This chapter presents the infrastructure recommendations for downtown Denton, and includes key findings that led to the recommendations. The recommendations are founded on the vision and thoughtful insights of both the public and private sector. Additionally, the recommendations take into consideration the Downtown Master Plan, public involvement results, and existing conditions. These recommendations provide the foundation for the implementation strategies. The key infrastructure components addressed in this chapter are: streets and linkages; bicycle accommodation; parking; and solid waste.
A. Street and Linkages

One of the primary goals that define the vision for downtown, included in the Downtown Master Plan is: “Downtown should be pedestrian friendly and an enjoyable place to walk. All of downtown needs to have good pedestrian infrastructure, including sidewalks, shade, and calm traffic.”, the recommendation to achieve this goal is to create a network of “Complete Streets” in downtown. Complete streets are multi-functional, pedestrian-oriented, aesthetically-pleasing, and safe and inviting for residents and visitors. Redeveloping the existing downtown street network into complete streets will create a pleasing public realm, which in turn supports and encourages a wide variety of new development and investment.
Priority Recommendations:

E1: Adopt DTIP Street Standards for Downtown

E2: Modify City Mobility Plan to Include Downtown Street Standards

E3: Implement Hickory Street “Grand Street” Project

E4: Implement “Mews Street” Program for Parking, Safety, and Waste Removal

E5: Implement Early Action Street and Mobility Items

The following are the detailed recommendations and improvements for major and minor study-area streets to facilitate the creation of a complete street network. Exhibit 5.0 shows the downtown street grid with the number of lanes and directional flow of traffic identified on each street.

Urban Transect

The urban transect, (see Exhibit 5.1), involves the relationship between development (buildings), streets, parks, and natural features with the street network. Downtown is in the T5 urban center zone. One of the strengths of the transect is the comparison of physical changes between adjacent zones.

“Streets require vast amounts of land - in the United States, from 25 to 35% of a city’s developed land is likely to be in the public right-of-way, mostly streets”

Allan Jacobs, Great Streets

“This plan for downtown is fantastic, we fully endorse this concept for urban streets in downtown which supports growth and economic development”

Gary Bailey, PE
TxDOT Denton District - Area Engineer
Complete Street Elements
A: Angled Parking
B: Public Street Furniture
C: Private Street Furniture
D: Awnings
E: Bus/Emergency Bulb
F: Pedestrian Lighting
G: Street Lighting
H: Street Landscaping
I: Shared Travel Lanes

**DS 1 Hickory Street (East of the Square)**

Hickory Street is envisioned as the “Grand Street” for downtown, linking the Courthouse Square and the proposed DCTA transit center. The identity and character of Hickory should include: wide sidewalks on both sides of the street, angled parking, and shared travel lanes which are able to accommodate bicycle use, as shown in Exhibit 5.2. Added streetscape elements will create a pedestrian-friendly environment ready to support economic development downtown.
3-D Perspectives of Hickory Street
These three views were developed to define the enhanced character of the proposed street for shopping, dining and strolling through downtown. The 3-D renderings show the relationship of parallel parking to the wide pedestrian sidewalk, the greening of the street with new street trees and the pedestrian quality of Hickory Street with the added parking, landscape, sidewalks, crosswalks and bulb-outs at intersections.
Complete Street Elements
A: Parallel Parking
B: Public Street Furniture
C: Awnings
D: Pedestrian Bulb
E: Pedestrian Lighting
F: Street Lighting
G: Street Landscaping
H: Dedicated Bike Lane
I: Pedestrian Crosswalk

**DS 2 Locust & Elm Streets**

Elm and Locust streets are keys to mobility for north-south traffic flow. These streets have travel lanes which support slower automobile speeds (maximum 20-25 mph) with parallel parking, pedestrian sidewalks, and bulb-outs at intersections. See Exhibit 5.4.
**Complete Street Elements**

A: Parallel Parking  
B: Public Street Furniture  
C: Awnings  
D: Pedestrian Bulb  
E: Pedestrian Lighting  
F: Street Lighting  
G: Street Landscaping  
H: Shared Travel Lane  
I: Pedestrian Crosswalk

**DS 3 Hickory & Oak Streets (West of the Square)**

Hickory and Oak Streets will carry two lanes of eastbound traffic east of the Square and will support a mix of development types. Oak Street will carry two lanes of westbound traffic west of the Square and will support a mix of development types. The street rights-of-way will support attractive sidewalks with street furniture for retail, office, or residential uses. Parallel parking on these streets will help slow traffic and protect pedestrians. Bulb-outs at intersections with special paving at crosswalks will help define safe pedestrian crossing zones. See Exhibit 5.5.
Complete Street Elements
A: Parallel Parking
B: Angled Parking
C: Awnings
D: Pedestrian Bulb
E: Pedestrian Lighting
F: Street Lighting
G: Street Landscaping
H: Shared Travel Lane
I: Pedestrian Crosswalk
J: Public Street Furniture

DS 4 Oak – (East of the Square)
Oak Street will carry two lanes of two-way traffic east of the Square and will support a mix of development types. The street right-of-way will include attractive sidewalks with street furniture for residential neighborhoods. Parallel parking on this street will help slow traffic and improve pedestrian safety. Bulb-outs at intersections with special paving at crosswalks will help to define the role of these streets. See Exhibit 5.6.
**DS 5 Sycamore Street**

Sycamore Street, which connects UNT with the proposed DCTA transit center, will be designed for all transportation modes, including two striped bicycle lanes for two-direction bicycle travel. Parallel parking on this street will include additional depth for the safety of adjacent bikers. See Exhibit 5.7.

