

## **CHAPTER ONE** GENERAL CONDITIONS

The purpose of the Newport News/Williamsburg International Airport (PHF) Design Guidelines is to provide Developers guidance on how the Peninsula Airport Commission (PAC) will review and approve development of future projects on PAC owned land. These design standards apply to any of the following contracting methods for project delivery:

- Design-bid-build (DBB);
- Design-Build (DB);
- Construction Manager at Risk (CMR);
- Third Parties, or;
- Public Private Partnership (3P) methods

An important element of these guidelines is the application of sustainable design into all projects that are undertaken at the airport, regardless of the contracting method employed to deliver the project. The Newport News/ Williamsburg International Airport is committed to continual planning and development that embraces economic, environmental and operational sustainability. As such, **Chapter 4** outlines sustainable guidelines that the governing body of the airport has determined to be appropriate for Newport News/ Williamsburg International Airport. In an effort to promote both sustainability and a spirit of economic viability, the sustainability guidelines are presented in three (3) tiers:

- Tier 1: Initiatives included in Tier 1 have environmental benefit but represent small additional capital costs. These sustainability initiatives are *required* to be incorporated by Developers.
- Tier 2: Initiatives included in Tier 2 have increased environmental benefit, but also higher development costs than those included in Tier 1. These sustainability initiatives are <u>voluntary</u> but developers are encouraged to include these in their developments.
- Tier 3: Initiatives included in Tier 3 have the greatest environmental benefit but also the highest development costs. Similar to Tier 2 initiatives, those in Tier 3 are <u>voluntary</u> but developers are encouraged to include these in their developments.

It is our opinion that identifying sustainable practices early in the design process allows for adequate cost control and an ultimate reduction in total life cycle costs.



The application of these design guidelines will result in development at the airport that is consistent with the goals of the (PAC).

#### **1.1 JURISDICTION**

Newport News/ Williamsburg International Airport is situated within the jurisdictional limits of both the City of Newport News and York County, Virginia and is governed by the PAC. The PAC was formed in 1946 by Acts of Assembly and is considered a creature of the state. As such, neither the City of Newport News nor York County have jurisdiction regarding code compliance. Close coordination with the PAC and the DRC is incorporated into these Design Guidelines due to the shifting nature of local, state and federal regulations that may affect project design and construction.

## **1.2 SPECIAL USE**

The facilities and infrastructure in place at Newport News/Williamsburg International Airport represent substantial local, state and federal investment. As such, parcels with direct airside access are reserved for aviation businesses that are *dependent upon the airside assets contained in the Air Operations A rea* (AOA). Interior portions of PAC owned land are envisioned to contain aviation related businesses that do not necessarily require direct airside access (e.g. vocational schools, R+D facilities etc.) but that have business plans focusing on aviation.

#### **1.3 SUSTAINABILITY SCORING**

The application of sustainability should be incorporated early into the planning process and continued into the design phase of the project. Incorporating sustainability early into the design process will maximize the effectiveness of the project's sustainability elements.

Implementation of sustainable design elements can reduce initial capital and recurring operational costs. The focus of sustainability in these Design Guidelines follows the Economic-Operational-Natural Resource-Social (EONS) framework in that any project should first make economic sense. Only after economic and operational costs are considered should a project address reducing natural resource and social impacts associated with the project.

**Chapter 4** of the Newport News Williamsburg International Airport Design Guidelines provides sustainable guidelines for Developers to consider during the design phases. Scoring for each sustainable initiative contained in the sustainability guidelines will be applied based on the matrices contained in **Appendix A**. Each sustainable guideline is provided a point value that is translated into one of four colored leaves depending on the level:





## **1.4 DESIGN REVIEW COMMITTEE**

A five (5) member Design Review Committee (DRC) will be appointed by the Peninsula Airport Commission and consist of the following members:

- Peninsula Airport Commission Board Member;
- Executive Director;
- Assistant Airport Director, Planning and Development;
- Assistant Airport Director, Operations and Maintenance, and;
- Director of Facilities Management.

The Peninsula Airport Commission authorizes the DRC to review, approve or disapprove all site plans, architectural plans and other project submittals. The DRC is responsible for reviewing plans for all development, including construction of any type including landscaping, lighting, signage and all other improvements. All plans are reviewed to determine their compliance with these Design Guidelines and the adopted Master Plan for the airport. This process ensures harmony of design and compatibility of use throughout PAC owned land.

#### 1.5 **REVIEW PROCESS**

The purpose of the review process is to facilitate quality development that is consistent with the Design Guidelines through a collaborative review and approval process. All proposed development plans must be in compliance with these Design Guidelines and all Developers must follow the specific procedures involving the submittal of documents as outlined in **Chapter 2**.

The Design Guidelines may be more restrictive than, but do not supersede or modify, any applicable governmental regulations. Conformance to the Design Guidelines and any approval by the DRC does not imply conformance with any governmental regulation, nor does it obviate any necessary governmental approvals. In some instances, governmental regulations may be more restrictive and shall prevail over these Design Guidelines. No activity shall commence on PAC owned land until the plans have been approved by the DRC and necessary permits have been issued by the PAC. The DRC will forward recommendation of approval or denial to the Peninsula Airport Commission which reserves the right to reject the DRC's recommendation.



## 1.6 VARIANCES AND APPEALS OF DECISIONS

The DRC may authorize variances to the Design Guidelines when circumstances such as topography, natural obstructions, hardship, environmental objectives or parcel use may warrant, as long as these variances are not in conflict with building code regulations.

Variances must be approved by a majority vote at any meeting of the DRC with more than two members present. Where there is more than one provision within the Design Guidelines that covers the same subject matter, the provision that is most restrictive or imposes the higher standard shall prevail.

Should the DRC recommend denial of plans, the Developer may submit a written appeal to PAC. The written appeal shall address:

- 1. The reason for the denial, and;
- 2. Provide an explanation of how the plans meet or exceed the Design Guidelines and;
- 3. Request appeal approval and allow plans to proceed through the Design Review process.

The PAC will review the written appeal request and determine whether the denial is appropriate or whether the development may proceed through the Design Review process. The PAC will provide a written determination to the Developer. Should the PAC deny the plans, the Developer may resubmit revised plans to the DRC for reconsideration.

#### 1.7 **REQUIRED VERSION TO BE FOLLOWED**

For professional service firms that are designing projects in which the PAC will be the owner and operator, the designer is required to follow the latest edition of these Design Guidelines that are effect at the time of Work Authorization execution. For professional service firms that are designing projects for private Developers, the designer is required to follow the latest edition of these Design Guidelines that are in effect at the time of lease execution with the PAC.

#### 1.8 UPDATES AND REVISIONS TO DESIGN GUIDELINES

The PAC reserves the right to periodically update the design guidelines from time to time as it sees fit and necessary. All revisions to these Design Guidelines will be posted onto the Newport News/Williamsburg International Airport's public website at <u>www.flyphf.com</u> and can be found under the Project GreenSkies tab.

# **CHAPTER TWO** DEVELOPMENT PLAN REVIEW

The intent of the Development Plan Review Process is to facilitate quality development through an orderly process of design evaluation and approval of plans. The review process has been established to review site plans, civil plans, architectural plans, landscape plans and signage plans as they relate to the guidelines established in the Newport News/ Williamsburg International Airport Design Guidelines.

As described in this chapter, the review process is intended to provide an early interchange between the Developer and the DRC so that preparation and review of development plans can be completed in a timely and efficient manner. **Figure 2-1** outlines the typical process for the review and approval of development plans

## 2.1 **REVIEW PROCESS**

The DRC is responsible for the administration of the Design Guidelines and the review and approval of all plans and other project deliverables. The DRC shall review the plans and submittals and approve the project in accordance with the procedures contained in these Design Guidelines. No construction activity shall commence on PAC owned land until construction drawings and specifications have been approved by the DRC and necessary permits are received from the PAC.

The specific standards set forth in these Design Guidelines establish consistent standards of quality to be used in the evaluation of each project's development plan. However, the DRC has the right to vary provisions in the Design Guidelines if, in the DRC's opinion, such a variance creates a desirable enhancement to the project subject to limitations that may be imposed by code requirements.

## 2.2 APPLICATION

Any private Developer wishing to develop on PAC owned land must first complete an Application for Land Disturbance and submit the required fee outlined in **Section 2.14.** The application should be submitted *after* lease execution.



FIGURE 2-1: Design Review Process





## 2.3 SITE ORIENTATION MEETING

The Developer shall have a *Site Orientation Meeting* with the DRC as soon after the application is approved to discuss:

- 1. The attributes of the site;
- 2. These Design Guidelines and any questions the Developer may have, and;
- 3. Review design schedule and establish future meeting dates

In addition to the topics above, the overriding focus of the Site Orientation Meeting should be on how the proposed development relates to the remaining PAC owned land as a whole. The exchange of ideas and concepts early in this process will facilitate the development of a project that meets these Design Guidelines while also allowing for any unique needs of the Developer.

## 2.4 CONCEPT REVIEW PLAN

After the Site Orientation Meeting, the Developer shall have a Concept Plan Review meeting with the DRC. This meeting shall take place with the DRC to ensure the design intent is consistent with the vision for the PAC owned land and these Design Guidelines.

The Concept Plan will evaluate the major elements of the proposed project to assure that the design is in conformance with the Design Guidelines. It is the intent of the PAC to define "concept" as 10% design and should include freehand sketches and not necessarily engineered drawings. The Concept Plan should present conceptual project details outlined in **Table 2.1** and shall include, but not be limited to:

- 1. Conceptual site organization:
  - a. Building size and type;
  - b. Parking location;
  - c. Site access, and;
  - d. Site Circulation;
- 2. Conceptual landscaping plans:
  - a. Intensive Zone;
  - b. Wetland and/ or Upland Buffer Zone, and;
  - c. Transitional Zone
  - d. Exterior lighting plan with foot candle contours
- 3. Conceptual construction logistics plan
  - a. Laydown area
  - b. Haul routes
- 4. Conceptual grading plans;
- 5. Conceptual signage plans;
- 6. Conceptual utility plans;
- 7. Project Relationship to:
  - a. Existing and future roads;
    - b. Existing and future land uses;
    - c. Existing and future utilities;



- d. Existing and future rights-of-way and easements, and;
- e. Existing and future pedestrian routes

The DRC shall review each Concept Plan submittal for consistency with the vision for PAC owned land and these Design Guidelines. Additionally, the DRC will review the Concept Plan in relation to code compliance, to the extent practicable in a conceptual drawing. Should the DRC find it necessary for major modifications to the Concept Plan, the Developer is required to resubmit a new Concept Plan that incorporates DRC comments. Upon receiving Concept Plan approval, the Developer is eligible to begin the Design Development Process as outlined in **Section 2.5** and **Section 2.6**.

## 2.5 **DESIGN DEVELOPMENT – 30% REVIEW**

All Developers are eligible to begin Design Development following approval of the Concept Plan by the DRC. The Developer shall refine the approved Concept Plan to a 30% Development Plan and include items outlined in **Table 2.2** and general professional requirements.

