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SECTION 7 ACCESS, CIRCULATION AND PARKING

7.1 INTRODUCTION

This section is intended to ensure that the parking and circulation aspects of developments are well designed with regard to safety, efficiency and convenience for vehicles, bicycles, pedestrians and transit, both within the GDP and to and from surrounding areas. This section provides Performance Standards for the development and redevelopment of property. In utilizing these regulations, the Applicant and other users should remain flexible in their approach to site design given the characteristics of the site, the nature of the use and the intent of these standards.

7.2 VEHICULAR ACCESS POINTS

7.2.1 Policy

Access to public streets shall be allowed if the following three criteria are complied with:

- A. The future traffic predicted to use the proposed access point does not cause the Level of Service at any link, intersection or driveway access within the Traffic Study area to drop below the levels set forth in the Municipal Code.
- B. Intersection spacing requirements are met;
- C. The access spacing meets LCUASS, or as otherwise approved by the City Engineer (and the CDOT if required).

7.2.2 Criteria

- A. Intersection and driveway spacing shall comply with LCUASS, unless otherwise approved by the City Engineer.
- B. Key access points are indicated on the GDP Maps (Section 11). Proposed access locations contained in this GDP are conceptual in nature only, and are specifically exempt from any vesting (except for Boyd Lake Avenue access points). Access locations and operation shall be approved by the City Engineer after review of

the supporting Development Projects and Traffic Studies.

- C. Approval of any particular design plan by the City shall not relieve the Applicant from responsibility from compliance with the requirement of this Section. In the event a plan does not comply with the level of service standard after development or redevelopment occurs, the Applicant or landowner is obligated to take such further measures in the manner contemplated by its design, which are necessary to comply with the intent of these Performance Standards.
- D. Fire apparatus access roads shall be provided and maintained in accordance with the provisions of the *Loveland Fire Department Development and Construction Requirements*.
- E. Access to a state-regulated highway shall comply with the State Highway Access Code, 2 C.C.R. sec. 601-1. The Applicant shall submit to the Engineering Division copies of the approved access permits from CDOT prior to the approval of any plat that includes access to US 34.
- F. No direct access to US 34 from Parcel A will be approved until the City receives a copy of the approved configuration and type of intersection traffic control from the CDOT for the safety upgrades needed at the interchange of I-25 and US 34.
- G. Acceleration, deceleration and/or auxiliary turn lanes may be required if a Traffic Study finds that they are necessary to preserve safety and/or the traffic-carrying capacity of the existing street.
- H. A Traffic Study shall be submitted to the City (unless waived by the Traffic Engineer) in accordance with LCUASS.

7.3 ROUNDABOUTS

7.3.1 Policy

Roundabouts are often an effective tool for traffic management. They are used largely to reduce motor vehicle speeds, increase capacity level, increase safety, and to reduce noise and air pollution. Therefore, the use of roundabouts will be considered at arterial/collector street intersections. The City Engineer shall approve the use and design of roundabouts.

7.3.2 Criteria

The configuration of proposed roundabouts should be designed by a licensed professional engineer. The engineer must have previous experience in designing roundabouts of comparable traffic capacity. Refer to the LCUASS roundabout design standards and required qualifications for the design engineer.

7.4 STREET HIERARCHY

7.4.1 Policy

Vehicular circulation within the GDP is designed to provide safe, understandable, and convenient access to all sites. The design of these routes is an important feature of the GDP, providing pleasing corridors used in guiding visitors and employees to each village, to individual parcels, and to each Building.

Primary access points to all sites are provided via an internal roadway system. The hierarchy of roadways emphasizes view corridors and features curvilinear sections to create continuous visual interest. Coordinated landscaping along major roads and at driveway entrances is also emphasized.

7.4.2 Criteria

The following criteria address basic planning concepts for arranging and designing arterial streets, collector streets, local streets, internal driveways, entry drives and service drives.

Roadways within the GDP will be designed to meet the *LCUASS – General Parameters and Technical*

Design Criteria of LCUASS, with the following exceptions: Street cross sections for specific types of streets shown on Maps 8 and 9 in Section 11 of this GDP, but not included in the LCUASS Suburban Arterials and Urban Character Village Streets shall be allowed, subject to approval by the City Engineer.

