

VI. Utility Guidelines

The design of a mixed use development (MU) is to occur in a comprehensive manner, where land uses, site layout, utility corridors, landscaping, lighting and other infrastructure are designed in concert with one another. This will especially apply to utility design work, where advance planning and layout will facilitate construction, operation and maintenance, both from a functional and aesthetic standpoint.

General Utility Considerations

The Colorado Springs Utilities ("Springs Utilities") provides the community of Colorado Springs with electric, gas, water and wastewater service. To accommodate and support MU development, guidelines have been developed for utility placement and design. In addition, Springs Utilities publishes the "Colorado Springs Utilities Site Design Guidelines" which provides details regarding site improvements and landscaping requirements within rights-of-way and utility corridors and easements. This information is for general planning purposes only, and does not supersede applicable City or Springs Utilities codes, tariffs, service standards, specifications, or safety codes. Due to the nature of MU development, utility design is expected to be site specific. Developers are encouraged to contact Springs Utilities in the earliest phase of the project to discuss options for utility connections and placement.

The MUD street types, rights-of-way widths and associated corridors and easements allow for most typical site layouts and utility infrastructure. Additional utility easements may be required by Springs Utilities as necessary to accommodate the final utility infrastructure and to meet access requirements of the mixed use development. The developer typically dedicates such easements using a standardized Springs Utilities permanent easement agreement form and process.

Details regarding line extension and service standards, easements, and other available services can be found at the Springs Utilities web site at www.csu.org. Select Residential Services or Business Solutions from the main menu and then click on Utilities Development Services for a list of available documents and services.

General Utility Guidelines

The following design guidelines are recommended for a MU development:

A. Supply

1. When submitting the Mixed Use Concept Plan the following information shall be provided:
 - a. A plan identifying the points of interconnection for water, wastewater, gas, and electric.
 - b. A map showing the general corridor and initial layout for each utility.
 - c. Demand calculations for each utility under full build-out conditions.
 - d. A summary describing current utility infrastructure in the area of development. This summary shall include the age and condition of the infrastructure, and any proposed modifications (including relocation and replacement). Capacity issues shall also be identified, including any impacts on existing infrastructure. Utility services may be capacity limited due to existing infrastructure. Utility services are provided to eligible customers at the time of connection to the distribution system on a "first come, first served" basis in accordance with Springs Utilities' tariffs.
2. Springs Utilities will determine if existing mains may or may not be adequate to meet current or proposed uses. Modification of existing utility lines used to support the new development, if required due to capacity limitations, age or condition, shall be at the developer's expense.
3. Fire service and hydrant lines installed for commercial or multi-family residential use require independent connections to the water mains.
4. Where available, non-potable water should be used for landscape irrigation. Springs Utilities encourages the extension of non-potable waterlines and the use of non-potable water for irrigation.
5. Consideration for wastewater hydraulics should be included in the Mixed Use Concept Plan. Modifications of existing infrastructure to achieve the required flow rate should be at the developer's expense.
6. Private main agreements may be required for parcels with limited access to public facilities.
7. A Utilities Addressing Plan (UAP), along with a Utilities Design Cad File (UDCF), will be required when a request for service is submitted to Springs Utilities in accordance with Appendix B of the *Line Extension & Service Standards* manuals.

B. Metering

1. Meter Locations

- a. Preferred locations for electric, gas and water meters shall be identified in the Mixed Use Development Plan. Guidelines for location of meters can be found in the Line Extension and Service Standards manuals
- b. Concrete-filled guard posts shall be installed in front of gas and electric meters in accordance with Appendix E of the Springs Utilities' Line Extension & Service Standards – Gas manual to provide protection from vehicular traffic.
- c. Proper clearance between gas meters and electrical equipment and transformers shall be provided in accordance with the Springs Utilities' Line Extension & Service Standards - Gas manual.
- d. Large gas and water meters shall have vehicular access for installation and service of meters.
- e. Openings into structure/residence from adjacent gas meters require a minimum of three feet clearance from vents, doors, windows, intakes, etc.
- f. Water meters installed inside a residence or business shall have a low voltage wire run from the meter location to a remote reader to be located outside the building.
- g. Floor drains need to be installed within five feet of any indoor water meter location.
- h. Individual shut off valves (curb stop) must be provided to isolate each Springs Utilities-owned meter. Curb stop box lids need correct address tags.

