



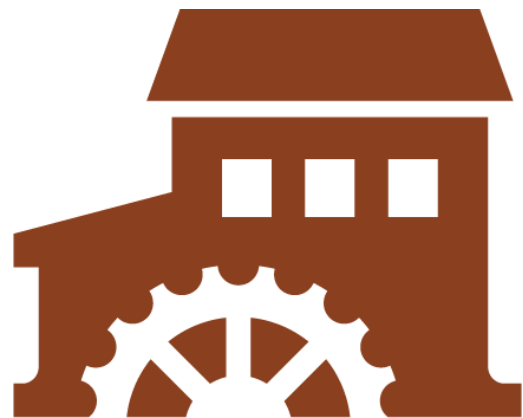
Photo courtesy of Centre Regional Planning Agency.

Township of Ferguson

PINE GROVE MILLS TRANSPORTATION MOBILITY STUDY

Presentation to the Board of Supervisors

JUNE 7, 2022



Submitted to:



Submitted by:

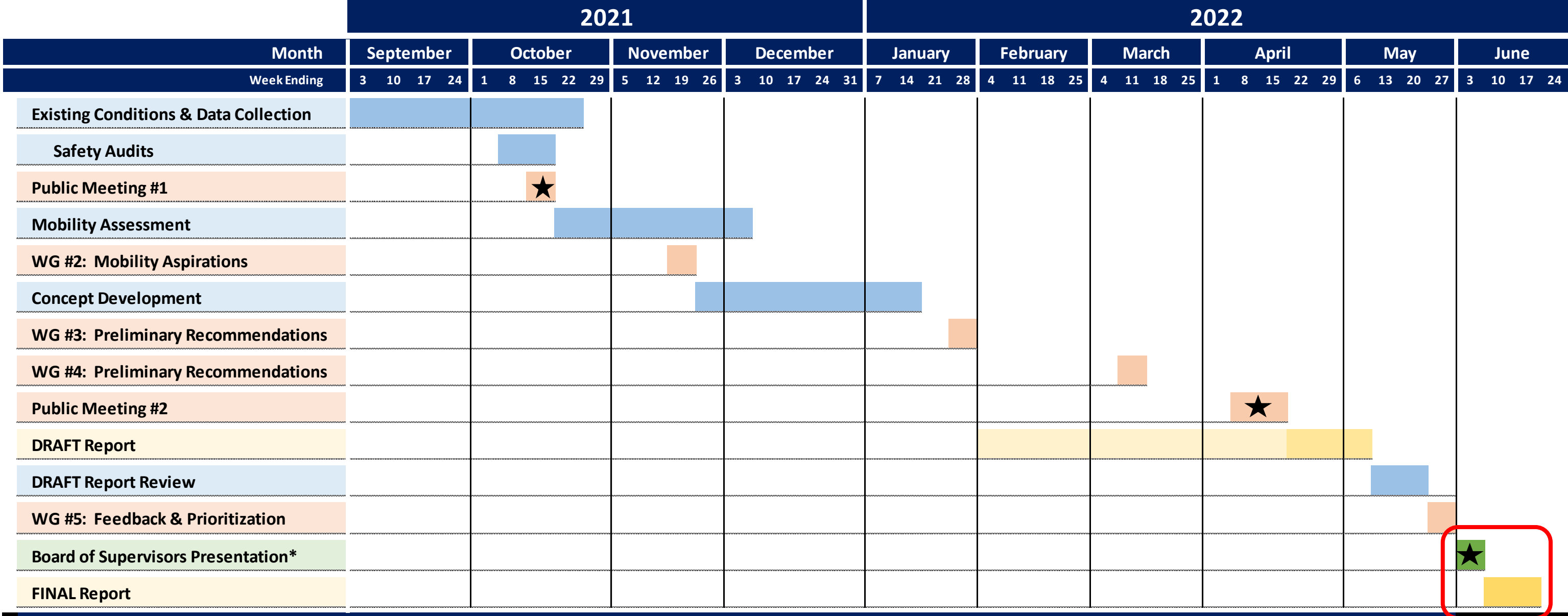


Board of Supervisors Presentation

- Study Progress & Update
- Study Introduction & Objective
- Planning Partnerships
- Public Outreach
- Mobility & Safety Assessments
- Design Concepts
- Recommendations
- Questions & Discussion



Study Schedule and Progress



Legend:
■ Study Activity ■ Project Meeting ★ Board of Supervisors Meeting
■ Deliverable ★ Public Meeting

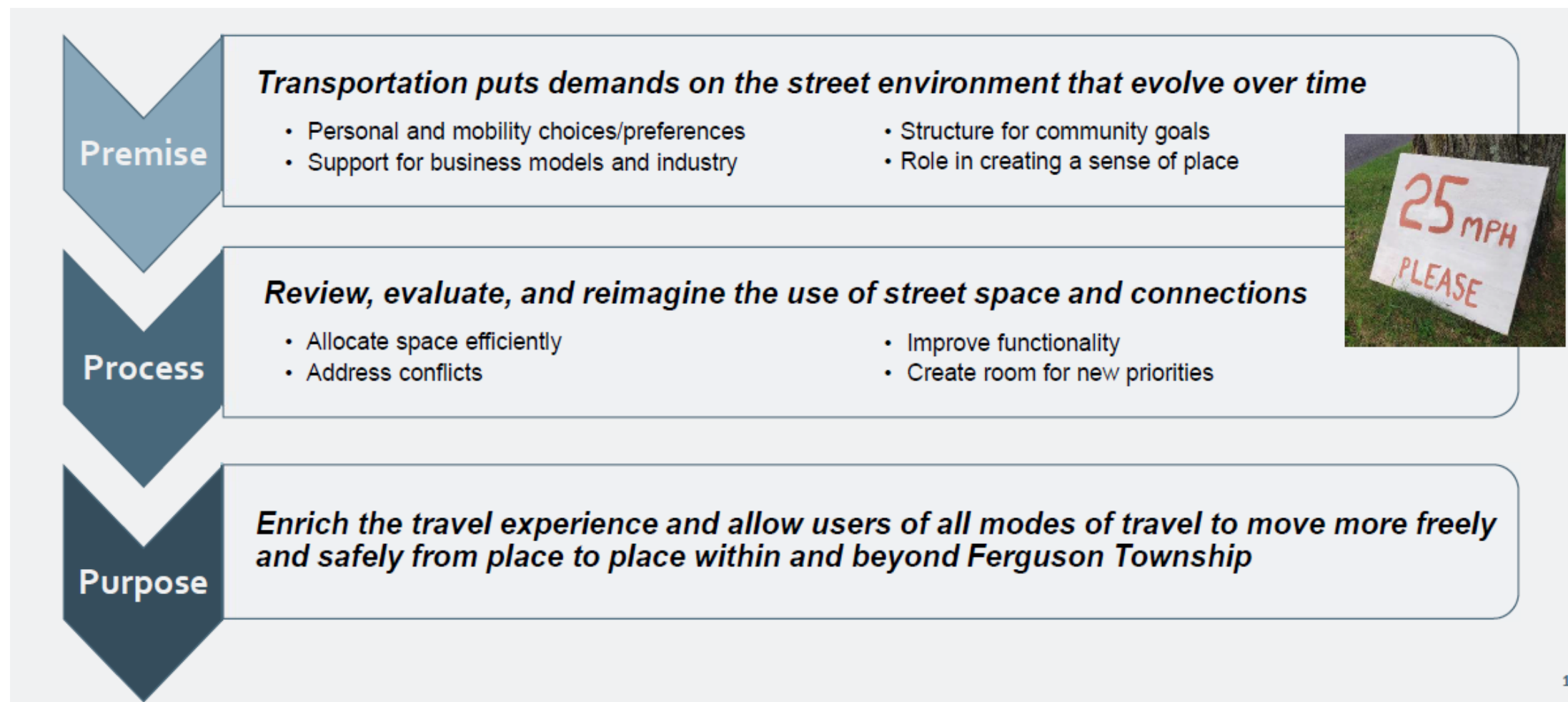
Notes:
 Board of Supervisors Meetings -- First and third Tuesdays
 Planning Commission Meetings -- Typically second and fourth Mondays; Schedule TBD.



Pine Grove Mills Mobility Study

- Study Objective

To evaluate the transportation issues, concerns, and opportunities identified in the SAP and identify concepts and recommendations to address those items and improve overall safety and mobility.



