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Route 28 Corridor Plan

Loudoun County Department of Planning

~~September 3~~October 6, 2010

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Route 28 Corridor Plan

INTRODUCTION

The County envisions the Route 28 Corridor as an airport-anchored gateway into Loudoun County offering a positive and welcoming business environment that supports significant job growth and economic activity in varied settings. The County also envisions the corridor evolving into a premier location for regional, national, and international businesses with a high-quality image that offers employees vibrant centers of activity and highly-integrated pedestrian and transit-friendly employment developments. This vision reinforces the County's commitment to the continued commercial growth of the corridor that in turn contributes to the overall fiscal health and economy of the County.

The Economic, Land Use, Transportation, Design, and Sustainable Development policies contained in the plan are intended to provide a framework for future development that reflects eight conceptual themes derived from the public process.

1. The Route 28 Corridor is an employment-based corridor that offers broad employment opportunities;

2. The Route 28 Corridor creates "places" or centers of activity offering office and office-supportive amenities along with public and civic uses that give the corridor a community identity;

3. The Route 28 Corridor supports residential in locations that can induce greater business activity[ms1];

4. The Route 28 Corridor takes advantage of its proximity to Washington Dulles International Airport;

5. The Route 28 Corridor promotes multi-modal connectivity, including transit, with the existing and planned transportation infrastructure;

6. The Route 28 Corridor promotes a consistent pattern of development adjacent to Route 28 with higher-density office development and mixed-use activity centers;

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7. The Route 28 Corridor will emphasize form and design as much as use[ms2];

8. The Route 28 Corridor encourages sustainable development practices.

The Route 28 Corridor boundaries include properties that are bordered by Broad Run and Loudoun County Parkway to the west, Dulles Airport and Fairfax County to the south, Cascades Parkway, Potomac View Road, and the W&OD to the east, and Route 7 and Bles Park to the north. ~~, and Cascades Parkway, Potomac View Road, and the W&OD to the east.~~ The map below shows the actual boundaries of the Route 28 Corridor. The properties contained within these boundaries are subject to the policies contained within the Route 28 Corridor Plan. These policies are described below.

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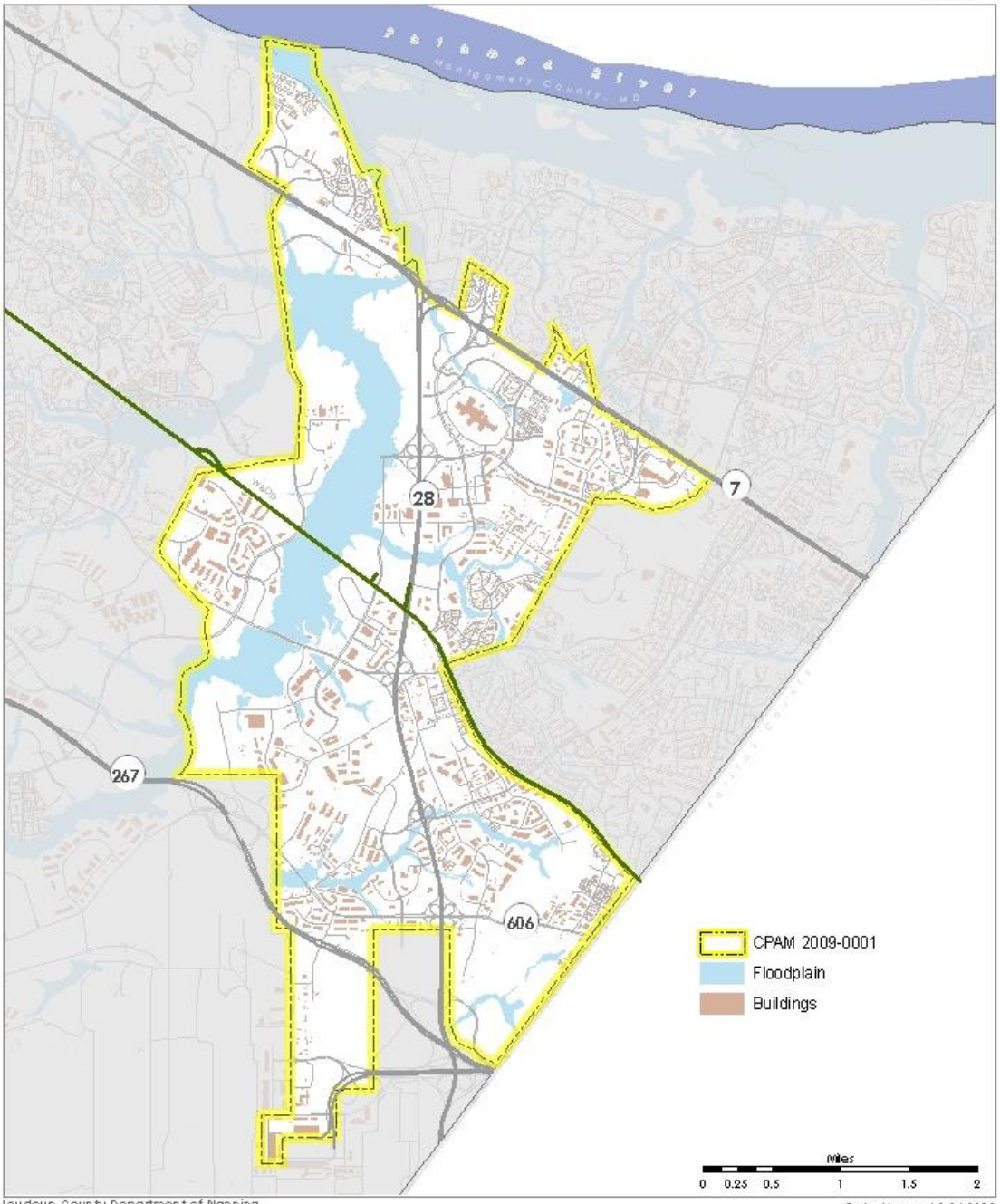
Route 28 Corridor Boundary Map



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Loudoun County Office of Mapping and Geographic Information
Imagery Courtesy of the Commonwealth of Virginia

Date Mapped 8.16.2010
Map Number 2010-181

ECONOMIC

The County can attract greater commercial development, including high-quality office, to the Route 28 Corridor based on several advantages:

- Approximately 3,100 acres of land remain undeveloped within the corridor;
- Properties adjacent to or within proximity of Route 28 offer businesses high visibility and accessibility;
- Properties suitable for custom campus developments are available that can accommodate combined office, research and manufacturing operations;
- Proximity to an improved highway, air transport, and a future mass transit network for cost-efficient and timely distribution of goods and services, employee mobility, and greater workforce commuting options;
- Direct access to the world through ample fiber lines at MAE-East and international flights at Washington Dulles International Airport;
- Close proximity to the intelligence and surveillance hub along the Route 28 South Corridor and a host of neighboring peer organizations such as Orbital Sciences, Raytheon, AOL, M.C. Dean and others; and
- Proximity to a highly-educated, diverse workforce.

The Route 28 Corridor Plan policies will maximize the commercial development potential within Route 28 Corridor by building on these strengths, offering planned land uses within locations that reflect the full economic potential of properties, and providing office development options within employment settings that reflect the kind of environments sought by business users. Route 28 Corridor Plan policies will also support economic development in the corridor by accelerating the timing and absorption of office into the Route 28 Corridor submarket. Lastly, ~~T~~the Route 28 Corridor Plan will promote the growth of the commercial tax base; ~~thereby~~ improving the revenue balance between commercial and residential, offsetting the greater costs of services for residential development, helping to meet or exceed the ability of the County to pay Route 28 Tax District bonds, and relieving the tax pressure on County residents by maintaining an affordable real property tax rate.

The policies contained within the plan are also intended to meet the key demands for development associated with the County's Board-adopted targeted Industry Clusters - Federal Government Contracting, Defense and Aerospace, and Information Communications Technology, as well as the emerging International Business cluster. While these businesses are currently recruited based on a cluster strategy which uses the County's existing business assets, the plan's policies establish a long-term vision for the corridor that will solidify Loudoun's corporate image and help expand these industries into the future. The plan also protects and encourages several critical features of high-end, corporate environments consistently sought by

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these types of industries. Specifically, the plan provides highly visible locations for high-quality office development, including custom campus headquarters and mid-to-high-density office, and multi-use office buildings within mixed-use environments. Route 28 development patterns encourage the highest-density office space fronting along both sides of Route 28 supported by lower-density Office and Flex uses that support information technology, research-and-development, and high-end manufacturing behind the "wall" of mid- to high density high quality office.

