

## **APPENDIX A**

### **Design Standards for Streets, Sidewalks and Bikeways – 6/07/04**

#### **Purpose and Intent**

The 2025 Transportation Plan established a functional classification system consisting of Major Arterials, Minor Arterials, Major Collectors and Neighborhood Collectors. In developing new design standards, it was determined that local residential and local non-residential streets should also be included. This provides for an integrated street system.

A roadway system must balance the conflicting goals of traffic movement and access to land. Arterials are primarily for the movement of through traffic; collectors provide equal attention to land access and through traffic; and local streets provide access to individual parcels of land at the expense of through traffic. Selecting the proper roadway design for each functional classification is vital to development of a system of roadways which provides the needed connectivity between all areas of the city as well as the capacity to handle future traffic volume.

Design elements encompassing right of way width, pavement width, number of travel lanes, bike lane width, use of curb and gutter, sidewalk and pedway width, parking, driveways, buffer strip width, and utility easements must be appropriately selected to provide the function, character, traffic volume and speed desired.

Major streets serve a development pattern that ranges from low density residential to intensely developed commercial centers and corridors. To meet such varied conditions and address neighborhood livability factors requires an array of design approaches. A “one standard fits all” is not consistent with traffic needs or the wide variety of situations encountered.

In several of the street types, an alternative design will be considered or may be required when conditions specified in the standards are found to exist. This language was drafted specifically to allow a design appropriate for the land use and traffic conditions being created by a proposed development. The alternative design may be requested by the developer or recommended by city staff or the Planning and Zoning Commission. Criteria are included to provide guidance in selecting the proper street design to match the expected conditions. If the alternative design exceeds the standard design for a particular street type, it shall be presumed to satisfy these requirements. In all other cases, the final decision shall rest with the City Council.

#### **Application of Design Standards**

The design standards are intended to result in a more predictable and acceptable outcome for street improvements. Due to the wide range of circumstances, however, the standards need to be applied with a certain amount of flexibility. Street construction activity consists of building completely new streets as well as making minor improvements to existing streets. Many existing streets will not be changed at all in the next several years while others will be candidates for additional lanes, intersection reconfiguration, or major reconstruction. Unlike new streets, existing streets have physical constraints to being retrofitted to meet new standards due to a narrow right of way or the proximity of buildings, utilities or mature trees. Additionally, adjacent property owners often voice concern about more traffic, speeding, noise, storm water runoff, and other issues.

To deal with the application issue, two categories of improvements have been developed. Major projects consist of significant improvements to the street system and the design standards are to be interpreted as requirements. In situations where it is not feasible, practical or desirable for a proposed street improvement to meet the required standards, a design exception may be considered and approved by the City Council as part of the public hearing process. Major projects include:

- Construction of a new street
- Major reconstruction of an existing street (e.g. upgrade to city standards)
- Major widening of an existing street (e.g. addition of one or more lanes)

For minor improvements the design standards are regarded as a guideline rather than an absolute requirement. In such cases, if the standards are not attainable a design exception will not be required. Minor projects include:

- Resurfacing or partial reconstruction of the pavement
- Installation of traffic calming devices
- Intersection improvements (e.g. traffic signals, turn lanes, etc.)
- Reconstruction resulting in incidental widening
- Installing bike lanes or sidewalks on existing streets

Major projects typically entail significant citizen input in evaluating location and design alternatives. Meetings are held with interested parties such as property owners and residents followed by public hearings by the City Council. Citizen input on Minor projects varies. Resurfacing usually involves public notice but little citizen involvement whereas traffic calming measures can entail extensive citizen participation in the location and design process.

In regards to private development, the proposed standards would normally only apply to undeveloped land that is being platted for the first time. The standards could, however, apply to a previously developed area under two circumstances: 1) the area is being replatted to create a different street and lot layout for redevelopment and the construction of new buildings; and 2) the area is being rezoned to allow more intensive development (e.g. changing from residential to commercial and thus from residential to non-residential streets).

### **Local Residential Street Design Standards**

**Residential Streets** provide direct access to residential dwellings and other allowed uses. They should be designed for this intended function and exhibit characteristics which contribute to a safe and attractive living environment. This can be achieved by providing a diversity of street types, each serving a specific role. Right of way and pavement widths less than the general standard should provide acceptable levels of access, safety and convenience for all users, including emergency service providers, while enabling enhanced site design and creation of attractive streetscapes. Subdivision layouts should avoid the creation of pass through routes for external traffic while allowing local drivers to move easily to and from higher order streets.

