



## TECHNICAL M E M O R A N D U M #3 - MULTI-MODAL ANALYSIS

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Subject: Technical Memorandum 3 – Multi-Modal Analysis DRAFT

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### INTRODUCTION

Downtown Columbus is generally blessed with a walkable town center, nearby ColumBUS service, and in close proximity to the People Trails. However, there are hidden, and not-so-hidden areas downtown which act as pedestrian barriers, effectively becoming points which pedestrians, and even parkers avoid. These points are seen to affect parking utilization and availability, and it is important to understand that these barriers have different affects on different user groups. Customers are most likely to want to park close, or in view of their destination. Employees may be willing to park further away, but may have concerns about safety and visibility. Visitors and tourists need clear direction as motorists, and once parked, as pedestrians to featured locations. Commuters typically find the shortest walk from where they can park to the train station.

This memorandum analyzes facets of the transportation system that are both parking and parking-related, which both have an impact on the relationship between supply and demand. This memorandum includes analysis of:

- Accessible parking and curb ramps
- Pedestrian access
- Vehicular circulation
- ColumBUS transit service
- Bicycle infrastructure and parking
- Signage and wayfinding
- Transportation demand management

# ACCESSIBLE PARKING AND CURB RAMPS

## HANDICAPPED SPACES

The State of Indiana and INDOT do not have any guidelines on providing on-street handicapped parking. Standards for the number of on-street handicapped parking spaces provided are provided by the United States Access Board, a federal agency that promotes equality for people with disabilities through leadership in accessible design. The Access Board guidelines are not mandated, but suggested guidelines when evaluating and providing on-street handicapped parking.

Access Board guidelines suggest a minimum number of accessible parking spaces in relation to the total number of marked or metered spaces on a block. This relationship is shown below in Table 1.

Table 1 R214 On-Street Parking Spaces Guidelines

Total Number of Marked or Metered Parking Spaces on the Block Perimeter	Minimum Required Number of Accessible Parking Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 and over	4% of total

Source: US Access Board; <http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/chapter-r2-scoping-requirements>

MUTCD contains provisions for marking on-street parking spaces (see section 3B.19). Metered parking includes parking metered by parking pay stations. Where parking on part of the block perimeter is altered, the minimum number of accessible parking spaces required is based on the total number of marked or metered spaces on the block perimeter.

Table 2 below summarizes the inventory of marked on-street parking spaces within the study area, by block. The table also shows the number of existing on-street, accessible spaces versus the number of recommended on-street, accessible spaces, by block. It should be noted that many on-street parking spaces in downtown Columbus are not marked or metered, so they are not represented in the table below; the recommended guidelines only consider number of accessible spaces per number of marked/metered spaces.

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**Table 2 On-Street Handicapped Parking Spaces on Key Blocks**

West/East Boundaries	North/South Boundaries	# of On-Street Spaces (along perimeter)	# of Existing ADA Spaces	# of Suggested ADA Spaces	Difference
Brown & Jackson	8th & 5th	81	0	4	-4
Brown & Jackson	5th & 4th	13	0	1	-1
Brown & Jackson	4th & 3rd	18	1	1	0
Brown & Jackson	3rd & 2nd	28	0	2	-2
Jackson & Washington	8th & 7th	9	0	1	-1
Jackson & Washington	7th & 6th	25	0	1	-1
Jackson & Washington	6th & 5th	32	0	2	-2
Jackson & Washington	5th & 4th	46	2	2	0
Jackson & Washington	4th & 3rd	17	1	1	0
Jackson & Washington	3rd & 2nd	28	2	2	0
Washington & Franklin	8th & 7th	26	0	2	-2
Washington & Franklin	7th & 6th	45	2	2	0
Washington & Franklin	6th & 5th	45	2	2	0
Washington & Franklin	5th & 4th	28	0	2	-2
Washington & Franklin	4th & 3rd	25	1	1	0
Washington & Franklin	3rd & 2nd	9	0	1	-1
Franklin & Lafayette	7th & 6th	6	0	1	-1
Franklin & Lafayette	6th & 5th	6	0	1	-1
Franklin & Lafayette	5th & 4th	33	0	2	-2
Franklin & Lafayette	4th & 3rd	10	0	1	-1
<b>TOTAL</b>		<b>530</b>	<b>11</b>	<b>32</b>	<b>-21</b>

As shown in the table above, the number of existing on-street, accessible spaces in downtown Columbus is significantly lower than what is recommended by the United States Access Board. It is important to note that the guidelines summarized above are not laws, but simply recommendations. If more on-street, accessible spaces are marked/defined, such markings should adhere to the guidelines summarized in Section 3B.19 of the 2011 in MUTCD.

