

Spokane Traffic Calming Master Plan

District:	3
Neighborhood:	Balboa – South Indian Trail
Project Extent:	Indian Trail Road (Holyoke Avenue to Janice Avenue)
	Estimate: \$1,366,000

Problem Statement: Residents of the Balboa – South Indian Trail neighborhood raised concerns over pedestrian and bicyclist safety along and crossing Indian Trail Road between Holyoke Avenue and Janice Avenue (0.74-mile segment).

Traffic Analysis

Indian Trail Road within the study area is classified as a major arterial with a posted speed limit of 30 miles per hour and provides four lanes. The study corridor does not provide marked shoulders or bike lanes. The study corridor has marked pedestrian crossings at Weile Avenue (0.39 miles east of Janice Avenue) and Woodside Avenue (newly installed, 0.54 mile east of Janice Avenue). There is no signalized intersection within the study area. Sidewalks with a landscape strip are provided along the study corridor.

The table below shows the 2022 daily traffic volumes and 85th percentile speeds on Indian Trail Road. The highest daily volume on Indian Trail Road was 18,845 vehicles west of Elmhurst Avenue (one block east of Holyoke Avenue). The highest 85th percentile speed was 41 miles per hour (11 miles per hour greater than the posted speed limit). The data indicates there is a speeding concern.

2022 Daily Traffic and 85th Percentile Speeds on Northwest Boulevard

Direction	# Lanes	2022 Daily Traffic (Vehicles per day)	85 th Percentile Speed (mph)	Posted Speed (mph)
West of Elmhurst Avenue ^a				
EB	2	9,436	39	
WB	2	9,409	42	
Both Dir.	4	18,845	41	30
West of Kathleen Avenue ^b				
EB/SB	2	9,230		
WB/NB	1	9,230		
Both Dir.	4	18,460	40	30

^a Traffic data collected in May 2022.

^b Traffic data collected in April 2014. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions.

The table below shows the severity and types of crashes occurring on Indian Trail Road from Holyoke Avenue to Janice Avenue over the last five years (excluding intersection crashes at the east and west ends). There was a total of 17 crashes on Indian Trail Road, including 10 injury crashes and one fatal crash. The only fatal crash was related to left turning at Beacon Avenue. Angle and turning related collisions were the most common crash type (each representing 29 percent of all crashes).

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Crashes on Indian Trail Road from Holyoke Avenue to Janice Avenue (2017 to 2021)

Crash Type	Crash Severity					Total
	Fatal	Minor Injury	Possible Injury	Property Damage Only	Unknown	
Rear End	-	1	-	-	-	1
Angle	-	1	1	3	-	5
Turning	1	-	4	-	-	5
Sideswipe	-	-	1	-	-	1
Stationary Object or Car	-	-	-	2	1	3
Pedestrian/Bicycle	-	1	1	-	-	2
Total	1	3	7	5	1	17

The study corridor has existing conditions of high traffic with shared facility per the Bicycle Facility Classification in the City Bicycle Master Plan, people biking need to share a lane with auto vehicles. The study corridor has future plans for a shared use path implementation per the Bicycle Master Plan.

The need for enhanced pedestrian crossing treatments across Indian Trail Road in the study area 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. Based on the findings, red treatment (e.g., High Intensity Activated Crosswalk [HAWK] signal beacon, midblock pedestrian signal) is the preferred treatment if there are 20 or more pedestrian crossings during the peak hour given the high existing traffic volume. Although pedestrian crossing data is not available, it is assumed the 20 or more pedestrian crossing threshold is met given the surrounding urban neighborhood and commercial destinations on Indian Trail Road study corridor.

Recommended Solution:

The study corridor was evaluated to determine the best placement for an enhanced pedestrian crossing with consideration for fronting land use, location of bus stops, estimated crossing demand and spacing from existing protected crossings.

