

Feasibility Study for Intermodal Facility in Anchorage, Alaska

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Abstract

The Dimond Transit Center, operated by People Mover, is located in south Anchorage at the Dimond Center, a large indoor mall. Five bus lines serve 750 riders a day at the transit center. In addition, Alaska Railroad Corporation (ARRC) tracks along the western edge of the property serve 1300 intercity riders a day during the summer months. Commuter rail service is being planned, with a train station on the south side of Anchorage to support the two existing train stations on the north and west sides of Anchorage. In addition to commuters, ridership would include shoppers from remote areas of Alaska and hikers and skiers traveling to the resort community of Girdwood, about 40 miles south of Anchorage.

The intermodal feasibility study for the Dimond Transit Center examines the viability of connecting rail service to transit, pedestrian, bicycle, and automobile networks at this location. The area is a commercial and entertainment hub for Anchorage, attracting a significant number of trips daily; however, bicycle and pedestrian facilities in and around the Dimond Transit Center are not adequate to meet the "last mile" needs of intermodal facility users. Thus, pedestrian-bicycle access and circulation are critical to the success of an intermodal center.

The feasibility study advocates a phased approach for the development of an intermodal facility at the Dimond Transit Center, beginning with pedestrian and bicycle improvements before building the rail service infrastructure. Demand models unique to Anchorage ridership characteristics are discussed and conceptual designs are provided for both phases.

Introduction

The Dimond Center and the surrounding commercial development in South Anchorage at the corner of Dimond Boulevard and Old Seward Highway is part of an important transportation, retail, and employment center for the Municipality of Anchorage, Alaska (MOA) (see Figure 1). About 20 years ago, the Dimond Transit Center was built on property leased to the MOA by the Dimond Center. This facility, which today serves five bus routes and 750 riders a day, has expanded transportation options for the South Anchorage area. Surveys undertaken by the Dimond Center have indicated that more than 25% of persons employed at the Dimond Center travel to work via the bus system, emphasizing the important role public transit plays in supporting the commercial viability of the area.

Over time, the Alaska Railroad Corporation (ARRC) and the Dimond Center have discussed the benefits of building a train station in the vicinity of the Dimond Transit

Center. This location is seen as particularly promising because existing railroad tracks run just to the west of the Dimond Center at the center of a strong economic hub for the city. In 2002, ARRC published the South Central Network Commuter Study and Operation Plan, which looked at the feasibility of commuter rail in Anchorage and the surrounding areas and included a rail station near the Dimond Center as part of the proposed commuter rail network. In 2005, the Dimond Center prepared the South Anchorage Intermodal Transportation Center Project Prospectus, which resulted in a \$2.8 million earmark being appropriated towards the development of an intermodal facility integrating rail and bus transit facilities in South Anchorage. In 2008, ARRC presented the Dimond Center Intermodal Transportation Center Project Development Plan to the Federal Transit Administration (FTA), proposing that the earmarked money be spent on preparing NEPA documents, preliminary engineering, and construction of the siding and platform boarding station needed for a train station to be built in the area of the Dimond Center. The FTA asked for a feasibility study to be performed prior to design and construction. This task was given to the MOA's Public Transportation Department to oversee.

The study area for this project includes public property (Dimond Boulevard along the north side of the Dimond Center site and Old Seward Highway between Dimond Boulevard and 88th Avenue) and private property (Dimond Center Drive, 88th Avenue between the railroad tracks and the Old Seward Highway, and other unnamed parking circulation roadways along the bus routes on the Dimond Center property). Figure 2 shows the major roadways and development in the vicinity of the Dimond Transit Center. The Dimond Transit Center itself is built on Dimond Center property which the Dimond Center has historically leased to the municipality for \$1 per year.

Stakeholders interviewed as part of the feasibility study have a bright vision for the Dimond Center Intermodal Facility. They see in this project the potential to significantly increase transportation options throughout Anchorage and the surrounding communities. The facility would be used by daily commuters, shoppers, and visitors to Anchorage from other parts of Alaska and from all over the world. It could provide better access to the recreational trains run by ARRC, to the Dimond Center, and other commercial establishments in the area. Synergistic transfers between the bus system and the rail system would expand the network for both services. Pedestrian and bicycle trail improvements could expand access to transit services and shopping, entertainment, and employment opportunities throughout the area.

