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## MEMORANDUM

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**TO:** TRANSIT AND PARKING COMMISSION  
**FROM:** METRO TRANSIT  
**SUBJECT:** STOP CONSOLIDATION RECOMMENDATION  
**DATE:** 2/12/14

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Metro Transit has been reviewing a number of corridors to reduce travel time and improve schedule adherence by implementing stop consolidation. The current (2013 – 2017) Transit Development Plan (TDP) approved several corridors for this purpose, including Johnson/Gorham. Page 4-2 of the TDP states:

*Adopt a bus stop consolidation program to remove or relocate excessive bus stops in central Madison, particularly on the Jenifer Street, Johnson Street, Gorham Street, and Monroe Street corridors. This project is needed to bring these corridors into compliance with the Transit Planning Guidelines of spacing bus stops, in general, between 3/16- and 1/4-mile (990 to 1,320 feet) apart. The stop consolidation program should include substantial public outreach and sufficient data collection and analysis to identify the appropriate bus stops for removal or relocation.*

During the process of identifying the Johnson/Gorham corridor for this project, Metro Transit staff met with Alder Ledell Zellers and Tenney-Lapham Neighborhood Association President Joe Lusson. Staff also presented the plan and solicited feedback at the Tenney-Lapham Neighborhood Association annual meeting on October 24, 2013 at which there were over 100 people in attendance. In the Tenney-Lapham Neighborhood Association Winter 2014 Newsletter on page 4, it was reported:

Representatives of Madison Metro came to the TLNA Annual meeting to outline proposed changes to the placement and number of bus stops along E. Johnson Street as well as similar changes proposed for East Gorham Street. They are planning to eliminate a few stops on both streets to increase route speeds. In addition a public hearing was held to allow for “Work between the hours of 7:00 PM to 7:00 AM...on a limited basis when deemed necessary...” during the 2014 E. Johnson reconstruction project. Such work must be preapproved by the City Engineer. This is a relatively standard provision for the magnitude of work being done and no neighborhood objections have come forth.

Based on this exploration and the feedback gathered, Metro Transit recommends that a stop consolidation plan thinning stops in that corridor to every other block rather than every block be implemented in conjunction with corridor improvements to be made in the summer of 2014. The target for the changes is September 2014.





Please see the attached map marking which stops will be consolidated and other documents providing more information about stop consolidation.

