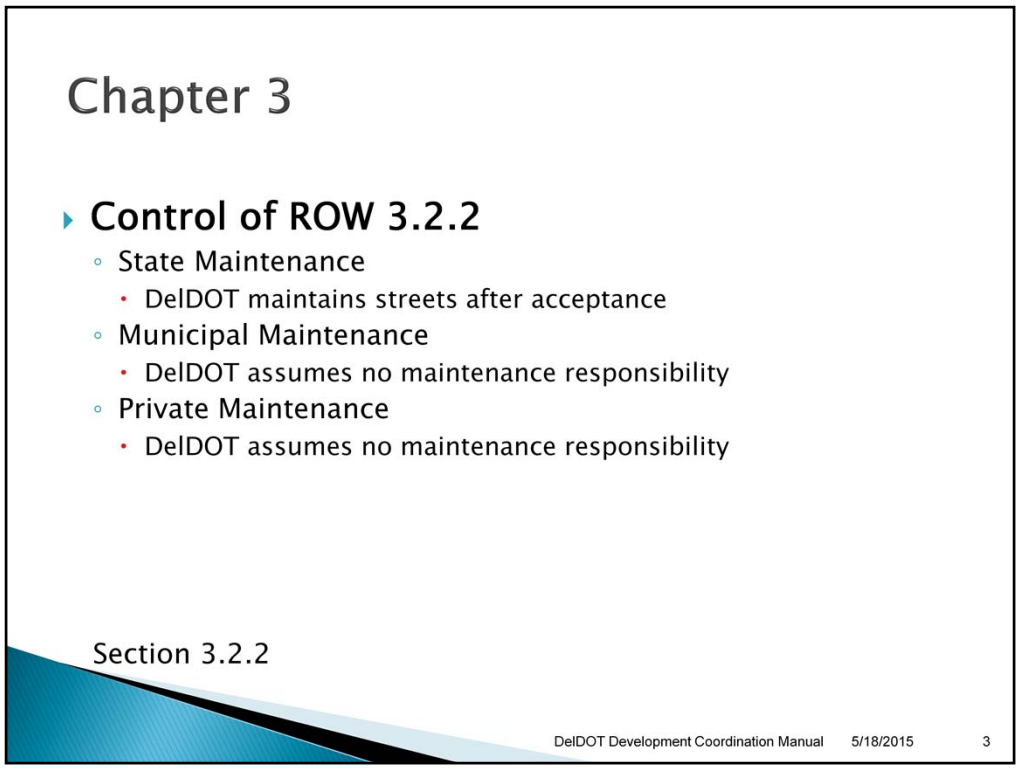
DelDOT
DC Manual

Chapter 3
Record Plan Design

May 18, 2015

Chapter 3

- **Purpose:**
- Specific standards and design guidance needed to assure adequate Record Plan design in the development of site transportation facilities;
- The elements that need to be provided to DelDOT on the Record Plan so that DelDOT can provide the applicable local land use agency with a letter of "No Objection to Recordation" (LONOR).



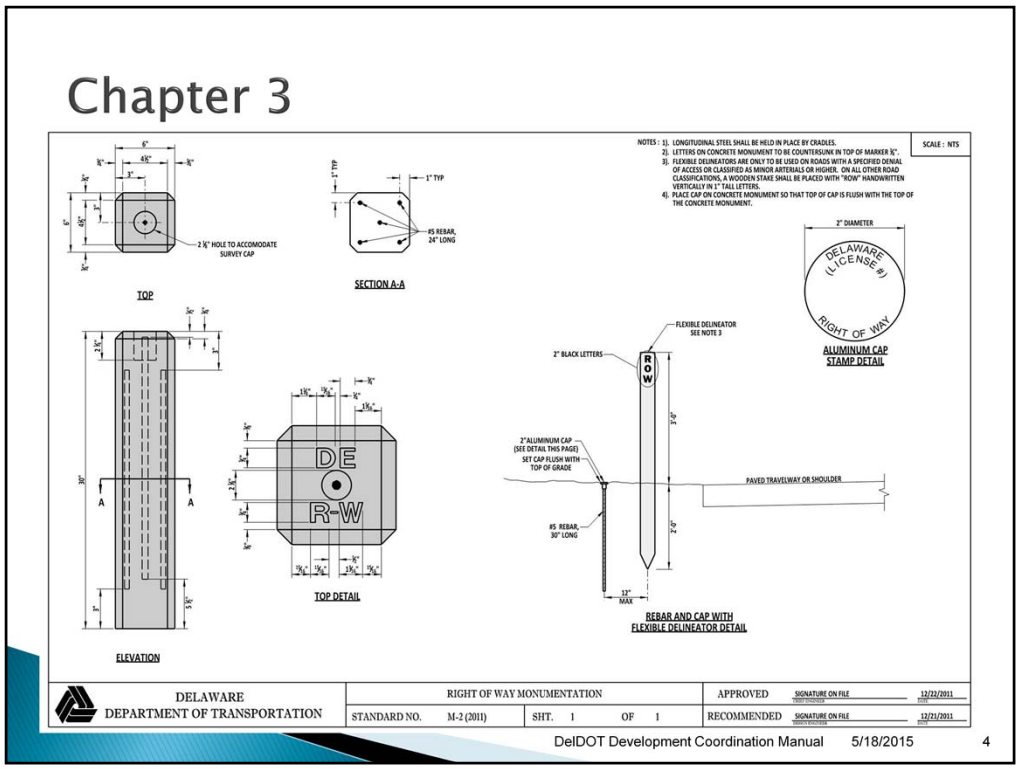
A general note should be placed on the plan outlining maintenance responsibility.

State – R/W dedicated to public use and built to state standards.

DelDOT assumes no maintenance responsibilities within the dedicated street right-of-way until the streets have been accepted by DelDOT.

Muni- R/W dedicated to public use and built to local municipal standards

Private – private r/w and built to local land use standards, typically Sussex County standards



From Standard construction details M-2

Monuments and pins set by a DE licensed PLS

Subdivision streets - Right-of-way monuments shall be placed along the right-of-way lines, at a minimum on one side of the street at every change in horizontal alignment

Frontage streets - Right-of-way markers shall be set and/or placed along the frontage road right-of-way at property corners and at each change in right-of-way alignment

At acceptance, there should be a monument schedule and a plan sheet showing the locations of the monuments that were installed.

Chapter 3

Figure 3.2.1-a Minimum Right-of-Way Width

Roadway Type	Minimum Right-of-Way Width
Subdivision Street – Type I (< 500 ADT)*	50 feet
Subdivision Street – Type II (501 – 3000 ADT)* Type III (> 3000 ADT)*	60 feet
Industrial Street (plus 15 foot wide storm drainage easement on both sides)	60 feet
Local Road	60 feet
Collector (Major and Minor)	80 feet

**Provide an additional ten-foot drainage easement on both sides for subdivision streets with open drainage.*

Note: *At intersection streets the right-of-way shall have a minimum radius of 25 feet.*

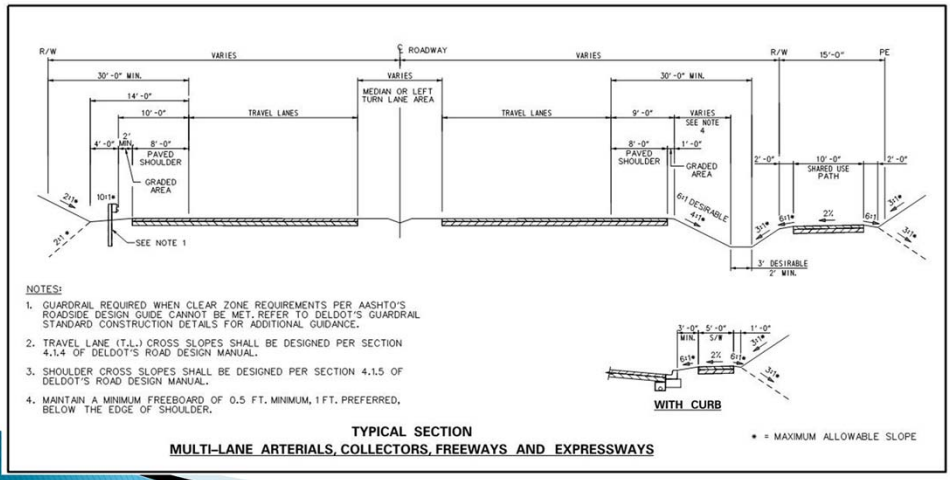
The subdivision of property adjacent to a State-maintained roadway is subject to a dedication of right-of-way.

This width provides for future roadway improvements to accommodate the forecasted traffic based on the Record Plan and the local land use agency's comprehensive plan.

