



PRINCE WILLIAM COUNTY MIXED-USE & MULTI-MODAL CONNECTIVITY IN INNOVATION PARK & GAINESVILLE

FINAL REPORT

PREPARED FOR: PRINCE WILLIAM COUNTY & METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS
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EXECUTIVE SUMMARY

The Innovation Park and Gainesville stations are identified in the Prince William County Comprehensive Plan as areas for future service on a planned future extension of the Virginia Railway Express (VRE) Manassas line on the Norfolk Southern freight rail line. The VRE conducted a Gainesville-Haymarket Extension study analyzing these two station areas (plus the Town of Haymarket which is not in the scope of this study) and at their March, 2017 meeting the VRE Board determined that the extension was impractical at this time. Figure 1 provides a general locator map showing the two future potential station areas

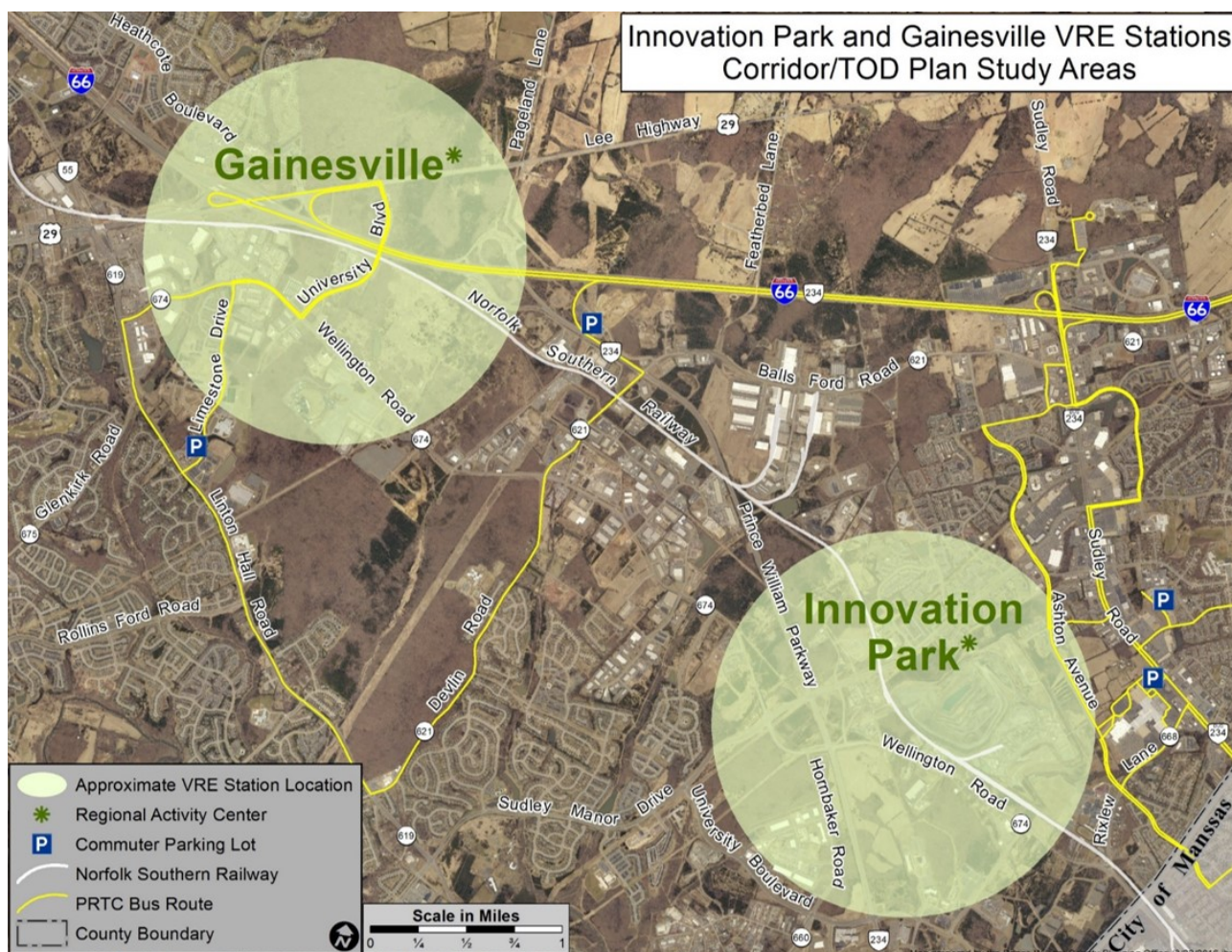


Figure 1. Innovation Park and Gainesville Station Area Locations

This Transportation/Land-Use Connections (TLC) program project examined both existing and currently planned land use and transportation elements affecting the two planned VRE stations and developed recommendations for continued economic development without VRE investment in the foreseeable future. The study considered transportation oriented design (TOD) readiness from both the study areas and local station perspectives, multimodal connectivity and accessibility, and guidelines for economic growth and community design. The study combined quantitative analysis with strategic stakeholder engagement customized to be responsive to both the County's needs and the TLC program objectives, defining concepts based on transferable, quick-response techniques and a strategic action plan.

This study found strong potential for the development of continued economic growth centered along Wellington Road, an arterial roadway that generally parallels the Norfolk Southern tracks. The study suggests that there are opportunities for the Wellington Road corridor to evolve over time into an area with strategically located mixed-use activity centers (that might be branded as village centers and town centers) that would be able to support quality bus service in the corridor over time.

Figure 2 illustrates, from a conceptual perspective, how the Wellington Road corridor might best be positioned over time to evolve into a transit corridor independent of VRE while improving readiness for future VRE service in the long term.

Stage 1 in Figure 2 shows the existing conditions from a schematic perspective. Currently, Wellington Road is an industrial collector roadway, mostly two lanes in width, that traverses the industrial land uses parallel to the Norfolk Southern tracks. The study area has three key destinations:

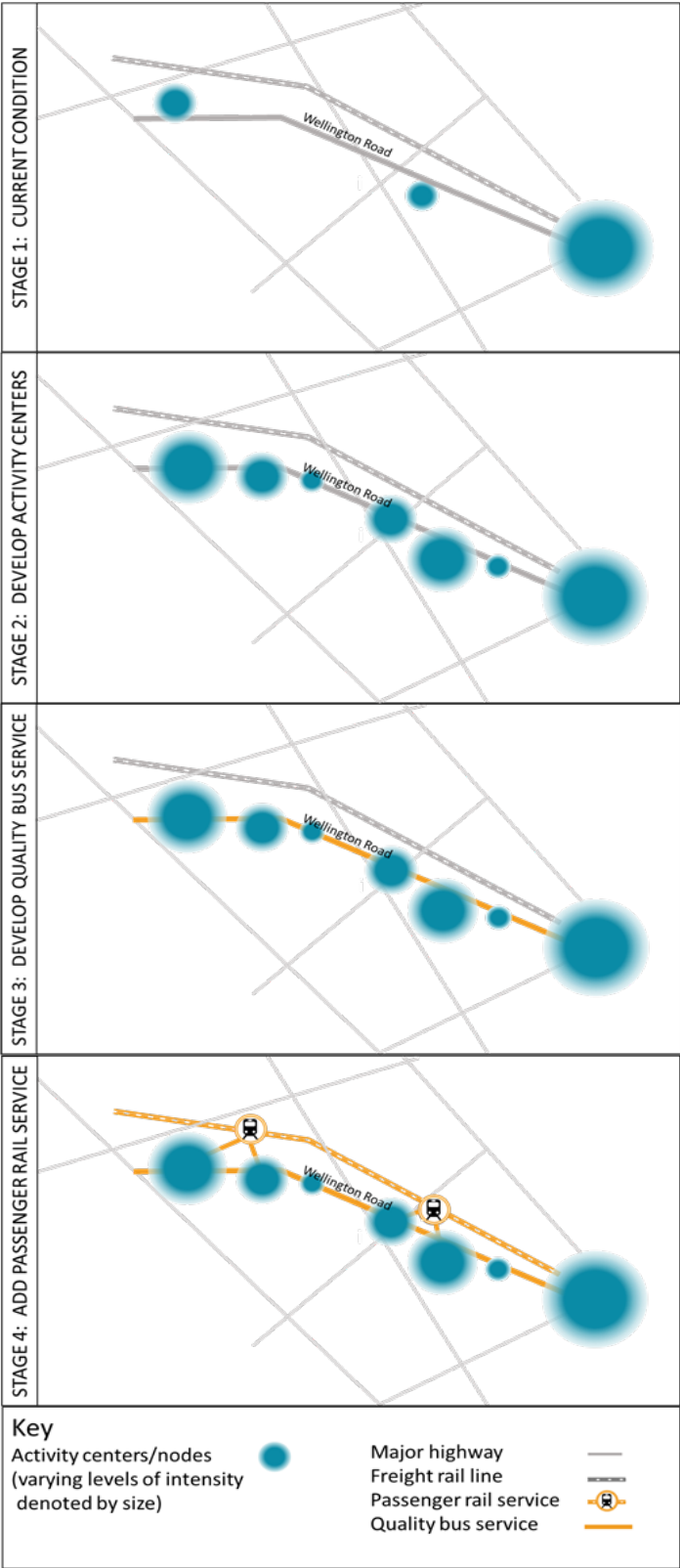


Figure 2. Wellington Road Conceptual Corridor Evolution

- Gainesville, with Atlas Walk and the Promenade, are destinations at the northwest end of Wellington Road,
- The George Mason University Science and Technology Campus is an emerging institutional attraction centrally located in the study area, and
- Downtown Manassas serves as an anchor to the southeast.

Stage 2 in Figure 2 illustrates the conceptual next step in realizing a vision for Wellington Road, in which each of the existing activity centers intensifies, generally according to current plans. At the same time, strategic new village centers could be developed along Wellington Road as infill locations.

Stage 3 illustrates the continued growth of the Wellington Road corridor, but with high quality bus services established along Wellington Road to help the corridor evolve and become TOD-ready independent of VRE.

Finally, as shown in Stage 4, the long-term vision for the corridor would be to supplement the local, multimodal corridor with passenger rail service on the Norfolk Southern tracks to better connect the corridor to the rest of the Washington, D.C. region. The proximity between both existing and potential village centers and the Norfolk Southern tracks could continue to support a commuter parking resource for a larger commutershed while facilitating deviation of the “Stage 3” Wellington Road bus service into the VRE stations and promoting walking, bicycling, and short transit trips from the town centers and village centers. The current design and function of the Lorton VRE station may serve as a useful prototype for the development of these centers.

This conceptual evolution does require balancing several moving parts, notably the desire to leverage current economic initiatives such as data centers with the long-range potential for higher density, walkable

mixed-use communities. This report describes how that balance might occur, from a combination of corridor visioning, analytics, and work program elements for Prince William County to consider refinements to policy, planning, and project delivery processes to foster such evolution.

A key recommendation from the study is the development of a Wellington Road Corridor Small Area Plan that would build on the concepts outlined in this report and further the elements of the action plan described in the recommendations section of the report. Additional recommendations in the action plan include a series of policy, planning, and implementation actions to strengthen the study area identity, facilitate additional mixed-use development, leverage institutional and civic working relationships, and guide Wellington Road corridor evolution.

PURPOSE & CONTENTS OF REPORT

This assessment of the mixed-use potential and multimodal connectivity in the vicinity of a planned Virginia Railway Express (VRE) extension of the Manassas Line is intended to foster the development of the Innovation Park and Gainesville areas into thriving, walkable activity centers. Transit-oriented development in these activity centers, supported by connected networks of pedestrian and bicycle facilities and transit service will fulfill the strategic sustainable growth strategy envisioned in the Regional Transportation Priorities Plan, support the Region Forward goals and objectives, and increase Prince William County’s economic vitality and development potential.

This project was initiated in conjunction with an alternatives analysis conducted by VRE of the Gainesville / Haymarket Extension (described as the GHX). The VRE GHX analysis determined that the implementation

of the extension to Gainesville or Haymarket was not yet cost-effective based on the levels of current development and the forecast 2040 land use and transportation system conditions in the regional Constrained Long Range Plan (CLRP).

The purpose of this TLC project is to:

- 1) Assess the readiness of transit-oriented development (TOD) for potential station areas in Innovation Park and Gainesville.
- 2) Assess the multimodal connectivity of the existing and planned land use and transportation system and how that connectivity might be improved to foster TOD.
- 3) Consider approaches to augment the County's existing design guidelines to foster better multimodal connectivity at both small area plan and site development levels.
- 4) Produce an implementation plan with specific short, medium, and long-term actions to ensure the vision comes to fruition.

The methodology, analysis, and findings of this study are likely applicable to other locations in Prince William County and other jurisdictions throughout the Washington region.

Report Contents & Organization

This report contains the following sections:

- A description of the **current planning context** which both informs the need for this study and the basis for study analysis and recommendations
- A summary of the **analytic reviews and findings** in three topical areas:
 - TOD readiness,
 - Multimodal connectivity, and
 - Design guidelines

- A recommendation for **next steps** that the County should take to implement the study recommendations.

Additional details on the technical analyses are contained in three appendices:

- Appendix A describes TOD readiness,
- Appendix B describes multimodal connectivity, and
- Appendix C provides background on the design guidelines recommendations.

PLANNING CONTEXT

Existing land use within the Innovation Park and Gainesville activity centers can be broadly categorized as low-density industrial mixed with undeveloped parcels, and some residential subdivisions and auto-oriented uses toward the activity center edges. The station area plans will identify redevelopment constraints and opportunities to balance economic development, community interests, and environmentally sensitive areas.

The County's population and employment projections demonstrate growth along the general Gainesville-Haymarket extension area, but do not appear to leverage the potential for TOD at the VRE station areas. Focusing growth into station walksheds and bike-sheds is a key policy initiative that should be facilitated through policy documents and development approval processes.

VRE's Gainesville-Haymarket Extension (GHX) study assessed a specific set of locations prior to the start of the TLC project. Because VRE has decided not to pursue an extension at this time, the County has an opportunity to rethink long term plans in the corridor, recognizing that station platform and yard-and-shop locations should be

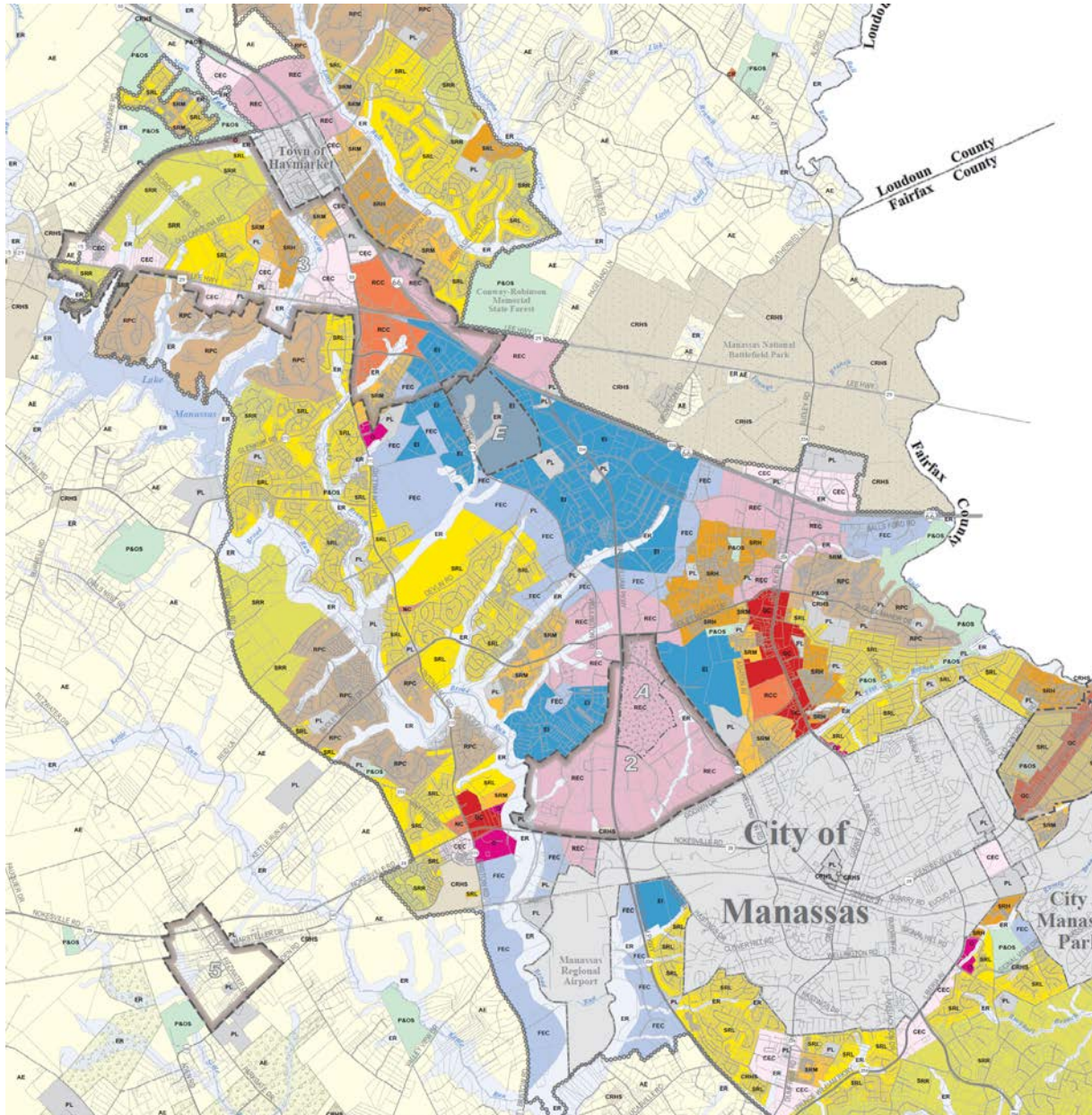


Figure 3. Prince William County Long-Range Land Use Map

preserved to the extent possible through the local planning process to preserve future GHX viability.

Current Comprehensive Plan

The County is currently updating its Comprehensive Plan, last fully updated in 2008. Figure 3 shows the land use plan that sets the foundation for economic growth. The current planning context recognizes the

general separation of land use types that reflect the type of planning and zoning legacy common to jurisdictions nationwide but also the unique experience of Prince William County's recent economic development history.

Notably, Figure 3 illustrates:

- The establishment of residential developments in shades of yellow largely

reflecting the County's wave of growth over the past three decades as a bedroom community for the greater Washington, DC region.

- The retention of industrial zoning shown in blue, reflecting legacy extraction uses along the Norfolk Southern rail line and emerging strategic economic development associated with newer technologies such as data centers that are relatively nimble occupiers of brownfield or secure campus sites.
- Regional employment centers (REC) designated in pink shades (with more traditional clusters of retail uses in brighter red), including significant investments in properties obtained by the County for economic development over the past several decades.
- The areas defined as regional employment centers (REC) and community employment centers (CEC) are designated in the Comprehensive Plan as allowing a mix of residential and commercial uses. In these areas, a development applicant needs to conform to other Comprehensive Plan guidance and may need to apply for rezoning to an appropriate zoning district to develop an integrated mixed-use development.

- The designation of two key sector plan areas, I-66/Route 29 (identified as part of the 2008 Comprehensive Plan) and Innovation (adopted in 2012) for more focused land use recommendations.

In 2016, the County adopted the Data Center Opportunity Zone Overlay District (DCOZOD), reflecting the economic development opportunities that could be leveraged with an eye towards industrial properties located in proximity to high-voltage power lines. Figure 4 shows the DCOZOD, which incorporates the industrial areas also shown in Figure 3.

Figure 5 presents a conceptual view of the land uses recommended in the current Comprehensive Plan with adjustments made to show where new strategic activity centers might be established.

The existing activity centers shown in Figure 5 include (from west to east):

- A. Atlas Walk
- B. The Promenade
- C. Jiffy Lube Live arena
- D. George Mason University Science and Technology Campus
- E. Downtown Manassas

- Occupy underutilized or vacant land,
- Benefit from generally high visibility along and accessibility via major roadways,
- Not be directly or proximally served by high voltage power lines, thereby reducing their desirability as data center opportunities within the DCOZOD

The yellow dots symbolize opportunities for activity centers that could help strengthen the Wellington Road corridor from a connectivity perspective, provide opportunities to live, work, and shop in compact communities, and strengthen the corridor's TOD readiness for both bus service in the near term and VRE stations in the longer term.

