

Welcome to the

S. Walnut Street Traffic Calming &
Bike/Pedestrian Improvement Project

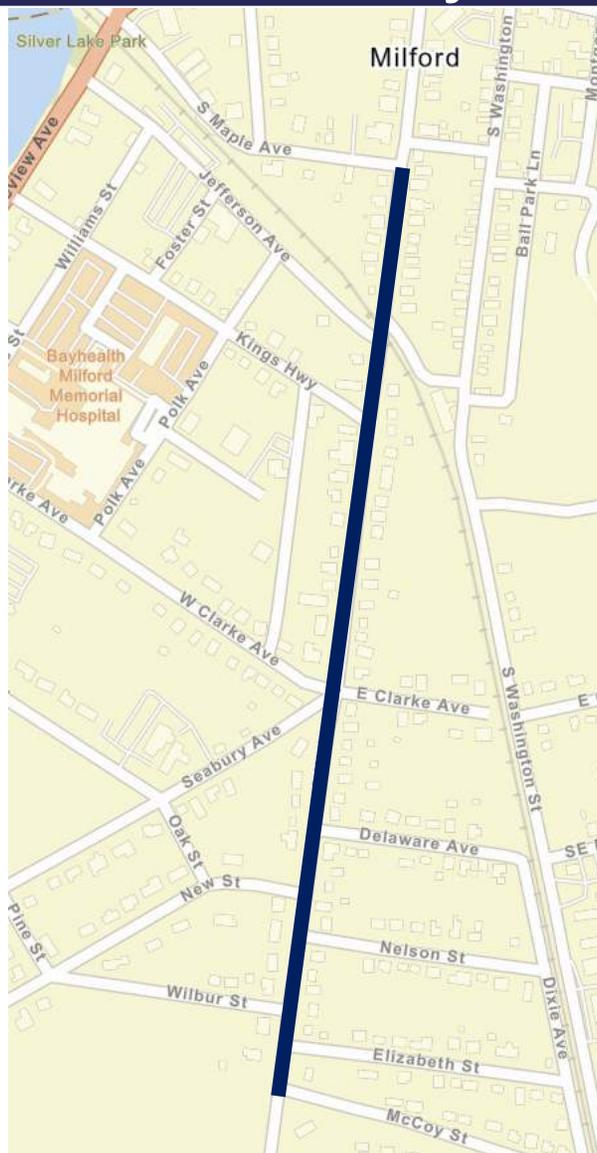
Public Workshop #2

April 4, 2023

S. Walnut Street Traffic Calming & Bike/Pedestrian Improvement Project

Study Area

S. Walnut Street
between McCoy Street
and S. Maple Avenue



S. Walnut Street Traffic Calming & Bike/Pedestrian Improvement Project

Project Goals

- Improve bicycle and pedestrian connectivity along S. Walnut St
 - New shared use path
 - Complete gaps in existing sidewalks
- Reduce traffic speeds and provide traffic calming
- Improve pedestrian crossing at Seabury Avenue and W. Clarke Ave
- Improve S. Walnut Street intersection configuration with Railroad

S. Walnut Street Traffic Calming & Bike/Pedestrian Improvement Project

Traffic Calming Study

- Current posted speed: 25 mph
- Analyzed speed data from September 11, 2022 through September 19, 2022
 - Average speed: 27 mph
 - 85th percentile speed: 31 mph
- 62.6% of all recorded vehicles were traveling at speeds greater than the posted speed limit
- Half of all crashes occurred at two main intersections:
 - S. Walnut Street and McCoy Street
 - S. Walnut Street and Seabury Avenue/Clarke Avenue

