

From: [Larson, Aidan](#)
To: [Larson, Aidan](#)
Subject: FW: Transit Network Redesign failings
Date: Monday, April 11, 2022 4:15:13 PM

From: gordian@nym.hush.com
Sent: Friday, April 8, 2022 11:35 AM
To: [Patricia Bennett](#); [Brigit E. Brown](#); [Denise N. Jess](#); [Harald Kliems](#); [Ann E. Kovich](#); [Darrin S. Wasniewski](#); [Robbie Webber](#)
Subject: Transit Network Redesign failings

Friday April 6, 2022
Madison Transportation Commission members,

The Metro Transit Network Redesign Choices Report, FEBRUARY 26, 2021, and other documents from Madison Metro and Jarrett Walker + Associates, propose a drastic redesign of the routes and schedules of Madison's bus system. An overwhelming amount of information is presented in tables and maps. The whole analysis is misguided because it tries to answer the wrong questions.

Asking the Right Questions

"Transit is useful when it increases the number of useful places people can access in a reasonable amount of time."

Metro Transit Network Redesign Choices Report, FEBRUARY 26, 2021, p. 52

Two metrics are used throughout the Report to measure how "useful" transit is. They are "Residents Accessible in 45 minutes or less" and "Jobs Accessible in 45 minutes or less".

See Metro Transit Network Redesign Choices Report, FEBRUARY 26, 2021, Appendix A.

Actually, an increase in the number of jobs or people accessible within 45 minutes is not in itself very valuable. It is just a goal that is relatively easy to quantify. The two metrics in the Report are what a business person might use to locate a new store or restaurant. They are largely irrelevant to bus riders. In the real world, people do not want transit access to thousands of complete strangers or to thousands of jobs that they do not have. Workers want transit access to their one job. Students want transit access to their school. Consumers want transit access to nearby stores and shops. People want transit access to places where they socialize. Asking how many thousands of people or jobs are within a 45 minute trip is the wrong question. Bus riders want a system that provides easy access to their particular destinations. Asking the wrong questions leads to absurdities like eliminating bus routes for the sake of improving transit service.

Madison Metro is not starting with a clean slate. People whose bus routes are being eliminated might well have chosen to live where they do, in part, for

the location's bus service to their work, school, stores, etc. At the other end of the bus trip, employers, schools, and stores rely on that bus service for their workers, students, and customers. A transit system designed for access to the greatest number of other people and the greatest number of jobs within 45 minutes will not necessarily meet the real needs of many bus riders.

As the maps on pages 28 and 29 show, both jobs and population are heavily concentrated in downtown Madison. Given Madison's geography and demographics, the solution to the problem of providing quick access to the greatest number of jobs or other people becomes obvious. Run bus routes radially from downtown Madison with few stops, in order to increase speed, and, therefore, population covered within 45 minutes. The choice of metrics has dictated the solution to the problem.

Metro Transit Network Redesign Choices Report, FEBRUARY 26, 2021, pp. 28 - 29

Unfortunately, the Report addresses the wrong problem. "Approximately two-thirds of Madison's jobs are located beyond the isthmus and the university." See p. 9. The Report does not tell us how well rapid access to jobs in the downtown area gets two-thirds of Madison's workers to their jobs. The same difficulty occurs for people going to school, stores, and places where they socialize.

Metro Transit Network Redesign Choices Report, FEBRUARY 26, 2021, p. 9

Political Will

The Report says that Madison's existing bus routes provide poor service to people not going downtown. See the discussion on pages 45, 46, and 48 of Metro Transit Network Redesign Choices Report, FEBRUARY 26, 2021. Feeder routes and orbital routes serve areas outside of central Madison. Bus service to most areas of Madison could be improved by increasing bus frequency on these feeder routes and orbital routes and by adding more of them. It is a matter of finding the political will to spend the money to improve transit service outside of central Madison.

The Report has many statements such as this one,

"A transit agency can pursue high ridership and extensive coverage at the same time, but the more it pursues one, the less it can provide of the other. Every dollar that is spent providing high frequency along a dense corridor is a dollar that cannot be spent bringing transit closer to each person's home or reaching areas at the edge of the city, and vice versa."

Metro Transit Network Redesign Choices Report, FEBRUARY 26, 2021, p. 13

and this one,

"Both alternatives are designed for the year 2023, with the assumption that Metro Transit will only have its existing operating budget.

