

Newberg Transportation System Plan and Municipal Code Street Cross-Section Types and Definitions

July 2019

Excerpts from the Newberg Transportation System Plan (TSP)

<https://www.newbergoregon.gov/planning/page/transportation-system-plan-update-0>

Functional Classification

Traditionally, a roadway is classified based on the type of travel it is intended to serve (local traffic versus through traffic). The roadway functional classification determines the level of mobility for all travel modes, defining its level of access and usage within the City and region. The street functional classification system recognizes that individual streets form a network that works together to serve travel needs on a local and regional level. From highest to lowest intended traffic volume, the classifications are arterials, collectors, and local streets. Roadways with a higher intended traffic volume generally have a classification and related standards that promote more efficient vehicle movement through the City, while roadways with lower intended usage are classified to provide greater access to local destinations such as businesses or residences.

Arterial Streets in Newberg are classified as either Major or Minor Arterials.

- **Major Arterials** in Newberg include OR 99W, which is owned by ODOT. OR 99W has the highest traffic volumes in Newberg. It is the roadway that residents use to connect to locations outside the City, and the roadway that visitors use to reach and travel through Newberg.
- **Minor Arterials** in Newberg include ODOT-owned OR 219 and OR 240, City-owned Mountainview Drive and Springbrook Road, and Yamhill County-owned Wilsonville Road. These Minor Arterials also carry some of the higher traffic volumes of any roadway in the City and are used by residents to connect to locations outside the City, as well as provide major connections within the City.

The posted speed along arterials in Newberg may vary from 45 miles per hour as you enter the city to as low as 25 miles per hour through the downtown core.

- **Collector Streets** in Newberg connect the neighborhoods and major activity generators to arterial streets. These streets provide greater accessibility to neighborhoods than arterials, and provide efficient through movement for local traffic. The City of Newberg has two classifications for collectors: Major and Minor Collectors.
 - Villa Road and Haworth Avenue are examples of Major Collector streets providing connections between commercial areas of town and the surrounding neighborhoods.
 - Minor collectors (such as Meridian Street and Columbia Drive) provide the primary connections between neighborhoods and the major road system, but generally span shorter distances than major collectors.
- **Local Streets** provide direct access to residences in Newberg. These roadways are often lined with residences and are designed to serve lower volumes of traffic with posted speeds of 25 miles per hour.

Street Type

In addition to functional class, the surrounding uses provide context for how roads are intended to function for pedestrians, bicyclists, and transit riders. The street type of a roadway defines its cross-section characteristics and determines how users of a roadway interact with the surrounding land use.

Since the type and intensity of adjacent land uses and zoning directly influence the level of use by pedestrians, bicyclists, and transit riders, the design of a street (including target speed, intersections, sidewalks, and travel lanes) should reflect its surroundings. The street types attempt to strike a balance between street functional classification, adjacent land use, zoning designation and the competing travel needs by prioritizing various design elements.

- **Mixed-Use Streets** typically have a higher amount of pedestrian activity and are often on a transit route. These streets should emphasize a variety of travel choices such as pedestrian, bicycle, and transit use to complement the development along the street. Since Mixed-Use Streets typically serve pedestrian-oriented land uses, walking should receive the highest priority of all the travel modes. They should be designed with features such as wider sidewalks, pedestrian amenities, transit amenities, attractive landscaping, on-street parking, pedestrian crossing enhancements, and bicycle facilities.
- **Residential Streets** are generally surrounded by residential uses, although various small commercial uses may be embedded within the neighborhood. These streets often connect neighborhoods to local parks, schools and mixed-use areas. They should be designed to emphasize walking, while still accommodating the needs of bicyclists and motor vehicles. A high priority should be given to design elements such as traffic calming, landscaped buffers, walkways/pathways/trails, on-street parking, and pedestrian safety enhancements.
- **Commercial/Industrial Streets** are primarily lined with retail and large employment complexes, and often serve industrial areas. These uses serve customers throughout the City and region and may not have a direct relationship with nearby residential neighborhoods. Although commercial streets will be somewhat auto oriented, they should still accommodate pedestrians and bicyclists safely and comfortably. Roadway widths are typically wider to accommodate a high volume of large vehicles such as trucks, trailers, and other delivery vehicles. Design features should include sidewalks and pedestrian crossing enhancements. Bicycles should be accommodated through shared-lane markings and plentiful bicycle parking. Sidewalks should be constructed in accordance with Newberg's Development Code.

