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PREFACE

P.1 PURPOSE

The purpose of the Delaware Department of Transportation's (DelDOT's) *Development Coordination Manual* is to set forth the requirements of DelDOT for the planning, design, construction, and acceptance of subdivision streets and access to State-maintained roadways.

Land development and subdivisions have a direct impact on the transportation system. These impacts have to be assessed to ensure that the system is safe and efficient. The safety and efficiency of a roadway depends to a large extent upon the amount and character of interruption in the movement of traffic. Vehicles entering, leaving, or crossing the roadway cause most interruptions in traffic.

Property owners fronting State-maintained roadways have certain rights of access consistent with the zoning and use of their property (except along controlled or limited access highways). In addition, the traveling public who use those State-maintained roadways have certain rights to freedom of movement and safety.

The standards and regulations presented herein are intended to regulate and control the location, design, and operation of access points and transportation facilities maintained by DelDOT. All commercial entrances, residential entrances and State-maintained subdivision streets are to be designed and constructed in accordance with these requirements. These requirements apply to the following:

- A. New subdivisions and land developments.
- B. Lot line adjustments.
- C. Changed or expanded subdivisions and land developments.
- D. Any new access onto a State-maintained roadway.
- E. Modifications to an existing access.
- F. Assessment of the impacts of traffic.
- G. Off-site improvements.
- H. Transportation Improvement Districts (TIDs).

P.2 LEGAL AUTHORITY

The authority for DelDOT's *Development Coordination Manual* is set forth in the Delaware Code. Applicable sections include, but are not limited to:

- A. Title 17 – Highways, Chapter 1, Subchapter III, Section 131 - General Jurisdiction
- B. Title 17 – Highways, Chapter 1, Subchapter III, Section 141 - Regulation of Traffic; Exceptions
- C. Title 17 – Highways, Chapter 1, Subchapter III, Section 146 – Access to State-Maintained Highways
- D. Title 17 – Highways, Chapter 5, Section 508 – Dedication of New Roads for State Maintenance; Approval Required; Security
- E. Title 21 – Motor Vehicles, Chapter 41 – Rules of The Road
- F. Title 29 – State Government, Chapter 61, Section 6103 – Deposit of State Money
- G. Title 9 – Counties

P.3 ACCESS APPLICATION AND APPROVAL PROCESS

This section outlines the procedures to be followed by developers and/or property owners in order to obtain approval of a commercial access or a State-maintained subdivision street. A full review of the plans includes, at minimum, comments from various groups within DelDOT including, but not limited to, the Traffic Section, the respective Maintenance District, Bicycle and Pedestrian Group, and Development Coordination before the letter is issued. Other Sections from DelDOT shall be included as needed. Access applications, construction permits and procedures for residential units are outlined in Chapter 7. The estimated review time by DelDOT is based on a complete submission. Incomplete submissions will be returned to the developer for resubmission. This process is illustrated in Figures P3-a and P3-b.

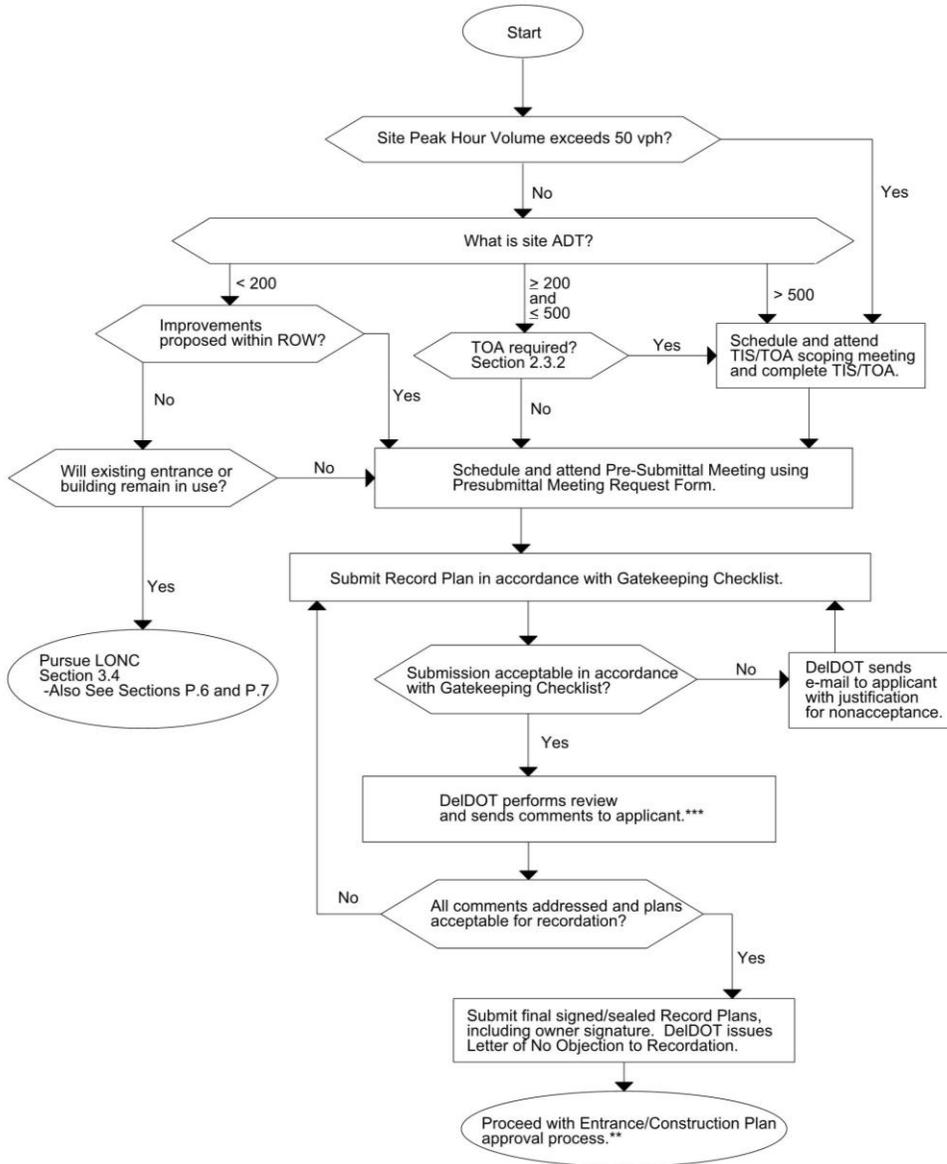
DelDOT reviews the Record Plan in accordance with this *Development Coordination Manual*. The initial stage fee as outlined herein shall be paid prior to review of the Record Plan. When the plan meets the requirements of DelDOT, a letter of “No Objection to Recordation” (LONOR) shall be issued to the governing land use agency.