The *Revised General Plan* policies anticipate the continued growth and expansion of Washington Dulles International Airport for both passengers and cargo and seek to maximize the economic opportunities created by the airport. The Route 28 Corridor Plan policies continue to recognize Washington Dulles International Airport as a 21st Century multi-modal transportation hub that attracts airport-linked and ancillary businesses to the corridor and provides a gateway to the world. Airport-linked businesses include those businesses which rely significantly on the airport's passenger and cargo capacity, including businesses which depend on frequent long-distance travel and businesses involved with air-surface cargo warehousing and distribution. Airport-ancillary businesses include retail, hotels, and restaurants that support the growing airport-linked businesses moving to the corridor, along with national and international businesses who locate near the corridor due to its high-quality image and accessibility to the region's transportation network.

By clustering industrial and flex along Route 606 west of Route 28[ms3], the County continues to support high-end manufacturing and distribution logistics, including air-surface cargo distribution, and other ancillary businesses, with the opportunity to capture even more airport-linked businesses in addition to those already emerging. The Route 28 Corridor Plan also encourages legacy industrial users currently along Route 28 to relocate to the more appropriate Route 606 area, which will in-turn establish a competitive, corporate gateway into Loudoun along Route 28, and strengthen and protect the identities of both Route 28 and Route 606 in future decades.

Economic Policies

1. The County supports an airport-anchored business corridor that captures airport-linked and airport-ancillary businesses along with targeted Industry Clusters.
2. To evolve the corridor into a premier location and employment destination for regional, national, and international businesses, the County will plan properties that offer high visibility and accessibility to Route 28 for mid to high-density office.
3. Areas fronting along Route 28 will support the highest density office.

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4. Office developments within mixed-use settings will be supported within the corridor to create "places", or centers of activity, that offer a complete set of uses and amenities that will appeal to office tenants, visitors, and residents alike.

5. New residential will be strategically located and concentrated within high-density mixed-use office environments where there is the highest potential to capture high-quality and high-density Office, thereby catalyzing the office development potential of sites and their vicinities while having an overall positive impact to the County's Route 28 Tax District debt obligations[ms4].

6. The County will target industrial and flex businesses, including distribution logistics, to locate to the planned Industrial area in the vicinity of Route 606 west of Route 28 where properties offer more immediate access to the airport, Route 28, and the regional surface transportation-network

7. Legacy industrial users currently along Route 28 are encouraged to relocate to planned Industrial areas.

8. [ms5]The County supports a planned transit network within the corridor that will move employees, visitors, and residents seamlessly between various modes of transport.

11. The County supports the planned development and growth of Washington Dulles International Airport and will ensure that all new development consider and sufficiently mitigate potential impacts to the airport, such as transportation congestion, environmental impacts, and conflicting land uses.

12. The County will coordinate county planning with airport planning to ensure that the health and growth of the airport and corridor economies are mutually supportive.

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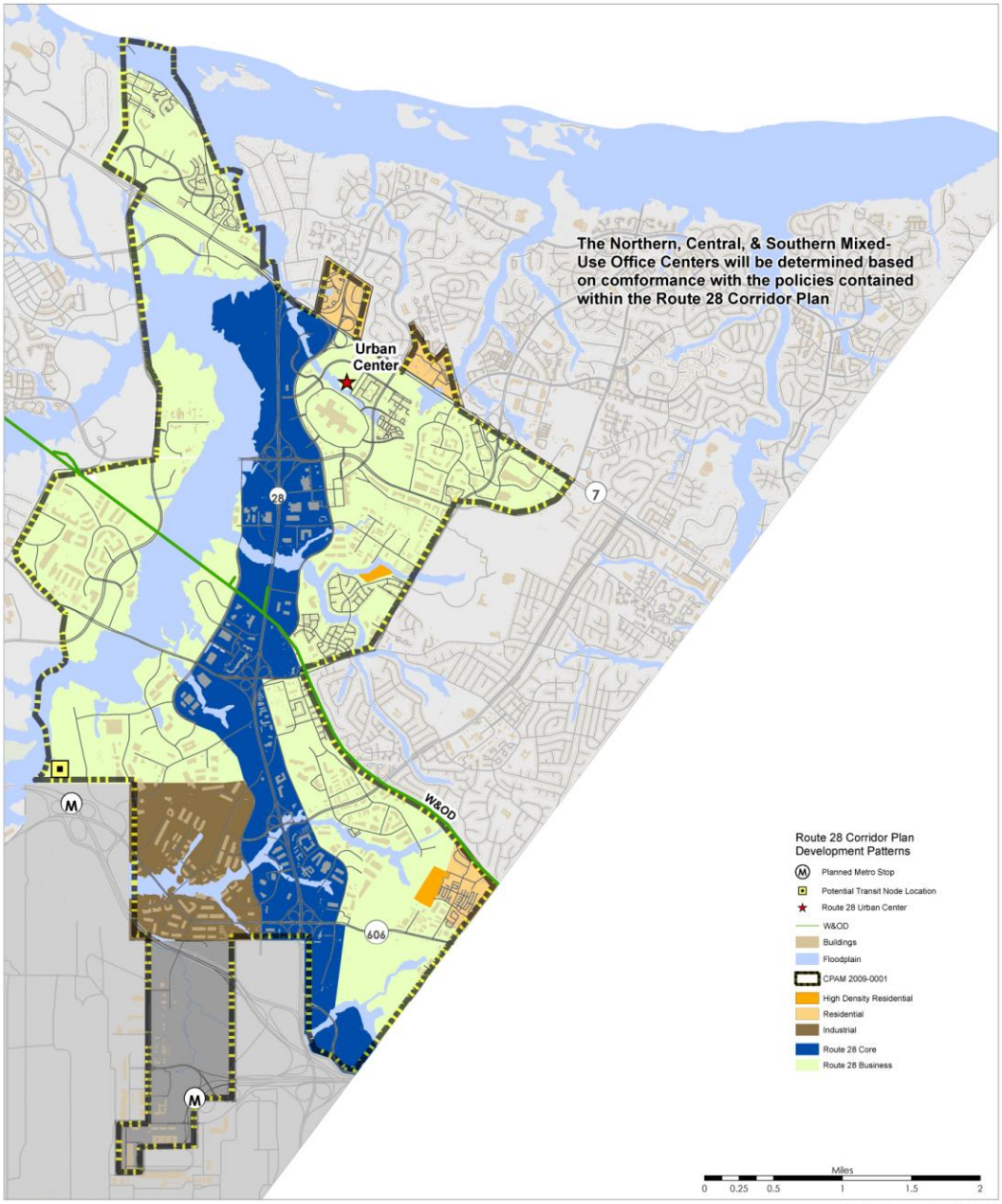
Route 28 Corridor Plan Development Patterns



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Loudoun County Office of Mapping and Geographic Information

Date Mapped 8-30-2010
Map Number 2010-186

LAND USE

The County envisions the Route 28 Corridor as a major economic and employment center with predominantly commercial development within distinct land development patterns. Office development options are intended to meet the individual needs of regional, national, and international businesses that reflect evolving market preferences and potential. The development options range from suburban, lower-density office settings to medium-density, compact, pedestrian-oriented office clusters and higher-density, transit-oriented mixed-use office centers. Other parts of the corridor more immediate to Washington Dulles International Airport and Route 606 west of Route 28[ms6] are planned for Industrial uses, including Flex and Light Industrial.

Office employment in the Route 28 Corridor is planned within the Route 28 Business area, which supports Office and Flex uses, as well as a Route 28 Core area where two new types of office employment will be developed: Office Clusters and Mixed-Use Office Centers. These land development patterns are defined by the overall form and character of development, as well as their recommended land use mixes and intensities. Land use planning encourages higher intensity office employment uses immediately adjacent to Route 28 (generally between the parallel roads of Pacific and Atlantic Boulevards) with flexible development options elsewhere in the corridor. To catalyze office development at key locations and their surrounding areas, the development options allow three high intensity mixed-use areas to develop under certain criteria that will serve as centers of activity along the corridor. A broad range of supportive uses will be permitted and encouraged as appropriate, such as residential, hotels and retail. To support Loudoun's industry clusters related to Federal Government Contracting, Defense and Aerospace, Information Communication and Technology, and other emerging industry clusters, the corridor will offer unique opportunities for businesses to develop customized hybrid campuses that include combinations of office, research-and-development, and manufacturing in one development setting.

