



Building Your Technology Universe: Understanding the Value of GTFS & Building a Technology Culture

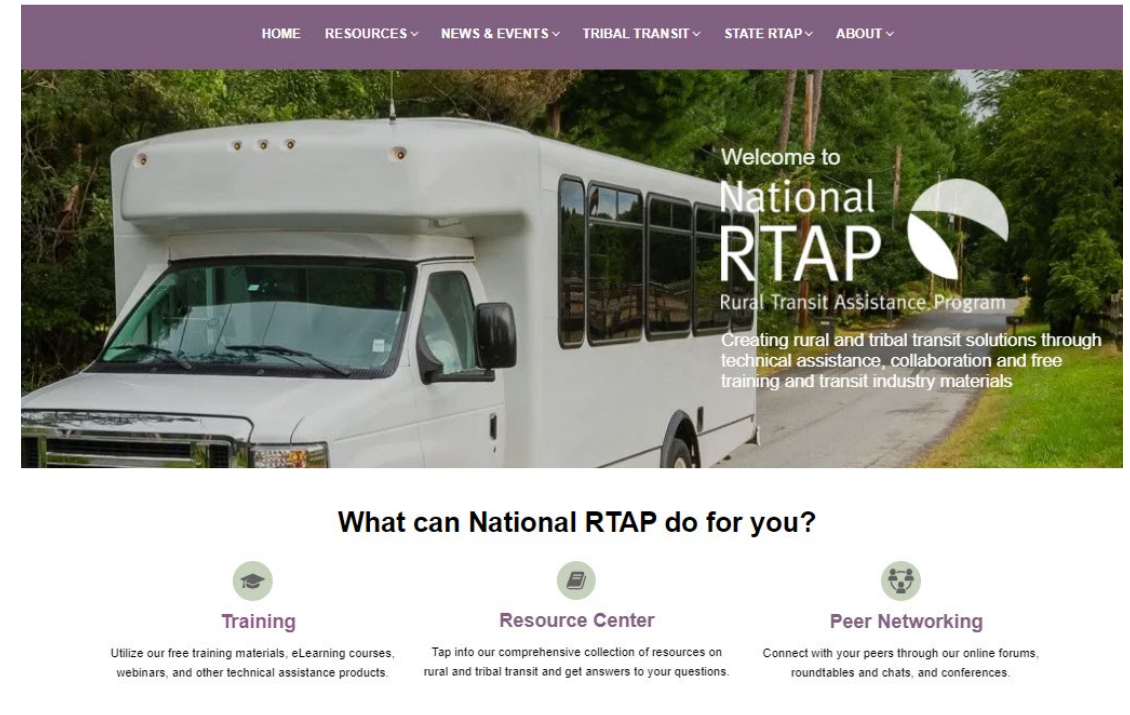
February 3, 2026 3:00 to 4:15 PM Eastern



U.S. Department of Transportation
Federal Transit Administration

National Rural Transit Assistance Program

- Technical assistance center funded by FTA through the Section 5311 Program
- Provides free training materials and technical assistance to rural and Tribal transit providers and state RTAP programs
- Review Board – state DOT and rural and tribal transit agency staff
- Learn more at nationalrtap.org



National RTAP Resources and Services

Training

manuals, videos, slides,
and eLearning for front-
line staff and
management

Information

and best practices via
tech briefs, toolkits,
topic guides, articles,
and news

Technology Tools

for procurement, cost
allocation, website
building, RideSheet and
GTFS

Peer Networking

and training via webinars,
conferences, roundtables,
and online forums

Assistance

through reference services
and tech support – bring us
your questions!

Presenters



Al Benedict

Technology Tools / Community Rides Grant
Leads, National RTAP



Rebecca Anger

Program Manager for Transit Policy and
Technical Assistance, AASHTO



Marcy Jaffe MBA, MPA

GTFS Technical Support, National RTAP
Transnnovation Inc



Stephanie Bushong

Transit Deputy Director
Ketchikan Gateway Borough



Joe Gallagher

Transportation Data Analyst,
Federal Transit Administration

State DOTs Supporting GTFS

- GTFS is both a reporting requirement and valuable tool
- More robust and reliable GTFS data creates more opportunities for regional connectivity and long-range planning
 - USDOT SMART Grant
 - FTA Research and Innovation programs
 - RTAP Grants



Webinar Agenda

Agenda

- Overview / GTFS - Why?
- Free Tools To Generate or Evaluate GTFS - How?
- Data Quality / Validation / Permalink
- Let's Go Beyond in Ketchikan: Real-time, Service Alerts, Operations & much more
- FTA GTFS Data Collection Update

Time for Q&A/discussion at the end

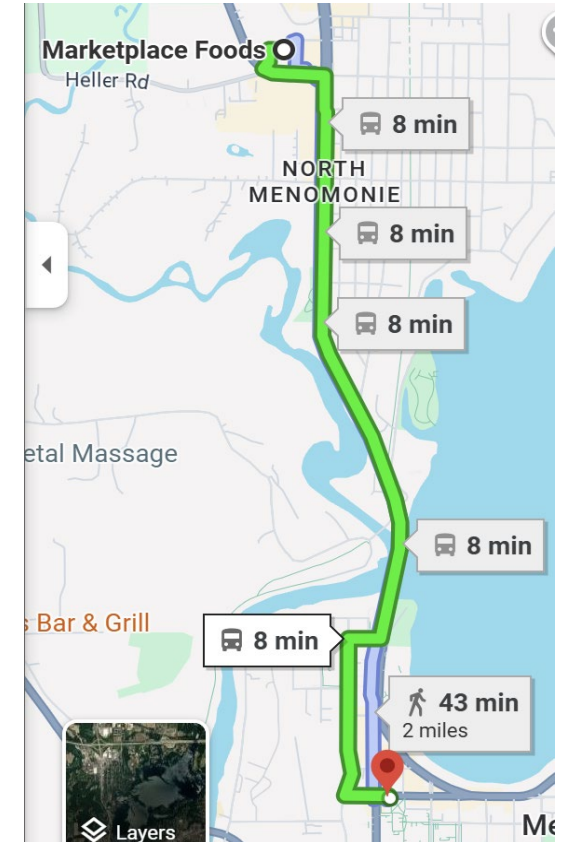
Overview / GTFS - Why?

What is General Transit Feed Specification (GTFS)?

Transform paper or online timetable and stop locations to digital, standardized & easy-to-use trip plans

City of Ladysmith Designated Bus Route						
3 minute bus wait time at each location.			Full route schedule Wednesday & Saturday			
Summer Schedule May 1-Oct. 31						
Location	Bus Arrival Time at Pick-Up Location					
Greenwood Family Apts 809 E 10th St N	8:00 AM	9:15 AM	10:30 AM	11:45 AM	1:00 PM	2:15 PM
Memorial Park	8:05 AM	9:20 AM	10:35 AM	11:50 AM	1:05 PM	2:20 PM
East Side of Krist	8:10 AM	9:25 AM	10:40 AM	11:55 AM	1:10 PM	2:25 PM
Rusk Haven Apartments	8:20 AM	9:35 AM	10:50 AM	12:05 PM	1:20 PM	2:35 PM
Flambeau Village	8:25 AM	9:40 AM	10:55 AM	12:10 PM	1:25 PM	2:40 PM
Walmart	8:35 AM	9:50 AM	11:05 AM	12:20 PM	1:35 PM	2:50 PM
Marshfield Clinic	8:40 AM	9:55 AM	11:10 AM	12:25 PM	1:40 PM	2:55 PM
Library Lower Lot	8:50 AM	10:05 AM	11:20 AM	12:35 PM	1:50 PM	3:05 PM
Greenwood Manor 710 Miner Ave W	9:00 AM	10:15 AM	11:30 AM	12:45 PM	2:00 PM	3:15 PM
The Market Plaza (9th St Café Door)	9:05 AM	10:20 AM	11:35 AM	12:50 PM	2:05 PM	3:20 PM

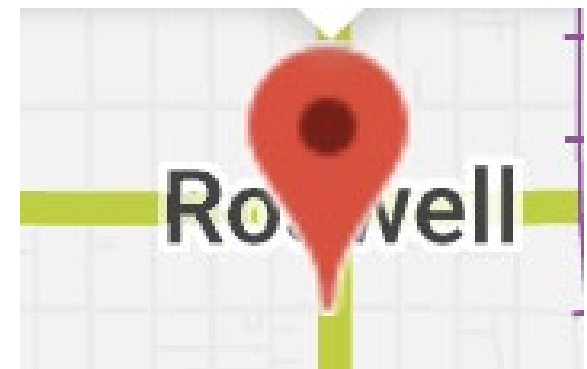
- agency.txt
- calendar.txt
- calendar_dates.txt
- fare_attributes.txt
- fare_rules.txt
- feed_info.txt
- routes.txt
- shapes.txt
- stop_times.txt
- stops.txt
- transfers.txt
- trips.txt



Why GTFS Plan a trip to the UFO Museum?



?



Trip Plan - Data Details Roswell Transit

ROS WELL TRANSIT MAIN STREET SCHEDULE														
WEEKDAY MORNINGS AND EARLY AFTERNOON														
Run No.	NORTH BOUND					SOUTH BOUND					Main & W. Pecos	Main & W. Garza	Arrive at Airport	Main & W. Garza
	Leave Airport	Main & E. Duran	Main & E. Pecos	Arrive at Terminal	Depart Terminal	Main & E. County Out	Roswell Mall	Main & W. County Out	Arrive at Terminal	Depart Terminal				
11a	6:28	6:34	6:39	6:49	6:52	6:27	6:33	6:38	6:43	6:49	6:54	6:59	7:04	7:09
12a	6:54	7:00	7:05	7:15	7:18	7:24	7:29	7:34	7:40	7:46	7:51	7:56	8:01	8:07
13a	7:15	7:21	7:26	7:36	7:45	7:51	7:56	8:01	8:07	8:13	8:18	8:23	8:28	8:34
11a	7:42	7:48	7:53	8:03	8:11	8:17	8:22	8:27	8:33	8:38	8:43	8:48	8:53	8:58
12a	8:09	8:15	8:20	8:30	8:38	8:44	8:49	8:54	9:00	9:05	9:10	9:15	9:20	9:25
13a	8:40	8:46	8:51	9:01	9:08	9:14	9:19	9:24	9:30	9:35	9:40	9:45	9:50	9:55
11a	9:03	9:09	9:14	9:24	9:33	9:39	9:44	9:49	9:55	10:00	10:05	10:10	10:15	10:20
12a	9:36	9:43	9:48	9:58	10:06	10:13	10:19	10:24	10:31	10:36	10:41	10:46	10:51	10:56
13a	10:04	10:11	10:16	10:26	10:34	10:41	10:47	10:52	10:59	11:04	11:09	11:14	11:19	11:24
11a	10:32	10:39	10:44	10:54	11:02	11:09	11:15	11:20	11:27	11:32	11:37	11:42	11:47	11:52
12a	11:00	11:07	11:12	11:22	11:30	11:37	11:43	11:48	11:55	12:00	12:05	12:10	12:15	12:20
13a	11:28	11:35	11:40	11:50	11:58	12:05	12:11	12:16	12:23	12:28	12:33	12:38	12:43	12:48
11a/11b	11:56	12:03	12:08	12:18	12:26	12:33	12:39	12:44	12:51	12:56	13:01	13:06	13:11	13:16
12a/12b	12:24	12:31	12:36	12:46	12:54	13:01	13:07	13:12	13:19	13:24	13:29	13:34	13:39	13:44
13a/13b	12:52	12:59	13:04	13:14	13:22	13:29	13:35	13:40	13:47	13:52	13:57	14:02	14:07	14:12
For rides from stops that are not on the Main Street route, call our office at (575)624-6766.														
The last call for Side Route/Dial-a-Ride service on weekdays is 9:20 pm.														



Stop 57 - Airport



C

Roswell Transit Bus St...
City Of Roswell I.T. Department

Locations of bus stops used by Roswell Transit

170,015 views

Published on December 12, 2025

SHARE

Untitled layer

Stop 57 - Airport

Stop 1 - Roswell Transit

Stop 2 - Buffalo Wild Wings

Stop 3 - Arby's

Stop 4 - Fairfield Inn

This map was...

The Anderson M...
of Contempor...

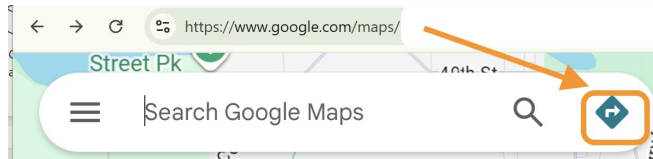
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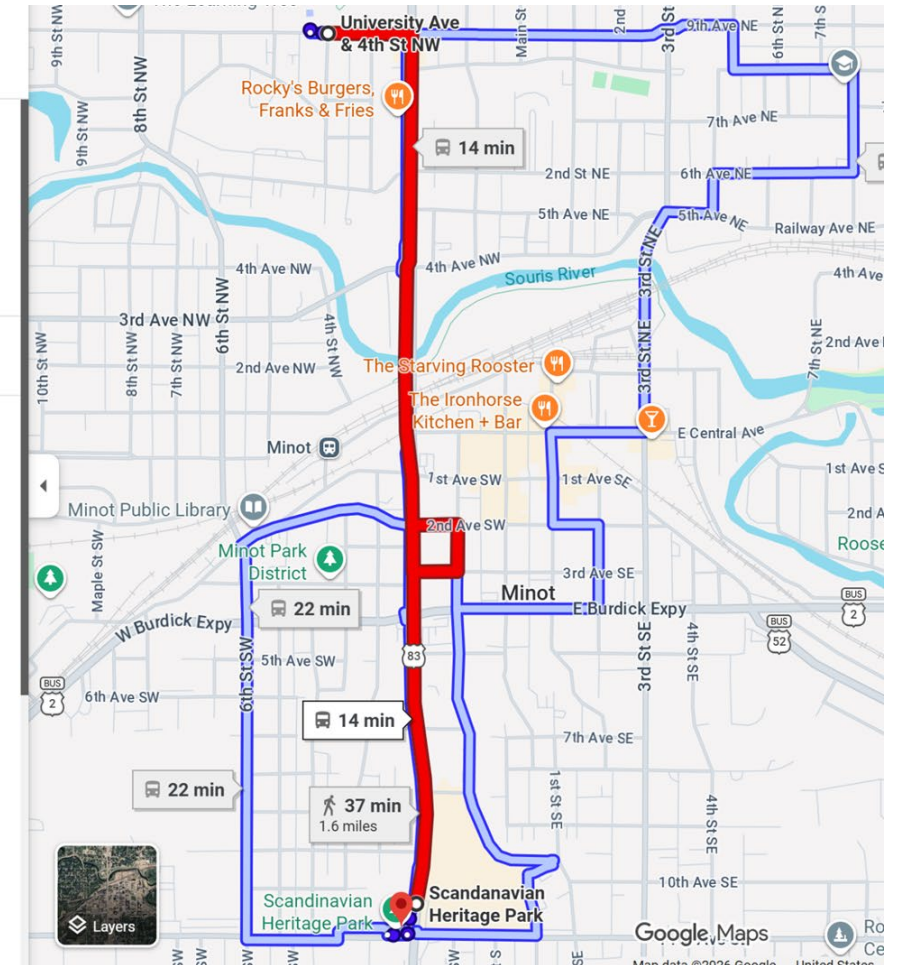
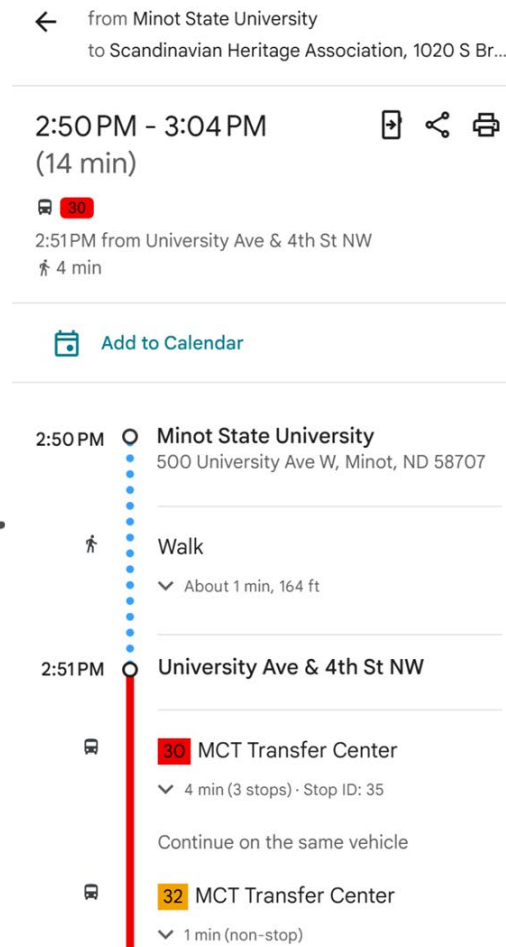
Minot, North Dakota - Detailed Trip Plan - Any App



Google Maps



Apple Maps



Trip Plan - Multiple Languages: Spanish

Translation services?