Multi-Modal Roadway Cross Sections

Street design in Newberg requires attention to many elements of the public right-of-way and considers how the street interacts with adjoining properties. Four zones comprise the cross-section of streets in Newberg: the context zone, walking zone, biking/on-street parking zone, and driving zone. The design of these zones varies based on the functional classification and street type.

- **Context Zone:** The context zone is the point at which the sidewalk interacts with the adjacent buildings or private property. The purpose of this zone is to provide a buffer for land use adjacent to the street and to ensure that all street users have safe interactions.
- **Walking Zone:** This is the zone in which pedestrians travel. The walking zone is determined by the street type and should be a high priority in mixed-use and residential areas. It includes a minimum five foot wide clear throughway for pedestrian and ADA access, an area for street furnishings or landscaping (e.g. benches, transit stops and/or plantings), and a clearance distance between curbside on-street parking and the street furnishing area or landscape strip (so parking vehicles or opening doors do not interfere with street furnishings and/or landscaping). Streets located along a transit route should incorporate furnishings to support transit ridership, such as transit shelters and benches, into the furnishings/landscape strip

adjacent to the biking/on-street parking zone.

- **Biking/On-Street Parking Zone:** This is the zone for biking and on-street parking, and is the location where users will access transit. The biking/on-street parking zone is determined by the street type and use. Major streets that exceed speeds and traffic volumes for safe shared lane use should include designated bike lanes. On-street parking may be present in some cases depending on the adjacent uses, available right of way, and presence of surface parking.
- **Driving Zone:** This is the throughway zone for drivers, including cars, buses, and trucks and should be a high priority in commercial/employment and industrial areas. The functional classification of the street generally determines the number of through lanes, lane widths, and median and left-turn lane requirements. However, the route designations (such as transit street or freight route) take precedence when determining the appropriate lane width in spite of the functional classification. Wider lanes (between 13 to 14 feet) should only be used for short distances as needed to help buses and trucks negotiate right-turns without encroaching into adjacent or opposing travel lanes. Streets that require a raised median should include a minimum 6 foot wide pedestrian refuge at marked crossings. Otherwise, the median can be reduced to a minimum of 4 feet at midblock locations, before narrowing at intersections for left turn lanes (where required or needed).

Roadway Cross Sections

Roadway standards and cross sections depend on functional classification, and are refined further in this section. Table 3 provides a summary of design standards by functional classification for typical Newberg streets, which are dictated by the Newberg Public Improvements Standards found in Chapter 15.505 of the Newberg Municipal Code and are provided here for reference. All new and rebuilt streets in Newberg must conform to the most current design standards in the Newberg Municipal Code, including but not limited to the required widths of travel lanes, bike lanes, sidewalks, planter strips, and on-street parking. Where a range of values is listed the City will determine the width based on a consideration of the existing constraints and needs for the facility. Illustrations of typical cross sections are shown in Figure 14 through Figure 20. Wider widths may result from enhanced multimodal facilities that may include wider bike lanes, presence of buffered bike lane, wider planting strips, wider sidewalks, or combined bike and pedestrian paths.

