D. Vehicular Circulation

Functional Classification of Streets

City of St. Louis major street classifications fall into categories as follows.

- An Interstate is a fully access controlled, grade separated principal arterial, with four to eight lanes of divided traffic carrying regional and long distance trips at speeds of 50 to 55 mph. Interstates carry 2,000 vehicles per lane per hour.
- A Principal Arterial is a partial access controlled, four to six lanes with median facility, carrying intra- and inter-city trips at speeds of 35 to 50 mph. Principal Arterials carry 1,100 to 1,500 vehicles per lane per hour.
- A Minor Arterial provides restricted private access, two to four travel lanes at speeds of 25 to 35 mph, connecting neighborhoods and arterials. A Minor Arterial carries 600 vehicles per lane per hour.
- A Collector is a two to four lane street connecting neighborhoods within the community at speeds of 25 to 30 mph with some direct access to abutting properties. A Collector carries 500 vehicles per lane per hour.

The following classifications apply to St. Louis study area streets as follows:

Principal Arterials:

- Cole east of Tucker
- ML King east of I-70
- Market
- 4th Street
- Broadway south of Cole
- Tucker

Minor Arterials:

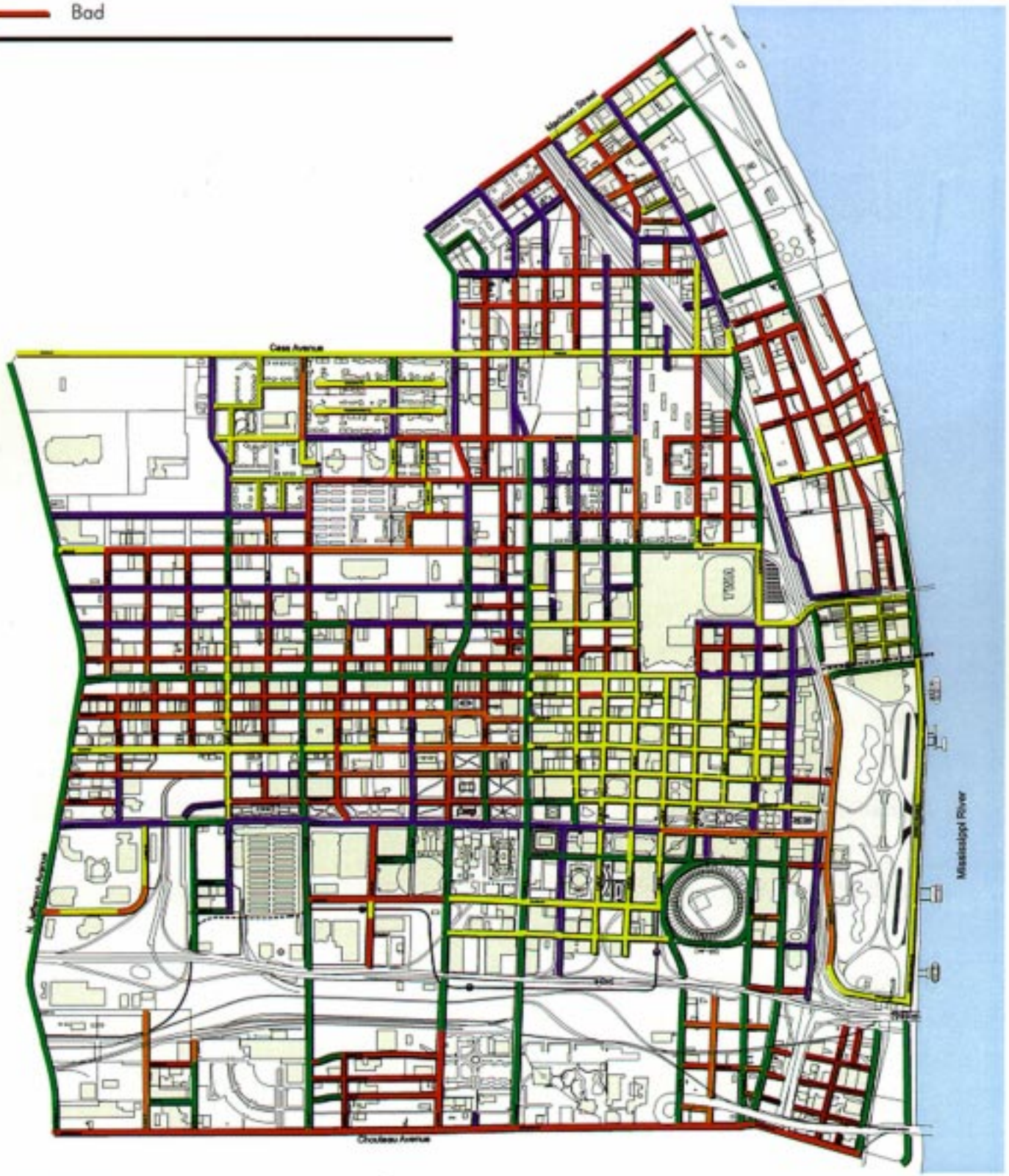
- Washington
- Eads Bridge
- Memorial Drive
- 7th/8th south of Market
- 14th south of Cole
- 18th south of Market
- Olive west of Tucker
- Broadway between Cass and Cole