2. Meter Accounts

- a. Commercial and residential meters require separate billing accounts.
- b. Separate meters shall be required for landscape irrigation associated with commercial accounts.
- c. Each business or residence shall have its own gas, water, and electric meter.

C. Utility Access

1. Access to utility infrastructure is of prime importance and shall be maintained to Springs Utilities' standards for all public streets and utility easements.
2. Adequate access shall be provided to all electric,

gas and water meters, to all vaults and valves, and to all sewer manholes.

3. Avoid locating sewer manholes, electric transformers or meters in narrow or dead-end streets.
4. Avoid routing utilities under streets with specialty paving that increases the complexity and expense of utility repairs.
5. All utilities shall be installed with adequate vertical and/or horizontal separations to facilitate access and maintenance. Please refer to current *Springs Utilities' Line Extension & Service Standards* manuals for detailed requirements.

D. Utility Easements

1. The initial Mixed Use Concept Plan should show all proposed rights-of-way and utility corridors and easements.
2. Easements shall be provided for all public water lines and hydrants not located in a public right-of-way. Changes in location of utilities or final transformer, fire hydrant or meter locations may require granting of additional easements.
3. All utility easements where access by Springs Utilities vehicles may be required shall be constructed to an HS 20 wheel loading standard.

E. Street Lighting

1. Street lighting systems, when provided, should be located in the utility corridor of the tree lawn area of the ROW. To the extent possible, public streetlights should be limited to public roadways and utility easements in private roadways. Public streetlights should be avoided on private property, unless installed under Springs Utilities Security Lighting policy set forth in Section 12.02 of the *Line Extension & Service Standards-Electric* manual.
2. Public street lighting should be installed and maintained by Springs Utilities. All other lighting for on-site streets, pedestrian walkways, bikeways and parking lots should be installed and maintained by the developer. The options for public street lighting are shown in Section 17 of Springs Utilities' *Distribution Construction Standards – Electric*. The spacing, location, height, fixture style, light source and level of illumination shall be subject to the standards and review of Springs Utilities. Other types of light poles or luminaires/fixtures may be installed, subject to the approval of Springs Utilities.
3. Streets with trees on a center median may be lighted with twin davit bracket arms located in the median or with single davit bracket arms located on both sides of the street.

F. Landscaping

1. Landscaping and fences in utility easements shall meet the criteria as established in the "Colorado Springs Utilities Site Design Guidelines". No trees shall be placed within 15 feet of the centerline of any wet utility.
2. Springs Utilities' main and service lines that run under decorative rock, landscaping, or specialty paving may be required to be sleeved or encased to protect the integrity of the main and service lines and minimize damage to landscaping in the event of required maintenance.

G. Cable & telecom

1. Cable and telecommunications facilities may be included in joint trenches, subject to the agreement of Springs Utilities and the other utility.

H. Storm water drains

1. To the extent known or anticipated, proposed storm water drains that would be located in a street right-of-way or utility easement should be shown on the Mixed Use Concept Plan.

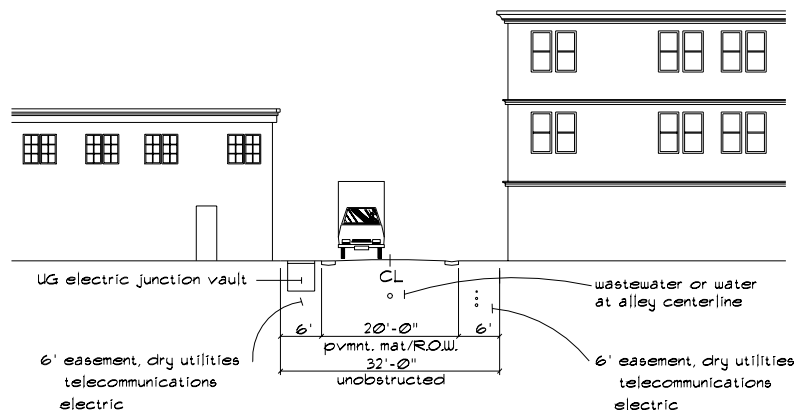
ALLEY

The alley design allows for a combination of wet and dry utilities, dependent upon the adjacent street type and need for utility service.

