ROAD DESIGN MANUAL REVISIONS
January, 2020

CHAPTER 2E

- Page 2E-35 – Added the following language at the end of the last paragraph: *"See General Note on GS Standards."*

APPENDIX A

APPENDIX A, SECTION A-1

- Page A-17 – Added the following language to the Geometric Design Standards for Urban Principal Arterial System (GS-5) to include information for a 25 mph design speed under "Other Principal Arterial with Curb and Gutter".

- Page A-18 – Added the following language to the Geometric Design Standards for Urban Minor Arterial Street System (GS-6) to include information for a 25 mph design speed under "Streets with Curb and Gutter".

- Page A-19 – Added the following language to the Geometric Design Standards for Urban Collector Street System (GS-7) to include information for a 25 mph design speed under "Streets with Curb and Gutter".

APPENDIX A, SECTION A-2

- Page A-3 – Added the following language at the end of the page: *"STREETSCAPE AND LANDSCAPE – See Appendix B(1)."*

APPENDIX A, SECTION A-4

- Page A-10 – Added the following language at the end of the page: *"NOTE: AUXILIARY / TURN LANES SHOULDERS ARE TO BE THE SAME AS THE MAINLINE. SEE CHART ABOVE; IF NOT A WAIVER IS NEEDED."*

APPENDIX A, SECTION A-7

- Page A-6 – Added the following language at the end of item (d) under "The "No Plan" concept may be <u>used</u> when: *"(See Public Hearing and Right of Way in this section)"*.

APPENDIX A(1)

- Page A(1)-11 – Revised the following language under "Bike Lane" from: "*Bike lanes are established with appropriate pavement markings and signing along streets in corridors where there is significant bicycle demand and where there are distinct needs that can be served by them. The purpose should be to improve conditions for bicyclists on the streets. Bike lanes are intended to delineate the right of way assigned to bicyclists and motorists and to provide for more predictable movements by each. Bike lanes also help to increase the total capacities of highways carrying mixed bicycle and motor vehicle traffic."* To: *"A portion of the roadway designated by striping, signing, and pavement markings for preferential or exclusive use by bicyclists. They are one-way facilities that carry bicycle traffic in the same direction as adjacent motor vehicle traffic. Bike lanes have horizontal separation (i.e. pavement markings, such as 4" or 6" solid white lines) but do not have vertical separation between the bike lane and the vehicle travel lane and/or parking lane."*

  Added the following language between "Bike Lane" and "Separated Bike Lane": Buffered Bike Lane – Bike lanes with horizontal separation (i.e. additional pavement markings, such as a painted buffer), but without vertical separation between the bike lane and vehicle lane and/or parking lane.

- Page A(1)-12 – Added the following language after the third sentence under "Bike Lane": *"Bike lanes have horizontal separation (i.e. pavement markings, such as 4" or 6" solid white lines) but do not have vertical separation between the bike lane and the vehicle travel lane and/or parking lane."*

  Added the following language after "Bike Lanes":
  "Buffered Bike Lane – Bike lanes with horizontal separation (i.e. additional pavement markings, such as a painted buffer), but without vertical separation between the bike lane and vehicle lane and/or parking lane. See FHWA Separated Bike Lane Planning and Design Guide and NACTO Urban Bikeway Design Guide for design criteria for one-way and two-way facilities.

  Separated Bike Lane - A facility (also sometimes called "cycle track" or "protected bike lanes") are located within or directly adjacent to the roadway that has both horizontal separation (i.e. additional pavement markings, such as a painted buffer) and vertical separation (i.e. flexible delineators, curb median, on-street parking, landscaping) between the bike lane and vehicle travel lane and/or parking lane. Practitioners have flexibility in choosing specific design elements. Separated bike lanes can operate as one-way or two-way facilities; their designs can integrate with turning automobile traffic at intersections or can be more fully separated; they can be designed at roadway grade, at sidewalk grade or at an intermediate grade.. See FHWA Separated Bike Lane Planning and Design Guide and NACTO Urban Bikeway Design Guide for design criteria for one-way and two-way facilities."

- Page A(1)-14 – Revised "Table A(1)-1-1 Bicycle Facility Design For Curb and Gutter Typical Section"

  Added the "Source" for the information in the above Table.

  Added the following language to the "Key" associated with the above Table: "*bbl = Buffered Bike Lane"*.

- Page A(1)-15 – Revised "Table A(1)-1-2 Bicycle Accommodation/Facility Design For Shoulder and Ditch Typical Section"

  Added the "Source" for the information in the above Table.

- Page A(1)-18 – Revised the following language in the second sentence in the second paragraph under "Bike Lines" <u>from</u>: *"A two-way bike lane on one side of the roadway is <u>not</u> permitted unless the bike lane physically separated from the travelway."*
  <u>To</u>: *"A two-way bike lane on one side of the roadway is not permitted unless it is a separated bike lane."*

  Revised the following language in the first sentence of the third paragraph <u>from</u>: *"Where on-street parking is permitted as shown in FIGURE A(1)-1-1(1)…"* <u>To</u>: Where on-street parking is permitted as shown in FIGURE*"S"* A(1)-1-1(1) "*and A(1)-1-1(2)…"* .

