BRT CORRIDOR STUDY
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INFILL AND REDEVELOPMENT ASSESMENT

DRAFT

An evaluation of the potential for infill and redevelopment along the four corridors being studied for future Bus Rapid Transit (BRT)

This project was created as part of the Capital Region Sustainable Communities Consortium, a group initiated as part of the Sustainable Communities Grant, from the U.S. Department of Housing and Urban Development received by the Capital Area Regional Planning Commission.

Project Team

The project team was assembled to create, review and suggest improvements to the methods and products of this report. The team was comprised of:

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Executive Summary

The infill and redevelopment assessment was undertaken to gain a better understanding of the development potential along Bus Rapid Transit (BRT) corridors currently being considered for future development. BRT is high-frequency, limited-stop bus system that offers faster service and improved urban mobility, often featuring dedicated lanes, traffic signal priority, distinct busses and stations, and real-time information systems that provides users with current wait time. BRT is most appropriate for the highest ridership areas within a larger bus system and can be developed at less than half the cost of rail. The findings of this document will be used by the BRT transit and market study consultants to provide them a better understanding of the opportunities that exist along the corridors being studied. It also can provide information about future population and employment that could occur in these areas, which can be used when deciding the level of BRT service that is most appropriate. The four corridors being studied for future BRT start from the Capitol square and travel as follows:

- East: Following East Washington Avenue to East Towne Mall with a slight deviation to service Madison College (MATC) near Hwy 51.
- West: Traveling on University Avenue to Whitney Way, then to West Towne Mall via Mineral Point or Odana Road.
- North: Traveling to Warner park via Fordem and Sherman.
- South: Via Park Street, transitioning to Fish Hatchery on Badger Road, and terminating at Hatchery Hill.

The process used for the infill and redevelopment assessment identified sites, established development programs for each site and summarized the data by corridor. Infill and redevelopment sites were identified using several metrics addressing value, building size and others combined with a visual inspection of the corridors. Based on conditions on the sites, they were classified by the estimated timeframe of their potential redevelopment, recognizing that certain sites will likely develop sooner than others. Next, each site was assigned a detailed building program (based on existing plans when available) or a building type suitable to the site's context.

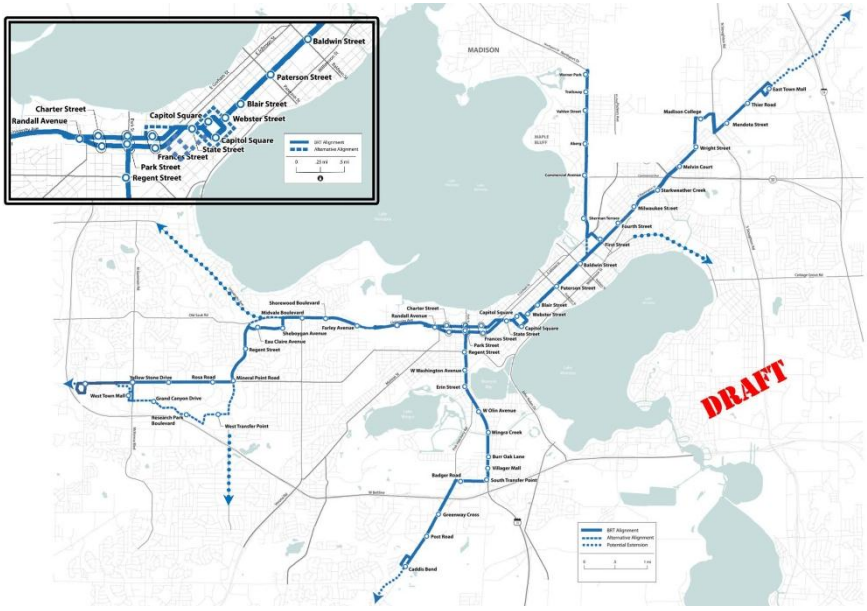


Figure A: Map of Potential BRT Corridors

Overall, approximately 160 redevelopment sites were identified in the corridors, often comprising multiple parcels. The East Washington corridor had the largest number of sites, 48, with a combined 240 acres, including the 100 acre East Towne site of the mall and surrounding properties. This was followed by the western corridor, which has 27 sites but greater acreage (300 acres), largely due to the 80 acre West Town site and the vacant 60 acre CUNA Mutual property between Mineral Point and Odana Roads. The South and North corridors are characterized by small sites, with the exception of those found in those in and around the Wingra Triangle area.

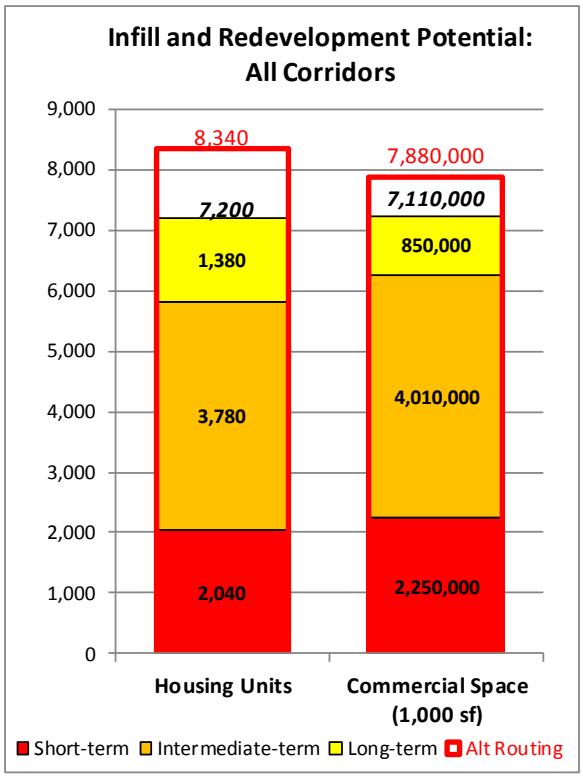


Figure B: Summary of infill and redevelopment, all corridors

Overall, the sites along the primary routing identified have the potential for approximately 7,200 housing units and over 7,000,000 square feet of commercial space. Due to the context of these sites, townhomes and multifamily units comprise all of the residential units discussed, though no distinction was made between rental and owner-occupied housing. Put in perspective, the City of Madison added an average of about 1,600 housing units a year from 2000-2010, with slightly more than half in multi-family buildings. With regards to commercial space, the greater Madison area absorbed an average of about 260,000 square feet of office space a year during that period. Total retail inventory in the area is about 40.6 million square feet.

When alternative routing is used on the West corridor, these numbers increase by about 15%. Approximately 85% of the identified infill/redevelopment potential was thought to be on a site that could intensify in either the short (0-10 years) or intermediate-term (11-20 years).

When evaluated by corridor, the East Washington corridor contains the most redevelopment potential for residential and commercial space, which is not surprising given the corridor had the most area in redevelopment sites and some of the highest density building programs of the corridors. It is followed by the West corridor, particularly the alternative routing on Odana Road. The south approaches the west corridor in terms of residential and falls short in commercial development. The north corridor, with the fewest and frequently small sites, had the lowest redevelopment and infill potential.

While it is recognized not all development would likely occur, the potential value and occupancy capacity of these sites is significant. The 160 sites conservatively have value capacity of over $2.6 billion dollars and could support a new population of nearly 45,000 (including residents, employees and customers).

Infill and Redevelopment Potential	Value	New Population (residents, employees, customers)
East Corridor	$1,245,000,000	18,970
North Corridor	$125,000,000	1,980
West Corridor	$620,000,000	10,510
West Corridor Alt Route	*$285,000,000*	*5,680*
South Corridor	$365,000,000	6,550
Total	**$2,640,000,000**	**43,690**

Figure C: Value of Redevelopment

This estimate of redevelopment potential does not include East Towne and West Towne mall areas. Given the very large size of the areas, both over 80 acres, the wide range of possible redevelopment scenarios and unpredictable market forces, assigning specific redevelopment estimates is problematic. Using successful mall redevelopments as guides for estimating development capacity, it is conceivable that the two mall areas combined could redevelop to add between 800,000 and 1,350,000 square feet of commercial and between 1,100 and 2,200 residential units. At the high end, this amounts to approximately 20% of the total estimated redevelopment potential.

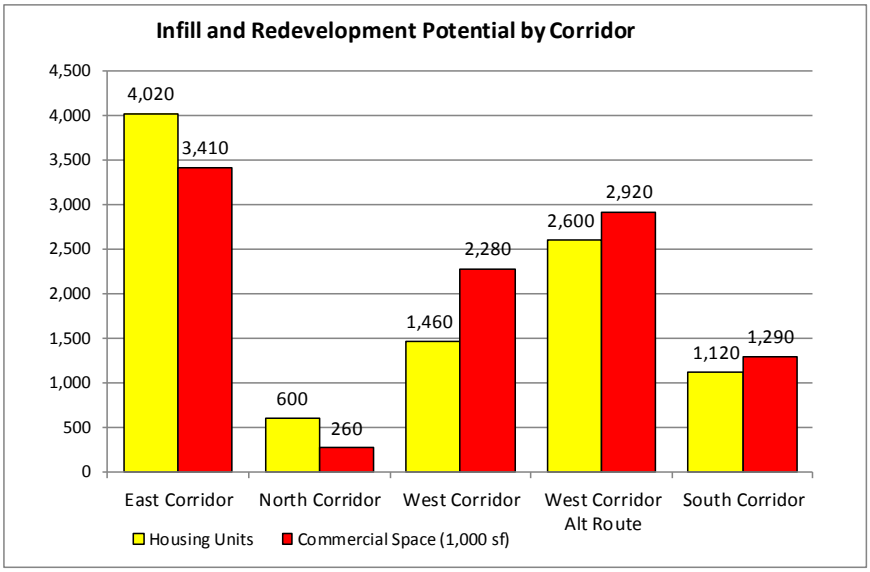


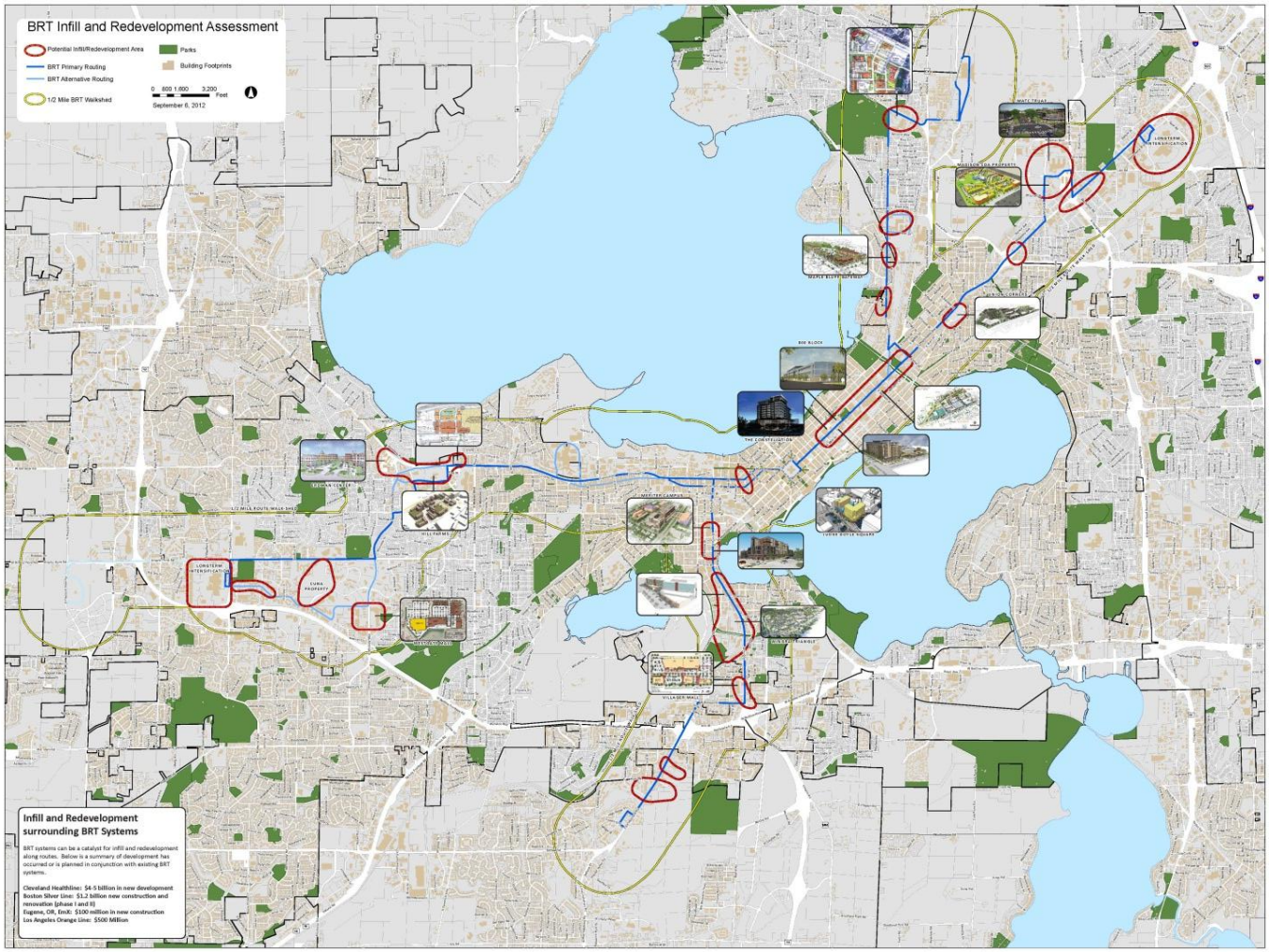
Figure D: Summary of infill and redevelopment, by corridors

One theme that arose through this process was that redevelopment is often unpredictable, sometime happening in unforeseen areas and not in areas thought to prime for redevelopment. With that mentioned, certain areas appear to be on the cusp of rapid redevelopment. The East Washington corridor between the Capitol and First Street can be classified as one of those areas. With the Constellation (700 block) currently under construction, interest in the Reynolds properties (700 block of Mifflin) and the potential for the City of Madison to sell the city-owned 800 block, this area could be transformed very quickly. Other major sites that could redevelop on this corridor include the collection of properties owned by the Mullins Group next to the Yahara River. BRT could help further encourage development in this area, especially since location (and all those between First Street and Park Street) would be served by two of the corridors, resulting in higher volume of riders and direct transit access to more areas. Other areas appearing to be likely for catalytic redevelopment include Park Street between Monona Bay and the Wingra Triangle, and the concentration of parcels surrounding University Avenue and Whitney Way.

Figure E: Major infill and redevelopment areas.

Site	Corridor	Size	Description
800 E Wash	**East**	**4.5 acres**	The site was the focus of an RFP, which was awarded to ULI, who proposed 160,000 sf of commercial and 85 residential units. That proposal fell through, but an unsolicited proposal by Metcalfe's emerged during the process. The Metcalfe's proposed 90,000 sf of commercial including a grocery store and office space, a 120 room hotel and 14 townhomes. The city may reissue the rfp, negotiate with another developer, or put the land up for sale.
Union Corners	**East**	**12.5 acres**	Two RFP responses are currently under consideration by the City. The proposals generally include around 160 residential units and 160,000 square feet of commercial space.
1400 E Wash	**East**	**14 acres**	A collection of several parcels, all owned by the Mullins Group on the west side of the Yahara River. While many of the sites have buildings on them, they are generally underutilized and could house additional space. Using a mix of building types, the site could support nearly 600 dwelling units and 450,000 square feet of commercial space.
Hill Farms	**West**	**21 acres**	Owned by the state, the site was once planned to be sold and use the proceeds to construct a replacement facility. The approved GDP calls for an intensification of 1.4 million square feet and 350 residential units.
CUNA UW	**West**	**60 acres**	Two vacant parcels owned by CUNA Mutual and the UW Research Park. If developed similarly to abutting office buildings and senior housing, it would have the capacity for over 500 housing units and 600,000 square feet of commercial space.
Westgate	**West**	**18 acres**	A new Hyvee is currently under development at the Westgate Mall. Additionally the shopping center's owner has created a redevelopment plan that calls for a total of 250,000 square feet of commercial and 186 residential unites
Wingra Triangle	**South**	**32 acres**	While currently under construction at the northern tip, the remainder of the site is planned for 125 residential units and 630,000 square feet of commercial and clinic space.
Thorstad Chevy	**South**	**15 acres**	The vacant car lot could support approximately 150 dwelling units and 120,000 square feet of commercial if programmed with a mixture of uses.

Figure F: Summary map of major infill and redevelopment areas.



Introduction

The infill and redevelopment assessment was conducted as one element of the Transit Corridor Studies undertaken by the Capital Region Sustainable Communities (CRSC) Consortium. Corridor studies include a Bus Rapid Transit (BRT) and express bus study ("transit study") managed by the Madison Area Transportation Planning Board (MATPB, the area's Metropolitan Planning Organization, or MPO). A market study will estimate demand for transit supportive housing and commercial along the proposed BRT corridors and express (commuter) bus destinations in outlying communities.

