

GROWTH AND ACCESSIBILITY PLANNING (GAP)

TECHNICAL ASSISTANCE PROGRAM

UDA Multimodal Planning

Goochland County

May 18, 2022



Agenda

- **Introductions**
- **Overview of Study Scope**
- **Bicycle/Pedestrian Assessment**
- **Transit Assessment**
- **Public Input**

The Virginia Office of Intermodal Planning and Investment (OIPI) has developed the GAP-TA program to support the following activities:

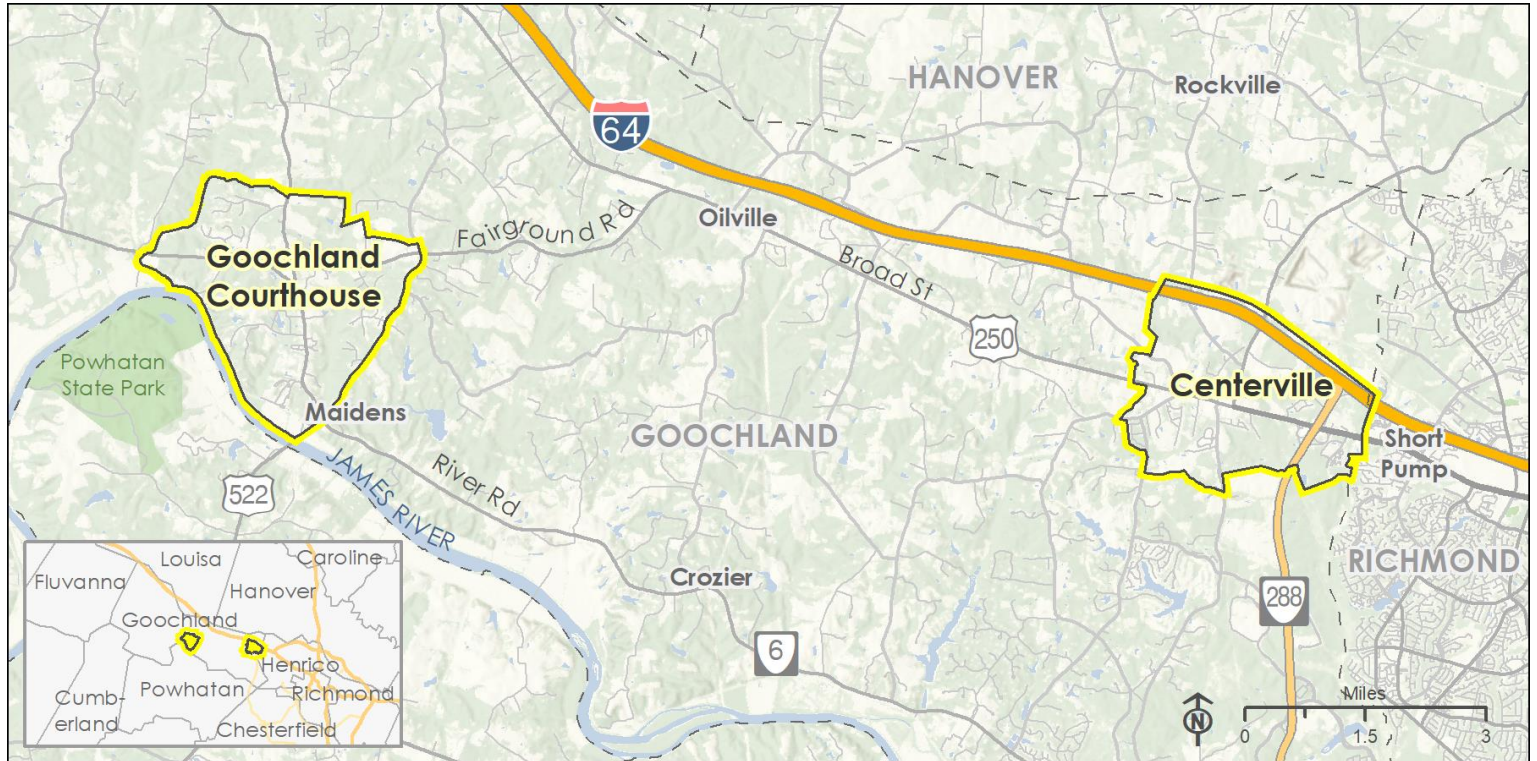
- 1. Conduct multimodal planning within existing or planned Urban Development Areas or Growth Areas**
2. Develop or evaluate strategies to address emerging planning issues
3. Develop an accessibility planning program
4. Conduct multimodal planning outside of urbanized areas

- **Goochland County study awarded grant under Component 1**
- **Eligible Activities: Support the intent of the Virginia Code §15.2-2223.1, namely support “traditional neighborhood design” by planning for:**
 - Pedestrian-friendly road design
 - Connectivity of road and pedestrian networks
- **Expected Outcomes:**
 - Need identification and planning for multimodal transportation infrastructure
 - Complete inventory of existing sidewalk and bicycle lanes

- **Evaluate Bicycle/Pedestrian recommendations in the County's Comprehensive Plan for two of Goochland County's Designated Growth Areas**
 - Centerville Village
 - Goochland Courthouse Village
- **Evaluate existing Bicycle/Pedestrian infrastructure in Centerville and Goochland Courthouse Villages**
- **Make recommendations to improve Bicycle/Pedestrian planning which promotes interconnectivity, accessibility, safety, and appropriate design**
- **Evaluate the demand for potential transit service to the Centerville Village**
- **Support State efforts to promote safe alternatives to vehicular traffic**

Study Areas

- Goochland Courthouse Village
- Centerville Village



Source: Michael Baker

Bicycle & Pedestrian Analysis

Bicycle and Pedestrian Analysis

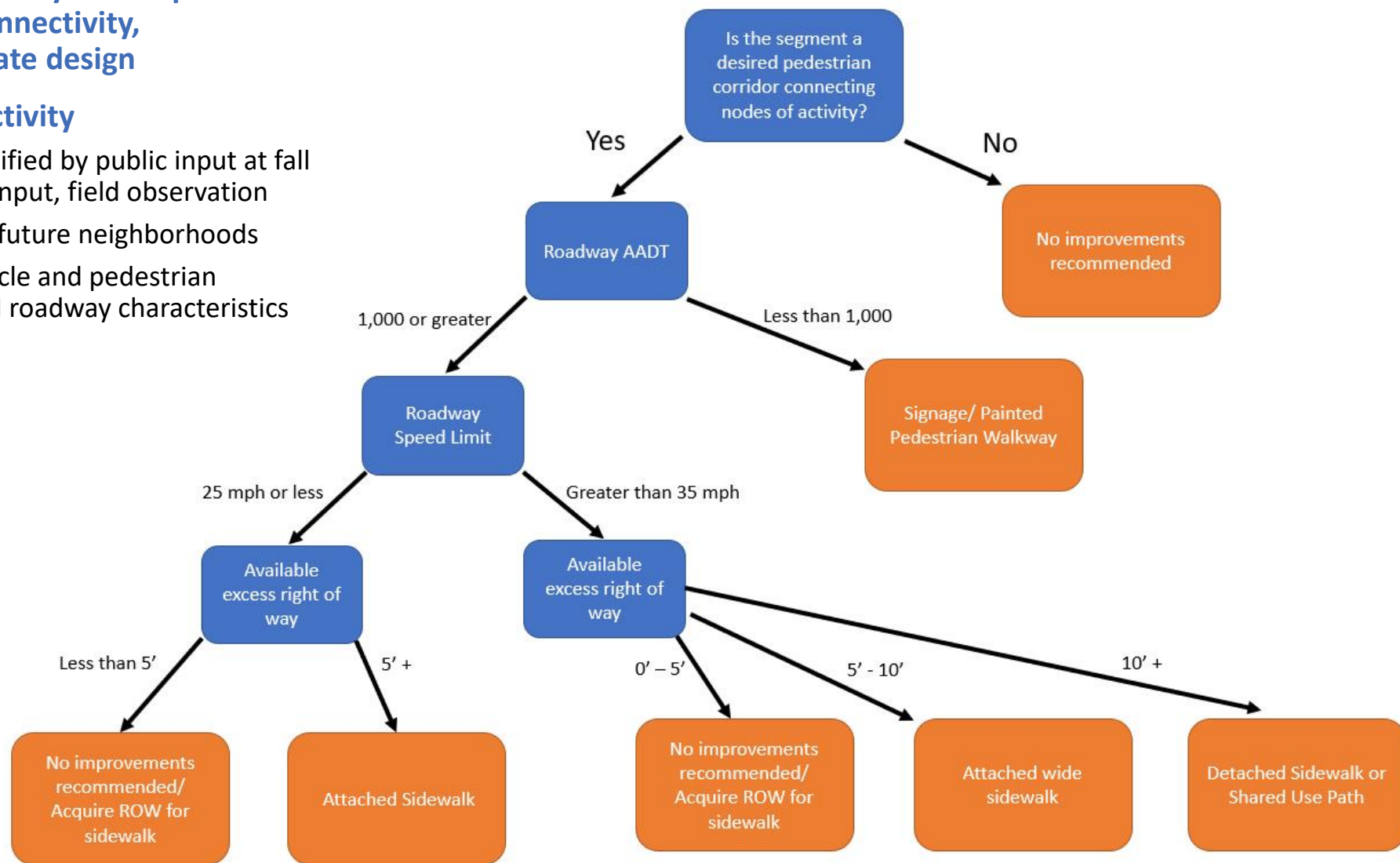
- **Goal: Make recommendations for bicycle and pedestrian improvements promoting interconnectivity, accessibility, safety, and appropriate design**

- **Promote Appropriate Interconnectivity**

- Nodes and Activity Centers identified by public input at fall 2021 community meeting, staff input, field observation
- Including potential and planned future neighborhoods
- Evaluate location of existing bicycle and pedestrian facilities, crosswalks and physical roadway characteristics

- **Infrastructure Recommendations**

- Chosen based on existing traffic, speed, lane width, etc.
- Sidewalks
- Crosswalks
- Bicycle Lanes
- Shared Lane Markings
- Paved Shoulders



Decision tree: pedestrian infrastructure

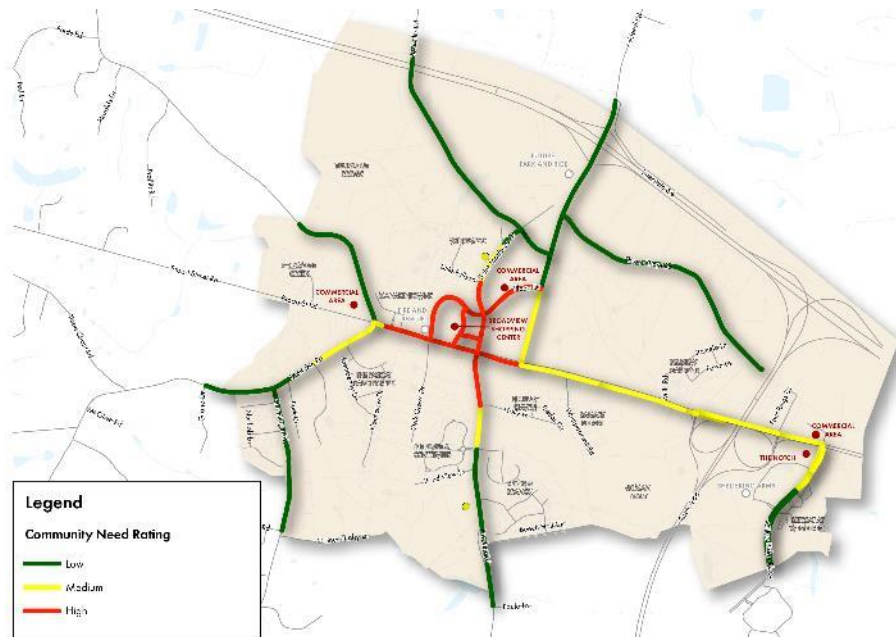
Bicycle and Pedestrian Prioritization

• Prioritizing Bicycle and Pedestrian Recommendations

Recommended improvements scored based on:

- **Traffic Level of Stress**
 - Speed, Traffic, Number of Lanes, Reported Crashes
- **Community Need**
 - Proximity to Nodes of Activity, Schools, Transit, Population Density, Employment Density, Equity Needs
- **Tactical Viability**
 - Scale, Right-of-Way, Connectivity, Project Readiness

Allow local leaders to make data-informed decisions



Example community need scores, Centerville Village

Traffic Level of Stress Score			
Element	Low (1 point)	Medium (2 points)	High (3 Points)
Speed Limit	25 or lower	30-40	45 or Higher
AADT	Less than 2,500	2,500 to 7,499	7,500 or Higher
Vehicle Lanes	2 Lanes	3-4 Lanes	More than 4 Lanes
Safety	No reported bicycle or pedestrian crashes	Non-fatal or serious injury bicycle or pedestrian crash	Fatal or serious injury bicycle or pedestrian crash

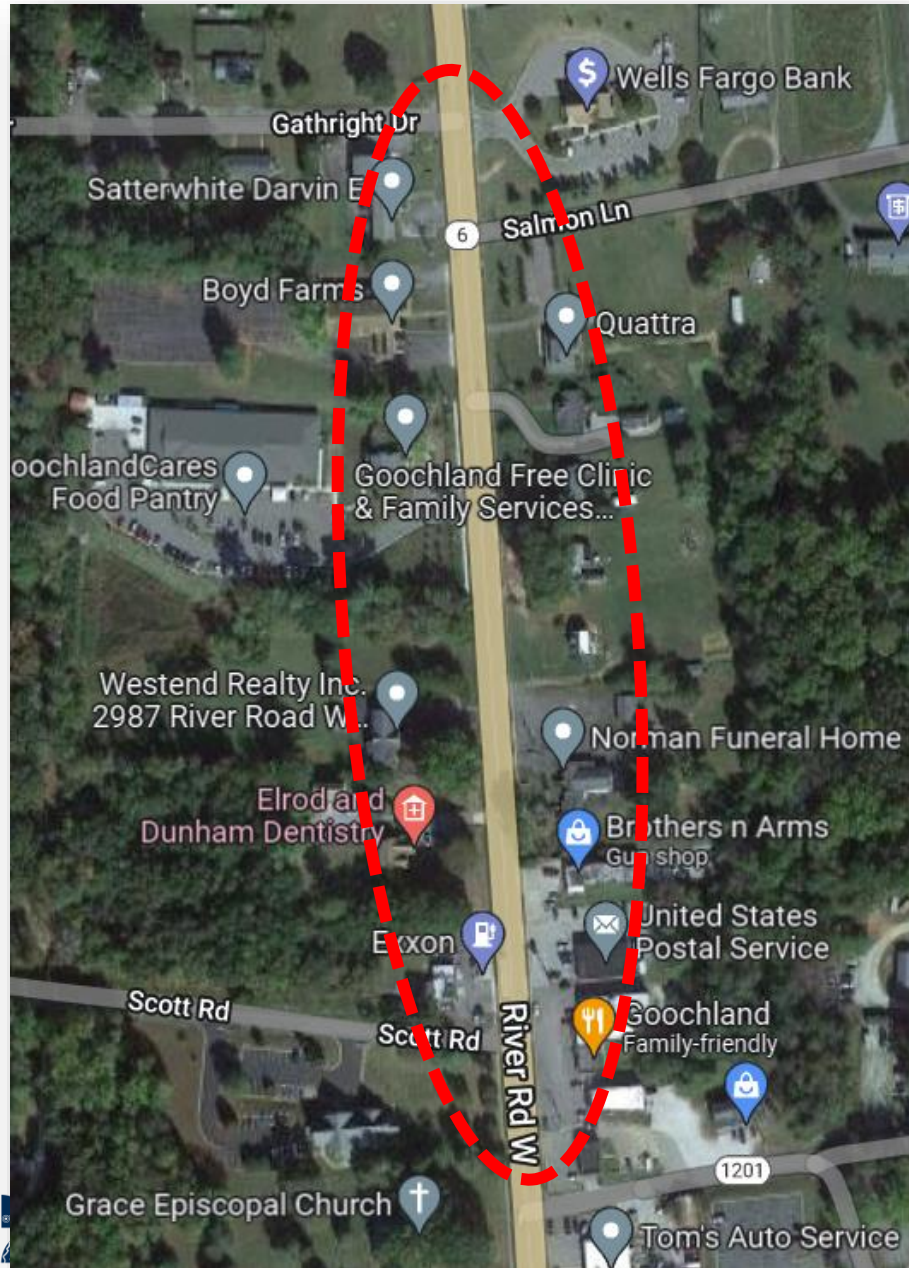
Community Need Score			
Element	Low (1 point)	Medium (2 points)	High (3 Points)
Activity Center	More than 0.5 miles from a VTRANS Activity Center or other primary community activity center	0.25-0.5 miles of a VTRANS Activity Center or other primary community activity center	Located within 0.25 miles of a VTRANS Activity Center or other primary community activity center
School	More than 0.25 miles from a school	Within 0.25 miles of a school	Located within 500 ft of a school
Transit	More than 0.25 miles from a transit stop	Within 0.25 miles of a transit stop	Segment includes transit stop
Bike Score/Walk Score	Located in an area with a combined Bike Score + Walk Score of less than 50.	Located in an area with a combined Bike Score + Walk Score of 50-99.	Located in an area with a combined Bike Score + Walk Score of 100 or more.
Population Density	Located in a Block Group that falls within the 4th or 5th quintile of population density for the community.	Located in a Block Group that falls within the 2nd or 3rd quintile of population density for the community.	Located in a Block Group that falls within the highest quintile of population density for the community.
Employment Density	Located within the 4th or 5th quintile of employment density for the community based on Census LEHD primary employment data.	Located within the 2nd or 3rd quintile of employment density for the community based on Census LEHD primary employment data.	Located within the highest quintile of employment density for the community based on Census LEHD primary employment data.
Equity Emphasis Area (VTRANS)	Not located in an Equity Emphasis Area	Located in Equity Emphasis Area with an index score that is less than the average index score of all EEs in the community.	Located in Equity Emphasis Area with an index score that is greater than the average index score of all EEs in the community.

Tactical Viability			
Element	Low (1 point)	Medium (2 points)	High (3 Points)
Scale of Corridor	Corridor has a "Principal Arterial" functional classification.	Corridor has a "Minor Arterial" or "Collector" functional classification.	Corridor has a "Local" functional classification.
ROW Needs	Additional right of way is anticipated to be acquired from multiple properties.	Additional right of way is anticipated to be acquired from a single property.	No additional right of way is anticipated.
Connectivity	Improvements enhance existing bike/ped infrastructure or are not connected to existing bike/ped facilities.	Improvements extend existing bike/ped infrastructure network but do not connect discontinuous facilities.	Improvements establish a link between existing but discontinuous bike/ped infrastructure.
Project Readiness	Improvements will require a new project.	Improvements are part of or can be incorporated into a planned project.	Improvements are part of or can be incorporated into a committed project.

Traffic, community, and tactical prioritization criteria

Analysis Example

Example Corridor Analysis



River Road (VA-6): Goochland Courthouse Village Center

• General Description:

- 2 lane roadway
- Primary access road to County courthouse and historic village center
- Continuous sidewalks on east side of road
- Partial sidewalks on west side of road
- No bicycle markings or facilities



Step 1: Determining Facility Type

Pedestrian Facilities

- **Located within ¼ mile of activity nodes**
 - Conclusion: Pedestrian travel expected
- **AADT > 1,000**
 - Conclusion: Should include separate pedestrian facilities
- **Speed Limit: 35 mph**
 - Conclusion: Sidewalk should be detached to provide some space between the roadway and the sidewalk

Pedestrian Recommendation:
Detached sidewalk on both sides of the road

Bicycle Facilities

- **Located within 1 mile of activity nodes**
 - Conclusion: Bicycle travel expected
- **AADT > 1,000 vehicles**
 - Conclusion: Should include bicycle accommodations
- **Speed Limit: 35 mph**
 - Conclusion: Travel speeds are low enough to safely provide a designated bicycle travel area (sharrow or bicycle lane)
- **Existing Pavement width: Approximately 36 ft total/ 18 ft per lane**
 - Conclusion: Sufficient space for a designated bike lane

Bicycle Recommendation:
Bicycle lanes in both direction of travel

Note: All recommendations subject to feasibility based on existing right of way and road conditions

Step 2: Rating the Priority of Improvements

Traffic Stress

How much danger does vehicular traffic present to bicyclists and pedestrians?

- Moderate speed limit
- Moderate traffic volumes
- Low number of lanes
- Low number of reported crashes

Rating: Moderate

Community Need

How much bicycle and pedestrian activity is expected based on demographics and the built environment?

- High proximity to community activity center
 - Moderate proximity to schools
- Moderate bike/walk score
- Moderate population density
- High employment density

Rating: High

Project Viability

How easy would it be to implement the projects?

