MONTGOMERY COUNTY PLANNING COMMISSION
October 10, 2012

SITE VISIT AGENDA

NO SITE VISITS SCHEDULED

5:30 PM **Dinner @ Amelia's, Cambria Street**

MONTGOMERY COUNTY PLANNING COMMISSION
October 10, 2012 @ 7:00 P.M.
Board Room, Government Center

A G E N D A

CALL TO ORDER:

DETERMINATION OF A QUORUM:

APPROVAL OF AGENDA:

APPROVAL OF CONSENT AGENDA:

PUBLIC ADDRESS:

PUBLIC HEARING:

OLD BUSINESS:

NEW BUSINESS:

- Resolution for Walt Haynes
- Appoint nominating committee

WORKSESSION:

- Shawsville Area Route 11/460 Corridor Study Presentation - Elijah Sharp, NRV PDC
- Zoning Ordinance Amendments:
  - Keeping of chickens in residential zoning districts- Brea Hopkins

LIAISON REPORTS:

- Board of Supervisors- Chris Tuck
- Agriculture & Forestal District- Bob Miller
- Blacksburg Planning Commission – Frank Lau
- Christiansburg Planning Commission – Bryan Rice
- Economic Development Committee- John Tutle
- Public Service Authority – Joel Donahue
- Parks & Recreation- Cindy Disney
- Radford Planning Commission- Bob Miller
- School Board- Bill Seitz
- Planning Director's Report- Steven Sandy
  - Discussion of joint meeting with Blacksburg & Christiansburg Planning Commission
  - Annual PDC Dinner in Pulaski County
  - Discussion of CPEAV Conference in Lynchburg

-OVER-

MEETING ADJOURNED:

UPCOMING MEETINGS:

October 17, 2012	Planning Commission Site Visits (CANCELLED) Planning Commission Regular Meeting (CANCELLED)
October 25, 2012	Annual PDC Dinner- Bull & Bones at the River (6:30pm Reception, 7:00 pm Dinner)
November 14, 2012	Planning Commission Public Hearing
November 21, 2012	Planning Commission Site Visits (To be determined) Planning Commission Regular Meeting (7:00 pm)

MONTGOMERY COUNTY PLANNING COMMISSION
CONSENT AGENDA
October 10, 2012

A. APPROVAL OF MINUTES

- September 12, 2012

ISSUE/PURPOSE:
The above listed minutes are before the Planning Commission for approval.

B. SCHEDULE THE FOLLOWING ITEMS FOR PUBLIC HEARINGS BEFORE THE PLANNING COMMISSION ON NOVEMBER 14, 2012 AND BOARD OF SUPERVISORS ON NOVEMBER 26, 2012

An ordinance amending Chapter 10 entitled Zoning, Section 10-41 of the Code of the County of Montgomery, Virginia by allowing the keeping of chickens as a permitted accessory use on property zoned Residential (R-1, R-2, or R-3), Planned Unit Residential (PUD-Res), Planned Unit Development-Traditional Neighborhood Development (PUD-TND) and amending Chapter 10 entitled Zoning, Section 10-61 by defining Residential Chicken Keeping.

RESOLUTION OF APPRECIATION

WALTER "WALT" HAYNES

WHEREAS, Walter "Walt" Haynes provided dedicated and distinguished service to the people of Montgomery County as a member of the Montgomery County Planning Commission from March 2005 until his death on June 9, 2012; and

WHEREAS, Mr. Haynes provided leadership while serving as elected Chair (2012), and Vice-Chair (2008, 2009, 2011) of the Planning Commission; and

WHEREAS, Mr. Haynes commitment to better planning was evidenced by his participation in the development of the six (6) village plans, the Village Transportations Links Plan (VITL) 2007, by his service as liaison to the Parks and Recreation Committee and the Blacksburg Planning Commission; as well as his achievement of Certified Planning Commissioner; and

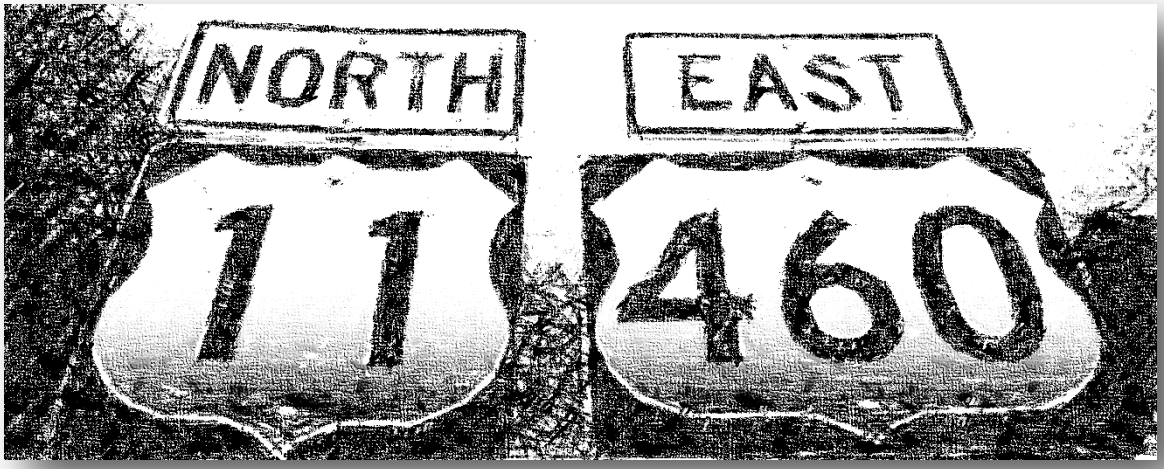
WHEREAS, the wise council of Mr. Haynes, which has always been for the betterment of the citizens of Montgomery County, will be missed by his fellow Planning Commissioners and Planning Staff.

NOW THEREFORE, BE IT RESOLVED, that the Montgomery County Planning Commission hereby expresses its appreciation for the outstanding, and dedicated service that Walter "Walt" Haynes provided to the people of Montgomery County.

Frank Lau, Chair	Joel Donahue, Vice-Chair
John Tutle, Secretary	Cindy Wells Disney
Robert Miller	Bryan Rice
William Seitz	Jeanne Stosser

Shawsville Area

Route 11/460 Corridor Study



July 2012

For: Montgomery County Planning Department
By: New River Valley Planning District Commission

Disclaimer

This report was prepared by the staff of the New River Valley Planning District Commission through funding assistance received from the Federal Highway Administration (FHA), United States Department of Transportation (USDOT), and the Virginia Department of Transportation (VDOT) through VDOT's Rural Transportation Planning Assistance Program.

The contents of the document reflect the views of the authors and do not necessarily reflect the official views or policy of the Federal Highway Association or the Virginia Department of Transportation. This document does not constitute standard, specification, or regulation. Federal Highway Association and Virginia Department of Transportation acceptance of this document as partial fulfillment of work program obligations does not constitute endorsement/approval of the need for any recommended improvements, nor does it constitute commitment to fund any such improvements. Additional project level assessments and/or studies of alternatives may be necessary.

Acknowledgement

Pursuant Montgomery County TRN 2.4.1 Corridor Planning and Access Management: In cooperation with the New River Valley Planning District Commission, develop a regional approach to the corridor planning process (e.g. The 177 Corridor Plan) which incorporates access management techniques. In March of 2010, the Montgomery County Planning Department and New River Valley Planning District Staff selected the Route 11/460 Corridor within the Shawsville area, as defined within the boundary of the 2004 Shawsville Village Plan.

Shawsville Area Transportation Study

Roanoke Road - Route 11/460

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Section 1 – Introduction

1.1 Introduction

The Route 11/460 Corridor Study evaluates performance and safety concerns within the Shawsville Village Area. The study specifically applies the Virginia Department of Transportation's (VDOT) Access Management Standards; American Association of State Highway and Transportation Official's (AASHTO) minimum sight distance requirements for decision, intersection, stopping and passing; the US Department of Transportation's (USDOT) Speed Concepts Guide; and the Federal Emergency Management Agency's (FEMA) Mitigation Best Practices along the corridor.

The New River Valley Planning District Commission partnered with the Montgomery County Planning Department to identify specific transportation challenges within the Shawsville area. The corridor was evaluated for design inadequacies based on the criteria provided by VDOT, AASHTO, USDOT, and FEMA. Recommendations were developed for each of the locations that currently do not meet the criteria.

Section 4, Improvement Options, identifies potential strategies for the corridor. Appendix A provides maps that illustrate existing challenges. Appendix B provides illustrations of a conceptual corridor plan. Together, Section 4 along with Appendix A and Appendix B can be used by County and VDOT staff to develop alternative strategies for the corridor.

1.2 The Study Area

The study area is defined as the portion of Route 11/460 that falls within the 2004 Shawsville Village boundary (amended in 2010); including intersecting roadways, adjoining parcels of land, and all of the entrances for the length of the corridor. In 2004, the community of Shawsville was designated by Montgomery County as a distinct planning area. In 2007, the Village transportation Links Plan was created to develop a comprehensive bicycle, pedestrian, and greenways master plan. The portion of Route 11/460 that runs within the study area is uncommonly flat and straight, making it unique to the surrounding area. Currently, there are no signalized intersections along the 4-Lane rural divided highway. The image below represents the area described:

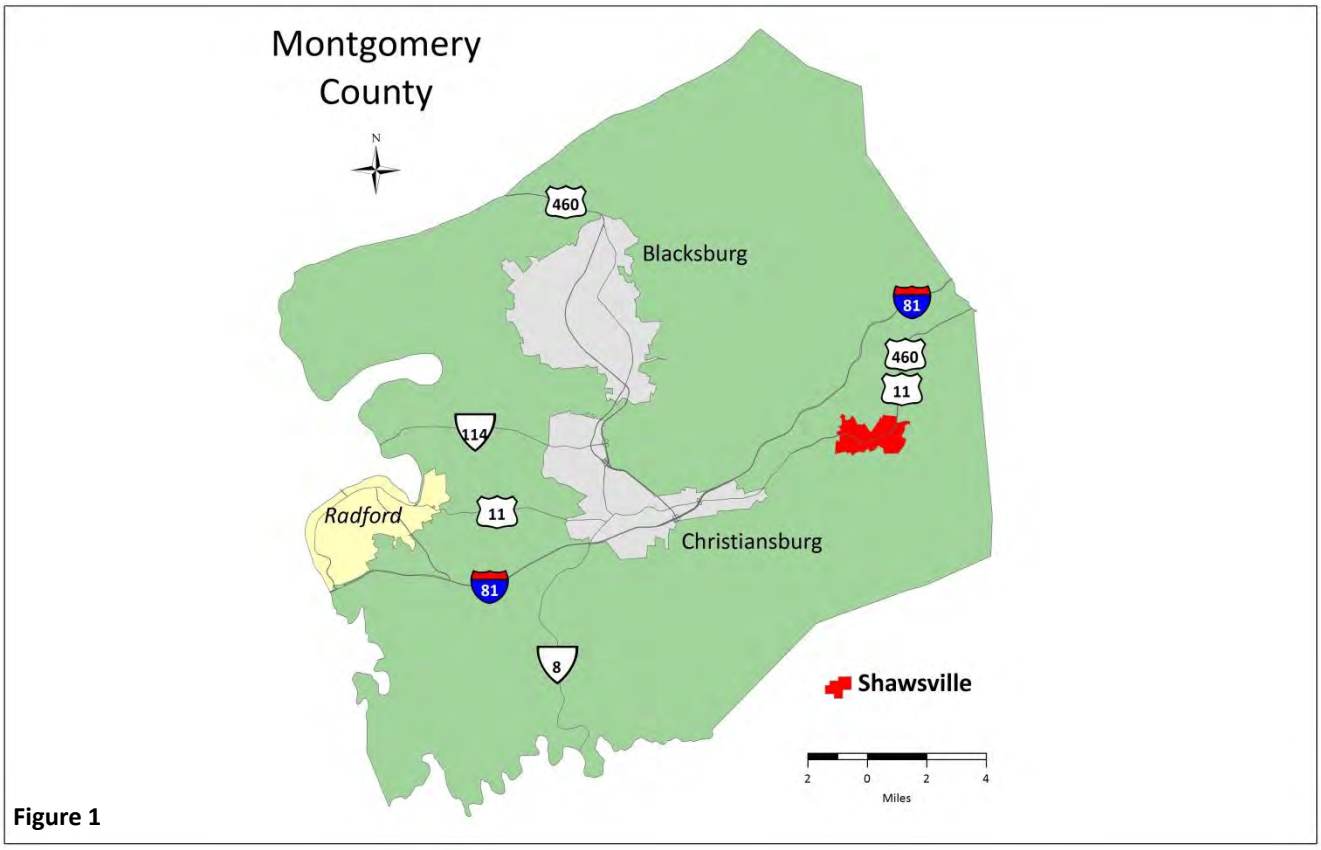


Figure 1

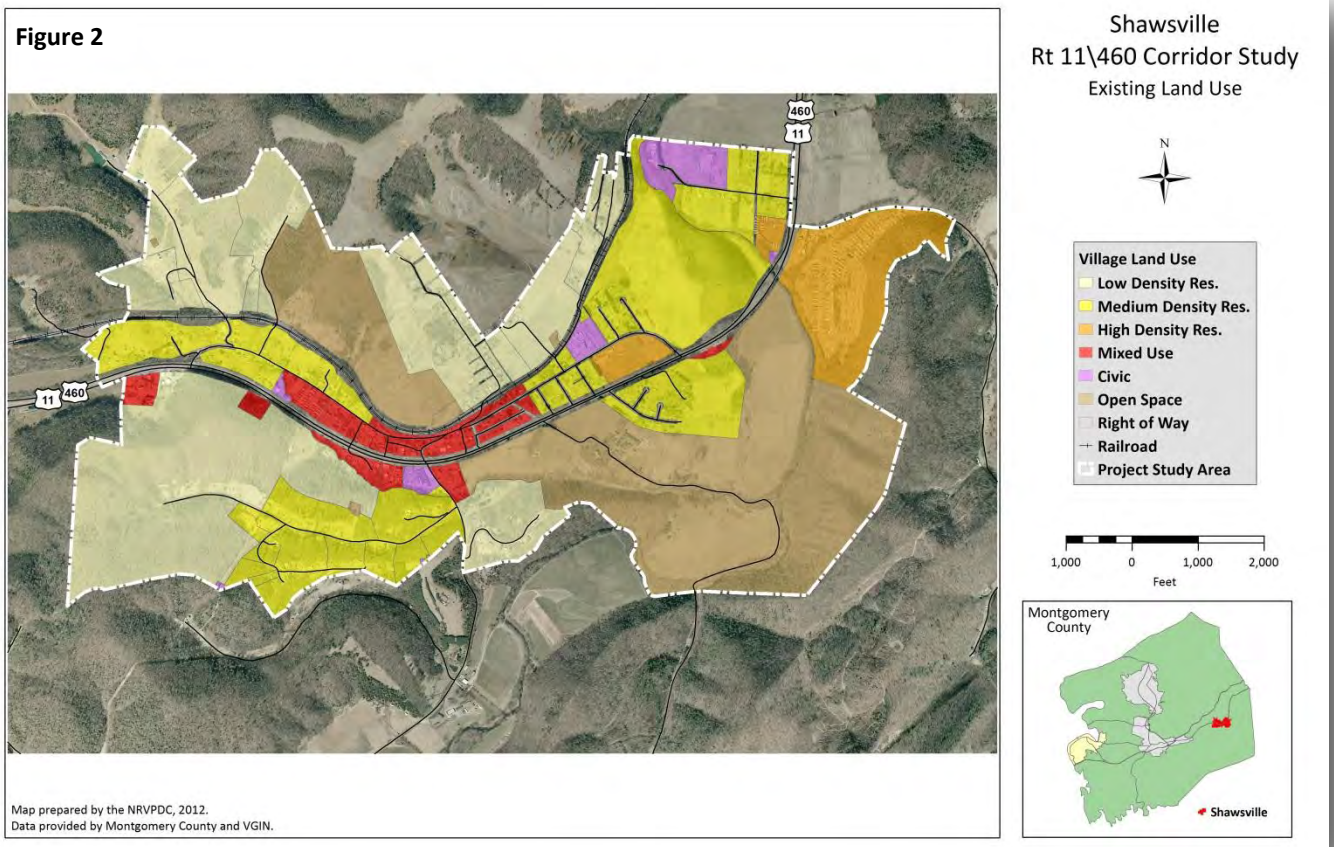
Section 2 – Corridor Overview

2.1 Corridor Significance

Route 460 is distinguished in the VTrans 2035 Plan, the Commonwealth's long-range transportation plan, as a Corridor of Statewide Significance. Also known as the Heartland Corridor, Route 460 is very important to Virginia for moving freight and connecting local communities. In Montgomery County, the corridor provides a valuable connection between major employment centers in Blacksburg/Christiansburg and Roanoke/Salem areas. The route also plays a key role in providing alternative routing for traffic when I-81 is delayed due to an accident or inclement weather.

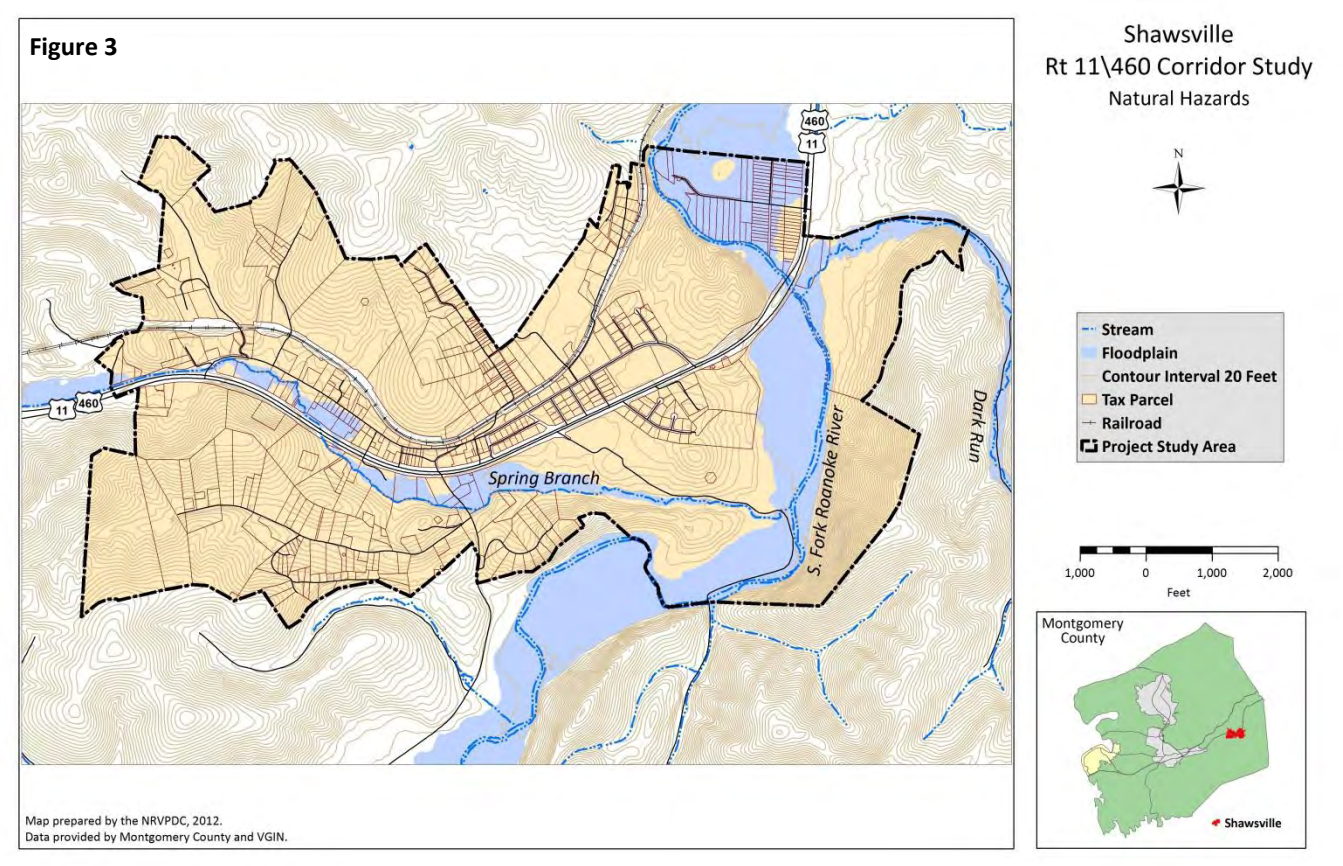
2.2 Existing Land Use

The Shawsville area is predominately comprised of mixed use, medium density residential, and open space land uses. Route 11/460 serves as a primary roadway and bisects the village area into nearly equal halves. Higher density parcels are generally located along the corridor and lower density parcels are generally located farther away.