Planning Partnerships

- Project Partners
 - Centre Regional Planning Agency (CRPA)
 - Centre Area Transportation Authority (CATA)
 - Pennsylvania Department of Transportation (PennDOT)
- Project Working Group
 - 5 working meetings
 - Roadway safety audits
 - Staffed public meetings
 - Reviewed deliverables

Project Working Group	
Name	Organization
Albert Carlson	PennDOT District 2
Greg Kausch	CATA/CRPA
Trish Meek	CRPA
Jerry Binney	Planning Commission
Paul Tomkiel	Pine Grove Mills SAP Committee
Dave Modricker	Ferguson Township
Kristina Bassett	Ferguson Township
Ron Seybert	Ferguson Township
Carrie Hill Machuga	McCormick Taylor
Michelle Goddard	McCormick Taylor
Rob Watts	McCormick Taylor



Ferguson Township PINE GROVE MILLS MOBILITY STUDY

Study Area Map

-  Study Area Boundary
-  Neighborhoods
-  State Route
-  Township Road
-  Alley/Private
-  No Info Available
-  State Forest Road
-  PA Bike Route G









Ferguson Township

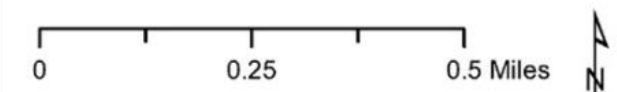
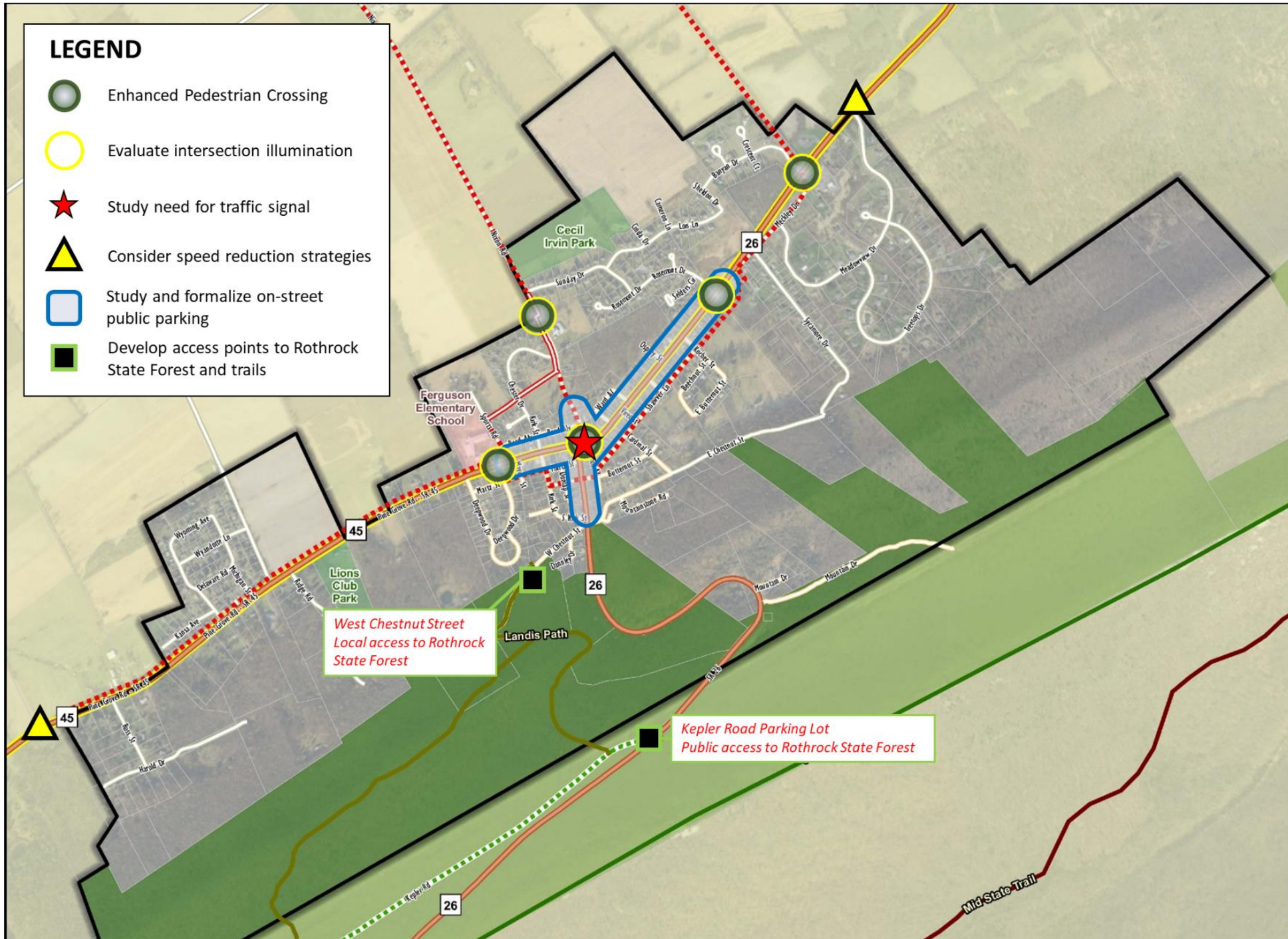
PINE GROVE MILLS MOBILITY STUDY

Mobility Map

LEGEND

-  Enhanced Pedestrian Crossing
-  Evaluate intersection illumination
-  Study need for traffic signal
-  Consider speed reduction strategies
-  Study and formalize on-street public parking
-  Develop access points to Rothrock State Forest and trails

-  Study Area Boundary
-  Shared Use Path
-  PA Bike Route G
-  Proposed Bike Path
-  Mid-State Trail
-  Hiking Only
-  Rothrock Shared-Use Trail
-  School
-  Park
-  Rothrock State Forest



Public Outreach

Understand the network from the community's perspective

- Locations with issues and ideas
- Look and feel of solutions
- Think through implications

Engagement during concluding stages

- Vet concepts and alternatives
- Prioritize recommendations



Mobility & Safety Assessments

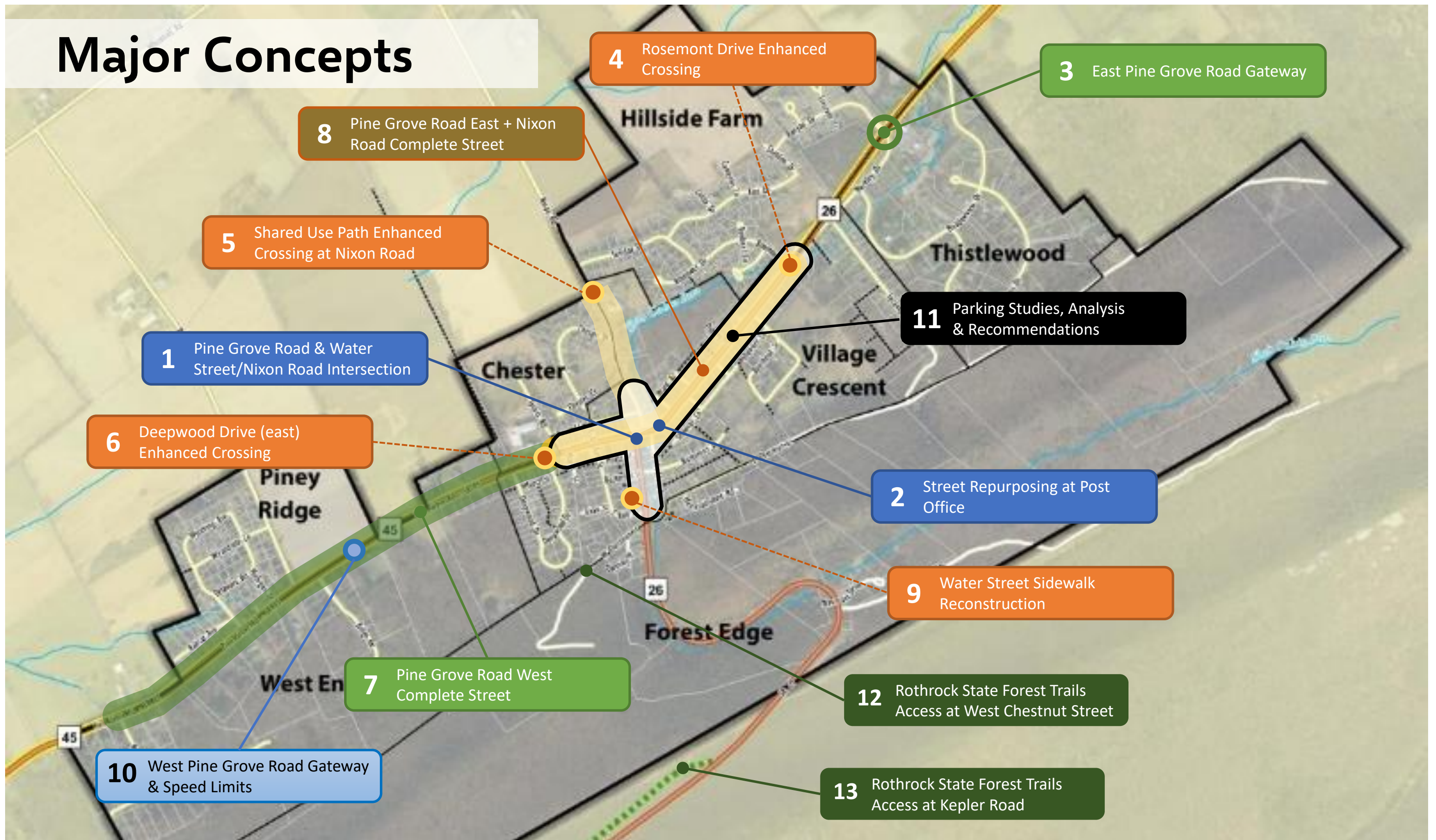
- Pedestrian and Bicycle Roadway Safety Audits
- Transportation Data Collection
- Traffic Signal Warrant Study
- Crash Location & Trends
- Parking Utilization
- Illumination/Lighting Study
- Transit Ridership