Also important to note is that the City of Columbus requires off-street parking to have about one space per 25 spaces in off-street lots and garages be designated as handicapped.<sup>1</sup> On-street and off-street handicapped spaces combined equals 165 total spaces.

<sup>1</sup> Columbus Zoning Code, 7.1.C Barrier Free ("Handicap") Parking Requirements

## **CURB RAMPS**

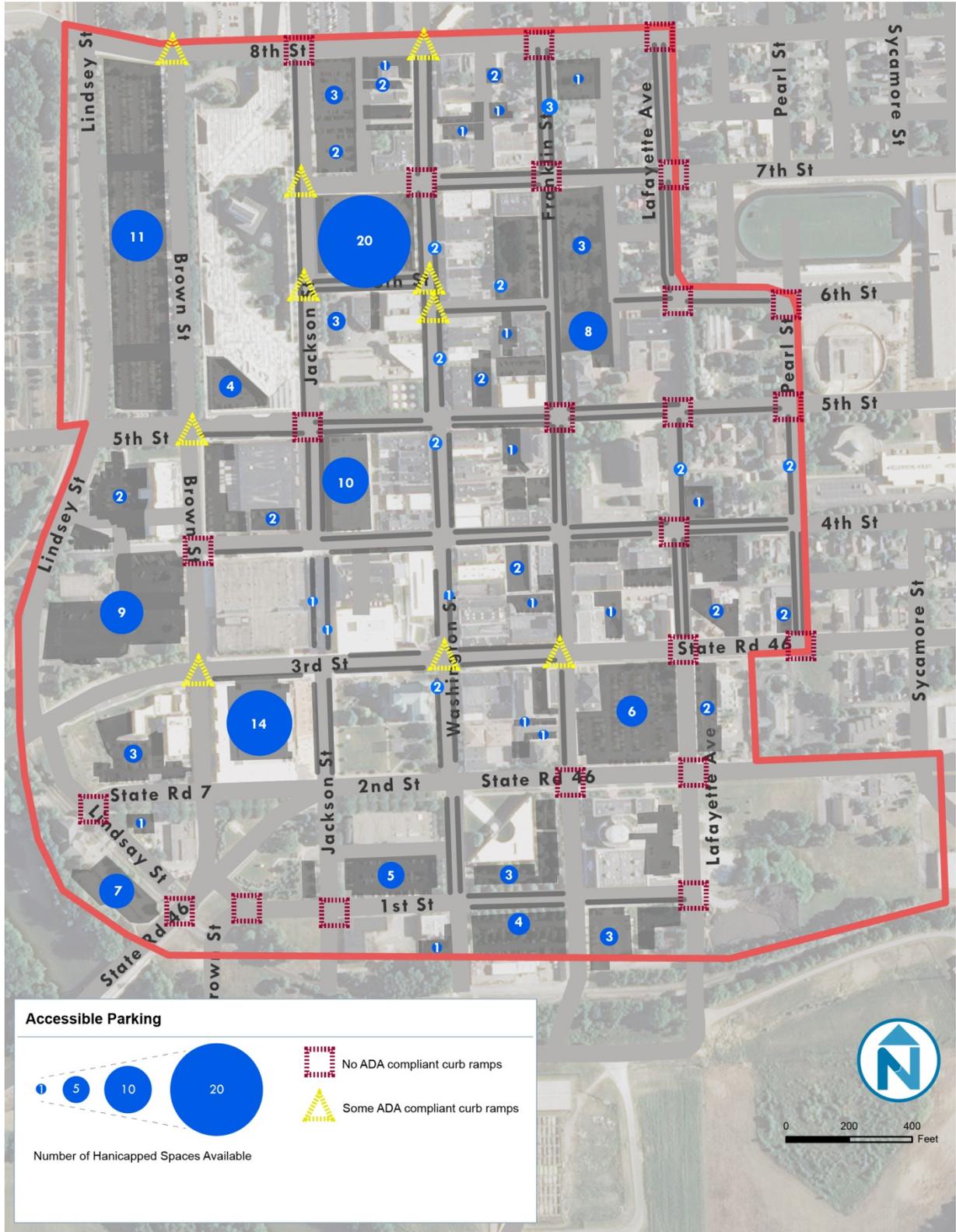
Despite how many spaces the City provides on- and off-street, where these spaces are located is key. Once an individual parks, the infrastructure must be ADA (Americans with Disabilities Act) accessible to get around downtown and to destinations. The ADA is a civil rights law that makes it illegal to discriminate based on disability. Title III of the ADA requires that public spaces, such as our transportation system, be designed without the types of barriers that would make it difficult for disabled persons to use. ADA-compliant curb ramps therefore are required on all public property to provide a safe transition from street level to a curbed sidewalk (and vice versa) and should conform to the guidelines with respect to width, slope, cross slope, and placement. Curb ramps must also have detectable warnings on them (i.e. dome shaped bumps) to help people with visual impairments identify when they are entering (or leaving) the sidewalk.

