November 7, 2022

To: City of Madison Transportation Commission

Re: Agenda Item # 1, November 9, 2022 Transportation Commission meeting

1) Shown on the following pages are examples of apparent issues in the process used to create the "How far can I travel in 45 minutes …" map shown on page 16 of the October 2022 Transit Network Redesign - Title VI Service Equity Analysis, as well as in the series of "How far can I travel in 45 minutes …" maps contained in the January 28, 2022 Draft Plan Report, Appendix C: "Travel Time Maps."

The two "How far can I travel …" maps shown on pages 2 and 4 below are each followed by output from Metro Transit's on-line "Plan your trip" application showing examples of reachable destinations that are not depicted on the travel time maps. Some, but not all, of those discrepancies may be explained by the assumptions regarding wait time that were used for the modeling. I see no reason to believe other maps in that series do not contain similar inconsistencies.

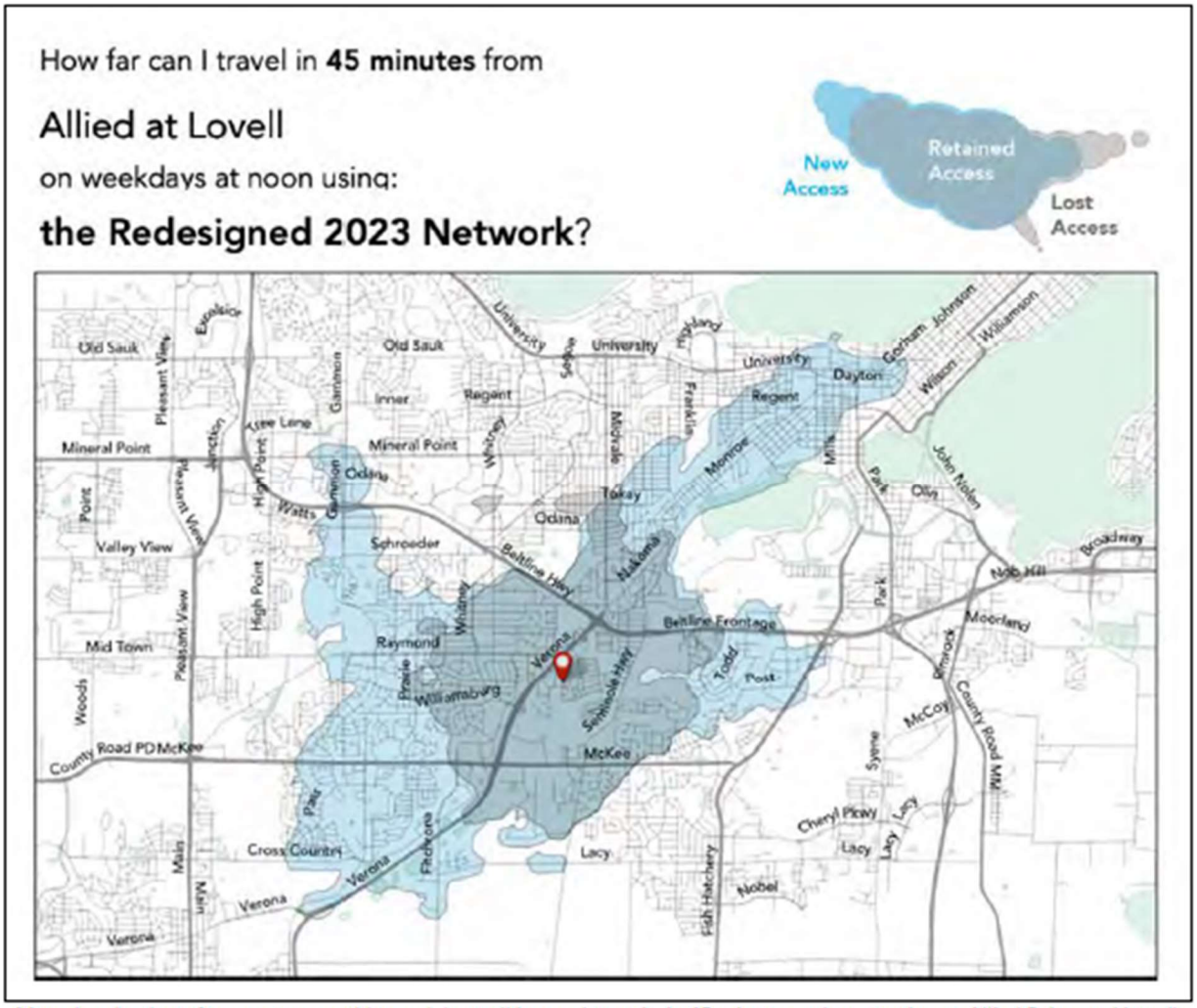
One of the assumptions used to create the "How far can I travel …" maps is that the wait time for each bus ridden is equal to one-half the frequency of that bus (the wait time for a bus that runs once per hour will always be 30 minutes). The use of that assumption virtually guarantees that, when modeled, a "ridership" based transit system, where buses run more frequently but may not offer service to as many potential riders, will always appear to perform more favorably than a "coverage" based system, where buses run less frequently but may offer service to a substantially greater number of potential riders.

