How Trains Make Money: Advancing Our Understanding of Passenger Rail

Rail Passengers has invested in modeling tools such as IMPLAN that allow us to map out the economic benefits of train service.
Required Reading

- Our “Amtrak Fact Sheets” are used by reporters, policy makers, and advocates every year
- With special ongoing thanks to:
  - George Chilson
  - Matt Fels
- www.railpassengers.org/ridership
The Big Picture

- Compiling current ridership data as a whole tells us that Long Distance Trains perform surprisingly well.
- Note that state supported trains usually have multiple frequencies.
- Frequencies cut both ways – State Supported Trains are saved by them, Long Distance Trains perform in spite of them.
- These unique characteristics of the Long Distance line represents a dynamic many fear losing.
- Again, Thanks George!
So. We know how the trains perform relative to each other—but how do they affect the world around them?
Beyond the train itself

• Passenger rail is a niche industry, and a niche area of study

• Our friends at T4A and Mayor John Robert Smith had worked with the Trent Lott Center at University of Southern Mississippi

• Dr. Yuanyuan Zhang authored an excellent study conceptualizing the restoration of Gulf Coast Service

• Dr. Zhang is a Research Professor at the Center for Logistics, Trade and Transportation at USM
  • Specializing in transportation related economic development
Building our platform

- Collaborated with Dr. Zhang to build economic impact model
  - Comprehensive Literature review of 40+ Papers
  - Defined Impacts to derive benefits
- Contracted with IMPLAN to quantify benefits
  - IMPLAN is a calculator for multiplier effects of changes in final demand for one industry on all other industries within a local economic area
  - IMPLAN uses a matrix of data from the Bureau of Labor Statistics (BLS)
  - IMPLAN is relied upon by Universities, Fortune 500 Companies, and the US Forestry Service
Passenger Trains do make money

...Just not for the railroads that operate them. We built a model with Dr. Zhang to illuminate:

• **DIRECT** quantifiable benefits from passenger trains:
  • Railway Operations and Maintenance Spending on local economies
  • New Visitor Spending
    • Induced travel that otherwise would not happen
  • Community development and property values adjacent to train stations

• **INDIRECT** quantifiable benefits include:
  • Pollution control savings
  • Highway traffic fatalities avoided
  • Highway maintenance avoided
  • Saved travel cost for area residents
Southwest Chief Bustitution

The Association investigated Amtrak’s plan to replace the Chief with a Bus through New Mexico, Colorado and Kansas.

• Overall the Chief would leave a **$180 Million** hole in the parts of those three states it would no longer serve directly.

• Amtrak itself estimated that replacing the Chief with a bus would lead to 100,000 fewer riders. From that, we estimated that
  • At least $5 Million would be lost in visitor spending from 30,000 riders who would no longer travel without the option
  • There would be an over 70% increase in pollution control in the three states affected from those driving in the wake of losing direct train service

WHOLE PAPER: [www.railpassengers.org/swc](http://www.railpassengers.org/swc)
A second train is estimated to attract an additional 155,500 to the corridor. Using data obtained from Amtrak, we estimate that the state would see:

- Overall, a $25 Million return from the $2-3 Million operating cost for the state
- Those “not travelling” given train service would create $2.9 Million in new spending for the state
- 90,000 drivers would divert to train service, saving the state
  - $1.8 Million in accidents avoided
  - $20.8 Million in saved maintenance

WHOLE PAPER: [www.railpassengers.org/mn](http://www.railpassengers.org/mn)
SAMPLE CALCULATION

Direct Benefit: New Visitor Spending

\[
\text{Projected ridership in state} \times \text{induced ridership} \% (0.9) \times \text{tourist ridership} \% (0.46) = \text{Induced Tourist Ridership}
\]

\[
\text{Induced Tourist Ridership} \times \text{Average Daily Spend} (140.17) \times \text{Duration} (3) = \text{Visitor Spending}
\]

<table>
<thead>
<tr>
<th></th>
<th>BABY BUILDER VISITORS</th>
<th>EMPIRE BUILDER VISITORS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL</strong></td>
<td>$845,696.07</td>
<td>$1,711,942.63</td>
</tr>
<tr>
<td><strong>IMPLAN</strong></td>
<td>$2,873,740.00</td>
<td>$5,815,984.00</td>
</tr>
</tbody>
</table>

PASSenger TRAVEL BEHAVIOR WITHOUT TRAINS IN MN, WI & IL

- Driving 59%
- Flying 21%
- Taking the Bus 11%
- Not Travelling 9%
Southwest Chief Visitor Impacts

<table>
<thead>
<tr>
<th>State</th>
<th>Category</th>
<th>Job</th>
<th>Labor income</th>
<th>Value added</th>
<th>Output</th>
<th>State/local tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>Visitor spending</td>
<td>41.23</td>
<td>$1,799,581.00</td>
<td>$2,747,358.00</td>
<td>$4,481,549.00</td>
<td>$275,891.00</td>
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<tr>
<td>AZ</td>
<td>Visitor spending</td>
<td>5.87</td>
<td>$193,437.00</td>
<td>$266,978.00</td>
<td>$464,019.00</td>
<td>$27,366.00</td>
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<tr>
<td>NM</td>
<td>Visitor spending</td>
<td>19.64</td>
<td>$553,129.00</td>
<td>$804,190.00</td>
<td>$1,455,618.00</td>
<td>$85,720.00</td>
</tr>
<tr>
<td>CO</td>
<td>Visitor spending</td>
<td>2.48</td>
<td>$85,756.00</td>
<td>$137,236.00</td>
<td>$242,263.00</td>
<td>$16,171.00</td>
</tr>
<tr>
<td>KS</td>
<td>Visitor spending</td>
<td>5.19</td>
<td>$149,140.00</td>
<td>$214,260.00</td>
<td>$391,745.00</td>
<td>$23,007.00</td>
</tr>
<tr>
<td>MO</td>
<td>Visitor spending</td>
<td>20.74</td>
<td>$597,085.00</td>
<td>$850,949.00</td>
<td>$1,564,307.00</td>
<td>$88,604.00</td>
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<tr>
<td>LA</td>
<td>Visitor spending</td>
<td>1.17</td>
<td>$31,818.00</td>
<td>$46,677.00</td>
<td>$86,353.00</td>
<td>$5,533.00</td>
</tr>
<tr>
<td>IL</td>
<td>Visitor spending</td>
<td>10.81</td>
<td>$389,950.00</td>
<td>$558,782.00</td>
<td>$937,955.00</td>
<td>$60,830.00</td>
</tr>
</tbody>
</table>

Calculated via IMPLAN, SWC visitor spending alone creates $9,623,809 in total benefits.
SAMPLE CALCULATION

Indirect Benefit:

Highway Accidents Avoided

Automotive VMT Avoided

\[
\text{Travel Distance (mileage between origin & destination train stops)} \\
\times \text{Passengers that would Drive} \\
(\text{No. of passengers} \times (1 - \text{induced %}) \times \text{automobile mode share (59%)} \\
+ \text{No. of passengers in an automobile (1.64)})
\]

Saved crash cost by shifting from automobile to passenger rail

\[
= \text{Automotive VMT Avoided} \times \text{cost of accidents per vehicle mile ($1.20)}
\]

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<thead>
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<th>EMPIRE BUILDER</th>
<th>BABY BUILDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>$3,441,687</td>
<td>$1,320,797</td>
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</table>
Southwest Chief Traffic Fatalities Avoided

<table>
<thead>
<tr>
<th>State</th>
<th>Saved cost by using current service (Scenario I)</th>
<th>Replace the current service by bus bridge ABQ-DDG (Scenario II)</th>
<th>% increased cost (Scenario II)</th>
<th>Replace the current service by bus bridge ABQ-LAJ (Scenario III)</th>
<th>% increased cost (Scenario III)</th>
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</thead>
<tbody>
<tr>
<td>CA</td>
<td>$345,620.26</td>
<td>$138,163.15</td>
<td>40%</td>
<td>$136,475.89</td>
<td>39%</td>
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<tr>
<td>AZ</td>
<td>$951,685.55</td>
<td>$624,912.65</td>
<td>66%</td>
<td>$618,962.15</td>
<td>65%</td>
</tr>
<tr>
<td>NM</td>
<td>$1,037,035.22</td>
<td>$820,233.16</td>
<td>79%</td>
<td>$822,491.04</td>
<td>79%</td>
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<tr>
<td>CO</td>
<td>$292,754.31</td>
<td>$259,022.65</td>
<td>88%</td>
<td>$259,848.68</td>
<td>89%</td>
</tr>
<tr>
<td>KS</td>
<td>$908,360.89</td>
<td>$750,239.75</td>
<td>83%</td>
<td>$731,381.30</td>
<td>81%</td>
</tr>
<tr>
<td>MO</td>
<td>$460,678.37</td>
<td>$285,584.88</td>
<td>62%</td>
<td>$277,558.71</td>
<td>60%</td>
</tr>
<tr>
<td>IA</td>
<td>$48,629.10</td>
<td>$23,696.02</td>
<td>49%</td>
<td>$23,151.57</td>
<td>48%</td>
</tr>
<tr>
<td>IL</td>
<td>$244,854.46</td>
<td>$80,124.11</td>
<td>33%</td>
<td>$77,283.85</td>
<td>32%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$4,289,618.16</td>
<td>$2,981,976.37</td>
<td></td>
<td>$2,947,153.19</td>
<td></td>
</tr>
</tbody>
</table>
A Major Question

**DIRECT** quantifiable benefits from passenger trains:
- Railway Operations and Maintenance Spending on local economies
- **New Visitor Spending**
  - Induced travel that otherwise would not happen
- Community development and property values adjacent to train stations

**INDIRECT** quantifiable benefits include:
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- Highway maintenance avoided
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How did you come to this meeting?
How would you have come without trains?
Washington, D.C.

Source: https://www.amtrak.com/state-economic-impact-brochures
The State of Montana

Source: https://www.amtrak.com/state-economic-impact-brochures
Let’s tell a story


Source: [www.railpassengers.org/ridership](http://www.railpassengers.org/ridership)
QUESTIONS

• More questions? Reach out to abezumwalt@narprail.org

• 202-408-8362 X3123