The purpose of the infll and redevelopment assessment is to gain a better understanding of physical development capacity that exists along the BRT corridors, by identifying the quantity, type and locations of potential future infill and redevelopment that could occur.

How the Findings will be Used

The infill and redevelopment assessment, transit, and market studies are inter-related and coordinated to integrate land use and transportation planning. The infill study estimates the development potential. The market study uses this development potential, along with other information, to estimate demand for housing and business space, coming from infill and redevelopment, upon start-up of BRT (estimated 2020-2022): Given trends and market conditions, what portion of the available infill and redevelopment areas are likely to develop in the next 10, 20 and 30 years? The transit study then uses this demand estimate as one of the factors generating ridership upon BRT start-up.

Figure 1: A BRT station in Cleveland

What is BRT?

Bus rapid transit (BRT) is high-frequency, limited-stop service that offers faster service and improved urban mobility. BRT has been described as a bus system that acts similarly to a light rail.

Compared to traditional bus service, BRT has the potential for faster service and increased ridership. For example, Eugene, Oregon's EmX service saw a 74% increase in ridership with a 30% increase in speed vs. previous bus service. BRT is best suited for routes that are heavily used by existing or future transit riders and is not a solution for every route.

One factor that makes BRT an especially attractive form of rapid transit is its significantly lower price compared to rail systems. While its difficult to directly compare costs due to location-specific requirements such as bridges, tunnels, right of way, etc., light rail transit systems cost between $40 and $50 million per mile. Commuter rail (which relies heavily on existing tracks for cost savings) ranges between $10 and $30 million per mile. In contrast, BRT systems can cost as little as $3 to $10 million per mile.

There are some key differences between traditional busses and BRT. Most notably, the frequency of trips is higher, typically with 15 minute or better service all day and 10 minute or better at peak times. The distance between stops is increased over typical bus routes. Traditional bus stop spacing is around 1/4 to 1/8 mile, with BRT stations are typically spaced about ½ mile apart.

Bus stops are often replaced with BRT stations, which are generally sheltered waiting areas with distinct architecture. These stations often feature off-board ticket purchase, which allow for faster passenger boarding, further reducing transit times. BRT stations frequently contain informational displays showing the status and anticipated wait time for the next bus. BRT vehicles are generally larger and of a distinct design to reinforce branding messages of rapid transit. BRT systems can also utilize dedicated lanes (busways) to speed transit times, though they can also function well in mixed traffic. Most BRTs have signal priority systems that can extend green lights or shorten red lights to allow the bus to proceed faster.

Once BRT is operational, it can stimulate additional demand for housing and business. Additional demand can result from growing ridership (customers), physical improvements (stations and dedicated travel lanes that convey permanence), and better access to jobs and activities from station areas. Public policies and development incentives also are important in stimulating transit supportive development (also called transit-oriented development).

Transit supportive development, in turn generates new transit riders, which, in turn can stimulate more development. Figure 2 below shows the mutually supporting relationship. The market study, with data from the infill study, will estimate additional demand, resulting from BRT, to 2035 for housing and jobs along the corridor.

The findings could also have some influence on route selection. While many of the initial routing decisions have previously been made, some important decisions remain and development potential along the corridor is one of five considerations. The remaining considerations are:

- Employment within ¼ or ½ mile
- Existing transit ridership along route
- Population within ¼ or ½ mile
- Roadway suitability.

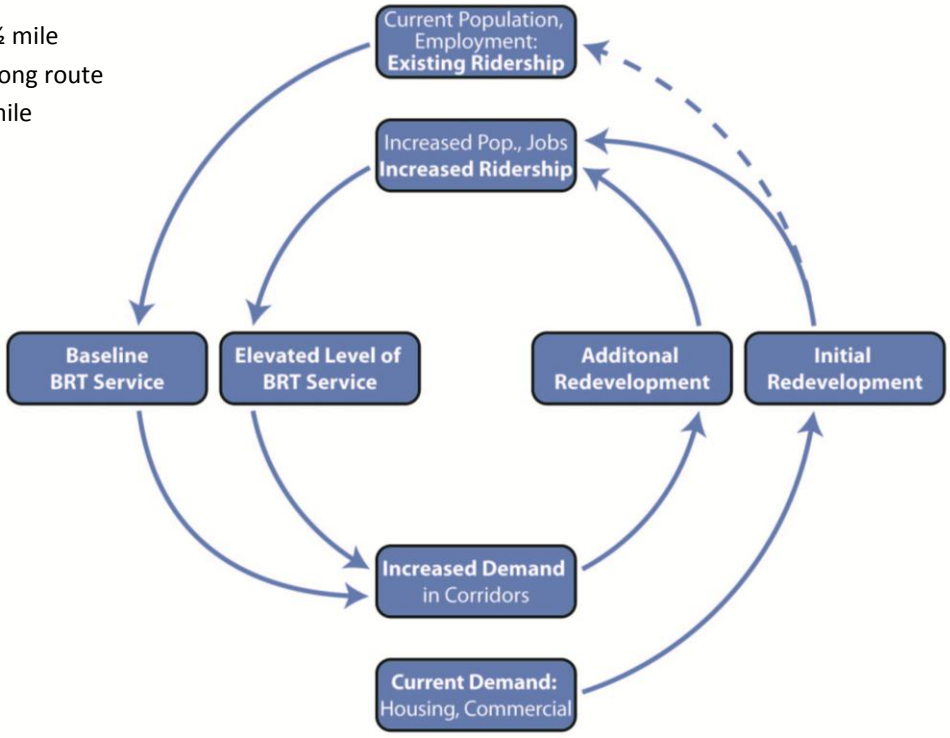


Figure 2: Market demand and BRT potential relationship diagram

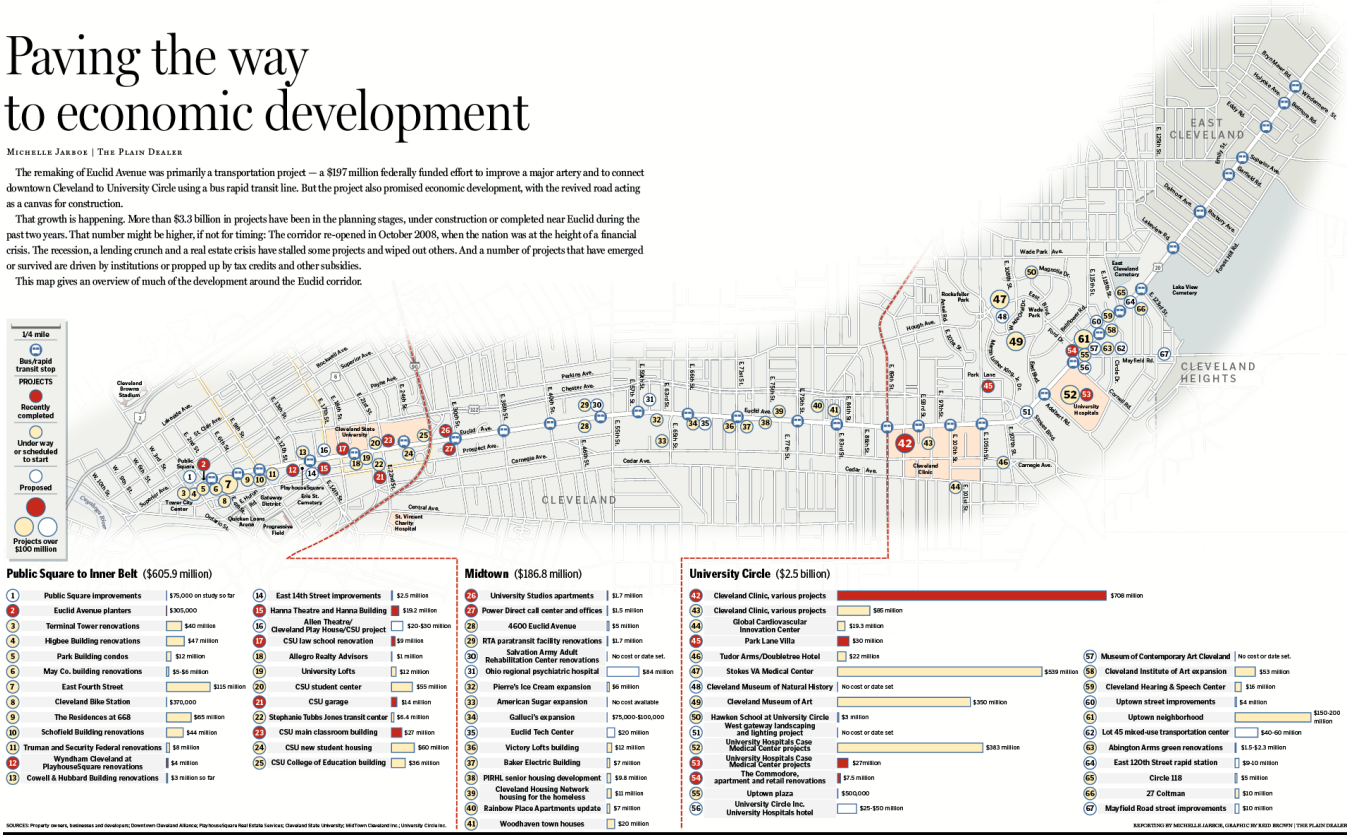
BRT and Economic Development Potential

While modern BRT is a relatively new method of mass transit, some systems have shown the ability of BRT to spur transit-oriented development along the routes. Cleveland's Healthline, which links the city's downtown and University Circle area, is regarded as one of the most successful systems in terms of economic impact, spurring development and leveraging investment in the surrounding corridors. Since the Healthline opened in 2008, over $4 billion in new development and redevelopment has occurred along the corridor. While much of this was institutional uses, including hospital and university facilities, the project is attributed for catalyzing the corridor and spurring housing and commercial development.

Similarly, in Boston over $700 million of development occurred in a 1.5 mile stretch along its Silverline with an equal amount planned. Los Angelis' Orange Line achieved ridership levels projected to take 15 years in seven months, yielding $500 million in developments surrounding station areas. Some BRT systems have not been as successful at creating development along the routes, however this may have as much to do with the timing as any other factor; several BRT systems were developed just before or in the years since the economic downturn of 2008. The lingering side effects of the recession may be limiting growth along these corridors; however the success of these systems is reflected in the increased ridership observed.

While the amount of infill and redevelopment that could occur along the potential BRT corridors in Madison is difficult to determine, this assessment provides some insight in to opportunities that exist. The picture will be further clarified by the market study, which will estimate market demand in these areas with and without the development of a BRT system.

Figure 3: Illustration showing investment and economic development surrounding Cleveland's Healthline



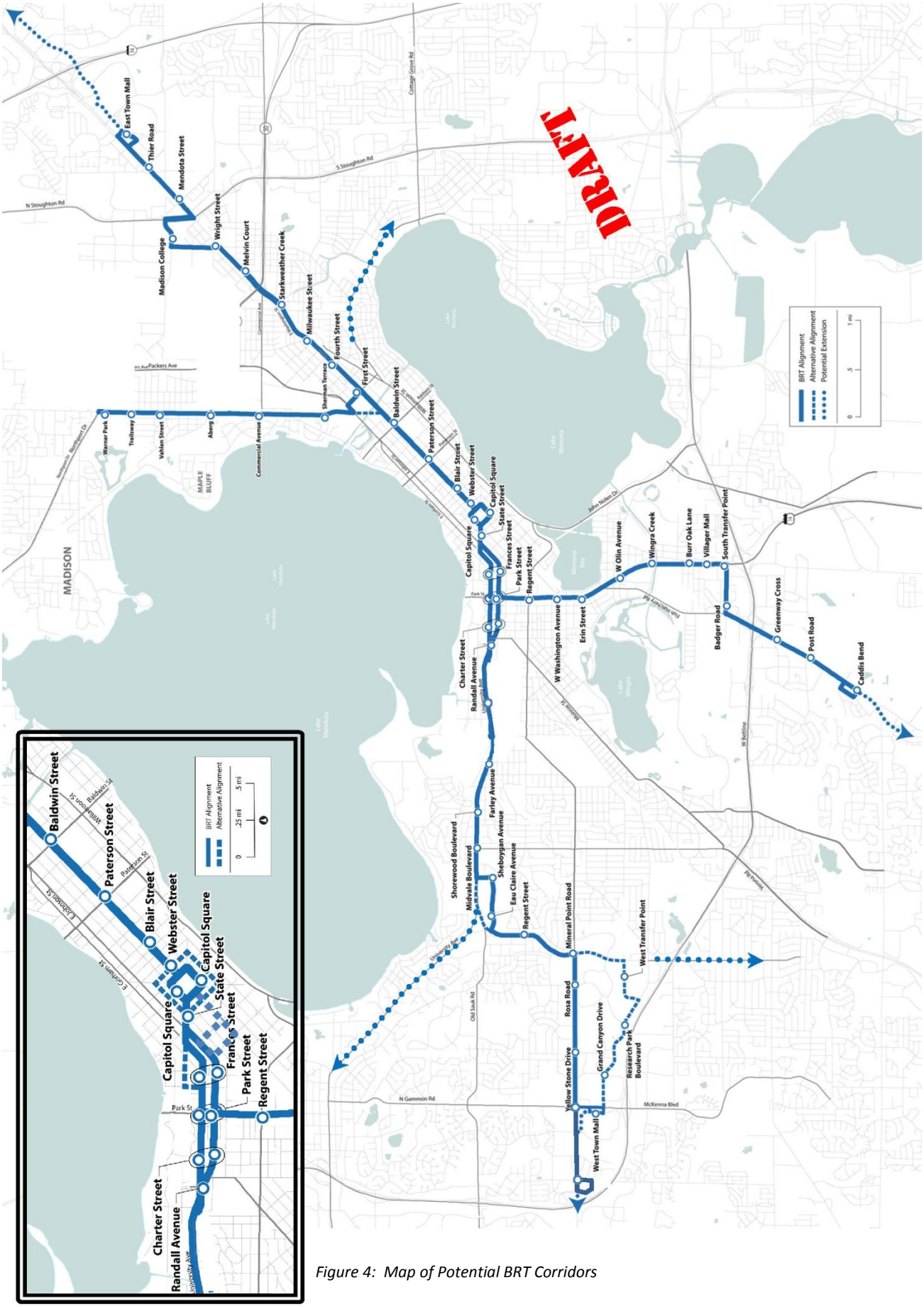


Figure 4: Map of Potential BRT Corridors

The BRT Corridors and Other Potential Future Transit Improvements

There are four primary corridors of study, emanating from the Capitol Square in Madison. The eastern route of study primarily follows East Washington Avenue, extending to East Towne Mall with a slight deviation at Hwy 51 to serve Madison College (MATC). A potential extension would continue east toward Sun Prairie via High Crossing Boulevard. The north corridor travels via Sherman Avenue to Warner Park and Northport Avenue. The western route follows University Avenue, transitioning to Mineral Point Road via Whitney Way. Routing alternatives include Odana Road from Whitney Way to West Towne Mall, and a there is a potential route extension to the planned University Research Park expansion west of the beltline. The south corridor uses Park Street until Badger Road then turning to follow Fish Hatchery Road.

BRT service could coordinate with Metro's existing and potential express bus service for further enhancement of service. Express bus is distinct from BRT and serves a different purpose. It's a limited-stop route that primarily connects residential and employment areas during peak communing hours. For example, Metro's route 75 (downtown Madison and Verona/Epic) has five stops between the Capitol and the beltline, then has no stops until it reaches Verona, where it stops another seven times. This route has four round trips per day, whereas BRT might have between 60 and 70 trips.

In some communities that could be served by future express bus service, a similar assessment of redevelopment potential has occurred as part of Future Urban Development Area (FUDA) planning studies.

