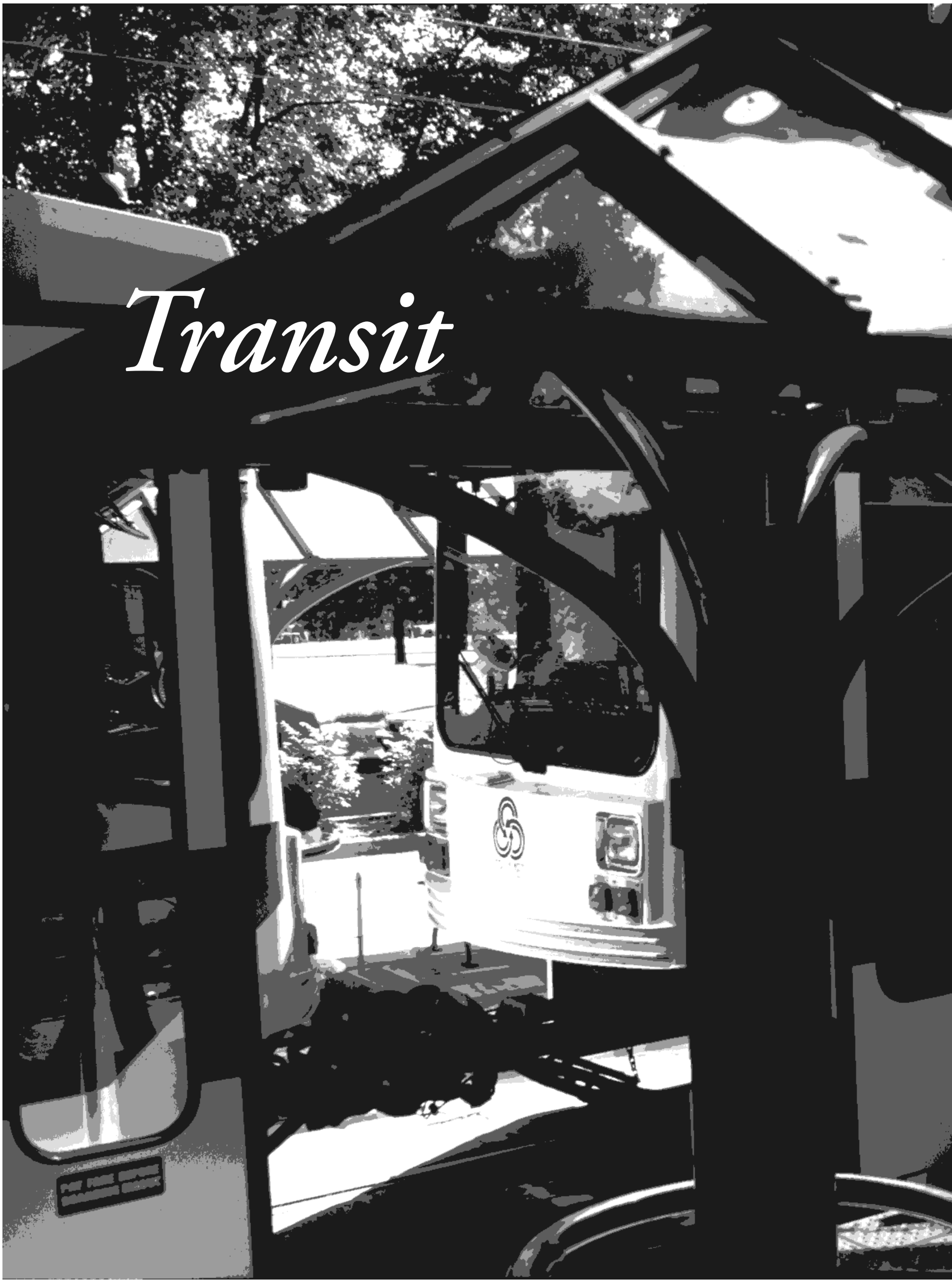

Transit

Goals and Objectives

1. Provide a public transportation service that is easy to use and understand.
2. Provide convenient commuting transportation for Downtown employees.
3. Provide convenient commuting transportation for Downtown shoppers and visitors.
4. Serve the daily internal transportation needs of Downtown residents, employees and visitors.
5. Provide a public transportation system that is economical and efficient.
6. Provide attractive transit stops within a five-minute walking distance (maximum) of Downtown destinations.
7. Provide a system that addresses the environmental and aesthetic concerns of Downtown.
8. Provide a transit system that supports the “Park Once” facilities.

Successful downtowns are busy places where people want to be, for a wide variety of reasons. Successful downtowns collect workers, visitors, tourists, customers, residents, students and others, along with the institutions, streets, buildings and other meeting places at and along which all of these people may gather and interact.

Successful downtowns also share an ease of movement of all of these people, conveniently and inexpensively among the many destinations in and near the downtown. Successful downtowns are also places where people feel safe and comfortable when walking about the downtown. Where walking is enhanced, more pedestrians will allow retail and other in-town functions to operate with higher levels of success.

Milwaukee has a great tradition of being a walkable city. In conjunction with the pedestrian enhancement plan for the Downtown, transit will play a key role recreating and maintaining the walking character of the Downtown. Tourists and visitors moving between the various new entertainment and new retail attractions as well as workers and residents moving between new housing and new jobs will all serve to help Milwaukee to become one of the most exciting pedestrian and transit connected downtowns in America.

Numerous "multi-modal" transit alternatives are included in the plan to offer a series of alternatives to the current dominance of auto travel Downtown. By increasing the building intensity, increasing the emphasis on improvements to the pedestrian realm and by adding three additional modes of transit with numerous connections between modes, the city can regain its social, physical and economic wealth.

The transit plan is therefore a plan for the movement of people to, from and in Downtown. The plan takes a holistic approach to all of these movements. It includes computer information panels on the freeway to speed vehicular access to Downtown, new parking access and capacity signing, a pedestrian way finding sign system, improved sidewalks, crosswalks, street furniture, an enhancement of the existing bus service, improvement of the regional train facilities, an expansion of the rubber tire trolleys, additional bicycle lanes, a potential future streetcar circulator, computerization and satellite tracking of existing taxis, and water taxis. Specific recommendations for pedestrian movement during the winter months have also been considered.

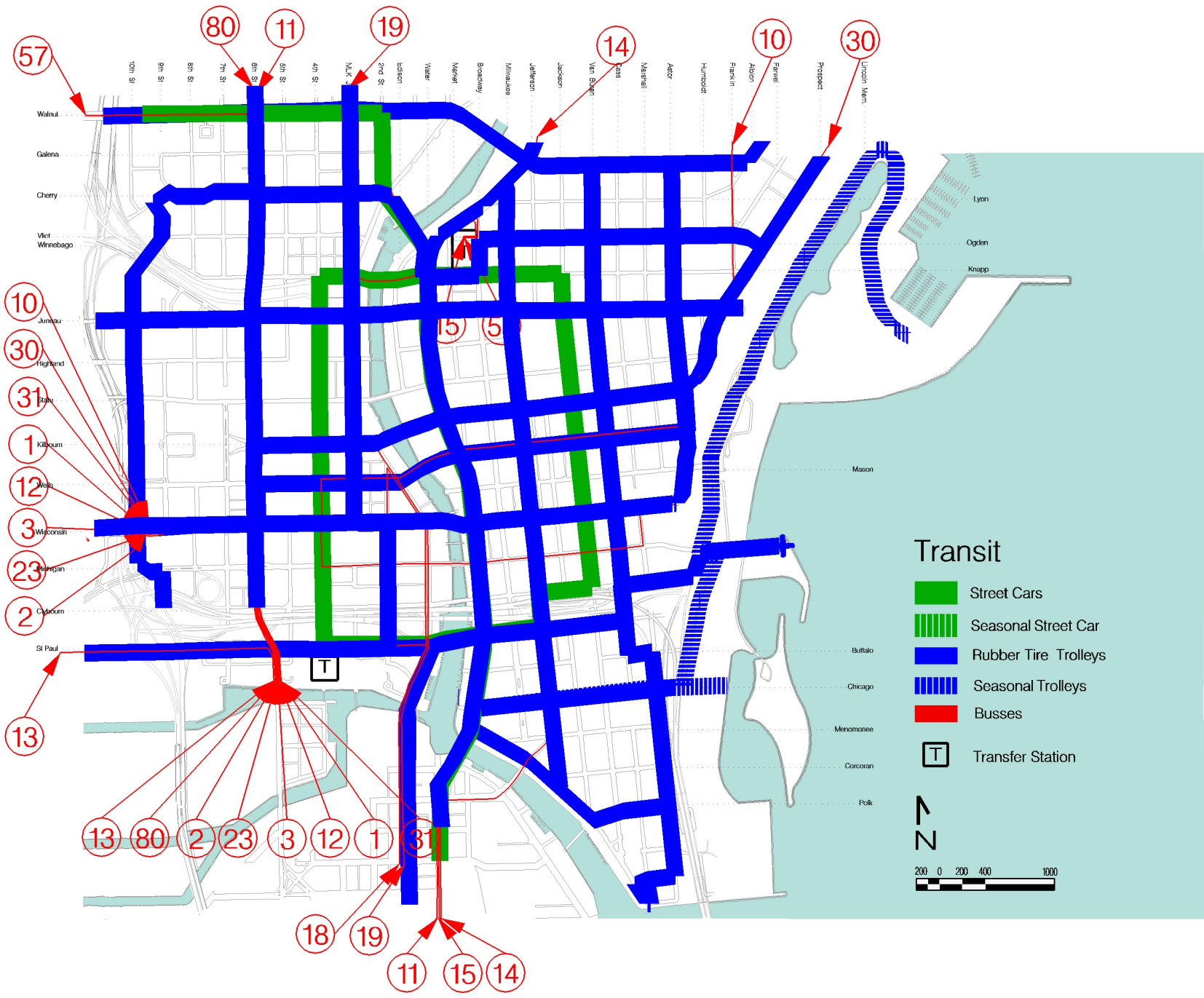
Enticing people to become transit users while Downtown after years of auto dependence has catalyzed a concept called "Park Once". Visitors and those working or living Downtown and in the adjacent neighborhoods who arrive by automobile will learn that they can literally park once in Downtown and never have to use the car again until they leave.

The primary mobility goal should be to enable movement easily and conveniently within and to Downtown without fostering dependence upon private automobiles. The realization of this relies upon a multi-facetted approach to several movements of people. Trolleys will provide mobility within Downtown; streetcars may link some of the outlying neighborhoods and activity generators. However, the City must accommodate people who arrive in automobiles in a way that does not overwhelm Downtown streets with traffic. This is addressed in the "Park Once" plan. Strategically located parking decks connected to the transit system permit people to "Park Once" in Downtown Milwaukee. People living within walking distance of any of transit mode, will not need a car to travel within the CBD at all. The plan provides for these nodes within walking distance of all existing and proposed residences in Downtown.

Minimizing automobile movement will have many positive repercussions. The existing street capacity can be allocated to alternative uses. Decreased internal movement will reduce the duplication of provided parking spaces. Minimizing the present need for automobiles will create an environment more conducive to pedestrian activity. The Downtown experience will become more interesting and diverse as Milwaukee becomes more of a walking City. Intensifying points of interaction will increase the opportunities for viable retail and services that will, in turn, improve the City’s vibrancy.

For transit to be conveniently and confidently used by the greatest number of people, the system must be kept simple and legible. The design of all components must consider pedestrian safety and comfort in addition to enhancing the surrounding environment. Network structure and maps must be comprehensible and graphically interesting to make the system easy to use. Shelters must protect patrons from inclement weather with wind buffers and heating elements. Shelters must be strategically located in close proximity to most activity generators and residences. Shelters can be individualized to identify districts. Improved street furniture will enhance pedestrian amenities and comfort.