The Developer shall submit one (1) full size and scaled sets of the 30% Development Plans to the Assistant Airport Director for Planning and Development who will review the plans against the requirements outlined in **Table 2.2** to determine completeness of the plan set. Should the submittal be deficient, the Assistant Airport Director for Planning and Development will notify the Developer in writing.

Upon determining the 30% Development Plans are ripe for review, the Assistant Airport Director for Planning and Development shall request an additional two (2) full size sets for DRC review. The DRC members shall have 10 business days to review the 30% Development Plans. The Developer shall then have a 30% Design Review Meeting with the DRC which will focus on identifying and resolving any inconsistencies between the development plan and these Design Standards.

#### 2.6 **DESIGN DEVELOPMENT – 60% REVIEW**

The Developer is authorized to proceed to the 60% Development Plan preparation following the written receipt of the 30% Development Plan review comments, and successful resolution of these comments, from the DRC.

The Developer shall refine the approved 30% Development Plan in accordance with the 60% Development Plan submittal requirements in **Table 2.3** and general professional requirements. The Developer shall submit one (1) full size and scaled set of the 60% Development Plans to the Assistant Airport Director for Planning and Development who will review the plans against the requirements outlined in **Table 2.3** to determine completeness of the plan set.



#### Table 2.1

## Concept Plan Checklist

Item <u>Number</u>	<u>Initials</u>	Item	PAC <u>Sign-Off</u>
1		Name and street address of the development	
2		Name, address, e-mail and phone number of Developer	
3		Parcel dimensions, acreage and conceptual depiction of proposed building coverage including all impermeable surface coverage	
4		Calculated floor area ratio and lot coverage	
5		North arrow and scale (not to be smaller than 1":40')	
6		Location of all CBPA RPAs and jurisdictional wetlands on or adjacent to the proposed site	
7		Lease limits and setbacks for landscaping, wetland critical zones, parking and signage	
8		Conceptual locations for service areas and trash collection areas	
9		Conceptual locations for both temporary and permanent signage	
10		Conceptual organization of buildings on the site and their relationship to the surrounding context (including potential future developments)	
11		Provide building or site sections showing adjacent finished grades, landscape and signage	
12		Provide conceptual architectural elevations (including FFE) and proposed materials in sufficient detail to understand building massing and relationship to surrounding development	
13		Provide shadow study of facility, including site-line study from ATCT cab if the proposed building is between cab and any portion of the AOA.	
14		Provide conceptual landscape plan depicting generalized location and types of plants along with delineation of landscape planting zones.	
15		Conceptual grading plan showing proposed 2-foot contours	
16		Conceptual utility plan indicating proposed tie-in with existing utilities	
17		Conceptual illustration of vehicular and pedestrian circulation routes showing all sidewalks	
18		Conceptual exterior lighting plan and means/ methods to reduce light pollution	
19		Conceptual roof plan with any proposed HVAC equipment and sustainability initiatives	
20		Preliminary location of construction laydown area and proposed haul routes.	



#### Table 2.2

#### 30% Design Checklist

Item	<b>.</b>	τ.	PAC
<u>Number</u>	<u>Initials</u>	Item	<u>Sign-Off</u>
1		All items from Conceptual Plan Checklist brought up preliminary engineering level of detail and any necessary corrections to address DRC comments on Conceptual Plan.	
2		Dimensions showing relationship between buildings and parking to lease lines. Also show distances between structures.	
3		Gross parcel area, gross building area and building area per floor (if applicable), percentage of site covered by gross building area (floor area ratio).	
4		Corner Visibility Triangles at intersection of access apron and roadway.	
5		Delivery access routes, fire access routes and location of service areas.	
6		Location of all parking stalls, including accessible spaces and those reserved for sustainable design guidelines.	
7		Dimensions of travel lanes and landscape islands.	
8		Site access, existing streets, right-of-way widths, pavement widths and any proposed cul-de-sacs.	
9		Preliminary grading, indicated by proposed and existing 2-foot contours.	
10		Pavement sections and proposed stabilization to reach design CBR.	
11		Description of the method of providing draining to meet Storm Water Design Criteria.	
12		Preliminary landscape plan indicating plant species from approved species list.	
13		Required landscape setbacks, buffer treatment and streetscape.	
14		Show existing site features (e.g. mature vegetation, high value vegetation, drainage ways, etc.).	
15		Location and identification of all landscape structures (fencing, signage, lighting, sustainability initiatives, etc.).	
16		Soil analysis report.	
17		Schematic architectural elevations.	
18		Proposed development schedule.	
19		If the development will be phased, then general timing of the phases with sufficient information to define the development intent of later phases.	
20		Written project summary describing design evolution from conceptual plan to 30% design and highlighting changes from the conceptual plan.	



#### Table 2.3

#### 60% Design Checklist

Item Number	Initiala	Itom	PAC Sign Off
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1		All items from 30% Design Checklist brought up to 60% design level and addressing any DRC comments from 60% Design Review.	
2		Applicant name and contact information.	
3		Parking areas with number of spaces, method of calculation and stall dimensions. Must show location of handicap accessible parking.	
4		Location of site lighting, height. Include shop drawings or manufacturer cut sheets for proposed light fixtures.	
5		Location of all known utilities and easements.	
6		Location of storm drainage facilities and easements.	
7		Utility connection details.	
8		Placement and size of all sidewalks and pavement including curb and gutter sections.	
9		Building elevations for all sides, with material color and texture identified.	
10		Floor plans with FFE identified.	
11		Building materials and colors on sample board.	
12		Placement of all exterior building lighting (including building mounted lighting).	
13		Trash enclosure locations and screening materials.	
14		Location of trees, shrubs, groundcover, perennials and turf areas.	
15		Plant list including species, size and quantity by landscaping zone. Include a review of planting details including schedules and any restrictions on when planting can be conducted.	
16		Landscape grading plan (if different from engineering grading plan).	
17		Location, materials and color of all screening walls and retaining walls.	
18		Location and detail of site amenities.	
19		Description and rendering of proposed signage.	
20		Preliminary traffic, wastewater and drainage reports.	
21		Material color boards shall include roof material, paint and stain color chips, masonry material, glazing and mullions, accent materials, any other material applied to the exterior of the building. The material board shall not exceed 11x17" in size. Multiple material boards can be submitted should the 11"x17" size be insufficient.	



Should the submittal be deficient, the Assistant Airport Director for Planning and Development will notify the Developer in writing. The Developer will be required to resubmit corrected plans.

Upon determining the 60% Development Plans are ripe for review, the Assistant Airport Director for Planning and Development shall request an additional two (2) full size sets for DRC review. The DRC members shall have 10 business days to review the 60% Development Plans and provide comments to the Assistant Airport Director for Planning and Development. Comments from the DRC will be compiled and transmitted to the Developer within 5 business days of the date of receiving all DRC comments. The Developer will review the comments and identify how the comment will be addressed in the Construction Drawings and Specifications.

## 2.7 CONSTRUCTION DRAWINGS AND SPECIFICATIONS REVIEW

The Developer is authorized to proceed to the 100% Development Plan preparation following the receipt of 60% Development Plan review comments, and successful resolution of these comments, from the DRC. Development Plans shall be prepared under the direction, and bear the seal and signature of a licensed Commonwealth of Virginia: 1) local land planning firm, 2) registered architect, 3) registered landscape architect, or 4) registered civil engineer. Building Plans shall be prepared under the direction and contain the seal and signature of a Virginia registered architect. Landscape Plans shall be prepared under the direction and contain the seal and signature of a registered Virginia landscape architect.

The Developer shall submit three (3) full size and scaled sets of the 100% Development Plans, 3 bound copies of Contract Specifications and 3 sets of any required technical reports or plan addendums to the Assistant Airport Director for Planning and Development for DRC review. DRC members will have 10 business days to review the 100% Development Plans and Contract Specifications. Additionally, the Assistant Airport Director for Planning and Development that the 100% Plans and Contract Specifications are under final review by the DRC

## 2.8 MODIFICATIONS TO CONSTRUCTION DRAWINGS

Once the Development Plan has been approved by the DRC, no deviations are permitted unless approved in writing by the DRC. When the Developer wishes to make a change that deviates from the plans as approved by the DRC, a written request must be submitted along with 1) a completed Development Plan Amendment, 2) a "red-lined" set of plans clearly delineating the proposed change and 3) the Development Plan Amendment Review fee outlined in **Section 2.14**.

There are five general thresholds that trigger re-submittal of approved development plans:



- 1. Any change order greater than 1 percent (>1%) of the total construction cost;
- 2. There is a change in approved business use of the building;
- 3. Modifications to the approved site plan in excess of 15% of land area;
- 4. Modifications to the approved building exterior including but not limited to items affecting building height and building finishes;
- 5. Modifications to the approved landscaping or signage plan.

No construction activity shall commence until plans have been approved by the DRC. Any field changes to approved plans must be approved by the DRC prior to construction.

## 2.9 CONSTRUCTION SITE MAINTENANCE

All construction storage and equipment yards (e.g. "laydown space") shall be located avoid impacting any FAA navigational aid critical area and minimize visibility from off-site locations. The Developer shall identify the location and of construction storage space on the site plan submitted as part of the Concept Review Plan. Construction sites shall be maintained in a neat and orderly manner. All trash shall be kept in enclosed containers and emptied frequently. Daily construction access shall be coordinated with the Newport News/ Williamsburg International Airport Department of Public Safety (DPS). Special care shall be taken to protect existing pavements, curbs, lighting and other site improvements from damage. Contract specifications shall contain language that requires the contractor to repair any damages to existing pavement and to bring the pavement back to original condition at the contractor's expense.

Dirt stockpiles are only permitted during construction and must be removed upon building occupancy. Stockpiles shall not exceed 20 feet in height and shall be setback a minimum of 50 feet from any existing and proposed street right-of-way. Adequate erosion and sediment control and wildlife attractant control is required. Approval from the DRC must be granted prior to locating any stockpiles.

## 2.10 CONSTRUCTION INSPECTION

From time to time, members of the DRC may inspect a construction site for compliance with approved construction documents, plans and these Design Guidelines. A post-construction project review will be made to verify compliance with Design Guidelines and approved construction documents.



### 2.11 POST-CONSTRUCTION REVIEW AND DELIVERABLES

A post-construction project review may be made a DRC representative to verify compliance with Design Guidelines and approved construction documents.

At the conclusion of construction the Developer shall provide to the PAC a complete as-built set in both electronic format (AutoCAD Map 2012) and in full size plans to an appropriate scale. The Damage/ Compliance Deposit outlined in **Section 2.13** will be withheld until such time as the Assistant Airport Director for Planning and Development has acknowledged receipt and adequacy of the as-built drawings. Should the Developer not provide as-built drawings, the PAC will retain the Damage/ Compliance Deposit to procure professional services to develop as-built drawings.

## 2.12 VIOLATIONS

If, in the course of an inspection outlined in **Section 2.10**, the DRC finds a violation of the conditions of approval or finds that construction is not in conformance with requirements, a written Notice of Violation will be provided to the Developer indicating the nature of the violation. If the violation is substantial in nature, construction must cease immediately upon receipt of the Notice of Violation. If the violation is not substantial in nature, subject to correction of the violation. Violations shall be resolved immediately regardless of severity.