The County also will carefully consider compatibility in proposed uses, densities, and site design with existing uses during the land development process, including the Washington Dulles International Airport, the Loudoun Quarry, Loudoun Water's Broad Run Water Reclamation Facility and residential neighborhoods. The corridor should include a distinctive identity through the use of landmark projects as well as high quality landscaping, architecture, signage, sustainability and other design elements that will set it apart from competing areas. The County's plan for the Route 28 Corridor is intended to stimulate the development of high-quality employment settings and transform the corridor to one of greater density, a synergistic mix of uses, more pedestrian and transit friendly, and sustainable in design and function.

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General Policies

1. The County anticipates the development of Route 28 as a premier airport gateway and business corridor with an organized pattern of development. All land development within the corridor should conform to the Route 28 Corridor Land Development Pattern Map and the related plan policies contained herein.

2. The County supports the continued growth of higher education and research-and-development uses within the Route 28 Corridor that are complementary and compatible with the employment character of the corridor.

3. Large-scale Public and Civic uses should generally be located outside the Route 28 Core unless they are well-integrated within a development and enhance the economic development potential of sites.

4. All new development within the Route 28 Corridor will take into consideration existing and planned development both within and adjacent to the corridor, including Washington Dulles International Airport, Loudoun Quarry, Loudoun Water's Broad Run Water Reclamation Facility, and residential neighborhoods. Compatible transitions to these uses may be appropriate through a combination of use, intensity, scale and/or building heights, and setbacks. Improved multi-modal connections between residential neighborhoods and employment areas within the corridor are anticipated.

5. The County encourages higher Floor Area Ratios (FARs) and minimum number of stories to ensure that land situated along Route 28 ~~and within the Route 28 Tax District~~ will build to its full potential, though the overall density of a project may be reduced based on environmental considerations, compatibility with surrounding uses and business requirements, and to further other planning objectives. The resulting development pattern should conform to the goal of locating the highest intensities closest to Route 28 and within ¼ mile of planned transit (bus or rail) stations.

6. All office land use categories provide flexibility for office campuses that include combinations of office, research-and-development, and manufacturing, provided that the project fully meets the design guidelines of this Plan.

7. The County may consider higher density office development adjacent to the east side of Atlantic Boulevard/Shaw Road and the west side of Pacific Boulevard as part of an integrated Office Cluster development or Mixed-Use Office Center. Consolidation of land or parcels should occur on both sides of these roadways such that the overall development results in well-designed, high-quality uses that are functionally and visually integrated with a pedestrian-oriented streetscape along Atlantic and Pacific Boulevards. Appropriate transitions should be provided for lower density office settings within areas planned for Route 28 Business as well as existing residential neighborhoods.

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8. Residential development will continue to be located outside the adopted Ldn 65+ (day/night average noise level) noise contours for Washington Dulles International Airport. Residential development within the Route 28 Tax District will be limited to three Mixed-Use Office Centers, the Urban Center, and the following specific locations: (1) the Old Sterling planning area; (2) the Oak Grove area; (3) the Eden Tract and Loudoun Village properties; and (4) areas designated as high density residential on the Planned Land Use Map. Specific densities for planned high density residential areas are as follows[ms7]:

   a. Victoria Station - up to 10 dwelling units per acre

   b. Pearson Reserve - up to 8 dwelling units per acre

9. Flex uses are supported in the Route 28 Corridor. Flex uses include laboratory, data centers, and training facilities in combination with office and research and development Within Flex, supportive Retail and Commercial uses over 10% will be limited to showrooms associated with the predominant use[ms8].

~~9.~~10. ~~New~~ Flex and Light Industrial uses are supported within planned Industrial areas in conformance with the Land Development Pattern Map.

~~10.~~11. The County ~~shall~~ encourages the consolidation of existing smaller properties in order to create more unified development within the Route 28 Corridor. The advantages of consolidated development include comprehensive urban design, uniform architectural treatment, controlled access, more efficient parking and landscaping, and environmental protection. Consolidation of land or parcels should occur such that the development results in well-designed, high-quality uses that are sensitive to, and functionally and visually integrated with, planned and existing developments both within and adjacent to the corridor.

~~11.~~12. All development proposals should conform to a generally rectilinear grid system of streets. Development proposals adjacent to vacant or underutilized land should demonstrate reasonable opportunities for connectivity and coordinated site design.

~~12.~~13. All development within the Route 28 Corridor will comply with the ~~applicable~~basic design standards contained in this Plan. Office Clusters and Mixed-Use Office Centers will comply with the applicable base design standards regarding site design, street and block, streetscape, building ~~form and placement, building articulation~~, parking, parks and open spaces, ~~streetscape,~~ public and civic, landscaping, and signage that ensure high-quality design[ms9]. All developments should contribute to the aesthetics of the corridor ~~and coordinate development on both sides of Route 28~~[ms10].

~~13.~~14. The County supports the development of a Public/Civic Facilities Plan specific to the corridor that includes the identification and location of planned public facilities,

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including parks and open spaces, and civic uses unique to the corridor and at a scale that is compatible with planned development[ms11].

~~14.~~15. For the purposes of the Route 28 Corridor Plan, the definition of Parks and Open Spaces and Civic and Public uses are as follows[ms12]:

Parks & Open Spaces - Outdoor areas that are dedicated for public use such as athletic fields, parks, greens, squares, plazas, courtyards, forecourts, and playgrounds. These spaces should be integrated purposefully into the overall design of the development and not merely be residual areas left over after buildings and parking lots are sited. Parks and Open Spaces include open spaces in their "natural" state, such as forests, wetlands, or meadows; trails and trail connections, along with active and passive recreational spaces. The preservation of environmentally fragile and valuable land and habitat will be given a priority. Parks and Open Spaces also include greens, squares, plazas, forecourts, and courtyards, which should be designed as appealing places that foster social interactions and are designed as appealing places that foster social interactions and are designed to hold short-term informal activities and programmed events. ~~Examples of amenities within these areas include seating, lighting, landscaping, trail connections, public art/sculpture, water features~~[ms13]~~.~~

Civic Uses - A building operated by not-for profit organizations, exclusive of government, that is dedicated to arts, culture, and/or religion, such as museums, cultural centers, performing arts centers, art galleries, religious assemblies,~~.~~ etc.

Public Uses - Any building or structure held, used or controlled exclusively for public purposes by any department or branch of the federal, state, or Loudoun County government, such as government offices, libraries, community centers, recreation centers, sheriff substations, fire and rescue stations, etc.

~~15.~~16. The County ~~shall~~ encourages partnerships among multiple developments to contribute toward significant, meaningful, shared Parks and Open Spaces and Public and Civic ~~U~~uses that will serve multiple areas within the corridor. Such a contribution may count towards a project's required Parks and Open Spaces and ~~p~~Public and C~~c~~ivic use component[ms14]S[ms15].

~~16.~~17. The County encourages innovative and sustainable design to meet a project's Parks and Open Spaces requirements, such as terraces, forecourts, promenades, enhanced entrance features, bioswales, rain gardens, and green roofs and walls.

~~17.~~18. The following policies apply to all land development in the southeast quadrant of the corridor (generally south of Route 606 and east of Route 28) to reflect its proximity to Washington Dulles International Airport, Fairfax County and the Town of Herndon:

a. All land development proposals in this area shall be functionally and visually integrated with the adjacent transit station area planned in Fairfax County

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surrounding the Route 28/CIT metro station. All land uses shall be compatible with those existing and planned for Washington Dulles International Airport, Fairfax County and the Town of Herndon.

b. The County encourages the development of coordinated roads, sidewalks, bike paths, and trails that provide linkages within Loudoun County to adjacent areas within Fairfax County and the Town of Herndon, in particular the Route 28/CIT metro station.

c. A network of streets should be implemented to connect future development in Loudoun County to adjacent future and existing development in Fairfax County, including a grid street pattern surrounding the Route 28/CIT transit station. The grid should create a hierarchy of streets and multiple access points to higher capacity roads intended to handle the traffic.

~~18.~~19. The County ~~will~~ encourages Route 28 Tax District landowners in the corridor to rezone to appropriate zoning districts in the revised zoning ordinance that are consistent with the County's overall land use vision.

~~19.~~20. The County ~~will~~ supports mechanisms and incentives that extend public utilities where absent within the corridor.

~~20.~~21. The County will identify revitalization opportunities for property owners to upgrade under-utilized properties.

Route 28 Core Policies

The County will reserve areas adjacent to Route 28 for high-quality, high intensity office developments that take advantage of the economic opportunities associated with frontage on Route 28. The Route 28 Core is generally bounded by Pacific Boulevard to the west and Atlantic Boulevard/Shaw Road to the east. The County supports the development of Office Clusters within the Core. To stimulate economic activity along the corridor, a limited number of mixed-use office developments can be developed within this area in conformance with the Mixed-Use Office Center policies of this Plan.