Specially designed intersection improvements will act as traffic calming devices at transit stops. While suggested at all stops, enhanced intersections are required at transit line crossings, the inter-modal transfer stations and the mixed-use train station. The system is made more accessible through a way finding system that indicates parking deck occupancy



status and transit stops. This system will make the transition between the car/parking deck and the pedestrian realm more pleasant and interesting.

For public transportation to serve the largest number of people it must accommodate a wide range of goals and objectives. While certain goals and objectives may be in conflict with one another and others may compliment each other, compromises should be mindful of the prevailing redevelopment goals of making Downtown a more pedestrian-friendly place.

The layout of the network, the location of stops, the type of vehicle, operating hours and timing of vehicles are all critical to fulfilling the operational objectives. One of most important and fundamental design standards for the layout of each phase is the two to five minute walking times. For transit to really be effective it must providing access to all locations within Downtown with no location being further than a three minute walk. Ideally the walking distance should be reduced to two. It can be extended to five, but this is strongly discouraged.

To encourage ridership, a "free fare" downtown zone might be considered. Between Juneau and St. Paul Streets and 4th and Jackson Streets the lines will operate on an honor fare basis. Elsewhere, passengers may be required to pay their fares via a pass or a time-stamped ticket. Security personnel would also function as random fare checkers. Violators would be subject to large fines. Under such a system the Downtown could be a "free-fare" zone where fares would not be required or checked.

The Transit Phasing Plan

The long range transit plan illustrates the street car lines, the secondary rubber tire trolleys which supplement the streetcars, the bus lines which connect to the neighborhoods, the train station, the inter-modal transfer points, and the water taxi. Each of these modes provides a distinct travel option and modal choice, but all are interconnected. To arrive at this long range plan, the plan started with a system of buses, trolley, train and bicycle routes.

To create the long range transit plan three phases are indicated on the Transit Phasing Matrix. This matrix demonstrates that there will be many steps along the path toward full implementation. The matrix indicates the streets and the mode that are affected.

In Phase One the bus routes are transferred from Wisconsin Avenue and three rubber tire trolleys are added to the existing trolley line which currently connects Brady Street with the Downtown. Streetscape improvements and transit stops are installed. Limited water taxi service will be initiated. Private entrepreneurs will establish an on-demand taxi service.

During Phase Two the East/West rubber trolley lines become operational as housing, tourism and business increase. Engineering studies will be completed for the streetcar lines. Design plans will be completed for the new multi-modal train station and the transfer station in the Water Street entertainment complex. Water taxi services will be fully operational. Additional intersection improvements, streetscaping and transit stops will also be constructed.

In Phase Three the streetcar lines will be constructed. The rubber tire trolleys will be transferred to neighborhood centers. Streetcar stops, remaining intersections and streetscaping will be completed. The Multi-modal train station will become operational, as will the Water Street transfer facility.

The multi-modal transit recommendations for Downtown include the following:

1. Significant enhancement of the pedestrian realm
2. Rubber-tire trolleys
3. Downtown circulator – streetcar
4. County buses
5. Satellite Accessed Taxi
6. Water Taxi
7. Bicycle lanes and paths
8. Regional buses (Greyhound, Badger etc.)
9. Heavy rail
10. Private automobiles and vans

Streets with trolley lines:

East and West Lines

Chicago (seasonal)
St. Paul Avenue
Wisconsin Avenue
Kilbourn Avenue
Juneau Avenue
Cherry/Ogden Avenues
Walnut

North and South Lines

10th Street (after Park East Freeway is removed)
6th Street
3rd Street/MLK/Plankinton
Water Street
Milwaukee Street
Van Buren Street – Cass Street
Astor Street
Prospect/Farewell Street (if they remain one way)
Memorial Drive (Seasonal)

Trolleys

Trolleys are rubber-tire vehicles that emulate older streetcars in form and character. They combine historic charm with modern functionality. Ideally they are propane gas or electric. They are color coded to immediately identify their line and route for patrons. In this fashion, the Green Line trolleys will be painted green, Blue Lines painted blue, and so forth.

The Downtown trolley network can be implemented in three phases. The first phase comprises two linear and one circular routes. The second phase increases the number of east/west and north/south lines and includes seasonal lines. The third phase removes trolleys from specific streets because of the construction of the streetcar lines.

Trolleys have been identified and prioritized as one of the Catalytic Projects to instigate redevelopment in Downtown. When fully implemented, the service becomes a comprehensible grid of trolley lines. Their movements back and forth on the same streets are coordinated with stops, signs, schedules, shelters, streetscape and intersection improvements. The long range Downtown Trolley Plan includes six east/west trolley routes, and seven north/south routes. An eighth line is added in the summer when the lakefront is more intensively used.

The majority of the lines are linear; trolley vehicles simply go up and down the same street. Until the streetcar line is constructed, one loop connecting the train station to the Downtown and the Water Street entertainment complex, is recommended. This circular loop is continuous, simple and two way.

No circuitous routes are recommended. Most people can comprehend a simple loop that closely approximates a circle. However, circuitous routes are more difficult to understand and comprehend. This obfuscation tends to discourage use. The simple linear lines and the loop in Downtown are connected to the current trolley connection to Brady Street. It is recommended that this line become an extension of the Water Street route connection to Prospect/Farewll Avenue Trolley.

The service area of each stop has been diagramed using a three-minute walk. The three-minute walk (600 feet) gives excellent access within a short walk for everyone. Often, this distance is extended to a five-minute walk which is about 1,300 feet. However, the shorter walking distance actually creates incentives to use the system. It also compensates for the days of inclement weather. When all of the walking radii are superimposed on the Downtown, a trolley serves everyone within a short walk.

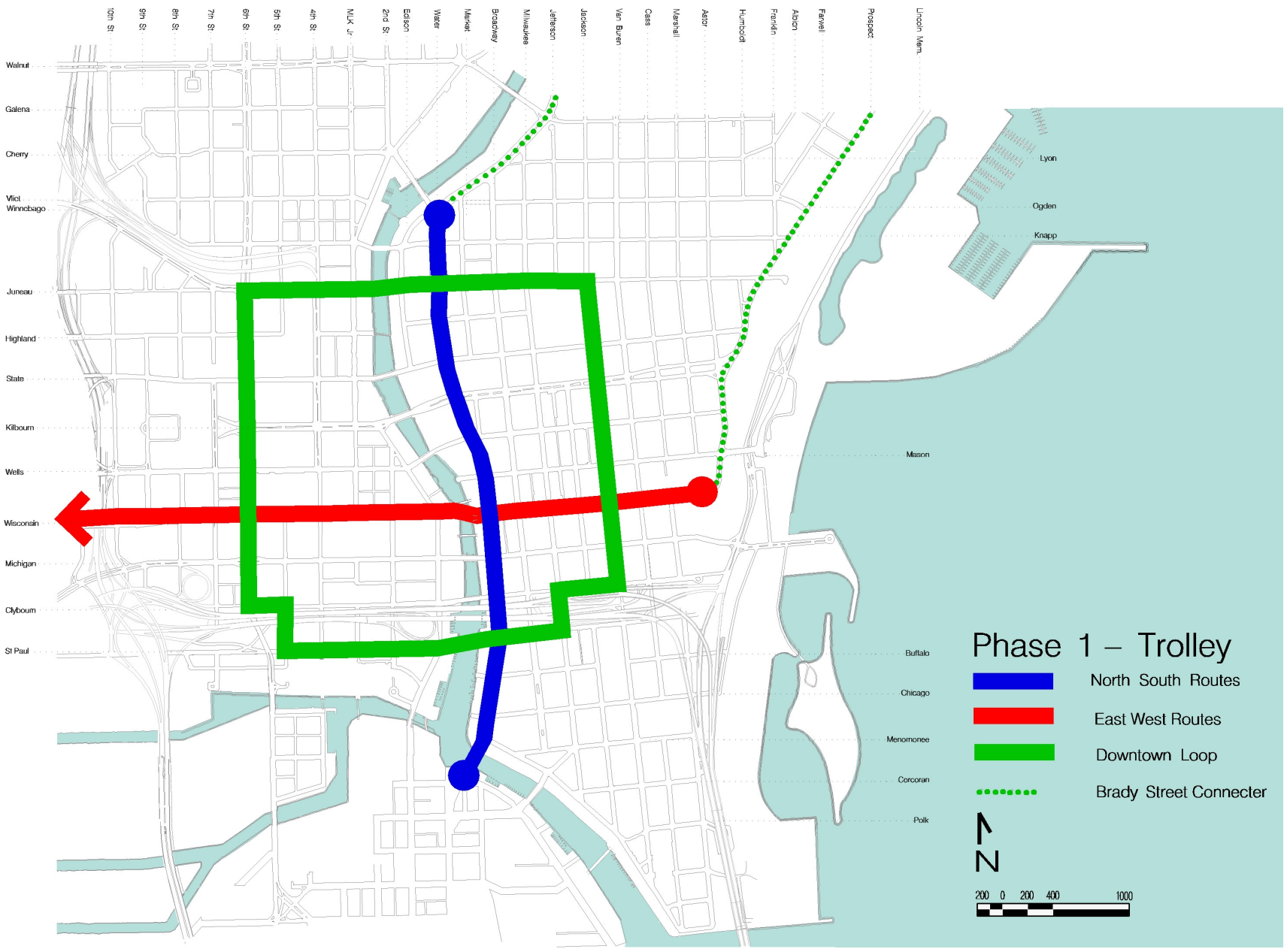
At full implementation, there will be 38 trolley intersections. The high volume of pedestrian traffic generated from people transferring between transit lines will encourage retail activity. These intersections will become locations of fun and activity. The corners of these intersections are the logical locations for retail and restaurants. Traffic calming intersection enhancements are recommended at each of these locations. Improvements should include pedestrian crosswalks, transit shelters/winter heaters, planters and benches.

The performance goal is to maintain a three to seven minute headway: three minutes during the noon and evening rush hours. As traffic lightens during the mid-morning and afternoon and later in the evenings, trolleys should be able to move faster.

It is recommended that the first phase trolleys have the goal of operating an average of 12 hours a day during the week (260 days per year). On weekends, service should be available from 10:00 a.m. to 2:30 a.m. The service will operate at different intensities; that is the number of trolleys on the network will vary depending on the activity intensity in the downtown and on the time of the day. The presence of a large convention, for example, would indicate an increase in trolley service for the participants.

The following is a conceptual daily schedule:

TIME	% OF FLEET CAPACITY
6AM to 9 AM	60%
9 AM to 11:30 AM	40%
11:30 AM to 1:30 PM	100%
1:30 PM to 4:30 PM	40%
4:30 PM to 7:00 PM	100%
7:00 PM to 2:30	40%



First Phase

The first phase of the recommended trolley network will be sufficiently visible and accessible to make a strong and positive initial impact. The implementation of this first phase cannot be timid. The system will require public relations and educational support. The recommended network should be completed and operational with the minimum number of recommended trolleys and stops.

Three lines are recommended in the first phase. The Red Line would run up and down Wisconsin, the Blue Line would run up and down Water and the Yellow Loop route would run along Sixth Street, Juneau Avenue, Broadway and St. Paul Avenue. The Downtown loop connects the train station with much of the Downtown. The thicker dotted line on the map indicates a 10-minute walk from the train station. This graphic reveals that only a small area of Downtown is accessible from the train station. To become an integral component in the Downtown, the train station must be better connected to the rest of Downtown.

Another reason to introduce this circular loop early in the transit transformation of Downtown is that in later phases this loop will be replaced by the streetcar loop. By introducing it earlier, it will begin to set a pattern of loop legibility and dependability. This route must be slightly flexible during the construction phase of the streetcar lines.