Table 3: Functional Classification Design Standards (Typical***)

Street Classification	ROW (ft) Width	Street Width (ft)	Travel Lanes	Median Type	Striped Bike Lane	Sidewalk	On-street Parking	Planter Strip
Statewide Highway	ODOT	ODOT	ODOT	ODOT	ODOT	ODOT	ODOT	ODOT
Major Arterial	95-100	74	4	TWLTL or median	Yes	Yes	No	Yes
Minor Arterial	69-80	48	2	TWLTL or none	Yes	Yes	No	Yes
Major Collector	57-80	36	2	None	Yes	Yes	No	Yes
Minor Collector	61-65	40	2	None	Yes*	Yes	Yes	Yes
Local Residential	54-60	32	2	None	No	Yes	Yes	Yes†
Local Commercial/Industrial	55-65	34	2	None	No	Yes	No	Yes

*Minor collectors shall provide designated shared space for bicycles instead of bike lanes. See Bicycle Facility Treatment Guidelines later in this section for details.

***Actual standards based on the most recently adopted Public Works Design and Construction Standards and Development Code.

†The planter strip may be eliminated on limited residential streets. Curbside sidewalks have additional design requirements.

ODOT: Oregon Department of Transportation-owned facility. The design authority ultimately rests with ODOT.