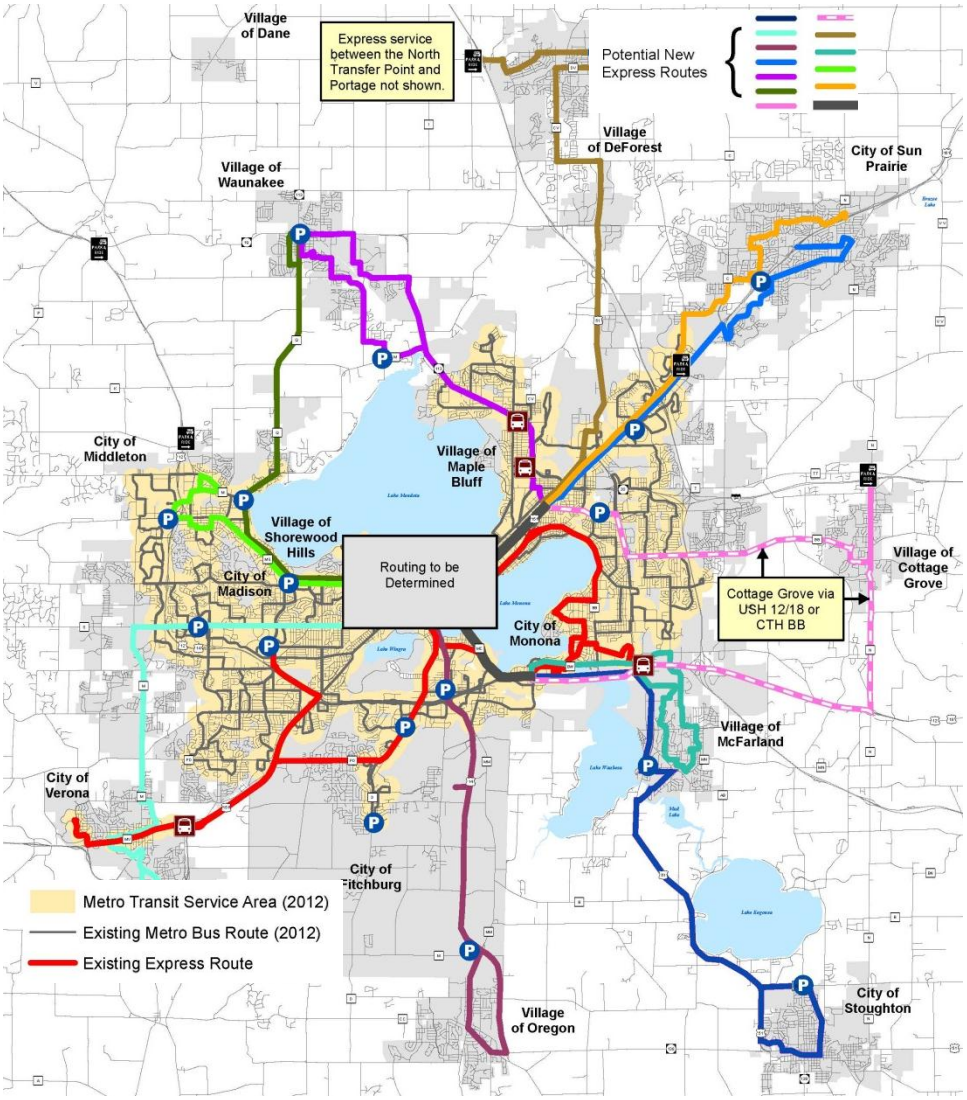


Figure 5: Current and potential future express bus service

Infill and Redevelopment Assessment Methodology

The methodology to estimate the infill and redevelopment potential along these corridors had essentially three components. First potential infill/redevelopment sites were identified using a variety of property information and a visual assessment. Next, a development program, or the mix of uses and building types, was established for each site. A rough estimate on the timeframe of development was also created during this phase. Lastly, the development potential was summarized by corridors as well as timeframe of development. A brief discussion of each component follows.

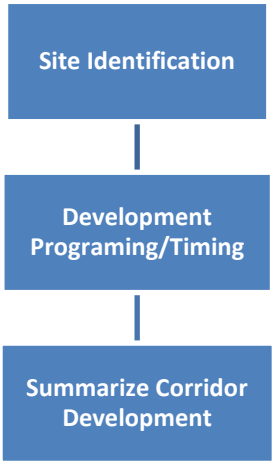


Figure 6: Methodology Diagram

Site Identification

Development sites for the infill and redevelopment assessment were selected based on data from a variety of sources. Along the corridors, a property inventory was established that included parcels located within ¼ mile (a standard value for walking distance or about 2 blocks) of the initial corridors studied.[1] With primary, alternative and potential extensions of routes, the parcel inventory grew to approximately 30,000 parcels.

The following factors were considered when selecting infill and redevelopment sites. See the appendix for corridor mapping and discussion regarding each of the factors.

- Land Value to Improvement Value Ratio
- Change in Improvement Value Since 2000
- Floor Area Ratio (FAR)
- Total Value Per Acre
- Existing Plans and Studies
- Parcel/Site Size
- Ownership Patterns
- Tax Delinquency
- Vacancy

Lastly, a visual inspection of the corridors was also made to select potential redevelopment sites for further evaluation. Each of the above factors was mapped using the parcel inventory discussed previously. The information for each parcel was considered and the project team used its combined professional judgment in determining whether a property would be considered an infill or redevelopment site.

Out of this evaluation, approximately 160 redevelopment parcels were identified. The East Washington Corridor had the most redevelopment sites of all the corridors, followed by the West corridor and the Park Street Corridor.

[1] The initial study corridors used to create the property inventory included alternatives and extensions that have since been eliminated from consideration, upon recommendation of the BRT consultant. See the appendix for a map containing all alternatives initially considered.

The series on images on the right are excerpts from the analytical maps created to show areas that might be prone to redevelopment. In each maps, the red and orange area indicate properties that are more likely to change/redevelop based on a particular metric. Green indicates the properties are more stable per that metric. From the top, the maps are value to improvement ratio, improvement value growth since 2010, FAR (commercial buildings only) and total value per acre.

Hypothetical Timeframe of Redevelopment

Once redevelopment/infill sites were identified (which were often comprised of multiple parcels), they were given a hypothetical timeframe of redevelopment based on all factors discussed. The purpose of the timeframe was to separate and provide distinct information about sites that appeared most likely to redevelop in near future and those that appeared to have redevelopment potential but would face challenges with the site's current characteristics.

The timeframes utilized included short, intermediate and long-term and while these were not considered precise measures, the staff team used 0-10, 11-20 and greater than 20 years as unofficial intervals during discussions. The introduction of BRT could accelerate the timing of some of the sites by creating more demand in locations along the corridors.

Data Limitations

There are some limitations to the above mentioned factors. First is an acknowledgement that assessed value does not equal market value of a property. This is especially true for manufacturing or industrial properties, where assessments are determined by the state. While market value would be best, it would be difficult to obtain for such a large number of parcels, and according to state statutes assessed value is must be within 10% of market value at least once every 5 years.

Another issue with using assessment information is there are no valuation data for properties owned by tax-exempt organizations, such as public agencies, non-profits or churches. This creates holes in the data and these properties must be handled on a case by case basis.

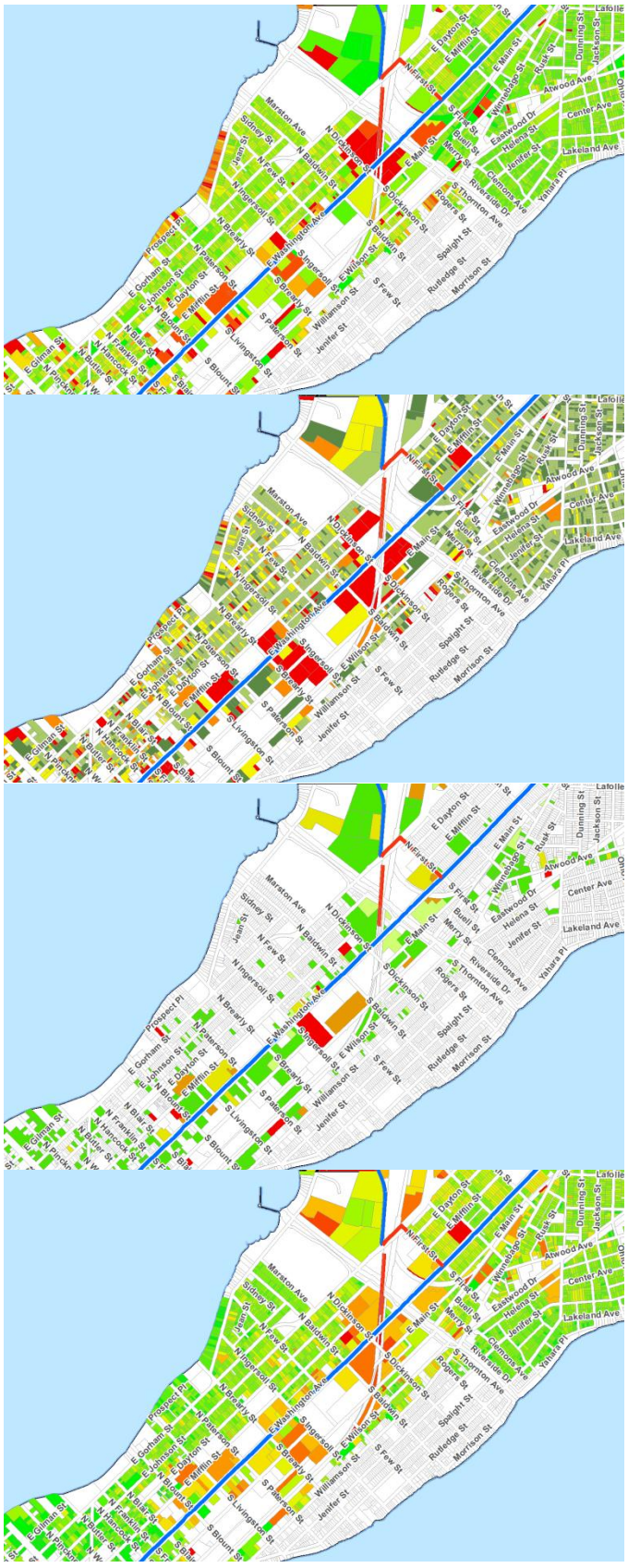


Figure 7: Analytical maps used to identify infill and redevelopment sites.

Sites occupying multiple properties also created challenges. There were several instances where buildings were located on one parcel and associated parking or other use was on an adjacent property. This created sites with some properties having a very high improvement to land values or FAR and other without significant improvement values. As a result of data limitations, and the general uncertainty in estimating future development, the project team sought to use "conservative" estimates (when in doubt, erring on the side of lower development and longer development timelines).

Site Programing

Once sites were identified, the amount of development that could occur on them needed to be established. This development assessment used two different strategies. First, if a building program existed for a site, such as a general development plan (GCP), or a redevelopment plan with detailed estimates of development, the amount of commercial space and residential units specified in the document was incorporated into the assessment. If no building program existed for a particular site, the amount of future development that could occur was estimated using a series of 20 building types, each with specific density values associated with them (commercial FAR and residential units/acre). These building types were applied to various sites or portions thereof to estimate a probable and desirable development outcome, based on the professional judgment of the staff review team. The associated building density figures allowed for calculation of development based on acreage of sites (acreage times density equals housing units or commercial square feet). The 20 building types addressed residential, commercial and mixed-use buildings in a variety of contexts and densities.

The density values for the building types were calculated based on the number of stories, the amount of parking required, how parking would be handled (structured or surface), and the amount of open space on site. These density values were adjusted slightly based on a comparison of existing developments' densities.

Corridor assessment maps on the following pages show the building type numbers. Residential buildings are coded in the teens, commercial in the twenties and mixed-use buildings in the thirties. Within a category, higher numbers depict greater building scale.

Redevelopment Building Types			*Units per Acre*	*Commercial FAR*
Residential	*11*	*Townhomes*	*20*	*0*
	12	*3 Story - surface parking*	*30*	*0*
	13	*3 Story - structured parking*	*55*	*0*
	14	*4 Story - surface parking*	*40*	*0*
	15	*4 Story - structured parking*	*70*	*0*
	16	*6 Story - mixed parking*	*Not used*	*0*
	17	*6 Story - structured parking*	*85*	*0*
	18	8 story - structured parking	*100*	*0*
Commercial	21	1 story - surface parking	*0*	*0.3*
	22	2 story - surface parking	*0*	*0.4*
	23	3 story - surface parking	*0*	*0.6*
	24	4 story - mixed parking	*0*	*0.75*
	25	4 story - structured parking	*0*	*1.4*
	26	6 story - structured parking	*0*	*2.25*
	27	8 story - structured parking	*0*	*3*
Mixed-Use	31	1 story comm, 2 story res; 3 total	*30*	*0.25*
	32	1 story comm, 3 story res; 4 total	*40*	*0.25*
	33	1 story comm, 5 story res; 6 total	*60*	*0.25*
	34	2 story comm, 4 story res; 6 total	*65*	*0.8*
	35	2 story comm, 6 story res; 8 total	*100*	*0.8*

Figure 8: Hypothetical building types used to program infill and redevelopment sites

Sites Not Programmed

Two areas - East Towne and West Towne mall properties and surrounding outlots and large format retail – were not programmed due to the difficulty in estimating future development potential on such large areas. Around the country, there are many examples of enclosed shopping centers from the 1960's and 70's redeveloping into thriving mixed-used retail, residential and entertainment districts.

The most notable redevelopment near Madison is Bayshore Town Center in Glendale, WI, just north Milwaukee. Previously an enclosed mall with strip retail on a 52 acre site, Bayshore added a street system, public spaces and 500,000 square feet of commercial space and new residential units. This nearly doubled the density of the site and brings the total square footage to 1.3 million (0.57 FAR, excluding structured parking). Milwaukee County Transit Service recently upgraded transit service to Bayshore with the introduction of the MetroEXpress Green Line. While not a BRT system, the new route increases frequency, with less than 15 minutes per bus for most of the day, and eliminates half of the previous stops by moving to ¼ mile spacing.

Figure 9: A birdseye view of Bayshore Town Center in Milwaukee. Buildings outline in blue were existing prior to redevelopment.

Another case study worth mentioning is Belmar in Lakewood, CO, where a complete redevelopment of the 104 acre site occurred. The 1.3 million square foot Villa Italia mall (0.28 FAR), which opened in 1966, was demolished and replaced with 1.1 million square feet of retail, 900,000 square feet of office space and 1,300 residential units (a commercial FAR of 0.44 and residential density of 12.5 units per acre). The award-winning project is one mile from Denver's west light rail line (under construction) and is served by local and express busses.

Transformations of this scale may not occur rapidly or at all, and there is no known indication the properties owners are considering such a change. However, its beneficial to understand the long-term potential growth capacity for these areas.

While specific estimates for East and West Town areas are not feasible, their size combined with large areas of surface parking, create the largest potential infill and redevelopment opportunities along the corridors, if not in the entire City. Bayshore and Belmare provide glimpses into the potential of these sites.

If East Towne area was redeveloped with similar increases in density as Bayshore or Belmar, it could add between 500 and 1,000 units and 500,000 to 750,000 square feet of commercial space. One major challenge East Towne will face if it redevelops is its lack of connectivity to surrounding areas. The site is largely constrained by I-94 to the east, rail and environmental corridors to the south and a large hill side to the north. The mall's irregular shape could also create difficulty in phased redevelopment.

Similarly, the West Towne area could add 300,000 to 600,000 square feet and 600 to 1,200 residential units. West Towne, however, does not have some of the site constraints facing East Towne; its better connected with neighboring areas and the more linear shape of the buildings makes incremental intensification more practical.

Together, East Towne and West Towne have the potential for an enormous amount of growth, having the capacity to add between 800,000 and 1,350,000 square feet of commercial and between 1,100 and 2,200 residential units.