- A. **Arterial Streets** provide access through the development and connect directly with the primary perimeter roadways serving the surrounding area including US 34, Boyd Lake Ave., County Road 9, Rocky Mountain Avenue, County Road 24E and First Street. Arterial streets may be designed as divided or undivided, and feature streetscape and entryway landscaping
- B. **Collector Streets** provide direct access from the arterials streets to residential neighborhoods or development parcels, and connects them with the perimeter roadways and other internal roadways within the development. Collector streets feature secondary entryways where they connect with the perimeter roadways, US 34/Eisenhower Blvd., Boyd Lake Avenue, County Road 9, Rocky Mountain Avenue, County Road 24E and First Street. Collector streets may be designed as divided or undivided roadways, and feature streetscape and entryway landscaping, similar to the arterial streets.
- C. **Local Streets** provide access to Lots and can be shared by several Lots.
- D. **Entrance Drives** provide direct access to individual Building drop-off and parking areas.
- E. **Service Drives** provide access to loading and waste pick-up areas within individual sites or parcels. Service drives are encouraged to be separate from entrance drives.

7.5 TRAFFIC CALMING

Traffic calming measures may be implemented on collector and residential streets, as needed (based upon a current Traffic Study), such as, but not limited to, mini roundabouts or traffic circles, street narrowing, medians or other techniques, as approved by the City Engineer.



7.6 ALLEYS

Alleys are allowed in mixed use areas and in residential neighborhoods.

7.7 CUL-DE-SACS

“Hammerhead” cul-de-sacs are allowed (See Figure 7-1) in addition to standard cul-de-sacs.

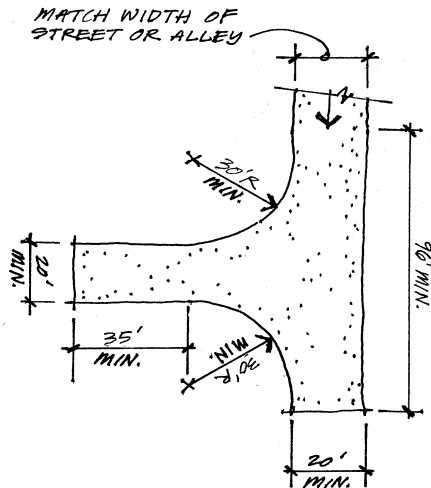


Figure 7-1 – Hammerhead Cul-De-Sac

7.8 MEDIAN TREATMENTS

Medians within public roadways are encouraged, but not required except in 4-lane arterial roadways.

Median width will vary. Median width shall be approved by the City Engineer.

Landscaped medians (except for medians within US 34) shall be maintained by the Centerra Metropolitan District No.1, the Developer or an owners association designated by the Developer. The City will provide no maintenance for landscaped medians.

7.9 EMERGENCY AND UTILITY ACCESS

7.9.1 Policy

Fire protection for the GDP is provided and administered by the City Fire Department. Police protection is provided by the City Police Department. For these and all other services requiring emergency or maintenance access, convenient and appropriate routes should be easily discernible and, when appropriate, clearly marked.

7.9.2 Criteria

Provide access for fire, police, ambulance, and other emergency vehicles to buildings in accordance with *Loveland Fire Department Development and Construction Requirements*. Such access shall be fully capable of supporting such vehicles.

Temporary fire access roads, turnarounds and second points of access may be used as part of an approved phased project or imminent public street improvements. Temporary access roads shall meet all other fire road access criteria.

Provide unobstructed access to utilities, including easements when required.

Where possible, connect emergency routes between adjacent properties.

7.10 MASS TRANSIT FACILITIES

7.10.1 Policy

The Developer anticipates the need to provide mass transit facilities to serve the residents, shoppers, visitors, and employees in the GDP. The plans include the integration of transit facilities within the GDP. Proposed facilities may include bus shelters along the arterials and possibly collectors in several areas throughout the GDP. Final locations of these facilities will be determined as development progresses. Some Buildings and development areas may generate such high volumes of transit use that stops may be required in these specific areas. These facilities will not be required until such time that a transit provider serves the GDP.

7.10.2 Criteria

Bus shelters shall be designed consistent with the architectural character for recognition purpose. Plans for bus shelters shall be approved by the future transit provider and by the Centerra DRC.

In areas where transit facilities are fully exposed to climatic conditions the shelter shall be designed with a solid roof, enclosed on one or more sides, and provide seating within the protected area. Landscaping can also be used as wind breaks around transit facilities.

Bus shelters shall be of appropriate size based on the potential number of users within their intended service area.

Advertising on bus shelters and bus benches is prohibited.

Locate bus shelters in close proximity to commercial retail areas and other Buildings that generate high volumes of transit use.

Locate bus shelters in close proximity to primary pedestrian walkways, which serve the surrounding businesses and neighborhoods.