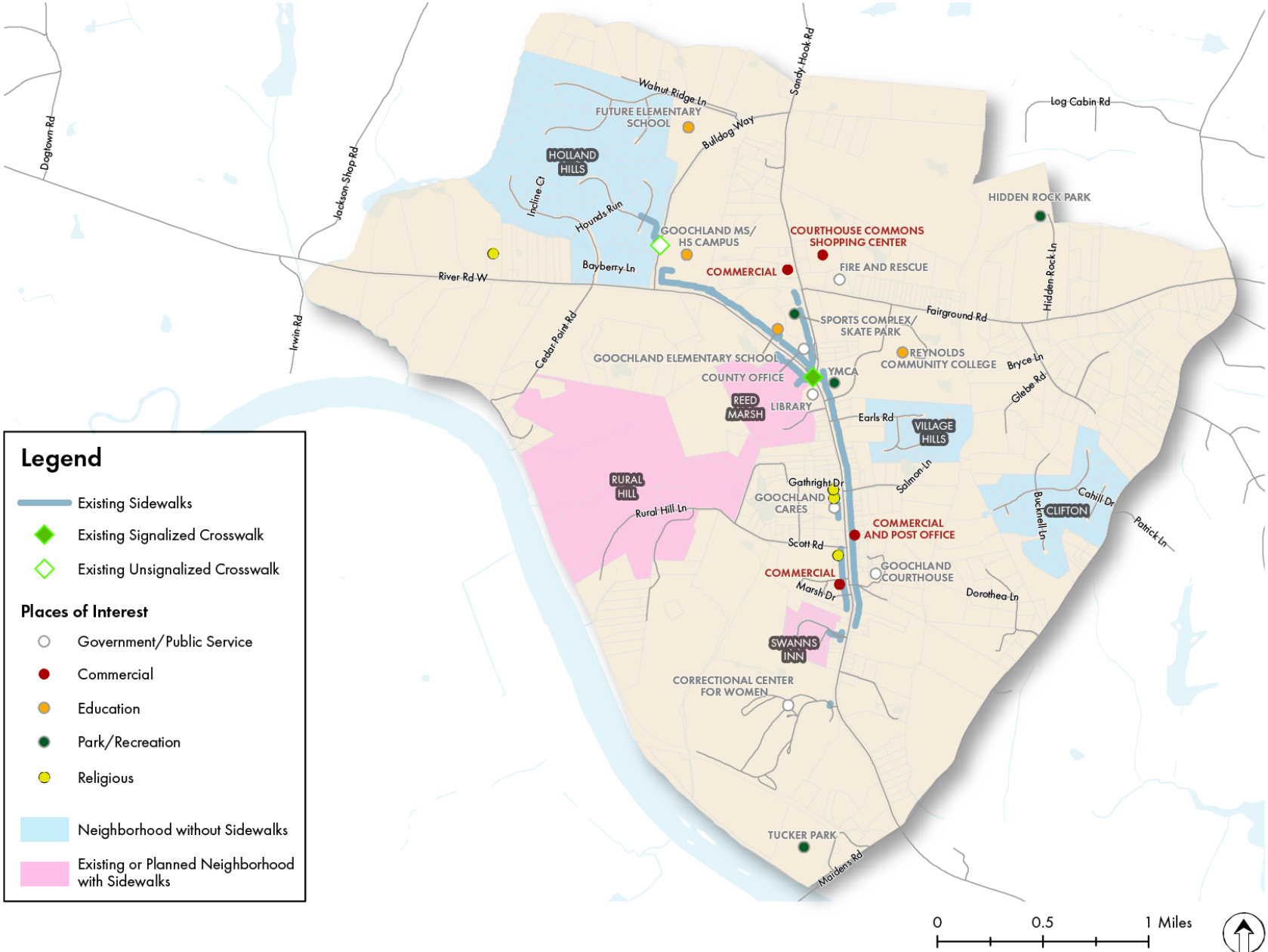
- Moderate road scale
- High right of way sufficiency
- Moderate connectivity
- Moderate project readiness

Rating: Moderate

Recommendations – Goochland Courthouse

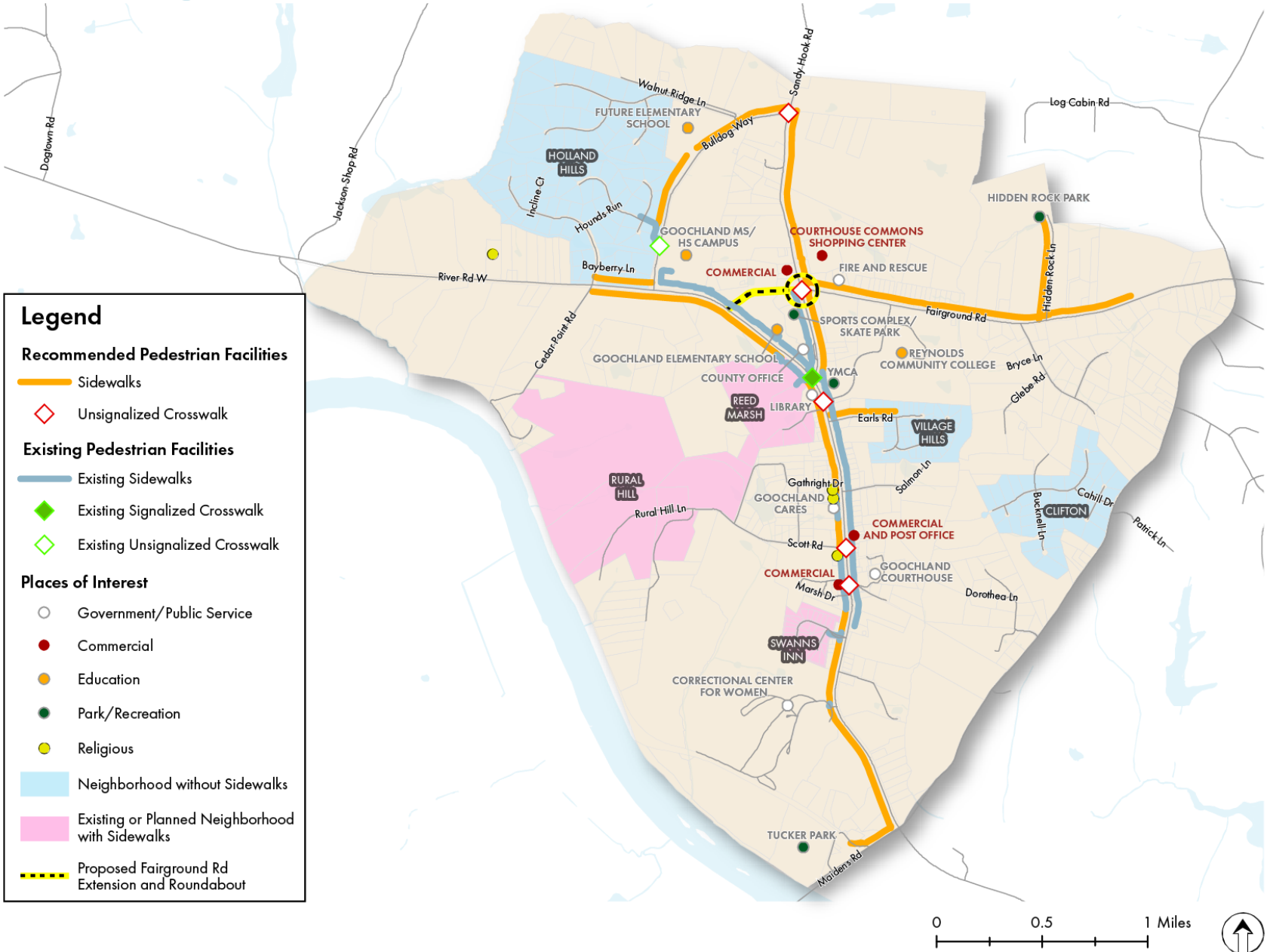
Courthouse Village

Courthouse Village: Existing Pedestrian Infrastructure



Courthouse Village

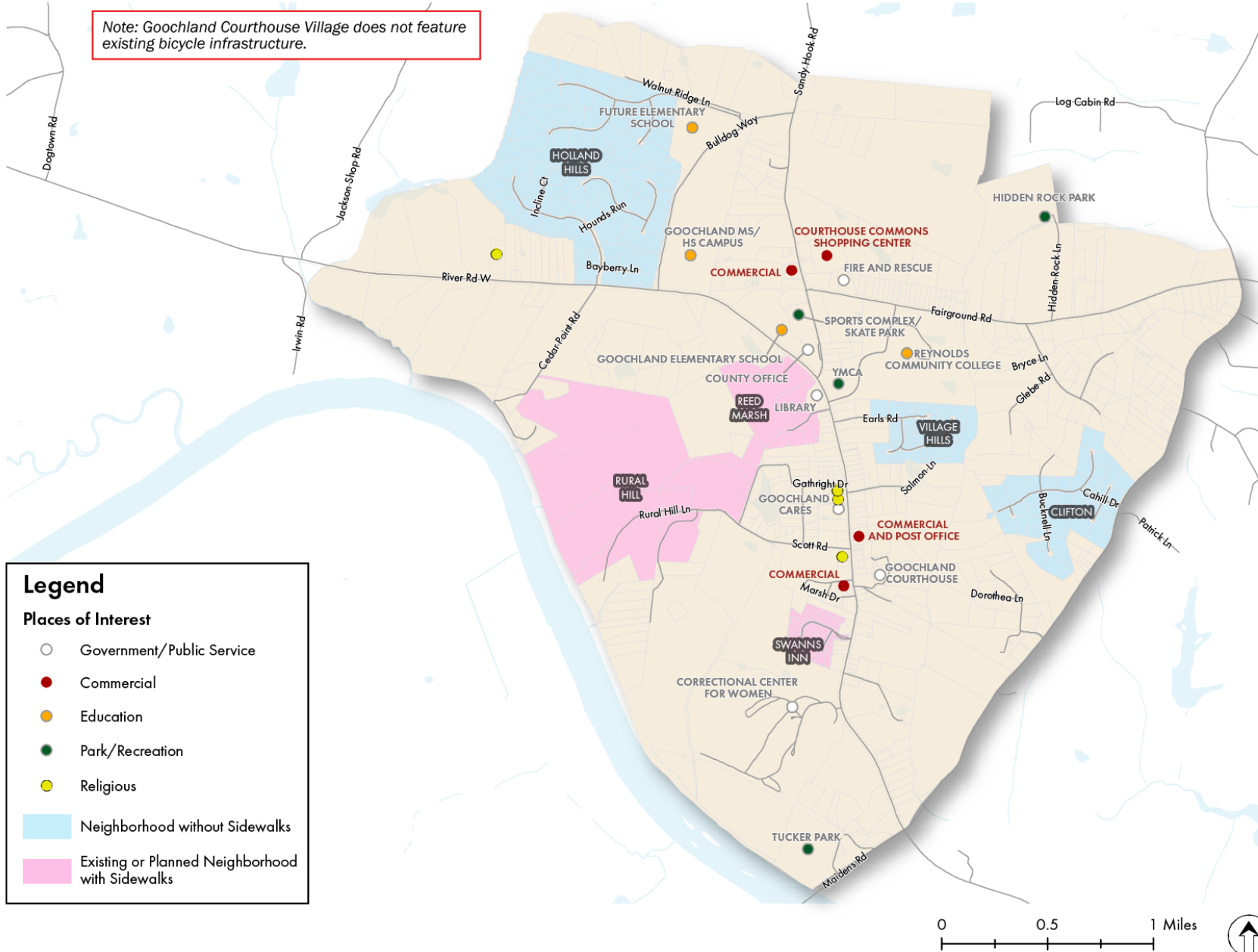
Courthouse Village: Recommended Pedestrian Infrastructure