**Complete Street Elements**

A: Parallel Parking  
B: Public Street Furniture  
C: Awnings  
D: Pedestrian Bulb  
E: Pedestrian Lighting  
F: Street Lighting  
G: Street Landscaping  
H: Dedicated Bike Lane  
I: Pedestrian Crosswalk
Mulberry Street will carry two lanes of two-way traffic and will support a mix of development types. The street right-of-way will support attractive sidewalks with street furniture for residential neighborhoods. Parallel parking will support ground-floor retail and improve pedestrian safety. Bulb-outs at intersections with special paving at crosswalks will help to define the roles of these streets. See Exhibit 5.8.
DS 7  Mews Streets

Mews streets are the four smaller streets located behind the streets that front the Denton Courthouse. The four mews streets (Walnut, Austin, Pecan, and Cedar) will be designed to support the delivery and movement of people and goods on the Square.

Increased parking, solid waste screening, improved pedestrian mobility, improved streetscape aesthetics, and delivery truck loading zones are addressed to improve safety and increase downtown economic development. See Exhibit 5.9 (Exhibit 5.13 shows a prototypical mews street plan).
**DS 8  Alley Streets**

Alley streets are distinctive, narrow streets that assist in the movement of people and goods downtown. They typically include a row of bollards or curbs protecting the buildings and pedestrians with parking positioned between street trees and with street lighting hung on cables between buildings. See Exhibit 5.10. Unit pavers on these streets can add character. These alley streets provide an excellent environment for restaurants and clubs desiring outdoor seating for al fresco dining.
Carroll Boulevard and Bell Avenue are regional streets which are, respectively, six and four lanes wide and are designed to move traffic around downtown quickly. See Exhibit 5.11. Safe and efficient movement of cars is the number one goal for these wide streets.
The designs included are offered as a concept reflecting established standards. Of note, these street prototype cross sections were established without the aid of survey controlled information. The concepts presented will need to be modified during the design phase to include specific details regarding: utilities, building property lines, street right-of-way’s, buildings prior to redevelopment and other site specific items. Additionally, some segments of existing street right-of-way’s may not be able to accommodate the proposed recommendations. This may require securing additional right-of-way property or as noted, a modified design configuration.

Mews Streets Prototypical Design

Mews Street Concept Plan
Exhibit 5.12
Exhibit 5.13 shows how trash and delivery can be handled on two-lane wide streets between parking spaces.

“If we can design and build streets so that they are wonderful, fulfilling places to be for all people, then we will have successfully designed about 1/3 of the city directly --- and they will have an immense impact”

Allan Jacobs, *Great Streets*
B. Bicycle Mobility

Bicycling offers a healthy, environmentally-beneficial transportation alternative, which supports mixed-use economic developments and offers a legitimate option in the overall traffic mix. Bicycles are classified as vehicles by state law, and cyclists have the same rights and duties as other vehicle operators.

Several types of bicyclists, including those with differing experience levels, ride by choice or necessity and have an interest in using the local street system within and beyond the study area. The study area was analyzed to determine which streets and what methods are most appropriate to provide specific bicycle facilities both to maximize downtown economic development opportunities and to address the burgeoning interest...
**Priority Recommendations:**

G1: Adopt DTIP which defines bicycle mobility standards for Downtown

G2: Implement Bicycle Lanes on Sycamore Street to DCTA Station

G3: Conduct Traffic Study for Specific Intersection Designs

G4: Implement Bicycle Signage Program Downtown (Shared Lane and Bike Lane)

G5: Incorporate DTIP Bicycle Standards into City of Denton System/Standards

in using bicycles as transportation. These bicycle recommendations take into consideration the context of overall vehicular circulation, pedestrian mobility, development patterns, parks and open space, solid waste collection, and downtown Denton’s “complete streets” strategy.

**Approach to Bikeway Evaluation**

Downtown’s current accommodation of bikeways was examined. Traffic counts and accident data were reviewed, and on-site observations were made of the entire street network. The analysis included evaluating accident locations, proposed land uses, parking, parks, and suggested development forms. This section addresses the resulting findings and their relevance to real and perceived bicycle accommodation problems; and it makes recommendations for better accommodating current and future downtown bikeways. Exhibit 5.14 shows the proposed accommodation of bicyclists in downtown.