General Policies

1. The Route 28 Core supports development within an Office Cluster or a Mixed-Use Office Center per the policies of this Plan.

2. The County may consider custom campuses that include combinations of office, research-and-development, and manufacturing uses within the Route 28 Core provided the predominant use in the proposed development remains office or research-and-development and the proposal conforms to the applicable design standards. ~~Uses other than office should be provided in the interior of the site, not be visible from Route 28~~[ms16], and include architectural and site design elements consistent with the predominant office buildings.

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3. New commercial retail uses within the Core will not be supported immediately adjacent to Route 28 unless incorporated within an office building.

4. Large-scale single-story retail buildings that require over 20,000 square feet conflict with the compact, pedestrian-oriented nature of these developments are not appropriate. Drive-through retail uses are also discouraged[ms17][ms18].

5. Hotels within the core should include a range of services and amenities, including restaurants, room service, concierge services and meeting rooms.

6. As the gateway into Loudoun and to the Washington Dulles International Airport, the County supports a higher concentration of full-service hotels, meeting and convention spaces, and entertainment uses south of Sterling Boulevard~~Route~~[ms19] ~~606~~.

7. The following general ~~design~~ criteria will be considered when an Office Cluster or Mixed-Use Office Center is proposed:

   a. The request is consistent with the intent and purpose of the Route 28 Corridor employment objectives and design standards.

   b. Proposed open spaces, parking areas, pedestrian walks, signs, lighting, landscaping, and utilities are arranged to achieve a safe, efficient and visually appealing development. They will be designed to complement and function with the buildings and uses within the development[ms20].

   c. The proposal is not detrimental to the orderly and coordinated development of its surroundings by providing appropriate connections, landscaping and opportunities for integration of the adjacent properties.

   d. The proposal mitigates any adverse impacts to the built and natural environment.

   e. The project achieves adherence to the design standards within the Route 28 Corridor Plan.

   f. The project complies with the sustainable development and unmet housing needs policies of the Route 28 Corridor Plan.

Office Cluster Policies

Office Clusters are defined as medium and high density compact, pedestrian-oriented office developments with highly integrated office-supportive amenities including retail, restaurants, hotels, personal services, parks and open spaces, public and civic uses, and both surface and structured parking at full build-out. They do not permit a residential component.

1. Premier, highly-visible Office Clusters adjacent to Route 28 are supported in areas depicted on the Route 28 Corridor Land Development Pattern Map as Route 28 Core. Office within an Office Cluster is defined as high-quality office buildings containing four

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or more stories and located within areas that provide significant visibility and proximity to heavily traveled roadways.

2. A minimum of six stories[ms21] is recommended for office buildings immediately adjacent to Route 28.

3. The County encourages a mix of highly-integrated uses and employment supportive uses, including Commercial Retail and Services uses, within Office Clusters. No residential development will be permitted.

4. Vertically-mixed buildings, such as multi-story office buildings with commercial storefronts on the ground level, are encouraged within Office Clusters.

5. Secure office and research-and-development campuses will be permitted within areas designated as Office Clusters contingent on general compliance with the design standards contained herein. For secure campuses, deviations from the applicable design standards may be considered on case-by-case basis in order to accommodate security elements, for example greater building setbacks, secured perimeters, controlled site access, etc. The land use mix in an Office Cluster, based on square footage by use category, will generally comply with the following ratios:

Land Use Category*	Minimum Required	Maximum Permitted
Office	60%	100%
Commercial Retail & Services*	0%	10%
Flex	0%	10%
***For retail policies, see Countywide Retail Policy Plan**		

6. All Office Clusters will include a combination of Parks and Open Spaces and Public and Civic uses consisting of a minimum of 15% of the land area of the site. All such uses shall be meaningful and appropriate to the scale, setting and location of the development. All Parks and Open Spaces and Public and Civic uses shall conform to the design standards contained herein.

7. ~~The County may consider h~~Hotels, meetings and convention spaces, and entertainment uses proposed south of Sterling Boulevard ~~under Commercial Retail and Services that~~ may exceed the recommended 10% Commercial Retail and Services[ms22] provided the overall percentage does not exceed 30[ms23]% and lower FAR's may be allowed.

8. Non-residential FAR's between 0.6 and 1.5 FAR are envisioned in Office Clusters within the Route 28 Core contingent upon the availability of adequate transportation improvements.

Mixed-Use Office Center Policies

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The County's vision includes the development of Mixed-Use Office Centers in the northern and southern ends of the corridor to promote the County's image as a world-class business destination[ms24]. A third Mixed-Use Office Center is envisioned in the central portion of the corridor. These live-work centers will have higher intensities and a greater variety of uses than other areas of the corridor including multi-family residential to support a diversity of residents and workers, transit, and retail, entertainment, and recreational activities that promote 24/7 activity during morning and evening hours when employees are typically absent. Full-service and high-end limited service hotels, meeting places, destination attractions, culture, and entertainment that offer greater weekend and nighttime activity for office and Washington Dulles International Airport employees are encouraged. The mix of uses will allow for the creation of vibrant, activity-rich centers that will attract office tenants and a broad spectrum of residents and employees to the corridor and create unique "places" that are amenities for the entire corridor and its surrounding areas.

Within each Center, a high quality working and living environment will be created through well-designed projects. A range of residential dwelling units that help fulfill the County's unmet housing needs will be a vital element in these areas to ensure that affordable housing options will be located close to employment opportunities and transit. The phased density of these Centers may be higher than other areas within the Route 28 Corridor in order to provide a well-designed urban pattern of residential and non-residential uses with the "critical mass" needed to support employment and mass transit.

1. The Plan foresees the development of up to three premier, high-intensity, Mixed-Use, Office Centers within the Route 28 Corridor in areas depicted on the Route 28 Corridor Land Development Pattern Map as Route 28 Core. Office within a Mixed-Use Office Center is defined as high-quality office buildings typically containing seven or more stories and located within areas that provide high visibility, proximity to Route 28, accessibility from major roadways, and opportunities for accessible, multi-modal transportation options.

2. The three Mixed-Use Office Centers should be generally distributed throughout the corridor, with the northern center near the Route 28/Route 7 interchange, the central center proximate to the Washington and Old Dominion Trail and/or the Route 28/Waxpool Road interchange, and the southern center near the Route 28/Greenway/Toll Road interchange. As a major, limited access highway, Route 28 is a barrier to Mixed-Use Center integration. As such, the highway should always act as an edge when centers are proposed adjacent to Route 28.

3. Mixed-Use Office Centers will be between 50 and 90 acres in size[ms25]. The County may consider proposals under 50 acres on a case-by-case basis provided the Center is adjacent to an existing or approved high density office development, an integrated development plan can be achieved through roadway, pedestrian and bicycle connections as well as a

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consistent streetscape, and the project fully meets the County's visions for Mixed-Use Office Centers.

4. Mixed-use Office Centers will be developed as 24/7 amenity-rich environments unique to the corridor that appeal to a broad spectrum of employees, business tenants, and residents. A mix of mutually supportive uses will be provided in these Centers, including business, retail, restaurants, personal services, hotels, for-sale and rental housing, civic, public, cultural, and entertainment. They will serve as centers of activity along the corridor.

5. The County anticipates the development of vertically integrated mixed-use buildings, such as multi-story office and residential buildings with commercial storefronts at ground level, within Mixed-Use Office Centers. Individual residential buildings are allowed provided they are well-integrated into the design of the center and conform to the Route 28 Corridor design standards for Mixed-Use Office Centers. The Centers will have an "urban feel" with pedestrian-oriented building facades, ground-floor shops and civic amenities, and streets culminating in distinctive public spaces. Pedestrian circulation will be enhanced by short blocks arranged in a rectilinear grid-street pattern.

6. Residential dwellings within Mixed-Use Office Centers will be high-density, multi-family and meet the housing policies of this Plan. The County supports the development of multi-family housing at a variety of price points for rent and for purchase.

7. Mixed-Use Office Centers will provide for a safe, accessible, and pedestrian-friendly environment. Pedestrian and bicycle access shall be provided to transit stops/stations and neighborhoods adjacent to the area. Any potential conflicts between non-pedestrian and pedestrian circulation are to be resolved in favor of the pedestrian right-of-way.

8. Within the Centers, the highest concentration of development should be within a ¼ mile of existing and/or planned transit stops/stations. The mix of uses at the highest concentration of development should create a critical mass of pedestrian activity as people live, work and spend leisure time in this area.