2.3 Natural Hazards

The community of Shawsville is situated along the base of a natural valley, which increases the risk of flooding. Route 11/460 traverses relatively level ground along the base of mountains surrounding the community. Among the natural hazards that could create adverse impacts along the corridor, flooding perhaps poses the most significant threat. In addition, the Shawsville area typically experiences precipitation evenly throughout the year, creating the possibility of flooding during any season.



Spring Branch Creek runs along Route 11/460 from the west and intersects with the Roanoke River that runs north/south. Dark Run Creek intersects the Roanoke River from the east. Based on FEMA floodplain data, there are currently two locations along the 11/460 corridor that are susceptible to flooding. In addition, some of the highest risk areas occur within higher density residential areas to the northeast.

In addition to the floodplain (shown above), flooding also occurs during heavy rainfall periods in low points, also known as the "sag." The sag is where water is concentrated as a result of gravity. Mitigation strategies for flooding are evaluated in section 4.6 of this study.

2.4 Performance and Safety Concerns

Performance and safety are priority concerns, as land use and land access to different parcels continues to change. Roadway intersections are among the most pressing concerns along the Route 11/460 corridor. Intersections and driveways require vehicle operators to make decisions for lane selection and adjust their speed, all while being aware of other traffic movement. Traffic volume and speed can create different levels of comfort for vehicle operators (through traffic vs. local traffic).

Route 11/460 locally functions as a principal corridor and should provide greater movement capabilities with limited access. According to 2009 VDOT traffic tables, there are approximately 7,500 vehicles that pass through the Shawsville area each day. Traffic volume increases significantly when accidents and construction occur on I-81. Although the volume of traffic is acceptable for a 4-lane rural divided highway, capacity and performance can be impacted greatly by inadequate land access management.

As a general rule, private driveways and commercial entrances should not be located near busy intersections, but rather within the less active areas between. Entrances along the corridor should be located at very consistent, predictable, and strategically planned locations minimizing traffic conflict points. Results of good intersection/access management include: preserving the function of the roadway and local investment, and improving safety and aesthetics. Consequences of poor intersection management over time may include: producing traffic congestion, increasing the risk of crashes, limiting flexibility to improve conditions, losing customers, and decreasing property values.

2.5 Transportation Choices

With the exception of Ride Solutions, a free carpool matching service for citizens, transportation choices are currently limited in the Shawsville area. There are currently 14 participants that utilize the Ride Solutions program. Ride solutions works with individuals on a one-on-one basis, and with employers to create company-wide alternative transportation programs. Additional information about the program is available online here: http://www.ridesolutions.org/index.asp.

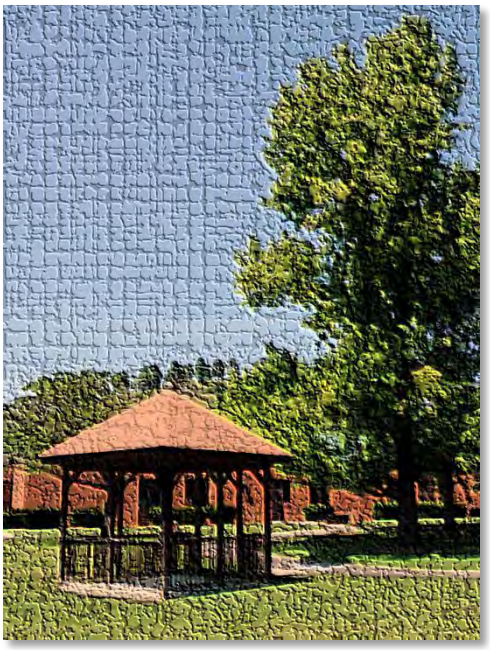
Currently, there are no public trails or shared roadways for bicyclists. Sidewalk infrastructure is scarce, and there are no pedestrian crosswalks traversing Route 11/460. In addition, there are no public transportation routes that utilize the Route 11/460 corridor. The Shawsville area is bypassed by the Smart Way bus route that travels via Interstate 81.

The Shawsville area includes an elementary school, a public library, and a YMCA facility that may benefit from the development of pedestrian and bicycle accommodations. Interconnecting the existing businesses with sidewalks and trails could reduce the number of daily short vehicle trips by allowing residents and visitors to park once and walk to additional destinations.

Section 3 – Existing Plans

3.1 Planning and Zoning Ordinances

The Route 11/460 Corridor Study was developed to address existing Code of Montgomery County §10-1 Title, Purpose and Intent, item 2(f). The Code reads: "*Protect against overcrowding of land, undue density of population in relation to the community facilities existing or available, obstruction of light and air,* ***danger and congestion in travel and transportation, and loss of life, health or property from fire, flood, panic or other dangers.***" The study utilizes VDOT, USDOT and AASHTO guidance to evaluate danger and congestion in travel and transportation. Resources from FEMA provided guidance on health, property, and flooding.



In addition, Montgomery Code §8-152(d) defines access as it relates to new streets for subdivisions. In general, entrance types are not differentiated in the current code. New streets and commercial entrances are both subject to the Virginia Department of Transportation's Access Management Regulations. Existing code could reference VDOT Access Management Regulations or new code could identify specific access management applications preferred by the county.

3.2 Shawsville Village Plan

In January 2007, nearly 500 surveys were distributed to households in Shawsville. The survey asked residents what they did or did not like about Shawsville, what they would change, and what they felt the County government needed to know. Survey respondents said that they love the rural, quiet, small town atmosphere in Shawsville. Many also liked its location: close to Christiansburg, Roanoke, and Salem, but distant from industrial areas. When asked what they would change or improve, residents suggested improving transportation safety and access to public transportation, and creating recreational opportunities for both the young and elderly.

Community visioning sessions provided the public an opportunity to share potential goals for the future of Shawsville. Transportation was identified as a particular area of interest. Residents felt that traffic safety on local roads needed improvement, public transit should be available, and pedestrian/bike/golf cart connections were needed to public facilities.

The 2000 Census data confirmed the lack of transportation options regarding travel to work. Out of 485 workers, 86% drove to work alone and 8% carpooled. Between 2007 and 2008, a volunteer van service and the Smart Way bus provided services in Shawsville. Both services were later discontinued due to the lack of ridership.

The following transportation related policies were developed in meetings with village citizens. The policies are intended to guide the actions of County and State Agencies to achieve preservation and development of Shawsville in accord with the Village Plan:

SVP 1.7.4 Minimize the Impacts of Road Improvements.
Evaluate and minimize the impact on historic structures from and publicly or privately funded road or streetscape improvements within the planning area.

SVP 1.8.1 Avoid Reverse-Frontage Development.
New development adjacent to US 460/11 and on Old Town Road should face toward the respective road.

SVP 1.8.2 Manage Access.
Develop and implement an access management plan along US 460/11 to limit the number of access points on the road, consistent with the land use and design policies for this corridor.

SVP 1.8.3 Encourage Connectivity.
Encourage inter-parcel connections between all sites along US 460/11 for both vehicles and pedestrians, including new connections to existing neighborhoods that need better and safer access.

SVP 1.8.4 Calm the Traffic.
Calm the traffic that flows into adjacent residential areas through the use of traffic-calming devices and street design, and to provide safe pedestrian crossings.

SVP 10.1 Pedestrian and Vehicular Safety.
Promote safe pedestrian and automobile travel along US Route 460/11 and other roads in the village.

SVP 10.2 Public Transportation.
Provide access to public transportation and alternative transportation options (bicycling, hiking/walking, golf carts, etc.)

SVP 10.3 Recognize that Roadways Are Public Spaces.
This plan recognizes that public roadways are not just conduits for transporting people and vehicles. Rather, they are public spaces with important social and cultural functions, including viewing the community and meeting neighbors.

3.3 Village Transportation Links Plan

In 2007, Montgomery County prepared the Village Transportation Links Plan (VITL). The purpose of the plan was to develop a comprehensive Bicycle, Pedestrian, and Greenways Master Plan for the villages designated in the 2004 Montgomery County Comprehensive Plan. Functioning as an element of the Comprehensive Plan, the VITL plan establishes a vision for non-motorized transportation access and mobility within and between each of the 7 villages.

The planning process for the study involved a number of research and outreach efforts that included: a field analysis, public and key stakeholder input, and developing a plan for the proposed network. The Shawsville Village community workshops identified the following connectivity issues:

- Connecting the fairly dispersed pattern of settlements together and to the schools and library.
- Challenges with crossing Rt. 460 – explore possibility of underpass at river crossings, pedestrian overpass or traffic light at Library crossing.
- Landowner interest in connecting middle/elementary schools – roughly 25% of the area population is school aged children.
- Concern over increased traffic from the potential site of the NS intermodal facility.
- Potential greenway along Roanoke River.

The VITL concept for Shawsville (Figure 4, page 9) is to connect residential areas to the Meadowbrook Library/YMCA. The basic framework included:

- Creating a parallel system to Rt. 460 that connects the historic residential areas and the schools to the library through a new multi-use trail and sidewalks along Old Town Road.
- Adding sidewalks to residential areas not located in the village core.
- Adding paved shoulders to Rt. 460 for direct access to regional destinations.

In addition to the items above, a traffic signal location was identified along Route 460 that would provide a safe pedestrian crossing near the library. A right-of-way analysis along Old Town Road for the purpose of installing sidewalk was also recommended. Figure 4 provides a graphic that illustrates the planning elements in the VITL plan. In 2011, the Dollar General store installed a crosswalk across Alleghany Spring Road; however, other VITL projects have not begun.

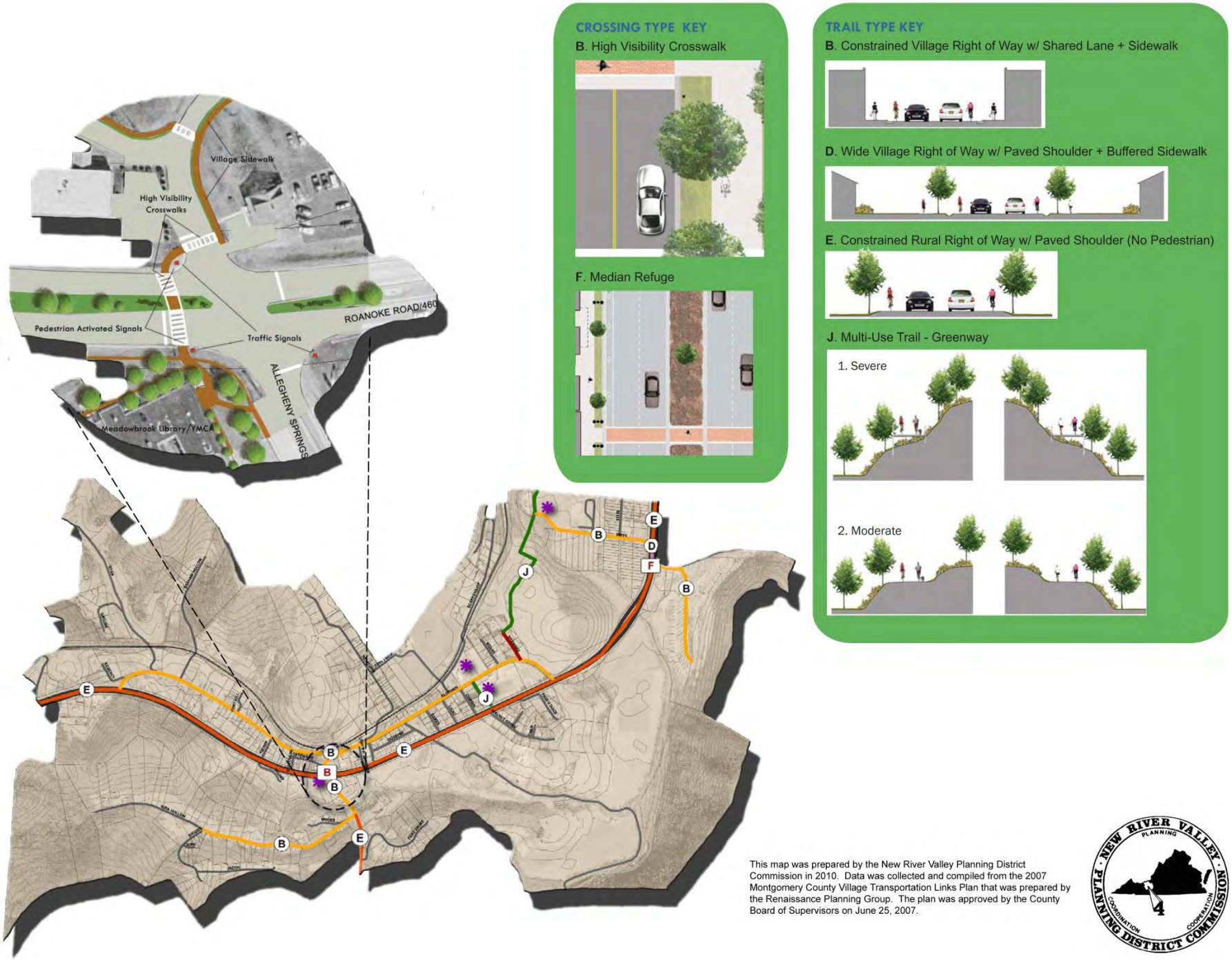
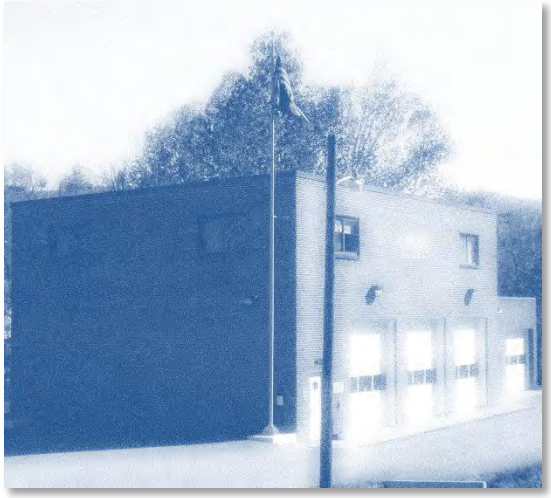

CROSSING TYPE KEY
B. High Visibility Crosswalk
F. Median Refuge
TRAIL TYPE KEY
B. Constrained Village Right of Way w/ Shared Lane + Sidewalk
D. Wide Village Right of Way w/ Paved Shoulder + Buffered Sidewalk
E. Constrained Rural Right of Way w/ Paved Shoulder (No Pedestrian)
J. Multi-Use Trail - Greenway
1. Severe
2. Moderate
Village Sidewalk
High Visibility Crosswalks
Pedestrian Activated Signals
Traffic Signals
ROANOKE ROAD/460
ALLEGHENY SPRINGS
Meadowbrook Library/YMCA
This map was prepared by the New River Valley Planning District Commission in 2010. Data was collected and compiled from the 2007 Montgomery County Village Transportation Links Plan that was prepared by the Renaissance Planning Group. The plan was approved by the County Board of Supervisors on June 25, 2007.
NEW RIVER VALLEY PLANNING DISTRICT COMMISSION
PLANNING
COORDINATION
COOPERATION

Figure 4

Section 4 – Improvement Options

4.1 Developing a Local Blueprint

Recent Transportation studies show that as roadway improvements are made, the accessibility within a community is increased. This tends to increase land value and promote land use changes (from agriculture or residential to commercial or industrial) that in-turn increase local traffic. As traffic increases so does the potential for conflicts and the traffic movement begins to deteriorate. Transportation and land use needs change and directly support and influence community economic development strategies.



The local blueprint for future land use and land access should be designed and planned in a way that has a positive impact on qualitative measures of community life. Federal funding trends indicate that particular attention will be paid to the degree in which projects contributed significantly to: broaden traveler mobility through intermodal connections, enhance job commuting options, or improve connections between residential and commercial areas. Access management applications would improve the connections between residential and commercial areas; furthermore, create opportunities along the Route 11/460 Corridor for bicycle and pedestrian applications. Safety improvements offer qualitative possibilities for the community.

The Federal Highway Administration describes the characterization of rural highways as low-density. Typical land uses include: gas stations, small convenience stores, industrial, and farm land. In some cases, there are large expanses of undeveloped property. Pedestrian and bicycle traffic volumes are typically low. Although the density of parcels naturally offers more distance between entrances, rural areas may be subject to development in the future. The following access management principals are recommended to help improve safety:[1]

- *Early communication between local government staff and all stakeholders.* As development occurs, a potential concern is the subdivision of large properties near rural intersections.
- *Provide adequate vehicle storage depth for vehicles exiting the main roadway.* This will minimize the speed differential between through traffic and vehicles slowing to turn into an entrance.

[1] Federal Highway Administration, (February 2010). *FHWA-SA-10-002 – Access Management in the Vicinity of Intersections.* Retrieved from: http://safety.fhwa.dot.gov/intersection/resources/fhwasa10002/

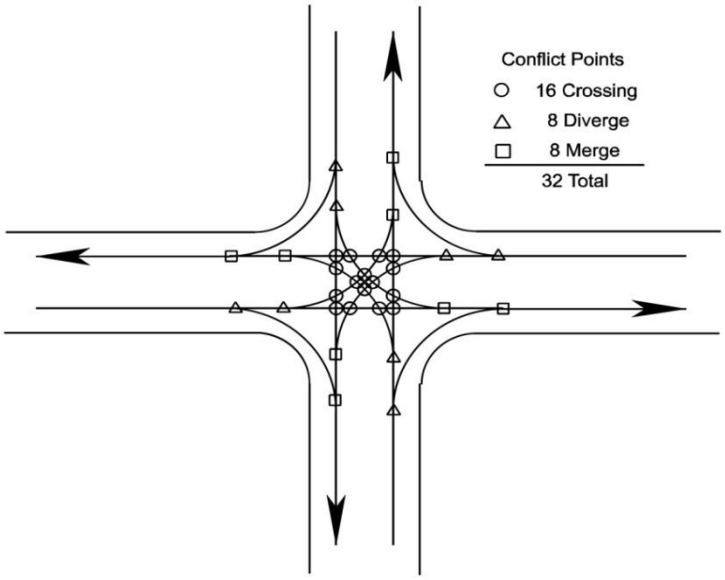
- *Pave the shoulders near entrances.* This will provide additional entry and exit width within the functional area of the intersection.
- *Create frontage roads in parallel with the main roadway in higher traffic generating areas.* This solution can help eliminate access points along the major roadway.