“home language”

Português (Portugal)

română

shqip

Slovenčina

slovenščina

Русский

српски (ћирилица)

Українська

ქართული

հայերեն

Google Maps

Show side bar

Saved

Recents

Your contributions

Location sharing

Your timeline

Your data in Maps

Share or embed map

Print

Add a missing place

Add your business

Edit the map

Tips and tricks

Get help

Consumer information

Language

← desde Minot State University
hacia Scandinavian Heritage Association, 1020 ...

9:03 a.m. (jueves) -

9:37 a.m. (34 min)

9:11 a.m. de 20th Ave NW & 3rd St NW
13 min

Agregar al Calendario

9:03 a.m. Minot State University
500 University Ave W, Minot, ND 58707

A pie

✓ Acerca de 8 min, 0.3 mi

9:11 a.m. 20th Ave NW & 3rd St NW

34 MCT Transfer Center

✓ 11 min (13 paradas) - ID de parada: 164

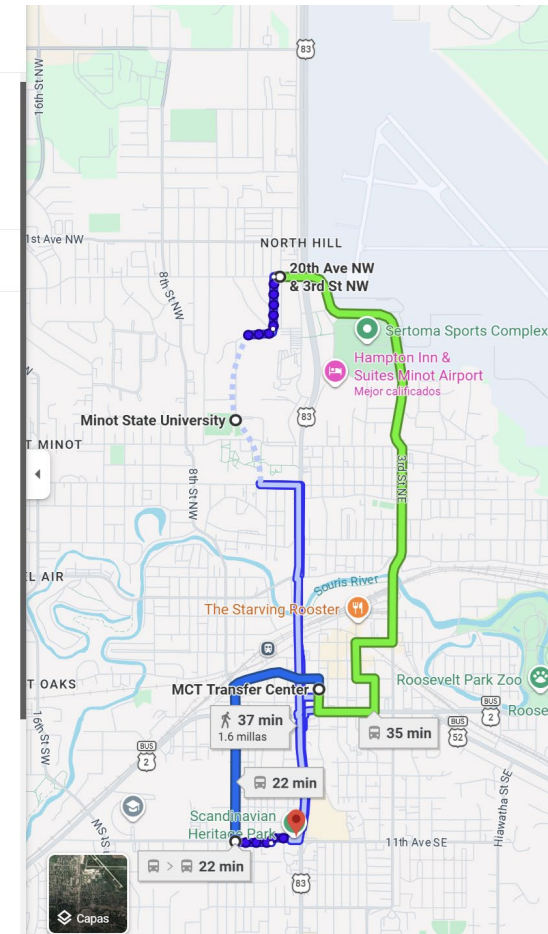
9:22 a.m. MCT Transfer Center

9:30 a.m. 35 MCT Transfer Center

2 min (6 paradas) - ID de parada: 1

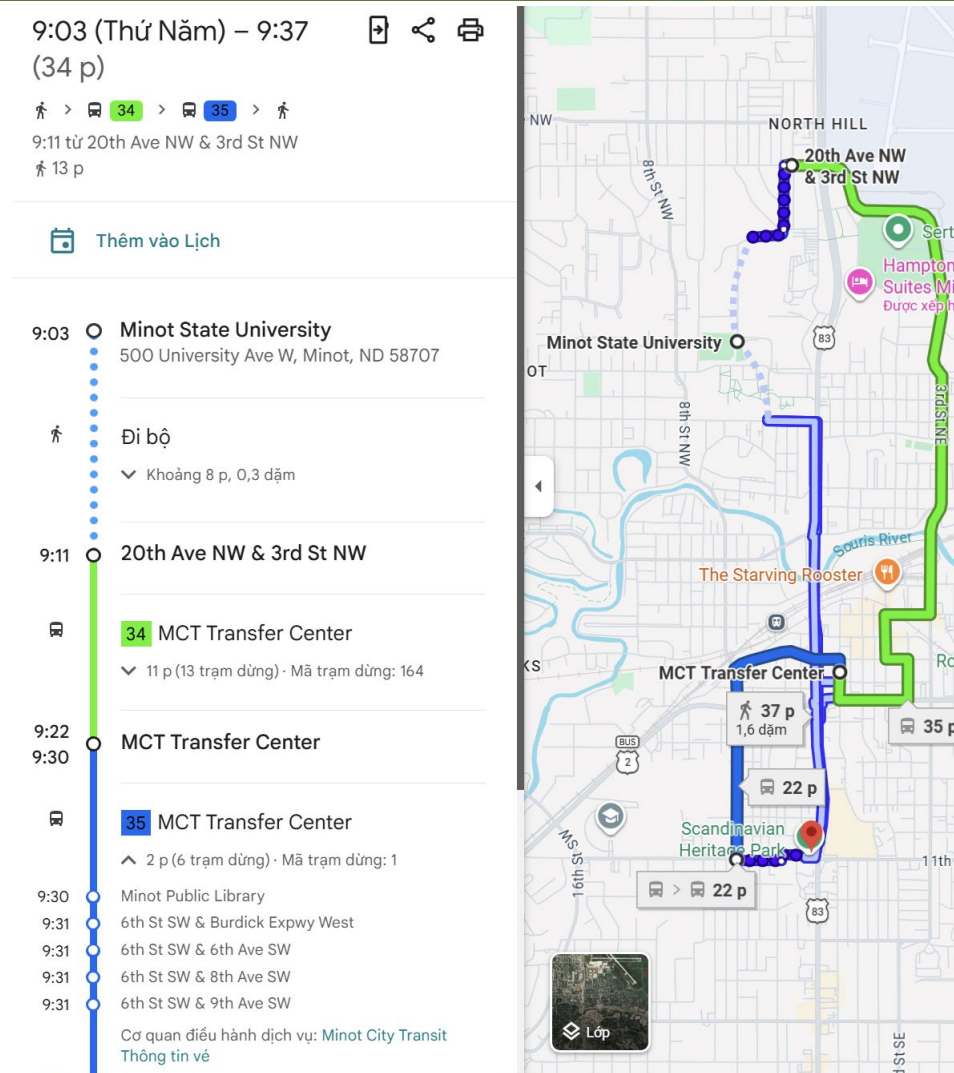
9:30 a.m. Minot Public Library
9:31 a.m. 6th St SW & Burdick Expwy West
9:31 a.m. 6th St SW & 6th Ave SW
9:31 a.m. 6th St SW & 8th Ave SW
9:31 a.m. 6th St SW & 9th Ave SW

Servicio prestado por Minot City Transit
Información de boleto



courtesy Google Maps

Trip Plan - Multiple Languages: Vietnamese & other Title VI languages



courtesy Google Maps
<https://maps.app.goo.gl/DCmCUWBmwEeSEiBo6>

Alerts to Your Cell Phone



Send directions to Google Pixel
7



Copy
link



12:09 PM (Wednesday)—
2:25 PM

2 hr 16 min



10



1517X

12:10 PM from 5810 Berkman/Sweetbriar



3 min

[Details](#)



11:52 AM (Wednesday)—
2:25 PM

2 hr 33 min



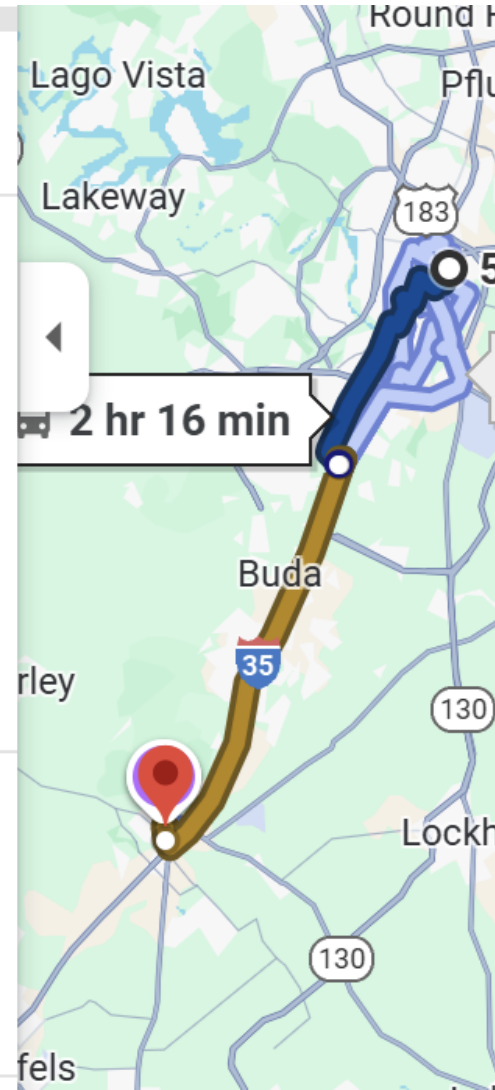
337



801























1517X



All Next Departures

Select any bus stop

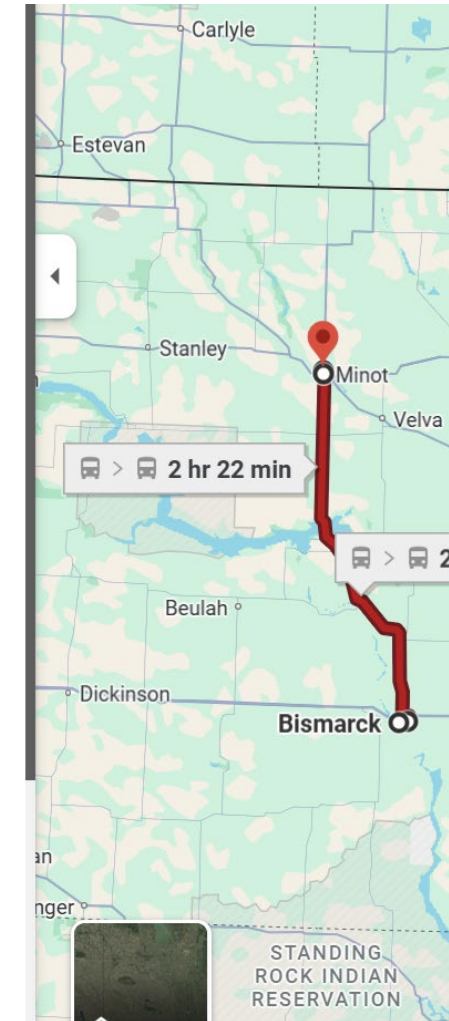
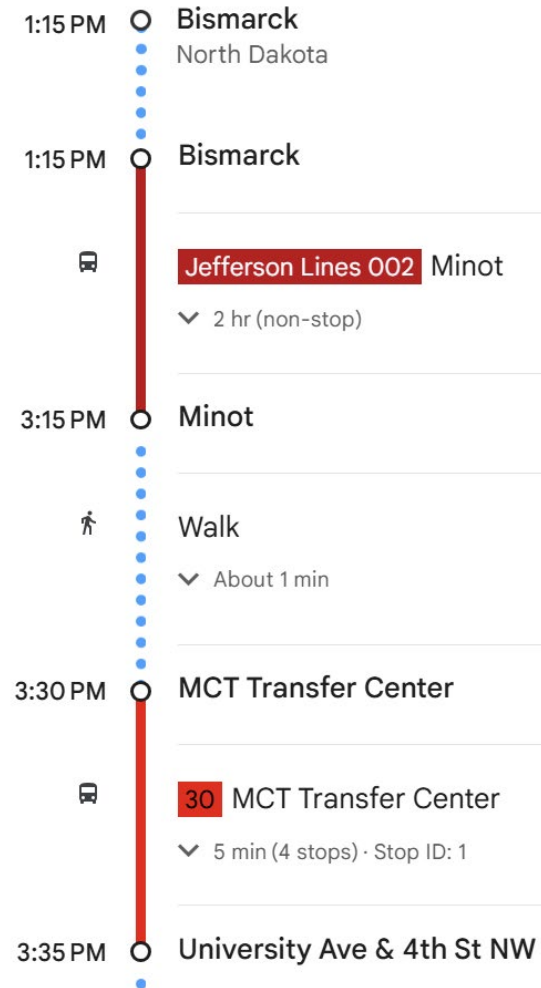
Shared stops?