Exhibit 5.15 shows the locations of vehicular accidents over the past six years. The highest incidence of traffic collisions (35) occurred along Hickory Street and the lowest incidence of recorded traffic collisions (17) occurred along Sycamore Street among the east-west roadways. While these numbers reflect these street’s higher traffic volumes, they are only a starting point for determining a need for upgrading intersection treatments. Southbound Elm and northbound Locust streets reflect similar numbers of accidents with comparably high traffic volumes, and will require further analysis before modifying intersection treatments.
Accident clusters at the intersections of Sycamore Street and Bell Avenue; Sycamore Street and Carroll Boulevard; Mulberry and Elm streets; and Mulberry and Locust streets, for example, indicate the need for further study as the recommended bicycle facilities are implemented to determine if additional signals, warnings, or other traffic controls are warranted at these intersections. While limited sightlines crossing Bell Avenue from eastbound Sycamore Street do not seem to create a disproportionate number of crashes at this intersection, the faster nature of motor vehicle traffic along Bell Avenue and the width of the crossing of this busy roadway may justify adding a signal at this location to assist bicyclists and pedestrians to cross the intersection.

**Recommendations Overview**

Dedicated bike lanes for east-west travel are recommended along Sycamore Street, a less hilly route with lower traffic volumes, which connects directly to the Denton Branch Trail, to UNT, and to the proposed DCTA transit center (via Railroad Avenue). Shared Lane Markings (SLMs) are recommended for Oak and Hickory streets because of their right-of-way constraints and angled auto parking. In addition, establishing a 20-25 MPH maximum speed throughout downtown, along with a truly 'vertically-shared' bicycle/
automobile roadway zone, is recommended to create a more bicycle-friendly environment downtown.

A couplet of north-south bike lanes along Elm and Locust Street with an eastward connection along Parkway/Oakland to the TWU campus will provide more comfortable bikeway accommodation through the center of downtown along the Courthouse Square. A third set of bike lanes is proposed to use one-way southbound Railroad Avenue (by establishing a contra flow northbound bike lane). This set of bike lanes will connect the Denton Branch Trail to the DCTA transit center, and to Quakertown Park (via an off-street trail along the north side of McKinney Street). The McKinney Street Trail connects to a north-south bike lane couplet along Bell Parkway and Bell Avenue on the east side of Quakertown Park, which will provide an easier connection for bicyclists between the proposed DCTA transit center and the TWU campus.

The latest nationally-approved “shared use lane markings” and related regulatory signage indicating that “Bicycles May Use Full Lane” should be used downtown. Both controls are included in the December 2009 Manual on Uniform Traffic Control Devices (MUTCD). These treatments establish and clearly convey the equal status of bicycles with automobiles in the road-user hierarchy. The only streets not programmed for these treatments are the two regional access roadways at the perimeter of downtown, Carroll Boulevard and Bell Avenue south of McKinney Street.

**Traffic Control and Advisory Signage and Wayfinding**

**Finding** – Accommodating bicyclists downtown will require an enhanced bikeway signage system, including wayfinding signage, as well as the new regulatory signage that clarifies the legal status of bicycles on the roadways.

**Recommendation** – A comprehensive bikeway wayfinding study should be prepared to determine the most appropriate destinations to sign for bicyclists, pedestrians, and motorists. The results of the study will define which destinations to include, the distances from each placement, and the most appropriate wayfinding titles to use for clarity and simplicity. Wayfinding provides sufficient information to aid travelers and visitors to confidently determine which routes reach chosen destinations.
Regulatory signs provide clarity of use for both motorists and bicyclists. Part 9 of the MUTCD document covers signs, pavement markings, and highway traffic signals specifically related to bicycle operation on both roadways and shared-use paths. The absence of a marked bicycle lane or any other bicycle-related traffic control device on a particular roadway does not mean that bicyclists are precluded from riding on that roadway.

### Bike Lane Sign

The bike lane sign (R3-17) and plaques (R3-17aP and R3-17bP) (see Exhibit 5.17) should only be used for marked bicycle lanes as proscribed in the MUTCD manual (Section 9C.04). Bike lane signs and plaques should be used in advance of the upstream end of the bicycle lane, at the downstream end of the bicycle lane, and at periodic intervals along the bicycle lane as determined by engineering judgment based on the prevailing speeds of bicycle and other traffic, block length, distances from adjacent intersections, and related considerations.

### Shared Lane Marking

Shared Lane Marking (SLM) signage, (see Exhibit 5.17) which should be used on downtown roadways with a speed limit above 20-25 mph, provides for the accommodation of bicyclists where the street lanes are too narrow for bikes to share side-by-side with motor vehicle traffic. SLM signage may be used to:

1. Assist bicyclists with lateral positioning in a shared lane, which has parallel on-street parking, to reduce the potential conflict between bicyclists and the open door of a parked vehicle;
2. Assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane,
3. Alert road users of the lateral location bicyclists are likely to occupy within the traveled way;
4. Encourage motorists to safely pass bicyclists;
5. Reduce the incidence of wrong-way bicycling.