DelDOT will also review construction plans for subdivision streets and/or entrances in accordance with this *Development Coordination Manual*. Construction/ Entrance plans must be signed and sealed by a land surveyor or professional engineer registered in Delaware as outlined in Chapter 4.

The construction stage fee must be paid prior to review of the Entrance/Construction plan. Upon review and approval of the Entrance/Construction plan, DelDOT will issue an approval letter.

Any site being considered by DelDOT for access to a State-maintained roadway shall be evaluated to determine if it will also impact any other DelDOT programs. These programs include, but are not limited to, the Corridor Capacity Preservation Program (CCPP), the Capital Transportation Program (CTP), the Transportation Alternatives (TA) Program, the Highway Safety Improvement Program (HSIP), and the Pavement Rehabilitation Program. If a plan would have an effect on any of these programs, DelDOT will require additional reviews and additional requirements to be met.

Figure P3-a Record Plan Review Process for Letter of No Objection to Recordation (LONOR)

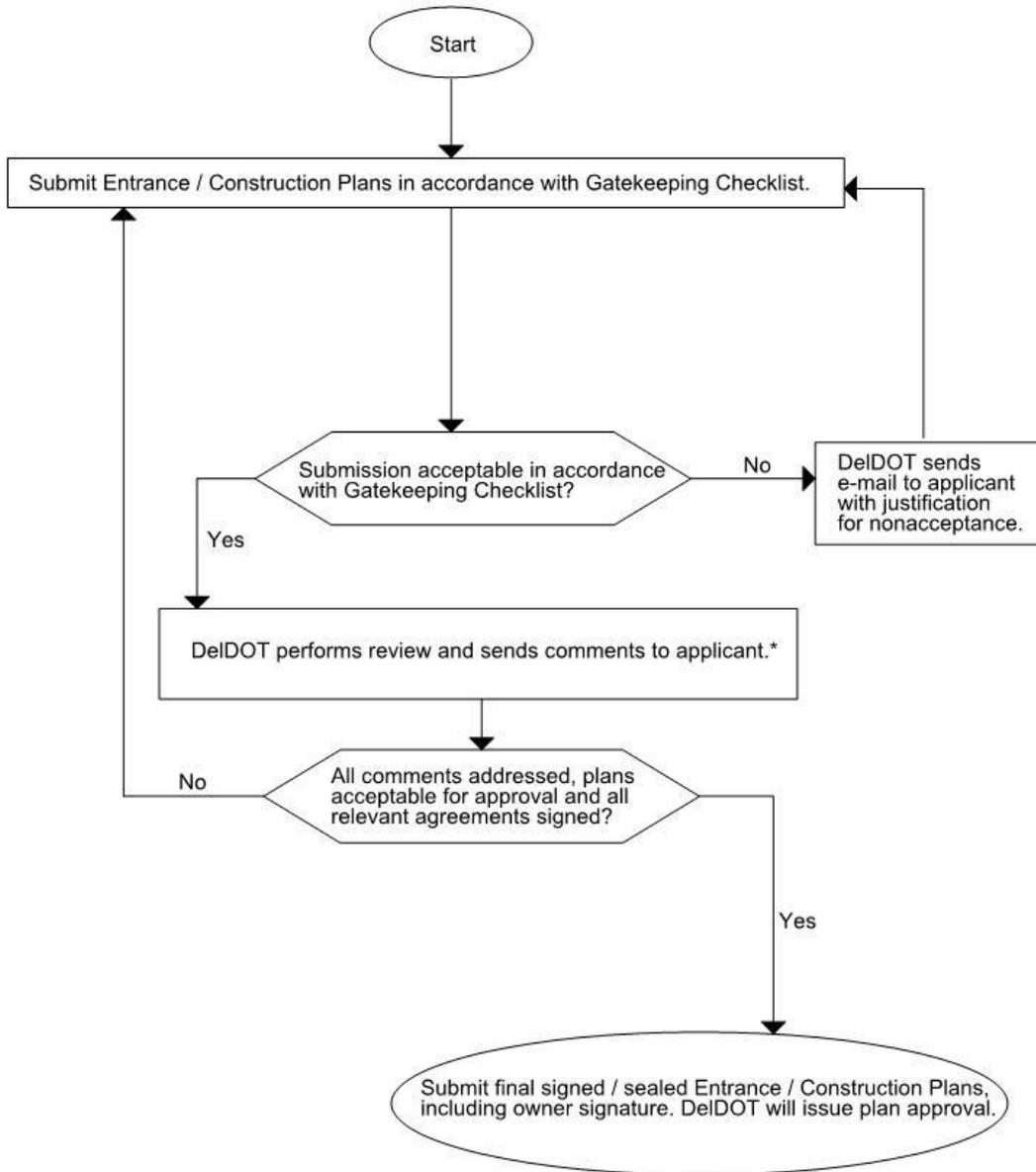


*This chart is intended only as a general guide for issuance of a Letter of No Objection to Recordation (LONOR). The review process may be modified depending on the specific nature of the project submitted.

**Construction / Entrance Plans will generally be reviewed concurrently with Record Plan submission. However, Construction / Entrance Plans will not be reviewed for final approval prior to issuance of LONOR.

*** Plan review schedule available at www.deldot.gov/information/business

Figure P3-b Review Process for Entrance/Construction Plan Approval



* Plan review schedule available at www.deldot.gov/information/business

P.4 ACCESS APPLICATION AND APPROVAL PROCESS - APPLICATION

The application with supporting documents and plans shall be submitted to the Subdivision Engineer for review and approval. All documents shall be submitted electronically. Plans shall be in pdf format.

All fees shall be submitted in accordance with Section P.5.