In the study area, there are eight of 45 intersections that have ADA curb ramps on all corners of the intersection. An additional 13 intersections provide ADA curb ramps on at least one corner, but not all corners. This is a limiting factor to easily access parts of downtown, not just for those that have mobility challenges, but for those with strollers.

The map below in Figure 1 shows the relationship between the location of handicapped parking spaces (both on- and off-street) and ADA compliant curb ramps. The intersections that have no symbols indicate that they are fully compliant. In the core of downtown, Washington at 4th and 5th Streets, 4th Street, and Jackson Street have intersections that are fully compliant. However, there is very little (or no) designated handicapped parking on these blocks. The eastern part of the study area, particularly on Lafayette Street, has many intersections that are not ADA accessible, making it difficult or impossible to safely cross streets.

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Figure 1 Handicapped Parking Spaces and ADA Compliant Curb Ramps



## PEDESTRIAN ACCESS

Pedestrians generally have an easy time walking around downtown Columbus. Sidewalks are in good condition and exist throughout the study area, and standard pedestrian crosswalks are provided at most intersections.

Countdown pedestrian heads are provided at most signalized intersections. However, during off-peak hours, signals at several of these intersections switch to a flashing red cycle. Field observations showed that motorists seem to be accommodating to pedestrians during these times (in general, motorists in the area seem to be accommodating to pedestrians).

Despite the excellent grid network and infrastructure for pedestrians, the consultant team identified two main issues: 1) many non-compliant ADA curb ramps, as identified above, and 2) very long crossings at key intersections. The following streets can be more difficult to cross due to multiple vehicular travel lanes:

- 2nd Street
- 3rd Street
- Lindsey Street
- Brown Street

There are several ways to make these streets less of a barrier to pedestrians, which can therefore result in easier access to parking lots, including lots south of 2nd Street and Mill Race Park lots. Opportunities to make these streets more pedestrian friendly include:

- Adding on-street parking in place of a vehicular travel lane
- Constructing bulb-outs at intersections
- Creating buffered bicycle facilities in place of a vehicular travel lane
- Improving pedestrian signals to make the wait at intersections shorter

## VEHICULAR CIRCULATION

Downtown Columbus has a number of one-way streets which limit vehicle access and turning movements. Most communities prefer two-way streets because they have been proven to enhance economic development (more convenient access for customers), improve pedestrian safety and appeal, help improve public safety and safety perception, provide more convenient access (and visibility) and reduce traffic by eliminating the need for unnecessary vehicular circulation.