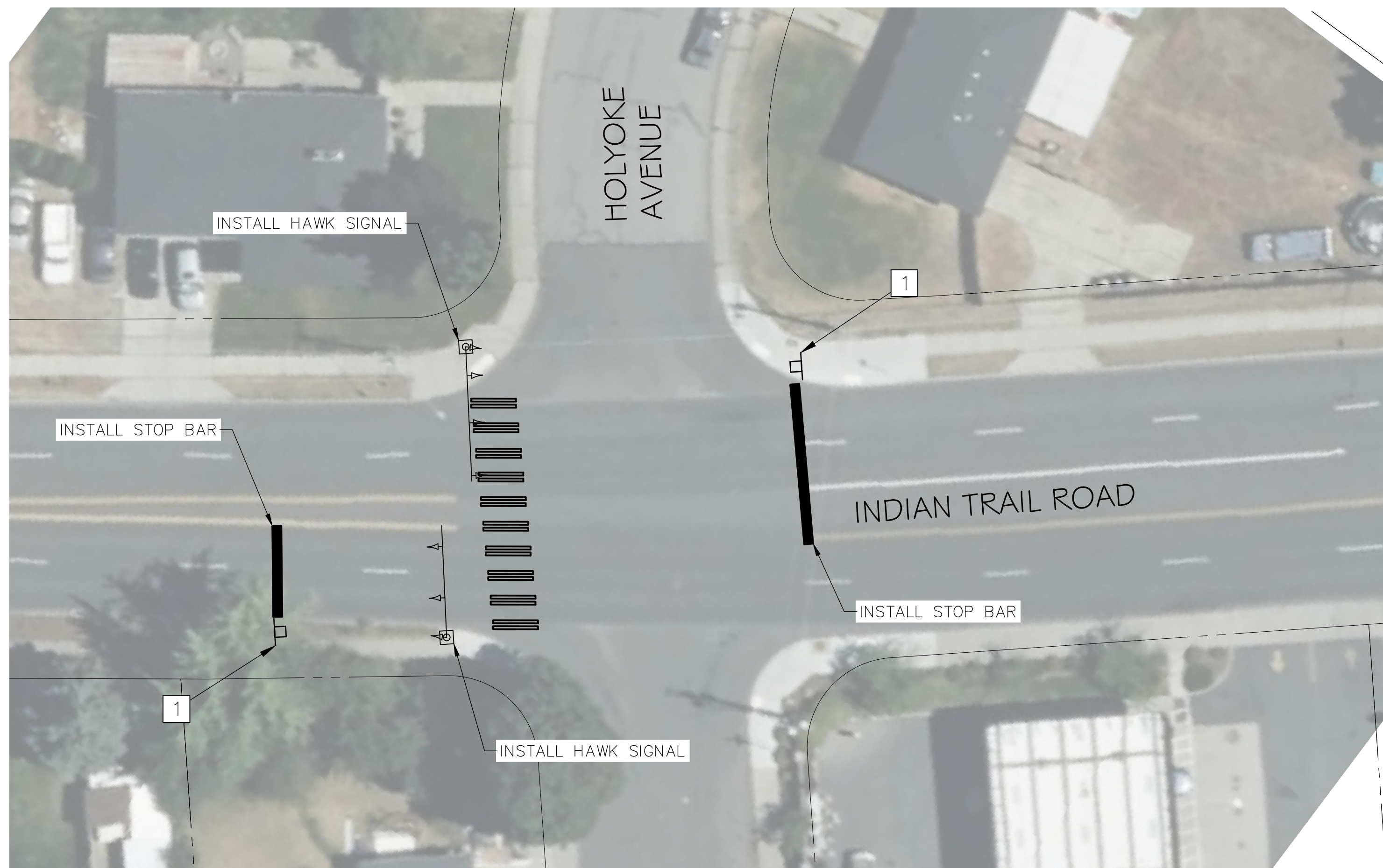
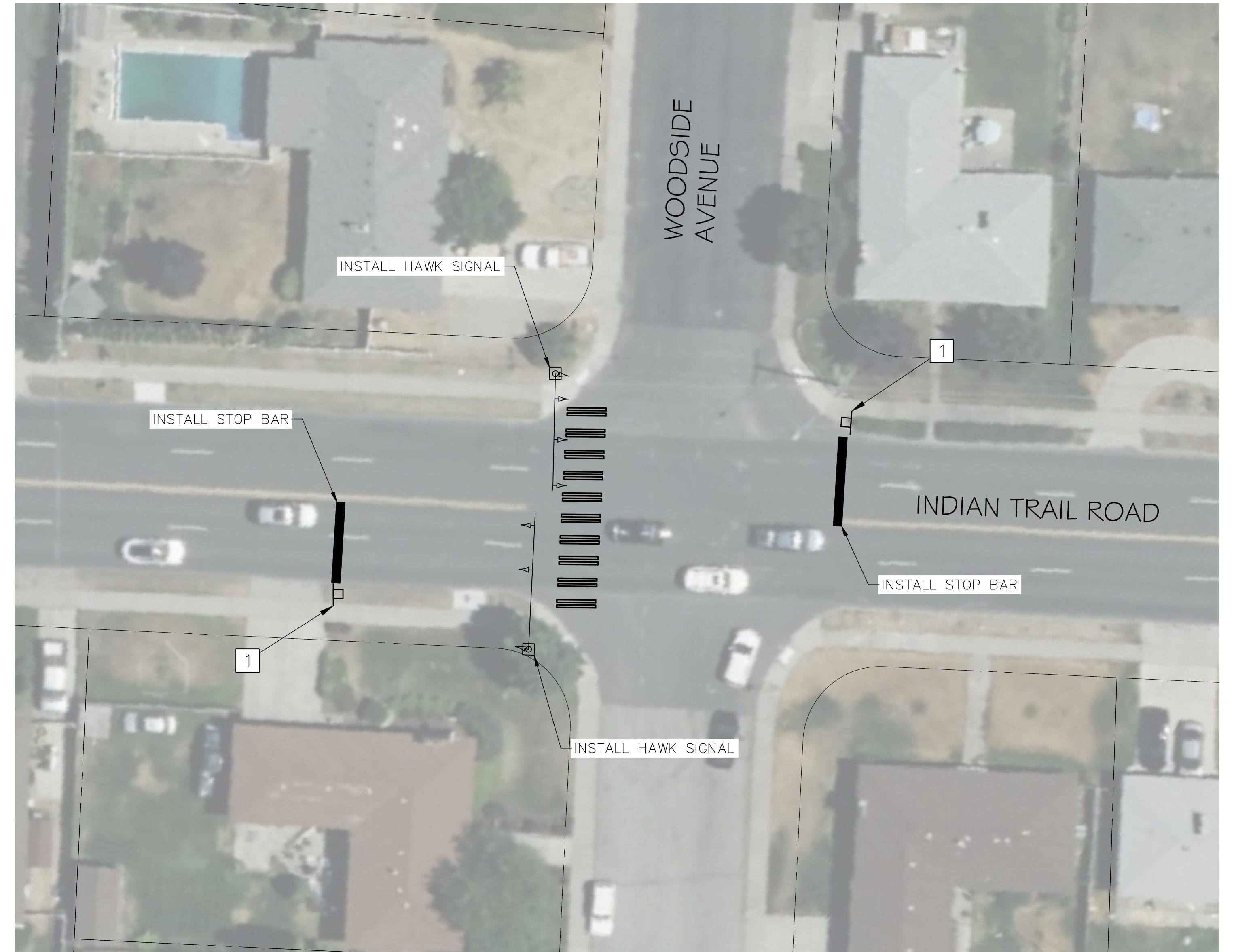
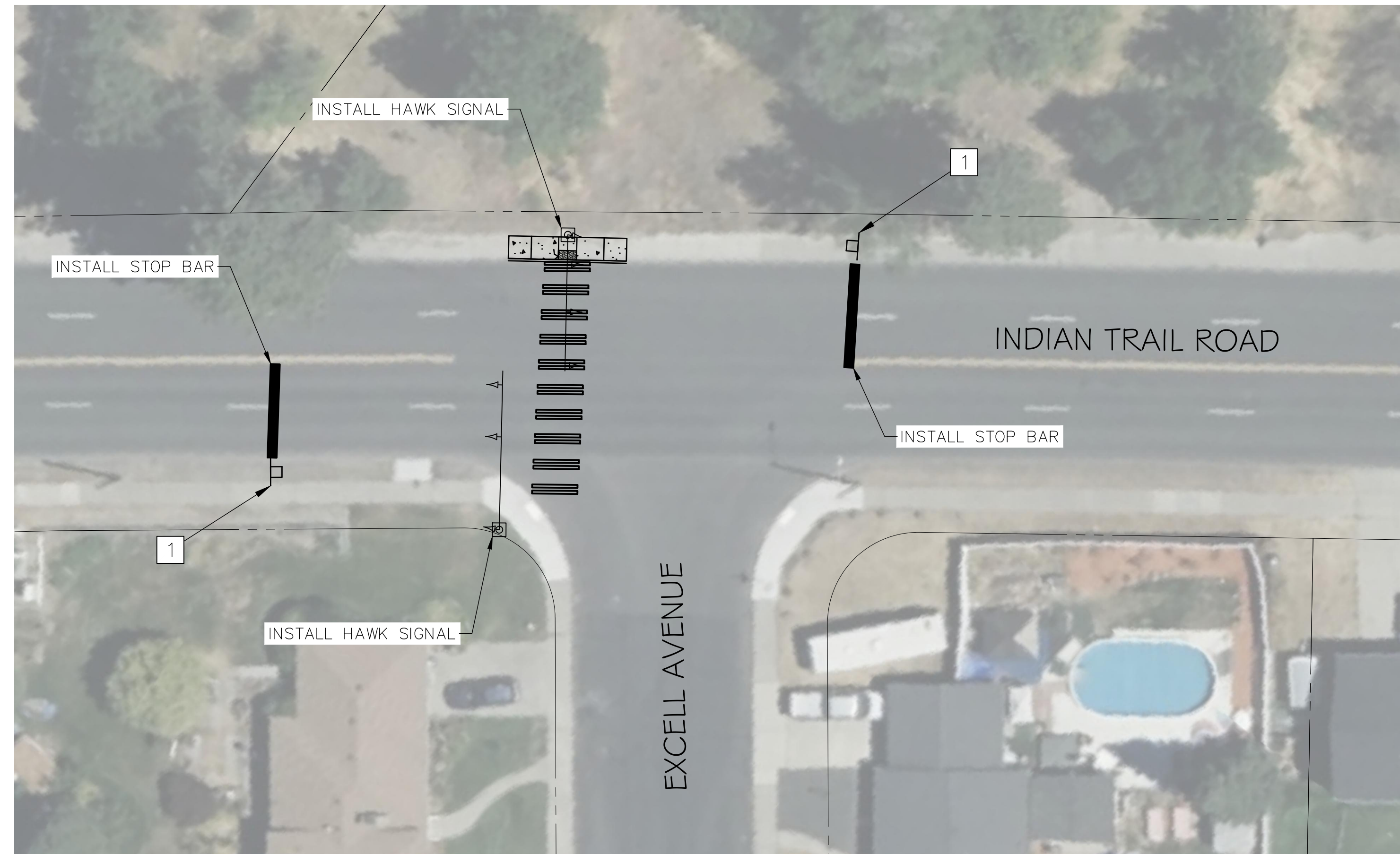
The installation of a hybrid beacon pedestrian crossing is recommended on Indian Trail Road at Holyoke Avenue to serve the crossing demand for the nearby commercial uses and STA stops. The nearby southbound bus stop (ID 1376) should be relocated to the intersection.

The installation of a traffic signal or hybrid beacon pedestrian crossing is recommended on Indian Trail Road at the existing Woodside Avenue marked crossing to serve the crossing demand for the nearby STA stops and Woodside Avenue which is designated a city Bike Friendly Route. The traffic volumes at the intersection are high enough to warrant a traffic signal but may attract more drivers to use Woodside Avenue to access Indian Trail Road.

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>

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The installation of a hybrid beacon pedestrian crossing should be considered on Indian Trail Road at Excell Avenue to serve the crossing demand for the nearby STA stops. This location is the lowest priority of the three recommendations due to the crossing demand.

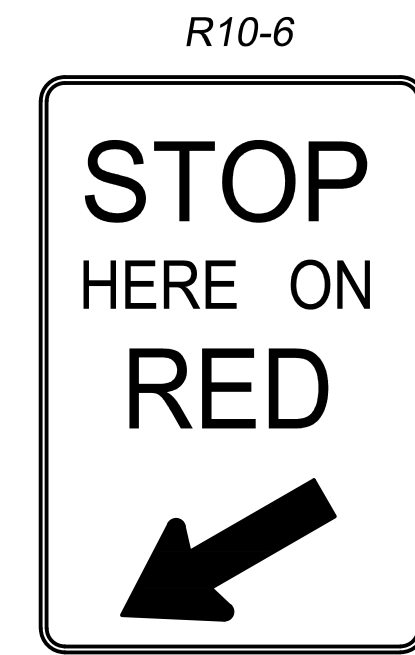


LEGEND

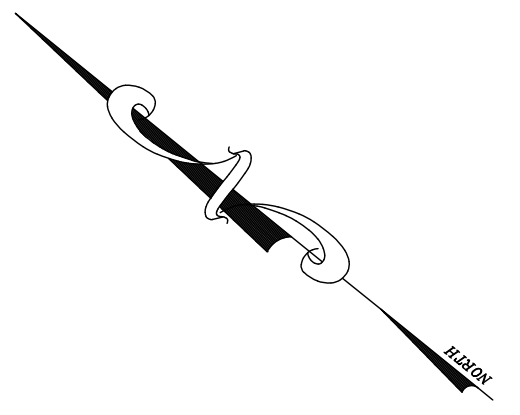
- PROPERTY LINE
- INSTALL CROSSWALK PER COS STD PLAN G-61
- PROPOSED SIGN
- INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B