- Page A(1)-23 – Added the following language before "Separated Bike Lanes" :
  "BUFFERED BIKE LANES
  Bike lanes with horizontal separation (i.e. additional pavement markings, such as a painted buffer), but without vertical separation between the bike lane and vehicle lane and/or parking lane. See FHWA Separated Bike Lane Planning and Design Guide and NACTO Urban Bikeway Design Guide for design criteria for one-way and two-way facilities."

  Added the following language at the end of the last sentence in the second paragraph under "Separated Bike Lanes": FHWA "<u>Separated Bike Lane Planning and Design Guide</u>" "*and NACTO Urban Bikeway Design Guide*."

- Page A(1)-81 – Added the following language after the second sentence: *"Advisory R309.4 Curb Ramps or Blended Transitions. Curb ramps or blended transitions complying with R304 shall connect the access aisle to the pedestrian access route. Curbs shall not be located within the access aisle."*

- Page A(1)-89 – Added the following language after the first sentence: *"Advisory R309.4 Curb Ramps or Blended Transitions. Curb ramps or blended transitions complying with R304 shall connect the access aisle to the pedestrian access route. Curbs shall not be located within the access aisle."*

- Page A(1)-107 – Added the following language at the end of the second paragraph "R308.1.2 Boarding Platforms": *"(See AASHTO Guide For Geometric Design of Transit Facilities on Highways and Streets, page 5-28, section 5.2.3.3)."*

- Page A(1)-109 – Added the following language in "Figure A(1)-3-6 Elements and Dimensions Associated with Bus (Transit) Stops": 8' Min. x 25' Min. Concrete Boarding Platform "*(Includes 1 - 8' x 5' Boarding and Alighting Area for each Door of the Bus)".*

- Page A(1)-110 – Added "FIGURE A(1)-3-7 OFF ROAD SEPARATED BIKE LANE WITH SIDEWALK" detail.

- Page A(1)-111 – Renamed *"FIGURE A(1)-3-7 TYPICAL BUS (TRANSIT) SHELTER"* To: FIGURE A(1)-3-"*8"* TYPICAL BUS (TRANSIT) SHELTER

APPENDIX B(1)

- Page B(1)-8 – Revised language in "Table 2 – SHOULDER AND DITCH SECTION", note #9 to increase the width of additional shoulder from 3 ft. to 4 ft.

- Page B(1)-9 – Revised language in column 2 & 3 under Roadway Section Criteria in "Table 3 – ONE-LANE (ONE-WAY) SUBDIVISION STREETS" to replace "Fill and Cut or Fill" to *"Shoulder Width"* and increase the width of "Shoulder with Guardrail" from 5 feet to 6 feet.

- Page B(1)-18 – Revised "TABLE 4 – SCHOOL BUS ACCESS ROAD" and added the following notes: *(3) Parking lanes are 7 feet wide and include the gutter pan when curb and gutter is used. (4) Gutter pan is not a portion of the travelway, but is a portion of the parking lane.*

- Page B(1)-23 – Revised the following language the second sentence in the fourth paragraph from; "SU-40 single unit trucks" To: "*SU-30*" single unit trucks.

- Page B(1)-24 – Added the following language after the second sentence under "Cul-de-sacs and Turnarounds": "*Roadways in industrial and commercial areas using Cul-de-sac designs shall accommodate a WB-67 design vehicle."*

  Added the following language at the end of part a Circular Type Turnarounds: "*(See FIGURE 4 CUL-DE-SAC AND TURNAROUNDS)".*

  Revised the following language in the second sentence of part b. Cul-de-sacs with unpaved centers (Islands) from: *"Pavement widths may be increased by the District Engineer/Administrator's Designee to accommodate turning radii of single unit truck design vehicle. Parking should be restricted to the outside of the curve."* To: Pavement widths "*shall"* accommodate the turning radii of an "*SU-40"* single unit truck design vehicle. Parking should be restricted to the outside of the curve. "*The pavement width shall accommodate an SU-40 when passing a parked vehicle within the cul-de-sac."*

  Added the following language at the end of part b. Cul-de-sacs with unpaved centers (Islands): *"(See FIGURE 4 CUL-DE-SAC AND TURNAROUNDS)"*

  Added the following language at the end of part c. Alternative Turnarounds (for Residential streets only): *"(See FIGURE 4 CUL-DE-SAC AND TURNAROUNDS)"*

- Page B(1)-25 – Revise “FIGURE 4 CUL-DE-SAC DETAIL” to include 60 foot radius for outer edge of pavement on the center and right detail on cul-de-sac details.

  Revised the name of “FIGURE 4 CUL-DE-SAC DETAIL” to “*FIGURE 4 CUL-DE-SAC AND TURNAROUNDS”*.

- Page B(1)-62 thru B(1)-64 – Added “Section B(1)-8- School Bus Loops and Drop Off ‘ Pick Up Areas”.

APPENDIX F

- Page F-83 – Revised “Figure 3-28 Typical Application with Sidewalks and Bike Lanes with Right Turn Lane Deceleration Lanes (Curb and Gutter Section)” to add acceleration lane to detail.