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PWC DCSM Section	VDOT Section	Notes
Section 600 Transportation Systems		
1. Section 602.07 A & C. Intersection Spacing and right angles: **300 feet** **All intersect at 90°**	1. VDOT Road Design Manual Section 4 E.1-2. – Intersections. **200 feet (provision for adjustment)** **Allows intersect between 60°-90°**	Permit use of VDOT standards for private streets and roadways which are built to public standards. VDOT access management Table 2-2 does not provide any clear intersection spacing requirements along local streets. We should keep the minimum 200 feet spacing requirement along local streets and for minor collector streets. Eliminate 300 feet requirement along minor collector streets. Section 602.07 C – Due to safety reasons keep 90 angle requirements. Recommend reducing the tangent distance to 50 feet on local streets and to 100 feet on major collector and higher category streets.
2. Section 602.07 A Intersections, Crossover Spacing **Table 6-6**	2. VDOT Road Design Manual, Appendix F, Crossover Spacing **Table 2-2**	There are several differences between these two tables. Recommendation is to not have intersection spacing in the DCSM. Should follow VDOT Access Management requirements and standards. Acceptable to use VDOT Access Management Table 2-2 for crossover spacing.
3. Section 602.07 I & J. Street Intersections **35 feet minimum** **50 feet minimum (pavement) industrial** **25 feet commercial entrances**	3. VDOT Road Design Manual Section 4. E 3. Minimum Radii **15 feet minimum turning radius** **25 feet Subdivision Streets** **30 feet Industrial Streets**	Permit use of VDOT standards. See table 4-3 Design Vehicle and Turning Radius by Land Use. Recommendation is to keep the DCSM requirements. Table 4-3 is more complicated and requires different radius based on design vehicles.

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4. Section 602.07 C. Tangent Distances **100 feet ≤ 1,000 VPD** **200 feet ≥ 1,000 VPD**	4. VDOT Road Design Manual Section 4 Entrance Design Access Centerline **40 feet beyond nearest side edge line**	Permit use of VDOT standards for private streets and roadways which are built to public standards. Section 602.07 C – Due to safety reasons keep 90 angle requirements. Recommend reducing the tangent distance to 50 feet on local streets and to 100 feet on major collector and higher category streets.
5. Section 602.07 K. Distance between PTCR and PCCR **130 feet Category V and below** **280 feet Category VI and above**	5. VDOT Road Design Manual Section 4, Figure 4-11. Also, Table 2-2 Note 1. **50 feet**	Permit use of VDOT standards for private streets and roadways which are built to public standards. See also entrance throat table 4-2 in VDOT Road Design Manual. Recommendation is to keep the 130 feet spacing requirement for local and minor collector streets and 280 feet requirement for major collector and higher category streets. Eliminate category V and category VI reference in this section.
6. Detail 650.04 RL-2 Street Section **Cat 1&2, Speed Limit is 20 MPH**	6. VDOT Design Manual GS-SSAR Street Section **Lowest Design is 25 MPH** **Up to 2000 VPD, Min. C/L 200', 25 MPH**	If the 20-mph design speed is used, then VDOT requires 20 mph advisory speed limit signs and there is also a requirement for a speed study. There should be a note about streets that will be accepted by VDOT and what that might require. Keep DCSM requirements. It is applicable to public and private streets. Note that Section 46.2-1300 of the Code of Virginia allows jurisdictions to reduce the speed limit to less than 25 mph, but not less than 15 mph on any highway within its boundaries that is located in a business district or residence district, provided that such reduced speed limit is indicated by lawfully placed signs. The County has not received guidance from VDOT as to whether speed studies will be required for these lower