Collectors:

- 9th/10th
- 11th south of Washington
- 7th/8th between Washington & Market
- Sullivan Drive and connections to and including Biddle, Washington, Chouteau and Poplar
- Pine between 4th and 21st
- Chestnut between Memorial and 21st
- Locust between 4th and Tucker
- Olive between 4th and Tucker
- Clark between 8th and 18th
- 18th between Market and ML King

Vehicular Circulation: Street Pavement Conditions

- Best
- Good
- Fair
- Poor
- Bad



Note:
Roadmap and base data provided by SLDC.

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Street Widths

These vary widely even along any given street. For example, Market varies from 40 feet to 81 feet in curb-to-curb within the downtown study area. Chestnut varies from 36 to 77 feet in curb-to-curb width. Detailed maps of street widths available in the City of St. Louis at the offices of the Board of Public Service (BPS).

Street Pavement Conditions

Streets vary in condition from newly paved to bad within the Prime Study Area. A majority of the streets within the Downtown Core are in fair, good or best condition. The significant number of 'best' streets in the Core is attributed to a large repaving effort completed in the summer of 1998. In contrast, a large portion of the streets in the remainder of the Prime Study Area are in poor to bad condition.

One-Way Designations

The one-way couplets are 4th/Broadway, 7th/8th, and 9th/10th Pine/Chestnut and Locust/Olive. Except for the wide 4th/Broadway couplet, which provides freeway access and serves major event destinations, all other couplets in the core area are narrow streets (typically 36 feet). Given the tight block spacing ranging from 225 to 275 feet and the high development densities, these one-way streets function reasonably well with minimal out-of-direction travel.

It is important to note that certain freeway ramps (especially the I-64 ramps at 9th and 10th Streets) were designed for one-way street operation.