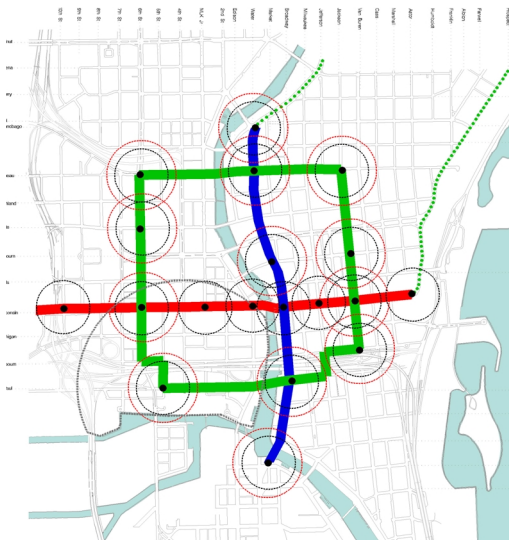
There are 22 stops proposed in the First Phase trolley plan. A 1,200 walking distance (less than 5 minute walk) has been circumscribed around the stops. This distance is shorter than the more typical 1,320 feet and makes the system more convenient and user friendly. A total of seven stops are recommended on Wisconsin Avenue, six on Water Street and nine on the Downtown loop. This configuration will provide the greatest coverage for the least initial cost.

Sixteen vehicles are required to initiate the first phase. Four vehicles are recommended for Wisconsin, four additional on Water Street, and eight for the Downtown loop. An initial purchase of 17 trolleys with one vehicle as a spare is recommended.

The first phase trolley network has 17 stops. Several are shared, e.g., the Yellow Loop shares four stops. Each of these stops requires two shelters on either side of the street. These stops/kiosks should be fitted with a radiant heating element. The trolley kiosks should be integrated with intersection improvements which include pedestrian crosswalks, signing and other street furniture amenities.

A minimum of two propane or battery operated trolleys per line is recommended in the second phase of the trolley network. They should have the capability of being primarily enclosed, though open at the rear. People should be able to hang onto the rear, similar to a San Francisco cable car. Speeds, compatible with pedestrians, should be slow but steady. These cars should be very colorful and easy to spot. These vehicles should also be equipped with a fare card reader that allows a potential rider to use a pre-purchased debit card or a credit card. Tokens can also be used.

The first phase will begin with ten trolleys on Wisconsin Avenue and Water Street. These initial routes will test the operating procedures, stop designs and customer satisfaction. Customer reactions will inform decisions for subsequent phases.

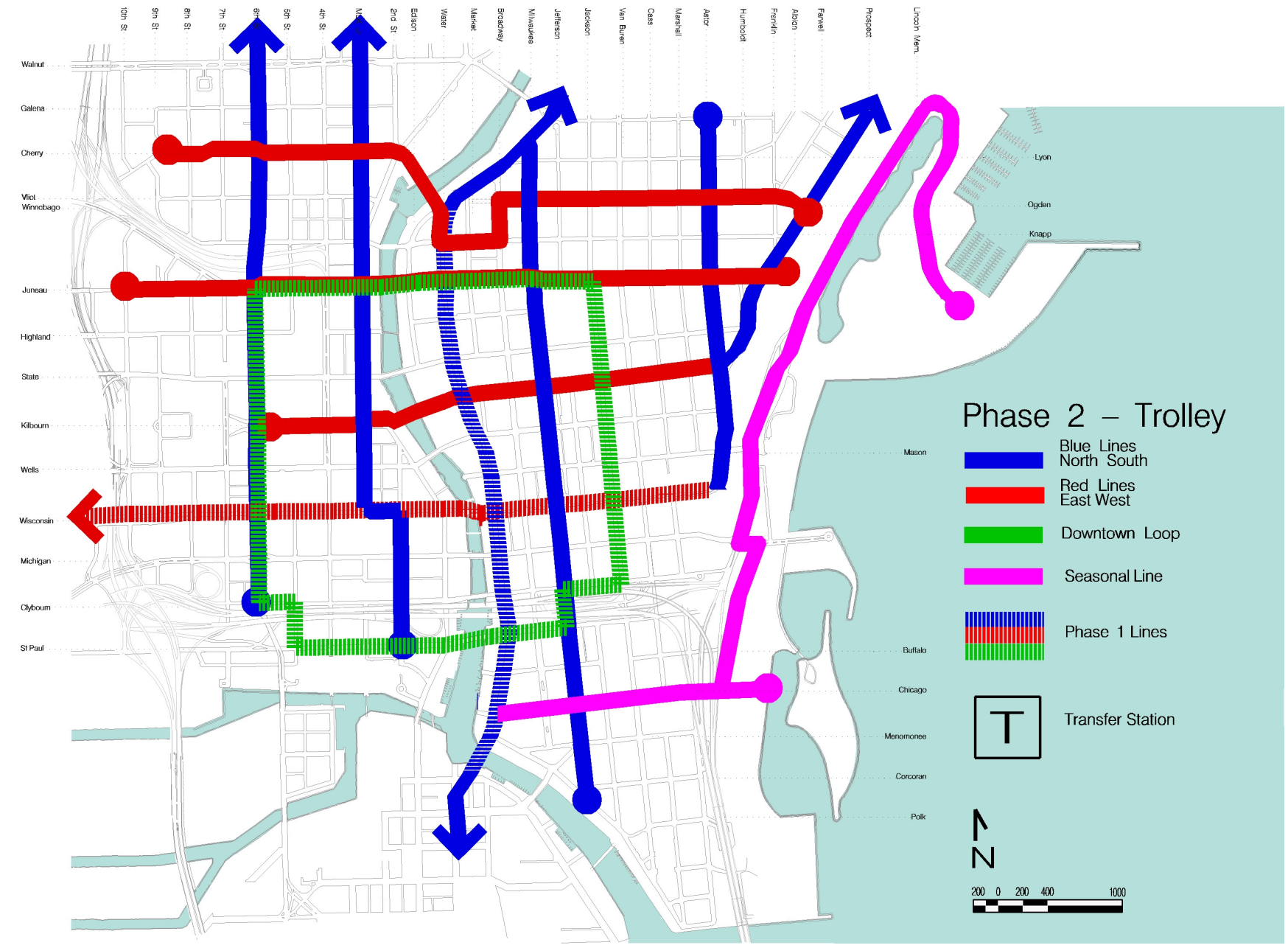


Trolley, Taxi and Bus Kiosks

Transit kiosks are a critical component of the legibility of the transit network. One design for a transit kiosk is offered. It incorporates all of the specific design characteristics specified for Downtown Milwaukee. The trolley stops should begin with a generic design. Variations should designate the various routes and districts. A change of color using a similar design is one alternative. Variation of roof design could be another alternative.

It is primarily transparent with a clear roof and sides thereby minimizing the visual intrusiveness on the street. It provides a telephone, a schedule display, an advertising panel, and seating. Perhaps the most important feature is the heating element attached to the edge of the roof structure cantilevered over the sidewalk. This is activated when the temperature falls below freezing and a person approaches the kiosks. The kiosks will therefore have the dual function of bus stop and pedestrian amenity. It may become one of the most important features to enhance the winter pedestrian experience in Downtown. If properly designed this structure can enhance the pedestrian street experience while reducing the upkeep and maintenance costs.

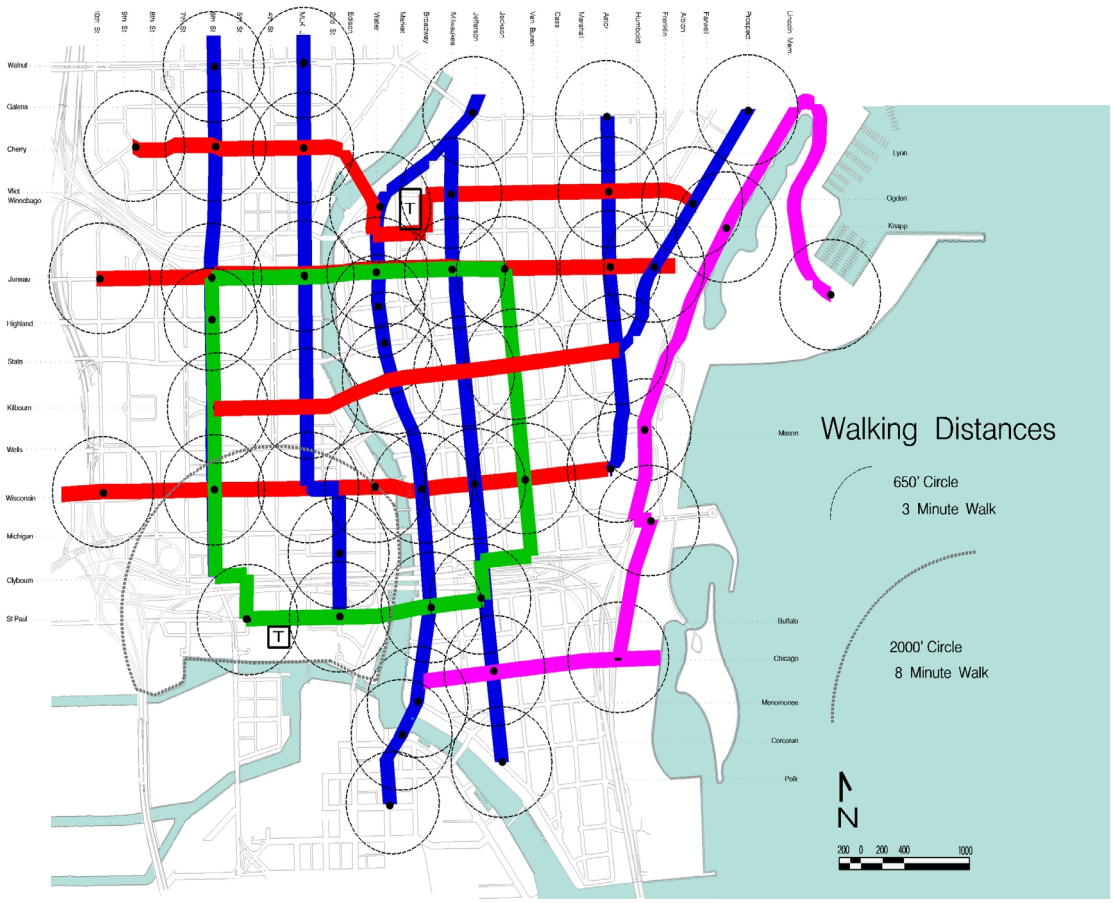
Their design will enhance the visual character of the sidewalk and street, complement the proposed streetscape, provide a new level of comfort to the customer and enhance the "Park Once" concept.