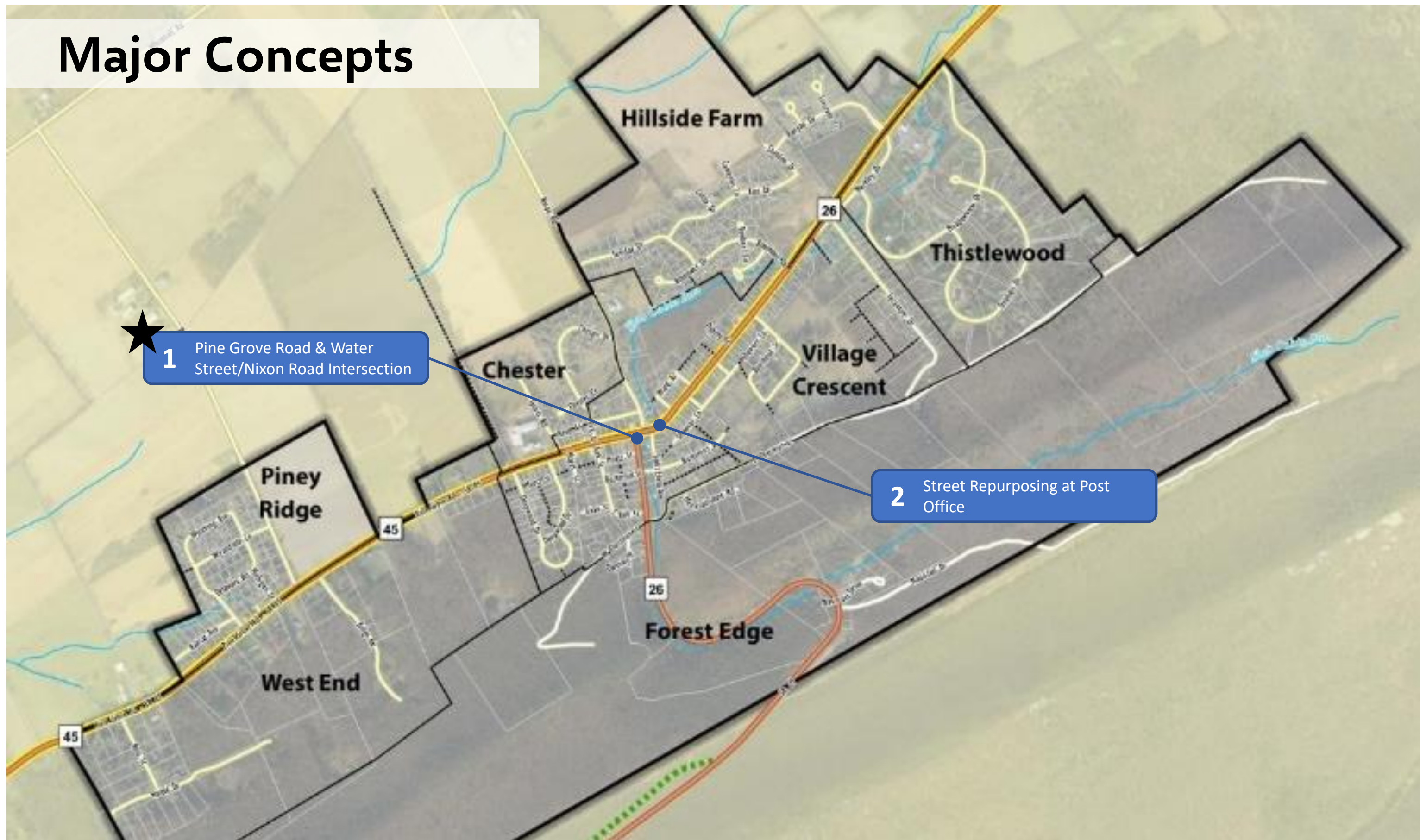
Concept Development



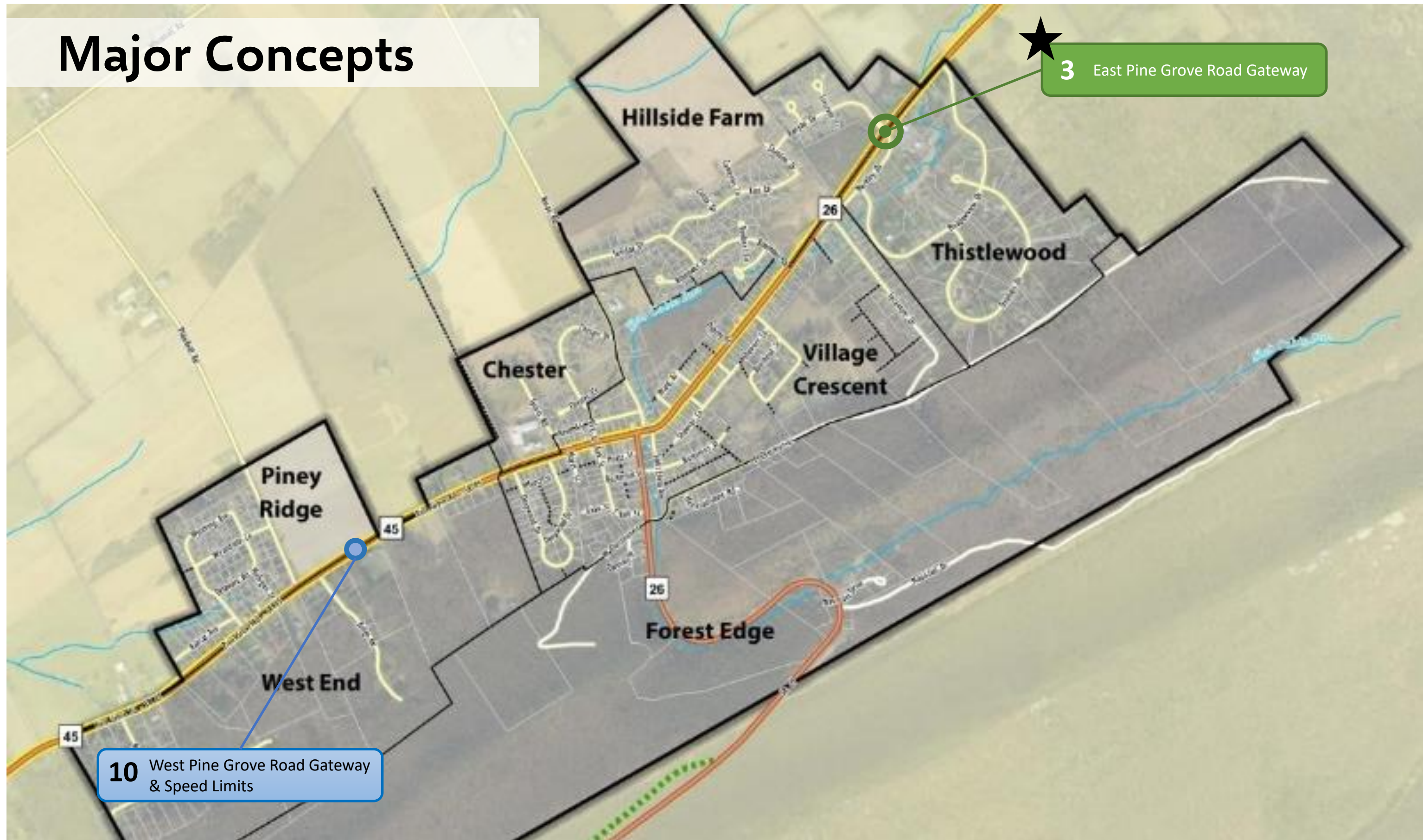
Major Concepts



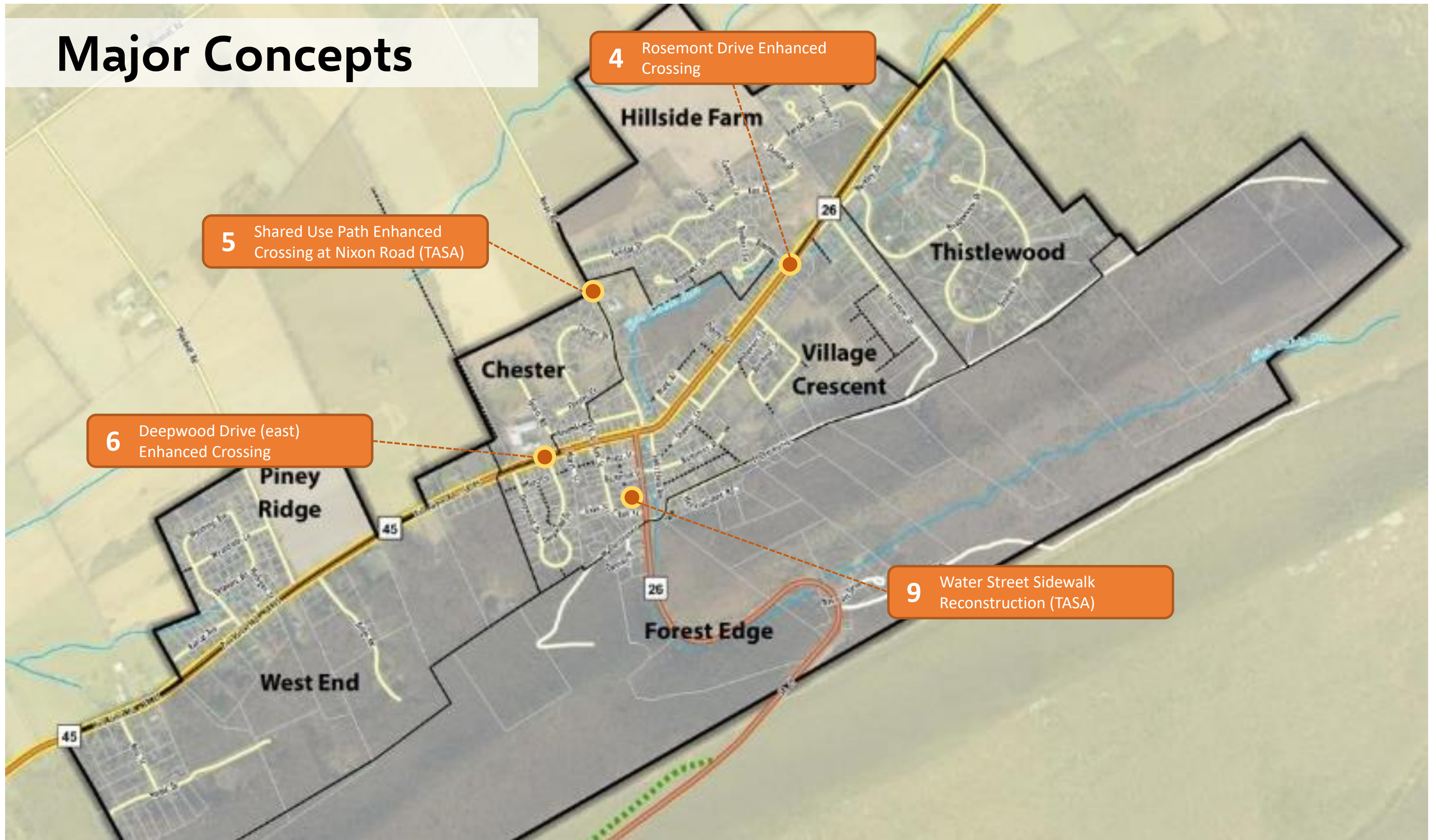
Major Concepts



Major Concepts



Major Concepts



4 Rosemont Drive Enhanced Crossing

5 Shared Use Path Enhanced Crossing at Nixon Road (TASA)