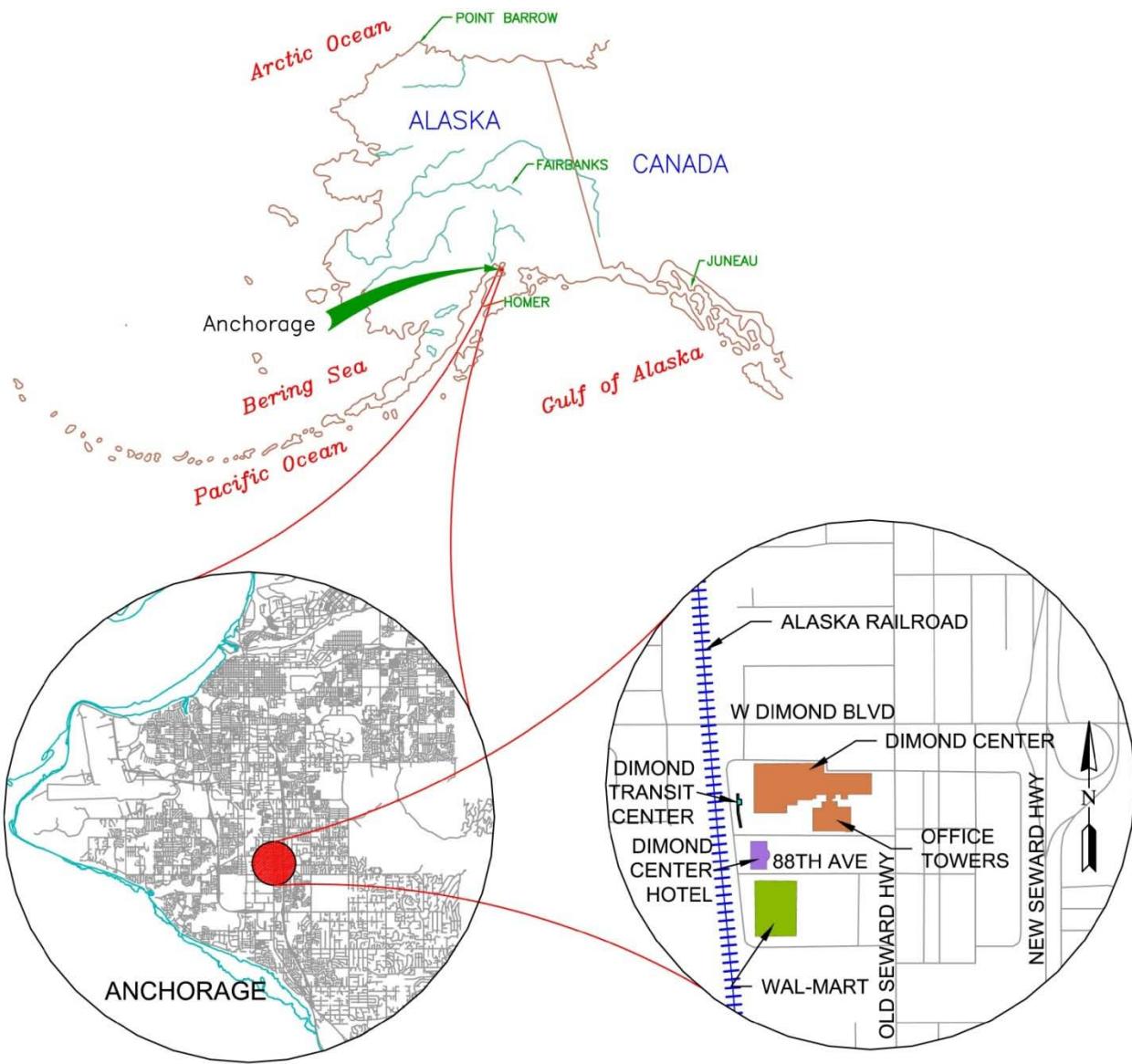


Figure 1: Location of Dimond Transit Center

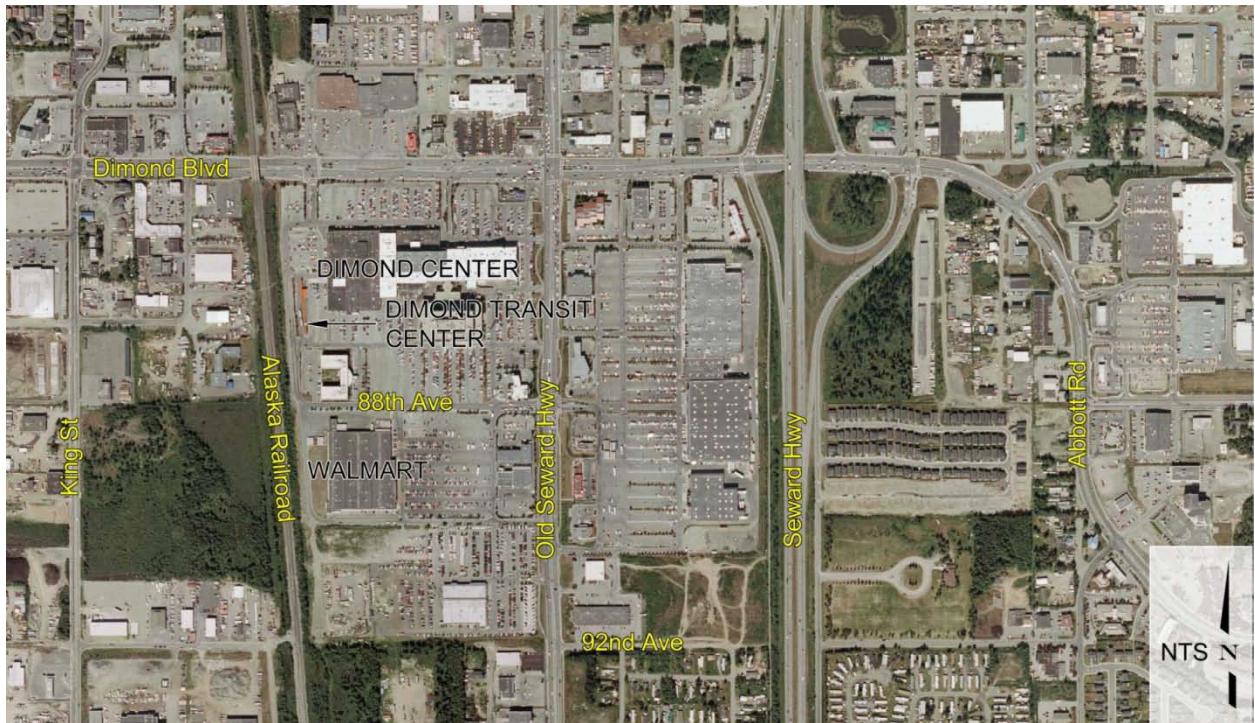


Figure 2: Dimond Transit Center and Vicinity

Existing Conditions

Existing users of the Dimond Transit Center include pedestrians, bicycles, and bus transit. In the future, train riders could also be serviced here if a train siding and platform were built in the area.

Good pedestrian and bicycle connections are important to the existing Transit Center and will be imperative for a successful intermodal facility in the future; however, several deficiencies with the current pedestrian and bicycle facility have been noted, including:

- Complete absence of pedestrian pathways between Dimond Boulevard to the north and the Dimond Transit Center
- Incomplete pedestrian access routes between the Dimond Transit Center and the Old Seward Highway to the southeast
- Difficult pedestrian wayfinding

As mentioned before, the Dimond Transit Center was built on private property about 20 years ago. This results in some difficulties for the bus system, including:

- Buses can only travel in one direction through the site due to geometric constraints at one of the intersections
- The existing Dimond Transit Center does not have enough bus parking spaces during driver breaks, resulting in some drivers parking their buses in the Dimond Center parking lot.

- Traffic congestion during peak shopping season results in significant delay to the buses that travel to the Dimond Transit Center.