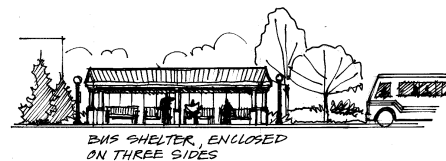
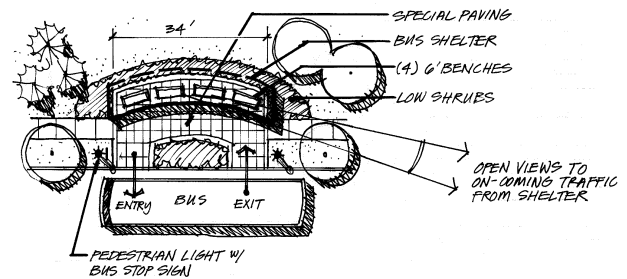
Where possible, locate bus shelters behind the sidewalk so that the sidewalk passes between the shelter and the street.

In order to provide safe loading and unloading of buses, sidewalks shall be designed so that a paved surface is provided at both the front and rear doors of the bus when the bus is parked at the facility. Coordinate design of these facilities with the transit provider. (See Figure 7-2).

7.11 RESTRICTED-ACCESS DRIVES AND SECURED ENTRIES

7.11.1 Policy

Some facilities may require secured entries in order to control access to an individual business or site. Such guardhouses and security gates shall be de



signed and located to be as visually integrated with the site and the Primary Structures.

7.11.2 Criteria

Guardhouses shall be located within a landscaped island and be bordered with plantings of trees and shrubs

Adequate stacking must be provided for cars entering a secured campus as determined by a Traffic Study. A minimum distance shall allow for at least 3 cars to be stacked waiting to obtain clearance for entry, therefore, guardhouses must be located a minimum of 60 feet behind the stop bar on the access drive. Perimeter security fencing shall step back away from the access road to provide greater visibility for exiting traffic and to create a more welcoming appearance.

Locate guardhouses so that crossing conflicts with major bicycle and pedestrian routes are minimized, and where queuing vehicles do not restrict visibility or cause hazardous conditions.

Provide a distinct pedestrian walkway at secured entries that is separate from the travel lanes.

Guardhouses shall meet the requirements of the Loveland Fire Department.



7.12 TRUCK TURNING REQUIREMENTS

7.12.1 Policy

Vehicle circulation shall be designed to provide safe and efficient turning movements for anticipated service and emergency vehicles. Design of individual parcels to accommodate truck access shall meet regulatory requirements for turning areas without sacrificing other important objectives of the Performance Standards, including minimizing pedestrian-vehicle conflicts, discouraging speeding, minimizing space devoted to street use, and relating roadways and other vehicle use areas to the site and natural topography.

7.12.2 Criteria

Design roadway turning areas, especially those anticipated for truck service and emergency vehicle access, to meet the required regulatory standards for minimum truck turning movements and area requirements including those established by the following agencies and others as applicable, as amended from time to time:

- A. City (LCUASS).
- B. Loveland Fire Department Development and Construction Requirements.
- C. Mass transit provider (if present).
- D. American Association of State Highway Transportation Officials (AASHTO) - Standards for Turning Roadway Design (including minimum turning path dimensions)

In general, design roadway-turning areas (for truck service and emergency vehicles) according to the following AASHTO standards:

- A. Turning areas anticipated for single unit truck or bus access (including entry drives, drop-offs, and parking areas) shall use SU-30 turning dimensions (including 42 ft. minimum outside turning radius)
- B. Minimum turning areas anticipated for semi trailer combination trucks access (with 40 ft.

wheelbase) shall use WB-40 turning dimensions (including 40 ft. minimum outside turning radius)

- C. Turning areas anticipated for larger semi trailer combination truck access (with 50 ft. wheel base) shall use WB-50 turning dimensions (including 45 ft. minimum outside turning radius)
- D. Turning areas anticipated for emergency and fire truck access shall use B-40 turning dimensions (including 42 ft. minimum outside turning radius)

7.13 SIGHT TRIANGLES

7.13.1 Policy

Sites shall be designed so that plants and structures on the site do not interfere with the safe movement of motor vehicle traffic, bicycles or pedestrians.

7.13.2 Criteria

No plants, foliage, wall, fence or berm higher than twenty four (24) inches above the top of the curb shall be located within the sight distance triangle on any corner of the property adjoining an intersection. Sight distance triangles shall comply with the minimum sight distance requirements defined by the LCUASS.

7.14 PARKING LOTS

7.14.1 Policy

Parking lots shall be designed to be safe, efficient, convenient and attractive, considering use by all modes of transportation that will use the parking area (including cars, motorcycles, trucks, bicycles, and emergency vehicles).

