROJECT LIMITS: LOGAN NEIGHBORHOOD

TYPE OF IMPROVEMENT: TRAFFIC

CITY PROJECT NUMBER | CITY PLAN NUMBER

EFN: TRAFFIC DESIGN

CALL BEFORE YOU DIG 1-800-424-5555

District:	1
Neighborhood:	Logan
Project Extent:	Montgomery Avenue and Cincinnati Street Intersection
	Estimate: $210,000

Problem Statement: Residents of the Logan neighborhood raised concerns over speeding and safety at the Montgomery Avenue and Cincinnati Street intersection. Both streets are classified as local streets with a speed limit of 25 mph. The intersection has no stop or yield control signs on any approaches. The north and south legs of the intersection are offset by 50 feet.

Montgomery Avenue and Cincinnati Street Intersection

Traffic Analysis:

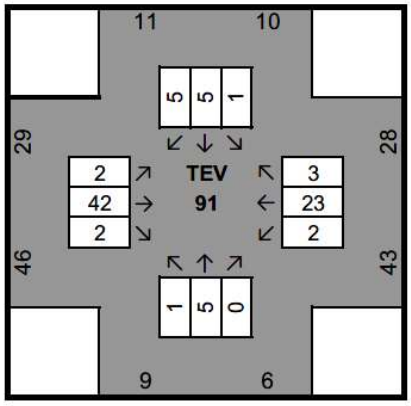
The table below shows estimated 2022 daily traffic volumes and 85th percentile speeds on Montgomery Avenue (west of Cincinnati Street). There are about 600 vehicles per day on Montgomery Avenue with an 85th percentile speed of 27 mph (2 mph higher than the posted speed limit).

2022 Daily Traffic and 85th Percentile Speeds on Montgomery Avenue (West of Cincinnati Street)

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) [a]	85th Percentile Speed (mph)	Posted Speed (mph)
Both Dir.	2	596	27	25

[a] Traffic data collected on November 16, 2022. A seasonal adjustment factor of 1.01 was applied to the traffic count, based on historical traffic data from the city to estimate average daily traffic.

The figure below shows the existing PM peak hour traffic volumes at the Montgomery Avenue and Cincinnati Street intersection, based on a traffic count from November 1, 2022. These volumes were adjusted with a seasonal adjustment factor of 1.05, based on historical traffic data from the city to estimate the 30th highest hour. There are only 11 vehicles on the southbound approach, with six vehicles on the northbound approach during the PM peak hour.



PM Peak Hour Traffic at Montgomery Avenue and Cincinnati Street

The table below shows the type and severity of crashes at the Montgomery Avenue and Cincinnati Street intersection over the last five years. There were only two crashes, both turning-related collisions resulting in minor injury.

Crashes at Montgomery Avenue and Cincinnati Street Intersection (2017 to 2021)

Crash Type	Crash Severity				Total
	Fatal	Major Injury	Minor Injury	Property Damage Only	
Turning	-	-	2	-	2
Total	0	0	2	0	2

The north and south legs of Cincinnati Street are offset by 50 feet; therefore, vehicles need to turn slightly to continue north or south on this street. Currently the intersection is uncontrolled, with no stop or yield control signs on any approaches. Section 2B.04 of the Manual on Uniform Traffic Control Devices (MUTCD)[3] states that the use of yield or stop signs should be considered at the intersection of two minor streets or local roads where the intersection has more than three approaches and where one or more of the following conditions exist:

a) The combined vehicular, bicycle and pedestrian volume entering the intersection from all approaches averages more than 2,000 units per day;
b) The ability to see conflicting traffic on an approach is not sufficient to allow a road user to stop or yield in compliance with the normal right of way rule if such stopping or yielding is necessary; and/or
c) Crash records indicate that five or more crashes that involve the failure to yield the right-of-way at the intersection under the normal right-of-way rule have been reported within a 3-year period, or that three or more such crashes have been reported withing a 2-year period.

Requirements a) and c) are not met. However, as shown in the figure below, the northbound and southbound approaches have obstructions within their required stopping sight distance triangles. Because of these sight restrictions, vehicles are required to slow down in order to proceed north or

[3] *Federal Highway Administration, Manual on Uniform Traffic Control Devices, 2009 Edition, Pg. 50.* *https://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part2b.pdf*

south on Cincinnati Street. Typical right of way guidelines would indicate that the through movement on Montgomery Avenue would have priority over Cincinnati Street. Therefore, it is recommended that stop signs be installed on the northbound and southbound approaches to improve intersection safety.

Montgomery Avenue and Cincinnati Street Intersection – Required Sight Distance Triangles

Additionally, curb extensions could be considered as a means to lower travel speeds on Montgomery Avenue through the intersection. These features narrow the roadway width, resulting in lower speeds and shorter pedestrian crossings. Curb extensions are estimated to reduce the 85th percentile speeds by 3 mph.[4]

Recommended Solution:

The Montgomery Avenue and Cincinnati Street intersection has no stop or yield control signs on any approaches. The north and south legs of the intersection are offset by 50 feet. It is recommended that stop signs be installed on the northbound and southbound approaches to improve intersection safety. Additionally, it is recommended that curb extensions be installed on Montgomery Avenue to slow speeds and increase intersection safety.