4.2 Access Management

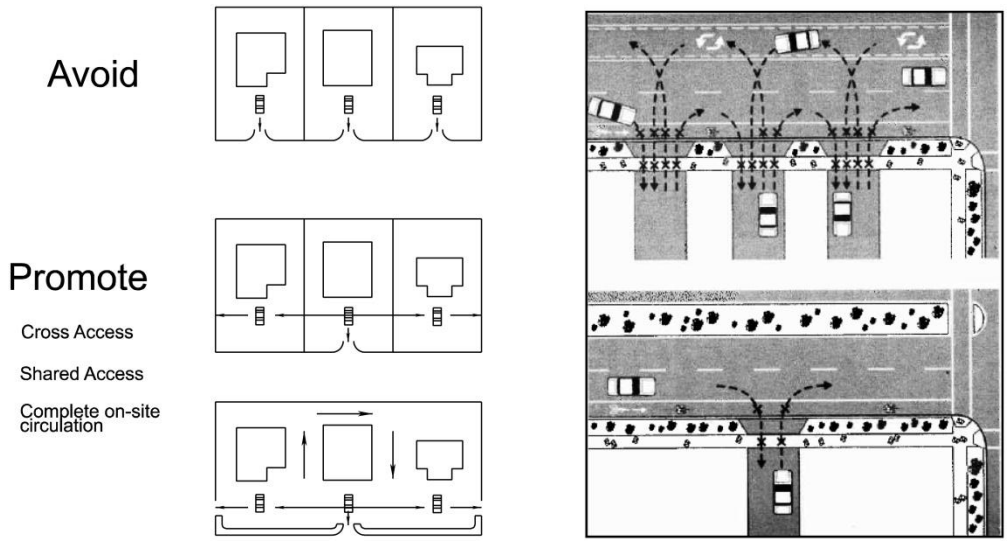
Access management is the systematic control of location, spacing, design and operation of driveways, entrances and intersections. Guidance is intended to improve the safety and capacity of existing roadways. Typical design principles for intersections outlined in the Virginia Department of Transportation Access Management Design Standards for Entrances and Intersections, Section 2, F-13 are:

1. Limit Number of Conflict Points
2. Coordinate Design and Traffic Control
3. Separate Conflict Points
4. Favor Major Flows
5. Segregate Movements
6. Accommodate Pedestrians and Bicyclists
7. Consider the Design Vehicle
8. Consider Roundabout Design

Access management methods, by design, are intended to preserve the integrity of the local roadway system. Ultimately, these methods extend the functional life and the public investment in corridors. Through the successful implementation of access management techniques, corridors will function at more consistent speeds – by limiting the number of potential conflict points produced by vehicles entering or exiting the roadway. The graphic below illustrates a typical intersection and the associated conflict points (*VDOT Access Management Design Standards for Entrances and Intersections*, Figure 2-1, F13. Effective October 14, 2009).



Inconsistent spacing of entrances and intersections decrease predictability for motorists, pedestrians and bicyclists. Roughly 75% of all accidents in the United States occur at entrances and intersections during left turning movements. By reducing the total number of entrances and intersections there is a direct reduction in the number of allowed conflict points along a corridor. The graphic below illustrates this standard for entrance design (*VDOT Access Management Design Standards for Entrances and Intersections*, Figures 4-7 & 2-15, F93 & F19. Effective October 14, 2009).



There are other important factors to consider when creating entrances or driveways such as: the angle of entry (90° preferred, 60° minimum), sight distance for vehicles entering the corridor, stopping sight distance for vehicles traveling along the corridor, turning radii for vehicles exiting the corridor, traffic signal and median crossing spacing. VDOT provides additional guidance and resources to plan for these factors.

The spacing of entrances, driveways and crossovers in a rural area is typically greater than that of an urban area. The spacing is greater due to lower population density, generally less traffic, typically larger parcels, and higher speed limits. Because the distances are naturally longer between destinations, there is a need for land access planning; such is the case for the Route 11/460 corridor.

In January 2012, the Access Management spacing standards were revised. Originally, the spacing standards for unsignalized crossovers/intersections and full access entrances were treated the same. The 2012 revision separates the two entrance types in order to address the different functionality of each. The proposed changes are anticipated to decrease the number of spacing exceptions within VDOT's service area. Table 1 (below) is from *Appendix F, VDOT Access Management Design Standards for Entrances and Intersections*, Table 2-2..

Route 11/460's Highway Functional Classification is Collector. All of the entrances are classified as Unsignalized Intersections/Crossovers (Xover), Full Access Entrances, or Partial Access One or Two Way Entrances.

Table 1

F-23

Minimum Spacing Standards for Commercial Entrances, Intersections, and Crossovers

Highway Functional Classification	Legal Speed Limit (mph)①	Centerline to Centerline Spacing in Feet			
		Signalized Intersections/ Crossovers②	Unsignalized Intersections/ Crossovers③	Full Access Entrances④	Partial Access One or Two Way Entrances⑤
Principal Arterial	≤ 30 mph 35 to 45 mph ≥ 50 mph	1,050 1,320 2,640	880 1,050 1,320	440 565 750	250 305 495
Minor Arterial	≤ 30 mph 35 to 45 mph ≥ 50 mph	880 1,050 1,320	660 660 1,050	355 470 555	200 250 425
Collector	≤ 30 mph 35 to 45 mph ≥ 50 mph	660 660 1,050	440 440 660	225 335 445	200 250 360
Local Street⑥	Commercial entrance spacing: See Figure 4-11.				

TABLE 2-2 MINIMUM SPACING STANDARDS FOR COMMERCIAL ENTRANCES, INTERSECTIONS AND CROSSOVERS ⑦

Considering the variety of options available, each location is unique and will need improvements tailored to the specific area of concern. Some effective access management applications for consideration are:

- Acquire access rights
- Close an existing median opening
- Replace a full median opening with a directional opening
- Install a driveway channelizing island: "pork chop"
- Install a division island within the upstream functional intersection: "u-turn"
- Install a left-turn or right-turn bay
- Develop joint and cross access between parcels
- Construct a frontage road
- Construct a reverse frontage road

Appendix B provides a conceptual corridor plan utilizing the access management methods described above. ***Access management does not only apply to new driveways and entrances. Improvements can be applied during regular corridor maintenance to address existing conditions.*** According to Virginia Code §33.1-198.1 the VDOT access management regulations and standards have been authorized. 24 VAC 30-73 Principal Arterial Regulations became effective on July 1, 2008 and 24 VAC 30-73 Minor Arterial, Collector, & Local Street Regulations became effective on October 14, 2009.

Currently, only 40% of the entrances and crossovers in the Shawsville area meet existing Access Management Regulations. The conceptual corridor plan, outlined in Appendix B, increases the number of entrances that meet code to nearly 90%. Most of the corridor can be improved by reducing the total number of Full Access entrances. Currently there are 16 Open Medians – the plan recommends reducing the total number of Open Medians to eight. In addition, reducing the number of entrances to each parcel, and providing joint access to parcels will provide even more improvement.

The corridor plan in Appendix B is a low-cost and low-impact approach; however, a few enhancements are needed to ensure proper functionality of the roadway. Potential enhancement applications include: installation of left turn lanes at open medians for u-turn maneuvers, relocation of entrance 41, and potentially installing a traffic signal at the intersection of Alleghany Spring Road. The Planning District Commission recommends that Montgomery County work with VDOT to select appropriate Access Management solutions for the Route 11/460 Corridor.

4.3 Speed Limit and Sight Distance

In addition to entrance spacing, the speed at which drivers operate their vehicles directly affects the mobility and safety of the corridor. The Federal Highway Administration acknowledges that the relationship between speed and safety is not clear cut; however, most agree that the risk of injuries increases with speed.

A basic concept is that drivers tend to read the road, not local plans. Because of this fundamental principal, design should come first. Typically, traffic control devices and geometric design influence the driving experience. Traffic control devices are used to regulate, warn and guide drivers through the use of signs, traffic signals, pavement markings and other devices. The geometric design process is used to define the location and dimensions of road infrastructure – which consists of the horizontal and vertical alignment, cross section features, intersection type and all the associated details.

For general planning purposes, roadways have two distinctive speeds: (1) design speed, and (2) posted speed limit. The design speed is always greater, as a factor of safety for motorists exceeding the speed limit. Appropriate speed limits are required for effective speed management. The limit should be accepted as reasonable by most drivers, keeping in mind that all drivers will not conform to posted speed limits. In essence, speed limits separate high-risk and reasonable behavior.

The Route 11/460 corridor, through the Shawsville area, has a posted speed limit of 45 mph to 60 mph. The speed is greater towards the outer areas and reduced as the intensity of land use increases towards the center. A Speed Profile may be appropriate in the Village area. A Speed Profile examines the design speed for the length of the corridor against with the posted speed limit. The actual speed of traffic would then be measured at different intervals to establish a mean speed for each section of the corridor. A reasonable speed limit would fall near the 85th percentile of the roadway users travel speed.[2] Because the same spacing is currently required for 35 mph – 45 mph, reducing the speed limit wouldn't necessarily create more land access (unless it was reduced to 30 mph).

[2] United States Department of Transportation, (September 2009). *Speed Concepts: Information Guide, FHWA-SA-10-001.* Retrieved from: http://safety.fhwa.dot.gov/speedmgt/ref_mats/fhwasa10001/fhwasa10001.pdf

Another limiting factor for corridor speed designation is sight distance. Drivers need visibility of the roadway to interpret conditions and respond with the appropriate action. The AASHTO Green Book identifies four types of sight distance: decision, intersection, passing (on two-lane roads), and stopping. Decision, intersection, and stopping are applicable along the Route 11/460 corridor.

Decision sight distance is defined by the AASHTO Green Book as: "The distance required for a driver to detect an unexpected or otherwise difficult-to-perceive information source or hazard in a roadway environment that may be visually cluttered, recognize the hazard or its potential threat, select an appropriate speed and path, and initiate and complete the required maneuver safely and efficiently." [3] This distance could be valuable for the Route 11/460 corridor to determine appropriate warning devices for heavily congested areas or areas prone to flooding. Table 2 (below) identifies AASHTO's recommended decision sight distances.

Table 2

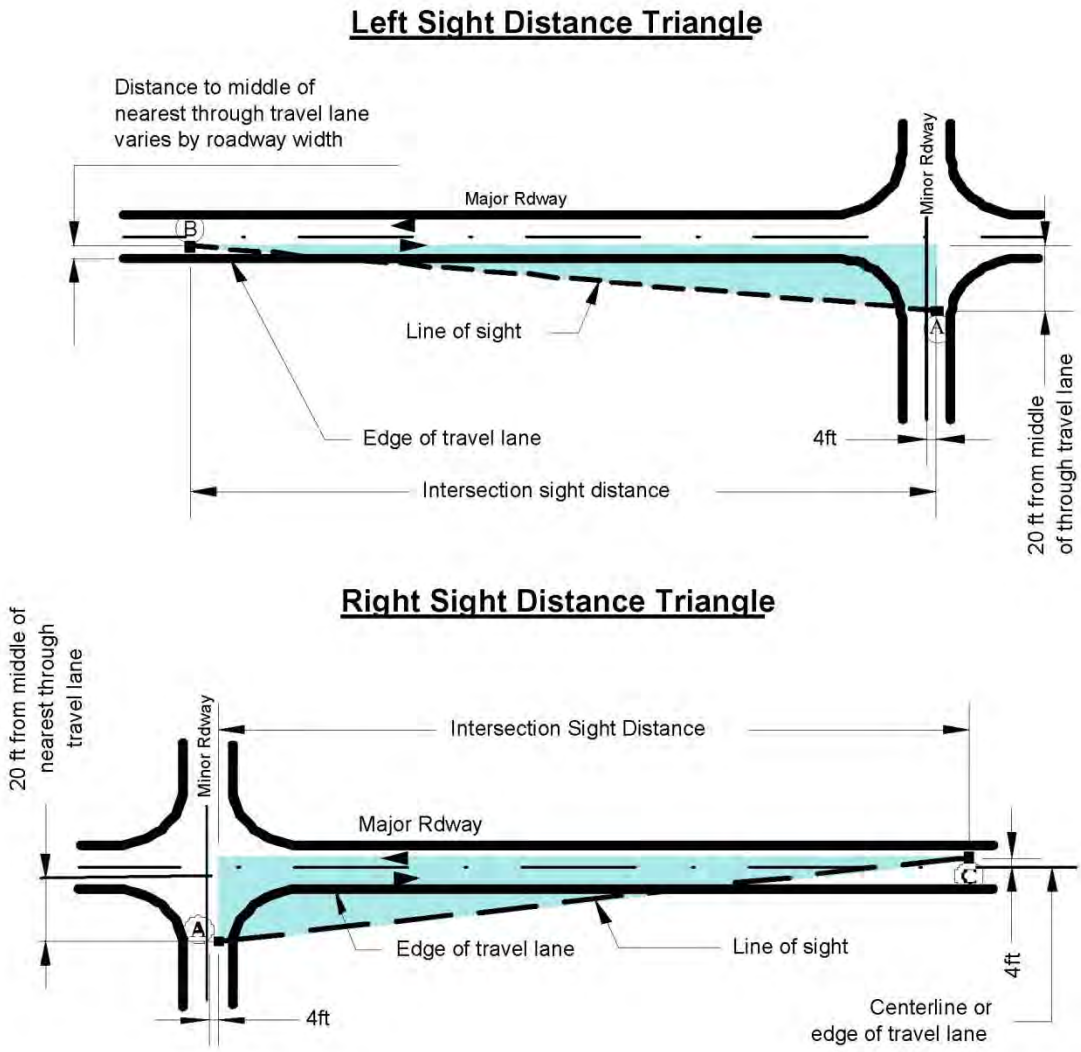
Design Speed (mph)	Decision Sight Distance for Avoidable Maneuver, (ft.)				
	A	B	C	D	E
30	220	500	450	500	625
40	345	725	600	725	825
50	500	975	750	900	1025
60	680	1300	1000	1150	1275
70	900	1525	1100	1300	1450

*Note: Avoidance Maneuvers
1. Avoidance maneuver A: Stop on rural road
2. Avoidance maneuver B: Stop on urban road
3. Avoidance maneuver C:Speed/path/direction change on rural road
4. Avoidance maneuver D: Speed/path/direction change on suburban road
5. Avoidance maneuver E: Speed/path/direction change on urban road

The core portions of the village, where parcel size is most compact, could utilize avoidance maneuvers B and E. The outer portions of the corridor, where the parcel size increases, could utilize avoidance maneuvers A and C.

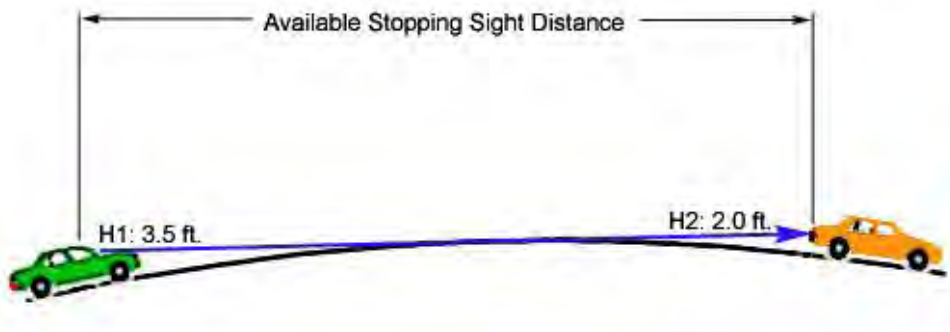
[3] Transportation Research Institute, Oregon State University, (February 1997). *Discussion Paper No. 8.A – Stopping Sight Distance and Decision Sight Distance.* Retrieved from: http://www.oregon.gov/ODOT/HWY/ACCESSMGT/docs/StopDist.pdf?ga=t

Intersection sight distance is measured along the major roadway and varies based on the existing speed limit. VDOT identifies decision points to represent the position of drivers along the roadway and establishes two sight distance triangles. The triangles reflect the necessary sight distance for vehicles to safely enter the major roadway. The figure below illustrates this concept.



Nearly 60% of the entrances located along the Route 11/460 corridor do not provide good intersection sight distance. The line of sight is often obstructed by neighboring or closely spaced entrances. 44% of the affected entrances could provide adequate sight distance if adjacent parcels shared entrances and entrance spacing was increased. 8% of the affected entrances lack adequate site distance due to a geometric deficiency and 6% of the affected entrances are currently obstructed by vegetation overgrowth.

Stopping is the most common type of sight distance because it is needed the entire length of every roadway. The criterion used to evaluate the stopping sight distance assumes: a driver reaction time of 2.5 seconds, a driver eye height of 3.5 feet, and an object height of 2.0 feet (tail lights of another vehicle). The image below illustrates this distance as it may be perceived on rolling terrain.



As a factor of safety, the vertical height criteria are set at 95% lower than the average driver height and vehicle tail light. AASHTO provides guidance on stopping sight distance. Table 3 reflects the requirements for various conditions on a relatively level roadway; however, depending on alertness, fatigue level, alcohol consumption, and age of the driver – the time varies from about 0.75 seconds to 1.5 seconds.

Table 3

Design speed (mph)	AASHTO design stopping sight distance criteria (feet)	Estimated stopping sight distance for mean driver (feet)	Estimated stopping sight distance for dry roadway conditions (feet)
15	80	40	75
20	115	60	110
25	155	80	150
30	200	105	190
35	250	135	235
40	305	165	285
45	360	200	340
50	425	235	400
55	495	275	465
60	570	320	535
65	645	365	605
70	730	415	680
75	820	465	765
80	910	520	850

In terms of speed, AASHTO's Guide for Achieving Flexibility in Highway Design states: "nominal deficiencies as great as 5-10 mph may not create an undue risk of increased crashes." Ultimately, the risk of crashes increases as the difference in speed between vehicles entering versus vehicles traveling along the corridor increases.

Approximately 60% of the entrances along the Route 11/460 corridor fall short of the AASHTO design stopping sight distance criteria. The close proximity of entrances along Route 11/460 creates inconsistent driving conditions. A vehicle trying to enter the roadway could be obstructing the view of another entrance less than 100 feet away. If a vehicle enters Route 11/460 when the entrance is obstructed a driver may not have sufficient time to react. AASHTO recommends a stopping sight distance of 360 feet for 45 mph roadways.

4.4 Potential Safety and Capacity Needs

The 2005 Virginia Highway Functional Classification, prepared by the Virginia Department of Transportation, classifies Route 11/460 as a Rural Major Collector. A Rural Major Collector is defined as a link to nearby larger towns or routes of higher classification, provides service to any county seat not on an arterial system, connects to larger systems not directly served by higher systems, and serves the more important intra-county travel corridors. The 11/460 corridor provides access to Interstate-81 (higher classification), the Town of Christiansburg (County seat), the Salem area (nearby larger towns) and connects to numerous local corridors throughout Montgomery County.