CONSTRUCTION NOTES

- 1** INSTALL PROPOSED HAWK STOP BAR SIGN
- 2** POTENTIAL RIGHT-OF-WAY CONFLICT



PROPOSED HAWK STOP BAR SIGNAGE



**PRELIMINARY
NOT FOR CONSTRUCTION**

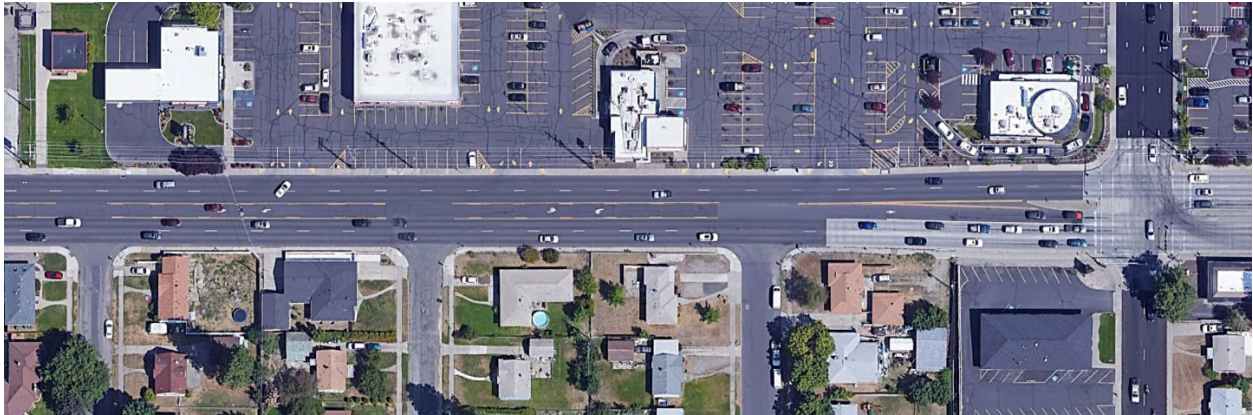
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CITY OF SPOKANE, WASHINGTON DEPARTMENT OF ENGINEERING SERVICES 808 WEST SPOKANE FALLS BLVD. SPOKANE, WASHINGTON 99201-3343 (509) 625-6300									
PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN									
SEGMENT LIMITS: INDIAN TRAIL ROAD HOLYOKE AVENUE TO EXCELL AVENUE									
PROJECT LIMITS: BALBOA-SOUTH INDIAN TRAIL									
TYPE OF IMPROVEMENT: TRAFFIC									
CITY PROJECT NUMBER: CITY PLAN NUMBER:									
EPN: TRAFFIC DESIGN									
CALL BEFORE YOU DIG 1-800-424-5555									

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Spokane Traffic Calming Master Plan

District:	3
Neighborhood:	Balboa – South Indian Trail
Project Extent:	Francis Avenue at Five Mile Shopping Center (West of North Ash Street)
	Estimate: \$971,000

Problem Statement: Residents of the Balboa – South Indian Trail neighborhood raised concerns over access management and limited pedestrian crossing options on Francis Avenue at Five Mile Shopping Center located west of North Ash Street and east of Cannon Street.



Francis Avenue at Five Mile Shopping Center (West of Ash Street)

Traffic Analysis

The shopping center has a site frontage of approximately 970 feet and contains four driveways along Francis Avenue. Francis Avenue within the study area is classified as an urban principal arterial with a posted speed limit of 35 miles per hour. The roadway provides four lanes with a two-way-left-turn lane. Francis Avenue operates at State Route 291 under WSDOT jurisdiction. Ash Street is classified as a major arterial with a posted speed limit of 30 miles per hour. The roadway operates as a southbound one-way street with three lanes north of Francis and two lanes south of Francis. Cannon Street is classified as a local street with a posted speed limit of 25 miles per hour. The roadway provides two lanes with on-street parking. The nearest controlled crosswalk is located at Ash Street, and the nearest crosswalk to the west is located 0.6 miles west of Ash Street at Alberta Street. Curb tight sidewalks are provided, while marked shoulders and bike lanes are not available within the study area.

The following table shows the estimated 2022 daily traffic volumes and 85th percentile speeds on Francis Avenue at Five Mile Shopping Center. The highest daily volume on Francis Avenue was 31,150 vehicles west of Belt Street. The highest 85th percentile speed was 40 miles per hour (10 miles per hour greater than the posted speed limit). The data indicates there is a speeding issue.

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2022 Estimated Daily Traffic and 85th Percentile Speeds on Francis Avenue

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day)	85 th Percentile Speed (mph)	Posted Speed (mph)
West of A Street ^a (West of study area)				
EB	2	14,338	40	
WB	2	15,340	39	
Both Dir.	5	29,678	40	30
West of Belt Street ^a (West of study area)				
EB	2	14,988	36	
WB	2	16,162	41	
Both Dir.	5	31,150	39	30
West of Adams Street ^b (East of study area)				
EB	2	15,462	37	
WB	2	15,329	41	
Both Dir.	5	30,791	39	30

^a Traffic data collected in Oct 2014. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions.

^b Traffic data collected in March 2017. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions.

The table below shows the severity and types of crashes occurring on Francis Avenue at Five Mile Shopping Center from 2017 through 2021 (from Cannon Street to Ash Street, excluding intersection crashes at the east and west ends). There were 28 total crashes, including 12 injury crashes. Rear end and angle related crashes were the most common crash type (each representing 29 percent of all crashes).

Crashes on Francis Avenue at Five Mile Shopping Center (2017 to 2021)

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Possible Injury	Property Damage Only	
Rear End	-	-	-	2	6	8
Angle	-	-	-	2	6	8
Turning	-	-	2	2	2	6
Sideswipe	-	-	1	1	2	4
From Same Direction	-	-	-	1	-	1
Pedestrian/Bicycle	-	-	1	-	-	1
Total	0	0	4	8	16	28

The need for enhanced pedestrian crossing treatments across Francis Avenue was analyzed based on NCHRP Report 562, using collected traffic data. Based on the findings, red treatment (e.g., HAWK signal beacon, midblock pedestrian signal, half signals) is the preferred treatment if there are 20 or more pedestrian crossings during the peak hour. Although pedestrian data is not available, it is assumed the 20 or more pedestrian crossing threshold is met due on Francis Avenue due to the adjacent shopping center and surrounding urban neighborhoods.

Spokane Traffic Calming Master Plan

Recommended Solution:

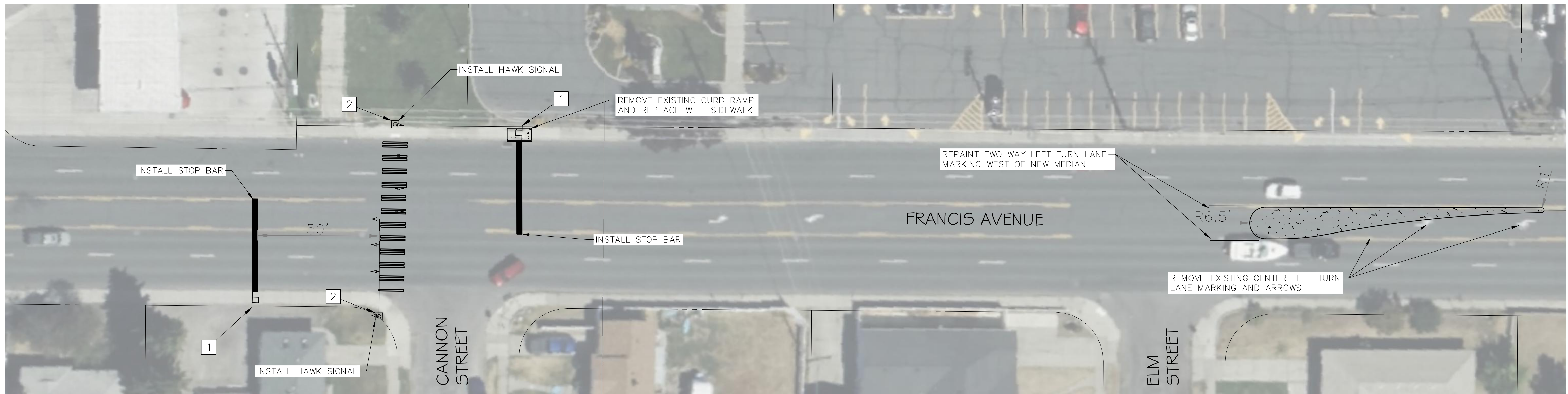
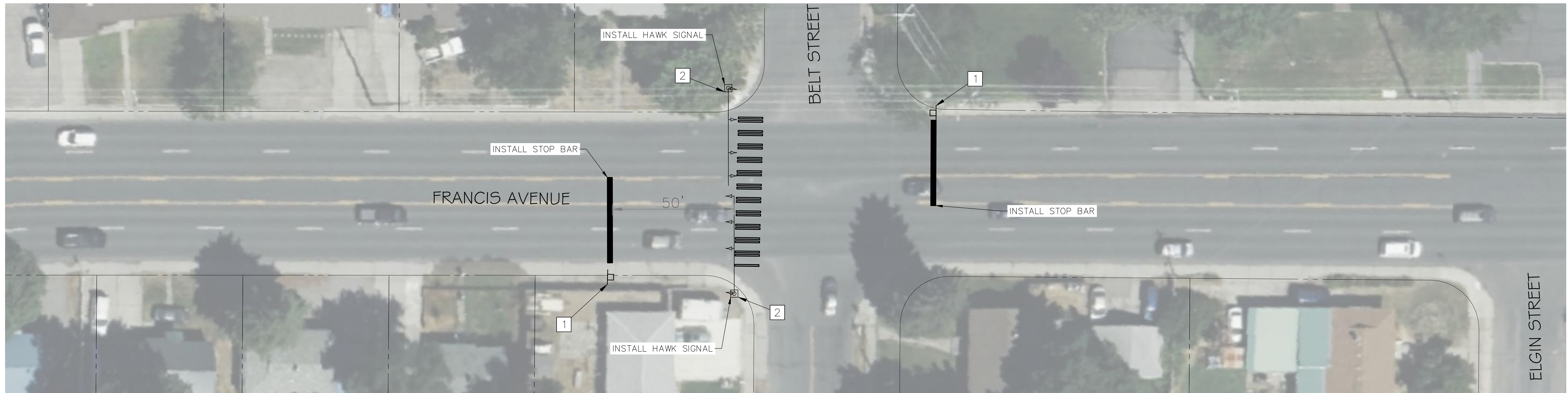
The study corridor was evaluated to determine the best placement for an enhanced pedestrian crossing on Francis Avenue with consideration for walking pathways through the shopping center, location of bus stops, estimated crossing demand and spacing from existing protected crossings. Any improvements on Francis Avenue will require approval from WSDOT.