S. Walnut Street Traffic Calming & Bike/Pedestrian Improvement Project

Crash Data



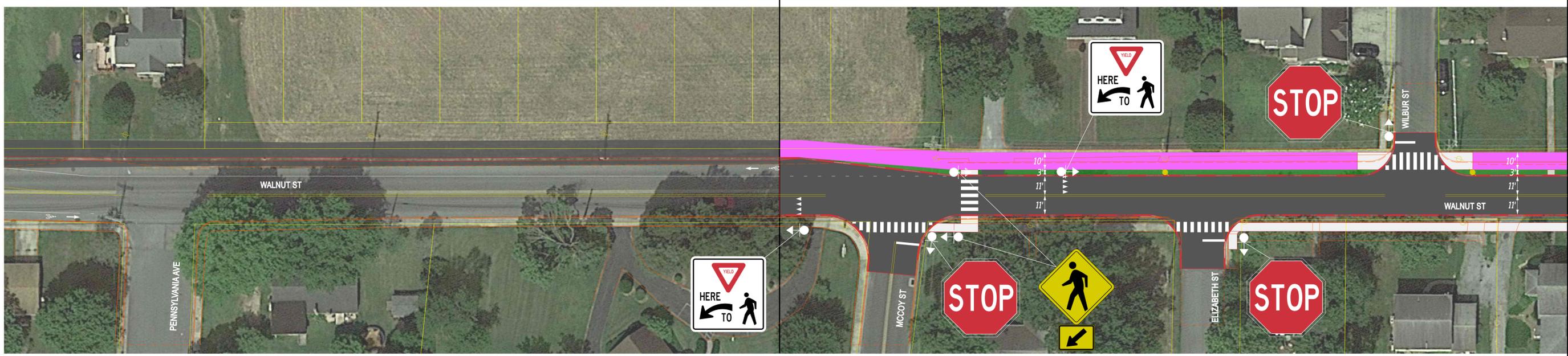
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Speed Study Evaluation