“Bicycles May Use Full Lane” Sign

“Bicycles May Use Full Lane” signs (R4-11) are an integral companion to the SLM signage (see Exhibit 5.18). These signs may be used on roadways where no bicycle lanes or usable adjacent shoulders are available for bicyclists and where travel lanes are too narrow for bicyclists and motor vehicles to operate side by side.

Providing these regulatory (black lettering on white background) signs in conjunction with or alternatively with SLM pavement markings provides a clear communication to both bicyclists and motorists that the bicyclist has a legal right to occupy the full travel lane, and that the motorists must change lanes to pass.

Other Signs

Other useful signs for the study area include a warning of a Diagonal Railroad Crossing (W10-12) and the Bicycle Wrong Way (R5-1b) and Ride with Traffic (R9-3c) signage (see Figure 5.7). These signs may be especially helpful for contra flow traffic along the bike lanes on the one-way Elm and Locust street couplets. The Bike Parking sign (D4-3) directs bicyclists to the location of bicycle parking (see Figure 5.19). (Parts 1,
2, 3, and 4 of Part 9 of the MUTCD include general provisions, signs, and pavement details.)

Bike Route Signs

The standard MUTCD bikeway sign (M1-8) can be configured (as M1-8a) to include the city’s logo and provide numbering for major cross-town bike routes.

Destination and Distance Signs

Destination and distance signs give key or major destinations with directional arrows and include mileage distances to these locations (see Figure 5.9). Wayfinding signage with distances to key destinations can be very helpful for all road users. This supplemental signage becomes part of a public relations outreach strategy to educate all road users.

Hickory and Other Downtown Streets

Exhibit 5.22
Downtown Square Shared Bicycle Lane

Finding - Accommodating bicyclists next to the Denton County Square downtown requires a special design treatment due to having standard angled automobile parking on both sides of the street. Cars backing into vehicular and bicycle lane creates a dangerous situation.

Recommendation - We propose this one block route(s) on Locust and Elm have a special design treatment. These two blocks need to be dedicated bicycle shared lane routes that transition from the striped dedicated bike lanes. For this one block route in each direction, shared lane markings (exhibit 5.17) will need to be applied on the pavement at three (3) locations (beginning, middle, end) along the block.

The following narratives describe each of the major routes through downtown:

1. Hickory and other downtown streets:

SLMs are proposed along Hickory Street between Carroll and Railroad avenues extending to the DCTA transit center (see Photograph 5.0). SLMs are also recommended on streets, such as Industrial or Oakland, that are too narrow to be able to stripe for dedicated bike lanes. These markings, complemented with the “Bicycles May Use Full Lane” signage, will clearly communicate the expectations for both bicyclists and motorists. Adding two-way SLMs with “Except Bikes” signage on the one-way placards is recommended for the block of Oakland north and slightly east of Industrial Street and for other one-way streets.

2. Hickory Street at the Denton Branch Rail Trail

The intersection of the Rail Trail with Hickory Street will need to be further evaluated to determine the most appropriate method for signing the Rail Trail crossing of Hickory Street at the proposed DCTC transit center (see Photograph 5.1). The final design of the transit center and its parking lots will affect the Rail Trail connection between Hickory and Sycamore street.

3. Sycamore at the Denton Branch Rail Trail

Designated bike lanes are proposed on Sycamore Street between the Denton Branch Rail Trail at the proposed DCTA transit center and Carroll Boulevard leading to the UNT campus.
4. Sycamore at the Bell Avenue intersection

Adding a signal or other traffic control device at the intersection where Sycamore Street crosses Bell Avenue will aid bicyclists (and pedestrians) to cross the intersection. Improved crosswalks and ADA ramps should also be included when this intersection is upgraded.

5. Locust (one-way northbound) and Elm (one-way southbound)

Bike lanes are the preferred treatment for the right sides of the Locust and Elm street couplet. Right side lanes better accommodate the safety of cyclists to turn right from one of these streets. Limiting downtown traffic to 20-25 mph will ease the turning movement negotiations for right-turning cyclists. Bike lane striping should be dashed between 50 and 200 feet prior to each intersection to facilitate the right-turn movements.

6. Locust and Elm Streets at Mulberry Street

Crossing either one-way Locust or Elm streets at Mulberry Street can be challenging during heavier traffic periods. These intersections should be studied to determine if they warrant adding signals. A residual benefit of adding signals at these two intersections may be slower overall traffic speeds, and rendering a safer, more bike-friendly cycling environment, on both north-south and east-west routes.

7. Sycamore Street at Carroll Boulevard

Placing bike lanes on Sycamore Street will probably require a signal at Carroll Boulevard. A qualified engineer should study the intersection to determine if a signal is warranted; consideration could be given to employing a user activated stop signal.

8. Parkway/Oakland Street

Bike lanes on Parkway/Oakland will give bicyclists along Elm and Locust streets access to and from the TWU campus and Quakertown Park.