From west to east, the activity center and village center opportunities are:

- Piney Branch Industrial Park,
- Buchanan Property (north of I-66),

The activity center opportunities reflect areas that appear to:

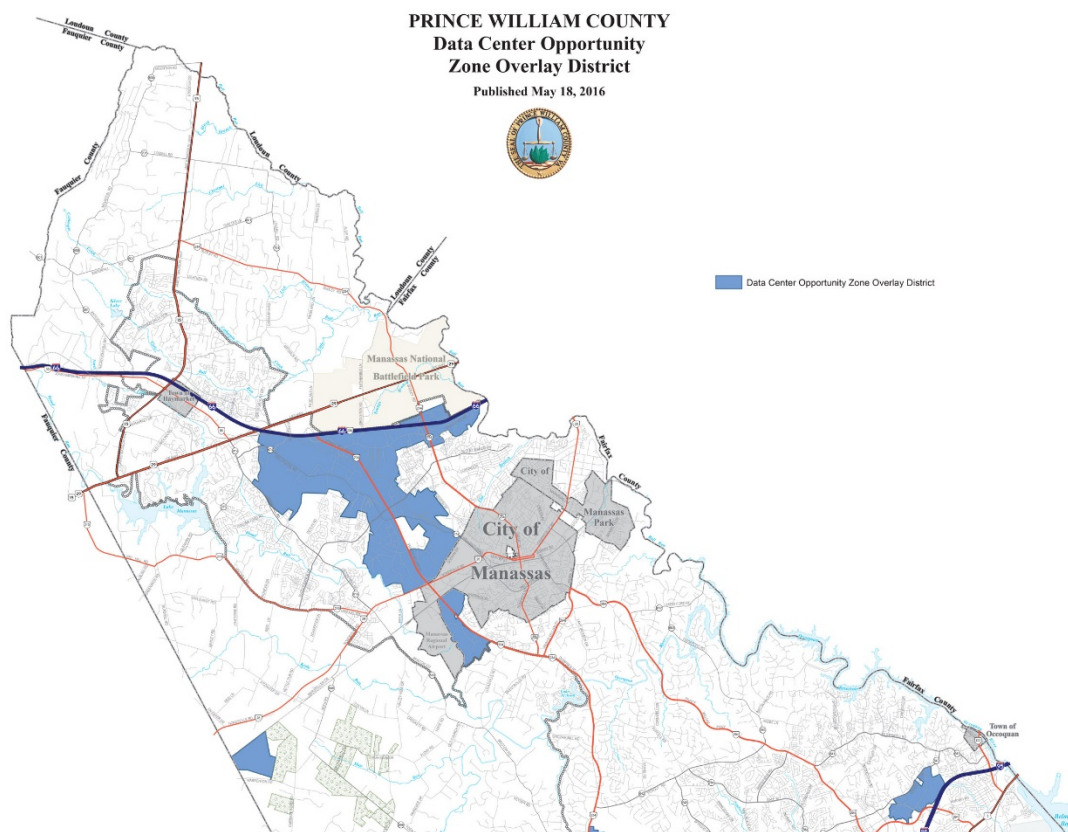


Figure 4. Data Center Opportunity Zone Overlay District Location

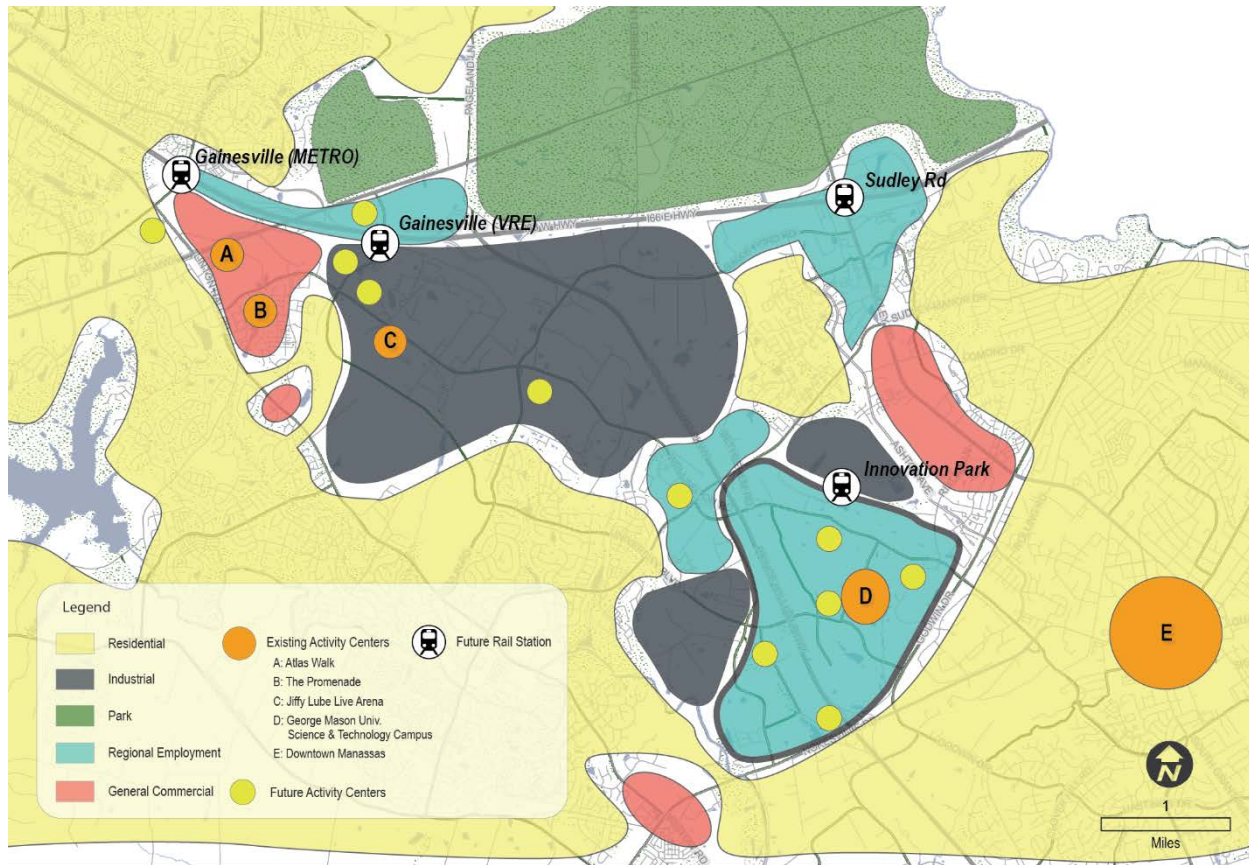


Figure 5. Strategic Village Center Opportunities

- Northeast quadrant of Wellington/University,
- Southeast quadrant of Wellington/Devlin,
- Western quadrant of Wellington/Sudley Manor adjacent to the Arcadia Apartments,
- Birkett Barn site vicinity in the Innovation Sector Plan,
- Innovation Sector Plan neighborhood adjacent to future VRE station (per current Sector Plan)
- Innovation Town Center (per current Sector Plan and reflected in Miller and Smith concepts)
- Farm Live Brewery site vicinity
- Lockheed Martin property

The fact that these opportunities are shown as identically sized yellow dots is not meant

to suggest that they are intended to be developed in a uniform fashion. Rather, the potential for each opportunity needs to be further developed in the Wellington Road Corridor Small Area Plan to reflect market potential, County strategic economic development objectives, and the interests of property owners, the development community, and the existing residential and commercial neighbors who stand to benefit from investment in these areas (as long as the new neighbors are good neighbors).

The development of new mixed-use activity centers needs to be sensitive to the various planning and fiscal capacities of planned County infrastructure and services. Notable among these capacities are public facilities such as roads, schools, libraries, parks/recreation, and fire/rescue. There are many moving pieces in the fiscal puzzle. Most notably for the Wellington Road

corridor, the fiscal considerations should include:

- The possibility of zoning changes or incentives to **increase total density**, so that both residential and commercial development yields can increase
- Careful examination of **development context and resulting infrastructure needs**; the mixed-use nature of town center and village center developments will likely yield higher wage earners making shorter trips by car and generating fewer public school pupils than the current county average. The County needs a range of residents and businesses to be sustainable; the benefits of development types and designs that generate a higher cost-benefit ratio even for residential development should be taken into account.
- Recognition of the **evolutionary nature of the corridor**; lower-investment commercial development may be a short to mid-range investment that would be replaced with higher density mixed use development over time. Conversely, however, higher cost investment in lower yield properties (such as significant investment in power lines extended to potential data centers) may make such properties less likely to redevelop in the future.

Figure 5 also shows both future VRE and Metrorail station locations per the current Comprehensive Plan. For both VRE and Metrorail, the linear facility (along the Norfolk Southern tracks and along I-66) forming the alignments are essentially fixed (deviation would be prohibitively expensive) yet the specific location of stations along those alignments may still have some flexibility. In both cases, the implementation timeframe should be assumed to be in the far future; planning and implementation should reflect the aspiration of rail transit but not rely on it in the near term.

TOD READINESS

Achieving a fully functional and multimodally connected transit-oriented station area requires a combination of policy-related, market, physical, and social factors. Renaissance has developed a method for assessing how “ready” a station area is for TOD. This method examines the full spectrum of factors, including multimodal connectivity, and identifies a station area’s strengths and weaknesses.

In the simplest terms, transit oriented developments (TODs) are compact mixed-use areas with moderate to high intensity and density within walking distance of a transit stop or station. TODs are designed to maximize walking trips and access to transit. TODs are characterized by streetscapes and an urban form oriented to pedestrians to promote walking trips to stations and varied other uses within station areas.

Achieving TOD around a transit station area is an evolutionary process. TODs need a specific combination of geographic, demographic, economic, and institutional factors to emerge and function effectively in complementary fashion. Cultivating an environment from which TOD will emerge therefore requires diligent planning. TOD emerges from opportunities that planners and local governments create, that elected officials enable, and that developers and financial institutions recognize and act upon. Identifying those opportunities is the key to understanding whether an area is “ready” for TOD and what actions are critical to unlocking the full potential for TOD at a given location.

Innovation Park and Gainesville could be strong candidates for rail transit in the long-term future, given the existing rail line and the willingness to focus new growth in these areas. Investments in premium transit require ridership forecasts that come from land use decisions to focus and design



Figure 6. TOD Readiness Elements

development surrounding the station area with TOD characteristics – densities high enough to generate ridership, walk access to transit, and built form consistently and cohesively oriented to the transit station. Even if rail transit never comes to the Innovation Park and Gainesville areas, these places still need to evolve into more compact, pedestrian-oriented nodes of activity with multimodal transportation options to help the County and the region absorb the anticipated new growth and realize the promising economic opportunities available.

These changes in land use and multimodal connectivity take time and careful planning. Now is the time to begin understanding how ready Innovation Park and Gainesville are for TOD and to align the policy, infrastructure, and financial pieces to increase the readiness for these areas to evolve.

TOD Readiness Evaluation

Figure 6 shows the 20 quantitative and qualitative measures for each study area that reflect the full spectrum of TOD interests. By analyzing these 20 measures, planners can understand an area's strengths and weaknesses, and develop strategies to increase readiness by building upon the area's strengths, and seizing opportunities to address areas of weakness.

Policy measures indicate the level of support the local government has demonstrated through visioning processes and documents, supportive regulations, public investments, policy adoptions, and other commitments. They also indicate the level of consistency and predictability in the process. These measures are primarily driven by local governments, and are also of interest to developers, as they can provide procedural or fiscal incentives for developers. A cooperative local government with a clear vision for TOD and a steady

policy environment sets the table to help facilitate each of the remaining market, physical, and social measures.

Market measures assess the market potential of the area and evaluate recent real estate activity and trends. These measures are of primary interest to potential investors (i.e. developers and lenders), because they significantly affect factors like calculated risk and return on investment.

Physical measures evaluate the area's underlying infrastructure, mix of uses, and the quality and connectivity of transportation networks. In general, these measures appeal primarily to businesses, as they indicate the propensity for potential customers to access the business without having to drive. These measures are also relevant to other audiences, including potential residents, investors, and planners because they describe the variety of destinations available and the ease with which one can access destinations by non-auto modes. Physical measures also assess the scale and orientation of the built environment (for humans or autos). Pedestrian oriented places generally have easier access to transit, and can support local businesses with greater numbers of pedestrians passing by.

Social measures reveal several facets of the vibrancy and civic resources of the community, as well as the balance of demographic and socioeconomic characteristics of the existing residents. These measures are primarily relevant to potential residents and visitors because they indicate the community assets available. Local government planners, transit service providers, and businesses are also interested in these measures.

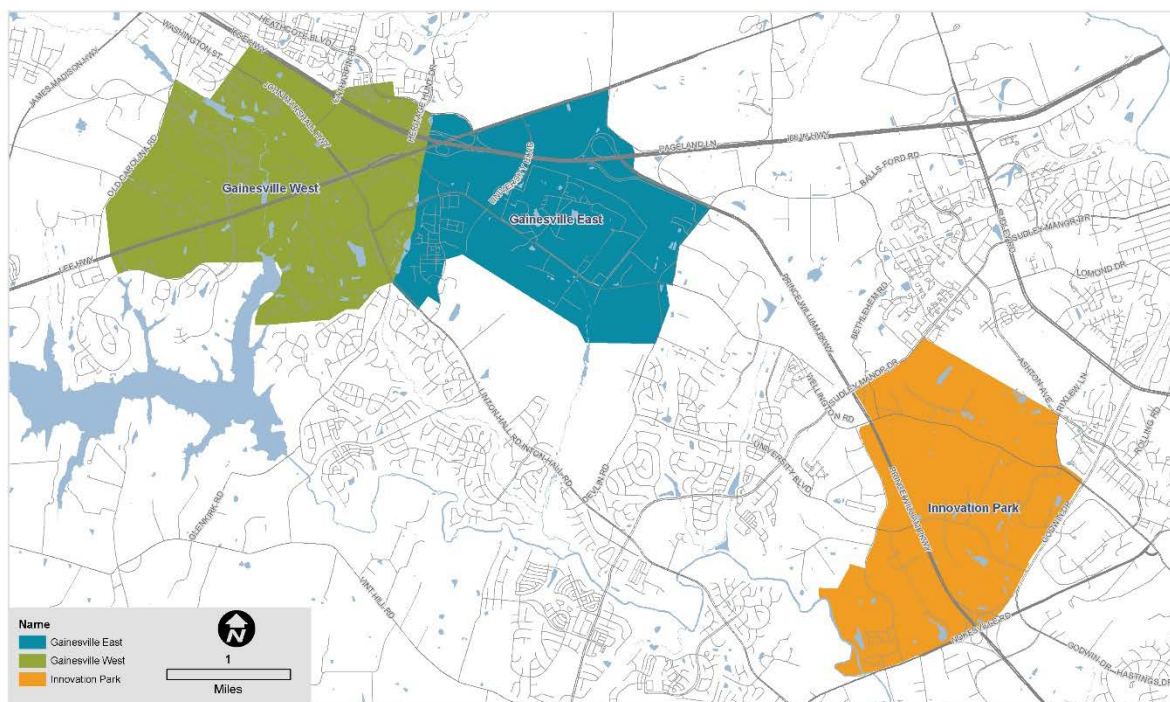


Figure 7. TOD Readiness Analysis Study Areas

TOD Readiness Results

Figure 7 shows the boundaries of the study areas identified for Innovation Park and Gainesville. The 2012 Innovation Sector Plan area boundary. The potential range of Gainesville area VRE stations examined by VRE spans a larger geographic area. To retain a sense of TOD readiness as applied to a walkable geography, the Gainesville area was divided into two subareas for this analysis, labeled Gainesville West and Gainesville East.

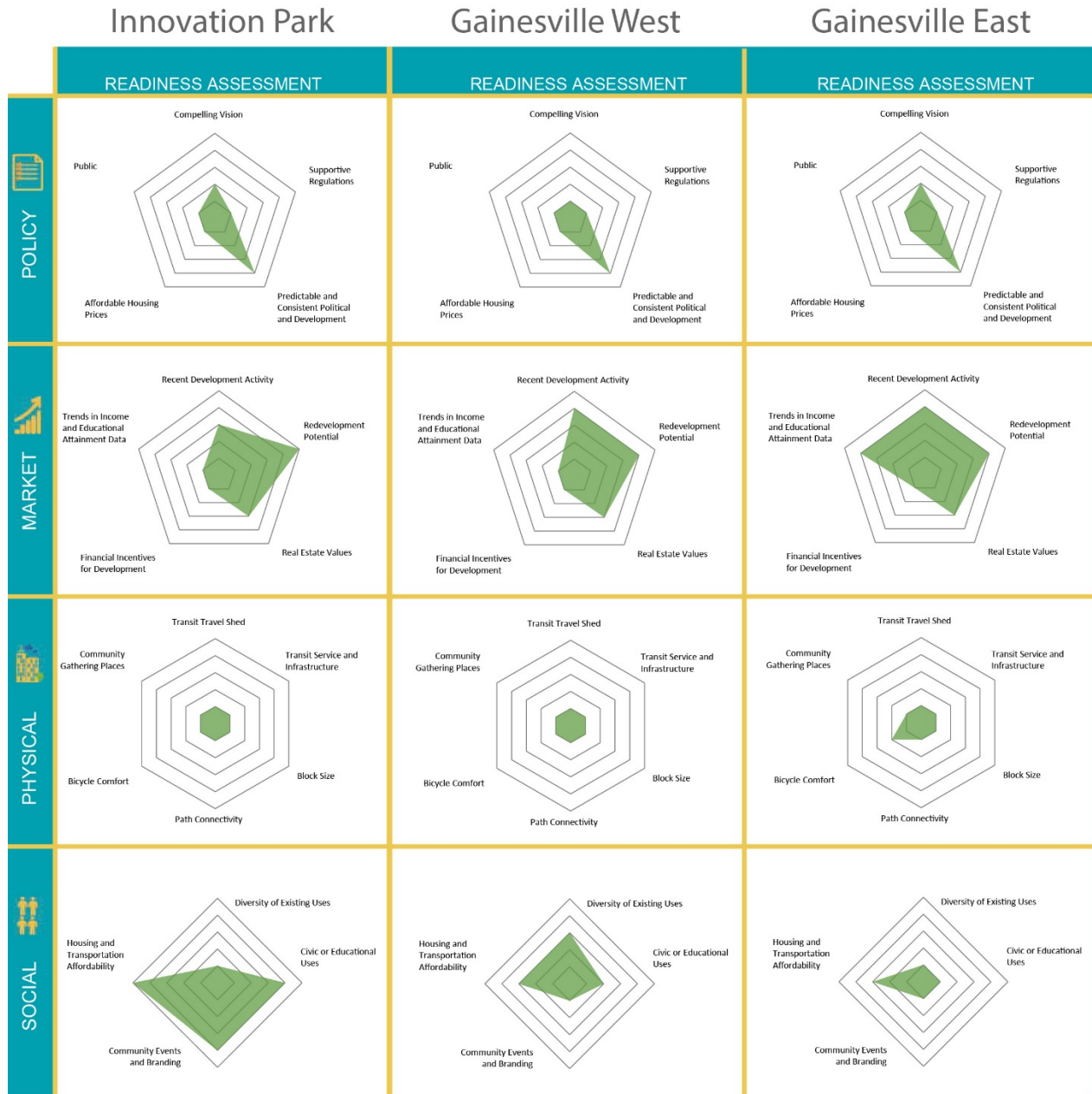


Figure 8. TOD Readiness Elements for Station Areas

Figure 8 provides a summary of the TOD readiness results, using a graphical “radar chart” presentation to show the relative strengths of each measure in each analysis area. As indicated in Figure 8, both the Innovation Park and Gainesville station areas are generally strong in the market and social measures, but relatively weak in the policy and physical measures. Table 1 describes the key strengths and weaknesses

in each area. The recommendations in the final section of this report are designed to help leverage the market and social strengths of each study area and provide direction on development of VRE station areas, address multimodal connectivity within and between the study areas, and explore the development of the Wellington Road corridor.

Connectivity Analysis

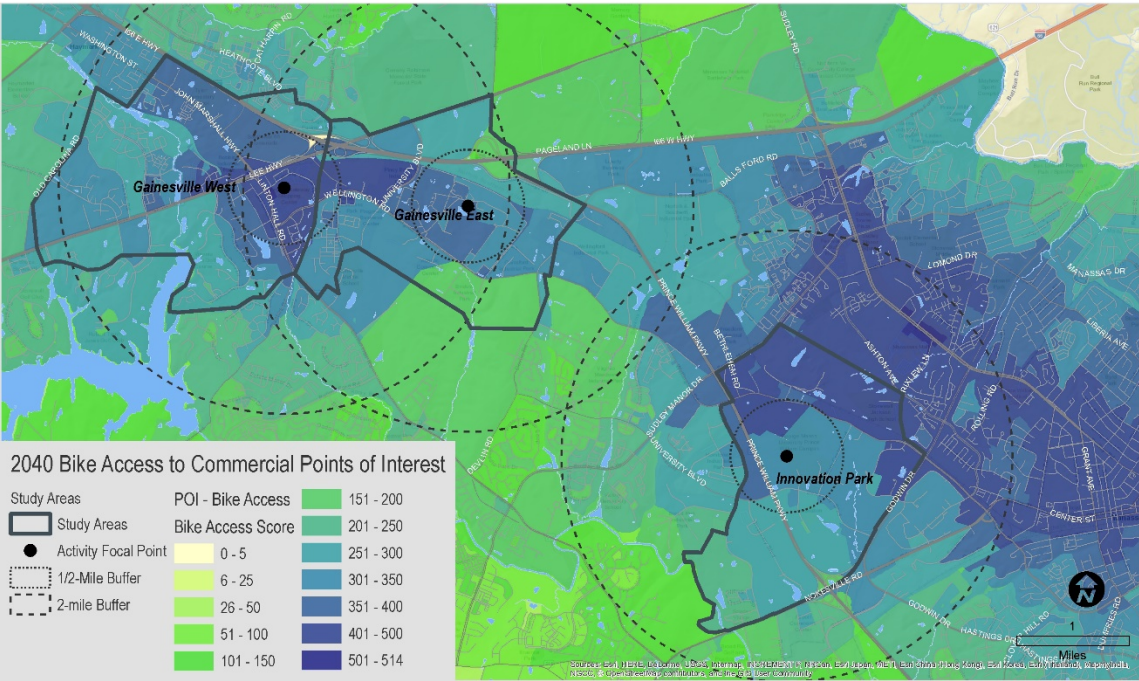


Figure 9. Forecast 2040 Bicycle/Short Auto Trip Connectivity Analysis

Appendix A provides additional detailed information on the TOD Readiness methodology and results.