As a collector, the roadway is intended to provide land access and traffic circulation within residential, commercial, and industrial areas. The collector system distributes traffic from the arterials through the area to the motorist's ultimate destination. In addition, collectors should channel local traffic into the principal arterial system to optimize mobility.

The main growth is expected to be redevelopment, utilizing the new Traditional Neighborhood Design zoning district. Currently, there are no large industrial developments expected. Additional traffic generated within the Shawsville area will be limited.

Capacity improvements may need to be examined to support I-81 in the event of emergencies or lane closures. Currently, Route 11/460 is not 4-laned into Christiansburg. The photo on this page shows traffic backed up along the corridor a few miles before the existing choke point (4-Lane to a 2-Lane typical). The roadway could be improved to more efficiently support diverting traffic capacity. Additional safety considerations such as signage, signals, turn-lanes, and supporting facilities may also be appropriate.

In addition, an increase in freight traffic may occur due to the proposed Norfolk Southern Intermodal Facility nearby in Elliston. The additional traffic may have a positive impact on the local businesses; however, the new truck traffic may create some challenges for developing community improvements (bike trails, pedestrian crossings, streetscaping, etc.). In addition, more traffic without addressing access management and sight distance issues will increase the risk of crashes.

4.5 Alternative Transportation Choices

In 2005, Montgomery County worked with the New River Valley Planning District Commission to prepare the Eastern Montgomery County Public Transportation Needs Assessment. Public Transportation was identified as an issue by two groups working in the area, the Meadowbrook Planning Team and the Eastern Montgomery Service Providers Coalition. The special study was developed around guidance within the County's Comprehensive Plan, *Montgomery County 2025 (174, 2004) the Health and Human Service Goal 2.3: Transportation*, which stated the County will seek to: "Provide increased access to a (sic) variety of public transportation opportunities for all citizens, with a special emphasis on job-related transportation for the disabled and for lower income individuals and families."

A self-selecting survey was conducted as a part of the study that received nearly 100 responses. The survey specifically targeted persons felt to have transportation needs within Eastern Montgomery. The survey found that 72% of respondents would use public transportation to assist them in accessing services and meeting their shopping/recreational needs. 53% of respondents said that they would utilize public transportation for access to work. The study also found that the number of persons seeking better access to the Christiansburg and Salem areas were nearly equal.

In 2008, the Smart Way route was adjusted to pass through the Shawsville area. During the one-year trial run, only one rider took advantage of the services. Ridership also began to fall in the Christiansburg and Roanoke areas due to increased travel time. In 2009, the Route was discontinued and rerouted to I-81.

In 2007, a weekly volunteer van service began in the area. A handicapped accessible van was donated by Shelor Motor Mile, a local business, to provide services for Shawsville residents. The service focused on non-emergency medical, access to government buildings, and grocery stores. Similar to the Smart Way, the service lacked regular ridership. In 2011, the New River Valley Agency on Aging began providing services for qualifying seniors in the area.

4.6 Hazard Mitigation

The Federal Emergency Management Agency (FEMA) provides various levels of guidance to reduce the damages of flooding. The guidance provides recommendations for improving existing buildings, developing stormwater management plans, and making adjustments to land use policies.

Examples of improvements that can be made to buildings located in a floodplain are:

1. Elevate critical needs such as the furnace, water heater and electric panels
2. Install "check valves" in sewer traps to prevent flood water back-up
3. Seal basements and foundations with waterproofing compounds
4. Elevate structures above historical flood levels

Examples of stormwater management applications are:

1. Reduce impervious surfaces to reduce runoff velocity
2. Clear canals and waterways of vegetation and debris to increase volume by increasing the velocity (flow) rate
3. Increase channel capacity to manage 25 year to 100 year storms
4. Install stormwater infrastructure such as pipes, culverts, retention basins and ponds

Examples of land use policies are:

1. Allowing cluster development on sites located outside of the floodplain
2. Developing a water front park designed to attract channel overflow
3. Restricting further development within the 100 year flood plain
4. Realigning heavily used local transportation routes
5. Establishing Disaster Resistant Community Planning Committees (FEMA, Project Impact terminology) to communicate needs to the County

In June 2011, Montgomery County identified the Shawsville Area as a Planned Unit Development – Traditional Neighborhood Development Infill District. Also known as PUD-TND development, Section 10-32 of the County Code establishes policy to support traditional neighborhood design concepts and provide compact development options for residential land use. The purpose is to provide opportunities for the development of new neighborhoods that feature a mix of land uses and building types that are closely linked by a network of streets, sidewalks, formal and informal open spaces and trails that create an environment that is both pedestrian and transit friendly.

After examining local land use policies, Montgomery County has Code that supports cluster development outside of the floodplain, and that restricts further development within the floodplain. Some other policy guidance options may be considered to further protect assets located within the floodplain.

4.7 Integration of Transportation and Future Land Use Planning

Traditionally, transportation planning has focused primarily on the improvement of capacity by expanding the space of corridors to accommodate more volume. More recently, transportation planners are finding that improvements can also be made through good land use decisions that consider future mobility needs. Inefficient transportation and land use policy integration directly affect congestion, safety, reliance on automobiles, and increase environmental concerns.

For access management to be successful, the methodology should be applied to all modes of transportation including transit, bicycle and pedestrian. Land use techniques that reduce the need for travel such as nodal or "hub" and mixed use development offer the flexibility to have choices in developing a community which residents have efficient transportation choices.

4.8 Pin-Pointing Potential Improvements

Potential improvements and observations in the Shawsville area include but are not limited to:

1. Reducing the number of Open-Median crossings – this reduces the number of Full Access Entrances and decreases the necessary spacing from 660 ft to 305 ft. (Access Management)
2. Reducing the number of entrances – particularly on parcels that have multiple entrances. (Access Management)
3. Creating access between parcels and joining entrances – particularly between similar land uses. (Access Management)
4. Add turn lanes at open medians and local roadways. (Safety)
5. Perform a signal determination at the intersection of US Route 11/460 and Alleghany Springs Road. (Access Management and Safety)
6. Remove vegetation growth that limits proper sight distance at intersections. (Sight Distance and Safety)
7. Install advanced warning signage/devices to alert motorist of flood prone areas during heavy rainfall periods. (Hazard Mitigation and Safety)
8. Reducing the speed limit may provide a benefit to Partial Access Entrances but would not improve sight distances. (Access Management and Safety)

Section 5 – Funding Opportunities

5.1 Existing Funding Mechanisms

As a US Highway, Route 11/460 is eligible for Federal funding. The Surface Transportation Program provides apportionments to each State based on lane miles, total vehicle miles traveled, and ratio of estimated tax payments. States then sub-allocate the funding – setting aside certain percentages for safety, transportation enhancements, urbanized areas, and a small amount is reserved for other areas deemed necessary. Eligible programs are matched at a rate of 80% federal and 20% local and include:

- Construction, reconstruction, rehabilitation, resurfacing, restoration, and operations improvements for highways and bridges.
- Capital costs for transit projects eligible for assistance including vehicles and facilities.
- Carpool projects, fringe and corridor parking facilities and programs, bicycle and pedestrian walkways, and modification of public sidewalks to comply with ADA compliance.
- Highway and safety infrastructure improvements and programs, hazard eliminations, projects to mitigate hazards caused by wildlife, and railway-highway grade crossings.
- Transportation Enhancement activities.
- Infrastructure-based intelligent transportation systems capital improvements.

Currently, funding opportunities are somewhat limited for transportation improvements that do not qualify for federal revenue.

5.2 Potential Funding Sources

Federal funding programs provide the best opportunity to make transportation improvements within the Shawsville area. For example, the Highway Safety Improvement Program funding could be used to determine the need for traffic signals, address poor sight distance locations, and install traffic calming measures. Transportation Enhancement funds can be used to construct bicycle and pedestrian improvements. Surface Transportation and local maintenance funding can be utilized to implement the proposed access management plan.

States may also use up to 10% of their Federal apportionments at a 100% federal share match for traffic control signalization, traffic circles(roundabouts), safety rest areas, pavement marking, commuter carpooling and vanpooling, rail-highway crossing closure, or installation of traffic signs, traffic lights, guardrails, impact attenuators, concrete barrier endtreatments, breakaway utility poles, or priority control systems for emergency vehicles or transit vehicles at signalized intersections.

FEMA provides funding opportunities for preparedness and disaster relief. FEMA also manages the National Flood Insurance Program, which makes federally-backed flood insurance available in communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. The insurance is available in most communities through insurance agents.

Appendix A

Access Management Corridor Evaluation

Initial analysis of entrances along the Route 11/460 corridor indicates that: 44% fail, 20% are relatively close, and 36% meet the 2012 Access Management standards. Comparing the 2009 standards: 62% failed, 11% were relatively close, and 27% met the standard.

Route 11/460 Entrances - Shawsville Village Area

	Point	Posted Speed Limit (mph)	Existing Entrance Type	Code min. Spacing (ft)	Existing Spacing (ft)	Existing Rating
Route 460/11 West	OM-P	55	Xover	660	1270	GREEN
	P	55	FA	445	1270	GREEN
	OM-O	55	Xover	660	414	RED
	1	55	FA	445	414	YELLOW
	2	55	PA	360	350	YELLOW
	OM-N	55	Xover	660	2679	GREEN
	3	55	FA	445	2679	GREEN
	OM-M	45	Xover	440	634	GREEN
	OM-L	45	Xover	440	789	GREEN
	4	45	FA	335	789	GREEN
	5	45	PA	250	364	GREEN
	6	45	PA	250	325	GREEN
	OM-K	45	Xover	440	231	RED
	7	45	FA	335	231	RED
	8	45	PA	250	257	GREEN
	9	45	PA	250	109	RED
	10	45	PA	250	142	RED
	OM-J	45	Xover	440	491	GREEN
	11	45	FA	335	491	GREEN
	12	45	FA	335	69	RED
	13	45	PA	250	145	RED
	14	45	PA	250	214	YELLOW
	15	45	PA	250	158	RED
	OM-I	45	Xover	440	275	RED
	16	45	FA	335	275	YELLOW
	OM-H	45	Xover	440	304	RED
	17	45	FA	335	304	YELLOW
	18	45	PA	250	171	RED
	19	45	PA	250	127	RED
	OM-G	45	Xover	440	538	GREEN
	20	45	FA	335	538	GREEN
	OM-F	45	Xover	440	306	RED
	21	45	FA	335	306	YELLOW
	22	45	FA	335	78	RED
	23	45	PA	250	190	RED
	24	45	PA	250	82	RED
	OM-E	45	Xover	440	76	RED
	25	45	FA	335	76	RED
	26	45	PA	250	498	GREEN
	OM-D	45	Xover	440	221	RED
	27	45	FA	335	221	RED
	OM-C	45	Xover	440	West	GREEN
	28	45	FA	335	1280	GREEN
	OM-B	60	Xover	660	658	YELLOW
	OM-A	60	Xover	660	789	GREEN
	29	60	FA	445	789	GREEN

Notes:

GREEN : The entrance meets existing standard
YELLOW : The entrance is relativley close to the existing standard
RED : The entrance does not meet the existing standard
FA : Full access entrance
PA : Partial access entrance
OM : Open median

Route 11/460 Entrances - Shawsville Village Area

	Point	Posted Speed Limit (mph)	Existing Entrance Type	Code min. Spacing (ft)	Existing Spacing (ft)	Existing Rating
Route 460/11 East	OM-A	60	Xover	660	1000	GREEN
	30	60	PA	360	626	GREEN
	OM-B	60	Xover	660	120	RED
	31	60	FA	445	120	RED
	32	60	PA	360	220	RED
	33	60	PA	360	88	RED
	OM-C	60	Xover	660	336	RED
	OM-D	45	Xover	440	1241	GREEN
	OM-E	45	Xover	440	688	GREEN
	34	45	PA	250	204	YELLOW
	OM-F	45	Xover	440	233	RED
	35	45	FA	335	233	RED
	OM-G	45	Xover	440	337	
	36	45	FA	335	337	GREEN
	37	45	PA	250	314	GREEN
	38	45	PA	250	82	RED
	39	45	PA	250	114	RED
	40	45	PA	250	236	YELLOW
	OM-H	45	Xover	440	113	RED
	41	45	PA	250	182	RED
	OM-I	45	Xover	440	305	RED
	42	45	FA	335	305	YELLOW
	OM-J	45	Xover	440	810	GREEN
	OM-K	45	Xover	440	1089	GREEN
	43	45	FA	335	1089	GREEN
	OM-L	45	Xover	440	861	GREEN
	44	45	PA	250	215	YELLOW
	OM-M	45	Xover	440	549	GREEN
	45	45	FA	335	549	GREEN
	OM-N	45	Xover	440	662	GREEN
	46	55	PA	360	255	RED
	47	55	PA	360	141	RED
	48	55	PA	360	70	RED
	49	55	PA	360	100	RED
	OM-O	55	Xover	660	2197	GREEN
	50	55	FA	445	2197	GREEN
	OM-P	55	Xover	660	414	RED

Notes:

GREEN : The entrance meets existing standard
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OM : Open median

Shawsville
Rt 11\460 Corridor Study

SHEET 1 OF 9

Map prepared by the NRVPDC, 2012.
Data provided by Montgomery County and VGIN.

N

Acceptability Rating

- YES
- MAYBE
- NO
- Segment Length
- Project Study Area
- Tax Parcel

Acceptability rating based on VDOT Access Management Regulations, Minimum Spacing Standards for Commercial Entrances, Intersections, and Crossovers, Figure 24. White numbers indicate a measurement and black numbers correspond with the Route 11/460 Entrances - Shawsville Area data table.

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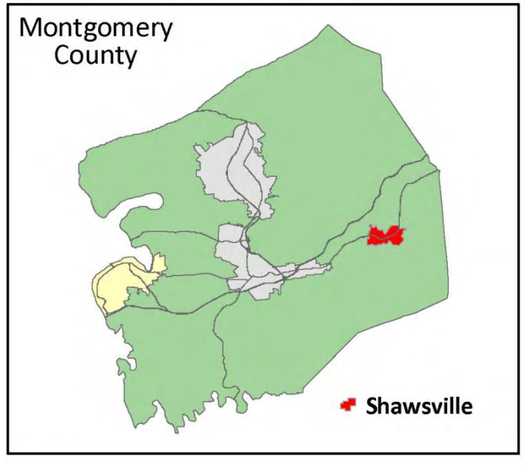
Feet



Shawsville
Rt 11\460 Corridor Study

SHEET 2 OF 9

Map prepared by the NRVPDC, 2012.
Data provided by Montgomery County and VGIN.

N

Acceptability Rating
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- MAYBE
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- Project Study Area
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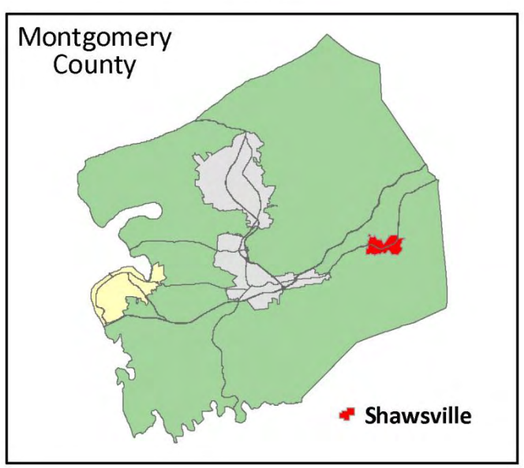

Shawsville
Rt 11\460 Corridor Study

SHEET 3 OF 9

Map prepared by the NRVPDC, 2012.
Data provided by Montgomery County and VGIN.

N

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- YES
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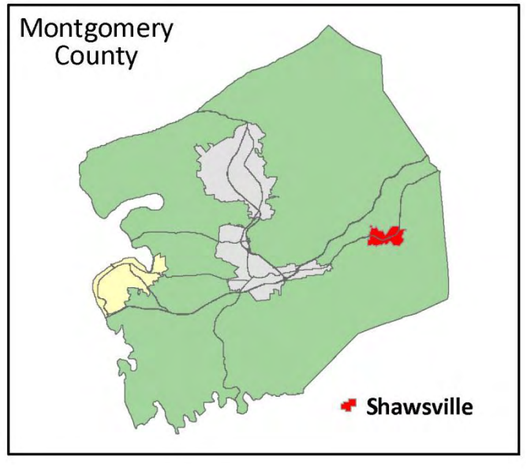

Shawsville
Rt 11\460 Corridor Study

SHEET 4 OF 9

Map prepared by the NRVPDC, 2012.
Data provided by Montgomery County and VGIN.

N

Acceptability Rating

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- NO
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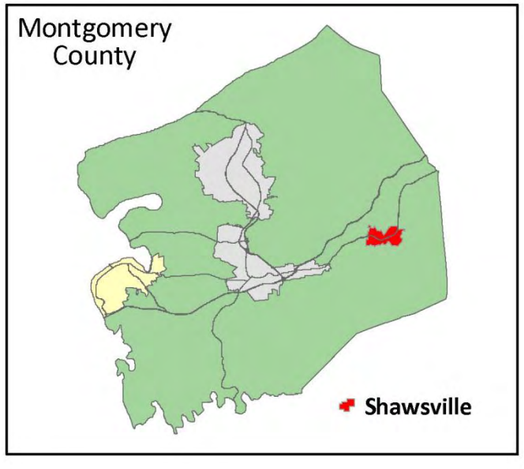
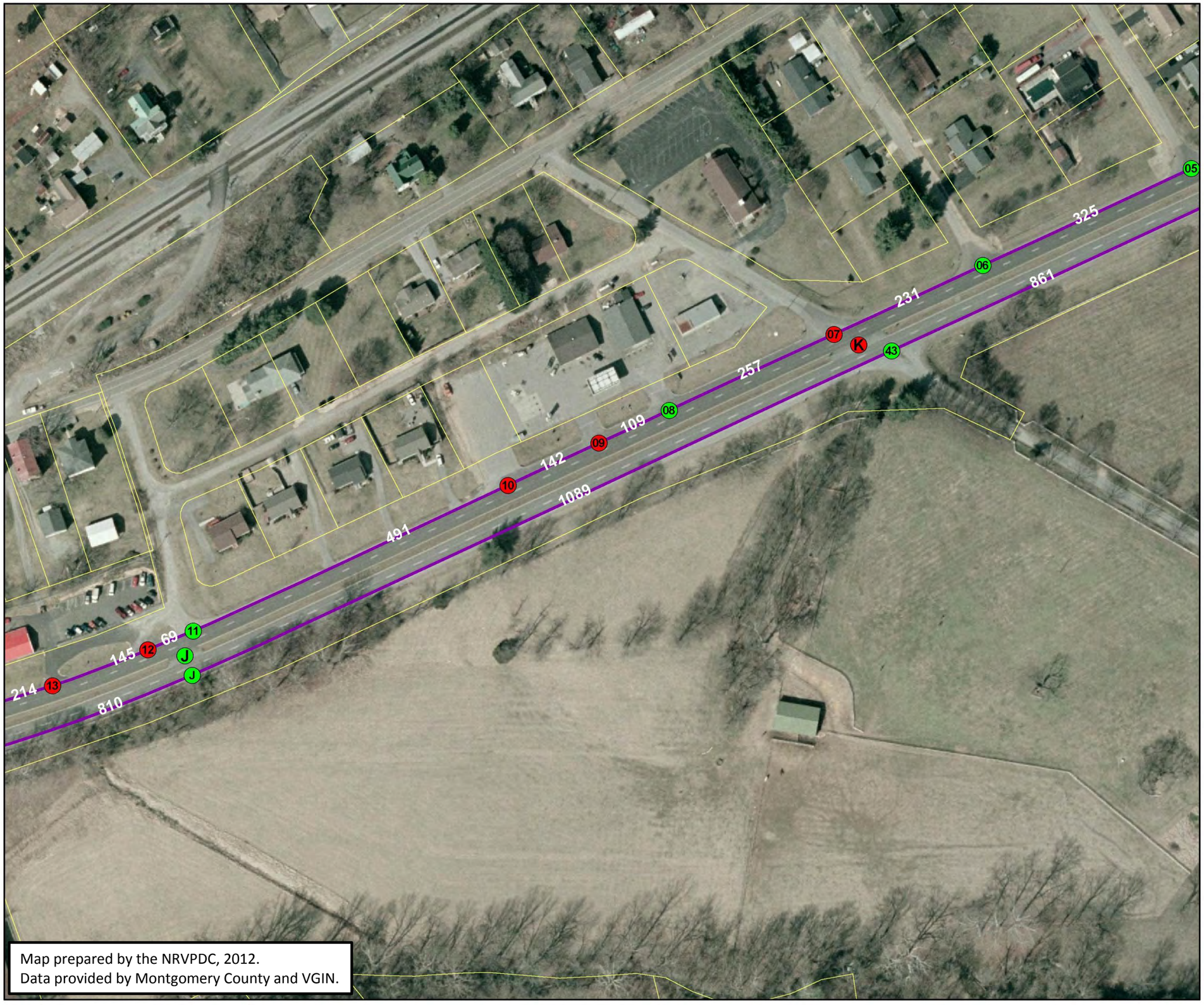


Shawsville
Rt 11\460 Corridor Study

SHEET 5 OF 9



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Data provided by Montgomery County and VGIN.

