

*Year 2035 No Build ADT and Turning Movement Forecasts
Downtown Verona Traffic Study
(SRF Consulting Group, Inc.)*

DRAFT TECHNICAL MEMORANDUM

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MSA PROFESSIONAL SERVICES

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DATE: February 6, 2013

SUBJECT: YEAR 2035 NO BUILD ADT AND TURNING MOVEMENT FORECASTS
DOWNTOWN VERONA TRAFFIC STUDY

This memorandum documents the preparation of the travel demand forecasts for the Main Street and Verona Avenue corridors located in Verona, Wisconsin. Travel demand forecasts were generated along the Main Street corridor between W. Harriet Street and Paoli Street and along the Verona Avenue corridor between Westlawn Avenue and Lincoln Street, as well as adjacent roadways. The year 2035 No-Build average daily traffic (ADT) forecasts were used develop turning movement forecasts at six intersections, including:

- Main Street and W. Harriet Street
- Main Street and Verona Avenue
- Main Street and Church Avenue
- Main Street and Paoli Street
- Verona Avenue and Westlawn Avenue
- Verona Avenue and Lincoln Street

METHODOLOGY

Although forecasts were prepared along two corridors within Downtown Verona, the project's study area was defined as the greater Verona area to include emerging growth areas, including the rapidly developing Epic Systems campus. The study area is composed of a wide mix of land uses that includes residential, commercial, agricultural, open space, industrial and institutional. In addition to diverse land uses, the study area has experienced a recent increase in residential development and the construction of new office space, all of which is expected continue over the next 25 years.

Travel demand forecasts were developed for the year 2035 No-Build using the Dane County regional travel demand forecast model. As a part of this study, the model was updated to incorporate additional detail within the study area to more closely estimate future travel demand within Downtown Verona. This process involved subdividing transportation analysis zones (TAZs) within the study area to reflect the level of detail needed to generate turning movement

forecasts at six intersections. Figure 1 shows the original TAZs used for the Dane County regional travel demand model and the TAZs used as part of the current study.