MCT Transfer Center		
 	MCT Transfer Center	7:00 AM
 	MCT Transfer Center	7:00 AM
 	MCT Transfer Center	7:00 AM
 	MCT Transfer Center	7:00 AM
 	MCT Transfer Center	7:00 AM
 	MCT Transfer Center	7:00 AM
 	MCT Transfer Center	7:00 AM
 	MCT Transfer Center	7:30 AM
 	MCT Transfer Center	7:30 AM
 	MCT Transfer Center	7:30 AM



Critical Local and Intercity Connections

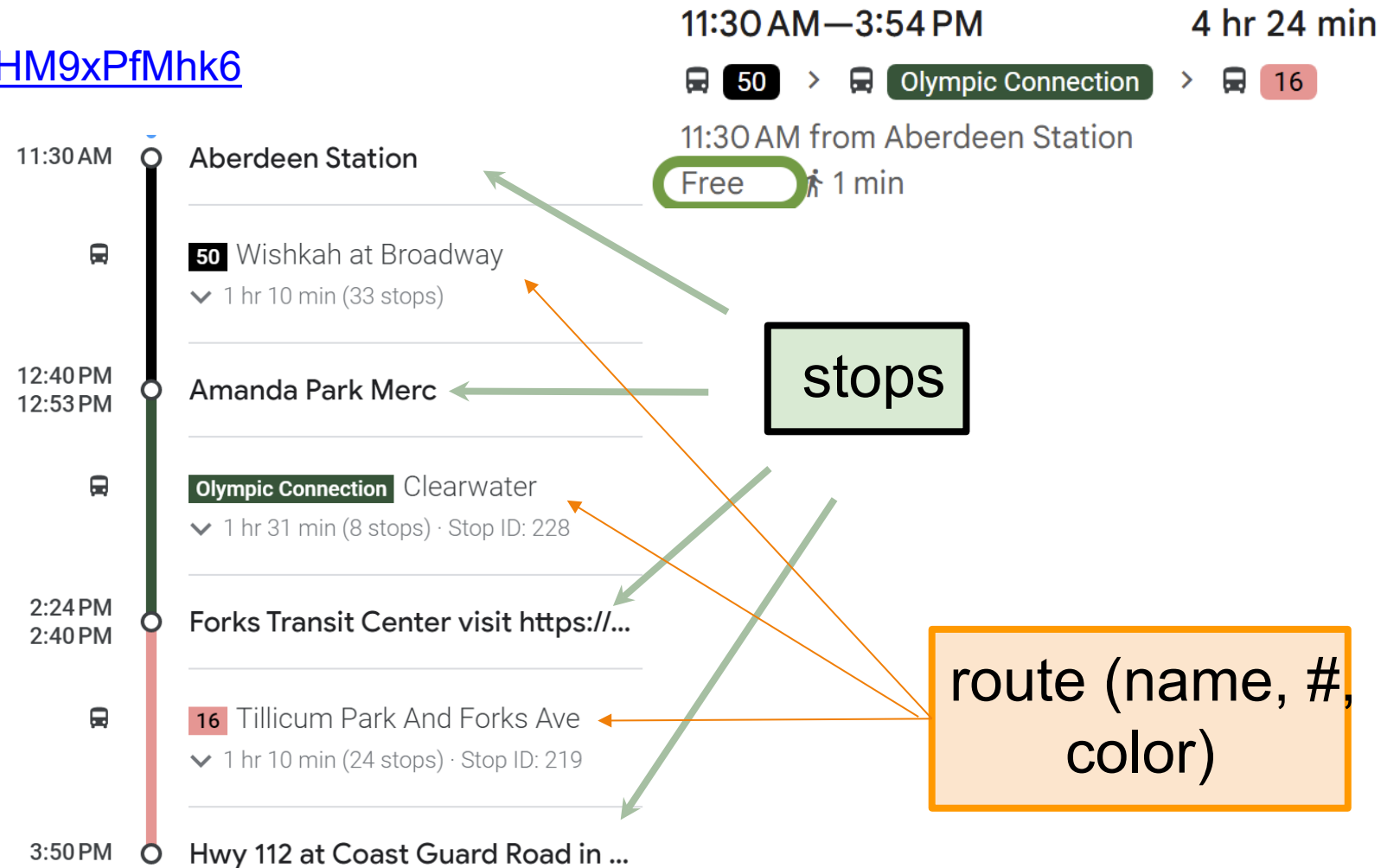
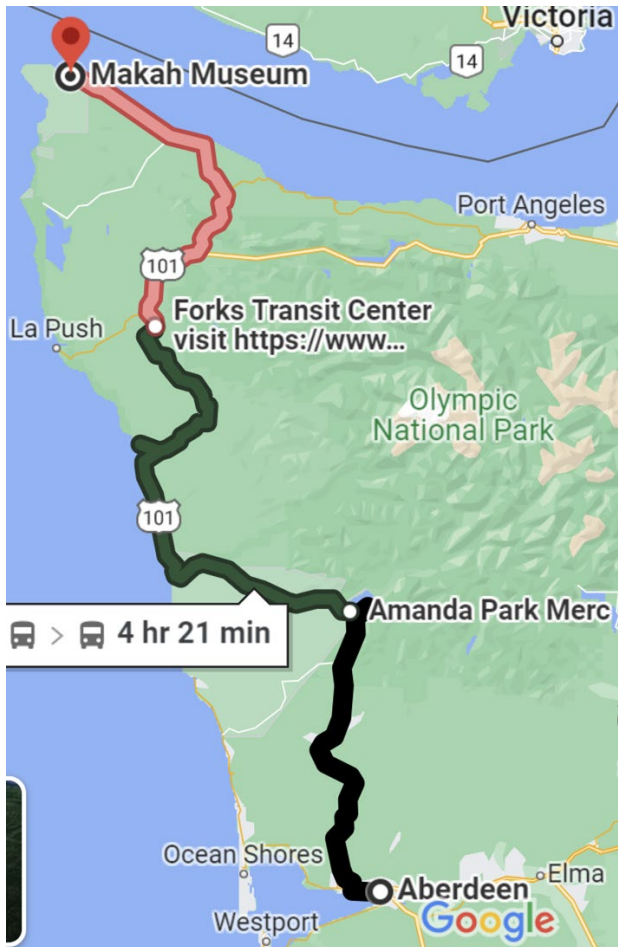
Bismarck to Minot State University
connecting
Jefferson Lines with
Minot City Transit



Online, Digitized Trip Plan (150 miles + Fare Free)

Live link to:

<https://maps.app.goo.gl/EE4inF4HM9xPfMhk6>



Explaining Fares

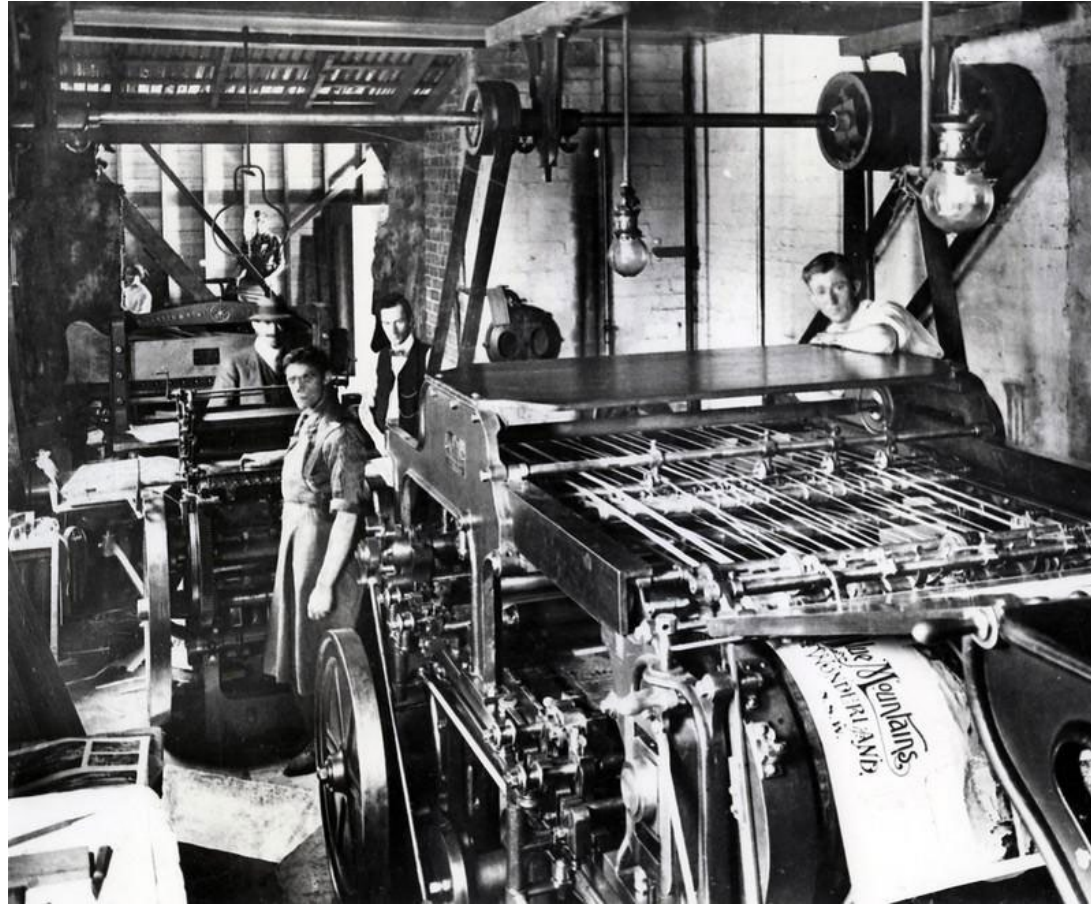
Adults (18-59)	\$2.00
Children (5-17)	\$2.00
Children 4 and under	free w/ adult
Disability with ID	\$. 50 (must show ID)
Military/Veteran	\$. 50 (see below for details)
Shuttle Deviation (scheduled in advance)	\$.50

Full card purchase with qualifications listed below for anyone in this category is \$35.00.



***Purchase of the full card will entitle purchaser to receive \$8.00 in additional monies via card value. Purchaser will receive 4 additional \$1.00

Printing Timetables



"Harry Phillips and staff at his printing press c1912" by [Blue Mountains Library, Local Studies](#) is licensed under [CC BY-SA 2.0](#).

Cost of Marketing: Billboards?

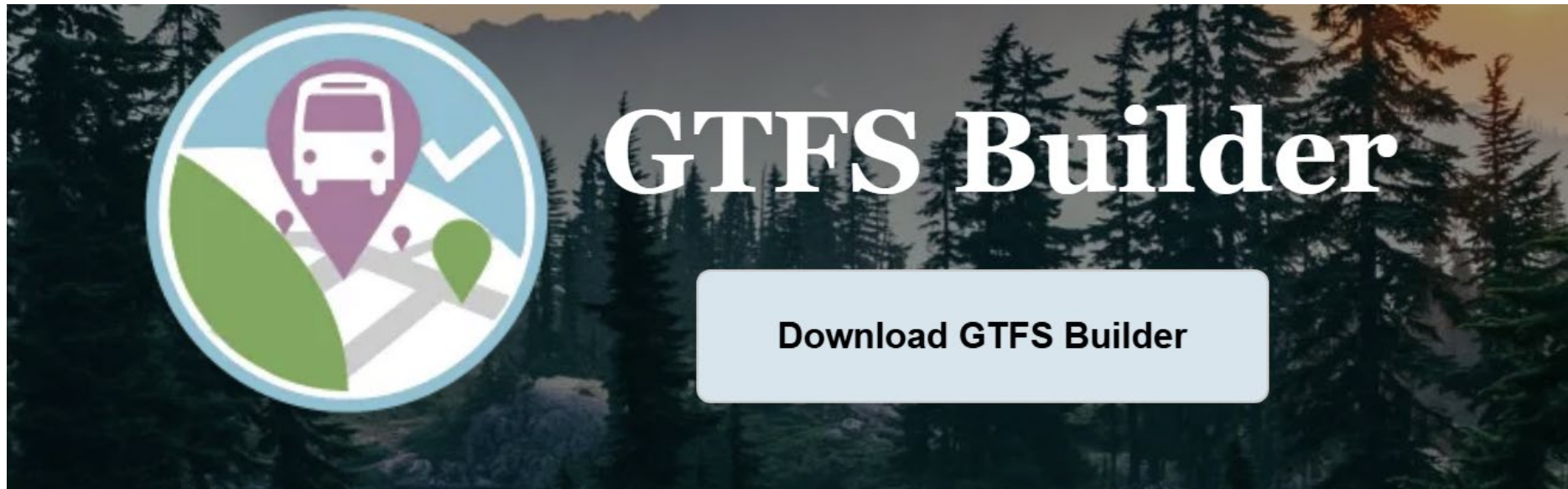


"Billboard Study #10" by [Daveness_98](#) is licensed under [CC BY 2.0](#).

Free Tools To Generate & Evaluate GTFS - How?

Managing Data in Excel / GTFS Builder

Free tools > Generates text files >> validate >> host >> publish



<https://www.nationalrtap.org/Technology-Tools/GTFS-Builder/Support>

GTFS Builder



Excel

- Allow macros
- Save files to your PC (not Sharepoint/OneDrive, etc)



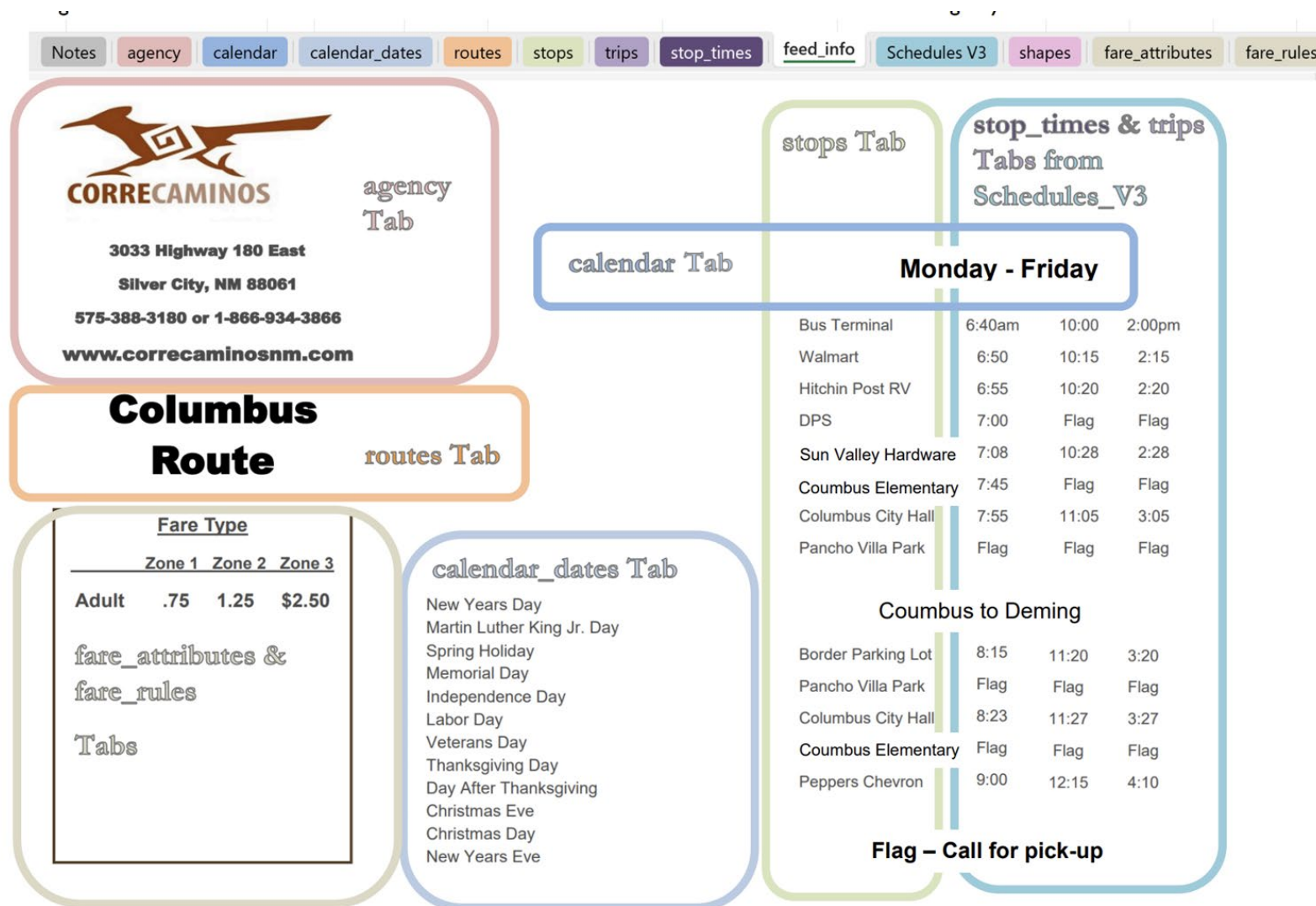
Google Earth Pro for Desktop

<https://www.google.com/earth/about/versions/#earth-pro>

Google My Maps

Google Account (gmail) for Google Drive & MyMaps

Your Timetable > GTFS Data



National RTAP's GTFS Builder Support/Guidebook



GTFS BUILDER GUIDEBOOK

August 2025



A Program of the Federal Transit Administration
Association

This document was prepared by National RTAP with the financial assistance of the U.S. Department of
agency of the U.S. Government. National RTAP assumes no liability for the contents or use thereof. It do

3 Complete the agency Tab

Using the example data and explanatory information in Table 3.1 enter data in the **agency** tab. Figure 3.1 depicts how the public facing data are depicted on a trip plan. View this video to walk-through and complete the agency Tab, **GTFS Builder support: Agency, Calendar, Calendar_dates, Routes, Feed_info, Fare and Transfer Tabs.**

Table 3.1 agency Tab

Field	agency_id	agency_name	agency_url	agency_timezone
Sample Data	CTS	Clallam Transit System	https://www.clallamtransit.com	America/Los_Angeles
Public Facing	No	Yes	Yes	No
Required/Optional	Required	Required	Required	Required
Format	Text	Text	URL	Time zone
Notes	Any name, abbreviation or number is acceptable.	Agency name is identical to what is published at the agency_url as the agency.	Links back to the agency website for additional information. Include https:// a complete URL	Find your time zone Calendar Dates (holidays) & Time Zones Additional Time Zones

National RTAP's GTFS Builder Checklist

17 National RTAP GTFS Builder Checklist

Agency Name: _____ Staff Contact: _____

Task	Guidebook Section	Time Estimate	Begin Task Date	End Task Date	Notes
REQUIRED TASKS					
If Google Transit is the preferred trip planner, confirm the agency can agree to the sample Google Licensing Agreement.		60 min.			
Download Google Earth Pro for Desktop to the PC for this project	1	15 min.			
Configure trusted project folder for macros	1	10 min.			
Complete the Tabs: agency, calendar, calendar dates, routes and feed_info	2,3,4,5 & 11	30 min.			
Determine if agency bus stop coordinates are available from other organizations. If so, obtain them	6	30 min.			