The installation of a hybrid beacon pedestrian crossing is recommended on the west leg of the Francis Avenue/Cannon Street intersection to maximize spacing from the Ash Street signalized crossing and proposed crossing at Belt Street (see below). The crossing should consider alignment with the existing pedestrian pathway on the north side of Francis Avenue between the gas station and the bank.

The installation of a hybrid beacon pedestrian crossing is recommended on Francis Avenue at Belt Street to serve the crossing demand for the nearby commercial uses and STA stops and Belt Street which is designated a city Bike Friendly Route. This location is not directly along the frontage of the Five Mile Shopping center but provides appropriate spacing between the existing signalized crossings at Alberta Street and Ash Street. This location is a priority over Cannon Street due to anticipated future crossing demand.

Access management strategies should be applied to Francis Avenue to mitigate conflicts.

- Install a narrow-raised center median on Francis Avenue west of Ash Street, extending from the existing raised median west to Oak Street. This would allow Oak Street full movements but restrict the Five Mile Shopping Center driveway adjacent to Starbucks to right-in/right-out movements.
- Install a raised center median on Francis Avenue east of Elm Street (approximately 120-ft long) to restrict the driveway between Subway and Burger King to right-in/right-out movements. This raised median would be incorporated into the recommended pedestrian crossing at this location.



LEGEND

- PROPERTY LINE
- INSTALL CROSSWALK PER COS STD PLAN G-6 I
- PROPOSED SIGN
- INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
- INSTALL NEW CURB PER COS STD PLAN F-106B
- INSTALL NEW TRAFFIC ISLAND CONCRETE PER COS STD PLAN F-108

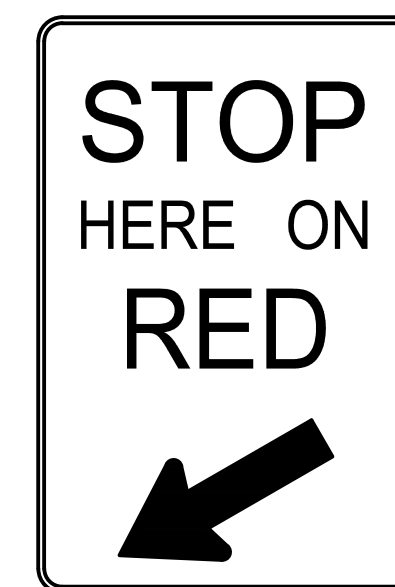
CONSTRUCTION NOTES

- 1** INSTALL PROPOSED HAWK STOP BAR SIGN
- 2** POTENTIAL RIGHT-OF-WAY CONFLICT

NOTE:

1. PROJECT REQUIRES WSDOT APPROVAL.

R10-6



PROPOSED HAWK STOP BAR SIGNAGE

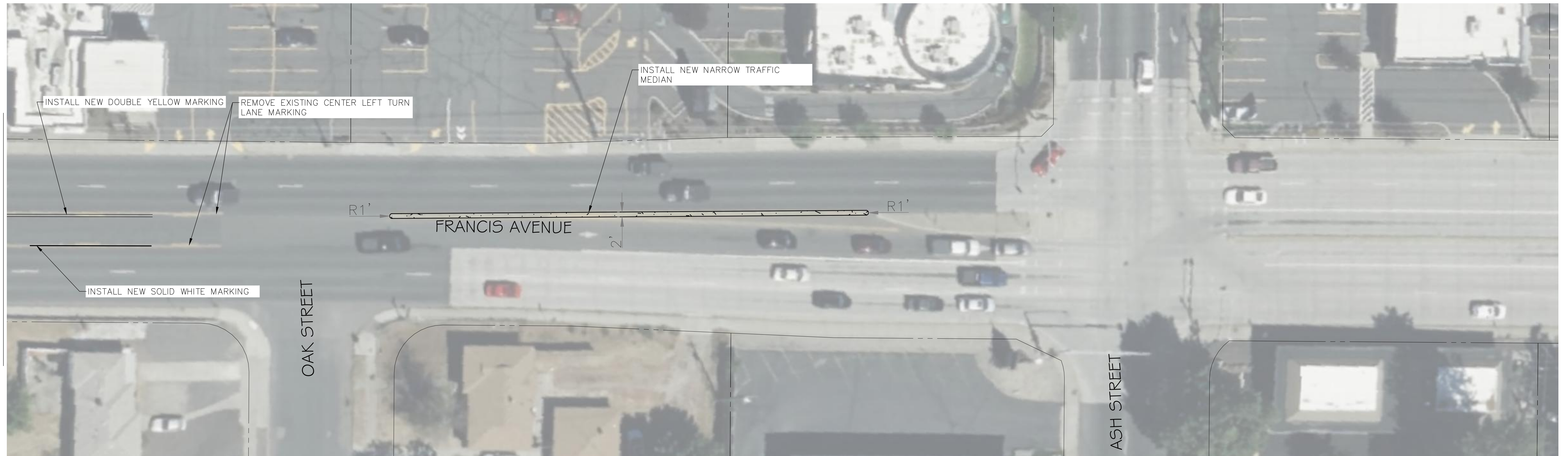
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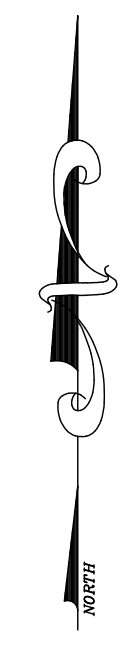
MATCHLINE NEXT SHEET

MATCHLINE PREVIOUS SHEET



LEGEND

- PROPERTY LINE
- INSTALL NEW TRAFFIC ISLAND CONCRETE PER COS STD PLAN F-108



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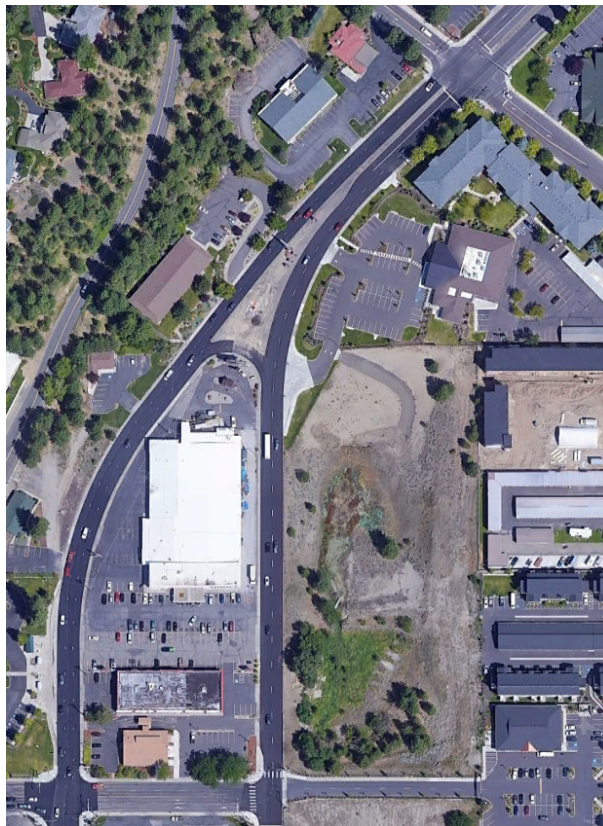
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Spokane Traffic Calming Master Plan

District:	3
Neighborhood:	Balboa – South Indian Trail
Project Extent:	Maple Street and Ash Street at Country Homes Boulevard
	Estimate: \$709,000

Problem Statement: Residents of the Balboa – South Indian Trail neighborhood raised concerns over access management and pedestrian safety on Maple Street and Ash Street at Country Homes Boulevard.