[4] *Engineering Speed Management Countermeasures: A Desktop Reference of Potential Effectiveness in Reducing Speed. Federal Highway Administration. July 2014.*

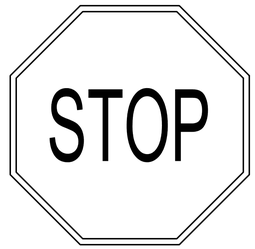
LEGEND

- PROPERTY LINE
- INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
- INSTALL LANDSCAPING, NATIVE PLANTINGS
- INSTALL CURB RAMP PER COS STD PLAN F-105
- # INSTALL STOP SIGN

CONSTRUCTION NOTES

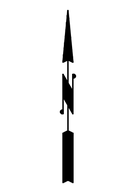
1. INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO EXISTING MANHOLE WHERE SHOWN.
2. REMOVE EXISTING INLET. PLUG AND ABANDON EXISTING PIPE.
3. EXISTING MANHOLE TO REMAIN IN PLACE.
4. INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO NEW CATCH BASIN WHERE SHOWN.

R01-01



PROPOSED STOP SIGN

PRELIMINARY
NOT FOR CONTRUCTION



8
8 of 10

Plotted On May 14, 2023 – 7:08pm

DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	E.F.N., U.S.N.	FROM	TO	COUNCIL ACCEPT DATE	TO	ORD. NO.	DATE	FILE NO.
REVISIONS				AS BUILT							GRADE ORDINANCE LIST			

NAVD88 = (OLD CBM ELEV.) - (13.13) | AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVD88 ELEV.: None Given

CBM NO.: None Given

NAVD88 DATUM

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

HORIZONTAL PLAN/PROFILE 1" = 10'

VERTICAL PROFILE ONLY N/A

SCALE

CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007

	BY	DATES
DRAWN:	DRV	2/2022
REVISED:	DRV	05/2023
CHECKED:	JS	2/2022
APPROVED:	AM	2/2022

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN

SEGMENT LIMITS: MONTGOMERY AVENUE AND CINCINNATI STREET

PROJECT LIMITS: LOGAN NEIGHBORHOOD

TYPE OF IMPROVEMENT: TRAFFIC

CITY PROJECT NUMBER | CITY PLAN NUMBER

EFN: TRAFFIC DESIGN

CALL BEFORE YOU DIG 1-800-424-5555

District 1, Logan: Hamilton Street and Marietta Avenue from Hamilton Street to Columbus Street
Estimate: $662,000

LEGEND

- PROPERTY LINE
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB
- INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
- INSTALL NEW CURB PER COS STD PLAN F-106B
- INSTALL CURB RAMP PER COS STD PLAN F-105
- INSTALL LANDSCAPING, NATIVE PLANTINGS

CONSTRUCTION NOTES

1 LOCATION WHERE SIDEWALK INTERSECTS DRIVEWAY. MATCH EXISTING ELEVATIONS AT DRIVEWAY LIMITS

PRELIMINARY

NOT FOR CONTRUCTION

N

9
9 of 10

Plotted On May 14, 2023 – 7:10pm

DATE	BY	PROJ.	DESCRIPTION	FROM	TO
REVISIONS					

DATE	BY	PROJ.	E.F.N. - U.S.N.	FROM	TO
AS BUILT					

COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
GRADE ORDINANCE LIST					

NAVD88 = (OLD CBM ELEV.) - (13.13) | AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVD88 ELEV.: None Given

CBM NO.: None Given

NAVD88 DATUM

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

HORIZONTAL PLAN/PROFILE 1" = 20'