7.14.2 Criteria

- A. To the extent practical, pedestrians and vehicles shall be separated through provision of a sidewalk or walkway. Where complete separation of vehicles is not feasible, using landscaping, bollards, special paving, lighting and other means

- to clearly delineate pedestrian areas, shall minimize potential hazards.
- B. Unobstructed vehicular access to and from a public street shall be provided for off-street parking spaces.
- C. Parking lots shall be designed so that backing and turning movements associated with parking layout will minimize conflicts with traffic, either on or off site.
- D. Parking lots with more than three parking spaces will provide adequate room to allow vehicles to turn around within the parking lot and enter an adjoining street in a forward direction.
- E. Parking stalls shall be clearly and permanently defined on the parking surface using asphalt paint. If an alternate method of defining parking spaces is desired it shall require approval from the City.
- F. Where parking stalls overhang (bumpers overhang) into a peripheral sidewalk area, the sidewalk shall have a minimum width of seven (7) feet.
- G. See also Section 6.28 for lighting requirements in parking areas.
- H. Landscaped islands with raised curbs shall be used to define parking entrances, ends of parking aisles, the location of internal drives, and to provide pedestrian refuge areas and walkways, unless approved otherwise by the City.
- I. Parking, loading, maneuvering and driving areas shall be paved with asphalt, concrete or similar dust free material approved by the City.
- J. Loading and unloading facilities shall take place on site and not on public right-of-way. There shall be no backing of vehicles onto the public right-of-way from loading areas.
- K. Drive-up and drive-through lanes shall be segregated from drive aisles and general parking areas.
- L. Parking is prohibited within Setback zones. Refer to table 6-1 for Setbacks.
- M. Refer to Section 6.17 for parking lot screening requirements.



7.15 PARKING DIMENSIONS

- A. Parking lots shall be designed using the angles, layout and dimensions as indicated in the figure and tables below, unless otherwise approved by the City.

Parking Area Dimensions

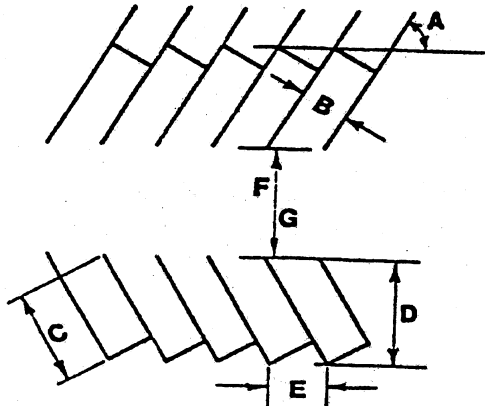


Figure 7-3

Standard Vehicle

A	B	C	D	E	F	G
0°	8	23	8	23	20	12
30°	8.5	20	17.4	17	20	15
45°	8.5	20	20.2	12	20	15
60°	9	19	21	10.4	24	20
90°	9	19	19	9	24*	20**

Compact Vehicle

A	B	C	D	E	F	G
0°	7.5	19	7.5	19	20	12
30°	7.5	16.5	14.8	15	20	15
45°	7.5	16.5	17	10.6	20	15
60°	8	16	17.9	9.2	24	20
90°	8	15	15	8	24*	20**

- A. - ANGLE OF PARKING
- B. - STALL WIDTH
- C. - STALL LENGTH
- D. - STALL DEPTH
- E. - CURB LENGTH
- F. - TWO-WAY DRIVE WIDTH OR DOUBLE LOADED DRIVE WIDTH
- G. - ONE WAY DRIVE WIDTH OR SINGLE LOADED DRIVE WIDTH

* When garages are located along a driveway and are opposite other garages or buildings, the driveway width must be increased to 28 ft.

** When an overhang is allowed to reduce stall depth, aisle width must be increased to 22 feet.

Under special conditions these dimensions could be varied with the City Engineer's approval.
 Stall length can be reduced by 2' when overhang is provided.
 For handicapped spaces, width shall be 13' with ramp access to walks.

- B. Adequate turn around and backing areas shall be provided without disruption of circulation or parking facilities.
- C. Parking spaces located across from each other, on opposite sides of a drive lane, should be located at the same angle to the drive lane.
- D. Angle parking located on a drive lane with one common exit and entrance is discouraged, unless the angle of the parking space is ninety (90) degrees to the direction of travel.

7.15.1 Break Up Large Parking Lots

- A. Large parking lots shall be divided into smaller sections by using landscape separators. Each section shall contain a maximum of two hundred (200) parking spaces. Landscape separators shall have a minimum width 15 feet (exclusive of sidewalks). (See Figure 7-4.)