MULTIMODAL CONNECTIVITY

The multimodal connectivity assessment identified the potential for a well-defined corridor along Wellington Road extending from downtown Manassas to Gainesville that could help connect future communities to the activities needed for daily life (notably retail, services, health, and recreation). Nearly as important, this analysis noted that while the corridor could become relatively rich in destinations, the current plans for the corridor maintain a fairly strong separation between residential and commercial activities, in part due to the complexity of comprehensive plan guidance and zoning district requirements as noted on page 5. These two findings helped inform the study

Table 1: Overview of TOD Readiness Analysis Results

	Innovation Park	Gainesville
Strengths	<ul style="list-style-type: none">• Civic & educational anchors• Place identity• Affordability• Redevelopment potential	<ul style="list-style-type: none">• Recent development activity• Redevelopment potential• Real estate values• Trends in income and educational attainment
Weaknesses	<ul style="list-style-type: none">• Lack of adopted compelling vision• Complex development regulations which do not encourage compact, mixed-use, pedestrian-oriented development• High speed sparsely spaced road network	<ul style="list-style-type: none">• Lack of adopted compelling vision and supportive regulations• Isolated auto-oriented single use developments• Lack of affordable housing policies

recommendations and conceptual vision to introduce additional residential mixed-use

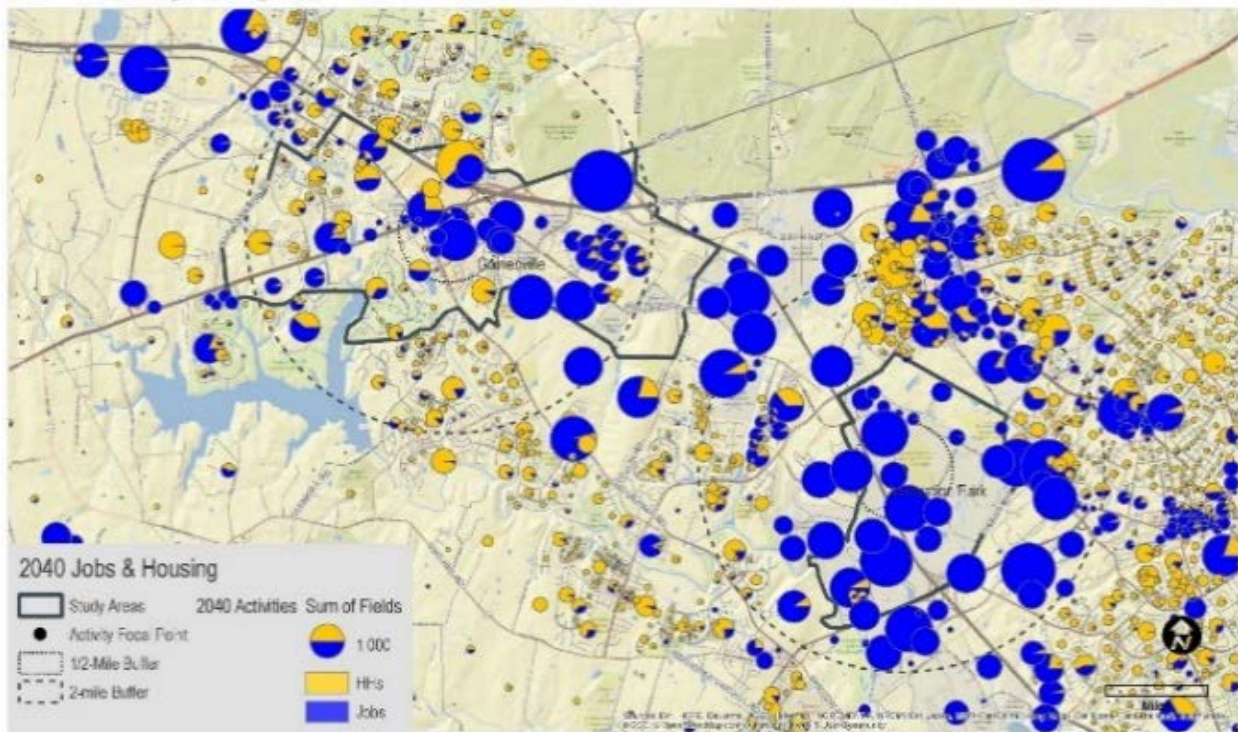


Figure 10. Forecasted Development Intensity and Diversity.

activities at strategic locations in the study area.

The assessment of multimodal connectivity focused on the consideration of walking, bicycling, and short auto trips between origins throughout the study area and non-work destinations, based on a methodology developed in concert with the Virginia Office of Intermodal Planning and Investment as part of the considerations for future Smart Scale project prioritization evolution. The analysis found that locations with high levels of retail and service “points of interest” within close distance of residential communities resulted in lower household vehicle miles of travel; greater use of walking, bicycling, and transit; and higher property values.

Figure 9 shows the forecasted 2040 accessibility to nearby retail opportunities (within walking, bicycling, or a short auto trip) in the study area based on both projected

land use and existing and planned transportation networks. Figure 9 shows the emergence of a nearly continuous high opportunity zone along Wellington Road from downtown Manassas to Gainesville. The opportunities are highest at or near the established activity centers in downtown Manassas, the George Mason University campus, and the Atlas Walk development.

The Atlas Walk development already contains a high concentration of retail goods and services, meaning that it has the highest levels of connectivity for starting a trip at this location. However, since Atlas Walk is primarily a retail center, with no co-located residential housing, there is a missed opportunity for increased trip generation for those walking, biking, or short vehicle trips.

Figure 10 shows the projected 2040 levels of development intensity in the study area. The forecast 2040 number of jobs and housing

units in each census block is represented by the size of the circle for each block and the jobs/housing balance is denoted by color (with blue denoting jobs and yellow denoting housing units).

Figure 10 shows that the study area is forecast to grow in a generally homogenous way with jobs segregated from housing units, particularly in the Wellington Road corridor from Atlas Walk to Innovation Park. This homogeneity can limit the amount of walking and biking that actually takes place, even if theoretical walk and bike access is high. In addition to working on inter- and intra-area connectivity, there are opportunities to make land use changes that will facilitate more effective connectivity for walking, bicycling, and short auto trips in the Wellington Road corridor.

Introducing more residential opportunity into the corridor could help leverage the high levels of commercial accessibility already planned, leading to the recommendation to develop strategic mixed-use village centers along Wellington Road and at key locations throughout the Innovation Sector Plan.

Appendix B provides additional detail on the methodology and results of the connectivity analysis.

DESIGN GUIDELINES

The consideration of design guidelines for this project incorporated both site-specific concepts as well as overarching concepts that could be applied at a wide variety of scales. Prince William County has conducted fairly extensive development of design guidelines for the Innovation Park station town center, and those guidelines are

best refined through the ongoing Small Area Plan process.

Appendix C provides additional detail on both the overarching design concepts as well as the hypothetical concept for furthering mixed-use infill development to promote the refinement of the Atlas Walk and Promenade developments into mixed-use town centers.

Overarching Design Concepts

This project considered three levels of overarching design concepts that would help develop and implement a Wellington Road Corridor Small Area Plan.

From a corridor, or subregional, perspective, the County might consider broader and deeper incorporation of the 2013 *Multimodal System Design Guidelines*¹ developed by the Virginia Department of Rail and Public Transportation (DRPT). These guidelines provide guidance on development densities and roadway designs that support different levels of transit system investment. One of the challenges faced in the current VRE GHX study was the degree to which development densities in a reasonable station catchment area were insufficient to generate high levels of VRE ridership, both in terms of proximate station density for walk access, bike access, or feeder bus transit access as well as for a drive-access commutershed that did not have equally attractive options for longer-distance work trips such as those provided for in the Transform66 project.

Figure 11 indicates the level of transit-supportive densities currently forecasted in the corridor, with systematic localized assumptions used to disaggregate Transportation Analysis Zone (TAZ) level forecasts to census geographies and normalized jobs and housing to the gross-

¹ "Multimodal System Design Guidelines", Virginia Department of Rail and Public Transportation, 2013,

<http://www.drpt.virginia.gov/planning/multimodal-guidelines/>



Figure 11. Forecast 2040 transit-supportive densities

density activity unit level used in the DRPT Guidelines. The breakpoints shown in Figure 11 correspond to general “activity unit” densities used to support different levels of transit service. As defined in the guidelines, activity units are the sum of an area’s population plus jobs, reflecting both residential and commercial activities. Areas shown in gray (such as the Manassas Battlefield National Park) have too little density to support any level of transit service. Areas in yellow are lower density blocks that might be served by a demand-responsive service. Areas in tan have sufficient density (a gross density of at least 6.64 activity units per acre) to likely warrant service by a fixed-route bus system. Areas in brown (more than 13.75 activity units per acre) may support high quality, frequent bus service. The DRPT Guidelines suggest that at least 33 activity units per acre are necessary to support a conventional bus rapid transit (BRT) service.

Figure 11 suggests that planning for the study area is already evolving towards some transit-supportive densities, but that the activity densities are generally not yet organized in a fashion to demonstrate the need for more than fixed-route bus service. This is due both to the current land use, as well as market demands. Plans for the corridor have generally focused on individual activity centers and not on the corridor as a whole. While the County is poised to attract significant economic development through 2040, the existing zoning has limited potential to absorb both employment and population growth for the long term.

These findings reinforce the value of seeking additional mixed-use centers where residential growth can be accommodated while retaining, and perhaps increasing, both the capacity for certain types of commercial development as well as activities designed to foster commercial growth.

The recommendations for a more diverse, mixed-use Wellington Road corridor should incorporate the establishment of development densities that would support at least high-quality, frequent fixed-route bus service, with consideration of reaching densities supportive of BRT.

Sector Plan / Site Plan Design Concepts

Prince William County has already invested in a substantial amount of site-level design

guidance in the Innovation Town Center area, building from a 2009 station area study conducted in conjunction with George Mason University. Portions of the 2009 study were incorporated in the 2012 Innovation Sector Plan and a separate set of design guidelines for the County's property within the town center were developed in 2016.

Figure 12 shows the Town Center concept from the 2009 study conducted jointly with George Mason University.



Figure 12. Innovation Town Center Concept From 2009 Study

The concept envisions the Prince William Parkway as a fully grade separated freeway with multiple overpasses for both vehicles and pedestrians. One of the overarching design guideline concepts suggests tightening the focal area of the plan to allow

Figure 13 provides a high-level conceptual design for how the existing Atlas Walk and Promenade activity centers could continue to evolve and intensify through infill developments on pad sites and eventual



Figure 13. Gainesville Area Infill Design Concept

the parkway to serve as an edge between activity nodes so that provision of costly multimodal connectivity between existing crossing points is not integral to the concept plan.

Gainesville Design Concept

In contrast to the materials available for the Innovation Sector Plan area, the Gainesville area has limited design history or planning.

conversion of surface parking to structured parking as property values increase over time.

The Figure 13 concept suggests an opportunity to increase mixed-use economic development without substantial redevelopment of existing buildings, but rather by formalizing parking lot aisles into a more formal street grid and introducing a mix of uses as suggested by color coding:

- White buildings are existing buildings that remain
- Pink buildings represent retail (or vertical mixed-use with ground floor commercial) that essentially extend Atlas Walk and expand the Promenade area
- Yellow buildings reflect residential (the shapes are based on the adjacent Wentworth Green development townhouses)
- Blue buildings are generally office or other commercial (including the Spring Hill Suites hotel to the east of the Promenade).

Design guidelines objectives reflected in Figure 13 include:

- Allowing the major roadway network to serve as boundary edges, with commercial uses backing to those wider, larger roads and allowing Wellington Road to serve as a separation between the two activity centers.
- Reinforcing the two activity centers with activating residential uses at the edge of the current retail space.
- Seeking flexible and activating uses, such as the establishment of a civic space (indicated by the flagpole symbol) in the SteinMart/Sports Authority parking lot) which could serve as a location for temporary events such as a farmer's market or open-air concerts.

Of course, the market may also seek other opportunities through repurposing or full redevelopment of the existing building stock. It should also be noted that Figure 13 is purely conceptual and meant to spur conversation; developed using staff judgment but without the desirable stakeholder coordination that a more flexible study schedule may have permitted.

RECOMMENDED NEXT STEPS

This examination of the Innovation Park and Gainesville areas has been conducted at a time when the County has several opportunities for policy and planning actions to consider how transportation and land use connections at these two study areas identified in the Comprehensive Plan might best be considered. The decision of the VRE Board to not pursue an extension of VRE service in the near future provides a logical springboard for the next set of actions that the County may take in concert with regional, state, municipal, and private partners in plan development and implementation.

The technical analyses conducted as part of this study have led to the conclusion that there is great opportunity in the study area to facilitate the identification, and evolution, of a development corridor along Wellington Road. This corridor has the potential to evolve into a productive transit corridor in its own right; one that can be augmented in the long term by VRE service. This evolution must be facilitated by the County's actions.

The concepts identified in this report can be promoted by Prince William County staff through a series of policy, planning, and implementation actions. Table 2 identifies recommended next steps for Prince William County to consider, with several explanatory notes in the following paragraphs.

George Mason University is a valued economic development partner and the Science and Technology Campus provides the opportunity to attract a range of institutional, professional, cultural, and recreational investments into the Innovation Park Small Area Plan area. Development of an updated campus master plan would both help define objectives and contribute to branding and recruiting opportunities for both property owner investment and innovative funding.

Similarly, continued coordination with the City of Manassas can be pursued to strengthening both physical and cultural connections between downtown Manassas and the Innovation Park Small Area Plan area. For example, shuttle services could be provided between amenities such as the Hylton Performance Center and Old Town Manassas.

The fact that VRE will not be extended towards Gainesville in the near term raises the importance of preserving property along the Norfolk Southern alignment to facilitate expansion of freight rail service and the development of passenger rail service through both linear and spot improvements. The establishment of pedestrian access may help raise awareness and support for right-of-way protection. Note that even interim access will likely complicate future passenger rail implementation as demonstrated from the recent Purple Line experience in Montgomery County. Montgomery County purchased rail right-of-way in 1980 planning for future passenger rail service to connect Silver Spring with Bethesda. The "interim use" of the right of way for the Capital Crescent Trail became a treasured community asset so that the long-planned light-rail now faces opposition from neighbors who do not want their trail experience altered. Continued reinforcement of the planned transit services in the corridor through signage would be expected to alleviate, but not eliminate, community attachment to such an interim use.

The Gainesville study area may have the greatest opportunity for significant long-range actions. The VRE GHX study identified several potential locations for both station platforms and yard and maintenance shop locations.

Corridor identity and branding will be important to foster the development of transit-supportive development over time, particularly considering the anchoring effect of downtown Manassas. While the most important nodes along the corridor will continue to be most effectively managed at the community level through small area plans and development plans, successful linkage of these centers in a more regional context may be facilitated by the larger Wellington Road corridor identity.

Table 2 shows the recommended action plan, organized by policy, planning, and implementation actions. The plan identifies four tiers of action to connect the needs and interests in the Wellington Road corridor to countywide work program elements:

- Ongoing, short-term actions are already underway in the County's work program,
- Mid-term actions are those that should be part of the developing the Wellington Road Corridor Small Area Plan and generally accomplished in the next 2 to 4 years, and
- Long-term actions are those that should follow the completion of the Wellington Road Corridor Small Area Plan and might be accomplished in a 4 to 6-year timeframe.

Table 2. Recommended Action Plan

	OBJECTIVES	TIMEFRAME
Policy actions		
Continue mixed-use Zoning Text Amendments	<ul style="list-style-type: none"> • Clarify and simplify overlay districts, especially in Innovation Park area • Seek stronger design guidance • Promote residential mixed-use where applicable 	Ongoing, short-term: ongoing; to be interspersed with other policy and planning items as needed.
Conduct Wellington Road Small Area Plan	<ul style="list-style-type: none"> • Engage stakeholders • Define corridor vision • Refine VRE station locations • Identify town center and village centers • Develop small area plan 	Mid-term: Primary product to focus attention on decisions for the corridor relating to the balance of industrial and residential uses and preserving VRE station options for the long term. (2-3 years)
Establish Complete Streets Implementation Strategy	<ul style="list-style-type: none"> • Establish layered network and modal emphasis per DRPT guidelines • Pursue context-sensitive design standards in conjunction with VDOT • Refine internal processes to ensure complete streets approach throughout both private and public small area plan and implementation processes 	Mid-term: Start immediately, but continue as an ongoing basis
Conduct zoning / LDR diagnosis and potential rewrite	<ul style="list-style-type: none"> • Streamline development process cost and predictability • Focus on Innovation Park 	Mid-term: In coordination with Innovation Small Area Plan (2 to 3 years)
Designate additional mixed-use districts	<ul style="list-style-type: none"> • Replicate Innovation Town Center efforts and deliverables for new town centers and village centers 	Long-term: Following completion of Wellington Road Corridor Small Area Plan (3-5 years)

	OBJECTIVES	TIMEFRAME
Planning actions		
Update Innovation Park Small Area Plan	<ul style="list-style-type: none"> Refine Town Center recommendations Assess potential for Burkitt Barn, Live Farm Brewery, and VRE Neighborhood Village Centers 	Ongoing, short-term – underway (1 to 2 years)
Develop and Adopt Trails Plan	<ul style="list-style-type: none"> Recognize value of off-road, unpaved network for pedestrian interconnectivity 	Ongoing, short-term/ Mid-term: Incorporate in Comprehensive Plan update; refine as part of subsequent efforts as needed
Develop George Mason University campus master plan	<ul style="list-style-type: none"> Establish long range vision and consider growth strategies 	Mid-term: Can be done in tandem with Wellington Road Corridor Small Area Plan (2 to 4 years)
Preserve Norfolk Southern Easement	<ul style="list-style-type: none"> Identify space needs for both linear and spot facilities to ensure passenger rail viability Protect space via reservation, proffers 	Mid/ Long-term: Begin prior to Wellington Road Small Area Vision Plan; confirm approach after Vision Plan completion. (2 to 4 years)
Establish Gainesville Small Area Plan	<ul style="list-style-type: none"> Confirm VRE station locations Identify potential for infill, mixed-use development Consider desirable economic development for open/underutilized properties Consider long range relationship of VRE and Metrorail 	Long-term: Utilize and formalize findings of Wellington Road Small Area Plan (4 to 6 years)
Implementation Actions		
Leverage Innovation Fund	<ul style="list-style-type: none"> Continue use of Innovation Fund to leverage state/private investment 	Ongoing, short-term
Establish community / civic events	<ul style="list-style-type: none"> Strengthen existing civic partnerships and develop new relationships 	Ongoing, short-term
Strengthen planning and physical connections with City of Manassas	<ul style="list-style-type: none"> Strengthen existing civic partnerships and develop new relationships 	Ongoing, short-term : Continue to strengthen and focus relationships. May apply to several geographic focal areas within County.
Carry concepts into Transit Development Plan	<ul style="list-style-type: none"> Carry corridor identity and branding into regular transit planning and operational analysis 	Mid-term – ongoing. Start with next PRTC TDP in 2018
Establish corridor identity and branding	<ul style="list-style-type: none"> Unite independent policy and planning actions under corridor umbrella Build support and develop champions for transit corridor evolution 	Long-term: Utilize concepts in Wellington Road Small Area Plan (4 to 6 years)

APPENDIX A. TRANSIT-ORIENTED DEVELOPMENT READINESS ANALYSIS AND RESULTS

This appendix provides the results of the transit-oriented development (TOD) readiness analyses conducted for the Innovation Park and Gainesville study areas.

Purpose

Prince William County is experiencing rapid growth and development, even faster than the greater Washington, D.C. metropolitan region. Innovation Park and Gainesville are two activity centers identified by the County and the Metropolitan Washington Council of Governments as areas that will focus new population and employment growth in compact, walkable, mixed-use areas that support a variety of multimodal travel choices and investment in premium transit. These two areas represent strong economic development opportunities.

The existing Norfolk Southern rail line is an existing asset for both study areas that presents potential for rail-based transit service in the long term. Even without rail transit, these areas have potential for being vibrant focal points for the western part of Prince William County, with active street life, a robust diversity of connected destinations, and a closely knit urban fabric with options for living, working, and playing.

This vision for the Innovation Park and Gainesville areas is different from today's reality, and these areas will need to evolve over time through gradual transitions to achieve the ultimate potential. This evolution takes time and depends on the alignment of a variety of policy, market, physical, and social factors. TODs are characterized by streetscapes and an urban form oriented to pedestrians to promote walking trips to transit stations and the mix of uses and amenities located within the station areas.

What is TOD Readiness?

In the simplest terms, transit oriented developments (TODs) are compact, moderate to high intensity and density, mixed use areas within walking distance of a transit stop or station which is designed to maximize walking trips and access to transit. TODs are characterized by streetscapes and an urban form oriented to pedestrians to promote walking trips to stations and varied other uses within station areas.

Achieving TOD around a transit station area is an evolutionary process. TODs need a specific combination of geographic, demographic, economic, and institutional factors to emerge and function effectively in complementary fashion. Cultivating an environment from which TOD will emerge therefore requires diligent planning. TOD emerges from a multitude of opportunities that planners and local governments create, that elected officials enable, and that developers and financial institutions recognize and act upon. Identifying those opportunities is the key to understanding whether an area is "ready" for TOD and what actions are critical to unlocking the full potential for TOD at a given location.

Why is TOD Readiness Important in Innovation Park and Gainesville?

Innovation Park and Gainesville could be strong candidates for rail transit in the long term future, given the existing rail line and the willingness to focus new growth in these areas. Investments in premium transit require ridership forecasts that come from land use decisions to focus and design development surrounding the station area with TOD characteristics – densities high enough to generate ridership, walk access to transit, and built form consistently and cohesively oriented to the transit station. Even if rail transit never comes to the Innovation Park and Gainesville areas, these places still need to evolve into more compact, pedestrian-oriented nodes of activity with multimodal transportation options to help the County and the region absorb the anticipated new growth and realize the promising economic opportunities available.

These changes in land use and multimodal connectivity take time and careful planning. Now is the time to begin understanding how ready Gainesville and Innovation Park are for TOD and to align the policy, infrastructure, and financial pieces to increase the readiness for these areas to evolve.

Overview of the 20 Measures

The TOD readiness analysis evaluates 20 quantitative and qualitative measures for each study area that reflect the full spectrum of TOD interests. By analyzing these 20 measures, planners can understand an area's strengths and weaknesses, and develop strategies to increase readiness by building upon the area's strengths, and seizing opportunities to address areas of weakness.