9. Quakertown Park

Trails should be added to enhance connectivity with Quakertown Park, linking it with surrounding neighborhoods as the park is renovated.
10. McKinney Street at Oakland

A well-marked or signaled crossing (HAWK signal) of McKinney Street at Oakland Street should be installed to facilitate the connection between downtown and Quakertown Park. This connection will provide area visitors and residents alike with a safe, predictable connection between downtown and the civic resources within Quakertown Park.

11. Bell Avenue at Quakertown Park

Providing a crosswalk on Bell Avenue to Quakertown Park will be needed to safely accommodate students and others going between the proposed DCTA transit center, as well as surrounding neighborhoods to the east, and the TWU campus.

12. McKinney Street Off-Street Trail Link and Crosswalks

A crosswalk at the intersection of McKinney Street and Bell Avenue connecting (eastward along the north side of McKinney across the freight rail tracks) to a formal north-south crosswalk to the proposed DCTA transit center will enhance pedestrian and bike safety for everyone living or working east of the railroad tracks or west of Bell Avenue.

13. Railroad Avenue

Bike lanes are proposed on Railroad Avenue, extending the Denton Branch Rail Trail alignment to and past the proposed DCTA transit center between McKinney and Sycamore streets. These bike lanes will require special care to sign properly for two-way bicycle flow, permitting bicyclists to pass through or use DCTA transit center bicycle accommodations. While a placing a contra-flow bike lane on a one-way street is generally discouraged, proper markings and signage could permit the one-way southbound Railroad Avenue right-of-way to accommodate two-way bike traffic.
C. Parking

The following items summarize the findings and specific consultant parking recommendations for downtown. Each entry is defined with a statement of findings and the resulting recommendation(s). Exhibit 5.22 shows the parking strategy proposed for downtown Denton.

1. Increase Parking in the Short Term

**Finding** – Downtown currently has adequate parking to serve existing and near-future demands, although 71 percent of the existing parking is for private use and not for the visiting public. Mobility will increase and parking demand will rise within a development horizon of approximately three years of the DCTA rail line opening.
Priority Recommendations:

B1: Increase On-Street Parking
B2: Establish Shared Parking Program
B3: Enlarge Public Parking Lots
B4: Create Wayfinding Signage Network for Parking
B5: Establish Cash-in-Lieu Parking Program
B6: Early Action Parking Projects

downtown. Maximizing parking on-street and on city-owned property presents a short-term opportunity to provide additional parking.

Recommendation - Increase public parking by two primary methods:

1. Create additional parallel and angled on-street parking on existing streets. Many of downtown’s existing streets are overly wide with wide travel lanes; the cross sections for these streets have been redesigned, as defined in the “Complete Streets” recommendations, to have on-street parking and comfortable pedestrian walkways.

2. Create three public parking lots downtown. Public parking lots A, B, and C (Exhibit 5.22) need to be expanded to maximize efficiency.

2. Establish Shared-Parking Program

Finding – The analysis shows that the largest quantity of public parking is located in DTIP Zone 7, which contains 639 public parking spaces, accounting for 13 percent of downtown’s parking. This zone has the greatest concentration of public facilities, including City Hall, the Civic Center, and the Post Office. These spaces are not attractive to visitors because their location requires a long walking distance to and from downtown.

Recommendation – Denton should develop a shared-parking program with existing property owners to allow daytime parking use with the aid of stickers, tags, or signs along with evening use for shopping, dining, and residential users. In addition, cooperative arrangements with property owners for sharing the use of existing parking lots with the public should be aggressively
pursued. The following issues should be addressed as a part of such agreements:

- Parking lot improvements, where necessary, including paving and pavement markings,
- Provision of signage and lighting,
- Liability resulting from public use of spaces,
- Maintenance of the parking areas, and
- Enforcement of towing.

3. Parking Calculations for New Development

Finding – Base Parking Requirements for gross floor area of new developments are established in the Denton FBC and detailed in Exhibit 5.23. Restaurant uses downtown are proposed to be calculated at the same rate as a general retail use.

<table>
<thead>
<tr>
<th>REQUIRED PARKING</th>
<th>RESIDENTIAL</th>
<th>HOTEL / MOTEL</th>
<th>OFFICE</th>
<th>RETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESIDENTIAL</td>
<td>1 Space per Bedroom up to 2.0 / dwelling unit (^4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOTEL / MOTEL</td>
<td>1.0 / bedroom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OFFICE</td>
<td>1 / 300 sq. ft. or 1/400 with publicly shared parking (^1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETAIL</td>
<td>1 / 300 sq. ft. or 1/400 with publicly shared parking (^1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIVIC</td>
<td>To be determined by Minor Waiver (^2,3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>To be determined by Major Waiver (^3)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Shared Parking Calculations

The Shared Parking Factor for two functions, when divided into the sum of the two amounts as listed on the required parking table below, produces the effective parking needed for each site involved in sharing. Conversely, if the sharing factor is used as a multiplier, it indicates the amount of building allowed on each site given the parking available.