Although this study does not include a detailed analysis of traffic volumes and vehicular circulation, the study team believes that more two-way streets would have several benefits in downtown Columbus:

- Slower vehicular traffic
- Easier pedestrian crossings
- Safer streets
- Greater access to on- and off-street parking facilities
- Less traffic due to less circling around blocks to get to a destination or available parking space

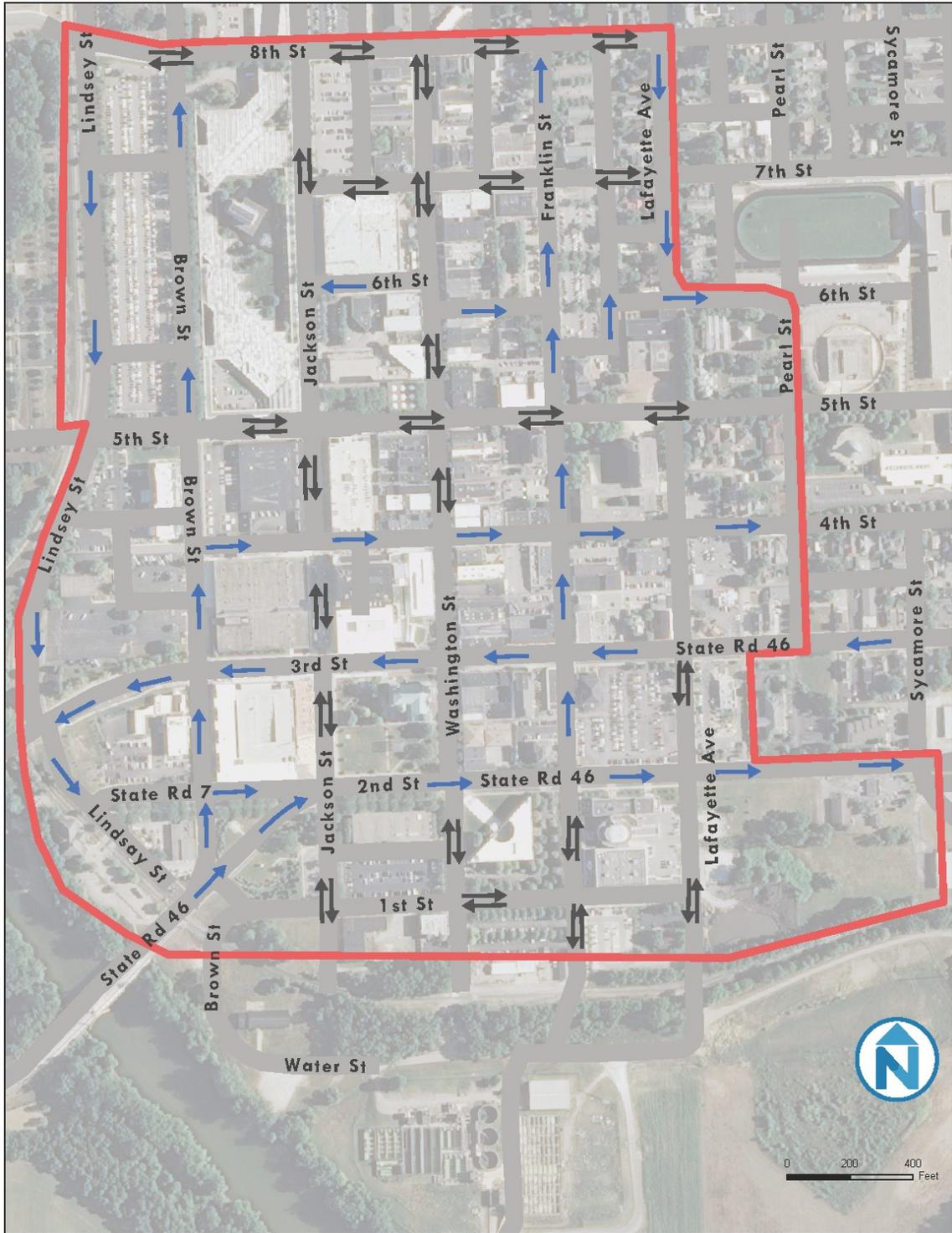
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The City should evaluate some of these two-way streets and determine, based not only on traffic volumes but on access to parking, pedestrian volumes and safety, and bicycle accommodations, if the street should: a.) remain one-way, b.) convert to two-way, or c.) remove a lane of traffic and introduce on-street parking or bicycle facilities.