Complete the Tabs: agency, calendar, calendar dates, routes and feed_info	2,3,4,5 & 11	30 min.
Determine if agency bus stop coordinates are available from other organizations. If so, obtain them	6	30 min.
If not, identify bus stop coordinates using MyMaps and/or Google Earth	6	60 min.
Convert bus stop coordinates from MyMaps or Google Earth or file into the stops Tab	7	20 min.

Confirm the stops_tab is correct in the calendar_dates.txt file in the stops tab folder		5 min.			
REQUIRED TASKS					
Notes tab, use the macro to generate stop_times and trips data	8	4 min.			
Confirm stop times & trips Tabs have data	9	4 min.			
If shapes were created, use the macro in Notes Tab to calculate distance between stops and shape	14	10 min.			
Notes Tab: using the macro, generate GTFS text files into the feed folder	10	2 min.			
Compress (.zip) the text files	12	2 min.			
Validate the .zip & resolve all errors/evaluate warnings and infos	12	10 min.			
Upload fully valid GTFS .zip to Hosting website for the with the same file name	16	10 min.			

For further technical assistance, please contact National RTAP either by email (support@nationalrtap.org) or by phone (888-589-6821). On Thursdays from 1 to 1:30 (except for federal holidays) you may join our Zoom office hours from this link (no registration needed)

GTFS Data You Have

stop_id	stop_code	stop_name	stop_desc	stop_lat	stop_lon
1		Greenwood Family Apartments		45.472156	-91.088925
2		Memorial Park		45.469745	-91.101582
3		East side of Krist		45.464865	-91.099969
4		Rusk Haven Apartments		45.457841	-91.096348
5		Flambeau Village Apartments		45.454361	-91.107803
6		Walmart Supercenter		45.457369	-91.113387
7		Marshfield Medical Center - Ladysmith			
8		Library Lower Lot			
9		Greenwood Manor			
10		The Market Plaza			













stops


	A	B	C	D	E
1	trip_id	arrival_time	departure_time	stop_id	stop_sequence
2	Designated City Route_T01	08_00_00	08_03_00	1	1
3	Designated City Route_T01	08_05_00	08_08_00	2	2
4	Designated City Route_T01	08_10_00	08_13_00	3	3
5	Designated City Route_T01	08_20_00	08_23_00	4	4
6	Designated City Route_T01	08_25_00	08_28_00	5	5
7	Designated City Route_T01	08_35_00	08_38_00	6	6
8	Designated City Route_T01	08_40_00	08_43_00	7	7
9	Designated City Route_T01	08_50_00	08_53_00	8	8
10	Designated City Route_T01	08_55_00	08_58_00	9	9
11	Designated City Route_T01	09_00_00	09_03_00	10	10
12	Designated City Route_T01	09_05_00	09_08_00	1	1

stop_times

- agency.txt
- calendar.txt
- calendar_dates.txt
- fare_attributes.txt
- fare_rules.txt
- feed_info.txt
- routes.txt
- shapes.txt
- stop_times.txt
- stops.txt
- transfers.txt
- trips.txt

GTFS Text Files

-  agency.txt
-  calendar.txt
-  calendar_dates.txt
-  fare_attributes.txt
-  fare_rules.txt
-  feed_info.txt
-  routes.txt
-  shapes.txt
-  stop_times.txt
-  stops.txt
-  transfers.txt
-  trips.txt



```
route_id,agency_id,route_short_name,route_long_name,route_desc,route_type,route_url,route_color,route_text_color,  
Blue,NCMT,Blue,,,3,,0000FF,FFFFFF,,  
Red,NCMT,Red,,,3,,FF0000,FFFFFF,,  
Green,NCMT,Green,,,3,,00FF00,000000,,  
,
```

GTFS Text Files Zipped Together

qtl_il_gtfs.zip

agency.txt
calendar.txt
calendar_dates.txt
fare_attributes.txt
fare_rules.txt
feed_info.txt
routes.txt
shapes.txt
stop_times.txt
stops.txt
transfers.txt
trips.txt

- ☐ **Zip/compress only these text (.txt) files**
- ☐ Do not zip the folder
- ☐ Do not upload the Excel

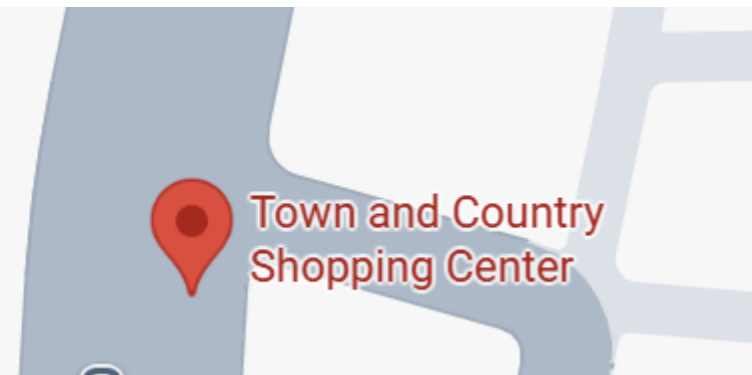
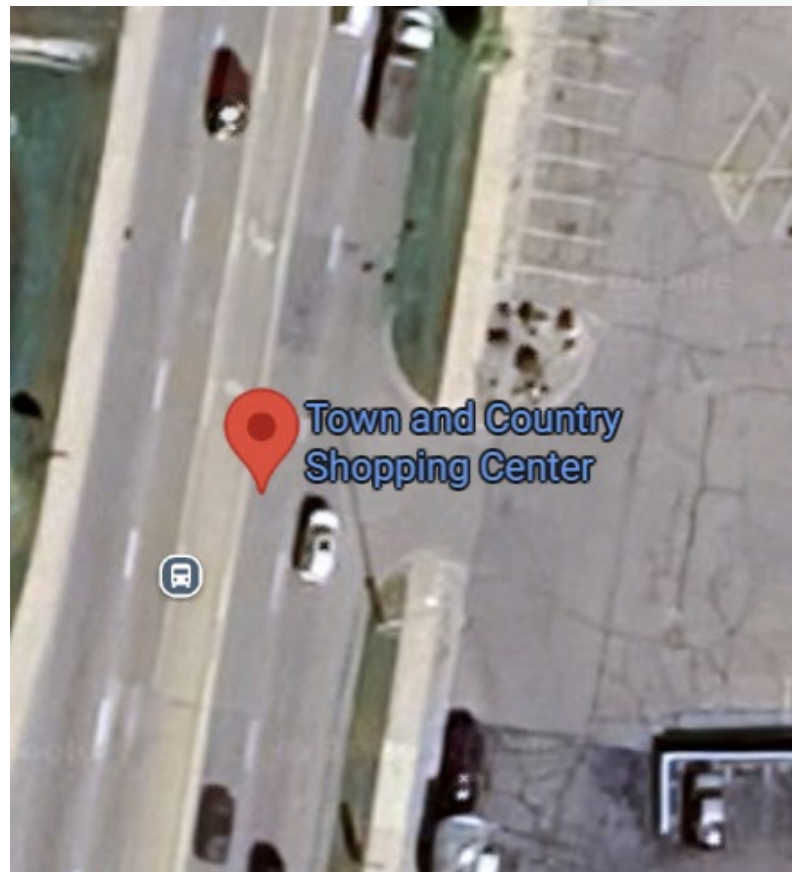
Data Quality / Validation / Permalink

Bus Stop Locations: Safe, Accurate, near the pole, bench, etc

Town and Country Shopping Center

Stop ID: 116

Bus stop



Map Your Bus Stops - Update Them

stop_id	stop_name	stop_lat	stop_lon
57	Airport	33.307153	-104.519803
1	Roswell Transit	33.398285	-104.522459
2	Buffalo Wild Wings	33.400705	-104.522667
3	Arby's	33.403996	-104.52264
4	Fairfield Inn	33.405999	-104.522635

mymaps.google.com

(needs a Google / gmail to edit/upload)

Map interface showing a list of bus stops. The list includes:

- roswell - update locations
- Uniform style
- All items (218)
- Airport
- Roswell Transit
- Buffalo Wild Wings
- Arby's
- Fairfield Inn
- Across from NMMI
- Little Caesar's
- Los Cerritos
- Kass Plaza
- Main & Country Club
- 2nd and Lea
- Dairy Queen
- Second and Sycamore
- Belmont

Map interface showing a satellite view of Roswell, Georgia. A pop-up window displays details for the Roswell Transit stop:

Roswell Transit

stop_id: 1
stop_code: No value
stop_desc: No value
stop_lat: 33.398285
stop_lon: -104.522459

Map labels include: W 12th St, E 12th St, E 11th St, E 10th St, W 6th St, W 5th St, Roswell Museum Art & Center Temporarily closed, Cattle Baron, and Vanalia Ave.

Holidays = calendar_dates.txt < in GTFS

service_id	date	exception_type
wkday	20260119	2
wkend	20260119	1
wkday	20260216	2
wkend	20260216	1
wkday	20260525	2
wkend	20260525	1
-	-	-

Holiday Schedule

Quincy Transit Lines will operate on its Saturday/Sunday/Holiday Schedule on the following days:

- All Saturdays & Sundays
- New Years Day
- Memorial Day
- Independence Day
- Labor Day

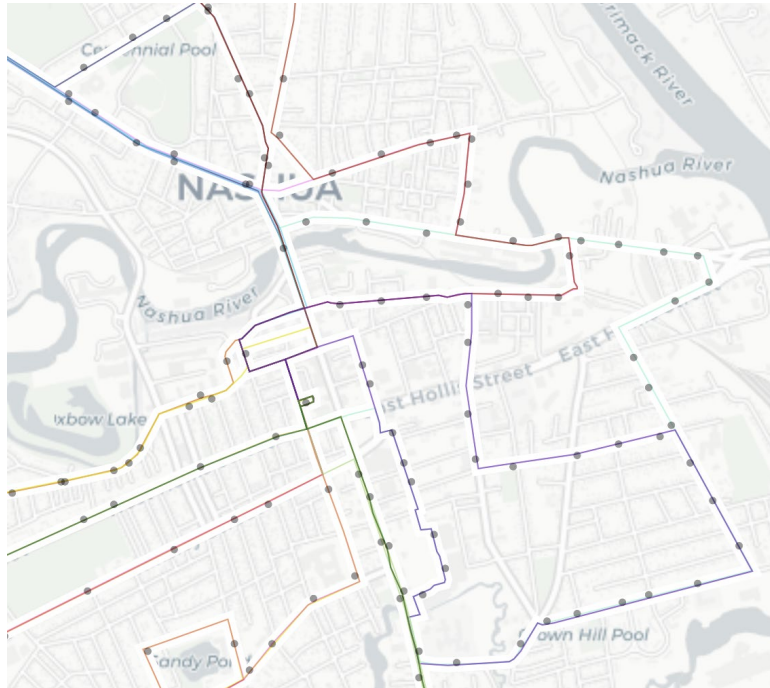
QTL will have two fixed routes and one Paratransit bus operating on Saturday/Sunday & Holidays.

QTL does not operate on Thanksgiving Day or Christmas Day.

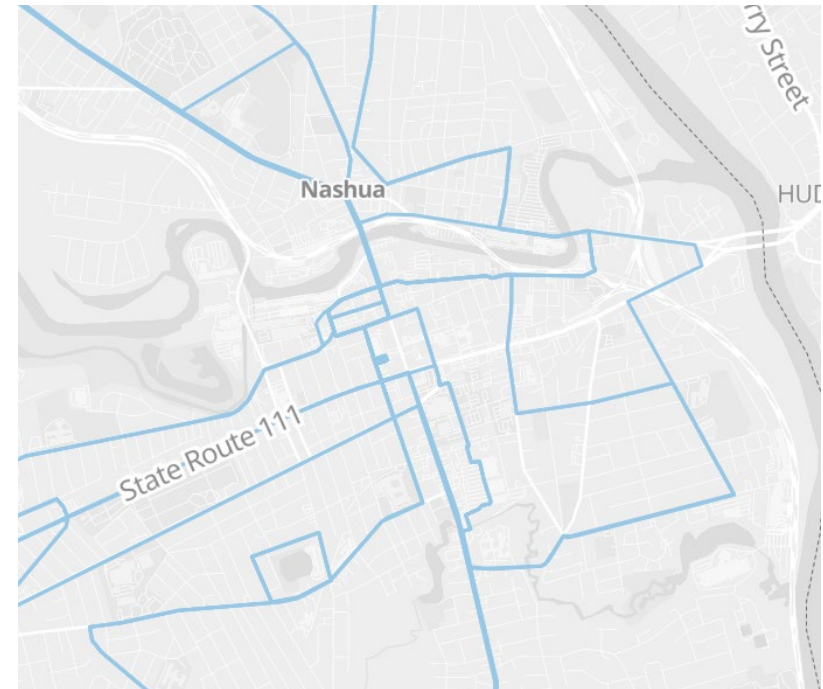
Quincy Transit Lines will operate its regular schedule on the following holidays:

- Martin Luther King Birthday
- Presidents' Day
- City (Mayoral) Election (Every 4 years)
- Good Friday
- Columbus Day
- Presidential Election Day (Every Four Years)
- Veterans' Day Holiday
- Friday following Thanksgiving
- Christmas Eve Day – buses will close at 4 p.m.