<table>
<thead>
<tr>
<th>RESIDENTIAL</th>
<th>HOTEL / MOTEL</th>
<th>OFFICE</th>
<th>RETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESIDENTIAL</td>
<td>1</td>
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<tr>
<td>OFFICE</td>
<td>1.4</td>
<td>1.7</td>
<td>1</td>
</tr>
<tr>
<td>RETAIL</td>
<td>1.2</td>
<td>1.3</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Notes:
1. Required Parking may be reduced to the lower amount if at least 80% of non-residential parking is available as public shared parking. Otherwise, the higher standard parking requirement shall apply.
2. Open space and civic space do not require parking.
3. Active recreation or sports facilities parking requirements shall be determined by minor waiver.
4. On-street parking shall not count toward meeting residential parking requirements.
**Recommendation** – The FBC-based parking calculations, shown in Exhibit 5.22, should be used to determine the number of parking spaces required for new development.

4. Parking Calculations for Existing Development

**Finding** – Base Parking Requirements for gross floor area of existing development are established in the Denton FBC and detailed in Exhibit 5.24. Existing restaurant uses may be considered “grandfathered in” and should not need to meet FBC-based parking requirements for general retail uses so that the downtown business community is not adversely affected.

**Recommendation** – The FBC-based parking calculations, shown in Exhibit 5.24, should be used to determine the number of parking spaces required for existing uses, only if they modify business floor area.

5. Increase Parking for the Mid-Term

**Finding** – Parking demand is not uniform throughout the study area; some blocks have deficiencies and others have surpluses of public parking. Currently, the blocks in the center of downtown nearest Courthouse Square (DTIP Zones 4, 5, and 6) have the least public parking. Maximizing the size and efficiently of downtown parking facilities will be important over the mid-term development horizon (three to five years out).

**Recommendation** - Existing public parking Lots A and C should be enlarged:

1. Lot A – Denton should work to develop a shared-parking agreement with Wells Fargo for mid-term surface-lot usage and long-term garage development.
2. Lot C – Denton should raze the old fire station.
and partner with adjacent property owner(s) to expand public parking for mid-term surface-lot usage and long-term garage development.

6. Create a Wayfinding Signage Network

**Finding** – An enhanced signage system is needed to support public parking downtown. Such a system is called a wayfinding signage network; it can direct visitors to locations offering public parking. Wayfinding is the means of providing graphic information to aid travelers and visitors to confidently determine the route to reach chosen destinations. It enhances the ability to orient and locate oneself within an area.

**Recommendation** – A comprehensive wayfinding study should be completed to define the type of signs, locations, content, and sign design (see Exhibit 5.25). These signs will be designed specifically for downtown Denton and its points of interest, including public parking and directions to the area’s multiple destinations, such as Quakertown Park, the proposed DCTA transit center, Courthouse Square, UNT, TWU, and others.

An attractive, recognizable, and unique theme should be developed for downtown Denton’s wayfinding system graphics and signage. On-street signage should direct motorists to available parking facilities, and it should lead pedestrians to their downtown destinations once they arrive at their parking location. Available parking locations in downtown Denton should be publicized through parking brochures and maps distributed to customers, visitors, and workers at popular attractions and public places downtown.

7. Establish Delivery Truck Guidelines

**Finding** – Downtown streets exhibit a tight development pattern, creating a challenge for delivery trucks serving clubs and restaurants. A large number of these deliveries take place during the work day, with the driver double parking on the streets near the commercial establishments, which causes delays and dangerous situations for motorist who attempt to pass.

**Recommendation** – A comprehensive set of guidelines is recommended for large trucks making downtown deliveries, including:
Locations where trucks can stop to make deliveries

Times when large trucks are not allowed to deliver goods

Preferred routes for large trucks entering downtown

Item 1 – Trucks serving merchants in DTIP Zone 5 have two options. First, the trucks can double park in the front of the store during approved times; trucks double-parking in these locations during non-approved times will be ticketed. The second option is for truck drivers to park in the areas identified and striped as delivery zones. These delivery zones are located in the new streetscape designs for the mews category of streets (such as, Austin, Cedar, Walnut, and Pecan).
Trucks serving all other DTIP zones need to be in a loading zone and not double parking or violate traffic regulations.

Item 2 – Large food and beverage delivery trucks will not be allowed to deliver from 11 am-2 pm and from 6 pm -10 pm during weekdays and weekends. This is to assist delivery trucks, emergency vehicles, and standard traffic.

Item 3 – Large trucks, as defined by TxDOT and City engineers, should use either Carroll Boulevard or Bell Avenue to enter (or pass through) downtown. These two roadways serve as the regional mobility corridors linking into the city-wide network.

8. ADA Parking

Finding – Some existing downtown public parking lots do not have ADA spaces identified. Additional ADA spaces will be needed as downtown grows.