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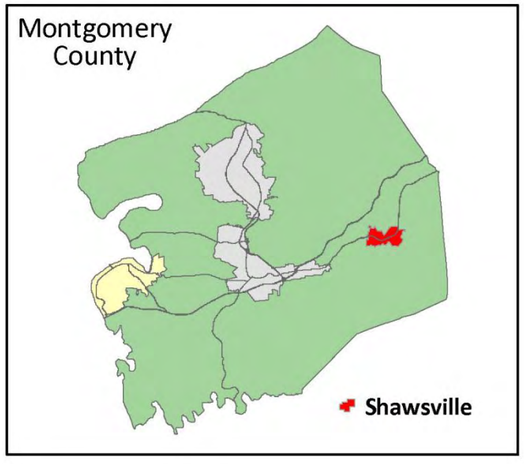
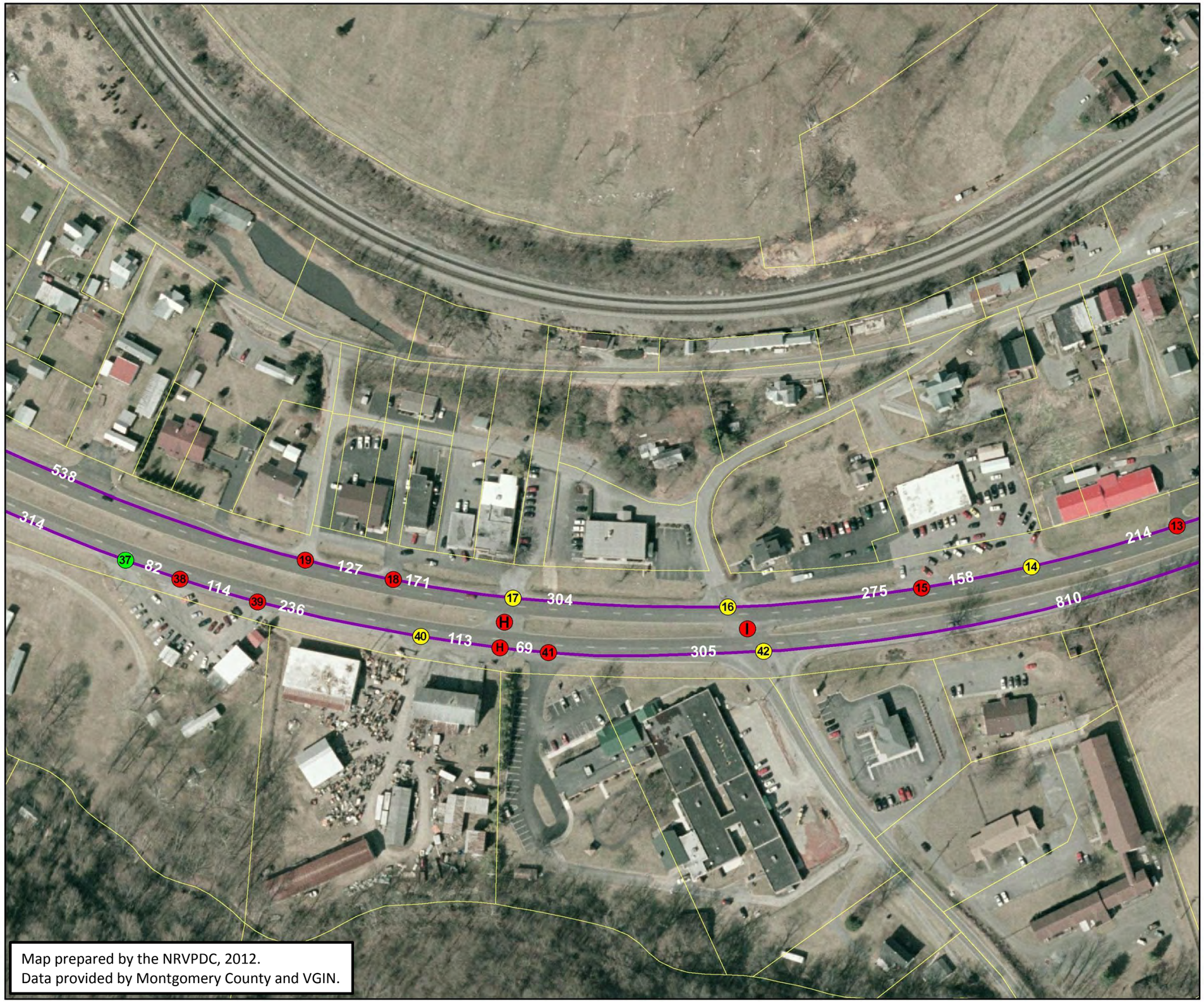


Shawsville
Rt 11\460 Corridor Study

SHEET 6 OF 9



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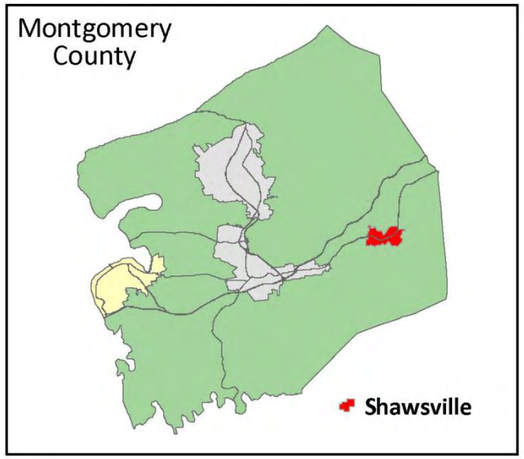
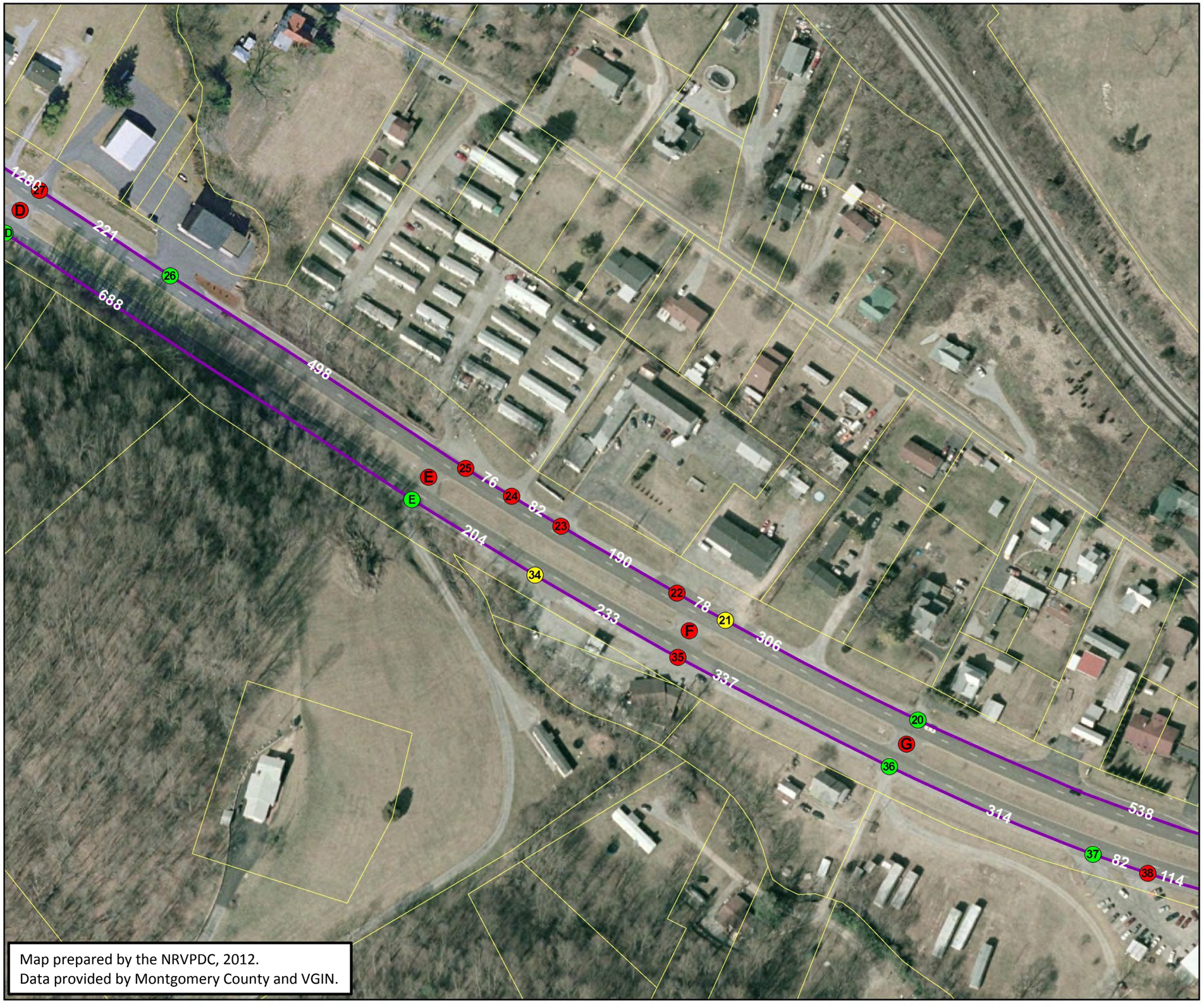


Shawsville
Rt 11\460 Corridor Study

SHEET 7 OF 9



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- NO
- Segment Length
- Project Study Area
- Tax Parcel

Acceptability rating based on VDOT Access Management Regulations, Minimum Spacing Standards for Commercial Entrances, Intersections, and Crossovers, Figure 24. White numbers indicate a measurement and black numbers correspond with the Route 11/460 Entrances - Shawsville Area data table.

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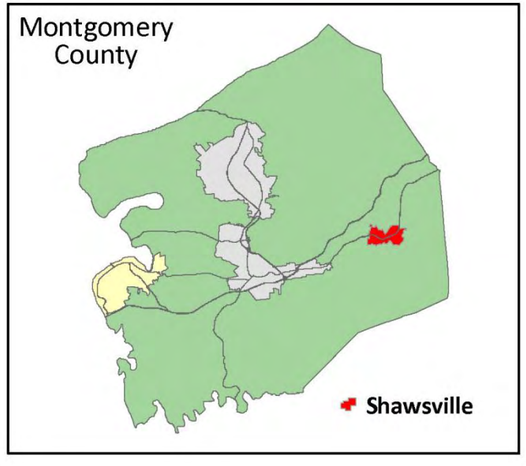
Feet



Shawsville
Rt 11\460 Corridor Study

SHEET 8 OF 9

Map prepared by the NRVPDC, 2012.
Data provided by Montgomery County and VGIN.

N

Acceptability Rating
- YES
- MAYBE
- NO
- Segment Length
- Project Study Area
- Tax Parcel

Acceptability rating based on VDOT Access Management Regulations, Minimum Spacing Standards for Commercial Entrances, Intersections, and Crossovers, Figure 24. White numbers indicate a measurement and black numbers correspond with the Route 11/460 Entrances - Shawsville Area data table.

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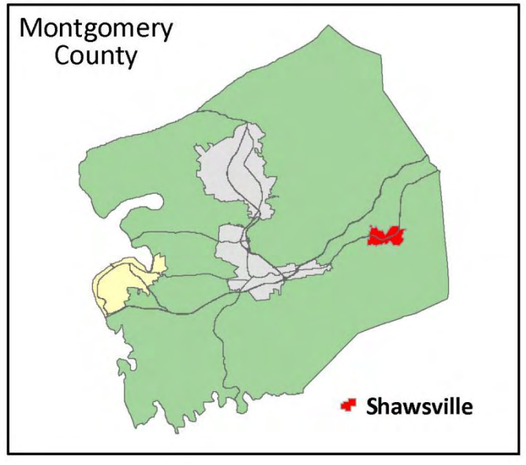
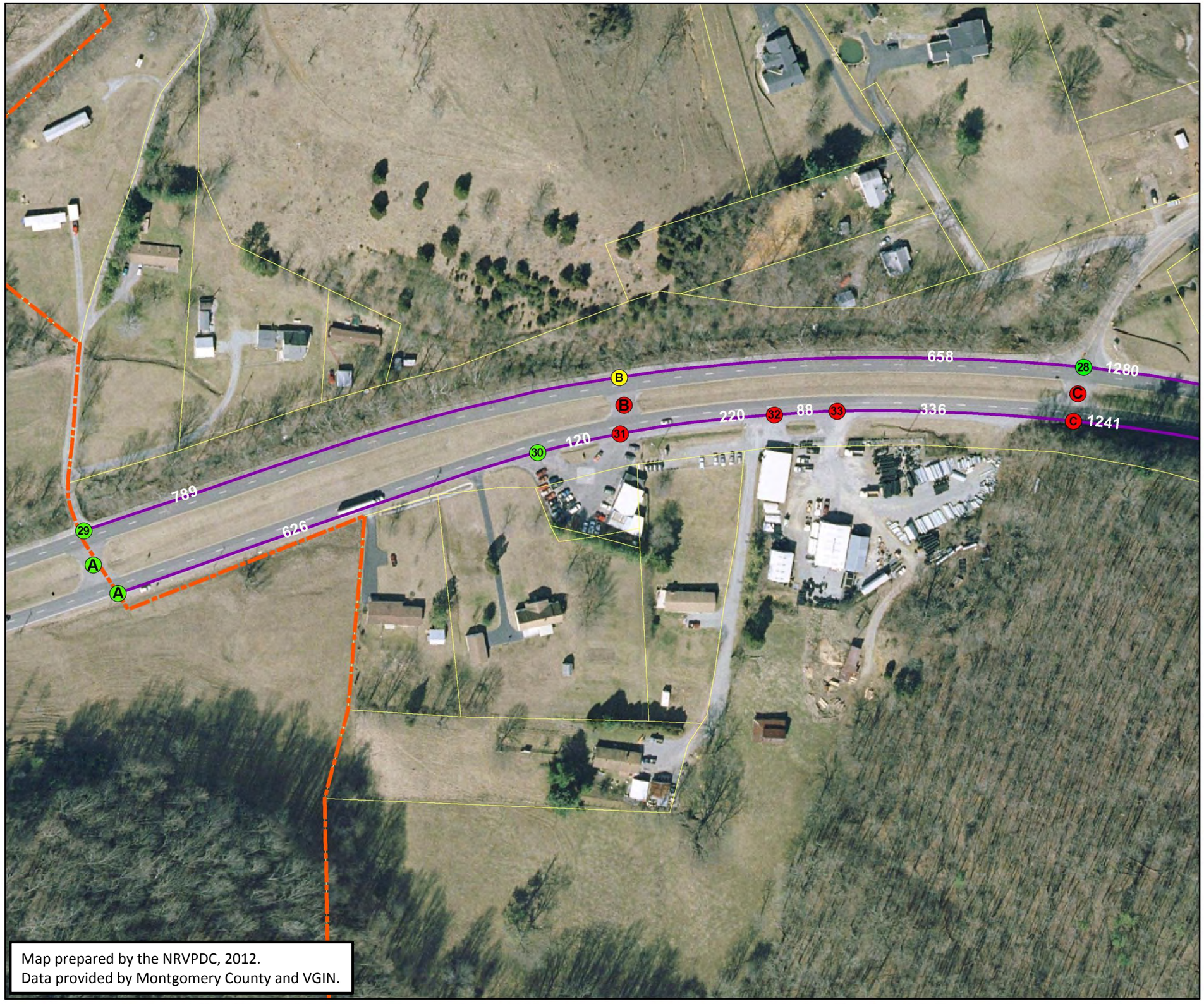


Shawsville
Rt 11\460 Corridor Study

SHEET 9 OF 9



Map prepared by the NRVPDC, 2012.
Data provided by Montgomery County and VGIN.

N

Acceptability Rating

- YES
- MAYBE
- NO
- Segment Length
- Project Study Area
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Acceptability rating based on VDOT Access Management Regulations, Minimum Spacing Standards for Commercial Entrances, Intersections, and Crossovers, Figure 24. White numbers indicate a measurement and black numbers correspond with the Route 11/460 Entrances - Shawsville Area data table.

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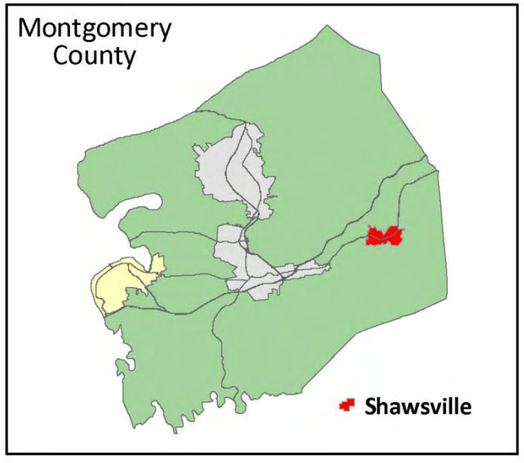


Appendix B

Access Management Corridor Recommendations

The table below identifies one method to address access management issues along the corridor. The mapping in Appendix B illustrates the conceptual plan.