Courthouse Village

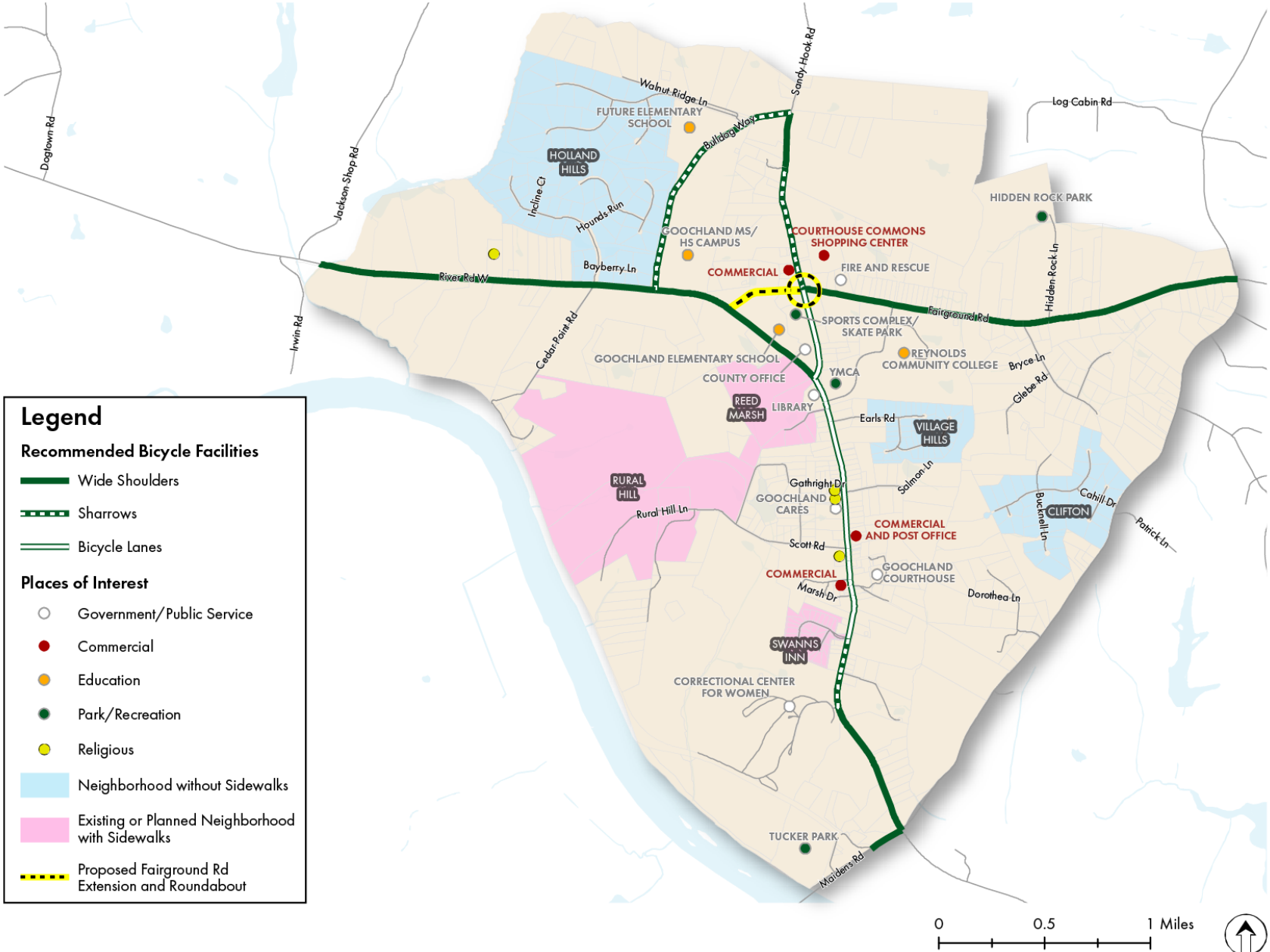
Courthouse Village: Existing Bicycle Infrastructure

Note: Goochland Courthouse Village does not feature existing bicycle infrastructure.



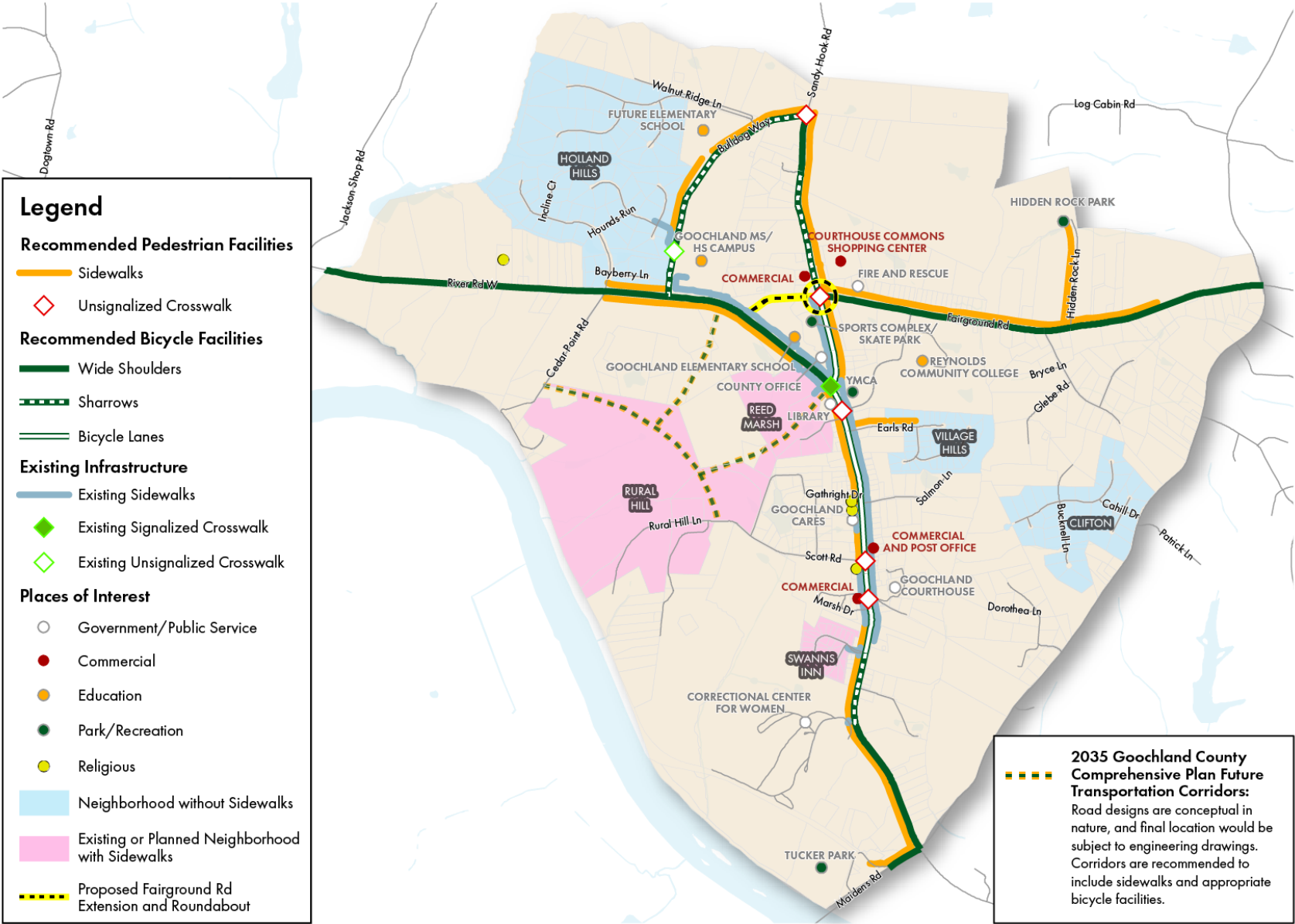
Courthouse Village

Courthouse Village: Recommended Bicycle Infrastructure



Courthouse Village

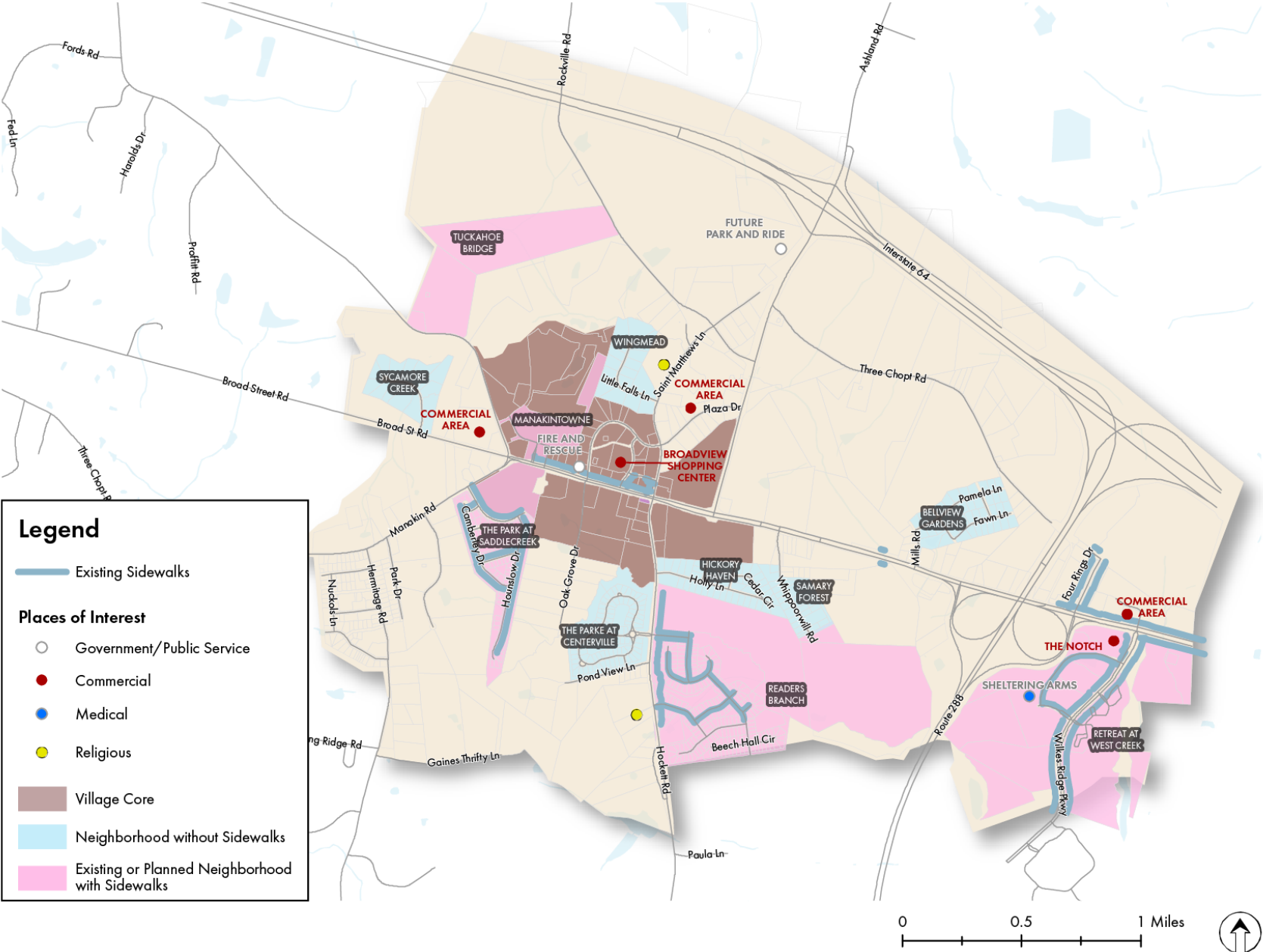
Courthouse Village: Combined Pedestrian and Bicycle Infrastructure Recommendations