TWLTL: Two-Way Left Turn Lane

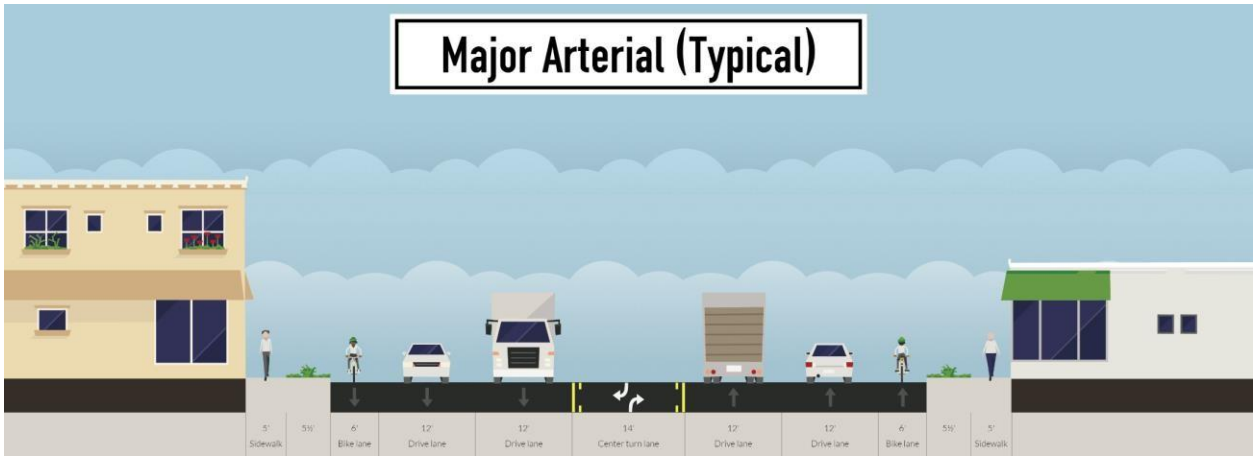


Figure 15: Typical Major Arterial

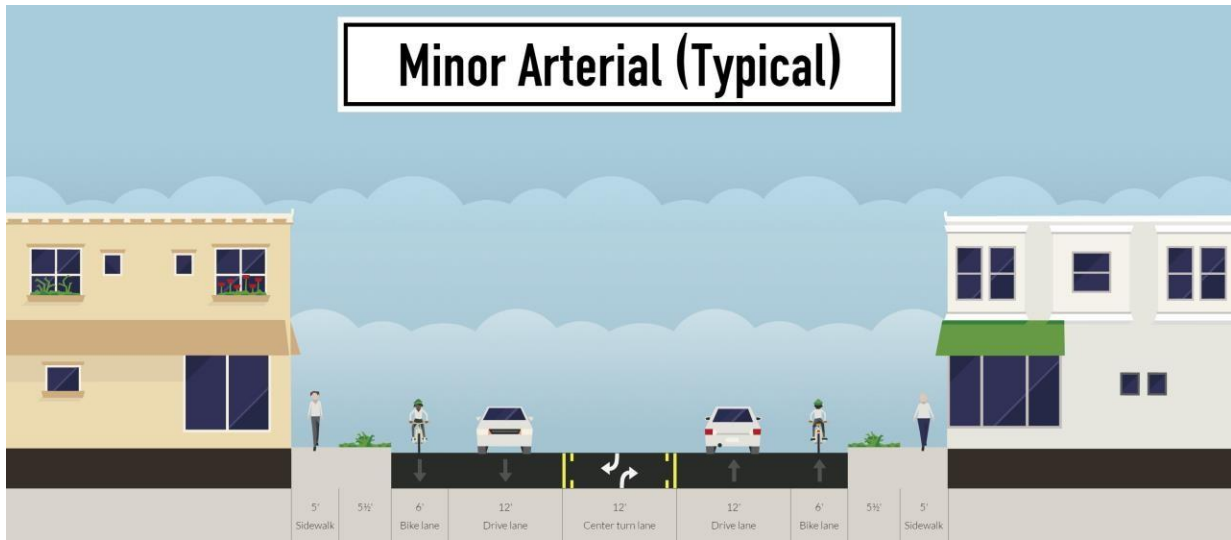


Figure 16: Typical Minor Arterial



Figure 17: Typical Major Collector



Figure 18: Typical Minor Collector

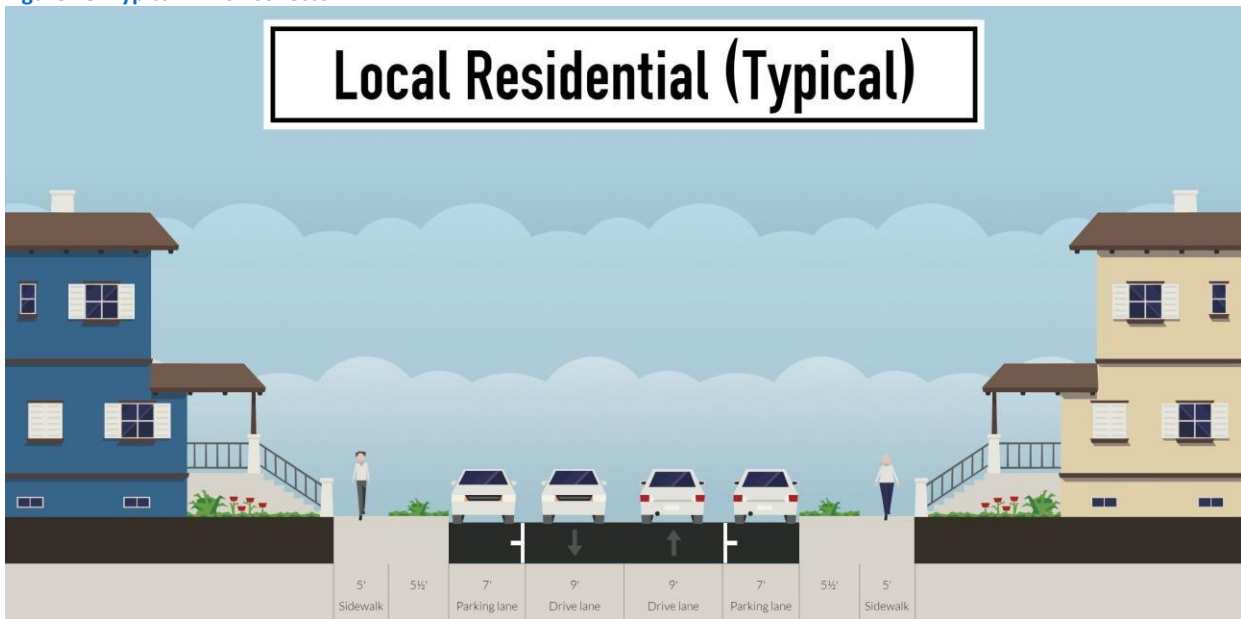


Figure 19: Typical Local Residential

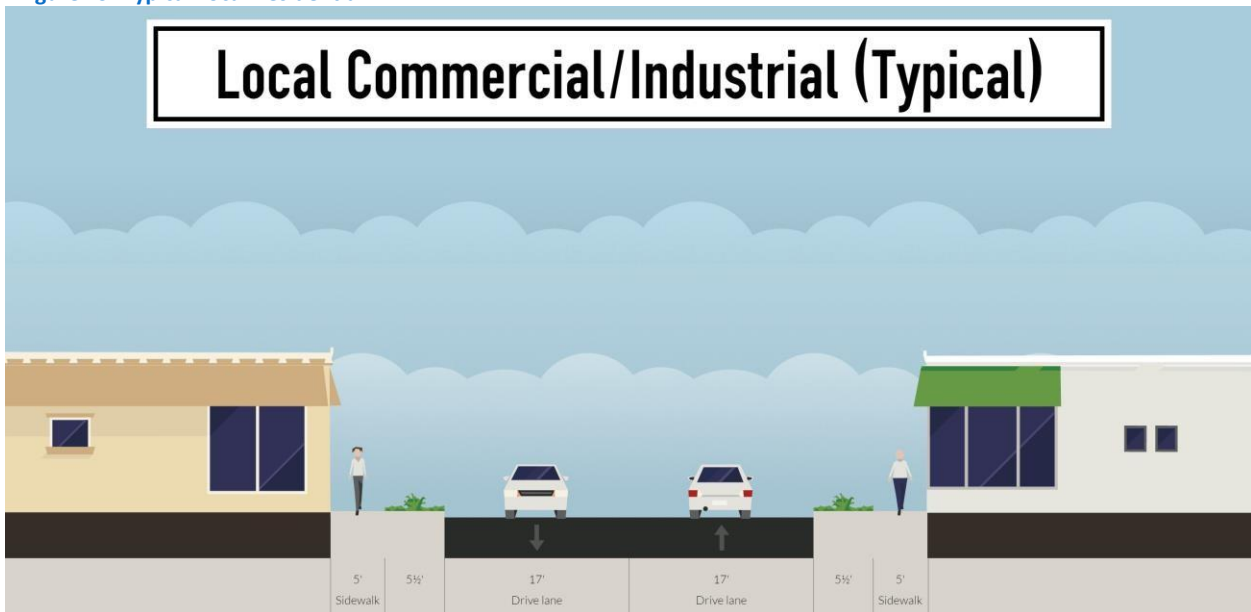


Figure 20: Typical Local Commercial/Industrial

Shared-Use Path Cross Sections

Shared-use paths provide off-roadway facilities for walking and biking travel. Depending on their location, they can serve both recreational and general travel needs. Widths should provide ample space for both walking and biking and should also be able to accommodate maintenance vehicles. The design criteria for shared-use paths are shown in Figure 21. The City may reduce the width of the paved shared use path as necessary in constrained areas located in steep, environmentally sensitive, rural, historic, or development-limited areas of the City. In areas with significant walking or biking demand, the paved shared-use path should be 16 feet wide. In addition, a variety of amenities can make off-street trails more inviting to the user. These amenities (such as interpretive signs, water fountains, benches, lighting, maps, art, and shelters) would not typically be provided along shared-use paths but may be provided for off-street trails in natural settings that have more flexibility with right of way.