Any violations that are not corrected upon issuance of the Certificate of Occupancy shall be corrected by the PAC and all costs associated with these corrections deducted from the Damage/ Compliance Deposit outlined in **Section 2.13**.

#### 2.13 DAMAGE/COMPLIANCE DEPOSIT

A damage/ compliance deposit in the following amounts is required for all projects, prior to DRC approval:

- Small Commercial/ Office (up to 50,000 sf): \$50,000
- Medium Commercial/ Office (50,001 -100,000 sf): \$100,000
- Large Commercial/ Office (>100,001 sf): \$150,000

Damage/ compliance deposits may be in the form of a Performance Bond, Letter of Credit or checks and shall be made payable to the "Peninsula Airport Commission." Performance Bonds, Letter of Credit and Deposits checks will be returned upon completion of the post-construction project, subject to the provisions in **Section 2.11** and **Section 2.12**.



## 2.14 DESIGN REVIEW FEE SCHEDULE

Section 107.1 of the 2006 Virginia Uniform Statewide Building Code (USBC) and §36-105 of the Code of Virginia authorizes local governing bodies to establish and levy fees in order to defray the cost of enforcement of the USBC. In accordance with § 36-105 of the Code of Virginia, the following fee schedule shall be applied:

Table 2.4

Design Review Fee Schedule

Fee				<u>Amount</u>
Applic	ation			\$250
New B	uilding			
a.	0 gsf	to	4,999 sf	\$500
b.	5,000 gsf	to	24,999 gsf	\$750
с.	25,000 gsf	to	34,999gsf	\$1,000
d.	35,000 gsf	to	49,999 gsf	\$1,250
e.	50,000 gsf	to	74,999 gsf	\$1,500
f.	75,000 gsf	to	99,999 gsf	\$2,000
g.	100,000 gsf	to	149,999 gsf	\$2,500
h.	150,000 gsf	to	249,999 gsf	\$3,500
i.	250,000 gsf a	nd at	pove	\$5,000
Additie	ons and Remo	dels		
a.	0 gsf	to	4,999 sf	\$250
b.	5,000 gsf	to	24,999 gsf	\$375
с.	25,000 gsf	to	34,999gsf	\$500
d.	35,000 gsf	to	49,999 gsf	\$625
e.	50,000 gsf	to	74,999 gsf	\$750
f.	75,000 gsf	to	99,999 gsf	\$1,000
g.	100,000 gsf	to	149,999 gsf	\$1,250
h.	150,000 gsf	to	249,999 gsf	\$1,750
i.	250,000 gsf a	nd at	oove	\$2,500
Code I	nspections (pe	er visi	it)	\$150
Develo	opment Plan A	men	dments	\$250



## 2.15 NOTICE OF COMPLIANCE

Upon completion of construction, the Developer shall submit a Notice of Completion to the Assistant Airport Director for Planning and Development. Upon notification, the PAC will then inspect the site within 10 business days. The purpose of the inspection is to determine if the improvements have been constructed or installed consistent with the approved plans and to determine that all other aspects of site development are in compliance with the Design Guidelines. If the PAC finds that the site is substantially completed, a Notice of Substantial Completion will be issued which will then instigate final code inspections and city appraisal processes.

Any "punchlist" items that the PAC identifies during final site inspection will require a re-inspection. After all items are completed and are in compliance with these Design Guidelines, the PAC will issue a Certificate of Occupancy.

## 2.16 AIRPORT CONTACT INFORMATION

All submittals may be sent or hand delivered to the Peninsula Airport Commission offices:

Peninsula Airport Commission 900 Bland Boulevard, Suite G Newport News, Virginia 23602

ATTN: Theodore Kitchens

Phone: 757-877-0221 Fax: 757-577-6369

# CHAPTER THREE SITE PLAN DEVELOPMENT

The following chapter outlines guidelines for site planning and design that Developers shall use during site planning. The site planning guidelines help ensure the development of PAC owned land in a manner that is consistent with airport design criteria the airport is obligated to adhere to as part of federal grant assurances.

## 3.1 AIRPORT SECURITY PLAN COMPLIANCE

All development on PAC owned land will be required to comply with the most recently approved Airport Security Plan (ASP). All Developers must coordinate early in the design process with the PAC to ensure compliance with the ASP. Access to the entire AOA will be restricted and measures will be taken to ensure only authorized individuals and vehicles gain access to this area. Any design will be subject to the security requirements of the FAA and the Department of Homeland Security (DHS).

A fifteen foot (15') minimum clear zone is required for areas that abut the AOA fence line, or any new portions of fence line that may separate the Security Identification Display Area (SIDA) from public access. Fencing details shall be approved by the DRC at the 60% Design Review Meeting. Fencing shall be consistent on all PAC owned land.

Special signage is required on the AOA fence. Airport required signage on standard AOA fence shall include a "No Trespassing – Airport Security Area" sign spaced at 200-feet off center and mounted on the public side for public viewing. At a minimum, each parcel shall have one of these signs along their portion of AOA fence line. These signs shall be mounted 48" above finished grade and be a minimum of 36-inches wide and 14-inches tall.

Additional specialized signage is required should the Developer require an additional SIDA entry gate. These include:

• Warning Sign: this sign communicates that access is for authorized personnel only. The sign consists of a 36-inch by 12-inch red sign with white thermoplastic retro reflective lettering mounted a minimum of 48-inches above finished grade with the following message:



Warning (3-inch cap height on lettering) Authorized Persons Only (2-inch cap height on lettering)

• Gate Number Sign: this sign communicates the official gate number assigned by the Department of Public Safety for the gate. The sign is a white 6-inch by 6-inch retroreflective sign with black lettering mounted in the upper right hand corner of the gate with the following message:

Gate #X (2-inch cap height lettering where X equals the assigned gate number)

• Guidance Sign: this sign asks the driver to ensure the gate is closed prior to driving off after passing through the gate. The sign shall be a yellow 24-inch by 12-inch retroreflective sign with black lettering mounted a minimum of 48-inches above finished grade with the following message:

After Passing – Confirm Gate Closure (1 <sup>1</sup>/<sub>2</sub>-inch cap height lettering)

## 3.2 CODE COMPLIANCE

The Site Plan sheet shall contain a listing of all applicable codes used in the development of the site plan.

#### 3.3 SITE DESIGN AND SPECIAL CONSIDERATIONS – BUILDINGS

An overriding intent of these Design Guidelines is to create a campus approach to facility development on PAC owned land. Thus, Developers are encouraged to include an emphasis on developing their parcel with a focus towards a totally integrated complex. In particular, the Developer should spend time focusing on how the massing, scale, color, and circulation relate to adjacent parcels and/ or buildings and to PAC owned land as a whole. Orientation of improvements must acknowledge basic site considerations, adjoining building uses and siting, and overall circulation patterns.

#### 3.3.1 Phasing

When appropriate, site and building planning may be undertaken in a manner that allows phased development of the site over time, however, the Concept Plan that is shared with the DRC at the Concept Review Meeting should provide the DRC members with an overall conceptual site development plan that covers all phases of development



## 3.3.2 Building Groups

When multiple structures are planned as part of a single ownership or project, they must be designed in a unified architectural and spatial manner for the site.

#### 3.3.3 Siting and Orientation

In addition to meeting the general setback criteria and any site specific setback criteria outlined in **Section 3.7**, the location and orientation of any building should:

- 1. Provide view corridors,
- 2. Make optimum use of sun availability and angles,
- 3. Enhance the character of existing land forms and site features,
- 4. Strengthen the relationships between buildings on individual parcels, and;
- 5. Avoid "wind tunnel" effects between buildings. Historical wind data for Newport News/ Williamsburg International Airport can be found on the approved Airport Layout Plan for the airport.

Four general perspectives are a critical part of this consideration:

- 1. Views to a site from other areas;
- 2. Views to other areas from a site;
- 3. Views through a site from key locations within PAC owned land, and;
- 4. ATCT Line-of-Sight requirements.

The siting and orientation of each building shall be considered as it relates to its specific parcel, its effect on adjacent parcels, and, as it occurs, the massing of consecutive lots. Appropriate building scale shall be used so that the buildings do not dominate the site. The Developer should use building forms that minimize cut and fill. Buildings should be located on the highest ground in order to facilitate drainage away from foundations.

Building entries should be located so that they are easily identifiable. Each project should provide a well-defined entry sequence for pedestrian and vehicular uses from the street to the building. Pedestrian pathways should be in conformance with current Americans with Disabilities Act (ADA) standards. Secondary entrances should be easily accessible and convenient to parking and delivery areas that serve buildings but should not dominant the building facade.

#### 3.3.4 Easements and Utilities

Easements are restrictions placed on parcels to provide a specific use, such as the service of a public utility line or drainage system. If required by the easement holder, structures, walls, fences, and



landscaping erected within easements may be subject to removal at the expense of the parcel lessee.

## 3.4 ZONING

Site development within PAC owned land shall conform to these Design Standards, FAA criteria (i.e., regulations, orders, directives, engineering briefs and other advisory materials). Additionally, guidance found in FAA Order 8260.3B "United States Standard for Terminal Instrument Procedures (TERPS)" controls the location and massing of objects in the vicinity of the airport in order to protect established or planned approach procedures into the airport. Application of guidance in TERPS, FAR Part 77, any FAA Advisory Circular or any FAA Engineering Brief should be conducted in close coordination with the PAC.

## 3.5 LOT SIZE AND ANCILLARY BUILDING FACILITIES

The following sections present minimum lot sizes, floor area ratios, lease outline drawings and ancillary facility locations. Should the Developer require additional acreage, the DRC will review the request at the site orientation meeting and identify lot coverage based on the requirements outlined in this section.

#### 3.5.1 Minimum Lot Sizes and Maximum Lot Coverage

PAC owned land shall divided into either 1-acre (43,560 square feet), 2-acre (87,120 square feet) or 3-acre (130,680 square feet) parcels.

All parcels shall have a maximum building footprint, including attached office/ public use space, no more than 50-percent of lot size with a maximum floor area ratio of 70-percent of lot size. Maximum lot coverage *including automobile parking* and other impervious surface coverage (other than aircraft apron) shall not exceed 70-percent, subject to airspace limitations. The minimum lot coverage is 30-percent (see Table 3.1 for schedule of coverage).

#### Table 3.1

Schedule of Maximum Permissible Lot Coverage

Coverage	1-acre <u>parcel</u>	2-acre <u>parcel</u>	3-acre <u>parcel</u>
Maximum Building Footprint	21,780 sf	45,360 sf	65,340 sf
Maximum Building Size	30,492 sf	60,984 sf	91,476 sf
Maximum Lot Coverage	30,492 sf	60,984 sf	91,476 sf

Note: Maximum Lot Coverage does not include any aircraft apron space.

No single building, with the exception of accessory buildings, shall be less than 5,000 gross square feet. Should a building be within 250 square feet of the minimum size required, the PAC reserves the right to apply these Design Guidelines to the building. Buildings less than 4,750 square feet in size are permissible, but still require PAC review and approval before construction. Additionally, the construction of individual t-hangar units (commonly referred to as Port-A-Ports) is not allowed.