Recommendations – Centerville

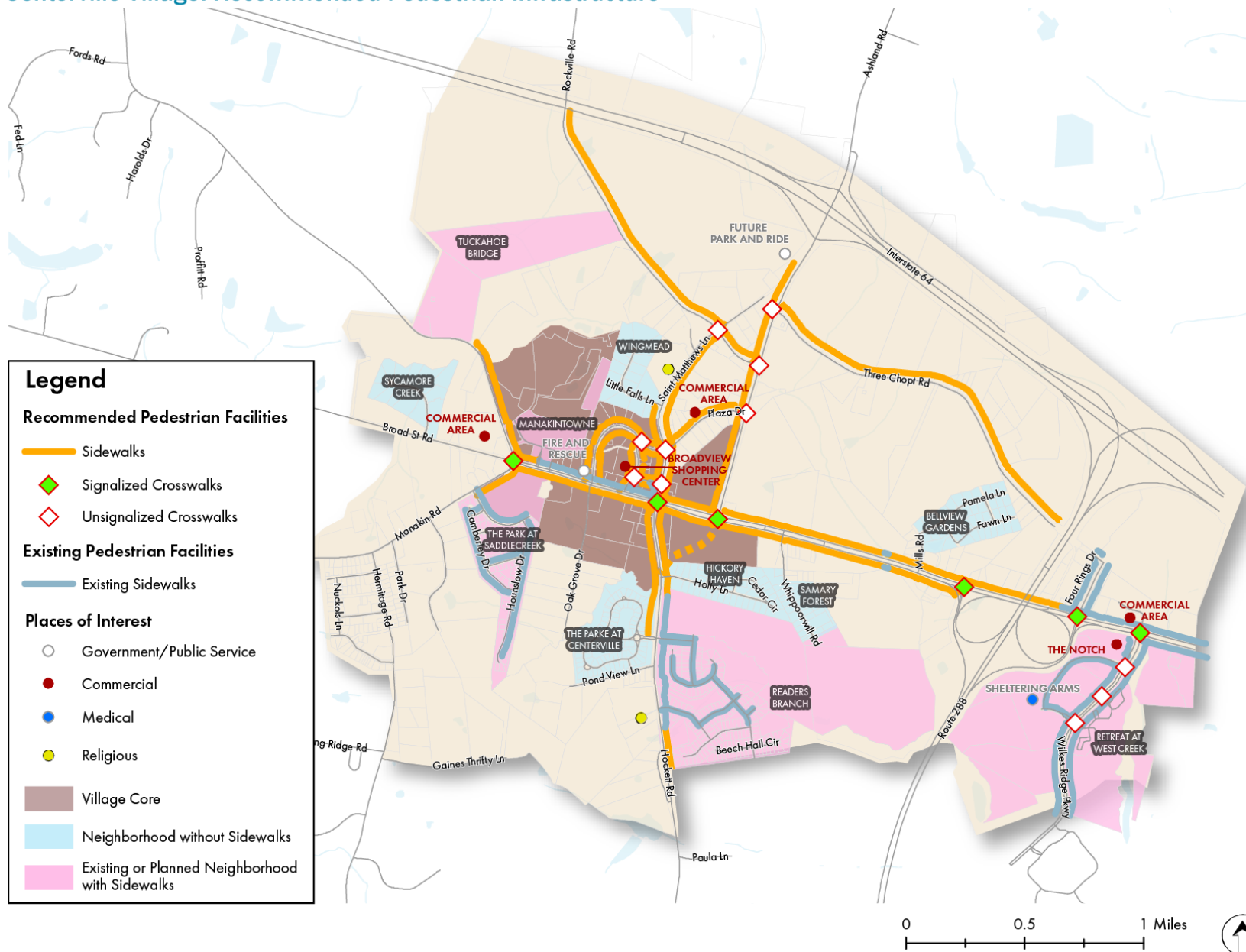
Centerville Village

Centerville Village: Existing Pedestrian Infrastructure



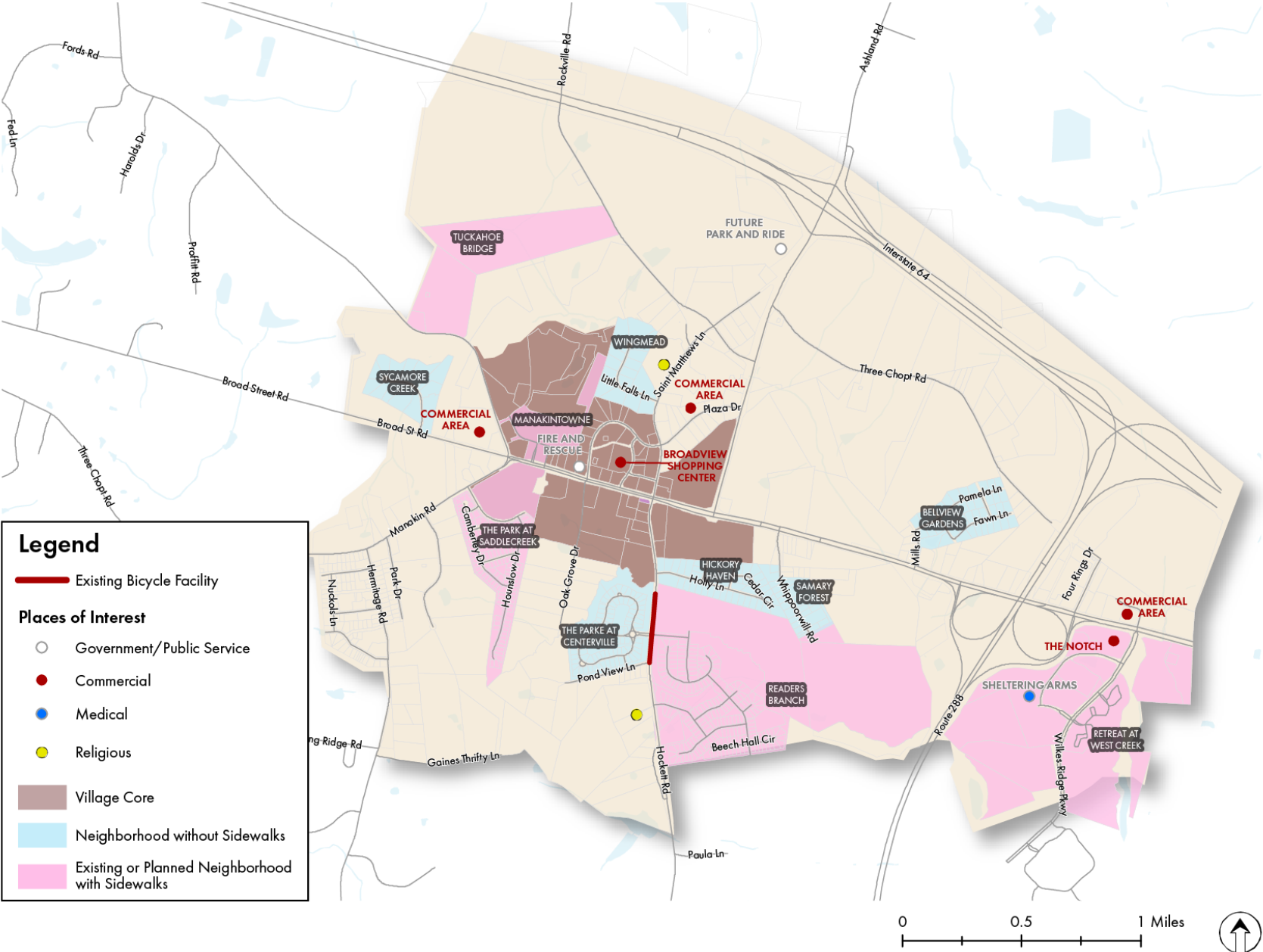
Centerville Village

Centerville Village: Recommended Pedestrian Infrastructure



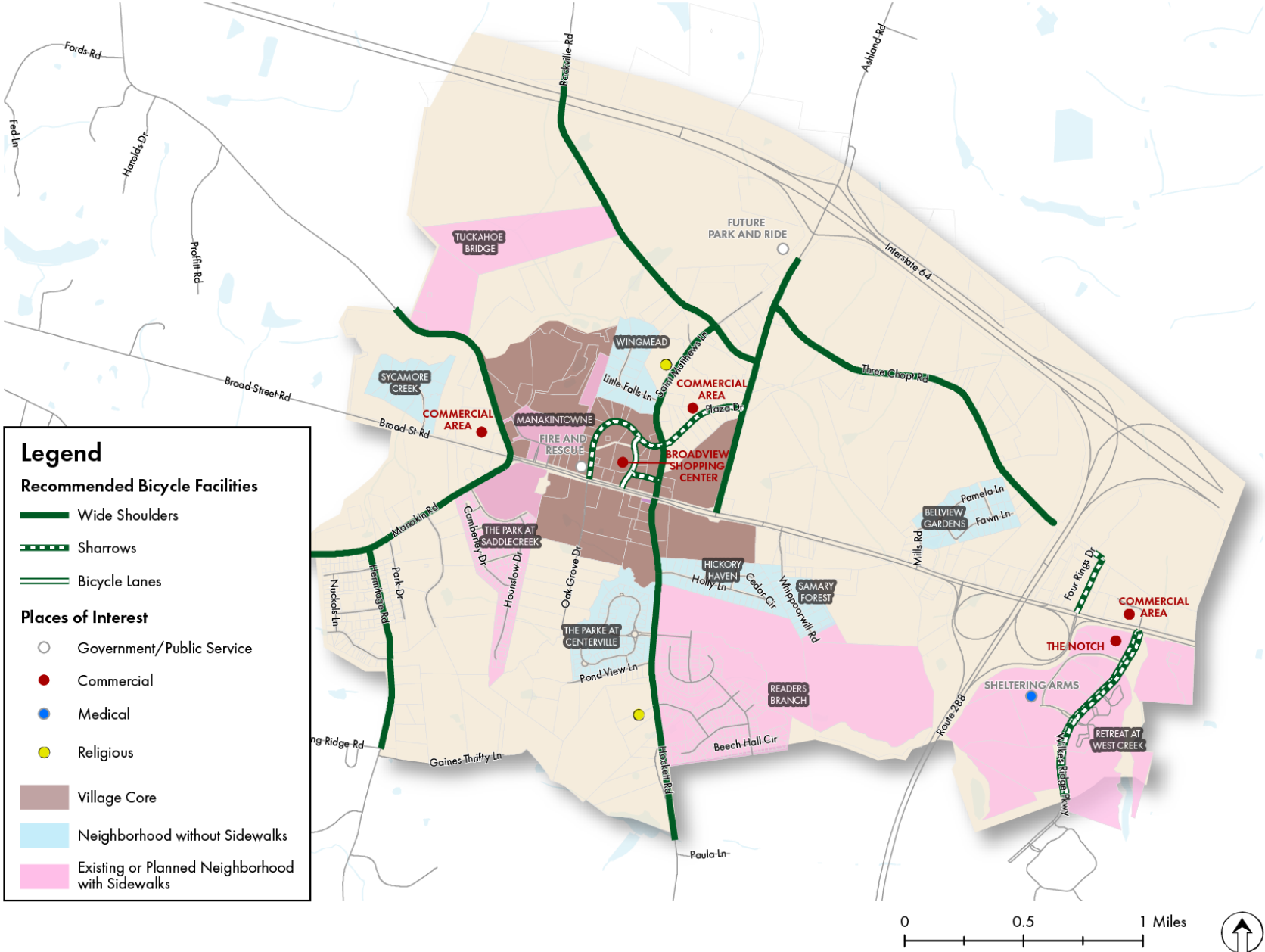
Centerville Village

Centerville Village: Existing Bicycle Infrastructure

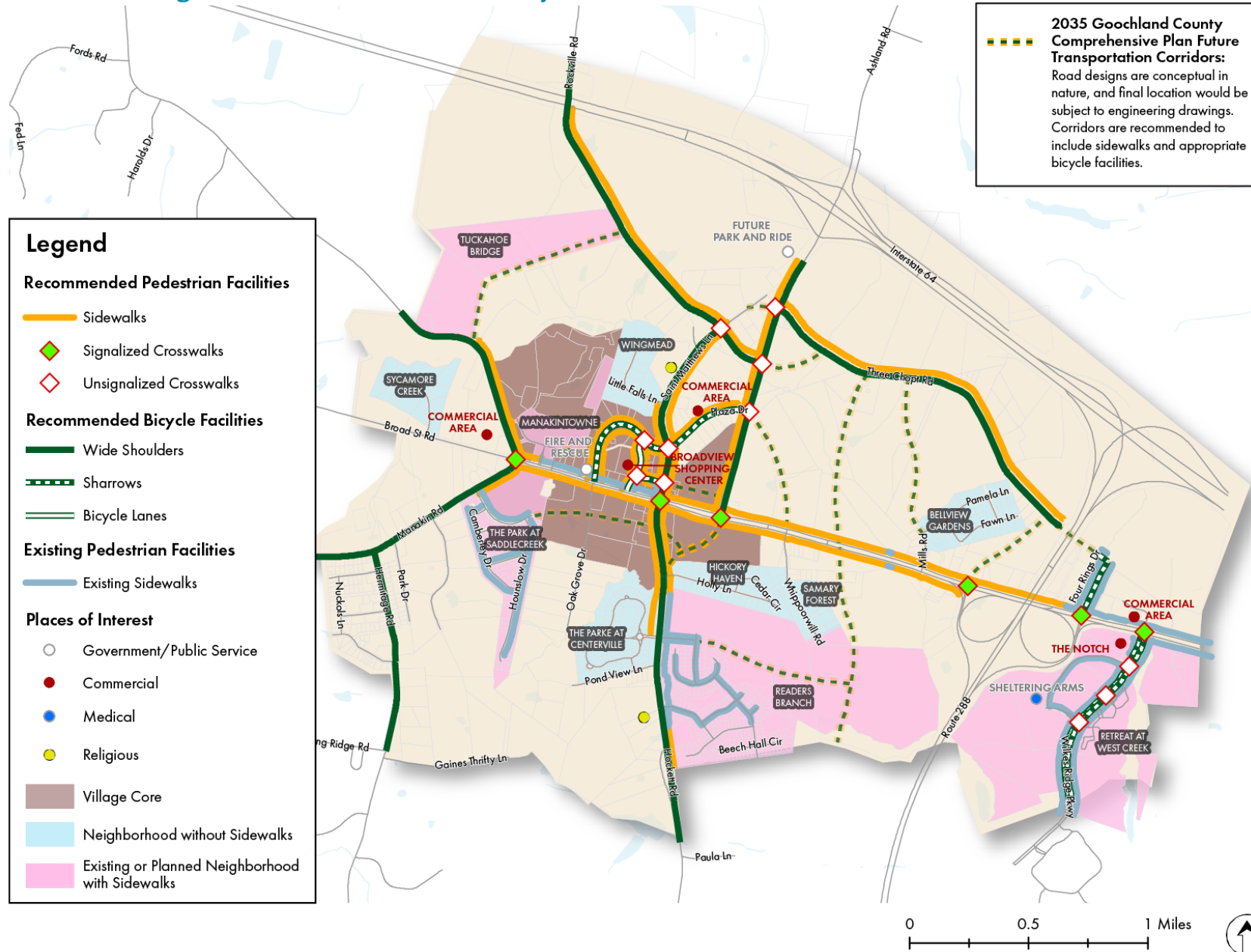


Centerville Village

Centerville Village: Recommended Bicycle Infrastructure



Centerville Village: Combined Pedestrian and Bicycle Infrastructure Recommendations



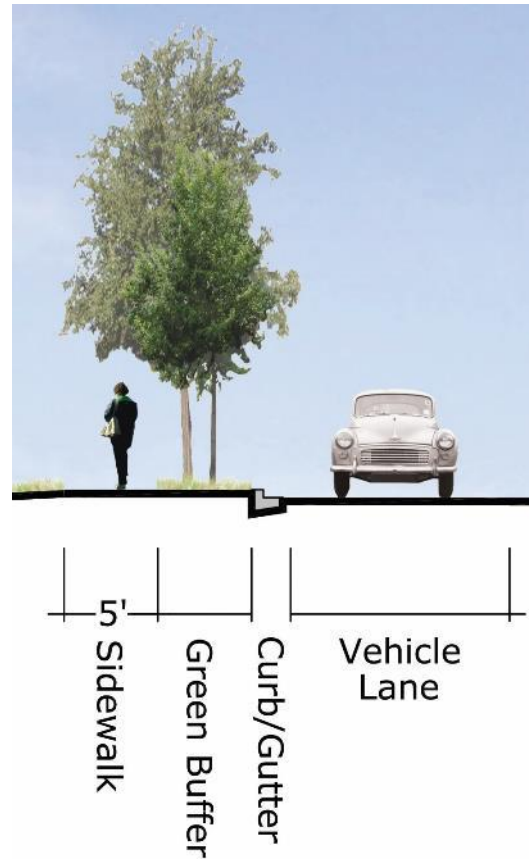
Facility Types

Typical Facility Design Standards

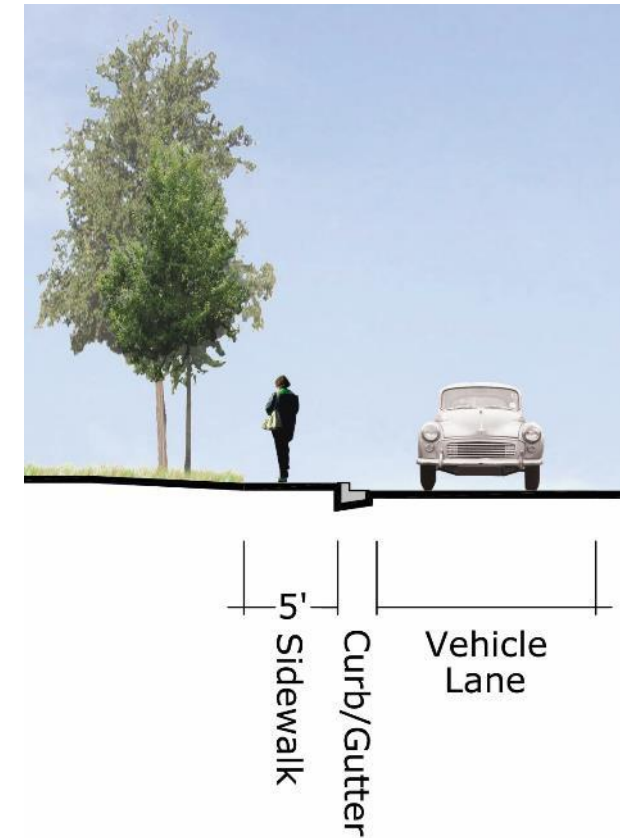
- **Sidewalks**

- 5 ft. standards width
- 8 ft. or wider in busy commercial areas
- Both sides of street in core areas
- Just one side outside of the core
- Landscape buffer or other separation on high-traffic or high-speed roads
- In all cases, as much comfort and safety as right-of-way allows

Sidewalk with buffer



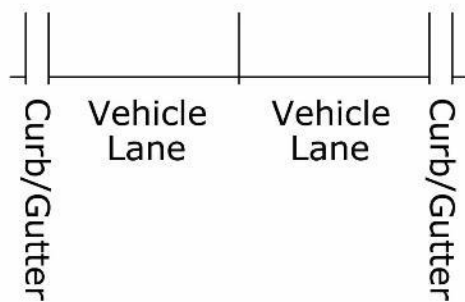
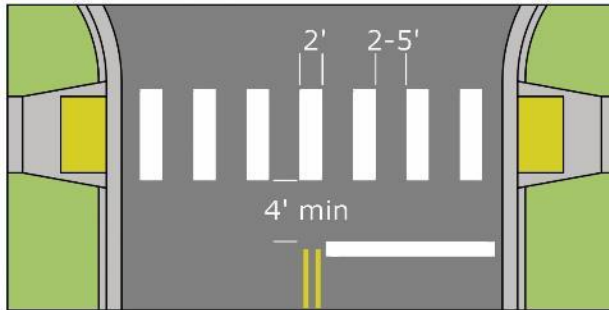
Sidewalk without buffer