Dedication is based on the functional classification of the road which is found on our website under publications and then maps

Chapter 3

- **ROW – Fig. 3.2.5-d**
  - Minimum Standards for Total Roadway ROW



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30 feet of right-of-way from outermost edge of the through lane(s)

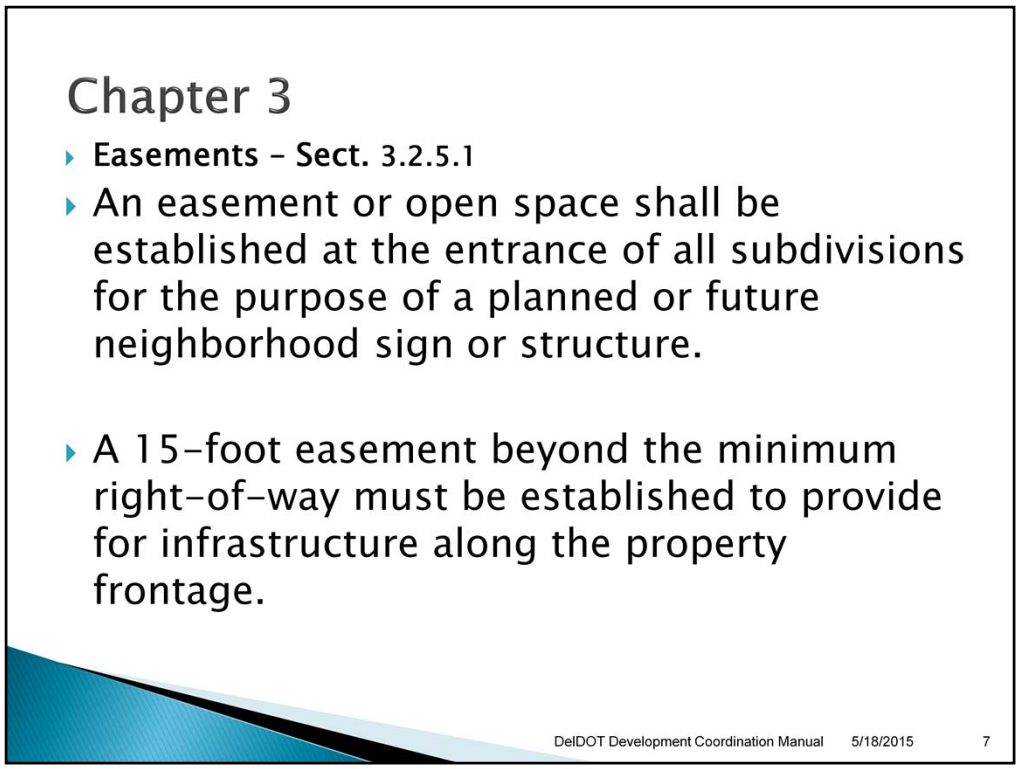
8’ shoulder, 1’ graded area, 18’ for the foreslope and ditch which is 3’ deep at 6:1 slope, and 3’ flat-bottomed ditch = 30’

Need for guardrail is guided by design standards for sideslopes or obstructions. See Road Design Manual and Roadside Design Guide for more details.

Guardrail side has 8’ shoulder, then 2’ offset to guardrail, and then 4’ from face to grade break point.

With curb, 5’ separation from face of curb, 1’ graded area on backside before grading to original ground.

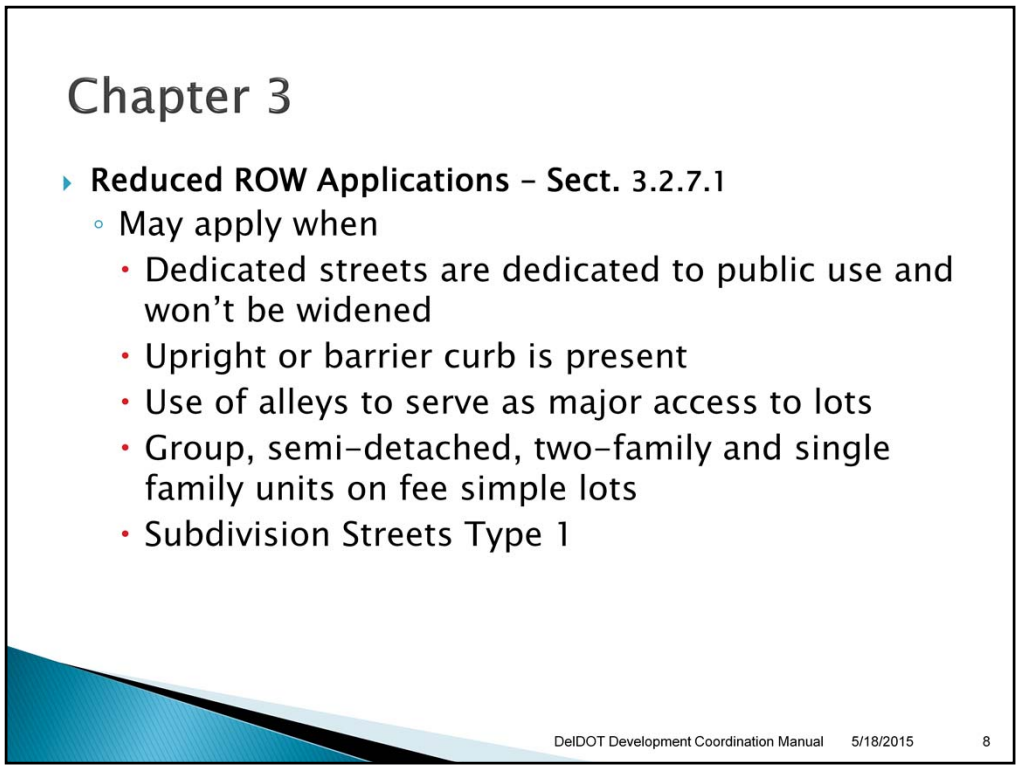
SUP 2’ graded area on each side of path at 6:1



Need to make sure there is a location available for the future even if a sign is not going to be installed now.

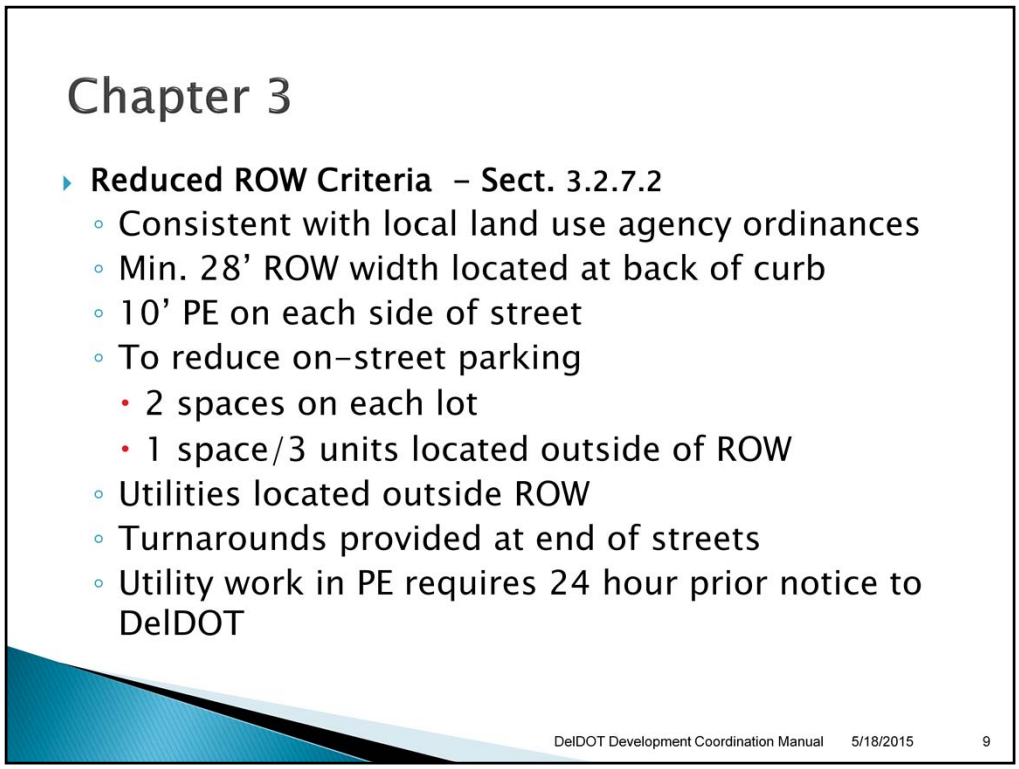
It is a problem if there are corner lots and the property owner does not want the sign on their property.

15' PE is needed for more than just a SUP. Can be utilities, clear zone, sidewalk, or drainage.



Upon request, DelDOT shall consider a reduction in the required right-of-way for subdivision streets

Reduction in right-of-way is intended to permit greater flexibility in community design(TND) while retaining adequate safeguards to provide the traveling public with sufficient travel way for anticipated traffic.



28' ROW width consists of 24' paved road with 2' curb and gutter on each side

10-foot permanent easement shall be provided along each side of all streets to allow DelDOT personnel to undertake routine and emergency maintenance work and shall also be available for utility and construction purposes, and permanent placement of signs and traffic control devices.

Chapter 3

- **Minor Residential Subdivisions Requirements**
  - Provide proper driveway spacing

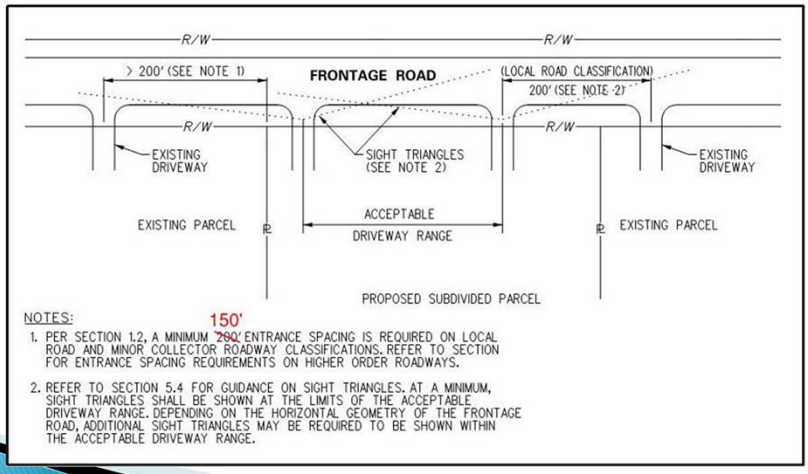


Figure 3.3.2-a

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Minor - seeking to subdivide property into five or less lots

Error in the spacing as shown here, should be 150’ for a local road, as specified in Chapter 1.

Plans submitted electronically with initial stage fee, form, and checklist. Appendices C & D

Greater flexibility in entrance location for minors

Detail adjacent parcels entrances to determine constraints, then can locate within “Acceptable driveway range”

Sight triangles must be calculated and shown for range of locations

Eliminates the need to get reapproved. As long as within “Acceptable driveway range”, no need for revisions. This should help the districts and individual property owners to locate the driveway due to revisions of the house layout on the lot.

