



Comprehensive Operations Analysis **Existing Conditions Summary**

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*Presented to Duluth Transit Authority
Prepared by Connetics Transportation Group*



1.0 Introduction

In August 2020, the Duluth Transit Authority (DTA) engaged Connetics Transportation Group (CTG) to conduct a Comprehensive Operations Analysis (COA) of their fixed-route transit system. This technical memorandum presents the methodology and findings of the existing conditions analysis for the COA. The COA is structured around five distinct phases, with the existing conditions analysis representing Phase 2 of the process. The following outlines each anticipated phase of the COA with corresponding objectives:

- **Phase 1 Guiding Principles:** Determines the elements and strategies that guide the COA process.
- **Phase 2 Existing Conditions:** Review and assess the regional markets and existing DTA service.
- **Phase 3 Identify and Evaluate Alternatives:** Create service delivery concepts for the future DTA network.
- **Phase 4 Finalize Recommended Network:** Select a final recommended network for implementation.
- **Phase 5 Implementation and Scheduling Plan:** Create a plan to executive service changes and implement the recommended network.

The DTA provides transit service to the Twin Ports region, primarily in and around the cities of Duluth, Minnesota and Superior, Wisconsin. In August 2020, CTG worked with DTA staff and members of a technical advisory group (TAG) to complete Phase 1 of the COA (Guiding Principles). This phase helped inform CTG of the DTA and TAG member expectations for the COA process and desired outcomes of the study. They expect the COA process to result in a network that efficiently deploys resources and receives buy-in from the community. The desired outcomes include a recommended transit network that is attractive to Twin Port's residents, improves the passenger experience, improves access to opportunity, is equitable, is resilient, and is easy to scale when opportunity arises.

A detailed understanding of the underlying market conditions, travel patterns, and existing DTA system service performance is an essential first step towards the development of a new DTA network. This technical memorandum documents the analysis and findings of the baseline conditions of the COA and is organized as follows:

Section 2: Summary of Key Findings highlights the primary findings of sections 3, 4, and 5 of this document. These findings will serve as a basis for the development of network recommendations.

Section 3: Twin Ports Regional Review provides an overview of demographic, socioeconomic, and travel patterns within the Twin Ports region that influence the demand for transit.

Section 4: Service Overview and Performance Assessment provides an analysis of the DTA's existing fixed-route service performance at the system, route, and stop-levels.

Section 5: Activity Center Review identifies essential activity centers to be served by transit and analyzes existing transit travel times amongst them and to other key locations in the DTA service area.

Appendices: provide supporting documentation of the analysis, including route profiles and additional maps referenced throughout the main body of this document.

2.0 Summary of Key Findings

The following details the key findings from this technical memorandum. These findings are essential for understanding the Twin Port's existing travel markets and transit service performance. They will be utilized to assist in identifying and evaluating service alternatives, and ultimately determining the final recommended transit network.

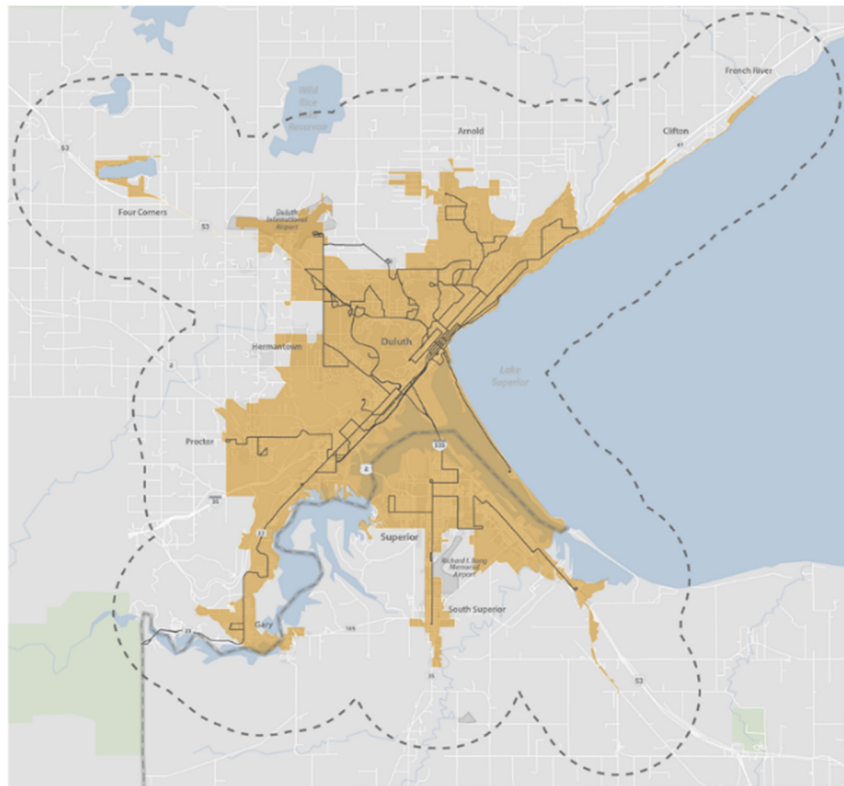
Twin Ports Regional Review

Existing DTA service provides suitable transit coverage throughout the region.