Typical Facility Design Standards

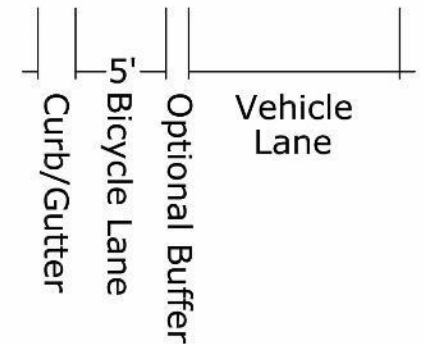
- **Crosswalks**

- High visibility design
- ADA curb ramps and features
- Cars stop minimum of 4 ft. back
- At traffic signal intersections, push-button pedestrian signals installed
- Unsignalized at lower volume and lower speed crossings



- **Bicycle Lanes**

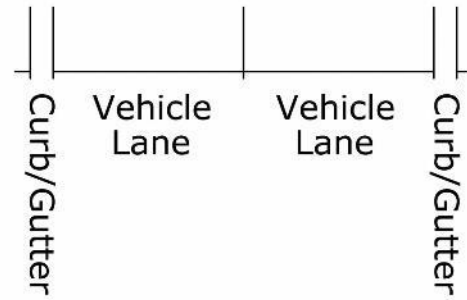
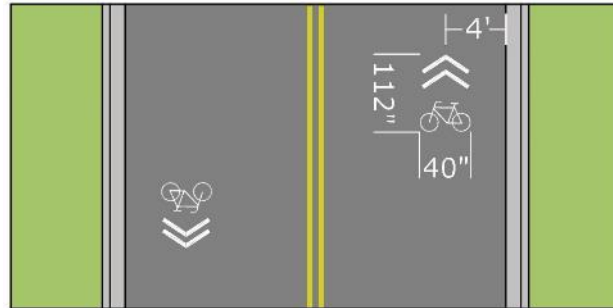
- Exclusive space for bikes with signs and pavement markings
- Standards 5 ft. width
- Optional buffer of 1.5 ft. or more on busy routes where space allows
- On roads with speed limits 35 mph or less



Typical Facility Design Standards

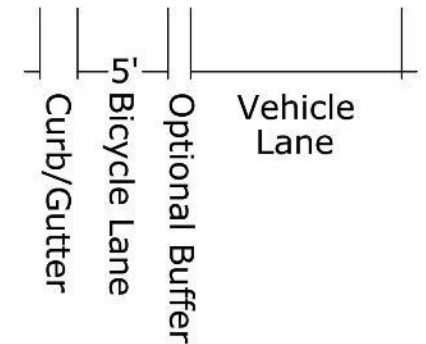
- **Shared Lane Markings (Sharrows)**

- Bicycles share space with cars on low volume, low speed roads
- Use is activity centers where there is no room for bicycle lanes
- Helps bicycles and cars be aware of each others presence



- **Paved Shoulders**

- Additional paved area on higher speed roads away from core activity centers
- 4-8 ft. as right-of-way allows
- Offers a measure of safety for cyclists away from core areas and official bicycle routes



