

ATHENA ROUTE OPTIMIZATION

Education Logistics, Inc.

Training
Guide

2025

Athena Route Optimization

Training Guide

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INTRODUCTION

Athena's Route Optimization feature allows you to develop the most efficient bus routes within the guidelines of your district's transportation policies. You can rapidly generate efficient routes with the runs in your system and quickly review the impact of changes in school times or in the number of vehicles used. You can create and examine these solutions, even as you use the system for your daily transportation work. If you decide you want to use one of these solutions to modify your existing data, you can easily incorporate it into the actual transportation system.

Route Optimization uses your geographic and transportation data to help you accomplish these tasks more efficiently and easily. The system performs previously routine and repetitive tasks automatically, reducing the amount of time required to prepare for a new school year or respond to changes in transportation requirements. You can use the various optimization features (Stop, Run, and Route) to perform a variety of transportation management tasks. These components are sold separately, so the items that appear in your system will reflect those which you have purchased.

Route optimization is simulation software. The data used in the optimization process is based on your existing transportation data, but it is a totally distinct data set. Think of optimization as a simulation which is based on your current transportation data but which you can modify safely without affecting your actual transportation data. What you do in Route Optimization does not affect your transportation system unless you choose to confirm the route solution (incorporate it into your actual data).

We encourage you to experiment with the Route Optimization data. Try the same problem several times, making different changes each time to see how well each approach works. You can then combine the best features of each approach to create the most efficient solution. This approach will enable you to develop specific strategies in optimizing your data. You can also use the automated optimization functions which often reveal improvements you may not have noticed.

Keep in mind that we are continuously updating and improving our software, so changes may be made to the program after the printing date of this guide. As a result, you may encounter parts of the system that vary somewhat from the steps and illustrations in this guide. Such differences should be minor, however, and the primary concepts that it discusses still apply.

Again, we encourage you to experiment with the various optimization features, to play with different scenarios, and compare the results. Changes will not affect your regular data unless you decide to confirm the run solution, so you can easily abandon results you do not like.

OPTIMIZATION PREP WORK

Listed below are prep work items you will need for optimization

1. **Up to date map** - A very important part of prep work for transportation studies. It is the indicator whether the stop times Athena produces are close enough to real life stop time values. If you adjust times in Athena frequently, you may not be calibrated. The better calibration is, the less guess work must be done in the project.

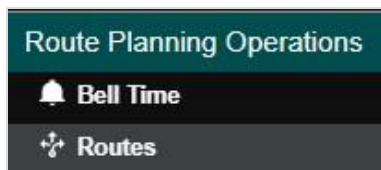
2. **Student Match Rate** - Having kids matched is important for these studies so that the proper eligibility for ridership can be determined, and the distance to stops and stop assignments can be in place.
 - a. What are unmatched students? - Students whose address cannot be located on the map.
 - b. Recognizing unmatched students - Students that Geolocation is unmatched in the student import module.
3. **School Changes** - Any school changes should be handled before Optimization is done. School data input, Bell times in place, Boundaries posted, and Eligibility updated.
4. **Student Assignment to Stops** - If any work on student to stop assignments needs to be done; it should be done before run optimization takes place. The following changes can affect student assignment.
5. **Student Eligibility** - Again, any boundary changes should be posted to their schools so that eligibility of students can be updated, any students who do not need stops anymore can be removed from them and any students who become eligible for transportation can have a stop assigned, creating new stops as needed. Stop locations could come from other schools formerly transporting students in that area.
6. **Walk to school distances** - Any changes to walk to school boundaries should be posted as they affect eligibility as mentioned above. Depending upon the change stops and stop assignments may need to be added or removed for this work.
7. **Walk to stop distance** - Changes in walk to Stop distance can affect the number of stops used for eligible students, this could mean more stop locations needing to be created (for reduction in distance) or less stop locations needed (for increases in distance)
8. **Transportation Accuracy** - if using existing data in the study (for fleet reductions and evaluations), your transportation data needs to properly represent what is currently being done as much as possible.

GETTING STARTED

1. Once logged in, go to Routing Management.



2. In the action bar, under Route Planning Operations, select Routes.



3. On the Route landing page, create a task.

Route Opt

Create

+

- Select the routes you want to work with in the Augment Context window.

Augment Routes Context

Cancel OK

Available Routes To Load

<input type="checkbox"/> Route ↑	Description
<input checked="" type="checkbox"/> 100	Gallatin Elementary
<input checked="" type="checkbox"/> 139	Carter, Petroleum, and Park
<input checked="" type="checkbox"/> 140	Gallatin Elementary
<input type="checkbox"/> 141	Madison and Ravalli
<input type="checkbox"/> 142	Carter, Rosebud, and Liberty
<input type="checkbox"/> 143	Daniels, Park, and Petroleum
<input type="checkbox"/> 144	Carbon and Madison
<input type="checkbox"/> 145	EC Carbon and Madison
<input type="checkbox"/> 147	Judith, Phillips, Park, and Richland
<input type="checkbox"/> 148	EC Valley, Meagher, Liberty, and Park
<input type="checkbox"/> 149	Glacier, Sheridan, and Meagher
<input type="checkbox"/> 150	Garfield, Liberty, and Rosebud
<input type="checkbox"/> 151	Phillips and Liberty
<input type="checkbox"/> 152	Deer Lodge Elementary
<input type="checkbox"/> 153	Phillips, Lincoln, and Fergus
<input type="checkbox"/> 154	Musselshell and Richland
<input checked="" type="checkbox"/> 155	Gallatin and Stillwater
<input type="checkbox"/> 156	Roosevelt and McCone
<input type="checkbox"/> 157	Rosebud and Liberty
<input type="checkbox"/> 158	Madison and Powder River

Runs To Load: ☒ All Unassigned ☐ None

- Select All Unassigned runs, then select OK.
- Routes and Unassigned Runs will be listed in the data panel.