Chapter 3

- **Minor Residential Subdivisions Requirements**
  - Provide note

    If the residual lands of the applicant are ever developed into a major subdivision, then the access to the minor subdivision parcels may be required to be from an internal subdivision street.

  - Clearly show entrance location on plan

Section 3.3.2

Chapter 3

- **Traffic Generation Diagram**

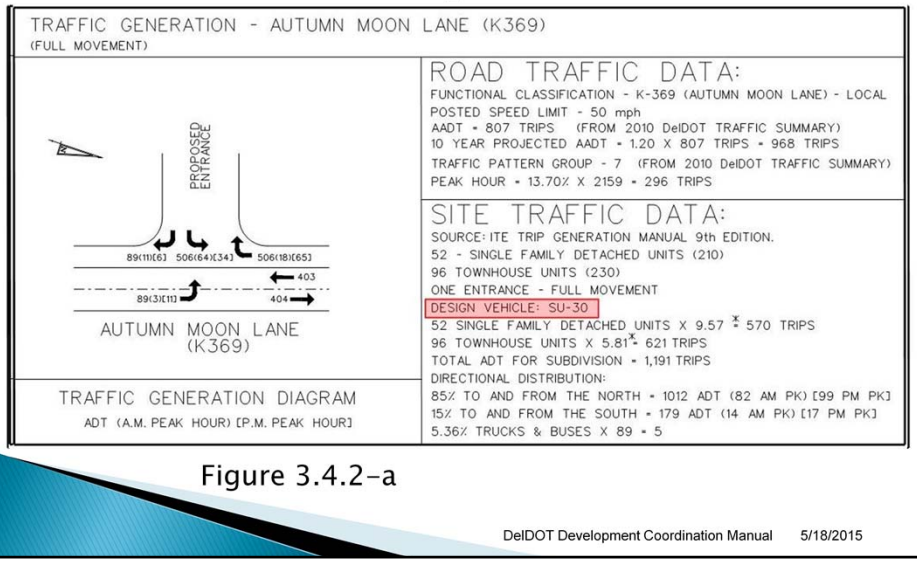
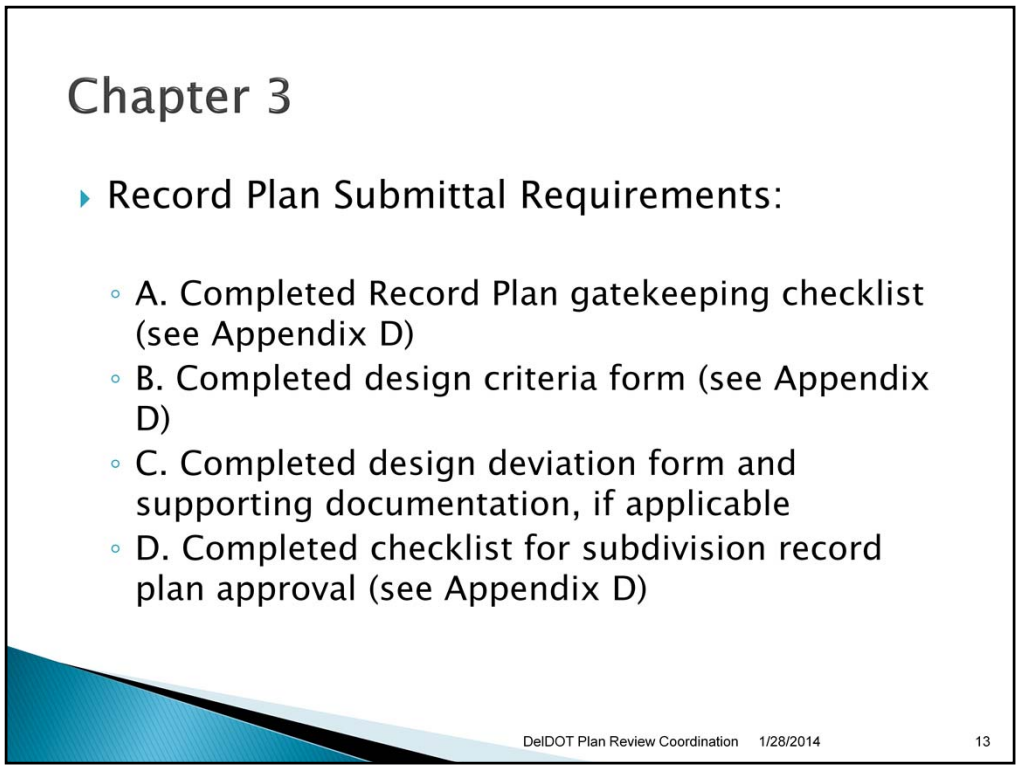


Figure 3.4.2-a

If the traffic generation is wrong, you have to start over, so very important that it is done correctly.

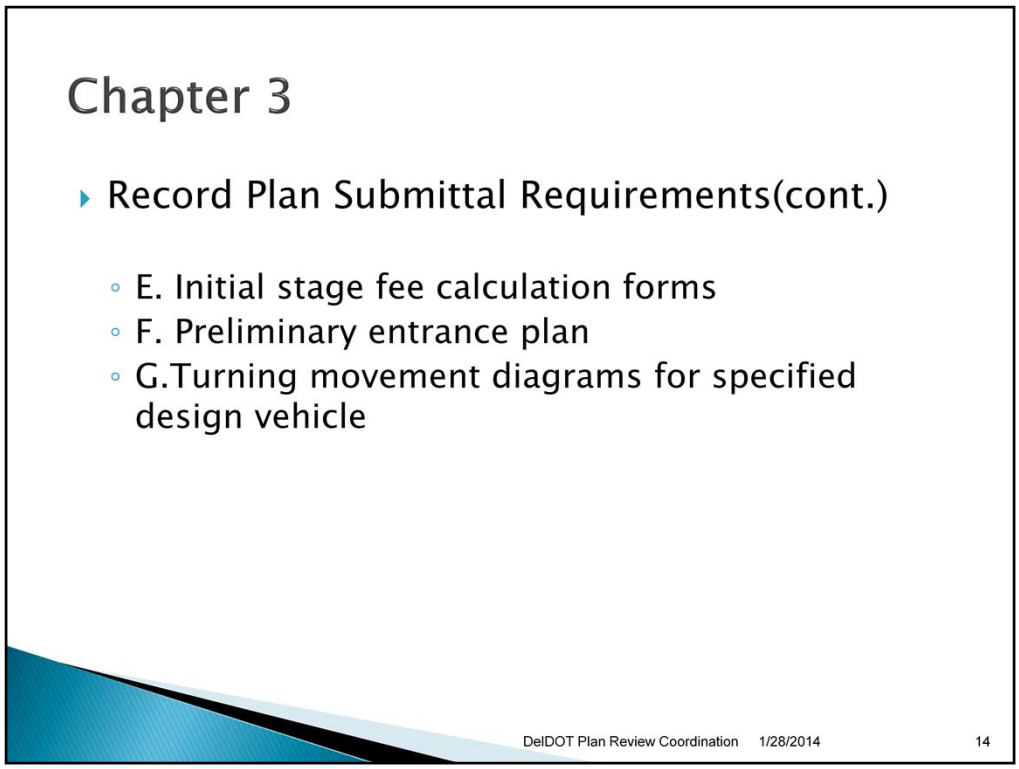
1. Traffic generation (from ITE Manual, latest edition) and distribution for the site
2. Truck percentage for the site
3. Existing and build-out volumes for the site (daily and peak hour) *(DelDOT will provide projected volumes upon request)*
4. Existing and projected (10-year) directional distribution volumes for the adjacent roadway *(DelDOT will provide projected volumes upon request)* - The minimum projected 10-year volumes should be 20% greater than the existing volumes plus the site traffic.
5. Posted speed limit
6. Design vehicle - Applicant will be required to coordinate with owner/developer to determine correct design vehicle for site usage. 5.2.3.a



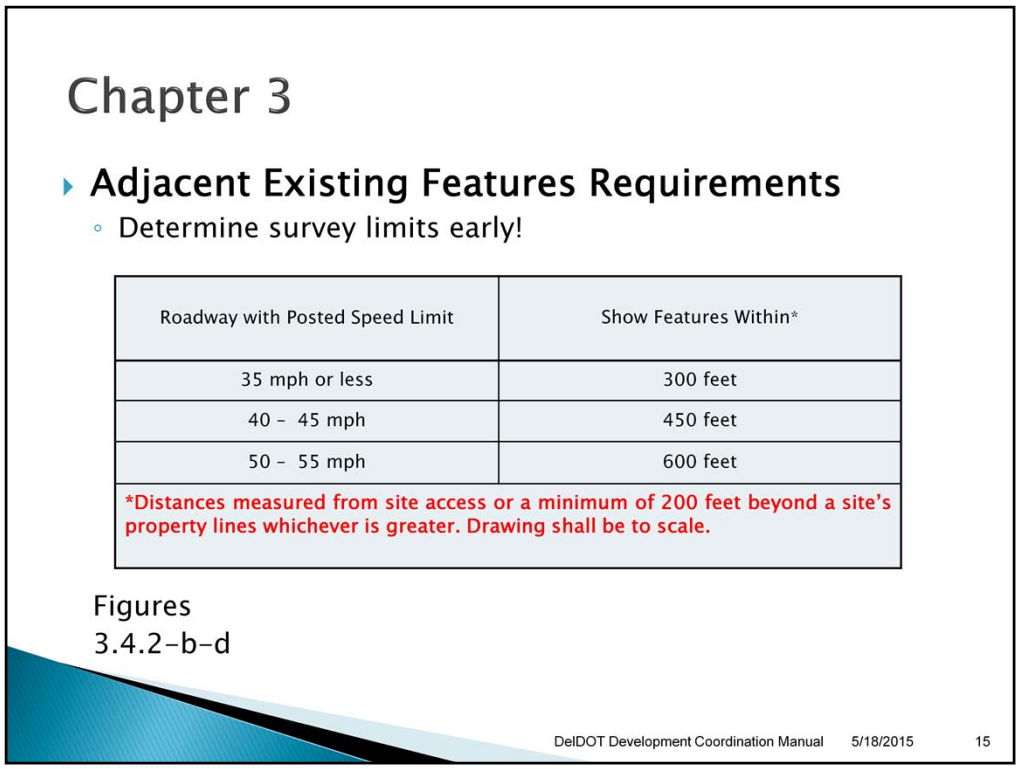
Design Criteria Forms and Design Deviation forms are still under development.