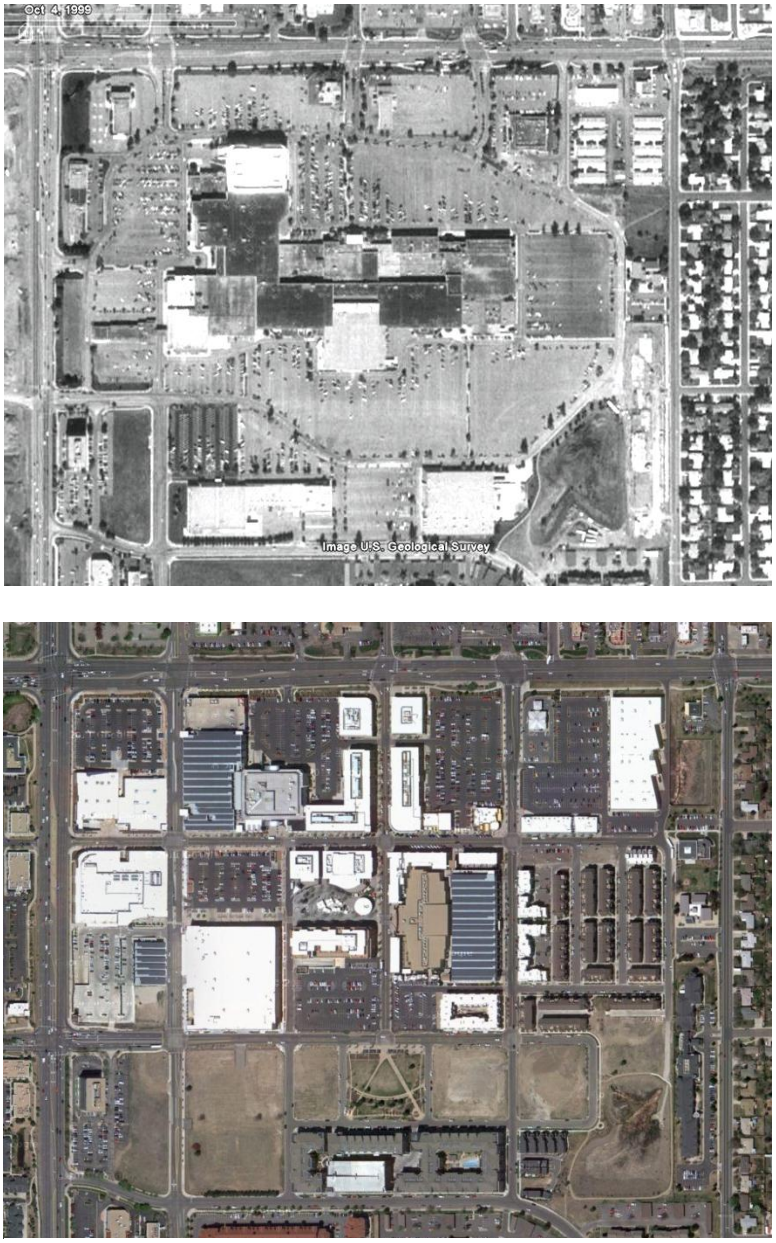


Figure 10: Aerial photos of Belmar before (above) and after redevelopment (below)

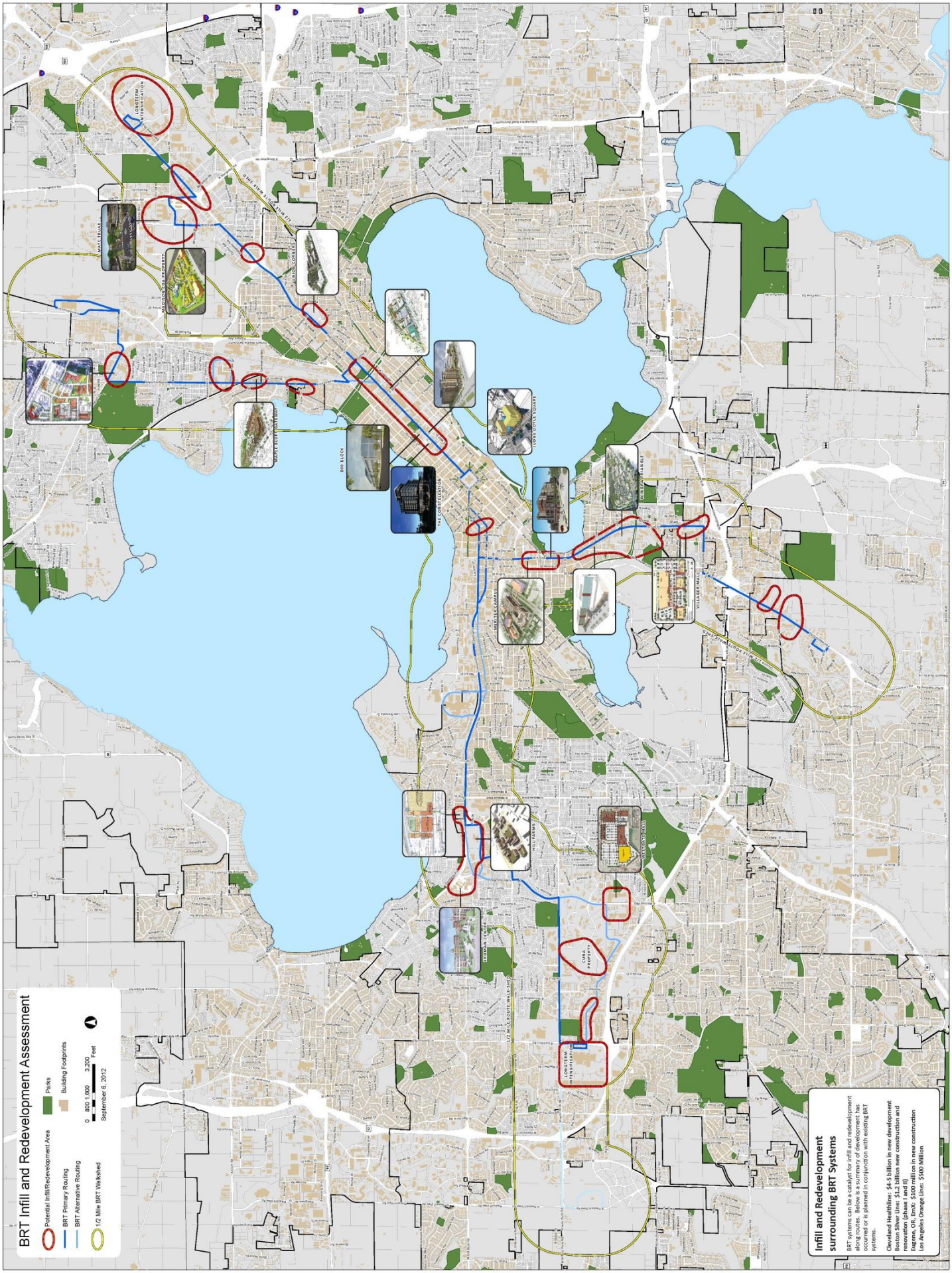


Figure 11: Summary map of major infill and redevelopment areas.

Findings: Infill and Redevelopment Opportunities

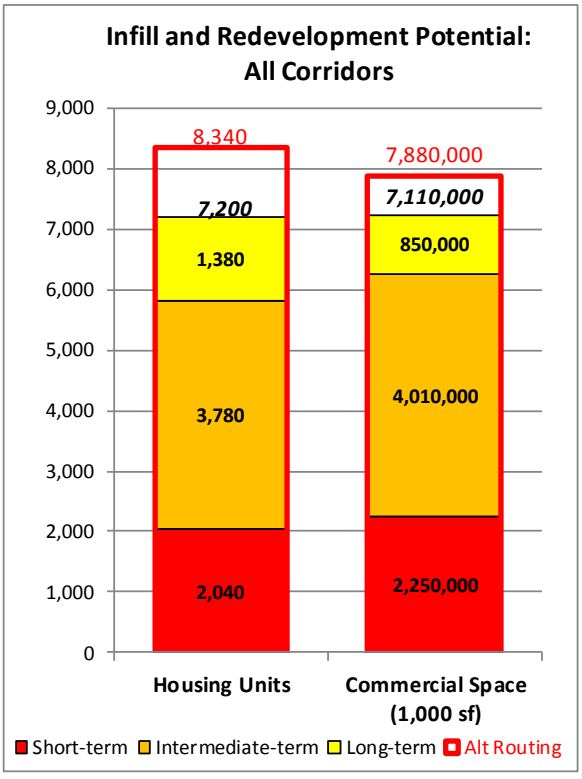
After each site was assigned a building program and all staff reviews were completed, the development potential was summarized for the routes individually and collectively. Overall, the identified sites have the potential to add approximately 7,200 housing units and 7.1 million square feet of commercial space on the primary corridors, not including East and West Towne areas. One alternative routing on the west corridor was still under consideration at the time this report was written (Odana instead of Mineral Point Road), If this alternative routing is used the potential development increases about 15%. The residential component includes townhomes (single family attached) and multifamily units only, since single-family detached housing is generally not suitable along major transportation corridors.

The largest concentrations of redevelopment opportunities occurred in a handful of locations. On East Washington, the isthmus area had the greatest potential, with the Union Corners site and several parcels west of 1st Street. In the longer-term, East Towne area is a major opportunity. On the Park Street corridor, the Wingra Triangle area and surrounding properties (including the Thorstad Chevy site) has the greatest potential, though significant opportunities exist on Park near Monona Bay. On the West corridor, in addition to the West Towne area, major opportunities exist surrounding the intersection of University Avenue and Whitney Way, as well as on the 70 acre CUNA mutual property, spanning between Mineral Point and Odana Roads. The North corridor is characterized by smaller sites and infill of existing developments on Sherman Rd. The map on the previous page shows several of the major redevelopment areas and existing redevelopment concepts that exist for those sites.

Approximately 85% of the identified development potential was believed to have the ability to develop in the short or intermediate terms (0-10 and 10-20 years) based on existing site conditions, however there is no certainty that these properties will redevelop in the specified timeframes. Short-term sites are generally characterized by vacant land, largely vacant buildings or sites where development activity is expected shortly, such as those being sold by the City of Madison Request for Proposal (RFP) process. Intermediate-term sites may have a higher occupancy levels or value to them, but appear as good candidates for development due to low site utilization levels. Long-term sites generally show underutilization and redevelopment potential, but face challenges such as high levels of occupancy, varied ownership, in areas of weak market absorption or near several sites that would be expected to redevelop first.

While it is recognized not all development would likely occur, the potential value and occupancy capacity of these sites is significant. The 160 sites conservatively have value capacity of over $2.6 billion dollars. Values were estimated on a per square foot basis, referencing RS Means Construction Cost Estimator data for the appropriate building type.

Figure 13: Summary of infill and redevelopment potential: all corridors



These sites would result in nearly 44,000 people occupying those sites. This estimate includes a mix of new residents, employees and customers which could utilize the BRT system and provide an additional ridership base. Approximately 1/3rd of these occupants would be residents.

Infill and Redevelopment Potential	Value	New Population (residents, employees, customers)
East Corridor	$1,245,000,000	18,970
North Corridor	$125,000,000	1,980
West Corridor	$620,000,000	10,510
West Corridor Alt Route	*$285,000,000*	*5,680*
South Corridor	$365,000,000	6,550
Total	**$2,640,000,000**	**43,690**

Figure 14: Value and Occupants of Redevelopment

The development estimates represent a likely development outcome[2] if the property redevelops. The market study will provide more information on the likelihood of development in the corridor. Market forces constantly change and will do so in the future.

The following pages will provide discussion and additional details on larger sites in the corridors. Complete maps with all sites and development assumptions are available in the appendix.

[2] This was based on the context and general understanding of recent development trends. This was not a maximum capacity based on existing zoning.

Corridors in Detail: East Corridor

The east corridor travels from the Capitol square to East Towne Mall generally along East Washington Avenue. All together, the East Washington corridor has the capacity for approximately nearly 4,000 housing units and 3.4 million square feet of commercial space in identified infill and redevelopment sites.

Capitol Square to First (Capitol East District)

Between the Capitol Square and First Street, the East Washington corridor is comprised of relatively large parcels often with significant redevelopment opportunity. These include several City-owned properties which are actively being developed through the City's land bank program. BRT could serve as a boost for redevelopment in this area because it would be served by both the east-west and north-south corridor routes.

The City also owns large a parking lot at East Washington and Butler Street (1) serving the nearby State office building, and has issued RFP's for the 700 and 800 block parcels it owns (2). Other major redevelopment options include the Reynolds properties (3) the Mautz Paint site (4) and former Land O'Lakes Dairy (5).

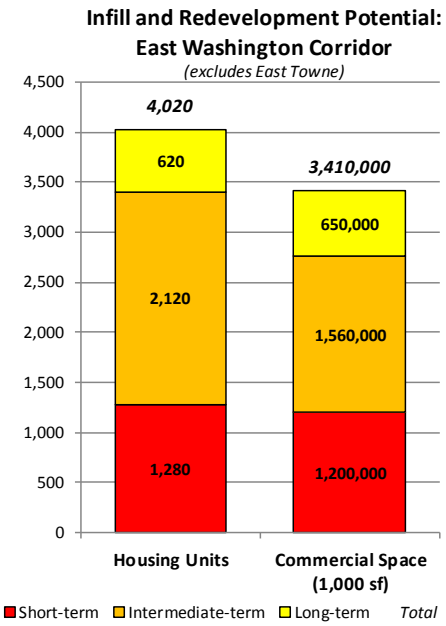


Figure 15: Summary of infill and redevelopment potential: East Corridor

A developer has recently proposed a six story, 250 unit residential building on the Reynolds property. However the proposal does not appear consistent with existing plans and would likely require multiple changes in plans and zoning to be approved.

Figure 16: Infill and Redevelopment sites and programs on the East Washington corridor, Capital to First Street

Development programs for the properties west of the First Avenue are guided by the Capitol East Gateway plan, which details building scales and uses for these sites. Scales of buildings programmed in this area generally range from four to twelve stories, depending on the block face, and the uses are a balance of commercial and residential.

There are some parcels in this area not included in this assessment that are worth mentioning as they have future development potential. First are the MGE storage yards and the City water service building. These two underutilized properties take up a two block area on Main Street between Paterson and Livingston streets. Since MGE, the owner of the primary parcel, is tax exempt, their holding costs are not likely an inducement to sell. Another property with long-term potential is the Metro facility at Ingersoll and East Washington. While the building currently exceeds its bus storage capacity and an additional facility may be needed, its location serves Metro well. A long-term vision for this property may be similar to the Grand River Station Transit facility developed in Lacrosse, WI, which features a transit center, ground level retail, structured parking and nearly 100 residential units above.

The intersection of the Yahara River and East Washington is surrounded by several redevelopment opportunities. On the west side of the Yahara River, there are several underutilized former industrial parcels, along with a vacant historic restaurant and the Washington Square office building (6) and single story commercial buildings (7). With the exception of an auto body shop and a second building, all of these parcels are owned by the Mullins Group. The north corridor's busway crossing the Yahara River may require some land contained in these properties. East of the Yahara and abutting Burr Jones Park is a dated strip retail building with several vacancies and a large parking area at the street (8). To the south is an active lumber yard (9) all of which are an underutilization of highly desirable land.

First Street to Fair Oaks/Wright Streets

The next major redevelopment area is the Union Corners site (10) at East Washington Avenue and Milwaukee Street. The City of Madison recently released an RFP for development on this site and is in the process of reviewing responses. This site is more neighborhood-oriented than those to the west, and a slightly lower scale would be anticipated. Development projections for this site followed details provided in the previous Union Corners general development plan. The two proposals under final consideration envision approximately 160-180 residential units and 160,000 to 185,000 square feet of commercial space.

A cluster of redevelopment areas surround the intersection of Hwy 30 and East Washington (11). Some of these sites have been identified in previous planning studies as appropriate for gateway commercial office, supported by access and visibility from the highway.

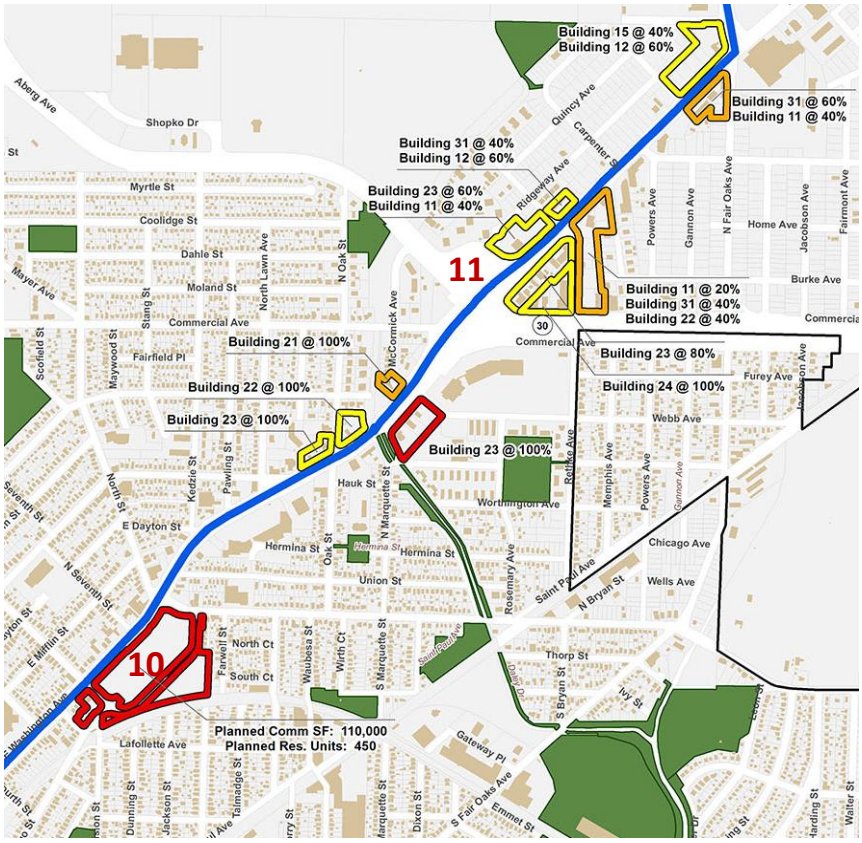


Figure 17: Infill and Redevelopment sites and programs on the East Washington corridor, between Fourth Street and the Hwy 30 area.

Fair Oaks/Wright Streets to East Town

Several major redevelopment sites are situated near Hwy 51 and East Washington. One of the more significant may be the planned expansion of Madison Area Technical College (12), which may add up to one million sf of new institutional space[3]. Across the street from MATC, the Madison Housing Authority plans a redevelopment of its property (13), which would add 180 new homes. These two redevelopments were not included in the assessment calculations, due to their institutional/public nature, however they are discussed as they have the potential to generate significant future ridership.

