

DESIGN MEMO 1.00

To: Designers, Contractors, and City Departments
Date: January 10, 2023
Subject: Introduction
Category: General

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1 Purpose

The purpose of the City of Columbus Department of Public Service Design Memos is to integrate a wide range of design criteria and practices into a coherent set of standards and guidelines that, over time, will be incorporated into a City of Columbus Roadway Design Manual.

In 2008, Columbus City Council passed a Complete Streets Resolution (0151X-2008) to express support of Complete Streets principles including designing and maintaining the operations of the entire right-of-way of every Columbus roadway to enable safe access for all users. The resolution urged the Department of Public Service and the Transportation Division to include Complete Streets policies in all street construction, reconstruction, and repair projects. It further stipulated that these policies should restructure the department’s procedures to accommodate all users on every project; prompt a re-write of design manuals to encompass the safety of all users; and re-train planners and engineers to balance the needs of diverse users.

The design memos are considered living documents that will be revisited and updated over time, as needed, to keep standards current with best practices.



2 Applicability

The City of Columbus design memos shall be used for scoping, design, and construction of projects within the City of Columbus right-of-way. Projects include capital improvement projects and private development projects.

2.1 Project Types

2.1.1 *New Construction*

New construction projects provide facilities in an area that had previously been unused and undeveloped. This also includes projects where the existing facility is completely removed and replaced with a new facility even if the new facility is intended to perform the same function as the original facility. All new construction projects shall comply with City of Columbus design requirements.

2.1.2 *Alterations*

Alteration projects, also called reconstruction projects, include projects that reconstruct or rehabilitate any portion of an existing facility. These projects can include full depth replacement of the facility or alteration of the elements of the facility such as resurfacing, provision of additional traveled way, or traffic signal replacement. Alteration projects may also include the construction of new accessible facilities, such as new curb ramps or accessible pedestrian signals. Alteration projects shall comply with City of Columbus design requirements; if complying with design requirements is determined by the designer to be technically infeasible, the designer shall refer to City of Columbus Design Memo 1.01: Design Variance Process.

3 Relationship of the Design Memos to Other Design Requirements

The design memos are intended to reflect and serve as a key implementation tool for the policies adopted by the City of Columbus. While the design memos provide the requirements for the design and provision of improvements to the right-of-way in the City of Columbus, other rules and regulations relating to the design and provision of improvements will also apply, including but not limited to:

- Columbus City Code
- Multimodal Thoroughfare Plan
- Current or Future City Bikeway Plans
- Downtown Streetscape Standards
- Columbus Standard Drawings
- Columbus Construction and Material Specifications
- Columbus ADA Rules and Regulations
- Traffic Signal Design Manual

4 Use of “Shall” and “Should”

Throughout the design memos, “shall” is used to indicate mandatory or specifically prohibitive practice. There can be no deviations from “shall” statements for new construction projects. For projects that are considered to be an alteration to an existing facility, there can be no deviation from “shall” statements without the approval of a design exception. See City of Columbus Design Memo 1.01: Design Variance Process.

Throughout the design memos, “should” is used to indicate recommended, but not mandatory, practice. “Should” statements explain the most desirable design options for typical situations. These statements are typically paired with an “unless” statement, which lists the circumstances under which designers may deviate from the “should” statement, using engineering judgement.



5 Definitions

Bicycle – A pedal-powered vehicle upon which the human operator sits. The term “bicycle” for this publication includes two-, three-, and four-wheeled human-powered and electrically assisted (E-Bike) vehicles, but not tricycles for children.

Bicycle Boulevard – Streets designed to prioritize bicycle traffic by minimizing motorized traffic volumes and operating speeds. They are also referred to as neighborhood greenways, neighborhood bikeways, slow streets, or bicycle priority streets.

Bicycle Box or Bike Box – A designated area on the approach to a signalized intersection, between an advance motorist stop line and the crosswalk or intersection, intended to provide bicyclists a visible place to wait in front of stopped motorists during the red signal phase.

Bicycle Facilities – A general term denoting provisions to accommodate or encourage bicycling, including bikeways, bicycle boulevards, bicycle detection, shared lane markings, wayfinding, in addition to parking and storage facilities.

Bicycle Lane or Bike Lane – A portion of the roadway that has been designated for exclusive use by bicycles and mobility devices by pavement markings and, if used, signs.

Bicycle Route or Bike Route – A designation of streets, roads, or bikeways made by a jurisdiction having authority with appropriate directional and informational route markers, with or without specific bicycle route numbers. Signs that provide directional, distance, and destination information for bicycles do not necessarily establish a bicycle route.

Bicyclist Design User – The selected bicyclist used to design the elements of a bikeway. Design users range from typical adult bicyclist, recumbent bicyclist, children, bicyclist pulling a trailer, etc.

Bicyclist Design User Profile – The selected bicyclist comfort profile used to select an appropriate bikeway for a street or roadway.

Bikeway – Any road, path, or facility intended for bicycle travel which designates space for bicyclists distinct from motor vehicle traffic or a bicycle boulevard designed for bicyclist travel priority. A bikeway does not include shared lanes, sidewalks, signed routes, or shared lanes with shared lane markings.