P.4.1 Approval of Application

The approval of the application shall be subject to the following conditions:

- A. The application shall be properly and clearly completed in accordance with DelDOT. Applications found to be unsatisfactory shall be returned for correction and resubmission.
- B. The location, design, and construction of driveways and entrances shall meet the geometric requirements of DelDOT. Necessary provisions for drainage, pavement types and thicknesses, sight distance and other construction details shall conform to the current requirements of DelDOT.
- C. When access facilities cannot be provided in accordance with DelDOT's requirements due to limitations particular to the site or where the applicant refuses to comply, the access application for the intended use may be denied.

P.4.2 Access Application and Approval Process - Review of the Plan

DelDOT's Record Plan requirements are outlined in Chapter 3. DelDOT must review and approve the Record Plan and issue the letter of "No Objection to Recordation" prior to granting entrance approval. Submission of a Record Plan and issuance of a letter of "No Objection to Recordation" is required independent of the local land use agency's requirements, except in such individual cases where DelDOT determines that the proposal does not create any transportation impacts and does not trigger entrance/access improvements that would require further review by the Department. DelDOT's letter of "No Objection to Recordation" shall be valid for a period of 5 years, and DelDOT's Entrance/Construction Plan approval shall be valid for a period of 3 years. Once the approval expires, plans will need to be resubmitted for review. No extensions of the approval will be granted.

The requirements for the subdivision street and entrance plan are outlined in Chapter 4. DelDOT (e.g. Traffic, Maintenance Section, Bicycle and Pedestrian Group, and Development Coordination at minimum) will review and comment on the preliminary entrance plan prior to issuance of a letter of "No Objection to Recordation" to the local land use agency.

Once DelDOT has issued its letter of "No Objection to Recordation" for the Record Plan, the final entrance plan can be submitted along with the construction stage fee. DelDOT will then distribute the final plan to the support sections (e.g., Traffic Section, Pavement Management Section) for review and comment.

Upon addressing all comments provided by DelDOT in a comment response letter, the entrance/construction plans can be submitted. When DelDOT notifies the applicant that the final entrance/construction plans meet the requirements outlined in this *Development Coordination Manual*, the applicant shall submit signed and sealed plans for final approval by DelDOT.

P.4.3 Access Application and Approval Process – Entrance/Construction Plan Approval

Following DelDOT's approval of the entrance/construction plan, the applicant's engineer shall receive the approved plan and approval letter from the Subdivision Engineer. The approved entrance/construction plan shall be valid for a period of time in accordance with Section P.4.2.

P.4.4 Access Application and Approval Process - Construction

The applicant shall submit construction documents (application, security, plans) for the work as outlined in Chapter 6. After review and approval of the security and the required construction documents, the Public Works Engineer shall issue the Notice to Proceed (NTP). No work shall be undertaken until the NTP is issued by DelDOT. For commercial sites, a Commercial Entrance Construction Permit (see Appendix E) will be issued in addition to NTP.

Upon completion of the construction to the satisfaction of DelDOT, in accordance with the terms of the Permit, DelDOT shall release the security and issue an entrance permit or begin the acceptance procedure when appropriate.

P.5 REVIEW FEES

Review fees (as applicable) will be assessed for all development proposals at the following stages:

- Traffic Impact Study Review (*pending review and approval of the General Assembly*).
- The Initial Stage.
- The Construction Stage.

The following applies to determining and collecting fees to cover the costs of administering the review of a typical land development proposal.

- A. Traffic Impact Study Review: A Fee of \$5000 is collected when an applicant requests confirmation of the Scope of Work for the study.
- B. Initial Stage: Fees are collected at the time of submission of the record plan for DelDOT's review. The fee associated with this stage offsets a portion of the costs associated with plan review activities before final plan approval by the local land use agency. An "Initial Stage Fee Calculation Form", available online at <http://devcoord.deldot.gov> > Forms, or digital equivalent must be submitted with the fee, which is calculated as follows:
 1. Minor residential subdivision: \$100.
 2. Major State-maintained, residential subdivision: \$400 plus \$10 per lot.
 3. Non-residential development: \$500 plus \$20 per lot or \$500 plus \$20 per 1,000 square feet of gross floor area, whichever is greater.
 4. Mixed use development: calculated for each land use separately and added together.
 5. Residential, Non-State maintained development: \$520
- C. Construction Stage: Fees are collected at the time of submission of the construction plans for DelDOT's review. The fee associated with this review offsets a portion of the costs incurred by

DelDOT for the technical review of subdivision street plans and highway access plans. A “Construction Stage Fee Calculation Form” available online at <http://devcoord.deldot.gov> > Forms, or digital equivalent must be submitted with the fee, which is calculated as follows:

1. Minor residential subdivision: No fee required.
2. Major residential, State-maintained subdivision: 150% of the Initial Stage Fee for a major residential subdivision as identified in Item 2 of the form.
3. Non-residential development: 150% of the Initial Stage Fee for non-residential development as identified in Item 2 of the form.
4. Residential, non-State maintained: 150% of the Initial Stage Fee for non-residential development as identified in Item 2 of the form.

All fees shall be paid using the methods described in the Fee Forms (available at <http://devcoord.deldot.gov>) and in accordance with DelDOT’s current polices. Payments submitted to DelDOT must be accompanied by the appropriate fee calculation form (or the digital equivalent), which can be found on DelDOT’s website under Development Coordination at the following link: <http://devcoord.deldot.gov>.

If DelDOT determines that a check or money order is the necessary form of payment for a particular project related fee, the check or money order shall be payable to the Delaware Department of Transportation. Checks or money orders that are requested by DelDOT must be dated within 90 days of the date submitted, must include the applicable fee forms and shall be mailed to DelDOT at the following address:

Attention: Controller
DelDOT
P.O. Box 778
Dover, DE 19903

A copy of the payment and appropriate fee form or digital equivalent shall be uploaded to DelDOT’s Subdivision Section along with the submittal package using the methods described in the Fee Forms (available at <http://devcoord.deldot.gov>) and in accordance with DelDOT’s current polices.

P.5.1 Review Fees - Fee Administration

DelDOT will not accept a record plan or construction plan submission without a respective fee calculation form and payment. Should any payment received be deemed insufficient, one of the following two options is available at the discretion of DelDOT:

- A. Funds will be accepted and deposited in accordance with DelDOT’s current policies. DelDOT shall notify the applicant that no action on the submission will take place until the balance of required fees is received.
- B. All documents subject to review by the Subdivision Engineer will be returned to the applicant or processed as a declined submission. Documents can be resubmitted with correct fees at a later date.

