



# East Market Street/Harrison Street Intersection Signal Upgrade



ASHE Altoona / PennDOT District 9-0

Joint Workshop April 23, 2026

PennDOT District 8-0



# Barbara Hoehne, PE

- ▶ Senior Principal / Engineering Director
- ▶ 12 years with STV Incorporated
- ▶ 37 years' experience with Central PA Consulting Engineering Firms
- ▶ Current Role: PA/NJ Civil Highway Discipline Chief (Project Delivery Team) and Senior Project Manager
- ▶ Projects ranging from intersection and safety improvements to limited access highways on new alignments
- ▶ WTS Central PA Founding Member
- ▶ ASHE Altoona Past President

# Team Organization Slide

**PennDOT**  
District 8-0

**Kinsley**  
**Construction,**  
**LLC**  
Contractor

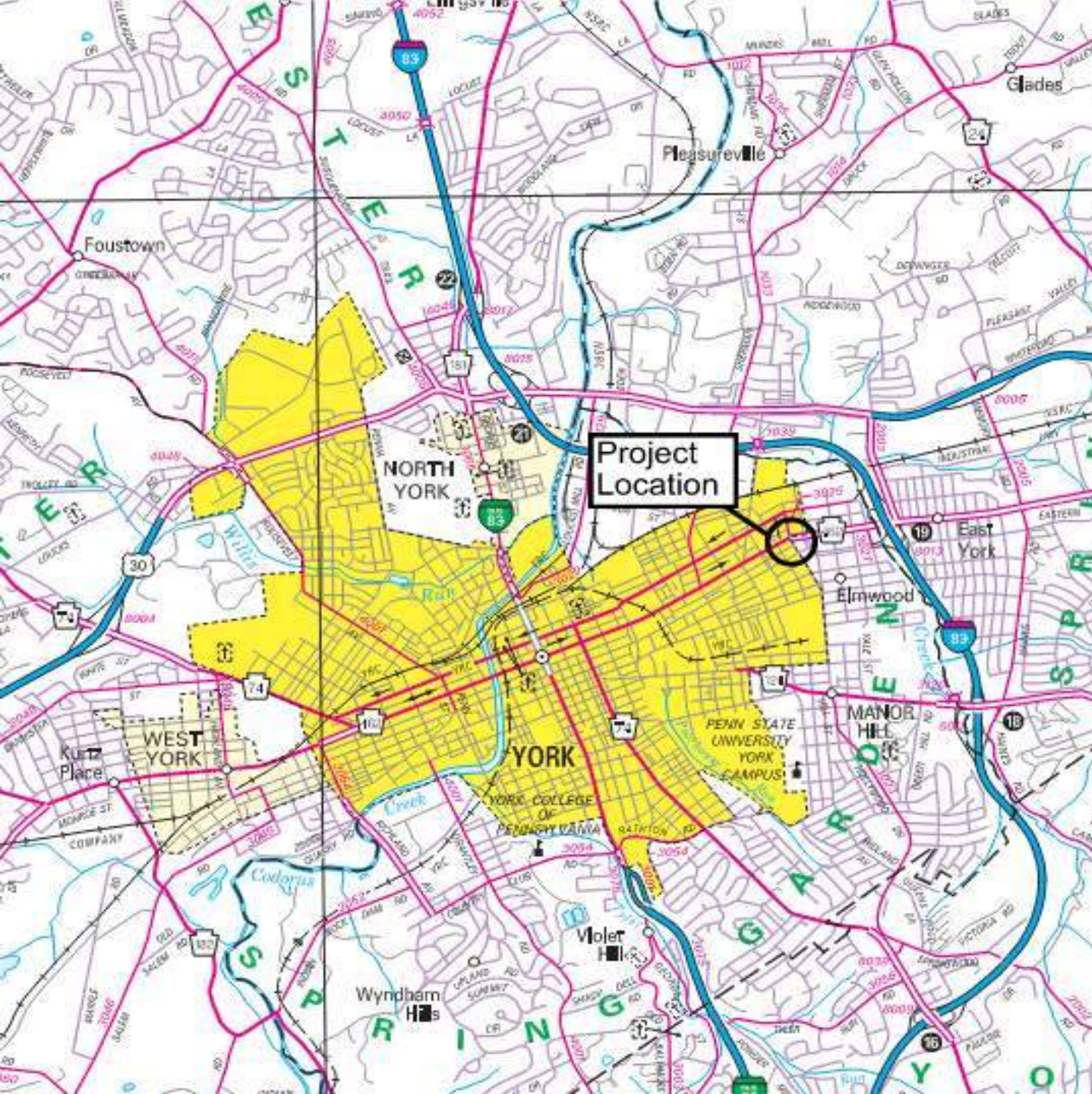
**RK&K**  
Construction  
Management /  
Construction  
Inspection