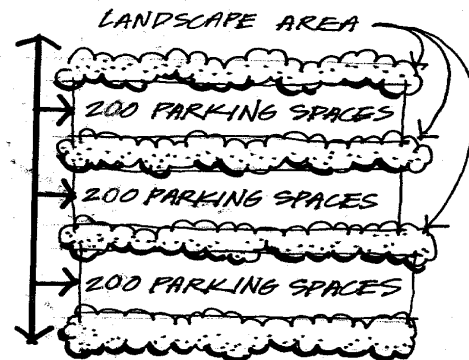


Figure 7-4 – Break Up Large Parking Areas

- B. Landscape separators shall contain, as a minimum, one deciduous or evergreen tree per 700 square feet of landscapable area, or one tree per 35 lineal feet, whichever results in a greater number of trees. Trees can be planted formally or informally in groupings.

- C. For parking lots with more than forty (40) spaces, parking bays shall extend no more than fifteen (15) parking spaces without an intervening tree, landscape island or landscape peninsula. (See Figure 7-5).

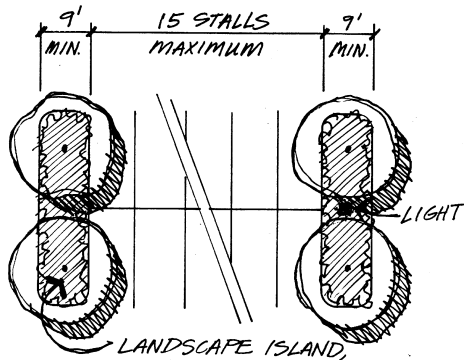


Figure 7-5 – Landscape Islands

7.16 COMPACT CAR PARKING

7.16.1 Criteria

- A. Parking spaces designated for compact cars shall be at least eight (8) feet wide and fifteen (15) feet long.
- B. Compact car spaces should be clustered in-groups. The groups should be evenly distributed throughout the parking lot. However, compact car spaces should not be placed within the most accessible or highest turnover areas, such as directly in front of the building near the main entrance.

7.16.2 Policy

- A. Be no more than twenty (20) percent of the total number parking spaces in each lot;
- B. Compact car spaces shall be identified with a 'C' symbol. The compact car demarcation should be 2 square feet in size, be located at the rear of each compact car space and be clearly legible.

7.17 PARKING RATIOS

7.17.1 Policy

Adequate parking shall be provided to support individual projects within the GDP. If a specific use is not discussed the Parking Ratio will be determined on a case-by-case basis with Centerra DRC and City approval.

If development is within 1650' of an existing transit facility the minimum-parking ratio may be reduced subject to City approval.

In the event that a previously approved development is converted to a different land use, the number of existing and/or added stalls for the applicable use(s) shall meet the requirements of these Performance Standards.

Refer to Sections 9 and 10 for Parking Ratios in MUNs and residential neighborhoods. Refer to Section 6.16 for parking areas that exceed the recommended ratio.

7.17.2 Minimum Off-Street Parking Criteria

Alzheimers Care Facility: 1 space for every 3 beds, plus 0.5 spaces per Employee on a major shift.

Assisted Living Facilities: 1 space for every 3 beds, plus 0.5 spaces per Employee on a major shift.

Athletic/Fitness/Recreation Facilities: 1 space/300 gross square feet of Building Floor Area.

Automotive Sales / Auto Dealerships: 1 space for every 450 gross square feet of Floor Area.

Bar/Tavern: 1 space for every 100 gross square feet of Floor Area.

Call Center: 6 spaces per 1,000 gross square feet of Building Floor Area.

Clinics: 1 space for each examination or treatment room plus 1 space for every 2 Employees or health care providers.



Colleges/Universities in a Campus Setting: 1 space for each Employee plus 1 space for every 5 students.

College/Universities in a Non-Campus Setting (for non-traditional commuting students including adult education, professional and/or technical training, continuing education, etc): 1 space for each classroom seat plus one space for each shift Employee.

Commercial/Retail Uses: 1 space/ 300 gross square feet of Building Floor Area.

Congregate Care Facilities and Congregate Care Housing Developments: 1 space for every 3 beds, plus 0.5 spaces per Employee on a major shift.

Convenience Store: One space for every 200 gross square feet of Floor Area.

Corporate Campus (Office/R & D labs without light manufacturing or distribution): 1 space per 250 gross square feet of gross Building Floor Area.

Corporate, Professional, and Multi-Tenant Offices: 1-space/250 gross square feet of Building Floor Area.