DelDOT’s Cash Receipt Policy must be followed in order to be in compliance with Title 29 of the Delaware Code, Section 6103 (all receipts in excess of \$100 per day must be deposited daily). The date that payments are received in the Division’s financial management unit in DelDOT’s administration building in Dover will be used and recorded for this purpose.

P.6 Process for Letter of No Contention Requests with 199 ADT or Less

This section defines the process as it relates to existing commercial uses/projects that generate a total of 199 Average Daily Trips (ADT) or less, are seeking an approval to use an existing entrance facility and are proposing to re-use an existing building or make a small expansion/addition to an existing building. To be eligible, the existing business must not have been vacant for three or more years, and the project scope cannot include; significant building expansions, construction or placement of significant new structures, or changes to the character, volume or pattern of site traffic. Project eligibility is at DelDOT's discretion, and requires that the proposed business must either; generate a reduced amount of traffic or generate only a minimal net increase in traffic and must not be required to perform a Traffic Impact Study (TIS) or a Traffic Operational Analysis (TOA). Small changes in use or minimal additional services offered at an existing operational commercial site may fall under this process, at the discretion of the Subdivision Engineer or Public Works Engineer, if they result in minimal changes to site traffic and do not affect traffic flow, (i.e. addition of a mobile food cart, ancillary sales of additional merchandise, outdoor display of inventory/merchandise etc.)

- A. All applicants will be required to complete and submit a [Permit Application](http://devcoord.deldot.gov) (available online at <http://devcoord.deldot.gov> > Forms) with site traffic / trip generation information (average number of daily: vehicles using entrance, customers, employees).
- B. DelDOT will perform a cursory review based on the provided information to determine if the formal plan review process is needed to obtain a Letter of No Objection to Recordation (LONOR) as required (or exempted) in P.4.2 or if the project can be issued a Letter of No Contention (LONC) or Permit for Entrance Construction (PEC) (for minor modifications to the Existing Entrance(s)).
- C. DelDOT will make a determination within 15 business days for a maximum process time of 3 weeks. If more time is needed, DelDOT personnel will notify the Applicant with an expected response date.
- D. DelDOT will check items such as; known safety issues by reviewing a minimum of 3 years of crash history data at the entrance location, whether an auxiliary lane is required, the general layout of the entrance facilities, the surrounding area, infrastructure and if construction is occurring in the area to determine if the formal plan review process and LONOR are required.
 1. Existing Commercial Projects that generate a total site ADT of 100 or less will typically not meet the thresholds to require an auxiliary lane, so analysis is not necessary.
- E. If a lack of required right-of-way width is the only deficiency of the existing site along a Minor Collector or greater roadway functional classification (i.e. Major Collector, Minor Arterial, Principal Arterial or Freeway/Expressways) then the required right-of-way dedication must be confirmed to exist or be provided via a deed or recorded plat.
- F. If a Capital Transportation Program (CTP) Project is occurring contiguous to the parcel/project then the formal plan review process and LONOR may be required.
- G. If significant construction and/or improvements are needed to support the application, then the formal DelDOT approval process (LONOR and Entrance Plan Approvals (EPA)) are required.

Waivers for any of the above conditions shall require written approval from the Director of Planning.

P.7 Process for Letter of No Contention Requests with 200 ADT or More With Reduced Site ADT (Total) or Minimal Increased Site ADT (Net)

This section defines the process as it relates to existing commercial uses/projects that generate a total of 200 Average Daily Trips (ADT) or more, are seeking an approval to use an existing entrance facility and are proposing to re-use an existing building or make a small expansion/addition to an existing building. To be eligible, the existing business must not have been vacant for three or more years, and the project scope cannot include; significant building expansions, construction or placement of significant new structures, or changes to the character, volume or pattern of site traffic. Project eligibility is at DelDOT's discretion, and requires that the proposed business must either; generate a reduced amount of traffic or generate only a minimal net increase in traffic and must not be required to perform a Traffic Impact Study (TIS) or a Traffic Operational Analysis (TOA). Small changes in use or minimal additional services offered at an existing operational commercial site may fall under this process, at the discretion of the Subdivision Engineer or Public Works Engineer, if they result in minimal changes to site traffic and do not affect traffic flow, (i.e. addition of a mobile food cart, ancillary sales of additional merchandise, outdoor display of inventory/merchandise etc.)

- A. All applicants will be required to complete and submit a [Permit Application](http://devcoord.deldot.gov) (available online at <http://devcoord.deldot.gov> > Forms) with site traffic / trip generation information (average number of daily: vehicles using entrance, customers, employees).
- B. DelDOT will perform a cursory review based on the provided information to determine if the formal plan review process is needed to obtain a Letter of No Objection to Recordation (LONOR) as required (or exempted) in P.4.2 or if the project can be issued a Letter of No Contention (LONC) or Permit for Entrance Construction (PEC) (for minor modifications to the Existing Entrance(s)).
- C. DelDOT will make a determination within 15 business days for a maximum process time of 3 weeks. If more time is needed, DelDOT personnel will notify the Applicant with an expected response date.
- D. DelDOT will check items such as; known safety issues (by reviewing a minimum of 3 years of crash history data at the entrance location), whether an auxiliary lane is required, the general layout of the entrance facilities, the surrounding area, infrastructure and if construction is occurring in the area to determine if the formal plan review process and LONOR are required.
- E. If a lack of proper right-of-way width is the only deficiency of the existing facility along a Minor Collector or greater roadway functional classification (i.e. Major Collector, Minor Arterial, Principal Arterial or Freeway/Expressways) then proper right-of-way dedication must be confirmed to exist or be provided via a deed or recorded plat.
- F. If a Capital Transportation Program (CTP) Project is occurring contiguous to the parcel/project then the formal plan review process and LONOR may be required.
- G. If a project is determined to be a candidate for the LONC/PEC process, generates a total site ADT between 200 and 1,999 and is located within Investment Level I and Investment Level II Areas as defined by the State Strategies for Policies and Spending maps, the applicant will be required to pay the Shared Use Path (SUP)/Sidewalk fee in lieu of construction. If the applicant chooses to construct the pedestrian facilities they will have to follow the formal DelDOT approval process (LONOR and Entrance Plan Approvals (EPA)).
- H. Projects that generate a total site ADT of 2,000 or greater (regardless of Investment Level Area designation) must provide proof of existing pedestrian facilities or they will be required to follow the

formal DeIDOT approval process (LONOR and EPA) and construct any identified pedestrian facilities/upgrades. Only at the Subdivision Engineer's concurrence, (based on physical impossibility or extenuating circumstance), will such projects be permitted to pay the SUP/Sidewalk fee in lieu of construction and follow the LONC process.