Routes

Augment Context

Bell Times

+ Add New

- Delete

Columns

<input type="checkbox"/> Route	Description	Vehicle	AM/PM
<input type="checkbox"/> 100	Gallatin Elementary		Afternoon
<input type="checkbox"/> 139	Carter, Petroleum, and Park		All-Day
<input type="checkbox"/> 140	Gallatin Elementary		All-Day
<input type="checkbox"/> 155	Gallatin and Stillwater		All-Day
<input type="checkbox"/> 209	Gallatin Elementary		All-Day
<input type="checkbox"/> 222	Flathead, Cuthbertson, and Li...		All-Day
<input type="checkbox"/> 236	Flathead, Petroleum, Park		All-Day
<input type="checkbox"/> 291	Gallatin		All-Day
<input type="checkbox"/> 397	Flathead, Sheridan, Rosebud,...		All-Day
<input type="checkbox"/> 398	Flathead, Rosebud, and Liberty		All-Day
<input type="checkbox"/> 402	Flathead, Sheridan, Petroleum		All-Day
<input type="checkbox"/> 417	Gallatin and Sheridan		All-Day

Unassigned Runs

All

All-F

Clear

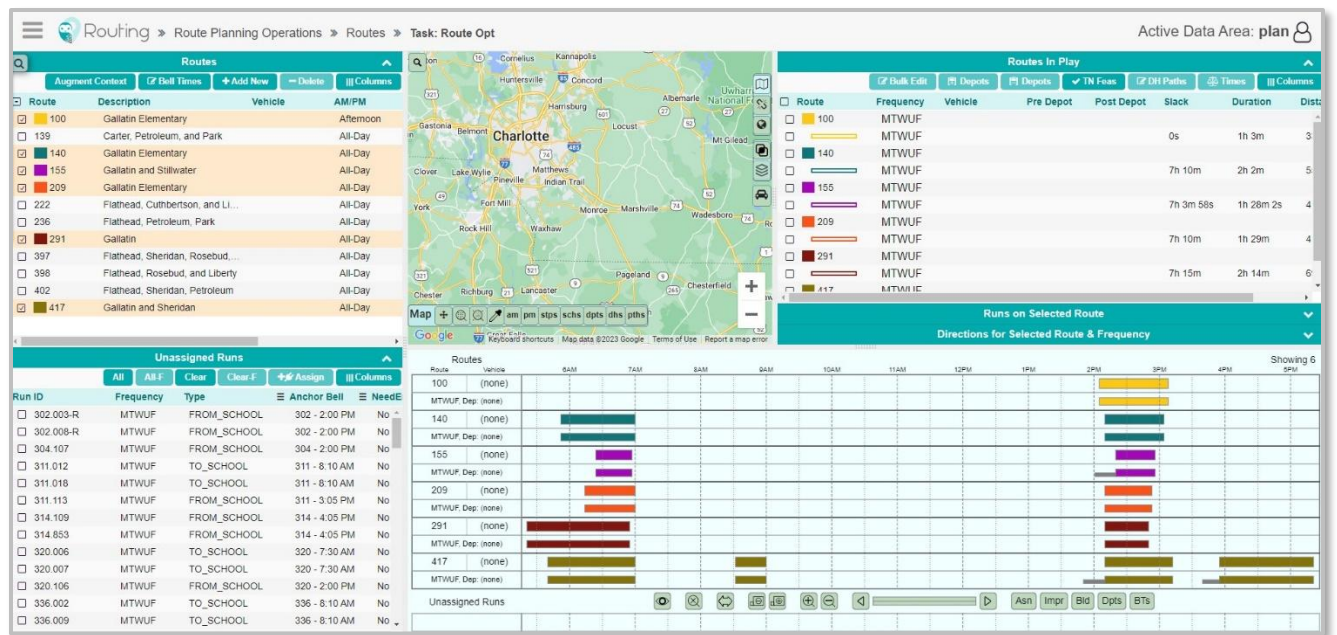
Clear-F

Assign

Columns

Run ID	Frequency	Type	Anchor Bell	NeedE
<input type="checkbox"/> 302.003-R	MTWUF	FROM_SCHOOL	302 - 2:00 PM	No
<input type="checkbox"/> 302.008-R	MTWUF	FROM_SCHOOL	302 - 2:00 PM	No
<input type="checkbox"/> 304.107	MTWUF	FROM_SCHOOL	304 - 2:00 PM	No
<input type="checkbox"/> 311.012	MTWUF	TO_SCHOOL	311 - 8:10 AM	No
<input type="checkbox"/> 311.018	MTWUF	TO_SCHOOL	311 - 8:10 AM	No
<input type="checkbox"/> 311.113	MTWUF	FROM_SCHOOL	311 - 3:05 PM	No
<input type="checkbox"/> 314.109	MTWUF	FROM_SCHOOL	314 - 4:05 PM	No
<input type="checkbox"/> 314.853	MTWUF	FROM_SCHOOL	314 - 4:05 PM	No
<input type="checkbox"/> 320.006	MTWUF	TO_SCHOOL	320 - 7:30 AM	No
<input type="checkbox"/> 320.007	MTWUF	TO_SCHOOL	320 - 7:30 AM	No
<input type="checkbox"/> 320.106	MTWUF	FROM_SCHOOL	320 - 2:00 PM	No
<input type="checkbox"/> 336.002	MTWUF	TO_SCHOOL	336 - 8:10 AM	No
<input type="checkbox"/> 336.009	MTWUF	TO_SCHOOL	336 - 8:10 AM	No

7. Select your Routes and the Unassigned Runs that you want to work with.



You will see the Unassigned Runs and Routes in the workspace and timeline.

8. Route Opt tools are in the Timeline Panel.



- Opt Assign
- Opt Improve
- Opt Build
- Opt Depots
- Opt Bell Times

USING ROUTE OPTIMIZATION TOOLS

Optimize Assign

As a user, I would like to take a group of unassigned runs and assign them to routes.

- After creating your task, select your routes in the Augment Context window.