9. Major access roads will be located on or near the periphery of the Mixed-Use Office Centers to avoid conflict with pedestrian traffic.

10. Parking within Mixed-Use Office Centers at full build-out should consist primarily of structured parking. Surface parking should be avoided except for on-street parking and as needed on an interim basis in the early phases of development.

11. Given the potential for the highest intensities and the greatest mixture of uses, each land development application proposing a Mixed-Use Office Center will analyze and effectively mitigate potential fiscal, transportation, capital facility, housing, and environmental impacts. The following criteria will used to evaluate Mixed-Use Office Center proposals:

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a. New residential uses will be contingent on the prior or concurrent construction of employment uses such that office uses will be the predominant use(s) on the property during each phase of the development;

b. The provision of a unified, coherent concept plan showing the type and scale of uses, densities, and the physical and functional integration of proposed land uses in all phases of development, including specific plans and commitments for transit station(s) that will connect to existing and planned transit service along Route 28 and the Dulles Greenway and future connections to adjacent parcels;

c. The availability of appropriate multi-modal transportation improvements, including pedestrian and bicycle travelways;

d. The provision of utilities, public services and facilities such as schools, fire and rescue, sheriff, and recreational facilities;

e. The pedestrian-scaled, mixed use character of the area shall be established in the initial phase of development. The initial phase should include a grid street pattern, vertically-integrated land uses with ground-floor retail and other pedestrian activity-generating uses located along the street, plazas and usable open space, etc.; and

f. Commitments to address the County's unmet housing needs.

12. The land use mix in a Mixed-Use Office Center, based on square footage by use category, will ~~generally~~ comply with the following ratios[ms26]:

Land Use Category	Minimum Required	Maximum Permitted
Office	50%	75%
Commercial Retail & Services*	10%	30%
High Density Residential	15%	25%
Public and Civic	5%	No Maximum
***For retail policies, see Countywide Retail Policy Plan**		

13. All Mixed-Use Office Centers will include Parks and Open Spaces consisting of a minimum of 10% of the land area of the site.

14. All Public and Civic uses and Parks and Open Spaces shall conform to the design standards contained herein.

15. The County anticipates a total residential and non-residential FAR from 1.0 to 2.0 within the Mixed-Use Office Centers. Additional intensity in the form of density bonuses will also be considered when a proposal commits to significant contributions to address unmet housing needs and/or public facilities that exceed the recommendations of this Plan[ms27].

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Route 28 Business Policies

The Route 28 Business area reserves land outside the Route 28 Core for low to mid-density Office and Flex uses. Office settings allow for a limited amount of internally-oriented office-supportive uses and amenities. Within Flex settings, buildings contain spaces that can be configured to allow a flexible amount of office or showroom space in combination with research-and-development, laboratory, high-tech, and warehousing uses. Flex uses also include Data Centers. The overall intensity of these areas should generally be lower than Office Clusters and Mixed-Use Office Centers with buildings containing two or more stories.

1. Route 28 Business supports up to 100% Office and Flex uses with supportive Commercial Retail and Services limited to 10% of the floor area as depicted on the Route 28 Corridor Land Development Pattern Map as Route 28 Business.
2. The County supports and encourages the development of secure office campuses and research-and-development uses within the Route 28 Business area.
3. No additional residential development will be permitted within the Route 28 Business area outside those areas specified in General Policy 8.
4. Typical buildings within the Route 28 Business area will contain two or more stories. The County encourages higher intensities, generally four or more story buildings, adjacent to major roadways such as George Washington Boulevard, Russell Branch Parkway, Waxpool/Church Road (Route 625), Loudoun County Parkway, Moran Road, Sterling Boulevard, Route 7, and Route 606 east of Route 28. Flex uses will not be permitted adjacent to these roadways.
5. ~~Flex uses including research-and-development, laboratory, data centers, and training facilities in combination with office will be permitted in the Route 28 Business area and allow for Commercial Retail and Service uses. Within these uses, any retail over 10% will be limited to showrooms associated with the predominant use~~[ms28]~~.~~
6. Route 28 Business prohibits the outside storage of materials and equipment.
7. All developments within the Route 28 Business area will include a combination of Parks and Open Spaces and Public and Civic uses consisting of a minimum of 15% of the land area of the site. All such uses shall be meaningful and appropriate to the scale, setting and location of the development and shall conform to the design standards contained herein.
8. Non-residential FARs between 0.4 to 1.0 are envisioned within the Route 28 Business area. Lower FARs may be allowed for Flex developments~~uses~~.

Route 28 Industrial Policies

The Route 28 Industrial area supports Heavy Industrial, Light Industrial, and Flex uses that have traditionally clustered near the Washington Dulles International Airport. Light Industrial and Flex businesses that include warehousing, distribution, and manufacturing that rely on time-

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sensitive air-cargo transfer can take advantage of locating within the Industrial area. This area provides more immediate access to the airport, Route 606, Route 28, and the regional surface transportation network. Locating the Route 28 Industrial area near the airport and along the Route 606 Corridor west of Route 28 also protects land critical to airport-related businesses and directs these types of uses to land that is outside the Route 28 Core.

1. Route 28 Industrial supports up to 100% Heavy Industrial, Light-Industrial, and Flex uses with supportive Commercial Retail and Services limited to 10% of the floor area as depicted on the Route 28 Corridor Land Development Pattern Map as Route 28 Industrial.

2 Within Light Industrial settings, buildings contain spaces that can be configured to allow a flexible amount of office space in combination with warehouse distribution, manufacturing (light and heavy), freight-forwarding (truck terminals and air cargo), and heavy equipment repair.

3 ~~Flex uses including research and development, laboratory, data centers, and training facilities in combination with office will be permitted in the Route 28 Industrial area. Supportive commercial and retail uses over 10% will be limited to showrooms associated with the predominant use~~[ms29]~~.~~

4. Uses requiring considerable outside materials and equipment storage, heavy equipment repair, and similar activities will be permitted within areas designated as Industrial.

5. All developments within the Route 28 Industrial area will include Parks and Open Spaces consisting of a minimum 10% of the land area of the site. All such uses shall be meaningful and appropriate to the scale, setting, and location of the development and shall conform to the design standards contained herein.

6. The County will provide opportunities and incentives to encourage legacy industrial businesses within the corridor to relocate to designated industrial areas.

7. Non-residential FARs between 0.20 to 0.40 are envisioned within the Route 28 Industrial area.

HOUSING

The County's policies for Mixed-Use Office Centers include the provision of multi-family housing located close to employment, transit, shopping and services. In addition to office and residential, Mixed-Use Office Centers will include a mix of commercial retail and services and other types of supportive uses. The plan's housing policy objectives promote Mixed-Use Office Centers that enable employees in the corridor to live close to their places of employment, whether a retail sales clerk, engineer, hotel manager, pilot or warehouse worker. All development within the Route 28 Corridor that includes a residential component should address the County's unmet housing needs. In particular, the residential component of Mixed-Use Office Centers should accommodate a variety of age groups, interests, and needs and be accessible to

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those without cars, meet ADA requirements, and incorporate universal design. Appropriate contributions include Affordable Dwelling Units (ADUs) required pursuant to the Zoning Ordinance, below market rate for-purchase and/or rental units that the County deems to meet the intent of these housing policies, or monetary contributions to County housing initiatives and programs.

Housing Policies

1. All residential development within the Route 28 Corridor shall conform to County policies for addressing unmet housing needs to encourage a diverse population of residents to support a variety of jobs.
2. Housing that is developed to fulfill unmet housing needs should be well integrated and dispersed throughout the Mixed-Use Office Centers while located near existing or planned employment opportunities, transit routes and stops, and other amenities.
3. All proposals for Mixed-Use Office Centers shall provide a minimum of 12% of the proposal's total units on-site to address unmet housing needs. The minimum number of units shall be distributed as affordable based on the countywide housing policies and the following Income Tiers:

Income Tiers for Addressing Unmet Housing Needs in the Route 28 Corridor **Based on Washington Metropolitan Area Median Income (AMI)**	
Income Tier	**% of Total Units**
0 up to 30%	2
Above 30% up to 60%	5
Above 60 up to 80%	3 (For Sale Only[ms30])
Above 80 -100%	2 (For Sale Only)

4. If required by the Zoning Ordinance, ADUs may be counted toward meeting the 12% unmet housing need objective.
5. A covenant securing affordability for a minimum 30 years will be attached to each unit that addresses unmet housing needs.
6. Flexibility regarding the percentages within the income tiers may be considered for projects that meet additional housing needs identified by the County. Examples include providing a higher proportion of units in the lowest income tiers, providing units with more bedrooms than would otherwise be expected, or providing a high proportion of accessible units. Such proposals shall be evaluated on a case-by-case basis.