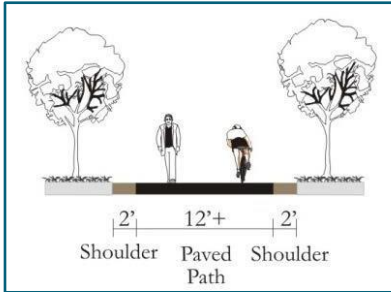


Figure 21: Design Criteria for Shared-Use Paths

Excerpts from the Newberg Municipal Code (NMC) <https://www.codepublishing.com/OR/Newberg/>

15.05.030 Definitions.

“Arterial” means a street so designated in the Newberg transportation system plan. Arterials are intended to expedite the movement of traffic to and from major trip generators and between communities and to collect and distribute traffic from expressways to collector streets, or directly to traffic generators. Arterials are of two types:

1. **Major Arterial.** An arterial typically with or planned to have more than one travel lane in each travel direction.
2. **Minor Arterial.** An arterial typically with or planned to have one travel lane in each travel direction (see Appendix A, Figure 21).

“Collector” means a street so designated in the Newberg transportation system plan. Collectors are intended to channel traffic from local streets or other collectors to the arterial street system. They can also provide access to abutting properties. Collectors are of two types:

1. **Major Collector.** A collector that is intended to serve through traffic and that typically has sufficient traffic volume to warrant striped bike lanes.
2. **Minor Collector.** A collector that is not intended to serve through traffic and that typically does not have sufficient traffic volume to warrant striped bike lanes (see Appendix A, Figure 22).

“Functional classification” means the classification given to streets and highways in the Newberg transportation system plan. The classification is intended to describe the purpose of the street relative to access and mobility. Classifications include, from highest to lowest, expressways, major and minor arterials, major and minor collectors, and local commercial, industrial and residential streets.

15.505.030 Street standards.

G. Street Width and Design Standards.

1. Design Standards. All **streets** shall conform with the standards contained in Table 15.505.030(G). Where a range of values is listed, the **director** shall determine the width based on a consideration of the total **street** section width needed, existing **street** widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the **director**, the overall width shall be determined using the standards under subsections (G)(2) through (10) of this section.

Table 15.505.030(G) Street Design Standards

Type of Street	Right-of-Way Width	Curb-to-Curb Pavement Width	Motor Vehicle Travel Lanes	Median Type	Striped Bike Lane (Both Sides)	On-Street Parking
Arterial Streets						
Expressway**	ODOT	ODOT	ODOT	ODOT	ODOT	ODOT
Major arterial	95 – 100 feet	74 feet	4 lanes	TWLTL or median*	Yes	No*
Minor arterial	69 – 80 feet	48 feet	2 lanes	TWLTL or median*	Yes	No*
Collectors						
Major	57 – 80 feet	36 feet	2 lanes	None*	Yes	No*
Minor	61 – 65 feet	40 feet	2 lanes	None*	Yes*	Yes*
Local Streets						
Local residential	54 – 60 feet	32 feet	2 lanes	None	No	Yes
Limited residential, parking both sides	44 – 50 feet	28 feet	2 lanes	None	No	Yes
Limited residential, parking one side	40 – 46 feet	26 feet	2 lanes	None	No	One side
Local commercial/ industrial	55 – 65 feet	34 feet	2 lanes	None*	No*	Yes*

* May be modified with approval of the **director**. Modification will change overall curb-to-curb and **right-of-way** width. Where a center turn lane is not required, a landscaped median shall be provided instead, with turning pockets as necessary to preserve roadway functions.