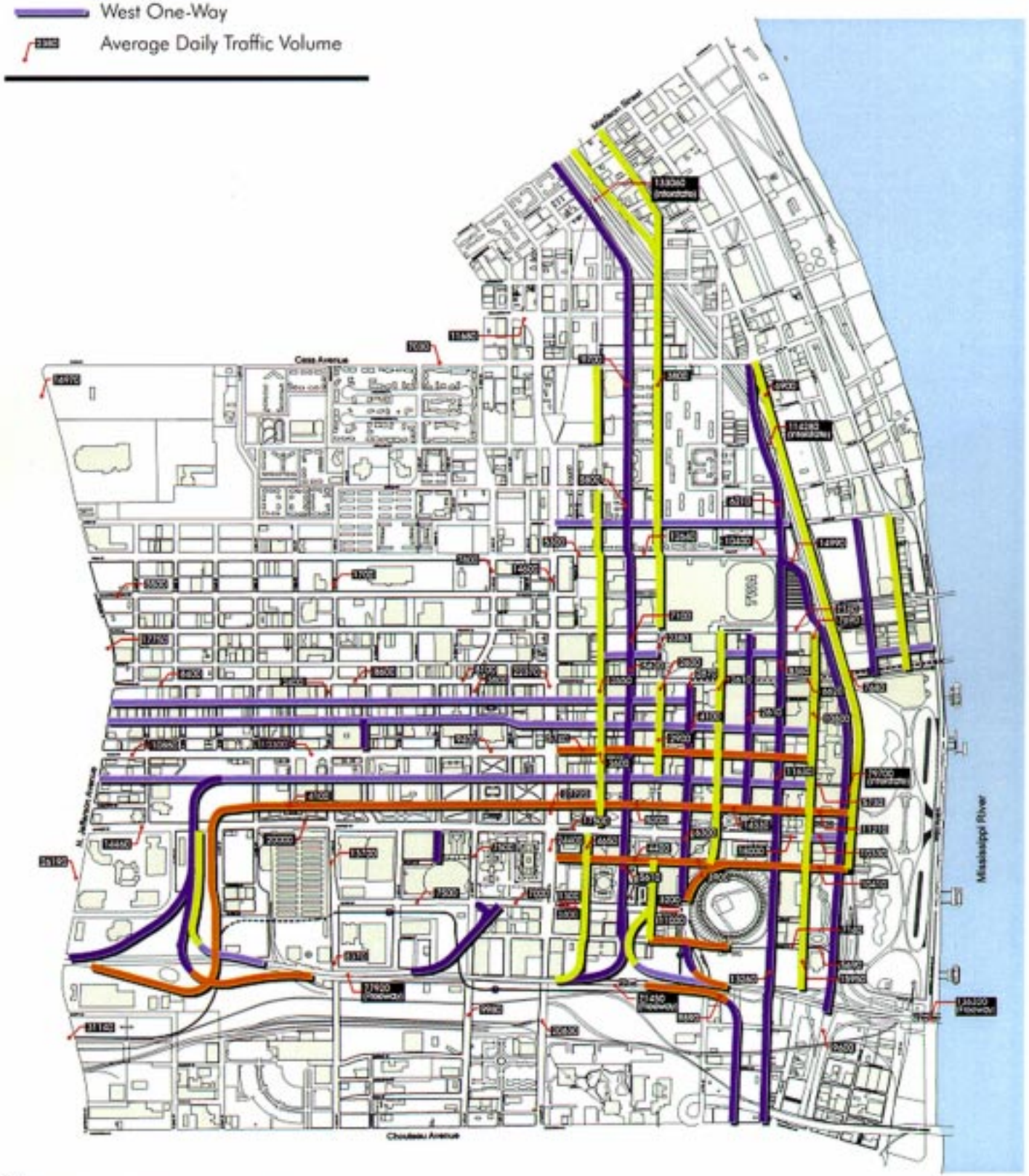
Traffic Volumes

Average daily traffic (ADT) volumes at selected locations are shown on the facing page.

Tucker, 14th, 18th, Washington, Clark, Spruce and Cole are the important multi-lane two-way streets. Tucker carries the highest volume – about 28,000 vehicles per day (VPD) – followed by Market at 18,000 VPD and Cole and 18th each at about 13,000 VPD. Volumes on 4th are as high as 16,000 VPD and over 13,000 VPD on Broadway. Chestnut carries over 11,000 VPD. Most of the other one-way streets carry fewer than 7,000 VPD.

The highest freeway volume is I-70 north of downtown with 133,000 VPD. Near the Arch, the volume is considerably less at about 80,000 VPD. Poplar Street Bridge carries over 136,000 VPD. I-64 volume is about 78,000 VPD.

Vehicular Circulation: One Way Streets and Daily Traffic Volumes



Notes:
ADT's indicate traffic volumes in both directions, unless otherwise indicated.
Basemap and base data provided by SLDC.

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Street Capacity

Downtown has a total of 47 inbound traffic lanes and 61 outbound traffic lanes on its surface streets. The largest directional discrepancy occurs along the west edge of the study area where there are 11 more outbound lanes than inbound. The extra outbound lanes are a consequence of one-way street designations where one-way streets often do not work in a paired fashion.

We estimate that the carrying capacity of the surface streets is about 80,000 vehicles per hour. Although volumes are not available for many of these streets, those that are available for the busiest streets (Tucker, Market, Washington) show that afternoon peak hour volumes are no more than 50% of capacity. Indeed, our observations of downtown streets showed relatively little congestion throughout the day.

Traffic Controls

Most intersections are signal controlled. A $3 million signal improvement program will interconnect 75 downtown signals by fiber-optic cable.