# Proposed Bus Stop Reductions/Relocations Project



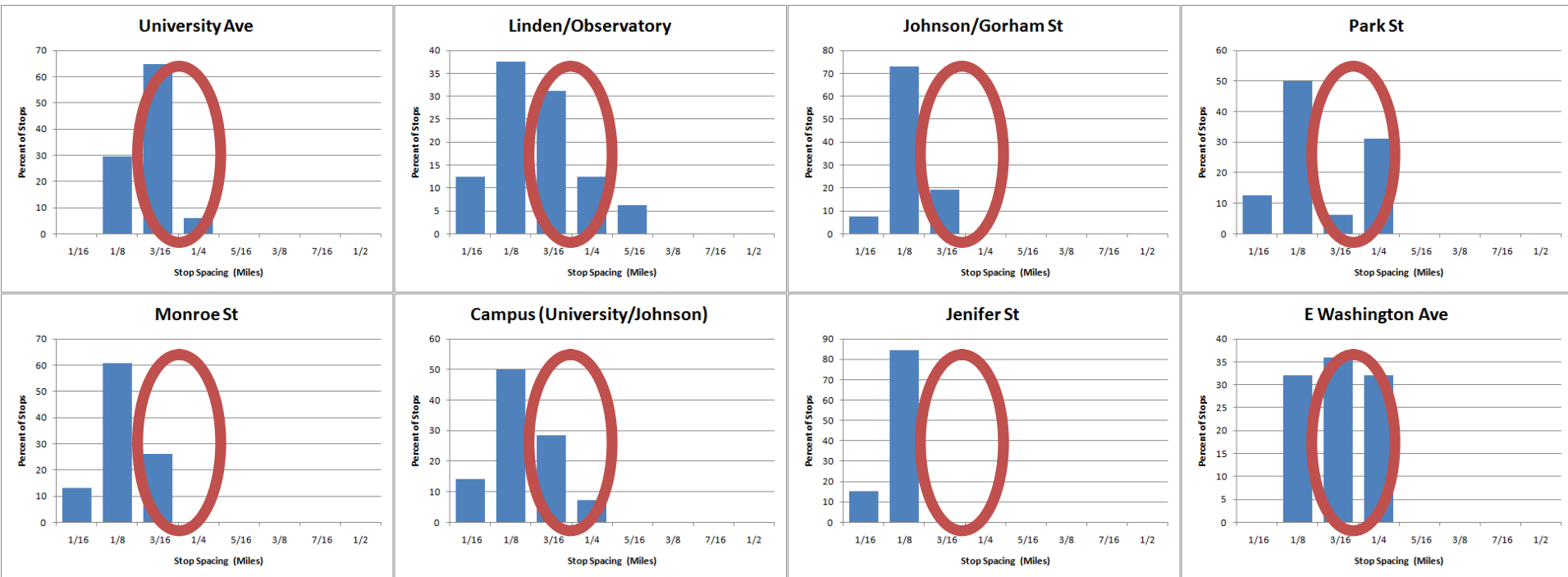
## Legend

### Bus Stops

-  Proposed inbound stop spacing on E. Gorham.
-  Other existing inbound stops
-  Outbound stops
-  Proposed stop removal



# Bus Stop Spacing





Bus stop spacing — the distance between bus stops — involves a trade-off between area coverage with convenient pedestrian access to transit and the speed/reliability of the transit service. Bus stops placed excessively close together may result in a higher number of starts and stops that increase travel time; however, bus stops that are spread too far apart may increase the walking distance or reduce the ¼-mile coverage area of the transit system.

Several transit corridors in central Madison and peripheral Madison shown in Figure 29 were analyzed to determine the general characteristics of bus stop spacing in the Metro Transit service area. The central Madison corridors consist of a variety of higher speed urban arterials (East Washington Avenue, Park Street, and University Avenue) and lower speed streets (Jennifer Street, Johnson/Gorham streets, Mills Street, and Monroe Street). Madison’s geography is relatively free of bridges, open space, steep topography, and other features that would necessitate more closely or widely spaced stops that would influence this analysis.

## Bus Stops and Amenities

Metro has about 2,000 bus stops throughout the service area. About half of the stops are near-side (buses stop before they pass through an intersection) and about half are far-side (buses stop after they pass through an intersection), with about 300 stops located mid block or within an intersection. The bus stops within central Madison are more likely to be near-side than are bus stops within the peripheral service area. As described in Section 2, 193 bus stops are equipped with shelters.