2) The Title VI Service Equity Analysis assumes that all persons in a census block group (map of block groups shown on page 7) within a quarter mile of a transit stop are "served" by transit. The use of census block group geography casts an unreasonably wide net and there are two dimensions to this. First, the geographical size of census block groups leads to overstating proximity. Block groups range in size, but a square mile is common, which means the walking distance to and from service can be over 1.25 miles, which is well beyond what most people are willing to walk to a transit stop. The second dimension concerns demographics. It would seem the race/ethnicity portion of the Equity Analysis should be based on census block data from the 2020 PL 94-171 (census data) Summary File, which is available, rather than on block group data from the 2020 American Community Survey. The block level data is considerably more granular than the block group data and would produce more realistic, and considerably lower, estimates of potential transit users. It's uncertain what impact the use of census block level data would have on the percentages of potential transit users summarized by race/ethnicity. Unless the race/ethnicity analysis is rerun using the block level census data, we will never know for certain. The income data that was also analyzed for the Equity Analysis is only available from the American Community Survey at the block group and tract levels. However, there appears to be no requirement for the same census geography to be used for both analyses and it's generally considered desirable to use the best available data.

3) Given all the above, I am requesting that this Commission pause the acceptance and approval of the Title VI Service Equity Analysis until these issues can be reviewed. I understand you may already be familiar with the assumptions and methodology used for both the Equity Analysis and the "How far can I travel …" maps, and feel they are appropriate; however, I doubt that's true for everyone having an interest in this matter.

Respectfully submitted,
Dave Davis
Madison, WI 53173

From the October 2022 **Title VI Service Equity Analysis,** page 16, prepared by Jarrett Walker + Associates