Maple Street and Ash Street at Country Homes Boulevard Intersection

Traffic Analysis

Ash Street, Maple Street, and Country Homes Boulevard are classified as major arterials with posted speed limits of 30 miles per hour. Ash Street is a southbound one-way street and provides three lanes. Maple Street is a northbound one-way street and provides two lanes. The two streets connect on the north and converge into Country Homes Boulevard with a raised center median separating the movements. Curb tight sidewalks are provided in the network except for the east side of Maple Street, which lacks pedestrian facilities. County Homes Boulevard/Cedar Road is a signalized intersection located 500 feet north of Maple Street/Ash Street/County Homes Boulevard intersection. There is one existing transit stop located at Ash Street north of Five Mile Road serving Route 4 and Route 662 for

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southbound traffic. The transit stop has a turnout/bay to prevent blocking traffic flow when stopping for riders. The commercial area bounded by Ash Street and Maple Street has three driveways on Ash Street, three driveways on Maple Street and one driveway on Five Mile Road.

The table below shows the 2022 daily traffic volumes and 85th percentile speeds on Ash Street and Maple Street within and around the study area. The highest daily volume on Maple Street was 13,131 vehicles North of Francis Avenue and 11,575 on Ash Street north of Five Mile Road. The highest 85th percentile speed on Maple Street was 40 miles per hour (10 miles per hour greater than the posted speed limit) and 37 miles per hour on Ash Street (seven miles per hour greater than the posted speed limit). The data indicates there is a speeding issue on both Maple and Ash Street north of Five Mile Road.

2022 Daily Traffic and 85th Percentile Speeds on Ash Street and Maple Street

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) ^a	85 th Percentile Speed (mph)	Posted Speed (mph)
Maple Street North of Francis Avenue				
NB	2	13,131	32	30
Maple Street North of Five Mile Road				
NB	2	13,052	40	30
Ash Street North of Five Mile Road				
SB	3	11,575	37	30

^a Traffic data collected in May 2022.

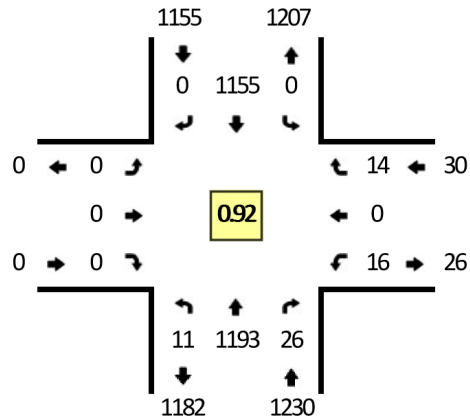
The table below shows the severity and types of crashes occurring at Maple Street, Ash Street, and Country Homes Boulevard from Five Mile Road to Country Home Boulevard over the past five years (excluding intersection crashes at the north and south ends). There were six total crashes without injuries crashes. Angle collisions were the most common crash type (representing 50 percent of all crashes)

Crashes at Maple Street, Ash Street, and Country Homes Boulevard Intersection (2017 to 2021)

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Possible Injury	Property Damage Only	
Rear End	-	-	-	-	1	1
Angle	-	-	-	-	3	3
Sideswipe	-	-	-	-	1	1
Stationary Object or Car	-	-	-	-	1	1
Total	0	0	0	0	6	6

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The figure below shows the existing PM peak hour traffic volumes at the Maple Street and Ash Street Boulevard intersection, based on a traffic count from November 2, 2022.



PM Peak Hour Traffic at Maple Street and Ash Street Intersection

The need for enhanced pedestrian crossing treatments was analyzed for Maple Street and Ash Street near Country Homes Boulevard based on NCHRP Report 562. Based on the findings, red treatment (e.g., HAWK signal beacon, midblock pedestrian signal) is the preferred treatment if there are 20 or more pedestrian crossings during the peak hour. It was assumed the pedestrian crossing threshold would not be met due to the lack of walking destinations in the study area.

Recommended Solution:

Maple Street and the northbound section of County Homes Boulevard between 5 Mile Road and Cedar Road have wide vehicle lanes that can promote faster driver speeds. Maple Street is approximately 36-foot wide, and the County Homes Boulevard northbound section is approximately 32-foot wide, both with 2 vehicle lanes. It is recommended both roadway segments be restriped with two 11-foot-wide lanes and the additional width repurposed to provide a northbound bike lane and a landscape buffer to separate the sidewalk from the vehicle lane.

Ash Street is also a wide roadway that provides three southbound vehicle lanes but could be reduced to two lanes and adequately serve vehicle demand. It is recommended the roadway be restriped with two 11-foot-wide lanes and the additional width repurposed to provide a landscape buffer to separate the sidewalk from the vehicle lane.

A pedestrian signal is not recommended due to the low estimated crossing demand on Maple Street and Ash Street at Country Homes Boulevard.


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There are several driveways on the study corridors with opportunities to consolidate and/or close them to reduce conflicts for both vehicles and pedestrians. The following access management improvements are recommended:

- Close the existing driveway on the west side of Maple Street that serve the building located at 6520 N Ash Street. This is the second driveway north of 5 Mile Road.
- Close the existing driveway on the east side of Ash Street that serve the building located at 6520 N Ash Street. The property has direct access to the parking lot to the north and a driveway approximately 25-feet to the north.



LEGEND

-  PROPERTY LINE
-  EXISTING CURB
-  INSTALL NEW CURB PER COS STD PLAN F-106B
-  INSTALL LANDSCAPING STRIP

CONSTRUCTION NOTES

- 1 INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO EXISTING DRYWELL.
- 2 INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO NEW CATCH BASIN AS SHOWN.
- 3 REMOVE EXISTING INLET. PLUG AND ABANDON EXISTING PIPE.
- 4 INSTALL CONCRETE DRIVEWAY TYPE 2 PER COS STD PLAN F-103A
- 5 INSTALL 11 FT THROUGH LANES AND 14 FT LANDSCAPE BUFFER TYPICAL SECTION FROM LOCATION SHOWN TO FRANCIS AVENUE
- 6 INSTALL 8 FT LANDSCAPE BUFFER, 11 FT THROUGH LANES, AND 6 FT BIKE LANE TYPICAL SECTION FROM CEDAR ROAD TO FRANCIS AVENUE
- 7 CLOSE EXISTING DRIVEWAY AND INSTALL NEW SIDEWALK.



**PRELIMINARY
NOT FOR CONSTRUCTION**

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NAVD88 = (OLD CBM ELEV.) - (1.3.13) 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. HORIZONTAL PLANS/PROFILE: 1" = 40' VERTICAL PROFILE ONLY: N/A IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY. SCALE:										CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007 BY: DRV DATES: 02/2023 REVISED: DRV 05/2023 CHECKED: JS 02/2023 APPROVED: AM 02/2023		CITY OF SPOKANE, WASHINGTON DEPARTMENT OF ENGINEERING SERVICES 808 WEST SPOKANE FALLS BLVD. SPOKANE, WASHINGTON 99201-3343 (509) 625-6300		PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN SEGMENT LIMITS: MAPLE STREET/ASH STREET COUNTRY HOME BOULEVARD PROJECT LIMITS: BALBOA-SOUTH INDIAN TRAIL		TYPE OF IMPROVEMENT: TRAFFIC CITY PROJECT NUMBER: CITY PLAN NUMBER:		EPN: TRAFFIC DESIGN CALL BEFORE YOU DIG 1-800-424-5555	
REVISIONS AS BUILT										GRADE ORDINANCE LIST NAVD88 DATUM									

Spokane Traffic Calming Master Plan

District:	3
Neighborhood:	Balboa – South Indian Trail
Project Extent:	Five Mile Road from Cochran Street to Ash Street
	Estimate: \$611,000

Problem Statement: Residents of the Balboa – South Indian Trail neighborhood raised concerns over pedestrian crossing and bicyclist facilities on Five Mile Road from Cochran Street to Ash Street (0.66 miles). Five Mile Road within the study is classified as a minor arterial with a posted speed limit of 30 miles per hour. The roadway provides two lanes for westbound and one lane for eastbound. The sidewalk network in the study corridor is predominantly complete. There is a westbound (uphill) bike lane on the corridor from Austin Road to Cochran Street. The future plan for the corridor per the Bicycle Master Plan remains the same as existing: moderate traffic with bike lane. No marked crosswalks are provided within the study corridor.