**STV**  
**Incorporated**  
Prime Consultant  
Engineer

**A. Morton**  
**Thomas And**  
**Associates, Inc**  
Utility coordination  
support

**AD Marble & Co.**  
Environmental and  
cultural resource  
services;  
public involvement

**Susquehanna**  
**Civil, Inc.**  
Field Surveys



# Project Location Map

- ▶ East Side of City of York
- ▶ City of York / Spring Garden Township
- ▶ Proximity to I-83 and SR 30



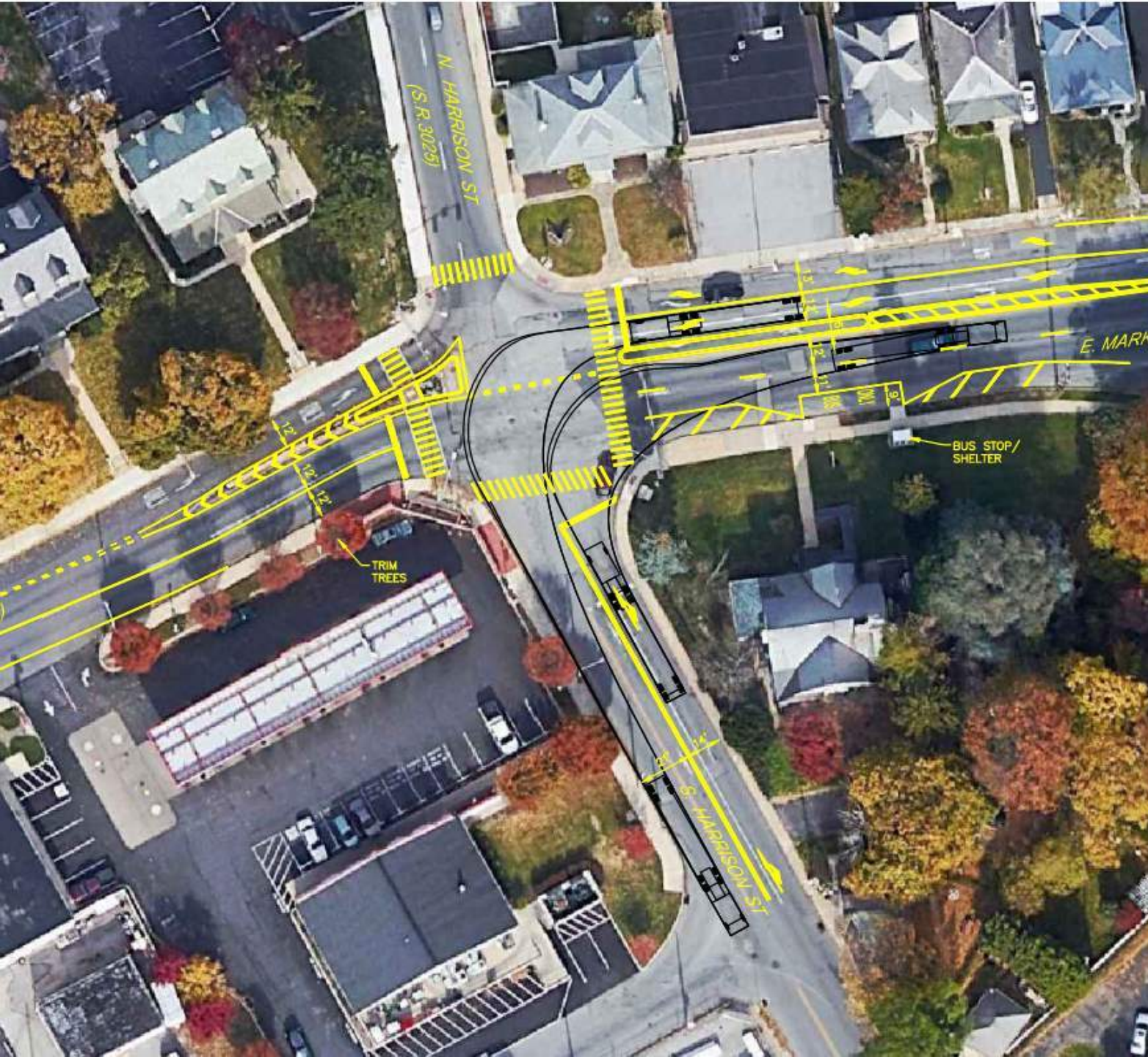
# Existing Condition

- ▶ East Market Street one-way eastbound – west side of intersection
- ▶ East Market Street two-way – east side of intersection
- ▶ Harrison Street one-way northbound – north side of intersection
- ▶ Harrison Street two-way – south side of intersection



# Purpose and Need

- ▶ Improve Intersection Safety
- ▶ Safety Concern
  - East Market Street line striping
  - Two-way vs one-way traffic
  - Crash history