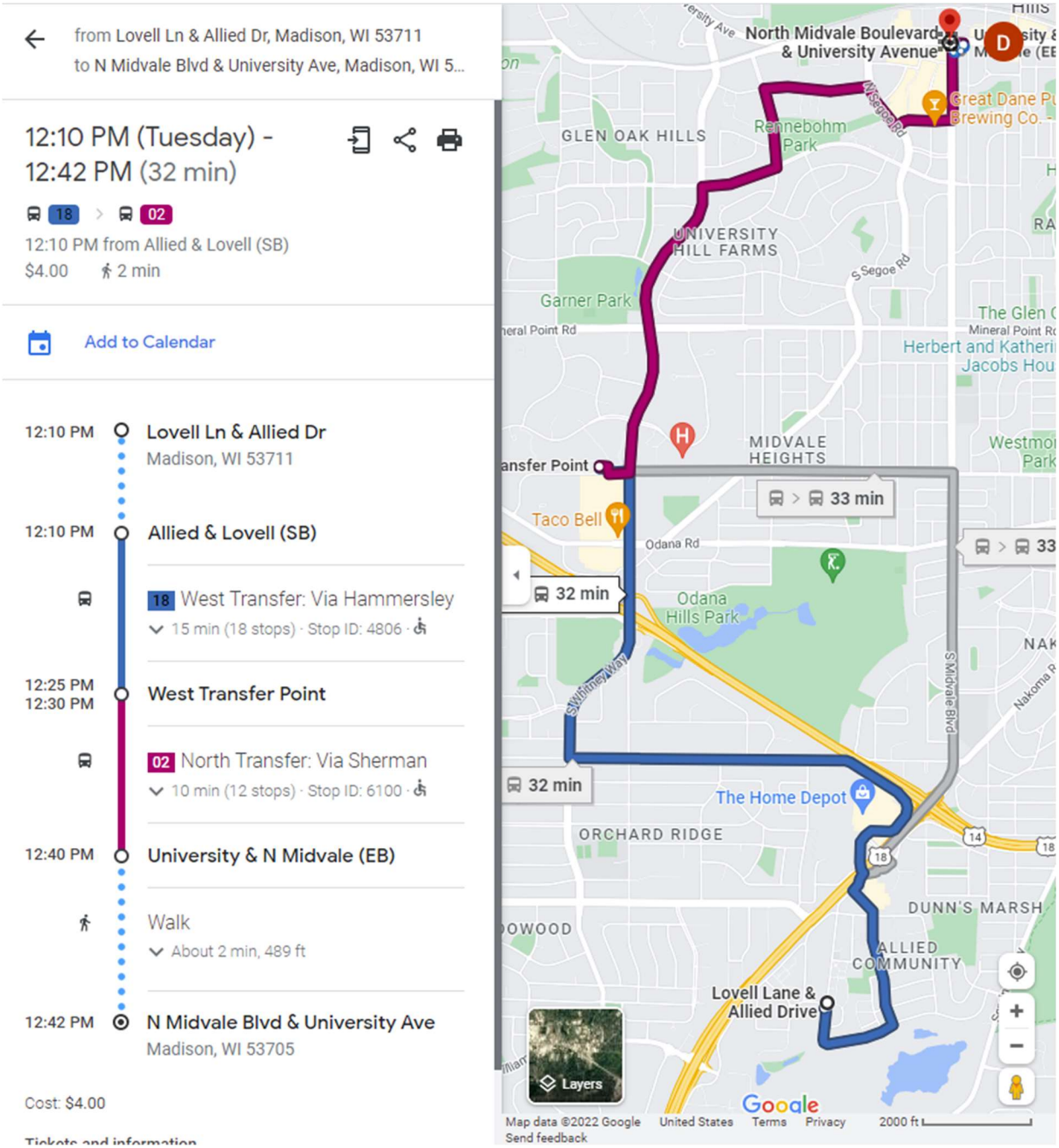


Map showing how far someone could travel, by walking and transit, in 45 minutes, when starting at Allied Drive and Lovell Lane

As shown in the figure above, the redesigned transit network would allow someone in this location to access many more places (the light blue areas) in the same amount of time. In this particular example, a person located at Allied Drive and Lovell Lane could reach approximately 6,000 jobs within 45 minutes using existing transit service, compared to approximately 41,000 jobs within 45 minutes with the Transit Network Redesign network.

This same analysis has been repeated for each location on a grid within the Metro Transit service area to understand how the population will be affected as a whole, as shown in the map below.

From Metro Transit's on-line "Plan Your Trip" application, showing that a bus trip from the intersection of **Allied Dr & Lovell Ln** to the intersection of W. Johnson St & N. Mills St would require 32 minutes of travel time. If the rider started walking to the bus stop at noon, they would arrive at their destination within 45 minutes. This destination is not shown as being within the "Retained Access" (current coverage) area depicted on Jarrett Walker's "How far can I travel in 45 minutes" map shown on page 2.



From the January 28, 2022 **Draft Plan Report, Appendix C: "Travel Time Maps,"** page 13, prepared by Jarrett Walker + Associates