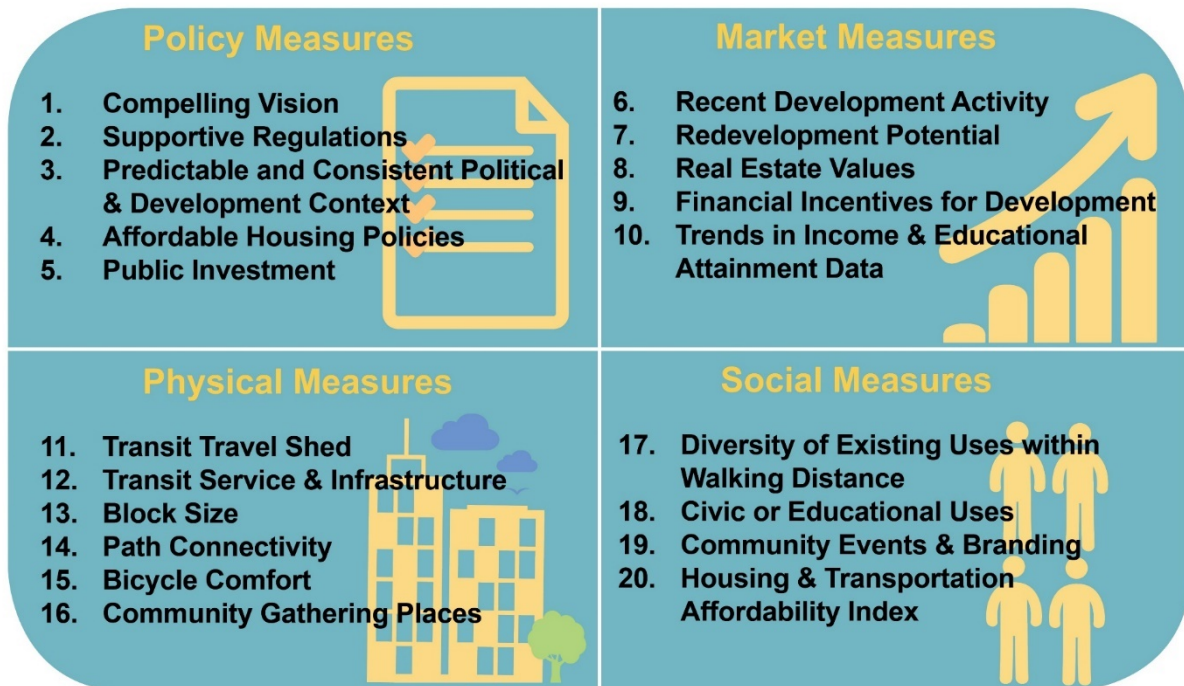


Figure 1. 20 Measures of TOD Readiness

Policy measures indicate the level of support the local government has demonstrated through visioning processes and documents, supportive regulations, public investments, policy

adoptions, and other commitments. They also indicate the level of consistency and predictability in the process. These measures are primarily driven by local governments, and are also of interest to developers, as they can provide procedural or fiscal incentives for developers.

A cooperative local government with a clear vision generally takes precedence over market conditions and transit access, although all three are important factors. What makes an area “ready” is more akin to how steady an area is in terms of politics.

Market measures assess the market potential of the area and evaluate recent real estate activity and trends. These measures are of primary interest to potential investors, i.e. developers and lenders, because they significantly affect factors like calculated risk and return on investment.

Physical measures evaluate the area's underlying infrastructure, mix of uses, and the quality and connectivity of transportation networks. In general, these measures appeal primarily to businesses, as they indicate the propensity for potential customers to access the business without having to drive. These measures are also relevant to other audiences, including potential residents, investors, and planners because they describe the variety of destinations available and the ease with which one can access destinations by non-auto modes. Physical measures also assess the scale and orientation of the built environment (for humans or autos). Pedestrian oriented places generally have easier access to transit, and can support local businesses with greater numbers of pedestrians passing by.

Social measures reveal several facets of the vibrancy and civic resources of the community, as well as the balance of demographic and socioeconomic characteristics of the existing residents. These measures are primarily relevant to potential residents and visitors because they indicate the community assets available. Local government planners, transit service providers, and businesses are also interested in these measures.

The evaluation of each of the 20 measures is described in greater detail in the last section of this Appendix, entitled *Evaluation of the 20 TOD Readiness Measures*.

Results

Both Innovation Park and Gainesville areas are generally moderately strong in the market and social measures and weak in the policy and physical measures.

Table 1: Overview of TOD Readiness Analysis Results

	Innovation Park	Gainesville
Strengths	Civic & educational anchors Place identity Affordability Redevelopment potential	Recent development activity Redevelopment potential Real estate values Trends in income and educational attainment
Weaknesses	Lack of adopted compelling vision Complex development regulations which do not encourage compact, mixed-use, pedestrian-oriented development High speed, limited access road network	Lack of adopted compelling vision and supportive regulations Isolated auto-oriented single use developments Lack of affordable housing policies

Innovation Park

Strengths

Despite a lack of current activity, Innovation Park is a place with a known identity, and shows strength in the social measures of readiness. George Mason University's Life Sciences campus and the Hylton Performing Arts Center serve as large anchors, catalysts for future surrounding development, and generators of significant transit ridership. Thanks to Prince William County's efforts to create an identity for the area, it is a place identifiable by name, the Farm Live Brewery is an example of a business taking advantage of the creative energy and the area's unique historic resources. Innovation Park scores well on the Housing and Transportation Affordability Index, indicating it is a relatively affordable place to live.

Innovation Park has strong redevelopment potential including large parcel sizes for easy land assembly, low improvement-to-land value ratios, limited areas of existing single-family neighborhoods, and relatively few unique land owners per unit area.

Weaknesses

Innovation Park's biggest weaknesses are in the physical measures, mostly due to the lack of activity, infrastructure, and services. Today much of Innovation Park is wide expanses of open land. Office buildings are isolated in with poor connectivity to each other. Transit service is non-existent, with the exception of George Mason University's shuttles. Both University Blvd and Wellington Rd have a speed limit of 45 mph, which most bicyclists perceive as too fast for comfort, and the Prince William Parkway acts as a barrier prohibiting east-west bicycle and pedestrian connectivity.

The other significant weakness for Innovation Park is the complexity and layers of development regulations that makes them difficult to understand and use. Additionally, the lack of affordable housing policies county-wide does not ensure that as this area develops it will retain affordable or workforce housing options.

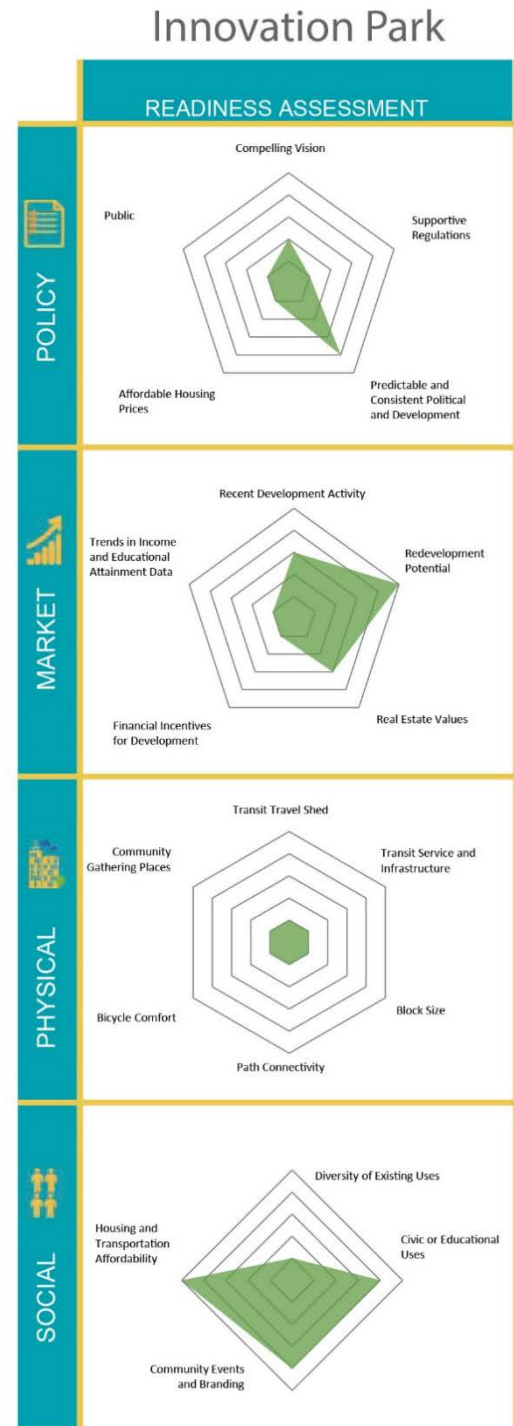


Figure 2: Innovation Park TOD Readiness Analysis - Results of 20 Measure Assessment

Opportunities

The Cooper Carry 2009 Innovation Master Plan provides some distinct concepts for the Innovation Town Center that are worth continuing to incorporate into the Innovation Park Small Area Plan. The 2016 Innovation Town Center Design Guidelines do not integrate the town center as seamlessly with the Hylton Performing Arts Center or the George Mason University campus. The County should consider additional coordination with the developer to enhance the integration of the town center with these community assets.

Additionally, the small area plan should show development better integrated with a future VRE station. The Cooper Carry plan simply shows a park-and-ride lot at the VRE station. However, the future VRE station could be a focal point, and should be well integrated into the development concept. Similarly, the small area plan should illustrate interim transit connections, and design development with fixed-route transit bus service in mind.

The County should identify specific strategic actions to implement the vision from the 2009 Innovation Master Plan, and use the development of the small area plan to reinforce and further articulate this vision. The small area plan should identify walkable focal points connected by low speed roads for bicyclists, and point out these areas on a map with geographic specificity.

The County should also use the small area plan as an opportunity to revise the layers of regulation in Innovation Park by simplifying the future land use and zoning overlay districts. This simplification may be achieved by eliminating the underlying future land use or creating a new stand-alone zoning category specifically for this area that clearly links to the 2009 Innovation Master Plan. The County should focus its investments (including those from the enterprise fund) into the core of the walkable focal points to create more energy in these areas and spur development interest.

The County should also undertake a detailed market assessment to better understand the current market dynamics, and consider using the results to tailor a financial incentive strategy to encourage more compact mixed-use developments and economic development.

Gainesville

The following sections describe the strengths, weaknesses, and opportunities for both Gainesville East and Gainesville West together, as the two study areas resulted in generally similar findings, though notable differences are described.

Strengths

The growing Gainesville area performs relatively strongly in several market measures, including recent development activity, redevelopment potential, and real estate values. As the broader Gainesville area has increased in population, the average educational attainment rates have increased at a much greater rate, which is generally indicative of strong market demand.

Weaknesses

Gainesville today is composed of isolated neighborhoods and auto-oriented commercial strip malls and big box stores, and there are no planning documents that indicate a more compelling vision for the area as a vibrant, walkable mixed-use center with supportive zoning and development regulations. The land use map in the comprehensive plan does not indicate otherwise, nor does the I-66/Rt 29 Sector Plan. This area lacks both a compelling vision for a vibrant walkable mixed-use center and supportive zoning and development regulations.

Gainesville is weak on all physical measures including transit service, block size, path connectivity, bicycle comfort, and community gathering places. While Atlas Walk and the Virginia Gateway Promenade are two small pockets with a diversity of destinations, the majority of the area is composed of single-use buildings in an auto-oriented environment. Residential and non-residential uses are not mixed at the walking scale, and the area lacks comfortable connected paths for walking and bicycling between uses.

The Housing and Transportation Affordability Index fluctuates within this area, but in general is higher than the ideal 45 percent. Public investment to encourage mixed-use walkable development is lacking, and the County as a whole lacks policies to encourage affordable workforce housing.

Opportunities

Prince William County should seize the opportunity to create a small area plan for Gainesville as part of the comprehensive plan update. The small area plan process can craft a compelling vision for transforming the overall area into a series of walkable nodes, building off the Atlas Walk and Gateway Promenade developments. Community gathering places are needed in this area. The County should include and highlight community gathering places in the small area plan as focal points.

The relatively strong market dynamics also present an opportunity for the County to encourage infill development. The County should consider revising its zoning code accordingly, especially to encourage residential infill and higher densities on parcels that are outside of established single-family neighborhoods to continue to build potential for premium transit ridership.



Figure 3: Gainesville East TOD Readiness Analysis - Results of 20 Measure Assessment

Finally, to enhance bicycle connectivity and comfort and provide more recreational walking opportunities, the County should prioritize the construction of identified trails in the Open Space Corridors concept draft, partnering with VDOT where possible and applying for funding to construct as many connections as possible. The Wellington Road and University Drive corridors can serve as key bicycle corridors, and the County should seek funding and opportunities for transformation of these corridors.

Evaluation of the 20 TOD Readiness Measures

This section describes the evaluation of each of the 20 TOD readiness measures for the Innovation Park and Gainesville study areas. Gainesville was evaluated as two separate study areas – Gainesville East and Gainesville West. Innovation Park was evaluated twice – once assuming a focal point of the future Town Center, and again assuming a focal point of the anticipated future VRE station. Quantitative measures were calculated for the entire Innovation Park area (i.e. the Sector Plan area) in both analyses. The maps in Figure 5 shows the areas of analysis.

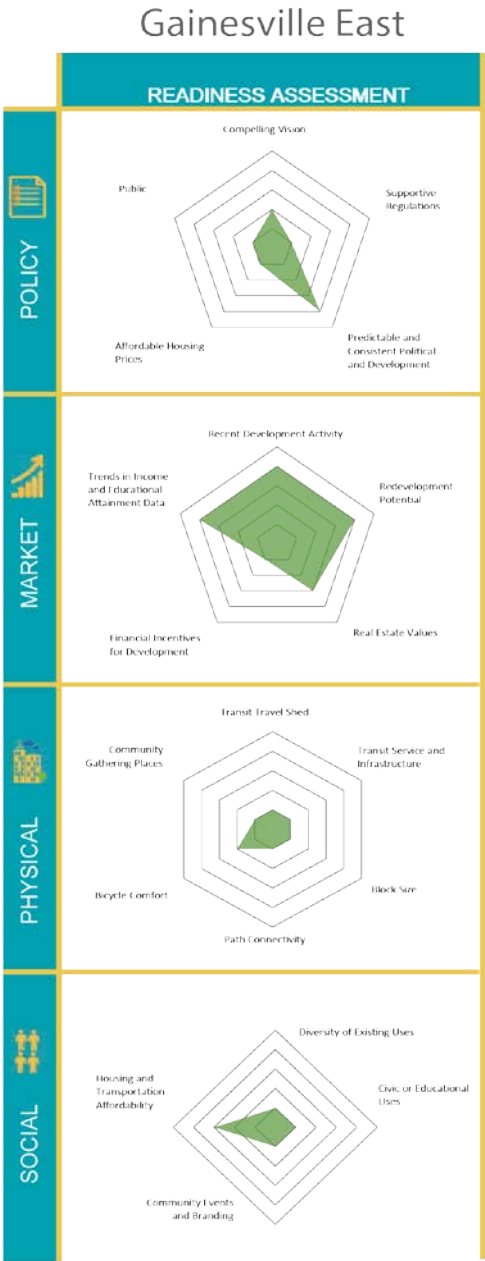


Figure 4: Gainesville West TOD Readiness Analysis - Results of 20 Measure Assessment

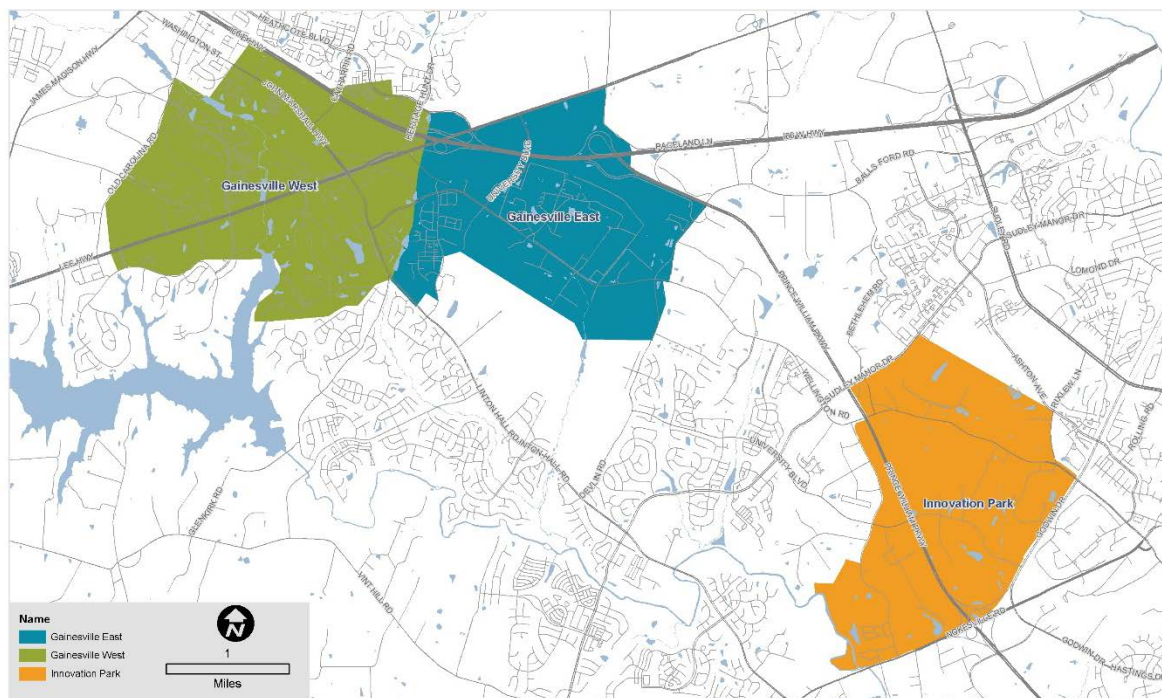


Figure 5: TOD Readiness Analysis Study Areas

The following sections describe the assumptions in evaluating the 20 TOD readiness measures. Readers may also refer to the TOD Readiness Tool User Guide, which has also been provided as a separate document. Recommendations are provided in bold text. Please note recommendations in bold are inclusive of short, medium, and long-term recommendations. Please refer to the body of the report, which describes the most important recommendations and the timeline for implementation.

Measure 1: Compelling Vision

Innovation Park

The Innovation Park Sector Plan describes the future Innovation Park area as “an advanced technology business park in a university campus setting ... [with] a town center that is intended to accommodate retail, residential, office and hotel facilities that are necessary to create a sense of place within Innovation Prince William.” The Innovation market study and planning effort conducted by Cooper Carry in 2009 provides a more robust vision for the town center area as a mixed-use “communiversity.” The 2016 Town Center Design Guidelines envision a mixed-use community with a distinctive character, but transit is not mentioned at all in the guidelines.

The Innovation Sector Plan envisions “a pattern of land utilization which reduces dependency on automobiles...” and has “transit-oriented facilities” listed as the preferred uses for the CT Commerce Transit Station subdistrict. **Transit-orientation in the Innovation Sector Plan could be strengthened.** The Sector Plan refers back to the comprehensive plan’s policies for Centers of Commerce, which the Long-Range Land Use policies mention promoting high-density mixed-use development near existing and planned multimodal transit centers, appropriate mixes and concentrations to support transit, and providing a pedestrian-oriented

integrated multimodal transportation network. **The upcoming Innovation Small Area plan should highlight these concepts more directly.**

While the Innovation Sector Plan includes a Commerce Transit Station subdistrict, with "transit-oriented facilities" listed as the preferred uses, all other subdistricts do not appear to build off this concept. **The Innovation Small Area Plan should include a map that orients development around a future transit station**, which may be a premium bus transit station within the area designated as the Town Center, or could be the future VRE station. **A Small Area plan should examine these concepts in greater detail, determine the best location for integration into the town center design, and show this with illustrations.**

An important part of an area vision is clearly specifying the density, mix of uses, and character of development. Ideally, the future land uses within a comprehensive plan allow for the density and mix of uses to support investment in premium transit. For Innovation Park, the desired densities and intensities to support commuter rail are floor-area-ratios (FARs) of 2.0 to 4.0 at the site level, and residential densities of 40-60 dwelling units (DU) per acre (or 25-35 DU per acre as the ideal gross res density for the half-mile station area as a whole). For the half-mile area around the VRE station, the sector plan allows up to a maximum FAR of 1.0 in the CH district. It is recommended that the area have a 45/55 residential to non-residential split, but residential component is a maximum of 25 percent allowed. Also of note, the County has adopted a Complete Streets policy, which is an important part of a compelling vision.

Gainesville

Most of the Gainesville West and parts of the Gainesville East study areas are within the I-66/ Route 29 Sector Plan area. The current I-66/ Route 29 Sector Plan contains descriptive language that could be considered a vision: *"Completion of the I-66/29 interchange and future expansion of improved telecommunication networks will substantially improve the desirability of the Gainesville area as a residential, employment, and retail center. Completion of the interchange will create a major grade-separated intersection at Linton Hall Road and Route 29, making it the focal point for higher density retail, office, lodging, and mixed land uses."*

The I-66/ Route 29 Sector Plan does not contain vision language that articulates a future vibrant walkable activity center. Although it does mention higher densities and mixed uses, the grade-separation intersection as a focal point does not contain language that specifically articulates transit-supportive pedestrian-oriented walkable development.

The I-66/ Route 29 Sector Plan refers back to the County's Community Design Plan, which contains design goals, policies, and action strategies for the County as a whole. The Community Design Plan provides generic language to create livable and attractive communities, encourage safe and accessible pedestrian circulation and community open space, and encourage the orientation of development to ridesharing, transit, or other mass transportation. This generic policy language is not aimed at any specific area of the County, and **could be strengthened to describe a more illustrative vision of the activity centers as transit-supportive walkable nodes of activity**, designed so that walking and bicycling are viable forms of transportation and residences are located within walking distance of a variety of uses to meet daily needs.