Special Event Access, Circulation and Parking

The St. Louis Police Department Traffic Safety Division manages traffic for special events including all games played at Busch Stadium, TWA Dome and Kiel Arena. The primary tool for traffic management is manual control of traffic at intersections surrounding the event sites and on major streets leading to the sites. For example, for baseball games at Busch Stadium, traffic control officers are deployed one hour before game time to direct traffic by hand at these intersections:

- 3rd/Market
- 4th/Market
- Broadway/Walnut
- Broadway/Market
- 8th/Clark
- 9th/Clark

Selected restrictions are placed on traffic to minimize conflicting flows such as prohibiting westbound flow on Walnut between 3rd and Broadway. The goal at Busch Stadium is to create essentially clock-wise flow given the one-way street grid. Post-game, Spruce Street is closed between Broadway and 4th to avoid conflicting movements. Manual control lasts from 30 to 60 minutes after the end of the game depending on the size of the crowd.

For football games at the TWA Dome, police manually control traffic on 4th and on Broadway between Cole and Walnut. An on-ground traffic supervisor is responsible for directing operations. Up to 32 officers are deployed for football games. At the Kiel Center, for example, manual control is used at:

- 14th/Clark
- 14th/Spruce
- 14th/I-64 ramps
- 18th/Clark
- Tucker/Clark

Additionally, southbound traffic on 14th is limited to busses and taxis dropping patrons at the face of the arena. After the event ends, westbound traffic is prohibited on Clark past the Arena block in order to expedite outbound traffic from the Kiel Center garage and to manage pedestrians crossing Clark to MetroLink or other parking areas.

Police officials indicate that these procedures typically work well for each of the sporting event sites. In general, the grid of streets, the proximity of sites to freeway ramps and the relatively high use of MetroLink with nearby stations allow these major events to disperse pedestrians and vehicular traffic in relatively short periods without major conflicts leading to chronic congestion.

Parking is largely managed by private operators, with the notable exception of the Kiel Center and Municipal Parking Plaza which are municipally operated. Event parking rates can vary by location and event, but typically range from $2 to $10. The existing parking system appears to fulfill the needs of event patrons, without resorting to using lands not otherwise used for parking.

Pedestrian/Vehicle Conflicts

Conflicts between vehicles and pedestrians are limited given the limited numbers of pedestrians in Downtown on a 24 hour basis. Even where the higher pedestrian volumes occur within the Core, narrow streets reduce pedestrians' crossing exposure to vehicles. However, notable obstacles and conflicts do occur at the following locations:

- Washington Street/Memorial Drive – As the key entry to Laclede's Landing, this wide intersection, complicated by columns for the I-70 overpass, provides poor pedestrian crosswalks and visibility. It is a daunting task to cross from the America's Center area or adjacent hotels to the Landing. Pedestrians have a difficult time anticipating vehicle turning movements that might conflict with their walking path.

- Market and Chestnut Street intersections with Memorial Drive – High volumes of vehicle traffic pose an intimidating crossing for pedestrians. Crossing distances are limited due to the divided section of Memorial Drive, but many turning vehicles and the noise from the depressed I-70 challenge pedestrians' ability to monitor approaching vehicles. Narrow sidewalks on the median section and high curbs reinforce the sense that this is not the place pedestrians should be.

- 8th and Pine MetroLink Stair – On 8th Street, the stair serving the eastbound train platform, situated at the south end of the station, opens directly to a service driveway serving the addition to the Wainwright building. Even though the service entrance has a garage door, it is a potentially dangerous point of conflict between service vehicles and MetroLink users. Furthermore, the stair occupies most of the limited sidewalk area, forcing sidewalk users to walk along the building face. This all but eliminates any sight distance between pedestrians and a vehicle exiting the service driveway.