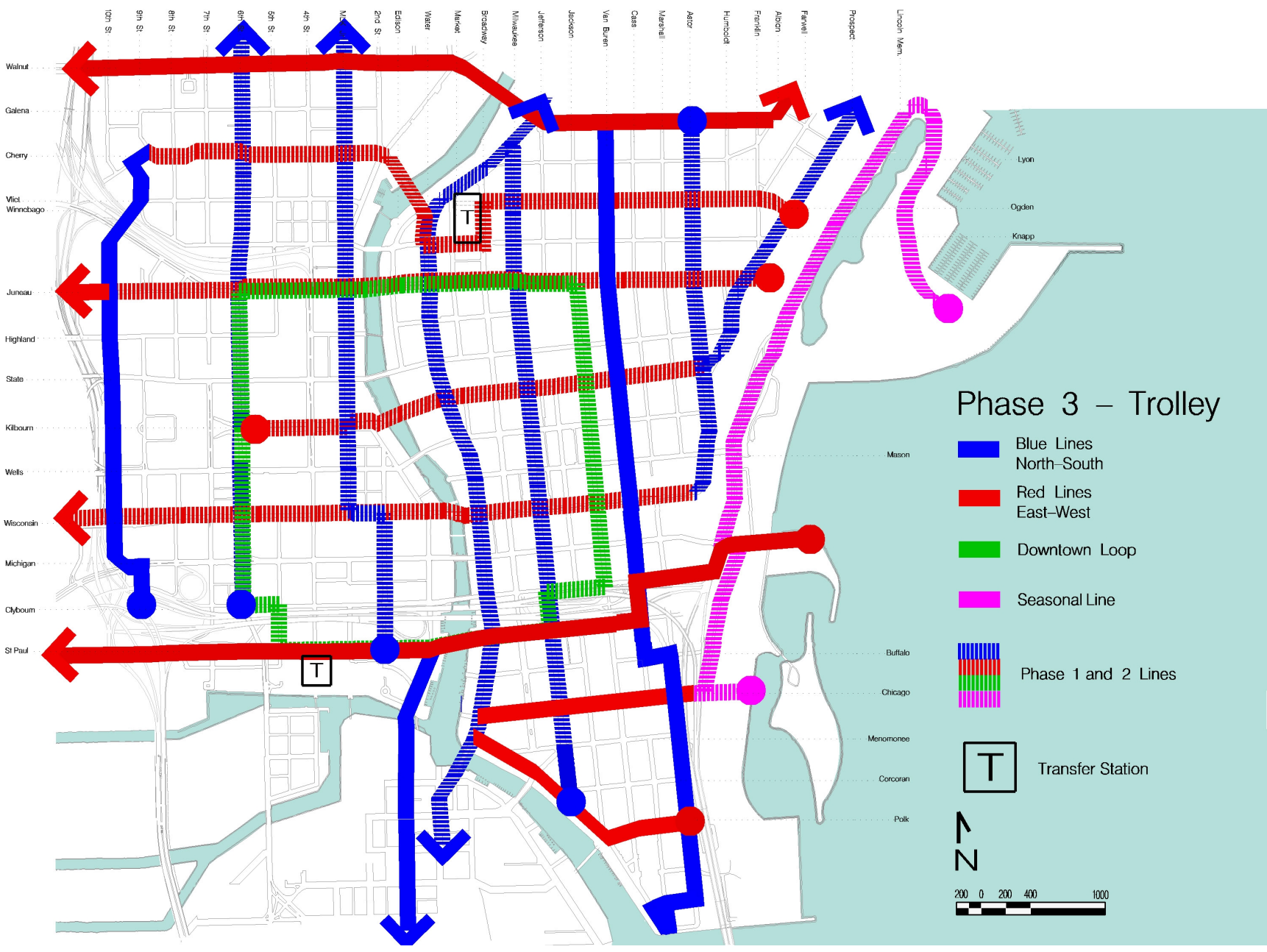
Phase Two Trolley

The implementation of the Phase Two trolley network will make it possible for people to live and work in and around Downtown. Those who need to move between disperse locations Downtown will be able to do so without the private automobile. This has the potential to reduce the need for parking spaces, maintain capacity on existing streets and to significantly improve the pedestrian experience. It will be the catalyst for the "Park Once" concept which will allow people who come to Downtown by car to park their car once and travel anywhere in the Downtown. It will facilitate the direct interactions of many more people and enhance development potential in Downtown.

Phase Two brings the trolley network up to full performance capability with the addition of nine more lines. Each of the lines will have two trolleys with the exception for a single trolley added to 6th Avenue and three more introduced to the Prospect/Farwell pair. The existing trolleys, which initiated this concept, connect the Downtown to Brady Street and can be used to supplement the proposed network or function as the spare vehicles. The additional East-West lines include Kilbourn Avenue, a combination of Cherry Street and Ogden Avenue and another line on Juneau Avenue parallels for part of the distance the Downtown loop. Additional North-South lines include 6th Street, Old World Third/Martin Luther King, Milwaukee Street, Van Buren Street, Astor Street and Prospect Avenue if it is converted to two way. It is further recommended that the Water Street line be extended to Brady Street and return to the Downtown via Farewell Avenue, if the one-way pair remains. The advantages of the trolleys are the flexibility of routing and the possibility of adding more vehicles to the network as demand warrants.

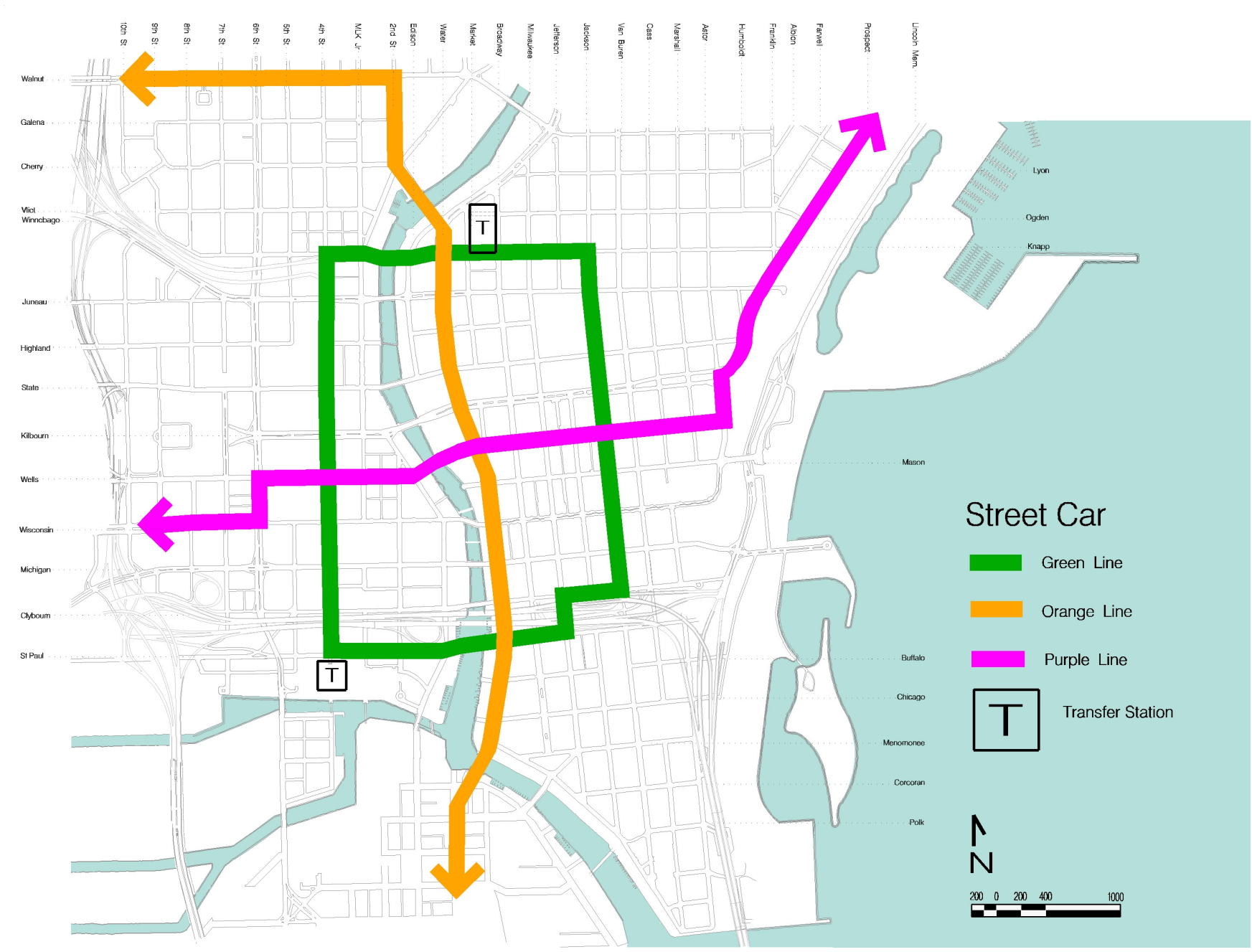


Eighteen additional trolleys will be required for Phase Two to bring the network to a total of 33 vehicles including three spare vehicles. During the summer months, two to four additional trolleys should be added for a seasonal line linking various activities along the lakefront. At the end of Phase Two, there will be 102 stops in the Downtown. This coverage allows people to go anywhere within the Downtown with a maximum of one transfer and at the longest a three-minute walk. The advantages of the trolleys are the flexibility of routing, and the possibility of adding more vehicles to the network as demand warrants.



Phase Three

Phase Three introduces four additional East-West lines: one on Walnut, another is the extensions on St Paul beyond the loop which also uses a portion of St Paul, the third is a permanent line on Chicago and a forth line links Polk and Water in the historic Third Ward. Two new North-South lines are recommended. One would be on Van Buren and another on 10th. At his phase, the line on Juneau and Plankinton could be extended.



Streetcar

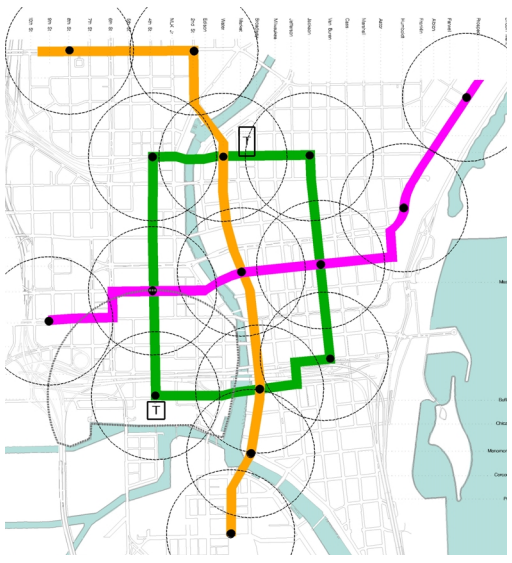
The Downtown Plan provides the opportunity for a classic streetcar network to be reintroduced into the street grid linking the Downtown to adjacent neighborhoods, the University, the Zoo, Miller Park and the airport. The classic image of a pedestrian-friendly city contains streets with small streetcars. The streetcar would significantly expand the service area of Downtown and conversely make Downtown jobs and activities more accessible to surrounding neighborhoods.

The Downtown Milwaukee Streetcar Plan is a simple loop and two intersecting lines. The Green Line, the Downtown loop, travels on St Paul, 4th, McKinley/Knapp and Jackson. This line replaces the rubber-tire trolleys. It is the major Downtown circulator. It connects the train stations and transfer points. It connects most of the major activity generators in the Downtown including the Midwest Express Convention Center, The Grand Avenue, the new multi-modal centers, the mixed-use train station, the Arena, the Bradley Center, the new neighborhoods, the proposed Water Street entertainment complex, the Post Office, Milwaukee School of Engineering, Cathedral Square, the Federal Building, Firstar and smaller uses along St. Paul in the Third Ward.

This loop is bisected and interconnected by two lines. The purple line extends from the north down Prospect Avenue, turns west onto Wells, passes under the convention center, turns onto 6th and then turns again and continues west along Wisconsin. This line would connect the University of Wisconsin-Milwaukee, Marquette University, and the Zoo to each other and to Downtown. In the summer it should connect to Miller Stadium creating a clear linkage to Downtown. If this line is created, then the stadium can recapture the advantage of being linked to the Downtown.

The Orange Line is the second line bisecting Downtown's Green Line. This line begins in Walkers Point (or even the airport) extends north on Water Street to the Cherry Street Bridge where it crosses the river and travels north along Martin Luther King Jr. Drive and makes a turn west along Walnut Street to extend along Fond du Lac Avenue.