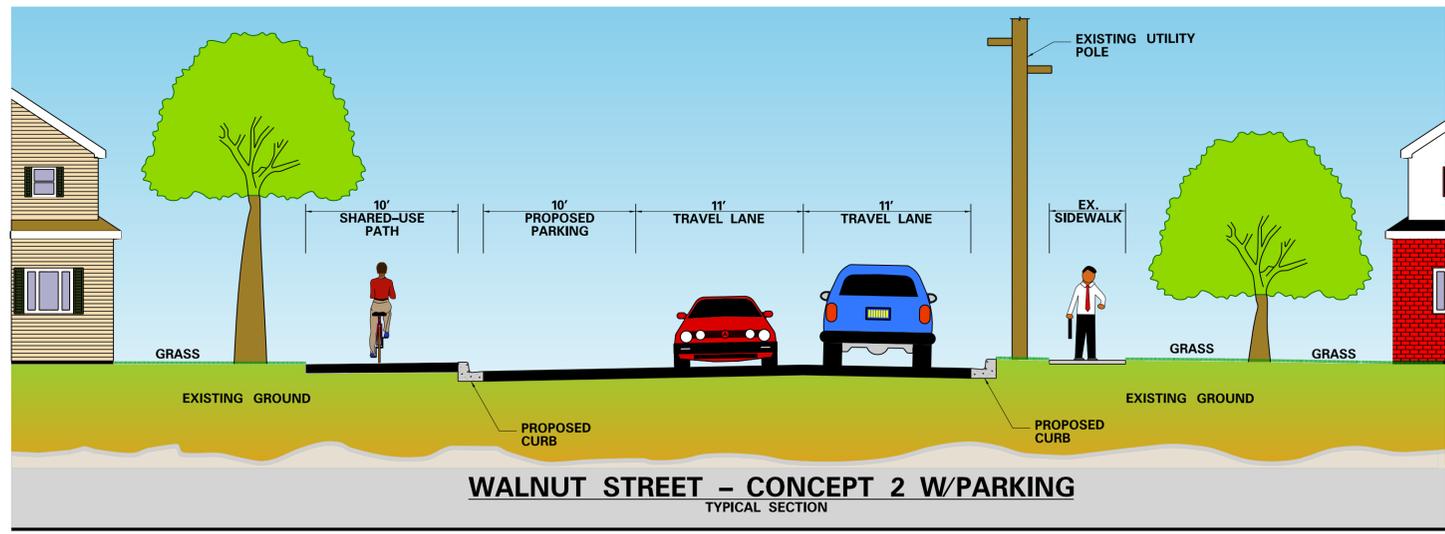
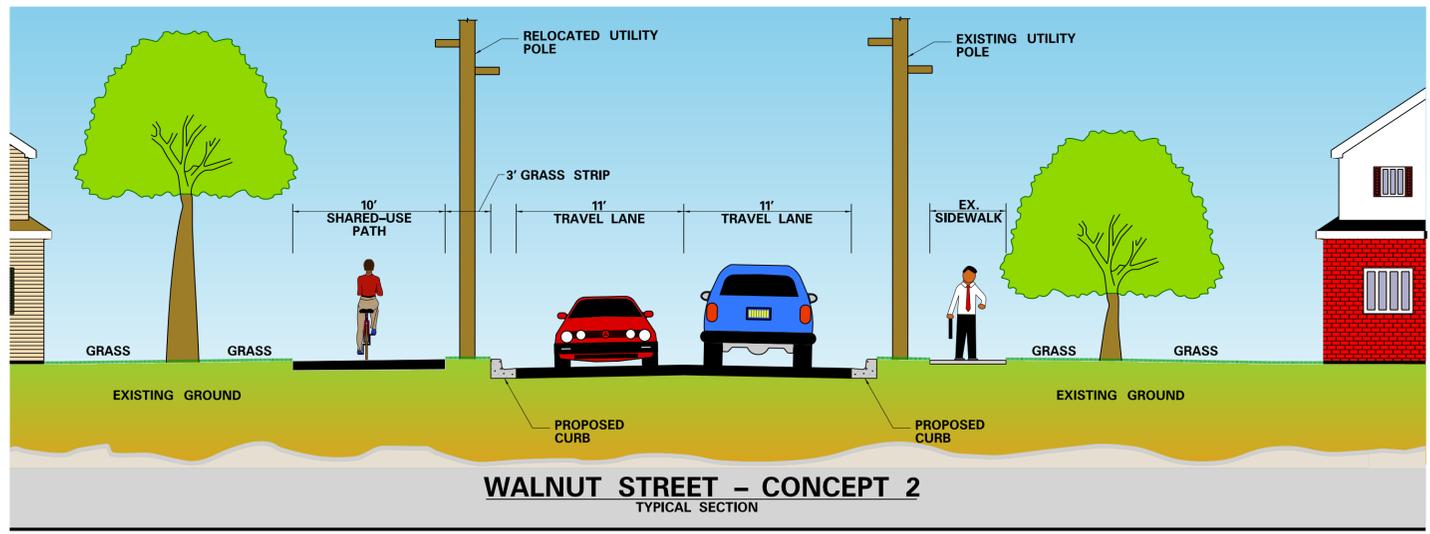
Milford S. Walnut Street Speed and Safety Evaluation							
	Type	Name	Potential Effectiveness for Speed Reduction (FHWA PSCI)	Potential for Crash Reduction (-) /Increase (+) (FHWA PSCI)	Potential Crash Reduction (-) /Increase (+) (HSM)	Considered? Why/why not?	Rank
Road Segment Treatment							
1	Vertical	Speed Humps	-6 mph	-40% to -48% (All Severities, All Crashes)	1. Treated Road = -40% (Injury Crashes, All Crash Types) 2. Adjacent Roads = -5% (Injury Crashes, All Crash Types)	No, speed humps are not preferred due to issues with emergency vehicles etc.	1
2	Vertical	Speed Table	-4 mph	-36% to -64% (All Severities, All Crashes)		No, speeds tables are not preferred due to issues with emergency vehicles etc.	2
Intersections Treatment							
3	Horizontal	Modern Roundabouts	-4 mph to -8 mph		-78% (All Severities, All Crash Types)	No, due to right of way constraints	1
4	Horizontal	Realigned Intersections				Yes, intersection improvements at S. Walnut/Seabury and S. Walnut and the R/R were recommended to assist in improving driver clarity	2
Road Segment Treatment							
5	Horizontal	Chicanes	-9 mph			No, roadway width that could be utilized for chicanes was utilized to add the shared use path	1
6	Horizontal	Lateral Shifts	Less than Chicanes			Yes, S. Walnut Street is recommended for a lateral shift between Delaware Ave and Clarke Ave	2
Road Segment Treatment: Road Width Reduction							
7	Width Reduction	Median Islands (Raised)	-3 mph	-39% (All Crashes) -44% (Fatal and Injury Crashes)	-39% (Injury Crashes, All Crash Types)	No, roadway width was narrowed to fit a new shared use path leaving no additional space for a median island	1
8	Width Reduction	Striping/Lane Markings	Reduction possible	Potential for less severe crash types	Potential for less severe crash types	Yes, lane widths were narrowed to 11' and shoulders/parking areas were reduced or eliminated	
Road Segment Treatment: Dynamic Signing							
9	Dynamic Signing	Radar Speed Signs	-2 mph to -5 mph		-46% (All Severities, All Crashes)	Potentially, coordinating with City of Milford	1



← SIMPSONS CROSSING CONCEPT 2 →

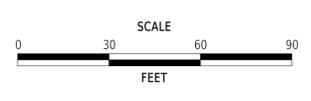


MATCHLINE SHEET 2



LEGEND	
	PROPERTY LINES
	EXISTING UTILITY POLE
	PROPOSED UTILITY POLE
	EXISTING MULT-USE PATH
	PROPOSED MULT-USE PATH
	PROPOSED BRICK MULT-USE PATH
	PROPOSED SIDEWALK
	PROPOSED PAVEMENT
	PROPOSED GRASS
	HISTORIC DISTRICT