View Routes / Bus Stops @ GTFS Repositories



<https://mobilitydatabase.org/>



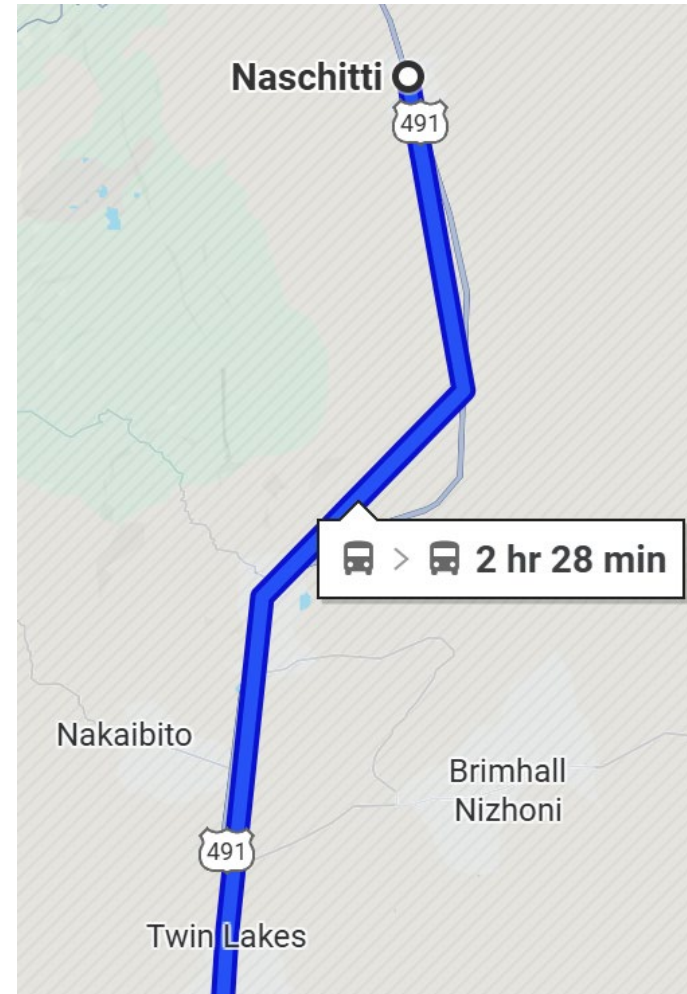
<https://www.transit.land/>

Without Shapes

Straight lines between stops

Agency will not display routes at
National Transit Map without Shapes

<https://www.bts.gov/national-transit-map>

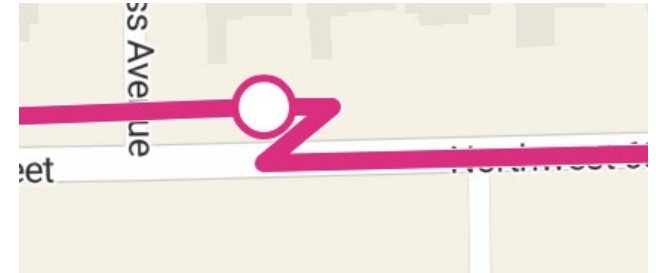


Let's Dial-up
Accurate GTFS Data
for NTD Reporting
and Rider Confidence

Maximizing Your
GTFS Data: Virtual
Workshop Creating
GTFS Shapes

<https://www.nationalrtap.org/Technology-Tools/GTFS-Builder/Support/How-toResources>

Shapes



- ❑ Line for each direction
- ❑ Both directions, centerline of the road
- ❑ Shape points ahead of the stop, not after the stop (zigzag)
- ❑ Confirm that the bus stop is correct side of the road

Let's Dial-up
Accurate GTFS Data
for NTD Reporting
and Rider Confidence

Maximizing Your
GTFS Data: Virtual
Workshop Creating
GTFS Shapes

<https://www.nationalrtap.org/Technology-Tools/GTFS-Builder/Support#How-toResources>

<https://gtfs.org/documentation/schedule/schedule-best-practices/#shapetxt>

GTFS Data Management Options

Other GTFS Data Managers

If you would rather not build and/or maintain your GTFS data, these vendors offer GTFS services:

- [Actionfigure](#)
- [AddTransit](#)
- [Arcadis/IBI Group](#)
- [Avail Technologies Inc](#)
- [Cal-ITP \(California Integrated Travel Project\)](#) - offers free GTFS technical assistance and sc
Email: hello@calitp.org
- [GMV Syncromatics](#)
- [Giro](#)
- [Maps and Beyond](#)
- [Mecatran](#)
- [Mobilibus](#)
- [Moovit](#)
- [Optibus/Trillium Solutions](#)
- [Passio Technologies](#)
- [Radiola](#)
- [TransitFare](#)
- [Transnnovation Inc](#)



[https://www.nationalrtap.org/Technology-Tools/GTFS-Buider/Support# OtherGTFSDataManagers](https://www.nationalrtap.org/Technology-Tools/GTFS-Buider/Support#OtherGTFSDataManagers)

Validate File

Mobility Data

<https://gtfs-validator.mobilitydata.org/>

Mecatran

<https://gtfsvtor.mecatran.com/utw-test/web/pub/gtfsvtor>

Summary

Agencies included

- Rusk County Transit
 - website: <https://rctc.online/>
 - phone number: (715) 532-1000
 - email: sheryl.kislingwerner@rctc.online

Feed Info

Publisher Name: Rusk County Transit
Publisher URL: <https://rctc.online/>
Feed Email: sheryl.kislingwerner@rctc.online
Feed Language: English
Feed Start Date: 2024-05-01
Feed End Date: 2026-05-01
Service Window: 2024-05-01 to 2026-05-01 (?)

Specification Compliance report

0 notices reported (0 errors, 0 warnings, 0 infos)

Notice Code

Made with ♥ by [MobilityData](#)

calendar_dates.txt - 1 WARNING

- 1 WARNING Useless calendar date

	service_id	date	exception_type
L2	WS	20241224	2

calendar.txt

	service_id	monday	tuesday	wednesday	thursday	friday	saturday	sunday	start_date	end_date
L2	WS	0	0	1	0	0	1	0	20240501	20260501

WARNING service_id Useless calendar date: it is specified as removed (type 2), but the calendar WS is not active on 2024/12/24.

Validation Dos and Don'ts

Agency_id (not zero or blank) << also entered into NTD P-50 form

No Errors (except regarding shapes)

No Expired Calendars

Add Shapes

Holidays, dates no service? Publish as Calendar_dates

expired_calendar

Dataset should not contain date ranges for services that have already expired.

This warning takes into account the `calendar_dates.txt` file as well as the `calendar.txt` file.

https://gtfs-validator.mobilitydata.org/rules.html#expired_calendar-rule

Host Valid GTFS File as "Permalink" - no date in file name!

At your website

Confirm the file URL does not change each time you update or upload a new version

No “wrapper” around the URL

National RTAP, free hosting

<https://www.nationalrtap.org/Technology-Tools/GTFS-Builder#UploadGTFS>



[Rider News](#) ▾ [Routes & Schedules](#) ▾ [Services](#) ▾ [Opportunities](#) ▾ [About TranGO](#) ▾

Thursday, November 27, 2025, in observance of Thanksgiving
Thursday, December 25, 2025, in observance of Christmas Day
Thursday, January 1, 2025, New Year's Day

[GTFS Data](#)



https://rapid.nationalrtap.org/GTFSFileManagement/UserUploadFiles/13050/qtl_il_gtf.zip

Test GTFS "Permalink" from a URL

https://gtfs-validator.mobilitydata.org

MobilityData

Canonical GTFS Schedule Validator

Evaluate your dataset against the official [GTFS Reference](#) and [Best Practices](#).

Upload a ZIP file

No file chosen

Choose a file...

You can also drag a file here

Or load from a URL

<https://rapid.nationalrtap.org/GTFSFileManagement/UserUploadFiles/1305>

Region (optional)

Choose a region

See Documentation

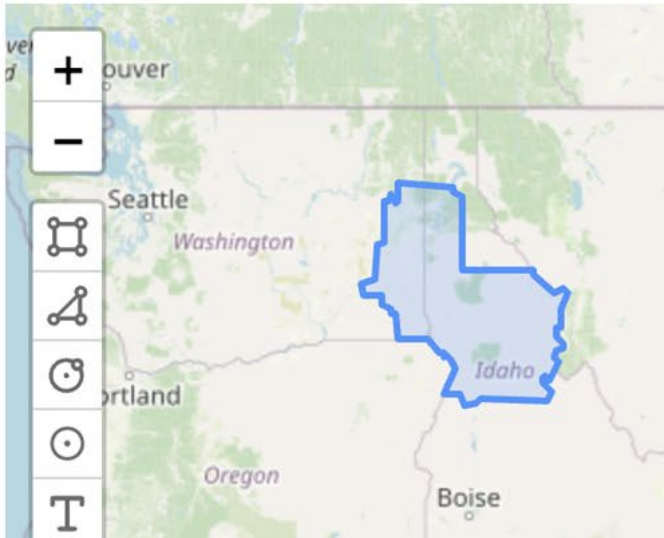
Validate

GTFS - Flex (data is also not challenging)

Edit Location GeoJSON

Geometry

Edit Boundary Map:



GTFS Admin

Agency

Attributions

Booking Rules

Calendar

Calendar Dates

Feed Info

Locations GeoJSON

Routes

Stop Times

Stops

Translations

Trips

GTFS Stop Times

Trip ID *
119c7747-c8fa-4fd2-8ft

Drop Off Type
2

TTS Stop Headsign

Stop Sequence *
2

Continuous Pickup
1

Arrival Time
Continuous Drop Off
1

Departure Time
Shape Dist Traveled
0

Stop ID
Timepoint
0

Location Group ID
Pickup Booking Rule ID
booking_route_3

UPDATE STOP TIME

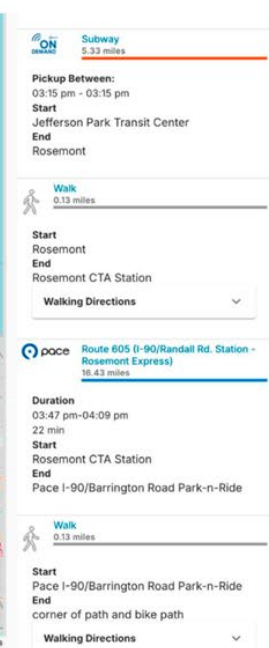
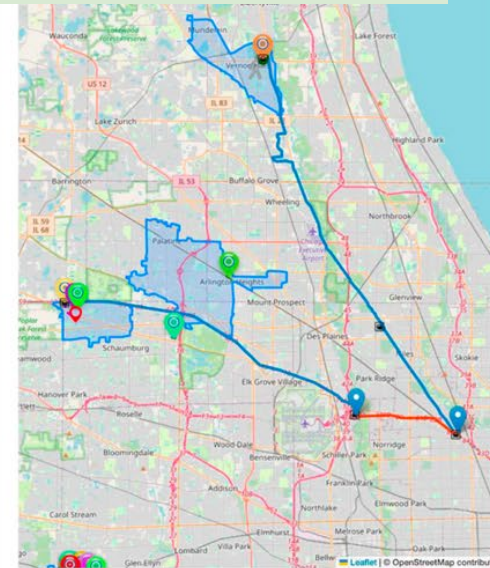
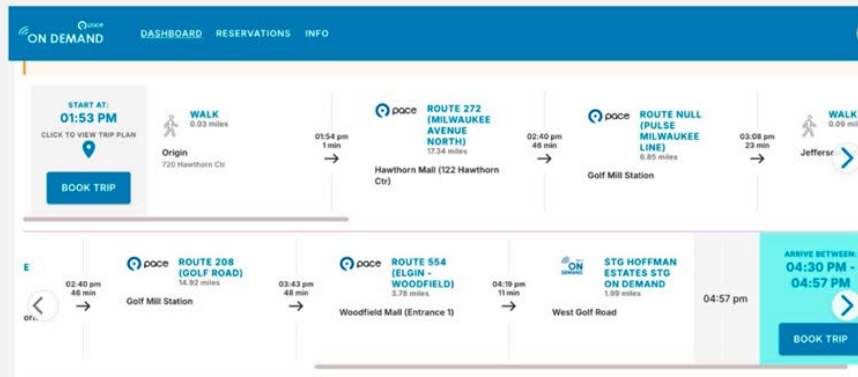
CANCEL

ID	Trip ID	Stop Sequence	Arrival Time	Departure Time	Stop ID	Location Group ID	Location ID	Start/End when service is offered
55682A7B-EEBF-463F-A313-1FC5CF4AB7D2	119c7747-c8fa-4fd2-8fb3-e6c23b8019df	2				area_639		06:00:00 18:00:00 1
ABF854A1-A5FB-4036-AD03-46585D626A87	e2ec2316-de68-4377-b8d0-3d06b2d9c7f9	2				area_639		06:00:00 18:00:00 1
D69E0235-406B-4901-AEA6-52A802706382	e2ec2316-de68-4377-b8d0-3d06b2d9c7f9	1				area_639		06:00:00 18:00:00 2

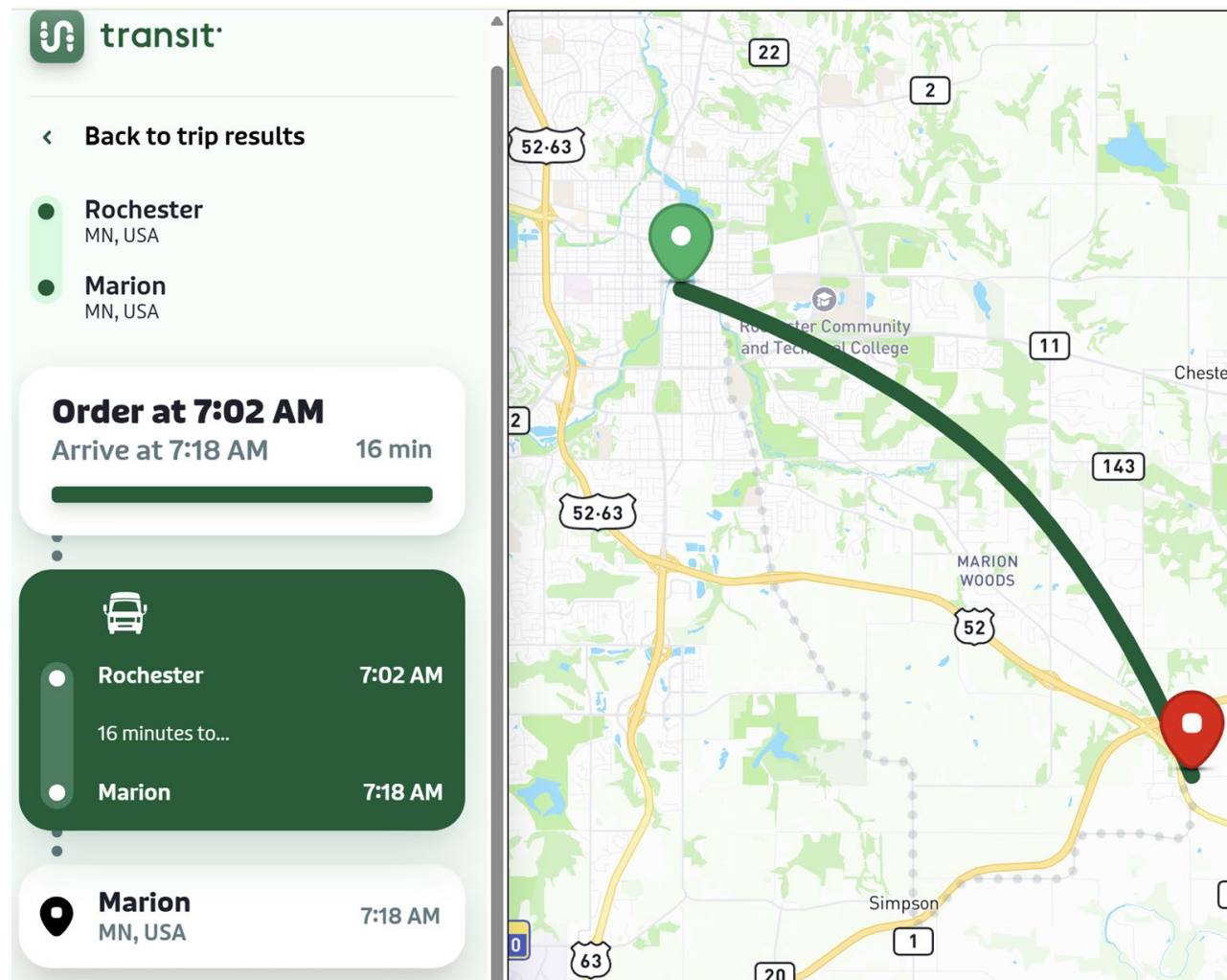
GTFS - Flex (service area - no fixed stops)

Vamos and Flex integration

Service Areas (flex)



GTFS Flex



<https://gofs.org>

N-CATT's Data Quality Checklist

Top Quality GTFS Data Files Checklist

Powerful Rider Trip Planning with Top-Quality GTFS Data-

Lets bring your data up a notch!