The design standard for a **Residential Street** shall be as follows:

1. Right-of-way: 50 feet wide

2. Pavement: 28 feet wide measured from back of curb
3. Turnarounds: Terminal streets shall have a turnaround at the closed end with an outside right-of-way diameter of 94 feet and a roadway pavement diameter of 76 feet.
4. Drainage: Curb and gutter system.
5. Sidewalks: 5 feet wide on both sides constructed 1 foot inside the right-of-way.
6. Parking: Permitted on both sides of the street.
7. Buffer Strip: 5 feet wide with trees permitted in the right-of-way subject to compliance with city policies and regulations.
8. Utility Easements: 10 feet on both sides adjacent to the right-of-way. The city and public utility providers will not be responsible for the restoration of any landscaping placed within utility easements that is removed or damaged as a result of constructing, repairing or maintaining public utilities.

In place of the typical Residential Street, a request may be submitted at the time of preliminary plat review for approval of one or more of the following alternative streets:

A **Residential Feeder** will be considered or may be required when one or more of the following conditions exist: 1) the intended use and adjacent zoning allows duplex or multi-family dwellings; 2) the expected average daily traffic (ADT) exceeds 500; or 3) the street collects localized traffic within a subdivision and leads to a collector or arterial street. A Residential Feeder shall conform to the following design standards:

1. Right-of-way: 50 feet wide
2. Pavement: 32 feet wide measured from back of curb
3. Sidewalks: 5 feet wide on both sides constructed 1 foot inside the right-of-way.
4. Buffer Strip: 3 feet wide with only ornamental trees permitted.
5. Other Features: Same as a Residential Street

An **Access Street** will be considered when all of the following conditions exist: 1) the intended use and adjacent zoning is single-family detached dwellings; 2) the street is not longer than 750 feet, and 3) the expected average daily traffic (ADT) is less than 250. An Access Street shall conform to the following design standards:

1. Right-of-way: 44 feet wide
2. Pavement: 24 feet wide measured from back of curb
3. Turnarounds: Terminal streets shall have a turnaround at the closed end with an outside right-of-way diameter of 94 feet and a roadway diameter of 76 feet.

4. Sidewalks: Same as a Residential Street, except sidewalks shall not be required on cul-de-sacs less than 250 feet in length.
5. Parking: Permitted on one side only
6. Other Features: Same as a Residential Street

The design standard for **Residential Alleys** shall be as follows:

1. Right of Way: 18 feet wide
2. Pavement: 16 feet wide measured from edge of pavement (no curb and gutter)
3. Travel Lanes: Two-way traffic allowed
4. Maximum Length: 500 feet between connecting streets
5. Parking: Parking in alley prohibited
6. Setbacks: Garages, carports and open parking spaces shall be set back at least 5 feet from the right of way.
7. Utility Lines: Both overhead and underground utility lines may be installed in the right of way.

### **Local Non-Residential Street Design Standards**

A **Non-Residential Street** is a low volume, low speed street which provides access to commercial, industrial, institutional, and other intensive land uses. Generally, only two travel lanes are needed. In some cases, these streets may carry considerable truck traffic, require wider driveways for access to loading docks, and have a need for on-street parking. Direct connections to collector and arterial streets are essential.

The design standard for a **Non-residential Street** shall be as follows:

1. Right-of-way: 66 feet wide
2. Pavement: 36 feet wide measured from back of curb
3. Turnarounds: Terminal streets shall have a turnaround at the closed end with an outside right-of-way diameter of 94 feet and a roadway diameter of 76 feet.
4. Sidewalks: 5 feet wide on both sides constructed 1 foot inside the right-of-way.
5. Parking: Permitted on both sides of the street.
6. Buffer Strip: 9 feet wide with trees permitted in the right-of-way subject to compliance with city policies and regulations.
7. Utility Easements: Same as a standard Residential Street

In place of the typical Non-residential Street, a request may be submitted at the time of preliminary plat review for approval of one or more of the following alternatives:

An **Option A** street will be considered when two or more of the following conditions exist: 1) the intended use and adjacent zoning is commercial, light industrial, office, and/or multi-family residential; 2) the expected average daily traffic (ADT) is less than 4,000; 3) the street is primarily intended to provide access to property and secondarily to serve through traffic; and 4) there is a nearby collector or arterial street to accommodate future traffic from surrounding land.

