

# FLORIDA RAIL SYSTEM PLAN

NOVEMBER 2023

## **Appendix F:**

Economic Impacts of Passenger Rail



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## F.1 Introduction

This Appendix describes economic impacts of passenger rail in Florida. Economic impacts of passenger rail activities in Florida stem from businesses providing passenger transportation services (e.g., Amtrak, Brightline), as well as users – visitors to Florida via rail – generating direct economic impacts through tourist expenditures. Moreover, indirect impacts associated with suppliers, and induced impacts associated with the re-spending of income, are also quantified. Combined, the direct, indirect, and induced effects comprise total economic impacts, with each measured in terms of employment, income, economic value-added (i.e., Gross State Product), economic output, and taxes.

## F.2 Approach

The analysis approach deployed in the economic impact analysis follows generally-accepted standards by identifying and categorizing the economic impacts related to passenger rail transportation. The following subsections outline the applied methodology, data sources, economic model, and the key inputs of passenger rail movements.

### F.2.1 Impact Approach and Terminology

Economic impacts of passenger rail are categorized into two broad activities: passenger rail service-providers, and passenger rail users. For each activity, three impact types were modeled: direct, indirect, and induced. Then, for each type, five measures were quantified: employment (in job-years), income, economic value-added, economic output, and taxes. These activities, types, and measures are defined below.

#### F.2.1.1 Activities

Florida passenger rail-related economic impacts are categorized into passenger service-provider and passenger user impacts.

- **Passenger Rail Service Providers** – Impacts associated with the provision of passenger rail transportation (i.e., the rail industry) include a range of transport and support administrative operations. Service provider impacts are based on transportation industry data in the IMPLAN® model, combined with relevant available data from the rail carriers. Service provision impacts are calculated for intercity passenger rail (Amtrak, and Brightline); tourist-oriented rail services (the Florida Railroad in Manatee County, the Gold Coast Railroad in Miami-Dade County, the Sugar Express in Hendry County, and the Seminole Gulf Railroad in Lee County); and commuter rail services (SunRail in the Orlando area, and Tri-Rail in Southeast Florida).
- **Passenger Rail Users** – Economic impacts arise in industry sectors that service visitors to Florida arriving by passenger rail (Amtrak). Rail visitors have several transport options and could possibly substitute other modal transport (highway and/or air) if rail services became unavailable. However, the choice to travel via Amtrak indicates cost, convenience and/or amenity advantages, and as such, removal of such advantages would negatively affect rail users and the industries serving them. In addition to Amtrak out-of-state passengers, the impacts related to similar

passengers for Brightline, commuter rail, and the tourist-related rail services within the state are also quantified.

### F.2.1.2 Types

Service provider and user impacts each consist of three types (and a combined total):

- **Direct** – Impacts from the provision of passenger rail transportation (service providers), as well from the firms/industries that accommodate out-of-state visitors that travel by rail in Florida (transport users).
- **Indirect** – Impacts associated with the suppliers that provide intermediate goods and services (inputs) to the directly impacted industries.
- **Induced** – Impacts associated with the re-spending of earned income from both the direct and indirect industries in the study area.
- Note that the indirect and induced types are often jointly referred to as multiplier effects/impacts.
- **Total** – Aggregated direct, indirect, and induced types.

### F.2.1.3 Measures

Each type is measured in terms of five economic metrics,<sup>1</sup> as follows:

- **Employment** – Measured in terms of full-time-equivalent (FTE) job-years.
- **Income** – Wage/salary earnings paid to the associated jobs.
- **Economic Value-Added** – Net economic activity (i.e., total output less gross intermediate inputs), synonymous with GRP (gross regional product); includes employee and proprietor income, other income types, taxes, etc., required to produce final goods and services.
- **Economic Output** – Total market value of sales associated with all levels of economic activity (comprised of gross intermediate inputs and value added, combined). Note that gross output is not the same as gross regional/state product, which only includes economic value added.
- **Taxes** – Various taxes on production and imports (sales, property, excise, etc.) resulting from business economic activity.

## F.2.2 IMPLAN® Economic Model

Passenger related rail impacts are based on input assumptions regarding passenger rail operations and visitor spending patterns applied to the IMPLAN® economic model.

The IMPLAN® v6 model, produced by IMPLAN® Group LLC, is an economic modeling, input-output based, social account matrix software. It estimates the economic impacts to a defined geography (i.e., Florida) resulting from expenditures in an industry or commodity in a particular year.<sup>2</sup> A social account matrix reflects the economic interrelationships between the various industries (and commodities), households, and governments in an economy and measures such interdependency via impact multipliers. Multipliers are developed within IMPLAN® from regional purchase coefficients, production functions, and socioeconomic data for each impact variable and are geographically-specific. IMPLAN® data and industry-accounts closely follow the

<sup>1</sup> All monetary measures (i.e., income, value-added, output, and taxes) are presented in 2018 dollars.

<sup>2</sup> Note that all results presented pertain only to one-year (2018) static impacts, and do not provide any dynamic or feedback changes.

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conventions used in the “Input-Output Study of the U.S. Economy” by the U.S. Bureau of Economic Analysis. IMPLAN® is one of the most commonly accepted models used for economic impact analysis and estimation throughout the country.

### F.2.3 Input Data and Assumptions

The various data sources used include: Amtrak, the Integrated National Transit Database, Visit Florida, IMPLAN®, the 2018 State Rail Plan, and internet sources. Data sought included passengers, employment, visitor characteristics (e.g., percent of passengers, average expenditures, days visited), etc. Such information was used to estimate direct transport-service and transport-user impacts input into the IMPLAN® model.

#### F.2.3.1 Passenger Transportation Services

IMPLAN® industry dataset provides various economic measures associated with the direct provision of rail transport in Florida (e.g., employment, economic output, etc.). However, such data are not subcategorized by passenger versus freight transport, nor are they shown by carrier. As such, the other sources listed above were utilized to derive the approximate values, with the resulting operational characteristics summarized in Table F-1.

Table F-1 | Passenger Rail Operations Summary

Type/Service	Location	FTE	Passengers (2018/19)
<b>INTERCITY RAIL</b>			
Amtrak	Statewide	634	905,074
Brightline	SE Florida	260	1,012,804
	Subtotal	894	1,917,878
<b>TOURIST RAIL</b>			
Florida RR	Manatee Co.	5	40,000
Gold Coast RR	Miami-Dade Co.	6	90,000
Sugar Express	Hendry Co.	6	52,200
Seminole Gulf Railway	Lee Co.	9	26,500
	Subtotal	25	208,700
<b>COMMUTER RAIL</b>			
SunRail	Orlando	45	1,469,654
Tri-Rail	South Florida	149	5,454,612
	Subtotal	194	6,924,266
<b>TOTAL PASSENGER RAIL</b>			
	<b>Total</b>	<b>1,113</b>	<b>9,050,844</b>

Sources: Amtrak; FDOT Sourcebook; Florida Development Finance Corporation, Brightline Series 2019B December 2020 Report; and 2018 State Rail Plan. Note that some of the employment values were unavailable from the carriers, and were proxied based on ridership.

#### F.2.3.2 Passenger Visitors Expenditures

Out-of-state visitor expenditures reflect Amtrak passengers arriving in Florida (data collected from the Amtrak Fact Sheets) as well as corresponding out-of-state users of the tourist rail lines



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and Brightline.<sup>3</sup> Such input, in conjunction with visitor profiles, is used to estimate the share of rail passenger movements that are visitors along with their average spending.

For example, Florida Amtrak annual passenger movements totaled 905,000 in FY2019. Since each passenger typically embarks (boards) and disembarks (alights), it is necessary to divide total passenger movements by two to estimate the actual number of Amtrak passengers (450,500). It was estimated that more than half (57%) of the boarding passengers are out-of-state visitors.<sup>4</sup> Assuming an average expenditure visit duration of 4.2 days and daily expenditure of \$162,<sup>5</sup> total Amtrak annual visitor expenditure to Florida is estimated at about \$174 million, as summarized in Table F-2.

Brightline offers premium intercity rail service, with some of the passengers being out-of-town visitors (business and tourists). Using a combination of inputs from different sources, the related visitor expenditures were estimated at \$97 million.

Tourist-rail expenditures were based on the data from the 2018 State Rail combined with some updated average daily spending, and were estimated to be around \$10 million.

The total rail visitor expenditures across the different user types in 2018 were estimated at \$281 million, see Table F-2.

Table F-2 | Passenger Rail Visitor Expenditures

Service Type	Intercity			Tourist				Total	
	Railroad	Amtrak	Brightline	Florida RR	Gold Coast RR	Sugar Express	Seminole Gulf		Subtotal
Location	Statewide	SE Florida	Subtotal	Manatee Co.	Miami-Dade Co.	Hendry Co.	Lee Co.	Subtotal	Total
<b>ANNUAL PASSENGER VOLUMES</b>									
Boardings/Alightings	452,537	506,402	958,939	40,000	90,000	52,200	26,500	208,700	1,167,639
<b>VISITORS (OUT-OF-STATE)</b>									
Percent	57%	28%	57%	30%	30%	28%	25%	28%	
Number	256,136	143,481	399,617	12,000	27,000	14,790	6,625	60,415	460,032
Expenditures/Day	\$162	\$162	\$162	\$162	\$162	\$162	\$162	\$162	
Days Visited (avg.)	4.2	4.2	4.2	1	1	1	1	1	
<b>Visitor Expenditures (millions of 2018\$)</b>	<b>\$174</b>	<b>\$97</b>	<b>\$272</b>	<b>\$2</b>	<b>\$4</b>	<b>\$2</b>	<b>\$1</b>	<b>\$10</b>	<b>\$281</b>

Sources: Amtrak; Florida Development Finance Corporation, Brightline Series 2019B December 2020 Report; Florida Visitors Study, March 2019; 2018 State Rail Plan.

### F.3 Passenger Rail Economic Impacts

Passenger rail impacts total about 8,570 job-years across Florida, reflecting the various impact activities and types (direct plus multipliers). A majority (4,350 job-years, or 51%) of these total employment impacts are associated with rail users (i.e., visitors) expenditures on various activities such as entertainment, shopping, lodging, food, etc. The remaining employment impacts (4,220, or 49%) arise from service provision impacts reflecting the intercity, tourist, and

<sup>3</sup> Commuter rail operations predominately serve residents and their local transit purposes, and as such were excluded from the quantification of visitor impacts.

<sup>4</sup> Based on the 2018 State Rail Plan.

<sup>5</sup> Florida Visitors Study, March 2019.

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commuter rail transportation activities. The other major takeaway is that about 89 percent of the (employment) impacts are associated with intercity rail transport (combining both service provision and user activities).

The following discussion details estimated impact types (e.g., direct, indirect, and induced) and measures by activity (e.g., transport services, visitor users). These impact activities, measures, and types are presented in Table F-3.

Table F-3 | Passenger Rail Economic Impacts, 2018

Measure and Type	Transport Service (Provision) Impacts				Transport Users (Visitor) Impacts			Total
	Intercity	Tourist	Commuter	Subtotal	Intercity	Tourist	Subtotal	
<b>OUTPUT *</b>								
Direct	\$364.2	\$10.2	\$79.2	\$453.5	\$252.7	\$9.1	\$261.8	\$715.3
Indirect	\$204.7	\$5.7	\$44.5	\$254.9	\$100.1	\$3.6	\$103.7	\$358.7
Induced	\$190.7	\$5.3	\$41.5	\$237.5	\$124.0	\$4.5	\$128.5	\$366.0
<b>Total</b>	<b>\$759.6</b>	<b>\$21.2</b>	<b>\$165.1</b>	<b>\$946.0</b>	<b>\$476.9</b>	<b>\$17.2</b>	<b>\$494.1</b>	<b>\$1,440.0</b>
<b>EMPLOYMENT **</b>								
Direct	890	30	190	1,110	2,760	100	2,860	3,970
Indirect	1,220	30	260	1,510	610	20	630	2,140
Induced	1,280	40	280	1,600	830	30	860	2,460
<b>Total</b>	<b>3,390</b>	<b>90</b>	<b>740</b>	<b>4,220</b>	<b>4,200</b>	<b>150</b>	<b>4,350</b>	<b>8,570</b>
<b>LABOR INCOME *</b>								
Direct	\$124.9	\$3.5	\$27.1	\$155.5	\$93.8	\$3.4	\$97.2	\$252.7
Indirect	\$68.5	\$1.9	\$14.9	\$85.3	\$32.0	\$1.2	\$33.2	\$118.5
Induced	\$58.6	\$1.6	\$12.7	\$73.0	\$38.1	\$1.4	\$39.5	\$112.5
<b>Total</b>	<b>\$252.0</b>	<b>\$7.0</b>	<b>\$54.8</b>	<b>\$313.8</b>	<b>\$163.9</b>	<b>\$5.9</b>	<b>\$169.8</b>	<b>\$483.6</b>
<b>TOTAL VALUE ADDED *</b>								
Direct	\$150.6	\$4.2	\$32.7	\$187.5	\$162.9	\$5.9	\$168.7	\$356.3
Indirect	\$110.5	\$3.1	\$24.0	\$137.6	\$52.0	\$1.9	\$53.8	\$191.4
Induced	\$108.0	\$3.0	\$23.5	\$134.5	\$70.2	\$2.5	\$72.8	\$207.2
<b>Total</b>	<b>\$369.0</b>	<b>\$10.3</b>	<b>\$80.2</b>	<b>\$459.6</b>	<b>\$285.1</b>	<b>\$10.3</b>	<b>\$295.3</b>	<b>\$754.9</b>
<b>TAX ON PRODUCTION AND IMPORTS*</b>								
Direct	\$3.5	\$0.1	\$0.8	\$4.4	\$24.2	\$0.9	\$25.1	\$29.5
Indirect	\$15.0	\$0.4	\$3.3	\$18.7	\$4.3	\$0.2	\$4.5	\$23.2
Induced	\$10.9	\$0.3	\$2.4	\$13.5	\$7.1	\$0.3	\$7.3	\$20.8
<b>Total</b>	<b>\$29.4</b>	<b>\$0.8</b>	<b>\$6.4</b>	<b>\$36.6</b>	<b>\$35.6</b>	<b>\$1.3</b>	<b>\$36.8</b>	<b>\$73.5</b>

\* Monetary values are in millions of 2018 dollars.

\*\* Employment rounded to the nearest 10 job-years.

Source: Based on IMPLAN® data.



### F.3.1 Passenger Rail Service Provision Impacts

Provisioning passenger rail transportation in Florida in 2018 yielded a direct employment impact of 1,110 jobs, comprised of 890 intercity, 30 tourist-related, and 190 commuter-related.

- **Direct** – Passenger rail providers yielded a direct impact of 1,100 jobs, earning \$156 million in labor income, producing \$188 million in economic value-added activity, resulting in \$454 million in economic output, with taxes on such direct output totaling \$4.4 million.
- **Total** – Including the Florida multiplier effects, transport service-related activity impacts totaled 4,220 job-years, earning \$314 million in labor income, producing \$460 million in economic value-added, total economic output of \$946 million, with a tax impact of almost \$37 million.

### F.3.2 Visitor Impacts

Passenger-related impact activities reflect expenditures by out-of-state visitors, based on intercity and tourist-rail passenger movements and assumptions regarding visitors, average length of stay, average visitor expenditure per day, and an allocation to various expenditure categories (e.g., retail purchases, transportation, entertainment, lodging, and food purchases). A majority of the visitor-related impacts stem from the intercity visitors rather than the much smaller order-of-magnitude tourism-related rail activity.

Passenger rail users (combined intercity and tourism-related) yielded the following economic impacts:

- **Direct** – Passenger rail users generated a direct impact of 2,860 jobs, earning \$97 million in labor income, producing \$169 million in economic value-added activity, resulting in \$262 million in economic output, with taxes on such direct output totaling \$25 million.
- **Total** – Including the Florida multiplier effects, transport users-related activity impacts totaled 4,350 job-years, earning \$170 million in labor income, producing \$295 million in economic value-added, total economic output of \$494 million, with a tax impact of almost \$37 million.

### F.3.3 Total Passenger Rail Impacts

Overall, provisioning of passenger rail service generated 1,110 direct jobs (4,220 including multipliers), while rail users generated 2,860 direct jobs (4,350 including multipliers). The combined impacts are as follows:

- **Direct** – Combining the passenger rail-related activities yielded a direct impact of 3,970 job-years, earning \$253 million in labor income, producing \$356 million in economic value-added, resulting in \$715 million in economic output, and yielding taxes on such direct output of \$30 million.
- **Total** – Including the multipliers, the passenger rail-related activities generated an estimated total of 8,570 job-years, earning \$484 million in labor income, producing \$755 million in economic value-added, resulting in total economic output of \$1.44 billion, and yielding a tax impact of almost \$74 million.

## F.3.3.1 Impacts as Percentage of the State Economy

It is important to contextualize the preceding economic impact estimates, as it may be difficult to visualize the many jobs and billions of dollars, etc. on a standalone basis. To that effect, the economic impacts of passenger rail are compared the total economic activity in Florida in 2018, by the same economic measures as the presented economic impacts, shown in Table F-4.

Total economic impacts associated with passenger rail in Florida are rather small compared to the size of the overall statewide economy, amounting to just less than 0.1 percent, depending on the measure.

Table F-4 | Relativity of Impacts by Measure, 2018

Economic Measure	State Value	Total Passenger Rail Impacts	
		Value	Percentage
Employment	12,123,215	8,570	0.07%
Labor Income*	\$620,246	\$484	0.08%
Total Value Added*	\$1,032,345	\$755	0.07%
Output*	\$1,851,489	\$1,440	0.08%
Tax on Production and Imports*	\$84,008	\$73	0.09%

\* In millions of 2018 dollars.

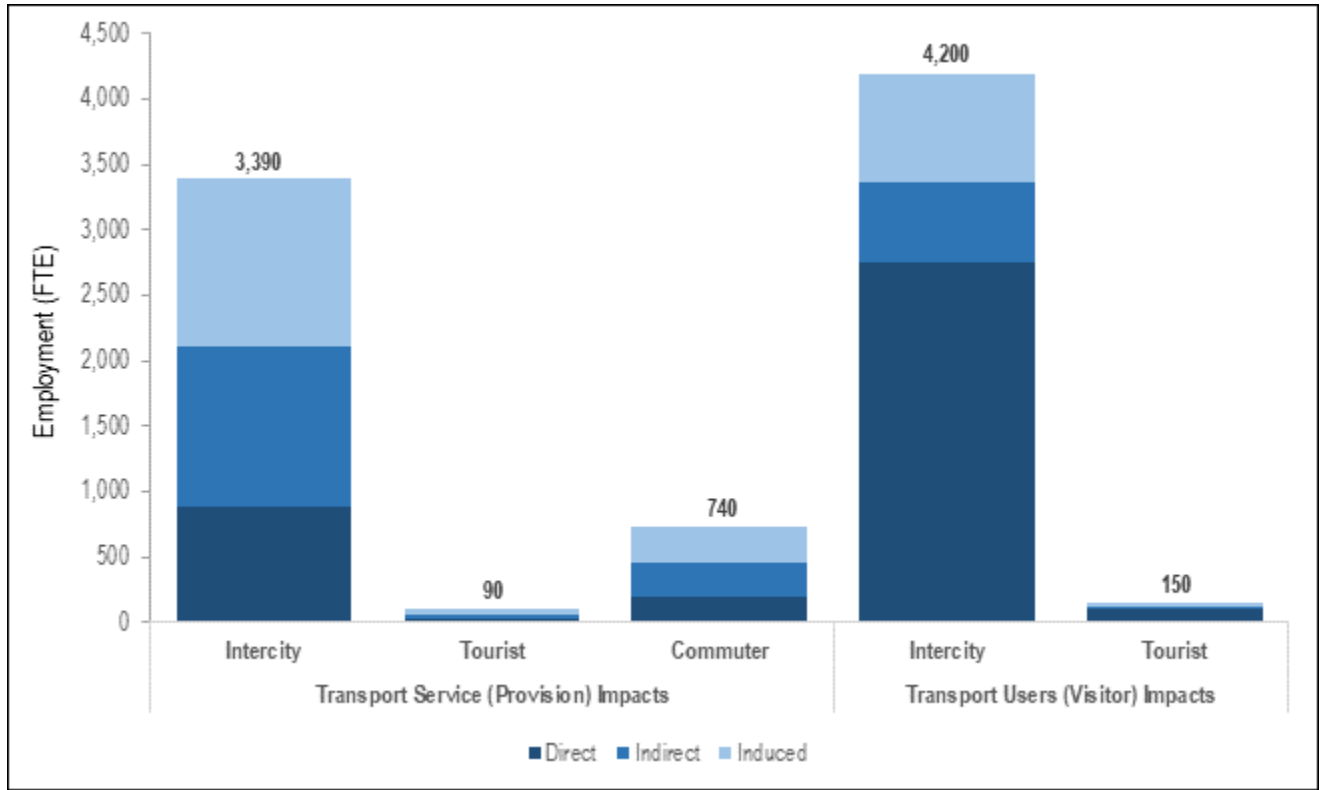
Source: Based on IMPLAN<sup>®</sup> data.

## F.3.3.2 Employment Impacts

As the most common impact measure, employment provides a suitable measure to illustrate the scope and magnitude of impacts by activity and type. Figure F-1 illustrates the impact variability between rail transport users (visitors) and service providers. Interestingly, the direct impacts associated with intercity passenger expenditures constitute the largest share of total compared to the other impact activities and types.

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Figure F-1 | Employment\* Impacts by Activity and Type



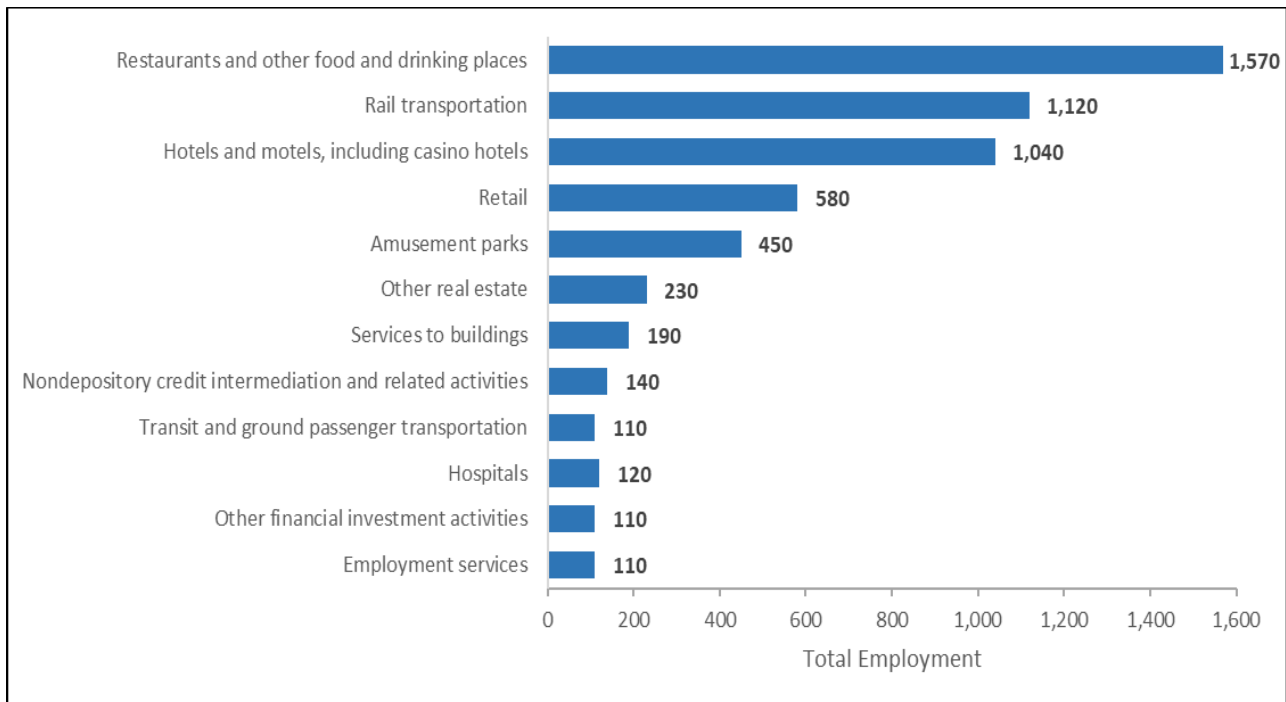
\* Employment rounded to the nearest 10 job-years.

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### F.3.3.2.1 Employment Impacts by Industry

The related employment impacts by industry and type further illustrate the relative impacts associated with passenger rail provision and users, as shown in Figure F-2. The top beneficiaries of passenger rail activity in Florida are industries representing: restaurants and other food and drinking places, rail transportation, lodging, retail, and amusement parks.

Figure F-2 | Employment\* Impacts by Industry



\* Employment rounded to the nearest 10 job-years.

### F.3 Summary

Passenger rail facilitates the movement of people and supports Florida tourism, with both the service provision and tourism spending captured in terms of economic impacts. The economic impacts from passenger rail span various industries of the statewide economy, and are summarized to amount to the following:

- **Employment** – Economic impacts of passenger rail extend beyond the 1,110 directly employed in the provision of passenger rail transportation service in 2018. When the passenger user impact activities and the multiplier effects are included, passenger rail-related employment in Florida totals 8,570 job-years, which represented about 0.1 percent of the total statewide employment.
- **Income** – About \$253 million in direct (service provision- and user-related) and \$484 million in total labor income was earned by these total impacted employees in 2018, representing about 0.1 percent of Florida's total labor income.
- **Economic Value-Added** – The combined value-added impact, at \$356 million in direct terms and \$755 million in total effects, associated with the passenger rail services and users represented almost 0.1 percent of Florida's 2018 Gross State Product.

In conclusion, the passenger rail industry not only provides some economic activity in itself; but it also facilitates additional economic activity via the services rendered to people and related industries, particularly tourism, contributing to the strength and diversification of the Florida economy.



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