- I. If significant construction and/or improvements are needed to support the application, then the formal DeIDOT approval process (LONOR and EPA) are required.

Waivers for any of the above conditions shall require written approval from the Director of Planning.

P.8 DEFINITIONS

AASHTO – American Association of State Highway and Transportation Officials.

Acceleration Lane – A speed-change lane, including tapered areas, for the purpose of enabling a vehicle entering a roadway to increase its speed to a rate at which it can more safely merge with through traffic.

Access – Any point of ingress or egress such as a driveway, street, road, or highway that connects to the general street system.

Accessway – A connection other than a sidewalk or walkway that provides bicycle and pedestrian passage between streets, between a street and a destination, or connecting to an existing or proposed trail.

Alley – A privately maintained street which provides secondary access typically along the rear lot line of adjoining properties. Alleys are intended to accommodate access to parcels and service delivery, such as trash collection and utility service.

Angle of Intersection – The angle that is formed by the intersecting streets' centerlines. Where the angle of intersection departs significantly (more than approximately 20 degrees) from right angles, the intersection is referred to as a *skewed intersection*.

Applicant – An individual or firm seeking approval from DelDOT.

Applicant's Engineer – An engineer licensed in Delaware and retained by the applicant to perform engineering services associated with their expertise.

Approach Leg – The intersection leg used by traffic approaching an intersection.

Approval (DelDOT) – General conformity with current DelDOT regulations, standard specifications, and standard details.

Approved Study Area – The study area approved for analysis by DelDOT in the Traffic Impact Study or Traffic Operational Analysis Scope of Work Letter.

Area-Wide Study – A study performed, generally in lieu of an individual TIS, for a designated area to determine the area-wide impacts of proposed developments within the specified study area that encompasses more than one possible development project.

Auxiliary Lane – A lane striped for use as an acceleration lane, deceleration lane, right-turn lane, or left-turn lane, but not for through traffic use.

Average Daily Traffic (ADT) – The total volume of two-way traffic during a given time period in whole days greater than one day and less than one year, divided by the number of days in that time period.

Boulevard Street – A street which typically functions as a collector street which involves a landscaped median of varying width which divides opposing travel lanes by green space.

Bypass Lane – A paved area to permit through traffic to bypass left-turning vehicles stopped on the travel lane.

Capacity – The number of vehicles that can traverse a point or section of a lane or roadway during a set time period under prevailing roadway, traffic, and control conditions.

Commercial Entrance – An entrance to or exit from a non-residential site or non-State maintained street.

Committed Developments – Developments that are recorded or largely approved by the local jurisdiction but which have not yet been constructed.

Community Facilities – Public destinations of significance to a community including, but not limited to, schools, libraries, parks, senior and recreational centers, as well as other neighborhood facilities, such as pools and tot lots.

Connectivity – A measure of how efficiently a transportation network provides access between destinations. It is measured using a Connectivity Ratio.

Connectivity Ratio - The ratio of links (street segments) to nodes (intersections and cul-de-sac heads). It is determined by dividing the number of street segments (street sections between intersections and/or cul-de-sac ends) by the number of intersections and cul-de-sac ends. For purposes of this calculation, proposed street intersections with existing roads and stub roads for future access to vacant developable lands shall count as 0.5 intersections.

Connector Streets – A continuous suburban development street or combination of streets beginning and ending on the state-numbered road system, having a high volume of through traffic.

Construction Entrance – A temporary access for the ingress and egress of construction vehicles.

Corner Clearance – The distance along the edge of the traveled way from the closest edge of pavement of the intersecting roadway to the closest edge of pavement of the nearest access connection.

Corridor Capacity Preservation Program (CCPP) – A Program established in accordance with Title 17, Section 145 of the Delaware Code to reduce the need for expansion, and maintain the regional importance, of four designated corridors (SR 1 from Dover AFB south to Five Points; US 13 from Route 10 to MD state line; US113 from southern limits of Milford to MD state line; Route 48 from Hercules Road to Route 41). http://www.deldot.gov/information/pubs_forms/manuals/corr_cap/index.shtml

Crossover – An opening in a median on a divided highway provided for crossing and turning traffic.

Cul-de-Sac Street – A subdivision street with a single point of access which terminates at a circular, paved turn-around. Also referred to as a “dead-end street”.

Deceleration Lane – A speed change lane, including tapered areas, for the purpose of enabling a vehicle that is exiting a roadway to leave the travel lanes and slow to a safe exit.

Delaware MUTCD – Delaware Manual on Uniform Traffic Control Devices.

DelDOT – The Delaware Department of Transportation.

Departure Leg – The intersection leg used by traffic leaving an intersection.

Development Coordination Section – The unit within DelDOT’s Division of Planning charged with the responsibility for reviewing subdivision and site plans, traffic impact studies, CCPP and development proposals.

Divided Highway – A highway with a median designed to separate traffic moving in opposite directions.

Drainage Structure – An inlet box, pipe, box culvert, or other similar conduit installed for the purpose of draining the flow of surface water.

Driveway – An access that is not a public street, road, or highway.

Field Entrance – A limited use driveway for the occasional/infrequent use by equipment used for the purpose of cultivating, planting, and harvesting or maintenance of agricultural land.

Frontage – The length along the highway right-of-way of a single property tract.

Functional Area (Intersection) – The area of an intersection necessary to provide all appropriate auxiliary lanes. The functional boundary includes more than just the physical area of the intersection.

Functional Classification – A classification system that defines the purposes and hierarchy of all streets and highways within a network (classification system maps can be found on DelDOT's website).

FWOP (Future Without Project) – In a TIS, denotes the anticipated future traffic condition at a location without the addition of traffic generated by the proposed project.

FWP (Future With Project) – In a TIS, denotes the anticipated future traffic condition at a location after the addition of traffic generated by the proposed project.

Gradient or Grade – The rate or percent change in slope, either ascending or descending from or along the highway.