STATES
TIMES
FILES

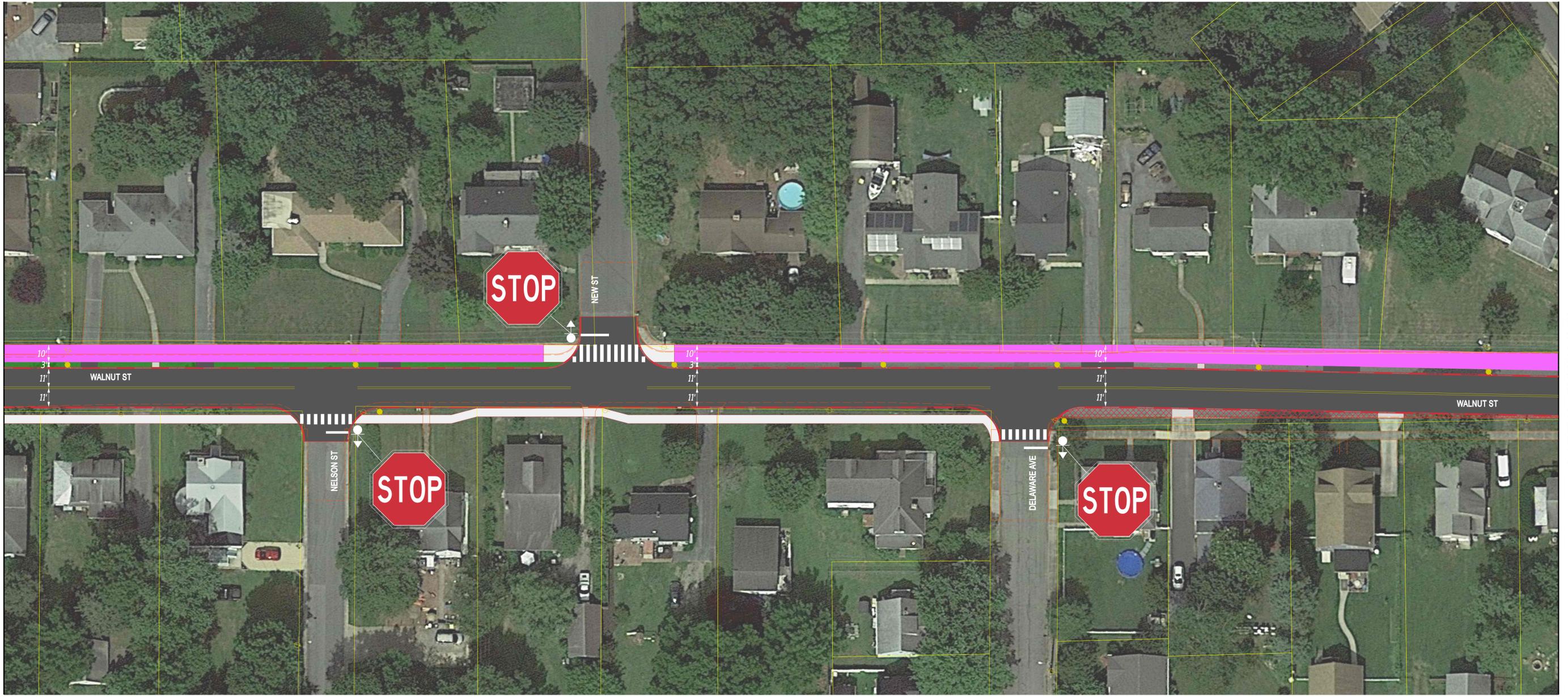


**WALNUT STREET
MILFORD, DE
CONCEPT PLAN**

CONTRACT	BRIDGE NO.	X
TXXXXXXXXX	DESIGNED BY:	M. PENNINGTON
COUNTY	CHECKED BY:	S. MARICIC-GOUDY
KENT		

CONCEPT 2

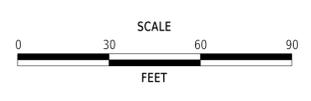
SECTION
CEN
SHEET NO.
1



MATCHLINE SHEET 1

MATCHLINE SHEET 3

LEGEND	
	PROPERTY LINES
	EXISTING UTILITY POLE
	PROPOSED UTILITY POLE
	EXISTING MULT-USE PATH
	PROPOSED MULT-USE PATH
	PROPOSED BRICK MULTI-USE PATH
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	HISTORIC DISTRICT