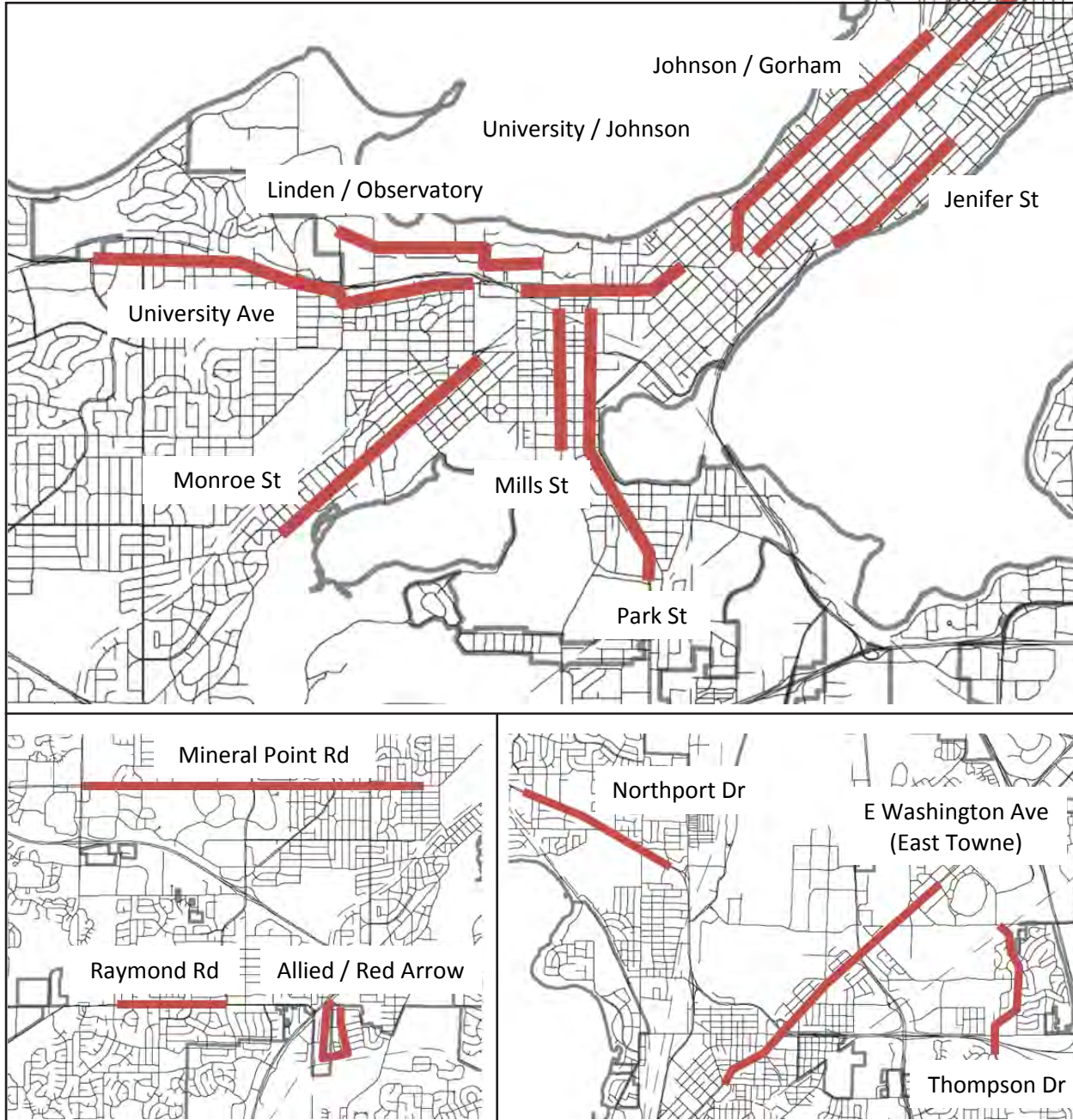
**Table 14**  
**Number and Location of Metro Bus Stops**

Location	Number
Far Side	931
Near Side	808
Other	297
Total	2,036



Corridors in Central Madison and Peripheral Madison Analyzed for Bus Stop Spacing

E Washington Ave  
(Isthmus)



In general, the higher speed roadways in central Madison have a longer average stop spacing (0.14 to 0.18 miles) than do lower speed roadways (0.10 to 0.12 miles). Exceptions occur at Linden Drive and Observatory Drive – the routing for part of Route 80 – where stops are 0.15 miles apart, on average. The peripheral corridors, which are mostly higher speed roadways, generally have a longer

average stop spacing (0.14 to 0.20 miles) than the central corridors. Unsurprisingly, central Madison corridors generally have a higher average number of boardings per stop: 16 to 90 average boardings per weekday (excluding the Madison CBD and UW Campus) compared to 12 to 27 on peripheral corridors.