Entertainment Facilities and Theatres: 1 space for every 3 seats in the principal place of assembly.

Fast Food Restaurant / Drive-Ins: 1 space for every 100 gross square feet of Floor Area.

Financial Services and Institutions: 1 space for every 250 gross square feet of Floor Area.

Flex Research and Development (Flex Office with light manufacturing): 3 space per 1,000 gross square feet of Building Floor Area.

Hospitals: 2 parking spaces per bed plus one parking space per 300 square feet of outpatient clinics and service areas.

Hotel/Conference Center: 1 space/room x .80 (plus .75 space per daytime Employee).

Independent Living Communities: 1 space per unit plus one space for each major shift Employee.

Indoor Recreational Facilities (Not Including Theaters or Auditoriums): 1 space for every 200 gross square feet of Floor Area.

Light and Heavy Manufacturing / Industrial Activities: 1 space for every 450 gross square feet of Floor Area or 1 for every 2 Employees, whichever is greater.

Medical Offices and Clinics: 1 space for every 200 gross square feet of Floor Area.

Medical Laboratories: 1 space for every 450 gross square feet of Floor Area.

Night Clubs: 1 space for every 4 seats plus two spaces for every 3 Employees on the maximum shift.

Nurseries / Child Care Centers: 1-parking space for each 450 gross square feet of Floor Area.

Nursing Care Facilities, Continuing Care Retirement Community: 1 parking space for every 3 beds plus one space per 2 major shift Employees.

Places of Worship: 1 space for every 4 seats in the principal place of assembly.

Public and Private Schools – Elementary: 2 spaces for each classroom.

Public and Private Schools - Senior High: 1 space for each 3 seats in the auditorium or principal place of assembly.

Public and Private Schools - Junior High: 2 spaces for each classroom.

Restaurant: 1-space/3 seats or 10 spaces/1000 gross square feet, whichever is greater.

Showroom Warehouse: 5 spaces for every 1,000 gross square feet of Floor Area.

Wholesale Commercial Uses/Warehouses: 1 space per 1,000 gross square feet for the first 100,000 gross square feet of Floor Area plus 1 space for every 5,000 gross square feet after the first 100,000 gross square feet.

7.18 ON-STREET PARKING

On-street parking will be allowed and encouraged on most residential local and residential collector streets to facilitate guest parking for houses and businesses fronting on those streets. On-street parking may not be counted to satisfy the minimum parking quantities described above unless approved by the Centerra DRC and the Director.

7.19 MOTORCYCLE PARKING

Motorcycle parking areas shall be paved with concrete, and signs shall be provided designating the area for motorcycle parking only.

A paved area measuring 9' x 18' will accommodate two motorcycles.

Parking lots with over 250 spaces shall provide 1% of total spaces as motorcycle parking. Parking lots with between 40 and 250 spaces shall provide a minimum of two motorcycle parking spaces. Parking lots with less than 40 spaces are not required to provide motorcycle parking spaces.

7.20 SHARED PARKING

Shared Parking will be allowed in situations where the individual land uses which share the parking spaces have differing peak parking demand times. A business or structure shall be allowed to share a maximum of 20% of its parking with another use. In these situations a parking demand study shall be prepared by a professional traffic engineer and submitted by the applicant documenting that the hours of actual parking demand for the proposed uses will not conflict and those uses will be served by adequate parking if Shared Parking reductions are authorized.

Shared Parking will also be allowed in situations where a business constructs additional parking that is above and beyond what is required to comply with the minimum parking standards. For example, the business is required to provide 100 spaces to meet the minimum standards, but the business builds 125 spaces. If agreed to by both parties, the excess 25 parking spaces may be shared with one or more adjacent businesses. A Shared Parking agreement shall

be submitted with the Development Project, and recorded so that it will run with the land.

7.21 PARKING FOR FACILITIES WITH MULTIPLE WORK SHIFTS

- A. Businesses with overlapping work shifts shall supply adequate on-site parking to accommodate the required parking for the total of the number of overlapping Employees.
- B. Shifts changes shall be staggered so as to reduce the number of additional spaces required.
- C. A parking management plan shall be submitted to the Centerra DRC and to the City for approval.

7.22 TRUCK TRAILER PARKING

Areas designated for semi trailer and large truck parking and loading shall be screened from view using architectural walls or a combination of landscaping, berming and walls. See Section 6.21.

Except during initial site construction, no parking is allowed for permanent or temporary storage of trucks, trailers, buses or semi-mobile equipment, with the exception of moving vans, etc., when in use.

