

# Spokane Traffic Calming Master Plan

**District:** 1  
**Neighborhood:** Hillyard  
**Project Extent:** Market Street and Haven Street between Rich Avenue and Joseph Avenue  
 Estimate: \$462,000

**Problem Statement:** Residents of the Hillyard neighborhood raised concerns over vehicle speeds on Market Street and Haven Street between Rich Avenue and Joseph Avenue (0.86 miles). Both Market Street and Haven Street are classified as major arterials through the project area. The streets are one-way couplets, with northbound traffic on Market Street and southbound traffic on Haven Street. Market Street has a 20 mph speed limit for most of the project extents, with a 35 mph speed limit on the south end (south of Wellesley Avenue). Haven Street has a 30 mph speed limit for most of the project extents, with a 35 mph speed limit on the south end (speed limit increases one block south of Wellesley Avenue).

## Traffic Analysis

The table below shows estimated 2022 daily traffic volumes and 85<sup>th</sup> percentile speeds on Market Street and Haven Street at the north and south ends of the couplet. As shown in the table, the roadways serve 10,000 to 12,000 vehicles per day at the north end of the couplet and 13,000 to 15,000 vehicles per day on the south end. Of note, the North Spokane Corridor project is currently under construction, located just east of the couplet. Traffic is expected to decrease on the couplet (north of Wellesley Avenue) when the Wellesley Avenue Interchange opens (expected in late 2023).

The 85<sup>th</sup> percentile speeds are 4 to 7 mph higher than the posted speed limits at the north end of the couplet. At the south end, 85<sup>th</sup> percentile speeds are 1 to 3 mph higher than the posted speed limit.

**2022 Daily Traffic and 85<sup>th</sup> Percentile Speeds on Market Street and Haven Street**

Segment	Road	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) <sup>a</sup>	85 <sup>th</sup> Percentile Speed (mph)	Posted Speed (mph)
N of Queen Avenue (North End)	Market (NB)	2	10,160	27	20
	Haven (SB)	2	11,681	34	30
N of Rich Avenue (South End)	Market (NB)	3	13,379	38	35
	Haven (SB)	2	14,920	36	35

<sup>a</sup> Traffic count data was collected on March 21, 2019. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions. A seasonal adjustment factor of 1.02 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 Market Street and Haven Street between Rich Avenue and Joseph Avenue over the last five-years. As shown in the table, there were a total of 81 crashes, including 36 injury crashes. Turning related collisions were the most common crash type (representing 48% of all crashes).

# Spokane Traffic Calming Master Plan

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## Crashes on Market Street and Haven Street, between Rich Avenue and Joseph Avenue (2017 to 2021)

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Property Damage Only	Unknown	
Turning	-	1	15	23	-	39
Sideswipe	-	-	1	4	-	5
Rear End	-	-	9	3	-	12
Stationary Object or Car	-	-	3	10	5	18
Pedestrian	-	-	7	-	-	7
Total	0	1	35	40	5	81

The traffic data shows 85<sup>th</sup> percentile travel speeds are 7 mph over the 20 mph posted speed limit on Market Street north of Wellesley Avenue. This section of Market Street has more commercial development and already has curb extensions, street parking, and pedestrian-scale street lighting. Therefore, no additional traffic calming measures are recommended on Market Street.