Augment Routes Context

Cancel

OK

Available Routes To Load

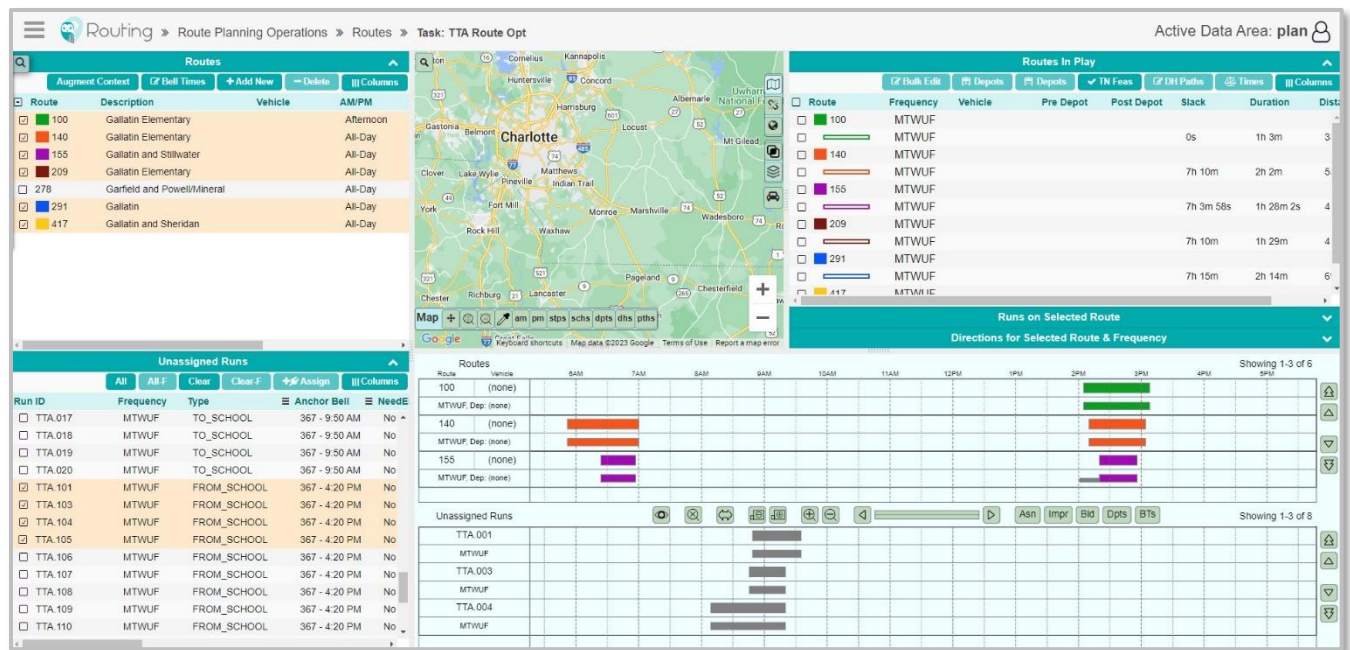
Route ↑

Description

<input checked="" type="checkbox"/>	100	Gallatin Elementary
<input checked="" type="checkbox"/>	139	Carter, Petroleum, and Park
<input checked="" type="checkbox"/>	140	Gallatin Elementary
<input type="checkbox"/>	141	Madison and Ravalli
<input type="checkbox"/>	142	Carter, Rosebud, and Liberty
<input type="checkbox"/>	143	Daniels, Park, and Petroleum
<input type="checkbox"/>	144	Carbon and Madison
<input type="checkbox"/>	145	EC Carbon and Madison
<input type="checkbox"/>	147	Judith, Phillips, Park, and Richland
<input type="checkbox"/>	148	EC Valley, Meagher, Liberty, and Park
<input type="checkbox"/>	149	Glacier, Sheridan, and Meagher
<input type="checkbox"/>	150	Garfield, Liberty, and Rosebud
<input type="checkbox"/>	151	Phillips and Liberty
<input type="checkbox"/>	152	Deer Lodge Elementary
<input type="checkbox"/>	153	Phillips, Lincoln, and Fergus
<input type="checkbox"/>	154	Musselshell and Richland
<input checked="" type="checkbox"/>	155	Gallatin and Stillwater
<input type="checkbox"/>	156	Roosevelt and McCone
<input type="checkbox"/>	157	Rosebud and Liberty
<input type="checkbox"/>	158	Madison and Powder River

Runs To Load:
☒ All Unassigned
☐ None

2. Then select your routes and the Unassigned Runs in the data panel.



- Then select the Assign button located on the timeline.



- The Confirm the RouteOpt action window will open.

The 'Confirm the RouteOpt action' window displays the following information:

- About to **Opt Assign** with:
- 8 unassigned runs
- 6 routes
- ☒ Consider AM/PM Run Mirroring
- Naming new routes as follows:
- Prefix:
- Start at:
- Buttons: **Proceed** and **Cancel**

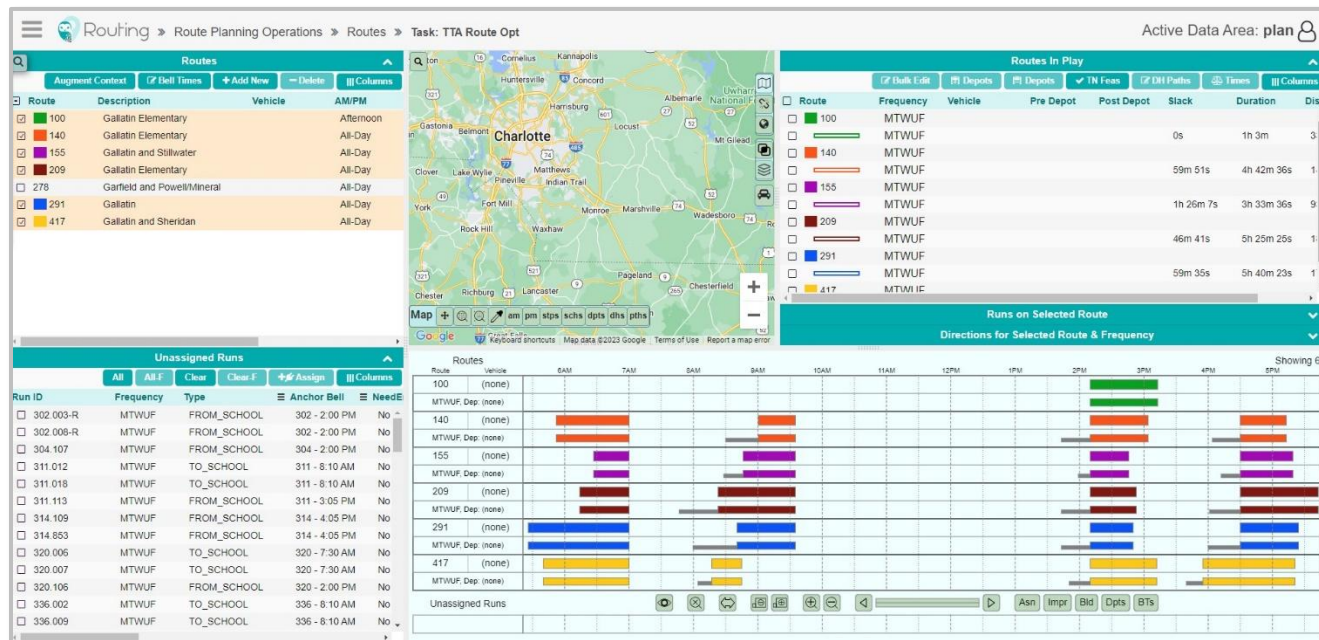
- The window will tell you what you are about to Opt Assign with.
 - You can check the box to Consider AM/PM Run Mirroring.
 - Then Name the new route with the Prefix and Start at.
 - Then select Proceed.
- Then confirm the change. Verify the before and after information.