On the southeast corner of East Washington and Hwy 51, a larger redevelopment area could see a mix of commercial and residential buildings. Across Hwy 51, the new Hyvee grocery store and abutting vacant parcels (14) have the capacity for additional commercial development at the street frontage.

East Towne

East Towne and its many outlot parcels (15) are the last major infill and redevelopment area. The sites have a significant amount of capacity for additional infill development, however connectivity to and through the sites present challenges. As mentioned before, this site was not included in the development capacity calculations because the scale (over 100 acres on the mall properties and nearly 200 with outlots and surrounding properties, uncertainty with potential development mixes and the unknown nature about when or if the parcel will fully redevelop. See the discussion of East and West Towne malls earlier in the report for further detail on these sites and their potential.

Figure 18: Infill and Redevelopment sites and programs on the East Washington corridor, Hwy 51 to East Towne

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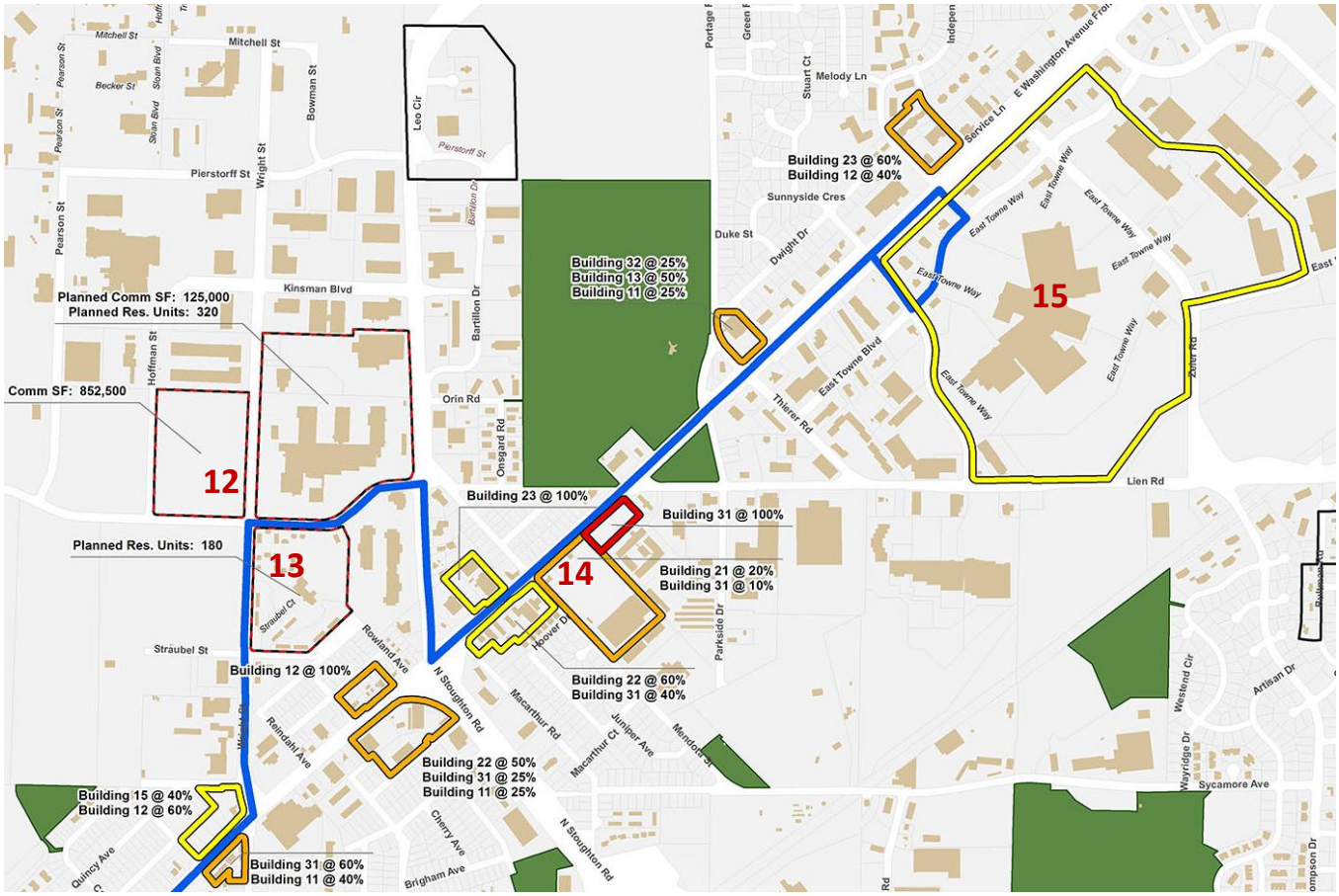


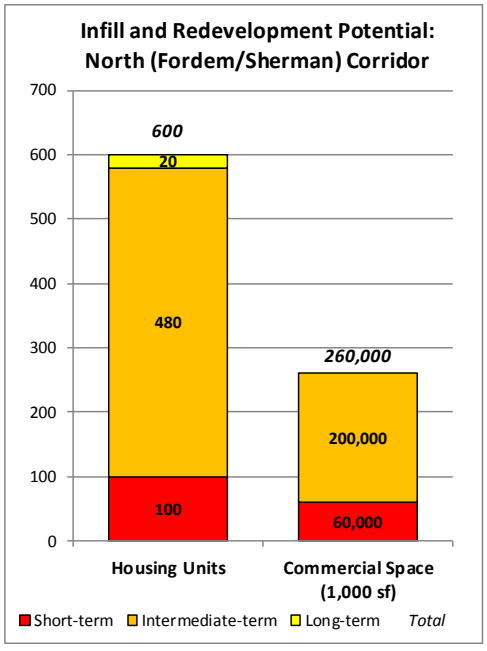
[3] Based on measurements of the campus plan

Corridors in Detail: North Corridor

The north corridor travels generally from East Washington and the Yahara River north via Sherman with service terminating at the airport. Many of the sites are individual parcels and are significantly smaller than those on the East Corridor. Given the relatively few infill and redevelopment sites identified on the north corridor, it's not surprising the identified capacity of the corridor was 600 residential units and 260,000 sf of commercial space.

The triangle at the corner of Sherman and Fordem (16) is the first significant opportunity as the route travels north from East Washington. The prominent corner contains a mix of single story building with large parking areas on parcels overlooking Burrows Park and Lake Mendota. Other major opportunities include the Northgate Shopping Center (17) at Aberg Ave, and the Northside Town Center (18) at Northport Drive. Both are older neighborhood retail centers with large parking areas at the street and have been discussed in the recent Northport-Warner Park-Sherman Neighborhood Plan. While the plan shows long-term replacement of the existing buildings on site, the assessment focuses on mixed use and commercial building infill in appropriate locations on site.

Figure 19: Summary of infill and redevelopment potential: North Corridor



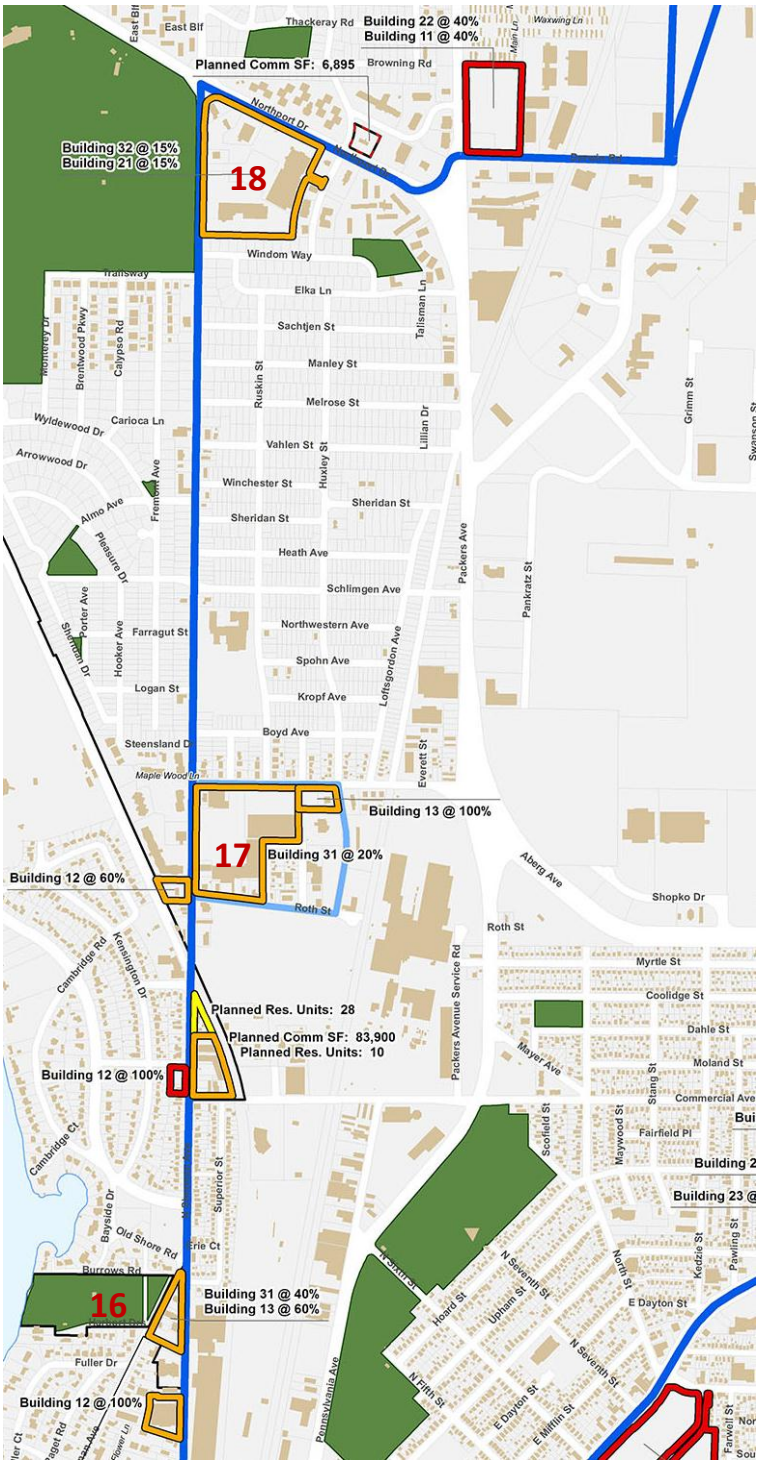


Figure 20: Infill and Redevelopment sites and programs on the North corridor.

Corridors in Detail: West Corridor

The west corridors generally follows University Avenue before turning south on Whitney Way. It resumes traveling west at either Mineral Point or Odana Road. The corridor has the capacity to add nearly 1,500 residential units and 2.3 million square feet of commercial, with the majority of the redevelopment occurring in the intermediate-term. If it follows the Odana Road alternative corridor, the capacity would increase to nearly 2,600 residential units and to 2.9 million square feet of commercial space. Most of this increase is attributed to the large undeveloped CUNA Mutual property, which is significantly larger on its Odana Road frontage compared to its Mineral Point frontage.

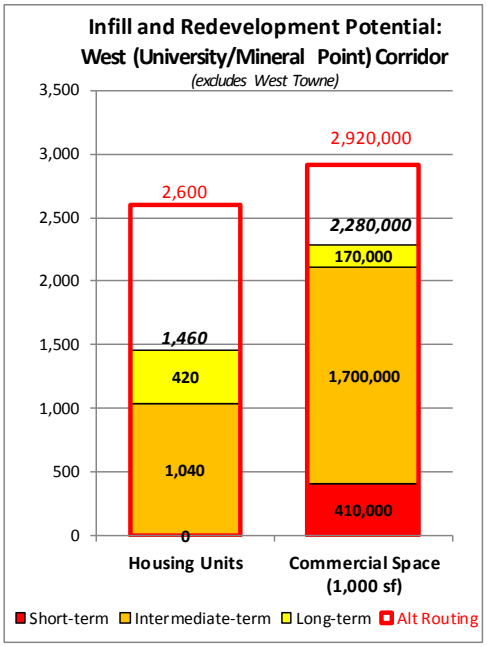


Figure 21: Summary of infill and redevelopment potential: West Corridor

Campus to Whitney Way

Starting from the east, significant redevelopment opportunities do not emerge until west of Campus Drive, with the exception of development outlined in the University of Wisconsin Campus Plan. Like the north corridor, redevelopment sites in this area are relatively small and comprised of few parcels. The Village of Shorewood Hill identified the commercial area at University and University Bay Drive (19) as a redevelopment site, appropriate for intensification of development. There are a select number of sites identified on the south side University Avenue, however the scale, parcel depth and access somewhat limit redevelopment opportunities in this area.

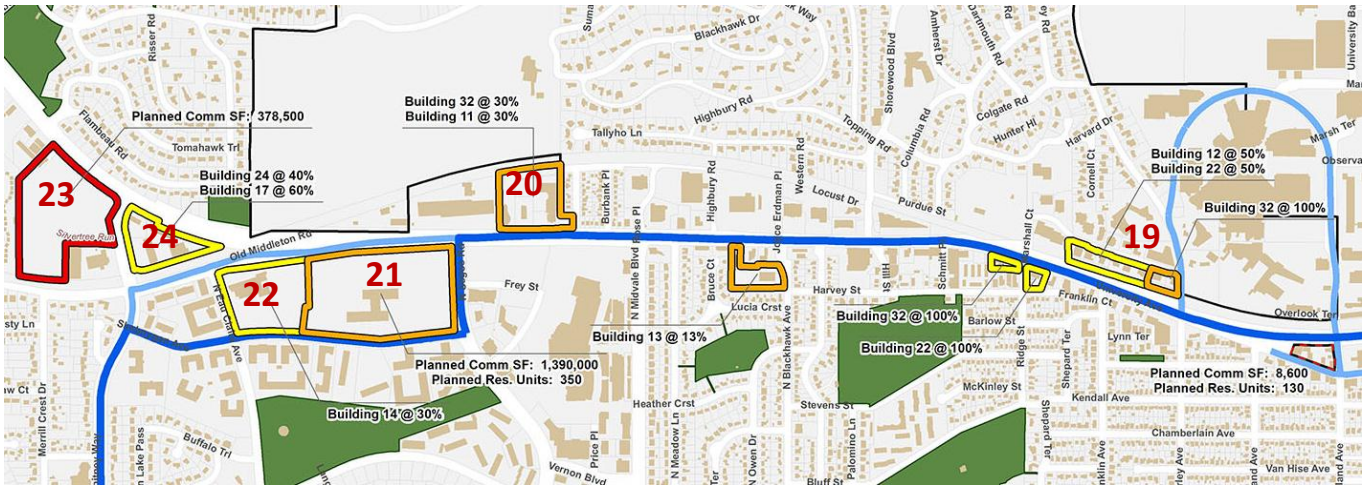


Figure 22: Infill and Redevelopment sites and programs on the West corridor, University Avenue segment

The first significant node of redevelopment sites occurs in the area surrounding University and Whitney Way. The shopping center north of the Hilldale (20) has limited visibility which makes maintaining occupancy challenging and the adjacent circular office tower is described as "dated" by a redevelopment study. That study recommended redevelopment for the site. The 20 acre DOT Hill Farms parcel (21) is a major opportunity, and a general development plan indicated the potential for 1.75 million square feet of new commercial space on the site. The neighboring Red Cross site (22) appears to have more land than is required for its use, which could be used for residential development on Sheboygan Ave. Just West of Whitney Way, the Erdman GDP (23) calls for the development of a health care and employment campus, anchored by UW Health which is currently under construction. Finally, the triangle located between the rail corridor and the intersection (24) appears to have long-term potential to develop beyond its current uses of 1-2 story commercial buildings and transform into a gateway development.

