# Extending the *Downeaster* Twice Daily To Bangor and Orono: An Economic Benefits Assessment

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## SUMMARY

**Rail Passengers modeling indicates that extending the existing Amtrak *Downeaster* service to Bangor with two daily roundtrip services could generate some $61.7 million in annual economic benefits (2025 dollars) for all 16 counties in the state of Maine — not only those with train stations — driven by generating new incremental ridership of more than 260,000 in the first year of service.**

Economic benefits will accrue in two ways — in the form of additional spending by passengers and by businesses serving those passengers or supporting the local economy, and also in the form of savings to municipalities, and passengers themselves.

Additional spending from riders in local economies comes as passengers board and alight in different places, opening their wallets along the way in local hotels, restaurants, and retail establishments, and inducing business-to-business transactions.

Savings come mostly through diverting vehicle miles traveled to rail, which produces cascading savings to many others — municipalities benefit in the form of reduced road construction and maintenance, society as a whole sees savings in the form of lower deaths and pollution emissions, and passengers themselves save because they often experience a lower overall trip cost by taking a train than they do by driving, flying or riding a bus once the total costs of ownership are taken into account.

*Rail Passengers* modeling of the Bangor extension suggests that **new visitor and traveler spending of some $15.5 million per year** across categories such as lodging, restaurants, entertainment, and shopping would support **191 new jobs**, concentrated mostly in Cumberland, Androscoggin, Kennebec, Penobscot, and Sagadahoc counties. Mainers could also see savings of some $12 million annually over other modes of travel, and road maintenance costs could be reduced by close to $10 million per year.

This *Rail Passengers Research Note* summarizes our results across five core dimensions: ridership, visitor spending, tax revenues, induced economic activity, and vehicle miles traveled (VMT) reduction. Our team modeled both projected ridership and economic output derived from that ridership, while also taking into account known regional destinations, tourism assets, healthcare centers, and educational institutions across Maine. We also performed a limited sketch-level assessment of the capital-spending effects to build platforms and structures associated with bringing service to places where it does not exist today. Those benefits are covered elsewhere in this report.

# FINDINGS

*Rail Passengers* was asked to assess the potential economic benefits of extending existing Amtrak *Downeaster* service with two daily roundtrips beyond the existing terminus of Brunswick. New stops examined were Lewiston, Winthrop, Waterville, Pittsfield, Bangor, and Orono, as well as the currently served stations. *Rail Passengers* modeling suggests that operating the additional *Downeaster* service could generate a **total economic benefit of $61.69 million annually, which can be expected to grow as ridership increases**.

*Rail Passengers'* ridership analysis suggested that **total new annual ridership on the *Downeaster* could be in the range of 260,534 riders in the first year.** Importantly, our modeling suggests that of the total ridership, around 11 percent represent travelers who would stay home and not spend any money in the absence of the service.

## Projected Ridership Gains

Every county in Maine is projected to generate new ridership if the *Downeaster* service is extended to Bangor, not just those counties directly served by a station. **Androscoggin** and **Kennebec** counties are projected to see the largest increase in ridership, at 36,240 and 36,034 respectively. This is followed by **Sagadahoc County** at 31,919, and **Penobscot** (where the extended service would terminate) at 31,479. Penobscot's ridership would be anchored by Bangor and Orono (home to the University of Maine). **Cumberland County**, which includes the cities of Portland, Freeport, and Brunswick and which enjoyed total 2024 *Downeaster* ridership of more than 309,000, would see the largest ridership increase among those communities already served, adding more than 26K additional annual boardings and alightings. Counties without stations, such as **Franklin** and **Piscataquis**, still contribute meaningfully — highlighting that Mainers would be willing to travel to the nearest station for service. This is especially true where counties feature major destinations like Acadia National Park in **Hancock County**, or Bates College, Poland Spring, and Lost Valley Ski Area in **Androscoggin County**.

## Annual Visitor Spending Benefit

The economic uplift from visitor spending (which, importantly, includes *all* travelers and not just those traditionally defined as "tourists") is substantial. **Cumberland County** leads the state with more than $9.6 million in new annual spending driven by the extension. Attractions such as LL Bean in Freeport, Casco Bay ferries, and the University of Southern Maine draw significant travel demand. Even smaller counties reap economic benefits — **Oxford County** records nearly $110,000 in new spending despite lacking a station. The presence of destinations like Boothbay Harbor in **Lincoln County** and whitewater rafting in The Forks in **Kennebec County** enhances travel appeal, supporting rail-driven tourism even

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in less urbanized areas. Overall, *Rail Passengers Association* estimates that **annual visitor spending** statewide across all categories — lodging, restaurants, entertainment, shopping, and the use of local transportation at destinations — **would exceed $15.5 million.**

## Annual Tax Revenues

*Downeaster* expansion would also generate millions in new tax revenue statewide. **Cumberland County** alone would generate more than $1.4 million annually in new tax revenues within the state. **Penobscot County**, bolstered by activity around Bangor, Orono, and the University of Maine, would generate more than $144K. Significant health institutions like St. Joseph Hospital in Penobscot and Central Maine Medical Center in Androscoggin also contribute to economic volume. Even unserved counties such as **Oxford**, **Waldo**, and **Franklin** would see tax revenues increase by tens of thousands annually, reflecting spending by traveling residents and visitors drawn to local attractions like Penobscot Bay, or Belfast Bay.

## Induced Economic Activity

The modeling also captures induced economic effects — spending that ripples through local economies. These include labor income, corporate profits, and economic multipliers. **Cumberland County** again posts the highest total, exceeding $37.9 million annually in new induced spending, much of it centered around its robust educational and tourism sectors. **Androscoggin County** exceeds $3.8 million, with important contributors like Bates College and Poland Spring. **Kennebec County**, home to the state capital, multiple colleges, and the Togus VA Hospital, sees nearly $3.8 million. The results are robust even in lower-population counties: **Hancock** contributes significantly at $1.3 million, thanks in part to destinations like Bar Harbor and the College of the Atlantic, and **Franklin**, **Lincoln**, and **Somerset** each contribute between $600K and $861K in new spending benefit.

## Vehicle Miles Traveled (VMT) Reductions and Road Maintenance Savings

Extending the *Downeaster* to Bangor would remove millions of vehicle miles from Maine's roads, with profound environmental and infrastructure implications. Together, the 16 counties considered in this analysis should expect to see roughly **5.9 million vehicle-miles traveled, or VMTs, removed from highways and secondary roads** thanks to a combination of existing visitors and residents who will shift some of their driving to using the train and new visitors who would not travel to these locations using any travel mode if the train did not exist.

Reducing VMTs can be expected to reduce costs imposed on municipalities and states for highway and road maintenance, reduce pollution and emissions, and reduce the number

of deaths from motor-vehicle crashes. **Road maintenance savings are projected to be worth roughly $9 million annually. Cumberland County** would see the largest annual reduction — more than 3.45 million vehicle miles eliminated — equating to over $5.3 million in avoided road maintenance. Other top contributors include **Androscoggin County** (373,000 VMTs removed), **Kennebec County**, at 370,949 VMTs removed), and **Sagadahoc County** at 328,587. Even counties without stations, like **Oxford** and **Franklin**, would see road usage decline by tens of thousands of miles per year. This reduction not only extends the life of Maine's roads but also reduces traffic congestion and vehicle emissions — key benefits aligned with broader climate and sustainability goals.

It's important to note that *Rail Passengers* modeled pollution-reduction benefits at the very low end of scientific consensus: $100 per ton of $CO_2$. Although some international estimates put the total cost burden of $CO_2$ per ton as high as $2,000, *Rail Passengers* chose to use the lower figure to be conservative. We believe a $500 per ton figure is both reasonable and defensible. The $100 per ton figure used in this analysis results in total annual pollution-reduction savings of just under half a million dollars; however, had the $500 per ton figure been used we would have reported generating annual savings of more than $2 million. *Rail Passengers* would be comfortable reporting the $2 million figure as a reduced-pollution economic benefit.

## Conclusion

The evidence is clear: extending the *Downeaster* to Bangor delivers significant economic, environmental, and social benefits across every county in Maine. This is not merely a transportation project; it is a statewide investment in mobility, tourism, education, healthcare access, and rural economic development. With colleges, hospitals, outdoor recreation, and iconic destinations woven into the state's fabric, *Downeaster* service offers a modern connection that binds Maine's communities, north and south, and ensures broader participation in its economic future.

## METHODS AND APPROACH

### Rail Passengers Ridership Model

For this assessment of the value of additional rail service, we calculated more than 70 variables for the counties that would encompass the station stops we were asked to examine, as well as additional counties to encompass rural areas whose residents could be expected to use train service. Counties assessed were:

Androscoggin County
Aroostook County
Cumberland County
Franklin County
Hancock County
Kennebec County
Knox County
Lincoln County
Oxford County
Penobscot County
Piscataquis County
Sagadahoc County
Somerset County
Waldo County
Washington County
York County

Based on those selections, we began by applying our in-house ridership model to estimate ridership based on particular characteristics of each county, broadly classified into five categories – demographics, industries, land-use, travel and transportation patterns, and natural/environmental factors. Since 2016, *Rail Passengers* has been assessing and comparing ridership at every station stop in the Amtrak system to understand the differences in the ways that populations in rural counties use Amtrak services compared with more suburban or urban communities.

For this analysis, *Rail Passengers* used its dataset of 389 U.S. counties with Amtrak service. Insights from this dataset reveal that 13 specific variables are statistically significant in estimating ridership in a given county at a 95 percent confidence level. These include both obvious and less-obvious characteristics. We assess, for example, the percentage of disabled residents, the percentage of residents without cars, as well as overall economic indicators such as the county's median income, the percent of county residents who rent, or the unemployment rate of the county. We also include the types of industry or

attractions available (light industry, warehousing, tourism, hospitals, and so forth), and even the annual lowest temperature.

After producing the ridership analysis, we then used our county-by-county ridership estimates to calculate the ways in which ridership increments in a given locality affected outcomes such as new visitor spending in various categories, the number of trips into and out of a locality, the percentage of trips taken in each travel mode (rail, car, bus or air), removed vehicle miles traveled (VMTs) and the savings associated with reduced VMTs in the form of pollution reductions, avoided fatalities and reduced per-mile road maintenance costs which are typically borne by the municipality. These calculations, in turn, are used to calculate additional business activity generated across industries. This two-step process is explained in more detail below.

## How Our Economic-Benefits Modeling Works

Our proprietary *Rail Passengers* economic-benefits model, co-developed in 2017 with the University of Southern Mississippi's Trent Lott Center, uniquely assesses 47 variables, incorporating the ridership estimates produced by our ridership model and ranging from things such as average bus operating revenues, passenger miles by car, emissions control costs per unit of $CO_2$, to the percentage of rail riders who are visitors versus residents, and so forth. Our model examines the way in which those variables interact with each other to produce different outcomes in the form of additional increments of spending or savings to consumers.

In Step One, our model's assessment produces outputs estimating the effects of ridership on things like visitor spending across different categories and the savings that riders can expect to pocket because of not driving or flying. The two core drivers of our model are ridership and mileage. Ridership figures drive the additional increments of spending, while mileage figures drive the savings produced. This first step of our economic-benefits modeling process produces a useful accounting of direct benefits stemming from rail ridership all on its own. We then combine this work with a second, additional, step to broaden our view of the benefits of rail throughout the economy.

In Step Two, we enter our model results/outputs into IMPLAN, a modeling tool widely used by universities, the Federal government, and economic-development agencies.[1] IMPLAN relies on Input-Output (I-O) analysis, which looks at inter-industry relationships within an economy. It captures all monetary market transactions *between industries*. By doing this, analysts can use the tool to study the effects of a change in one or several economic activities – say, introducing a passenger rail service -- on an entire economy. Uniquely

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[1] For more detailed explanations of IMPLAN, visit https://implan.com/application/

among economic-study tools, IMPLAN also includes transactions between industries and institutions and between institutions themselves, giving a truly complete picture of all monetary market transactions taking place over a given time period.

Put more simply, after *Rail Passengers*' model identifies the spending that enters a particular economy from the rail service, the IMPLAN tool traces the flow of that money through other parts of the local economy and the extent to which those flows generate additional labor income, value-added benefits, and tax effects.

## Notes and Limitations

The purpose of this Research Note was to create a high-level analysis of the conditions now present in the State of Maine, and to assess whether those conditions pointed toward sufficient potential economic benefits to justify moving into a more formalized study. Our scope was to assess both the ridership potential and the scale of economic benefits from extending passenger service twice each day to Bangor, using a set of station stops supplied by The Maine Rail Group other requesters. As such, this document is not a formal Operations Analysis or Service Development Plan, and our work did not consider a range of factors, such as, but not limited to:

- The final operating schedule of the service, which will affect whether the train is desirable or attractive to passengers
- Costs of any additional required station improvements for each station based on an in-situ assessment of existing physical conditions or ADA compliance
- Costs for rolling stock and locomotives that might be used in the service
- An updated assessment of track conditions and signaling by operating company and territory, or
- Changes in operating conditions by proposed host railroads

# RIDERSHIP PROJECTIONS

*RailPassengers'* ridership analysis assesses that annual ridership on a potential new extension to Bangor could begin at about 260K riders in year one growing to more than 330K riders by year five, based on the mix of urban, suburban, and rural counties which would be served by this route, and the opportunities for facilitating tourism, medical, and student-driven travel.

| Projected Incremental Ridership Gains By County/(Station) | | | | | |
|---|---|---|---|---|---|
| County/(Station) | Yr One | Yr Two | Yr Three | Yr Four | Yr Five |
| York County (**Wells***, **Saco***) | 24,637 | 26,093 | 27,635 | 29,268 | 30,998 |
| Oxford County | 4,703 | 4,981 | 5,275 | 5,666 | 6,085 |
| Cumberland County (**Portland***, **Freeport***, **Brunswick***) | 26,196 | 27,744 | 29,384 | 31,120 | 32,960 |
| Sagadahoc County | 31,919 | 33,805 | 35,803 | 38,453 | 41,298 |
| Androscoggin County (**Lewiston**) | 36,240 | 38,382 | 40,650 | 43,053 | 45,597 |
| Franklin County | 8,584 | 9,091 | 9,629 | 10,341 | 11,106 |
| Kennebec County (**Winthrop, Waterville**) | 36,034 | 38,164 | 40,419 | 42,808 | 45,338 |
| Lincoln County | 6,132 | 6,494 | 6,878 | 7,387 | 7,934 |
| Somerset County (**Pittsfield**) | 7,091 | 7,510 | 7,954 | 8,543 | 9,175 |
| Waldo County | 9,990 | 10,580 | 11,206 | 12,035 | 12,926 |
| Knox County | 13,380 | 14,171 | 15,008 | 16,119 | 17,312 |
| Piscataquis County | 2,474 | 2,620 | 2,775 | 2,980 | 3,201 |
| Penobscot County (**Bangor**, **Orono**) | 31,479 | 33,339 | 35,310 | 37,923 | 40,729 |
| Hancock County | 12,988 | 13,756 | 14,569 | 15,647 | 16,804 |
| Aroostook County | 5,406 | 5,725 | 6,064 | 6,513 | 6,995 |
| Washington County | 3,281 | 3,475 | 3,680 | 3,953 | 4,245 |
| **TOTAL** | **260,534** | **275,932** | **292,239** | **311,807** | **332,702** |
| * indicates existing *Downeaster* stop | | | | | |

Source: Rail Passengers Railway Ridership Model, via IBM SPSS Analysis

*RailPassengers'* previous work suggests that there is a stronger relationship between the population size of the county and the share of ridership than there is between median income for a county and its ridership. Since 2016, our work examining ridership across all Amtrak-served origin/destination points shows that rural and lightly populated areas are outsized users of passenger rail service, often producing annual trip numbers that are multiples of the catchment area's population rather than fractions.

As explained previously, our ridership model uses 13 statistically significant demographic, industry, and environmental characteristics derived from a study of 389 Amtrak-served counties to estimate how many riders a given county could be expected to produce.

# PASSENGER SPENDING

New, incremental visitor spending brought to each served community because of the new train service was assessed at **$11.3 million annually**. It is important to note that this is not all the spending captured in our modeling work, but simply the value of a portion of the

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new spending. There are more effects from a broader view of visitor spending captured elsewhere in the model, particularly in the IMPLAN Labor Income, Value-Added and Output values. Some visitors would still make the trip, but might drive, or take a bus or drive. Our model captures them as well. Thus, the Visitor Spending figure reported below includes those additional factors and produces an estimate of **$15.58 million in annual visitor spending across all categories.**

| County/(Station) | Lodging | Restaurants | Entertainment | Shopping | Local Transportation | Total New Spending |
|---|---|---|---|---|---|---|
| York County (**Wells\*, Saco\***) | $ 178,276 | $ 174,635 | $ 107,402 | $ 81,552 | $ 83,250 | $ 625,115 |
| Oxford County | $ 31,985 | $ 31,299 | $ 18,329 | $ 13,554 | $ 14,171 | $ 109,339 |
| Cumberland County (**Portland\*, Freeport\*, Brunswick\***) | $ 2,724,817 | $ 2,742,957 | $ 1,635,380 | $ 1,264,480 | $ 1,277,631 | $ 9,645,266 |
| Sagadahoc County | $ 210,540 | $ 197,031 | $ 121,981 | $ 88,868 | $ 90,332 | $ 708,752 |
| Androscoggin County (**Lewiston**) | $ 274,885 | $ 274,718 | $ 163,862 | $ 122,192 | $ 119,403 | $ 955,060 |
| Franklin County | $ 64,338 | $ 59,975 | $ 36,040 | $ 27,586 | $ 29,878 | $ 217,817 |
| Kennebec County (**Winthrop, Waterville**) | $ 271,358 | $ 269,901 | $ 157,556 | $ 117,015 | $ 117,853 | $ 933,683 |
| Lincoln County | $ 43,423 | $ 43,411 | $ 25,408 | $ 20,067 | $ 19,258 | $ 151,567 |
| Somerset County (**Pittsfield**) | $ 49,406 | $ 47,033 | $ 28,613 | $ 20,691 | $ 21,511 | $ 167,253 |
| Waldo County | $ 70,126 | $ 70,131 | $ 46,981 | $ 31,383 | $ 33,449 | $ 252,070 |
| Knox County | $ 99,738 | $ 97,324 | $ 57,869 | $ 45,068 | $ 45,027 | $ 345,026 |
| Piscataquis County | $ 16,706 | $ 16,464 | $ 10,074 | $ 7,416 | $ 7,474 | $ 58,135 |
| Penobscot County (**Bangor**, Orono) | $ 253,300 | $ 251,629 | $ 150,502 | $ 112,154 | $ 111,851 | $ 879,437 |
| Hancock County | $ 94,065 | $ 91,405 | $ 55,123 | $ 41,054 | $ 40,743 | $ 322,389 |
| Aroostook County | $ 41,803 | $ 39,713 | $ 23,854 | $ 17,871 | $ 17,478 | $ 140,719 |
| Washington County | $ 22,730 | $ 22,065 | $ 12,948 | $ 9,237 | $ 10,365 | $ 77,345 |
| **TOTAL** | **$ 4,447,499** | **$ 4,429,690** | **$ 2,651,921** | **$ 2,020,190** | **$ 2,039,675** | **$ 15,588,974** |

Annual Induced New State Visitor Spending From Downeaster Bangor Extension (incl Labor and Value Add)

\* - indicates existing *Downeaster* station stops

*Source: Rail Passengers Railway Benefits Calculator, IMPLAN Economic Modeling Tool*

The calculation underlying the percentage we apply to arrive at this figure was developed in 2017 through extensive research and literature review: *# of passengers deboarding X fraction of passengers assumed to be nonresident X fraction of "induced" passenger*s (i.e., passengers who only took the trip because the train route exists) X *lodging/restaurant/entertainment/shopping/local transportation spending per person reported by tourist bureaus in each state.*

# ENVIRONMENTAL BENEFITS

| Annual Reduction In Vehicle Miles Traveled (VMTs) | | |
|---|---|---|
| County/(Station) | VMTs Removed | Road Mx Savings |
| York County (**Wells\***, **Saco\***) | 253,623 | $ 393,250 |
| Oxford County | 48,415 | $ 75,068 |
| Cumberland County (**Portland\***, **Freeport\***, **Brunswick\***) | 3,452,867 | $ 5,353,773 |
| Sagadahoc County | 328,587 | $ 509,484 |
| Androscoggin County (**Lewiston**) | 373,069 | $ 578,455 |
| Franklin County | 88,367 | $ 137,016 |
| Kennebec County (**Winthrop, Waterville**) | 370,949 | $ 575,167 |
| Lincoln County | 63,125 | $ 97,878 |
| Somerset County (**Pittsfield**) | 72,998 | $ 113,185 |
| Waldo County | 102,841 | $ 159,458 |
| Knox County | 137,739 | $ 213,569 |
| Piscataquis County | 25,468 | $ 39,489 |
| Penobscot County (**Bangor**, **Orono**) | 324,058 | $ 502,461 |
| Hancock County | 133,704 | $ 207,312 |
| Aroostook County | 55,652 | $ 86,289 |
| Washington County | 33,776 | $ 52,371 |
| **TOTAL** | **5,865,237** | **$ 9,094,225** |

\* - indicates existing *Downeaster* station stops

*Source: Rail Passengers/USM Railway Benefits Calculator*

Trains are inherently energy efficient. In the United States, the Oak Ridge National Laboratory reports in Edition 39 of the Transportation Energy Data Book that as of 2018 Amtrak consumed 1,535 Btus per passenger mile, compared with 2,840 Btus per passenger mile for personal automobiles.[2] Thus, every reduction in vehicle-miles traveled helps to reduce the energy intensity of passengers' travels.

A 2007 study for the American Bus Association – "Comparison of Energy Use & CO2 Emissions From Different Transportation Modes" – found CO2 levels generated by trains, air travel, cars, and buses were estimated to be 177 grams per passenger mile, 243 grams per passenger mile, 371 grams per passenger mile, and 299 grams per passenger mile, respectively[3]. Once again, every VMT saved translates into less pollution emitted.

*Rail Passengers*' calculation of the economic value of these reductions is extremely conservative, however, and is based on work by the U.S. Department of Transportation and the Victoria Transport Policy Institute ("Transportation Cost and Benefit Analysis II – Air Pollution Cost"). ***The Institute notes that CO2 Emissions are very difficult to price, given varying climate forecasts and future discounting behavior***. Per ton, studies have estimated that CO2 Emissions have an impact from $17 to $917. However, there are credible estimates that put that cost well over $1,000 and even $1,600 per ton. The current guidance from the U.S. Dept. of Transportation for assessing the social cost of carbon is $57 per ton.[4]

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[2] Transportation Energy Data Book: Edition 39, Table 2.13 Passenger Travel and Energy Use, 2018 - https://tedb.ornl.gov/wp-content/uploads/2021/02/TEDB_Ed_39.pdf#page=63

[3] M. B. &. Associates, "Comparison of Energy Use & CO2 Emissions From Different Transportation Modes," American Bus Association, 2007.

[4] US DOT – Benefit-Cost Analysis Guidance for Discretionary Grant Programs, p 40

We modeled pollution-reduction benefits at the very low end of scientific consensus: $100 per ton of CO2. Although some international estimates put the total cost burden of CO2 per ton as high as $2,000, *Rail Passengers* chose to use the lower figure to be conservative. We believe a $500 per ton figure is both reasonable and defensible. **The $100 per ton figure *Rail Passengers* used in this analysis results in total annual pollution-reduction savings of just under half a million dollars; however, had the $500 per ton figure been used we would have reported generating annual savings of more than $2 million.** *Rail Passengers* would be equally comfortable reporting the $2 million figure as a reduced-pollution economic benefit.
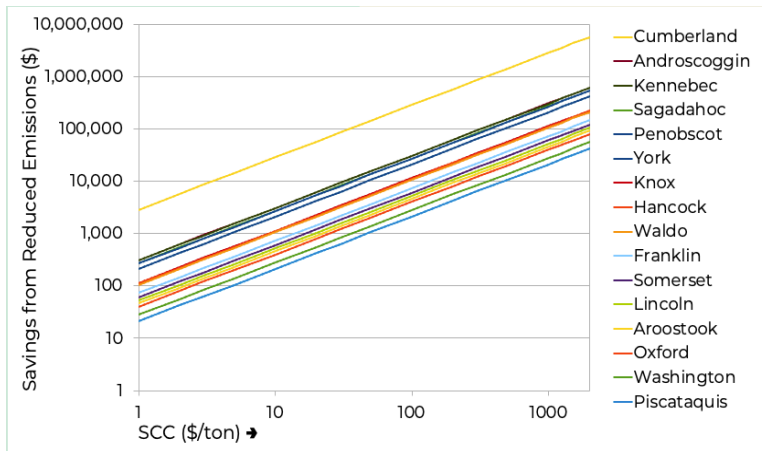


## SAVINGS FROM REDUCED VEHICLE MILES TRAVELED (VMTs)

Reducing the total number of vehicle miles traveled (VMTs) also translates into a reduced need to spend on roadway maintenance, both on highways and secondary roads, due to the fraction of reduced wear-and-tear imposed on the roadways.

We assume the train riders (not including the newly induced riders) who live in a region need to travel no matter what travel mode is provided. If the train was not there, they would take cars, planes, or buses. One of the values our model calculates is how many passenger miles traveled would have happened in cars if there were no passenger rail service. The Railway Benefits Calculator model *Rail Passengers* co-developed with the University of Southern Mississippi estimates the accrued annual savings to municipalities from reduced road wear-and-tear, assigning the savings only to the fraction of trips diverted from the roads to trains.

## OVERALL BENEFITS FROM DIRECT OPERATIONS

### Annual Estimated Economic Benefits of Extending Downeaster to Bangor 2x Daily

Presented below are the aggregate results of all the calculations and formula results from *Rail Passengers'* ridership model, *Rail Passengers'* economic-benefits model, and the

IMPLAN model's calculations of additional benefits in the form of Labor Income, Value-Added and total economic Output.

Results at the county level for counties in which station stops will be located are driven primarily by ridership at these stations. Results at a state-wide level are primarily driven by induced state-level spending not captured at the station level and the effects of maintenance and support spending on rail rights-of-way in each state.

As noted earlier, *Rail Passengers* did not include the benefits of a projected three- to five-year capital investment program that will be required to improve railbeds and signals, or to construct new tracks and sidings. Our team modeled high-level capital assumptions for each of the new station facilities that will be built, but that analysis is included separately. The table below reflects annual, continuing economic contributions rather than the time-limited horizon of capital projects.

*NOTE: The "Output" column includes amounts from the Labor Income and Value-Added columns, but also includes other inputs. Output cannot be viewed as the sum of Labor Income and Value-Added.*

| Downeaster Bangor Extension: Annual Estimated Economic Benefits to Selected Counties | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| County/(Station) | Visitor Spending (Direct) | Reduced Pollution | Reduced Crash Fatalities | Avoided Road Maintenance | Avoided Travel Costs (vs Other Modes) | Labor Income | Value Added | Output** | Total Economic Benefit |
| York County (Wells*, Saco*) | $ 487,290 | $ 20,984 | $ 29,609 | $ 393,250 | $ 519,666 | $ 332,866 | $ 654,623 | $ 1,034,783 | $ 2,485,582 |
| Oxford County | $ 93,020 | $ 4,006 | $ 5,652 | $ 75,068 | $ 99,200 | $ 52,702 | $ 106,199 | $ 171,007 | $ 447,952 |
| Cumberland County (Portland*, Freeport*, Brunswick*) | $ 6,634,042 | $ 285,673 | $ 403,101 | $ 5,353,773 | $ 7,074,809 | $ 6,361,502 | $ 11,722,134 | $ 18,138,159 | $ 37,889,558 |
| Sagadahoc County | $ 631,319 | $ 27,186 | $ 38,361 | $ 509,484 | $ 673,264 | $ 346,535 | $ 690,162 | $ 1,109,490 | $ 2,989,103 |
| Androscoggin County (Lewiston) | $ 716,783 | $ 30,866 | $ 43,554 | $ 578,455 | $ 764,406 | $ 537,171 | $ 1,050,544 | $ 1,679,716 | $ 3,813,780 |
| Franklin County | $ 169,781 | $ 7,311 | $ 10,316 | $ 137,016 | $ 181,061 | $ 106,853 | $ 212,633 | $ 355,834 | $ 861,320 |
| Kennebec County (Winthrop, Waterville) | $ 712,709 | $ 30,690 | $ 43,306 | $ 575,167 | $ 760,061 | $ 547,023 | $ 1,043,361 | $ 1,641,699 | $ 3,763,632 |
| Lincoln County | $ 121,284 | $ 5,223 | $ 7,369 | $ 97,878 | $ 129,342 | $ 75,514 | $ 147,703 | $ 239,746 | $ 600,841 |
| Somerset County (Pittsfield) | $ 140,251 | $ 6,039 | $ 8,522 | $ 113,185 | $ 149,570 | $ 76,754 | $ 153,059 | $ 258,058 | $ 675,626 |
| Waldo County | $ 197,590 | $ 8,509 | $ 12,006 | $ 159,458 | $ 210,718 | $ 108,011 | $ 225,998 | $ 386,030 | $ 974,311 |
| Knox County | $ 264,640 | $ 11,396 | $ 16,080 | $ 213,569 | $ 282,223 | $ 189,608 | $ 367,106 | $ 584,568 | $ 1,372,476 |
| Piscataquis County | $ 48,933 | $ 2,107 | $ 2,973 | $ 39,489 | $ 52,184 | $ 24,786 | $ 52,566 | $ 89,944 | $ 235,630 |
| Penobscot County (Bangor, Orono) | $ 622,616 | $ 26,811 | $ 37,832 | $ 502,461 | $ 663,983 | $ 479,951 | $ 949,310 | $ 1,552,779 | $ 3,406,482 |
| Hancock County | $ 256,887 | $ 11,062 | $ 15,609 | $ 207,312 | $ 273,954 | $ 184,230 | $ 351,050 | $ 541,339 | $ 1,306,163 |
| Aroostook County | $ 106,924 | $ 4,604 | $ 6,497 | $ 86,289 | $ 114,028 | $ 70,356 | $ 139,854 | $ 234,272 | $ 552,615 |
| Washington County | $ 64,894 | $ 2,794 | $ 3,943 | $ 52,371 | $ 69,206 | $ 32,461 | $ 70,308 | $ 122,337 | $ 315,546 |
| **TOTAL** | $ 11,268,964 | $ 485,261 | $ 684,731 | $ 9,094,225 | $ 12,017,675 | $ 9,526,321 | $ 17,936,610 | $ 28,139,761 | $ 61,690,616 |

\* - indicates existing *Downeaster* station stops

\*\* - includes **Labor Income** and **Value Added** values, but not a total

Source: *Rail Passengers Railway Benefits Calculator, IMPLAN Economic Modeling Tool*

# ADDITIONAL RESULTS

## Benefits From Capital Spending on New Station Facilities

We were asked to assess the economic contributions of time-limited capital spending on six new station facilities as part of our work, consisting of five "Shelter" stations for most of the route and one "Medium" station in Bangor. New station construction is only one portion of the capital spending that will generate economic benefits; track work and signaling, for example, also contributes to the local economy, although this is already being performed by host railroads and thus not included in our analysis.

The Federal Railroad Administration maintains Standard Cost Categories for rail construction elements. Stations and terminals construction is covered in SCC 20, and this is the category to which we confined our analysis. SCC 30 Support Facilities (Yards, Shops, Administration Buildings), SCC 10 Guideway and Track Elements, SCC 50 Signaling, SCC 70 Vehicles, and SCC 80 Professional Services were not part of this assessment.

A Shelter Station is an unstaffed station that typically serves small communities along long-distance or intercity passenger rail corridors, and includes a small, sheltered waiting room, platform(s) with canopy(ies), parking, and site lighting. A Medium Station is more elaborate, and includes a station building with operator offices, sheltered waiting rooms and restrooms, platform(s) with canopy(ies), parking, and site lighting.

We were asked to assume that *Lewiston*, *Winthrop*, *Waterville*, *Pittsfield*, and *Orono* would each receive construction at levels consistent with a Category 4 Shelter Station. *Bangor*, which no longer has a station building, would receive construction at levels consistent with a Category 2 Medium Station.

*Rail Passengers* assesses that station and facility construction would last between three and five years, and in total would generate **$11.2 million in benefit during that construction period.**

| Downeaster Bangor Extension: One-Time Contributions To Economy Through Station Construction | | | | | |
|---|---|---|---|---|---|
| Station and Type / **County** | Potential Employment FTEs | Est Direct Construction & Labor | Supply Chain Induced Materials | Induced Employment Effects (spending in local economy) | Economic Benefit from Temporary Construction |
| Lewiston - Category 4 Shelter Station (**Androscoggin County**) | 9 - 11 | $ 950,000 | $ 430,000 | $ 320,000 | $ 1,700,000 |
| Winthrop - Category 4 Shelter Station (**Kennebec County**) | 9 - 11 | $ 950,000 | $ 430,000 | $ 320,000 | $ 1,700,000 |
| Waterville - Category 4 Shelter Station (**Kennebec County**) | 9 - 11 | $ 950,000 | $ 430,000 | $ 320,000 | $ 1,700,000 |
| Pittsfield - Category 4 Shelter Station (**Somerset County**) | 9 - 11 | $ 950,000 | $ 430,000 | $ 320,000 | $ 1,700,000 |
| Bangor - Category 2 Medium Station (**Penobscot County**) | 14 - 17 | $ 1,500,000 | $ 675,000 | $ 500,000 | $ 2,675,000 |
| Orono - Category 4 Shelter Station (**Penobscot County**) | 9 - 11 | $ 950,000 | $ 430,000 | $ 320,000 | $ 1,700,000 |
| **TOTAL** | **59 - 72** | **$ 6,250,000** | **$ 2,825,000** | **$ 2,100,000** | **$ 11,175,000** |

*Sources: Rail Passengers Calculator, Input/Output Modeling, IMPLAN Economic Modeling Tool, FRA Standard Cost Categories SCC 20*

For Category 4 Shelter Stations we assumed **$950,000 in direct effects**, with between 30 percent and 40 percent of this amount devoted to worker payroll costs. Locally sourced cement, lumber, steel, and prefabricated shelters and other materials **could add between $250,000 and $400,000** depending on specifications and local availability. Purchases made by construction firms from local suppliers and subcontractors would likely generate **supply-chain effects reaching about $430,000 for each Shelter Station project**, for items ranging from building materials to equipment rentals and work vehicle fueling. During the construction term, we would expect site workers and supplier employees to spend wages locally on groceries, housing, restaurants, transportation, and healthcare, with **worker spending injecting another $320,000 into the local economy in each of the five communities getting new stations.**

For Bangor's Category 2 Medium Station, we assumed **$1.5 million for a relatively modest facility** but still larger than a shelter-only stop. The **supply-chain effects would come to $675,000** during the term of construction, and **worker spending in the local economy could reach about $500,000**. **This would generate a total economic benefit during the three-to-five year construction term of as much as $2.7 million.**

This is a "sketch-level" analysis of potential station construction scenarios for the proposed service extension. There were no in-situ site surveys, property searches, contractor identification, or architectural consultations involved in this analysis, and figures used were derived from standard-cost category averages and labor and materials costs in Maine and New England. Thus, *Rail Passengers* offers this capital-benefits analysis as a sketch-level indication only of what a reasonably scoped stations and platforms program might produce.

## Annual Tax Revenues Created by the Bangor *Downeaster* Extension

Recall that our study protocols look not only at direct spending by visitors, but at the business-to-business transactions that are spurred on by the visitors' activities.

All of these activities — from staying in a hotel to eating at a restaurant, visiting an entertainment venue, buying local goods, or renting a car — support local payrolls, so that those employees in turn make purchases and pay sales taxes or property taxes, or cause retail outlets to buy additional goods, or induce supporting businesses to supply services to the hotels or restaurants or stores.

This additional activity can take the form of restaurants resupplying food and ingredients, or retailers resupplying items they sell, anything from clothing to toiletries, or hotels purchasing supplies to maintain growing operations. Each of these business-to-business transactions produces tax revenues at varying levels depending on the jurisdiction. These are not new tax levies, or even new categories of taxation. Rather, they simply reflect a larger volume of revenue collection in line with larger business volumes.

Rail Passengers' assessment suggests that **additional taxes collected statewide as a result of the new rail service would increase by $2.4 million.** With Federal tax collections included, that figure rises to roughly $4.5 million.

The IMPLAN model captures those tax effects at the county level, which are presented in this table summarized by county. The Tax Impact Report generated by the model run should be read as a supplement to the overall economic impact estimates in this analysis. These tax results cannot be added to any summary or detailed economic indicator results, because they are already accounted for as a portion of the Total Output in the summary reported on page 13; the tax figures are "baked in" to the direct, indirect, and induced effects.

Tax results are displayed for Federal, State, County, Sub County General, and Sub County Special Districts in this analysis. Sub County General includes city and township governments, while Sub County Special includes fire and public-school districts.

| County/(Station) | Sub County General | Sub County Special Districts | County | State | Federal | Total Tax Revenue |
|---|---|---|---|---|---|---|
| **Annual Tax Revenues Created By Downeaster Bangor Extension** | | | | | | |
| York County (**Wells\*, Saco\***) | $ 36,694 | $ 15,167 | $ 1,640 | $ 43,471 | $ 77,524 | $ 174,496 |
| Oxford County | $ 4,103 | $ 4,854 | $ 412 | $ 7,316 | $ 13,432 | $ 30,118 |
| Cumberland County (**Portland\*, Freeport\*, Brunswick\***) | $ 525,891 | $ 99,065 | $ 25,331 | $ 795,177 | $ 1,367,001 | $ 2,812,465 |
| Sagadahoc County | $ 30,000 | $ 27,685 | $ 5,484 | $ 46,710 | $ 70,966 | $ 180,845 |
| Androscoggin County (**Lewiston**) | $ 51,392 | $ 13,431 | $ 3,388 | $ 83,194 | $ 121,248 | $ 272,653 |
| Franklin County | $ 9,174 | $ 5,140 | $ 1,673 | $ 18,000 | $ 25,934 | $ 59,921 |
| Kennebec County (**Winthrop, Waterville**) | $ 41,287 | $ 16,197 | $ 2,992 | $ 91,130 | $ 121,191 | $ 272,798 |
| Lincoln County | $ 6,669 | $ 4,203 | $ 1,104 | $ 9,034 | $ 18,487 | $ 39,497 |
| Somerset County (**Pittsfield**) | $ 5,309 | $ 7,082 | $ 1,743 | $ 12,081 | $ 18,512 | $ 44,727 |
| Waldo County | $ 10,664 | $ 7,986 | $ 2,355 | $ 19,972 | $ 27,591 | $ 68,568 |
| Knox County | $ 12,674 | $ 11,549 | $ 1,804 | $ 24,851 | $ 46,323 | $ 97,201 |
| Piscataquis County | $ 2,610 | $ 1,559 | $ 542 | $ 5,032 | $ 6,686 | $ 16,430 |
| Penobscot County (**Bangor**, **Orono**) | $ 40,947 | $ 12,033 | $ 3,386 | $ 87,671 | $ 115,474 | $ 259,511 |
| Hancock County | $ 19,877 | $ 5,341 | $ 917 | $ 24,541 | $ 46,588 | $ 97,266 |
| Aroostook County | $ 6,450 | $ 2,877 | $ 640 | $ 13,216 | $ 18,407 | $ 41,589 |
| Washington County | $ 5,135 | $ 1,084 | $ 693 | $ 6,882 | $ 8,994 | $ 22,789 |
| **TOTAL** | **$ 808,877** | **$ 235,253** | **$ 54,106** | **$ 1,288,279** | **$ 2,104,357** | **$ 4,490,873** |

\* - indicates existing *Downeaster* station stops

*Source: Rail Passengers Railway Benefits Calculator, IMPLAN Economic Modeling Tool*

# Key Terms

**Visitor Spending** – captures additional spending in the local economy exclusively from the roughly 5% to 7% of annual ridership that would not be there but for the train service.

*# of passengers deboarding X fraction of passengers assumed to be nonresident X fraction of "induced" passengers (i.e., passengers who only took the trip because the train route exists) X lodging/restaurant/entertainment/shopping/local transportation spending per person reported by tourist bureaus in each state.*

**Road fatalities** – an extremely conservative set of assumptions which uses a U.S. Dept. of Transportation figure related to, but different from, the U.S. Dept. of Labor's statistical value of a life saved. DOT refers to this figure as the "comprehensive cost" of road fatalities, and in our model examines only the subset of existing passenger miles shifted directly from car to rail

**Road maintenance** – derived from reductions in annual Vehicle Miles Traveled (VMTs) by non-resident passengers (i.e., assumes residents will likely drive to and from their preferred stations to use the train, so the rail service only reduces the VMTs imposed by non-residents).

**Labor Income (IMPLAN)** – All forms of Employment income, including Employee Compensation (wages, salaries, and benefits) and Proprietor Income.

**Value-Added (IMPLAN)** – The difference between an Industry's or establishment's total Output and the cost of its Intermediate Inputs; it is a measure of the contribution to GDP. Value Added is a large portion of Output, as it encompasses Labor Income (LI), Other Property Income (OPI), and Taxes on Production and Imports (TOPI).

**Output (IMPLAN)** – For all Industries, output equals the value of Industry production, which is equal to sales plus net inventory change, but details vary depending on industry sector. For wholesale and retail, Output is equal to gross wholesale margin or gross retail margin, respectively, not gross sales. In other words, the value of production for wholesale and retail sectors is the value of the services they provide and doesn't include the value of the items sold within their establishment. Output includes labor income and value-added, but also other intermediate inputs. Thus, in the tables we present, it's not accurate to add labor income and value-added to yield Output.

# Disclaimer and Authors' Statement

*This analysis was performed by the Rail Passengers Association research team and commissioned by the Maine Rail Group and Train Riders Northeast (TRNE). Input from Maine Rail Group and TRNE was limited to defining the parameters of what was to be assessed – two trains each day, each way, ending in Orono, and minimal station-area construction in all the new stops except Bangor, which would get a more traditional station building.*

*The study methodologies have been developed and refined continuously since 2017 by the Rail Passengers Association, in collaboration with the University of Mississippi's Trent Lott National Center for Excellence in Economic Development and Entrepreneurship. Initial development and refinement of Rail Passengers Railway Benefits Calculator, the underlying modeling, and the Rail Passengers ridership projection dataset of 389 Amtrak-served counties was led by USM's Dr. Yvonne Zhang and her students in 2017 with additional work in 2023. Our adjustments to the cost of carbon calculation were created in 2024 by Dr. John Christoph, of the Rail Passengers Association research team, and developed as part of a literature review prepared by Dr. Christoph's graduate student Cecilia Paparella at George Washington University. Additional research supporting the ridership model was performed by Joseph Aiello, MPA, of the Rail Passengers staff. Rail Passengers CEO Jim Mathews led the internal study project.*

*The conclusions reported in this assessment are solely those of the Rail Passengers Association and represent the output of Rail Passengers' statistically validated models. They reflect the research team's good-faith estimate of economic benefits and stimulation from the addition of two daily roundtrips to Bangor to the Downeaster service. Many external factors and policy choices can affect whether any particular projection is reached, exceeded, or missed. Moreover, this assessment is not intended to replace the type of analysis typical of a Service Development Plan or formal project planning.*