Gross Floor Area – The sum of the total horizontal areas of every floor of every building on a lot. The measurement of gross floor area shall be computed by applying the following criteria:

- A. The horizontal square footage is measured from the face of all exterior walls.
- B. Enclosed storage, mechanical areas, mezzanines and similar structures shall be included as gross floor area wherever at least seven feet are provided between the finished floor and the ceiling.

No deduction shall apply for horizontal areas void of actual floor space, for example, elevator shafts and stairwells.

High Density Development – Development that will result in a minimum of 50 employees per acre, or 9 residences per acre.

Higher Level Roads – Streets classified as one of the following: major collectors, minor and major arterials, freeways, and interstates.

Higher Order Streets – A term used as a relevant comparison between subdivision streets to refer to all streets which are classified above the street being described.

Highway – A general term for denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Industrial Street – A Street in an area for manufacturing or industrial use as defined by the local land use agency’s zoning code which is located in an unincorporated community and meets the following requirements:

- A. The aggregate internal street system contains a minimum of 500 linear feet of road surfacing.
- B. The internal street system connects to existing or proposed State-maintained roadways.

Infrastructure – In transportation planning, all the relevant elements of the environment in which a transportation system operates, including, but not limited to, bridges, drainage, lighting, pathways, pavement, railways, roadways, sidewalks, traffic control and monitoring equipment and systems, transit facilities, transit systems, utility installations and utility systems.

Interchange – A facility that grade separates intersecting roadways and provides directional ramps for access movements between the roadways. The structure and the ramps are considered part of the interchange.

Interconnectivity – Physical connections of roadways and sidewalks between two or more independent developments or residential subdivisions.

Intersection – For the purposes of this manual, the intersection encompasses not only the area of pavement jointly used by the intersecting streets, but also those segments of the intersecting streets affected by the design. Thus, those segments of streets adjacent to the intersection for which the cross-section or grade has been modified from its typical design are considered part of the intersection.

Intersection Legs - Segments of roadway connecting to the intersection.

Intra-connectivity – Physical connections of streets and sidewalks within a single development or residential subdivision.

Lane – The portion of a roadway for the movement of a single line of vehicles which does not include the gutter or shoulder of the roadway.

Level of Service (LOS) – A measure of traffic flow and congestion. As defined in the Highway Capacity Manual, it is a qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. LOS is measured on a scale from “A” to “F”.

Limited Access Highway – Highways, streets or roadways to which owners or occupants of abutting lands and other persons have no legal right of access to or from the same, except at such points and in such manner as may be determined by the public authority having jurisdiction over such highway, street or roadway.

Linkages – Roadways, sidewalks, access-ways and walkways that connect between adjacent development parcels and subdivisions.

Local Land Use Agency – The County or municipality that is responsible for reviewing and approving the applicant’s subdivision or land development plan.

Local Road – All roadways under DelDOT jurisdiction that provide direct access to land and links to the higher classification routes. Local roads have the lowest volumes of traffic and short trip lengths. These do not include subdivision streets.

Local Roadway Network – Those roadways comprising all roadway classifications designated as major collector or lower level (including minor collector, commercial collector, commercial access street, subdivision street, loop street, boulevard street, cul-de-sac, service road and alley).

Local Transportation Circulation Plan – A plan providing proposed locations for future roadways designated as minor collector or higher level, within a particular geographic area, that has been approved by DelDOT and the County or local jurisdiction to which it pertains.

Loop Street – A subdivision street with one or two points of access on a collector street or other higher order street.

Lot – A bounded area of land portrayed on a recorded or unrecorded plan, which usually also shows nearby streets and other physical features, as well as other lots and parcels. The lots delimited by plans are a basis of separate legally established parcels, usually for houses or other buildings. The resulting parcels may contain more than one lot, especially where lots are small. Occasionally, lots are delimited to transfer land from one parcel to another. Since parcels and lots are related, the terms are often used interchangeably.

Major Access – The point at which a privately maintained road, street, driveway or other entrance, carrying more than 500 vehicles trips per day or more than 50 vehicle trips for any hour, intersects a publicly maintained road or street.

Major Residential Subdivision – A subdivision of six or more residential lots.

Major Street – Typically, the intersecting street with greater traffic volume, larger cross-section, and higher functional class.

Median – The portion of a divided highway separating the traveled ways for traffic in opposing directions. A median may be traversable or non-traversable.

Median Left-Turn Lane – A speed change lane within the median to accommodate left-turning vehicles.

Minor Residential Subdivision – A subdivision of five or fewer residential lots.

Minor Street – Typically, the intersecting street likely to have less traffic volume, smaller cross-section and lower functional classification than the major street.

Mixed Use Development – Development that consists of two or more land uses within the same building lot or area.

Multi-modal Access – Ability of pedestrians, bicyclists and transit vehicles to enter, exit or use a transportation facility.

Nationally Accepted Standards (NAS) - includes references to guidelines and design standards that have been researched, compiled, published and maintained through the efforts of nationally recognized professional organizations and publications, which typically encompass the efforts of societies or associations within the fields of engineering or civil design.

Natural Area or Feature – May include steep slopes, upland natural areas, wetlands, or other bodies of water.

Neighborhood Commercial District – Commercial districts that serve to provide goods and services to the surrounding neighborhoods, generally consisting of older buildings with unique architectural style.

Net Dwelling Unit Density – The computation of dwelling unit density that excludes land area dedicated to the public use or for use as open space.

Off-site Improvements – Road improvements for the benefit of safety and/or capacity, that are generally beyond the limits of the site entrance and frontage. Such improvements do not include auxiliary lanes that serve the site entrance, but may include roadway widening along the frontage of the site.

Parcel – A uniquely described piece of land whose boundaries are established by legal instrument such as recorded deed, court order or a recorded plot which is recognized as a separate legal entity for the purposes of transfer of title.

PCPHGPL – Passenger cars per hour of green time per lane.

Pedestrian Refuge Areas – Areas protected by curb, landscaping or some other similar device so as to provide shelter for pedestrians traveling across vehicle travel lanes.

Physical Constraint – Limitation on development or access created by topographical features on the development parcel, or adjacent parcels, e.g., spacing of existing adjoining streets, freeways, railroads or other physical structures.

Potentially Developable or Redevelopable Land – Land that is not restricted from development by virtue of factors such as farm land preservation, wetlands or other environmental constraints, parkland, etc.