"This means any decision to provide more service in one area is a decision to provide less service somewhere else. This is why neither alternative significantly expands Metro Transit's service area or hours."

Metro Transit Network Redesign Alternatives Report, AUGUST 2, 2021, p. 4

Presumably, Jarrett Walker + Associates were told by the City of Madison to design routes that require spending no more money on the operation of Madison's bus system. This constraint represents a failure of leadership on the part of Madison's current leaders. A large amount of tax money was raised to fund Bus Rapid Transit, but little new money is provided for the system proposed in the Transit Network Redesign. Instead we are told that routes must be eliminated to reduce the time of bus trips. It would be like eliminating surface streets when expressways are built. That idea is unthinkable; money is simply added to the Streets budget to handle the additional maintenance needed.

Transit Accessibility Versus Availability

There is an important distinction between transit accessibility and the actual availability of jobs for a particular individual. The Metro Transit Network Redesign Alternatives Report, AUGUST 2, 2021, discusses transit accessibility to jobs by low income people. A close look at their conclusions illustrates the difference between transit accessibility and job availability.

"In the Ridership Alternative, nearly all people of color and people with low income would benefit from improvements to job access by transit within 45 minutes. In the Coverage Alternative, there would be much more variation from one area to another."

Metro Transit Network Redesign Alternatives Report, AUGUST 2, 2021, p. 56

If someone is looking for a job, calculating the number of available jobs means first reducing the number of transit accessible jobs to the number of jobs for which that one bus rider has the job skills and credentials required. The number of jobs for which the job hunter is qualified must be further reduced by the the job turnover rate; only vacant positions are really available. Finally, job hunters will want only jobs that offer better pay, benefits, and working conditions than they currently have. The actual number of genuinely available jobs might be thousands less than the number of jobs accessible by transit.

If someone already has a job but wants to move further away, faster transit can enable that person to do so. In this way, transit encourages urban sprawl; the first suburbs were built where railroad lines connected them to central cities. Jarrett Walker + Associates imply that a 45 minute one-way commute is an acceptable cost of going to work. Actual bus riders will see this commuting time as a burden that reduces the net benefit of having a

distant job.

The same type of analysis can be applied to other destinations. A store does not really count as an available option if its prices are higher or if its product selection is worse than that of another store within a 45 minute transit trip. Even if there are two equivalent stores reachable in the same transit time, how much does anyone gain from access to the second store?

Gathering and processing data that tell us how many jobs are really available to transit users would be extremely difficult. The same is true of nonemployment destinations. Such data is, however, what is needed to make informed decisions about bus routes and schedules. If Madison Metro had gathered statistics needed to model actual and potential bus riders, along with their destinations, its analysis would have been very valuable.

The authors at Jarrett Walker + Associates must be aware of the difference between transit accessibility and availability, but they do not refine their presentation to include more meaningful numbers. Only gross numbers of accessibility to people and to jobs are given.

Madison Metro Survey

A thoughtful, well designed public opinion survey of a random sample of Madison residents would have been a powerful analytical tool. The survey results could have been used to model actual and potential bus riders. None of that was done.

Madison Metro missed an opportunity to learn more about the transit expectations of Madison's residents. A public opinion survey was conducted. The respondents were self-selected, and their answers were self-reported. Because Madison Metro's survey respondents were not a random sample of Madison residents, Madison Metro cannot claim that the survey's results accurately represent the opinions of Madison's citizens. 2,872 people took the survey, if one assumes that no one took the survey more than once. Although the survey results are presented with great precision, they are only the opinions of 2,872 people who saw a chance to advance their own self interest. The way the survey results are presented will likely mislead naive readers into thinking that the answers report what Madison's citizens think about the transit network.

Metro Transit Network Redesign Alternatives Report, AUGUST 2, 2021, p. 6

Conclusion

The documents written by Jarrett Walker + Associates give readers an overwhelming amount of data. The mistake is using abstract, aggregate numbers that do not reflect the needs of real people. Bus riders are not numbers in a spread sheet, records in a data base, or gray blobs on a route map. Asking questions whose answers are relatively easy to quantify instead

of questions about bus riders' actual needs has lead to a proposed transit network that will not meet Madison's real needs. Policy makers asked to approve bus route and scheduling changes must be wary of this misguided analysis.

City documents are available at

<https://www.cityofmadison.com/metro/routes-schedules/transit-network-redesign>

Accessed 20220221

Don Lindsay