The goal is to agree on the criteria before the design is started.

Deviations are agreed to and not revisited later in the process.



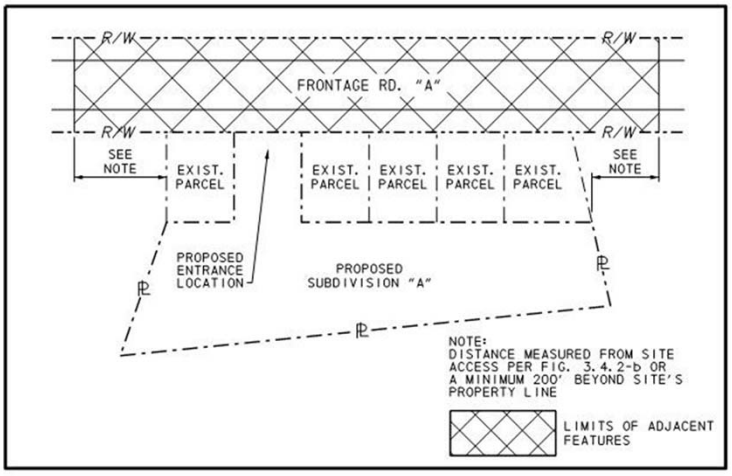
Brad will cover the turning diagrams this afternoon.



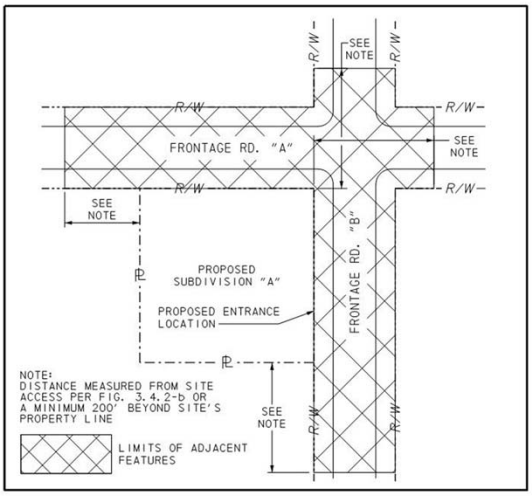
The next set of figures shows survey detail needed adjacent to the site

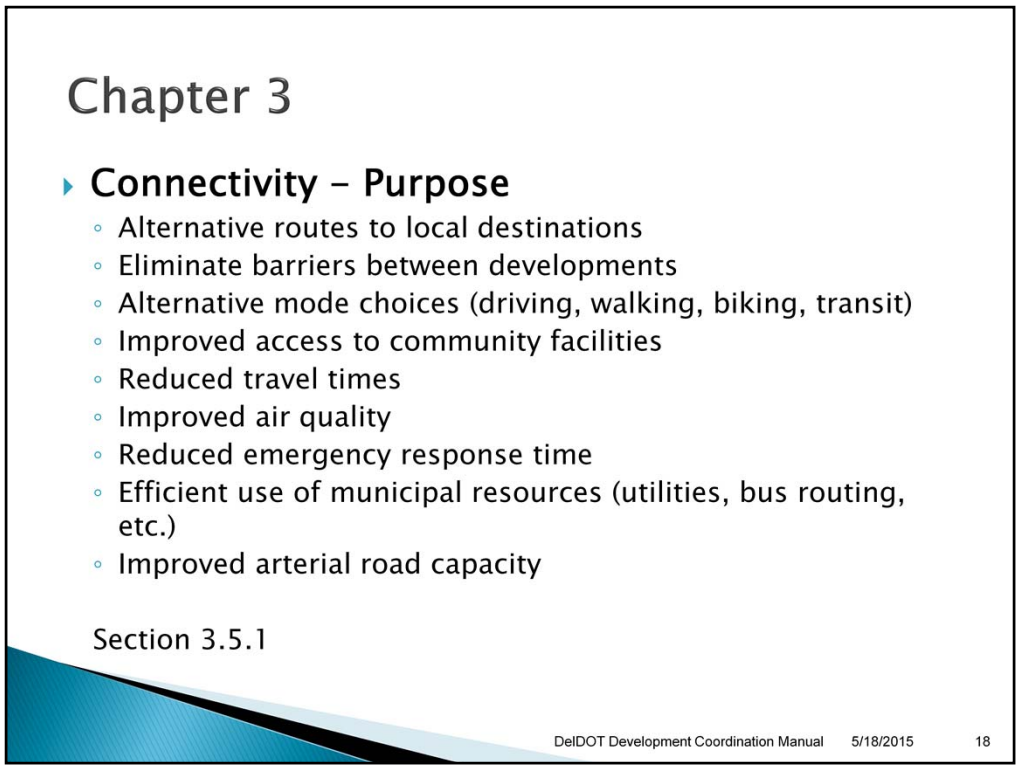
These are additional scenarios to depict how to calculate the distances.

Adjacent Existing Features Requirements Cont.



Adjacent Existing Features Requirements Cont.



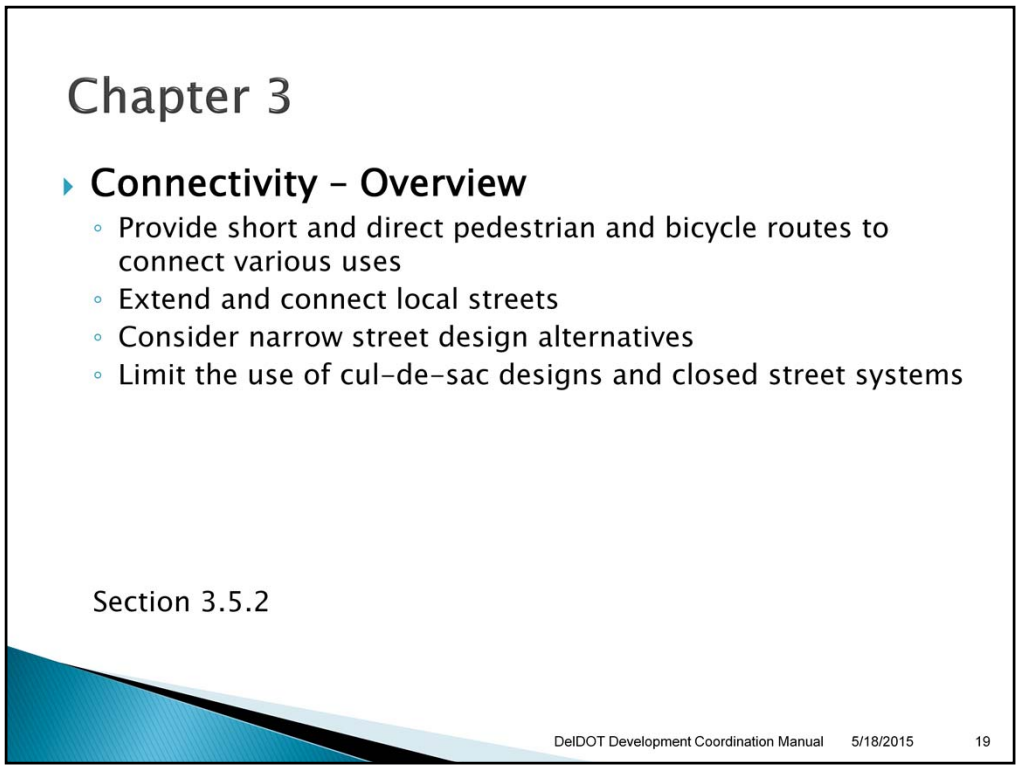


We used to have a site street plan, which was a another cumbersome document that didn't have stand alone value, so we include the info on the record plan.

Public is often concerned about emergency response times, evacuations.

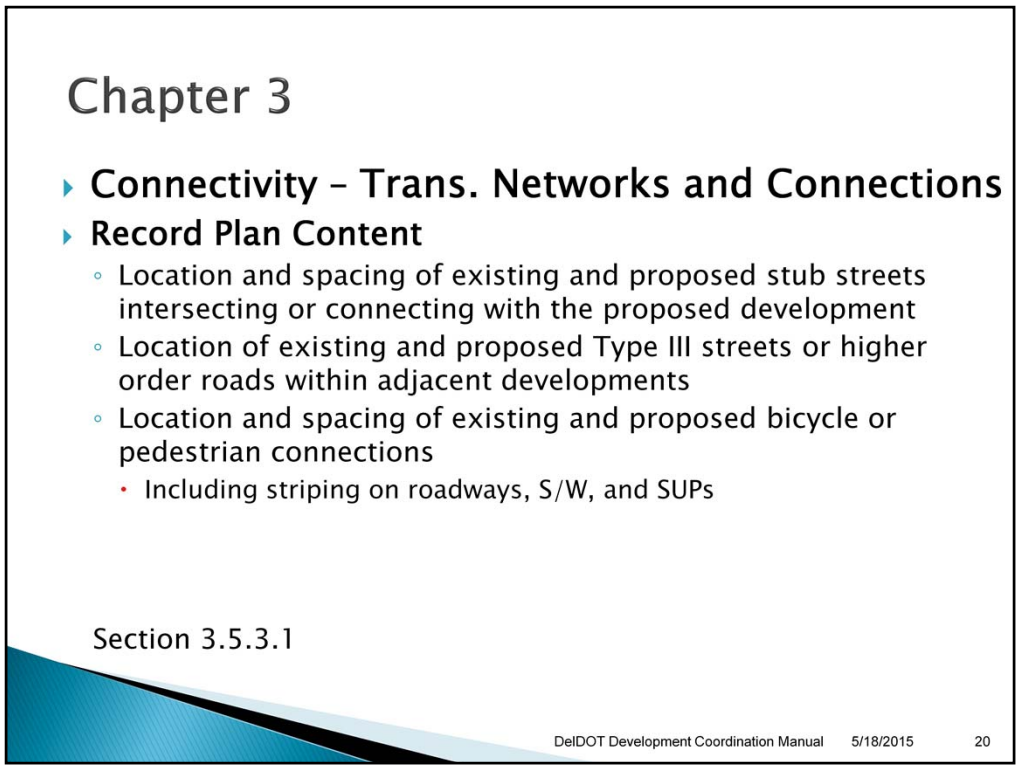
Major push to connect to transit stops so that trips are under a ¼ mile. This will reduce the reliance on paratransit. Cost is $3-4/trip vs. $40/trip for paratransit. Spending 60% of the transit budget serving 10% of the ridership.