Pre-Submittal Meeting – A meeting held with DelDOT and representatives of the developer prior to plan submittal to discuss proposed development.

Public Works Engineer – The DelDOT individual assigned to issue permits and supervise construction.

Record Plan (Approved) –

- A. A complete plan which defines property lines, proposed street and other improvements, and easements.
- B. A plan of private streets to be dedicated to public use.

Residential Access – An entrance serving a private, single-family, residential unit from an abutting State-maintained roadway.

Residential Site – A private, single-family, residential lot.

Right of Way – A general term denoting land, property, or interest therein; usually in a strip, acquired for, or devoted to, transportation purposes.

Roadway – The portion of a highway, including the travel-ways and shoulders.

Roundabout – A circular intersection with yield-control at entry, permitting a vehicle on the circulatory roadway to proceed, and with deflection of the approaching vehicle counter-clockwise around a central island.

Scoping Meeting – A meeting requested by an applicant to discuss the requirements and study area of a Traffic Impact Study or Traffic Operational Analysis.

Service Road – A subdivision street adjacent and generally parallel to a limited access arterial roadway or highway intended to provide access to properties adjoining or that are in close proximity to the limited access arterial roadway or highway.

Shared Access – A single connection serving two or more adjoining lots or parcels.

Shared-Use Path – A bikeway physically separated from motor vehicle traffic by an open space or barrier and either within a highway right-of-way or easement, or within an independent right-of-way. Shared-use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Most shared use paths are designed for two-way travel.

Shoulder Area – The portion of roadway adjacent to the travel-way for accommodating stopped vehicles, bicycles and pedestrians where there is no sidewalk, and providing lateral support to the base and wearing courses.

Sidewalks – Paved pedestrian pathways installed along roadways and streets, or within easements on private property.

Sight Distance – The distance visible to the driver of a passenger vehicle measured along the normal travel path of a roadway from one point to another point at a specified height above the roadway.

Site Plan – The plan sheet(s) signed by a licensed engineer or surveyor that depict the existing and proposed condition of a development site to scale, showing all pertinent information required by DelDOT and the local land use authority to receive the necessary planning or zoning board approvals.

Skewed Intersection – An intersection where the angle of intersection departs significantly (more than approximately 20 degrees) from right angles.

State-maintained Roadway – The entire width between the right-of-way of a publicly maintained roadway when any part thereof is open to the use of the public for purposes of multi-modal travel or the entire width of every roadway declared to be a public highway by any law of this state. It includes bridges, culverts, sluices, drains, ditches, waterways, embankments, walls, trees, shrubs, fences, etc.

Stopping Sight Distance (SSD) – The distance required by a driver of a vehicle, traveling at a given speed, to bring the vehicle to a stop after an object on the roadway becomes visible. It includes the distance traveled during driver perception and reaction times, and the vehicle braking distance.

Storage Length – Additional lane length added to an auxiliary lane, to store the maximum number of vehicles anticipated to accumulate in the lane, during a peak volume period. It prevents stored vehicles from interfering with the function of the deceleration lane or the through travel lanes.

Strip Development – See Minor Residential Subdivision.

Stub Street – Temporary dead end street for future connectivity with the adjacent property.

Subdivision –

- A. The division or re-division of a lot, or a parcel of land, by any means (including a plan or a description of metes and bounds) into two or more lots, tracts, parcels, or other divisions of land for the purpose of, whether immediate or future, lease, transfer of ownership, or building development.
- B. The division or allocation of land for the opening, widening, or extension of any street, or other public facilities.

Subdivision Manual – Development Coordination Manual.

Subdivision Street – A street, within a community or industrial park, categorized into three levels as follows:

- A. **Type I** – Subdivision streets with less than 500 ADT.
- B. **Type II** – Subdivision streets with between 501 to 3000 ADT.
- C. **Type III** – Subdivision streets with more than 3000 ADT.

Suburban Community – Any unincorporated community within the state of Delaware:

- A. Containing at least 5 separate and distinct property owners; provided, that each parcel of land, condominium or other individually owned unit of a multiunit building shall be deemed to have no more than 1 owner for the purposes of this subchapter;
- B. That are individually owned parcels of land whose streets in the aggregate equal a minimum of 500 linear feet of road surface or condominiums or other types of individually owned units of multiunit buildings whose streets in the aggregate equal a minimum of 300 linear feet of road surface; and
- C. Which, in the opinion of the local governing authority and DelDOT, is so situated as to form a unit which is reasonably and economically capable of being improved by the laying, repairing or completion of streets, signs, sidewalks and installation of surface drainage and storm sewers.

In addition to the above, such unincorporated communities within this State must be:

- D. Located on a highway which is part of the state highway system or will be connected to the state highway system when the projects provided for are complete and which street shall be either maintained by the DelDOT upon completion pursuant to the requirements of Title 17 of the Delaware Code and DelDOT's *Development Coordination Manual*; or
- E. Built pursuant to county rules and regulations requiring design and building standards and a means or mechanism to provide for the perpetual maintenance of such suburban community streets as provided herein.

Traffic Divider – A median type formation used to separate entering and exiting traffic.

Traffic Generator – An establishment or facility which produces and attracts traffic that did not previously exist and which causes that traffic to leave and enter the adjacent roadway. Traffic generation shall be expressed in terms of Average Daily Traffic (ADT). Each vehicle using the facility is to be counted twice (in and out).

Traffic Impact Study (TIS) – A study conducted during the development approval process to determine the impacts that traffic generated by the proposed development will have on the surrounding street network and the improvements needed to the transportation system in order to mitigate those impacts.

Traffic Island – A defined area between traffic lanes for control of vehicle movements or for pedestrian refuge.

Traffic Operational Analysis (TOA) – An evaluation, or series of evaluations, conducted during the review of subdivision, land development and entrance plans primarily intended to determine site entrance location and movements to be allowed at the site entrance. These evaluations may include: Queuing Analysis, Highway Capacity Manual Analysis, and Crash Analysis.

Transportation Improvement District (TID) – A geographic area defined for the purpose of securing required improvements to transportation facilities in that area.

Travel Demand Management (TDM) – A strategy, or a set of strategies, proposed by an applicant to mitigate the traffic impacts of a project by reducing the number of single occupied vehicles traveling to the site during the peak hour. TDM strategies can include such things as car and van pools, flex and staggered employee hours, transit or shuttle service.

