

Chapter 2: Review of Previous Studies

This chapter examines a number of recent studies that provide background information for transit planning in the BACTS region. The discussion focuses on transit-related issues addressed in these earlier reports. It identifies goals, findings, and recommendations that may be relevant for the region's public transportation system.

The chapter addresses the following studies and reports:

- Section 2.1 Evaluation of Public Transportation in the BACTS Area (1996)
- Section 2.2 Peer Comparisons in the 2001 Lewiston-Auburn Transit Study
- Section 2.3 Bangor Comprehensive Plan
- Section 2.4 Bangor International Airport Master Plan
- Section 2.5 Penobscot Riverfront Development Program
- Section 2.6 Bangor Mall Sub-area Plan
- Section 2.7 Bangor Center Revitalization Plan
- Section 2.8 Bangor Street Railway Grant Application

2.1 Evaluation of Public Transportation in the BACTS Area (1996)

A previous study of public transportation in BACTS region was completed by Tom Crikelair Associates in 1996. This planning effort included an analysis of service area characteristics, an onboard passenger survey, a random telephone survey, comparison of Bangor transit performance with peer transit systems, an evaluation of current fixed-route operations, and recommended strategies for improving public transportation services in the region. It also included a five-year capital and financial plan, and recommended marketing strategies for The Bus.

1996 Survey Results

Results of 1996 surveys should be noted, because these efforts will not be repeated in the 2002 study. The telephone survey revealed a high level of awareness and support for The Bus by area residents. More than 90% of area residents had a general knowledge of the fixed-route bus system, and nearly half of the residents surveyed had used the service at some time in the past. A combined total of 98% felt that The Bus is "very important" (80%) or "somewhat important" (18%) for the community as a whole. Eighty-nine percent favored continued local taxpayer support for the service.

The onboard survey found a high level of customer satisfaction with The Bus. Most service characteristics were rated positively by between 80% and 90% of riders. Ninety-one percent said it would be difficult or impossible to find other travel arrangements if

The Bus is cut back or eliminated. Two-thirds of bus riders reported household incomes under \$15,000. While nearly half the riders had valid drivers licenses, only 11% said they had a car available for their trip. One-third of riders said they were college or high school students. More than one-quarter of the riders started using the system within the past year, while 22% had used The Bus for 10 years or more.

Marketing Recommendations

The 1996 transit study recommended a number of marketing strategies that have been successfully implemented. These included:

- New full-color transit maps and timetables
- Introduction of a Monthly Pass program
- Joint marketing and outreach efforts with the University of Maine

The study also suggested introducing new bus stop signs throughout the system.

Service Improvement Strategies

The 1996 study suggested a number of improvement strategies to enhance customer convenience and operating efficiency. Key recommendations included:

- Offering faster “express” bus service between downtown Bangor and the Bangor Mall
- Improving the bus link between downtown Bangor and EMMC
- Increasing peak-hour frequencies on the Old Town route from once-an-hour to every 30 minutes
- Adding a separate Wilson Street route in Brewer to improve running times on the north and south Brewer loops

The 1996 study offered an implementation plan for possible evening service. It also discussed a possible shuttle bus service for the campus of the University of Maine.

While most of the marketing recommendations in the 1996 study were successfully implemented, many of the service improvement strategies were not pursued, due primarily to a lack of supporting federal, state, and local funding. A number of service deficiencies identified in the earlier study still need to be addressed. These include:

- Slow and circuitous routing of Mount Hope buses to the Bangor Mall
- Infrequent hourly headways on the Old Town route linking Bangor and Old Town with the University of Maine
- Infrequent hourly service to the Eastern Maine Medical Center and no convenient front-door stop at EMMC

2.2 Peer Comparisons in the 2001 Lewiston-Auburn Transit Study

In a 2001 study for the Lewiston-Auburn Transit Committee, Tom Crikelair Associates compared system performance of 12 small urban transit systems, including transit operations in Bangor, Lewiston, and Portland. Findings from the recent LATC study are noted here because peer comparisons will not be included in the current BACTS planning effort.

The LATC study examined Maine's three urban transit systems, along with similar sized operations in New Hampshire, Vermont, New York, Pennsylvania, Virginia, North Carolina, Missouri, and North Dakota. Comparisons were based on the USDOT's 1998 National Transit Database.

The Bangor transit system had the lowest cost per mile of the 12 peer transit systems. Bangor's cost of \$1.74 per mile was 44% below the average per mile cost of \$3.09 per mile. Bangor had the second lowest cost per service hour. Bangor's hourly cost was \$26.89, which is roughly one-third lower than the peer average of \$40.49 per hour.