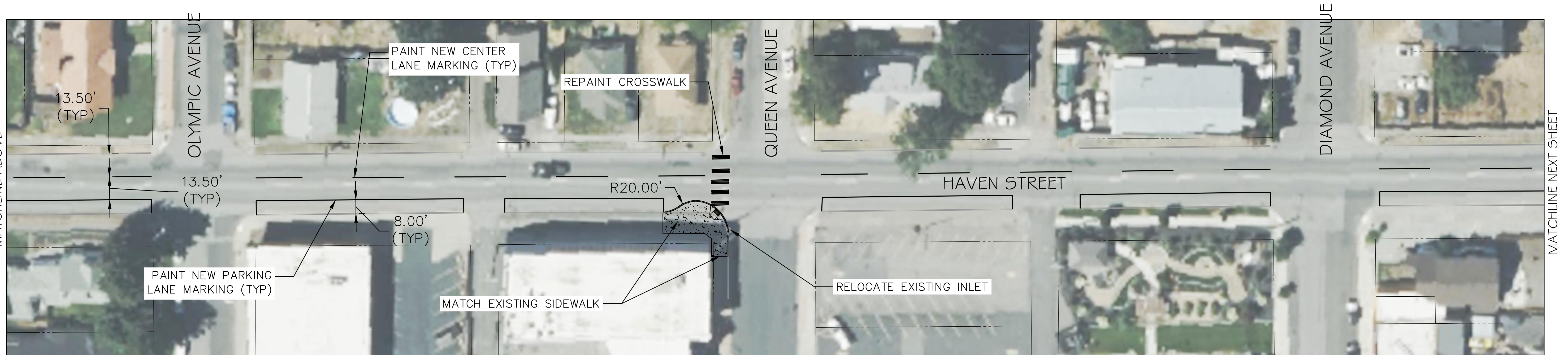
However, there are no curb extensions or other traffic calming measures provided on Haven Street. There are four marked pedestrian crossings on Haven Street (at Wabash Avenue, Queen Avenue, Everett Avenue, and Rowan Avenue). It is recommended that updated pedestrian crossing counts be collected to determine the highest crossed streets to narrow the roadway width and provide shorter crossing distances. Curb extensions are recommended at the four intersections with the highest east-west pedestrian crossing volumes. The addition of curb extensions is expected to decrease 85<sup>th</sup> percentile speeds by 3 mph on Haven Street.<sup>1</sup> Narrowing the travel lanes and adding street parking on the east side of Haven Street could also be considered as a means to reduce travel speeds.

### **Recommended Solution:**

Curb extensions are recommended at the four intersections with the highest pedestrian crossing volumes on Haven Street. Narrowing the travel lanes and adding street parking on the east side of Haven Street could also be considered as a means to reduce travel speeds. Due to the size of this project, this project will count as two projects.

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<sup>1</sup> *Engineering Speed Management Countermeasures: A Desktop Reference of Potential Effectiveness in Reducing Speed.* Federal Highway Administration. July 2014.

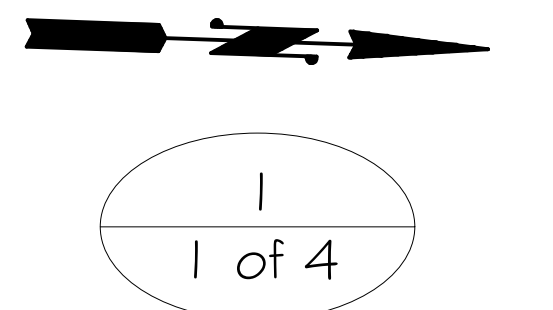


**LEGEND**

	PROPERTY LINE		INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
	EXISTING CURB		INSTALL NEW CURB PER COS STD PLAN F-106B
	EXISTING INLET		INSTALL CURB RAMP PER COS STD PLAN F-105
	INSTALL CENTER LANE MARKING		INSTALL CROSSWALK PER COS STD PLAN G-61
	INSTALL PARKING LANE MARKING		

- NOTES:**
- PROJECT COVERS TWO CONCEPT DESIGNS DUE TO SIZE.

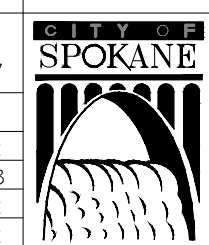
**PRELIMINARY  
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Plotted On May 14, 2023 - 6:59pm