Recommendation – Denton should redevelop existing public parking facilities in conformance with the Texas Accessibility Standards, and Denton should continually update the quantity of ADA spaces when new public parking facilities are added.

9. Parking Reductions for TOD

Finding – The study area includes a large, strategic area for TOD development, as defined in the FBC. TOD, as will occur around the proposed DCTA transit center, includes extensive mixed-use buildings, which require less parking; and less parking is programmed in the FBC development guidelines.

Recommendation – Parking for new development within a quarter-mile radius of the proposed DCTA transit center should be reduced by 25 percent, with the exception of parking for a stand-alone office building in this walk zone, which should only be granted a 15-percent reduction.

10. Acquire Strategic Property

Finding – The downtown area closest to the proposed DCTA transit center will most likely generate near-term private development, and it will experience pressure for additional parking to support both that development and the transit/transfer facility.
**Recommendation** – Denton should acquire additional property in the TOD area to have the opportunity to participate in public-private parking solutions.

### 11. Parking Calculations for Parking Garages

**Finding** – Parking demand is expected to be much greater in 10-15 years with construction of large buildings. Maximizing parking on currently-owned city property may offer a long-term opportunity.

**Recommendation** – Up to three parking garages may need to be financed and built in phases, as needed, using funding options discussed in this implementation strategies chapter.

All parking garage development should be sited with active ground-floor land uses fronting on public streets to help ensure a high-quality downtown pedestrian environment that will maximize economic development potential.

### 12. Funding / Implementation

**Finding** – Surface parking facilities are often the most economical solution in areas where land is relatively inexpensive. As the cost of land goes up, above-ground parking garages tend to become more cost-effective. Denton should begin setting aside revenue to be able to develop public parking structures as downtown grows.

**Recommendation** – Denton should primarily develop parking lots on land it owns. However, new property purchased for parking may include buildings or other improvements that will need to be demolished. A cash-in-lieu-of-parking program allows making a payment into a public parking fund in lieu of physically providing parking on site. The cost of a parking space for this program should be determined by calculating the construction cost of a 300-square-foot parking space and adding an estimated amount for the cost of land. The resulting sum should then be reduced by 60 percent to reflect the efficiency of use resulting from publicly-shared parking spaces.
13. Early Action Items

Finding – A set of early action projects was created to help downtown address parking issues and concerns. These early action items include parking recommendations, as well as traffic circulation, signage, landscaping, and other related features required for a successful parking program.

Recommendation – Completing the following early action projects is recommended to help solve downtown’s parking needs with a modest investment of cost and time.

a. Striping for angled parking on Hickory Street
b. Development of parking lot(s) (signage, lighting, ADA, resurfacing, and landscaping)
c. Wayfinding signage for public parking lots
d. Road and streetscape improvements for a two-three block section of Hickory Street (design)
e. Striping for angled parking on Industrial Street north of Mulberry Street and part of Mulberry Street between Industrial and Oakland streets

These projects should be completed within a 12-18 month timeframe following the DTIP’s adoption. Site design and engineering fees, construction engineering and management, and other similar costs will be required for these early-action projects.

14. Enhance Parking Education Program

Finding – Parking demand is greatest between 10 am and 3 pm. The current education program should continue to instruct downtown workers to park in more remote areas, which then allows business patrons access to parking spaces closest to the front doors of downtown businesses. This program needs to be supported with quality parking areas for employees. These designated employee parking areas need to be lighted appropriately for security as do the paths from these lots to the employees’ workplaces.

Recommendation – An enhanced parking education program is recommended for implementation to define areas for downtown employees to park and to educate these employees on the advantages of parking remotely.
15. Parking Enforcement

Finding – The two-hour time limit for downtown on-street parking spaces has not been enforced adequately. Stricter enforcement is needed to increase the turnover of parking spaces in the area, which will make spaces available for other patrons.

Recommendation – The current parking fine structure should be evaluated and then modified to better deter violators from parking beyond the maximum time allotted. Staying ahead of the growing number of downtown parkers is important, given the close proximity of the UNT and TWU campuses and student housing. An increased fine structure will help achieve better compliance with parking regulations; and it will generate additional funds, which can be applied to downtown programs.
D. Solid Waste

Downtown solid waste management involves three primary categories of issues, each of which involves important components, as follows:

1. Environmental Issues
   - Poor image
   - Bad odor
   - Glass and grease residue

2. Physical Issues
   - Dumpsters in the street
   - Dumpsters on sidewalks
   - Large trash containers sitting askew to the street
   - Turning radius of trucks
Priority Recommendations:

F1: Conduct Pilot Program
F2: Implement Preferred Plan (Location, Type, Pricing for Solid Waste Removal)
F3: Screen All Existing Solid Waste Dumpsters in the Square District
F4: Establish Broad Downtown Recycling Waste Program
F5: Create a Downtown Recycling Center
F6: Screen All Existing Solid Waste Dumpsters in the Downtown District

3. Economic Issues
   - Loss of parking
   - Limited number of recycling containers
   - Deleterious effect on economic development

Summary of Findings and Recommendations

A series of recommendations was designed to yield a comprehensive strategy for downtown waste management, based on existing downtown conditions, assessment factors, and stakeholder preferences. The following subsections detail the recommended strategy in six waste management recommendations:
1. Solid Waste Districts

Finding – The quantity and density of trash containers is different in different parts of downtown; a higher concentration of trash containers is located around Courthouse Square.