The team recommends that the City convert the roadway to the west of the entrance/exit of the Second Street Garage on 2nd Street to Brown Street to accommodate two-way traffic. This will allow for more streamlined exits from the garage, reducing the need to circle the Cole building to head west on 3rd Street.

A map of the one-way and two-way streets is shown below in Figure 2.

Figure 2 One-Way and Two-Way Streets



# COLUMBUS TRANSIT SERVICE

The ColumBUS system consists of four fixed routes, which combined span nearly 50 miles. Routes begin at the main transit hub at the Mill Race Center, just outside to the northwest of the project study area. The system is a timed-transfer “pulse” system that has all routes converging at the hub every 60 minutes; a second timed transfer takes place at the Target store on US 31, about halfway through the cycle. This latter site is subject to Target’s ongoing acquiescence with the stop. Service runs weekdays from 6:00 am to 7:00 pm.

The relationship of ColumBUS’s service area to the City’s incorporated area is noteworthy. The main portion of the City consists of the older areas surrounding the Central Business District (CBD), as well as newer contiguous areas that have developed around US 31. ColumBUS’s service area resides entirely within this portion of the City. The City’s incorporated area also includes several non- or partially-contiguous areas of significant size, including the region around the I-65/SR46 interchange (sometimes referred to as “Tipton Lakes”, although the actual Tipton Lakes subdivision is only a portion of this area), the area around the I-65/SR58 interchange (which has several industrial parks), and an area to the east of the City’s main portion around Otter Creek golf course. These newer incorporated areas currently are unserved by the fixed route system.

The location of the Mill Race Transit Center relative to the transit service area also requires elaboration. Since all routes begin and end at the Center, and the Center is located in the southwest corner of the service area, the minimum route length that the system can accommodate for this service area is 60 minutes.

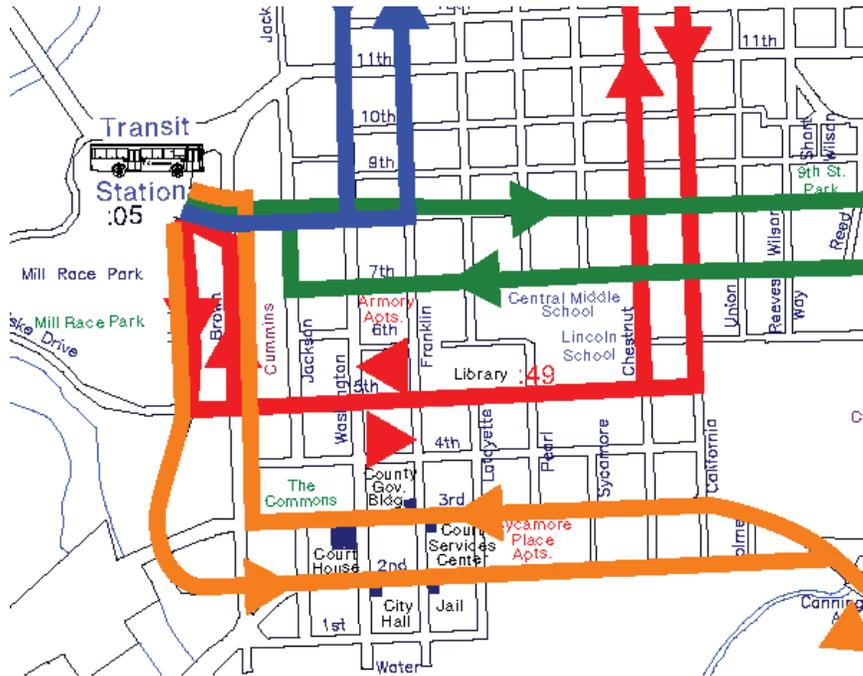
ColumBUS also maintains a “Call-a-Bus” paratransit service that operates citywide for eligible riders. A significant number of these rides are to the commercial areas along SR 46.