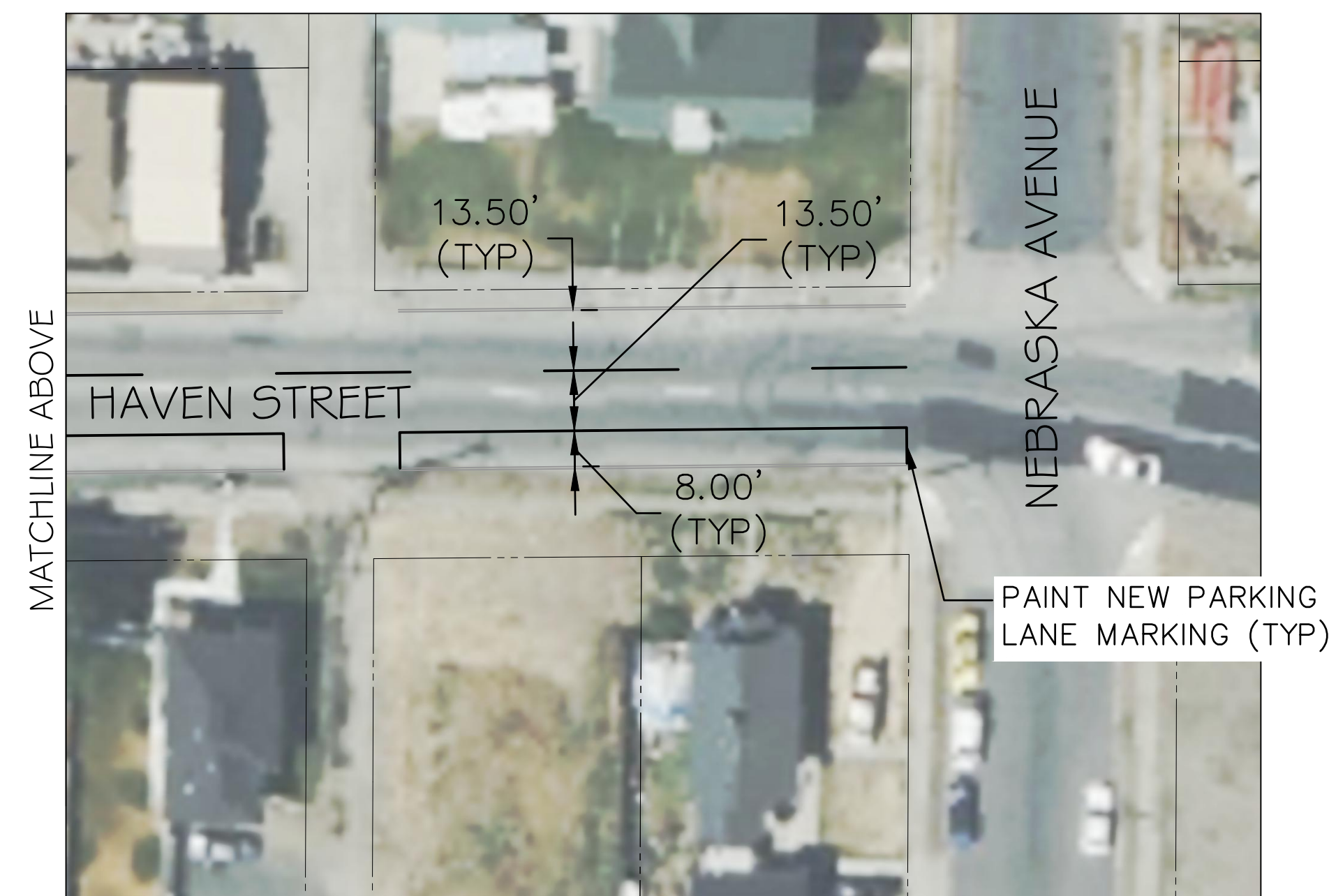
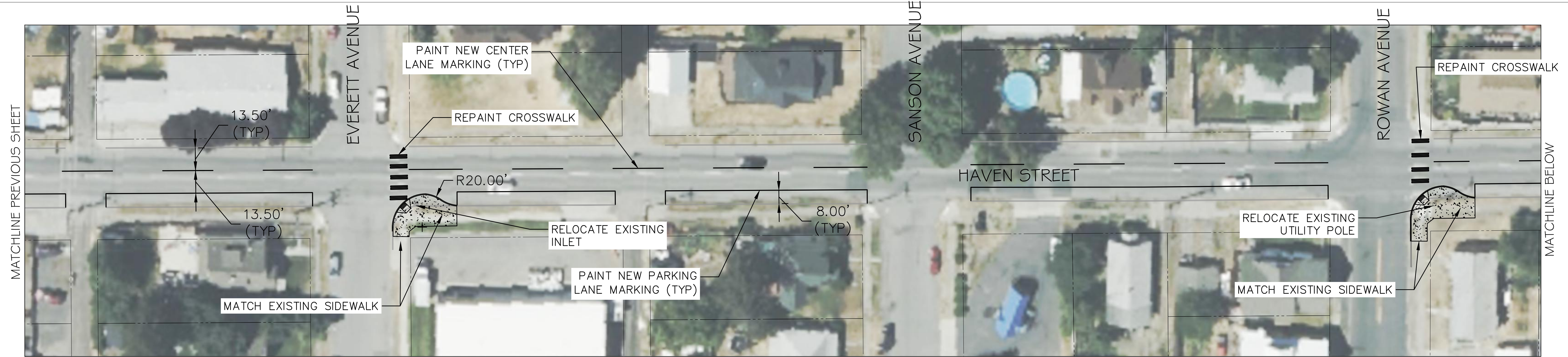
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			AS BUILT							