Traffic Analysis

The table below shows the 2022 daily traffic volumes and 85th percentile speeds on Five Mile Road. The highest daily volume on Five Mile Road 10,153 vehicles west of Austin Road. The highest 85th percentile speed was 40 miles per hour (10 miles per hour greater than the posted speed limit). The data shows there is a speed concern on Five Mile Road.

2022 Daily Traffic and 85th Percentile Speeds on Five Mile Road

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) ^a	85 th Percentile Speed (mph)	Posted Speed (mph)
West of Austin Road				
EB	1	5,762	38	
WB	2	4,391	42	
Both Dir.	3	10,153	40	30
West of Wedgewood Avenue				
EB	1	4,628	41	
WB	2	4,449	40	
Both Dir.	3	9,077	40	30

^a Traffic data collected in March 2022.

The table below shows the severity and types of crashes occurring on Five Mile Road from Cochran Street to Ash Street over the last five years (excluding intersection crashes at the east and west ends). There were 18 total crashes, including eight injury crashes. Angle collisions were the most common crash type (representing 61 percent of all crashes).

Spokane Traffic Calming Master Plan

Crashes on Five Mile Road from Cochran Street to Ash Street (2017 to 2021)

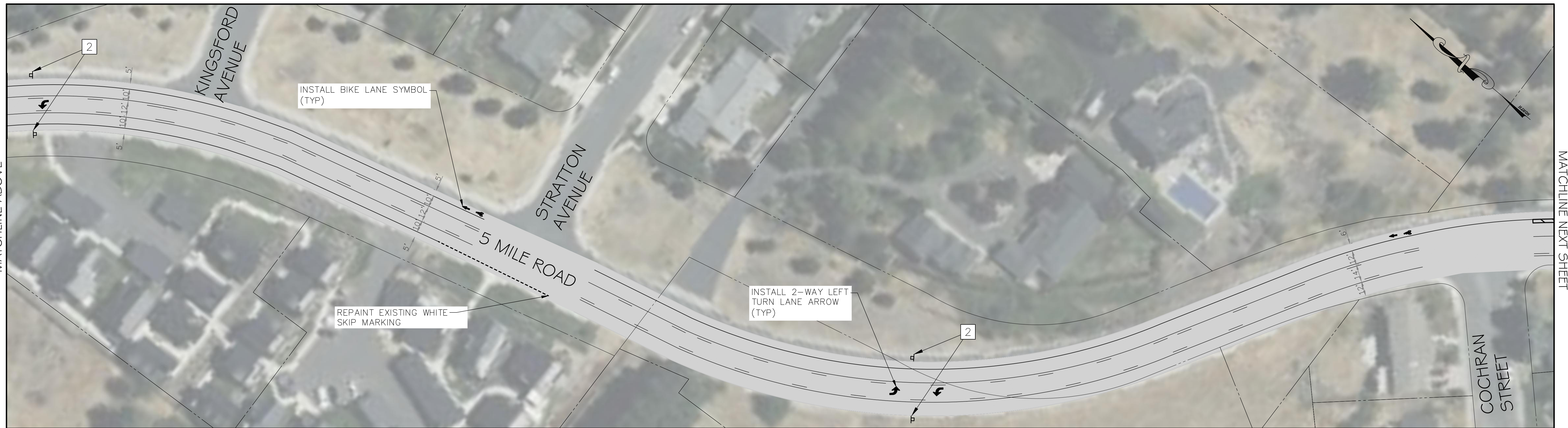
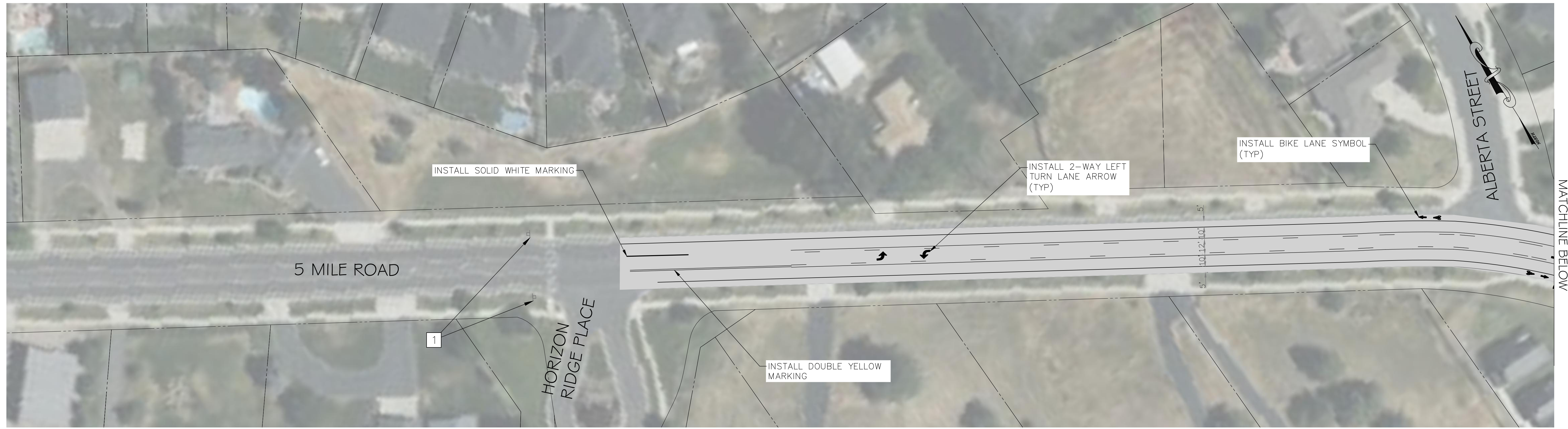
Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Possible Injury	Property Damage Only	
Rear End	-	-	-	1	1	2
Angle	-	-	1	4	6	11
Sideswipe	-	-	-	-	1	1
Stationary Object or Car	-	-	-	2	1	3
From Same Direction	-	-	-	-	1	1
Total	0	0	1	7	10	18

The need for enhanced pedestrian crossing treatments on Five Mile Road was analyzed based on NCHRP Report 562. Based on the findings, active or enhanced are the preferred treatment if there are 20 or more pedestrian crossings during the peak hour. Although no pedestrian data were recorded during the collection period, it is assumed the 20 or more pedestrian crossing threshold is met due to the surrounding urban neighborhood and commercial destinations east on Five Mile Road.

Recommended Solution:

The installation of a rectangular rapid flashing beacon (RRFB) pedestrian crossing is recommended on Five Mile Road at the Woodside Avenue to serve the crossing demand and Woodside Avenue which is designated a city Bike Friendly Route.

A lane reduction on Five Mile Road should be considered from Austin Street to Horizon Ridge Plan. Removing the second westbound vehicle lane would provide a three-lane section with bike lanes in both directions. This would match the cross-section on Five Mile Road west of Horizon Ridge Plan. The existing multilane section between Austin Street and Ash Street is needed for vehicle capacity.



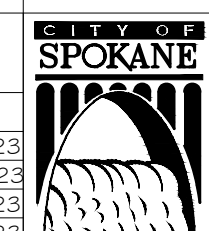
LEGEND

	PROPERTY LINE		INSTALL 2-WAY LEFT TURN LANE MARKING
	EXISTING CURB		INSTALL PROPOSED SIGN
	EXISTING ASPHALT PAVEMENT		

- CONSTRUCTION NOTES**
- 1 REMOVE EXISTING BEGINNING/ENDING TWO WAY LEFT TURN SIGNAGE
 - 2 INSTALL INTERMEDIATE TWO WAY LEFT TURN SIGNAGE PER COS STD PLAN G-70

DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	F.P.N.	U.S.N.	FROM	TO	COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
			AS BUILT													

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BENCHMARK LOCATION	None Given
NAVD88 ELEV.	None Given
CEM NO.	None Given
BAR IS ONE INCH ON ORIGINAL DRAWING.	HORIZONTAL PLANIMETER 1" = 40'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	VERTICAL PROFILE ONLY N/A
	SCALE