Confirm this change?

Before	#Runs	Slack	Duration	Distance
UNASSIGNED	2	0s	48m 55s	13.71 mi
Route 007	2	6h 2m 53s	57m 46s	14.67 mi
Route 008	5	-3m 54s	2h 7m 6s	39.59 mi
TOTAL	9	5h 58m 59s	3h 53m 47s	67.96 mi

After	#Runs	Slack	Duration	Distance
UNASSIGNED	0	0s	0s	0 ft
Route 007	4	27m 48s	1h 56m 22s	30.07 mi
Route 008	5	48s	2h 3m 49s	39.09 mi
TOTAL	9	28m 36s	4h 11s	69.16 mi

- Then select Proceed.
- You will see the changes reflect in the timeline. Runs have been assigned to existing routes.

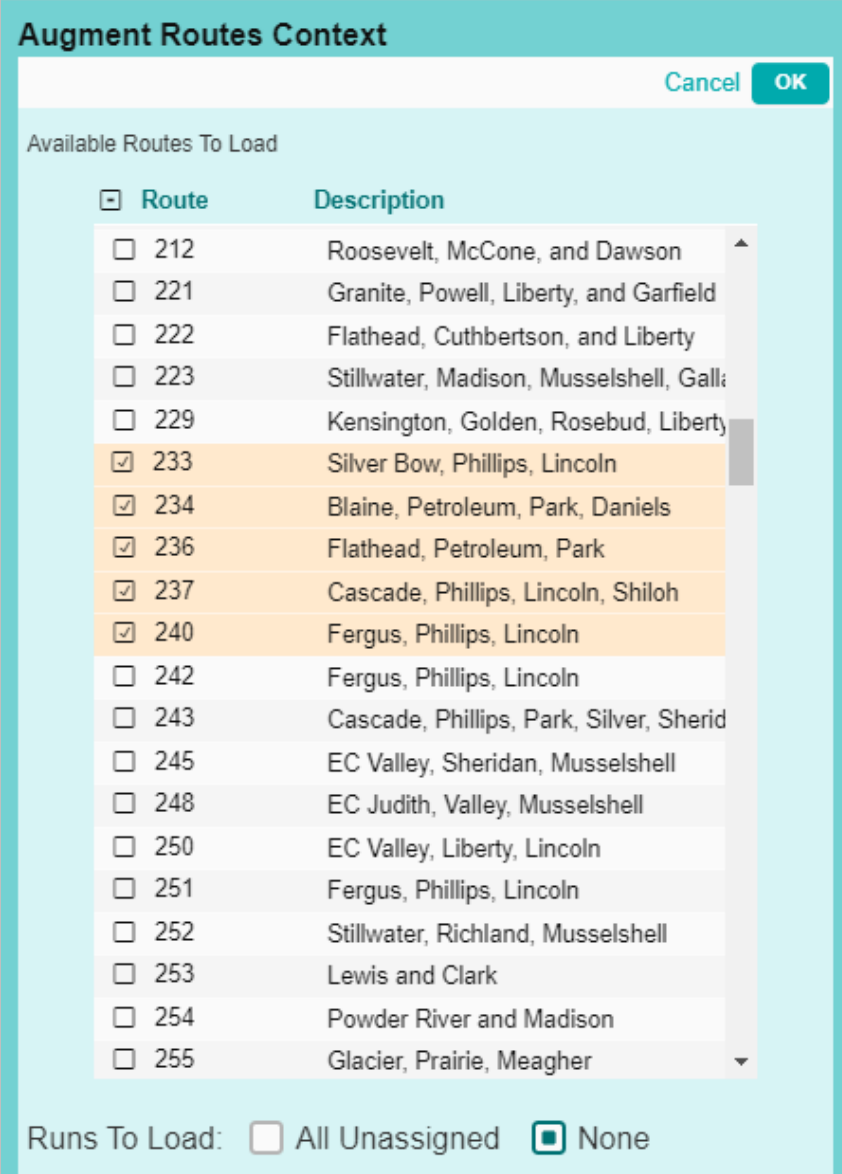


Note, the Assign tool will not interfere with your current route assignments. The current runs assigned are fixed. If it cannot find a place to assign the run, it will create a new route.

Optimize Improve

As a user, I would like to improve my routes for better efficiency.

1. After creating your task, select your routes in the Augment Context window.



The screenshot shows a window titled "Augment Routes Context" with a light blue header and a white body. In the top right corner, there are "Cancel" and "OK" buttons. Below the header, the text "Available Routes To Load" is displayed. A table with two columns, "Route" and "Description", lists 18 routes. Each row has a checkbox in the "Route" column. Routes 233 through 240 are highlighted in orange and have their checkboxes checked. At the bottom of the window, there is a section labeled "Runs To Load:" with two options: "All Unassigned" (unchecked) and "None" (checked).