As mentioned earlier in this report, the study team recommends **the County consider developing a small area plan for the Gainesville area** to better develop the vision concept described in the previous paragraph. A small area plan could provide the opportunity for the

County to develop illustrative representations of the type of development desired, which will help in conversations with developers interested in redeveloping this area. The small area plan should include a map that orients development around a future transit station, which could be VRE. **The County should use this opportunity to solidify the preferred station location for future VRE serve from a land use perspective, describe the challenges with this location, and develop specific recommendations for overcoming those challenges.** For example, the most desirable station location may be adjacent to the I-66 interchange with Route 29 because of land use opportunities for infill development at the Virginia Gateway area and just west of the Lowe's and recently constructed Cabela's. This location is the most challenging to expand the right-of-way for VRE service. Recognizing these challenges and determining strategies for overcoming them will be necessary for moving forward the discussion to prepare for VRE service. A small area plan for Gainesville will also present an opportunity for targeted public involvement, and allow the County to develop desired densities and mix of uses to support future premium transit service.

The Gainesville areas face the same challenge as Innovation Park for allowable density and mix of uses. The allowable maximum FARs and maximum split of residential to non-residential uses are not enough to support future commuter rail transit service.

Measure 2: Supportive Regulations

The zoning regulations (in addition to the future land use descriptions in Measure 1: Compelling Vision) for both Innovation Park and Gainesville areas are not consistent with appropriate mix of uses and transit-supportive densities for commuter rail.

The zoning regulations and community design plan do not specify the following elements to support pedestrian-oriented or transit-oriented development:

- Building Height
- Building Placement
- Building Frontage
- Density
- Frontage Standards
- Civic Open Space
- Building Façade Standards
- Parking Standards
- Street and Block Standards

After the County prepares a more compelling vision for the Innovation Park and Gainesville areas, the County can continue to increase the potential for pedestrian-oriented transit-supportive development by **ensuring the zoning code requires the above elements in a manner consistent with future VRE service. Design guidelines and parking reductions, maximums, or shared parking schemes, and other targeted strategies for transportation demand management are also recommended.** Note that these details can be developed as part of the small area plan.

For Innovation Park specifically, the governing development regulations are complex and unclear. The area's multiple designations include regional employment center underlying future land use, the sector plan area, a center of commerce designation in the comprehensive plan, a technology overlay district in the zoning ordinance, more than a dozen subdistricts in the sector plan, and part of the data center opportunity zone overlay district.

The County should use the small area plan as an opportunity to simplify the designations for this area and avoid adding new designations without addressing or simplifying the existing designations.

Measure 3: Predictable and Consistent Political and Development Context

This measure is the same for the Innovation Park and Gainesville areas. The measure is evaluated qualitatively through a series of questions on predictability of the permitting process, consistency in the development approval process, willingness to work with developers, common vision amongst elected officials, and local champions actively advocating for TOD. Analysts answer each question on a scale of one (lowest) to five (highest).

For the question of a local champion advocating for TOD, the analyst selected a four out of five because of local support of walkable mixed use development concepts in the Innovation Park and Gainesville areas. The analysts selected a three out of five for all other questions, indicating an average response. County staff indicated that the process is predictable, and many developers propose development concepts that are not allowed by-right, requiring the special use permit process to be used, which is less straight-forward and has a longer timeline for approvals.

The County could consider undertaking changes to the zoning ordinance to allow transit-supportive developments by-right. This would require strong articulation of the vision and development standards, as discussed under Measures 1 and 2.

Measure 4: Affordable Housing Policies

This measure is the same for the Innovation Park and Gainesville areas. Prince William County does not have an official affordable housing policy, and does not require developers to include affordable units or contribute to an affordable housing fund. The County had a voluntary affordable dwelling unit ordinance and obtained developer contributions to a housing preservation and development fund through proffers; however, state legislation on proffers changed in 2016, and the County can no longer use proffers to obtain this funding.

The County does offer a housing choice voucher program and distributes community planning and development funds from the US Department of Housing and Urban Development for down payment and closing assistance to first time homebuyers. These programs provide housing assistance, but do not ensure that future development within Innovation Park and Gainesville will be affordable to a range of incomes.

Every five years the Prince William County Office of Housing and Community Development prepares a consolidated plan in order to receive federal funding. The strategic plan within the consolidated plan focuses on the County's distribution of CDBG, HOME, and Emergency Solutions grant funding, which the County has continued to distribute.

Measure 5: Public Investment

Results for the Innovation Park and Gainesville areas are similar for this measure. The County has an Innovation Enterprise fund for infrastructure improvements, including roads, sidewalks, landscaping projects in Innovation Park, which is funded by the proceeds from County-owned property sales. In Gainesville, the County issued bonds for infrastructure investments at Virginia Gateway using tax revenue from the community development area.

The score of this measure could be improved with additional bicycle infrastructure investments, investments in utility infrastructure (water, sewer, drainage, etc) to support development at transit-supportive densities, committing County funds to be used as grants to encourage private sector development, and offering incentives to renovate existing buildings through façade improvements or other projects to better orient the built environment to the pedestrian scale.

Measure 6: Recent Development Activity

Figure 6 shows the location of building permits issued within and near the Innovation Park and Gainesville areas between 2014 and 2016.

Although Figure 6 shows no building permits in Innovation Park, this area has a notable non-residential development under construction - Farm Live Brewery for recreational/event functions.

BUILDING PERMITS 2014 - 2016

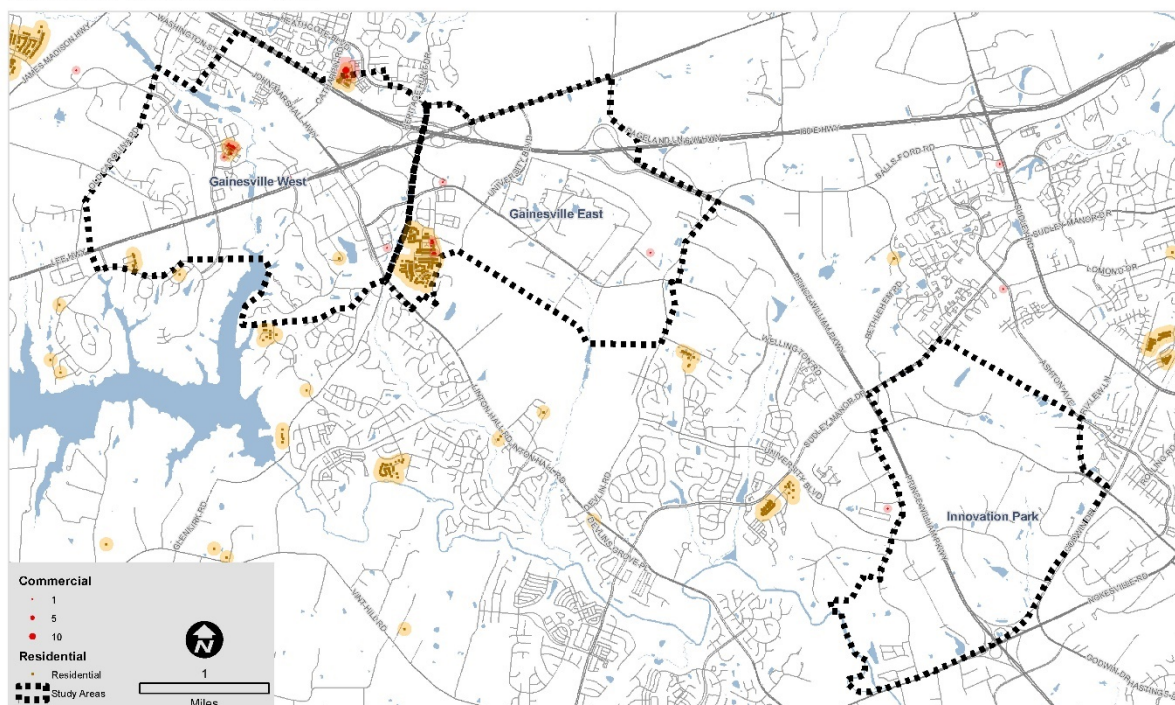


Figure 6: Building Permits Issued between 2014 and 2016

In the Gainesville areas, a large development of townhouses with some commercial occurred in the Gainesville East area on Limestone Drive, and there were two individual commercial

developments in addition, which look to be single building development projects. Figure 4 shows a handful of locations within the Gainesville West where building permits were issued.

Measure 7: Redevelopment Potential

Redevelopment potential is a combination of several statistics:

- Vacant and underutilized properties – acres of land where the improvement-to-land value ratio is less than 1.0, a rough approximation of properties that are more likely to redevelop commonly used for planning purposes
- Average parcel size – number of parcels per census block
- Parcel ownership – number of unique parcel owners per acre
- Non-vacant single family residential uses – the percentage of parcels that are single-family and not vacant. These uses are less likely to redevelop in the future.

Figures 7 through 9 show maps of the various statistics for the study areas.

VACANT AND UNDERUTILIZED PROPERTIES

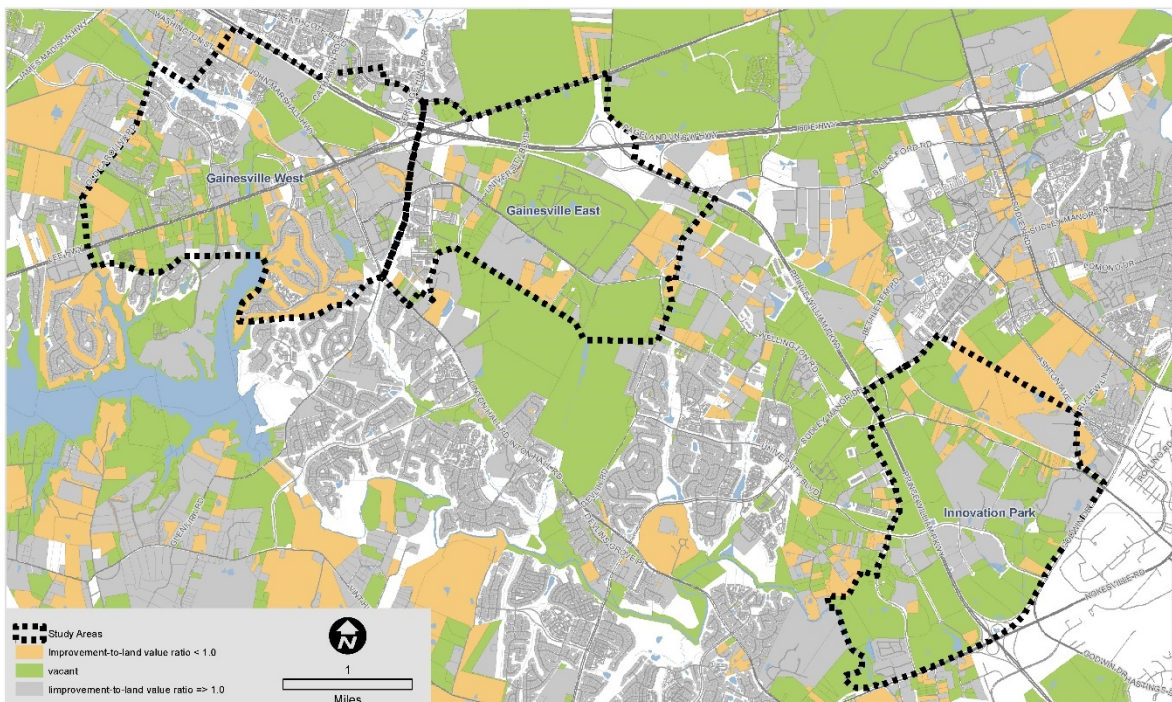


Figure 7: Vacant and Underutilized Properties

LARGE PARCEL OWNERSHIP [> 300 ACRES]

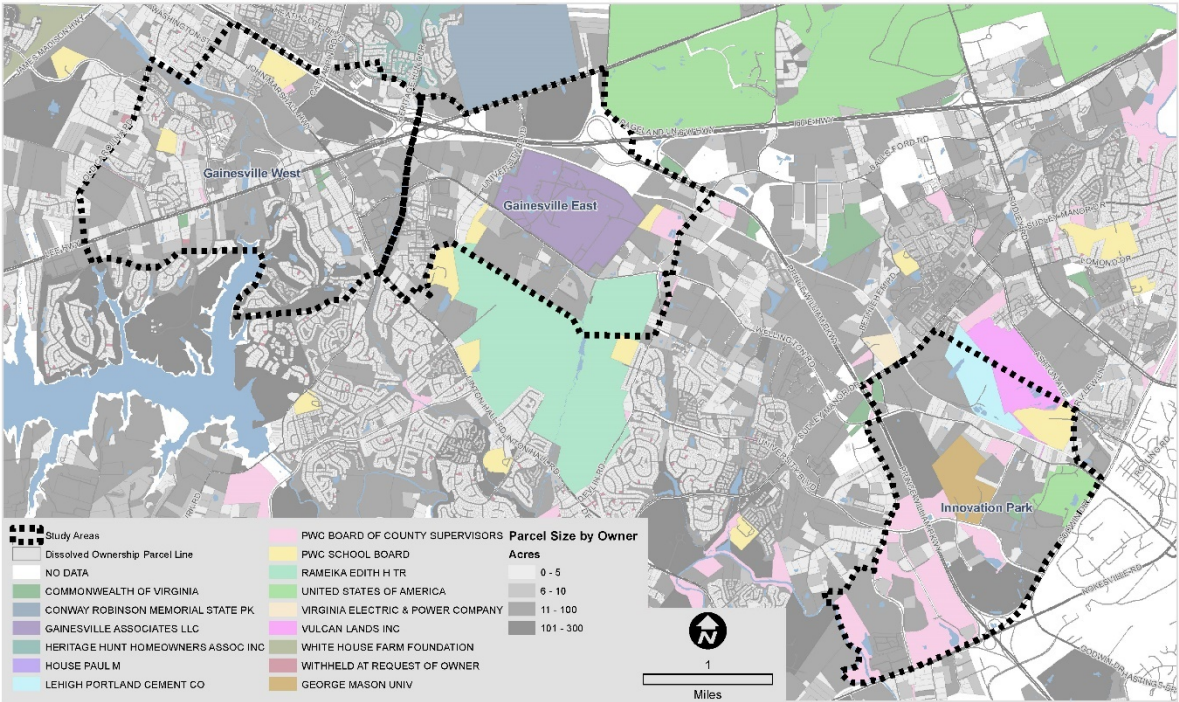


Figure 8: Parcel Size and Parcel Ownership

SINGLE-FAMILY RESIDENTIAL

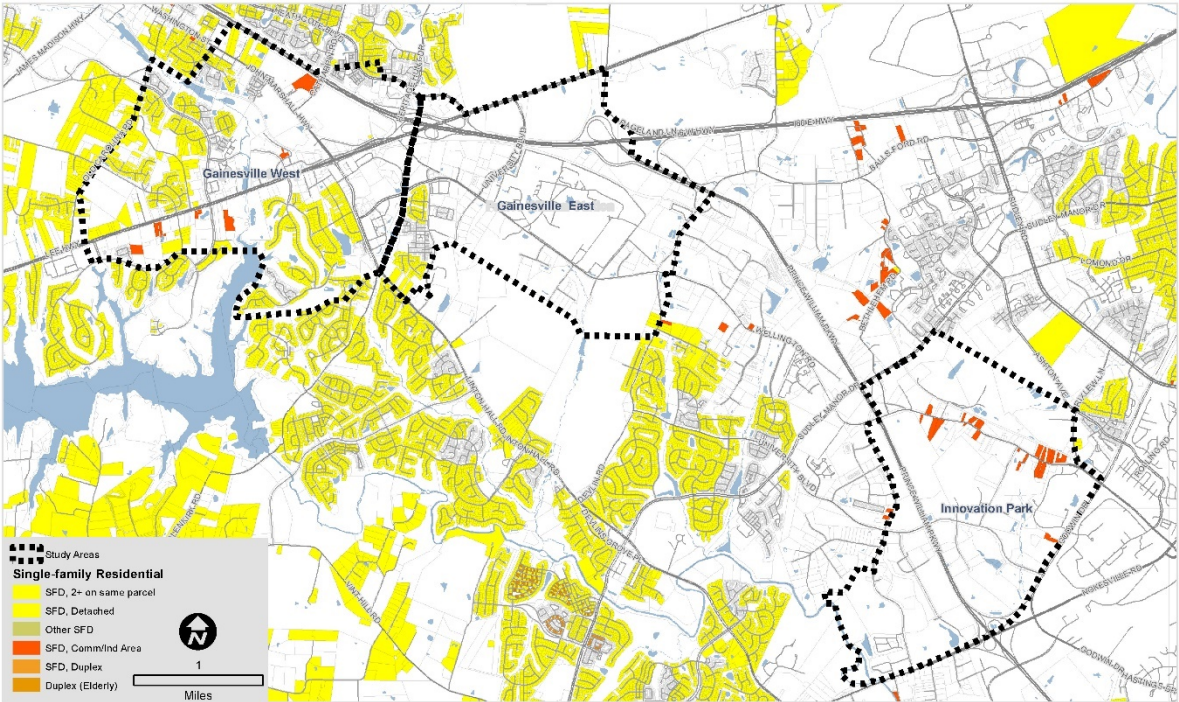


Figure 9: Single-Family Residential Parcels

The following table shows the results of these scores for Innovation Park, Gainesville East, and Gainesville West.

Table 2: Metrics Contributing to Redevelopment Potential

Redevelopment Potential Metrics	Gainesville West	Gainesville East	Innovation Park
Vacant and Underutilized Properties: Percentage of study area where improvement-to-land value ratio is less than 1.0	43%	67%	65%
Parcel Ownership: Unique property owners per acre	1.46	0.36	0.09
Parcel Size: Number of parcels per census block	40	32	7
Land Use: Percentage of parcels that are non-vacant single-family residential	42%	28%	13%

Measure 8: Real Estate Values

Real estate values are compared to the average values for the metropolitan statistical area (MSA). For the Washington DC MSA, the median home value is \$378,000 and median gross rent is \$1,500. Real estate values outside of 90 to 110 percent of the average values for the MSA are considered to be significant in this analysis.

Upon first glance of Table 3, it appears that Innovation Park is quite close to the MSA median values. Gainesville West is slightly higher than the MSA median values, and Gainesville East is even higher. However, it is important to understand the geographies of the census block group boundaries. Many of the census block group boundaries do not align with the study area boundaries. Also, much of the Innovation Park and Gainesville East areas are vacant, and the values of these metrics are attributable to a residential development that makes up only a small portion of the large block group areas. For these reasons, the results should not be interpreted too closely. Rather, a broad conclusion that can be drawn is that the real estate values in Gainesville are moderately strong, especially towards the west. Real estate values in the Innovation Park area are neither remarkably weak or strong.