The relationship of the ColumBUS transit system to Columbus’s downtown primarily derives from two geographic characteristics. First, the ColumBUS transit center (and major transfer point) located at Mill Race Center is not located in downtown Columbus, but rather slightly outside of it. Second, the downtown is not centrally located in ColumBUS’s service area, instead residing at the southwest portion of it. Because of these characteristics, bus service to downtown Columbus primarily consists of minor deviations of the four ColumBUS transit routes from the outlying portions of the service area to the downtown transit center.

There is currently no transfer point in Downtown Columbus that is common to all of ColumBUS’s fixed routes. A Downtown Transit Center is highly unlikely to be built in the near future, given the recent nature of the existing Mill Race Transit Center, and the suboptimal (i.e., non-central) location of downtown Columbus relative to ColumBUS’s service area. There are, however, several initiatives underway and/or discussions pending that would impact transit service in Downtown Columbus, including the following:

- The City has dedicated to expanding hours of weekday service, from its current ending time of 7:00 pm to 8:30 pm. This extension will be enacted in 2014.
- A route extending west from the downtown along SR 46 may be implemented in the next few years. It is not currently known whether this route will be an addition to existing local bus service, or a replacement for portions of it.
- Alternatives for providing 30-minute service (as opposed to the existing 60-minute headways) are being explored.

Figure 3 Zoom of Columbus Service Downtown



## BICYCLE INFRASTRUCTURE AND PARKING

As part of the City's Comprehensive Plan, a Bicycle and Pedestrian Plan was adopted by the City Council in May 2010. The vision of the plan is to create a system of bicycle and pedestrian facilities that provide access to and connectivity between all areas of the City. One of the goals of the plan is to expand transportation options available in the community. This goal is directly in line with parking management, as having choices and options on how to travel is important for all types of travelers.

To support this goal, the City provides short- and long-term bicycle parking downtown. Short-term parking is outdoor "C" bike racks, and long-term, a covered rack in the Jackson Street Garage.

Figure 4 Short- and Long-Term Bicycle Parking Provided in Columbus



## SIGNAGE AND WAYFINDING

Within the study area, there are three existing wayfinding signs related to parking. The signs are all located in the Visitor's Center parking lot. All three signs have the same design (Figure 5). Streets leading into downtown Columbus were inspected for wayfinding signage related to parking, but no other signs were found. There are several signs around the downtown area that direct motorists to the visitor's center; however, these signs do not specifically include or direct people to parking.

Figure 5 Existing Parking Signage in Columbus





## **TRANSPORTATION DEMAND MANAGEMENT**

Transportation Demand Management (TDM) measures collectively work to change how, when, where, and why people travel. Supporting cycling, walking, transit, and carpooling gives employees, residents, and visitors incentives to reduce reliance on the single-occupant vehicle. The TDM approach includes a variety of strategies that work together to achieve a more sustainable transportation system by making the most of the existing infrastructure.

The TDM strategies serve not only to make better use of transportation infrastructure, reduce the demand for new infrastructure, but also result in better place-making and community building. With young adults driving less (23% less according to the National Household Transportation Survey, 2001 - 2009) and more Americans looking for homes in walkable neighborhoods (80% of prospective buyers according to the National Association of Realtors, 2011), TDM helps to make developments and neighborhoods more attractive places to live, work, and visit. Workplaces and developments that have a vested interest in making places more accessible to employees and residents often emerge as vibrant, walkable neighborhoods with desirable amenities. With Columbus as the County seat and home to several large employers, TDM programs have the opportunity to substantially alter the mode choice of many employees.

Few known TDM programs exist in Columbus. There is vanpool program sponsored by the Central Indiana Regional Transportation Authority (CIRTA), called Commuter Connect. There is one known vanpool that meets at the Sam's Club in Greenwood. There are 15 riders that board one shared van. All riders work for Cummins. The program works where each rider pays a monthly fare for their seat on the van (provided by an outside vendor) and shares the cost of gas. All of the riders are volunteers, including the driver, who takes the van home every night. This particular van leaves Greenwood at 7:15am, arrives in Columbus at 8am, and departs Columbus at 5pm.