Option A streets shall conform to the following design standards:

1. Right-of-way: 60 feet wide
2. Pavement: 30 feet wide measured from back of curb
3. Parking: Not permitted on either side.
4. Other features: Same as a typical Non-residential Street

An **Option B** street will be considered when all of the following conditions exist: 1) the intended use and adjacent zoning is office and/or multi-family residential; 2) the street is not longer than 750 feet; 3) the expected average daily traffic is less than 1,000; 4) the street is intended to provide access to property and not serve through traffic; and 5) there is a nearby collector or arterial street to accommodate future traffic from the development of surrounding land.

Option B streets shall conform to the following design standards:

1. Right-of-way: 60 feet wide
2. Pavement: 30 feet wide measured from back of curb
3. Parking: Permitted on one side only
4. Buffer Strip: 9 feet wide with trees permitted as a typical Non-residential Street
5. Other features: Same as a typical Non-residential Street

An **Option C** street will be considered or may be required when two or more of the following conditions exist: 1) the intended use and adjacent zoning is intensive commercial and/or industrial; 2) the expected average daily traffic exceeds 4,000; 3) the street will serve a significant amount of through traffic; 4) the street will connect to two collector or arterial streets; 5) there will be a significant number of left turns to and from abutting driveways; and 6) there will be a significant amount of truck traffic.

Option C streets shall conform to the following design standards:

1. Right-of-way: 66 feet wide
2. Pavement: 38 feet wide measured from back of curb to provide for two 13' travel

lanes and a 12' two-way center turn lane.

3. Turnarounds: Terminal streets are not permitted
4. Parking: Not permitted on either side
5. Other Features: Same as a typical Non-residential Street

### **Neighborhood Collector Street Design Standards**

A **Neighborhood Collector** is intended to collect traffic from surrounding residential areas and connect to major streets; serve local, non-residential land uses such as schools, churches, and parks; and promote neighborhood livability. These streets provide two traffic lanes for shared use by vehicles and bicycles at low to moderate driving speeds (30 mph), accommodate an average daily traffic volume of 1,500-3,500 vehicles, and generally, connect to only one arterial or major collector street. They may also provide direct access to property and contain on-street parking. Two types of Neighborhood Collector streets are allowed. Either type may be required or proposed provided a statement of justification is submitted for the subject location.

**Option A** streets are intended to provide direct access to property and provide some periodic on-street parking for abutting uses. The design standard shall be as follows:

1. Right-of-way: 60 feet wide
2. Pavement: 34 feet wide measured from back of curb
3. Travel Lanes: Two travel lanes each 13.5 feet wide
4. Sidewalks: 5 feet wide on both sides constructed 1 foot inside the right-of-way.
5. Parking: Permitted on one side of the street only. A bulb-out may be built near intersections to create recessed parking, calm traffic and assist pedestrians.
6. Driveways: Permitted on both sides of the street.
7. Buffer Strip: 7 feet wide with trees permitted in the right-of-way subject to compliance with city policies and regulations.
8. Utility Easements: Same as a standard Residential Street

**Option B** streets are intended to primarily collect neighborhood traffic and not provide direct access to property. The design standard shall be as follows:

1. Right-of-way: 60 feet wide
2. Pavement: 30 feet wide measured from back of curb
3. Travel Lanes: Two shared travel lanes each 15 feet wide
4. Sidewalks: 5 feet wide on both sides constructed 1 foot inside the right-of-way.

5. Parking/Driveways: Not permitted on either side
6. Buffer Strip: 9 feet wide with trees allowed as for Option A streets
7. Other features: Same as Option A streets

### **Major Collector Street Design Standards**

A **Major Collector** is a mid-volume, multi-modal street (average daily traffic of 3,500-8,500 vehicles) which collects traffic from several neighborhoods and moves the traffic to the arterial network. These streets provide access to retail centers, office complexes, institutional uses such as colleges and hospitals, and multi-family residential areas. Major collectors typically have two, undivided travel lanes with a left turn lane at key intersections. A two-way center turn lane or intermittent raised median may be provided to manage access at high traffic locations. Typically, direct access to one and two-family residences is prohibited with consolidated driveways allowed for other uses when controlled as to location. No on-street parking is permitted.