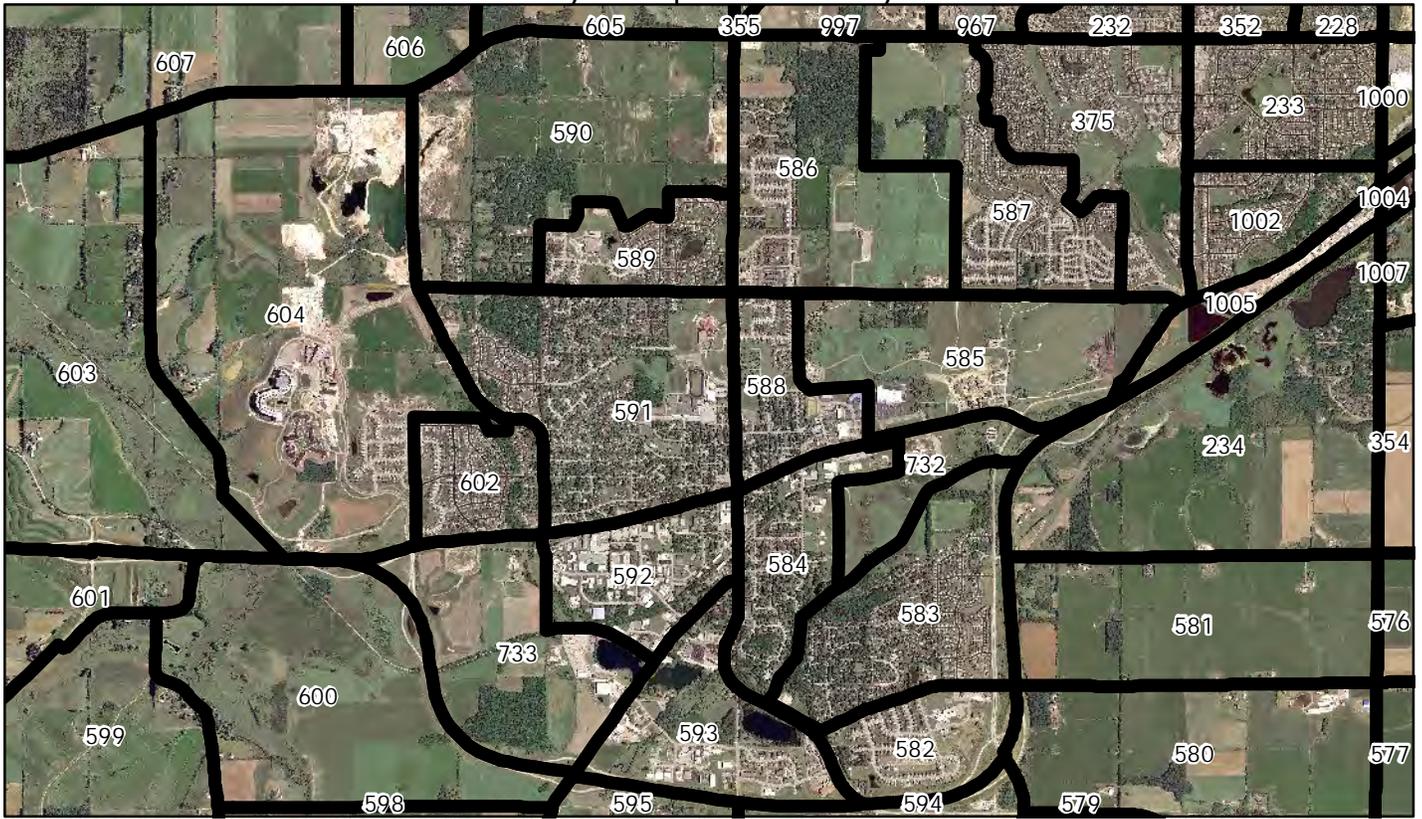
In addition to splitting the TAZs within the study area, the socioeconomic dataset within the study area was updated from year 2006 land use to year 2010 land use. The year 2010 land use dataset was developed using US Census 2010 block data and InfoUSA employment data (January, 2010). This process was implemented within the study area to improve model performance, account for the recent development and prevent an over-estimation of future traffic growth.

Year 2035 land use data was allocated within the newly created TAZs, while maintaining consistency with model's original growth assumptions (i.e. the original land use dataset was used as the control total). There were a few minor adjustments to the original year 2035 land use assumptions, which were applied to prevent a decrease in households or employment (as compared to year 2010) within the study area. Table 1 shows the land use assumptions for the Verona study area.