6 Deepwood Drive (east) Enhanced Crossing

9 Water Street Sidewalk Reconstruction (TASA)



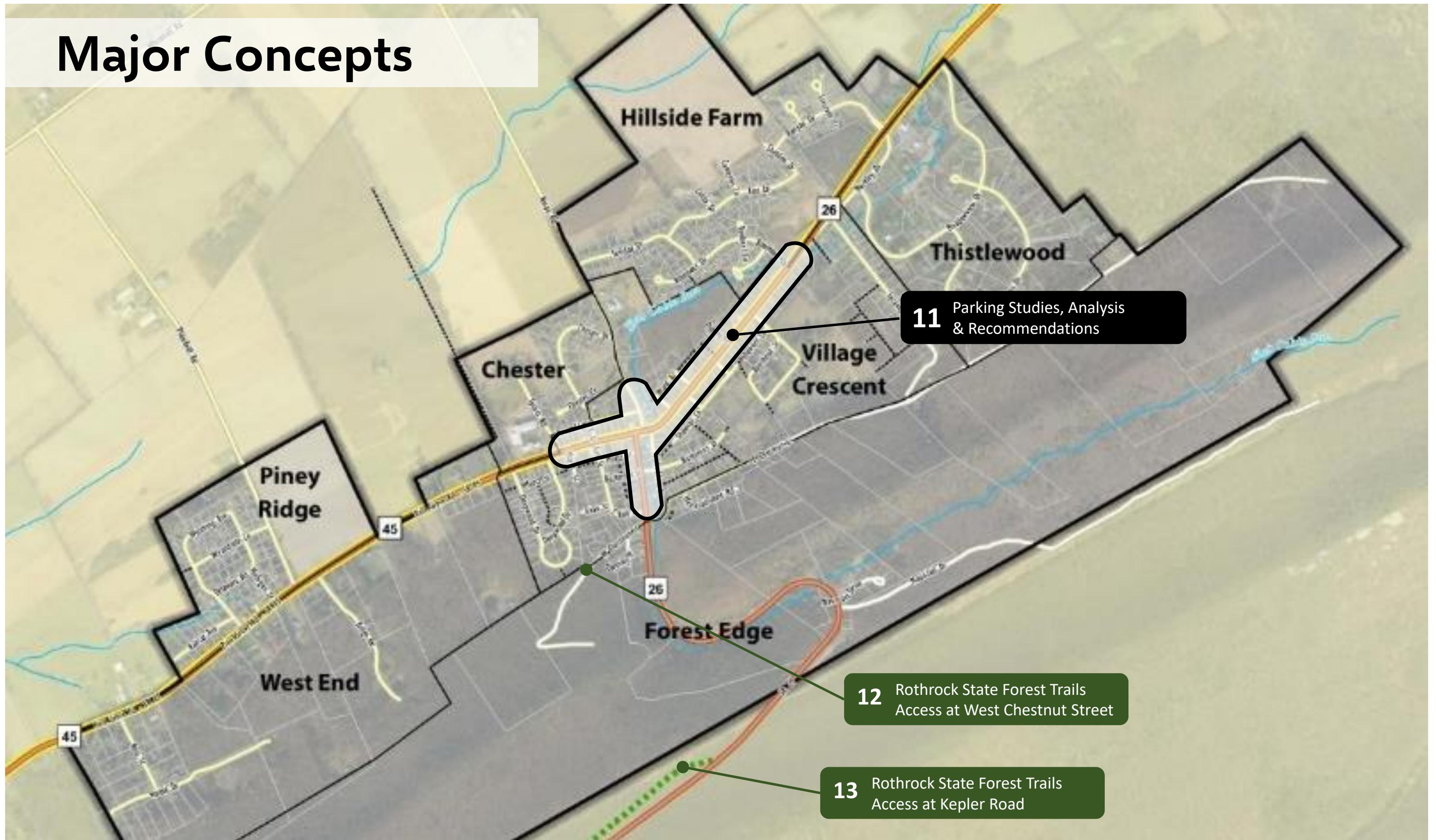
Major Concepts

8 Pine Grove Road East + Nixon Road Complete Street (TASA)

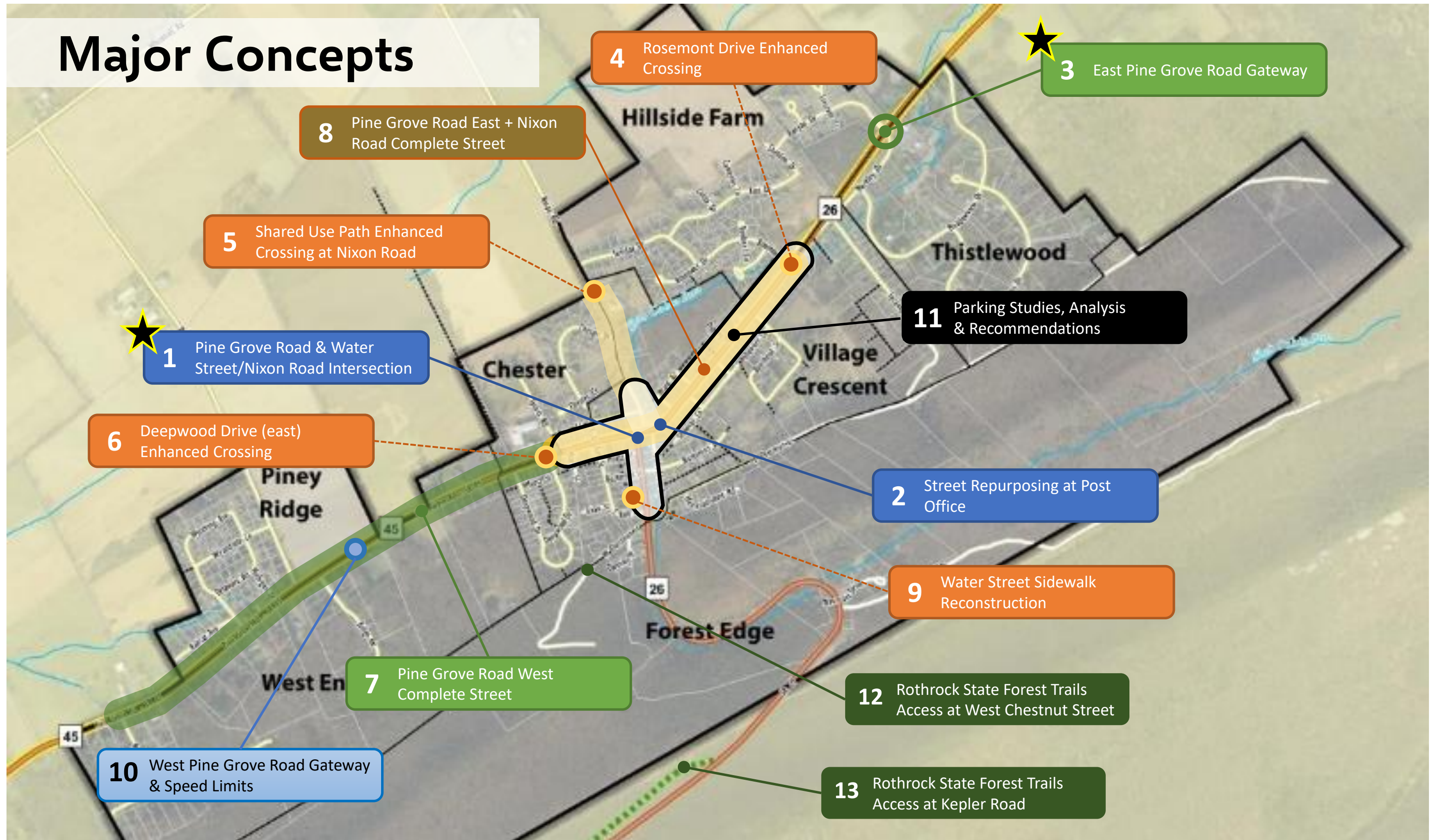
7 Pine Grove Road West Complete Street (TASA)