Guidelines

The following design guidelines are recommended for a MU Alley:

1. A six (6) foot dry-utility easement should be provided along both sides of the MU alley right-of-way.
2. When located in alleys, dry utilities should be placed in common trenches within the utility easement.
3. Alleys should normally contain no more than one wet utility.
4. Wastewater lines, located along the centerline of an alley, may be permitted in alleys that are 400' or less in length, if approved by Springs Utilities. Water lines in alleys are not restricted by alley length.
5. Direct access from the alley to utility improvements should be provided.
6. Paving within any utility easement should be permitted only to provide access to garages and adjoining parking spaces.
7. Landscape materials allowed within the easements should be groundcovers, annuals, perennials or shrubs (no more than ten (10) feet in height and no more than six (6) feet in width) conforming to "Colorado Springs Utilities Site Design Guidelines".
8. No parking spaces shall be allowed within the 30-foot unobstructed area.
9. Any utilities that may be subject to damage from vehicles shall be appropriately protected.
10. Wet utilities should not be located in alleys unless approved by Springs Utilities.
11. No water or wastewater facilities shall be placed in alleys with inverted crowns.

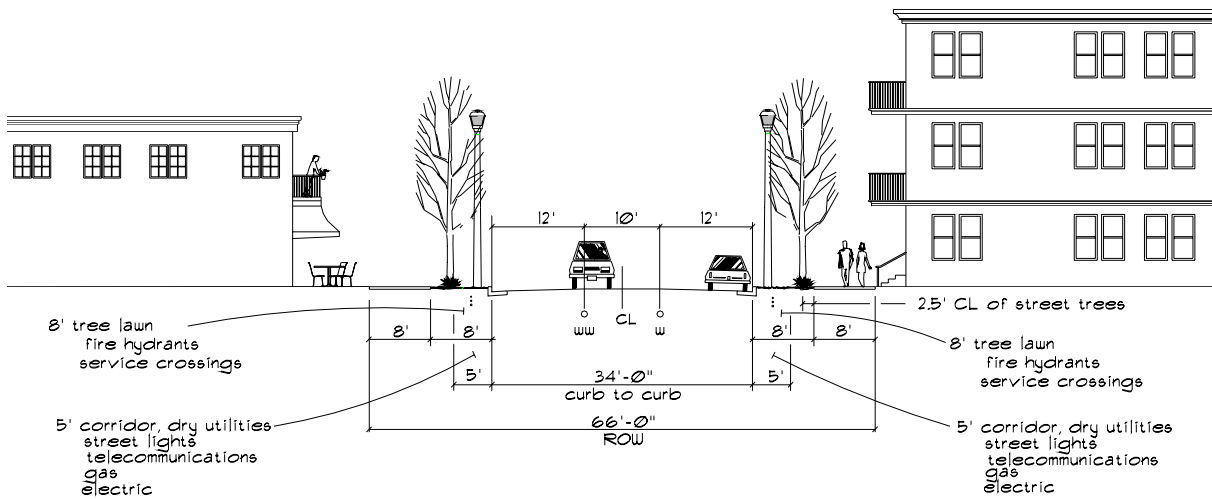


COLLECTOR STREET

The Collector Street provides access from adjacent arterial streets into the mixed-use activity center and serves as a non-arterial perimeter street.

Guidelines

1. A five (5) foot dry-utilities corridor should be provided along both sides of the Collector Street curb. The corridor may not be required if all dry utilities are located in an alley or other street.
2. Both wet utilities may be located in the street. If an alley is provided, one wet utility may be placed in the alley, subject to Springs Utilities approval.
3. Streetlights should be placed in the dry utilities corridor on either side of the street.