## Concept Plan

- ▶ Prepared by TRG for City of York 2021
- ▶ Signal upgrade
- ▶ Median and crosswalk striping
- ▶ Bus stop striping east side of intersection
- ▶ NB Harrison Street combined through-right



September 8, 2022 – Pre-Scoping  
Field View - Engineering



**September 8, 2022 – Pre-Scoping  
Field View - Environmental**

# Stakeholder Coordination



- ▶ City of York
- ▶ Spring Garden Township
- ▶ Local School Districts
- ▶ Emergency service providers
- ▶ rabbitTransit fixed route transit provider with existing bus shelter
- ▶ York Road Runners Club

# Safety Review Meeting – August 2, 2023



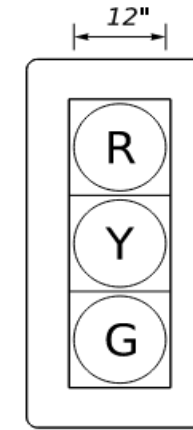
- ▶ Crash History
  - HSM Analysis
- ▶ Traffic Analysis
  - Traffic Count
  - Synchro/Sim Traffic

# Design Field View Meeting – November 14, 2023

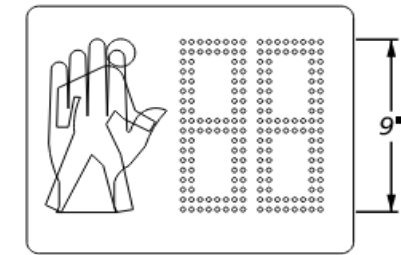
## ► Signal Design

- Exclusive WB LT (4a vs 3&4)
- Exclusive EB LT (8a vs 7&8)
- Added East leg ped xing