Major Concepts



Major Concepts



1A

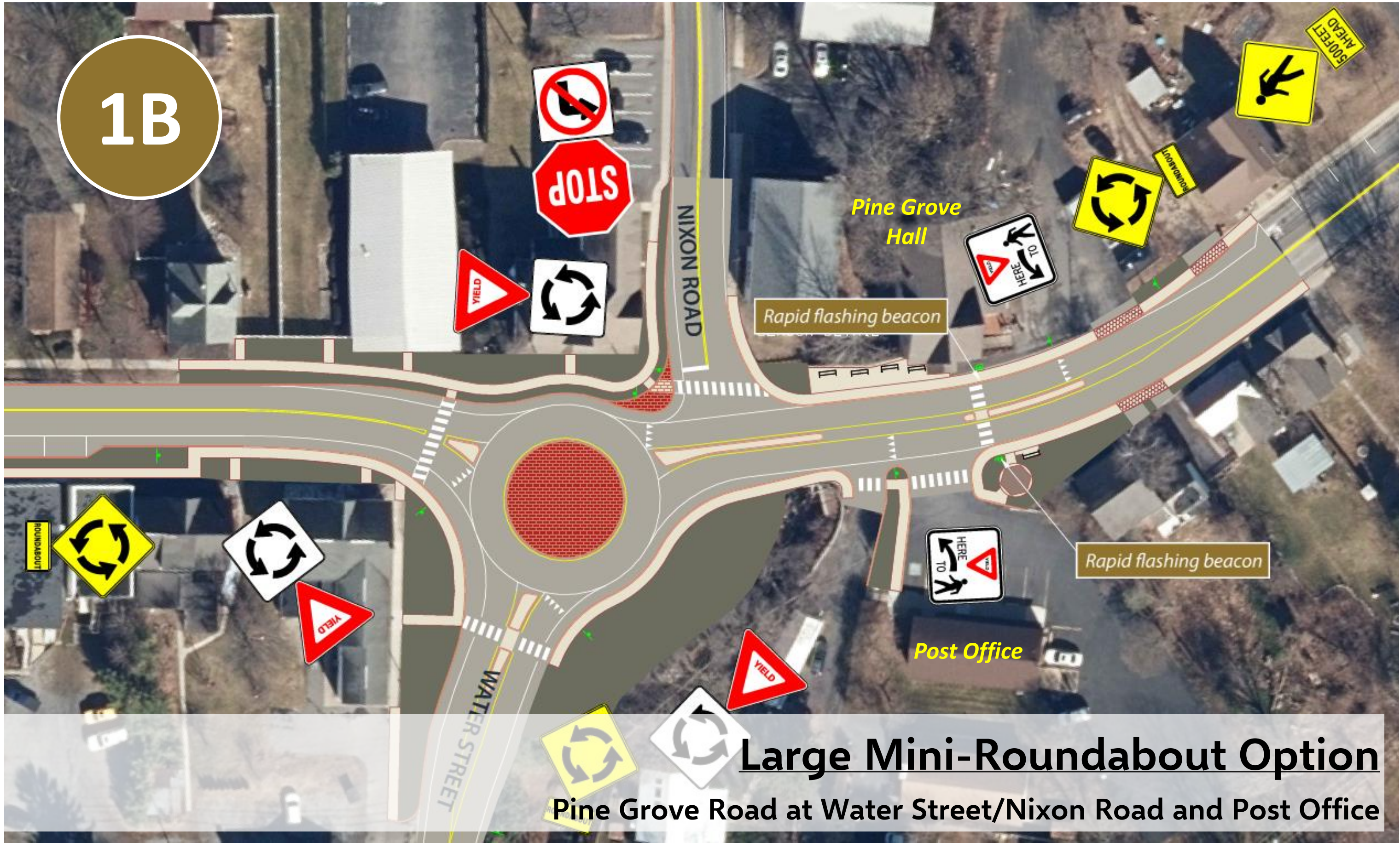


Stop Control Option

Pine Grove Road at Water Street/Nixon Road and Post Office



1B



Large Mini-Roundabout Option

Pine Grove Road at Water Street/Nixon Road and Post Office

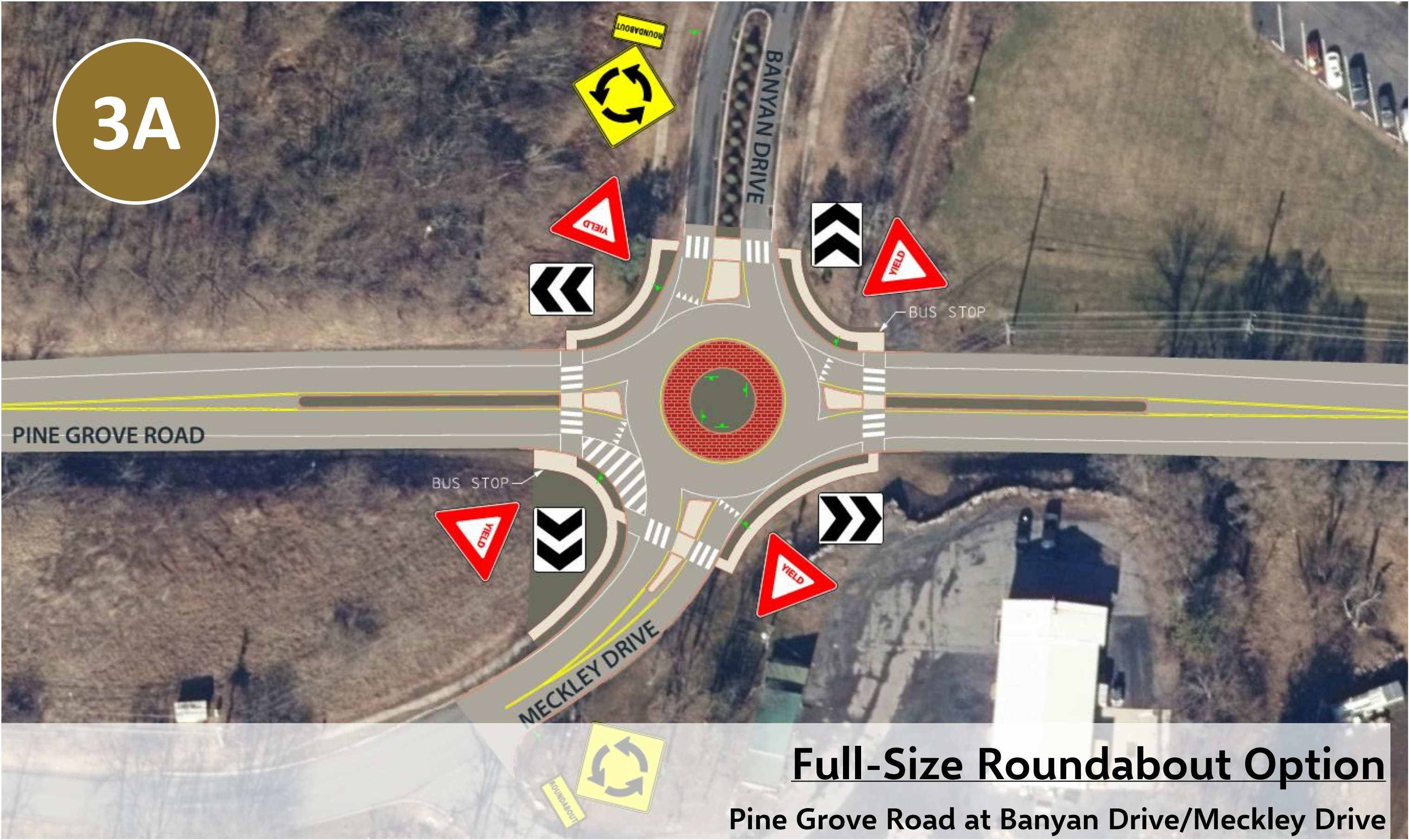


Pine Grove Road at Water Street/Nixon Road Comparison of Options

A1. Stop Control Option (39%)	A2. Large Mini-Roundabout Option (41%)
<p><u>BENEFITS</u></p> <ul style="list-style-type: none"> • Adds <u>two</u> fully enhanced crossings of Pine Grove Road. • Stop sign control is familiar to drivers and in context with the Pine Grove Mills environment. • Introduces minimal new delay on Pine Grove Road. • Does not preclude a traffic signal in the future. 	<p><u>BENEFITS</u></p> <ul style="list-style-type: none"> • Adds <u>one</u> fully enhanced crossing of Pine Grove Road. • Allows Nixon Road drivers to turn right and use the roundabout for “U-turns” to travel east toward State College/Boalsburg. • Reduces vehicle speed through the intersection, as vehicles yield when entering the roundabout.
<p><u>CHALLENGES</u></p> <ul style="list-style-type: none"> • Pine Grove Road vehicles do not stop or yield at the intersection, and speeds may remain higher than desired. • Turn restriction still required on Nixon Road. • Long pedestrian crossing distance across Water Street. 	<p><u>CHALLENGES</u></p> <ul style="list-style-type: none"> • Requires property/right-of-way acquisition and potential for environmental clearance and remediation. • Adds new delay for vehicles on Pine Grove Road. • Turn restriction still required on Nixon Road. • No rapid flashing beacons at roundabout crossings. • Roundabout center island is traversable; vehicles may enter the roundabout without slowing. • Precludes a traffic signal in the future.
<p>Cost Estimate - \$834,500</p>	<p>Cost Estimate - \$1,269,100 + ROW/remediation/etc.</p>