NAVD88 = (OLD CBM ELEV.) - (1.3.13)	AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
None Given	
NAVD88 ELEV. None Given	CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007
CBM NO. None Given	BY DATES
BAR IS ONE INCH ON ORIGINAL DRAWING.	DRAWN: DRV 1/2/2022
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	REVISED: DRV 05/2023
	CHECKED: JS 1/2/2022
	APPROVED: AM 1/2/2022



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:	HAVEN STREET WELLESLEY AVENUE TO NEBRASKA AVENUE		
TYPE OF IMPROVEMENT:	TRAFFIC		
CITY PROJECT NUMBER:	HILLYARD NEIGHBORHOOD		
PROJECT LIMITS:	HILLYARD NEIGHBORHOOD		
EFN:	TRAFFIC DESIGN		



LEGEND

	PROPERTY LINE		INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
	EXISTING CURB		INSTALL NEW CURB PER COS STD PLAN F-106B
	EXISTING INLET		INSTALL CURB RAMP PER COS STD PLAN F-105
	INSTALL CENTER LANE MARKING		INSTALL CROSSWALK PER COS STD PLAN G-61
	INSTALL PARKING LANE MARKING		

**PRELIMINARY  
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2  
2 of 4

Plotted On May 14, 2023 - 6:54pm

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

PROJECT NAME: <b>SPOKANE TRAFFIC CALMING MASTER PLAN</b>	
SEGMENT LIMITS: HAVEN STREET WELLESLEY AVENUE TO NEBRASKA AVENUE	TYPE OF IMPROVEMENT: <b>TRAFFIC</b>
PROJECT LIMITS: HILLYARD NEIGHBORHOOD	CITY PROJECT NUMBER CITY PLAN NUMBER
EPA: TRAFFIC DESIGN	

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# Spokane Traffic Calming Master Plan

**District:** 1  
**Neighborhood:** Hillyard  
**Project Extent:** Haven Street from Wellesley Avenue to Market Street  
 Estimate: \$341,000

**Problem Statement:** Residents of the East Central neighborhood raised concerns over pedestrian crossing safety and pedestrian network connectivity on Haven Street between Wellesley Avenue and Market Street (0.38 miles). Haven Street allows one-way southbound traffic and is classified as a major arterial with a speed limit of 35 mph for most of the project extent.

**Traffic Analysis:**

The table below shows estimated 2022 daily traffic volumes and 85<sup>th</sup> percentile speeds on Haven Street (north of Rich Avenue. There are about 15,000 vehicles per day on this section of Haven Street, with an 85<sup>th</sup> percentile speed of 36 mph (1 mph over the posted speed limit).

**2022 Daily Traffic and 85<sup>th</sup> Percentile Speeds on Haven Street (North of Rich Avenue)**

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) <sup>a</sup>	85 <sup>th</sup> Percentile Speed (mph)	Posted Speed (mph)
Haven Street (SB)	2	14,920	36	35

<sup>a</sup> Traffic count data was collected on March 21, 2019. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions. A seasonal adjustment factor of 1.02 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 Haven Street between Wellesley Avenue and Market Street over the last five-years. There were 11 total crashes, with fixed object collisions representing the most common crash type.

**Crashes on Haven Street, between Wellesley Ave and Market Street (2017 to 2021)**

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Property Damage Only	Unknown	
Turning	-	-	1	2	-	3
Stationary Object or Car	-	-	-	3	3	6
Pedestrian	-	-	1	1	-	2
Total	0	0	2	6	3	11

A review of existing sidewalk connectivity shows that Haven Street is lacking sidewalks on several blocks throughout the study area. The City of Spokane has funded a project to build the sidewalk along the west side of Haven Street to enhance pedestrian connectivity in the area. An east-west pedestrian crossing exists at the north end of the project area (at the Wellesley Avenue signal). However, it is also recommended that a second east-west crossing be considered at the south end (near Rockwell Avenue). This crossing would provide an east-west connection between the residential neighborhood (to the west) and the future Children of the Sun Trail (to the east). The Children of the Sun Trail will be a north-south multi-use path, running parallel to the North Spokane Corridor (trail completion expected in 2024).

# Spokane Traffic Calming Master Plan

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To fully connect to the trail, a crossing would be needed across Haven Street and Market Street near Rockwell Avenue. This east-west crossing location aligns with the planned improvements in the City of Spokane Bicycle Master Plan.

The recommended pedestrian crossing treatments (across Haven Street and Market Street) were analyzed based on the National Cooperative Highway Research Program (NCHRP) Report 562.<sup>1</sup> 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 NCHRP 562, rapid rectangular flashing beacons would be recommended across both Market and Haven if there are between 14 and 38 pedestrian crossings during the peak hour.