### EXISTING SIGNALS TO REMAIN

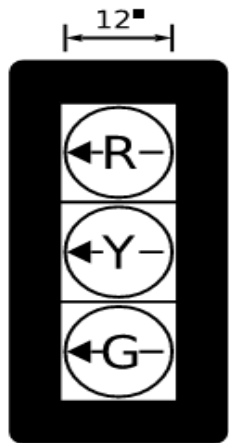


1,2,5,9,10

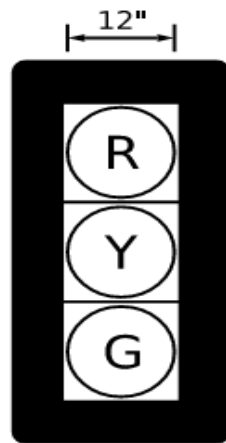


11,12,13,14,17,18

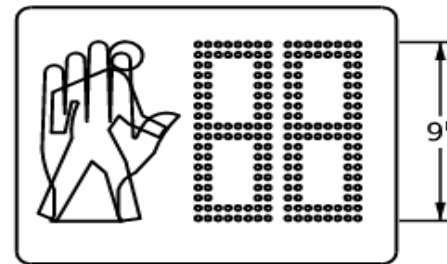
### PROPOSED SIGNALS



3,4,7,8

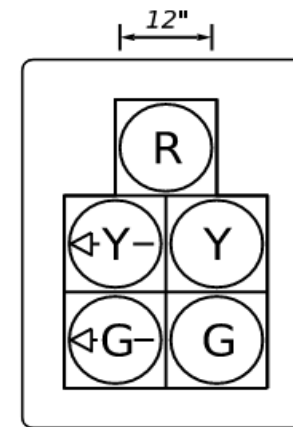


6

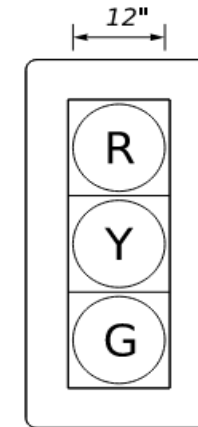


15,16

### EXISTING SIGNALS TO BE REMOVED



4a



8a

# Design Field View Meeting – November 14, 2023

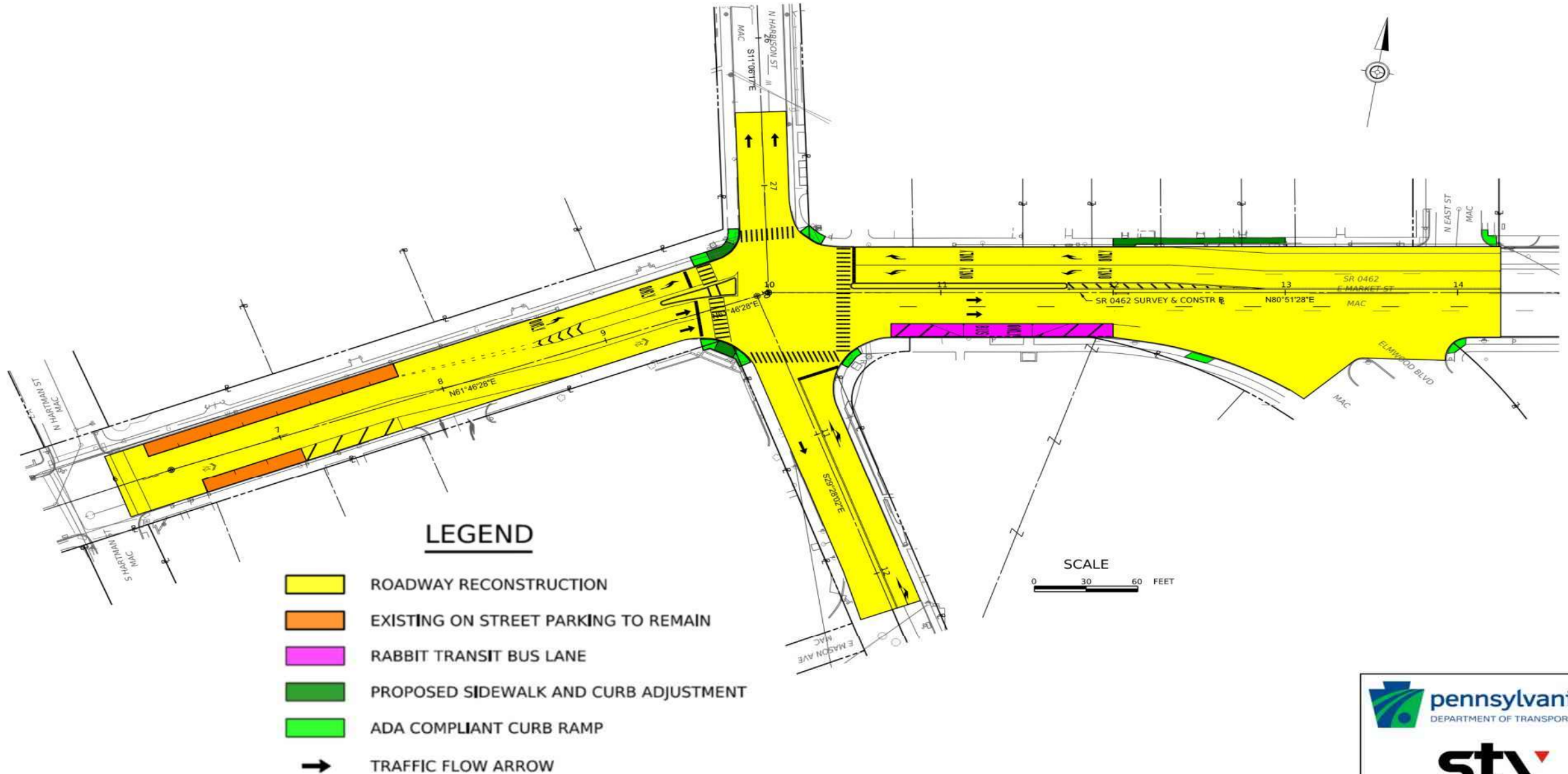
## ► Signal Operation

- 05 - Excl. WB left turn
- 01 EB LT & 02 WB RT permitted on red

MOVEMENT, SEQUENCE AND TIMING

SIGNALS	PHASE 1+5				PHASE 1+6				PHASE 2+5				PHASE 2+6				PHASE 4				E M F L R A G S E H N I C N Y G
	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1	R	R	R		G	G	Y	R	R	R	R	R	G	G	Y	R	R	R	R	R	Y
2	R	R	R		G	G	Y	R	R	R	R	R	G	G	Y	R	R	R	R	R	Y
3	←G	←Y	←R		←R	←R	←R	←R	←G	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
4	←G	←Y	←R		←R	←R	←R	←R	←G	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
5	R	R	R		R	R	R	R	G	G	Y	R	G	G	Y	R	R	R	R	R	Y
6	R	R	R		R	R	R	R	G	G	Y	R	G	G	Y	R	R	R	R	R	Y
7	←G	←Y	←R		←G	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
8	←G	←Y	←R		←G	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
9	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	R
10	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	R