Transit Assessment

Transit Assessment

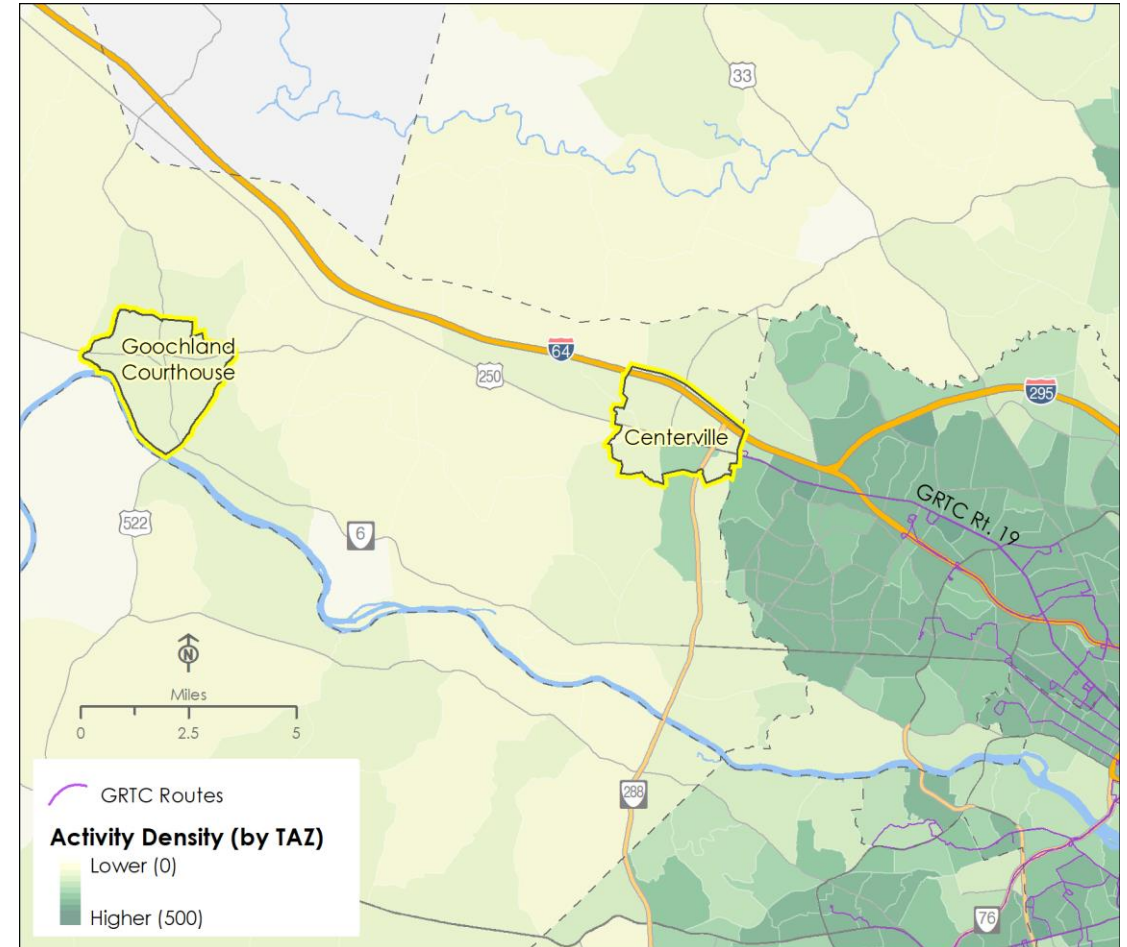
- **Goal: To evaluate transit supportive characteristics of Centerville Village**
 - Is transit feasible in Centerville?
- **Factors to consider:**
 - Amount and density of population
 - Amount and density of employment
 - Land use characteristics
 - Disadvantaged populations
 - Commute patterns – Origins/Destinations and distances
 - Comparable areas currently served by GRTC
- **Primary evaluation methods**
 - Activity Density
 - Equity Emphasis Scoring
 - Streetlight Origin-Destination Analysis
 - Comparison of Activity Densities Currently Served



Source: GRTC Press Kit

Activity Density

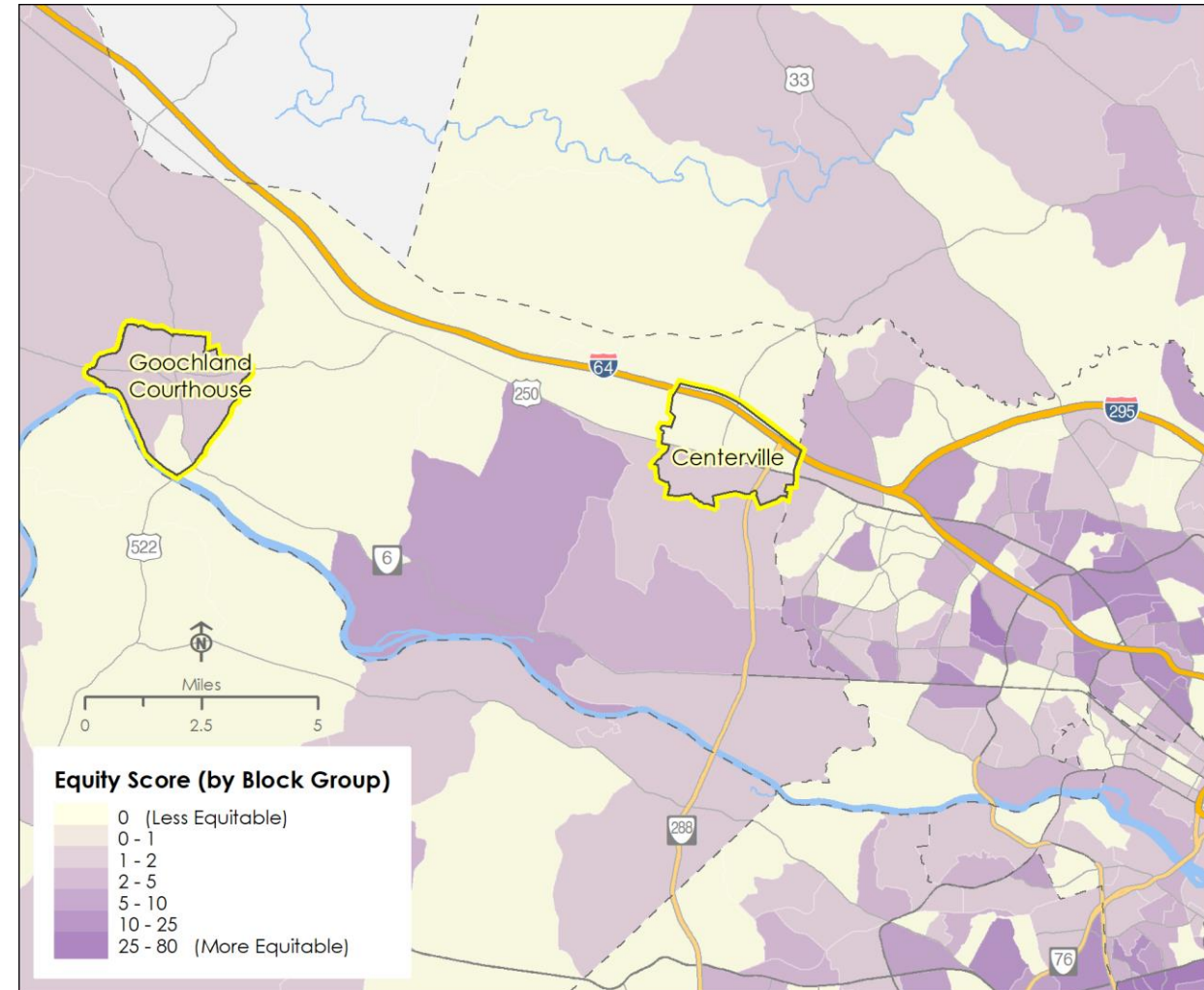
- Activity Density is defined as population plus jobs per acre
- An Activity Density of 5 is generally considered a transit supportive density
- Analysis used population and employment data developed by the Richmond Regional Planning District Commission
 - Data is provided by Traffic Analysis Zones (TAZs)
- Area-Weighted Activity Density for Centerville Village is 1.68
- Activity Density for TAZ #657 is 3.5
 - Highest Activity Density in Centerville area
 - Includes West Creek Office Park
- Conclusion:
 - Centerville does not meet the minimum transit supportive Activity Density



Activity Density around Centerville Village

Equity Emphasis Scoring

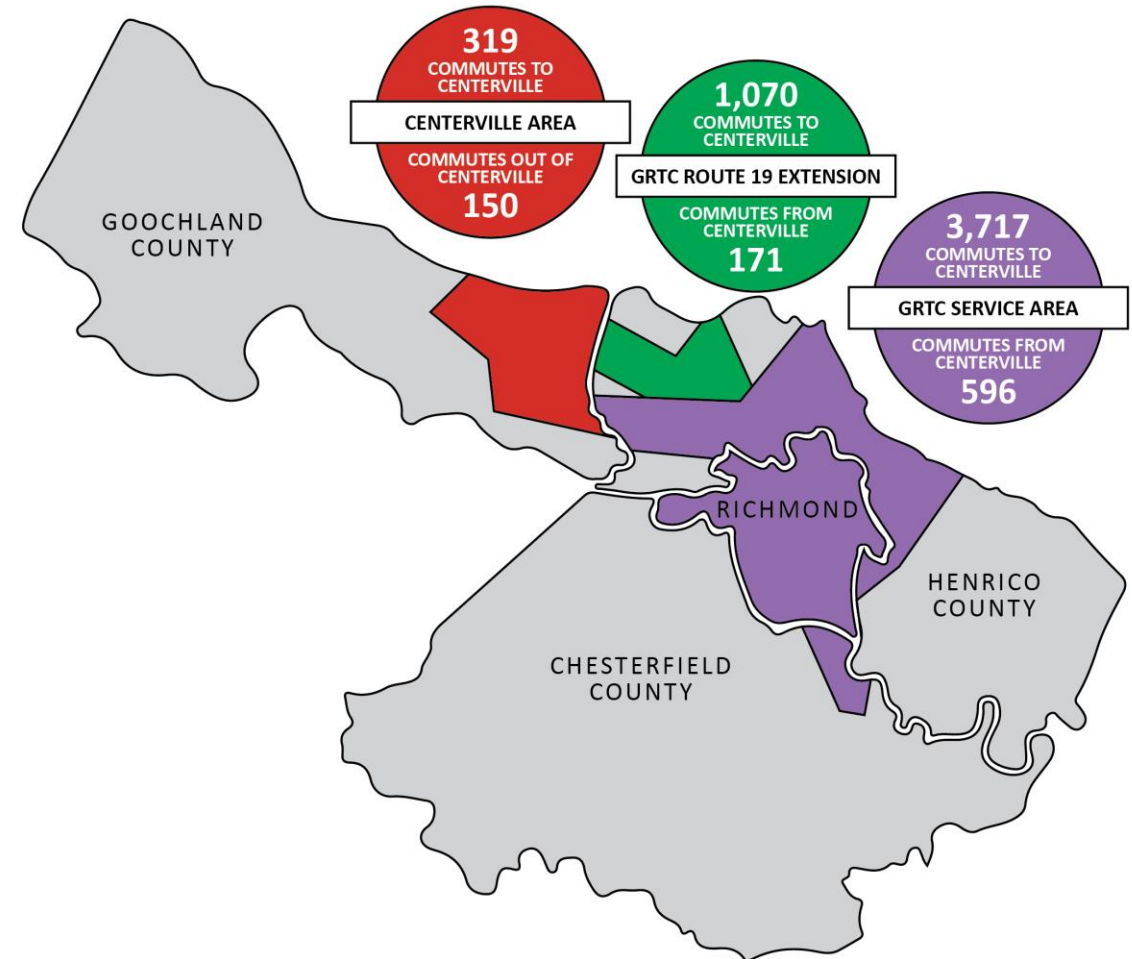
- **Equity Emphasis Scoring determines if there is a need for transit access to a traditionally disadvantaged community**
- **Analysis uses the following data from the American Community Survey:**
 - Ratio of Income to Poverty Level
 - Sex by Age
 - Hispanic Origin by Race
 - Age by Language Spoken at Home
 - Disability Characteristics
 - Total Population
- **Equity characteristics of each Block Group are compared to the region.**
- **According to VTrans (Virginia's Statewide Transportation Plan) the threshold Equity Emphasis Score (EES) for transit access is 2**
 - Centerville EES = 0.6
 - Average EES for total GRTC Service Area = 5.55
- **Conclusion:**
 - Centerville EES does not meet the threshold for transit
 - Nearby areas in Goochland County do meet the EES threshold