## 3.5.2 Lease Outline Drawing

The lessee shall provide the PAC with a survey from a Virginia licensed surveyor that depicts lease limits at the Concept Review Meeting so that the PAC can identify appropriate setback requirements pursuant to **Section 3.7** of these Design Guidelines. All land surveys must be conducted in compliance with FAA AC 150/ 5300-18b and include all pertinent attribute data for "Lease Zone 5.6.7." For hangar developments that require airside access, the lease shall extend a minimum of 100-feet from the hangar door and the apron tie-in shall be designed pursuant to **Section 5.1**. Maintenance of the apron located between the hangar door and the edge of the lease will be conducted at the lessee's expense.

## 3.6 FURTHER SUBDIVISION OF LAND

All PAC owned land shall be leased from the Peninsula Airport Commission. Appropriate leases shall be in place prior to submittal of application. No further subdivision of PAC owned land will be allowed.

#### 3.7 SETBACK REQUIREMENTS

Setbacks are designed to provide open space, retention areas, landscape areas, pedestrian circulation and buffers between public roadways, buildings, parking areas and adjacent building sites. Uses within setbacks are limited to berms, driveway crossings, landscaping, public and private utilities, drainage and slopes, sidewalks, irrigation, and permitted signs. Setback requirements on land owned by the PAC will be governed by the more restrictive of:

- 1. Those required to meet FAA design criteria, or;
- 2. Those required to meet FAA airspace restrictions, or;
- 3. Those required to meet environmental permitting conditions.

Numerous factors enter into the establishment of setback requirements at an airport. These factors are established by the FAA to ensure the safe and efficient operation of aircraft at the airport and to ensure the safety of the surrounding community. It is imperative that Developers coordinate closely with the PAC, and when necessary with the FAA, to identify all setback restrictions on a parcel prior to the beginning of the conceptual design phase.



In addition to the setback requirements listed below in **Sections 3.7.1** to **Section 3.7.4**, all construction on PAC owned land shall adhere to the requirements established by 14 CFR Part 77 and shall be reviewed for consistency with Part 77 by the Federal Aviation Administration through the filing of FAA Form 7460-1 "Notice of Proposed Construction or Alteration." Developers are encouraged to work collaboratively with the PAC in the timely development and submission of FAA Form 7460 and should allow for a 60 to 90 day review and approval process for the FAA. Additionally, Developers are required to adhere to the instructions provided by the FAA as part of their review and to make all conditions provided by the FAA a part of contract documents and specifications. The submission of the 7460 for FAA review shall occur in such a manner that the Developer can provide a copy of the FAA determination prior to the 60% Design Review Meeting with the DRC.

#### 3.7.1 General Requirements

The following are general requirements for setbacks on parcels that are owned by the PAC. More specific setback requirements can be found in **Section 3.7.2** to **Section 3.7.4** and should be used in conjunction with these general conditions in the preparation of the site plan for review by the DRC.

- 1. Buildings should be located on each site in a manner that is efficient, appropriate to site conditions, complimentary to the overall architectural composition, and compatible with adjoining projects and development throughout the airport.
- 2. Buildings shall be located to enhance project visibility and identity, while maintaining compatible relationships with adjacent parcels, aircraft aprons, vehicle parking and loading areas, and street frontages.
- 3. Buildings shall be arranged to provide convenient access to entrances and efficient onsite circulation for vehicles, pedestrians and aircraft.
- 4. Appropriate relationships shall be developed between buildings and setback areas to enhance street frontages and corners.
- 5. The potential of jet blast should be considered in the positioning of any structure, vehicle parking areas and access, and in evaluating and designing the overall site configuration relative to adjacent parcels.
- 6. Security plans established by the FAA, TSA and/or the Newport News/Williamsburg International Airport Department of Public Safety (DPS) should be incorporated into site planning, design development, contract specifications and contracts.
- 7. Setbacks are to be free from any structures, with the exception of awnings, eaves, overhangs, steps, windows, cooling devices or any other similar building feature. These elements may protrude up to five feet (5') into any setback.
- 8. Structures will be defined as anything which is built or constructed or any piece of work artificially built-up or composed of parts, included but not limited to: buildings, sheds, trash dumpsters or dumpster enclosures, towers,

overhead transmission lines and mechanical equipment enclosures.

- 9. Aircraft, aircraft components or any other type of material shall not be allowed to be parked or stored within any required setback.
- 10. No vehicle parking shall be allowed within the front setback area.

## 3.7.2 FAA AC 150/5300-13 Limitations

Setbacks are also impacted by guidance found in FAA Advisory Circular 150/ 5300-13 "Airport Design." Lateral setbacks from runways, taxiways and taxilanes are predicated on the airfield's design aircraft which is defined as the largest aircraft that conducts at least 500 annual operations. An operation is considered a takeoff, landing, touch-n-go or simulated approach to the airfield. A taxiway is generally located in what is referred to as the Air Operations Area (AOA) which is the area of the airfield that requires contact with the Air Traffic Control Tower (ATCT). Taxilanes are generally located in areas that do not require positive control from the ATCT. Taxilanes are typically found on apron edges and in areas that lead back to aircraft parking areas (e.g. t-hangars, tie-downs).

The following schedule of <u>taxiway</u> setbacks shall be used:

- 1. For parcels north of the intersection of Taxiway Alpha and Taxiway Delta and are adjacent to Taxiway Alpha: 93-feet as measured from centerline of Taxiway Alpha;
- 2. For parts south of the intersection of Taxiway Alpha and Taxiway Delta and are adjacent to Taxiway Alpha: 160-feet as measured from centerline of Taxiway Alpha;
- 3. For parcels located adjacent to Taxiway Delta: 160-feet as measured from centerline of Taxiway Delta;
- 4. For parcels located adjacent to Taxiway Juliet: 160-feet as measured from centerline of Taxiway Juliet.

Setback requirements from <u>taxilanes</u> and any taxiway not listed above will require coordination with the PAC.

#### 3.7.3 Navigational Aid Critical Areas

Setback distance shall adhere to any requirements necessary to protect navigational aid critical areas. Newport News/ Williamsburg International Airport is equipped with all-weather navigational aid facilities to maximize operational flexibility and safety. Each facility, along with their protected areas, is depicted on the approved Airport Layout Plan for Newport News/ Williamsburg International Airport which can be viewed at the PAC offices inside the terminal building. All new development shall adhere to the protection of these facilities and their critical areas to avoid degradation of signal quality due to electromagnetic interference. Close coordination with both the FAA and PAC are required when construction is planned in the vicinity of



these facilities, particularly if any solar panels or wind turbines are being considered in the development.

## 3.7.4 ATCT Line-of-Sight Limitations

Setback distances shall adhere to any line-of-sight requirements from the Air Traffic Control Tower (ATCT). ATCT personnel must see all active airfield pavements within the AOA. The Developer shall coordinate with the PAC and ATCT manager during conceptual plan development to identify any issues early in site planning.

## 3.8 BUILDING ADDRESS SYSTEM

Building addressing requirements will be determined by the jurisdiction in which the parcel is located.

Any internal streets on PAC owned that require street names shall be the responsibility of the Developer to coordinate thru the City of Newport News Engineering or York County Department of Public Safety Communications depending on parcel location. DRC coordination at the Concept Review Meeting is highly encouraged prior to the submission for street names on PAC owned land. The PAC will determine the officially approved numeric address for a site at the time of issuance of a building permit. Building address information must be located on all ground-mounted monument identification signage.

#### 3.9 SITE ACESS AND CIRCULATION

A fundamental development objective for all sites is the safe and efficient movement of vehicles and pedestrians. Vehicular access to any site must be carefully designed in relationship to vertical and horizontal curves, site distances, median cuts, other driveways, and other common traffic engineering criteria so that an efficient, smooth flow of traffic is encouraged. Access for each site must be determined in concert with overall traffic circulation, capacity needs, and requirements. Full movement access points on arterial streets shall be located a minimum of 600 feet from a signalized intersection.

Sites should be designed to minimize conflicts between automobiles and pedestrians and create a clearly organized system of entrances, driveways, and parking lots, while still providing adequate and convenient parking spaces. These requirements should minimize paved areas and curb cuts as well as reduce their overall visual impact. Parking lots and driveways must be designed for sufficient movement to avoid conflict with vehicular traffic in the street.



All Site Plan submittals must be accompanied by a site-specific traffic study from an independent traffic engineer. Commonly accepted City of Newport News or York County traffic engineering criteria must be met and supported by sufficient technical data.

### 3.9.1 Emergency Services and Utility Access

A comprehensive and coordinated approach should be taken to provide emergency access requirements. These include, but are not limited to, requirements by the Newport News/Williamsburg International Airport, Department of Public Safety (DPS), City of Newport News Police Department, City of Newport News Fire Department, York-Poquoson Sheriff's Office, York County Fire and Life Safety and ambulance service.

Additionally, the required circulation of moving vans, delivery trucks, and trash trucks should be included in the design in such a manner that it does not interfere with general vehicular or pedestrian circulation.

## 3.9.2 Restricted Drives/Secure Entries

Should a facility require a checkpoint(s) in order to monitor access to a site or individual building, any required guardhouses and security gates should be designed and located in a manner that will not restrict queuing of vehicles or passing of vehicles on the public roadway servicing the development, or cause other hazardous conditions on the site or on public roadways.

## 3.9.3 Transit

As of Spring 2011, only the existing passenger terminal building and portions of the general aviation area are served by Hampton Roads Transit (HRT). Should service be extended to additional PAC owned land, proposed development may be evaluated for public transit accommodation and bus stop/ shelter accommodation.

## 3.9.4 Signalization

Signalization is expected at all major intersections within PAC owned land. Additional signalization requirements on PAC owned land will be determined on a case-by-case basis.

#### 3.9.5 Pedestrian and Site Circulation

Site and building design must accommodate pedestrian circulation onsite from parking areas. Pedestrian systems should be physically separated from vehicular circulation as much as possible. Minimizing the areas where the two systems cross or are physically adjacent reduces traffic hazards and makes the pedestrian system more efficient.

Intersections where pedestrian routes cross vehicular circulation shall be clearly marked for visual identification by both motorists



and pedestrians. Parking areas must have sidewalk connections to the building entries.

#### 3.9.6 ADA Compliance

Handicapped accessibility for each site shall comply with the City of Newport News or York County standards, depending on parcel location, and the ADA Accessible Guidelines for Buildings and Facilities (ADAAG). See **Section 5.3.5** for number of accessible parking stalls required and other ADAAG requirements.

#### 3.10 SERVICE, DELIVERY TRASH AND OUTDOOR EQUIPMENT STORAGE AREAS

#### 3.10.1 Service Areas and Mounted Equipment

Service areas must be screened so that they are not visible from public streets or adjacent lots. Areas which are visible from the public street may use live vegetation materials or earth berms for screening which provide a proper visual barrier (see Section 7.1). Service areas which are visible from a public street shall be screened with at least a six foot (6') high wall or earth berm. The wall shall be constructed using an architecturally suitable material and color that is compatible with surrounding buildings. Screened walls, where appropriate, shall also be landscaped with evergreen plant materials.

Ground mounted mechanical and electrical equipment, such as main gas maters, electrical switching equipment, transformers, generators, fire sprinkler risers and other utility services shall be located on the side or rear of the buildings (when not adjacent to the AOA) and be screened from the public street by earth berms and/ or landscaping.