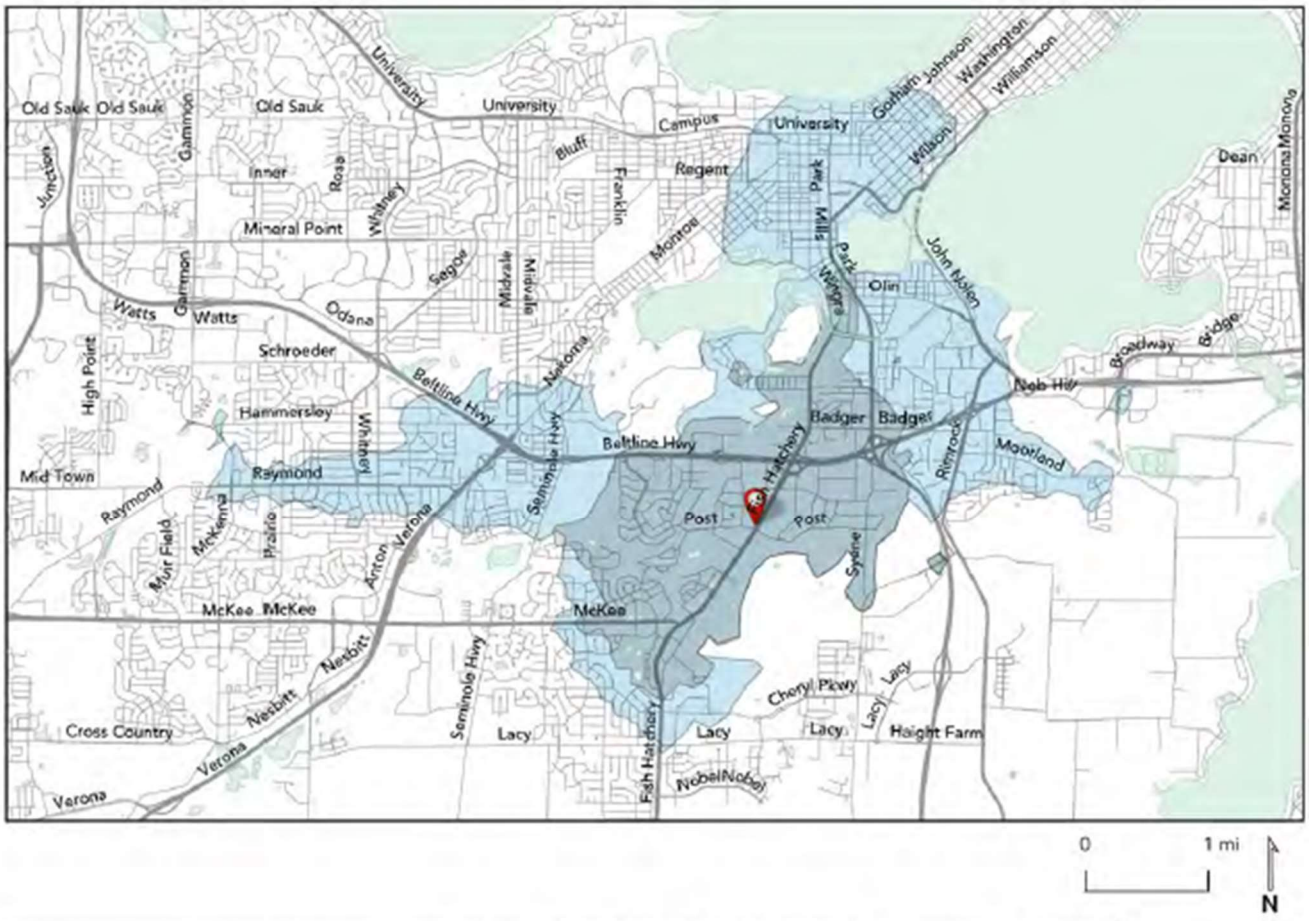
How far can I travel in **45 minutes** from

Fish Hatchery at Post

on weekdays at noon using:

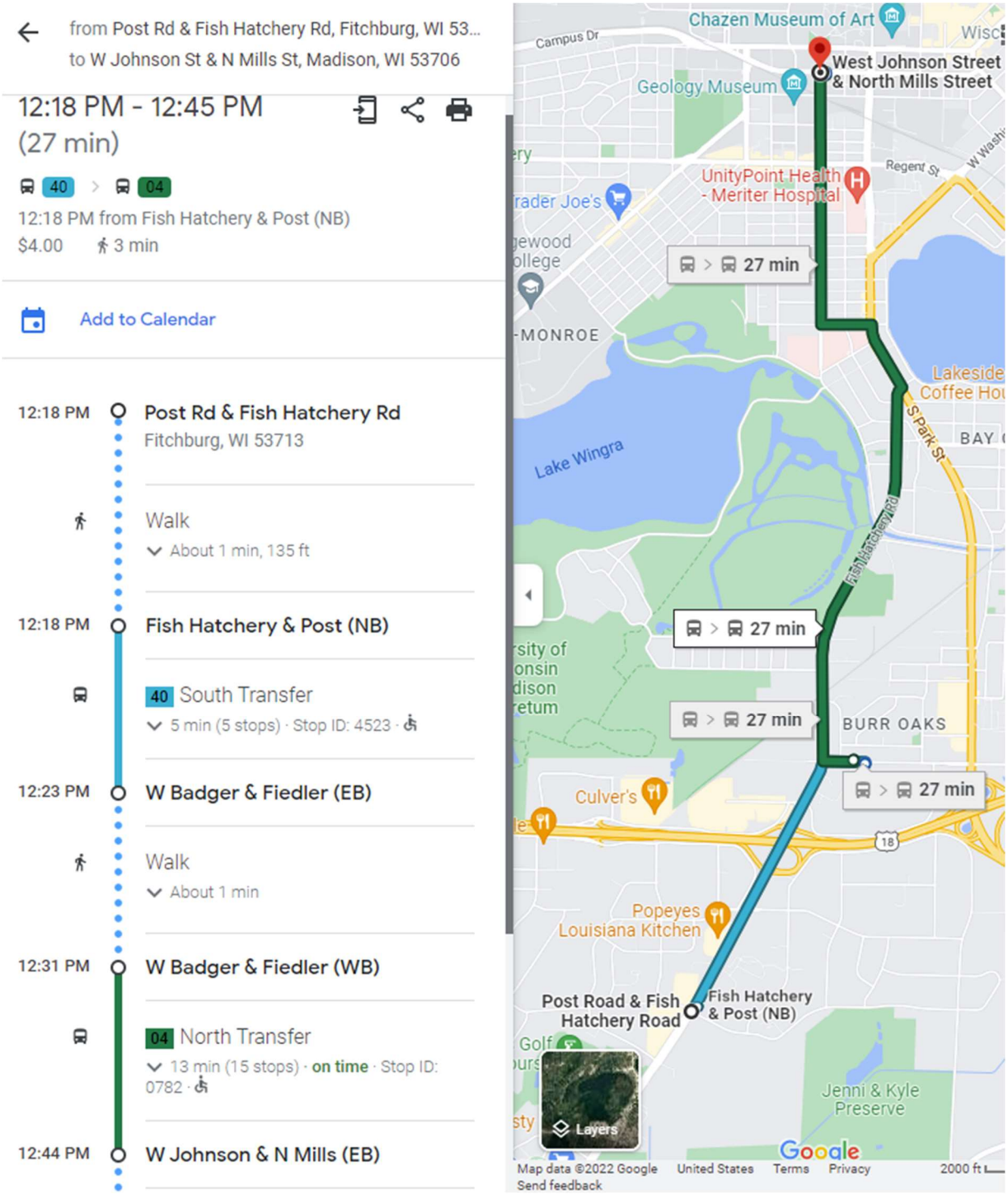
the Draft Plan Network?