# Online Project Plans Display – Spring 2024



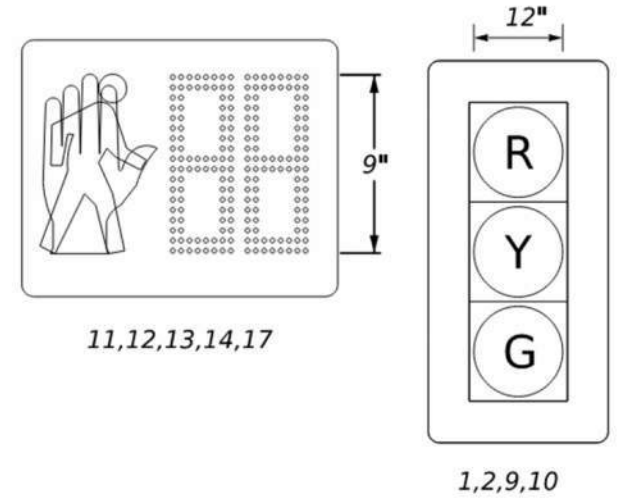


# Right-Turn Flashing Yellow Arrow

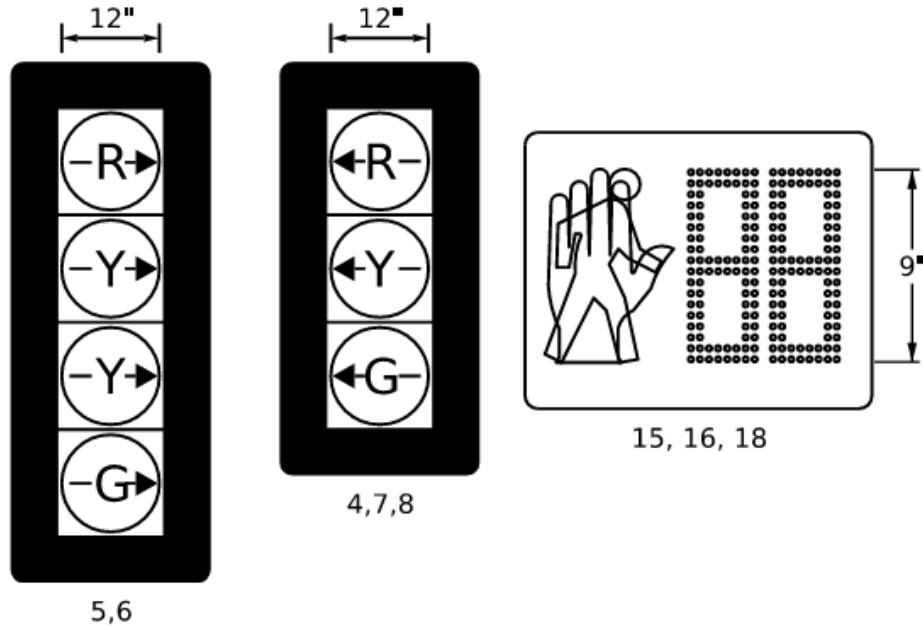
## ► Signal Design

- More conspicuous for right turn
- E/P WB RT (5a vs 5&6)