The design standard for a **Major Collector** street shall be as follows:

1. Right-of-way: 66 feet wide
2. Pavement: 36 feet wide measured from back of curb
3. Travel Lanes: Two lanes each 12 feet wide
4. Bike Lanes: Striped bike lane on both sides 6 feet from back of curb
5. Sidewalks: 5 feet wide on both sides constructed 1 foot inside the right-of-way.
6. Parking: Not permitted on either side
7. Driveways: Controlled as to location and width for access management purposes.
8. Buffer Strip: 9 feet wide with trees permitted in the right-of-way located 4 feet from edge of street and sidewalk subject to compliance with city policies and regulations.
9. Utility Easements: Same as a standard Residential Street

In place of the typical Major Collector, a request may be submitted at the time of preliminary plat review for approval of one or more of the following alternative streets:

An **Option A** street will be considered or may be required when the following conditions exist: 1) the intended use and zoning of nearby land is one or two-family residential and/or large open land areas such as parks, churches, and schools; and 2) the street is intended to serve through traffic and not provide direct access to property.

Option A streets shall conform to the following design standards:

1. Right-of-way: 66 feet wide

2. Pavement: 32 feet wide measured from back of curb
3. Travel Lanes: Two shared use travel lanes each 16 feet wide
4. Bike Lanes: No striped bike lanes
5. Sidewalk/Pedway: A 5 foot wide sidewalk on one side and an 8 foot wide pedway on the other side constructed 1 foot inside the right of way.
6. Parking: Not permitted on either side
7. Driveways: Not permitted on either side
8. Buffer Strip: 9-10 feet wide with trees permitted as for a typical Major Collector
9. Other features: Same as a typical Major Collector

An **Option B** street will be considered or may be required when one or more of the following conditions exist: 1) the intended use and/or zoning of adjacent land is retail commercial, office, institutional or multi-family residential; 2) the expected average daily traffic exceeds 6,000; and 3) the street will or is likely to connect to two arterial streets.

Option B streets shall conform to the following design standards:

1. Right-of-way: 76 feet wide
2. Pavement: 44 feet wide measured from back of curb
3. Travel Lanes: Two shared use travel lanes each 16 feet wide plus a center two-way left-turn lane 12 feet wide.
4. Bike Lanes: No striped bike lanes
5. Pedway/Sidewalk: An 8 foot wide Pedway on one side and a 5 foot wide sidewalk on the other side constructed 1 foot inside the right of way.
6. Parking: Not permitted on either side
7. Driveways: Controlled as to location and width for access management purposes.
8. Buffer Strip: 8-9 feet wide with trees permitted as for a typical Major Collector
9. Other features: Same as a typical Major Collector

### **Minor Arterial Street Design Standards**

A **Minor Arterial** is a mid-to-high volume multi-modal street (average daily traffic of 7,500-20,000 vehicles) which moves a large portion of internal city traffic. Minor Arterials usually connect to Major Arterials or Expressways and provide access to such traffic destinations as retail



shopping areas, employment centers, and many residential neighborhoods. These streets have a minimum of two, undivided travel lanes but may have up to four travel lanes with a raised median and left turn lane at intersections to manage traffic access. Typically, direct access to property is restricted and no on-street parking is permitted.

Three types of Minor Arterial streets are permitted. Each type may be allowed or required depending upon the surrounding land use pattern, traffic conditions or other circumstances.

An **Option A** street will be considered or may be required when the intended use or zoning of nearby land is predominantly residential or large open land areas such as parks, churches, and schools. Option A streets shall conform to the following design standards:

1. Right of way: 84 feet wide
2. Pavement: Total width is 40 feet measured from edge of shoulder.
3. Travel Lanes: Two lanes, each 12 feet wide.
4. Paved Shoulder: 8 feet on each side for bikes and emergency parking.
5. Drainage: Open channel or swale system without curb and gutter.
6. Sidewalk: 5 feet wide on one side constructed 1 foot inside the right-of-way.
7. Pedway: 8 feet wide on one side constructed 1 foot inside the right of way.
8. Parking: Not permitted on either side.
9. Driveways: Controlled as to location and width for access management purposes.
10. Buffer Strip: 14-15 feet wide on each side. Trees permitted in the right of way when located outside of the drainage channel and 4 feet from edge of sidewalk or Pedway subject to compliance with city policies and regulations.
11. Utility Easements: Same as a standard Residential Street.