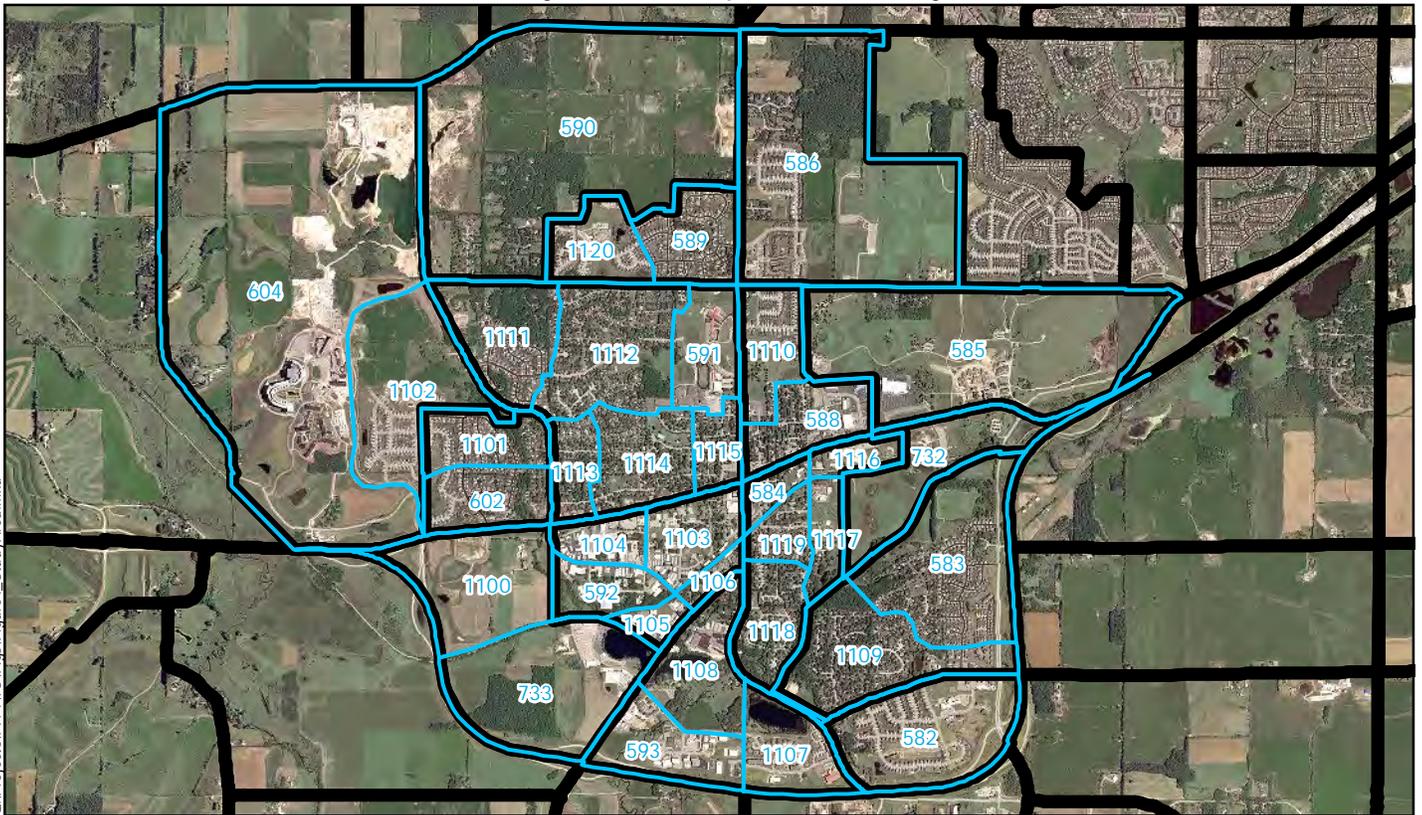
Table 1 – Verona Subarea Land Use Assumptions

Dataset		Households	Population	Employment		
				Retail	Service	Total
A	<i>Base Year (Original)</i>	2,730	7,530	500	1,785	4,294
B	<i>Base Year (Update)</i>	4,333	10,902	497	6,324	9,265
(=B-A)	<i>Base Year Difference</i>	1,603	3,372	-3	4,539	4,971
C	<i>Year 2035 (Original)</i>	6,159	15,829	1,249	10,440	14,389
D	<i>Year 2035 (Update)</i>	6,440	16,292	1,400	10,638	14,806
(=D-C)	<i>Future Year Difference</i>	281	463	151	198	417
(=D-B)	<i>Growth (Update)</i>	2,107	5,390	903	4,314	5,541

Dane County Transportation Analysis Zones



Verona Study Area Transportation Analysis Zones



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RESULTS

Year 2035 ADT traffic forecasts were developed for the Main Street and Verona Avenue corridors using the Dane County regional travel demand model under a No-Build condition. The No-Build condition includes all committed roadway improvements within the study area, consistent with the Madison MPO's 2013-2017 Transportation Improvement Plan and the City's Neighborhood Plans. Figure 2 shows the ADT forecasts along the Main Street and Verona Avenue corridors.