#### 3.10.2 Outside Storage Areas

Outside storage areas that are visible from a public street shall be screened with at least a six foot (6') high masonry wall. The wall shall be constructed using an architecturally suitable material and color that is compatible with surrounding buildings. Outside storage areas shall also be screened from adjacent lots and from the AOA, where possible, and be constructed using an architecturally suitable material and color that is compatible with surrounding buildings. Screened walls, where appropriate, shall also be land scaped with evergreen plant materials.

#### 3.10.3 Refuse Areas

Refuse shall be collected in dumpster or compactor type facilities. Refuse areas must be screened with a six foot (6') high masonry wall, and shall be constructed using an architecturally suitable material and color that is compatible with surrounding buildings. Screened walls shall also be landscaped with evergreen plant materials. Refuse areas are not allowed within any required setback.



## 3.10.4 Loading Dock/Bay Areas

Loading docks/ bays must be screened so that they are not visible from public streets or adjacent lots. Areas which are visible from the public street may use live vegetation materials or earth berms for screening which provide a proper visual barrier. Service areas which are visible from a public street shall be screened with at least a six foot (6') high wall or earth berm. The wall shall be constructed using an architecturally suitable material and color that is compatible with surrounding buildings. Screened walls, where appropriate, shall also be landscaped with evergreen plant materials.

Off street loading spaces shall be paved and be at least ten feet (10') in width by thirty feet (30') in depth. Loading spaces shall not encroach into any fire lane and shall be sufficiently located to ensure proper site circulation.

#### 3.10.5 Snow Storage and Removal

Provision must be made for snow storage onsite and Developers are encouraged to include a paved area on-site for the storage of the quantity of snow plowed from a 3" snow depth on paved surfaces. Pushing snow into the street or sidewalk areas is not permitted. All site owners are responsible for timely snow removal on their perimeter street sidewalks.



## CHAPTER FOUR SUSTAINABILITY GUIDELINES

The following chapter presents sustainability guidelines that the PAC encourages developers of PAC owned property to incorporate into their designs. Developers are encouraged to be creative in their sustainability initiatives. However, any creative solutions must still meet the intent of the sustainability guidelines contained in these Design Guidelines. Developers are encouraged to examine the Sustainable Airport Guidance Alliance (SAGA) database for additional ideas and best practices. The SAGA database can be found at: <u>http://www.airportsustainability.org/database</u>.

## 4.1 TIER 1 SUSTAINABILITY REQUIREMENTS

Tier 1 Guidelines are <u>required</u> sustainability initiatives that each Developer is required to incorporate into their designs. It is anticipated that these requirements will add minimal cost burden on developers but will have a positive impact on the environmental responsibilities of the Developer.

#### 4.1.1 Landscaping/Heat Island Reduction

The objective of this sustainable initiative is to minimize impact on the local microclimate and on human and wildlife habitat.

Scoring for this sustainable initiative will be based on the how the design accommodates the following criteria:

- 1. Provide shade from existing tree canopy or within five years of landscape installation for 50% of parking spaces. For any proposed plant species not listed in **Section 7.3.1** thru **Section 7.3.3**, consult an FAA certified airport biologist to ensure the plants will not attract wildlife.
- 2. Use an open grid paving system for portions of the paved parking surfaces
- 3. Provide shade for parking stalls by using vegetation or solar panels.
- 4. Use paving materials that have an SRI value greater than 29 and implement a maintenance program that ensures these surfaces are cleaned at least every two years to maintain good reflectance. Unless the reflectance is determined



directly through on-site testing, the following default SRI values are to be used:

1.	New "white" concrete	86
2.	Old (weathered) "white" concrete	45
3.	New Conventional "gray" concrete	35
4.	Old (weathered) " gray" concrete	19
5.	Old asphalt	6
6.	New Asphalt	0

#### 4.1.2 Water Efficient Landscape

The objective of this sustainable initiative is to limit or eliminate the use of potable water, or other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

Scoring for this sustainable initiative will be based on the how the design reduces potable water consumption for irrigation by 50% from a calculated mid-summer baseline case. Various method of reduction can include:

- 1. Using Xeriscaping techniques that incorporates plant species tolerant of local microclimate;
- 2. Increased irrigation efficiency through effective use of zoning, metering and technology (e.g. using local weather forecast to determine daily watering needs);
- 3. Use of captured rainwater;
- 4. Use of recycled wastewater, or;
- 5. Use of water treated and conveyed by a public agency specifically for non-potable uses.

Some recommended practices to meet the sustainable initiative include:

- 1. Perform a soil/ climate analysis to determine appropriate plant material and design the landscape with native or adapted plants to reduce or eliminate irrigation requirements. Where irrigation is required, use highefficiency equipment and/ or climate-based controllers.
- 2. Groundwater seepage that is pumped away from the immediate vicinity of buildings slabs and foundations can be used for landscape irrigation and meet the intent of this credit. However, it must be demonstrated that doing so does not affect site stormwater management systems.
- 3. Do not install plants that will require excessive irrigation.
- 4. Utilize native and/or low maintenance vegetation which may be acceptable for site use.
- 5. Utilize vegetation to reduce or eliminate irrigation requirements for landside areas.
- 6. Minimize the use of high maintenance lawns and annual plants.



- 7. Establish areas of high and low landscape maintenance areas. Group plants with similar water-use needs by determining which areas of the site should receive a higher level of care than others and, during drought periods, more irrigation.
- 8. Coordinate these areas with the irrigation plan. Higher maintenance areas should be located around the major building entries and high traffic areas. Lower maintenance areas should be located on low traffic areas, buffer zones and service areas.

#### 4.1.3 Public Transportation Access

The intent of this sustainable initiative is to reduce pollution and land disturbance by reducing automobile usage. The scoring for this criterion will be based on where the project is located in relation to the public transportation access.

## 4.1.4 Alternative Fuel Vehicle Parking

The goal of this sustainability initiative is to encourage the use of alternative fuel vehicle use by employees and visitors to the facility by providing and enforcing reserved parking in close proximity to the building entrance, subject to local code and ADA regulations.

Scoring for this sustainable initiative will be based on the how the design accommodates the following criteria:

- 1. Provide preferred parking for low-emitting and fuel-efficient vehicles for 10% of the total vehicle parking capacity of the site, with a minimum of 4 spaces. Additional points can be earned by providing reserved spaces above and beyond the 10% threshold.
- 2. Provide direct walking paths to the building entrance
- 3. Provide covered parking, such as solar panels mounted on top of a portico to increase renewable energy produced at the site. The provision of renewable energy thru covered parking can be used toward fulfilling the requirements in the Landscaping/ Heat Island Reduction initiative.

#### 4.1.5 Reduction of Light Pollution

The goal of this sustainability initiative is to minimize light trespass from the building and site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare reduction, and reduce development impact on nocturnal environments.

Scoring for this sustainable initiative will be based on the how the design accommodates the following criteria:

1. Only light areas as required to meet FAA Regulation, Airline and Airport operational requirements, security, safety and comfort. Lighting Power Densities shall not exceed



ASHRAE/ IESNA Standard 90.1-2007 Addendum "I" for the classified zone.

- 2. All projects shall be classified under one of the following zones, as defined in IESNA RP-33, and shall follow all of the requirements for that specific zone:
  - a. LZ2 "Low" which is defined as areas that are predominantly neighborhood business districts and light industrial with limited nighttime use and would be considered the parcels of PAC owned land adjacent to Providence Boulevard. The Developer should design exterior lighting so that all site and building mounted luminaires produce a maximum initial illuminance value no greater than 0.10 horizontal and vertical footcandles at the site boundary and no greater than 0.01 horizontal footcandles 10 feet beyond the site boundary. Document that no more than 2% of the total initial designed fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down). For site boundaries that abut public rights-ofway, light trespass requirements may be met relative to the curb line instead of the site boundary.
  - b. LZ3 "Medium" which are defined as areas that are predominantly commercial/ industrial in nature. The Developer should design exterior lighting so that all site and building mounted luminaires produce a maximum initial illuminance value no greater than 0.20 horizontal and vertical footcandles at the site boundary and no greater than 0.01 horizontal footcandles 15 feet beyond the site. Document that no more than 5% of the total initial designed fixture lumens are emitted at an angle of 90 degrees or higher from nadir (straight down). For site boundaries that abut public rights-of-way, light trespass requirements may be met relative to the curb line instead of the site boundary.
  - c. For ALL Zones Illuminance generated from a single luminaire placed at the intersection of a private vehicular driveway and public roadway accessing the site, is allowed to use the centerline of the public roadway as the site boundary.
- 3. Use shut-off controls such as sensors, timers and motion detectors to turn off lights when not needed.
- 4. Limit the height of light fixtures to less than four times the distance from the property line.
- 5. Utilizing computer simulation modeling to show that the requirements of IESNA RP-33 are met and that interior building lighting will not spill out and cause light pollution

The recommended practice for achieving this sustainable initiative is to adopt site lighting criteria that 1) maintains safe light levels and 2) incorporates technologies to reduce light pollution such as full cutoff luminaires, low-reflectance surfaces, use of low-angle spotlights and the use of LED light technologies.



## 4.1.6 Buy Local Campaign

The objective of this sustainable initiative is to promote the use of local products in the design and construction of the proposed Development. This will reduce transportation of material to the construction site and reduce emissions produced by the project.

Scoring for this sustainable initiative will be based on the percentage of locally derived material used in the design and construction of the facility. Higher points will be awarded for projects that use higher percentages of local product. Additional points are also available by using fixture, furniture and equipment (FF+E) that have a minimum of 10% post-consumer recycled content.

#### 4.1.7 Vanpool/Carpool Program

The objective of this sustainable initiative is the creation and promotion of a vanpool/ carpool program for employees of the proposed facility. This will reduce traffic volumes and emissions.

Scoring for this sustainable initiative will be based on the establishment of the program, the various methods of promotion and the scope of the program. Should a program expand to include adjacent properties, then additional points may be awarded.

## 4.2 TIER 2 SUSTAINABILITY GUIDELINES

Tier 2 Guidelines are <u>recommended</u> sustainability initiatives that each Developer, on their own accord, can incorporate into their designs. These initiatives may require additional expense but will have a broader impact on the environmental responsibilities of the Developer.

#### 4.2.1 Water Efficient Landscape

The objective of this sustainable initiative is the further reduction from the Tier 1 requirement in order to *eliminate* the use of potable water, or other natural surface or subsurface water resources available on or near the project site for landscape irrigation.

Scoring for this sustainable initiative will be based on how the design accommodates the following criteria:

- 1. Perform soil analysis to determine appropriate landscape materials and add soil amendments as necessary
- 2. Incorporate storm water/ greywater cisterns for the use in landscaping irrigations
- 3. Xeriscape the premises to reduce landscape irrigation demands. Install landscaping that it does not require permanent irrigation systems. Temporary irrigation systems used for plant establishment are allowed only if removed within one year of installation.