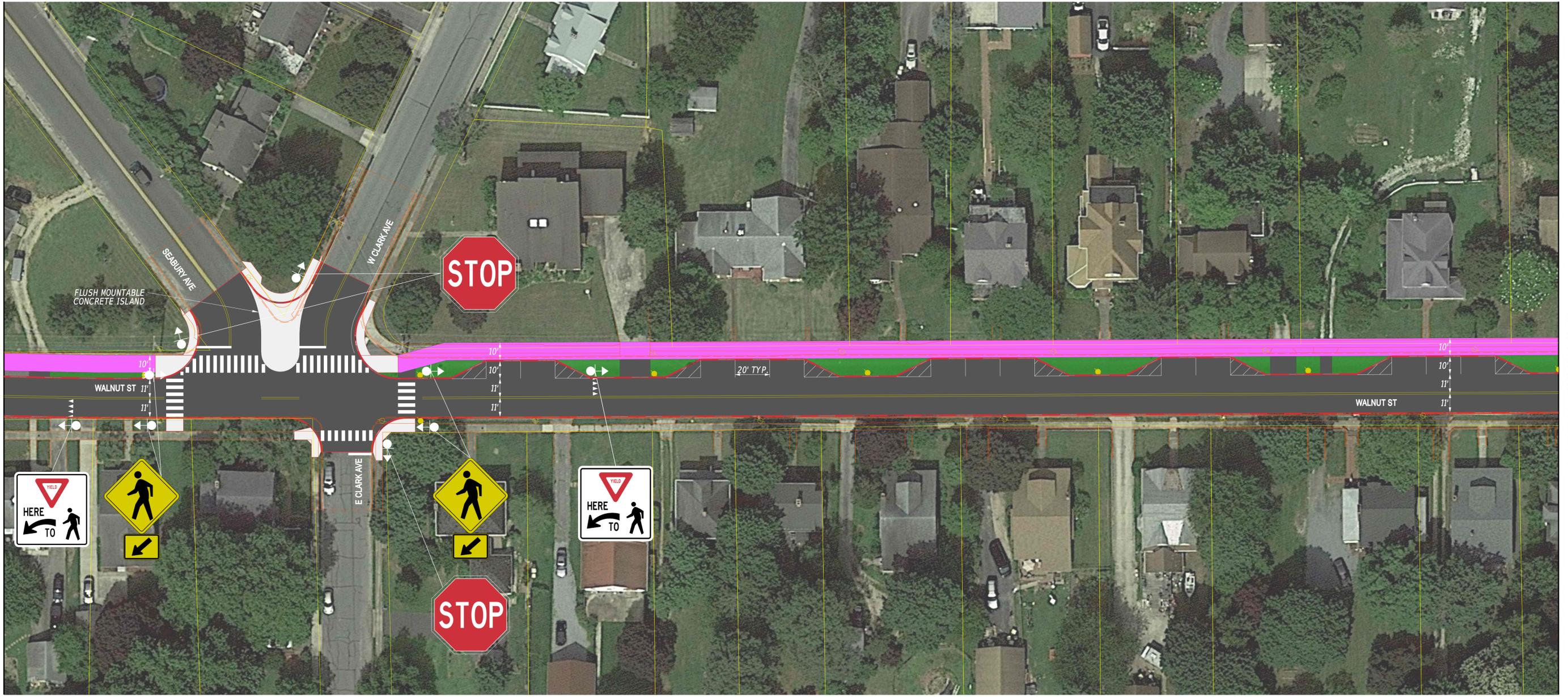


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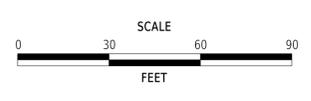
SECTION
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2



MATCHLINE SHEET 2

MATCHLINE SHEET 4

LEGEND	
	PROPERTY LINES
	EXISTING UTILITY POLE
	PROPOSED UTILITY POLE
	EXISTING MULT-USE PATH
	PROPOSED MULT-USE PATH
	PROPOSED BRICK MULT-USE PATH
	PROPOSED SIDEWALK
	PROPOSED PAVEMENT
	PROPOSED GRASS
	HISTORIC DISTRICT