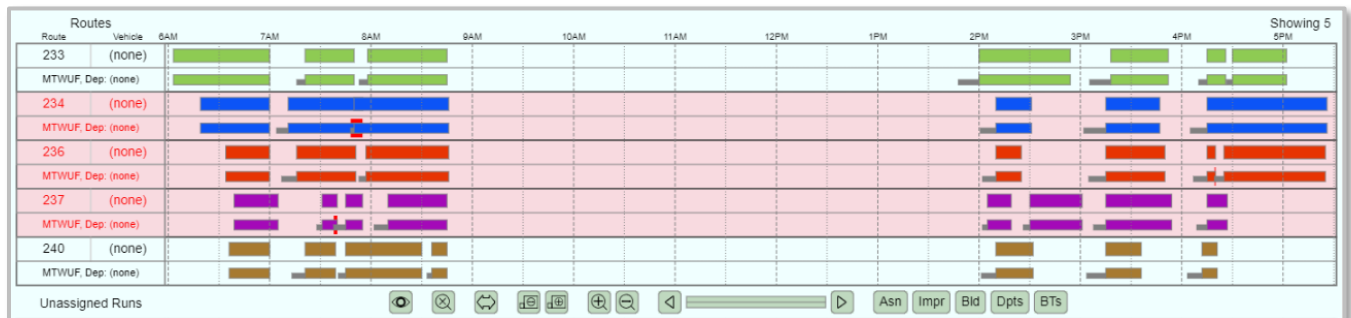
Route	Description
<input type="checkbox"/> 212	Roosevelt, McCone, and Dawson
<input type="checkbox"/> 221	Granite, Powell, Liberty, and Garfield
<input type="checkbox"/> 222	Flathead, Cuthbertson, and Liberty
<input type="checkbox"/> 223	Stillwater, Madison, Musselshell, Gall
<input type="checkbox"/> 229	Kensington, Golden, Rosebud, Liberty
<input checked="" type="checkbox"/> 233	Silver Bow, Phillips, Lincoln
<input checked="" type="checkbox"/> 234	Blaine, Petroleum, Park, Daniels
<input checked="" type="checkbox"/> 236	Flathead, Petroleum, Park
<input checked="" type="checkbox"/> 237	Cascade, Phillips, Lincoln, Shiloh
<input checked="" type="checkbox"/> 240	Fergus, Phillips, Lincoln
<input type="checkbox"/> 242	Fergus, Phillips, Lincoln
<input type="checkbox"/> 243	Cascade, Phillips, Park, Silver, Sherid
<input type="checkbox"/> 245	EC Valley, Sheridan, Musselshell
<input type="checkbox"/> 248	EC Judith, Valley, Musselshell
<input type="checkbox"/> 250	EC Valley, Liberty, Lincoln
<input type="checkbox"/> 251	Fergus, Phillips, Lincoln
<input type="checkbox"/> 252	Stillwater, Richland, Musselshell
<input type="checkbox"/> 253	Lewis and Clark
<input type="checkbox"/> 254	Powder River and Madison
<input type="checkbox"/> 255	Glacier, Prairie, Meagher

Runs To Load: ☐ All Unassigned ☒ None

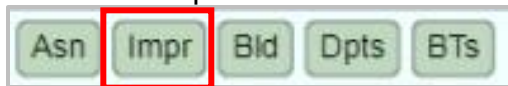
2. Then select your routes in the data panel.

Routes				
<input type="checkbox"/> Augment Context <input type="checkbox"/> Bell Times <input type="button" value="+ Add New"/> <input type="button" value="- Delete"/> <input type="button" value="III"/>				
<input checked="" type="checkbox"/> Route	Description	Vehicle	AM/PM	Frequency
<input checked="" type="checkbox"/> 233	Silver Bow, Phillips, Lincoln		All-Day	MTWTF
<input checked="" type="checkbox"/> 234	Blaine, Petroleum, Park, Daniels		All-Day	MTWTF
<input checked="" type="checkbox"/> 236	Flathead, Petroleum, Park		All-Day	MTWTF
<input checked="" type="checkbox"/> 237	Cascade, Phillips, Lincoln, Shi...		All-Day	MTWTF
<input checked="" type="checkbox"/> 240	Fergus, Phillips, Lincoln		All-Day	MTWTF

3. The routes will display in the timeline. Note: All routes in pink have negative slack.



4. Select the Improve button located on the timeline.



5. The Confirm the RouteOpt action window will open.

- The window will tell you what you are about to Opt Improve with.
- You can check the box to Consider AM/PM Run Mirroring.
- You can also check the box to Improve Depot Assignments as well.
- Then you need to select Depots Available and move them over to Depots to use with the arrow in the middle of the two windows.
- Then Name the new routes with the Prefix and Start at.

Confirm the RouteOpt action

About to **Opt Improve** with:

35 runs from 5 routes

☒ Consider AM/PM Run Mirroring

☒ Improve Depot Assignments As Well

Depots Available

Depot	Cap	AdjCap	In Use	Free
EBD1	20	20	0	20
HBD	40	40	0	40
bus1	20	20	0	20

Depots To Use

Depot	Cap	AdjCap	In Use	Free
MMS	50	50	0	50

>

Naming new routes as follows:

Prefix:

Start at:

f. Then select Proceed.

6. The Confirm this change window will open. Notice there is not negative slack.

Confirm this change?