**Table 15  
Bus Stop Spacing Analysis**

Corridor	From	To	Avg Weekday Boarding Per Stop	Total Distance (miles)	Number of Stops	Average Spacing (miles)
<b>Central Madison</b>						
University / Johnson	Randall	State	425	1.99	16	0.12
Linden / Observatory	Charter	University Bay	316	2.63	18	0.15
E Washington Ave (Isthmus)	Webster	Milwaukee	37	4.73	27	0.18
Johnson / Gorham	Cap Sq	First	67	3.47	28	0.12
Jenifer St	Baldwin	Blount	27	1.49	15	0.10
Park St	University	Wingra	78	2.58	18	0.14
Mills St	University	Erin	33	1.74	15	0.12
Monroe St	Breese	Glenway	16	3.04	25	0.12
University Ave	Breese	Segoe	90	2.98	21	0.14
<b>Peripheral Madison</b>						
Mineral Point Rd	Gammon	Toepfer	12	5.99	30	0.20
Allied / Red Arrow	Thurston	Thurston	18	2.50	18	0.14
Raymond Rd	Whitney	McKenna	16	1.99	12	0.17
Northport Dr	Packers	Kennedy	23	3.05	16	0.19
E Washington Ave (East Towne)	Milwaukee	Eagan	27	5.33	27	0.20
Thompson Dr	Swanton	Lien	10	2.73	18	0.15

**Figure 30**

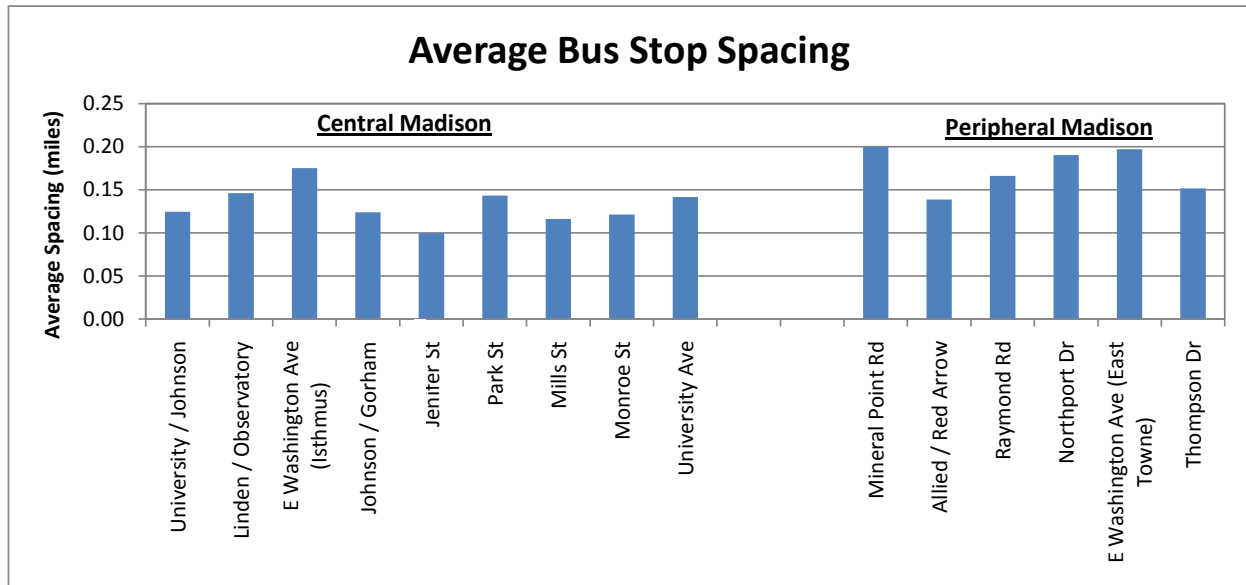
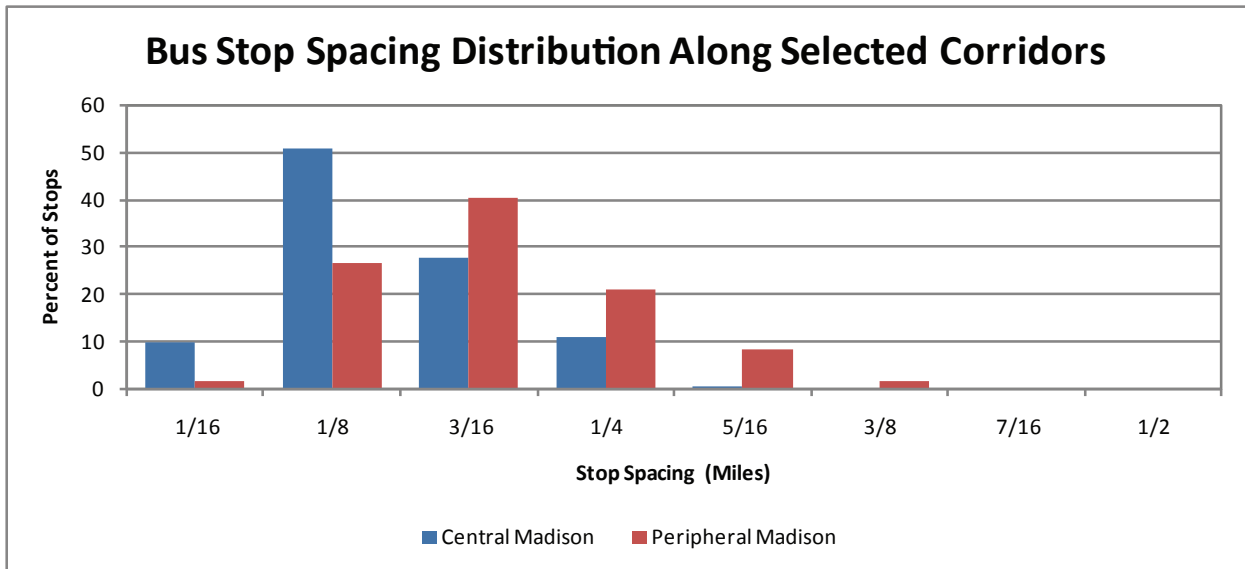