7.23 PARKING STRUCTURES

Design of Parking Structures shall be such that they are minimized visually by earthen embankments and by limiting the overall height of the structure relative to the principal building. Maximum height of Parking Structures shall be forty-five feet (45') but never taller than the principal Building.

Proposed Parking Structures require specific approval from the City. Approval will be contingent, in part, upon trip generation and traffic loads generated by the proposed development and the development infrastructure's capacity to handle the parking.



7.24 INTERIM PARKING LOTS

On-grade interim parking must be paved with an all weather material. It must be replaced with the permanent use within 24 months unless the City grants an extension. Internal parking lot landscaping is not required for interim parking areas. Perimeter landscape treatments shall be consistent with the landscape requirements for permanent parking lots. (See Figure 7-6).

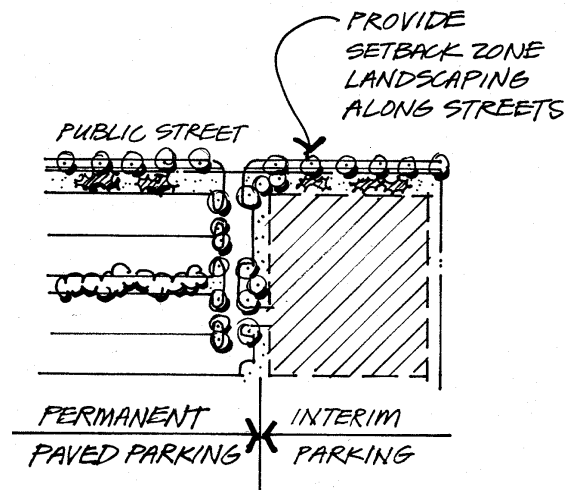


Figure 7-6 - Interim Parking Lot

7.25 HANDICAPPED ACCESS/PARKING/SIGNS

7.25.1 Policy

The GDP is intended to be equally accessible to handicapped and non-handicapped persons, and owners and Applicants are expected to meet or exceed all requirements of the Americans with Disabilities Act (ADA), 1996, and all amendments thereto, in the design and development of individual parcels, sites, Buildings, and facilities.

Provide equal access in a manner that integrates handicapped-accessibility with ordinary accessibility, rather than separately.

7.26 BICYCLE PARKING

7.26.1 Policy

Except as allowed for in these standards, bicycle parking shall conform to the LCUASS and shall be provided within each commercial, retail, business, office, industrial, civic and multi-family residential Lot to encourage and accommodate alternative transportation modes.

7.26.2 Criteria

- A. Bicycle parking facilities shall be located so as to provide safety, security and convenience for bicycle riders. Such facilities shall not interfere with, and be located a safe distance from, pedestrian and motor vehicular traffic.
- B. Generally, a minimum number of bicycle parking spaces shall be provided, equal in number to five (5) percent of the total number of automobile parking spaces provided by the development, but not less than two (2). Development Projects, which require 350 or more automobile parking spaces, a minimum of 16 bicycle parking spaces shall be provided. Development Projects such as these will be reviewed on a case-by-case basis by the City to determine the potential need for bicycle racks.
- C. Garages may be used to satisfy needs for bicycle parking for Residential Uses.
- D. Bicycle parking facilities should be located outside of a vehicular or pedestrian way and be protected and separated from motor vehicle traffic and parking lots by either a three (3) foot separation distance or a curb or other physical barrier.
- E. For security reason bicycle-parking areas should be located so they are highly visible from Building entrances and convenient for Employees, yet not generally visible from roadways.
- F. Bicycle parking facilities shall be designed to allow the bicycle frame and both wheels to be securely locked to the parking structure. The

structure shall be of permanent construction such as heavy gauge tubular steel and permanently attached to the pavement foundation.

- G. If the bicycle facility is to be used at night it should be sufficiently illuminated. See Section 6.28 for minimum foot-candles required for bicycle parking areas.
- H. Provide protection from the elements. Specific considerations include the following:
 - 1. Shelters and bike lockers are encouraged but not required. Protected overhangs incorporated into a Building's design are a desirable solution.
 - 2. Shelter design and materials should compliment the architectural design of the primary Building.

7.27 PEDESTRIAN CIRCULATION

7.27.1 Policy

Pedestrian and bicycle networks shall be designed to invite walking and bicycle use throughout the development, and to connect with regional systems in the area. Individual parcels and sites shall be integrated with the overall design to form a comprehensive network within the GDP. (See the Conceptual Amenity Map component of the GDP).