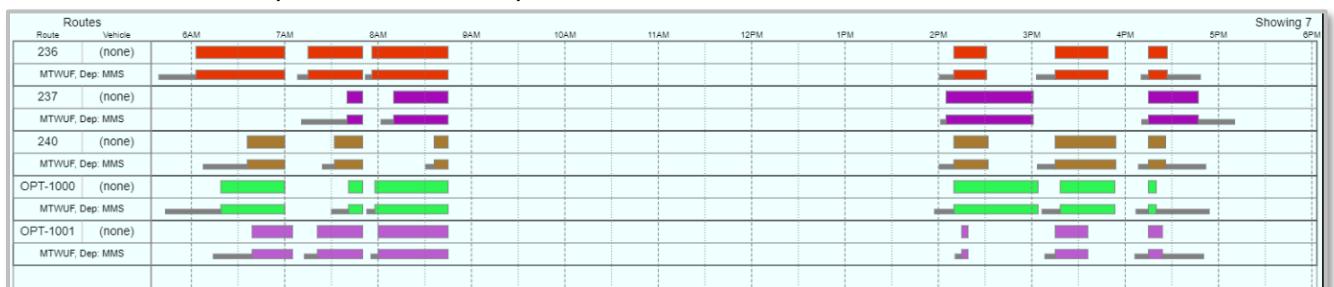
Before	#Runs	Slack	Duration	Distance
UNASSIGNED	0	0s	0s	0 ft
Route 233	7	37s	5h 6m 49s	111.35 mi
Route 234	6	-7m 3s	5h 5m 57s	110.73 mi
Route 236	7	-32s	4h 29m 26s	118.68 mi
Route 237	8	-2m 2s	3h 34m 6s	77.45 mi
Route 240	7	1m 40s	3h 11m 14s	74.44 mi
TOTAL	35	-7m 20s	21h 27m 32s	492.65 mi

After	#Runs	Slack	Duration	Distance
UNASSIGNED	0	0s	0s	0 ft
Route 233	3	1h 38m 51s	3h 2m 5s	79.97 mi
Route 234	4	52s	4h 46m 15s	133.23 mi
Route 236	6	1m 53s	4h 50m	164.50 mi
Route 237	4	11m 53s	3h 21m 33s	100.59 mi
Route 240	6	14m 36s	3h 37m 29s	104.10 mi
Route OPT-1000	6	2m 35s	5h 9m 11s	133.23 mi
Route OPT-1001	6	5m 26s	3h 37m 42s	101.04 mi

✓ Proceed

Cancel

7. Routes have been improved and new Opt routes have been created.



Optimize Build

As a user, I would like to take a selected group of and build efficient routes.

Note: you can include existing routes in this data and the runs from those routes will be added to the build process. Those routes will be gone after optimized.

1. After creating your task, select the All Unassigned runs at the bottom of the Augment Context Window.

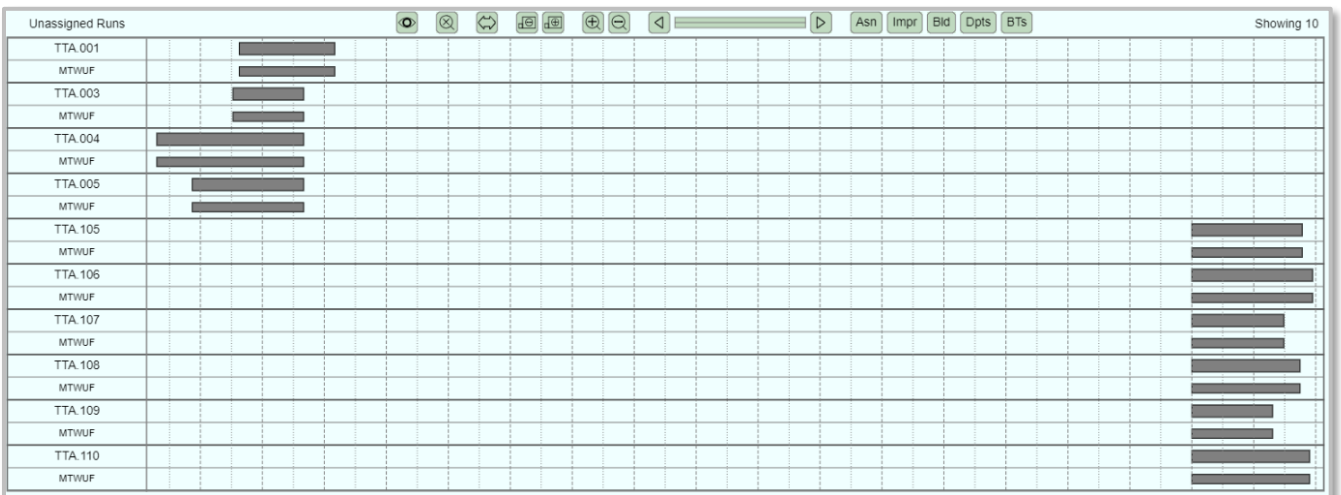
Runs To Load: ☒ All Unassigned ☐ None

2. All unassigned runs will be listed at the bottom of the Data Panel.

Unassigned Runs					
<div> <div>All</div> <div>All-F</div> <div>Clear</div> <div>Clear-F</div> <div>+ Assign</div> <div>III</div> </div>					
<input type="checkbox"/>	Run ID	Frequency	Type	Anchor Bell	NeedEnbl
<input type="checkbox"/>	MMS.203	U	FROM_SCHOOL	308 - 12:00 PM	No
<input checked="" type="checkbox"/>	TTA.001	MTWUF	TO_SCHOOL	367 - 9:50 AM	No
<input checked="" type="checkbox"/>	TTA.003	MTWUF	TO_SCHOOL	367 - 9:50 AM	No
<input checked="" type="checkbox"/>	TTA.004	MTWUF	TO_SCHOOL	367 - 9:50 AM	No
<input checked="" type="checkbox"/>	TTA.005	MTWUF	TO_SCHOOL	367 - 9:50 AM	No
<input type="checkbox"/>	TTA.006	MTWUF	TO_SCHOOL	367 - 9:50 AM	No

<input type="checkbox"/>	TTA.104	MTWUF	FROM_SCHOOL	367 - 4:20 PM	No
<input checked="" type="checkbox"/>	TTA.105	MTWUF	FROM_SCHOOL	367 - 4:20 PM	No
<input checked="" type="checkbox"/>	TTA.106	MTWUF	FROM_SCHOOL	367 - 4:20 PM	No
<input checked="" type="checkbox"/>	TTA.107	MTWUF	FROM_SCHOOL	367 - 4:20 PM	No
<input checked="" type="checkbox"/>	TTA.108	MTWUF	FROM_SCHOOL	367 - 4:20 PM	No
<input checked="" type="checkbox"/>	TTA.109	MTWUF	FROM_SCHOOL	367 - 4:20 PM	No
<input checked="" type="checkbox"/>	TTA.110	MTWUF	FROM_SCHOOL	367 - 4:20 PM	No

3. Unassigned runs will display in the Timeline Panel.



4. Next, select the build opt button.



5. The Confirm the RouteOpt action window will open.

Confirm the RouteOpt action

About to Opt Build with:

10 unassigned runs

0 routes

☒ Consider AM/PM Run Mirroring

☒ Assign Depots As Well

Depots Available

Depot	Cap	AdjCap	In Use	Free
EBD1	20	20	0	20
HBD	40	40	0	40
bus1	20	20	0	20

Depots To Use

Depot	Cap	AdjCap	In Use	Free
MMS	50	43	0	43

Naming new routes as follows:

Prefix:

Start at:

6. Then select Proceed.

7. The Confirm the change window will open.

Confirm this change?