Equity Emphasis Scoring for area around Centerville Village

Origin-Destination Analysis

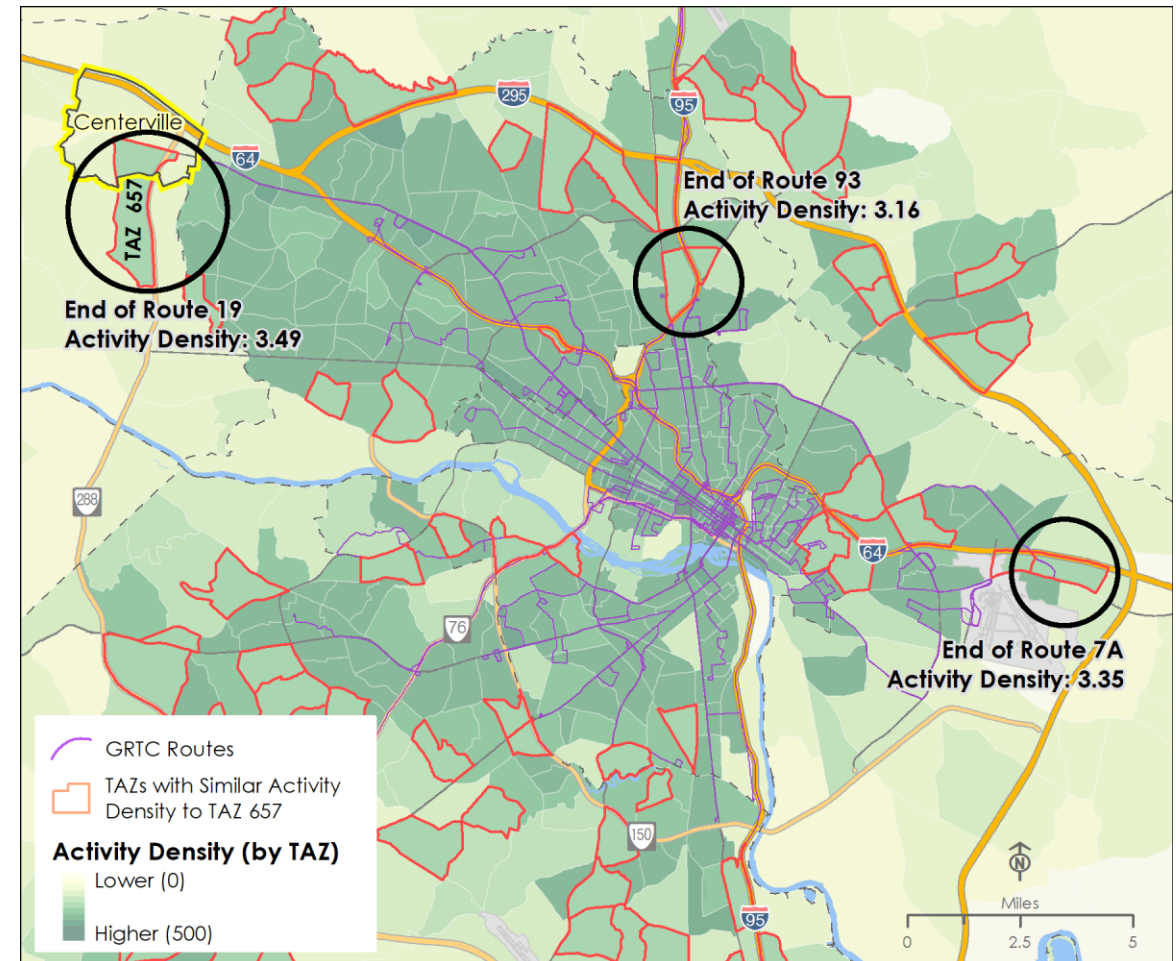
- **Evaluation of all trips between Centerville and the GRTC Route 19 corridor**
 - StreetLight uses cell phone data to produce trip origins and destinations
 - The number of trips beginning or ending in Centerville decline as you travel further from the Village
- **Evaluation of work trips to and from Centerville**
 - Longitudinal Employer-Household Dynamics (LEHD)
 - LEHD Origin-Destination Employment Statistics (LODES)
 - 3,717 commutes from GRTC service area to Centerville
 - 596 commutes from Centerville to GRTC Service Area
- **Conclusion:**
 - Centerville is a regional employment destination
 - Many trips originate or terminate in the GRTC service area – could potentially be served by fixed-route transit (bus)



Trips beginning or ending in Centerville

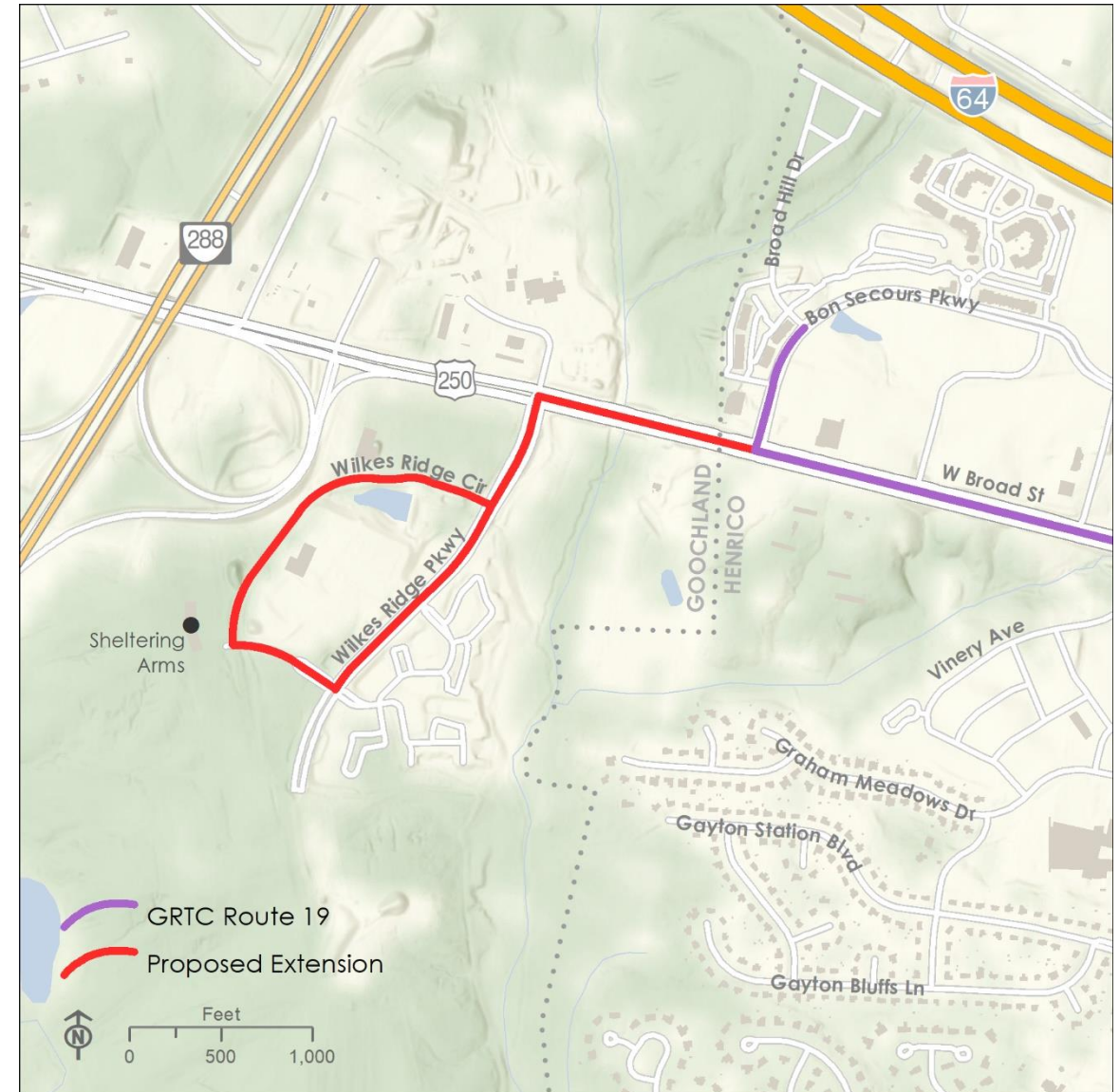
Comparison of Activity Densities Currently Served

- **Activity Density for Centerville TAZ #657 is 3.49**
- **Two TAZs in Richmond area identified with comparable activity densities to Centerville**
 - TAZ #322 = 3.15
 - TAZ #402 = 3.35
- **Both comparison TAZs are at the ends of GRTC routes**
 - Similar to Centerville
- **Both comparison TAZs have more commutes from them than to them**
 - Opposite of Centerville
- **Conclusion:**
 - Centerville exhibits similar characteristics to other areas currently served by GRTC fixed-route service



Recommended Alternatives

- **Supportive conclusions from analysis:**
 - Origin-Destination Analysis revealed many commute trips could be served by fixed-route transit
 - Comparison of Activity Densities to GRTC service area revealed Centerville has similar characteristics to areas currently served by GRTC
- **Extension of GRTC Route 19 to Wilkes Ridge development is most likely candidate for service**
 - Less than half a mile west of Bon Secours Pkwy (Route 19 terminus)
 - Proximity to higher density residential
 - Presence of pedestrian facilities
 - Extension previously presented in Coverage Concept for Expanded Services in GRTC Regional Public Transportation Plan (Completed May 2021)
- **Monitor locations for future consideration as development occurs:**
 - Centerville Village Core
 - Park and Ride lot at 623 & I-64
 - West Creek Office Park



- Do you agree with the pedestrian recommendations?
- Do you agree with the bicycle recommendations?
- Do you agree with the transit recommendations?
- Which of the recommendations do you see as being most important?
- Were there recommendations you had expected to see that are not included?

Additional Input

Additional Input on the Goochland County UDA Multimodal Planning Study can be provided to:

Tom Coleman | Principal Planner

Goochland County

TColeman@GoochlandVa.us

804-556-5865

Input will be accepted through May 25, 2022

Contact Us

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Visit vtrans.org/about/GAP-TA for information about the
Growth and Accessibility Planning Technical Assistance Program