If increased connections can be made to reduce the distance to ¼ mile, then more people can be served by regular transit service.

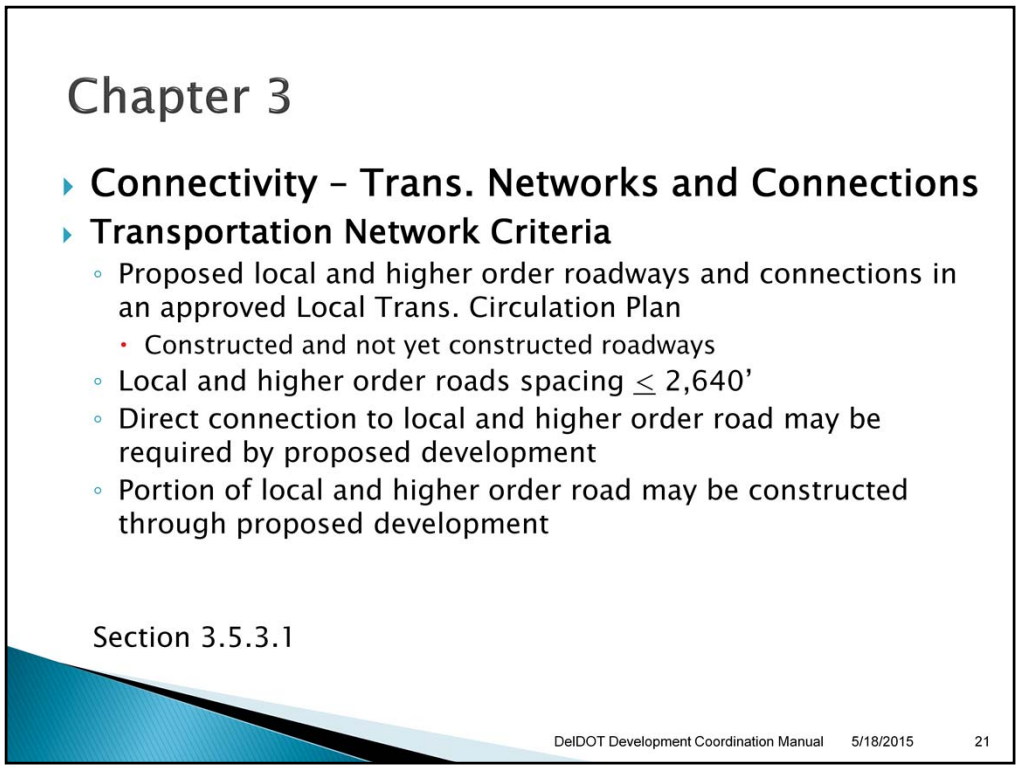


Provide connectivity to gov't offices and facilities, transit stops, places of public accommodations, employment, etc.

Consider narrow street design alternatives for interconnections. Can have neck downs, all sorts of connections are possible.

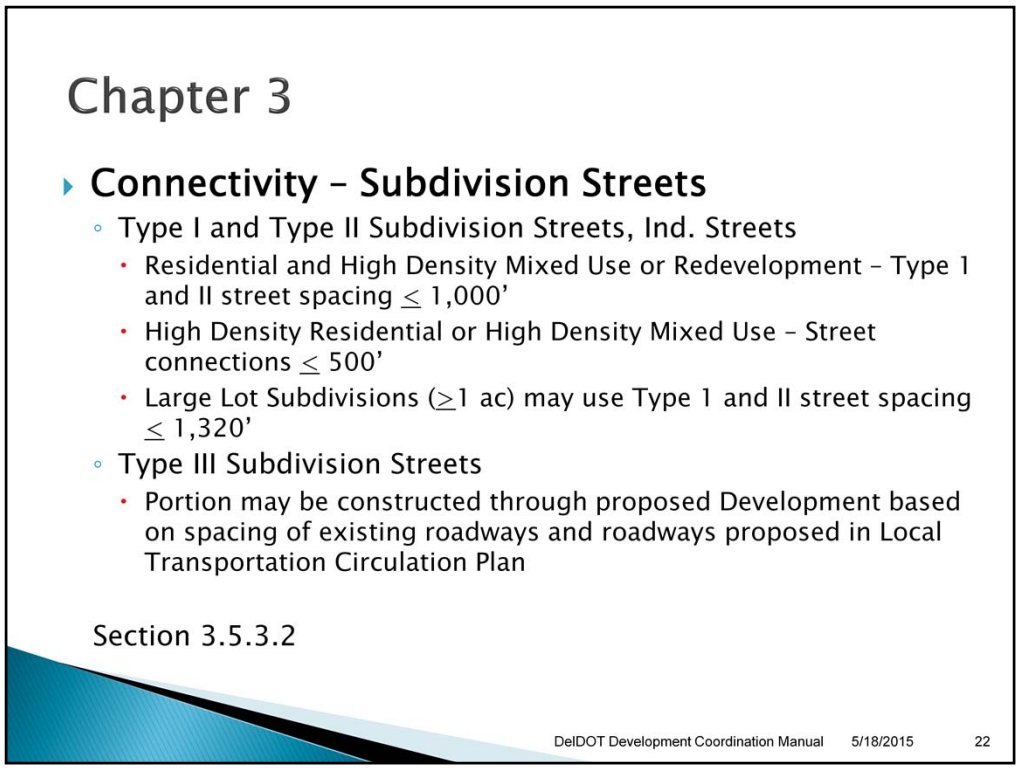


Fortunately, Google Earth makes this much easier.

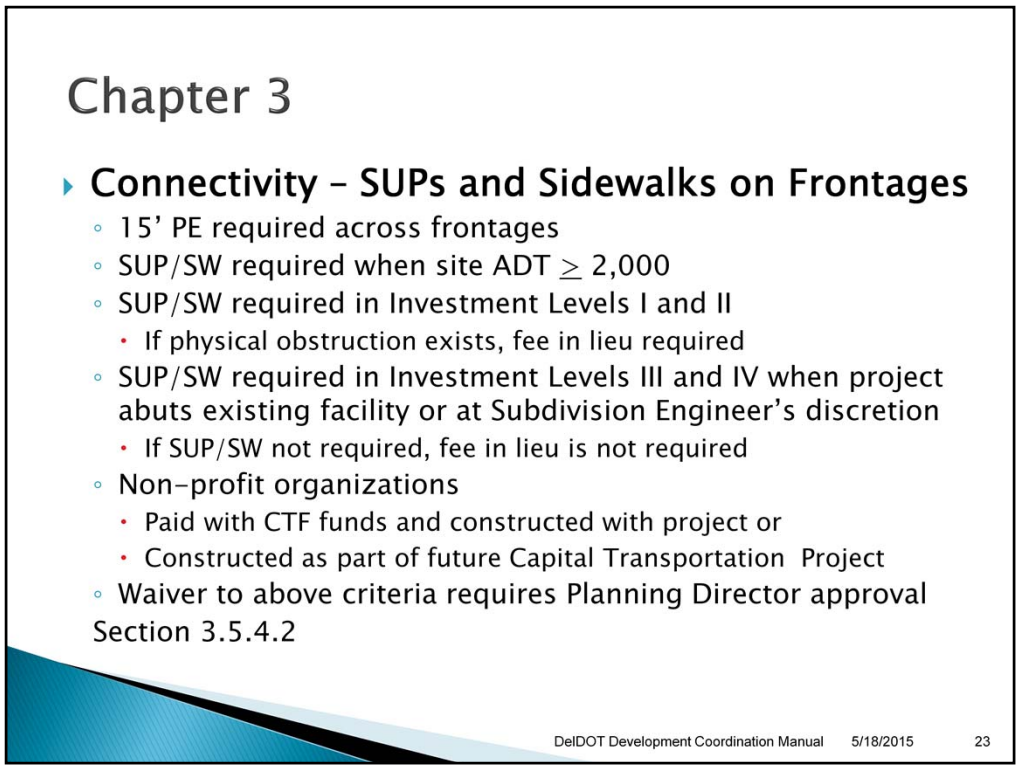


Provide example of an agency (i.e. Wilmapco) having a Local Transportation Circulation Plan

Dover High is an example of this. Local connector. Connections in Rehoboth between 24 and Old Landing Rd.