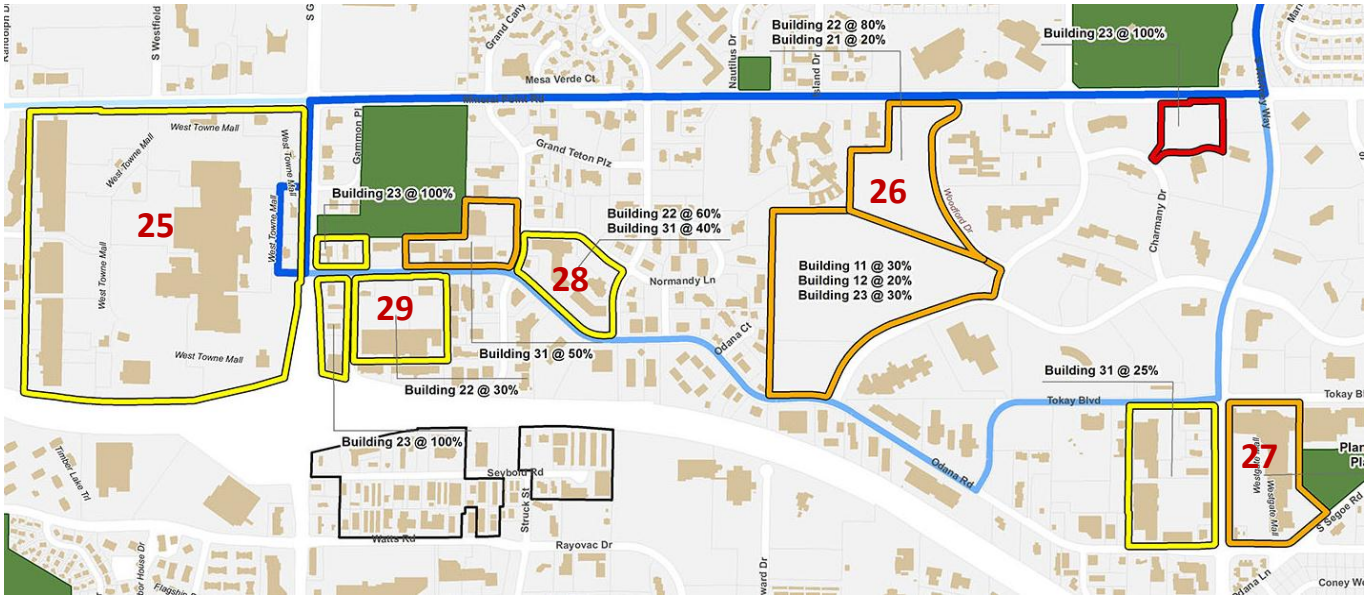
Mineral Point Road and Odana Road

There is relatively little redevelopment opportunities along Mineral Point Road prior to West Towne Mall (25), where the alternative corridor (Odana Rd) meets the primary corridor. One notable exception is the northern end of the CUNA Mutual parcel (26), a 60 acre parcel that extends from Mineral Point to Odana Road. While the future of this parcel is unknown, a mixture of office similar to the neighboring University Research Park would be appropriate.

On the Odana Road corridor, there is more potential for redevelopment. The BRT would serve the Westgate Mall and the Whitney Square shopping center across the street. At Westgate (27), a new grocery store is under construction and a redevelopment plan was created by the malls owner, outlining plans for additional commercial and residential space.

Much of the Odana Road is characterized by dated strip retail, though new development and intensification is happening. The park/stormwater facility on Mineral Point between Grand Canyon and Gammon Road abuts many of these properties and could be an asset that spurs future mixed-use or residential development. The Market Square properties (28), home to a small theater, bank, office and retail space, has struggled to maintain tenants and could transform to a more intense commercial mixed use development. The final site on the Odana corridor is the retail center anchored by Burlington Coat Factory and Joanne Fabrics (29), which could be intensified with future commercial development. One major challenge facing these sites is the lack of amenities to attract high quality development. There is no surrounding neighborhood and the area is primarily strip retail, office and car dealerships. However, the beltline provides significant visibility and accessibility for these parcels.

Figure 23: Infill and Redevelopment sites and programs on the west corridor, Mineral Point/Odana Road segment



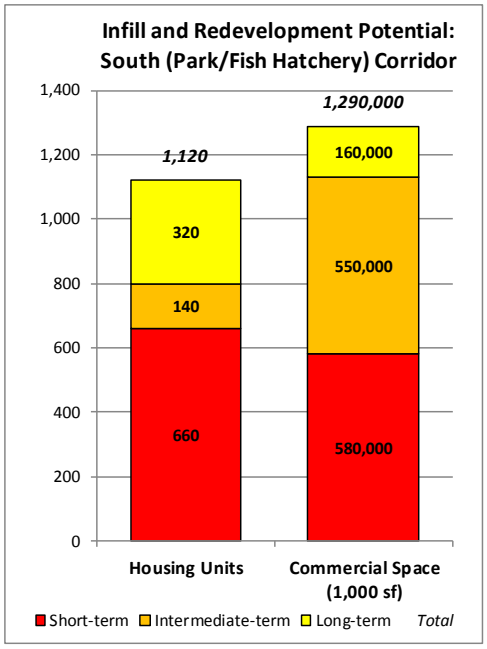
After the Mineral Point/Odana split, the routes return together at West Towne Mall and extend to High Point Road (with a potential extension to the University Research Park). Like East Towne Mall, this large site was not included in the development calculations, but development potential is discussed earlier in the document. West Towne, however, appears more feasible for intensification into a mixed-used retail center due to its building configuration, better street connections to surrounding areas and greater visibility from the highway.

A potential route extension travels west across the beltline on Mineral Point Road and terminates in the future expansion area for the University Research Park. One redevelopment/infill site that could be served by this extension is the newer Prairie Towne Center (not shown). With the introduction of BRT, a limited amount of mixed-use intensification could be developed on the site, adding commercial space and new residential units. This site may also be appropriate for a park and ride, potentially incorporating structured parking. One comment make during discussions about BRT was a park and ride with a grocery store close by may be a way of successfully capturing commutes who would otherwise drive. This site's proximity to the beltline and retail mix (Copps, Target, etc.) make it especially attractive for this purpose.

Corridors in Detail: South Corridor

The south corridor travels from University Ave/Johnson St on Park Street until Badger Road, where it transitions to Fish Hatchery Rd. The corridor continues to the Hatchery Hill area, with a potential extension to the Fitchburg Technology Park. Overall, the Park Street Corridor has the potential to add 1,120 housing units and nearly 1.3 million square feet of commercial space, with approximately half of the potential development identified as short-term sites.

Figure 24: Summary of infill and redevelopment potential: south corridor



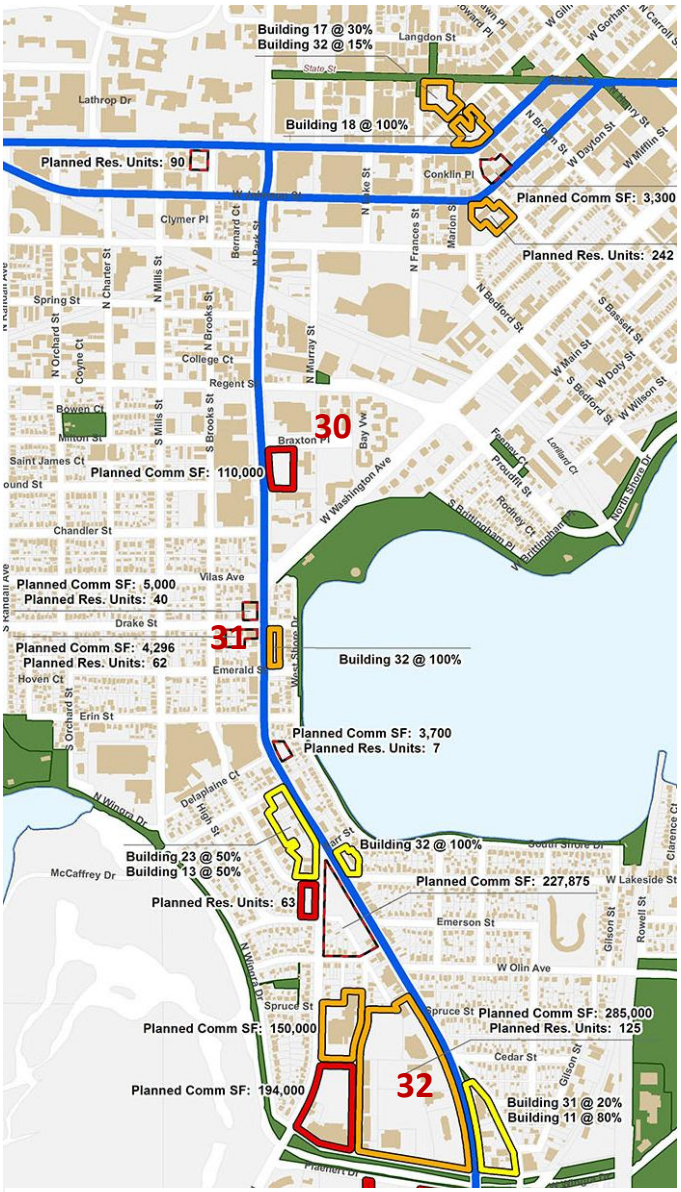


Figure 25: Infill and Redevelopment sites and programs on the south corridor, Park Street between University Ave and Wingra Creek

University Avenue to Wingra Creek

The first cluster of sites identified as the route leaves University Ave is near Monona Bay. Meriter Hospital's Campus Plan outlines their vision for future growth, and includes development on their large parking lot at Braxton Place (30) among other areas. Three blocks south, several sites were identified as being appropriate for future mixed-use development, with residential units on upper floor having lake views. These included planned development on the Ideal Body Shop and Lanes Bakery sites (which were not included in the calculations as they are in the permitting process) as well as the block on the east side of Park Street (31). The proximity to the capitol, campus and the two hospitals has the potential to drive market demand in this area.

The Wingra Triangle (32) is the next major redevelopment area and has been studied by several recent planning efforts. The Wingra BUILD plan identified four key transitional properties total over 13 acres. These include St. Mary's property, the former Dean/Morning Star Dairy (which is currently under construction), Bunbury's parking area and the US Army Reserve parcels. The BUILD study also provided an estimate of future development that could occur on the site, calling for primarily commercial space with complimenting residential uses. In addition to the properties within the triangle, many parcels surrounding the triangle would be appropriate for new mixed residential redevelopment.

Wingra Creek to Hatchery Hill

South of Wingra Creek, the former Thorstad Chevy site (33) is another prime site for redevelopment that was recently purchased. While the large site has significant potential, the geometry and lack of connectivity in this area could hinder site development. A combined development approach addressing surrounding parcels and adding connections to the south and west would increase the development potential.

The Villager Mall (34) on Park Street near Badger Road is an on-going redevelopment site with planned infill sites still remaining in outlot configurations. Across the street, the Comstock Tire and carwash sites could be redeveloped with a complimentary mix of commercial uses.

South of the beltline, the sites generally transition to infill of undeveloped and underdeveloped parcels. These include mostly residential parcels on the east side of Fish Hatchery and commercial or mixed use on the west side. Further south, several vacant parcels are planned for future commercial development near the Fitchburg Technology Center (not shown), which could be served by a potential route extension.

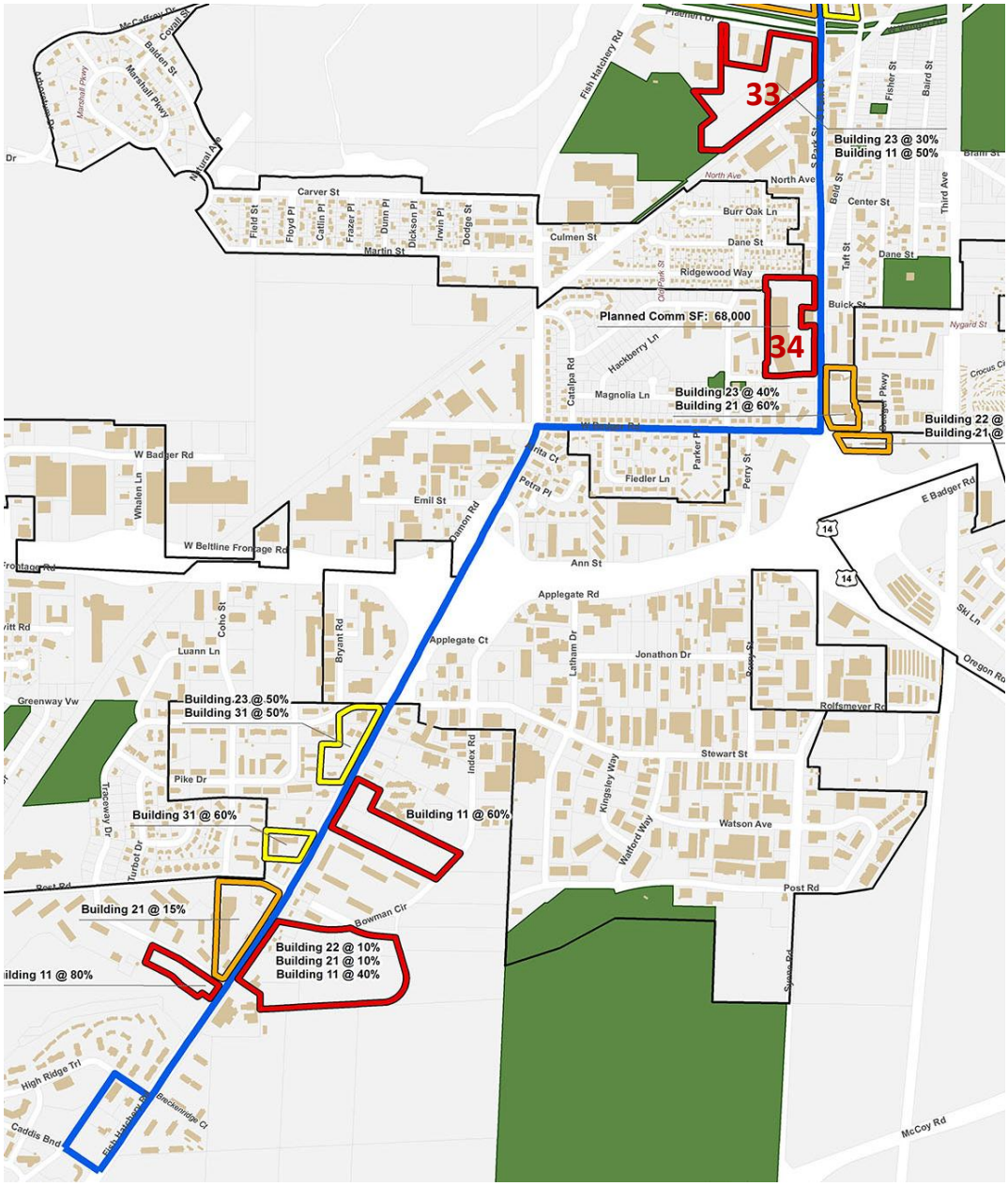
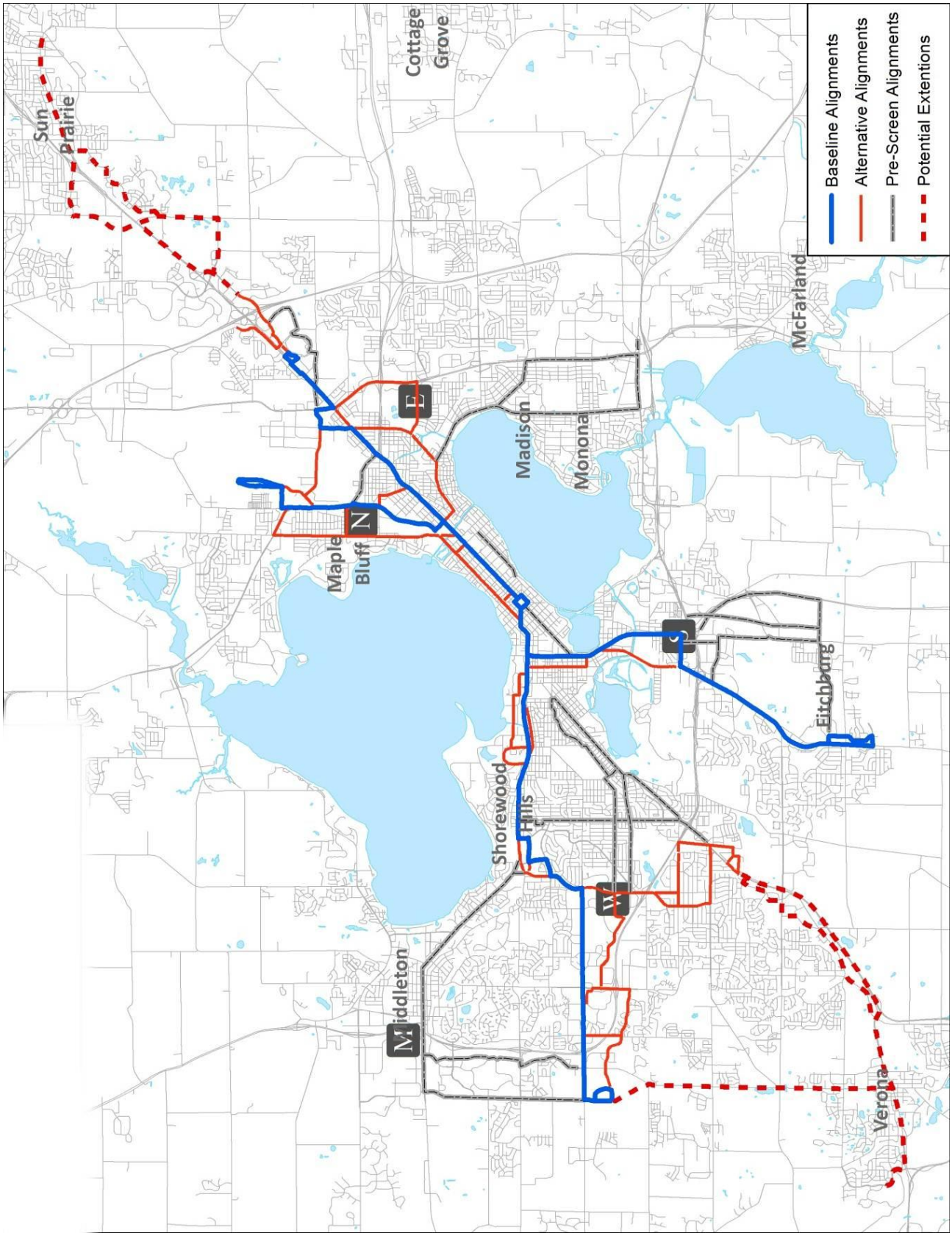


Figure 266: Infill and Redevelopment sites and programs on the south corridor, Park Street between Wingra Creek and Hatchery Hill

Appendix and Supplementary Materials

Map of All Initial BRT Routing Options Studied



Site Identification: Factor Discussion:

Value to Land Ratio: Properties with low improvement values relative to land value are generally underutilized and have a higher likelihood of being redeveloped. A typical properties' land value represents about 20 to 35% of the total parcel value; within the corridors, land value averages 29.2% of a property's total value (or 71.8% of the value comes from the building). While no specific ratio was viewed as a determining factor in site selection, generally a site with land value in excess of improvement value was investigated further.