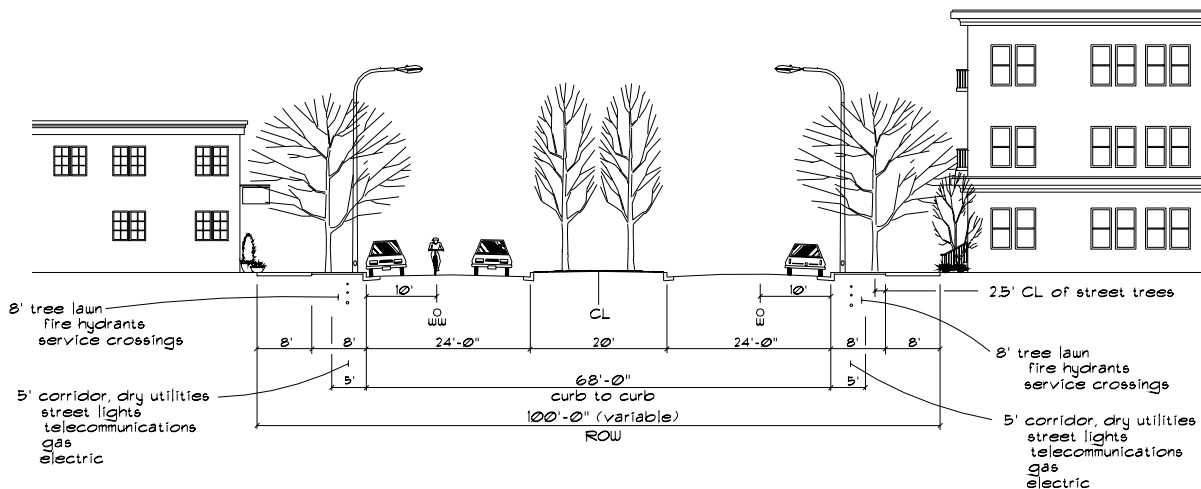


ENTRY/SPINE STREET

The Entry/Spine Street provides the main access from arterial streets, including right-in/right-out and serves as a focus of activity for large mixed use centers.

Guidelines

1. A five (5) foot dry utilities corridor should be provided along both sides of the Entry/Spine Street curb.
2. Wet utilities should be located within the paved area.
3. Gas lines are commonly located in the paved area while dry utilities are located back of the curb in the dry utilities corridor.

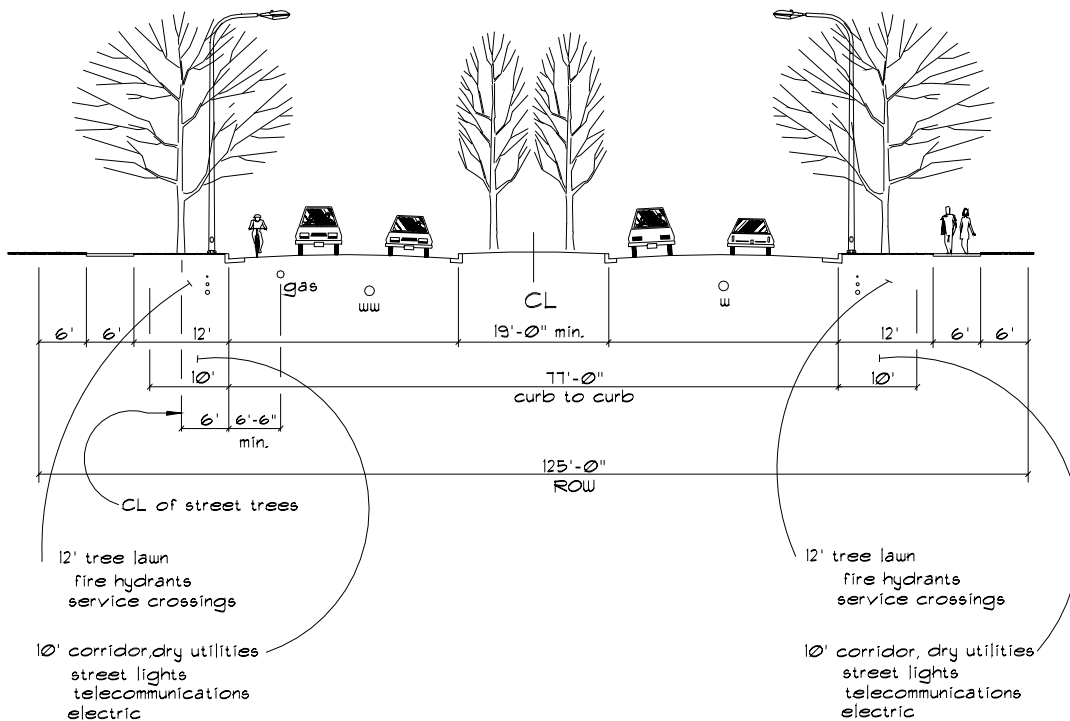


PARKWAY – 4 LANE

Parkways provide rapid and relatively unimpeded traffic movement throughout the City and carry high volumes of traffic to mixed use centers.