- All major activity and dense population/employment centers are currently served by at least one transit route.
- Over 75% of population and 85% of jobs in the defined study area have access to transit.
- Areas with the highest transit propensity index include Downtown Duluth, University of Minnesota-Duluth, West Duluth, Miller Hill Mall, Downtown Superior, and Lincoln Park.

There is limited latent ridership demand in the system.

- All areas with a high transit propensity index have transit service that produce adequate ridership returns and will likely not generate large amounts of additional riders in the future.
- There is potential for limited ridership growth in areas with moderate latent ridership demand, including West Duluth (Denfeld), Lincoln Park / Rice's Point, Congdon Park, Superior (south of downtown, Billings Park, and East End), and Proctor.



Defined Better Bus Blueprint Study Area

A review of regional travel patterns for all trips (not just transit) shows the impact of the COVID-19 pandemic in 2020. Using 2019 travel patterns is better suited for understanding regional movements in the Twin Ports.

- There was a 30% reduction in overall trip volumes between 2019 and 2020 due to COVID-19. As pandemic conditions improve, it is expected that regional travel patterns will return closer to 2019 levels in 2021 and beyond.
- Key travel patterns for all trips mirror the findings for transit with highest attraction to/from Downtown Duluth, University of Minnesota-Duluth, Miller Hill Mall, West Duluth, and Superior.

Service Overview and Performance Assessment

DTA's operational performance is consistent with its peers and national trends.

- The DTA provides significantly more passenger trips per capita than its peers. This shows the DTA's dedication to providing higher levels of transit service to the Twin Ports region.
- The DTA falls into the lower half of its peers on productivity measures of passenger trips per revenue hour and passenger trips per revenue mile.
- In general, transit ridership and productivity declines are consistent with the national trends. Ridership is down by over 10% nationally since 2015.
- One specific reason for DTA's productivity decline is the launch of several new routes over the last few years that have not performed particularly well, thus lowering overall productivity.

The existing DTA network is comprised of varied service types and spans.

- Weekday service is highly specialized and is comprised of routes that have a variety of service types and patterns that may be confusing to unexperienced users of the system. Weekend service is more simplistic and operates with fewer service types and patterns.
- Service spans lack consistency with many routes starting and ending service at different times. Many routes stop service after 6:00 and 7:00 pm on both weekdays and weekends.

Weekday ridership is concentrated in concentrated "hotspots"; weekend ridership is more dispersed.

- Approximately 80% of daily weekday ridership occurs in a few concentrated areas.
- Weekend ridership is more dispersed, with shopping centers, grocery stores, churches, and hospitality/entertainment attractions as important destinations. Weekend riders are less job focused and traveling more for recreation and/or errands and shopping.

Current service provides quality and consistent on-time performance.

- On-time performance is consistent across all time periods and over 82% of all trips are considered on-time (defined as 1-minute early to 5-minutes late).
- Approximately 6-7% of all trips are considered early, indicating on-time performance could be potentially improved through schedule adjustments.
- Specialized patterns and routes serving Superior tend to have lower on-time performance than the system at-large.

Similar performance metrics for weekdays, Saturdays, and Sundays indicate the presence of a strong transit user base.

- Even with reduced service levels on weekends, the DTA has consistent performance metrics across all days of service. This suggests that the Twin Ports region has a strong willingness to take transit, regardless of service levels, and/or has a large transit-dependent ridership base.
- The best performing routes provide frequent and consistent service to key areas.
- Less productive routes are comprised of services that are highly specialized (i.e. unique patterns) and/or are less frequent and direct.

Activity Center Review

It is critical to provide fast and frequent service to key activity centers in the region.

- Five key activity centers were identified: Downtown Duluth, University of Minnesota-Duluth, Miller Hill Mall, Superior, and West Duluth.
- Areas around each key activity center encompass over 65% of the DTA's daily weekday ridership and over 50% of the study area jobs.
- Fast and frequent service to/from activity centers may be vital as only 25% of the study area population lives in these areas and will access the system from other locations, leading to added travel times.

Service between activity centers is inconsistent depending on time of day, leading to longer travel times and limited access.

- Activity centers have different service levels depending on the time period, e.g., day (7:00 am to 6:00 pm) compared to evening service (6:00 pm to 10:00 pm).
- Lack of consistent all-day frequencies between activity centers can lead to longer trip/transfer times and can limit access during certain times of the day.
- Existing service between activity centers typically only connects to one adjacent activity center and requires transfers to travel longer distances (e.g. no service exists that connects Superior directly to Downtown Duluth and the Miller Hill Mall).
- There is generally fast and adequate access between Downtown Duluth and the other activity centers for day and evening service. One notable exception to this is Downtown Duluth to Superior in the evenings.
- Beyond Downtown Duluth, travel time and access between activity centers becomes limited in the evenings. Service to Superior is virtually non-existent after 7:00 pm.