** All standards shall be per **ODOT** expressway standards.

2. Motor Vehicle Travel Lanes. **Collector** and **arterial** streets shall have a minimum width of 12 feet.

3. **Bike Lanes.** Striped **bike lanes** shall be a minimum of six feet wide. **Bike lanes** shall be provided where shown in the Newberg transportation system plan.
4. **Parking Lanes.** Where on-street parking is allowed on **collector** and **arterial** streets, the parking lane shall be a minimum of eight feet wide.
5. **Center Turn Lanes.** Where a center turn lane is provided, it shall be a minimum of 12 feet wide.
6. **Limited Residential Streets.** Limited residential **streets** shall be allowed only at the discretion of the review authority, and only in consideration of the following factors:
 - a. The requirements of the fire chief shall be followed.
 - b. The estimated traffic volume on the **street** is low, and in no case more than 600 average daily trips.
 - c. **Use** for through **streets** or looped **streets** is preferred over **cul-de-sac** streets.
 - d. **Use** for short **blocks** (under 400 feet) is preferred over longer **blocks**.
 - e. The total number of residences or other **uses** accessing the **street** in that **block** is small, and in no case more than 30 residences.
 - f. On-street parking usage is limited, such as by providing ample off-street parking, or by staggering **driveways** so there are few areas where parking is allowable on both sides.
7. **Sidewalks.** **Sidewalks** shall be provided on both sides of all public **streets**. Minimum width is five feet.
8. **Planter Strips.** Except where infeasible, a planter strip shall be provided between the **sidewalk** and the **curb line**, with a minimum width of five feet. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb-side **sidewalks** may be allowed on limited residential **streets**. Where curb-side **sidewalks** are allowed, the following shall be provided:
 - a. Additional reinforcement is done to the **sidewalk** section at corners.
 - b. **Sidewalk** width is six feet.
9. **Slope Easements.** Slope **easements** shall be provided adjacent to the **street** where required to maintain the stability of the **street**.
10. **Intersections and Street Design.** The **street** design standards in the Newberg public works design and construction standards shall apply to all public **streets**, alleys, bike facilities, and **sidewalks** in the **city**.
11. The **planning commission** may approve modifications to **street** standards for the purpose of ingress or egress to a minimum of three and a maximum of six **lots** through a **conditional use permit**.

H. **Modification of Street Right-of-Way and Improvement Width.** The **director**, pursuant to the Type II review procedures of Chapter 15.220 NMC, may allow modification to the public **street** standards of subsection (G) of this section, when the criteria in both subsections (H)(1) and (2) of this section are satisfied:

1. The modification is necessary to provide design flexibility in instances where:

- a. Unusual topographic conditions require a reduced width or **grade** separation of improved surfaces; or
- b. **Lot** shape or configuration precludes accessing a proposed development with a **street** which meets the full standards of this section; or
- c. A modification is necessary to preserve trees or other natural features determined by the **city** to be significant to the aesthetic character of the area; or
- d. A planned unit development is proposed and the modification of **street** standards is necessary to provide greater privacy or aesthetic quality to the development.

2. Modification of the standards of this section shall only be approved if the **director** finds that the specific design proposed provides adequate vehicular **access** based on anticipated traffic volumes.

City of Newberg Transportation System Plan and Municipal Code Street Cross-Sections

Roadway	Functional Classification	Existing Right-of-way	Existing Pavement Width	Minimum Right-of-way	Minimum Pavement Width	Typical Cross-Section (per Transportation System Plan)
	Major Arterial (95-feet to 100-feet)			98-feet For typical section per TSP.	74-feet	<ul style="list-style-type: none"> • 1-foot from back of walk to right-of-way • 5-foot sidewalk • 5.5-foot planter* • 0.5-foot curb • 6-foot bike lane • 12-foot travel lane • 12-foot travel lane • 14-foot TWLT travel lane • 12-foot travel lane • 12-foot travel lane • 6-foot bike lane • 0.5-foot curb • 5.5-foot planter* • 5-foot sidewalk • 1-foot from back of walk to right-of-way

*5-foot minimum per NMC 15.505.030(G)(8)