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7. Mixed-Use Office Center proposals that meet the unmet housing needs objectives set forth in Policy 3 shall be entitled to receive a maximum 20 percent increase in floor area over the upper density limit set forth in the plan. Mixed-Use Office Centers that provide a greater amount of very-low income housing units based on the project's total units (0 up to 30% of AMI) are eligible for an additional increase in floor area per the following formula: for every 1 percent increase of units, an increase of 2 percent floor area may be granted up to an additional 10 percent. Increases in floor area may be used for residential and non-residential uses in accordance with the overall land use mix.
8. All dwelling units intended to address unmet housing needs should be provided prior to or concurrently with market rate units, be dispersed throughout the project, have a similar mix to market rate units in the number of bedrooms and floor area, and be comparable to market rate units in terms of appearance, materials, and finished quality.
9. The County's priority for meeting the housing needs of workers in the Route 28 Corridor, particularly unmet housing needs, will be within the Mixed-Use Office Centers. The County may consider a cash-in-lieu option that permits the developer to pay an amount equivalent to the cost of producing the units. The costs of producing such units should take into consideration all factors related to the actual cost of production (e.g., land values, construction costs, financing, maintenance and management, maintaining long-term affordability, etc.). Such contributions may be used to preserve and improve housing in existing adjacent neighborhoods through County programs.

TRANSPORTATION

Route 28 is one the most heavily traveled transportation arteries in Loudoun County, extending from Route 7 in the north to Dulles Airport and the Fairfax County line to the south. Route 28 in Loudoun County is a 6-mile long, six-lane, limited access, median divided, principal arterial with seven grade-separated interchanges. As of 2008, the latest available data from VDOT, Route 28 carries anywhere from 70,000 (at its northern most end), to 111,000 daily trips (where it intersects the Dulles Toll Road). Two parallel roads, Atlantic Boulevard to the east, and Pacific Boulevard to the west of Route 28, provide local north/south access to the corridor. A series of east/west roadways provide connections to countywide systems and allow local traffic to access the Route 28 Corridor. There are numerous bicycle and pedestrian facilities planned within the Route 28 Corridor, although the overall network remains incomplete. The Washington & Old Dominion (W&OD) Trail is the most significant non-motorized facility in the corridor. The Route 28 Corridor is currently served by both commuter and local bus service, with anticipated connections to future Metrorail.

While the corridor is currently automobile dependent, the transportation network in the future must provide more opportunities for greater bicycle, pedestrian, and transit accessibility to support the types of densities envisioned. The establishment of a multi-modal transportation network, with an emphasis on transit, is an important component to reduce future traffic impacts

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due to growth and to support the types of vibrant pedestrian-friendly employment and mixed-use developments envisioned in the corridor. Investments in transit within the corridor can enhance the value of adjacent properties, support greater high-quality Office development, and increase the competitiveness of the corridor within the region to attract national and international businesses. Travel Demand Management (TDM) strategies which reduce the use of single-occupant vehicle trips, optimize non-vehicular modes of transportation and maximize transportation system performance are critical for the development of the corridor. TDM strategies, in addition to mandating the use of alternative modes of transportation (i.e. bicycle, pedestrian, and transit), also advocate a shift in traditional work schedules which may include teleworking, compressed work week, flexible work hours etc. to achieve trip reductions. The implementation of TDM strategies is also consistent with the County's goals for environmental sustainability, providing opportunities for decreased fuel consumption and reductions in greenhouse gas production. The appropriate balance between land use and transportation demands to support expected growth in the corridor is critical to maintaining the viability and economic success of the corridor as it develops in the coming years.

Transportation Policies

1. Development in the corridor will be linked to transportation capacity. The Route 28 Corridor will offer a balance of transportation options, including automobile, transit, pedestrian, and bicycle.
2. Development within the Route 28 Core should be compact, higher-density, and include a mixture of uses to support reductions in vehicle trips and overall traffic congestion and multi-modal development.
3. The County will support the planning, funding, and development of public transit services for the Route 28 Corridor.
4. The County will work with VDOT to prioritize, fund, and implement road improvements that create better efficiencies and reduce traffic congestion within the corridor.
5. The County encourages[ms31] street connectivity within and between developments through a finer grid of streets to disperse traffic, reduce vehicle trips, and improve bicycle and pedestrian mobility.
6. The County will consider reduced design speeds and other flexible design standards on road segments within the corridor to ensure safe pedestrian and bicycle mobility.
7. The County will develop guidelines for context-sensitive street designs to improve bicycle and pedestrian accessibility, connectivity, functionality and safety within the corridor.
8. On-road bicycle accommodations and off road shared use paths and/or sidewalks will be provided, where feasible, on the parallel roads (Atlantic/Shaw and Pacific Boulevards) and major connecting roadways to provide a balanced multi-modal system.

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9. The County will develop opportunities for greater bicycle, pedestrian, and transit accessibility from employment areas to existing and planned neighborhoods within and outside the corridor.

10. The County supports the identification of additional locations for Route 28 bicycle and pedestrian cross-connections, including bridges and decks, which will decrease the barrier of the highway to bicycle and pedestrian movement.

11. Trail and/or sidewalk facilities will be incorporated in all road improvement projects in which provision for pedestrian movement is consistent with the function and character of the road and/or where there is an opportunity to establish a connection with the County's existing or proposed trail system.

12. Building on a preliminary study conducted in 2010, ~~T~~transportation solutions in the southern section of the corridor, including transit, pedestrian and bicycle ways, and road improvements will be determined through a regionally-oriented approach with Fairfax County, the Town of Herndon, and the Metropolitan Washington Airport Authority (MWAA).

13. The County will develop Travel Demand Management (TDM) strategies with assistance from the private sector to reduce the use of single-occupant vehicle trips and optimize transportation system performance during peak and off-peak periods.

14. The County will require a Travel Demand Management (TDM) plan for all Mixed-Use Office Center and Office Cluster developments. The TDM plan will establish specific trip reduction thresholds related to various phases of development, identify measures to quantify these trip reductions, and include penalty provisions in the event trip reductions thresholds are not achieved.

DESIGN

The development patterns supported in the Route 28 Corridor, including Mixed-Use Office Centers, Office Clusters, Office, and Flex, focus as much on the physical form and character of development as much as their uses. Adherence of development to the basic design standards below is important to achieving a unified development pattern in the corridor that is consistent with the Route 28 Corridor Land Development Pattern Map. Adherence to the basic design standards also contributes to a high-quality image for the corridor that attracts regional, national, and international businesses.

General Policies

1. The County will develop a user-friendly, illustrative design handbook that reflects the Route 28 base design standards contained herein. The handbook will convey a high quality image for the Route 28 Corridor and promote an overall sense of place through design elements that relate to block size, circulation and connectivity, streetscape and

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street sections, building form, placement (setbacks), orientation, articulation, Parks and Open Spaces, Public and Civic uses, landscaping and sustainability.

2. The base design standards emphasize the integration of natural features and shared, meaningful Parks and Open Spaces.

3. The County supports the creation of projects within Office Clusters and Mixed-Use Office Centers that create a sense of place, and establish the Route 28 Corridor as a premier employment location. In particular, development of a gateway at the southern end of the corridor is envisioned to convey a sense of arrival for visitors and business travelers to the Route 28 employment corridor and into Loudoun County. The County supports unique design within or proximate to a Mixed-Use Office Center that includes iconic buildings, structures, and monuments, significant signage, and public art/sculptures that are visible from the gateway crossroads of Route 28 and the Dulles Greenway/Toll Road.

4. The County encourages the submission of design commitments for proposed developments within the Route 28 Core and Route 28 Business areas to demonstrate conformance with the standards of the plan.

5. The County will consider incentives for property owners to upgrade their existing developments to meet the Route 28 Corridor design standards.

6. Developments within the Route 28 Corridor will have minimal impact on the natural environment or surrounding residential uses and exhibit design consistent with the Green Infrastructure and land use policies of the Plan. Existing historic sites, as well as the natural environment, should be incorporated and highlighted in the overall architectural and landscape design.

7. Office Clusters and Mixed-Use Office Centers within the entire Route 28 Corridor will be subject to specific design standards contained herein.

8. Developments proposed in the Route 28 Business area will be subject to the applicable design standards for Office and Flex uses. Generally, Flex developments in these areas should be designed within a park-like atmosphere, exhibiting a high curb appeal through the use of extensive landscaping and coordinated building architecture. Office uses should be located to the front of the building along the roadways, with Flex uses and parking to the rear of the property.