An **Option B** street will be considered or may be required when the following conditions exist: 1) the intended use or zoning of nearby land is residential or large open land areas such as parks, churches, and schools; and 2) the average daily traffic volume of the street is projected to exceed 15,000 vehicles in 20 years. Option B streets shall conform to the following design standards:

1. Right of way: 100 feet wide
2. Pavement: Total width is 40 feet measured from edge of shoulder.
3. Travel Lanes: One 12 feet wide lane on each side of a 12 feet center median.

#### 4. Other Features: Same as Option A

An **Option C** street will be considered or may be required when the intended use or zoning of adjacent land is predominantly commercial, industrial, office, or institutional. Option C streets shall conform to the following design standards:

1. Right-of-way: 84 feet wide
2. Pavement: 48 feet wide measured from back of curb
3. Travel Lanes: Two 12 feet wide travel lanes plus a 12 feet wide center, two-way left turn lane.
4. Bike Lanes: Striped 6 feet wide bike lane on each side measured from back of curb
5. Drainage: A curb and gutter system is most common
6. Buffer Strip: 10 feet wide on each side. Trees permitted in the right of way when located 6 feet from edge of street and 4 feet from edge of sidewalk or Pedway subject to compliance with city policies and regulations.
7. Other Features: Same as Option A

### **Major Arterial Street Design Standards**

A **Major Arterial** is a high volume multi-modal street (average daily traffic of 15,000 or more vehicles) which handles the bulk of through traffic within the city. Major Arterials connect to expressways and freeways as well as provide access to major traffic destinations such as regional shopping centers and major universities. These streets usually have at grade intersections which are spaced well apart. It is very common for Major Arterials to have four lanes with a continuous raised median except for a left turn lane at major intersections. Direct access to property is usually prohibited or limited to right-in, right-out and no on-street parking is permitted.

Two types of Major Arterial streets are permitted. Each type may be allowed or required depending upon the surrounding land use, traffic conditions or other circumstances.

An **Option A** will be considered or may be required when vehicle speeds are moderate, right of way is limited, and access is restricted thereby mitigating the need for a median. Option A streets shall conform to the following design standards:

1. Right of way: 106 feet wide
2. Pavement: Total width of 60 feet measured from back of curb or edge of pavement
3. Travel Lanes: Four lanes each 12 feet wide
4. Bike Lanes: Striped 6 feet wide bike lane on each side measured from back of curb
5. Drainage: May be built with curb and gutter or an open swale

6. Sidewalk: 5 feet wide on one side constructed 1 foot inside the right-of-way
7. Pedway: 8 feet wide on one side constructed 1 foot inside the right of way
8. Parking: Not permitted on either side
9. Driveways: Controlled as to location and width for access management purposes.
10. Buffer Strip: 14-17 feet wide on each side. Trees permitted in the right of way located 10 feet from edge of street and 4 feet from edge of sidewalk or Pedway subject to compliance with city policies and regulations.
11. Utility Easements: Same as a standard Residential street.

An **Option B** street will be considered or may be required when the projected average daily traffic volume of the street could reasonably exceed 20,000 vehicles in 20 years and/or the street connects to a freeway or expressway. Option B streets shall conform to the following design standards:

1. Right of way: 110 feet wide
2. Pavement: Total width of 52 feet measured from back of curb or edge of pavement
3. Travel Lanes: One 12 feet wide inner lane and one 14 feet wide outer lane on each side of a 16 feet wide center median which may include a 12' wide left-turn lane at intersections.
4. Bike Lanes: No bike lane on either side
5. Sidewalk: 5 feet wide on one side constructed 1' inside right of way
6. Pedway: 10' wide on one side constructed 1' inside right of way
7. Buffer Strip: 12-13 feet wide on each side. Trees permitted in the right-of-way located 8 feet from edge of street and 4 feet from edge of sidewalk or Pedway subject to compliance with city policies and regulations.
8. Other Features: Same as Option A

Requests for exceptions to the above design standards may be submitted at the time of preliminary plat review and shall be processed as a variance as provided by the Subdivision Regulations.