The intersection of streetcar lines creates a significant transfer point. These intersections must be on grade. Intersection improvements must include textured pavement across the entire intersection. When the streetcars arrive, all traffic should stop to allow safe pedestrian crossings. Because the corners will become active areas, every business and residential unit within a five to eight minute walk will benefit from transportation enhancements.

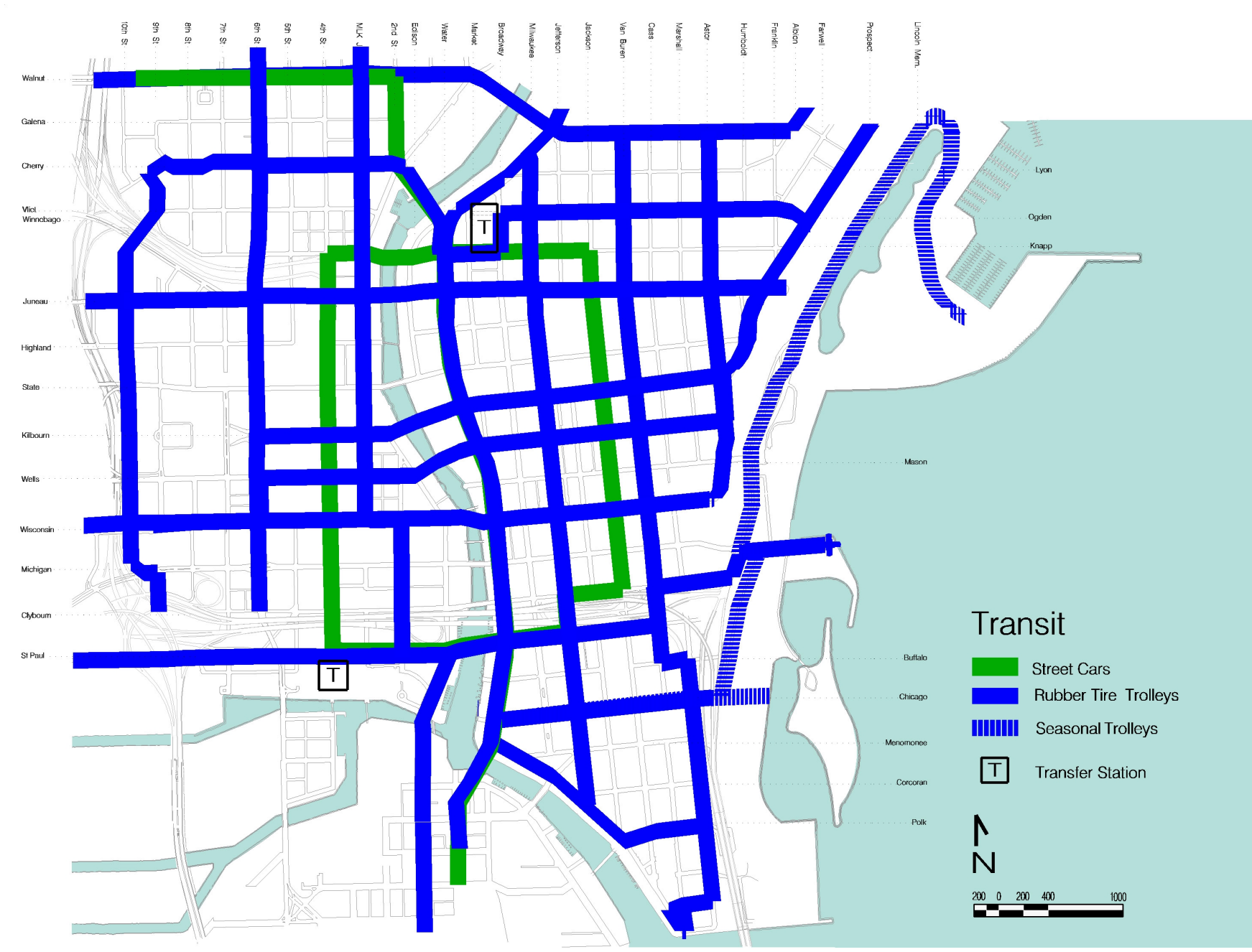


The Purple Line crosses the Green Loop twice: to the east at Cathedral Square, already a thriving restaurant and entertainment zone, and to the west at the new Midwest Express Convention Center.

The Orange Line also crosses the Green Line twice. In the south it crosses at St. Paul adjacent to the proposed new Third Ward market. To the north it crosses at Mc Kinley /Knapp and Water adjacent to the proposed entertainment complex and North Side transfer center.

The Orange and Purple Lines intersect at Water and Wells streets directly in front of City Hall. This intersection will become the most intensively used intersection in Downtown. Because of the concentration of surrounding offices and entertainment, the most transfers within the system are projected to occur at this location.

The streetcar system within Downtown should have the highest level of service. The headways between cars should be three to five minutes on all lines within the Downtown. For example, if a streetcar comes down Prospect Avenue every 10 minutes, another should be programmed to travel the same



route three minutes later. To achieve this headway, additional vehicles will shuttle back and forth on the Orange and Purple Lines and have switchbacks that allow vehicles to pass. The Red Line will be programmed to have a two to five minute headway.

Of important design consideration is the visual impact of the electric lines charging the streetcars and their catenary drape. Current research suggests that in the near future, these vehicles will be battery powered. They will be recharged using solar collectors—momentarily recharged at each stop and when they are not in service. If this technology is not available at the time this network is installed, the catenary wires should be incorporated into the center lighting pole.

The Long Range Downtown Transit Plan

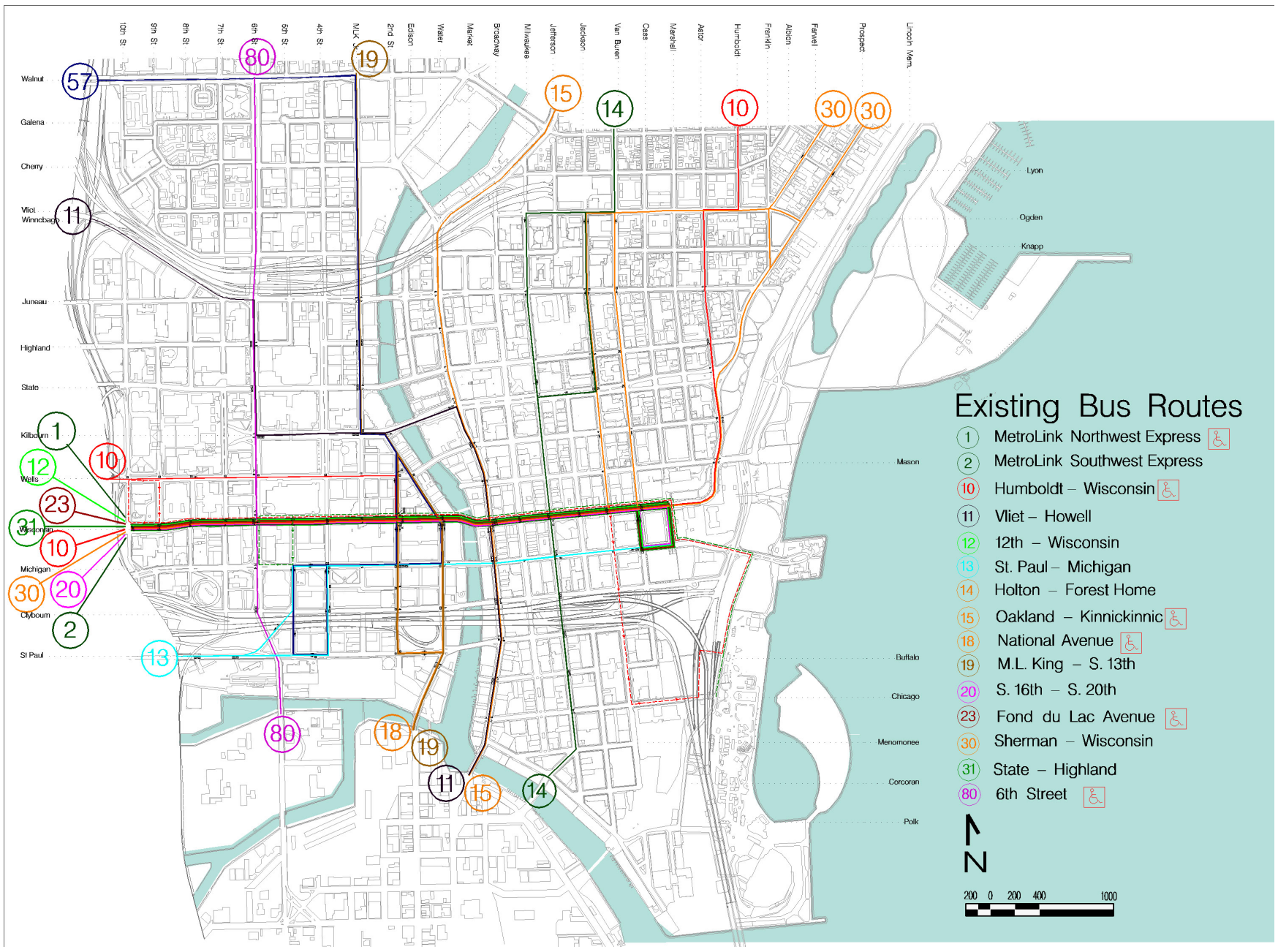
The long range transit plan combines the street car with the trolley lines. The streetcar is now the primary source of movement in Downtown supplemented by the trolley network which intersects the street car lines in 11 locations. The two networks have now become a single downtown movement system. The trolley lines remain on the following streets:

East and West

Walnut
Cherry Ogden
Juneau
Kilbourn
Wisconsin
St. Paul
Chicago

North South

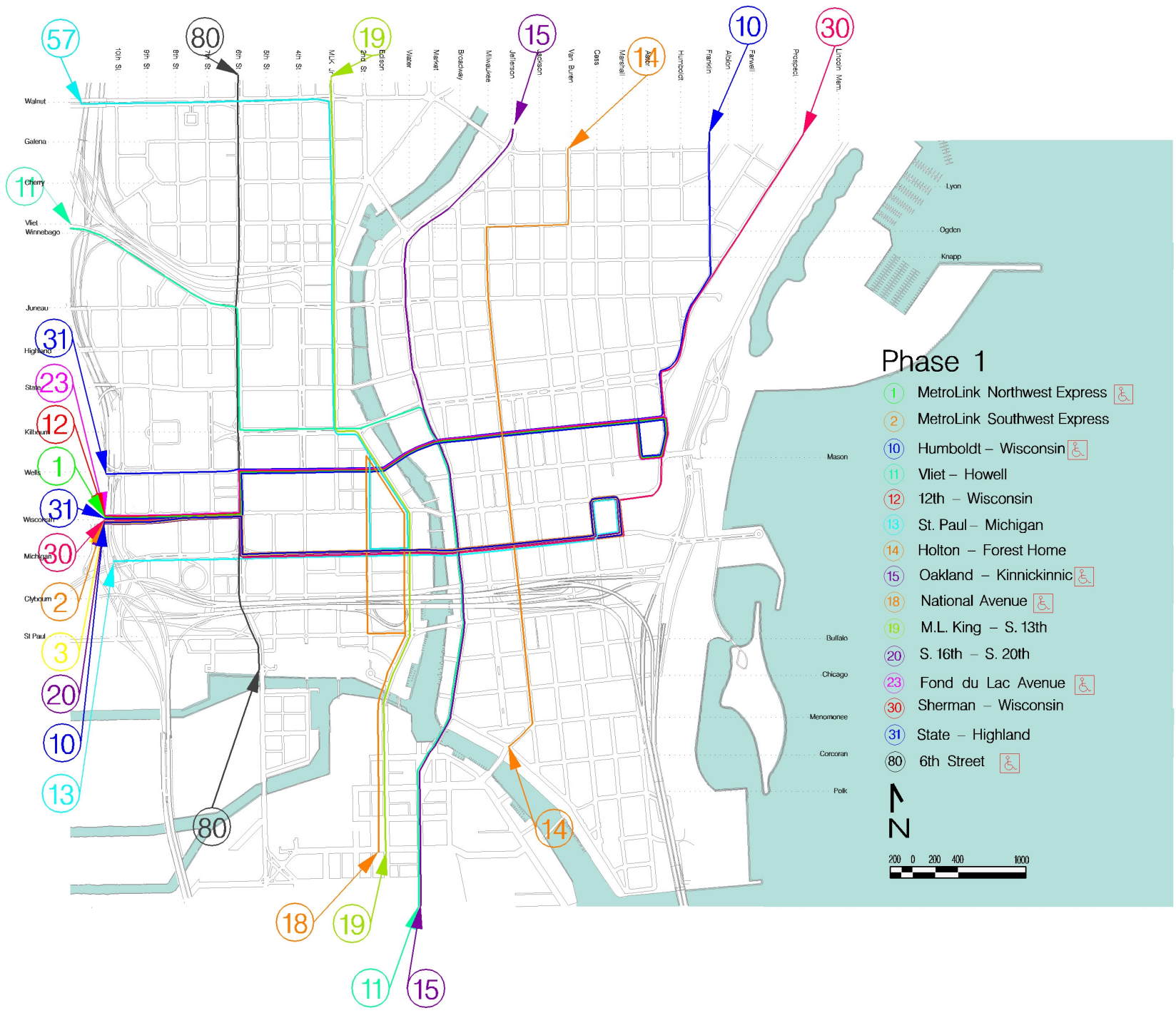
10th
6th
MLK-3rd Plankinton
Milwaukee
Cass
Seasonal trolley on Memorial Drive



County Buses

Larger buses will always be an important transit option for Downtown. They connect the peripheral neighborhoods and suburban locations to Downtown. They connect remote park-and-ride lots to Summerfest. Currently 19 County bus lines enter Downtown. Of those, nine bus lines use Wisconsin Avenue. Two lines use 6th, Water Street Plankinton, 2nd, portions of Jackson and Prospect. Most buses circulate around the Firstar Center or terminate at the Downtown Transit Center. This does not include the suburban express buses.

Large buses have flexible routes and have great carrying capacity. The Transit Plan recommends that the large buses should be used primarily as express and line haul transportation to and from downtown and the city neighborhoods. Unfortunately most large buses on city streets and the prototypical stop shelters have a negative or neutral visual and psychological impact. To alleviate this stigma, older bus shelters must be removed and new bus shelters of the same design as the trolleys kiosks should be installed. In the summer they provide an innovative transit function of connecting remote park-and-ride lots to Summerfest.



County Buses Phase One

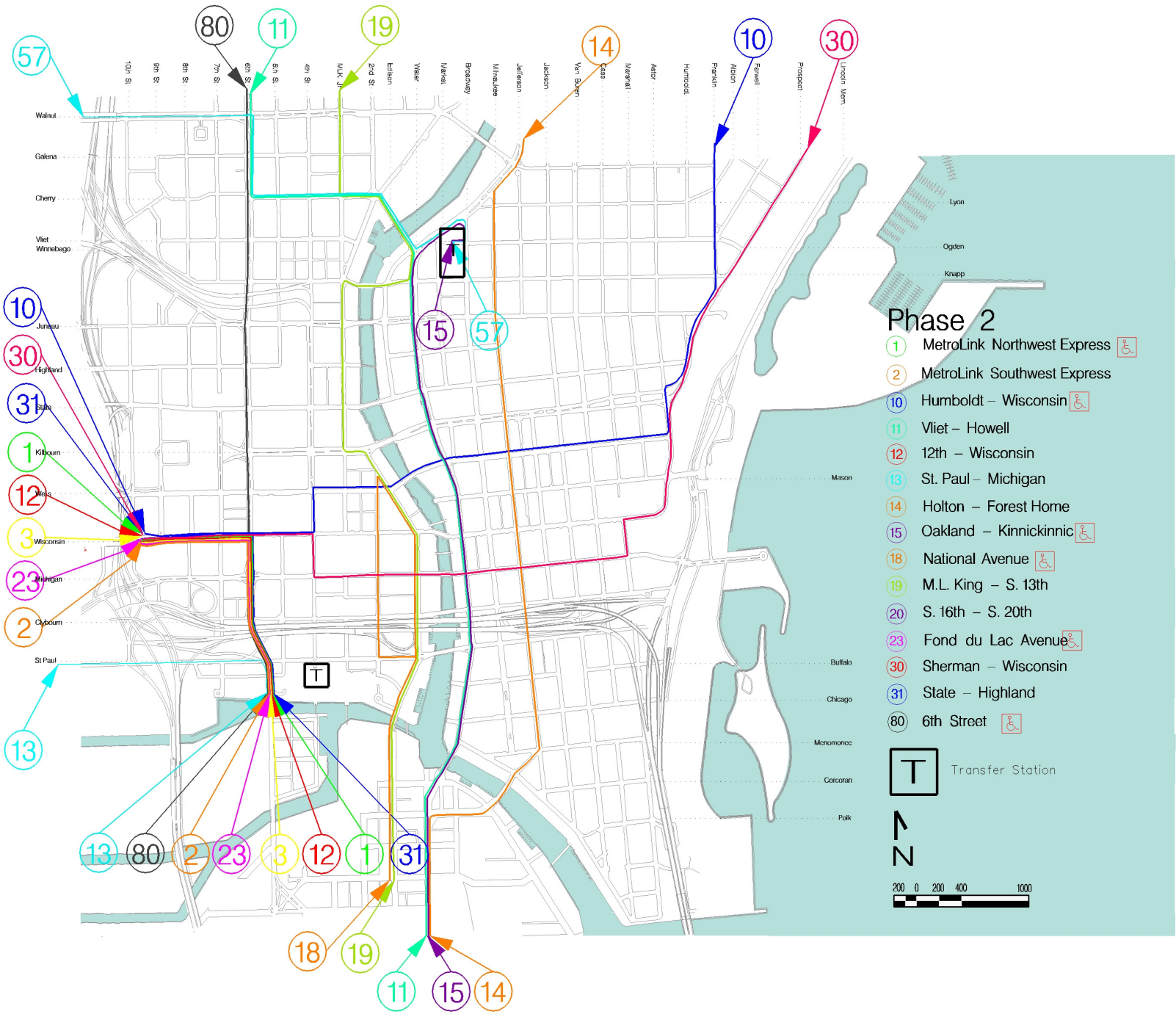
The transformation of Wisconsin Avenue requires that the existing bus lines be transferred to other locations. Until such time as the multi-modal transfer facilities are built, the Plan recommends transferring most bus lines from Wisconsin Avenue to Wells and/or Michigan. The preliminary recommendation is that the Number 2 and Number 20 lines would be added to the Number 13, which currently uses Michigan Street. Wells would have, in addition to the Number 10 line, numbers 23, 12, 1 and 31. The only City bus to remain on Wisconsin would be the Number 30. If possible this should be transferred to Michigan leaving Wisconsin free for the installation of the trolley and streetscape improvements.

New bus stops would have to be designed as part of the new street furniture on Wells and Michigan. If the number 10 or 30 bus remains on Wisconsin Avenue, it can share the bus stops/shelters with the trolley.

Regional Buses

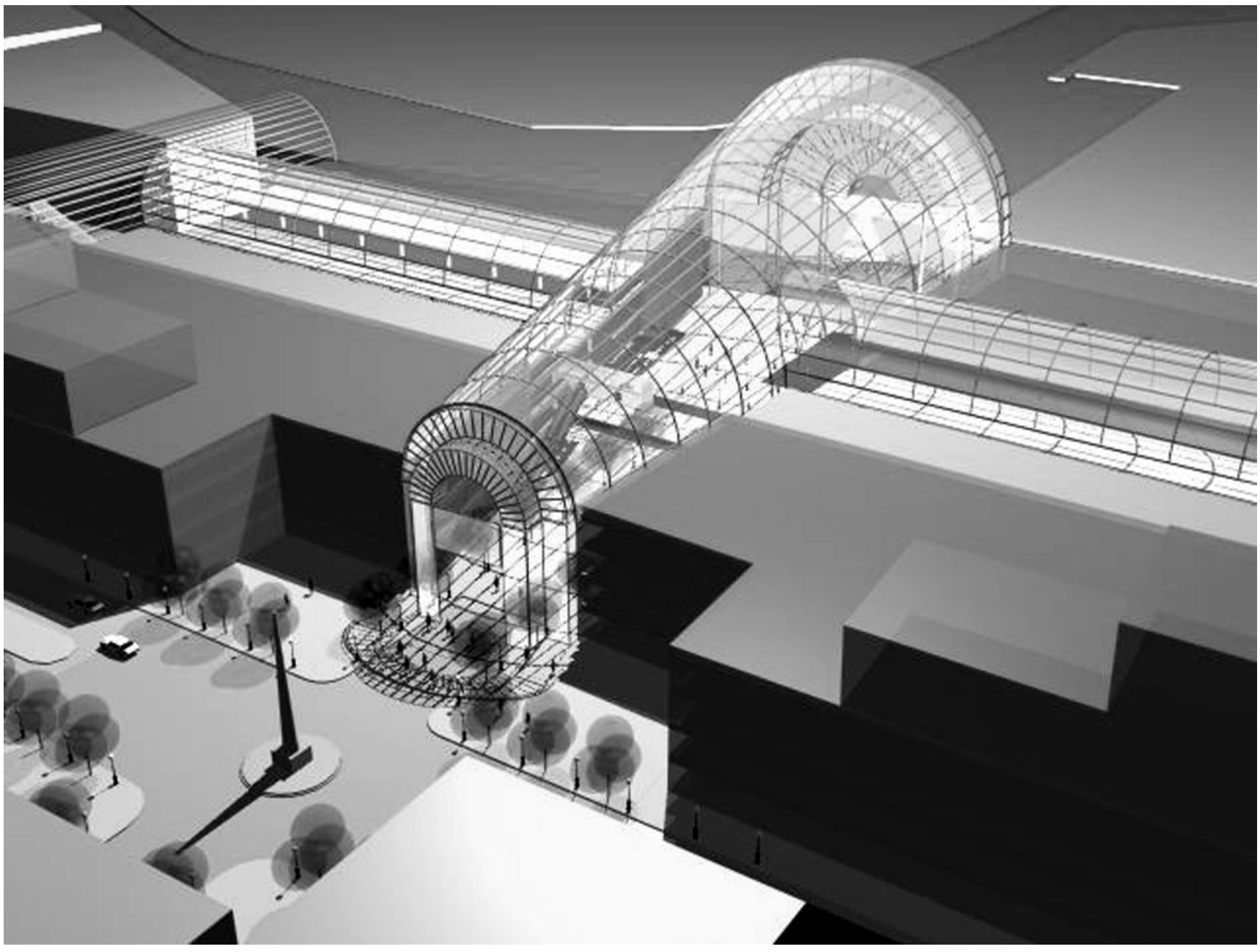
The Downtown Plan recommends that the Greyhound, the Badger and the suburban park-and-ride buses should terminate at the new multi-modal center located at the new mixed-use train station. This new building should be a state of the art facility combining offices, services, housing, train station, trolley station, bus ramps, bus bays, waiting rooms with public plazas, galleries, a river walk and a view of the river.