## 4.2.2 Electric Charging Stations

The goal of this sustainability initiative is to encourage the use of alternative fuel vehicle use by providing convenient electric charging stations for electric/ hybrid vehicle use. The charging stations should be free to all employees and visitors to the facility and be located in close proximity to the building entrance, subject to local code and ADA regulations.

Scoring for this sustainable initiative will be based on the how the design accommodates the following criteria:

- 1. Install electric charging stations for 5% of the total vehicle parking capacity of the site, with a minimum of 2 spaces. Additional points are available for higher percentage of spaces with electric charging stations. Charging stations shall be located in close proximity to the building and should be free for use by the public or employees
- 2. Cover the parking spaces with solar panels. These parking spaces can be used to count towards fulfilling requirements in the Tier 1 Landscaping/ Heat Island Reduction initiative.

## 4.2.3 Building Water Use Reduction

The intent of this sustainable initiative is to increase water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems. The Developer is encouraged to use WaterSense<sup>TM</sup>-certified fixtures and fixture fittings. Use high efficiency fixtures (water closets and urinals) and dry fixtures to reduce the potable water demand. Consider the use of alternate onsite sources of water, such as rainwater, stormwater, air conditioner condensate or graywater for non-potable applications such as toilet and urinal flushing, as approved by the manufacturer, and for custodial uses.

Scoring for this sustainable initiative will be based on the how the design employs strategies that, in aggregate, use 20% less water than the water use baseline calculated for the building (not including irrigation). Higher scores are available for designs that go above the 20% reduction threshold. The water use baseline shall meet the requirements of the Energy Policy Act of 1992 (EPAct 1992) and subsequent rulings by the Department of Energy, requirements of the Energy Policy Act of 2005, and the plumbing code requirements as stated in the 2006 editions of the Uniform Plumbing Code or International Plumbing Code as to fixture performance. Calculations are based on estimated occupant usage and shall include only the following fixtures and fixture fittings (as applicable to the building): water closets, urinals, lavatory faucets, showers, kitchen sink faucets and pre-rinse spray valves.

Some best practices to meet this sustainable initiative include:

1. Use high-efficiency fixtures and valves, automatic flush sensors, aerators on faucets and dual-flush toilets;

- 2. Use local generation of domestic hot water, as much as possible, to eliminate long piping runs associated with recirculation piping. Unless connecting to an existing hot water recirculating system;
- 3. Domestic hot water for general plumbing fixtures should be designed for a temperature of 140° F maximum, but not less than 120° F;
- 4. Install dry fixtures such as waterless urinals to reduce wastewater volumes;
- 5. Use instantaneous hot water heating systems (i.e., tankless, on-demand hot water heating);
- 6. Use zones or sub-meters to measure and audit water consumption rates at points of use;
- 7. Use reclaimed water for cooling tower makeup;
- 8. Evaluate pulsed-power electromagnetic water treatment, ultraviolet treatment, or ozone treatment for cooling tower water;
- 9. Establish a water supply system that supports vehicle maintenance without the use of potable water by using recycled water or diverted stormwater for vehicle and aircraft washing.

## 4.2.4 High SRI Roofing Material

The intent of this sustainable initiative is to reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize microclimate impact. The Developer is encouraged to consider installing high-albedo roofs to reduce heat absorption. SRI is calculated according to ASTM E 1980. Reflectance is measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance is measured according to ASTM E 408 or ASTM C 1371. Product information is available from the Cool Roof Rating Council website, at www.coolroofs.org. Also, visit the ENERGY STAR website, www.energystar.gov, to research compliant products.

Scoring for this sustainable initiative will be based on the how the design accommodates the use of roofing materials having a Solar Reflectance Index (SRI) equal to or greater than the values in the table below for a minimum of 75% of the available roof surface. Available roof surface is defined as the surface that is not occupied by HVAC equipment, skylights or other roof mounted equipment necessary for the operation of the building. Higher points are available for designs that employ SRI for more than 75% of the available roof surface.

<u>Roof Slope</u>	<u>Slope</u>	<u>SRI</u>
Low Sloped Roof	<2:12	78
Steep Sloped Roof	>2:12	29



## 4.2.5 Vegetated Roof (e.g. Green Roofing)

The intent of this sustainable initiative is to reduce heat islands to minimize microclimate impact.

Scoring for this sustainable initiative will be based on the percentage of available roof area that is used as a vegetated roof. The Developer should, at a minimum, install a vegetated roof for at least 50% of the available roof area. Available roof surface is defined as the surface that is not occupied by HVAC equipment, skylights or other roof mounted equipment necessary for the operation of the building. Higher points are available for designs that employ green roofing for more than 75% of the available roof surface.

## 4.2.6 Alternative Fuel Vehicle Share Program

The intent of this sustainable initiative is to encourage the use of alternative fuel vehicles. By providing an alternative fuel vehicle share program, the Developer will take a proactive approach in making the new technology available to employees for business use.

Scoring for this sustainable initiative will be based on the size of the alternative fuel vehicle share program, expressed as a ratio of number of AFVs to FTEs. The Developer should, at a minimum, provide one (1) AFV for every 25 FTEs with a minimum of one (1) AFV. Higher points are available should the Developer provide more AFVs.

The Developer will also be required to share usage of the AFVs by providing the PAC with a copy of monthly "sign-out" sheets for the vehicle. The PAC will use this information, in an anonymous fashion, for environmental reporting purposes.

#### 4.2.7 Alternative Fuel Vehicle Fleet

The intent of this sustainable initiative is to use AFV for all ground servicing equipment in order to reduce emissions associated with the proposed development.

Scoring for this sustainable initiative will be based on the initial number of AFVs purchased and the operational plan to increase the number of AFVs over the course of the lease term. The Developer should, at a minimum, provide one (1) AFV on opening day with a plan to reach 50% of all ground servicing equipment being AFV by the 10<sup>th</sup> year of the lease agreement. Higher points are available should the Developer provide more AFVs on opening day and have a more aggressive approach to reaching the 50% of all ground servicing equipment being powered by alternative fuels.



## 4.3 TIER 3 SUSTAINABILITY GUIDELINES

Tier 3 Guidelines are <u>recommended</u> sustainability initiatives that each Developer, on their own accord, can incorporate into their designs. These initiatives go further than those in Tier 2, but similar to Tier 2 guidelines will have a broader impact on the environmental responsibilities of the Developer.

### 4.3.1 Building System Commissioning

For occupied buildings, verify that the project's energy related systems are installed, calibrated and perform according to the owner's project requirements, basis of design, and construction documents. Regardless of project size, the Commissioning Authority (CxA) shall report results, findings and recommendations directly to the Developer and to the PAC. The commissioning team should be assembled early in the design process and should verify the performance of energy consuming systems prior to occupancy. Completed and accepted commissioning reports should be obtained prior to accepting the commissioned systems. Although the commissioning process should start as early in the design process as possible, it is allowable to engage a CxA agent to execute fundamental commissioning after construction has begun.

Scoring for this sustainable initiative will be based on the scale of the commissioning effort. At a minimum, the Developer shall designate an individual as the CxA to lead, review and oversee the completion of the commissioning process activities. The CxA shall have documented commissioning authority experience in at least two building projects. The individual serving as the CxA shall be independent of the project's design and construction management but may be a qualified employee of the Developer. However, for projects smaller than 50,000 gross square feet, the CxA may include qualified persons on the design or construction teams who have the required experience. Developers are encouraged to seek out qualified individuals to lead the commissioning process. Qualified individuals are identified as those who possess a high level of experience in the following areas:

- 1. Energy systems design, installation and operation;
- 2. Commission planning and process management;
- 3. Hands-on field experience with energy systems performance, interaction, start-up, balancing, testing, troubleshooting, operation, and maintenance procedures, and;
- 4. Energy systems automation control knowledge.

At a minimum, the commissioning process activities shall be completed for the following energy-related systems:

1. Mechanical and passive heating, ventilating, air conditioning and refrigeration (HVAC&R) systems and associated controls;



- 2. Lighting and daylighting controls;
- 3. Domestic hot water systems, and;
- 4. Renewable energy systems.

Additional points are available based on 1) including additional systems to be commissioned, 2) the deliverables from the commissioning effort and 3) the use of computer simulations to verify commissioning activities. Additional systems to be commissioned fall into "high energy use" and "low energy use" systems:

High energy consuming systems

- 1. Central Building Automation system
- 2. All HVAC system equipment
- 3. Lighting controls and sensors
- 4. Site Lighting
- 5. Refrigeration systems
- 6. Vertical Transport
- 7. Building Envelope
- Information Technology Systems IT (included in process loads: to promote energy savings, use the exceptional calculation method described in ANSI/ASHRAE/IESNA 90.1-2007 G2.5)

Low energy consuming system (except as Code requires)

- 1. Emergency Power Generators and Automatic Transfer Switching
- 2. Uninterruptible Power Supply systems
- 3. Life Safety systems; Fire protection Fire alarm, Egress pressurization
- 4. Lightning Protection
- 5. Domestic and Process water pumping and mixing systems
- 6. Equipment sound control systems
- 7. Data and Communication systems
- 8. Paging systems
- 9. Security systems
- 10. Irrigation systems
- 11. Plumbing
- 12. Illuminated guidance signage

For Runways, Civil/ Stormwater and Roadways projects this scope should include the following project components:

- For support and ancillary buildings include all of the applicable systems and assemblies noted above
- Runway lighting and illuminated signage
- o Runway NAVAIDS
- Site lighting systems
- Traffic signals
- Stations (e.g., pump stations, lift stations, drainage pumps)



- Heating/ Deicing systems
- Oil/ water separators

#### 4.3.2 Refrigerant Management

The intent of this sustainable initiative is to reduce ozone depletion.

Scoring for this sustainable initiative will be based on the design using zero CFC-based refrigerants in new base building HVAC&R systems. When reusing existing base building HVAC equipment, the Developer shall complete a comprehensive CFC phase-out conversion prior to project completion. Phase-out plans extending beyond the project completion date will be considered on their merits.

#### 4.3.3 Increased Energy Performance

The intent of this sustainable initiative is to achieve increasing levels of energy performance to reduce environmental and economic impacts associated with excessive energy use.

Scoring for this sustainable initiative will be based on the prescriptive path the Developer follows. The maximum number of points available in this category is 8 points. At a minimum, Developers will need to demonstrate energy efficiency over a baseline building energy usage. Up to 4 points may be awarded as such:

1 point =	10% improvement over benchmark standard
2 points =	10-20% improvement over benchmark standard
3 points =	20-30% improvement over benchmark standard
4 points =	>30% improvement over benchmark standard

- o Two additional points will be made available if the Developer complies with the prescriptive measures identified in the Advanced Buildings<sup>™</sup> Core Performance<sup>™</sup> Guide developed by the New Buildings Institute. The building must meet the following requirements:
  - Less than 100,000 square feet
  - Comply with Section 1: Design Process Strategies, and Section 2: Core Performance Requirements
- Three additional points will be made available should the Developer comply with the prescriptive measures of the 2008 ASHRAE Advanced Energy Design Guide for Small Warehouses and Self Storage Buildings. Project teams must comply with all applicable criteria as established in the Advanced Energy Design Guide for the climate zone in which the building is located.