Table 2 provides a summary of the ADT forecasts and summarizes the ADT growth along each corridor. The largest traffic volumes increases are expected on the north and southwest sides of Verona, consistent with the City's long-term development assumptions. Although residential, commercial and office park development is planned on the periphery of the City, the City's limited amount of alternative routes and existing neighborhood development patterns discourage travelers from bypassing the downtown area. As such, traffic volumes along the Main Street corridor north of Verona Avenue are expected to grow by 2.5% annually, whereas traffic volumes along Verona Avenue west of Main Street are expected to grow by 1.6% annually.

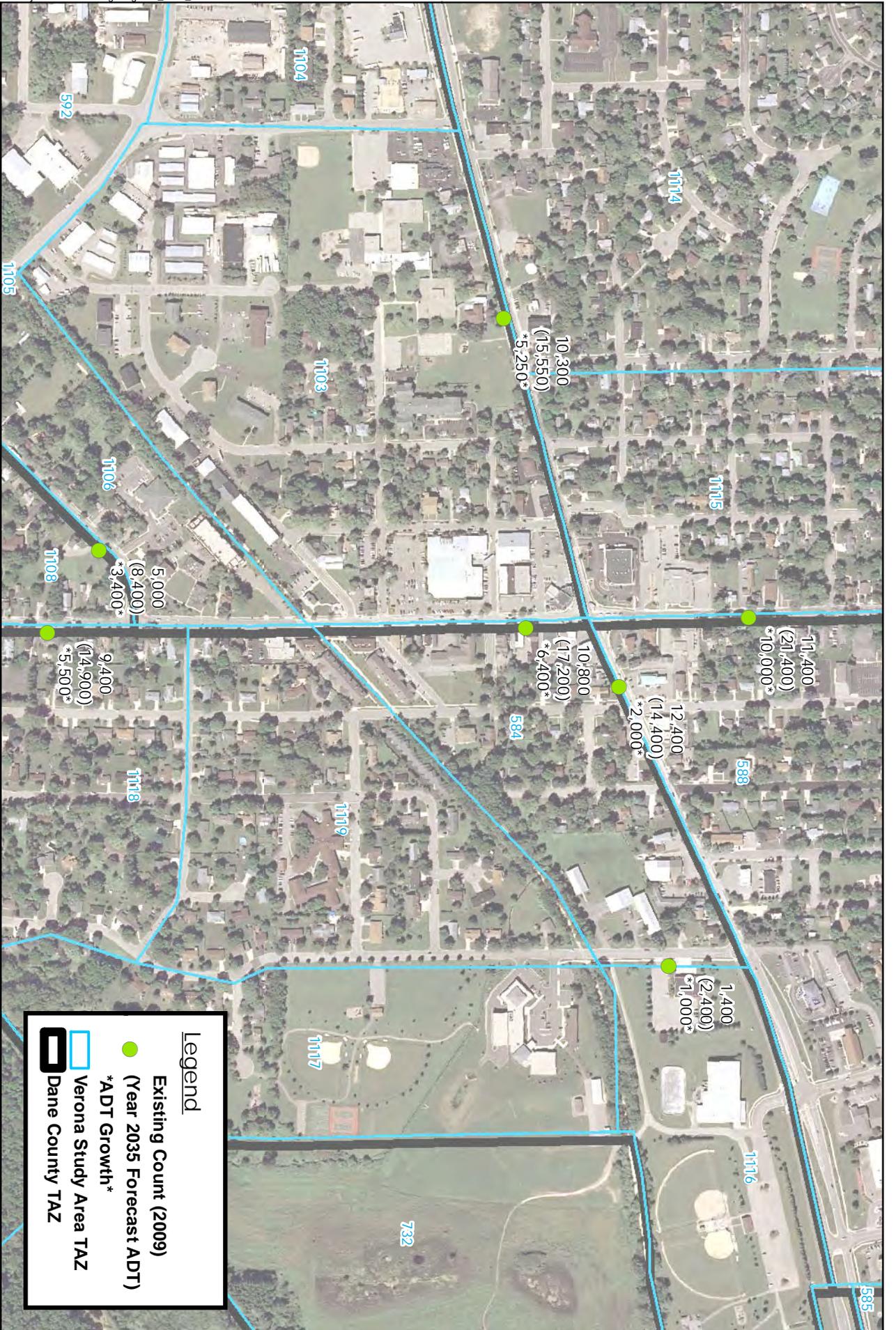
The only corridor expected to experience limited growth within the study area is the segment of Verona Avenue between Main Street and USH 151, with less than 1.0% growth annually. This limited growth over the next 25 years is due to limited land available for development and dedicated open space (e.g. Hometown USA Community Park, Military Ridge State Trail, Badger Prairie County Park, etc.). The primary sources of future traffic growth along this corridor are through traffic and increased activity along the commercial development due to the City's expected population increase.