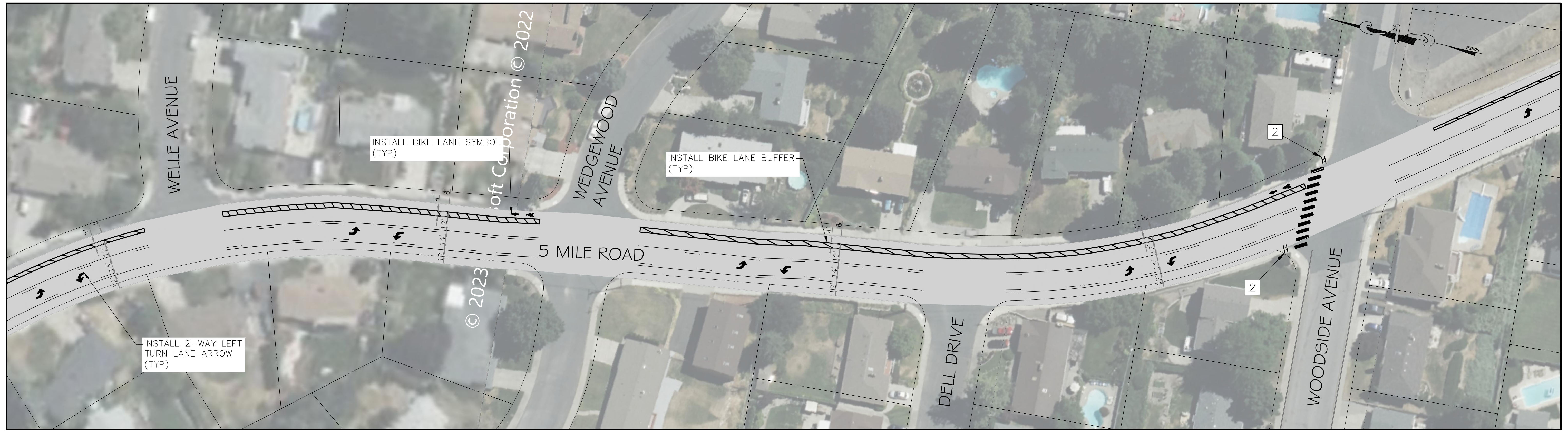
CITY OF SPOKANE, WASHINGTON
 DEPARTMENT OF ENGINEERING SERVICES
 808 WEST SPOKANE FALLS BLVD.
 SPOKANE, WASHINGTON 99201-3343
 (509) 625-6300

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN		TYPE OF IMPROVEMENT: TRAFFIC	
SEGMENT LIMITS: FIVE MILE ROAD HORIZON RIDGE PLACE TO ASH STREET		CITY PROJECT NUMBER	CITY PLAN NUMBER
PROJECT LIMITS: BALBOA-SOUTH INDIAN TRAIL		EPA: TRAFFIC DESIGN	

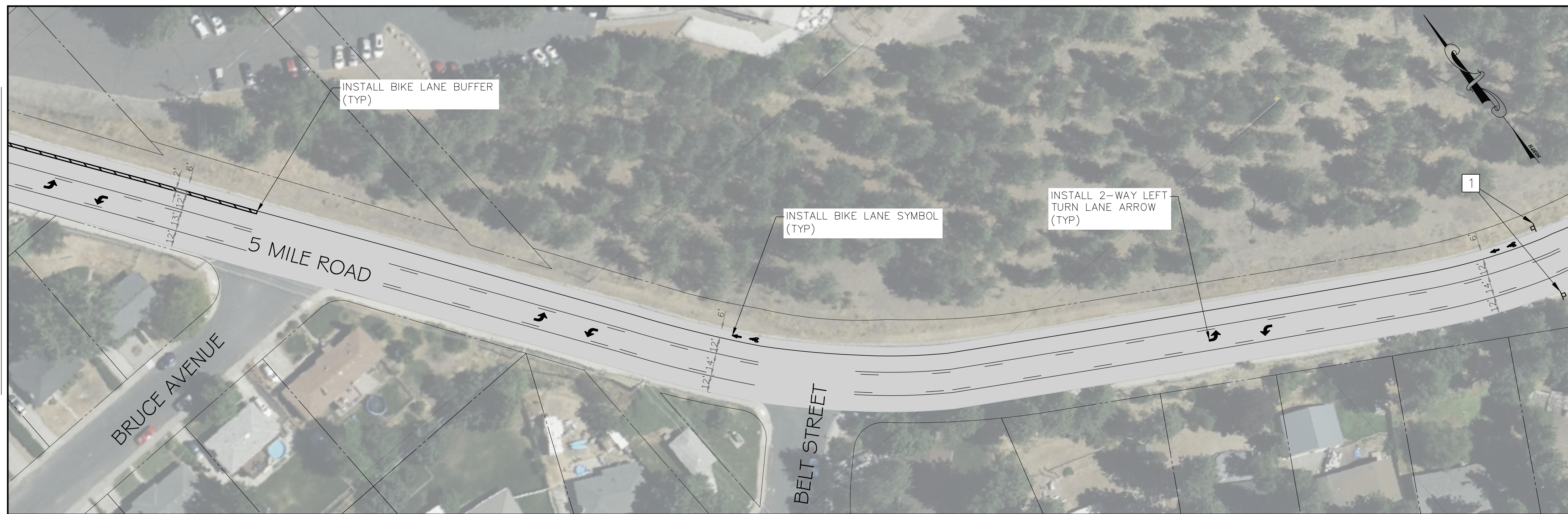
CALL BEFORE YOU DIG 1-800-424-5555

MATCHLINE PREVIOUS SHEET

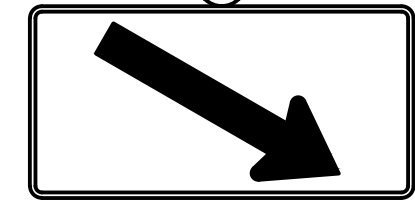


MATCHLINE BELOW

MATCHLINE ABOVE



MATCHLINE NEXT SHEET



PROPOSED RRFB SIGNAGE

LEGEND

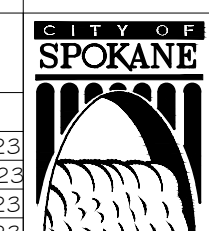
	PROPERTY LINE		INSTALL 2-WAY LEFT TURN LANE MARKING
	EXISTING CURB		INSTALL PROPOSED SIGN
	EXISTING ASPHALT PAVEMENT		INSTALL CROSSWALK PER COS STD PLAN G-6 I

CONSTRUCTION NOTES

- 1 INSTALL BEGINNING/ENDING TWO WAY LEFT TURN SIGNAGE PER COS STD PLAN G-70
- 2 INSTALL RRFB AND PROPOSED RRFB SIGNAGE

DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	F.P.N.	U.S.N.	FROM	TO	COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
			AS BUILT													

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CEM NO.	None Given
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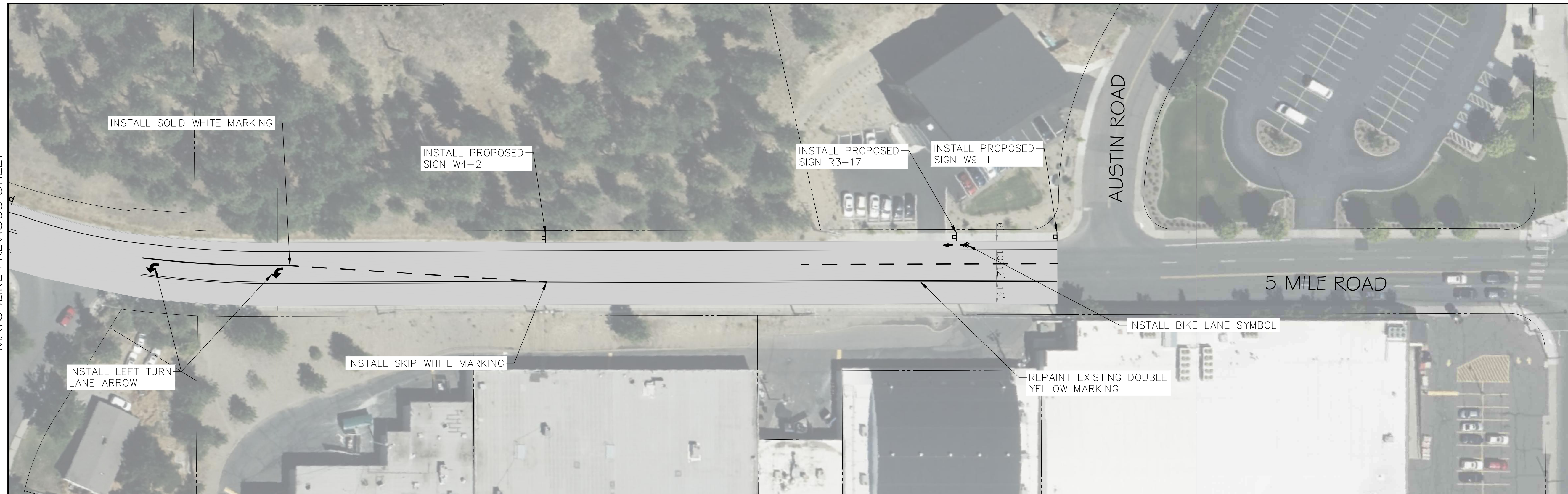