Table 3: Real Estate Values Metrics (Rounded)

Real Estate Values Metrics	Gainesville West	Gainesville East	Innovation Park
Median Home Value	\$409,000	\$430,000	\$346,000
Median Gross Rent	\$1,800	\$2,000	\$1,700

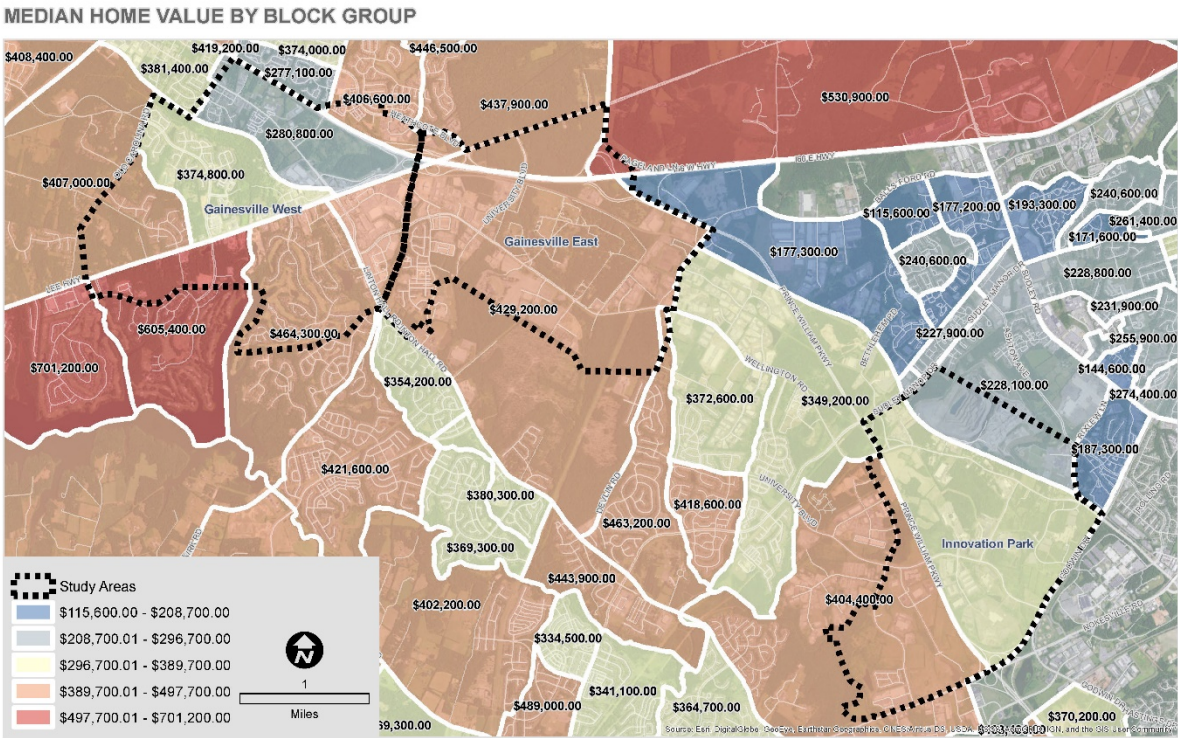


Figure 10: Median Home Value by Census Block Group (ACS 2011-2015 5-Year Estimates)

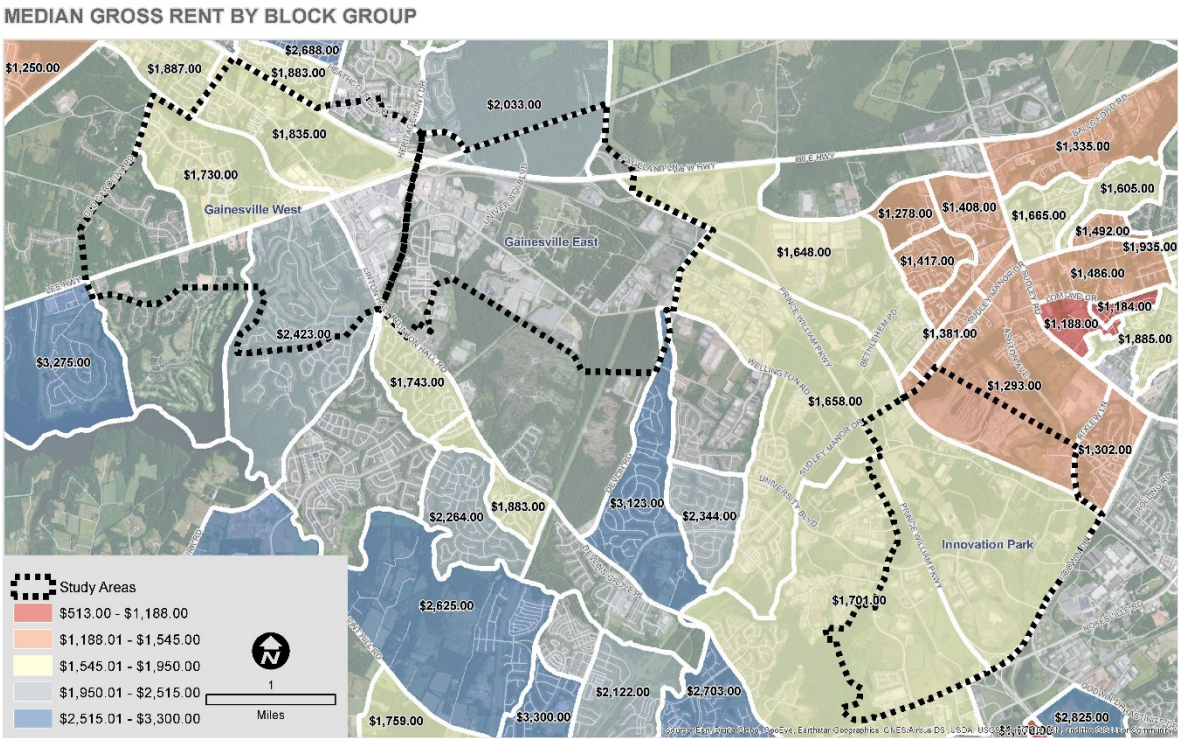


Figure 11: Median Gross Rent by Census Block Group (ACS 2011-2015 5-Year Estimates)

Measure 9: Financial Incentives for Development

The measure for financial incentives for development evaluates the number of available financial incentive programs for development and whether these incentives have been used to build a project within the station area.

Both Innovation Park and Gainesville have not had market assessments conducted to determine if there are financial gaps that are prohibiting developers from building transit-supportive development, as the County has not actively sought this type of development in these areas. The County does not provide financial incentive programs for projects within these areas to encourage transit supportive high density mixed use developments.

Financial incentives are typically provided when an area has an agreed upon vision for TOD. The Innovation Park and Gainesville areas are lacking that vision and consensus to varying degrees. Financial incentives could be a longer term option for the County to consider once a more concrete compelling vision for these areas is established and engrained.

Measure 10: Trends in Income and Educational Attainment Data

This measure indicates the desirability of an area and the area's ability to attract and retain residents who choose to stay there.

Educational attainment data has been increasing quickly in the census block groups touching the Innovation Park and Gainesville study areas (see Figures 12 and 13; Gainesville East is an anomaly due to the census block group geographies changing). Incomes have also risen, although to varying degrees, and the rise in incomes in some areas has not kept pace with inflation. After accounting for inflation, incomes in the Washington DC MSA grew seven percent between 2000 and 2010. In some portions of the study areas, incomes grew dramatically; others did not.

The inconsistency between the 2000 and 2010 census block group boundaries makes it difficult to discern specific changes at the neighborhood level (see Figures 14 and 15), and leads to some exaggerated results (especially in Gainesville East). While income data provides inconclusive evidence, the rise in education attainment indicates that new residents in these areas are choosing to move here.

Table 4: Income and Educational Attainment Metrics

Income and Educational Attainment Metrics	Gainesville West	Gainesville East	Innovation Park
Average Per Capita Income (2000)	\$35,900	\$24,400	\$26,200
Average Per Capita Income (2010)	\$35,800	\$40,300	\$29,300
Percent of Population Age 25+ with a Bachelor's Degree or Higher (2000)	32%	41%	40%
Percent of Population Age 25+ with a Bachelor's Degree or Higher (2010)	46%	30%	40%

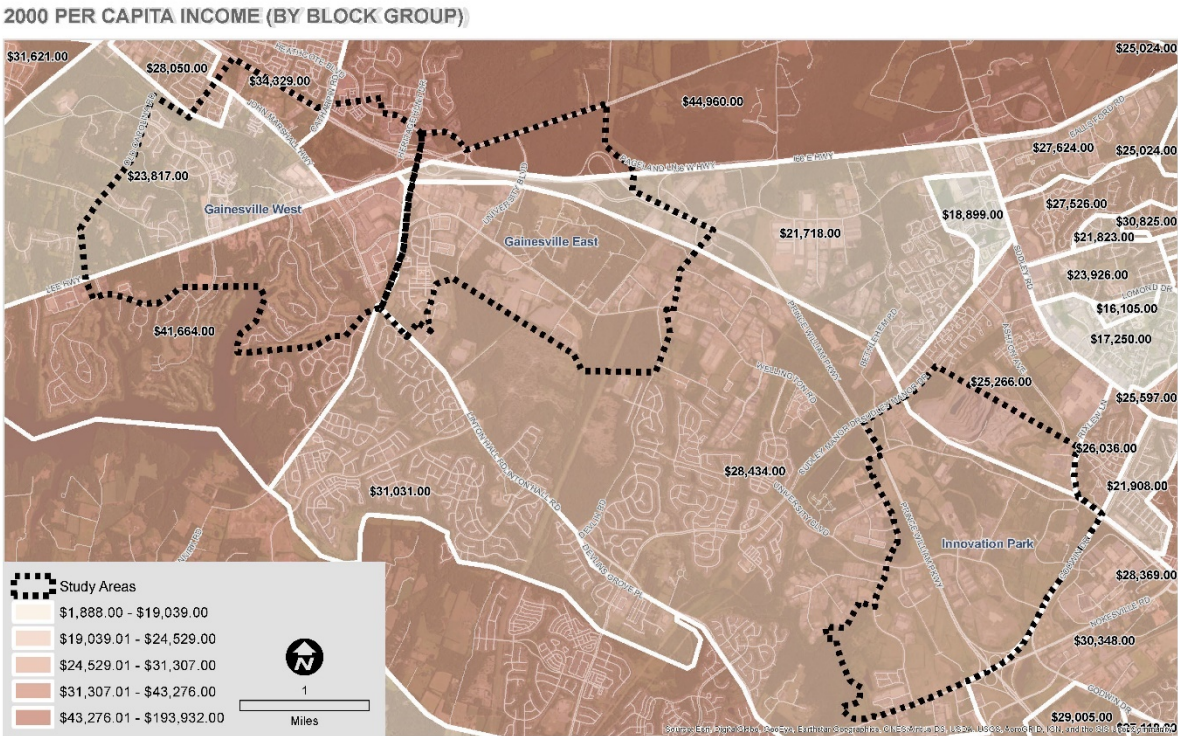


Figure 12: 2000 Average Per Capita Income by Census Block Group

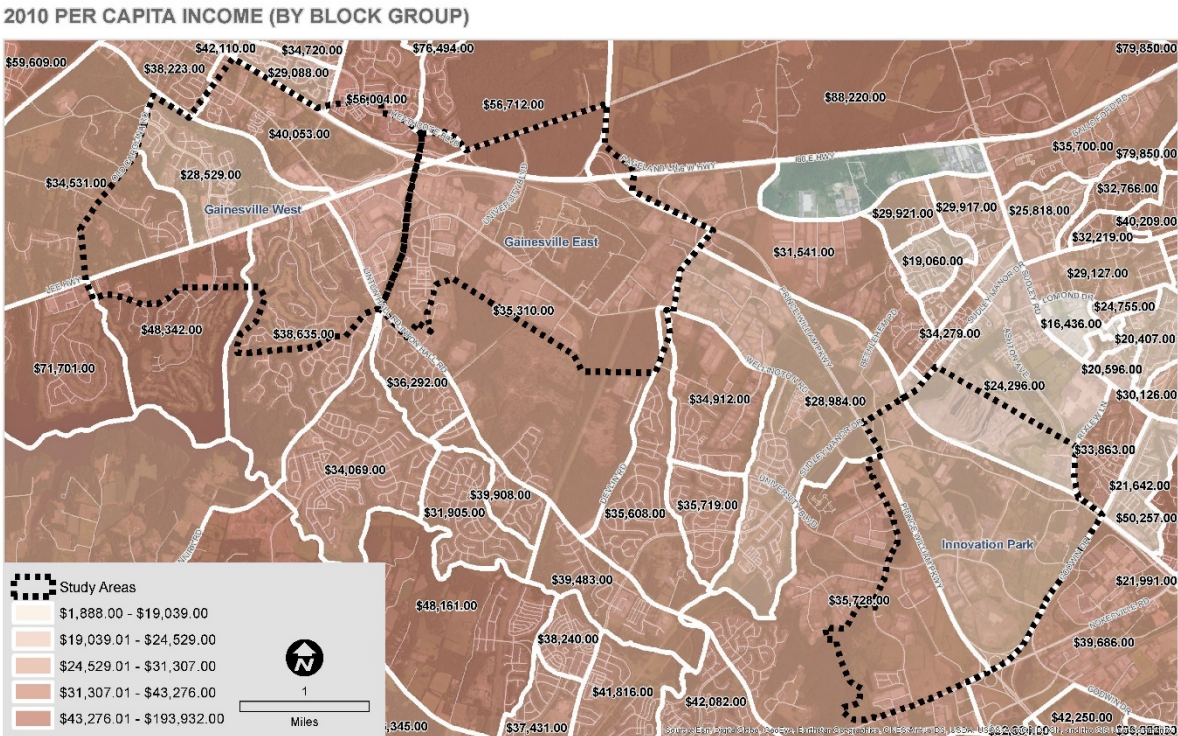


Figure 13: 2010 Average Per Capita Income by Census Block Group

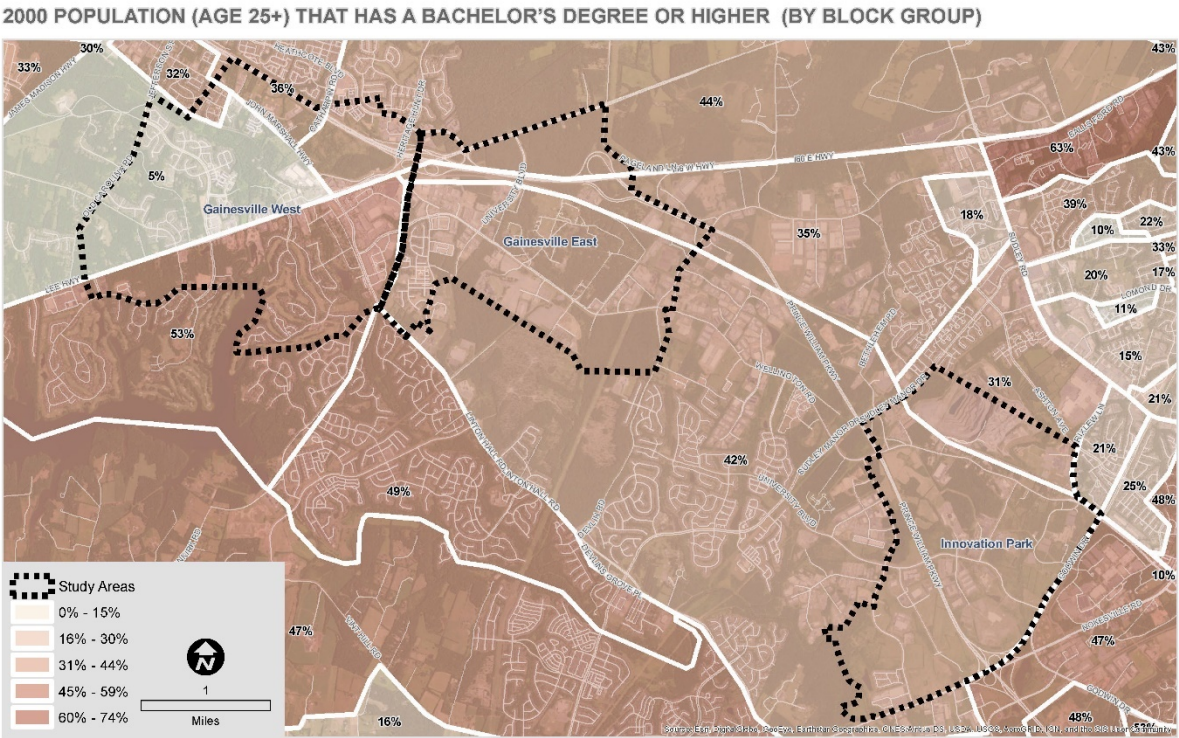


Figure 14: 2000 Educational Attainment

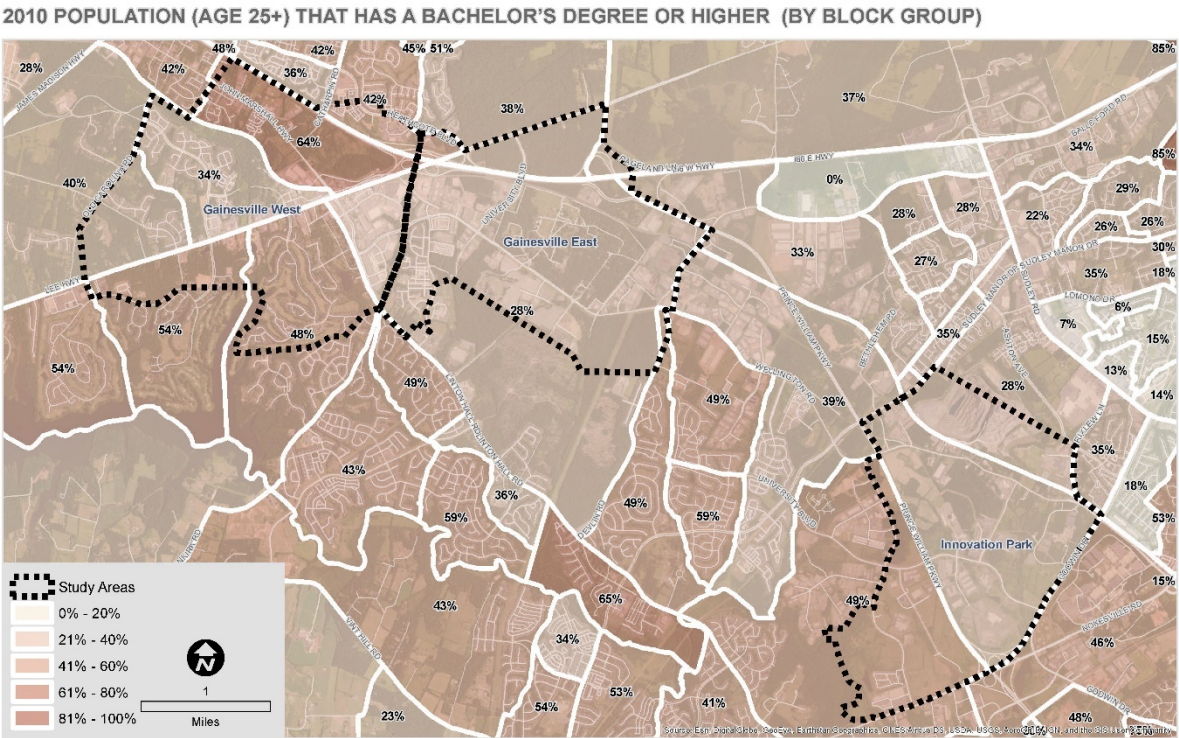


Figure 15: 2010 Educational Attainment

Measure 11: Transit Travel Shed

An area is ready for TOD if existing transit services within the area provide easy access to jobs. Table 4 shows the results from the All Transit Tool. Note that fewer than 50,000 jobs is considered to be extremely low. Innovation Park and Gainesville East are both very low because the census block group of origin is the same, and there is very limited transit service in these areas. Gainesville West has access to several PRTC commuter bus routes.

Table 5: Jobs Accessible within a 30-Minute Transit Trip (Source: Center for Neighborhood Technology's All Transit Tool)

Gainesville West	Gainesville East	Innovation Park
21,617	339	339

Measure 12: Transit Service and Infrastructure

The Transit Service & Infrastructure measure evaluates a station area's existing and proposed transit service and existing and proposed transit infrastructure.

VRE stations for both Innovation Park and Gainesville are included in Prince William County's comprehensive plan, but this transit service is not programmed in a cost feasible plan. The existing transit service does not meet standards for fixed route, which are generally considered to be headways of 30 minutes or less. The PRTC commuter routes that serve the Gainesville West area have headways of 60 minutes, and there is no transit service for the Gainesville East and Innovation Park areas.

Measure 13: Block Size

Block size is a critical component of walkability. Street patterns with small blocks offer a variety of pedestrian paths and more direct routes than streets with larger blocks. Block size is measured as average block length. Ideal values for block length range from 200 to 400 feet in dense urban areas to 200 to 600 feet in less dense areas. Table 6 shows the results for block size, which are all very large and undesirable. As the grid network continues to fill in, these numbers will rise. Filling in the grid network will be an important part of the small area plans.

Table 6: Average Block Length in Feet

Gainesville West	Gainesville East	Innovation Park
892 ft.	952 ft	1,194 ft

Measure 14: Path Connectivity

Path connectivity is a qualitative measure of the degree to which barriers disrupt the connectedness of the street network. The Path Connectivity measure requires a simple visual assessment of an aerial image (e.g. Google Earth) to determine whether any large barriers disrupt the street network, how frequently connections across the barrier are provided, and whether significant portions of the street network are disconnected.

All three study areas are considered to have a super block layout consisting of a few widely spaced arterial streets connecting to form a large block. Side streets may penetrate the large block, but are typically private and are dead ends. The preferred block layout is a small-scale grid street pattern where local, public streets typically cross at four-way intersections with few or no dead ends.

Prince William Parkway in Innovation Park is a major barrier to walkability. Development in this location should focus inward, with strategic connections provided across the parkway at well-defined points.

Measure 15: Bicycle Comfort

An area is more ready to transform into a vibrant walkable activity center if bicyclists can safely and comfortably ride on the roads and access destinations. A robust network of bicycle paths and bicycle-friendly streets can expand the transit station catchment area far beyond the typical pedestrian shed without using precious real estate for vehicular parking.

Figure 16 shows the road network posted speeds and highlights those roads with major trail facilities. Major trails along Wellington Rd and the University Drive extension should be pursued, as well as the other trails from the Open Space Corridors draft concept.

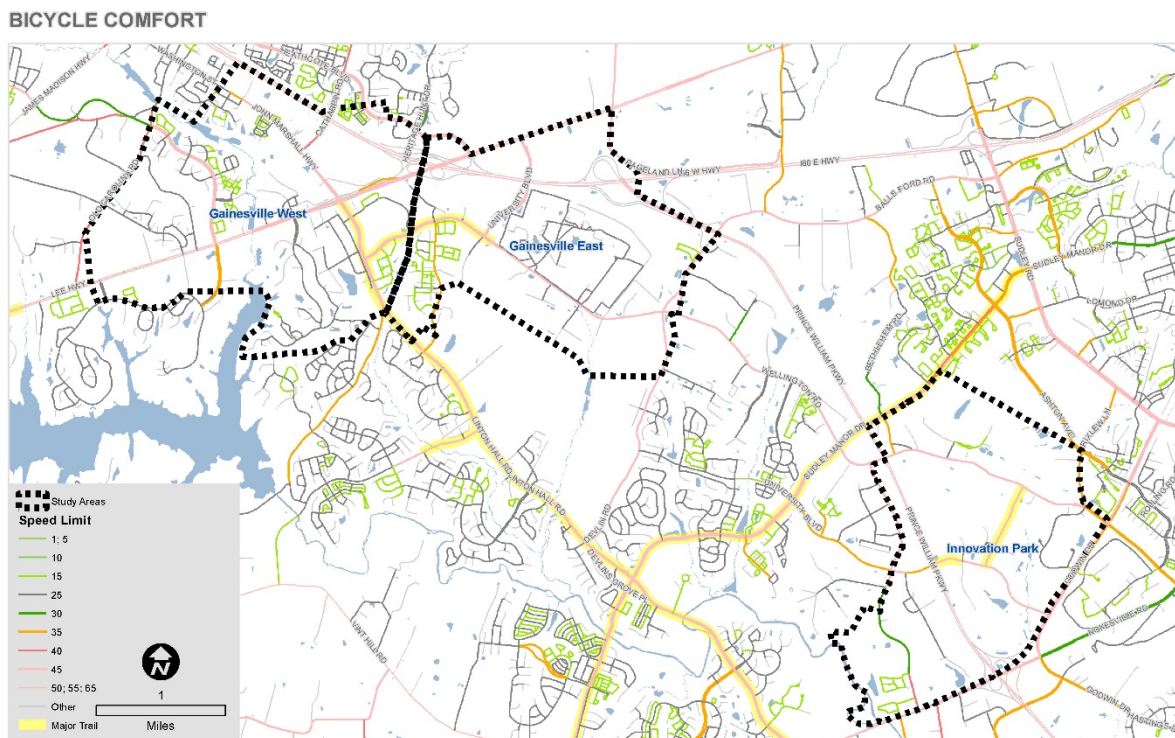


Figure 16: Bicycle Comfort: Posted Speeds and Major Trails

Measure 16: Community Gathering Places

Parks, public plazas and squares, and other areas of public open space are essential amenities and social catalysts for creating vibrant walkable activity centers. The Community Gathering Places measure is the percentage of study area that is considered to be parks or open space from parcel data. Table 7 shows the results. These metrics are very low for all areas, and the County should feature community gathering places in the development of the small area plans.