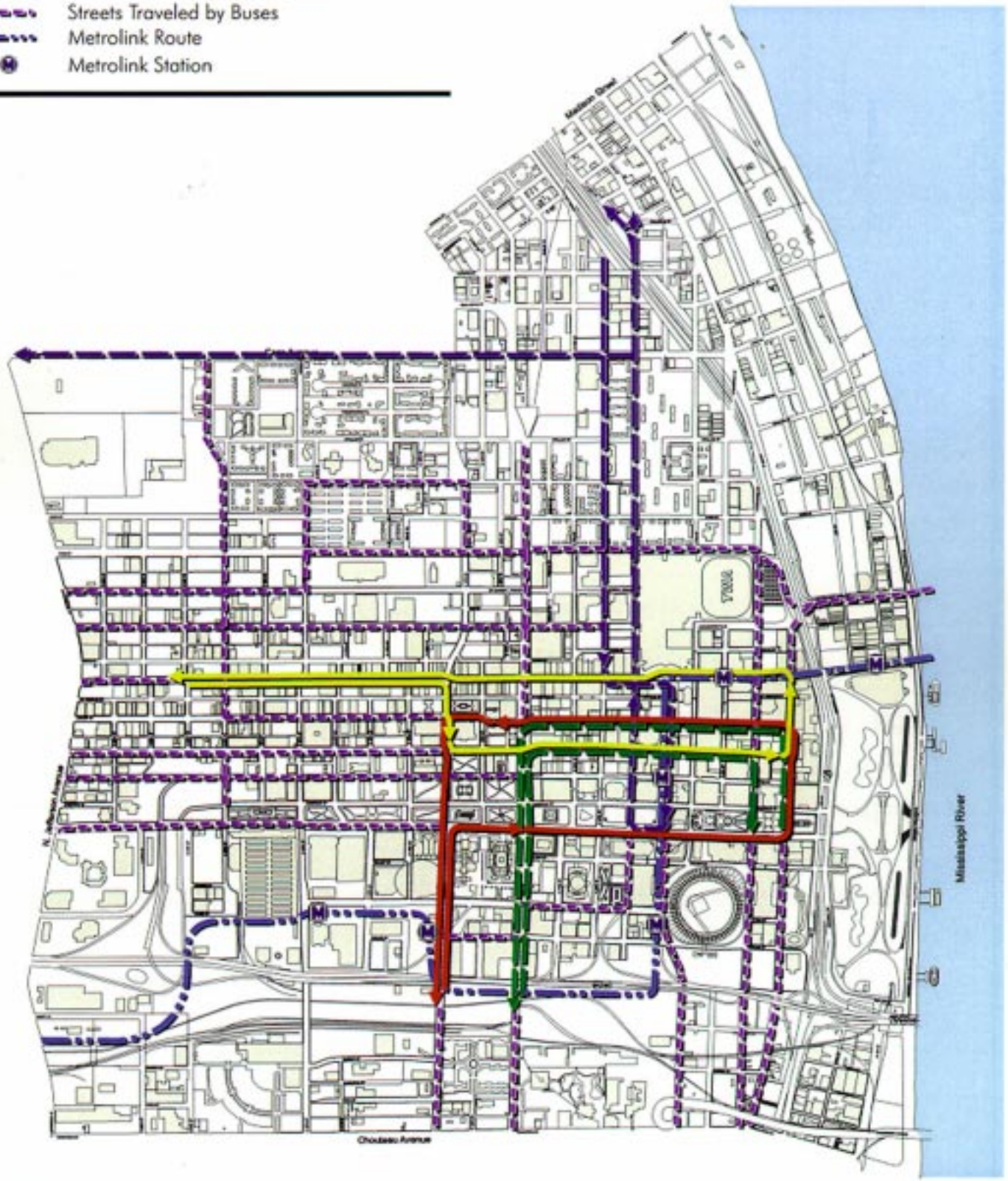
- Pedestrian signals within the Core area – We observed a number of these signals not to be working. We also noted that various signals operated at counter-intuitive times. That is, walk indications did not operate in conjunction with green signals, but only when all approaches were red. This combination of non-functioning signals and oddly-timed signals led pedestrians to walk whenever they saw fit. Again, the volume of vehicles and pedestrians often did not pose a great conflict, though the potential for danger exists.

- America's Center plaza – The off-street taxi stand is poorly defined and conflicts with the pedestrian crossing on the 8th Street alignment. We did not see great numbers of taxis or pedestrians, but were puzzled by the apparent use of pedestrian space for taxis.

- Wide crossings – Market and Tucker in particular suggest potential conflicts between pedestrians and vehicles given their wide crossing distances, with little or no refuge in the middle. Though we have no documentation of safety problems, these streets are intimidating for pedestrians.

Transit Circulation

- Northwest Bus Routes - Local
- North Area Bus Routes
- Southwest Bus Routes - Local
- Southwest Bus Routes - Express
- Streets Traveled by Buses
- Metrolink Route
- Metrolink Station



Note:
Basemap and base data provided by SLDC and BI-State.

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