- Four additional points will be made available should the Developer demonstrate a percentage improvement in the proposed building performance rating compared with the baseline building performance rating by *using a computer simulation model* for the entire building. Calculate the baseline building performance according to Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2007 (with errata but without addenda). Appendix G of ASHRAE Standard 90.1-2007 requires that the energy analysis done for the Building Performance Rating Method include ALL of the energy costs within and associated with the building project. To achieve points using this credit, the proposed design must meet the following criteria:
  - Comply with the mandatory provisions in ASHRAE Standard 90.1-2007, Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4 (without amendments)
  - Include all the energy costs within and associated with the building project
  - Compare against a baseline building that complies with Appendix G to ASHRAE Standard 90.1-2007 (without amendments). The default process energy cost is 25% of the total energy cost for the baseline building. For buildings where the process energy cost is less than 25% of the baseline building energy cost, the submittal must include supporting documentation substantiating that process energy inputs are appropriate.
  - For the purpose of this analysis, process energy is considered to include, but is not limited to: office and general miscellaneous equipment, computers, elevators and escalators, kitchen cooking and refrigeration, laundry washing and drying, lighting exempt from the lighting power allowance (e.g., lighting integral to security operations) and other (e.g., waterfall pumps). Regulated (non-process) energy includes lighting (such as for the interior, parking garage, surface parking, façade, or building grounds, except as noted above), HVAC (such as for space heating, space cooling, fans, pumps, toilet exhaust, parking garage ventilation, kitchen hood exhaust, etc.), and service water heating for domestic or space heating purposes.
  - For this credit, process loads shall be identical for both the baseline building performance rating and for the proposed building performance rating. However, project teams may follow the Exceptional Calculation Method (ASHRAE 90.1-2007 G2.5) to document measures that reduce process loads. Documentation of process load energy savings shall include a list of the assumptions made for both the base and proposed design, and theoretical or empirical information supporting these assumptions.

For runway/taxiway lighting, exceed the minimum FAA specifications by the levels below. Note that the benchmark calculation shall assume that conventional lights are used throughout the project and that the calculation must be based on

annual energy consumption and use seasonal climate data for the region, where applicable.

1 point =	10% improvement over benchmark standard
2 points =	10-20% improvement over benchmark standard
3 points =	20-30% improvement over benchmark standard
4 points =	>30% improvement over benchmark standard

#### 4.3.4 On-Site Renewable Energy

The intent of this sustainable initiative is to encourage and recognize increasing levels of on-site renewable energy self-supply in order to reduce environmental and economic impacts. The Developer should assess the project for non-polluting and renewable energy potential including solar, geothermal, low-impact hydro, biomass (to the extent that it does not attract wildlife or other hazards to air navigation) and bio-gas strategies. When applying these strategies, the Developer should take advantage of net metering with the local utility. Energy systems which are not eligible for this credit (but may be applicable under another credit) include architectural features such as daylighting and passive solar techniques, ground source heat pumps and renewable energy from off-site sources.

Scoring for this sustainable initiative will be based on the percentage of total building energy consumption that is drawn from on-site renewable energy. At a minimum, the Developer should provide for 5% of total building energy usage being drawn from on-site renewable energy sources. Higher points are available for greater percentage of total building energy usage from on-site renewable energy sources.

## 4.3.5 Vegetated and High SRI Roofing Material

The intent of this sustainable initiative is to reduce heat islands to minimize microclimate impact. This sustainable criteria provides flexibility to the developer to build a portion of roofing as vegetated roofing and other portions not as suitable for vegetated roofing as high SRI (e.g. long clear spans).

Scoring for this sustainable initiative will be based on the percentage of available roof area that is covered in either vegetation or high SRI material. Available roof surface is defined as the surface that is not occupied by HVAC equipment, skylights or other roof mounted equipment necessary for the operation of the building. At a minimum, the Developer should cover 50% of available roof area with vegetation and 50% of the remaining available roof area with high SRI material (for example, a 20,000 sf roof area would have 10,000 square feet of vegetated roofing material and 5,000 sf of high SRI material). Higher points are available for designs that employ SRI for more than 75% of the available roof surface.



SRI material used in the proposed development shall be equal to or greater than the values in the table below:

<u>Roof Slope</u>	<u>Slope</u>	<u>SRI</u>
Low Sloped Roof	<2:12	78
Steep Sloped Roof	>2:12	29



## **CHAPTER FIVE** CIVIL DESIGN CRITERIA

The following chapter provides civil design criteria for projects undertaken at Newport News/ Williamsburg International Airport. These civil design criteria rely upon the City of Newport News Design Criteria Manual, Second Edition but have been tailored to the types of development anticipated on PAC owned land. The Developer is encouraged to reference the City of Newport News Design Criteria Manual (http://www.nngov.com/engineering/engineering/pdf/eng-dcm) during their design process to ensure consistency with city design criteria.

## 5.1 APRONS

Developers on parcels with dedicated airside access are required to construct their apron using the same pavement section, material and other design specifications used to construct the common use pavement providing access to their parcel. The apron tie-in shall be the entire width of the parcel.

## 5.2 ROADWAYS

Street designs shall be accomplished under the supervision of a licensed professional engineer or certified land surveyor. Public and private streets shall be designed according to criteria described in these Design Guidelines, City of Newport News DCM and Virginia Department of Transportation (VDOT) Road and Bridge Standards. Criteria established in this chapter represent the minimum standards in normal situations, and the designer is responsible for determining if special site conditions require the use of materials and methods that are over and above those established.

The following basic design considerations shall be evaluated, along with other considerations for individual situations, as part of the street design process:

- 1. Water table elevation and variation impacts;
- 2. Existing and anticipated future traffic volumes and loading;
- 3. Weather conditions anticipated at the time of construction, and;
- 4. Soils conditions at and below the proposed road subgrade elevation.



The designer shall develop street designs based on commonly accepted design methods but not less than criteria identified in this chapter after evaluating existing soils conditions and anticipated traffic volumes projected for a minimum pavement design period of 20 years. Each street design shall contain a geotechnical soils evaluation report and a pavement design with appropriate exhibits and calculations justifying design recommendations.

## 5.2.1 Design Factors

The pavement section for all development on PAC owned land shall be based on the following criteria.

5.2.1.1 Design CBR

Along with the other factors explained in this chapter, the designer shall develop pavement section designs based on a design CBR value of 20. The following documents may also be used as references for the development of pavement section designs:

- 1. Thickness Design Asphalt Pavements for Highways & Streets (Asphalt Institute).
- 2. Interim Guide for Design of Pavement Structures (American Association of State Highway and Transportation Officials).
- 3. Flexible Pavement Design Guide for Primary and Interstate Roads in Virginia (VDOT and Virginia Transportation Research Council (VTRC)).
- 4. Pavement Design Guide for Subdivision and Secondary Roads in Virginia (VDOT and VTRC).

#### 5.2.1.2 Pavement Type

The Developer shall use flexible pavement for the design of private roadways on PAC owned land. The Developer may propose the use of rigid pavements based on life cycle cost analysis and/ or design analysis showing that rigid pavement may be cheaper than flexible pavement to achieve the design load over the 20 year life cycle. The DRC may approve the use of rigid pavement since it has a higher SRI than flexible pavement if the Developer can show that the rigid pavement is part of a wider sustainability program that is reflected in other design considerations.

5.2.1.3 Design Speed

The design speed for all streets on PAC owned land shall be 35 miles per hour.

5.2.1.4 Intersection Sight Distances

The design of intersections shall include sight distance requirements set forth in *A Policy on Geometric Design of Highways and Streets* (AASHTO, 1990 or latest edition).

An intersection site distance of 350-feet shall be the minimum sight distance values for intersections within PAC owned land.

5.2.1.5 Intersection and Crossover Spacing

Minimum intersection spacing and median break crossover separation shall be based upon the design speed of the street. The minimum spacing requirements within PAC owned land shall be 500-feet.

Spacing of intersections may be reduced to the minimum sight distance standard of 500-feet for either:

- 1. Existing undivided streets, or
- 2. Where no crossover is proposed for an intersecting street on a divided highway.

If spacing less than 500-feet should be desired for any other application, vertical and horizontal sight distance requirements shall be satisfied as detailed in *A Policy on Geometric Design of Highways and Streets* (AASHTO, 1990 or latest edition). A request for an exception shall be subject to the approval of the DRC. Spacing of crossovers that is less than 500-feet will not be considered.

5.2.1.6 L-Intersections

L-intersections are not allowed on PAC owned land.

5.2.1.7 Curb and Gutter/ Median Curb

Curb and gutter and median curb shall be designed in accordance with standard 2-foot 6-inch curb and gutter section. VDOT standard CG-7, a mountable combination curb and gutter design, may be used for high density developments with closely spaced driveways, as approved by the DRC.

5.2.1.8 Minimum Centerline Street Radii

The minimum centerline radius of new streets on PAC owned land shall be 450-feet. This is based on a posted speed of 30 mph and a design speed of 35 mph. Super elevation can be used in some instances to reduce these radial requirements but only with the prior approval of the DRC.



## 5.2.1.9 Cul-de-sacs

All cul-de-sacs on PAC owned land shall be designed for commercial use. Cul-de-sacs shall not be less than 1,200 feet in length as measured from the back-of-curb of the street providing access to the cul-de-sac. Minimum radius within the bulb of the cul-de-sac shall be 57-feet to the back-of-curb. Developers are encouraged to use off-set bulbs or landscaped islands in the cul-de-sac to reduce impervious surface coverage and heat-island effects. If landscaped islands are used, then the cul-de-sac should be designed with sufficient radius to allow the largest planned vehicle to circulate in a one-way manner.

#### 5.2.1.10 Driveway Aprons

All driveway aprons shall extend from the edge of existing pavement or curb line to the right-of-way line. Driveway apron material shall match the material of the adjacent curb and gutter (existing or proposed) unless the DRC approves the use of another material. Where proposed aprons adjoin existing curb and gutter, the curb facing must be broken off full-depth vertically. If the existing gutter is cracked, broken, rolled or not on grade, the entire curb and gutter section at the apron location must be removed prior to installing the new apron.

#### 5.2.1.11 Entrances

Commercial entrances shall be constructed in accordance with **Figure 5-1** thru **Figure 5-3** as applicable. Proposals for constructing an entrance of a material other than concrete will be submitted to the DRC for review and approval.

- Where pedestrian traffic is more than 100 pedestrians per hour or vehicular traffic at the entrance is 20 or fewer vehicle trips per hour, the entrance design shall conform to Figure 5-1 or Figure 5-2. Where high volume vehicular traffic and moderate to high speeds exist on the adjacent street, access ramps shall be specified according to Figure 5-3.
- 2. Driveways which serve as ingress and egress to commercially zoned or developed land shall be no less than 30 feet wide unless unusual conditions exist that warrant application of one-way directional use or angled entrances. Lot frontage limitations shall not dictate the use of entrances that are less than standard width.



## FIGURE 5-1



NOTES:

- 1. Concrete approach to be poured monolithically with radial curb.
- When used in conjunction with VDOT Standard CG-3 or CG-7, the curb face on this standard is to be adjusted to match the mountable curb configuration.
- Previous VDOT Standard CG-10A or the "metric" type entrance design shall not be used for application on commercial driveways at intersections with public streets in the City of Newport News.