Table 13 and Figure 30 show the average bus stop spacing and boardings per stop for the different corridors. Figure 30 shows the bus stop spacing distribution in 1/16-mile increments for the selected corridors in the central and peripheral areas. Both central and peripheral areas have a relatively normal distribution of bus stop spacing with

few outliers. In the central Madison area corridors (shown in blue), about 50% of bus stops are about 1/8 mile apart. The majority of the rest are 3/16- to 1/4 -mile apart, with a few closer together. In the peripheral Madison corridors, bus stops are a little further apart on average, with 40% being about 3/16-mile apart.

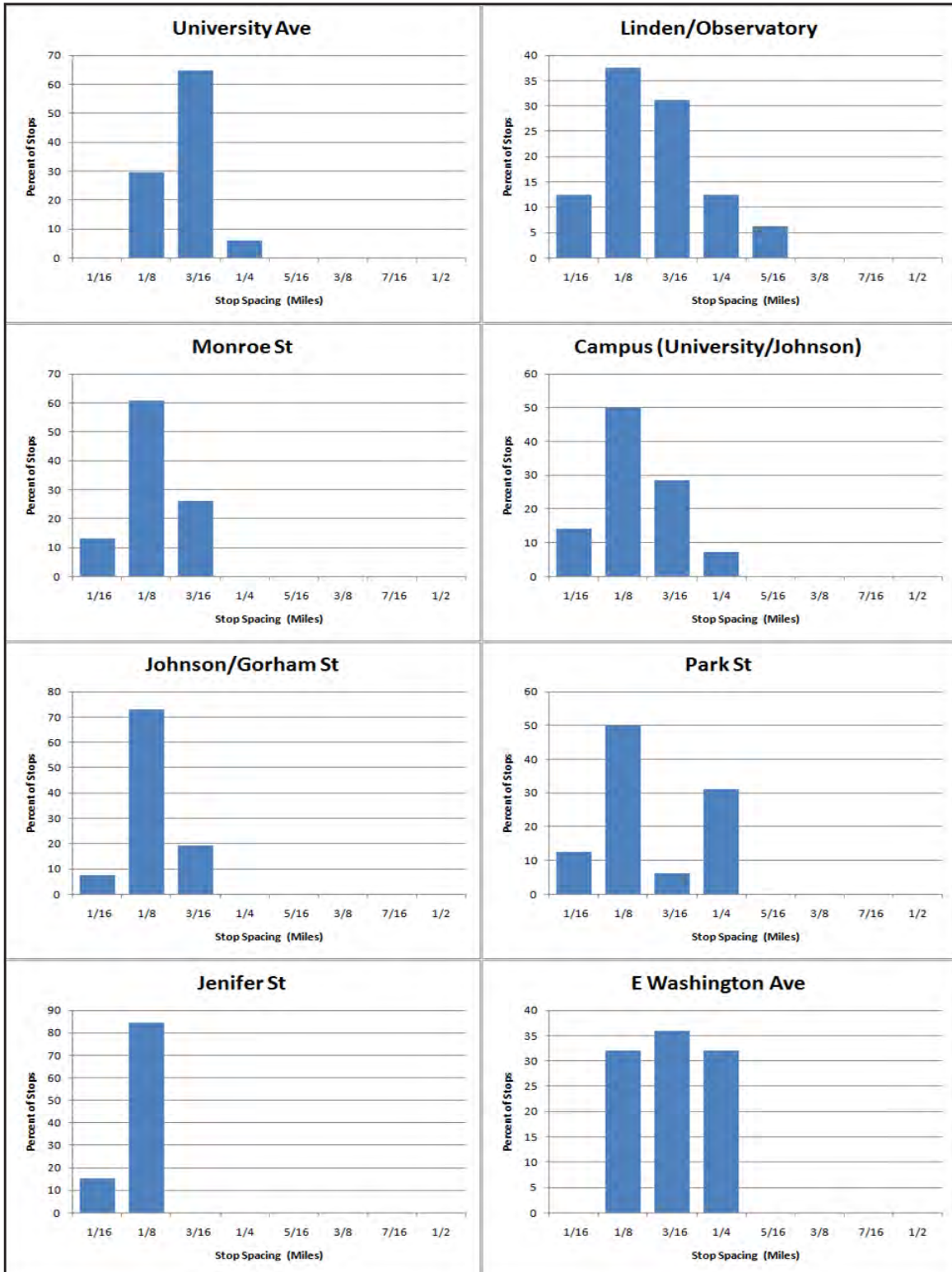
Figure 31



The bus stop spacing distribution for each corridor is shown on the following pages in Figures 32 and 33. Monroe Street, Jenifer Street, and Johnson and Gorham Streets have the closest spaced stops where the vast majority of stops are 1/8-mile apart, with some even closer. The major arterial streets have a slightly longer stop spacing. On University Avenue, most stops are 3/16-mile apart; Park Street has a mixture of 1/8-mile and 1/4 -mile spacings. Figure 34 on page 3-23 shows the location of stops in the central area with 1/4 mile buffers. It highlights the overlap in service coverage with the closely spaced stops.