Route 11/460 Entrances - Shawsville Village Area

	Point	Posted Speed Limit (mph)	Existing Entrance Type	Proposed			Existing Rating	Proposed Rating
				Entrance Type	Code min. (ft)	Spacing (ft)		
Route 460/11 West	OM-P	55	Xover	Xover	660	1270	GREEN	GREEN
	P	55	FA	FA	445	1270	GREEN	GREEN
	OM-O	55	Xover	CLOSE	NA	NA	RED	GREEN
	1	55	FA	PA	360	414	YELLOW	GREEN
	2	55	PA	CLOSE	NA	NA	YELLOW	GREEN
	OM-N	55	Xover	Xover	660	1534/2679	GREEN	GREEN
	3	55	FA	FA	445	1534/2679	GREEN	GREEN
	OM-M	45	Xover	Xover	440	634	GREEN	GREEN
	OM-L	45	Xover	CLOSE	NA	NA	GREEN	GREEN
	4	45	FA	PA	250	789	GREEN	GREEN
	5	45	PA	PA	250	364	GREEN	GREEN
	6	45	PA	CLOSE	NA	NA	GREEN	GREEN
	OM-K	45	Xover	Xover	440	556	RED	GREEN
	7	45	FA	FA	335	556	RED	GREEN
	8	45	PA	PA	250	257	GREEN	GREEN
	9	45	PA	CLOSE	NA	NA	RED	GREEN
	10	45	PA	PA	250	251	RED	GREEN
	OM-J	45	Xover	Xover	440	491	GREEN	GREEN
	11	45	FA	FA	335	491	GREEN	GREEN
	12	45	FA	CLOSE	NA	NA	RED	GREEN
	13	45	PA	PA	250	214	RED	YELLOW
	14	45	PA	PA	250	214	YELLOW	YELLOW
	15	45	PA	CLOSE	NA	NA	RED	GREEN
	OM-I	45	Xover	Xover	440	433	RED	YELLOW
	16	45	FA	FA	335	433	YELLOW	GREEN
	OM-H	45	Xover	CLOSE	NA	NA	RED	GREEN
	17	45	FA	PA	250	304	YELLOW	GREEN
	18	45	PA	CLOSE	NA	NA	RED	GREEN
	19	45	PA	PA	250	298	RED	GREEN
	OM-G	45	Xover	CLOSE	NA	538	GREEN	GREEN
	20	45	FA	PA	250	538	GREEN	GREEN
	OM-F	45	Xover	CLOSE	NA	NA	RED	GREEN
	21	45	FA	CLOSE	NA	NA	YELLOW	GREEN
	22	45	FA	PA	250	384	RED	GREEN
	23	45	PA	CLOSE	NA	NA	RED	GREEN
	24	45	PA	CLOSE	NA	NA	RED	GREEN
	OM-E	45	Xover	CLOSE	NA	NA	RED	GREEN
	25	45	FA	PA	250	426	RED	GREEN
	26	45	PA	PA	250	498	GREEN	GREEN
	OM-D	45	Xover	Xover	440	221	RED	RED
	27	45	FA	FA	335	221	RED	RED
	OM-C	45	Xover	Xover	440	1280	GREEN	GREEN
	28	45	FA	FA	335	1280	GREEN	GREEN
	OM-B	60	Xover	CLOSE	NA	NA	YELLOW	GREEN
	OM-A	60	Xover	Xover	660	1447	GREEN	GREEN
	29	60	FA	FA	445	1447	GREEN	GREEN

Number of Entrances	*46*	*30*	*Percentage of Entrances that meet 2012 Standards*	*41.30%*	*89.13%*

Notes:

GREEN : The entrance meets existing standard
YELLOW : The entrance is relativley close to the existing standard
RED : The entrance does not meet the existing standard
FA : Full access entrance
PA : Partial access entrance
OM : Open median

Route 11/460 Entrances - Shawsville Village Area

	Point	Posted Speed Limit (mph)	Existing Entrance Type	Proposed			Existing Rating	Proposed Rating
				Entrance Type	Code min. (ft)	Spacing (ft)		
Route 460/11 East	OM-A	60	Xover	Xover	660	1000	GREEN	GREEN
	30	60	PA	PA	360	626	GREEN	GREEN
	OM-B	60	Xover	CLOSE	NA	NA	RED	GREEN
	31	60	FA	CLOSE	NA	NA	RED	GREEN
	32	60	PA	CLOSE/PRV	NA	NA	RED	GREEN
	33	60	PA	PA	360	428	RED	GREEN
	OM-C	60	Xover	Xover	660	336	RED	RED
	OM-D	45	Xover	Xover	440	1241	GREEN	GREEN
	OM-E	45	Xover	CLOSE	NA	NA	GREEN	GREEN
	34	45	PA	PA	250	892	YELLOW	GREEN
	OM-F	45	Xover	CLOSE	NA	NA	RED	GREEN
	35	45	FA	PA	250	233	RED	YELLOW
	OM-G	45	Xover	CLOSE	NA	NA	RED	GREEN
	36	45	FA	PA	250	337	GREEN	GREEN
	37	45	PA	CLOSE	NA	NA	GREEN	GREEN
	38	45	PA	PA	250	396	RED	GREEN
	39	45	PA	CLOSE	NA	NA	RED	GREEN
	40	45	PA	PA	250	350	YELLOW	GREEN
	OM-H	45	Xover	CLOSE	NA	NA	RED	GREEN
	41	45	PA	RELOCATE	NA	NA	RED	GREEN
	OM-I	45	Xover	Xover	440	487	RED	GREEN
	42	45	FA	FA	335	487	YELLOW	GREEN
	OM-J	45	Xover	CLOSE	NA	NA	GREEN	GREEN
	OM-K	45	Xover	Xover	440	1899	GREEN	GREEN
	43	45	FA	FA	335	1899	GREEN	GREEN
	OM-L	45	Xover	CLOSE	NA	NA	GREEN	GREEN
	44	45	PA	PA	250	1076	YELLOW	GREEN
	OM-M	45	Xover	Xover	440	549	GREEN	GREEN
	45	45	FA	FA	335	549	GREEN	GREEN
	OM-N	45	Xover	Xover	440	662	GREEN	GREEN
	46	55	PA	PA	360	255	RED	RED
	47	55	PA	CLOSE	NA	NA	RED	GREEN
	48	55	PA	CLOSE	NA	NA	RED	GREEN
	49	55	PA	PA	360	311	RED	YELLOW
	OM-O	55	Xover	CLOSE	NA	NA	GREEN	GREEN
	50	55	FA	PA	360	2197	GREEN	GREEN
	OM-P	55	Xover	Xover	660	414	RED	RED

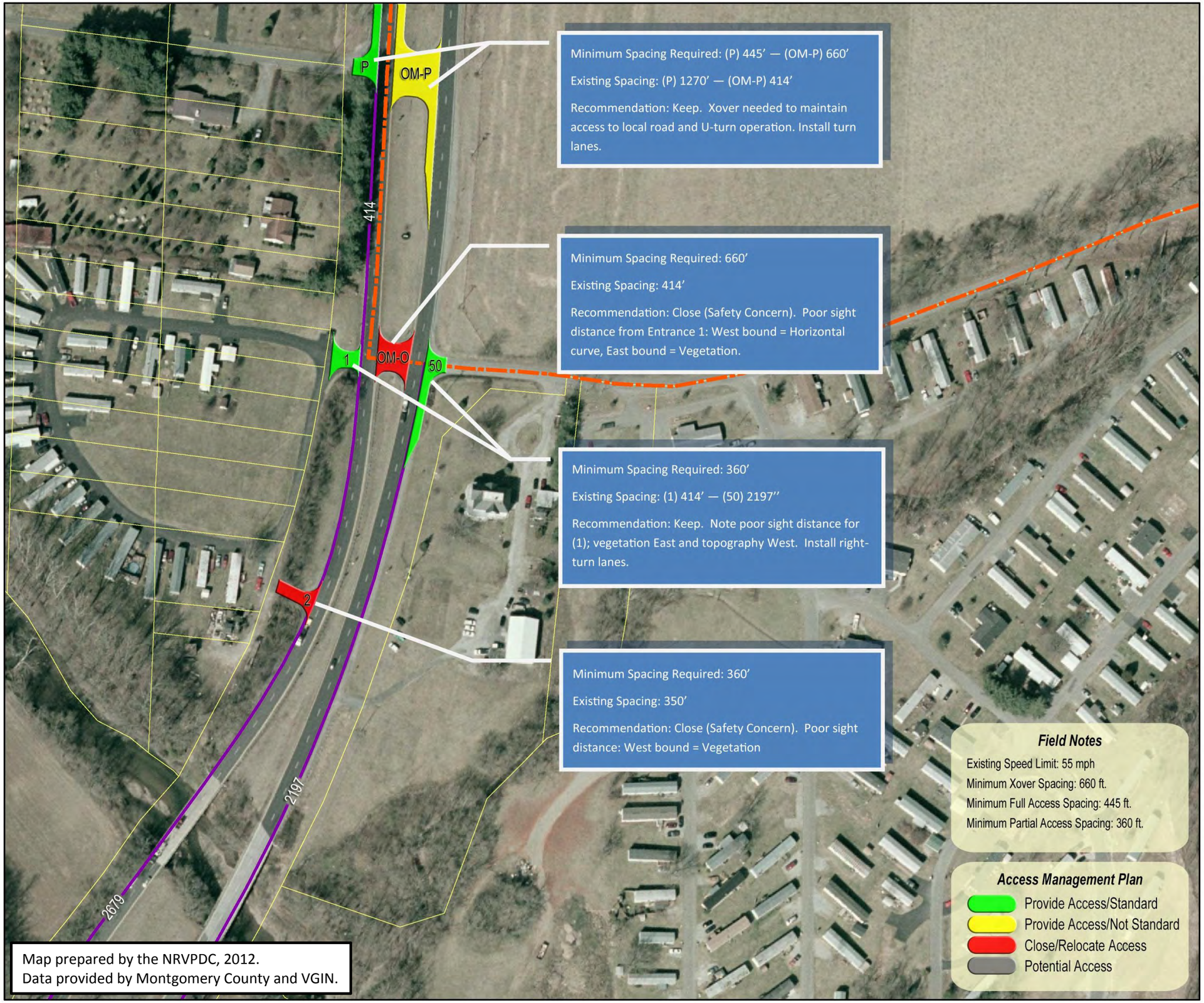
Number of Entrances	*37*	*22*	*Percentage of Entrances that meet 2012 Standards*	*40.54%*	*86.49%*

Notes:

GREEN : The entrance meets existing standard
YELLOW : The entrance is relativley close to the existing standard
RED : The entrance does not meet the existing standard
FA : Full access entrance
PA : Partial access entrance
OM : Open median

Shawsville
Rt 11\460 Corridor Study

SHEET 1 OF 9



Minimum Spacing Required: (P) 445' — (OM-P) 660'

Existing Spacing: (P) 1270' — (OM-P) 414'

Recommendation: Keep. Xover needed to maintain access to local road and U-turn operation. Install turn lanes.

Minimum Spacing Required: 660'

Existing Spacing: 414'

Recommendation: Close (Safety Concern). Poor sight distance from Entrance 1: West bound = Horizontal curve, East bound = Vegetation.

Minimum Spacing Required: 360'

Existing Spacing: (1) 414' — (50) 2197''

Recommendation: Keep. Note poor sight distance for (1); vegetation East and topography West. Install right-turn lanes.

Minimum Spacing Required: 360'

Existing Spacing: 350'

Recommendation: Close (Safety Concern). Poor sight distance: West bound = Vegetation

Field Notes

Existing Speed Limit: 55 mph
Minimum Xover Spacing: 660 ft.
Minimum Full Access Spacing: 445 ft.
Minimum Partial Access Spacing: 360 ft.

Access Management Plan

- Provide Access/Standard
- Provide Access/Not Standard
- Close/Relocate Access
- Potential Access

Map prepared by the NRVPDC, 2012.
Data provided by Montgomery County and VGIN.

N

RECOMMENDATIONS

- **Segment Length**
- **Project Study Area**
- **Tax Parcel**

Acceptability rating based on VDOT Access Management Regulations, Minimum Spacing Standards for Commercial Entrances, Intersections, and Crossovers, Figure 24. White numbers indicate a measurement and black numbers correspond with the Route 11/460 Entrances - Shawsville Area data table.

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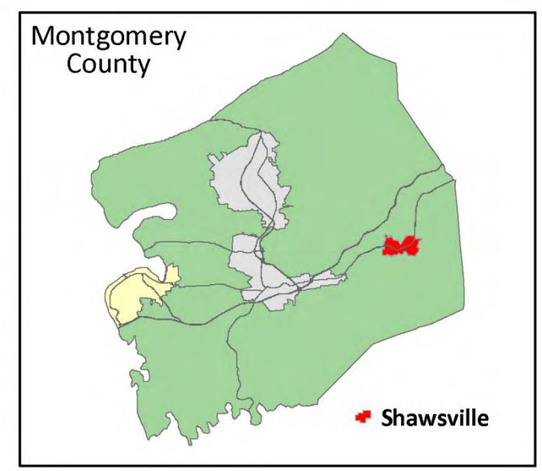
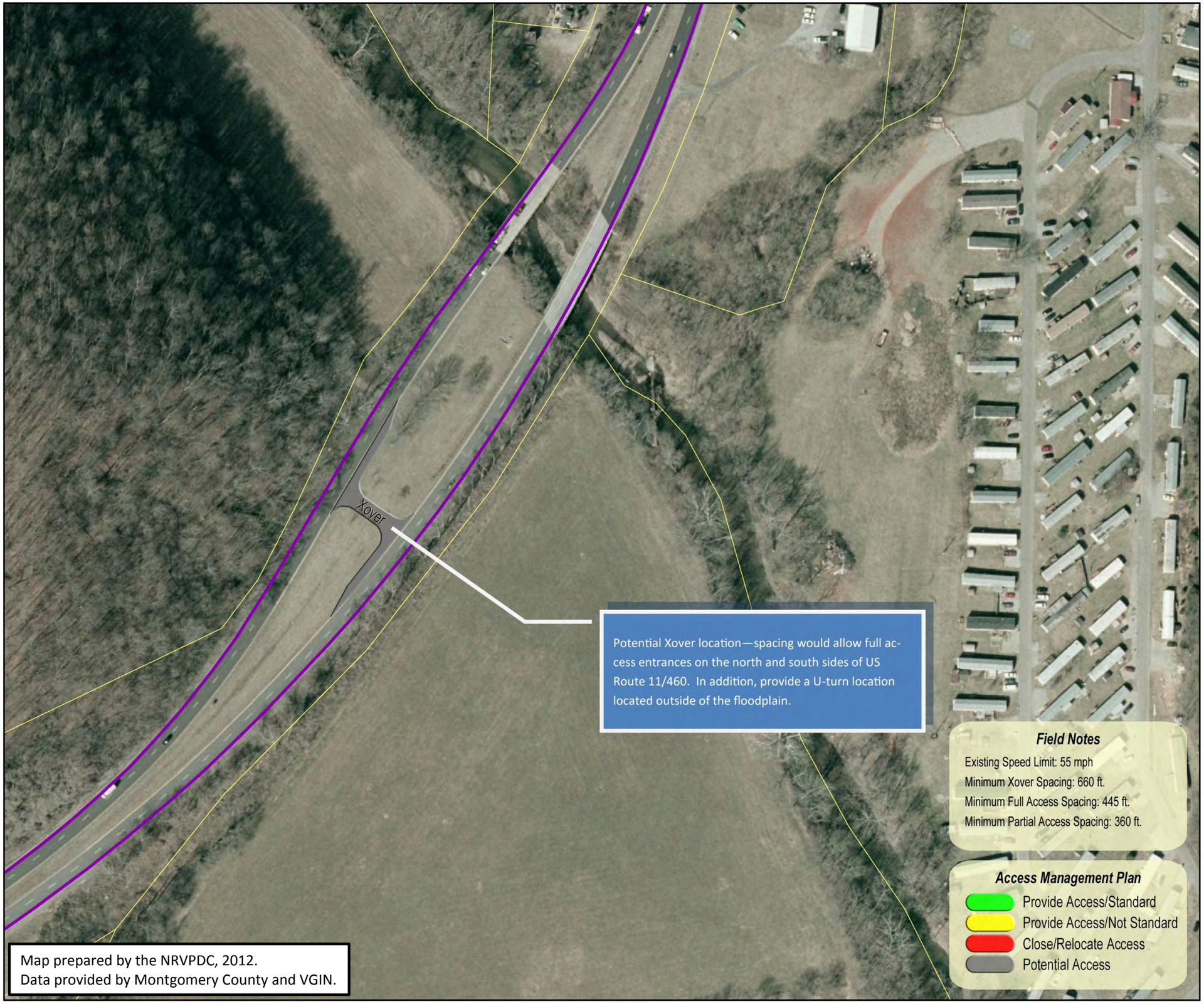
Feet



Shawsville
Rt 11\460 Corridor Study

SHEET 2 OF 9



Map prepared by the NRVPDC, 2012.
Data provided by Montgomery County and VGIN.