9. Developments proposed in the Route 28 Industrial area will be subject to the applicable design standards for General Industrial uses.

10. Developments on small parcels that may not be able to achieve the full vision of an Office Cluster may be considered if the proposed development is able to meet the intent of the design standards and can demonstrate compatibility and integration with adjacent developments.

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Office Cluster and Mixed-Use Office Center Design Standards

The Route 28 Core supports a development pattern of mid to high-density, compact, and pedestrian oriented Class A Office development through Office Clusters and Mixed-Use Office Centers.

Adherence to the base design standards listed below for Office Cluster and Mixed-Use Office Center developments establishes a consistent development pattern along Route 28 that supports a viable, cost-effective planned transit system. The base design standards also establish a more predictable development environment for businesses seeking to develop and locate into the corridor; ensure that development is compatible with adjacent land uses, contributes to the character of the neighborhood and larger community; create vibrant, pedestrian-oriented places; and support development that is high quality and visually appealing from adjacent streets and surrounding neighborhoods with an emphasis on building placement and orientation as well as site design.

The development pattern for Office Clusters calls for highly-integrated, compact, mid- to high-rise employment settings. Buildings in Office Clusters will be four or more stories and will provide both structured parking and minimal surface parking. It is envisioned that larger-scaled buildings with building heights of six stories or more will be located along Route 28 with lower density and building heights further away. Office Clusters feature buildings arranged around squares, greens, plazas, forecourts, and courtyards on blocks formed with a rectilinear street pattern. Office Clusters also include landscaped, walkable streets that can feature buildings with storefronts offering ground floor Commercial Retail and Services. Office Clusters are encouraged to provide Parks and Open Space features such as pedestrian promenades, linear parks and trails, outdoor amphitheatres, and similar design features that invite additional pedestrian activity, recreation, and socialization.

The development pattern for Mixed-Use Office Centers calls for a higher intensity of development than Office Clusters. Office buildings within Mixed-Use Office Centers typically contain seven or more stories. Parking within Mixed-Use Office Centers at full build-out should consist primarily of structured parking. The centers should have a lively, robust character with an integrated mix of uses that include Office, Commercial Retail and Services, Residential, Parks/Open Spaces and Public/Civic Uses. The design of Mixed-Use Office Centers is similar to Office Clusters and features a compact urban design with pedestrian-oriented building and garage facades, ground-floor shops, and distinctive public spaces. Pedestrian and transit circulation are enhanced by short blocks arranged in a rectilinear grid-street pattern.

Site Design Standards:

1. Office Clusters and Mixed-Use Office Centers are designed to be higher density, compact, and highly integrated developments that foster pedestrian activity.

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2. Development should enhance the existing character of the area, and build upon an established sense of place in the surrounding neighborhoods.
3. Heritage and environmental resources should be preserved and incorporated into the overall design of developments.
4. Pedestrian and bicycle facilities should be incorporated into all new development.
5. Transit stops will be incorporated into the layout of all Mixed-Use Office Centers.

Street and Block Standards:

1. Internal streets should follow a grid-street pattern to maximize pedestrian connectivity, improve traffic movement along multiple transportation routes and encourage shorter trips, unless precluded by natural and topographical barriers.
2. A hierarchy of streets should be identified, both internal and adjacent to the development, with street design standards that are context-sensitive to adjacent development. Street hierarchy can include primary streets where there is a focus of pedestrian activity, along with key areas of ground-floor retail activity where there is a high percentage of planned Commercial Retail and Service uses.
3. The street network should promote the efficient movement of vehicles while minimizing conflicts with pedestrians and bicycles.
4 The pattern of the street network should be planned to provide connections to adjacent existing and planned developments. The street network should connect to the surrounding street network as much as possible.
5 Blocks should be configured at a pedestrian-scale that encourages walkability. "Superblocks" should be avoided. Perimeter block sizes within Mixed-Use Office Centers and Office Clusters generally should not exceed 2,000 feet.
6 Blocks in Mixed-Use Office Centers should generally not exceed 400 linear feet. To mitigate the impact of longer blocks, any one block with a linear length of 400 feet or greater should provide in the middle of the block an alley, driveway, pedestrian way or other significant pedestrian feature such as a plaza, park, or promenade.

Streetscape Standards:

1. Streetscape design should ensure the space between the buildings and the roadways contribute to a comfortable pedestrian environment providing adequate space for efficient, safe, and accessible pedestrian circulation and a sense of enclosure that supports useable pedestrian spaces. Street trees and plantings should be considered to enhance the character of the street.
2. Large-lot commercial developments should provide both vehicular and non-vehicular linkages to surrounding areas and between office buildings and other uses.

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3. Where transit stops are planned, covered bus stops and waiting areas should be provided within the streetscape to shelter pedestrians from extreme sun, wind or rain.

Building Standards:

1. Office Clusters should feature buildings of four or more stories, except adjacent to Route 28 where buildings of six or more stories are envisioned. Mixed-Use Office Centers will feature buildings of seven or more stories with a general stepping down of densities towards the periphery of the development when necessary to be compatible with surrounding communities and developments.
2. Where not incorporated into mixed-use buildings, ~~R~~residential buildings within Mixed-Use Office Centers should be urban in character and compatible in form and scale with surrounding commercial buildings.
3. Distances between buildings should be managed ~~minimized~~ to create safe, pleasant, and active street-level environments and support pedestrian connectivity between buildings, thereby reducing the need for residents, employees, and visitors to drive their automobiles to reach supportive uses, including Commercial Retail and Services.
4. Buildings should be placed close to streets with minimal setbacks. Buildings should adhere to build-to-lines[ms32].
5. Primary building entrances should be oriented towards the street or a common gathering place such as a plaza, green, park, square, or pedestrian passageway. Pedestrians should be able to easily identify primary entrances into commercial establishments.
6. Buildings greater than 12 stories should be designed to include façade articulation with design details and features such as ~~treatments, which could include~~ building step-backs, to reduce visual massing and mitigate impacts to adjacent properties.
7. Building materials and colors should exhibit high-quality designs with four-sided architecture.
8. Service areas, including refuse and loading areas, should be enclosed within the principal building. Doors for access to the service areas should be functional while blending with the architectural treatment of the building.

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Parking Standards:

1. To encourage compact, pedestrian-oriented developments structured parking is supported within Office Clusters and Mixed-Use Office Centers. Office Clusters may contain both surface and structured parking, depending on the density proposed on-site, whereas Mixed-Use Office Centers will contain predominately structured parking at full build-out.

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2. Phasing of surface to structured parking during the construction of Office Clusters and Mixed-Use Office Centers will be considered through the application process.
3. The joint use of drive aisles and parking areas should be encouraged to reduce overall parking needs.
4. Parking should be located to the rear of buildings, within the interior of blocks, with access from alleys or streets which do not conflict with pedestrian access.
5. Structured parking should be conveniently or centrally located, but visibly minimized from arterial streets and public spaces. Surface parking should not occupy lots which terminate a street vista or abut street intersections
6. In Mixed-Use Office Centers and Office Clusters with supportive uses, primary pedestrian streets with ground-floor structured parking should include ground-floor uses or liner buildings with retail, services, restaurants, and offices.
7. Surface parking lots should be avoided along primary pedestrian streets. Surface parking lots should be adequately screened from the street-side.
8. Parking should be discouraged from locating along blocks where it is the sole use.

Parks and Open Spaces Standards:

1. Parks and Open Spaces include pedestrian-scaled outdoor areas such as greens, squares, plazas, courtyards, forecourts, and playgrounds. Parks and Open Spaces also include open spaces in their "natural" state, such as forests, wetlands, or meadows; trails and trail connections and active and passive recreational spaces.
2. Parks and Open Spaces should be integrated purposefully into the overall design of the development and not merely be residual areas left over after buildings and parking lots are sited.
3. Parks and Open Spaces designed to function as gathering places should be clearly identified and accessible to pedestrians and bicyclists.
4. Parks and Open Spaces should be dispersed so that all residential dwellings and non-residential buildings are located within 1,500 feet of such spaces.
5. Greens, squares, plazas, forecourts, and courtyards should be designed to be appealing places to gather with the type of amenities that foster informal social interaction among users. Examples of amenities within these areas include ponds, fountains, ornamental lamps, terraces, waterfalls, sculptures and other public art, planted beds, benches, drinking fountains, and clock pedestals.
6. Within Mixed-Use Office Centers, greens, squares, and plazas are encouraged to consider outdoor seating areas, amphitheatres, and other design elements that support more structured, formal activities.