Pedestrians should be separated from vehicles and bicycles. Where complete separation of pedestrians and vehicles and bicycles is not possible, potential hazards shall be minimized through the use of techniques such as special paving, grade separations, pavement markings, signs, striping, bollards, median refuge areas, traffic calming features, lighting or other means to clearly delineate pedestrian areas, for both day and night use.

7.27.2 Criteria

Sidewalks and/or pedestrian paths shall be constructed and located in order to:

- A. Provide a system of pedestrian movement to points both on and off site;

- B. Provide a logical link between the origins and destinations of pedestrian traffic;
- C. Provide a direct, convenient, safe, and visible pedestrian path between parking area and Building entrance.
- D. Be constructed to channel storm water resulting from minor storm events away from the traveled surface to eliminate ponding on sidewalks and paths.
- E. Paving materials shall be visually compatible with the architecture, durable, easily maintained (allow for snow removal), Non-slip, and accessible to the handicapped. Special paving materials such as interlocking brick color concrete pavers or colored and textured concrete and other similar materials are encouraged. Mortared brick paving is discouraged.
- F. Sidewalks will be provided along public streets within the development. Walks on some local streets may be eliminated if duplicated by a nearby (within 150'), generally parallel trail.
- G. Walks along public streets that are considered to be primary trails may be increased in width and provided on one side of the street only.
- H. Continuous pedestrian walkways shall link street sidewalks (public sidewalks) with customer/visitor building entries through individual sites. At a minimum, walkways shall connect focal points of pedestrian activity such as, but not limited to, transit stops, street crossings, building and store entry points, and shall feature adjoining landscape areas for no less than fifty (50) percent of the length of the walkway. It is preferable that these connections be located within Open Space areas. Where it is necessary for the primary pedestrian access to cross drive aisles, parking lots, or internal roadways the pedestrian crossing shall emphasize and place priority on pedestrian access and safety. The material and layout of the pedestrian access shall be continuous as it crosses the driveway, with a break in continuity of the driveway paving and not in the pedestrian access way. The pedestrian crossings must be well marked using



low maintenance pavement treatments (such as scored concrete with an appropriate size score pattern of “human scale”), colored concrete, pavers, brick or other similar materials) and signs, striping, lighting, traffic calming techniques, median refuge areas or landscaping.

- I. Where pedestrians and bicyclists share walkways, the pedestrian/bicycle system shall be designed to be wide enough to easily accommodate the amount of pedestrian and bicycle volumes that are anticipated. A minimum width of eight (8) feet shall be required and shall meet American Association of State Highway and Transportation Officials (AASHTO) guidelines, Guide for Development of Bicycle Facilities, August 1991, or any successor publication. Additional width may be required to accommodate higher volumes of bicycle and pedestrian traffic.
- J. Design sidewalks around non-residential and Multi-Family Dwellings, parking areas, and along all public and private roadways, to be constructed of concrete and have an unobstructed width of no less than five feet (5’).

7.27.3 Retail Pedestrian Circulation

In addition to the criteria listed in Section 7.27, retail areas shall provide the following:

- A. Continuous pedestrian walkways, no less than five feet (5’) in width, shall be provided from the public sidewalk or right-of-way to the principal customer entrance of all principal Buildings on a site. Walkways shall connect focal points of pedestrian activity such as, but not limited to, transit stops, street crossings, building and store entry points, and shall feature adjoining landscaped areas that include trees, shrubs, benches, flower beds, ground covers or other such materials for no less than fifty (50) percent of the length of the walkway.
- B. Sidewalks, no less than eight (8) feet in width, shall be provided along the full length of the building along any façade featuring a customer entrance, and along any façade abutting public parking areas. Where appropriate, sidewalks shall be designed to accommodate landscaping,

which could include some or all of the following: foundation plantings, planting areas not attached to the building, tree wells, flower pots, etc.).

7.28 RECREATIONAL TRAILS

7.28.1 Policy

Recreational trails should be planned to minimize conflicts with other modes of circulation, and engineered to meet performance characteristics of their identified uses. In general, pedestrian and bicycle trails should provide linkages between recreational and Open Space amenities. Facilitation and/or development of trails may be required of individual tract Applicants/owners in accordance with the General Conditions and Special Conditions.

See also the Conceptual Amenity Map (Section 11, Map 2) for conceptual trail locations. Exact trail locations will be determined with future subdivision plats and building permit applications.

Trails shown on the GDP maps will be ten feet in width and will be constructed of either concrete or an alternative soft pavement system (such as crusher-fines).

Refer to the LCUASS for design of public trails.

Trails should be universally accessible. Grades up to 5% can be used on standard trail sections (intersections should have grades below 3%). Grades above 5%, however, will not be considered accessible to wheelchair users.