Display / View

Part of GTFS Feed	How to check it is correct & What to do	Images
Route colors/text contrast are readable	<ul style="list-style-type: none">Replace route_text_color with '000000 (black) or FFFFFFFF (white) or vice versa to read route_name	<div>RC - Rutland Connector</div> <div>Marion Carbondale Intercity</div>

<https://n-catt.org/wp-content/uploads/2025/09/GTFS-Checklist-Final.pdf>

Will GTFS Be Perfect?



ONLY YOU

**Can keep your
GTFS data up-
to-date!**

Thursday GTFS Builder Open Office Hours

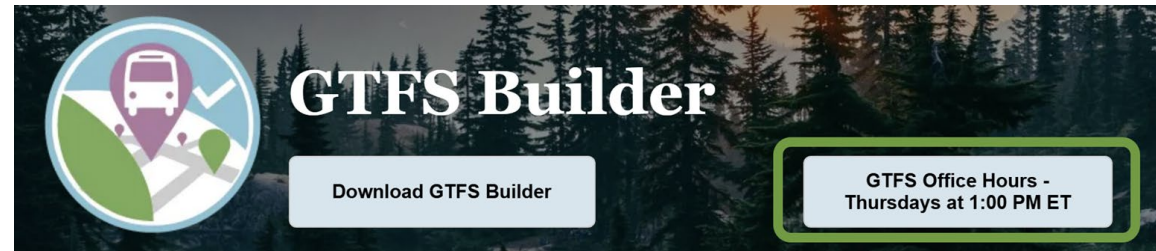
Each Thursday* 1-1:30pm EST

No registration needed

Link available on our support page

<https://www.nationalrtap.org/Technology-Tools/GTFS-Builder/Support>

*No meetings on Thanksgiving or other major federal holidays that fall on Thursdays



Let's Go Beyond in Ketchikan: Real-time, Service Alerts,
Operations & much more

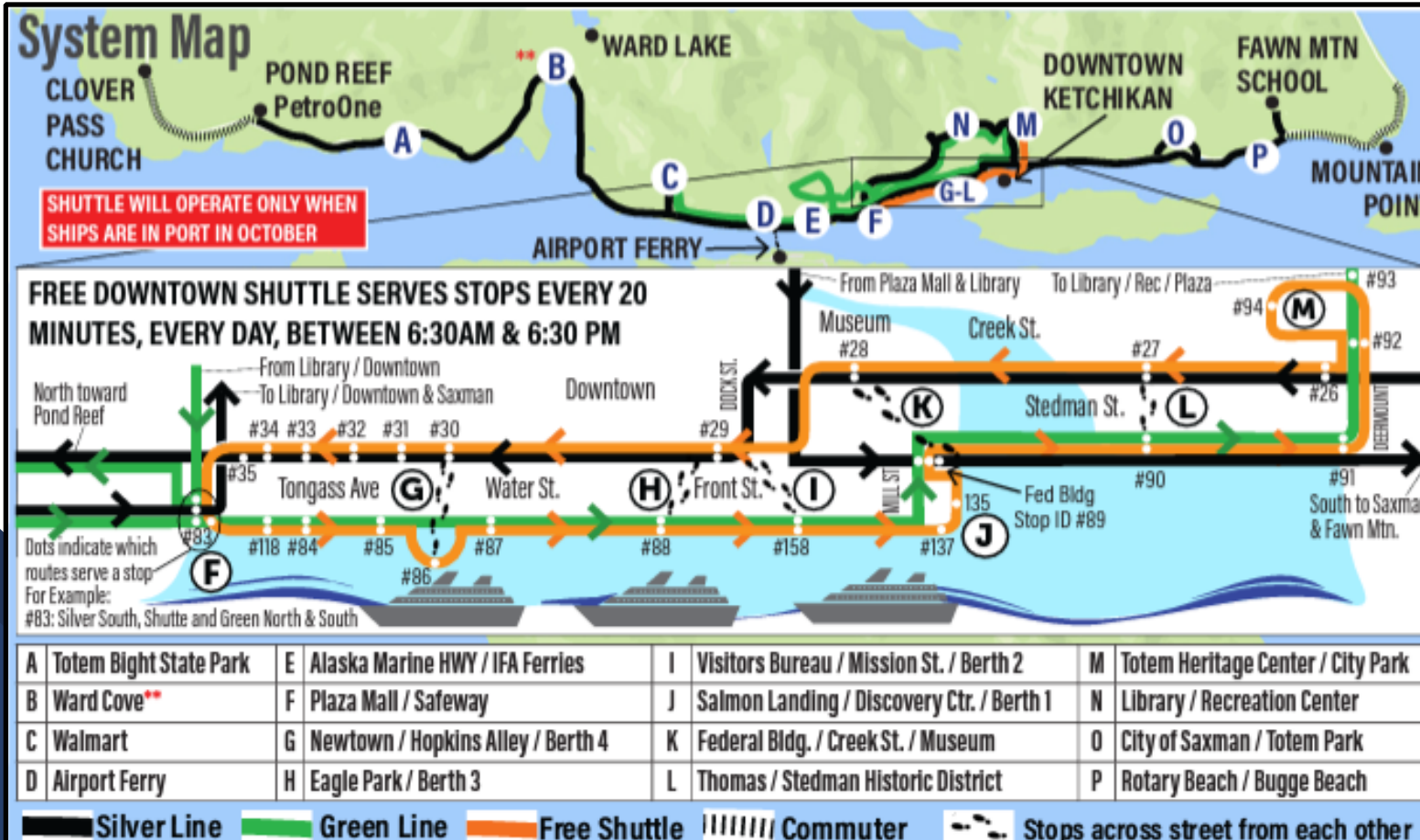


KETCHIKAN GATEWAY BOROUGH TRANSIT





SERVICE



Current

- **Three year-round Fixed Routes**
 - Green Line (City Limits)
 - Silver Line North & South
 - Commuter Extensions morning, mid-day and evening
- **ADA Complementary Paratransit & Senior Transportation**
 - Demand Response- Curb to Curb
 - Senior Program- comingled with Paratransit
- **Two Free-Downtown Shuttle May-September**
 - Additional cruise ship only days in April & October
 - Third Shuttle on high volume days over 8k Passengers or when two ships are served by Berth 4



FLEET



Revenue Vehicles

Buses-
12



Cutaway- 3



ADA Accessible Mini-Van- 2



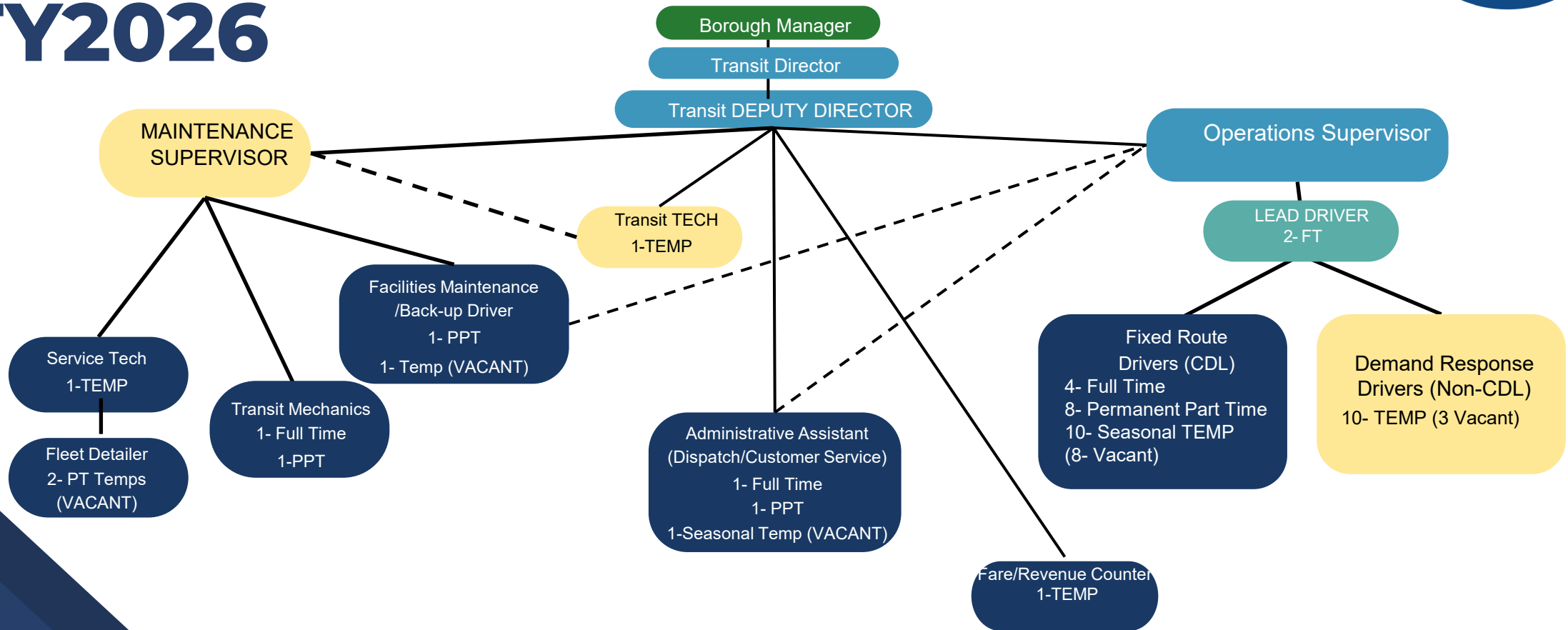
Support Vehicles



Provided 484,732 Rides in FY2025

○ ○ ○ ○

LEADERSHIP & STAFFING- FY2026



35 Staff as of 12/9/2025

Primary Reporting

Secondary Reporting



PROBLEMS



- **Examples of Problems Identified:**

- Poor/Cumbersome process to alert public of service changes
- Poor Communication between drivers & mechanics about vehicle issues
- Lack of in-service diagnostics
- Sunsetting Public App - lack of accurate real-time information
- Not real-time in Google
- Did not own data from Paratransit Contractor = poor reporting
- Needed better ridership data & location based data for funding
- Poor information & fare payment options for first time/single day riders
- Growing Staff - needed a better way to communicate & provide a tool for employees to manage their schedules better

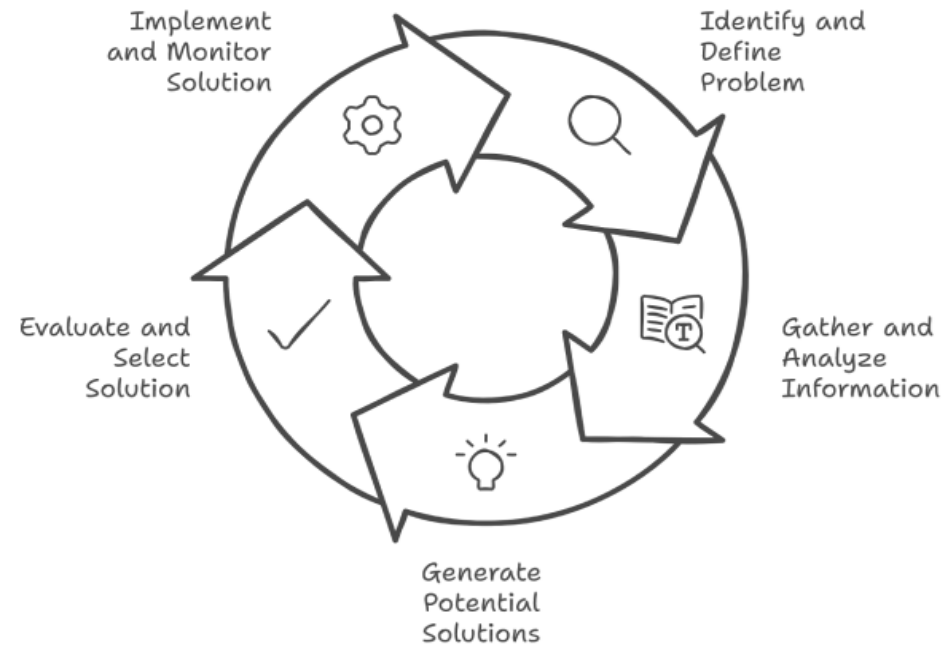


0000

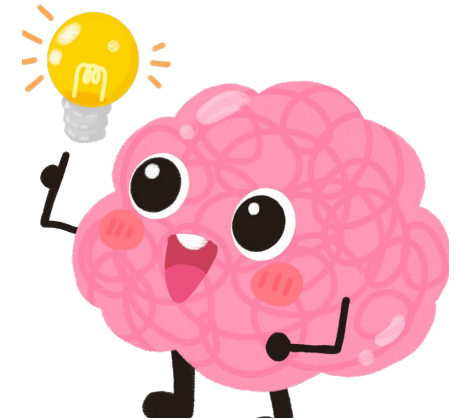
PROCESS

SIX SIGMA

5-Step Problem-Solving Process



<https://6sigma.us>



0000

SOLUTION CONNECTIONS



Infotainment, Auto Annunciation,
Destination Signs

GPS, Coaching,
Diagnostics

Cameras

Fleet & Facilities
Mgmt, eDVIR etc

Static
GTFS

GPS, Real Time
Publishing, Detours,
Alert Management,
OTP

Dispatch,
Rider App,
AI Voice

Automatic
Passenger
Counters

Static & Real Time
Info, Alerts etc
available to the
public

Real Time Passenger
Info, Detours, Alerts



0000

INTERCONNECTIVITY



tion, Destination Signs)



(Cameras)



samsara
(GPS, Coaching,
Diagnostics)



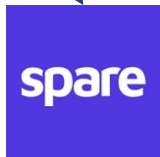
(GPS, Real Time Publishing,
Detours, Alert Management,
OTP)



(Fleet & Facilities Mgmt,
eDVIR etc)



(Static
GTFS)



(Dispatch, Rider App,
AI Voice)



(Automatic Passenger Counters)