Recommendation – Two separate districts should be established for trash removal each with a different removal plan. A Square District is proposed to cover the blocks closest to Courthouse Square, and a Downtown District is proposed to cover the rest of downtown. See Exhibit 5.26.

2. Front-Loaded Containers

Finding – Front-loaded containers (see Photograph 5.7) are larger than side-loaded containers. Thus, they can hold more trash and require less-frequent emptying, although their added size makes them more challenging to place and displaces more parking. Significantly, Denton has a preponderance of front-loading trucks, which require a greater turning radius to maneuver and require front-loaded trash containers to be located at an angle to the street in order to be emptied.

Recommendation – Denton should use front-loaded trash containers throughout downtown because of their greater capacity and less-frequent emptying requirements. These containers need to be grouped together mid-block and placed parallel to angled parking spaces to permit trash haulers to more easily...
empty them. Screening for these mid-block trash container groupings should include full masonry walls and quality metal doors.

3. Side-Loaded Containers

Finding – Side-loaded containers, an option for downtown (see Photograph 5.8), are smaller than front-loaded containers, and they can be screened and fitted between parallel parking spaces using on-street space more efficiently. The smaller size of the side-loaded containers requires emptying them more frequently, generally in both the morning and the evening; and the city currently has only a limited number of side-loading trash trucks.

Recommendation – Denton should discontinue use of side-loaded containers because of their added labor costs and the limited availability of side-loading city-owned trucks.

4. Recyclable Materials

Finding – Increasing the opportunities for downtown businesses and residents to recycle is of strong interest to the community. It improves the quality of life for users; and the city has been working to increase the availability of recyclable containers downtown. Recyclable containers are a light blue in color to separate them from the standard green solid waste receptacles.

Recommendation – Containers for recyclable material (see Photograph 5.9) should be added in both the Square and Downtown districts. To do so, the city needs to make a policy decision about whether items (plastic, glass and paper) are going to be mixed or separated for recycling. Also, a bulk recycling drop-off center should
be established downtown for downtown citizens and businesses with greater than normal recyclable needs.

5. Trash Container Screening

Finding – Most existing downtown trash and recycling containers are sited with no screening; fewer than 10 percent are concealed with some type of screening, primarily chain-link fencing with slats. In addition, many of these containers are located on the street, displacing parking spaces and creating a negative visual impression of downtown.

Recommendation – All trash and recycling containers in both the Square and Downtown districts should be screened behind a six-foot-tall masonry wall with hinged and painted metal doors (see Photograph 5.10). The enclosure needs to provide pedestrian access for those bringing trash to the trash container that is separate from the large doors that the trash hauler will use for his truck pick-up. This design and layout should
work well with the proposed downtown streetscape improvements.

6. Solid Waste Strategy – Pilot Program

Finding – Establishing a single, solid waste strategy for downtown will require careful planning.

Recommendation – The city should conduct a 30-day pilot program in the Square District to determine the most appropriate solid waste removal strategy for downtown (see Exhibit 5.11). The strategy will need to define waste pick-up times for weekday and weekend service and appropriate locations for trash and recycling containers, as well as the location for the downtown bulk drop-off recycling center.

The trial program must be carefully planned to properly locate the containers and address their screening requirements. The locations of trash and recycling containers and their screening will need to be defined with painted lines on the street pavement, reflecting future sidewalks and streetscape amenities.

The results of the pilot program will need to be thoroughly evaluated to be able to formulate a preferred solid waste removal strategy, which may incorporate a combination of removal systems. The Square District pilot program can also influence the approach to solid waste removal in the Downtown District. A revised solid waste removal schedule will need to be developed and distributed for the selected trash removal strategy. The goal is to provide better service for downtown businesses and residents, while creating a quality streetscape environment appropriate for downtown Denton.

Solid waste strategy elements
Photograph 5.11
7. Solid Waste Strategy
Downtown District

Finding - Some property owners in the Downtown District may be challenged to have individual waste facilities (dumpsters) on their site.

Recommendation - In the Downtown District the strategy for solid waste removal is based on the following procedures:

First, property owners need to design their site to accommodate a waste facility (dumpster) that is constructed to Code and 100% screened.

Second, a hardship option, is to work with the City to define a shared facility to use with a downtown neighbor. Property owner needs to be granted approval as having a hardship.

Third, this shared facility may be sited on private property or designed within City ROW. Said waste facility will be constructed to Code and 100% screened. Facility will be paid for by private property owners. Hardship cases will be reviewed case by case.