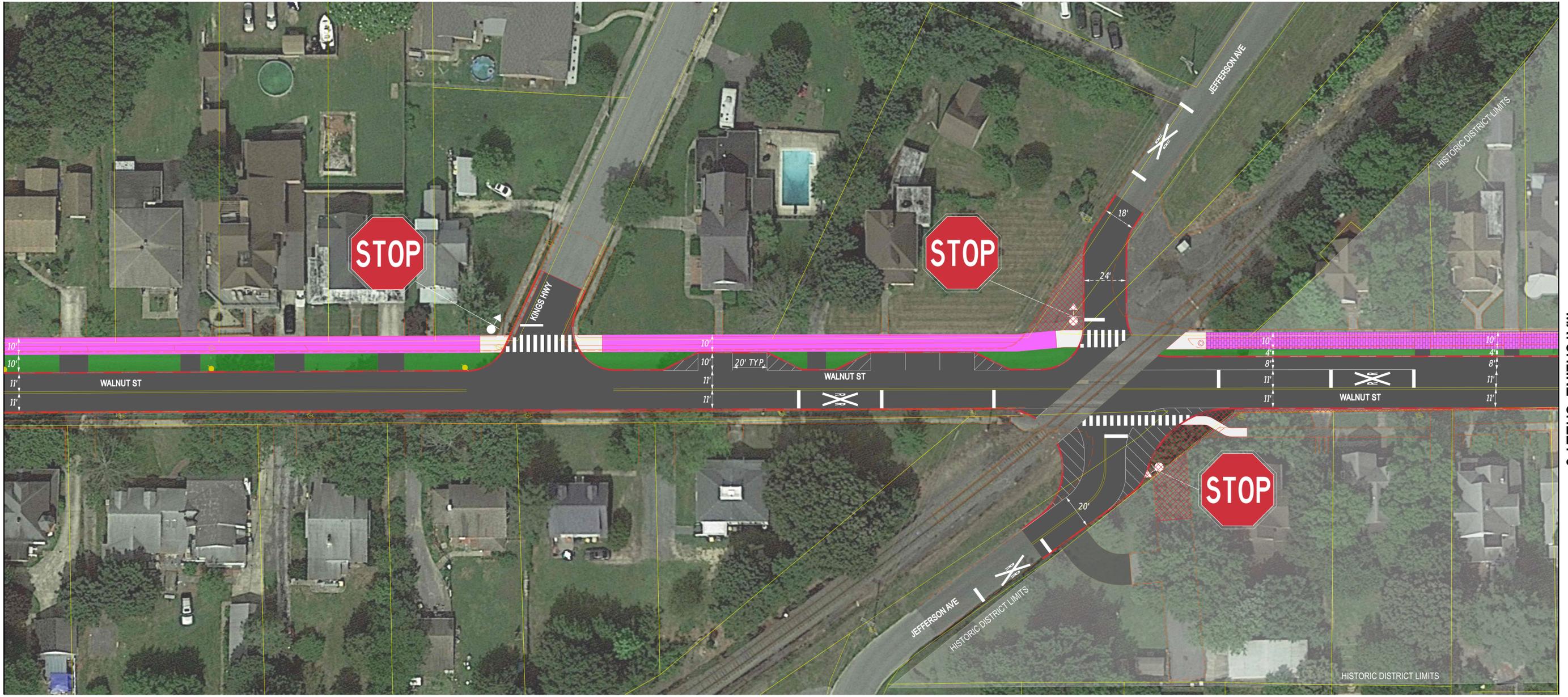


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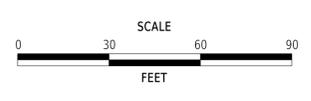
SECTION
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SHEET NO.
3