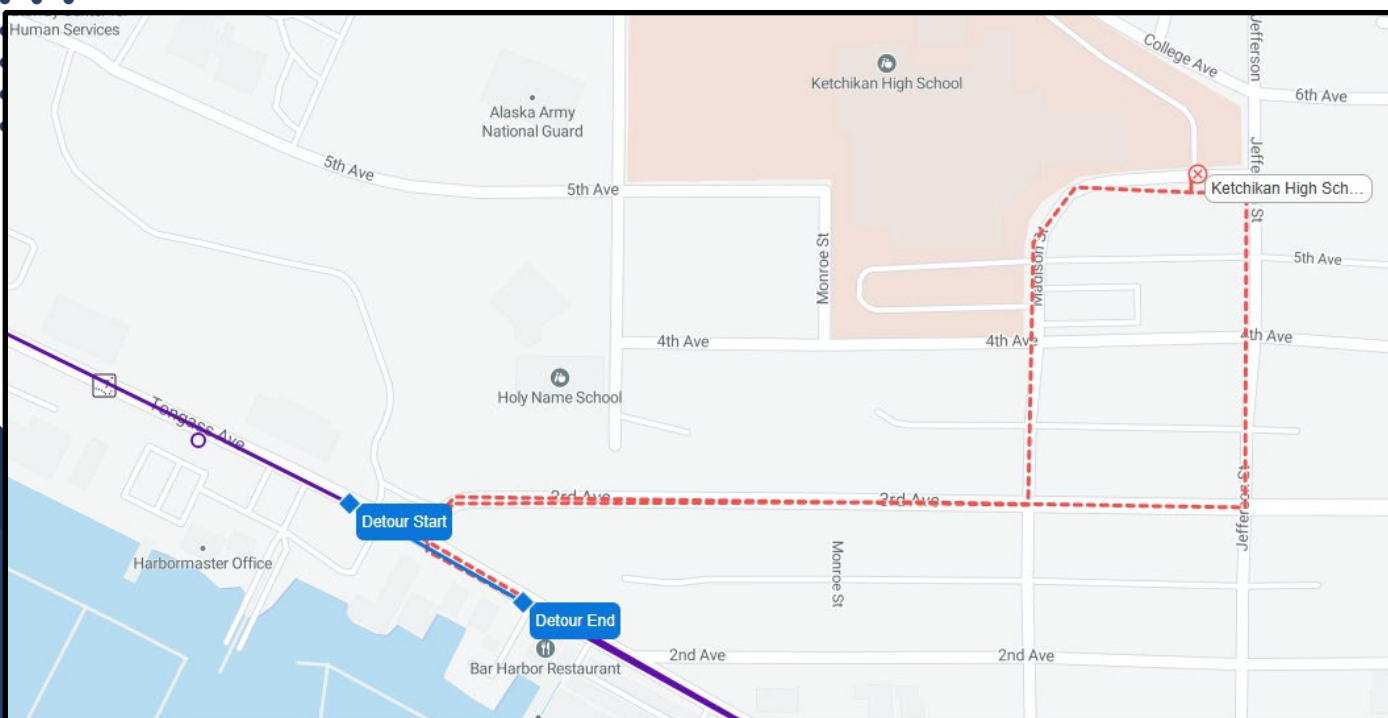
(Static & Real Time Info,
Alerts etc)



(Real Time Passenger Info,
Detours, Alerts)

○ ○ ○ ○

INTERCONNECTIVITY EXAMPLES



GTFS File Info

Agencies: 2 Blocks: 3 Routes: 2 Services: 2 Shapes: 10 Stop Times: 2,726 Stops: 154 Trips: 74

0000

EXAMPLES CONT.



Accepted

On Time

Pickup ETA
9:05 AM

Duty
Jemmar Macaspac - 95

Riders
1 Adult

Accessibility Features
1 Wheelchair

Overview

Payments

Timeline Details

Summary

OTP Windows

Requested

Scheduled

Actual

↑

Pickup at 2401 Eagle St, Ketchikan, AK 99901, USA

Estimated 9:05 AM Window 9:05 AM - 9:20 AM

🚌

Ride for 15 - 30 min • 4.3 mi

🚗 Fixed route is 11 min faster

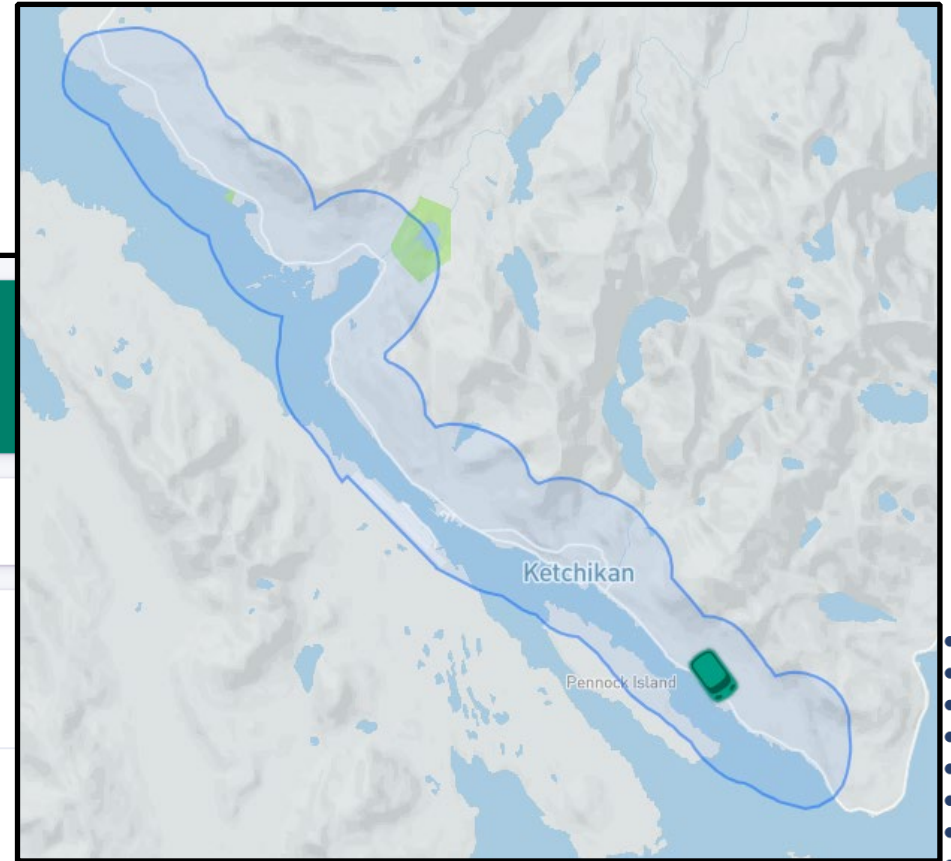
↓

Dropoff at Rendezvous Senior Day Services Inc - 2441 1st Ave, Ketchikan, AK 99901, USA

Estimated 9:24 AM Earliest 9:19 AM, latest 9:49 AM

Request Details

Rider



0000

CURRENT TECHNOLOGY



Operations/Management



samsara

(GPS, Dashcams, Coaching, Diagnostics)



(Cameras)



(First Drafts of ANYTHING, initial research, social media posts etc)



(GPS, Real Time Publishing, Detours, Alert Management, OTP)



(Automatic Passenger Counters)



(Fleet & Facilities Mgmt, eDVIR etc)



(Chat & Shift Scheduling)

Public Information



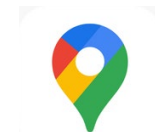
(Infotainment, Auto Annunciation, Destination Signs)



(Real Time Passenger Info, Detours, Alerts)



(Digital Fare Payment)



(Static & Real Time Info, Alerts etc)

Both



(Surveys, Training, Quizzes, Lost & Found etc)



(Dispatch, Rider App, AI Voice)



o o o o

LESSONS LEARNED

- Manage only one GTFS data set!
- Vendors use GTFS data in slightly different ways
 - Make changes cautiously!
- Quality/Accurate GTFS data needs constant attention
 - Engage your team!
 - Drivers & Dispatch are have great eyes
 - Stop locations need updating as satellites change
- Real-time GTFS is only possible with great static GTFS data



o o o o

FINAL THOUGHTS

- GTFS is SO MUCH MORE than an NTD requirement!
- Quality Data= Quality Information
- Start small, build from there

HAVE FUN!

FTA GTFS Data Collection Update

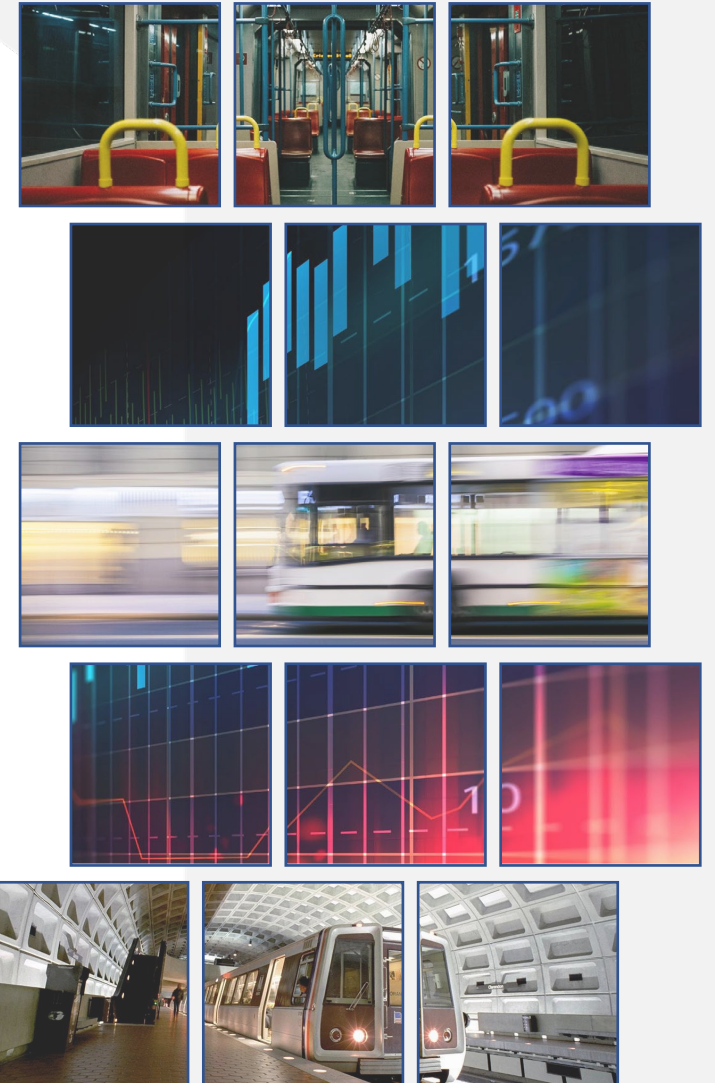
NTD GTFS Data Collection Update

Joe Gallagher, Transportation Data Analyst
NRTAP Webinar, Building a Technology Culture

2/3/2026



U.S. Department of Transportation
Federal Transit Administration



Disclaimer

The contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity to the public regarding existing requirements under the law or agency policies. Grantees and subgrantees should refer to FTA's statutes and regulations for applicable National Transit Database requirements.

<https://www.transit.dot.gov/ntd>

NTDHelp@dot.gov

GTFS is the first step to building a technology culture at your transit agency

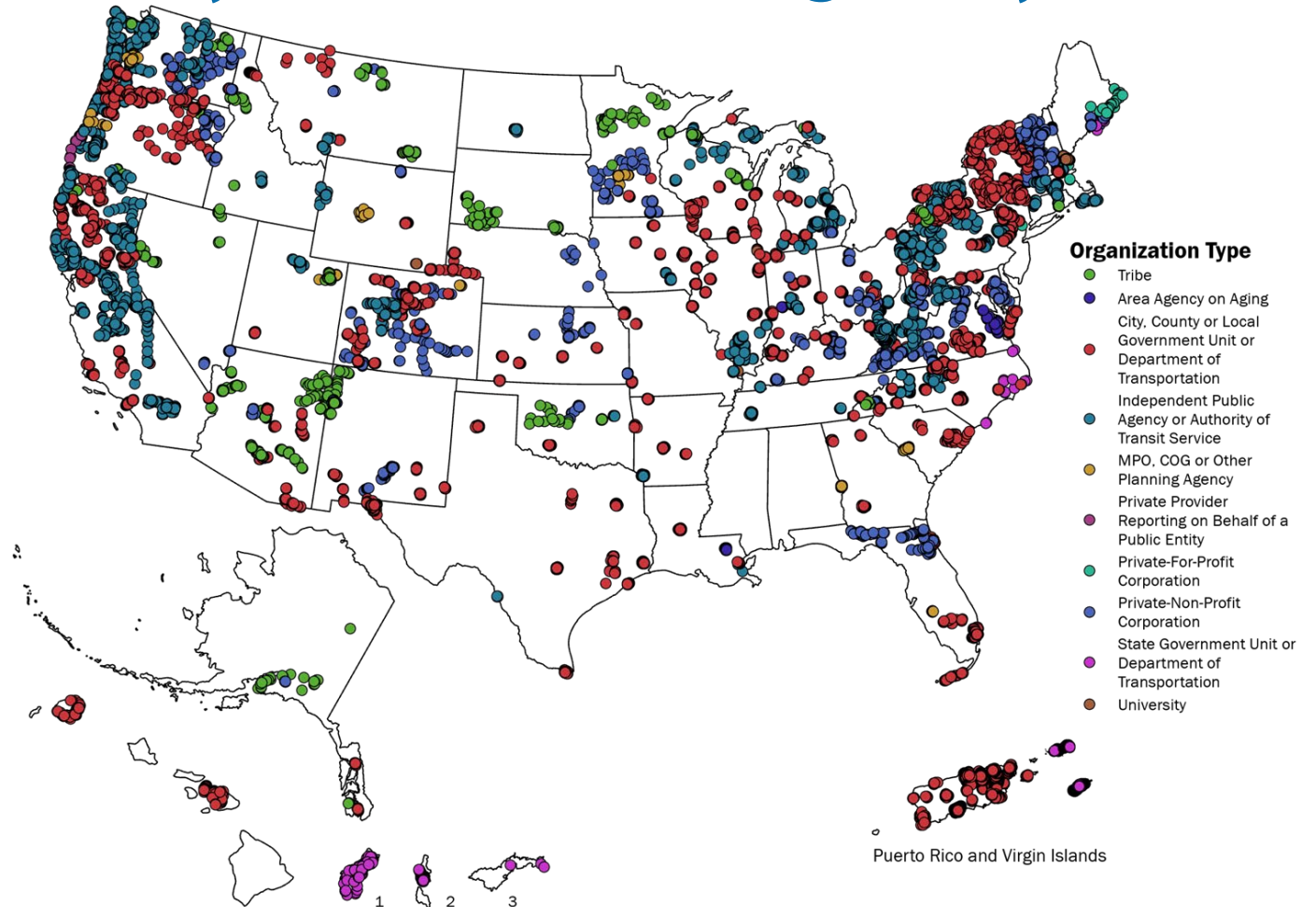
Rural transit agencies made a huge leap in data availability since the GTFS requirement was announced in 2022