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		speed limits or the definition of business or residence districts.
7. Section 602.5, Stopping Sight Distance **Table 6-4**	7. VDOT Design Manual, Stopping Sight Distance **Table 2-6**	There are several differences between the two tables. The minimum stopping sight distance requirements are the same as VDOT. The desirable stopping sight distance reference can be eliminated.
8. Section 600.0, Turn Lane Requirements **Table 6-7**	8. VDOT Road Design Manual, Turn Lane Requirements **Figure 3-1**	There are several inconsistencies between the two tables. Recommendation is PWC should follow VDOT standards. A lot of waivers have been filed over the years to get the turn lane to follow VDOT standards. Section 602.07 E can be amended – Along roadways classified as major collector or higher, left, and right turn lanes shall be provided where warranted in accordance with the VDOT Road Design Manual or as required by the Director of Transportation due to safety concerns.
9. Detail 650.02, RL-1 Typical Section **Cat. 1 & 2, Min. C/L radius 120 feet**	9. VDOT Road Design Manual, GS-SSAR Typical Section **Up to 2,000 VPD, Min. C/L radius 200 feet**	Different C/L requirements between PWC DCSM and VDOT. Keep the DCSM standard due to low speed policy for local streets.
10. Detail 650.03, RM-1 Typical Section **Cat. 4, Min. C/L radius 335 feet**	10. VDOT Road Design Manual, GS-SSAR Typical Section **Up to 2,000 VPD, Min. C/L radius 200 feet**	Different C/L requirements between PWC DCSM and VDOT. Keep the DCSM requirement. The 335 C/L radius is based on design speed with no superelevation requirement.
11. Detail 650.04, RL-2 Typical Section **Cat. 1 & 2, Min. C/L radius 120 feet**	11. VDOT Road Design Manual, GS-SSAR Typical Section	Different C/L requirements between PWC DCSM and VDOT.

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	Up to 2,000 VPD, Min. C/L radius 200 feet	Keep the DCSM standard due low speed policy for local streets.
12. Detail 650.05, RM-2 Typical Section **Cat. 4, Min C/L radius 335 feet**	12. VDOT Road Design Manual, GS-SSAR Typical Section **Up to 2,000 VPD, Min. C/L radius 200 feet**	Different C/L requirements between PWC DCSM and VDOT. Keep the DCSM requirement. The 335 C/L radius is based on design speed with no superelevation requirement.
13. Detail 650.05, CI-1 Typical Section **Cat. 4 & 6, Min. C/L radius is 335 feet and 762 feet, respectively**	13. VDOT Road Design Manual, GS Typical Sections **Min. C/L radius is 200 feet and 536 feet, respectively**	Different C/L requirements between PWC DCSM and VDOT. DCSM requirements are based on no superelevation provision. If 2% superelevation is provided along Cat. 6 road, the centerline radius can be reduced to 593 feet.
14. Detail 650.09, MC-1 Typical Section **Cat. 6, Min. C/L radius is 795 feet** **Shared Use Path, S=23 feet**	14. VDOT Road Design Manual, GS Typical Sections. Appendix A(1) **Min. C/L radius is 713 feet** **Figure A(1)-6, SUP=24.5 feet**	Different C/L and shared use path width requirements between PWC DCSM and VDOT. DCSM requirement of 795 feet radius is based on 2% superelevation(e%) and VDOT's is based on 4% (e%). Note can be added to state that 713 feet radius can be used with 4% superelevation.
15. Detail 650.10, MC-2 & MA-2 Typical Sections **Cat. 6 & 7, Min. C/L radius is 716 feet and 955 feet, respectively**	15. VDOT Road Design Manual, GS Typical Sections. **Min. C/L radius is 713 feet and 929 feet, respectively**	Different C/L requirements between PWC DCSM and VDOT. The minimum radius of 929 feet can used with 4% (e%) for MA-2 typical section.
16. Detail 650.11, MA-1 Typical Sections **Cat. 7, Min. C/L radius is 955 feet** **Shared Use Path, S=23 feet**	16. VDOT Road Design Manual, GS Typical Sections. Appendix A(1) **Min. C/L radius is 929 feet** **Figure A(1)-6, SUP=24.5 feet**	Different C/L and shared use path width requirements between PWC DCSM and VDOT. The minimum radius of 929 feet can used with 4% (e%) for MA-1 typical section.