Table 7: Percentage of land considered to be parks or open space

Gainesville West	Gainesville East	Innovation Park
0 %	0 %	0.2 %

Measure 17: Diversity of Existing Uses within Walking Distance

The diversity and desirability of destinations within walking distance indicates the potential for people who live or work within the study area to access a variety of uses to meet daily needs by walking. Walk Score provides a free analysis of the density and diversity of destinations that are within walking distance of a specified point. Walk Score values for Innovation Park and Gainesville East are quite low; values for Gainesville West are moderate thanks to Atlas Walk. The multimodal connectivity analysis described in Appendix B provides a more detailed analysis.

Table 8: Walk Score Values (on a scale of 0 to 100)

Gainesville West	Gainesville East	Innovation Park
53	2	15

Measure 18: Civic and Educational Uses

Major civic, cultural, and educational institutions can function as anchors or catalysts for surrounding development, and can generate significant transit ridership.

In Innovation Park, the Hylton Performing Arts Center and George Mason University are both major cultural and educational institutions, hence the Innovation Park area scores very well in this measure.

There are two elementary schools within Gainesville West, but no other government or other civic uses, and no other cultural or educational institutions, hence the Gainesville area scores poorly in this measure.

Measure 19: Community Events and Branding

Hosting events can develop an identity for the station area, especially events that celebrate or take advantage of an area's unique character.

The Innovation Park area scores well in this area, as the Hylton Performing Arts Center, George Mason University, and the County's incubators host events that draw attendees from across the

nation. The addition of the Farm Live Brewery and event space will continue to create energy and a known identity for the Innovation Park area.

The Gainesville areas did not score well on this measure, as community events are limited.

Measure 20: Housing and Transportation Affordability Index

The affordability of living in a particular location depends on both the cost of housing and the cost of transportation to get to work and meet daily needs. These factors are heavily influenced by the transportation options available and the mix of uses and amenities located nearby. The housing and transportation affordability index captures the location-efficiency of the area and the cost of living there. The general rule of thumb is that households should spend no more than 45 percent of their income on transportation and housing. The results of this measure are shown in Table 9.

Table 9: Housing and Transportation Affordability Index (Percent of Household Income Spent on Housing and Transportation Costs)

Gainesville West	Gainesville East	Innovation Park
54%	54%	44%

Summary

The Innovation Park and Gainesville areas have a variety of strengths and weaknesses in their readiness to evolve into vibrant walkable mixed use activity centers. The *Evaluation of the 20 TOD Readiness Measures* section described each measure in detail. Prior sections described the strengths, weaknesses, and opportunities for each area. This analysis complements the multimodal connectivity analysis described in Appendix B, and it forms the basis for the recommendations within the body of the report.

APPENDIX B. CONNECTIVITY ANALYSIS

Purpose

The purpose of the connectivity and accessibility analysis was to estimate projected multimodal connectivity needs in and between the three areas of focus through an analysis of walk and bike access to future retail points of interest. This analysis could then be used to help identify the general location and likely benefit of improved transportation and land use connections.

Methodology

The analysis started with the spatial identification of relevant points of interest. These points of interest were defined as part of research conducted for the Virginia Office of Intermodal Planning and Investment (OIPI) as part of the research and development for potential advancements to the Commonwealth's Smart Scale prioritization system (also known as House Bill 2). Renaissance and OIPI team member State Smart Transportation Institute (SSTI) helped develop an approach towards valuing place that is based on walk-accessibility to retail and service destinations. This effort for OIPI demonstrated that places with a high-level of walk-access to retail and service Points of Interest (POIs) showed a high relationship to reduced household vehicle-miles of travel (VMT) and increased non-auto driver mode share and household value. In other words, there is a correlation between the extent of walkable destinations and the fiscal and environmental health of a community.

For the TLC project, Renaissance performed spatial analyses and calculations to estimate the number of retail and service points of interest in 2040 at the census block level. An accessibility analysis was run to estimate walk and bike access (which serves as a surrogate for short auto trips) to these future points. The findings of these analyses, along with an analysis of estimated jobs/housing balance, suggest there are opportunities to improve walk connections within the station areas, opportunities to improve bike connections between station areas, and opportunities to improve the mix of potential walkers and cyclists through more diverse land use development.

Existing Points of Interest

SSTI developed a database of census block level points of interest dataset for Northern Virginia. This dataset identified total jobs by block, as well as the number of establishments by census block in several categories. The categories used in this analysis were banks, entertainment, food, groceries, recreation, and shopping, which generally align with what are summarized as retail in travel demand model datasets using common NAICS codes. Figure 1 shows the spatial distribution of these points of interest.

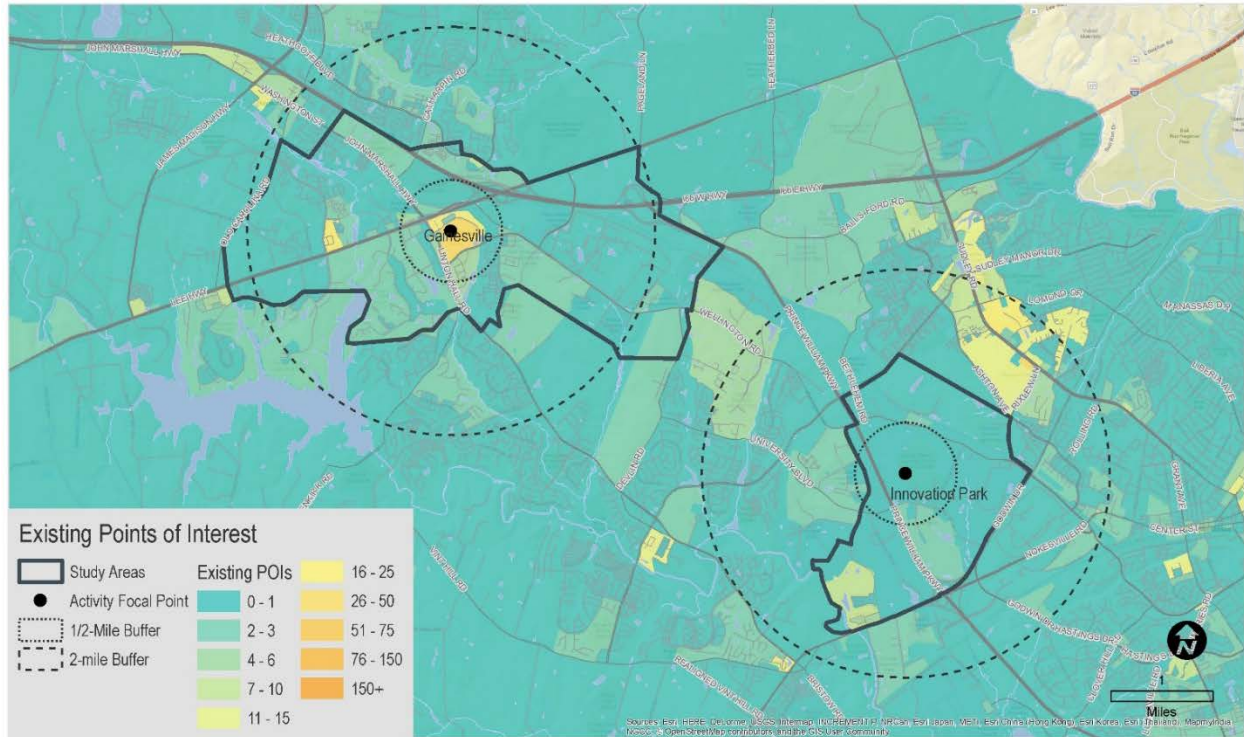


Figure 1. Existing Retail/Service Points of Interest (POI)

For the purposes of reference, Figure 1 also shows the TOD-readiness areas described in Appendix A as study areas and identifies both a 1/2 mile buffer and a 2 mile buffer to approximate reasonable walk trip and bicycle trip extents. The Atlas Walk development in Gainesville is clearly visible as the site with the greatest concentration of POIs in Figure 1. The commercial development along Sudley Road is not quite as concentrated, but covers a larger geographic area.

Forecast 2040 Points of Interest

Forecast jobs data from the MWCOC cooperative forecasting process was acquired for years 2010 and 2040. The MWCOC data is at the TAZ level, so there was a need to convert the MWCOC data into a census block equivalent in order to estimate points of interest associated with the MWCOC jobs data. This conversion was done using a spatial intersect where each census block was assigned to the TAZ that bounded the block's centroid. Each TAZ therefore had an estimated number of retail jobs (from the TAZ data) and an estimated number of points of interest (from the census block data). The ratio of jobs to points of interest created an estimate of jobs per establishment for each TAZ. Creating estimates of jobs per establishment at a TAZ level helped to differentiate between areas where retail jobs are populated by large big box establishments with many employees and small local establishments who have fewer employees per store. The data created using this methodology was visually examined for quality control purposes, and some TAZs and their associated census blocks were manually adjusted to create more realistic employees per establishment. (For example, there were rare occasions where the number of estimated retail jobs was lower than the estimated number of retail points of interest.) The calculated jobs per establishment number was then carried forward to the 2040 data, creating a 2040 points of interest estimate based on the 2040 TAZ retail jobs forecast.

Two slight modification to this methodology were employed: First, for the Virginia Gateway focus area, only the census blocks associated with Atlas Walk were used to derive an estimate of employees per establishment, rather than the full TAZ. This Atlas Walk-specific employee per establishment number was deemed a good model for the planned development in the other two focus areas as identified in available site plans. All new retail development within the three focus areas used the Atlas Walk jobs per establishment number, approximately 9 employees per establishment. The second modification was the use of the Innovation Park and Prince William Station site plans to determine the number of retail jobs in these respective focus areas in 2040, rather than the MWCOC TAZ estimates.

Figure 2 shows the future distribution of POIs within the study area.

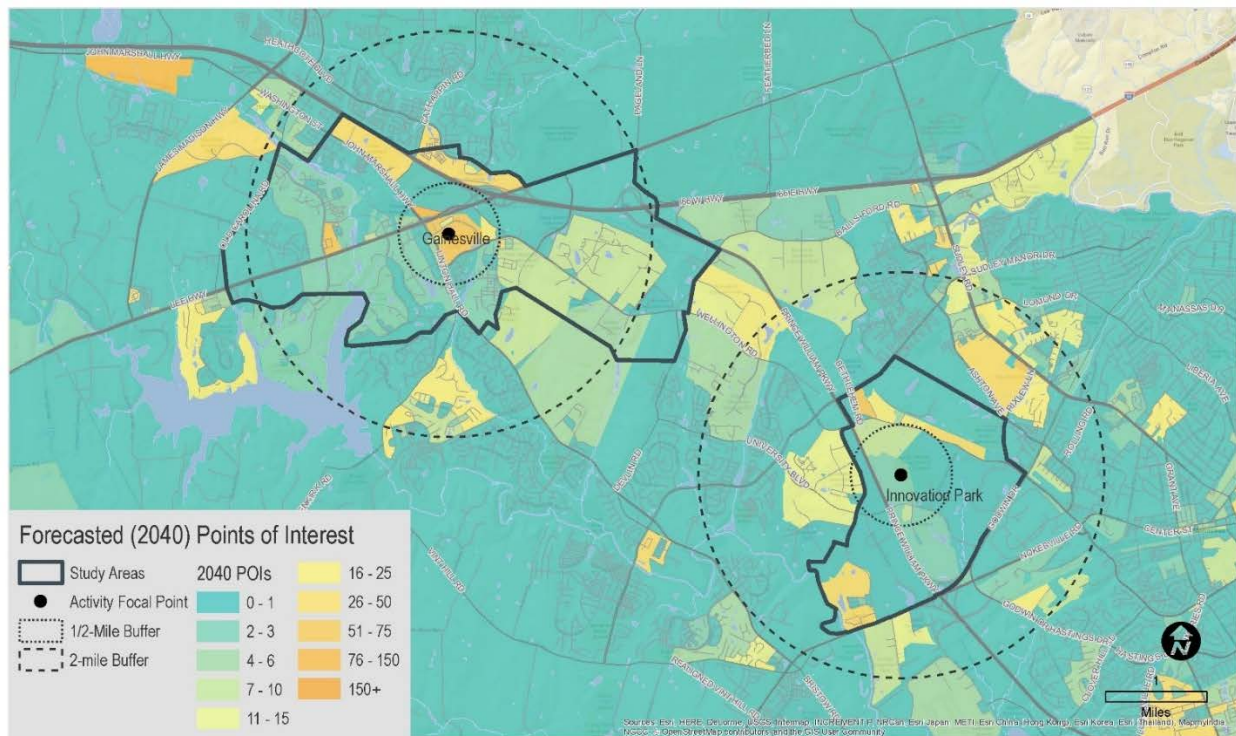


Figure 2. Forecasted 2040 Retail/Service Points of Interest (POI)

A comparison of Figures 1 and 2 shows that Prince William County (through the MWCOC process) forecasts significant retail growth throughout the region in a nodal pattern where points of interest are clumped together and surrounded by places with either limited or no points of interest.

Figures 1 and 2 provide the analytic baseline on which the connectivity analysis is constructed. Connectivity implies that there are both places to go as well as a way to get between them. This means that connectivity deals with both land use (places to go) and transportation (ways of getting there). As such, an accessibility analysis was employed to determine existing walk and bicycle accessibility. The accessibility analysis was performed in Sugar Access, an accessibility modeling platform. In brief, accessibility models determine the number of destinations reachable by each

origin over a given network in a given amount of time. One wrinkle to this calculation is that destinations closer to the origin are weighted as more valuable than places farther away, meaning that the access “scores” are not equivalent to the total number of destinations reachable, but rather to a sort of normalized number of destinations where destinations farther away are treated as fractions of a destination.

Accessibility / Connectivity Analysis and Findings

For this study, two accessibility models were run. The first model determined the number of points of interest reachable on foot by all census blocks in the study area and vicinity. The second model determined the number of points of interest reachable by bike for all census blocks in the study area and vicinity. The existing road network was used for walking and biking trips, and walking and biking was assumed to be viable except on interstates. It is acknowledged that there are places where walking and biking are legally allowed but are unlikely to be taken advantage of for design or safety reasons. However, without sufficient data on walking or biking comfort and safety, no differentiation between roads was made.

Additionally, the general pattern of new roads proposed in the Prince William and Innovation Park areas respective site plans were added to the regional transportation network and set to accommodate walking and biking. Figure 3 shows the results of the walk accessibility analysis.

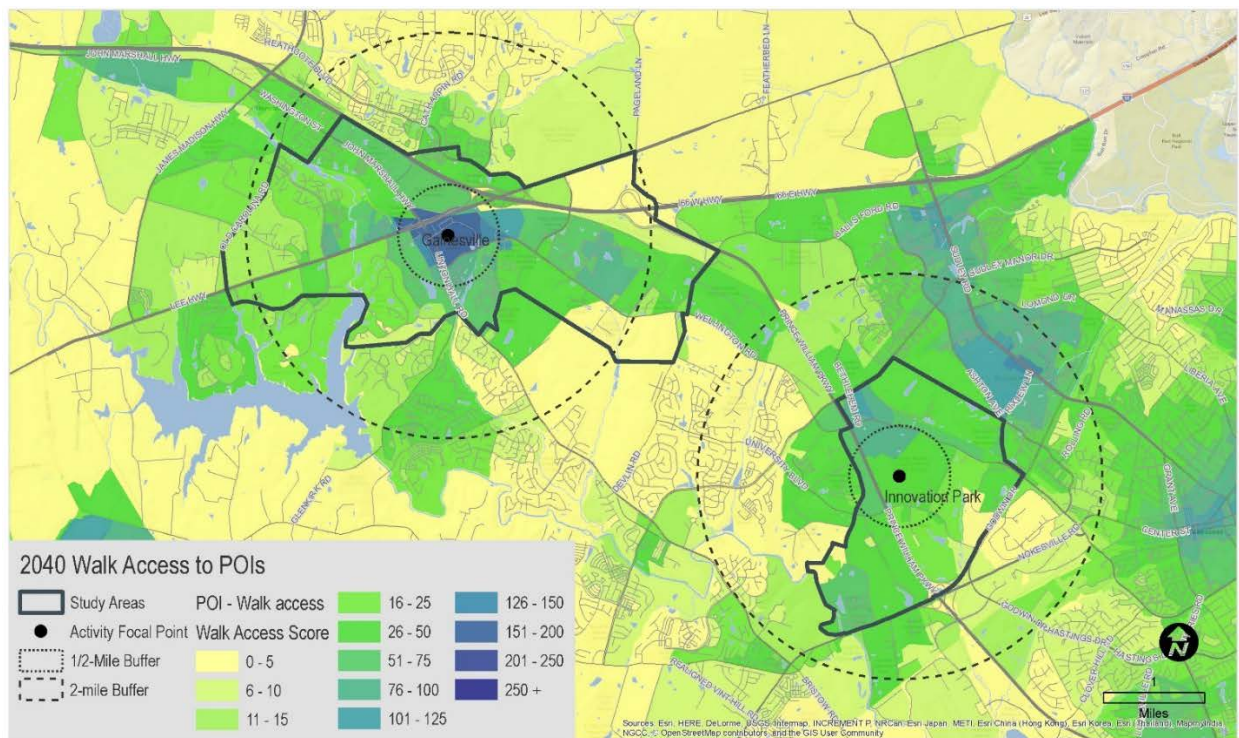


Figure 3. Walk Accessibility Results

Figure 3 shows the number of decay-weighted destinations within a 30 minute walk of each census block for the year 2040. The decaying value of destinations (those further away being less valuable than those nearby) has a major impact on walkable points of interest. The maps show fairly clearly that there is likely to be little opportunity to provide walking connections between

study areas that would influence a location's walk accessibility, and thus would be unlikely to be heavily used. Atlas Walk's large number of future points of interest help provide people starting a trip in that location with many destinations, but there is little difference for trips starting a half-mile away and those starting two miles away. Figure 3 suggests that an emphasis on internal walk connections within activity centers would therefore be a more appropriate solution than an emphasis on walk connections between the two station focal areas shown on the map. However, there does seem to be an emerging accessibility corridor along Wellington Road where access to points of interest is higher than the surrounding vicinity, both due to the connectivity provided by Wellington Road and to the location of small concentrations of retail and services along Wellington Road.

Figure 4 shows the result of the bicycle accessibility analysis. The bicycle accessibility analysis was performed by simply using a higher travel speed than the pedestrian analysis, and is therefore more appropriately considered an analysis of accessibility by bicycle or short auto trip. There are a number of reasons (age, ability, weather, specific trip purpose, etc.) why short non-work trips within a 2 to 5 mile radius might be made by bicycle or by auto. The analysis in Figure 4 strives to be mode-neutral; the idea is to examine where destinations fulfilling activities of daily life can be made within a relatively short trip by any mode for each origin in the Wellington Road corridor.

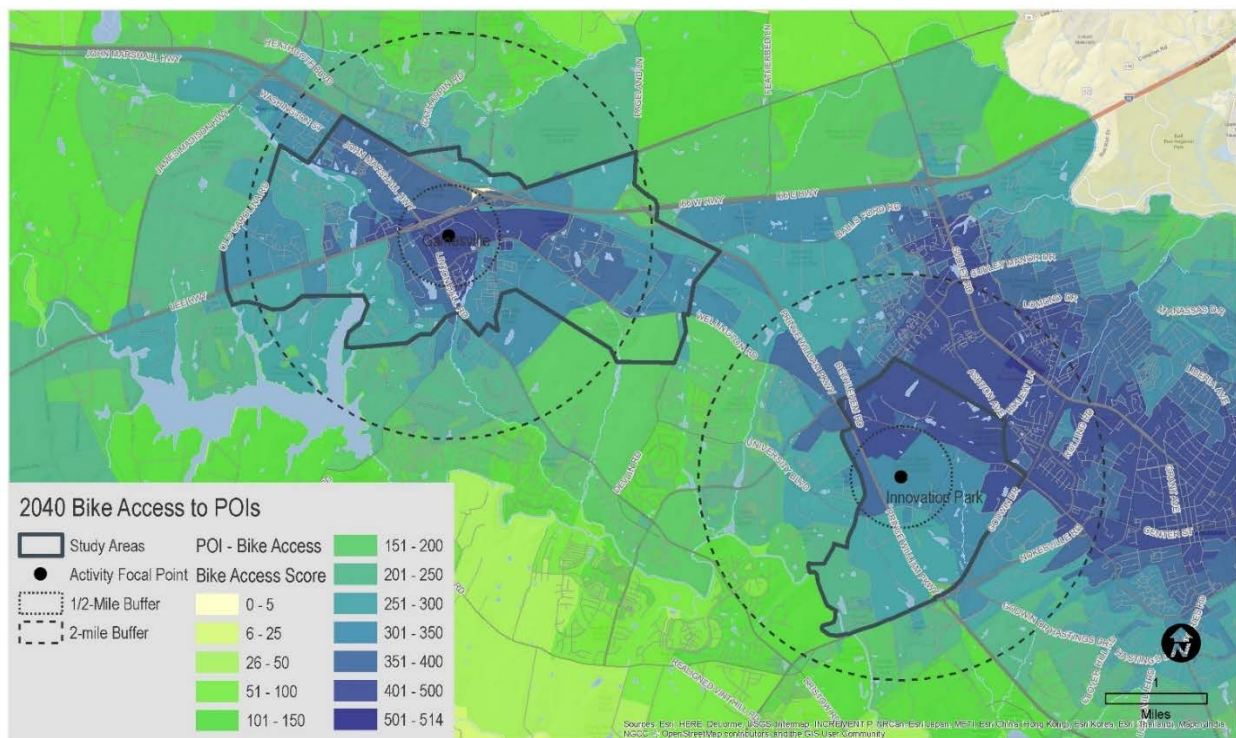


Figure 4. Bicycle/short auto trip analysis results

The Wellington Road corridor begins to appear as a much more visible presence in Figure 4, with a larger “travelshed” of highly accessible trip origin locations spreading along Wellington Road in a nearly continuous fashion from Gainesville through Innovation Park, and into downtown Manassas.