Travel Demand Model – A set of computer based tools comprising of software, existing and projected land uses, demographics, roadway and street data commonly used by Departments of Transportation and Metropolitan Planning Organizations to estimate future travel patterns, analyze potential improvements, and support Federally-required travel-related air quality studies. As referred to in this regulation, the term specifically refers to the ‘Peninsula Travel Model’ operated and maintained by DelDOT Planning.

Turning Roadway - A short segment of roadway for a right turn, delineated by channelizing islands. Turning roadways are used where right-turn volumes are very high, or where skewed intersections would otherwise create a very large pavement area.

Walkways – Pathways within commercial development sites that can range in size from a minimum 5 foot width to accommodate pedestrians, to a maximum 12 foot width to accommodate pedestrians and bicyclists.

P.9 REFERENCES AND SOURCE MATERIALS

This Manual includes references to guidelines and design standards that have been researched, compiled, published and maintained through the efforts of nationally recognized professional organizations and publications. Any direct references to or insertion of specific portions of such guidelines or standards may generally be considered as minimum criteria or standards within the authority of this Manual. Any general references to such guidelines or standards in their entirety may generally be considered as guidance materials, (to be considered during design and construction), within the context of this Manual. The Department may exercise engineering judgement in some cases and rely on standards and criteria, (for transportation elements, streets and highways under its jurisdiction), that differ from the minimum criteria presented within this Manual or within the external guidelines and design standards referenced by this Manual.

This Manual is intended for use by qualified engineering practitioners, and provides access to relevant standards and criteria (including various numerical design values and use conditions). The design, construction, and maintenance references contained in this Manual recognize many variable and often complex process considerations. The engineering design process, and associated use of this Manual, incorporates aspects of engineering judgment, design principles, science, and recognized standards towards matters involving transportation operations and roadway infrastructure. Department standards, criteria, and manuals should be taken into consideration when planning for the design, drafting and submission of projects that abut or have an impact on the local transportation system, state highway system or the national highway system. Users of this Manual are cautioned that the strict application of exact numerical values, conditions or use information taken from portions of the text may not be appropriate for all circumstances. Individual references to design values or concepts should not be used out of context or without supporting engineering judgment.

The design professional is encouraged to evaluate individual references respective of their context and placement within this Manual and should act upon them as either: basic design guidance (to the extent that some references within this Manual are general and suggestive in the execution of sound engineering judgement), or specific design criteria (to the extent that some references within this Manual are specific to a discrete design element or topic and prescriptive in the execution of sound engineering judgement).

P.9.1 References and Source Materials – National

The following guidelines and design standards (which are made available in their entirety through nationally recognized professional organizations and publications) are incorporated by reference, except as modified within this Manual. In the event that conflicts may exist between incorporated references and this Manual, the *Development Coordination Manual* controls.

AASHTO's "*Guide for the Development of Bicycle Facilities*", 4th Edition (2012)

AASHTO's "*A Policy on Geometric Design of Highways and Streets*", 6th Edition (2011), commonly referred to as "**the Green Book**"

AASHTO's "*LRFD (Load and Resistance Factor Design) Bridge Design Specifications*", 6th Edition (with 2013 Interim Revisions)

AASHTO's "*Roadside Design Guide*", 4th Edition (2011)

AASHTO's "*Manual for Assessing Safety Hardware (MASH)*", 1st Edition (2009)

American Concrete Pipe Association (ACPA)'s "*Concrete Pipe And Box Culvert Installation Manual*", (2007)

ACPA's "*Concrete Pipe Design Manual*", (2009)

Institute of Transportation Engineers (ITE)'s "*Trip Generation Manual*", 9th Edition (2012)

McTrans' "*Highway Capacity Software (HCS)*", (2010)

Transportation Research Board (TRB)'s "*Highway Capacity Manual (HCM)*" 5th edition (2010)

TRB's "*NCHRP (National Cooperative Highway Research Program) Report 350 - Recommended Procedures for the Safety Performance Evaluation of Highway Features*", (1993)

P.9.2 References and Source Materials – State of Delaware

The following guidelines, design standards and/or independent manuals (which are made available in their entirety through their authoring Agencies and/or Departments of the State of Delaware) are incorporated by reference, except as modified within this Manual. In the event that conflicts may exist between incorporated references and this Manual, the *Development Coordination Manual* controls.

DelDOT's "*Pedestrian Accessibility Standards for Facilities in the Public Right-of-way*" (2015 as amended or current version)

DelDOT's "*Road Design Manual*" (2011 as amended or current version)

DelDOT's "*Standard Construction Details*" (2014 as amended or current version)

DelDOT's "*Standard Specifications for Road and Bridge Construction*" (2001 as amended or current version)

DelDOT's "*Bridge Design Manual*" (2015 as amended or current version)

DelDOT's "*Traffic Design Manual*" (2015 as amended or current version)

DelDOT's "*Traffic Calming Manual*" (2012 as amended or current version)

DelDOT's "*Utility Manual*" (2007 as amended or current version)

P.9.3 References and Source Materials – Regulations

Regulations that are adopted through the Federal or State of Delaware Register of Regulations shall be taken into consideration in each aspect of planning, design or construction, where such Regulations may have independent jurisdiction over applicable elements irrespective of any consideration in this Manual. The omission of explicit references to any such applicable State or Federal Regulation from this Manual

shall not have the effect of sheltering the design professional from the separate and/or additional responsibilities that such Regulations may create. In the event that conflicts may exist between State or Federal Regulation and this Manual, the more restrictive criteria should be used, while meeting the intent of the controlling Regulation. All Regulations shall be considered in their entirety, inclusive of any amendments, in their most current version.

The following is not an exhaustive list, but includes some of the more commonly referenced Regulations:

Delaware version of the Federal Manual on Uniform Traffic Control Devices (DE-MUTCD)
(2011 as amended or current version)

Delaware Code, Section 2308: Development Related Improvements Requiring New Rights-of-way
(2006)

U.S. DOT Federal Transit Administration (ADA) American with Disabilities Act (2006 - Federal Register, Vol. 71, No. 209 as amended or current version)

U.S. DOJ American with Disabilities Act (ADA) Standards for Accessible Design (2010 - Federal Register Vol. 75, No.178 as amended or current version)