Change in Improvement (2000-2012): This measures investment, or lack thereof, a property owner made in their building(s). Change in building values was chosen over change in land value because land values are generally more susceptible to external market forces. One such external force is increasing desirability of a neighborhood, which could create gains in value without owners increasing or maintaining their investment in the property. While property values since 2000 have been highly variable, the average property within the study corridors (1/4 mile from the BRT corridors) saw an increase in improvement value of approximately 32% during the 12 year period. Properties that gained less than 20% were given more attention, especially those that lost value.

Floor area ratio (FAR): The ratio of total building area to land area was also considered in order to find properties which are underutilized. Properties with FAR's below 0.2 are generally considered underutilized. For comparison, single story retail with surface parking is approximately 0.25, and the average commercial property in the study area with a building on it has a FAR of 0.41.

While the data was useful in most areas, it only addressed commercial properties and presented some limitations. Building quality was not addressed in the data and could cloud conclusions. For example, some of the storage structures at Marling's Lumber were classified as buildings and contributed to the FAR.

Other challenges arose while interpreting the FAR data. Building assessment data is collected on an individual building basis, not by property. Because of this, if no building exists on a property there is not a record for that property and only commercial properties with a building on then show up in FAR mapping. This is one of the reasons visual inspections of the corridors became important during site selection.

Total Property Value Per Acre: The assumption behind this factor was that buildings on parcels being redeveloped would frequently be demolished, and lower costs per acre would be more attractive to potential developers. It also helped identify properties of lower value within a defined context, such as East Washington between Blair and the Yahara River, since it provided affordability information of specific parcels relative to those in its immediate surroundings. This factor was highly variable depending on location and therefore could not be used to compare value information between locations. For example, property values per acre at the Capitol Square were much higher than those along South Park Street corridor.

Vacancy of Commercial Properties: This was evaluated when data was available. Fully-leased properties are generally profitable and unlikely to be redeveloped in the near future. Alternately, largely vacant properties are more subject to change. Data was gathered from online commercial real estate listings, which provided some information about specific parcels but not a complete picture about vacancy along the corridors. It also did not provide information addressing how long a building has been vacant.

Ownership Patterns: Ownership patterns of abutting parcels were investigated to see if properties were being assembled for a larger development site. Property tax delinquency was also evaluated; however, very few instances of delinquency greater than two years were reported by the Dane County Treasures office.

Infill and Redevelopment Assessment Appendix Maps:

Site Selection Factor: Value to Land Ratio

Site Selection Factor: Change in Improvement (2000-2012)

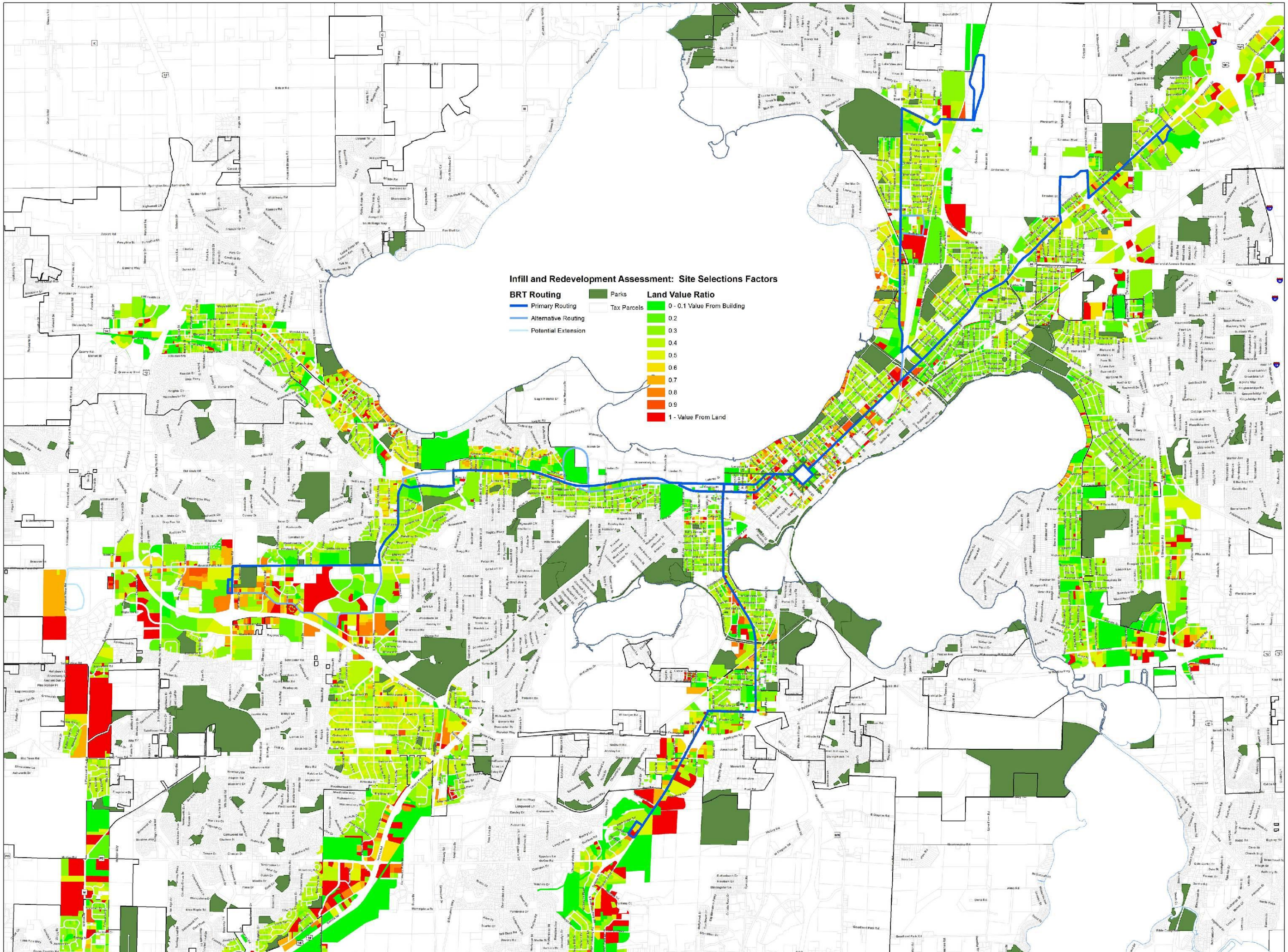
Site Selection Factor: Floor area ratio (FAR)

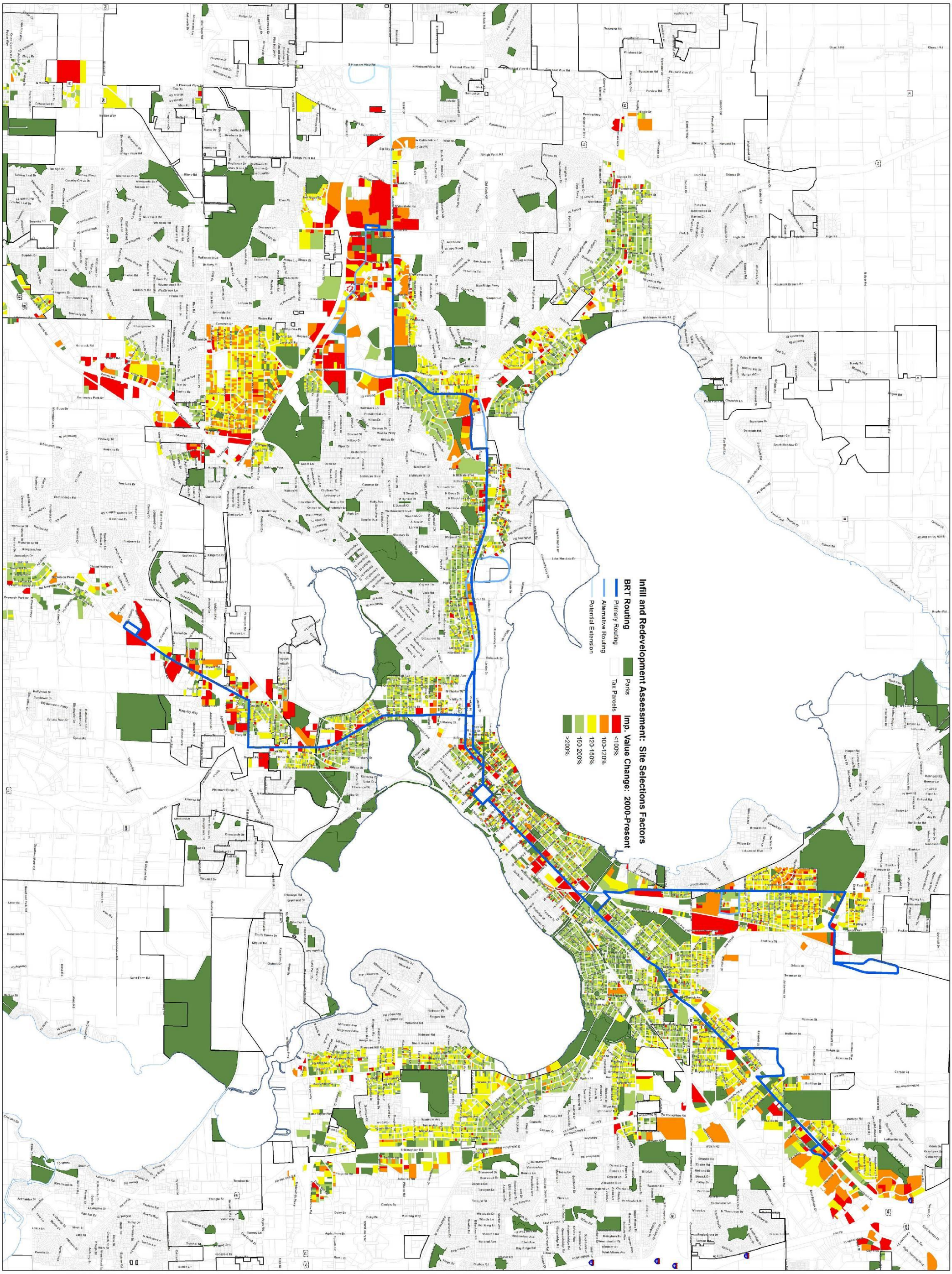
Site Selection Factor: Total Property Value Per Acre

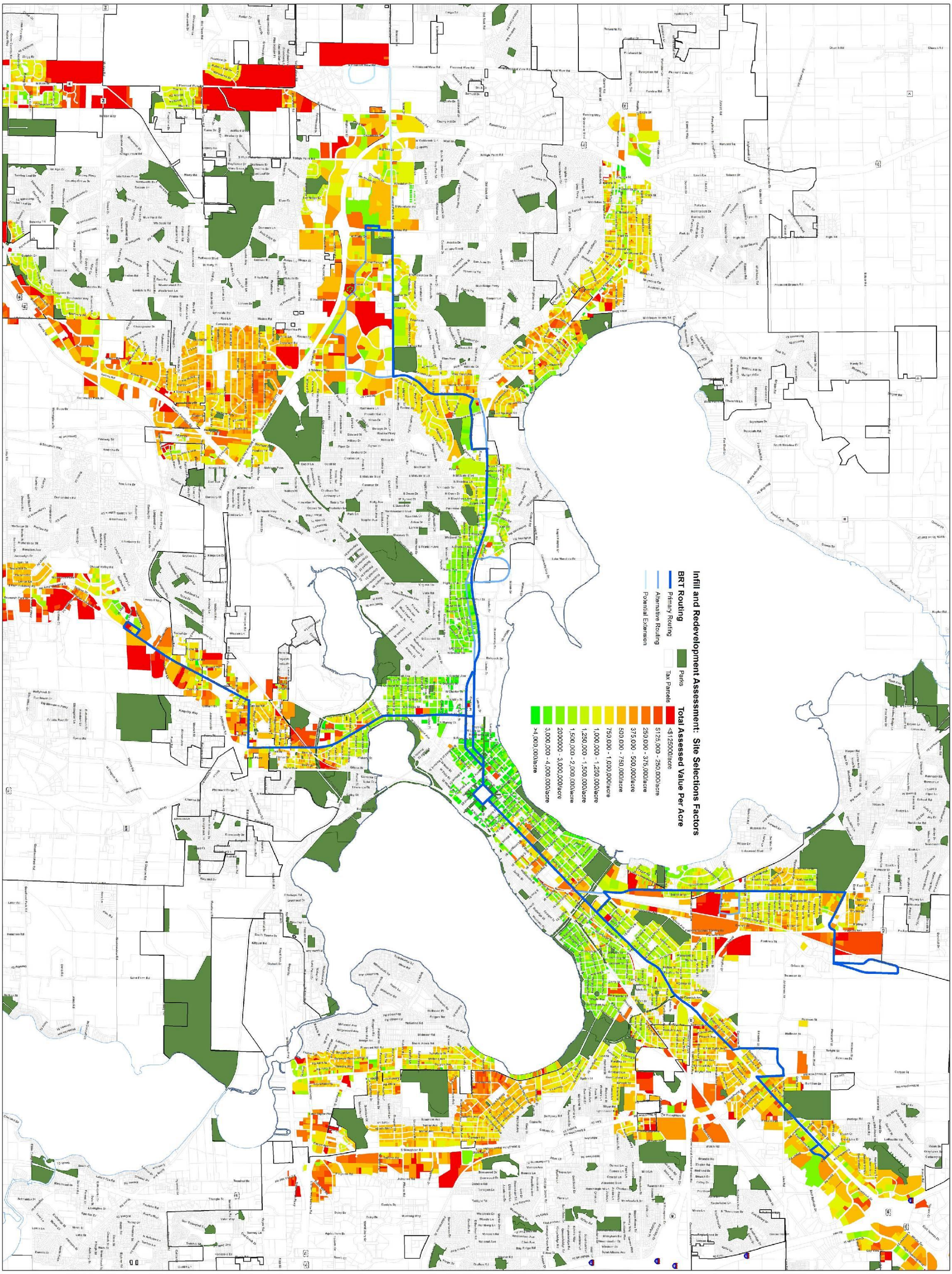
Infill and Redevelopment Sites: System Distribution

Infill and Redevelopment Sites: East and North Corridors (with building program information)

Infill and Redevelopment Sites: West and South Corridors (with building program information)


Infill and Redevelopment Assessment: Site Selections Factors
BRT Routing
Primary Routing
Alternative Routing
Potential Extension
Parks
Tax Parcels
Land Value Ratio
0 - 0.1 Value From Building
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1 - Value From Land


Infill and Redevelopment Assessment: Site Selections Factors
BRT Routing
Primary Routing
Alternative Routing
Potential Extension
Parks
Tax Parcels
Imp. Value Change: 2000-Present
<100%
100-120%
120-150%
150-200%
>200%