While these accessibility maps suggest interesting opportunities for walk and bike connectivity, they don’t speak to how many people there are in the area to take advantage of that opportunity.

Map 5 looks at the distribution of jobs and housing in the study area and vicinity. Generally, for access to points of interest to be utilized, there need to be a mix of jobs and housing so that the customer base is strong enough to make the future points of interest viable.

Figure 5 shows the forecast 2040 number of jobs and housing units by census block (represented by the size of the circle for each block) and the jobs/housing balance (with blue denoting jobs and yellow denoting housing units).

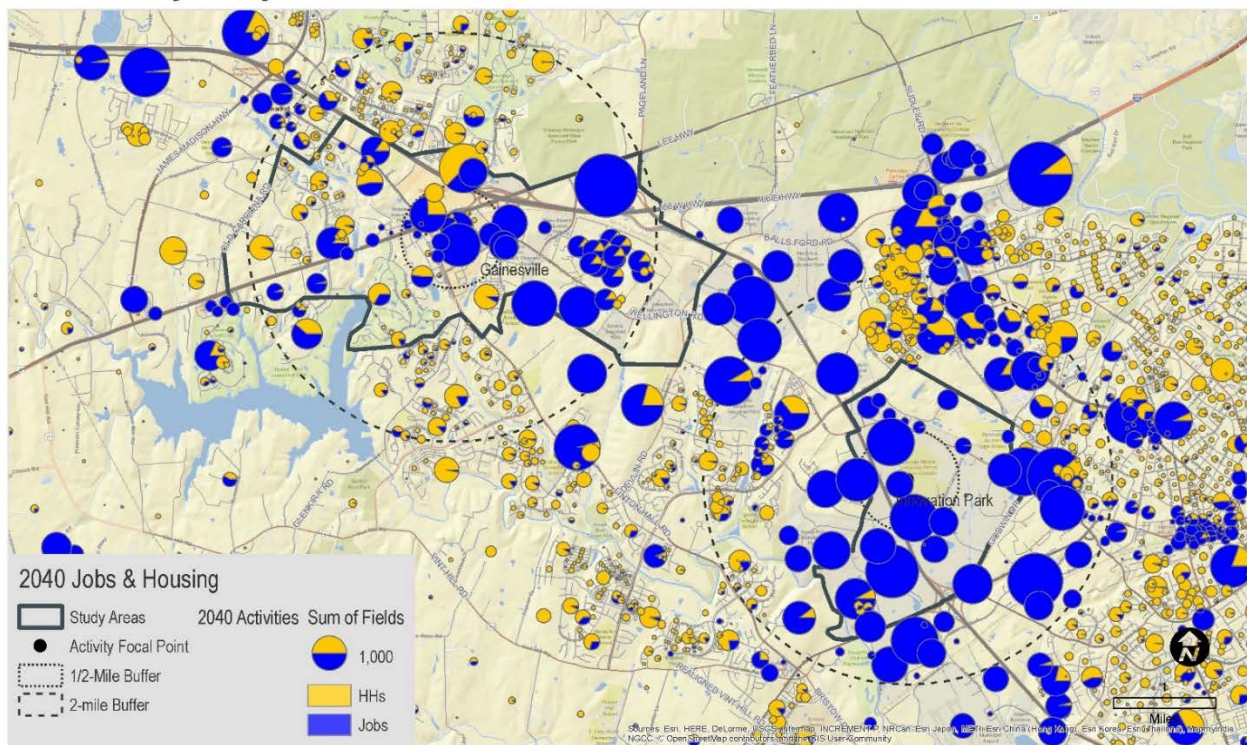


Figure 5. 2040 Development Intensity and Jobs/Housing Balance

Figure 5 shows that the study area is forecast to grow in a generally homogenous way with jobs segregated from housing units, particularly in the Wellington Road corridor from Atlas Walk to Innovation Park. This homogeneity can limit the amount of walking and biking that actually takes place, even if theoretical walk and bike access is high. In addition to working on inter- and intra-area connectivity, there are opportunities to make land use changes that will facilitate more effective connectivity for walking, bicycling, and short auto trips in the Wellington Road corridor.

APPENDIX C. DESIGN GUIDELINES

As indicated in the final report, the County has established a series of investigations of detailed design guidelines for the Innovation Town Center that may need to be updated and streamlined as part of the imminent Small Area Plan. The focus of the effort for this TLC project was therefore twofold:

- Provide some additional overarching guidance on design concepts that would be appropriate for a wide variety of scales, including countywide, Wellington Road corridor, Small Area Plan, and site.
- Provide a conceptual example of applying the general design concepts to an activity center in the Gainesville area, recognizing that the project timeframe did not provide sufficient time to conduct the type of stakeholder engagement that is integral to the successful development of design guidelines.

The purpose of the review of design guidelines was to review current conditions and establish appropriate levels of guidance for continuing study area development and evolution at site, corridor, and subregional scales. The assessment found that a high level of design guidance has been conducted on a nearly continuing basis at the site level scale. General design guidance at a more corridor level should be examined as part of a future Wellington Road Corridor Visioning Study, and incorporated into subsequent small area plans. Design guidance at a subregional scale should incorporate broader tools and techniques for addressing land use compatibility between legacy single-use commercial sites and more strategically located single-use sites as the County's work program evolves in the next few years.

Overarching Design Guidance

The following paragraphs offer suggestions on several design guideline elements that might be incorporated into ongoing and future planning efforts, including elements that, with particular attention to those elements that would be valuable for the recommended Wellington Road Corridor Vision Plan.

Element 1. Develop a robust layered transportation network with designated modal emphases

The DRPT *Multimodal System Design Guidelines* recommend three elements that should be incorporated into the Wellington Road Corridor Vision Plan:

- Developing a “layered network” to promote auto, transit, bicycle, and pedestrian connectivity both within and between activity centers
- Defining modal emphases to support the layered network designation with appropriate design standards (coordinated with VDOT) and guidelines (considered particularly in integrating the public and private realms along streets and roads).
- Establishing development density targets sufficient to achieve evolution of the corridor into a quality transit

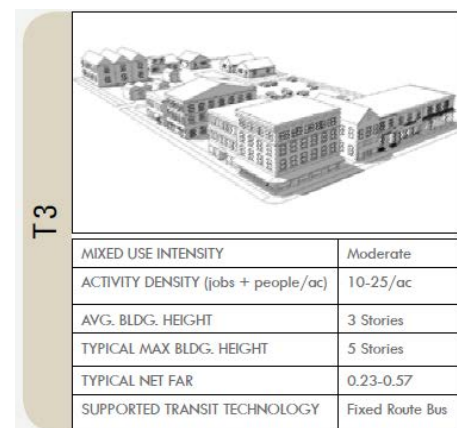


Figure 1. Considering targeted transit-supportive densities

corridor. The DRPT guidelines provide suggested targets for both gross and net densities considering both ¼ mile and ½ mile radii from a transit station. These densities may not be directly applicable for the ultimate VRE commuter rail service, but are useful for considering the evolution of the Wellington Road corridor into a high quality bus corridor.

The initial considerations of the Wellington Road Corridor suggest three concepts in particular should be explored during subsequent planning efforts:

- Consider developing a Wellington Road Corridor layered network including supporting collector roadways. In the current comprehensive plan, Wellington Road serves as the only roadway that would connect potential future activity centers within walking or bicycling distance (University Boulevard provides another arterial connection but is too far west to be part of an urban grid. The current comprehensive plan recommends widening Wellington Road to six lanes. Additional collector streets, such as Station Street and Freedom Center Drive in the current comprehensive plan are needed to support town center development, but are also valuable for connectors between activity centers.
- Consider developing Wellington Road as a four-lane road (with a lower target speed) rather than a six-lane road. Wellington Road is currently a two-lane road for most of the distance between the City of Manassas and its terminus at Linton Hall Road. Developing Wellington Road as a six-lane roadway would increase its functionality for longer distance traffic, but would limit its potential as a high-quality connector for bicyclists, pedestrians, and bus transit service between the conceptual activity centers that it could connect.
- Include consideration of goods movement and the trails and blueways connections as part of the corridor connectivity analysis. The trails planning efforts are generally designed to gently weave unpaved pedestrian connections through sensitive environmental areas such as the Upper Broad Run, Lower Broad Run and Rocky Branch subwatersheds. While the primary purpose of these trails may be recreational, they often can connect functional origins and destinations (as accomplished in the connections between the Wentworth Green residential community and the Promenade).

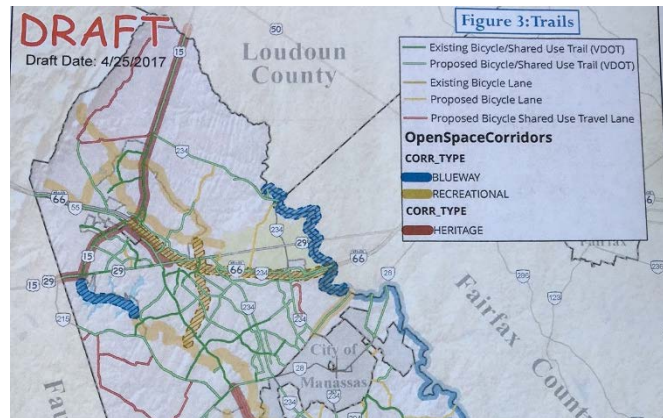


Figure 2. Unpaved trail connections can serve both recreational and functional transportation purposes.

Element 2. Develop concepts and guidelines for village centers, town centers and corporate/institutional campuses

The following guidelines provide a starting point for envisioning new village center and town center mixed-use developments where such centers will provide the highest and best use of the land, as well as for emerging corporate or institutional campuses for properties where the traditional campus style or secure facility development (whether for emerging industrial/technology uses such as data centers, or for more traditional office or research parks) is warranted.



Figure 3. Mixed uses, diverse facades, Lafayette, LA.

Guidelines for Village Centers, Town Centers, and Corporate or Institutional Campuses

Village Centers provide both an opportunity for community retail and services as well as gathering space for local residents. Village Centers serve a smaller market than Town Centers with buildings typically one to three stories in height.

Commercial and retail uses feature variety of building facades. Streets are narrow, with low travel speeds, wide sidewalks, and on-street parking.

In retrofitting built environments, parking lots can be divided into short blocks to better define a pedestrian realm and provide an organizing framework for future infill development.



Figure 4. On Street Parking – Fairfax Corner, VA

Town Centers have more intensity in the pedestrian shed with greater floor area ratios for both residential and commercial/office developments. The additional intensity helps support larger community retail uses like grocery stores and full service restaurants.

Town Centers may be anchored by a key community retail center like a grocery store with rear parking emphasizing pedestrian access.

Innovative housing may include flexible live-work units, applying vertical mixed use within a single owner-occupied or rental unit with high levels of transparency to facilitate identity for home-based offices.



Figure 5. Live/work housing units, Merrifield, VA

Both Village Centers and Town Centers typically include residential neighborhoods within the pedestrian shed, a short walk to the mixed-use center. These neighborhoods can contain a variety of housing types.

Within neighborhoods, local streets have very slow travel speeds reinforced by small building setbacks and perhaps different streetscaping elements such as the use of brick pavers.

Housing can take a variety of shapes and sizes to provide for a diversity of resident ages and needs. For instance, compact cottage designs combine market interests in detached housing and smaller unit sizes.

Attached townhomes can include a variety of building orientations and façade diversity. On-street parking contributes to pedestrian comfort and slow travel speeds. Additional parking is accessed from rear alleys.

Comparable examples

The following links provide examples of village centers and town centers in settings that are roughly comparable to western Prince William County in terms of locations at the edge of a major metropolitan area and issues associated with transitioning needs and property values.

Village Centers and Town Centers

Kentlands, Gaithersburg, MD

<http://kentlandsusa.com/home.asp>

Maple Lawn, Laurel, MD

<http://www.maplelawnmd.com/>

Crescent District Master Plan, Leesburg, VA,

<http://www.leesburgva.gov/government/departments/planning-zoning/comprehensive-planning/crescent-district-master-plan.htm>

Orenco Station, Hillsboro, OR

<http://orencostation.com/>

Park Place, Leawood, KS

<http://www.parkplaceleawood.com/residential/>

Zona Rosa Town Center, Platte County, MO,

<http://www.zonarosa.com/>

ClipperMill, Baltimore, MD,

<http://www.rosecompanies.com/all-projects/clipper-mill-green-adaptive-re-use-of-historic-mill-2>

Mueller, Austin, TX,

<http://www.muelleraustin.com/about/>

Mashpee Commons, Mashpee MA, Cape Cod,

<http://urbanland.uli.org/planning-design/new-suburbanism-reinventing-inner-ring-suburbs/>

Belmar, Lakewood Colorado, Denver County,

<http://uli.org/wp-content/uploads/ULI-Documents/Shifting-Suburbs.pdf>

Corporate or Institutional Campuses

Valley Forge Corporate Park, King of Prussia, PA

http://padeasla.org/index.php/award-winners/2008-awards/valley-forge-corporate-center-redevelopment-master-plan#!vfcc_14

Innsbrook, Henrico County, VA,

http://www.innsbrook.com/files/next/innsbrook_next_masterplan_5.pdf

The Village at Hendrix, Conway, AR,

<http://www.dpz.com/Projects/0430>

Element 3. Define town centers and village centers with Major highways near town centers and villages should be defined as edges

A challenge with design considerations for many activity centers is that the same crossroads that provided the initial levels of accessibility to spur economic development become the definitional “main streets” of that activity center.

The potential future village centers and town centers are most productively designed when they can be established in a quadrant of an intersection between major highways. The major highway function provides regional accessibility that helps facilitate both a market and a site edge that responds to contemporary access management concepts for state highways. The center of the development can be oriented around a walkable “pedestrian shed” served by internal local streets. In many cases, the other edges of the activity center will require buffering for either natural environmental features or adjacent community concerns; where such concerns are not prevalent, better connectivity by pedestrians, bicyclists, and local roadways (with low target speeds) between adjacent properties can be achieved.

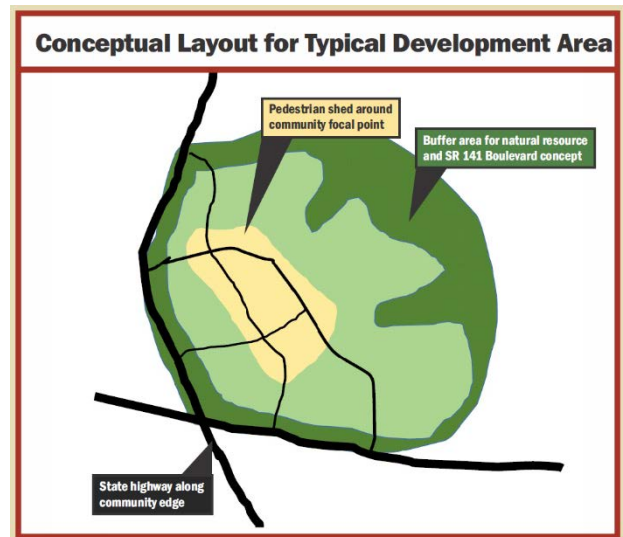


Figure 6. Activity centers should be designed to turn inward from major highways.

Element 4. Establish a corridor planning process to include a vision statement, key objectives, and supporting implementation activities

The following text provides an example of guidelines that might serve as concept for the Wellington Road Corridor Vision study:

The Wellington Road corridor will evolve into a transit-supportive group of town centers, village centers, and corporate or institutional campus settings that span from Manassas to Gainesville.

The vision statement might be expanded to encompass multidisciplinary objectives and reference key supporting documents and corridor-specific considerations:

The Wellington Road corridor evolution will support key objectives expressed by County elected and appointed officials, business and civic representatives, and the general community. The development of these plans and policies will reflect a triple-bottom line approach fostering more sustainable development:

- *Economic and fiscal objectives to attract and retain targeted businesses and quality development through programs such as those outlined in the Prince William County Comprehensive Plan,*
- *Environmental objectives to support the protection and preservation of valuable natural resources in the Wellington Road corridor, and*
- *Cultural objectives to celebrate the historic, institutional, educational, and agricultural resources in the area, incorporate the interests of current community members, and anticipate the needs of the next generation of residents.*

The implementation of the Wellington Road Corridor Vision may incorporate a structured set of implementation activities, which could include:

Key land use objectives and guidelines will be developed in conjunction with community members and may include elements such as:

- *Developing templates to guide the physical form of future neighborhoods where change is desired, including:*
 - *Introducing a mix of uses that help transform existing office campuses into neighborhoods with a sense of place, where appropriate*
 - *Recognizing the functional relationship of the County's designated new community development areas to both*
 - *Areawide travel patterns in an effort to balance trip productions and attractions and to reduce vehicle trip lengths, and*
 - *Established communities in the study area in an effort to provide supporting high quality goods and services as a part of new community development area plans*
 - *Developing pedestrian-scale design requirements or guidance to facilitate a human sense of scale and encourage walkable designs*
 - *Suggesting design guidance to facilitate placemaking efforts, including*
 - *Development form elements such as height, setbacks, and massing, and*
 - *Complete streets elements such as pedestrian and bicycle facility types and streetscape forms and materials both within and connecting study area neighborhoods*
 - *Identifying tools and approaches for development proposals to adequately express the satisfaction of design criteria and community expectations; including text, tabular, and graphic displays*
 - *Creating access management treatments that preserve the functionality of Wellington Road and intersecting arterial roads, in concert with intersection spacing for new community development area circulation plans to reduce block lengths, manage vehicular speeds, and prioritize transit accessibility and walkability*

- *Designing buffer treatments including both land use setbacks and landscape design elements*
- *Exploring opportunities for supporting policies and procedures, including*
 - *Clarifying or refining public sector and private sector roles and responsibilities for identifying, implementing, and monitoring planned transportation system improvements and conditions*
 - *Exploration of multimodal quality of service, connectivity, accessibility, mode share/internal capture, time-of-day considerations, and trip-based travel time index as measures that may augment or supplant traditional weekday peak hour intersection-based auto LOS*
 - *Flexibility to reconfigure business campuses internally within a reasonable set of regulations*
 - *Consideration of tools to stage development and infrastructure so that steady progress towards the corridor vision, documented through a Wellington Road Corridor monitoring program, is a prerequisite for continuing development.*
- *Establishing an implementation plan that identifies subsequent steps for*
 - *Planning and zoning changes both specific to the Wellington Road corridor and Countywide initiatives*
 - *Infrastructure implementation approaches that may include Multimodal Transportation Districts, or other phased or staged land use and infrastructure plans that balance land use and transportation investments and foster value capture techniques and facilitate consideration of innovative financing opportunities*
 - *Transportation Demand Management (TDM) plans and programs that are appropriate for individual neighborhoods as well as corridor-wide.*

Small Area Plan Development Concepts

Figure 7 provides a hypothetical high-level design concept for how the existing Atlas Walk and Promenade activity centers could perhaps continue to evolve and intensify through infill developments on pad sites and eventual conversion of surface parking to structured parking as property values increase over time.

The Figure 7 concept suggests an opportunity to increase mixed-use economic development without substantial redevelopment of existing buildings, but rather by formalizing parking lot aisles into a more formal street grid and introducing a mix of uses as suggested by color coding:

- White buildings are existing buildings that remain
- Pink buildings represent retail (or vertical mixed-use with ground floor commercial) that essentially extend Atlas Walk and expand the Promenade area
- Yellow buildings reflect residential (the shapes are based on the adjacent Wentworth Green development townhouses)
- Blue buildings are generally office or other commercial (including the Spring Hill Suites hotel to the east of the Promenade).

Design guidelines objectives reflected in Figure 7 include:

- Allowing the major roadway network to serve as boundary edges, with commercial uses backing to those wider, larger roads and allowing Wellington Road to serve as a separation between the two town centers.

- Reinforcing the two activity centers with activating residential uses at the edge of the current retail space.
- Seeking flexible and activating uses, such as the establishment of a civic space (indicated by the flagpole symbol in the SteinMart/Sports Authority parking lot) which could serve as a location for temporary events such as a farmers market or open-air concerts.

Additional considerations could include:

- The potential for a VRE station at the north end of the site. The segment of track between US 29 and University Boulevard was not considered as one of the more promising VRE station locations due to a combination of factors, notably physical constraints and right-of-way needs, the desirability of station locations on tangent sections as contrasted with curves, and property access relative to points either west of US 29 or directly east of University Boulevard. However, the potential might exist to rethinking these items as part of subsequent study.
- The potential for pedestrian and bicycle access under US 29 (particularly if future study further pursues the VRE GHX study “G-2” station location west of US 29)
- Additional activating uses for conceptual parking structures, particularly if existing retail uses redevelop. The “Texas Donut” concept of wrapping residential around parking is not shown on Figure 7 as such developments typically require a footprint of about 300’x400’ to be most cost effective (although some smaller size examples exist where property values are higher) and the remaining pad sites at these locations are smaller in size



Figure 7. Hypothetical concept for town-center infill development for Atlas Walk and Promenade