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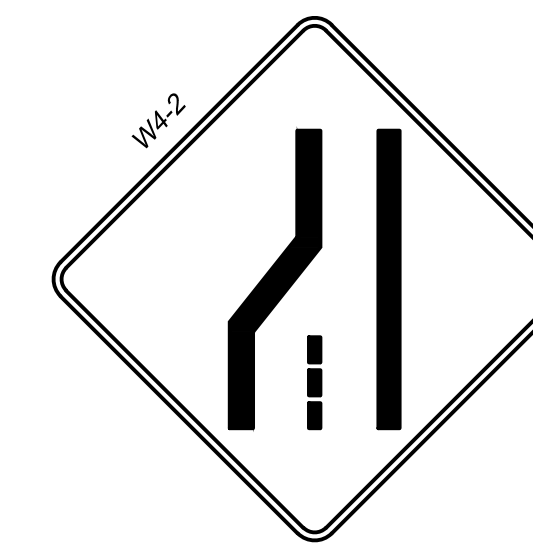
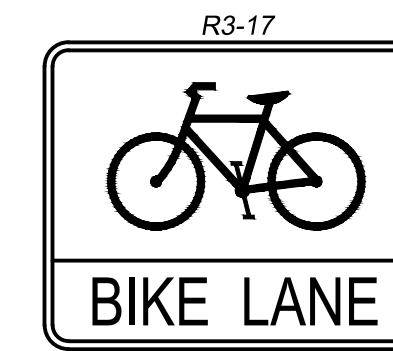
PROJECT NAME:	SPOKANE TRAFFIC CALMING MASTER PLAN	
SEGMENT LIMITS:	FIVE MILE ROAD HORIZON RIDGE PLACE TO ASH STREET	
TYPE OF IMPROVEMENT:	TRAFFIC	
CITY PROJECT NUMBER:	CITY PLAN NUMBER	
PROJECT LIMITS:	BALBOA-SOUTH INDIAN TRAIL	
EPN:	TRAFFIC DESIGN	

MATCHLINE PREVIOUS SHEET



LEGEND

	PROPERTY LINE		INSTALL 2-WAY LEFT TURN LANE MARKING
	EXISTING CURB		INSTALL PROPOSED SIGN
	EXISTING ASPHALT PAVEMENT		



PROPOSED SIGNAGE



**PRELIMINARY
NOT FOR CONSTRUCTION**

7
7 of 9

NAVD88 = (OLD CBM ELEV) - (1.3.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)										CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007			CITY OF SPOKANE, WASHINGTON DEPARTMENT OF ENGINEERING SERVICES 808 WEST SPOKANE FALLS BLVD. SPOKANE, WASHINGTON 99201-3343 (509) 625-6300	PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN	
BENCH MARK LOCATION: None Given										NAVD88 ELEV: None Given CBM NO: None Given				SEGMENT LIMITS: FIVE MILE ROAD HORIZON RIDGE PLACE TO ASH STREET	
NAVD88 DATUM										SCALE		PROJECT LIMITS: BALBOA-SOUTH INDIAN TRAIL		CITY PROJECT NUMBER: [] CITY PLAN NUMBER: []	
REVISIONS										AS BUILT		GRADE ORDINANCE LIST		DATE: [] BY: [] PROJ: [] E.P.N. U.S.N. FROM: [] TO: [] COUNCIL ACCEPT DATE: []	

Spokane Traffic Calming Master Plan

District: 3
Neighborhood: Balboa – South Indian Trail
Project Extent: Woodside Avenue Corridor
 Estimate: \$115,000

Problem Statement: Residents of the Balboa – South Indian Trail neighborhood raised concerns over speeding, cut through traffic, and lack of bicycle facilities on Woodside Avenue corridor within the neighborhood (approximately 1.76 miles). Woodside Avenue within the study area is classified as a local street with a speed limit of 25 miles per hour. The roadway provides two lanes with on-street parking. The sidewalk network in the study corridor is predominantly complete, except for the segment east of Five Mile Road. Along the study corridor, traffic circles are provided at Alberta Street, Dell Drive, and F Street to reduce travel speeds.

Traffic Analysis

The table below shows the 2022 daily traffic volumes and 85th percentile speeds on Woodside Avenue within the neighborhood. The highest daily volume on Woodside Avenue was 3,337 vehicles west of Five Mile Road. The highest 85th percentile speed was 31 miles per hour (six miles per hour greater than the posted speed limit).

2022 Daily Traffic and 85th Percentile Speeds on Woodside Avenue

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) ^a	85 th Percentile Speed (mph)	Posted Speed (mph)
West of Five Mile Road				
EB	1	1,926	30	
WB	1	1,411	31	
Both Dir.	2	3,337	30	25
West of Alberta Street				
EB	1	1,327	30	
WB	1	1,075	30	
Both Di.	2	2,402	30	25
West of Audubon Court				
EB	1	1,001	31	
WB	1	889	32	
Both Dir.	2	1,890	31	25
West of G Street				
EB	1	905	28	
WB	1	846	31	
Both Dir.	2	1,751	30	25

^a Traffic data collected in May 2022.

Spokane Traffic Calming Master Plan

The table below shows the severity and types of crashes occurring on Woodside Avenue over the last five years (excluding intersection crashes at the west end). There were 23 total crashes, including 13 injury crashes. Angle collisions were the most common crash type (representing 70 percent of all crashes).

Crashes on Woodside Avenue (2017 to 2021)

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Possible Injury	Property Damage Only	
Rear End	-	-	-	1	-	1
Angle	-	-	2	5	9	16
Turning	-	-	-	4	-	4
Stationary Object or Car	-	-	-	-	1	1
From Same Direction	-	-	1	-	-	1
Total	0	0	3	10	10	23

The need for enhanced pedestrian crossing treatments was analyzed based on NCHRP Report 562. Based on the findings, crosswalks are the preferred treatment if there are 20 or more pedestrian crossings during the peak hour. Although no pedestrian data were recorded during the collection period, it is assumed the 20 or more pedestrian crossing threshold is met due to the surrounding urban neighborhood. Curb extensions are currently in place at F Street to reduce traffic speed. Temporary curb extensions were installed at Bruce Avenue, G Street, Audubon Drive and Lindeke Street but were deemed not effective and removed by the City.

The study corridor is classified as a bike friendly route per the Bicycle Facility Classification in the City's Bicycle Master Plan, given the low traffic volumes and vehicle speeds travelling on the corridor. Woodside Avenue is a local street that connects east and west from Five Mile Road to Assembly Street. Road users tend to use the study corridor to avoid potential delay on other close major east-west roadways, where the study corridor will serve cut through traffic.

Recommended Solution:

Shared bicycle pavement markings should be considered to promote the bike friendly route on Woodside Avenue. The current vehicle volumes and speeds are appropriate for shared markings and do not indicate that bike lanes are appropriate.

It is recommended that speed feedback signs be added on Woodside Avenue east of Lindeke Street to alert drivers of the posted speed limit.



MATCHLINE BELOW



MATCHLINE ABOVE

MATCHLINE NEXT SHEET

LEGEND

- PROPERTY LINE
- EXISTING CURB
- SHARED LANE MARKING

**PRELIMINARY
NOT FOR CONSTRUCTION**

8
8 of 9

										NAVD88 = (OLD CBM ELEV.) - (1.3.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)										CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007										CITY OF SPOKANE, WASHINGTON DEPARTMENT OF ENGINEERING SERVICES 808 WEST SPOKANE FALLS BLVD. SPOKANE, WASHINGTON 99201-3343 (509) 625-6300										PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN SEGMENT LIMITS: WOODSIDE AVENUE INDIAN TRAIL ROAD TO 5 MILE ROAD PROJECT LIMITS: BALBOA-SOUTH INDIAN TRAIL										TYPE OF IMPROVEMENT: TRAFFIC CITY PROJECT NUMBER: _____ CITY PLAN NUMBER: _____ EPN: TRAFFIC DESIGN CALL BEFORE YOU DIG 1-800-424-5555																			
										BENCHMARK LOCATION: None Given										NAVD88 ELEV: None Given CBM NO: None Given										HORIZONTAL PLUMPTITUDE: 1" = 40' VERTICAL PROFILE ONLY: N/A										DRAWN: DRV 02/2023 REVISED: DRV 05/2023 CHECKED: JS 02/2023 APPROVED: AM 02/2023										NAVD88 DATUM										SCALE									
REVISIONS										AS BUILT										GRADE ORDINANCE LIST										NAVD88 DATUM										SCALE																													

MATCHLINE PREVIOUS SHEET



MATCHLINE BELOW

MATCHLINE ABOVE



LEGEND

- PROPERTY LINE
- EXISTING CURB
- SHARED LANE MARKING
- PROPOSED SIGN



PROPOSED SPEED FEEDBACK SIGN

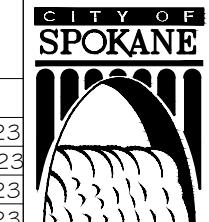
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9
9 of 9



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PROJECT NAME:	SPOKANE TRAFFIC CALMING MASTER PLAN	
SEGMENT LIMITS:	WOODSIDE AVENUE INDIAN TRAIL ROAD TO 5 MILE ROAD	
PROJECT LIMITS:	BALBOA-SOUTH INDIAN TRAIL	
TYPE OF IMPROVEMENT:	TRAFFIC	
CITY PROJECT NUMBER:		CITY PLAN NUMBER:
EPN:	TRAFFIC DESIGN	