Infill and Redevelopment Assessment: Site Selections Factors
BRT Routing
Primary Routing
Alternative Routing
Potential Extension
Parks
Tax Parcels
Total Assessed Value Per Acre
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$125,000 - 250,000/acre
250,000 - 375,000/acre
375,000 - 500,000/acre
500,000 - 750,000/acre
750,000 - 1,000,000/acre
1,000,000 - 1,250,000/acre
1,250,000 - 1,500,000/acre
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3,000,000 - 4,000,000/acre
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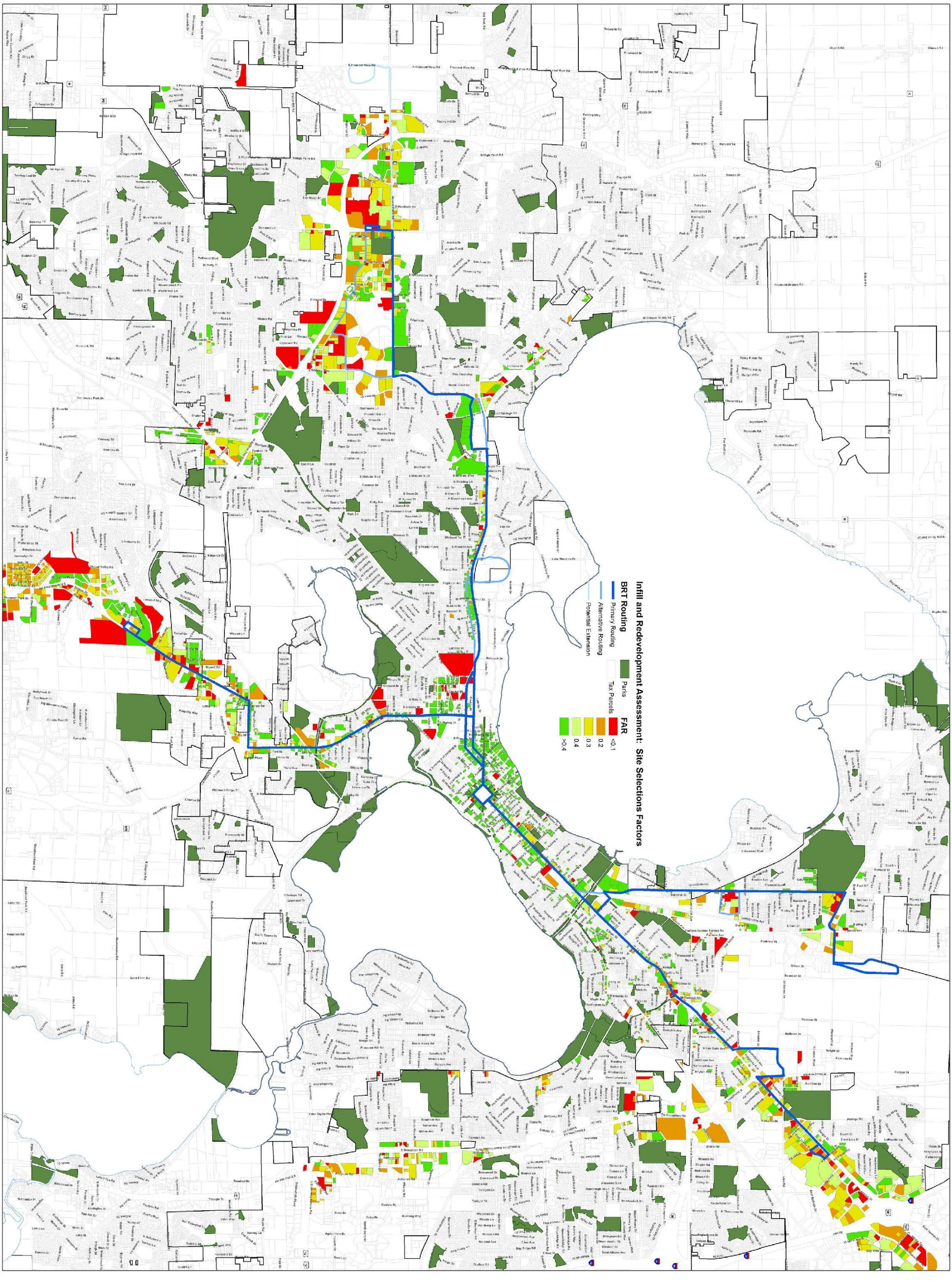
Infill and Redevelopment Assessment: Site Selections Factors
BRT Routing
Primary Routing
Alternative Routing
Potential Extension
Parks
Tax Parcels
FAR
<0.1
0.2
0.3
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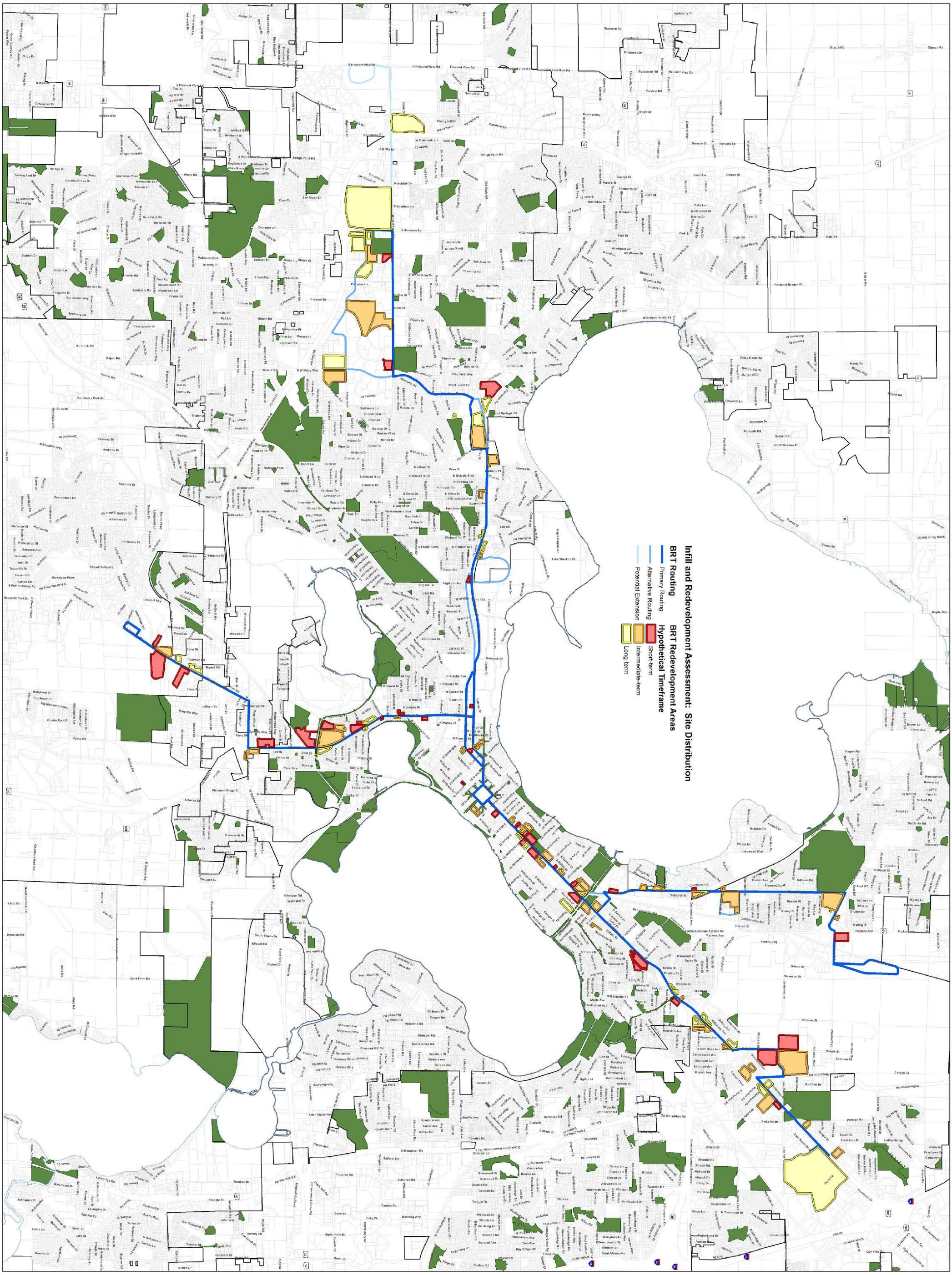
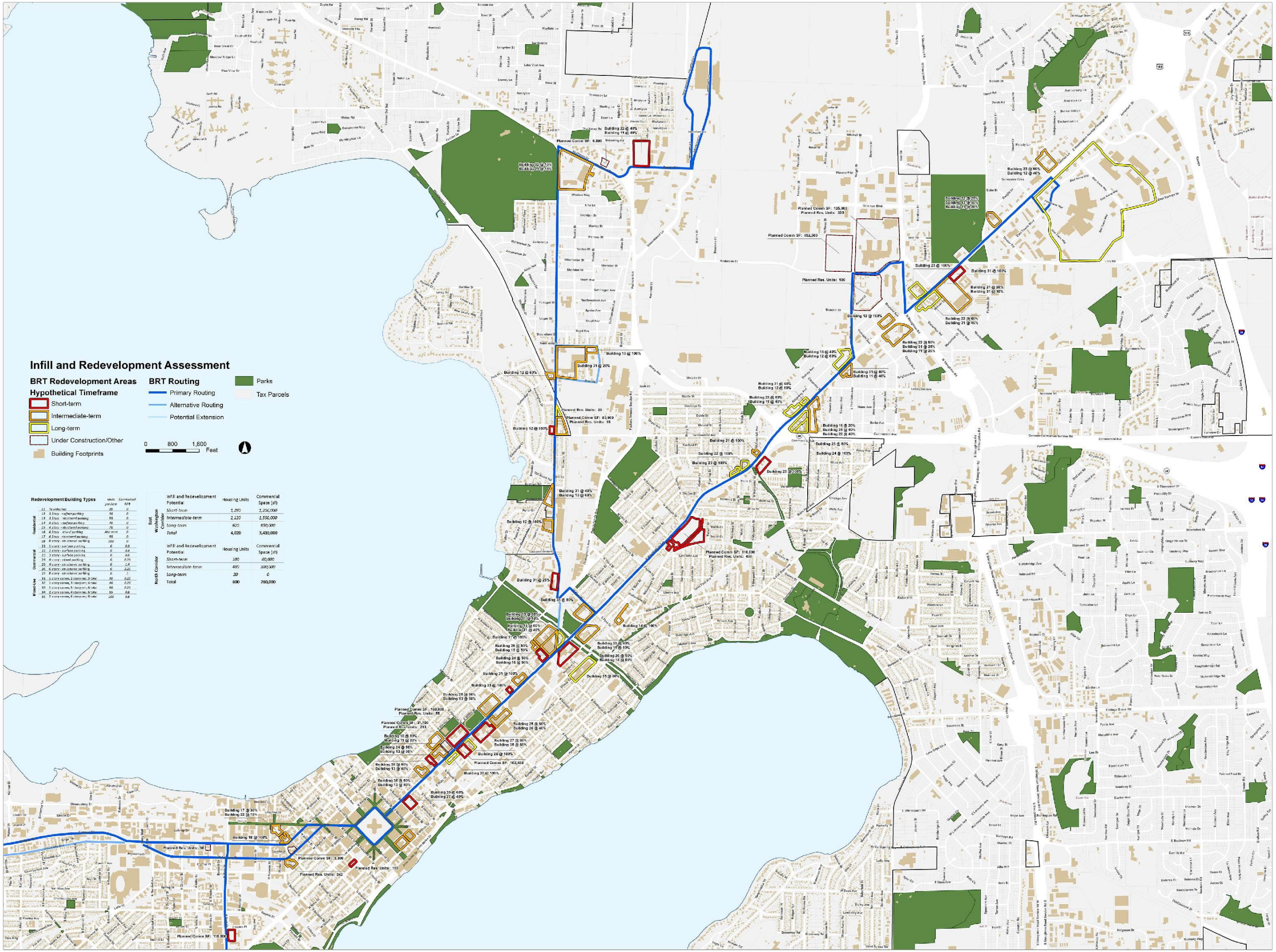
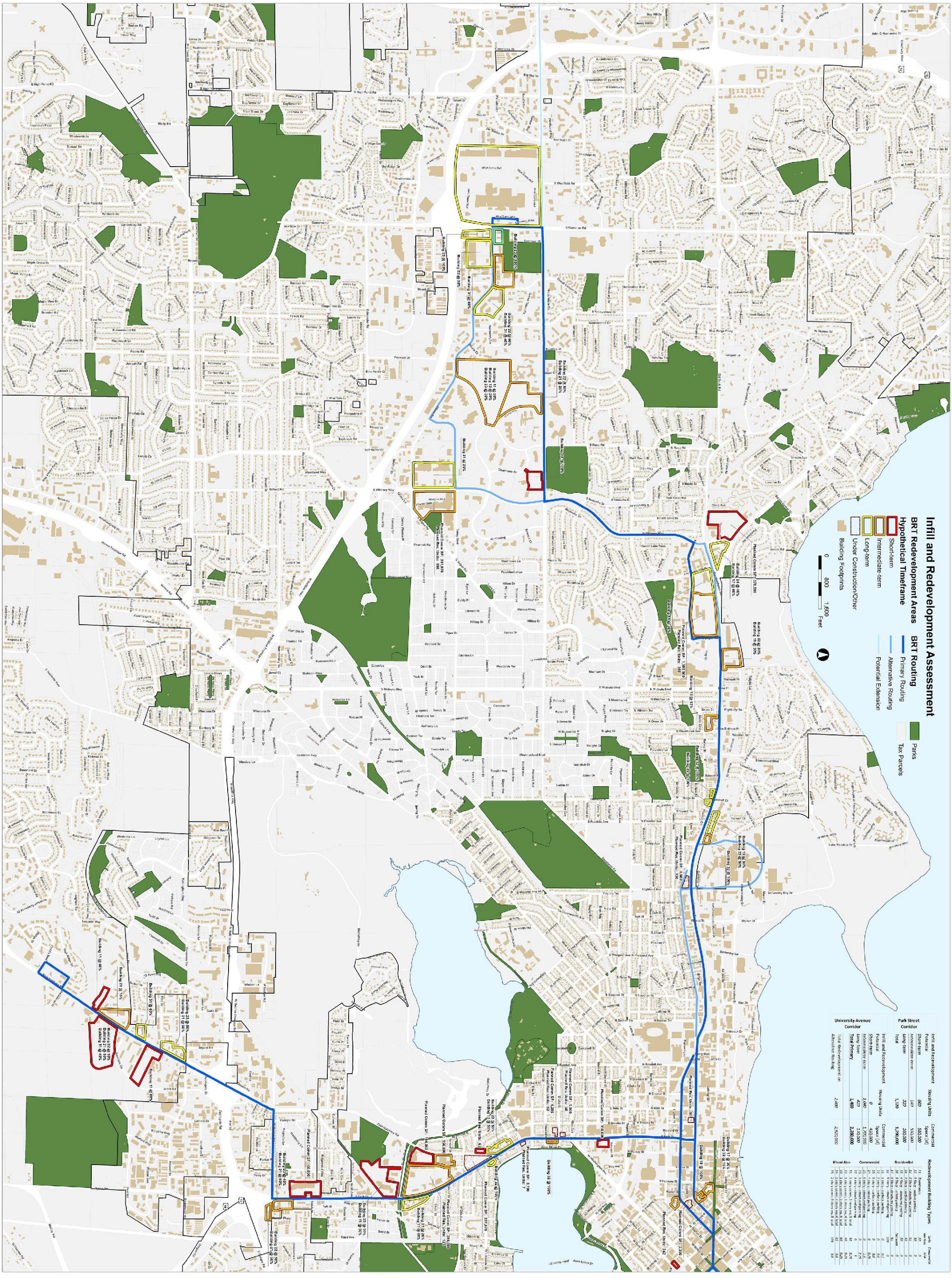

Infill and Redevelopment Assessment: Site Distribution
BRT Routing
Primary Routing
Alternative Routing
Potential Extension
BRT Redevelopment Areas
Hypothetical Timeframe
Short-term
Intermediate-term
Long-term


Infill and Redevelopment Assessment
BRT Redevelopment Areas
Hypothetical Timeframe
Short-term
Intermediate-term
Long-term
Under Construction/Other
Building Footprints
BRT Routing
Primary Routing
Alternative Routing
Potential Extension
Parks
Tax Parcels
0 800 1,600 Feet
Redevelopment Building Types
Residential
Commercial
Mixed-Use
East Wellington Corridor
Infill and Redevelopment Potential
Housing Units
Commercial Space (sf)
Short-term 1,290 1,250,000
Intermediate-term 2,120 1,550,000
Long-term 620 650,000
Total 4,020 3,450,000
North Corridor
Infill and Redevelopment Potential
Housing Units
Commercial Space (sf)
Short-term 100 40,000
Intermediate-term 480 200,000
Long-term 20 0
Total 600 240,000


Infill and Redevelopment Assessment
BRT Redevelopment Areas
Hypothetical Timeframe
Short-term
Intermediate-term
Long-term
Under Construction/Other
Building Footprints
BRT Routing
Primary Routing
Alternative Routing
Potential Extension
Parks
Tax Parcels
0
800
1,600
Feet
University Avenue Corridor
Park Street Corridor
Infill and Redevelopment Potential
Housing Units
Commercial Space (sf)
Short-term
Intermediate-term
Long-term
Total
Total Redevelopment on Alternative Routing
2,600
2,920,000
Total Primary
1,460
2,380,000
Redevelopment Building Types
Mixed-Use
Commercial
Residential