Roadway	Functional Classification	Existing Right-of-way	Existing Pavement Width	Minimum Right-of-way	Minimum Pavement Width	Typical Cross-Section (per Transportation System Plan)
	Minor Arterial (69-feet to 80-feet)			72-feet For typical section per TSP.	48-feet	<ul style="list-style-type: none"> • 1-foot from back of walk to right-of-way • 5-foot sidewalk • 5.5-foot planter* • 0.5-foot curb • 6-foot bike lane • 12-foot travel lane • 12-foot travel lane • 12-foot travel lane • 6-foot bike lane • 0.5-foot curb • 5.5-foot planter* • 5-foot sidewalk • 1-foot from back of walk to right-of-way

*5-foot minimum per NMC 15.505.030(G)(8)

Roadway	Functional Classification	Existing Right-of-way	Existing Pavement Width	Minimum Right-of-way	Minimum Pavement Width	Typical Cross-Section (per Transportation System Plan)
	Major Collector (57-feet to 80-feet)			60-feet For typical section per TSP.	36-feet	<ul style="list-style-type: none"> • 1-foot from back of walk to right-of-way • 5-foot sidewalk • 5.5-foot planter* • 0.5-foot curb • 6-foot bike lane • 12-foot travel lane • 12-foot travel lane • 6-foot bike lane • 0.5-foot curb • 5.5-foot planter* • 5-foot sidewalk • 1-foot from back of walk to right-of-way

*5-foot minimum per NMC 15.505.030(G)(8)

Roadway	Functional Classification	Existing Right-of-way	Existing Pavement Width	Minimum Right-of-way	Minimum Pavement Width	Typical Cross-Section (per Transportation System Plan)
	Minor Collector (61-feet to 65-feet)			64-feet For typical section per TSP.	40-feet	<ul style="list-style-type: none"> • 1-foot from back of walk to right-of-way • 5-foot sidewalk • 5.5-foot planter* • 0.5-foot curb • 8-foot parking lane • 12-foot travel lane with sharrow • 12-foot travel lane with sharrow • 8-foot parking lane • 0.5-foot curb • 5.5-foot planter* • 5-foot sidewalk • 1-foot from back of walk to right-of-way

*5-foot minimum per NMC 15.505.030(G)(8)

Roadway	Functional Classification	Existing Right-of-way	Existing Pavement Width	Minimum Right-of-way	Minimum Pavement Width	Typical Cross-Section (per Transportation System Plan)
	Local Residential (54-feet to 60-feet)			56-feet For typical section per TSP.	32-feet	<ul style="list-style-type: none"> • 1-foot from back of walk to right-of-way • 5-foot sidewalk • 5.5-foot planter* • 0.5-foot curb • 7-foot parking lane • 9-foot travel lane • 9-foot travel lane • 7-foot parking lane • 0.5-foot curb • 5.5-foot planter* • 5-foot sidewalk • 1-foot from back of walk to right-of-way

*5-foot minimum per NMC 15.505.030(G)(8)

Roadway	Functional Classification	Existing Right-of-way	Existing Pavement Width	Minimum Right-of-way	Minimum Pavement Width	Typical Cross-Section (per Transportation System Plan)
	Local Commercial/ Industrial (55-feet to 65-feet)			58-feet	34-feet	<ul style="list-style-type: none"> • 1-foot from back of walk to right-of-way • 5-foot sidewalk • 5.5-foot planter* • 0.5-foot curb • 17-foot travel lane • 17-foot travel lane • 0.5-foot curb • 5.5-foot planter* • 5-foot sidewalk • 1-foot from back of walk to right-of-way

*5-foot minimum per NMC 15.505.030(G)(8)

Roadway	Functional Classification	Existing Right-of-way	Existing Pavement Width	Minimum Right-of-way**	Minimum Pavement Width	Typical Cross-Section (per Transportation System Plan)
	Shared-Use Path			N/A	12-feet*	<ul style="list-style-type: none"> • 2-foot shoulder • 12-foot paved path* • 2-foot shoulder

*Preference in high use areas with significant walking or biking demand should be a 16-foot paved shared-use path.

**NMC 15.505.030 S(1) – Public walkways shall be located within a public access easement that is a minimum of 15 feet in width.