If relocation were to happen, the sites of the existing depots would become available for redevelopment.



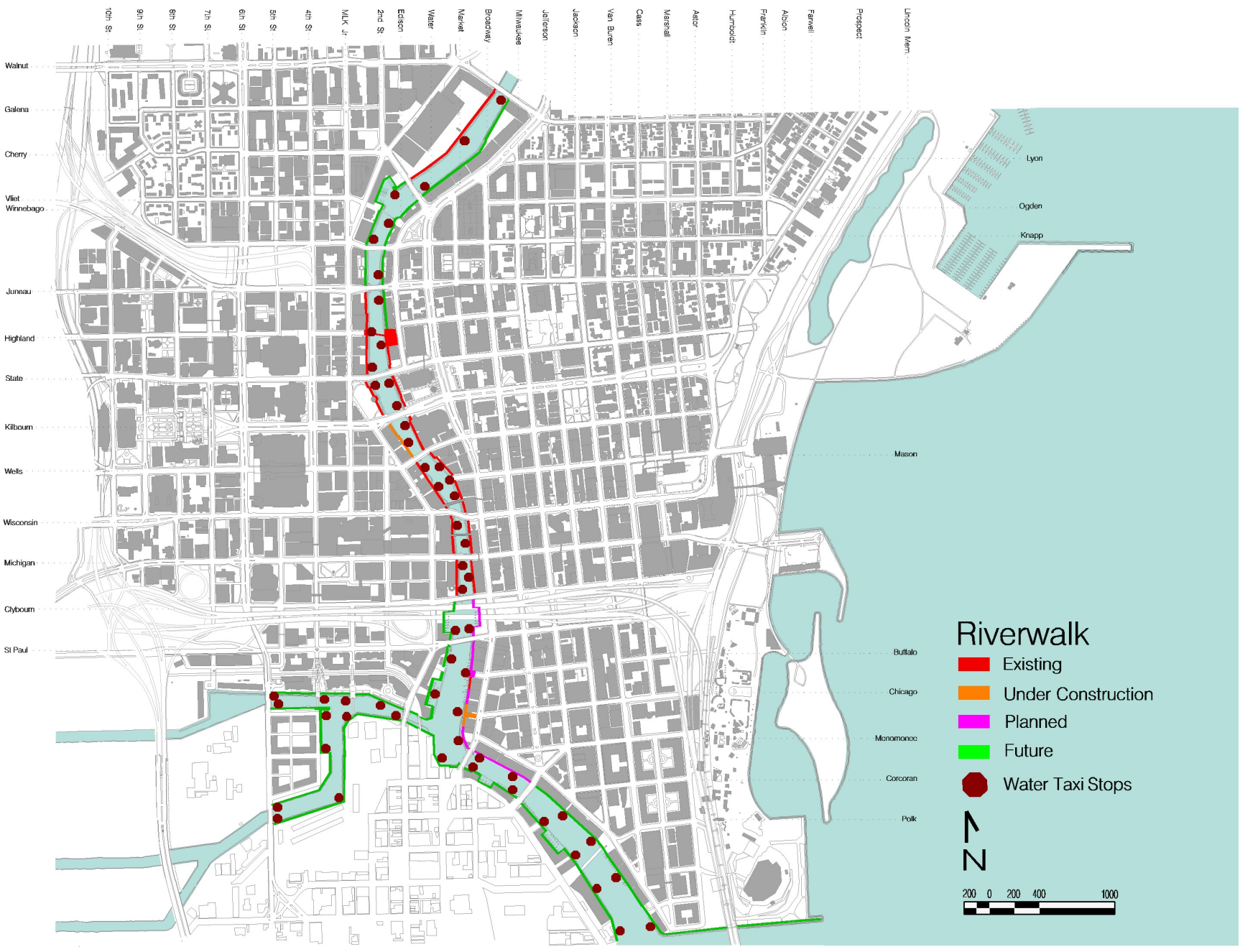
County Buses Phase Two

The long-term bus plan for Downtown is to terminate most of the buses in one of the two new inter-modal transfer centers. One would be located in the new mixed-use train station built on the location of the existing train station and post office. The second would be located off Water Street near the proposed entertainment complex to be built when the Park East freeway is converted to a boulevard. Connections to all other modes would occur at these locations encouraging passengers to transfer at this location. Bus lines which pass through the Downtown (numbers 10, 30, 11, 15, 19 and 80) would discharge passengers in one of the transfer stations and continue on their route through the City.



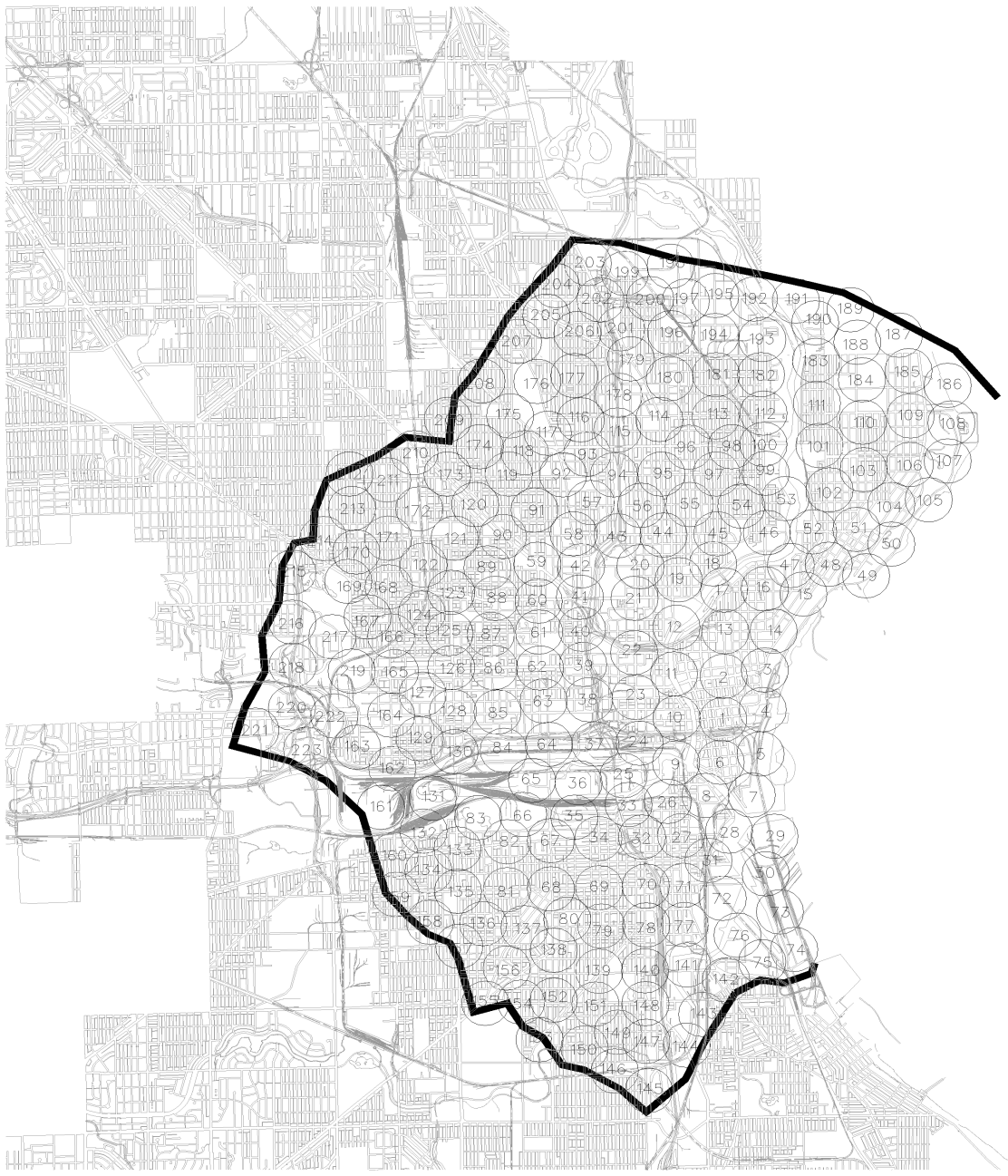
Heavy rail passenger service

High-speed rail service is becoming a popular alternative transportation option. Amtrack currently has a service between Downtown Milwaukee and Chicago. Recently, a North Shore commuter service was initiated and there are plans for the refurbishment of the existing station. The long range plan calls for a large mixed-use project to be constructed on the site of the existing Post Office and the train station if the Post Office site becomes available for redevelopment. The combined sites provide the opportunity for a state of the art multi-modal station that would combine high speed train service, local train service, regional bus service, trolleys and the street car. In addition the mixed-use design would have parking, offices, housing, retail and recreation.



Water Taxis

Water taxis provide an exciting, alternative transit mode within Downtown. These are most typically associated with tourists and entertainment venues. They are typically pontoon-type boats. They should operate at peak pedestrian-use times, and during all Downtown events. The Downtown Plan calls for a large number of entertainment venues to be located on the edge of the River. A total of 72 water taxi stops have been designated. The taxi should have "required stops" at popular locations and be "hailed" at all other stops. It should be pay as you go with subsidies from the restaurants and entertainment venues on the river edge. The Water Taxi stops are designed as integral components of the RiverWalk and the adjacent streets. The possibility of extending the taxi to the stadium and other valley destinations should be explored in the future. From the water taxi, the user gets a unique perspective of the City. From the banks and bridges, it animates the rivers. This will be most exciting in the Summer, when people will be able to travel from the Water Street entertainment complex to Maier Festival Park.



The "On demand" Satellite Accessed Taxi (SAT)