Guidelines

1. Wet utilities should be located within the paved area. Water and wastewater lines may be placed in the center of the same street with a ten (10) foot separation.
2. Gas lines are commonly located in the paved area while dry utilities are located back of the curb in the dry utilities corridor.

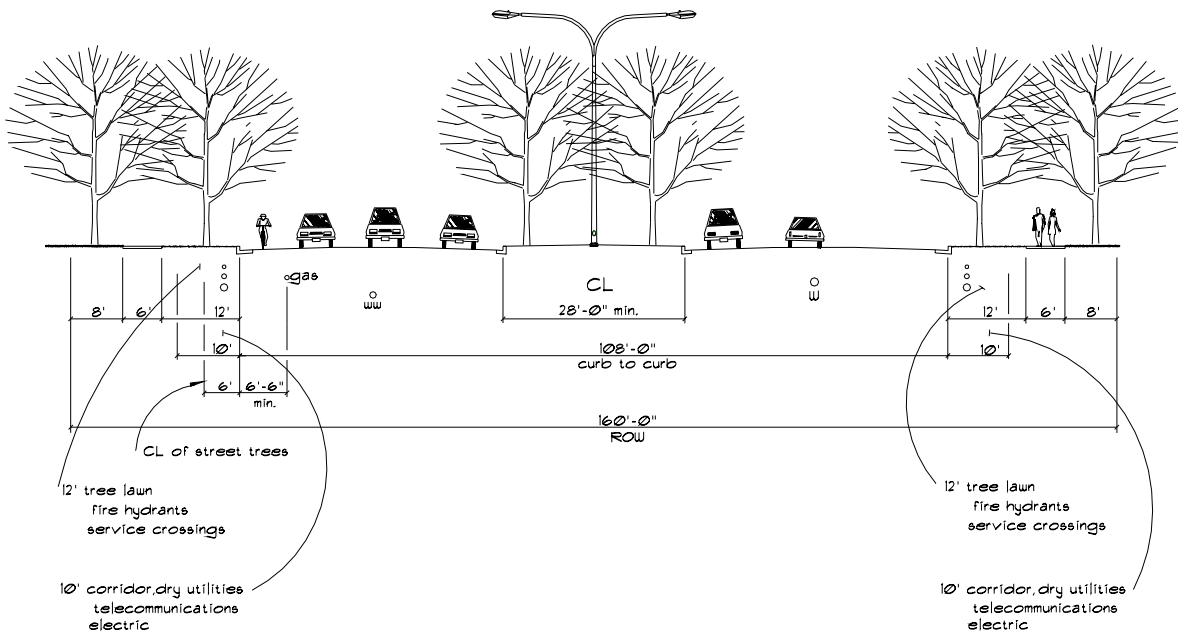


PARKWAY – 6 LANE

Parkways provide rapid and relatively unimpeded traffic movement throughout the City and carry high volumes of traffic to mixed-use centers.

Guidelines

1. Wet utilities should be located within the paved area. Water and wastewater lines may be placed in the center of the same street with a ten (10) foot separation.
2. Gas lines are commonly located in the paved area while dry utilities are located back of the curb in the dry utilities corridor.



ONE-WAY COUPLET

One-way couplets carry high volumes of traffic from a 6-Lane Parkway through mixed use centers by splitting the Parkway as it approaches the center into couplets of one-way streets and then rejoining them on the other side. The intersection of two set of intersecting couplets forms the framework of a street grid for the center, minimizes pedestrian crossing distances at intersections and decreases average travel times through the center.

Guidelines

1. Wet utilities should be located within the paved area with a ten (10) foot separation.
2. Gas lines are commonly located in the paved area while dry utilities are located back of the curb in the dry utilities corridor.