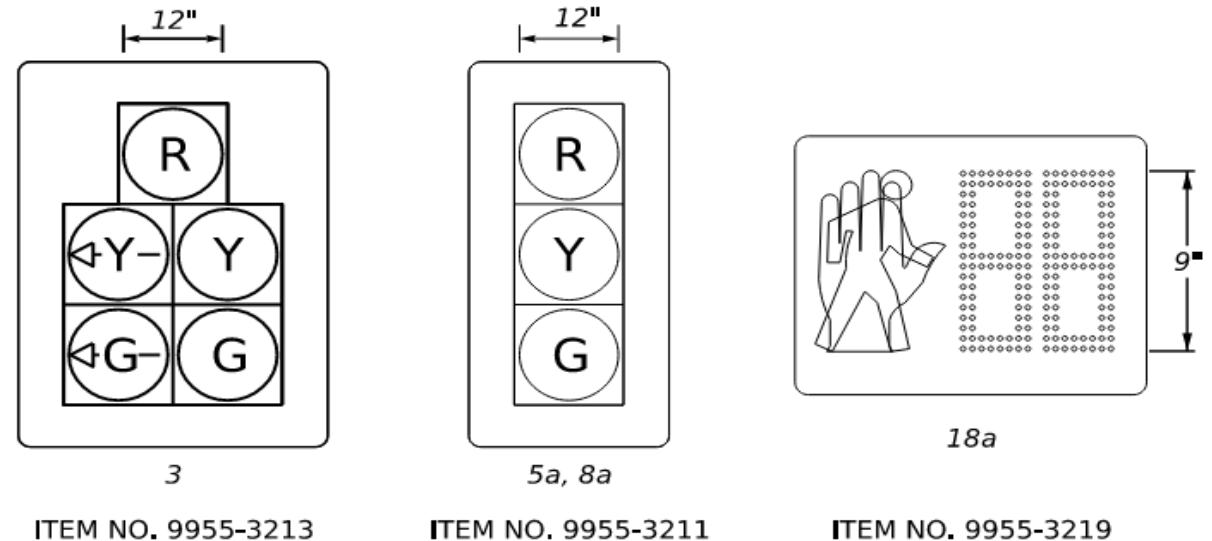
### EXISTING SIGNALS TO REMAIN



### PROPOSED SIGNALS



### EXISTING SIGNALS TO BE REMOVED



# Right-Turn Flashing Yellow Arrow

## ► Signal Operation

- 02 green arrow with no peds
- 02 Alt yellow arrow with peds

MOVEMENT, SEQUENCE AND TIMING

	PHASE 1+5				PHASE 1+6				PHASE 2+5				PHASE 2+5 ALT				PHASE 2+6				PHASE 2+6 ALT				PHASE 4				E M F L R A G S E H N I C N Y G				
	INTERVALS				INTERVALS				INTERVALS				INTERVALS				INTERVALS				INTERVALS				INTERVALS								
SIGNALS	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1	R	R	R		G	G	Y	R	R	R	R		R	R	R	R	G	G	Y	R	G	G	Y	R	R	R	R	R	R	R	R	R	R
2	R	R	R		G	G	Y	R	R	R	R		R	R	R	R	G	G	Y	R	G	G	Y	R	R	R	R	R	R	R	R	R	R
4	←G	←Y-	←R-		←R-	←R-	←R-	←R-	←G	←Y-	←R-		←G	←G	←Y-	←R-	-R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-
5	R	R	R		R	R	R	R	-G	-Y	-R		FL -Y	FL -Y	-Y	-R	-G	-G	-Y	-R	FL -Y	FL -Y	-Y	-R	R	R	R	R	R	R	R	R	R
6	R	R	R		R	R	R	R	-G	-Y	-R		FL -Y	FL -Y	-Y	-R	-G	-G	-Y	-R	FL -Y	FL -Y	-Y	-R	R	R	R	R	R	R	R	R	R
7	←G	←Y-	←R-		←G	←G	←Y-	←R-	←R-	←R-	←R-		←R-	←R-	←R-	←R-	-R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-
8	←G	←Y-	←R-		←G	←G	←Y-	←R-	←R-	←R-	←R-		←R-	←R-	←R-	←R-	-R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-	←R-
9	R	R	R		R	R	R	R	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	R	R	R	R	R
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13	DW	DW	DW		DW	DW	DW	DW	DW	DW	DW		WK	FDW	DW	DW	DW	DW	DW	DW	WK	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OFF
18	DW	DW	DW		DW	DW	DW	DW	DW	DW	DW		WK	FDW	DW	DW	DW	DW	DW	DW	WK	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OFF

# Right-Turn Flashing Yellow Arrow – District 5-0



- ▶ W Lehigh Street / Center Street / Phillip J. Fahy Memorial Bridge
- ▶ Bethlehem, PA