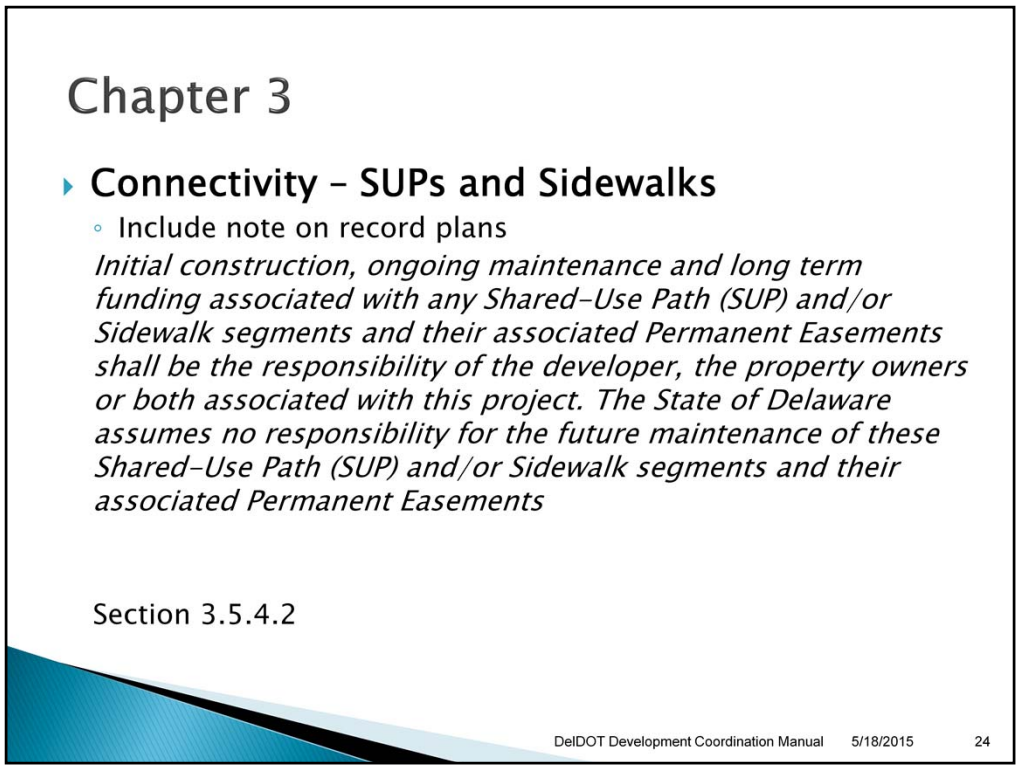
Distances measured from near side ROW line



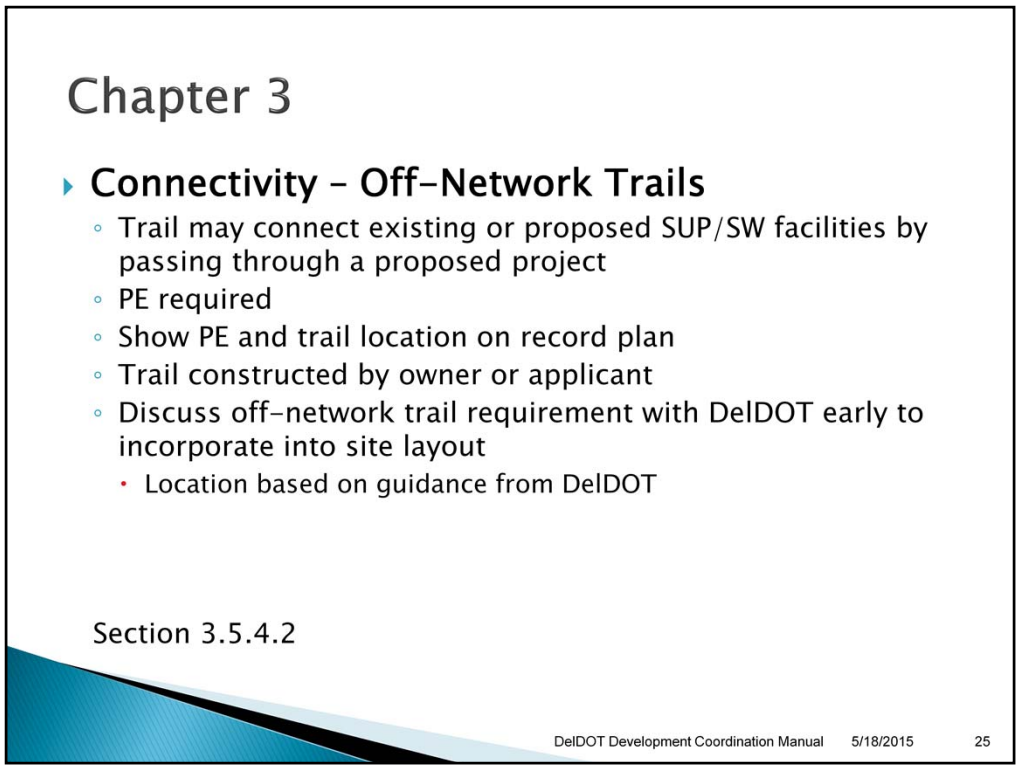
The fee in lieu amount is determined using the spreadsheet online and paid prior to plan approval. Covers materials and is not all-inclusive to provide some incentive to pay and not build.

Eliminates the sidewalk to nowhere and avoids construction of facilities located in more remote areas where the infrastructure will be deteriorated by the time it is connected.

I want to emphasize that in Levels III and IV it is DelDOT's discretion.



This note must be on the plan, which clearly outlines the responsibilities.



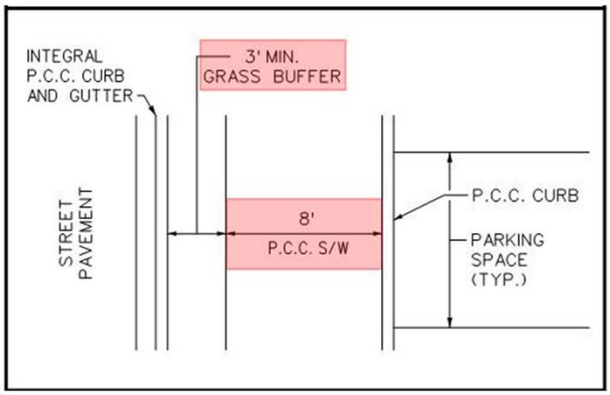
More and more trails statewide. We are constructed trails all over. Junction Breakwater, Pomeroy in Newark, Heritage Trail in Dover, Industrial Track in Wilmington. People can cycle from New Castle to Wilmington faster than driving.

A nice amenity to have in the area.

Chapter 3

- **Connectivity – SUP and Sidewalk Design**
  - Provide required buffers for S/W located between curb and parking
  - Minimum 3' grass buffer or additional S/W 3' width adjacent to parking
  - Keep free of U.P.'s and obstructions

Figure 3.4.4.2-a



Different methods to achieve the desired usable 5' width for sidewalks.

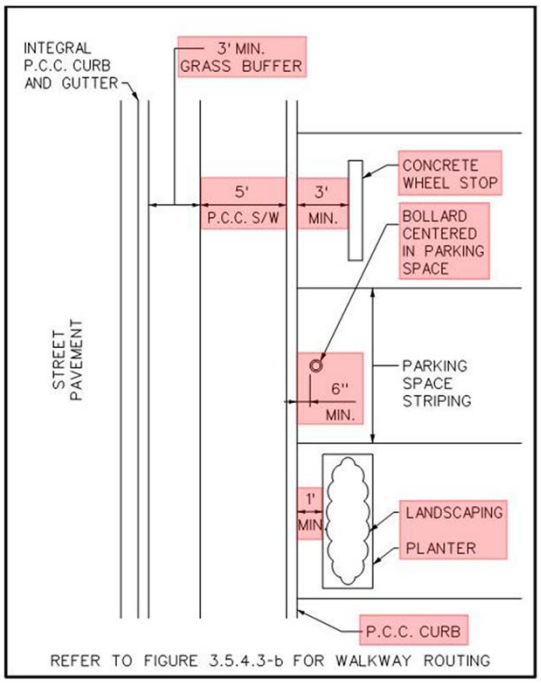
Grass buffers are only one option.

The goal is prevent vehicles from overhanging onto the sidewalk.

Chapter 3

- **Connectivity – SUP and Sidewalk Design**
  - Provide required buffers for S/W located between curb and parking
  - Minimum 3’ grass buffer

Figure
3.4.4.2-a

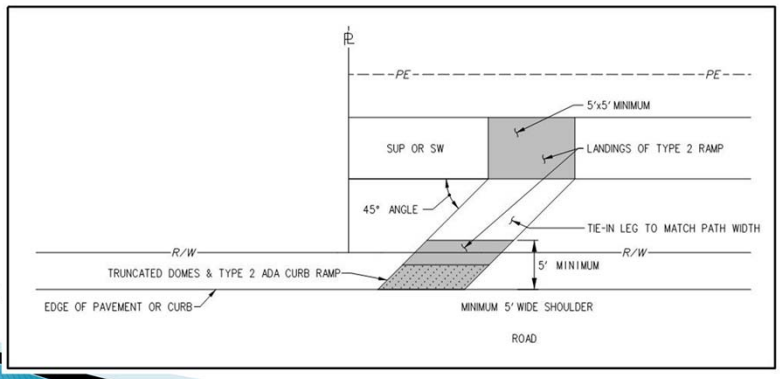


Different methods using wheel stops, bollards, or landscaping along edge of sidewalk and parking lot.

Chapter 3

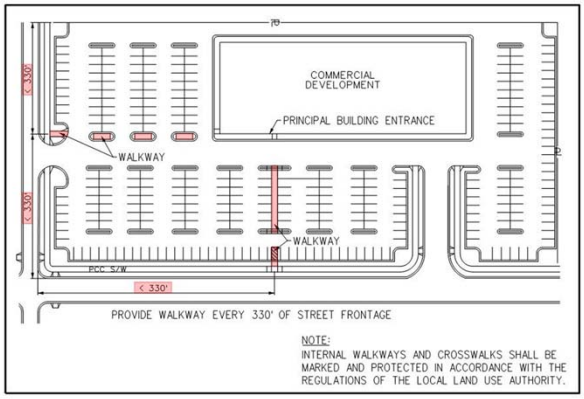
- **Connectivity – SUP and Sidewalk Termination**
  - Tie-in SUP/SW when min. 5' wide shoulder is present

Figure 3.5.4.2-b



Chapter 3

- **Connectivity – Walkways Sect. – 3.5.4.3**
  - Provide internal connections in non-residential developments
  - Recommended between parts of a site where the public may walk
  - Provide every 330' along street frontages
  - Connect building entrances to one another
  - Connect building entrances to adjacent public streets



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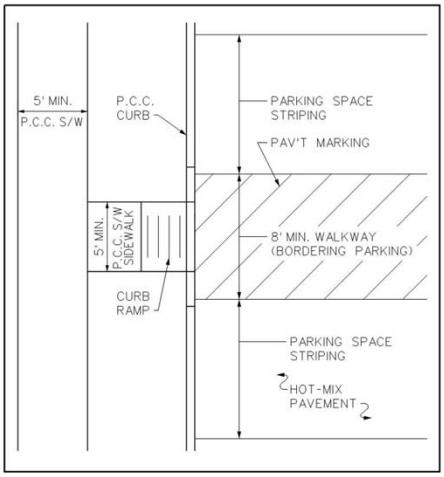
These are recommendations, but important to provide usable pedestrian networks.