Before	#Runs	Slack	Duration	Distance
UNASSIGNED	10	0s	8h 30m 45s	233.48 mi
TOTAL	10	0s	8h 30m 45s	233.48 mi

After	#Runs	Slack	Duration	Distance
UNASSIGNED	0	0s	0s	0 ft
Route OPT-2000	2	6h 55m	3h 29m 48s	116.73 mi
Route OPT-2001	2	6h 55m	2h 3m 12s	75.78 mi
Route OPT-2002	2	6h 55m	2h 19m 8s	75.89 mi
Route OPT-2003	2	6h 55m	3h 7m 56s	97.29 mi
Route OPT-2004	1	0s	1h 47m 53s	64.43 mi
Route OPT-2005	1	0s	1h 25m 52s	49.46 mi
TOTAL	10	27h 40m	14h 13m 49s	479.58 mi

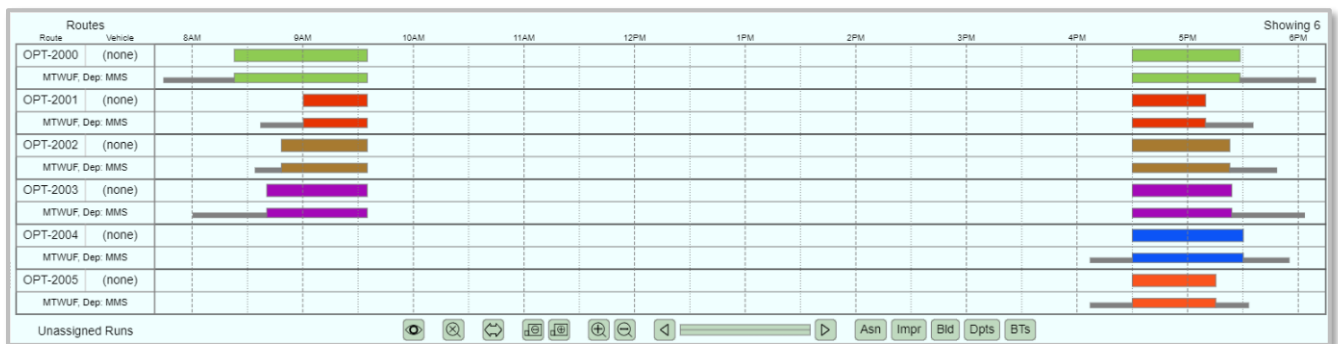
✓ Proceed

Cancel

8. Select Proceed.

9. Routes have been created.

<input checked="" type="checkbox"/>	■ OPT-2000	All-Day
<input checked="" type="checkbox"/>	■ OPT-2001	All-Day
<input checked="" type="checkbox"/>	■ OPT-2002	All-Day
<input checked="" type="checkbox"/>	■ OPT-2003	All-Day
<input checked="" type="checkbox"/>	■ OPT-2004	Afternoon
<input checked="" type="checkbox"/>	■ OPT-2005	Afternoon



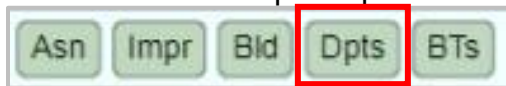
Optimize Depots

As a user, I would like to assign depots to my routes.

1. In the data panel, select the routes you want to work with.

<input checked="" type="checkbox"/>	OPT-2000	All-Day
<input checked="" type="checkbox"/>	OPT-2001	All-Day
<input checked="" type="checkbox"/>	OPT-2002	All-Day
<input checked="" type="checkbox"/>	OPT-2003	All-Day
<input checked="" type="checkbox"/>	OPT-2004	Afternoon
<input checked="" type="checkbox"/>	OPT-2005	Afternoon

2. Then select the Depots opt tool.



3. The Confirm RouteOpt action window will open.

Confirm the RouteOpt action
About to **Opt Depots** with:
6 routes

Depots Available

Depot	Cap	AdjCap	In Use	Free
EBD1	20	20	0	20
HBD	40	40	0	40
bus1	20	20	0	20

Depots To Use

Depot	Cap	AdjCap	In Use	Free
MMS	50	43	6	37

>

✓ Proceed

Cancel

- a. It will show you about the Opt Depots you will be working with.
 - b. Then select the Depots available and move them over to Depots to Use with the arrow in the middle of the two windows.
4. Then select Proceed.
 5. The Confirm this change window will open.

Confirm this change?

Before	#Runs	Slack	Duration	Distance
UNASSIGNED	0	0s	0s	0 ft
Route OPT-2000	2	6h 55m	3h 29m 48s	116.73 mi
Route OPT-2001	2	6h 55m	2h 3m 12s	75.78 mi
Route OPT-2002	2	6h 55m	2h 19m 8s	75.89 mi
Route OPT-2003	2	6h 55m	3h 7m 56s	97.29 mi
Route OPT-2004	1	0s	1h 47m 53s	64.43 mi
Route OPT-2005	1	0s	1h 25m 52s	49.46 mi
TOTAL	10	27h 40m	14h 13m 49s	479.58 mi

After	#Runs	Slack	Duration	Distance
UNASSIGNED	0	0s	0s	0 ft
Route OPT-2000	2	6h 55m	3h 29m 48s	116.73 mi
Route OPT-2001	2	6h 55m	2h 3m 12s	75.78 mi
Route OPT-2002	2	6h 55m	2h 19m 8s	75.89 mi
Route OPT-2003	2	6h 55m	3h 7m 56s	97.29 mi
Route OPT-2004	1	0s	1h 47m 53s	64.43 mi
Route OPT-2005	1	0s	1h 25m 52s	49.46 mi
TOTAL	10	27h 40m	14h 13m 49s	479.58 mi