- Drainage problems cause ponding in the area and have necessitated improvements to the boarding area.

Passenger trains operate on the tracks that pass by the Dimond Transit Center from mid-May to mid-September each year. ARRC operates two passenger trains on these tracks daily that leave Anchorage in the morning and return in the evening. In addition, ARRC runs trains at the request of cruise lines, carrying passengers from the ports up to Anchorage, Denali, or Fairbanks. About 2,000 passengers a day ride past the Dimond Transit Center over the summer months, with 600 of those passengers being direct ARRC customers.

In April 2009, the ARRC and the US Forest Service purchased a self-propelled railcar from Colorado Railcar Manufacturing for \$5.35 million. The diesel multiple unit (DMU) is used in the summer months for Whistle Stop service from Anchorage to Spencer Glacier, a remote back country area only accessible by train. The ARRC has applied for funding for additional DMUs.

Forecast employment growth for the Anchorage area is 0.8% per year from the year 2000 to the year 2030. The existing conditions report also noted that forecast population growth is 0.8% per year from the year 2007 to the year 2030. Ridership at the Dimond Center Intermodal Facility and activity at the Dimond Center is expected to grow at the same rate as Anchorage's population and employment. For purposes of demand estimates, a slightly more aggressive growth rate of 1% per year was assumed.