Source: City of Newport News Design Criteria Manual Plate 4417



## FIGURE 5-2



 Proposed seven—inch thick sidewalk is to be poured monolithically with entrance. All details and dimensions not shown are the same as Plate 4419.

2. This design may also be applied to other entrance standards as the need arises.

 When used in conjunction with VDOT Standard CG-3 or CG-7, the curb face on this standard is to be adjusted to match the mountable curb configuration.

Source: City of Newport News Design Criteria Manual Plate 4418









Source: City of Newport News Design Criteria Manual Plate 4419



- 3. The maximum driveway width allowed for typical applications shall be 50 feet, measured at the right-of-way line where high volumes of large trucks are anticipated. The maximum driveway width may be increased for public safety and/or emergency medical service vehicular access requirement.
- 4. Minimum radii shall be 15 feet but shall be increased to 25 feet where space is available behind the curb. Provisions for an increased right turn radius, an abbreviated right turn taper or full width right turn deceleration lane will conform to criteria contained in VDOT *Minimum Standards of Entrances to State Highways*. The minimum taper length of 30 feet shall be increased by 10 feet for every five miles per hour where the speed limit is in excess of 25 miles per hour.
- 5. The design criteria contained in **Figure 5-2** should be used where commercial truck traffic or onstreet delivery vehicles are anticipated on PAC owned land if there is not a significant grade differential between the street and the site, which would impact "low-bodied," over-dimensional vehicles from entering. Minimum entrance radii of 25 feet shall apply.

## 5.2.1.12 Sidewalks and Bikepaths

Sidewalks and bikepaths, when constructed within the City rights-of-way, shall be a minimum of four-inch-thick concrete, unless the DRC approves the use of a different material. Where the sidewalk is constructed in conjunction with street intersections, a standard handicap ramp (VDOT CG-12) shall be used.

Commercial sidewalks shall be designed with a minimum width of five feet along major thoroughfares. A five-foot wide sidewalk shall be provided and separated from the curb by a minimum 5-foot wide green strip. When a sidewalk is installed within 250 feet of an intersection, the sidewalk shall be seven feet wide and directly behind the curb. Where any sidewalk intersects with a driveway, an ADA compliant handicap down-ramp sidewalk shall be provided.

When a bikepath is proposed, it shall be separated from motorized vehicular traffic by an open space or barrier. Two-way bikepaths shall be at least 10 feet wide. One-way bikepaths have a limited application and shall be at least five feet in width. Bikepaths shall be designed to ensure continuity and minimal conflicts with motor vehicle crossflows and intersections with highways. Striping shall be placed to show lane usage. New bikepaths that intersect with street connections or standard entrances



shall provide for handicap curb cut ramps as detailed in this chapter.

#### 5.2.2 Pavement Section

Roadway pavement sections shall consist of  $1 \frac{1}{2}$ " of SM-2A (S-5) Bituminous Concrete over  $2 \frac{1}{2}$ " BM-2 (B-3) Bituminous Concrete on 8" of crushed stone. Minimum subgrade CBR value of 20 is required.

#### 5.2.3 Width

The minimum width for roadway on PAC owned land shall be 26feet from face-of-curb to face-of-curb. Travel lanes shall be at a minimum of 11-feet in width with standard 2-foot 6-inch curb and gutters. To promote sheet flow and water run-off, private streets shall be crowned using a 1/4" to 1' slope. A clear zone of 11-feet 6inches shall be provided as measured from the back-of-curb for a right of way width of 50-feet. The clear zone shall be kept free of any buildings or structures, however, as part of the 30% Design Development Review, the DRC may issue a waiver should extenuating circumstances require.

## 5.2.4 Lighting

A standard streetlight assembly shall consist of a standard-length concrete or steel pole to match existing conditions, enclosed lens cobra head luminaire and bracket length necessary to place the new luminaire over the edge of pavement and/or curb line (at a minimum). The minimum mounting height shall be 25 feet and shall be located behind the sidewalk.

For public roadways, the minimum maintained lighting shall be 0.4 footcandles of luminance. Developers are encouraged to incorporate sustainability guidelines that reduce light pollution in their designs (see Section 4.1.5).

#### 5.3 VEHICLE PARKING LOTS

Paved off-street parking must be provided for all developments. No parking shall be permitted on any street or access road, either public or private, or at any place other than the paved parking spaces provided. Depending on the parcel use, parking for development on PAC owned land shall comply with the following standards, subject to providing for required access for fire apparatus. Parking areas should be designed to:

- 1. Provide safe and convenient movement of motor vehicles;
- 2. Limit vehicular/ pedestrian conflicts, and;
- 3. Limit paved areas.

Parking facilities should be developed in such a manner that the furthest parking space shall be less than 750-feet from the main building entrance.



Additionally, the maximum location from the main building entrance to the furthest identified handicapped parking space shall not exceed 100-feet.

The Developer is required to provide interior planting thru the use of planting areas in their parking layout (see Section 7.5). Parking areas should be hard-surfaced and must have concrete curbs and gutters. Dirt, gravel, and grass lots are not allowed.

## 5.3.1 Number of Stalls Required

The number of parking stalls required is based on the planned use of the parcel. If the planned use is not listed in this section, then the requirements for a materially similar use should be followed. The following uses are considered appropriate on PAC owned land:

5.3.1.1 Single Occupant Corporate Hangar

Single occupant corporate hangars shall provide parking stalls in accordance with the following guidelines:

- 1 stall for every 500 gross square feet of office/ administration area, PLUS
- 1 stall for every vehicle stored on premises, PLUS
- 1 stall for every full time equivalent (FTE) employee.

Shall the computed number of stalls result in a fraction of a stall, the number of stalls provided shall be rounded up to the next highest whole number. The number of stalls computed by the formula in this section *does not include stalls required for ADA compliance.* 

#### 5.3.1.2 Group Corporate Hangar

Group corporate hangars shall provide parking stalls in accordance with the following guidelines:

- 1 stall for every 500 gross square feet of office/ administration area, PLUS
- 1 stall for every vehicle stored on premises, PLUS
- 1 stall for every 3 aircraft seats stored in the hangar.

Shall the computed number of stalls result in a fraction of a stall, the number of stalls provided shall be rounded up to the next highest whole number. The number of stalls computed by the formula in this section *does not include stalls required for ADA compliance.* 

5.3.1.3 Maintenance, Repair and Overhaul Facility

Maintenance, Repair and Overhaul (MRO) hangars shall provide parking stalls in accordance with the following guidelines:

- 1 stall for every 250 gross square feet of office/ administration area, PLUS
- 1 stall for every 5,000 square feet of open bay hangar, PLUS
- 1.5 spaces for every full time equivalent (FTE) employee.

Shall the computed number of stalls result in a fraction of a stall, the number of stalls provided shall be rounded up to the next highest whole number. The number of stalls computed by the formula in this section *does not include stalls required for ADA compliance.* 

## 5.3.1.4 General Office

General office buildings shall provide parking stalls in accordance with the following guidelines:

• 1 stall for every 350 gross square feet of floor area but no fewer than 3 stalls.

Shall the computed number of stalls result in a fraction of a stall, the number of stalls provided shall be rounded up to the next highest whole number. The number of stalls computed by the formula in this section *does not include stalls required for ADA compliance.* 

5.3.1.5 Vocational/ Flight Schools

Vocational/ Flight schools shall provide parking stalls in accordance with the following guidelines:

- 1 stall for every two (2) students in the maximum projected enrollment capacity, PLUS
- 1 stall for every classroom or teaching station.

Shall the computed number of stalls result in a fraction of a stall, the number of stalls provided shall be rounded up to the next highest whole number. The number of stalls computed by the formula in this section *does not include stalls required for ADA compliance.* 

#### 5.3.2 Reduction Below Required Number of Spaces

No reduction below the required number of spaces shall be approved by the DRC unless under extenuating circumstances. Additionally, nothing in this section should be construed to allow a reduction in required number of parking spaces based on an expansion of an existing building at a later date unless replacement



parking is identified in the new site plan submitted for the building expansion.

## 5.3.3 Pavement Section

Public parking pavement sections shall consist of  $1\frac{1}{2}$ " of SM-2A (S-5) Bituminous Concrete over  $2\frac{1}{2}$ " BM-2 (B-3) Bituminous Concrete on 8" of crushed stone. Minimum subgrade CBR value of 20 is required. The Developer is encouraged to incorporate sustainability practices in the design to reduce impervious surface coverage of the parking facility. These could include the use of parking pavers and land scaped islands (see Section 4.1.1).

#### 5.3.4 Interior Drive Dimensions

Interior drive dimensions providing access to parking stalls shall be designed using the following criteria:

<u>Stall Angle</u>	<u>Traffic Flow</u>	<u>Lane Width</u>
Parallel	One-Way	12-feet
30-degree	One-Way	12-feet
45-degree	One-Way	12-feet
60-degree	One-Way	18-feet
90-degree	Two-Way	24-feet

The minimum width for two-way traffic, regardless of stall angle, shall be 24-feet. Additional width over those outlined in the table above may be required for emergency vehicle access.

## 5.3.5 Stall Dimensions

Stall spaces shall have a dimension of 9' x 18' or 10' by 20' if parallel. Where parking spaces are located along a walkway, median or landscaped island of at least 9-feet in width, a 1' 6" overhang credit may be deducted from the required length of the parking space. Where this credit is used, the adjacent landscaped island, walkway or ADA accessible route shall be increased in width by an equal amount. Parking spaces shall be set apart from landscaped areas or ADA path by a permanent curb or wheel stop.

## 5.3.6 Handicapped Stalls

Handicapped stalls shall be within 100-feet of the main building entrance but in all cases shall be located on the shortest possible accessible route to the building entrance. The stalls shall be designed to meet the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).

#### 5.3.6.1 Number of Stalls Required

The number of handicapped accessible stalls shall be calculated for each individual parking facility and not based



on all parking facilities available. For example, if the development is phased over two phases and Phase One has a 500 space parking facility and Phase 2 has a 250 space parking facility, the total number of handicapped parking spaces shall be 16 spaces and not 15 spaces (750 x .02). The minimum number of handicapped accessible stalls shall be determined based on the following schedule:

#### Table 5-1

Required Number of Handicap Accessible Parking Stalls

Number of Publically <u>Available Parking Stalls</u>	Required Number of <u>Accessible Parking Stalls</u>
0-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
500-1,000	2% of all spaces
1,001 +	20 PLUS 1 for every 100 spaces above 1,000
Source:	

ADAAG as amended through September 2002. <u>http://www.access-</u> board.gov/ adaag

#### 5.3.6.2 Access Aisle

At least one space must be served by a 96-inch wide access aisle and be marked as van accessible. All pavement markings and signage must meet ADAAG.

#### 5.3.6.3 Other Design Considerations

Handicapped accessible spaces shall be constructed to be level in all directions with a maximum permissible slope/ cross slope of 1:50 (2%).

#### 5.3.7 Commercial Vehicle Parking

Parking areas for utility/ commercial-type company vehicles shall be of a size and configuration that all vehicles can be parked and



maneuvered fully within their designated areas without adversely affecting vehicular or pedestrian movement.