✓ Proceed
Cancel

6. Select Proceed.
7. All routes have been assigned depots and you can see them in Routes in Play.

Routes In Play						
				Bulk Edit	Depots	Depots
<input type="checkbox"/> Route	Frequency	Vehicle	Pre Depot	Post Depot	Slack	
<input type="checkbox"/> OPT-2000	MTWUF					
<input type="checkbox"/>	MTWUF		MMS	MMS	6h 55m	
<input type="checkbox"/> OPT-2001	MTWUF					
<input type="checkbox"/>	MTWUF		MMS	MMS	6h 55m	
<input type="checkbox"/> OPT-2002	MTWUF					
<input type="checkbox"/>	MTWUF		MMS	MMS	6h 55m	
<input type="checkbox"/> OPT-2003	MTWUF					
<input type="checkbox"/>	MTWUF		MMS	MMS	6h 55m	
<input type="checkbox"/> OPT-2004	MTWUF					
<input type="checkbox"/>	MTWUF		MMS	MMS	0s	
<input type="checkbox"/> OPT-2005	MTWUF					
<input type="checkbox"/>	MTWUF		MMS	MMS	0s	

Optimize Bell Times

As a user, I would like to optimize my bell times to create efficient routes.

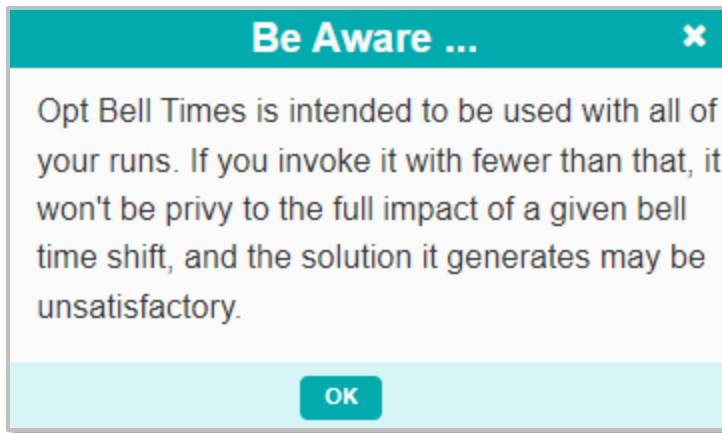
1. Select your routes.

<input checked="" type="checkbox"/> OPT-2000	All-Day
<input checked="" type="checkbox"/> OPT-2001	All-Day
<input checked="" type="checkbox"/> OPT-2002	All-Day
<input checked="" type="checkbox"/> OPT-2003	All-Day
<input checked="" type="checkbox"/> OPT-2004	Afternoon
<input checked="" type="checkbox"/> OPT-2005	Afternoon

2. Then select to Bell Time Opt tool.



3. The Confirm the RouteOpt action window will open.



4. The Confirm the RouteOpt action window will open.

Confirm the RouteOpt action

About to Opt Bell Times with:

10 runs from 6 routes

Minimum Offset Minute - Minute +

Bell Time Ranges

<input checked="" type="checkbox"/>	School	Bell Time	Earliest	-Offset	Latest	+Offset
<input checked="" type="checkbox"/>	302	7:30 AM	7:25	-5m	7:35	5m
<input checked="" type="checkbox"/>	302	2:00 PM	1:55	-5m	2:05	5m
<input checked="" type="checkbox"/>	303	7:30 AM	7:25	-5m	7:35	5m
<input checked="" type="checkbox"/>	303	2:00 PM	1:55	-5m	2:05	5m
<input checked="" type="checkbox"/>	304	7:30 AM	7:25	-5m	7:35	5m
<input checked="" type="checkbox"/>	304	2:00 PM	1:55	-5m	2:05	5m
<input checked="" type="checkbox"/>	305	7:30 AM	7:25	-5m	7:35	5m
<input checked="" type="checkbox"/>	305	2:00 PM	1:55	-5m	2:05	5m
<input checked="" type="checkbox"/>	306	7:30 AM	7:25	-5m	7:35	5m
<input checked="" type="checkbox"/>	306	2:00 PM	1:55	-5m	2:05	5m

Adjusting Ranges For 113 Bell Times

Earliest - Earliest + Latest - Latest +

Naming new routes as follows:

Prefix

Start at

✓ Proceed Cancel

- It will show you the Opt Bell Times it will be working with.
- You can set your Minimum Offset
- Then select your Bell Time Ranges
- Adjust your Ranges for Earliest and Latest offsets.
- Then name your new routes with the Prefix and Start at.
- The select Proceed.

5. The Confirm this change window will open.

Confirm this change?

Before	#Runs	Slack	Duration	Distance
UNASSIGNED	0	0s	0s	0 ft
Route OPT-2000	2	6h 55m	3h 29m 48s	116.73 mi
Route OPT-2001	2	6h 55m	2h 3m 12s	75.78 mi
Route OPT-2002	2	6h 55m	2h 19m 8s	75.89 mi
Route OPT-2003	2	6h 55m	3h 7m 56s	97.29 mi
Route OPT-2004	1	0s	1h 47m 53s	64.43 mi
Route OPT-2005	1	0s	1h 25m 52s	49.46 mi
TOTAL	10	27h 40m	14h 13m 49s	479.58 mi

After	#Runs	Slack	Duration	Distance
UNASSIGNED	0	0s	0s	0 ft
Route OPT-2006	2	6h 55m	1h 52m 2s	49.60 mi
Route OPT-2007	2	6h 55m	1h 50m 26s	60.54 mi
Route OPT-2008	2	6h 55m	1h 27m 16s	40.89 mi
Route OPT-2009	2	6h 55m	1h 31m 57s	33.78 mi
Route OPT-2010	1	0s	53m 9s	25.21 mi
Route OPT-2011	1	0s	59m 28s	25.31 mi
TOTAL	10	27h 40m	8h 34m 18s	235.33 mi

✓ Proceed

Cancel

6. Select Proceed.