Future Rail Service

Several uses are envisioned for train service as part of the Dimond Intermodal Facility. ARRC is interested in running a commuter rail service that would include service to the two existing rail stations in Anchorage (one at the airport and one in downtown Anchorage), service north to Wasilla and Palmer, and service south to Girdwood, in addition to service to the proposed Dimond Intermodal Facility. In addition to commuter rail, the Dimond facility could serve the existing passenger train routes that travel southward in the summer to access backcountry hiking trails and could also serve passenger train travel southward in the winter to access backcountry skiing.

Ridership Projections

Bus ridership at the Dimond Transit Center was forecast using the Anchorage Metropolitan Area Transportation Solutions (AMATS) 2027 travel demand model. Using this model, bus ridership at the Dimond Transit Center was projected to be 920 riders in 2027. A 1% growth rate was used to project ridership back to 2015 and forward to 2030.

To determine rail ridership at the proposed Dimond Intermodal Facility, it was first necessary to determine the type of rider that would be expected at this facility. Previous studies into the feasibility of commuter rail service in Anchorage were performed by Wilbur Smith Associates (WSA) in 2002 and updated in 2009. These studies focused on work-based trips. Stakeholders interested in a rail station in the area of the Dimond Transit Center suggested a number of other potential uses for a local rail system in this area, including:

- Residents of outlying Alaska villages who fly to Anchorage to shop or to attend events such as the Alaska Federation of Natives convention. Currently, many of these trips are made via taxi. These types of trips would be heaviest in the summer months and during the month of October, when residents of Alaska receive their Permanent Fund Dividend checks.
- Recreational users accessing the ski resorts in Girdwood (about 40 minutes south of Anchorage) or remote trailheads south of Anchorage that can only be reached by rail.
- Middle and High School children from Girdwood who are bussed to Anchorage for school and stay for after school activities.

Based on these potential user types for the Dimond Intermodal Facility, high and low estimates were developed for rail ridership in 2015 and in 2030, as shown in the following tables.

Source of Data	Low	High
Estimated DCIF Ridership Based on WSA 2009 White Paper	57	76
ANC Enplanements Traveling to DCIF	74	85
Diversion from People Mover Bus Routes	41	57
<i>Subtotal</i>	172	218
Uncertainty	-15%	+15%
2015 Sketch Level Planning Demand Estimate Average Daily Ridership	146	251

NOTE: Ridership between Girdwood and the DCIF contributes insignificantly to the ridership estimates in this table.

Table 1: Year 2015 Service Demand Estimate for DCIF

Source of Data	Low	High
Estimated DCIF Ridership Based on WSA 2009 White Paper	66	88
ANC Enplanements Traveling to DCIF	85	171
Diversion from People Mover Bus Routes	57	66
<i>Subtotal</i>	208	325
Uncertainty	-15%	+15%
Sketch Level Planning Demand Estimate Average Daily Ridership	177	374

NOTE: Ridership between Girdwood and the DCIF contributes insignificantly to the ridership estimates in this table.

Table 2: Year 2030 Service Demand Estimate for DCIF

Recommendations

A phased approach is recommended for the development of the Dimond Intermodal Facility. First, improvements to the existing pedestrian, bicycle, and transit networks are needed. The second phase would include the construction of a train siding and platform. The final phase would include any additional improvements that were necessary, such as the construction of a combined bus transit center/train station or parking improvements.

Proposed Phase I improvements to the pedestrian and bicycle facilities include:

- Construction of sidewalk or trail to improve existing unpaved pedestrian and bicycle routes. Installing pedestrian scale lighting to provide illumination for these routes during the winter months.
- Installing pedestrian scale lighting and signage along existing paved pedestrian routes to improve pedestrian wayfinding.

Proposed Phase I improvements to the transit facilities include:

- Geometric improvements to the intersection of Dimond Boulevard with Dimond Center Drive to allow better access to the Dimond Transit Center.
- Improvements to the transit center to allow bi-directional bus travel and to increase bus parking.
- Improvements to the drainage system at the transit center.
- Site improvements to the Dimond Center parking circulation routes to decrease delay to buses.

The costs for Phase I are estimated to be around \$3 million, with \$9,000 yearly operation and maintenance increases. Most of the funding for this phase has been identified.

Phase II improvements include a 1,000 foot train siding, a high level platform, and an overhead walkway, stairs, and an elevator from the train platform to the existing bus transit center. The cost of Phase II is estimated to be around \$11 million, with \$0.9 million in yearly operation and maintenance costs. Funding for this phase has not been identified.

The environmental documentation for Phase I is currently being prepared and construction of Phase I is expected to take place during the 2013 construction season.

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