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17. Detail 650.12, PA-1 Typical Section **Cat. 7, Min. C/L radius is 929 feet and 1,273 feet** **Shared Use Path, S=23 feet**	17. VDOT Road Design Manual, GS Typical Sections. Appendix A(1) **Min. C/L radius is 929 feet and 1,204 feet** **Shared Use Path, S=24.5 feet**	Different C/L and shared use path width requirements between PWC DCSM and VDOT. Keep the DCSM standard for minimum radius. VDOT standard is for rural condition only with Superelevation rate of 8%.
18. Detail 650.13, PA-2 Typical Section **Cat. 7, Min. C/L radius is 1,273 feet**	18. VDOT Road Design Manual, GS Typical Sections. Appendix A(1) **Min. C/L radius is 1,204 feet**	Different C/L requirements between PWC DCSM and VDOT. Keep the DCSM standard for minimum radius. VDOT standard is for rural condition only with Superelevation rate of 8%.
19. Detail 650.21, SD-1 Typical Section **Service Drives Standards**	19. VDOT Road Design Manual, GS-9 Typical Standards **Service Road Standards**	Different requirements for service roads between PWC DCSM and VDOT. County standard is based on two-way traffic flow. No need to change.
20. Section 601.08 A, Street Curb and Gutter **Curb and Gutter required for Urban Sections**	20. VDOT Road Design Manual, GS Typical Standards **Curb and Gutter not required**	Different requirements regarding curb and gutter and streets with shoulder design between PWC DCSM and VDOT. Keep the DCSM requirement. The road typical sections clearly state when the curb and gutter is required. The ditch sections streets are only allowed in large lot subdivisions of one acre or greater in size.
21. Section 602.04, Design Speed Standards **Table 6-2 AND Table 6-3**	21. VDOT Road Design Manual, Design Speed **Appendix A-1**	PWC DCSM standards do not align with VDOT guidance on Design Speeds. In some circumstances, VDOT allows the posted speed to be used as the design speed where PWC DCSM requires at least 5 MPH over the posted speed.

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		These Tables can be amended to align with VDOT.
Section 700 Environmental Systems		
1. DCSM Section 702.01 A. (Exhibit 5 Rainfall Intensity vs Duration for Various Frequencies of Occurrence) **2yr, 5 min. ~ 5.75 inches**	1. VDOT Drainage Manual Section 9.3.1 (Table 9-1 Criteria for Inlet Design) **4 Inches**	Permit use of 4 inches for private streets and roadways which are built to public standards. This is also noted in VDOT Road Design Manual Appendix B1 Section 4 l. Roadway Drainage 3C.
2. Section 702.11 E – Minimum Pipe Size: **15 inches,** **12 inches (driveway/ditch section)**	2. VDOT Drainage Manual Section 9.3.5 – Conduit Design: **15 inches,** **12 inches (pipe laterals/initial runs of 50 ft or less)**	Permit use of 12 inch pipe for laterals/ initial runs of 50 ft or less).
3. Section 702.11 F Maximum distance of storm piping: **<36" – 400 ft, ≥36" – 800 ft**	3. VDOT Drainage Manual Section 9.3.6 Access Hole Spacing: **12"-50 ft, 15"-42"-300 ft*, ≥48"-800**	Spacing between storm sewer manholes differs between PWC and VDOT. *VDOT has a footnote to increase to 400 ft.
Section 800 Buffer Areas & Landscaping & Tree Cover Requirements		
1. Not yet reviewed…	xx	xx
2. xx	xx	xx
3. xx	xx	xx
General Recommendations		

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1. Section 601.02 Functional Classification of Streets: Parts A – E.	1. VDOT Road Design Manual Section 2 Design Requirements – Functional Classification	There is not always consistency in the classification of a roadway between VDOT and PWC. Either follow VDOT category when it's a VDOT road or County Category when evaluating County Standards. Should not have to cross over and look at worse case. Or, have the functional classifications match between PWC and VDOT. The County is evaluating the functional classifications in the Thoroughfare Plan and will determine whether to recommend using VDOT's classifications in the Thoroughfare Plan in the Comp Plan Update due to be presented to the Board of County Supervisors late this year.

V0 – Original Draft 4/21/2021

V1 – Updated Draft 5/24/2021

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1. 604.05 A	Add language requiring a signing and striping plan as part of the site/subdivision plan. Require all signs/pavement markings installed prior to occupancy permit.	
2. 650.46 (CCR-1)	Revise the curb ramp detail or delete it as it does not comply with ADA specifications (wingwall should be 1:20 slope). Note that VDOT is considering changing the ADA curb standards to address the sharp corners of the CG-12 and CG-12 B standards. Could refer to new VDOT standard instead of revising the DCSM.	
3. General	Require the provision of total quantities and costs for pavement sections of streets on the UPL. This would help the inspectors.	
4. General	Include a note in large pitch on the cover sheet of the site/subdivision plans that states that streetlights/signs/pavement markings shall be installed prior to the issuance of occupancy permits.	