The Bangor system carried an average of 14 riders per service hour, which compares with 11 riders per hour in Lewiston and 20 riders per hour in Portland. The average for 12 peers was 18 riders per hour. Overall community bus usage can be measured in terms of annual riders per capita. Bangor area buses transport 6.7 riders per capita, which compares with 1.8 in Lewiston-Auburn and 14.7 in Portland. The average for 12 peers was 10.0 riders per capita.

Maine's three urban transit systems received the lowest level of state subsidy. Bangor's state subsidy of \$.53 per capita compares with the peer average of \$4.90 per capita. Local subsidy support in the Bangor area equaled \$3.55 per capita, significantly below the peer average of \$8.55. Portland's per capita local support for local bus service equaled \$29.63.

The Bus had the third highest fare box recovery ratio, with fares covering 33% of total operating costs. The average rate for 12 peers was 26%. Portland covered 26% of costs with fare box receipts, while the Lewiston-Auburn Transit Committee covered 16%.

2.3 Bangor Comprehensive Plan

Bangor's Comprehensive Plan was updated and adopted by the City Council in July of 2000. The Plan documents historical trends in development and demographics, and it assesses existing community facilities, services, and infrastructure. It examines existing transportation systems, including roadways, transit services, the airport, and the waterfront. The document includes a range of component plans that address items such as housing, economic development, community services, natural resources, and transportation.

The plan describes how development patterns in Bangor have become increasingly complex in the past 30 years, influenced in part by the introduction of Interstate 95, development of the airport complex, and construction of the Bangor Mall northwest of the Interstate. These and other changes have disrupted what had previously been a “reasonably simple development pattern.” Planning efforts are needed “to make sense out of these widely dispersed and diverse development complexes and tie them together in a meaningful manner.” (page 2-2)

Demographic trends include higher education levels, higher income levels, and increases in the working age population, with overall employment shifting from industrial manufacturing to professional services. The elderly population within Bangor has also been increasing.

The Comprehensive Plan suggests that income trends in Bangor present “a widely divergent picture.” “While median family income increased in real dollar terms from 1980 to 1990, the number of persons and families below the poverty level has increased significantly as well.” (p. 3-2) Bangor has a larger percentage of people below the poverty level than surrounding areas. “The City’s role in providing social services and housing assistance in the region becomes apparent from these statistical trends.” (p.3-2)

The document’s Transportation Systems Plan observes: “It is well understood that decisions in the transportation area will continue to shape the physical development of the city in the future.” (p. 4-2) While highway improvements are an important feature in the plan, rising traffic levels can also become a problem. “As more people use more automobiles more frequently, the traffic in what were formally quiet residential neighborhoods becomes a greater management problem.” (p. 4-4)

While the first transportation goal is to optimize investment in the city’s street and highway system, the second goal is “to provide alternatives to the automobile for Bangor citizens.” Underlying policy recommendations call for operation and promotion of a well-defined, high quality, and reliable bus transit system.

The plan also recognizes the potential importance of regional and international travel modes. “Tourists may well wish to leave their automobiles behind and use various mass transportation modes when they visit the state in the future. The city should be ready to embrace access to and interconnection with such passenger movements.” (p. 4-5)

Bangor’s Comprehensive Plan includes references to related planning efforts that include transportation components. These include the Airport Master Plan, the Harbor Management Plan, the Bangor Mall Sub-area Plan, the Downtown Redevelopment Plan, the Penobscot River Waterfront Redevelopment Plan, and a Traffic Circulation Study of the Central Business District.

2.4 Bangor International Airport Master Plan

The Airport Master Plan describes existing and future activity at the airport, along with proposed facility improvements. Transit related issues addressed by the plan include:

- Pedestrian uses around the airport
- Proposed realignment of Odlin Road and Maine Avenue
- Future use of the Maine Business Enterprise Park
- Location and function of a future intermodal facility
- Rail uses and locations

The plan recognizes Bangor as hub for education, recreation, health care, commercial, industrial, and governmental activities. The city is also a travel gateway for the Canadian Maritimes and Eastern Quebec, as well as central, eastern, and northern Maine.

A section of the Airport Master Plan addresses possible locations for a proposed intermodal transportation facility. This facility would provide a transfer hub for a variety of regional transportation modes. It would require local transportation links with area hotels, the downtown waterfront, and a proposed downtown conference center. One proposed location near the Odlin Road would require a shuttle link to the airport terminal and to downtown. A location near the existing terminal building would require a shuttle link to downtown and possibly to other transportation facilities.

2.5 Penobscot Riverfront Development Program

The Penobscot Riverfront Redevelopment Plan calls for mixed-use development of a 30-acre site owned by the city of Bangor on the Penobscot River waterfront. The plan envisions that development on the waterfront site will include the following elements:

- Quality hotel
- Conference center
- Public park and recreation areas
- Amphitheater
- Restaurants and retail businesses
- Office facilities
- Residential apartments
- Intermodal transportation center

The Redevelopment Plan identifies Bangor as a regional tourism gateway. It also highlights continued growth in the region's health care industry. "Officials at Eastern Maine Medical Center and Acadia Hospital cited their growing need and desire for conference facilities and indicated a range of other potential users within the health care industry." (p. 20) Bangor's future as an international business center was also seen as contributing to the potential for a conference center.

The Conceptual Development Plan calls for a variety of activity districts:

- Public recreation area and an entertainment district along the immediate waterfront
- Business district along Main Street, including a hotel, conference center, and office building
- Residential district just south of the hotel and convention center
- Future highway-oriented hotel at the south end of the site

The Riverfront plan does address local transportation needs. However, it appears that a variety of local transportation links might be required, including

- Frequent shuttle service between the waterfront and downtown restaurants, museums, and businesses - expanding the pedestrian zone by allowing people to combine walking with short bus rides
- Shuttle links to the Bangor International Airport and other Bangor hotels
- Shuttle links to Eastern Maine Medical Center

2.6 Bangor Mall Sub-area Plan

The Sub-area plan for the Bangor Mall area focuses primarily on development trends, impacts on roadways and intersections, and utility and related service requirements. The plan documents major increases in the area developed and in traffic flows.

The study indicates that it is difficult to project the impact of future development on future traffic volumes, because “much of the new development ... will be receiving visits from persons already in the Mall area. Recent studies suggest that anywhere from 40% to 60% of customers for new enterprises will already be part of the “available traffic stream.”

These observations could suggest a potential role for a future mall-area transportation system, if shoppers could be convinced to use mall shuttles for trips between individual retail destinations.

2.7 Bangor Center Revitalization Plan

The Bangor Center Revitalization Plan is a guide for addressing needs and opportunities in Bangor’s center city district. The plan addresses a number of transportation issues, focusing on access, traffic circulation, and parking. Key concerns include:

- Easy vehicle access to the downtown from major regional routes and cross-town arterials
- Easily accessible off-street parking at strategic vehicle entrances to the downtown
- Safe, convenient, and attractive pedestrian circulation routes between parking areas and downtown destinations

The plan calls for rerouting cross-town traffic, followed by reconfiguration of major intersections “to emphasize pedestrian as opposed to vehicular traffic flow.” The plan cites locations where improved off-street parking facilities could be developed. These locations are located in or immediately adjacent to the downtown center.

The plan does not address the potential for peripheral lots with linking shuttle service. It does, however, refer to the concept of “a tracked trolley connection between the downtown and the waterfront and Bass Park areas. It suggests that this idea should continue to be explored “as a means of better interrelating these areas functionally and economically.” It suggests that the downtown terminus of such a trolley system would be at the city’s parking garage bus shelter. It says: “The system should be designed as an all-season system utilizing, wherever possible, existing rail lines and public rights-of-way.”

The plan suggests that the city consider adopting a parking waiver fee for downtown developments that do not provide parking as required by zoning. It suggests that revenues be used to finance parking expansion. In some communities, parking waiver fees are also used to pay for parking lot shuttles and other transit services. The Bangor plan makes no reference to using parking fees for transit.

The plan calls particular attention to development opportunities for a city-owned parcel of land north of Kenduskeag Stream. The parcel is a 60,000 square foot block bounded by Washington Street, Exchange Street, Hancock Street, and Kenduskeag Plaza.

2.8 Bangor Street Railway Grant Application

In January of 2001, the city of Bangor applied to the Federal Highway Administration for capital funding to reestablish a “Bangor Street Railroad System.” The application envisions a network of self-propelled trolley vehicles that would provide intermodal links for visitors and tourists arriving and departing the Bangor regional transportation hub. It calls for using rail or street-based equipment, or a combination of both.

Trolley routes would supplement Bangor’s existing transit system by providing enhanced links to employers, educational and government institutions, major health service providers, and major retail centers.

The application envisions service to:

- Bangor International Airport
- Bass Park
- Penobscot Riverfront hotel and conference center
- Bangor’s downtown center
- Pickering Square parking garage and transit terminal
- Eastern Maine Medical Center
- Bangor Mall

- University of Maine’s Orono campus
- Proposed Calais branch passenger rail terminal
- Proposed riverfront high-speed ferry terminal
- Proposed gateway parking facility at the I-95/I-395 interchange

The application seeks \$635,250 for equipment purchases. It does not ask for federal funding for planning or for operations.

The application suggests that the concept could be tested by establishing an “initial phase” to link Bass Park, the Penobscot Riverfront Development Area, and downtown Bangor.

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