N

RECOMMENDATIONS

- Segment Length
- Project Study Area
- Tax Parcel

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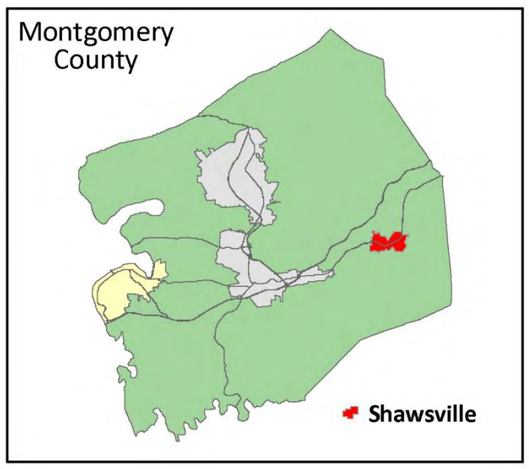
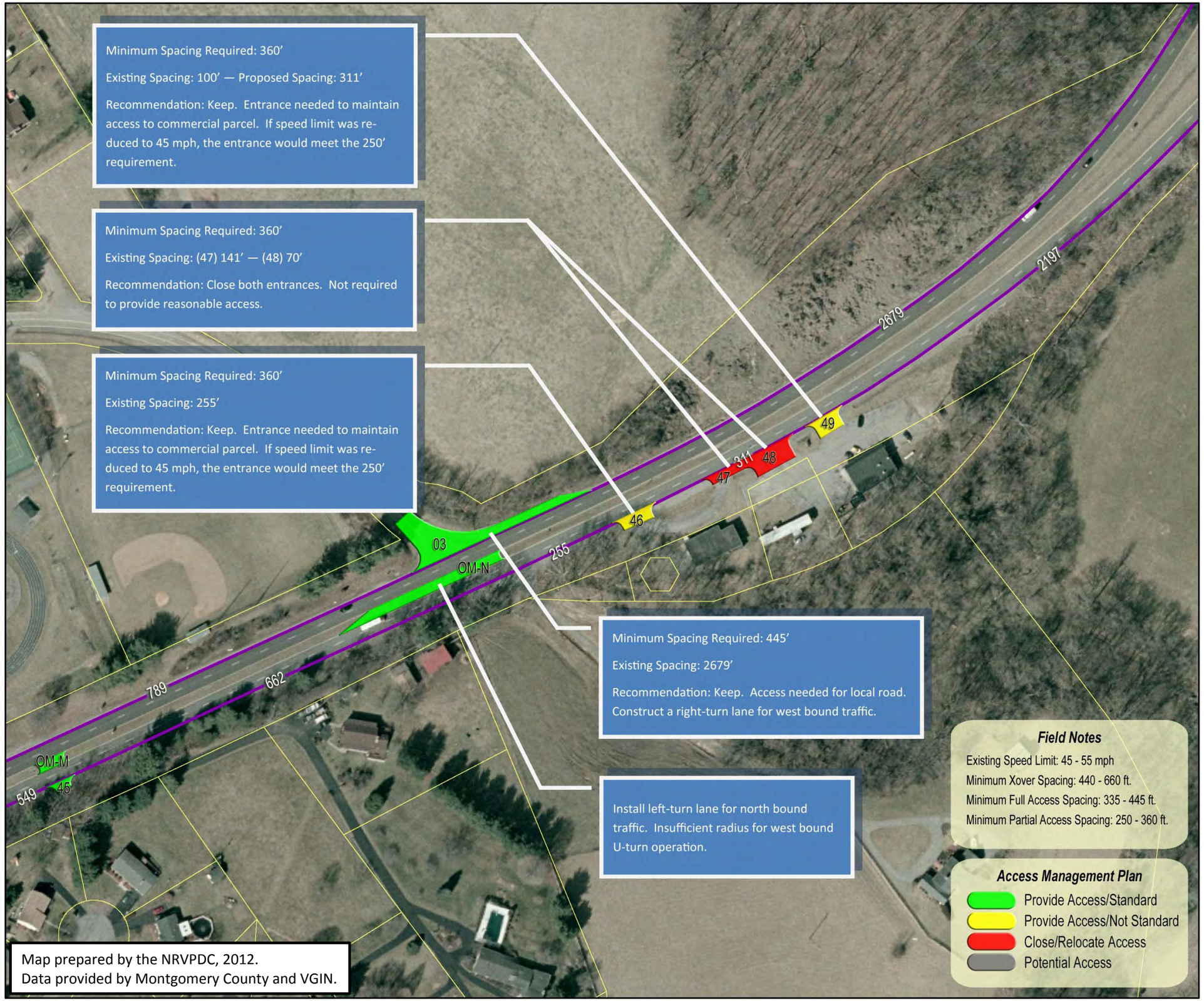
Feet



Shawsville
Rt 11\460 Corridor Study

SHEET 3 OF 9



Map prepared by the NRVPDC, 2012.
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RECOMMENDATIONS

- Segment Length
- Project Study Area
- Tax Parcel

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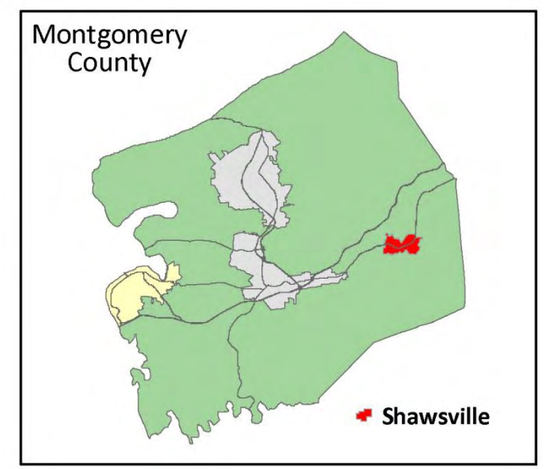
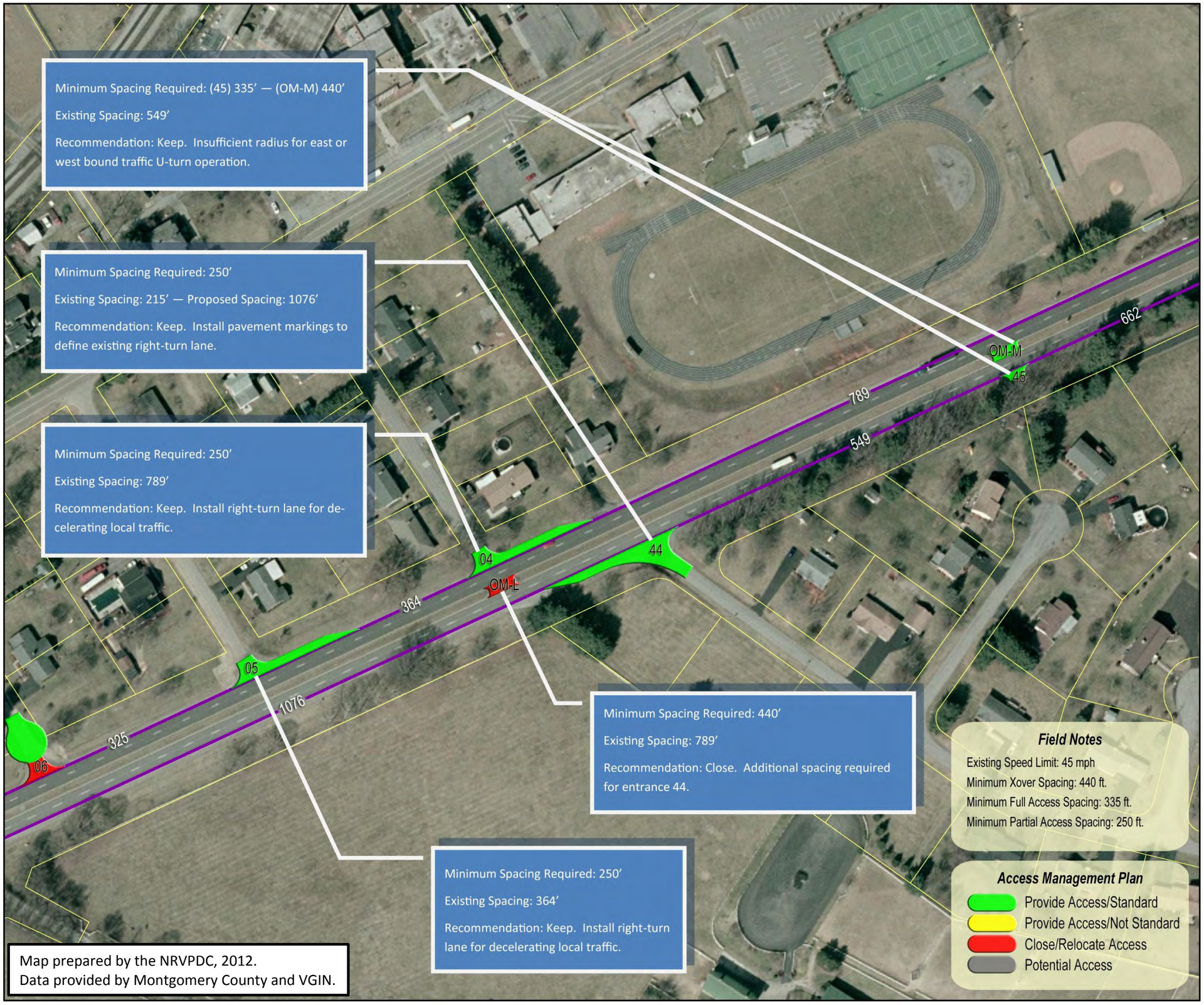
Feet



Shawsville
Rt 11\460 Corridor Study

SHEET 4 OF 9



Map prepared by the NRVPDC, 2012.
Data provided by Montgomery County and VGIN.

N

RECOMMENDATIONS

- Segment Length
- Project Study Area
- Tax Parcel

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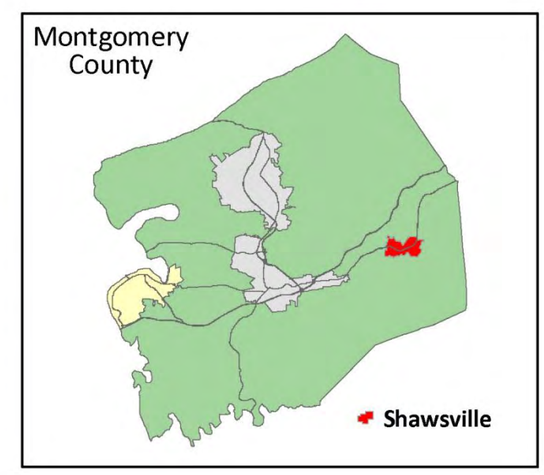
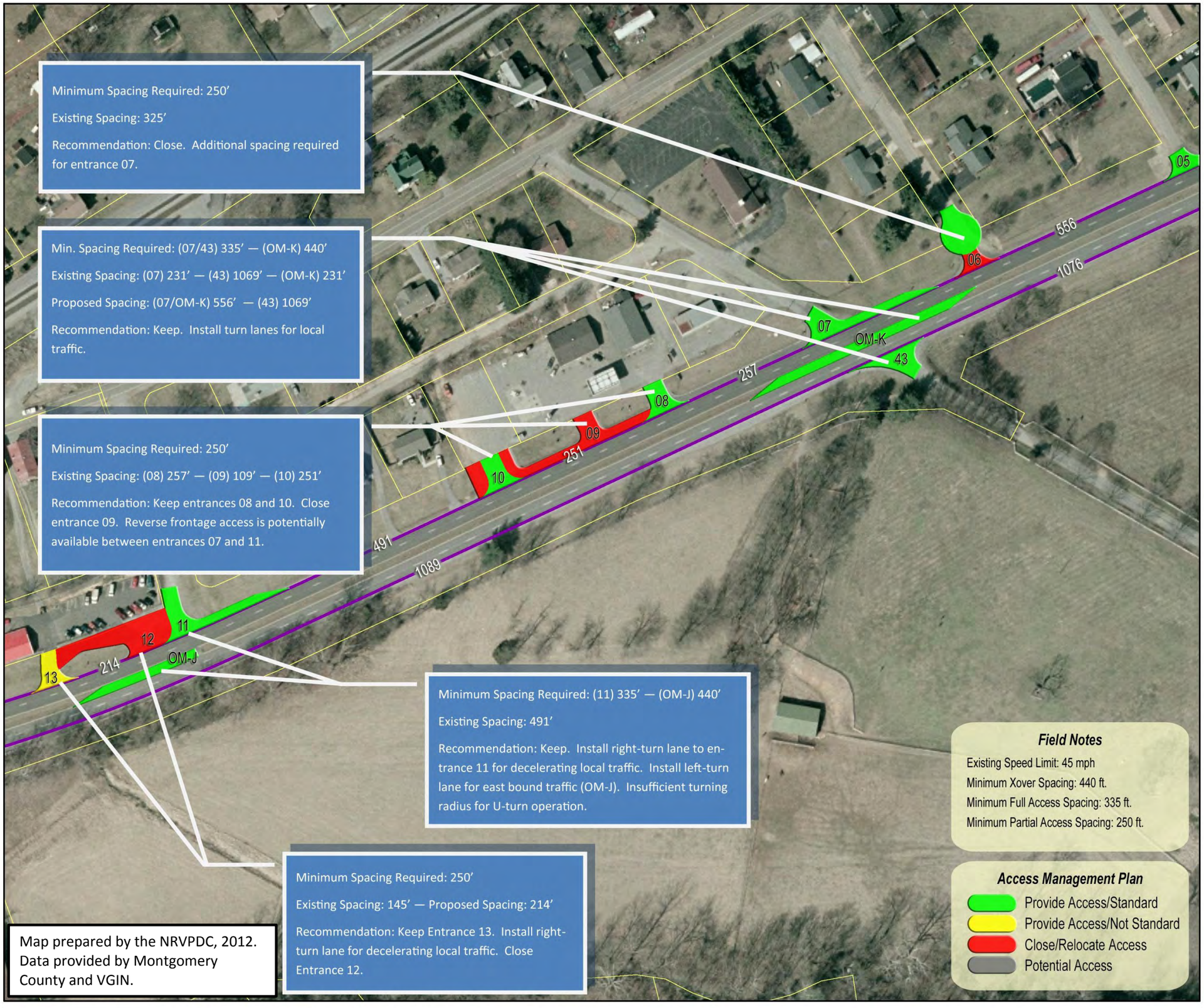
Feet



Shawsville
Rt 11\460 Corridor Study

SHEET 5 OF 9



Minimum Spacing Required: 250'

Existing Spacing: 325'

Recommendation: Close. Additional spacing required for entrance 07.

Min. Spacing Required: (07/43) 335' — (OM-K) 440'

Existing Spacing: (07) 231' — (43) 1069' — (OM-K) 231'

Proposed Spacing: (07/OM-K) 556' — (43) 1069'

Recommendation: Keep. Install turn lanes for local traffic.

Minimum Spacing Required: 250'

Existing Spacing: (08) 257' — (09) 109' — (10) 251'

Recommendation: Keep entrances 08 and 10. Close entrance 09. Reverse frontage access is potentially available between entrances 07 and 11.

Minimum Spacing Required: (11) 335' — (OM-J) 440'

Existing Spacing: 491'

Recommendation: Keep. Install right-turn lane to entrance 11 for decelerating local traffic. Install left-turn lane for east bound traffic (OM-J). Insufficient turning radius for U-turn operation.

Minimum Spacing Required: 250'

Existing Spacing: 145' — Proposed Spacing: 214'

Recommendation: Keep Entrance 13. Install right-turn lane for decelerating local traffic. Close Entrance 12.

Field Notes

Existing Speed Limit: 45 mph

Minimum Xover Spacing: 440 ft.

Minimum Full Access Spacing: 335 ft.

Minimum Partial Access Spacing: 250 ft.

Access Management Plan

- Provide Access/Standard
- Provide Access/Not Standard
- Close/Relocate Access
- Potential Access

Map prepared by the NRVPDC, 2012. Data provided by Montgomery County and VGIN.

N

RECOMMENDATIONS

- **Segment Length**
- **Project Study Area**
- **Tax Parcel**

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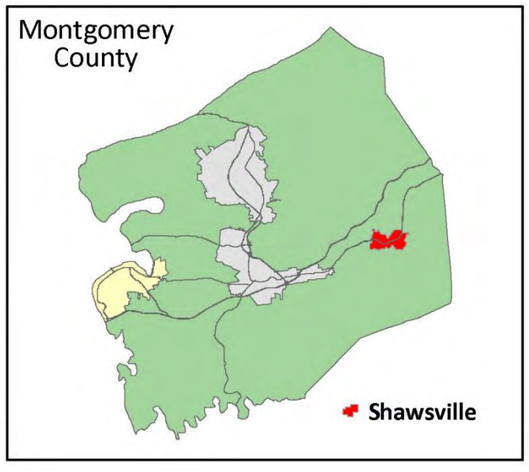
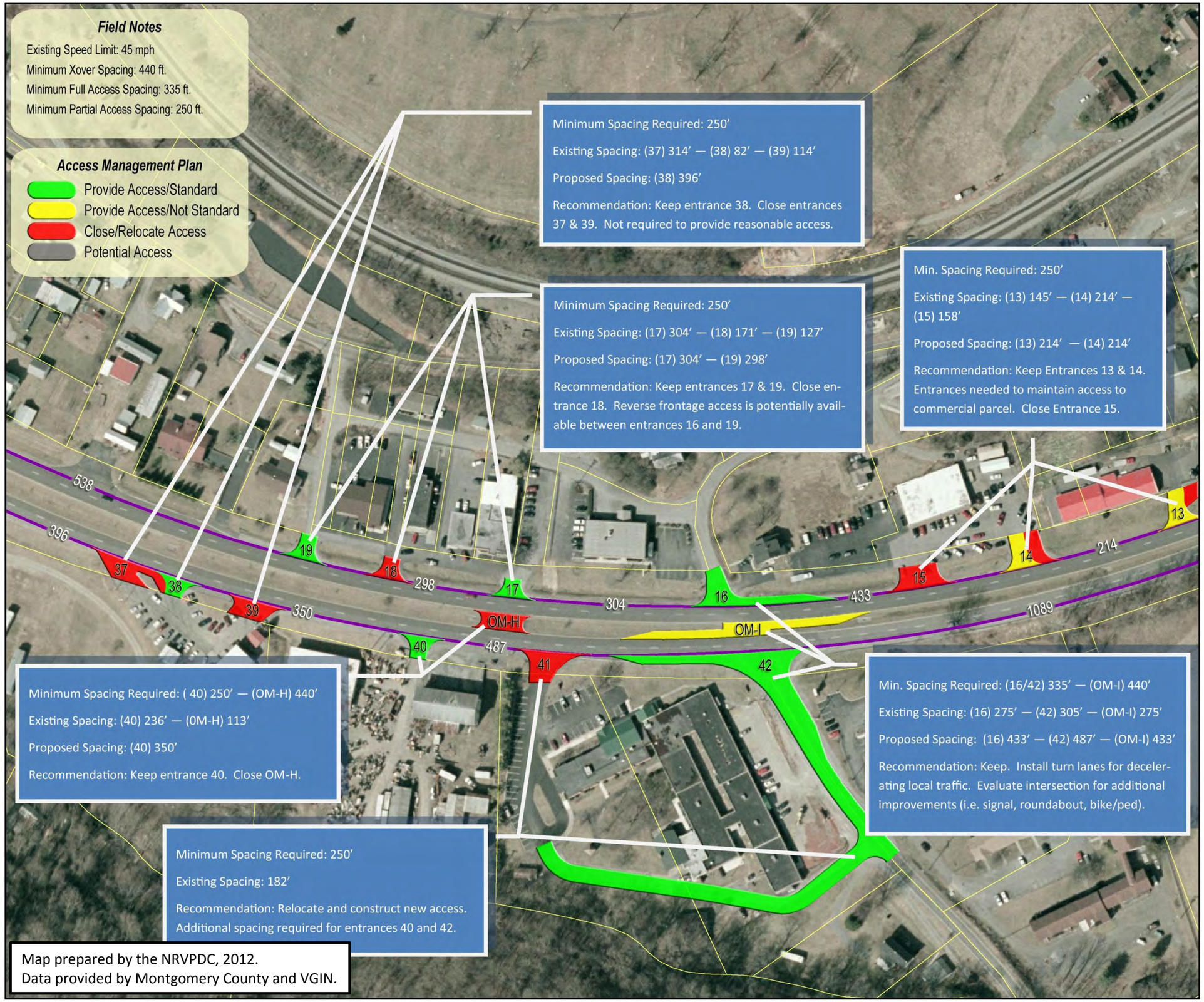
Feet



Shawsville
Rt 11\460 Corridor Study

SHEET 6 OF 9



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N

RECOMMENDATIONS

- **Segment Length**
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- **Tax Parcel**