Table 2 – Downtown Verona year 2035 ADT forecasts

Corridor	Location	Existing ADT (Year 2009)	Future ADT (Year 2035)	ADT Growth	% Growth	Annual Growth
Main Street	N of Verona Avenue	11,400	21,400	10,000	87.7%	2.5%
Main Street	S of Verona Avenue	10,800	17,200	6,400	59.3%	1.8%
Main Street	S of Paoli Street	9,400	14,900	5,500	58.5%	1.8%
Verona Avenue	W of Westlawn Avenue	10,300	15,550	5,250	51.0%	1.6%
Verona Avenue	E of Main Street	12,400	14,400	2,000	16.1%	0.6%
Paoli Street	W of Main Street	5,000	8,400	3,400	68.0%	2.0%
Lincoln Street	S of Verona Avenue	1,400	2,400	1,000	71.4%	2.1%

Turning movement forecasts were developed using the year 2035 ADT forecasts and the a.m. and p.m. peak hour turning movement data collected by MSA Professional Services in November 2012. Future year turning movements were developed by evaluating the ADT growth for intersection approaches, estimating peak hour growth for each intersection approach and distributing the peak hour growth to individual intersection movements.

A complete summary of existing and year 2035 a.m. and p.m. turning movement volumes are provided in Attachment 1 and Attachment 2.



Legend

- Existing Count (2009)
(Year 2035 Forecast ADT)
- ADT Growth*
- Verona Study Area TAZ
- Dane County TAZ



Average Daily Traffic Forecasts
Downtown Verona Traffic Study
City of Verona, WI

SENSITIVITY TEST

A sensitivity test was performed in conjunction with the development of year 2035 ADT forecast to determine how additional employment at the Epic Systems campus would impact the project area's ADT forecasts. This test consisted solely of increasing the future employment from 7,000 to 20,000 employees at the Epic Systems campus to determine how additional employment would impact traffic within Verona area.