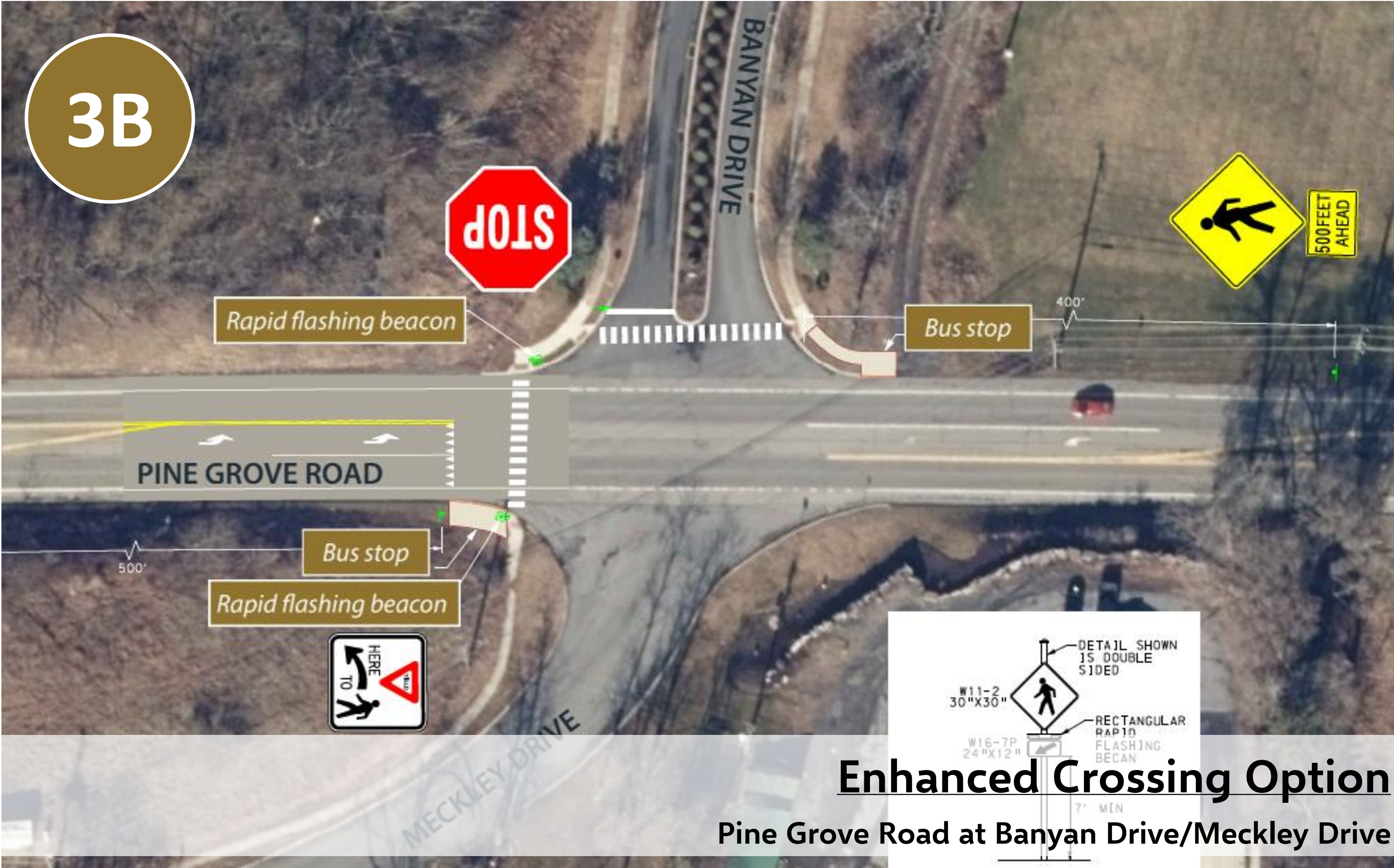
3A



Full-Size Roundabout Option
Pine Grove Road at Banyan Drive/Meckley Drive

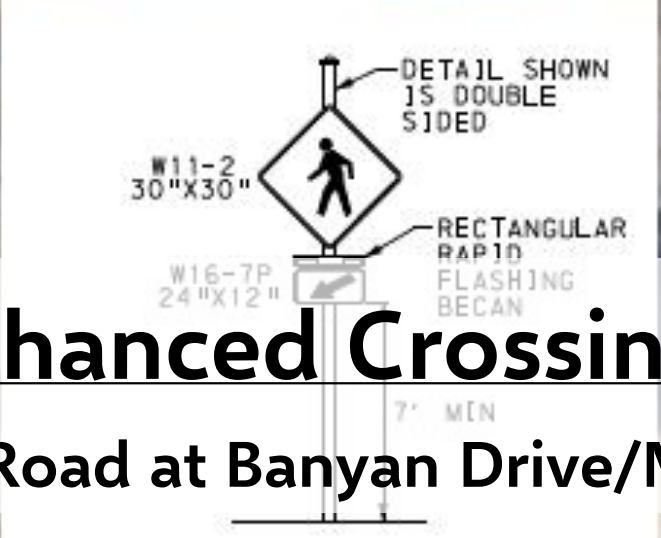


3B



Enhanced Crossing Option

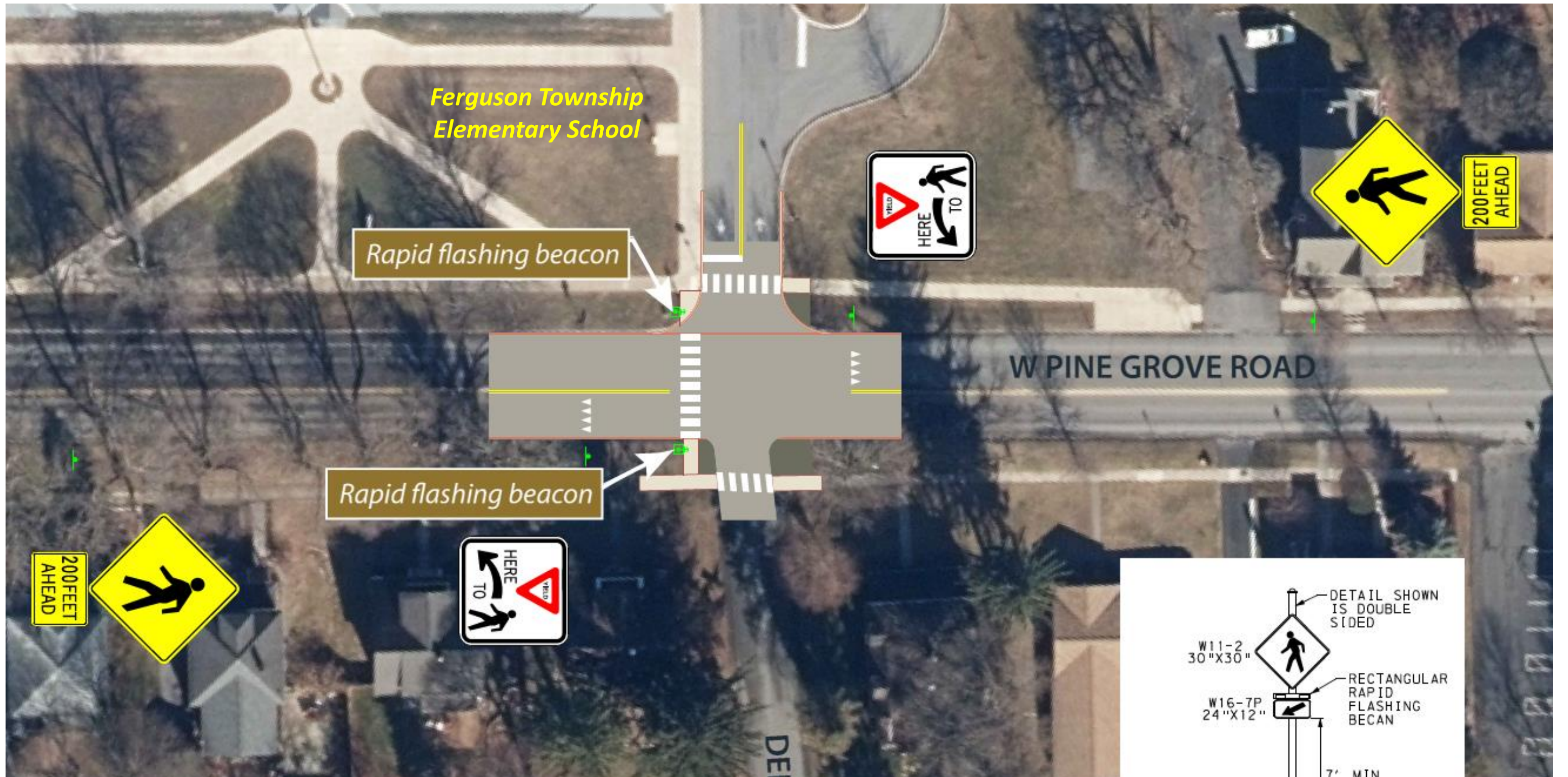
Pine Grove Road at Banyan Drive/Meckley Drive