Chapter 3

- **Connectivity – Walkway Routing**
  - Be as direct as possible
  - Minimize driveway crossings
  - Mark internal crosswalks

Figure 3.5.4.3-b

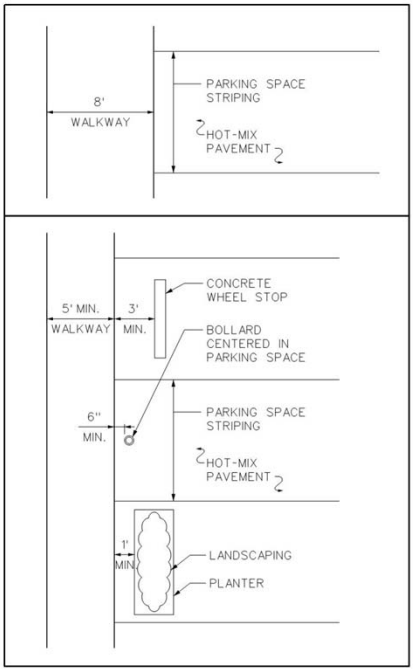


Provides accessibility from the sidewalk through a parking lot with a clear path.

Chapter 3

- **Connectivity – Walkway Design**
  - Paved
  - Minimum 5’ width unobstructed
  - 8’ width if bordering parking without improvements blocking vehicles
  - Differentiate walkways from parking areas (i.e. raised, materials, landscaping)

Figure 3.5.4.3-c

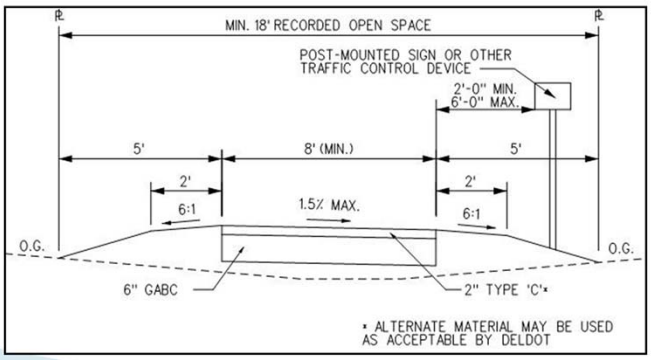


Can provide a walkway adjacent to a row of parking.

Chapter 3

- **Access-ways**
  - Pedestrian and bicycle passage between streets or ex. trails
  - Minimum 8’ width centered in 18’ wide open space
  - 2’ lateral clearance from obstructions
  - 2’ at 6:1 slope on each side of SUP
  - 1.5% C.S.
  - 2” Type C over 6” GABC

Figure 3.5.4.4-c



Neighborhood cut-throughs

Chapter 3

- **Access-ways – 660' < Block Length < 1,320'**
  - One access-way required near middle of block

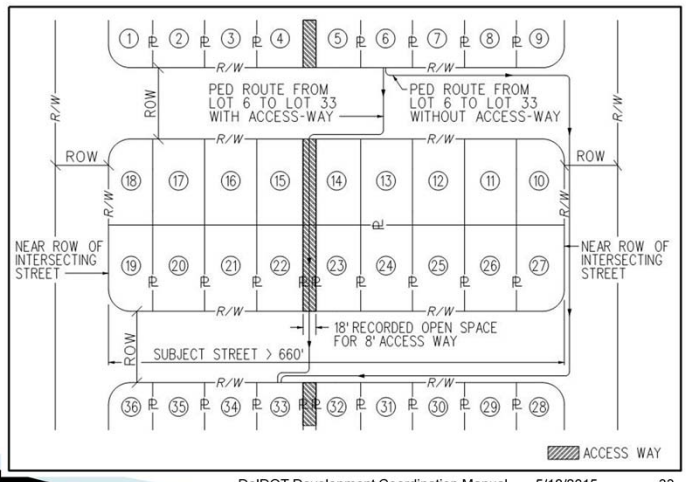


Figure 3.5.4.4-b

Ped route between lot 6 and 33 example.

Apply to State Maintained subdivisions.

Chapter 3

- **Access-ways – Block Length > 1,320'**
  - Two or more access-ways required on block

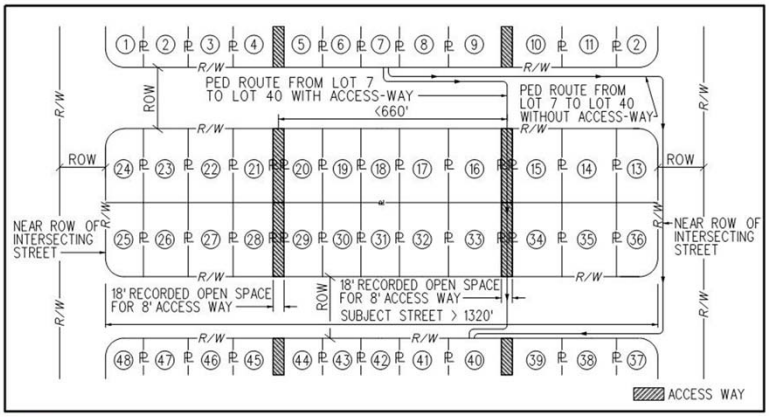


Figure 3.5.4.4-c

If the block length is greater than 1320' then you need 2 access-ways

Chapter 3

- **Access-ways – Cul-de-Sac Connection**
  - Provide access-way to connect adjacent cul-de-sacs

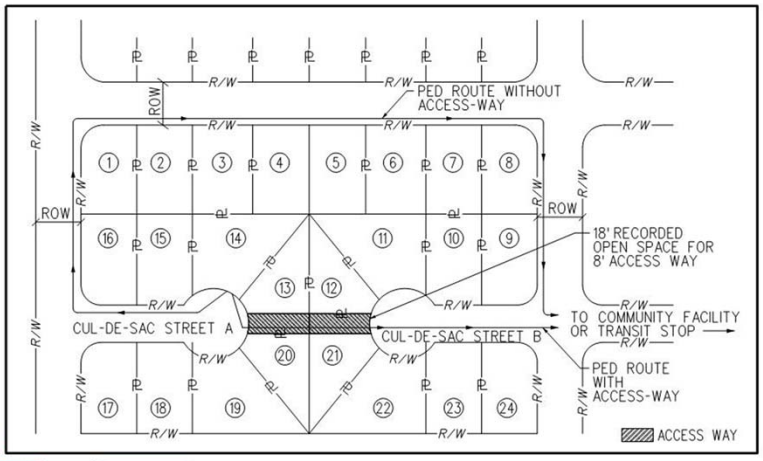


Figure 3.5.4.4-d

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Provides cut through to reduce distances to transit or bus stops.

My daughter cuts through neighbors yards because there is no direct route to the front of the neighborhood for the bus stop.

Chapter 3

- **Access-ways – Community Facilities**
  - Provide access-way to community facilities if it will reduce distance by 50%
  - Facilities may include schools, libraries, parks, rec. centers, pools, etc.

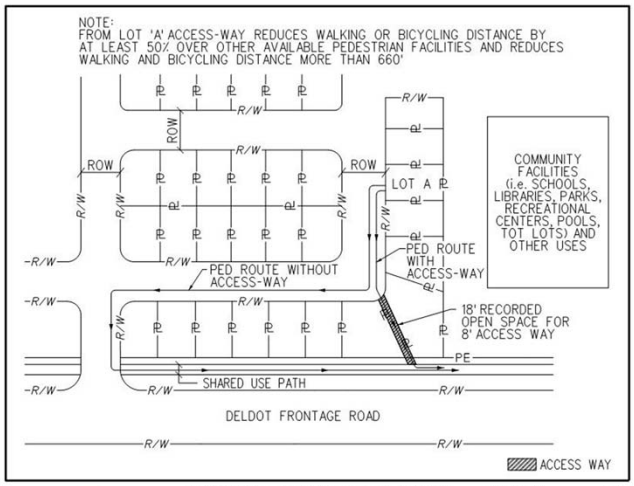


Figure 3.5.4.4-e

Provide connectivity to gov't offices and facilities, transit stops, places of public accommodations, employment, etc.