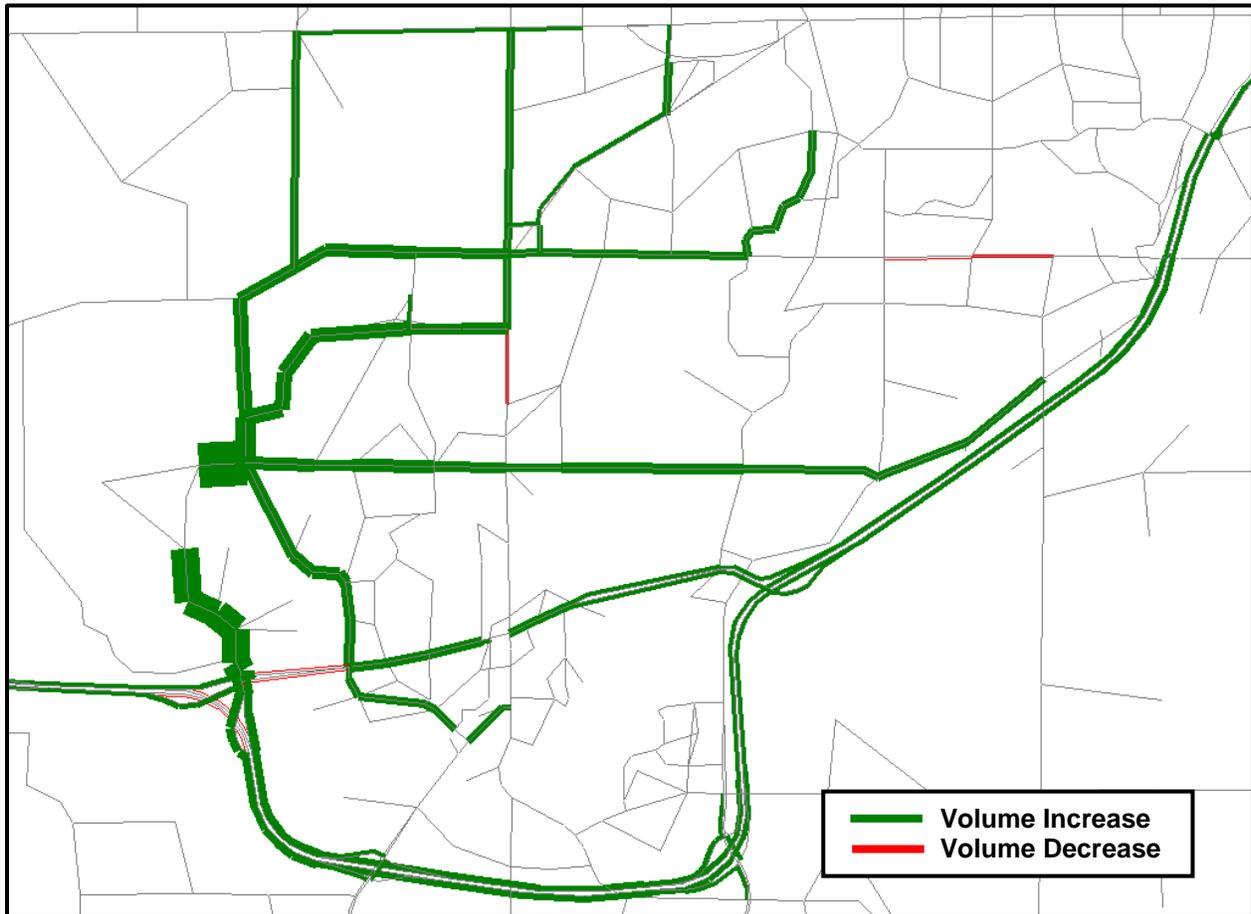
An analysis of the results determined that the additional employment would have limited impacts on forecasted daily traffic volumes within the Downtown Verona study area. The largest impact was realized within the immediate vicinity of the Epic Systems campus and along the USH 151 and Cross Country Road corridors. While the impact to Downtown Verona is limited, it would be reasonable to expect a modest increase in traffic volumes as a result of route shifts and additional trips to schools or commercial areas within Downtown Verona.

The travel demand model does not preclude additional activity between the Epic Systems campus and Downtown Verona, but inherent model parameters are calibrated to replicate trip lengths from the National Household Travel Survey (NHTS) data. For example, if the average commute to work within Dane County was estimated at 18 minutes, the model's home-based work trips were calibrated to replicate this average commute time.

Based upon these model parameters, a majority of the new traffic related to the additional employment growth at the Epic Systems campus is expected to interact with the growth in nearby residential neighborhoods on the north side of Verona. Even though Downtown Verona is within close proximity to the Epic Systems campus, the USH 151 and Cross Country Road corridors provide faster or more direct routes for commuters residing in the peripheral areas of Verona or within the greater Madison metropolitan area.

Figure 3 shows the future traffic volume differential when comparing the original future year land use against the sensitivity test land use.

**Figure 3 – Future Traffic Volume Differences
(Year 2035 Update compared to Year 2035 Sensitivity Test)**





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