Buffered Bike Lanes – A bicycle lane that is separated from the adjacent general-purpose lane or parking lane by a buffer area which may include chevron or diagonal markings.

Buffer Zone (Sidewalk) – The area between the curb or edge of pavement and the sidewalk Walk Zone.

Capital Improvement Project – A publicly funded project in the right-of-way.

Contraflow Bike Lane – A bicycle lane that has been designed to allow for bicycle travel in the opposite direction of motor vehicle traffic.

Design Speed – A selected speed used to determine the various geometric design features of the roadway or bikeway.

Design Volume – A volume, determined for use in design, representing the amount of traffic expected to use the highway or bikeway. Unless otherwise stated, it is an hourly volume.



Detectable Warning Surface – A standardized surface feature built in, or applied to, walking surfaces to indicate the boundary between a pedestrian route and a vehicular route where there is a curb ramp or blended transition, and at the edge of transit boarding platforms.

DMP – Division of Mobility and Parking

DoDC – Division of Design and Construction

DoTM – Division of Traffic Management

DPS – Department of Public Service

Frontage Zone (Sidewalk) – The area of the sidewalk between the back of the Walk Zone and the property line which may coincide with the face of a building.

Highly Confident Bicyclist– A general term denoting bicyclists who have the most tolerance for traffic stress and are generally comfortable operating in mixed traffic. This group represents 4-7% of the general population.

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

Interested but Concerned Bicyclist– A general term denoting bicyclists who have the lowest tolerance for traffic stress and prefer physical separation from traffic or bicycling on low-volume, low-speed residential streets. This group represents 51-56% of the general population.

Low-Stress Bicycle Network (also High Comfort or All Ages and Abilities) – A bicycle network that provides low-stress direct and convenient connections to destinations and other bike facilities in a manner that minimizes exposure to motorized traffic and conflicts with pedestrians.

Low-Stress Bicycling – Bicycling conditions suitable for the Interested but Concerned Bicyclist profile.

Mobility Devices – A small motorized or electronic device, such as an e-scooter, e-bike, or other similar device as determined by the Director of Public Service. A mobility device does not include those designed solely for use by a child, or those used as assistive mobility devices by persons with disabilities.

Pedestrian Access Route (PAR) – A path through and contained within a pedestrian facility that has slope, grade, surface characteristic, and other features that make it usable by persons having certain mobility and sensory impairment conditions.

Private Development – A privately funded development project of property that may include improvements to the public right-of-way.

Right-of-Way – A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes under control of the state or local authority.

Right of Way (Assignment) – The right of one driver, bicyclist, or pedestrian to proceed in a lawful manner in preference to another driver, bicyclist, or pedestrian.

Roadway – The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways.

Roundabout – A circular intersection that generally provides yield control to all entering vehicles and that features channelized approaches and geometry to encourage reduced travel speeds through the circular roadway.



Rumble Strips – A rough-textured surface constructed for the purpose of causing the tires of a motor vehicle driven over it to vibrate audibly as a warning to people driving.

Separated Bike Lanes – A bicycle lane that is physically separated from motor vehicle traffic by vertical elements as well as a horizontal buffer or elevation change from the street. These may also be referred to as protected bike lanes or cycle tracks. On-street parallel or angled motor vehicle parking can serve as the vertical elements.

Shared Lane – A lane where motor vehicles and bicycles share operating space. Shared lanes are not considered bicycle facilities unless they are designed to operate as a bicycle boulevard.

Shared Lane Marking – A bicycle pavement marking symbol indicating a preferred bicyclist operating position in a shared travel lane.

Shared Roadway – A road where motor vehicles and bicycles share operating space.

Shared Use Path (SUP) – A bikeway physically separated from motor vehicle traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other nonmotorized users. Shared use paths are also commonly referred to as trails, paths, or greenways.

Shoulder – The portion of the roadway contiguous with the traveled way that accommodates stopped vehicles, emergency use, conveyance of drainage, and lateral support of subbase, base, and surface courses. Shoulders, where paved, may be used by bicyclists and pedestrians.

Sidewalk – An improved surface for pedestrian travel paralleling a highway, road, or street.

Somewhat Confident Bicyclist – A general term denoting bicyclists who have some tolerance for traffic stress and generally prefer physical separation from traffic but are comfortable operating in bicycle lanes. This group represents 5-9% of the general population.

Traffic Calming – the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users.

Traveled Way – The portion of the roadway that allows for the movement of through traffic, including vehicles, transit, and freight. It does not include such facilities as curbs, shoulders, turn lanes, bike lanes, sidewalks, or parking lanes. Divided highways are made up of two separate roadways, each with its own traveled way.

Two-Stage Turn – The act of a bicyclist turning left in stages, by first crossing the perpendicular street, and then crossing the approach street during a gap in traffic or upon receiving a green indication at a traffic signal.

Two-Stage Bicycle Turn Box – A designated area at an intersection to provide bicyclists a place to wait to complete a two-stage turn outside of the path of moving traffic.

Uncontrolled Crossing – A crossing of a roadway which does not have yield, stop, or signal control facing approaching roadway users.

Walk Zone (Sidewalk) – The portion of the sidewalk used for pedestrian travel.