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7. Small-scale single or two story commercial retail buildings, such as restaurants, coffee shops, bakeries, and public markets, are allowed within greens, squares, plazas, forecourts, and courtyards.
8. Heritage and environmental resources should be incorporated into Parks and Open Spaces.
9. The preservation of environmentally fragile and valuable land and habitat will be given a priority for Open Space set-aside.
10. Parks and Open Spaces should connect with and provide views to natural amenities.
11. Developments should identify linkages to the existing or planned trail network.
12. Mixed-Use Office Centers should provide active Open Space to serve the concentration of residents within the center.

Public and Civic Standards

1. Public and Civic Uses shall be designed as major landmarks of Office Clusters and Mixed-Use Office Centers. Public and Civic buildings should exhibit a design that distinguishes it as a featured focal point of the community.
2. Public and Civic Uses shall be integrated into the community with maximum visibility and accessibility.
3. Planned transit stops shall be provided at all Public and Civic buildings.
4. Prominent and highly visible sites should be reserved for Civic and Public uses. Prominent sites include a location along a primary pedestrian street or at the terminus of a street vista.
5. Parks and Open Spaces should be considered in combination with public and civic buildings that include seating areas, public art, planted beds, benches, drinking fountains, etc.

Landscaping Standards:

1. Landscaped areas should be used to frame and soften structures, to define site functions, to enhance the quality of the environment, and to screen undesirable views.
2. Tree and plant selection and location should promote safety and security, enhance natural environment and stormwater management, provide shade for vehicles and pedestrians, reduce heat islands, and minimize maintenance requirements.
3. Low water use plants and native vegetation should be used to landscape new developments.
4. No invasive plant species should be allowed in the landscaping design.

Signage Standards:

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1. Visitors and residents should be able to locate and identify major attributes of the development through a unified signage concept.
2. Buildings should carefully incorporate signs and lighting.
3. Signage should contribute to the overall architectural and landscape theme.
4. Signage should be used to clearly identify public versus private/residential areas.
5. Streetscape signage should be appropriately scaled for pedestrians.

SUSTAINABLE DEVELOPMENT

Sustainable development is the relationship between the built environment, management practices, and green infrastructure. Sustainable development calls for practices that are economically cost-effective, enhance human health and well being, and protect and restore the environment.

The Route 28 Corridor Plan supports opportunities and incentives for sustainable development so that land development is at the forefront of such practices. A major component of sustainable development is sustainable site design, which includes local energy use, green building, stormwater management, and landscaping. As a sustainable development approach, Green Building is the design of new and existing buildings that can result in conserving energy and water, maximizing indoor air quality and light, and minimizing construction waste and disturbance of natural landscapes. The Route 28 Corridor also includes older, developed areas that do not meet today's current stormwater management requirements. As a result, stormwater management facilities in these areas do not achieve adequate pollution filtration and control. Sustainable landscaping strategies can help retain and treat stormwater, reduce stormwater runoff pollution, provide habitats for insects and migratory birds, and retain open space.

Given the diversity of Green Infrastructure within the Route 28 Corridor, the opportunity exists for development at full densities while promoting an ethic of natural areas stewardship. The defining natural feature of the corridor is the Broad Run, which drains to the Potomac River. The remaining forested lands in the corridor are primarily associated with the Broad Run and its floodplain. The Broad Run watershed also includes numerous streams, including Cabin Branch, Indian Creek, and various unnamed tributaries. The quality of these waters and the surrounding riparian areas are important not only to aquatic life and wildlife, but to County residents and businesses. Other Green Infrastructure resources associated with the Broad Run include a heron rookery, the State-threatened Wood Turtle within upstream tributaries of Broad Run, and habitat along portions of and areas surrounding Bles Park.

Significant standing heritage resources in the Route 28 Corridor include the W&OD trail along with the Toll House and its associated Broad Run Bridge remnants, or Stone Bridge, both of

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which date to 1820. Other heritage resources in the area include portions of the Vestal's Gap roadbed, of which a small segment remains in the vicinity of the Dulles Town Center and a continuous segment survives through the Claude Moore Park. Archaeological village and encampment sites can also be expected at the confluence of major streams with smaller settlements expected along contributing streams. Other Green Infrastructure elements within the Route 28 Corridor include planned and existing trails, and noise contours associated with Washington Dulles International Airport. In addition, steep and moderately steep slopes are present, primarily within or adjacent to the stream valleys and surrounding the Loudoun Quarry.

Energy Policies

1. The County will encourage opportunities for efficiency in energy production, transmission, and consumption. The County encourages infrastructure that combines a range of primary fuels and other energy sources, including waste heat reuse and renewable energy.
2. The County will encourage benchmarking the energy use of existing and planned buildings in the Route 28 Corridor to establish a baseline for energy demand estimates in the corridor.
3. The County encourages localized, integrated energy management system, such as recovery waste heat from high output uses like data centers to provide heating and cooling to nearby properties.
4. The county will promote, incentivize, and reward the reduction of traditional energy demand through co-generation, on-site renewables, and alternative power purchasing.

Stormwater Policies

1. The County will encourage the harvesting of rainwater for non-potable use, such as landscape irrigation, within all projects. The County will support Loudoun Water in the expansion of the reclaimed water network.
2. To mitigate the effects of impervious cover within the Broad Run watershed and to update older stormwater management the County will encourage efforts such as retrofitting stormwater systems and rehabilitating degraded areas to enhance their pollution removal capabilities and enable these facilities to become open space amenities.
3. The County promotes the use of low-impact development to replicate natural hydrologic patterns and alleviate the strain on centralized systems. Low-impact development practices can include stormwater planters, rain gardens, and wetlands to convey, retain, and treat rainwater.

Green Building Policies

1. The County will establish a green building program to assist the private sector in implementing the recommendations outlined in this plan.

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2. The County will establish standards for green building within the Route 28 Corridor. These standards will be used to promote, incentivize, and reward green building design in the corridor.

3. All county-constructed facilities will be constructed to LEED Silver minimum standards, or equivalent.

Landscaping Policies

1. The County encourages landscape approaches that conserve energy, treat stormwater runoff, minimize yard waste, control the spread of invasive species, and improve the health of site users.

2. The County promotes the use of salvaged materials whenever possible, restoration of degraded areas, the reintroduction of native vegetation, the use of street trees to reduce energy and stormwater treatment costs, and practices to decrease soil compaction and increase the soil's nutrient content and its ability to absorb water.

3. Habitat and recreational paths shall be encouraged along utility and abandoned rights-of-way and natural features such as streams and wetlands.

Green Infrastructure Policies

1. The Green Infrastructure is ~~the~~a critical framework of the corridor that will guide where and how development and redevelopment occurs. Green Infrastructure resources will be protected and enhanced.

2. The stream corridors associated with the Broad Run and its tributaries will be used as its primary organizing element. As the main organizing feature of the Route 28 Corridor, the Broad Run will be protected and enhanced to provide ecological benefits while being an amenity for employees and residents.

3. The Broad Run and its floodplain is envisioned to serve as a linear park that protects the river as a natural resource while integrating it into development as an amenity for businesses and their employees - including providing the opportunity for employees to bike and walk to work.

4. The Broad Run's tributaries, including Cabin Branch, Indian Creek, Russell Branch, Beaverdam Run, Stallion Branch, and Horsepen Run, should be used as Green Infrastructure links that connect employment centers with neighborhoods and other hubs of activity both within and adjacent to the corridor, including parks, heritage resources, and Public/Civic buildings. Current and planned hubs include the Urban Center, Claude Moore Park, and the Toll House and Broad Run Bridge. Connections should include permeable recreational trails, similar to the C&O Canal Path.

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5. Development activities should assess the condition of Green Infrastructure resources, enhance these resources, and create links to other areas to create a Green Infrastructure network.
6. For degraded forested areas close to the Broad Run and its tributaries, the County supports reforestation.
7. The County will collaborate with the Department of Environmental Quality on any pollution impairment issues that become apparent within the Broad Run and its tributaries and will support volunteer water quality monitoring efforts and coordination of these efforts with federal, state, and local water quality data collection.
8. The County will support public access through the Broad Run floodplain using methods that do not degrade sensitive features, including the use of pervious trail surfaces.
9. The County will coordinate with the Metropolitan Washington Airport Authority regarding water quality protection within the Broad Run watershed.
10. Unique heritage resources within the corridor, including the Broad Run Toll House and Bridge, the remaining segments of Vestals Gap Road, and the W&OD Trail should be preserved and considered in the design, construction, operations, and maintenance of development within the corridor. Preserving and enhancing these resources fosters an appreciation for their role in the built environment.

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