## **Recommended Solution:**


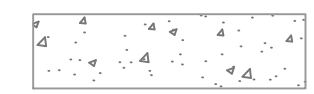
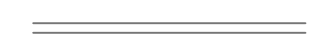

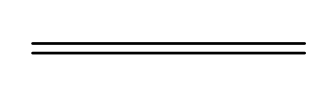
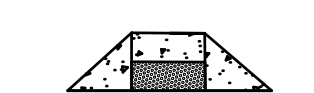

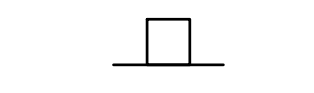
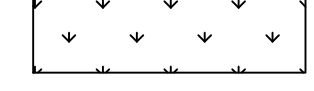
It is recommended that an east-west crossing be considered on Haven Street and Market Street at the south end of the project area (near Rockwell Avenue). This east-west pedestrian crossing would provide access to the future Children of the Sun Trail and the location aligns with the planned improvements in the City of Spokane Bicycle Master Plan.

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<sup>1</sup> 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>



**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 SIGN (SEE PROPOSED)
-  INSTALL LANDSCAPING, NATIVE PLANTINGS

**CONSTRUCTION NOTES**

- 1 INSTALL RAPID RECTANGULAR FLASHING BEACON (RRFB) WITH SIGN CONFIGURATION 1
- 2 INSTALL RAPID RECTANGULAR FLASHING BEACON (RRFB) WITH SIGN CONFIGURATION 2
- 3 LOCATION OF CONNECTION TO FUTURE TRAILHEAD FOR CHILDREN OF THE SUN TRAIL



PROPOSED RRFB SIGN CONFIGURATION 1



PROPOSED RRFB SIGN CONFIGURATION 2

**PRELIMINARY  
NOT FOR CONSTRUCTION**

Plotted On May 14, 2023 - 6:56pm

NAVD88 = (OLD CBM ELEV.) - (1.313) 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									
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					TYPE OF IMPROVEMENT: TRAFFIC				
SEGMENT LIMITS: HAVEN STREET AND ROCKWELL AVENUE					CITY PROJECT NUMBER: _____ CITY PLAN NUMBER: _____				
PROJECT LIMITS: HILLYARD NEIGHBORHOOD					EPN: 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
	INSTALL CROSSWALK PER COS STD PLAN G-61
	INSTALL SIGN (SEE PROPOSED)

**CONSTRUCTION NOTES**

- 1 LOCATION WHERE SIDEWALK INTERSECTS DRIVEWAY. MATCH EXISTING ELEVATIONS AT DRIVEWAY LIMITS
- 2 PAINT CROSSWALK
- 3 INSTALL NEW INLET AND MANHOLE. PIPE TO EXISTING SEWER MAIN
- 4 INSTALL RAPID RECTANGULAR FLASHING BEACON (RRFB) WITH SIGN CONFIGURATION 1
- 5 INSTALL RAPID RECTANGULAR FLASHING BEACON (RRFB) WITH SIGN CONFIGURATION 2
- 6 DEMOLISH EXISTING CONCRETE SIDEWALK AND CURB RAMP. INSTALL NEW SIDEWALK AND CURB RAMP TO PROVIDE ACCESS TO RRFB CROSSWALK
- 7 PROJECT EXTENDS OUTSIDE OF CITY OF SPOKANE RIGHT OF WAY

**NOTES:**

1. PEDESTRIAN COUNT NEEDED TO CONFIRM THAT RRFB IS PROPER FORM OF PEDESTRIAN CROSSING TREATMENT.



PROPOSED RRFB SIGN CONFIGURATION 1



PROPOSED RRFB SIGN CONFIGURATION 2

**PRELIMINARY  
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Plotted On May 14, 2023 - 6:57pm

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

NAVDS88 = (OLD CBM ELEV.) - (1.3.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

BENCH MARK LOCATION: None Given

NAVDS88 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 PLUMMER ONLY: 1" = 20'

VERTICAL: N/A

PROFILE ONLY: N/A

SCALE

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: BRUCE AVENUE CRESTLINE STREET TO LEE STREET	TYPE OF IMPROVEMENT: TRAFFIC
CITY PROJECT NUMBER:	CITY PLAN NUMBER:
PROJECT LIMITS: HILLYARD NEIGHBORHOOD	EFN: TRAFFIC DESIGN