MATCHLINE SHEET 3

MATCHLINE SHEET 5

LEGEND	
	PROPERTY LINES
	EXISTING UTILITY POLE
	PROPOSED UTILITY POLE
	EXISTING MULT-USE PATH
	PROPOSED MULT-USE PATH
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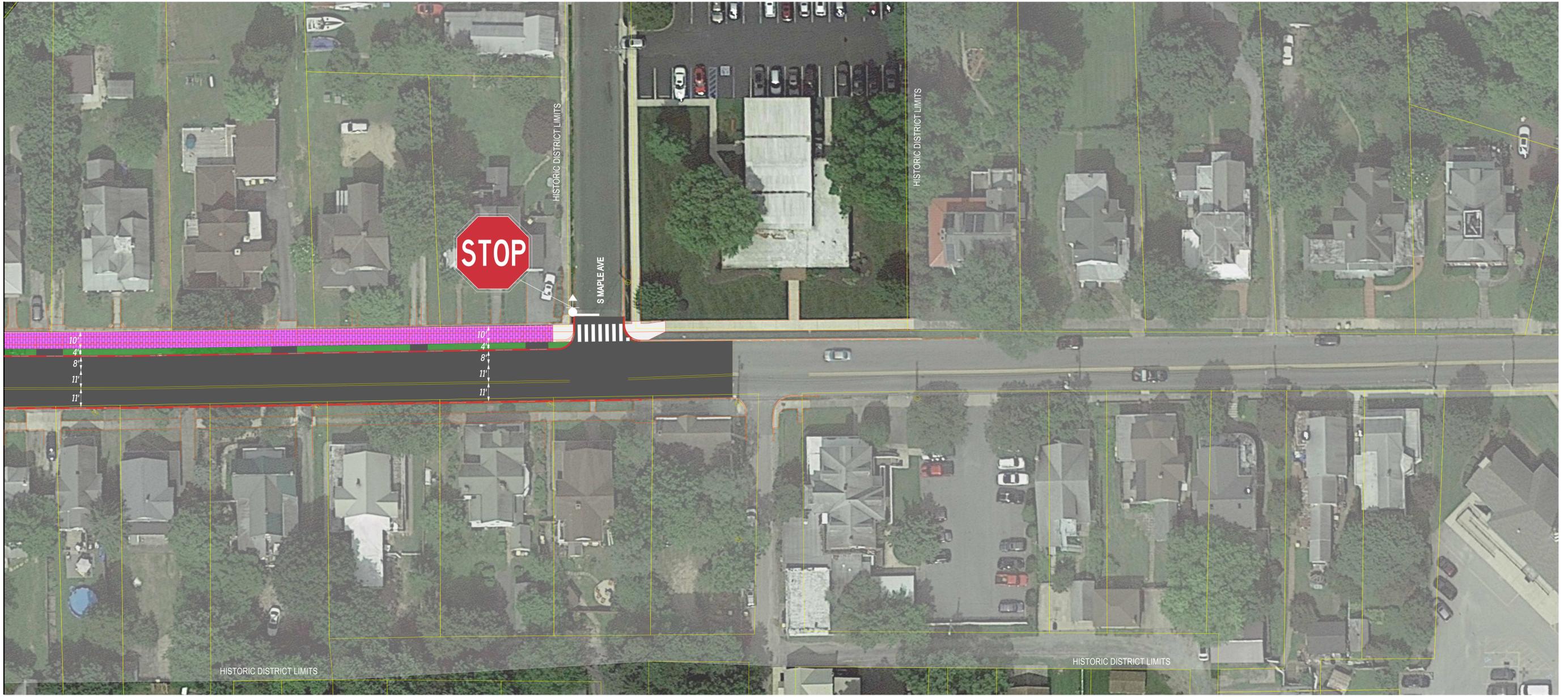
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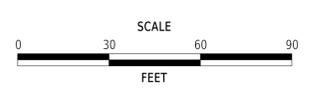
SECTION
CEN
SHEET NO.
4

STATES
TIMES
\$FILES



MATCHLINE SHEET 4

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CONCEPT 2	SECTION	CEN
	SHEET NO.	5

STATES
TIMES
\$FILES

Stop Sign Warrant Analysis

- ✓ Engineering analysis performed for a multiway Stop Sign installation
- ✓ Considered the following criteria
 1. Crash Analysis
 - a) Were there 5 or more crashes in a 12-month period that are susceptible to correction by a multiway stop installation (right and left turn collisions as well as right angle collisions)?
 2. Volume Analysis:
 - a) Major Street approach: at least 300 vehicles per hour, total for both approaches, for any 8 hours of an average day
 - b) Minor Street approach: Combined vehicular, pedestrian, and bicycle volumes, total for both approaches, averages at least 200 units per hour for the same 8 hours with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour
 3. Other Criteria
 - a) Is there a need to control left-turn conflicts?
 - b) Is this intersection near an area that generates high pedestrian volumes (i.e., church, school, etc.)?
 - c) Is this intersection a location where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop?
 - d) Is this intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multiway stop control would improve traffic operational characteristics of the intersection?

Stop Sign Warrant Analysis

1. Crash Analysis: Crashes in a 12-month period that are susceptible to correction by a multiway stop installation (right and left turn collisions as well as right angle collisions)

S. Walnut Street and McCoy Road	S. Walnut Street and W. Clarke Avenue	S. Walnut Street and Kings Highway
0	1	1
Stop Sign Not Warranted	Stop Sign Not Warranted	Stop Sign Not Warranted

2. Volume Analysis: Major and Minor Road Approaches

S. Walnut Street and McCoy Road	S. Walnut Street and W. Clarke Avenue	S. Walnut Street and Kings Highway
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Major Street: S Walnut Street
Minor Street: McCoy Street
Orientation: North/South
East/West

ENTER TRAFFIC VOLUMES IN THE TABLE BELOW

Time	S Walnut Street			McCoy Street			Total
	North	South	Total	East	West	Pedestrians	
6 - 7 AM	52	151	203	0	109	0	312
7 - 8 AM	82	181	263	0	109	0	372
8 - 9 AM	41	112	153	0	80	0	233
9 - 10 AM	50	143	193	0	104	0	297
10 - 11 AM	50	143	193	0	104	0	297
11 AM - 12 PM	59	174	233	0	128	0	361
12 - 1 PM	64	152	216	0	114	0	330
1 - 2 PM	56	185	241	0	98	0	339
2 - 3 PM	66	218	284	0	116	0	400
3 - 4 PM	76	248	324	0	133	0	457
4 - 5 PM	68	250	318	0	165	0	483
5 - 6 PM	14	181	195	0	133	0	328

Condition C.1 and C.2: A minimum of 300 vehicles per hour required on the major street and 200 units per hour required on the minor street. A total of 0 hours meet conditions C.1 and C.2.