Pine Grove Road at Banyan Drive/Meckley Drive Comparison of Options

B1. Full-Size Roundabout Option (39%)	B2. Enhanced Crossing Option (61%)
<p><u>BENEFITS</u></p> <ul style="list-style-type: none"> • Roundabout design features require vehicle slowing. • Pedestrian crosswalks with high visibility markings, median refuges, and overhead lighting are provided on all approaches. • Traffic capacity is increased on the Banyan/Meckley Drive approaches for future growth. • No right-of-way acquisition anticipated. 	<p><u>BENEFITS</u></p> <ul style="list-style-type: none"> • Designated and enhanced crossings gain the attention of motorists and promote compliance with “Yield to Pedestrian” rules. • Lower cost than the Full-Size Roundabout option. • Minimal new delay on Pine Grove Road.
<p><u>CHALLENGES</u></p> <ul style="list-style-type: none"> • Roundabout control adds new delay for vehicles on Pine Grove Road. • Significantly higher construction cost than the Enhanced Crossing option. 	<p><u>CHALLENGES</u></p> <ul style="list-style-type: none"> • Measured vehicle speed ~50 mph near intersection. • Requires speed limit changes to 40 mph or lower. • Eastbound sight distance affected by the roadway crest. Overhead beacons may be necessary. • Enhanced crossing not expected to reduce speeds. • Separate gateway features or treatment elsewhere would increase the ultimate cost.
<p>Cost Estimate - \$1,071,800</p>	<p>Cost Estimate - \$105,000 + Gateway (\$270,000)</p>



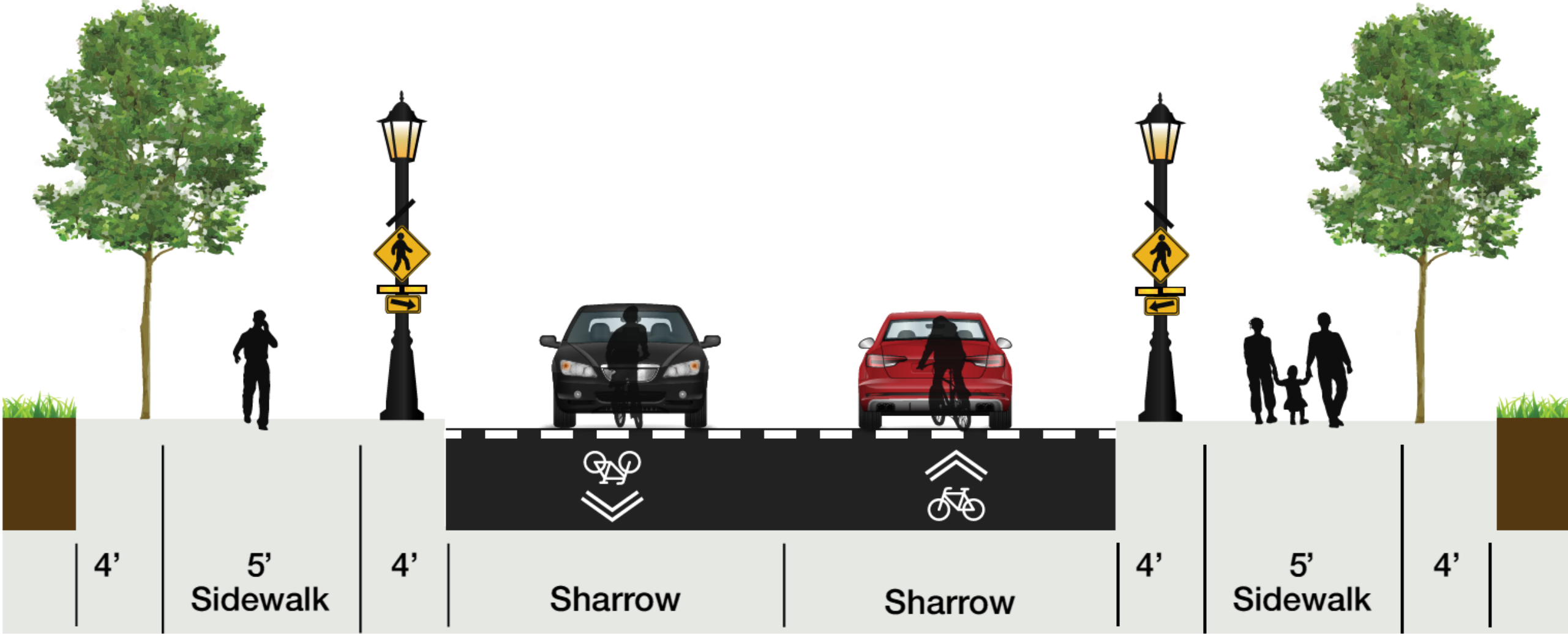


Deepwood Drive (east) Enhanced Crossing Option

Pine Grove Road at Ferguson Township Elementary School



Pine Grove Road Cross-Section with Enhanced Pedestrian Crossing



Deepwood Drive (east) Enhanced Crossing

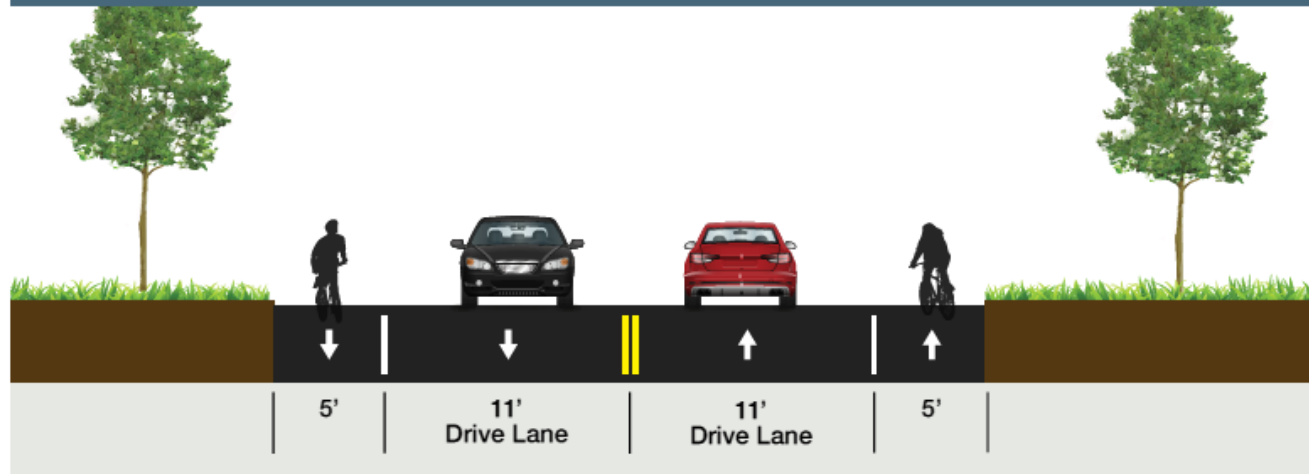
Pine Grove Road at Ferguson Township Elementary School