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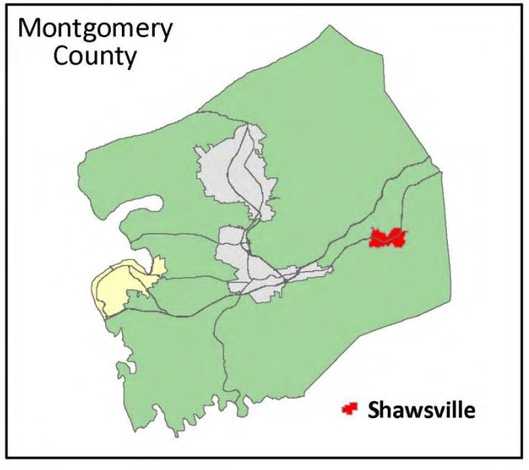
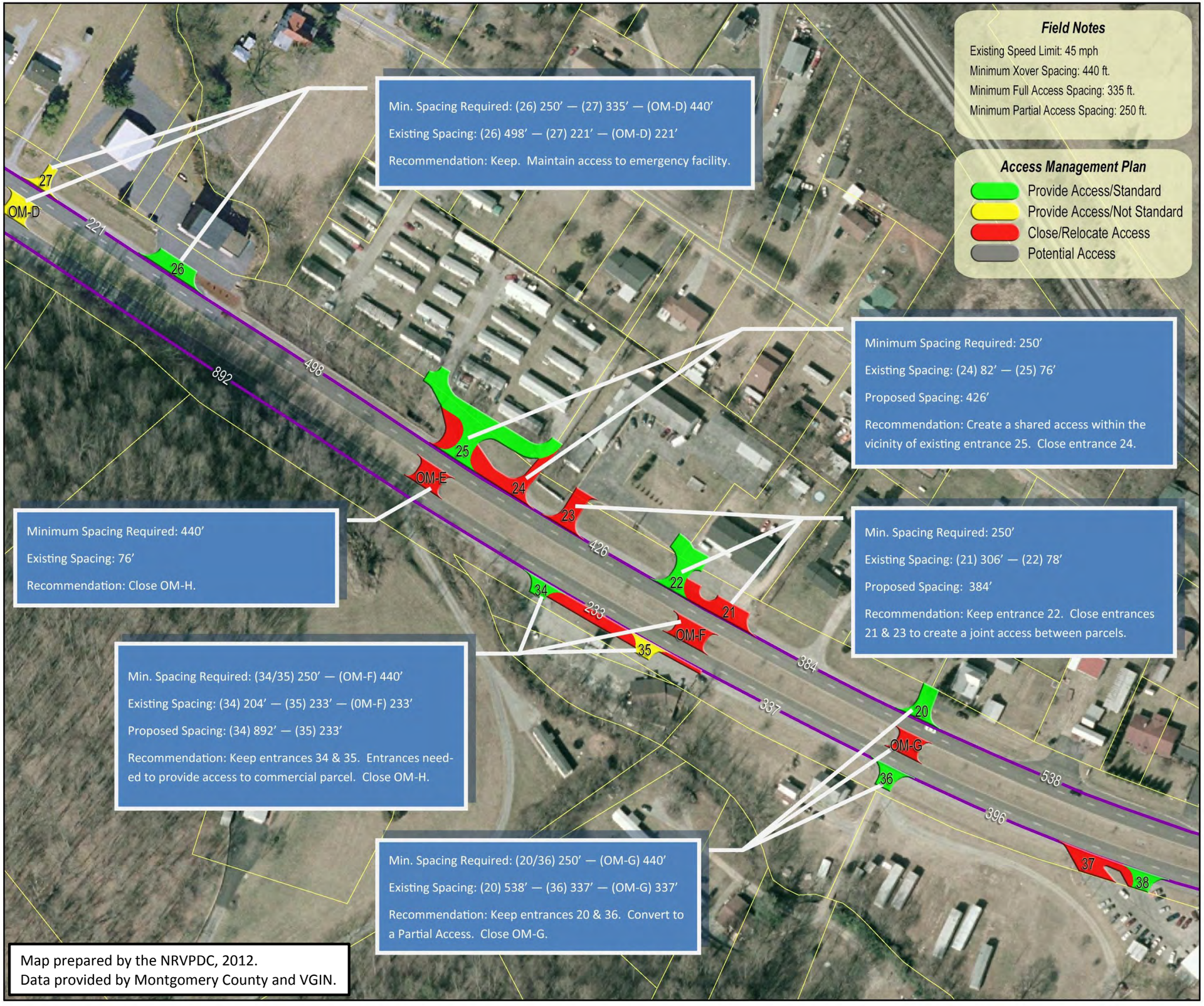


Shawsville
Rt 11\460 Corridor Study

SHEET 7 OF 9



N

RECOMMENDATIONS

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- Project Study Area
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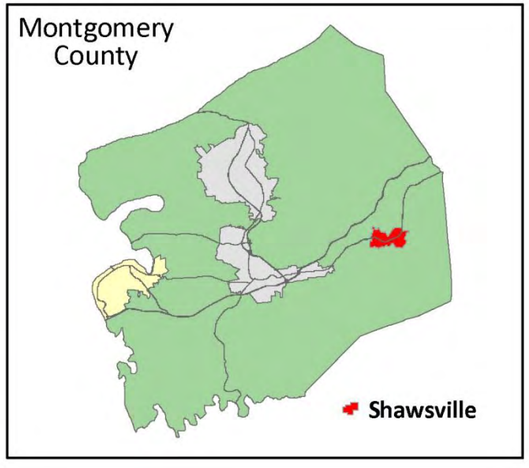
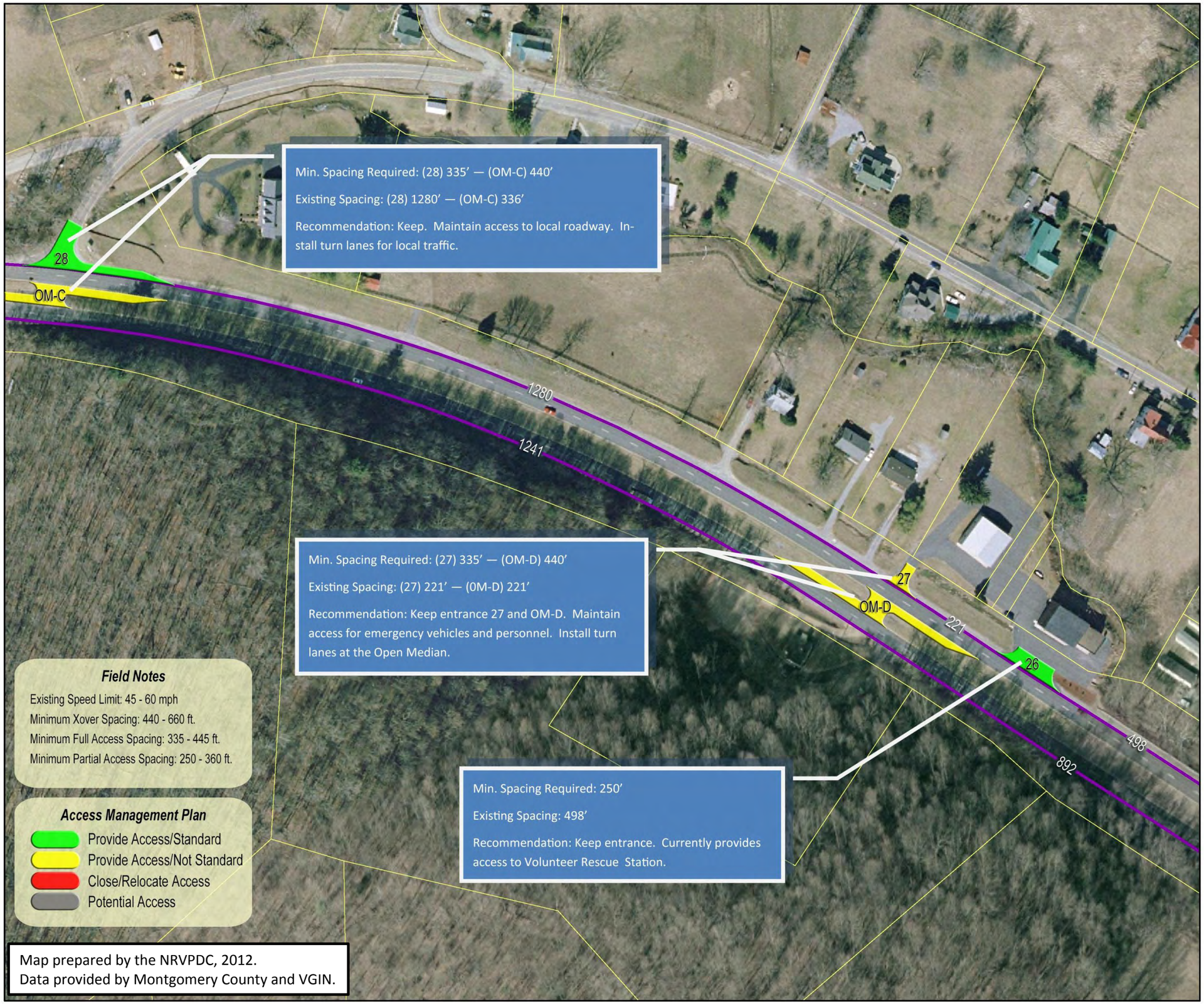


Shawsville
Rt 11\460 Corridor Study

SHEET 8 OF 9



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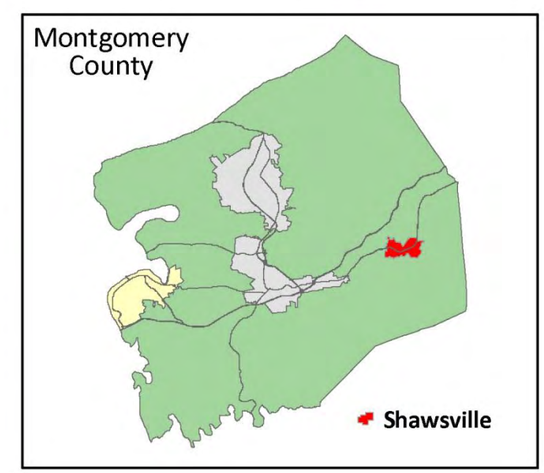
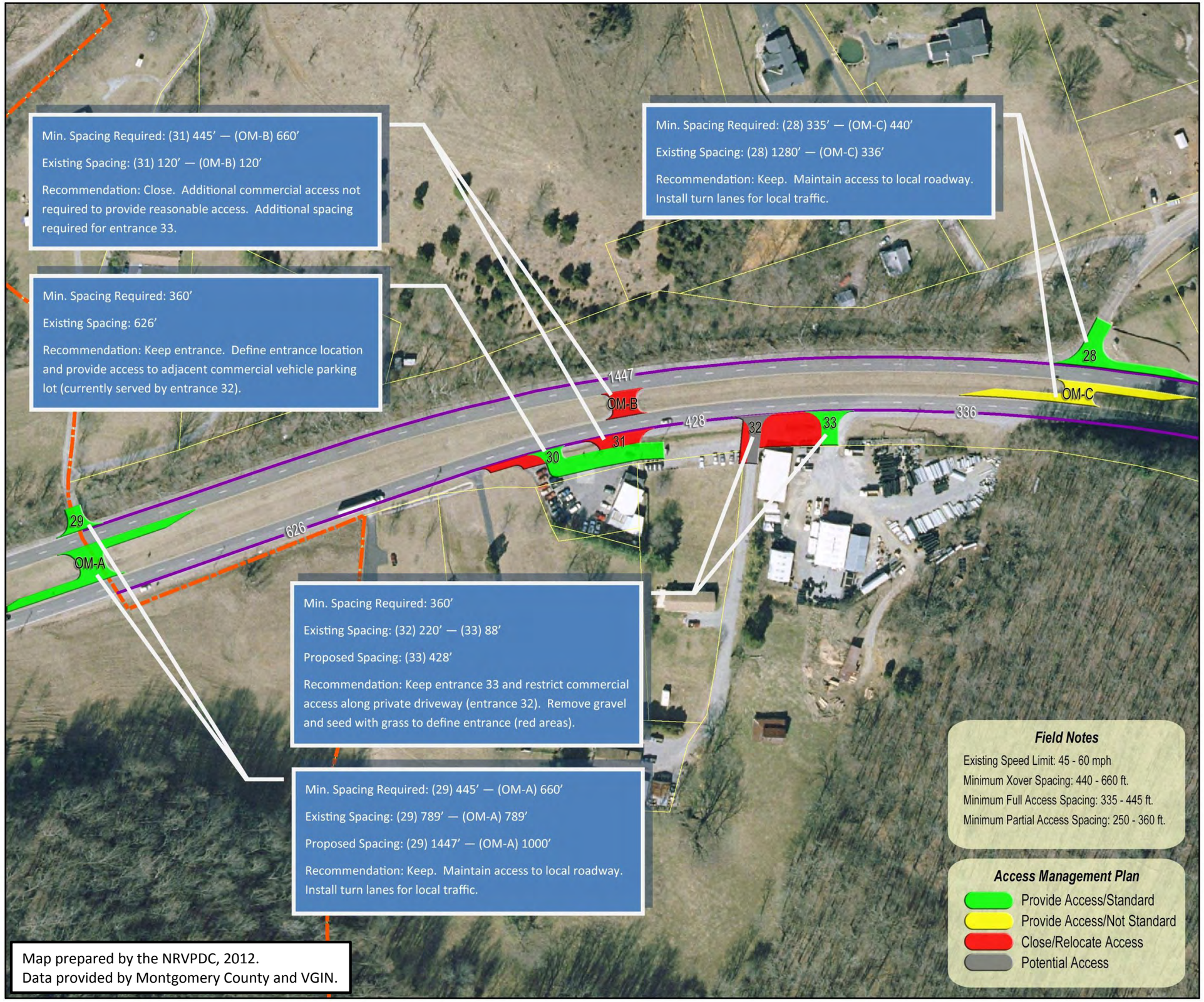


Shawsville
Rt 11\460 Corridor Study

SHEET 9 OF 9



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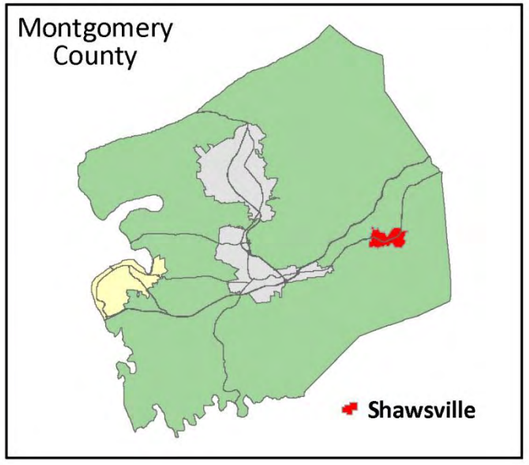

MONTGOMERY COUNTY DEPARTMENT
OF PLANNING & GIS SERVICES

PLANNING
GIS & MAPPING

755 ROANOKE STREET, SUITE 2A, CHRISTIANSBURG, VIRGINIA 24073-3177

MEMORANDUM

TO: Montgomery County Planning Commission

FROM: Planning Staff

DATE: October 2, 2012

SUBJ: ZONING ORDINANCE AMENDMENTS

RESIDENTIAL CHICKENS

Last month we discussed the possibility of an ordinance amendment to allow the keeping of chickens on properties located within the residential zoning districts – R1, R2, R3, TND and PUDRES. We reviewed a draft prepared by staff to add *Section 10-41(19) Urban Agriculture* to the Montgomery County Code. Staff was asked to provide options for regulating the number of chickens allowed per parcel based on acreage of the parcel.

During the meeting staff will discuss the possibility of the following options:

1. Sliding Scale – the number of chickens allowed would increase proportionate to the number of acres in the residential parcel.
2. Two Acre Minimum – a specified number of chickens would be allowed if the residentially zoned property is at least two (2) acres or more in size. Lots smaller than two acres would not qualify.
3. Downzoning parcels of five (5) acres or more to Rural Residential (R-R) – would allow "Agriculture, small scale" as currently defined in the zoning ordinance providing some limited agricultural opportunities.
4. Amend Chapter 3, Animals of County Code to allow Residential Chicken Keeping – Roanoke County used this approach to allow chickens in residential area. This section is enforced by the Animal Control department. Do we want Animal Control or Zoning to enforce this issue?

Our GIS Department has prepared a map of the county identifying the location and size of parcels zoned Residential R1, R2, R3, TND and PUDRES. Because of the size of the map, staff will review it with the Commission during the meeting.

Once the Commission decides which approach would work best for keeping chickens on residentially zoned properties, staff will develop additional ordinance language for review and approval.

DJ

Enclosure(s)

Sec. 10-41. - Supplemental district regulations

(18) *Farm enterprises.* Farm enterprises, as defined in Article VI of this chapter, are permitted in the A-1 Agriculture District subject to the following requirements:

(a) The gross floor area of any structure(s) devoted to the farm enterprise use shall not exceed two thousand (2,000) square feet.
(b) In addition to family members residing on the farm or the farm operators, up to two (2) nonresident, nonfamily employees (equivalent to two (2) full-time workers at forty (40) hours per week) are permitted to be engaged in the enterprise on an annual basis.
(c) Structures and parking areas shall be located at least one hundred (100) feet from any residential zoning district and adjacent dwellings, other than the owner's dwelling.
(d) At least thirty (30) percent by retail value of the products sold from the farm enterprise on an annual basis shall have been grown or produced on the farm.
(e) Hours of operation shall be limited to the hours between 7:00 a.m. and 10:00 p.m.
(f) One sign shall be permitted and shall be non-illuminated and not exceed twenty (20) square feet in area.
(g) The enterprise shall have at least forty (40) feet of frontage on at least one public road. In cases where the proposed farm enterprise does not meet the minimum road frontage, the board of zoning appeals may grant a special use permit for such a use provided all parties with interest in any private access easement used to serve the farm enterprise have received notification of the request.

(19) Urban Agriculture.

(a) Residential Chicken Keeping as defined in Article VI of this chapter, are permitted in the Residential (R-1), (R-2), (R-2), (TND) and (PUD-RES) zoning districts subject to the following requirements:

1. The owner of the chickens must reside on the property on which the chickens are kept. The keeping of roosters, capons, and crowing hens is prohibited.

2. Chickens shall be kept within a predator-resistant coop or chicken enclosure and shall not be allowed to roam free.

3. Coops and chicken enclosures shall be located in the rear yard only and shall be setback at least 25 feet from side and rear property lines. Portable Coops shall be moved on a regular basis and shall be setback 20 feet from side and rear property lines.

4. Coops shall provide at least two (2) square feet of interior space per chicken and chicken enclosures shall provide at least (8) square feet of exterior space per chicken with a maximum total area of 128 square feet. Neither the coop nor the enclosure shall exceed ten (10) feet in height.

5. Coops and chicken enclosures shall be well-ventilated and kept in a clean, dry, and sanitary condition at all times.

6. Chickens shall be kept for the household's personal consumption only. On-site commercial uses such as selling eggs or chickens for meat shall be prohibited.

7. Provision shall be made for the storage and removal of chicken waste (manure). Such waste shall not create a nuisance or health hazard to adjoining property owners.

8. All feed or other materials intended for consumption by chickens shall be kept in containers impenetrable by rodents, insects, or predators.

9. A zoning permit shall be obtained by the owner of the chickens.

Sec. 10-61. – Definitions

Repair shop: A building or portion thereof, other than a private garage, designed or used for servicing and repairing automobiles, light trucks and lawn equipment, as a business enterprise, and which may include auto body repair (also refer to "Garage, public").

Required open space: Any space required in any front, side or rear yard (also see "Green space").

Residential Chicken Keeping: The keeping of up to six (6) female chickens (hens) in non-agriculturally zoned areas as an accessory use to a single family residence subject to the standards set out in Section 10-41(19).

Restaurant: A structure, or any part thereof, in which food or beverages are prepared and dispensed for consumption at the time of sale. May include one (1) or more of the following:

Restaurant, full-service: A restaurant with table service (order placement and delivery on-site) provided to patrons, also including cafeterias; carry-out service, if any, shall be a limited portion of the facility and activity.

Restaurant, limited-service: A restaurant without table service provided to patrons; walk-up counter and carryout trade is a primary portion of the facility; includes fast-food, food delivery, carryout, public snack bars and delicatessens, but not specialty food stores.