5. 602.07 G	All required standard deceleration or turn lanes and tapers shall be designed in accordance with VDOT and AASHTO standards (see Table 6-7). Table 6-7 may be used to determine the minimum turn lane requirements when the traffic data is not available or required by the Director of Transportation.	
6. 602.07 K	For all roadways classified as Category V and below, a distance of at least one hundred thirty (130) feet shall be maintained between the ends and beginnings (PTCR and PCCR) of curb returns of all commercial entrances (including single-family attached and multifamily). For all roadways classified as Category VI and above, a distance of at least two hundred eighty (280) feet shall be maintained between ends and beginnings (PTCR and PCCR) of curb returns of commercial entrances (including entrances for single-family attached and multifamily). The separation shall be the same between curb returns of an entrance and a roadway intersection. If the street is a state-maintained road, the spacing shall be in accordance with VDOT Access Management Standards.	

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7. 601.01 B	Northern Virginia has been designated as an urban area by VDOT subdivision standards. All streets shall be designed as set forth in this manual or by VDOT standards, whichever is more stringent. VDOT minimum requirements may be permitted by the Director of Transportation, due to site limitations.	
8. 620.02 B	The applicant shall provide three (3) hard copies of the TIA at the time of submission of the site development plan application. Two (2) copies of the TIA shall contain computer disk(s) (CDs) containing analysis data files including the Appendix.	
9. 601.09 C 601.09 J	On public roadways, the County shall assume the operation and maintenance costs of the luminaires once they are energized and all installation costs and overages have been paid in full by the developer. Require that the developer submit a design request letter, County approved plan and bond sheet to the servicing utility with luminaire locations within ten (10) days of the pre-construction meeting.	

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10. 602.13 C, D and E	Add: One (1) luminaire shall be provided on each street approach to uncontrolled marked crosswalks.	
11. 602.12 E	A guardrail shall be required when fill exceeds ~~ten (10) feet~~ the height required in current VDOT standards.	
12. 602.02 D	Add: Curb ramp width should match the trail/shared path width to allow continuity.	
13. 603.20 F	Add: All alternative roadway lighting fixtures need to be annotated on the approved plans and a typical detail provided.	
14. 604.05 E	Prior to granting occupancy pavement markings should be installed unless final pavement topping has not been applied. All traffic control and safety signs shall be installed prior to granting occupancy. Prior to the release of the performance bond, county inspectors ~~may~~ shall require safety features such as no parking regulation signs, speed limit signs, stop signs, pavement markings, and traffic barricades to be installed as per the MUTCD. These items shall be installed at the developer's expense.	

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15. General	Consider a Minor Waiver request process when the proposed standard meets VDOT standards but not the DCSM.	
16. 602.16 2 J	The pavement designs for alleyways shall be reviewed as streets if the pavement design of alleyways does not match the adjacent street or have different CBRs other than the shared CBRs from the adjacent streets or only pavement designs for alleyways are submitted.	
17. 630.01 A	A Transportation Demand Management (TDM) plan is a general plan of actions which is designed to change travel behavior in order to improve performance of transportation facilities and to reduce the need for additional road capacity. Methods may include but are not limited to the use of alternative modes, bicycle/pedestrian amenities, outreach/information distribution, transit incentives, ride-sharing and vanpool programs, and other single-occupied vehicle (SOV) trip-reduction strategies. The TDM plan details mode choice, not trip generation.	

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18. 602.02 A	A TDM plan is required if the development proposal consists of Mixed-Use urban/suburban activity centers /and or Small Area Plans, including a Neo-Traditional Development and/or Transit Oriented Development and the applicant is requesting trip generation credits or reductions in conjunction with the proposed development. These types of developments typically include higher intensities of land use than normally anticipated by the zoning ordinance. The TDM plan shall identify and mitigate the effects of these higher intensities.	
19. Standard 650.49 (TB-1)	Change to VDOT's Standard OM4-2. Consider referring to VDOT standard and not including it in the DCSM.	
20. Table 6-8	Consider changing the parking requirement for Age Restricted residential units. The current rate is 1 per 3 units which we have found historically is too low. We are researching the rates in other jurisdictions and will make a recommendation to increase this rate.	

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21. MC – 1 Typical	Provide a typical section for a 2-lane Major Collector	