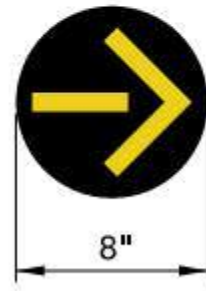
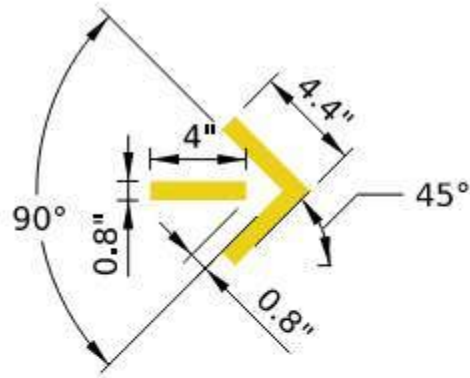
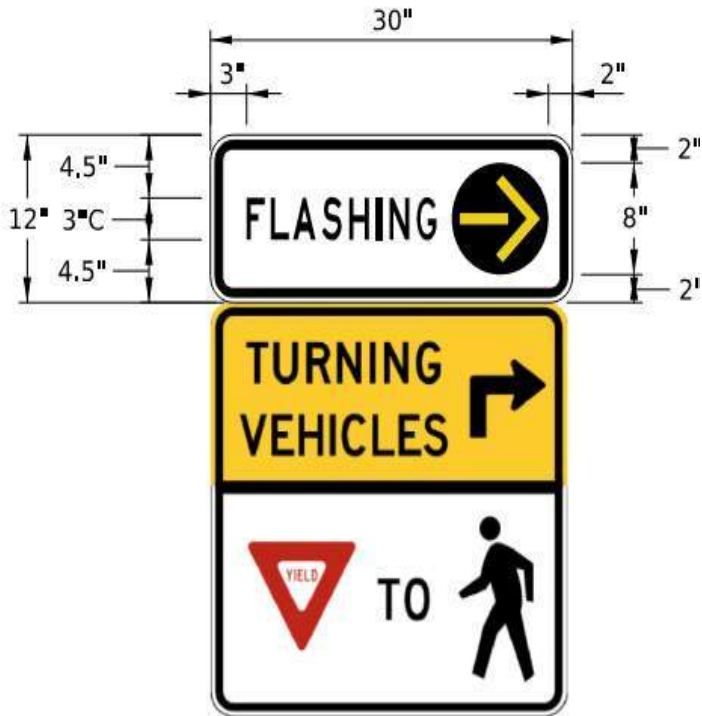
# Right-Turn Flashing Yellow Arrow – District 11-0



- ▶ Centre Avenue / Penn Avenue / East Liberty
- ▶ Pittsburgh, PA

# Right-Turn Flashing Yellow Arrow

## ► Westbound Custom Signing



ARROW DETAIL



# No Turn on Red Analysis – NB Harrison Street



- ▶ 95<sup>th</sup> percentile queue length was comparable to Right Turn on Red permitted for combined through / right lane
  - Right turn vehicles in queue while other motorists waiting to proceed straight through intersection
- ▶ Intersection LOS D

# Pre-Bid Construction Schedule



- ▶ Reviewed at each Constructability Review Meeting
- ▶ Included activities
  - Lead time for coordinated utility relocations (utility poles and water valve adjustments)
  - Signal equipment fabrication lead time
  - Video detection testing
  - Traffic signal testing
- ▶ 11/25/24 NTP to contractor
- ▶ 10/30/25 Construction completion

# Construction Cost Estimate



- ▶ Each design submission
- ▶ STV/PennDOT Design Team Estimate = \$776,870.50
  - PennDOT District 8-0 Bid Prices – Project History
    - *Special Items*
    - *Project Type*
    - *Project Size*
    - *Project Location*
- ▶ Kinsley Construction Cost Estimate = \$775,711.00
- ▶ Difference = 0.02%

# Construction – 2025 Season



- ▶ No questions received from Kinsley during Construction
- ▶ District 8-0 approved short term lane closures from 8:00 am to 4:00 pm (8:30 am to 3:30 pm per contract 0901-0001 special provision)
- ▶ Work completed using short-term lane closures instead of contract staged MPT plan

# During and After Construction Photos

▶ East Market Street – Southwest Quadrant of Intersection with S Harrison Street



# During and After Construction Photos

► N. Harrison Street – Looking North



# During and After Construction Photos

► East Market Street – Looking West at Median Island



# During and After Construction Photos

► East Market Street – Southwest Quadrant of Intersection with Elmwood Boulevard



# Before and After Construction Photos

► East Market Street – Looking East at Reconstructed Sidewalk



# Before and After Construction Photos

► East Market Street – Looking East at Northeast Quadrant of Intersection



# Before and After Construction Photos

► East Market Street – East Side of Intersection - Looking West



# Before and After Construction Photos

▶ East Market Street – West Side of Intersection - Looking East



# Before and After Construction Photos

► S Harrison Street – Looking North





**QUESTIONS?**

**Barbara Hoehne**

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