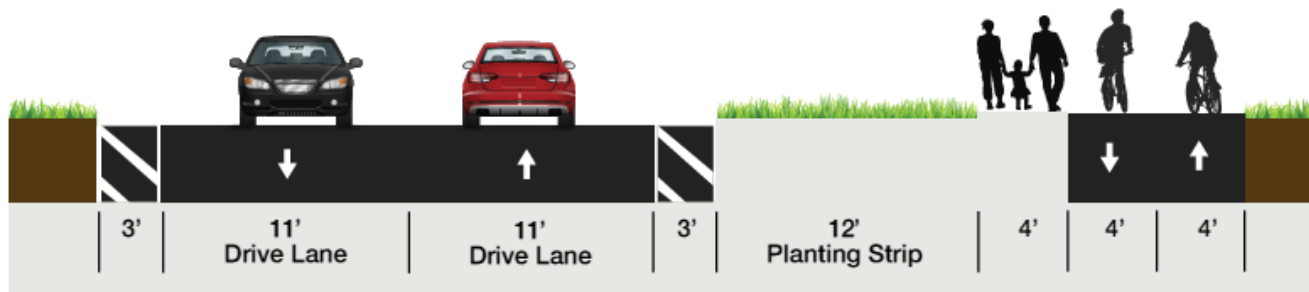
Pine Grove Road West Complete Street

Ross Street to Ferguson Township Elementary School

Alternative 1
Pine Grove Road with Widened Shoulders



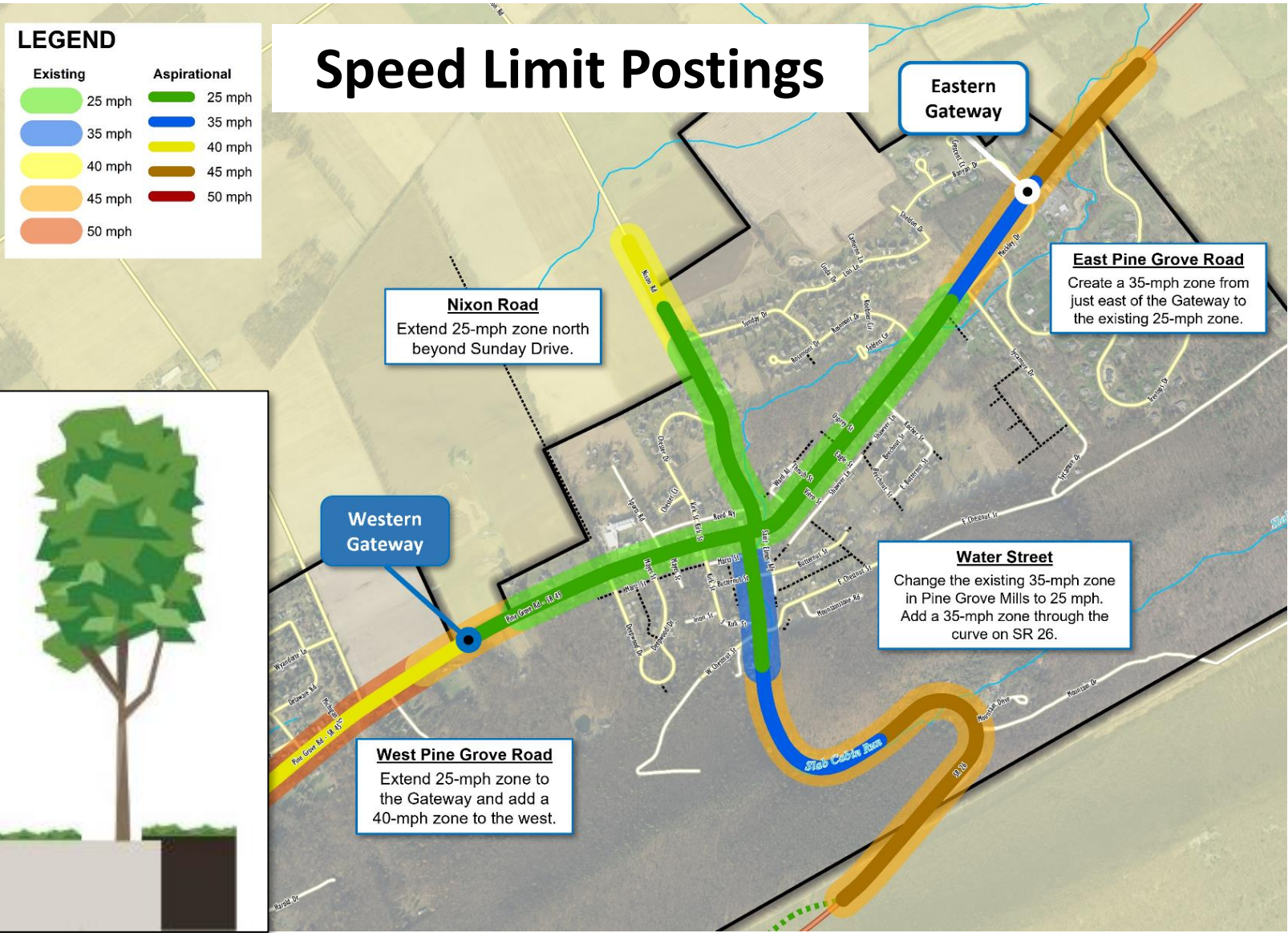
Alternatives 2A, 2B, or 2C
Pine Grove Road with Shared Use Path



- Potential impact of shared use path assessed
 - 2A – Path on north side of SR 45
 - 2B – Path on south side of SR 45
 - 2C – Path alternating sides
- Alternative 2C has less impact than 2A or 2B
- Township has a TASA grant to implement Alternative 1



Pine Grove Mills Western Gateway



Western Gateway Cross Section With Bike Lanes



Mobility Study Project Listing – Tier 1 Projects

ID	Project	Location	Description	Tier
1	Concept A.1, Stop Control Option	Pine Grove Road at Water Street/ Nixon Road	<ul style="list-style-type: none"> Retain the existing stop-controlled intersection. Revise Water Street and Pine Grove Road geometry. Add <u>two</u> enhanced pedestrian crossings. Add high-visibility crosswalks with overhead lighting. 	1
	Concept A.3, Large Mini Roundabout Option	Pine Grove Road at Water Street/ Nixon Road	<ul style="list-style-type: none"> Convert the intersection to a large “mini-roundabout”. Add <u>one</u> enhanced pedestrian crossing. Add high-visibility crosswalks with overhead lighting. 	
5	Concept C.3, Enhanced Crossing at the Shared Use Path	Nixon Road at Shared Use Path	<ul style="list-style-type: none"> Update the existing crossing of Nixon Road with an enhanced crossing with rapid flashing beacons, high-visibility pavement markings and lighting. Extend the 25 mph zone on Nixon Road to the north to encompass the Sunday Drive residential street intersection. 	1
6	Concept C.4, Enhanced Crossing at Deepwood Drive (east)	Pine Grove Road at Deepwood Drive (east)/ Elementary School Drive.	<ul style="list-style-type: none"> Switch crossing to west side of intersection. Add an enhanced pedestrian crossing of Pine Grove Road. Add high visibility pedestrian crosswalks with overhead lighting. 	1
7	Concept C.5a, Pine Grove Road West Complete Street	Pine Grove Road, from Ross Street to Elementary School	<ul style="list-style-type: none"> Widen the roadway shoulders on both sides of Pine Grove Road to 5 feet. Sign and mark the shoulders as bike lanes. 	1
8	Concept C.5b, Pine Grove Road East Complete Street	Pine Grove Road, from Ferguson Township Elementary School to Rosemont Drive	<ul style="list-style-type: none"> Add sharrow markings on Pine Grove Road. Consider adding “Bicycles May Use Full Lane” signage. Conduct community education on sharrows. 	1



Mobility Study Project Listing – Tier 1 Projects

ID	Project	Location	Description	Tier
9	Water Street Sidewalk Reconstruction and Extension	West side of Water Street, from Pine Grove Road to Chestnut Street	<ul style="list-style-type: none"> Reconstruct the existing sidewalk with ADA-compliant crossings of Martz Street and Smith Street. Extend the sidewalk by approximately 200 feet, from its current endpoint to Chestnut Street. 	1
11	Parking Improvements	Pine Grove Road, between Water Street and Elementary School	Parking Zone Studies and Expansion <ul style="list-style-type: none"> Evaluate sight distance and expand parking zones where sight distance allows. 	1
		Pine Grove Road, between Rosemont Drive and Elementary School	Marking of Parking Spaces <ul style="list-style-type: none"> Mark all legal parking spaces to match the ordained and posted signage. 	
		Pine Grove Road and Water Street	<ul style="list-style-type: none"> Parking Signage Updates Update parking signage to use a consistent systems, formats, and messaging. Place signs at more regular intervals along the south side of Pine Grove Road. Add/update signage along Water Street. 	
		Pine Grove Mills Mobility Study Area	Parking Signage/Ordinance Updates <ul style="list-style-type: none"> Review and update ordinance and parking postings for consistency. 	
4	Concept C.2, Enhanced Crossing at Rosemont Drive	Pine Grove Road at Rosemont Drive	<ul style="list-style-type: none"> Add an enhanced pedestrian crossing of Pine Grove Road. Add high visibility pedestrian crosswalks with overhead lighting. 	1/2



Mobility Study Project Listing – Tier 2 & 3 Projects

ID	Project	Location	Description	Tier
10	Western Pine Grove Road Gateway	Pine Grove Road east of Lions Community Park	<ul style="list-style-type: none"> Construct gateway treatment, including median, overhead beacon, speed feedback signs, pavement markings, etc. Extend the 25 mph speed limit to the gateway location and add a 40 mph zone starting just west of either Wyoming Avenue or Ross Avenue. 	2
2	Street Repurposing at Post Office	Pine Grove Road in front of Post Office	<ul style="list-style-type: none"> Repurpose roadside pavement, sidewalk, and landscaped area to create a useful, integrated space. Elements may include expanded green space/landscaping, bike rack, gazebo/seating 	3
3	Concept B.1, Full-Size Roundabout Option	Pine Grove Road at Banyan Drive/ Meckley Drive	<ul style="list-style-type: none"> Convert intersection to a full-size modern roundabout. Add high-visibility pedestrian crossings with overhead lighting. Install a landscaped “green median” on Pine Grove Road. Create 35 mph speed zone west of Banyan/Meckley Drive. 	3
	Concept B.2, Enhanced Crossing Option	Pine Grove Road at Banyan Drive/ Meckley Drive	<ul style="list-style-type: none"> Add an enhanced pedestrian crossing of Pine Grove Road. Add high visibility pedestrian crosswalks with overhead lighting. 	3
12	West Chestnut Street Turnaround Improvements	West Chestnut Street	<ul style="list-style-type: none"> Additional research and coordination required. Establish ownership and work with DCNR and State Forest on an agreement/plan for trail access, posting trail maps, adding bike rack, and other improvements to better maintain the turnaround. 	3
13	Kepler Road Parking Area and Trail Access Improvements	Kepler Road Parking Area	<ul style="list-style-type: none"> Additional research and coordination required. Establish ownership and work with DCNR and State Forest on an agreement/plan for parking regulations, trail access, posting trail maps, adding bike rack, and other improvements to better maintain the turnaround. 	3





Questions & Comments