* Compared with the Metro Network as of Spring 2020

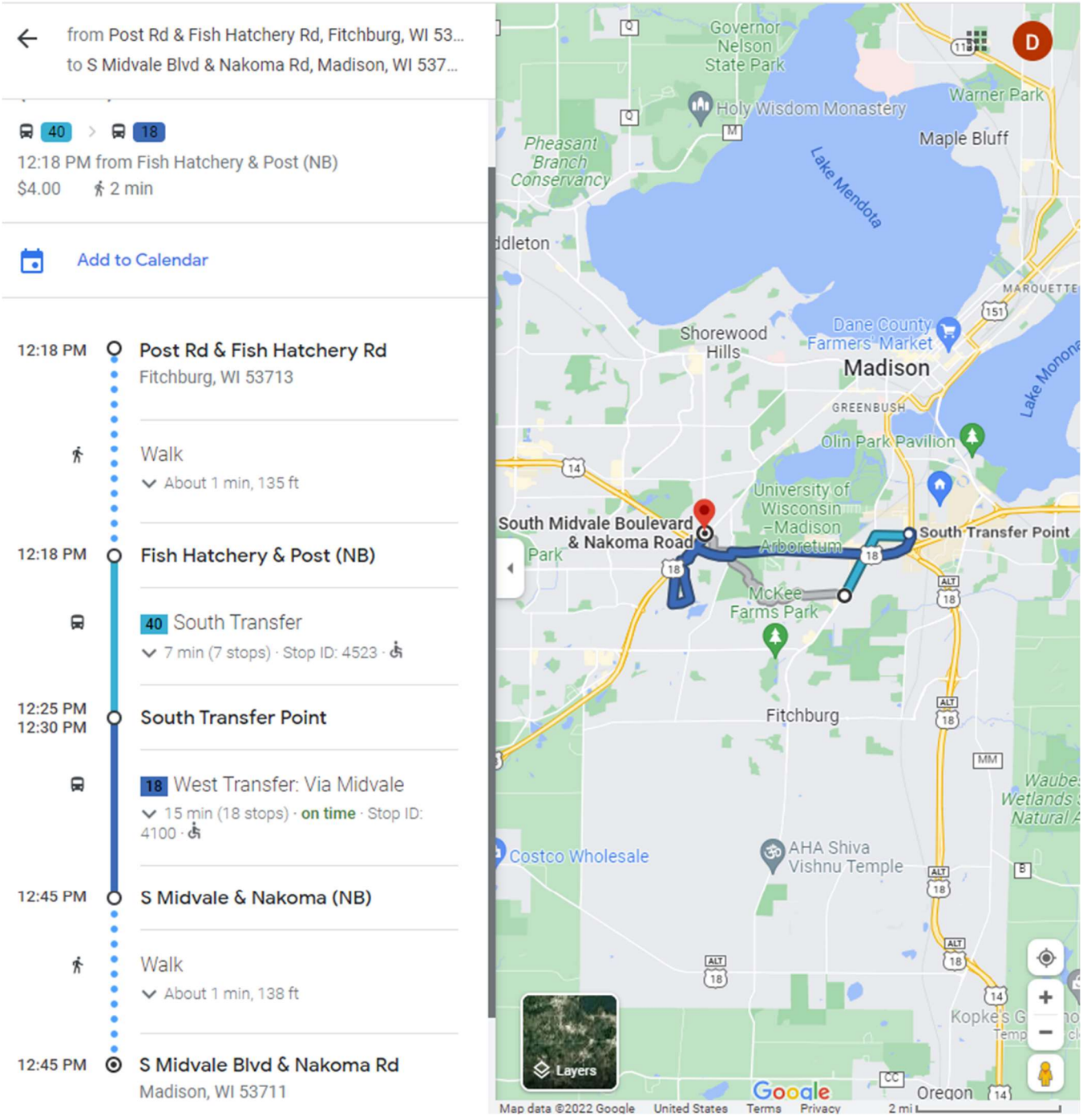


	Existing Network	Draft Plan Network	Change	% Change
Residents Accessible in 45 minutes or less	17,400	78,800	**+61,400**	**+354.0%**
Jobs Accessible in 45 minutes or less	15,400	75,300	**+59,900**	**+388.0%**

From Metro Transit's on-line "Plan Your Trip" application, showing that a bus trip from the intersection of **Fish Hatchery Rd & Post Rd** to the intersection of W. Johnson St & N. Mills St would require 27 minutes of travel time. If the rider started walking to the bus stop at noon, they would arrive at their destination within 45 minutes. This destination is not shown as being within the "Retained Access" (current coverage) area depicted on Jarrett Walker's "How far can I travel in 45 minutes" map shown on page 4.



From Metro Transit's on-line "Plan Your Trip" application, showing that a bus trip from the intersection of **Fish Hatchery Rd and Post Rd** to the intersection of S. Midvale Blvd & Nakoma Rd would require 27 minutes of travel time. If the rider started walking to the bus stop at noon, they would arrive at their destination within 45 minutes. This destination is not shown as being within the "Retained Access" (current coverage) area depicted on Jarrett Walker's "How far can I travel in 45 minutes" map shown on page 4.



Map showing census block groups: