

Marine Highways Co-operative Public Benefits Calculator

Walkthrough Help File

Introduction

Welcome to the help file of the Marine Highways Cooperative's Public Benefits Calculator. This free tool, primarily aimed at urban planners, allows a user to enter some simple data to understand the benefits that might be realized from including water based transport in a complete inter-modal freight transport plan. The tool also has the capability to show interested freight industry users the potential benefits incorporating water into the complete intermodal freight move.

The Marine Highways Cooperative's (MHC) public benefits calculator helps users to understand an efficient and sustainable way to move freight, realizing additional societal and environmental benefits from reduced congestion, emissions (per ton-mile), and even reduced energy use (per ton-mile).

You only need basic trip information to provide estimates of benefits; the tool also allows you to enter more advanced factors, if you wish, to improve the accuracy of the calculation.



The tool has been designed to be intuitive with most input fields and output fields having supporting text that guides the user through each stage of the tool.

The calculator uses a number of parameters to calculate your total savings. By default, the Marine Highways Calculator uses standard generalized values for these parameters, based on industry averages and Government guidelines.

The following sections will guide you through using the website in terms of what data you need to enter and why. However if you have any further questions, our contact information is provided on the website.

Home Screen

Log on to the website at http://www.marinehighways.org/benefits_calculator/



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Introduction

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[Continue to the Calculator](#)

Disclaimer: Whilst the Marine Highways Cooperative and AECOM have made every effort to ensure the accuracy of the information supplied within the tool, the tool is only intended to provide an indication of the potential benefits that might be accrued by using each mode of cargo transport. Before making a final decision about which mode is most appropriate in your situation, we recommend undertaking a detailed investigation of each of the options.

For more details, please see the [terms and conditions](#).

You do not need to register to use the Public Benefits Calculator. Simply click on the 'Continue to the Calculator' button to start using the tool.

Clicking on 'Continue to the Calculator' will commence Step 1 of the Public Benefits Calculator.



Step 1: Current Cargo Trip

Firstly, select the mode which is currently being used to transport the goods you propose to move by water. Then select the type of cargo that mode is carrying (container, trailer, bulk etc).

The tool will then provide a default weight per container or trailer based on this selection. However, should you wish to alter this figure then simply select the box next to 'Tons per Container or Trailer' and enter your revised figure.

Finally, enter the total number of containers or trailers to be moved during the period you are considering and click the next button at the bottom right hand corner of the screen. (Note - you can press back at any time in the process to alter any inputs)

For help on the inputs on any steps of the Public Benefits Calculator hover the cursor over the question mark symbol immediately to the left of each input box.



Encouraging cooperation for transportation modes | waterborne transportation

1 of 4 - Current Cargo Trip

Input Details of the Cargo Being Moved

Current Mode Being Used Road Rail

Cargo Type 20 Foot Container 40 Foot Container 53 Foot Container/Trailer Break bulk/pallets Bulk (solid or liquids)

Tons per Container or Trailer

Total Containers or Trailers to be Moved

Total Tons of Cargo to be Moved

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Step 2: Current Road/Rail Trip Details

Note – Step 2 will differ depending on which mode was selected in Step 1.

Current Road Trip Details

Firstly, select which type of truck is currently hauling the cargo, either a single combination truck (one without a separate trailer) or a combination truck (one with a separate trailer).

Then, enter the number of miles for each truck trip in both urban and rural areas. If you are unsure about the definition of urban vs. rural area, there is guidance available by hovering over the question mark symbol to the left of each input box. The tool will then calculate the total miles per trip.

There is also an option to specify the number of containers or trailers per truck trip. The default setting is 1, however should you wish to alter this figure simply select the box and type in the desired number of containers.

Once you are satisfied click the 'next' button to progress to Step 3.

Current Rail Trip Details

Firstly select the type of train which is hauling the cargo from the four options provided: Heavy Unit, Mixed Freight, Intermodal or Double Stack. If you are unsure as to the meaning of each term then hover the cursor over the associated question mark symbol for an explanation.

Next, type in the number of miles each train travels per trip. Then, type in the total number of miles per trip for the associated truck trips. This is important in order to take into account transportation of goods from a warehouse or factory to the train terminal (given that most sites do not have their own train terminal).

Finally, enter the number of containers or trailers moved per rail trip and the number of containers or trailers carried per truck for each associated road trip (default value: 1).

Once you are satisfied click the 'next' button to progress to Step 3.



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2 of 4 - Current Rail Trip

Current Trip Details

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Type of Train ? Heavy unit
 Mixed freight
 Intermodal
 Double stack

Rail Trip Miles ?

Road Miles for the Associated Truck Trips ?
For help with a distance calculation, please click [here](#).

Train Loading and Discharging

Number of Containers or Trailers Moved per Rail Trip ?

Number of Containers or Trailers Hauled per Truck When Travelling To or From the Rail Station ?

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Example of screen when 'rail' is selected at step 1.

Step 3: Potential Marine Highway Trip

Firstly, select the type of marine highways to be used: Coastal, inland waterways or the Great Lakes. A map of these is displayed on the right hand side when you hover the cursor over each marine highway type. Next enter the number of miles per marine highway trip. For assistance calculating marine highway trip miles, follow the link immediately below the title 'Marine Highway Trip Details'.

In addition, the number of road miles for associated truck trips is required.

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3 of 4 - Potential Marine Highway Trip

Marine Highway Trip Details

For detailed help to plan your Marine Highway trip, please click [here](#).

Type of Marine Highways to be Used Coastal
 Inland
 Great Lakes

Nautical Miles per Trip on a Marine Highway

Road Miles for the Associated Truck Trips
For help with a distance calculation, please click [here](#).

Loading and Discharging

Number of Containers or Trailers Hauled per Truck When Travelling To or From the Port



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Again, there is also an option to specify the number of containers or trailers per truck trip. The default setting is 1, however should you wish to alter this figure simply select the box and type in the desired number of containers.

Once you are satisfied click the 'next' button to progress to Step 4.

Step 4: Calculated Benefits Summary

This page provides a summary of the estimated benefits (in monetary terms) that could be achieved by utilizing Marine Highways. Hovering the cursor over the information symbols provides an explanation of each element of the calculation. Should you wish to export this table to a .PDF file, click on the associated button at the top or bottom of the page.



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4 of 4 - Calculated Benefits Summary

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The table below is a summary of the estimated benefits that could be achieved by utilizing Marine Highways. Positive numbers are potential benefits and savings, negative numbers are potential dis-benefits and costs. These figures are calculated using a number of parameters to convert the inputs you supplied into monetary values. By default, the Marine Highways Calculator uses standard generalized values for these parameters, based on industry averages and Government guidelines. However, if you have specific knowledge about your trips, the parameters can be altered using the Alter Variables button.

In the calculations below comparing a rail trip to Marine Highways, the default parameters have been used.

Indirect Cost Benefits	
Congestion Reduction	\$248.64
Pollution Reduction	\$1,222.47
Safety Improvements	\$15.86
Carbon Reductions	\$390.23
Public Cost Benefits	
Reduced Infrastructure Development	\$27.99
Reduced Infrastructure Maintenance	\$775.66
Private Cost Benefits	
Operational Cost Reductions	\$14,458.70
Total Benefits	
Total	\$17,139.54
Saving per container-mile	\$0.34

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Clicking on the 'alter variables' button at the top or bottom left of the page allows the user to alter the default parameters used to determine the calculated benefits. Each element can be altered by expanding a section by clicking on the small '+' to the left of each title and overwriting the value in a given box. Should you wish to revert to the default values simply click the 'Set to Defaults' button at the top right of the screen. References have been included next to each variable field so that you can check your agreement with each relevant author's rationale for the figure.

Clicking on the 'Back' button will return you to the calculated benefits summary.



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Variables

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The following page is a list of parameters used in the tool to turn the user inputs into monetary benefits. These parameters are based on industry averages and Government guidelines and have been adjusted to 2011 prices. If you have specific knowledge about your trips and local transport environment, you can alter parameters below.

Road Trip Congestion Levels

Reference: -

Notes: -

Units: % distance at each congestion level

Urban

Rural

Congestion	%	Congestion	%
Low	60	Low	60
Medium	20	Medium	20
High	20	High	20
Total	100	Total	100

Congestion Costs

Pollution

Safety

CO₂

Infrastructure Development

Infrastructure Maintenance