**Figure 32**  
**Bus Stop Spacing Distribution for Central Madison Corridors**





**Figure 33**  
**Bus Stop Spacing Distribution for Peripheral Madison Corridors**

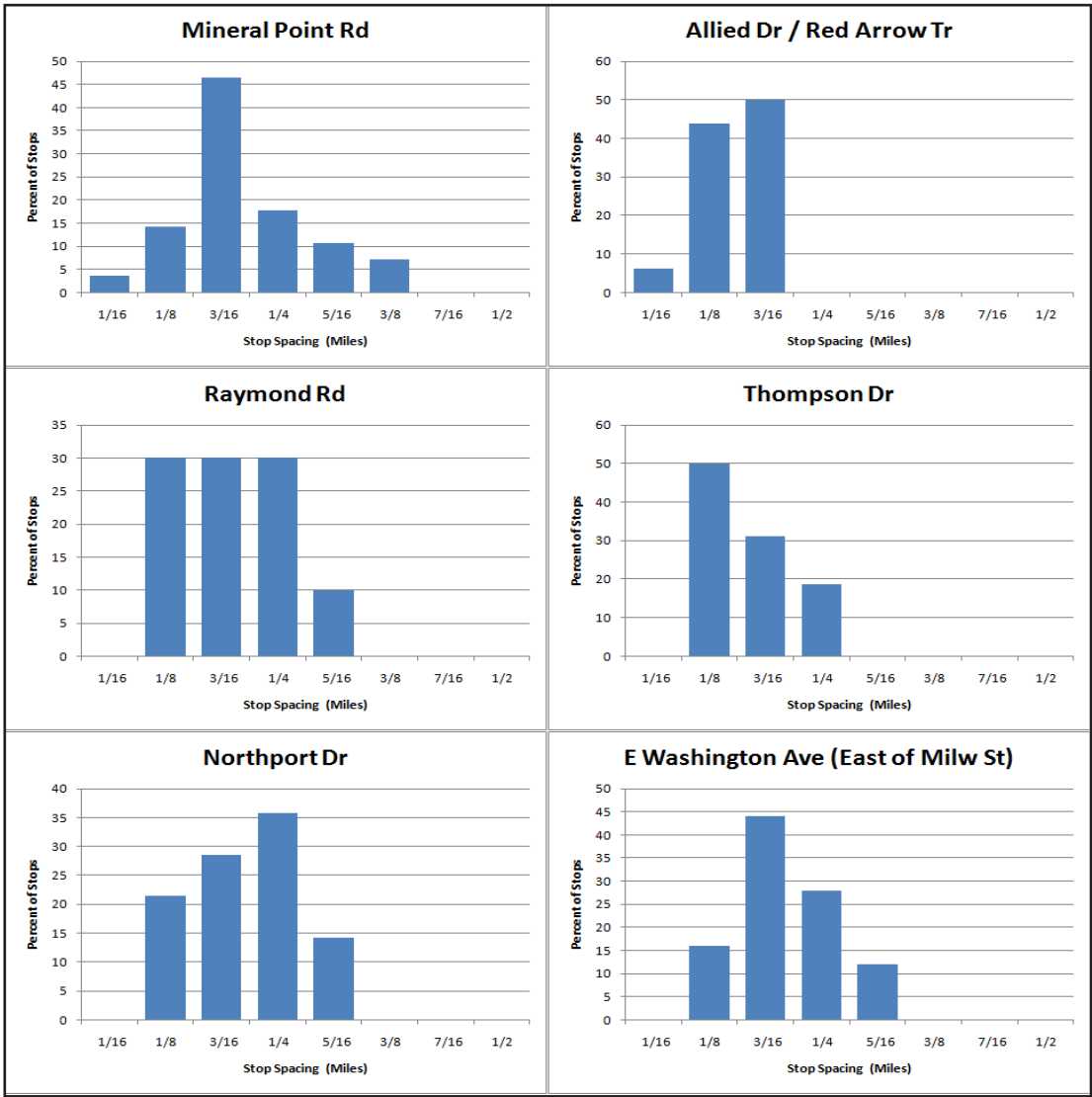
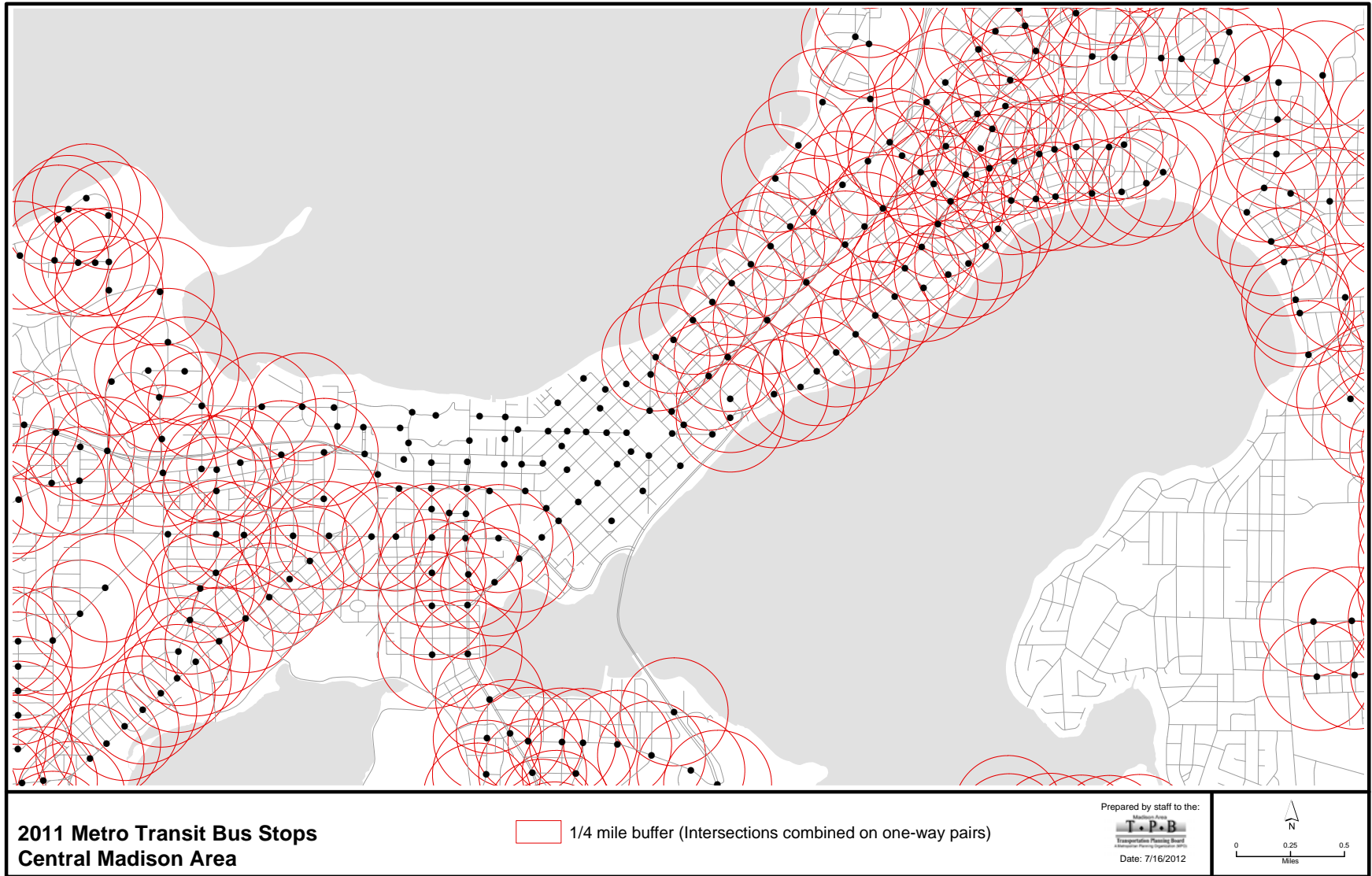


Figure 34



Note: Intersections with bus stops in the central Madison area with 1/4-mile buffers, excluding the Madison CBD. Each point and buffer represents a single stop, stop pair, or intersection with multiple stops in different directions.