Major Street: S Walnut Street
Minor Street: Clarke Avenue
Orientation: North/South
East/West

ENTER TRAFFIC VOLUMES IN THE TABLE BELOW

Time	S Walnut Street			Clarke Avenue			Total
	North	South	Total	East	West	Pedestrians	
6 - 7 AM	172	120	292	35	25	0	352
7 - 8 AM	173	120	293	35	25	0	353
8 - 9 AM	157	106	263	28	14	0	305
9 - 10 AM	145	142	287	28	17	0	332
10 - 11 AM	146	142	288	28	17	0	333
11 AM - 12 PM	134	140	274	28	20	0	322
12 - 1 PM	135	161	296	50	15	0	401
1 - 2 PM	141	164	305	40	32	0	417
2 - 3 PM	156	188	344	42	37	0	463
3 - 4 PM	170	211	381	43	41	0	505
4 - 5 PM	171	203	374	35	42	0	492
5 - 6 PM	177	202	379	35	42	0	493

Condition C.1 and C.2: A minimum of 300 vehicles per hour required on the major street and 200 units per hour required on the minor street. A total of 0 hours meet conditions C.1 and C.2.

Major Street: S Walnut Street
Minor Street: Kings Highway
Orientation: North/South
East/West

ENTER TRAFFIC VOLUMES IN THE TABLE BELOW

Time	S Walnut Street			Kings Highway			Total
	North	South	Total	East	West	Pedestrians	
6 - 7 AM	736	180	916	83	0	0	999
7 - 8 AM	138	180	318	83	0	0	401
8 - 9 AM	135	158	293	46	0	0	339
9 - 10 AM	739	138	877	50	0	0	927
10 - 11 AM	739	138	877	50	0	0	927
11 AM - 12 PM	124	121	245	54	0	0	299
12 - 1 PM	144	141	285	43	0	0	328
1 - 2 PM	131	127	258	59	0	0	317
2 - 3 PM	156	144	300	64	0	0	364
3 - 4 PM	180	161	341	69	0	0	410
4 - 5 PM	181	188	369	88	0	0	457
5 - 6 PM	173	176	349	61	0	0	410

Condition C.1 and C.2: A minimum of 300 vehicles per hour required on the major street and 200 units per hour required on the minor street. A total of 0 hours meet conditions C.1 and C.2.

S. Walnut Street and McCoy Road	S. Walnut Street and W. Clarke Avenue	S. Walnut Street and Kings Highway
Stop Sign Not Warranted	Stop Sign Not Warranted	Stop Sign Not Warranted

Other Criteria

S. Walnut Street and McCoy Road	S. Walnut Street and W. Clarke Avenue	S. Walnut Street and Kings Highway
---------------------------------	---------------------------------------	------------------------------------

Other criteria that may be considered in an engineering study include:
 A. The need to control left-turn conflicts;
 B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
 C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop; and
 D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multiway stop control would improve traffic operational characteristics of the intersection.

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S. Walnut Street and McCoy Road	S. Walnut Street and W. Clarke Avenue	S. Walnut Street and Kings Highway
No to all; Stop Sign Not Warranted	No to all; Stop Sign Not Warranted	No to all; Stop Sign Not Warranted



Stop Sign Warrant Analysis

What happens if a Stop Sign is installed when not warranted?

- ✓ Results in poor compliance by motorists who do not deem the stop sign necessary
- ✓ Frequent unnecessary stops result in more aggressive/abrupt motorist behaviors to recover the “lost” time from stopping
- ✓ Queues backing up at the Kings Highway approach of N. Walnut Street could extend back to railroad tracks

What can be implemented to slow traffic if a Stop Sign is not installed?

- ✓ Traffic calming measures such as narrowing lanes and introducing roadway curves
- ✓ Speed enforcement by police officers

S. Walnut Street Traffic Calming & Bike/Pedestrian Improvement Project

Thank you for attending our workshop.
For future information please contact:

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<http://cityofmilford.com>

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