VERTICAL PROFILE ONLY N/A

SCALE

CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007

	BY	DATES
DRAWN:	DRV	2/2022
REVISED:	DRV	05/2023
CHECKED:	JS	2/2022
APPROVED:	AM	2/2022

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN

SEGMENT LIMITS: HAMILTON STREET AND MARIETTA AVENUE
HAMILTON STREET TO COLUMBUS STREET

PROJECT LIMITS: LOGAN NEIGHBORHOOD

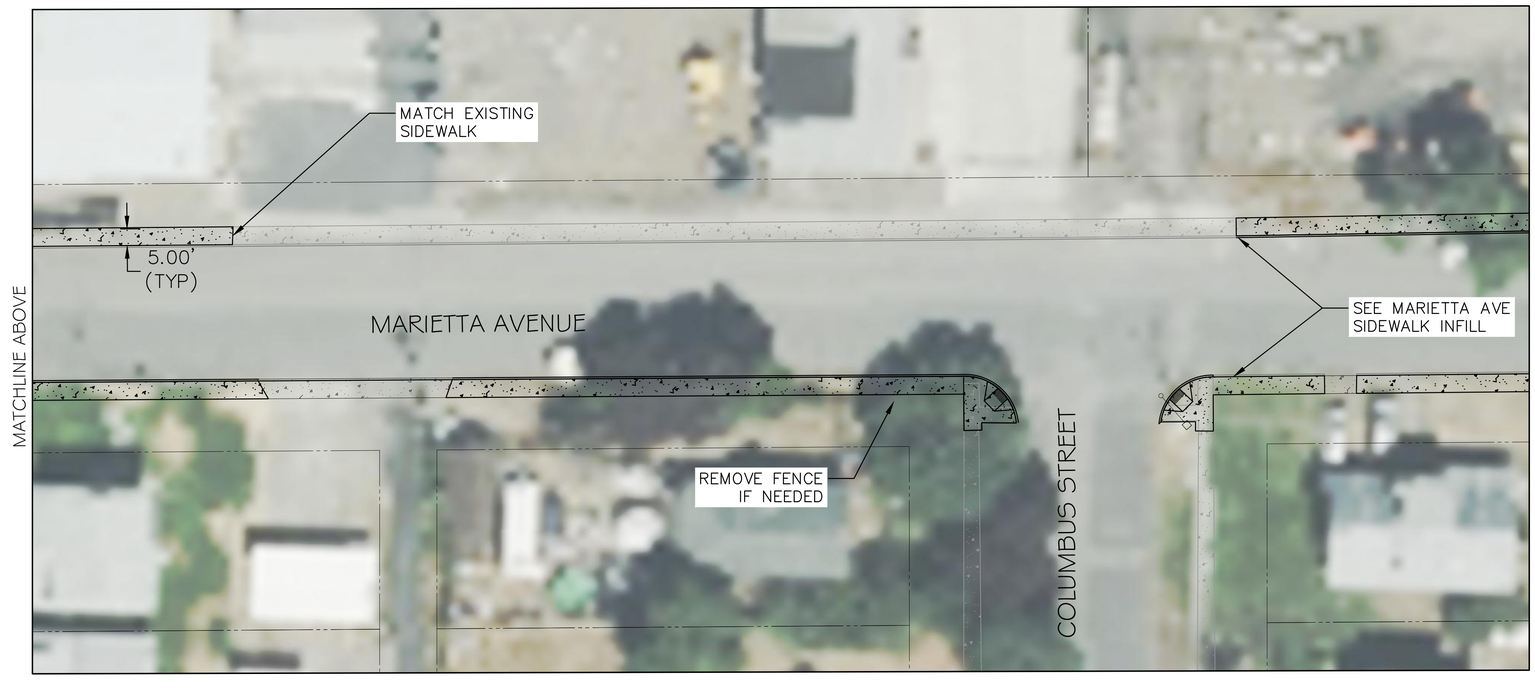
TYPE OF IMPROVEMENT: TRAFFIC

CITY PROJECT NUMBER | CITY PLAN NUMBER

ETN: TRAFFIC DESIGN

CALL BEFORE YOU DIG 1-800-424-5555

MATCHLINE PREVIOUS SHEET



LEGEND

- PROPERTY LINE
- EXISTING CONCRETE SIDEWALK
- EXISTING CURB
- INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
- INSTALL NEW CURB PER COS STD PLAN F-106B
- INSTALL CURB RAMP PER COS STD PLAN F-105
- INSTALL LANDSCAPING, NATIVE PLANTINGS

CONSTRUCTION NOTES

1. LOCATION WHERE SIDEWALK INTERSECTS DRIVEWAY. MATCH EXISTING ELEVATIONS AT DRIVEWAY LIMITS
2. INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO EXISTING MANHOLE WHERE SHOWN.
3. REMOVE EXISTING INLET. PLUG AND ABANDON EXISTING PIPE.

PRELIMINARY

NOT FOR CONTRUCTION

N

10
10 of 10

Plotted On May 14, 2023 – 7:11pm

DATE	BY	PROJ.	DESCRIPTION	FROM	TO
REVISIONS					

DATE	BY	PROJ.	E.F.N. - U.S.N.	FROM	TO
AS BUILT					

COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
GRADE ORDINANCE LIST					

NAVD88 = (OLD CBM ELEV.) - (13.13) — AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVD88 ELEV: None Given

CBM NO.: None Given

NAVD88 DATUM

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

HORIZONTAL PLAN/PROFILE: 1" = 20'

VERTICAL PROFILE ONLY: N/A

SCALE

CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007

	BY	DATES
DRAWN:	DRV	2/2022
REVISED:	DRV	05/2023
CHECKED:	JS	2/2022
APPROVED:	AM	2/2022

CITY OF SPOKANE, WASHINGTON
DEPARTMENT OF ENGINEERING SERVICES
808 WEST SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3343
(509) 625-6700

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN

SEGMENT LIMITS: HAMILTON STREET AND MARIETTA AVENUE
HAMILTON STREET TO COLUMBUS STREET

PROJECT LIMITS: LOGAN NEIGHBORHOOD

TYPE OF IMPROVEMENT: TRAFFIC

CITY PROJECT NUMBER | CITY PLAN NUMBER

ETN: TRAFFIC DESIGN

CALL BEFORE YOU DIG 1-800-424-5555