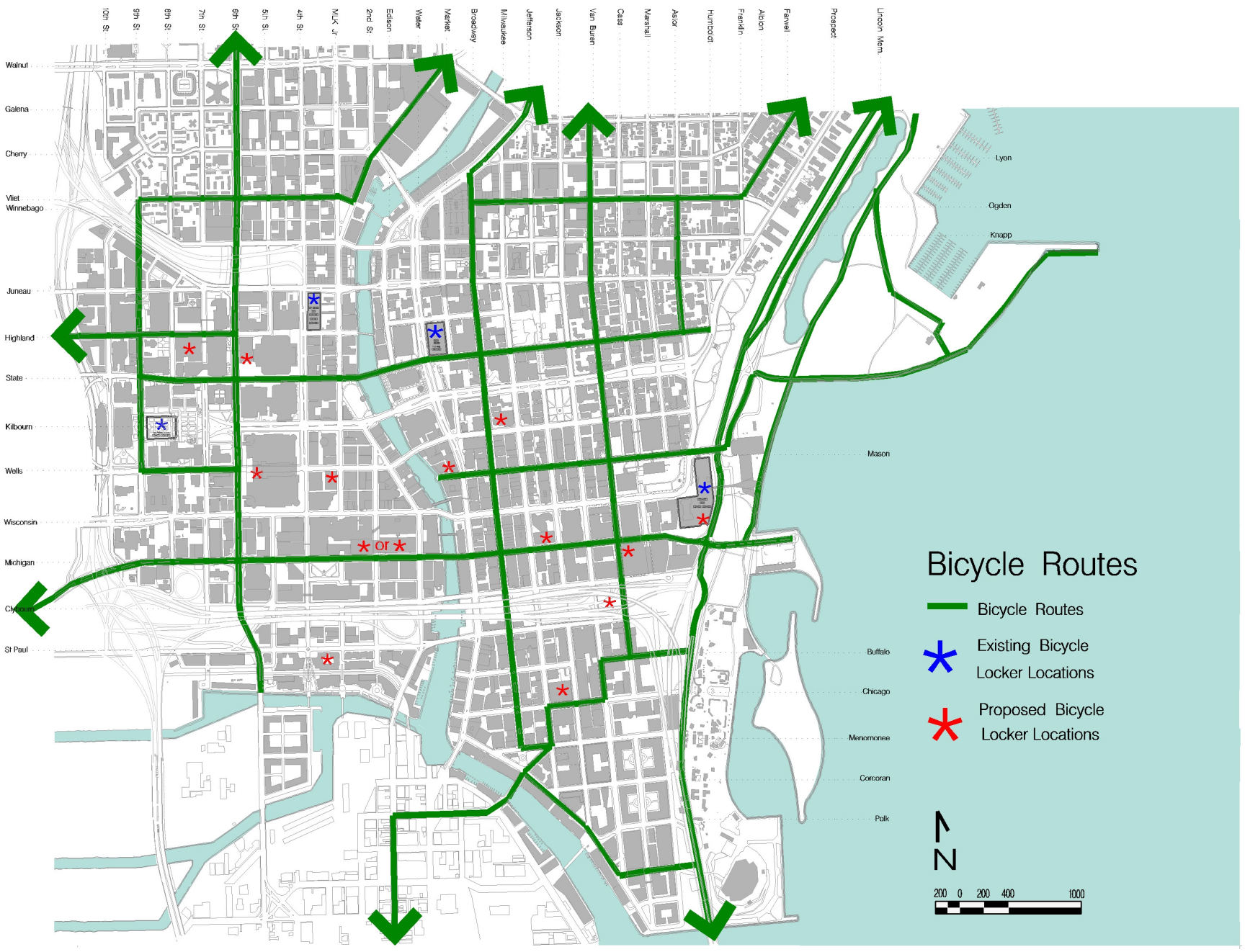
The on-demand satellite access taxi is an additional transit mode choice for Downtown Milwaukee. This is a hybrid transit service, which combines the convenience of a car with the service of a taxi. The difference is that it only travels between any of the prescribed points indicated by circles with a number on the adjacent map. It is significantly cheaper to use than a car or taxi, and slightly more expensive than the fare of bus. It will carry a traveler from point to point with a simple phone call. It is available when you want and where you want, at all hours of the day 365 day a year. It only comes to where you want when you call. It has no fixed route but travels from prescribed point to point. All businesses with over 50 employees have the first priority for a pick-up or drop-off point. The next priority is smaller pedestrian activity generators. All remaining areas, residential or commercial have designated stops not more than a five-minute walk apart.

This transit mode utilizes technology including GPS satellites to track the location of the vehicle nearest to the requested pick-up point. When you call it will even tell you how many minutes until it arrives at your pick-up point. It is being installed today in many new cars and is used by the major package handling companies.

Anyone within 15 minutes of Downtown can be picked up or dropped off at any number of selected points within this larger service area shown by the dark lines on the map. To use the SAT, you simply call the service. Using your phone number pad, indicate the number of the point you want to be picked up and the number of the location you want to go. It will then tell you in how many minutes the vehicle will be there. Once in the car, van or small bus, you will stop only a maximum of two additional times to drop off or pick passengers, until you are dropped off. The operating and economic advantage of this transit is that it only travels between points and that it carries more than one passenger at a time, passing the savings to the customer. Because it is in continuous motion it can be a profitable business for the operators. There are 220 or more potential satellite access taxi pick up and drop off points illustrated on the adjacent map.

The SAT has multiple functions. It can be used in the Downtown only or it can be used to service the area within a 15-minute distance of the Downtown. It will primarily serve those areas adjacent to the Downtown that do not have frequent bus transit service or are located beyond a five-minute walking distance of future rubber-tire trolleys or street car lines. This technology can reinforce the linkage between the Downtown and the immediate environs.

It is expected that this service will be a private service with a user fee and franchise paid to the City. The Downtown transit kiosks should be used as the SAT pick-up locations. Finally, there will still be specific personal taxi service, which will pick a customer up and travel from door-to-door.



Bicycle

Bicycles are a healthy addition to any downtown. Bicycles are becoming a popular form of transport for recreation, health and access to jobs and to other modes of transit. It is very popular with younger children, college students and middle-aged couples. This transportation technology has been incorporated into the multi-modal approach. A network of bicycle paths has been designed into the grid of Downtown to be compatible with the other modes. The bicycle grid is offset from the trolley streets and the streetcar streets by creating separate operating paths per street. As an example, one street has the trolleys, the next parallel street has the bicycles and the third has the streetcar. The bicycle network is continuous in Downtown allowing the cyclists to peddle throughout the Downtown on separate, but interconnected, routes.

The network enters Downtown from the south across the Hoan Bridge, from Broadway and Young, and Sixth on the south. From the north, the cyclists enter on Lincoln Memorial Drive and the bike path in the Lakefront Park, Van Buren, Water, Commerce and 6th. From the west, Michigan and State are the bicycle lane streets.

The minimum recommended bicycle line is 3 feet eight inches on both sides.

Bicycle locker locations currently exist at O'Donnell parking structure, 1000 Water Street parking structure, 4th Street and Highland Avenue parking structure, and MacArthur parking structure. In the Downtown Plan additional storage location are recommended in every existing and new parking structure as well as at the Train Station and the new multi-modal transfer locations. All new residential units shall have safe and sheltered bicycle storage. Street furniture must include bicycle-locking racks.

An additional requirement is the storage for motorcycles. Spaces should be programmed into all parking structures.

Bicycle lanes have been designed for the following streets.

- Farwell
- Ogden
- Broadway
- Van Buren
- Mason
- State
- Michigan
- 6th
- 9th
- Vleit
- N. Commerce

Policies

The need for a multi-faceted approach to circulation management is not new: "It appears that in order to accomplish even modest increases in the levels of bicycling and walking, a family of measures or incentives must be implemented. This is precisely what motorized traffic enjoys and takes for granted. The infrastructure for automobile travel includes not only the street and highway system, but also safe levels of lighting, ubiquitous parking facilities, any perforation of signs, signals, and controls aimed at insuring a safer driving experience... Assuming a need for travel exists, it is perhaps this type of commitment to a mode that is needed to ensure its acceptability and success." The following are important policies for circulation management that the City might consider:

Promotion of Alternative Transportation

In addition to policies and physical changes to the street, the City will need to actively promote people coming to and walking around the downtown area. The notion of getting people out of their automobiles is hardly new but "there is general agreement that a successful program will have three elements: realistic options, an enlightened involved public, and strong government support."

Promotional programs can include regulatory means such as requiring bicycle parking to be established by developers in addition to the City, when developing a new project.

Bicycle Travel

Bicycles are perhaps the most energy efficient and non-polluting mode of travel available. Bicycles also enjoy some of the advantages associated with single occupant vehicles (SOVs) in that the route and time of travel are individually determined by the driver of the bicycle.

Milwaukee has a significant student population and in many cities with large numbers of students, there are usually more potential bicycle riders simply because of the student population.

However, bicycle travel is quite viable for many more travelers in the City and enhancing this mode of travel will benefit the long term health of the City and its bicycle travelers. In fact, by enhancing the pedestrian environment, the bicycle environment can be enhanced. More bicycle travelers as opposed to more automobile travelers, in turn, will further enhance the pedestrian environment.

An entire separate document could be written outlining many means to enhance bicycle travel but these include some simple improvements, such as shower and locker facilities in the downtown area, preferably within places of employment. In many cities, these facilities are required as a matter of the City's zoning ordinance. For example, in Madison, Wisconsin one shower per gender is required for all office and professional buildings over 50,000 square feet in area. With these facilities increasing with one additional shower facility for every additional 100,000 square feet over 50,000 square feet. Other concepts include:

- Special events and promotions also work well to promote bicycling or walking awareness including bike to work days/weeks, group rides into the Downtown, and company competitions to determine which company can demonstrate the most bicyclists.
- Secure bicycle parking facilities are important throughout the Downtown and at transit stops.
- Intermodal connectivity is also important, especially for bicycles to be carried on transit.
- Public relations efforts are also important including good maps of bicycling and walking routes, better signing of bicycle routes, posters and other promotional materials focusing on bicycling and walking, plus poster campaigns and news stories about bicycle use, events, promotions, new routing, and the like.

For most of the streets in the Central Business District, there will not be separately striped bicycle lanes. For this reason "share the road" signs and single stripe bike route locations should be installed.

Promoting bicycling is not as weather-dependent as some might first think. The state of Minnesota, not considered a mild winter state, has been one of the leaders in promoting bicycle commuting and bicycle usage. Minnesota's seven year plan includes the goal of increasing bicycle miles traveled by 10 percent each year, to cut bicycles injuries and fatalities by 50 percent (referencing 1985 levels), and for 100 percent of the bicycles in the state to be registered. Bicycle commuting in Minneapolis and St. Paul continues even during the winter months. Clearly, the City of Milwaukee can match, and hopefully exceed, these goals.

Need for Goals

In addition to establishing policies and procedures to address pedestrian and other non-SOV travel, it is important that the City establish goals. Once these goals are established, they should be monitored annually to determine whether the goals are being or will be reached. These goals should be both short term and long term in nature. A short term goal might include having all newspaper racks in the City on permanent pedestal mounts within three years. A long term goal might be to increase pedestrian volumes on the sidewalks by 200 percent over the next 20 years.

Downtown Streets Policy

In order to ensure the long term viability of the pedestrian in Downtown Milwaukee, the City needs to establish a policy that all decisions involving pedestrians and streetscape must consider the needs of pedestrians to be higher than the needs of any other user of the street on a type "A" streets; to be equal with all other uses of the street on a type "B" streets and to be of lesser importance on type "C" streets.

Skywalks

Skywalks are another form of exclusive pedestrian way that exists in the Downtown. Eleven public skywalk links connect The Grand Avenue retail mall and Midwest Express Center with hotels and other buildings. Several private skywalks link buildings that are under common ownership but do not connect to the public network of skywalks.

The plan does not propose additional skywalks beyond the one that will connect the Hilton Hotel to the Midwest Express Center. Further expansion of the skywalk network would conflict with the plan's objective of increasing activity at street level by removing pedestrians from the sidewalks.

Crosswalks

Crosswalks that continue the pedestrian space of type "A" streets across streets should be striped or otherwise delineated a minimum of 15 feet in width.

For pedestrian crosswalks on type "A" and "B" streets, where there may be potential conflicts, prohibiting vehicles from turning right during a red light should be considered.

Obstacles in the Sidewalk

A sidewalk with sufficient zone "C" width as defined above can have a number of planters, signs, and other objects within it without seriously adversely affecting the pedestrian environment. However, many of the City's sidewalks are constrained by objects in the sidewalk that either need not be there or functions of which could be provided by more compact and aesthetically appealing designs.

The City should begin a program of phasing out conventional parking meters and installing more centrally located parking fee management systems. There are a number of these systems on the market today, but they all involve a single unit that can service a much larger number of parking spaces than conventional parking meters. Many of these other systems also offer the benefit of accepting credit and debit cards as well. In a similar manner, the City should ensure that signage along streets is consolidated. The City should implement a simply understood pedestrian way finding system with maps identifying locations, major amenities, and approximate walking times to reach those locations from where the pedestrian may be viewing the map. The way finding system should be located at all four corners of an intersection involving an "A" street and at diagonal corners for intersections involving a "B" street.

Hollow Walks

In many locations in the City, the space beneath the sidewalk is "hollow" and acts as part of the lower level of the adjacent building. As this sort of condition makes providing street trees very difficult and also encourages differential settling of the sidewalk, creating hazardous conditions for pedestrians, no new hollow walks should be permitted in the City. The City should also investigate means of acquiring hollowing walks along type "A" streets where it is structurally feasible to acquire and fill in the area beneath those walks.