Very important to reducing overall distance and connection to transit

Chapter 3

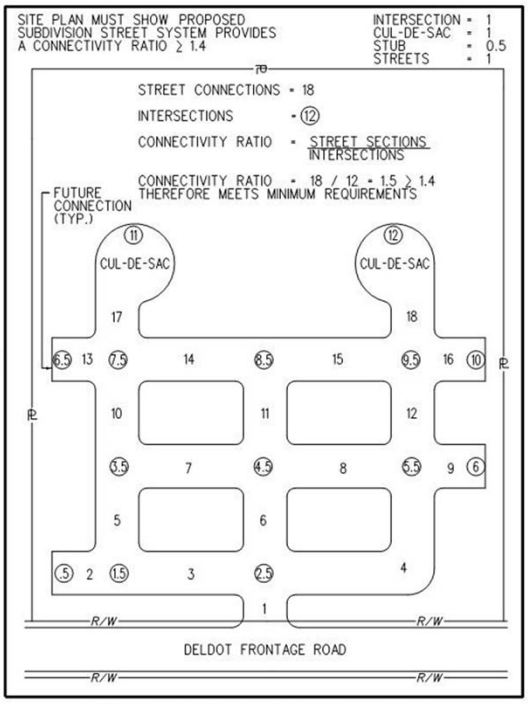
- **Connectivity – Transit Facilities**
  - Show existing and proposed transit stops with applicable bicycle and pedestrian connectivity

Section 3.5.5

Chapter 3

- **Connectivity – Subdivision Street Intra-Connectivity**
  - Connectivity ration $\geq$ 1.4
  - Submit calculation sheet with record plan submittal for review
  - Intersection = 1
  - Cul-de-sac = 1
  - Stub = 0.5
  - Street Sections = 1
  - Ratio = $\frac{\text{Street Sections}}{\text{Intersections}}$

Figure 3.5.6-a



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Starting at entrance, 18 segments

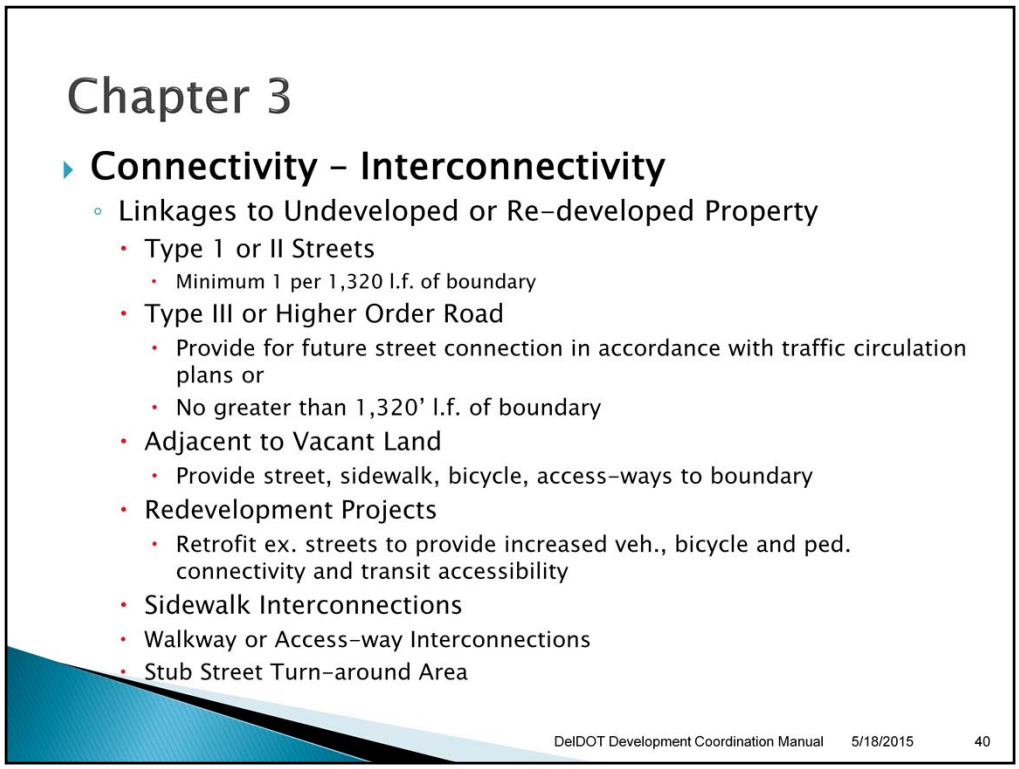
Starting lower left, count intersections 12

Need ratio greater than 1.4

Chapter 3

- **Connectivity – Interconnectivity**
  - Linkages to adjacent developments
  - Adjacent ex. developments without linkages
    - Provide access-way connections
  - Adjacent ex. developments with linkages
    - Incorporate street linkages to stub streets
      - Yes, this may require street construction beyond the pr. developments property line to make the street connection!
    - Provide sidewalk interconnections
    - Provide access-way or walkway connections

Section 3.5.7



Sidewalk Interconnections - All development plans shall provide for sidewalks along future public street connections to adjacent developable parcels along each development plan boundary that abuts potentially developable or re-developable land in accordance with the provisions for sidewalks

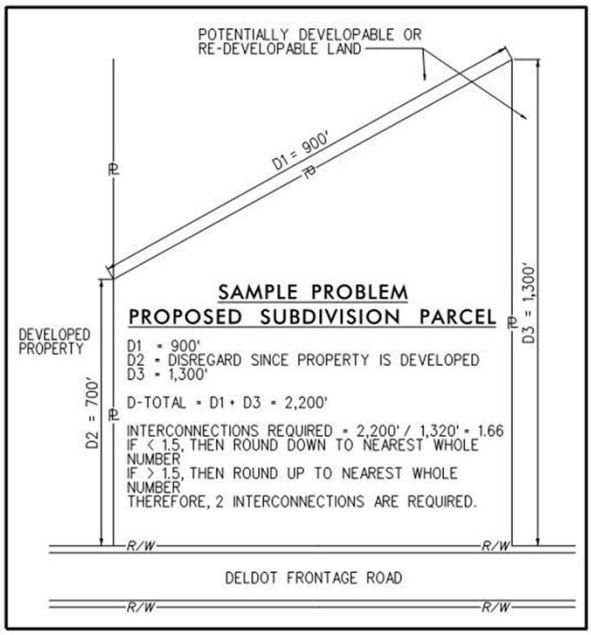
Walkway and Access-way Interconnections - All development plans shall provide for future public walkways and/or access-ways, as applicable, to connect to adjacent developable parcels by providing such connections as a continuation of the walkways or access-ways provided for the development in accordance with the walkway and access-way standards for each development plan boundary that abuts potentially developable or re-developable land.

Stub Street Turn-Around Area **-** The right-of-way stubs shall be planned and constructed to the subdivision boundary line for future connections as outlined in Section 5.1.5.2, Temporary Dead End Streets

Chapter 3

- **Connectivity – Interconnectivity**
  - Provide 2 interconnections on D1 and D3
  - Provide sidewalk, walkway or access-way interconnection to D2

Figure 3.5.7.3-a

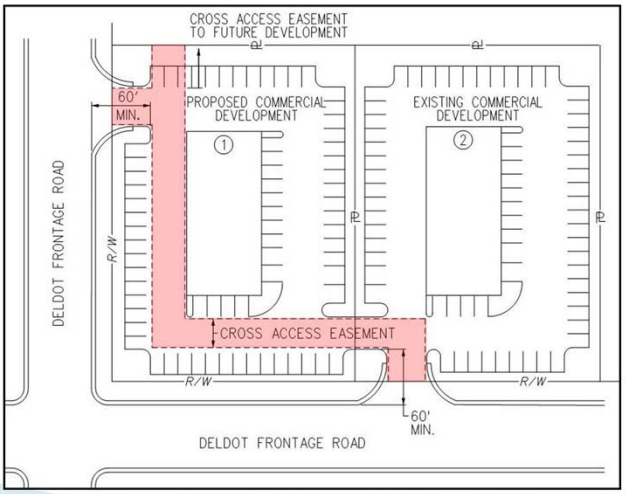


Example D2 is a developed property, so add up D1 and D3 distances to determine the number of interconnections.

Chapter 3

- **Connectivity – Non Residential Cross-Access Interconnectivity**
  - Goal to reduce/eliminate access points on frontage roadways
  - Share access with adjacent properties

Figure 3.5.7.4-a



Chapter 3

- **Connectivity – Hindrances**
  - The following may prevent street, bicycle or pedestrian connections from being made:
    - Physically or topographic conditions
    - Existing buildings or other adjacent developments
    - Connections may violate provisions in leases, easements, covenants or restrictions in place prior to March 2015
  - Identify hindrances early and discuss with DelDOT

Section 3.5.8

Chapter 3

- **Landscaping – Street Trees**
  - Offset Requirements
    - Integral PCC Curb and Gutter Type 2 – Min. 8' offset from back of curb to center of tree trunk
    - Integral PCC Curb and Gutter Type 3 – Min. 5' offset from back of curb to center of tree trunk
      - Requires approval if proposed on Type II Subdivision Streets
    - Sidewalk – Min. 5' offset from edge of sidewalk to center of tree trunk
  - See Appendix N for guidance on acceptable trees
  - Landscaping shall not impact sight distance or sidewalk stability

Section 3.7

Chapter 3

- **Landscaping – Street Trees**

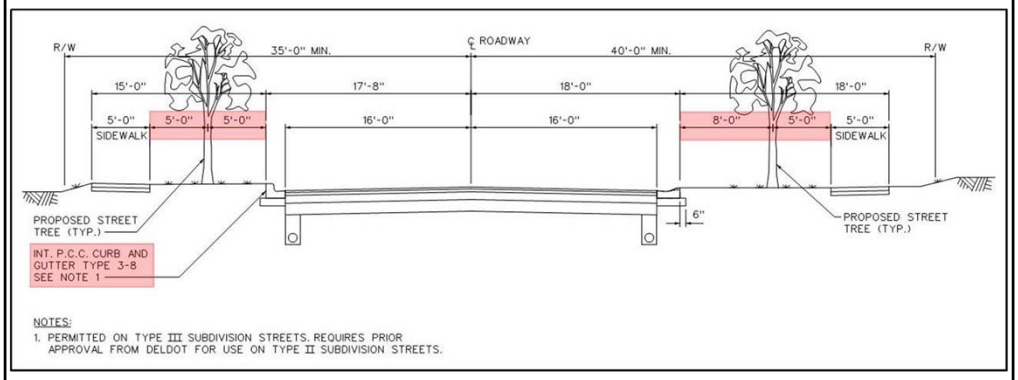


Figure 3.7-a

Chapter 3

- **Landscaping – Median Islands**
  - Use PCC Curb, Type 1-8 with street trees
  - Use PCC Curb, Type 2 without street trees
  - Include note on plan stating DelDOT will NOT maintain landscaping
  - Verify that tree placement will not impact sight distance

Section 3.7.1