Rural GTFS 2023 -2024

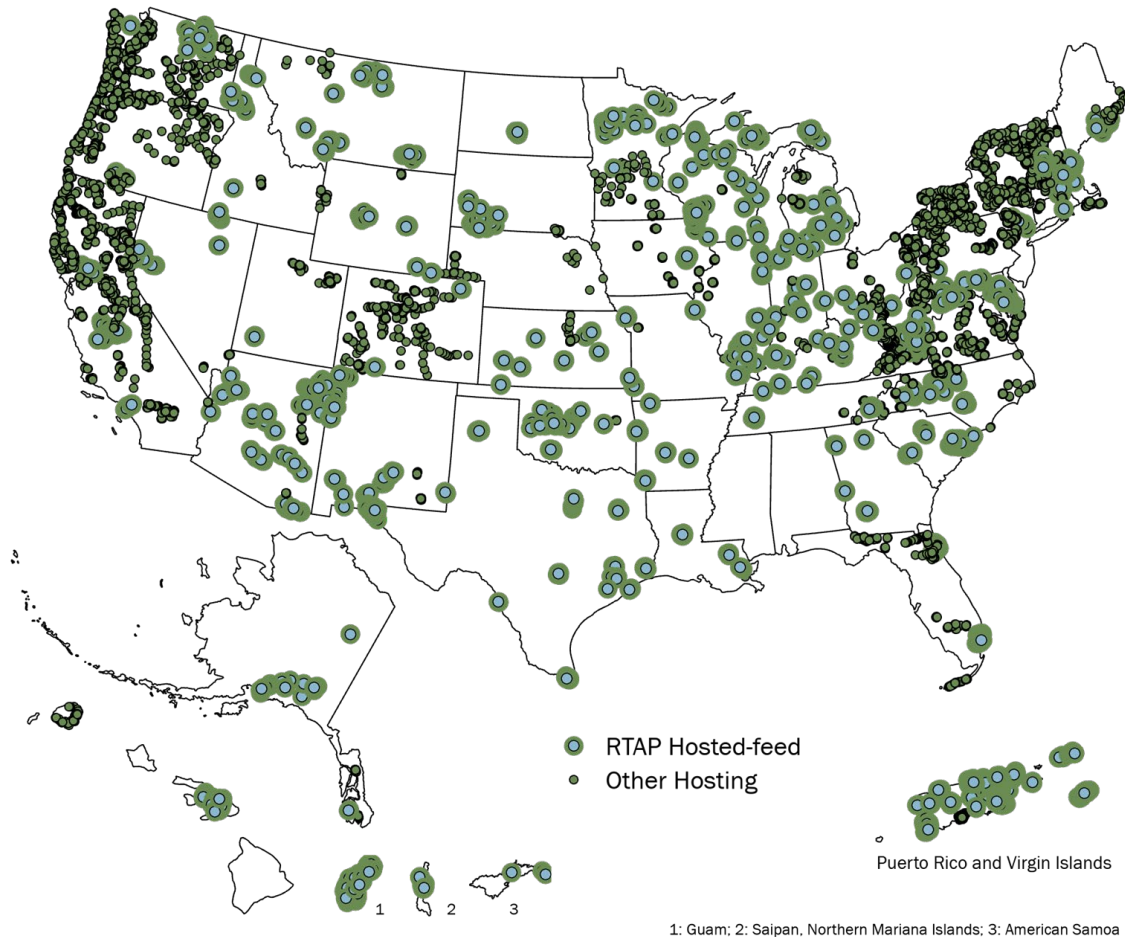
+ 2023: 71% Completed
2024: 97% Completed

+ GTFS Weblinks, 2023: 244
GTFS Weblinks, 2024: 514

+ Over 70,000 Rural and NRTAP-hosted stops

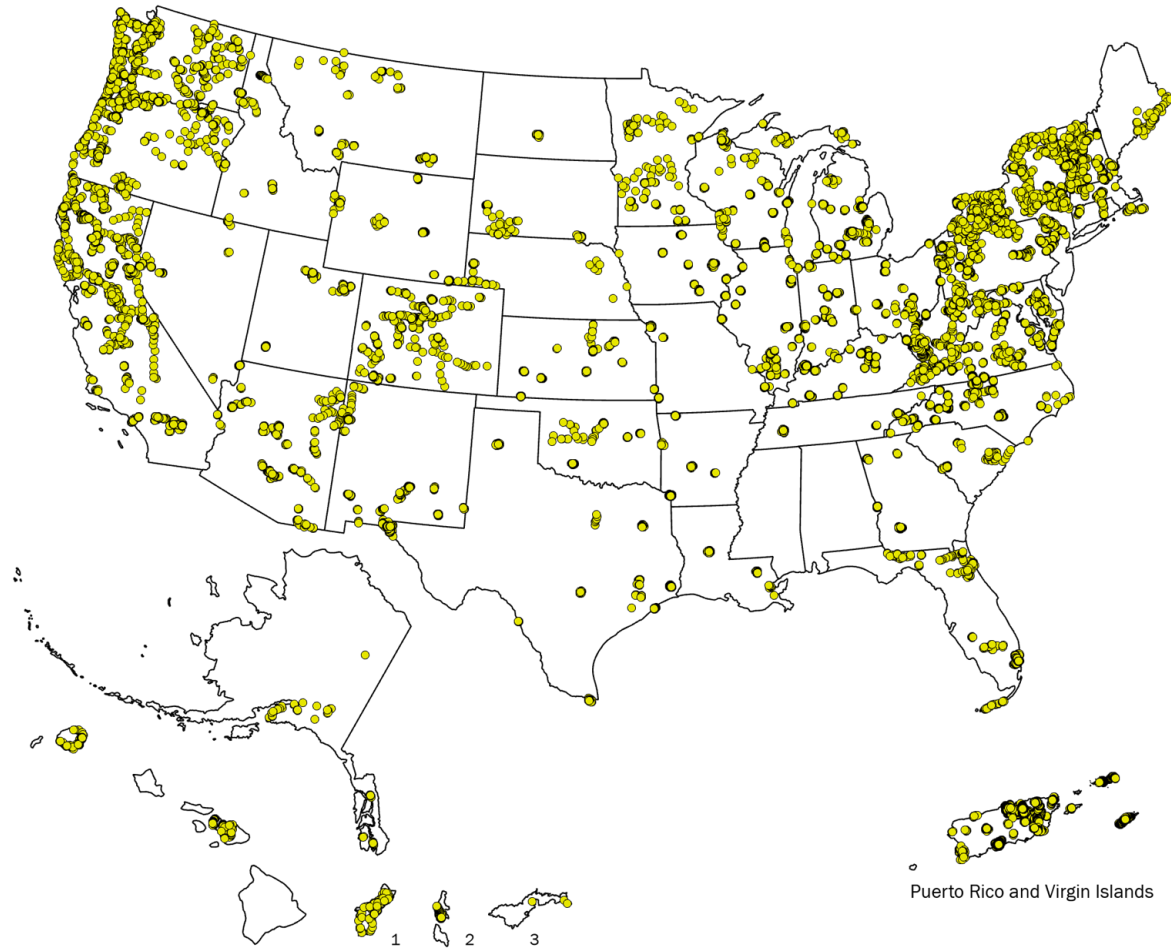


NRTAP provides webhosting for 52% percent of all rural GTFS feeds submitted to FTA

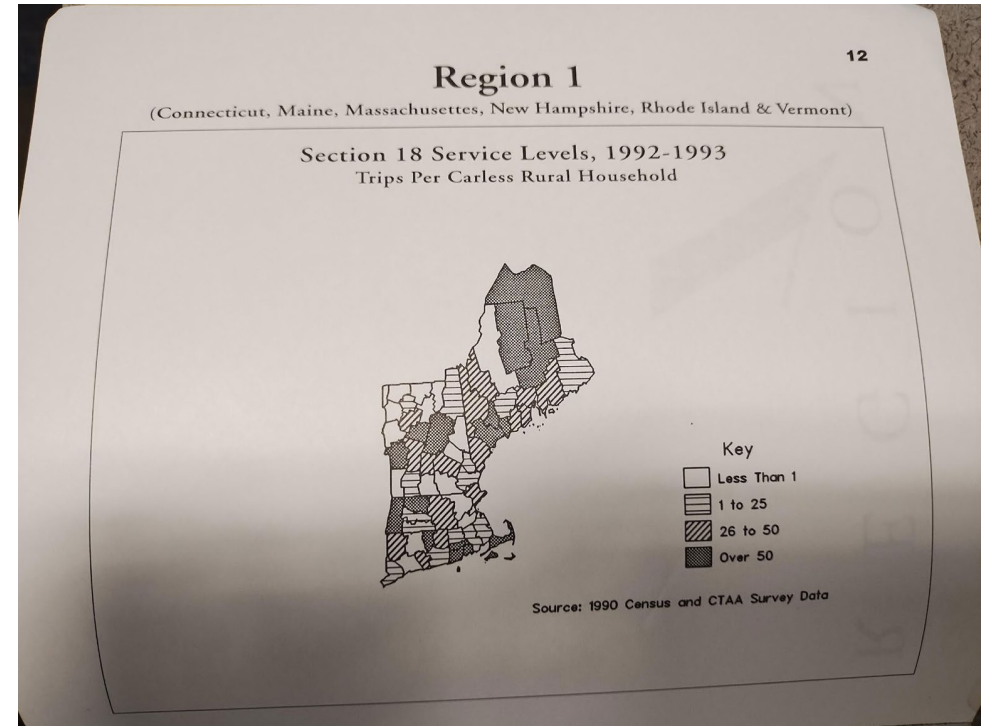


...and 20% of *all* feeds, including urban.
Thank you, NRTAP.

GTFS is giving FTA a more complete picture of transit service in rural America...

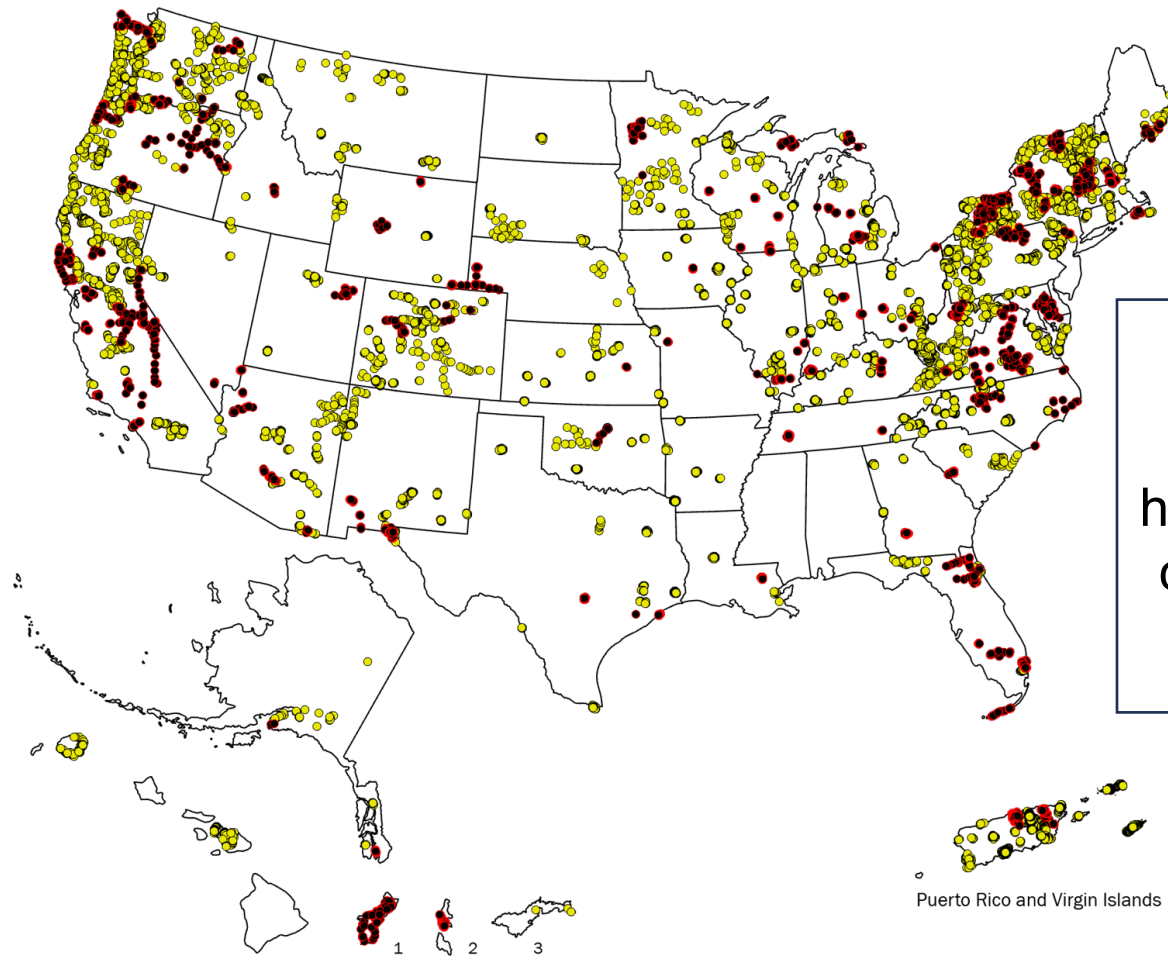


1: Guam; 2: Saipan, Northern Mariana Islands; 3: American Samoa



*Rural Transit Atlas circa
1994*

...but gaps in your data will affect how your feed can be used by your customers



28% of Rural GTFS feeds have an expired calendar as of 12/2025

Minimum NTD Requirements

- Active URL with direct download, or .zip file submission
- Files: stops, routes, trips, agency, calendar. shapes. Txt
- Fields: all required fields *plus* agency_Id
- Service window up to date

Value Add for You and Your Customers

Up to date (not -expired) calendar_dates.txt file; This ensures your service is accurately represented on public-facing trip planning applications

Clean, direct, active URLs help FTA and the public learn about your service more easily

A few common errors can impact the accessibility of your GTFS feed and possibly your NTD validation

- When preparing your annual report, ensure your GTFS link is working
 - 404 error: the link no longer exists
 - 403 error: the link exists, but cannot be accessed by the public
- Please submit a link directly to the feed itself (often ends in .zip or .ashx)
 - We love your schedules pages and open data portals, but it makes automatically processing your data more difficult. [Example](#)
 - Link protection/safe URL wrappers make validating your feed difficult
 - Often added automatically by email applications like Outlook: linkprotect.xyz.com/; safeurl.abc.com/...

GTFS feeds can be automatically picked up by journey planning applications and other data users, but your link needs to be active.

If you change your GTFS permalink, please update your P50, even if you already submitted your Annual Report – we appreciate it!

We update [our public database of GTFS feeds](#) monthly and the audience for that data is growing.

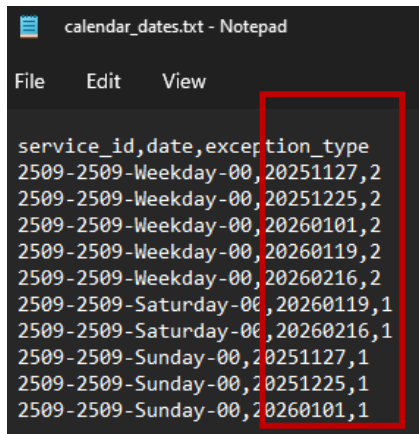


```
/linkprotect.cudasvc.com/url?a=https%3a%2f%2fgtfs.mata.cadavl.com  
TA%2fGTFS%2fGTFS_MATA.zip&c=E,1,vXbJcvT_YXL8J41qqnJMOhycj-  
sAbgVru_byay13NnLN57IrukSSzn662FRiTVk-  
rNwE1plvsiiokDbgZXrxFU9Vi1DBFVmMdszXiw,,&typo=1&ancr_add=1
```

Service Window dates lets FTA and the public know that the service in your feed is up to date

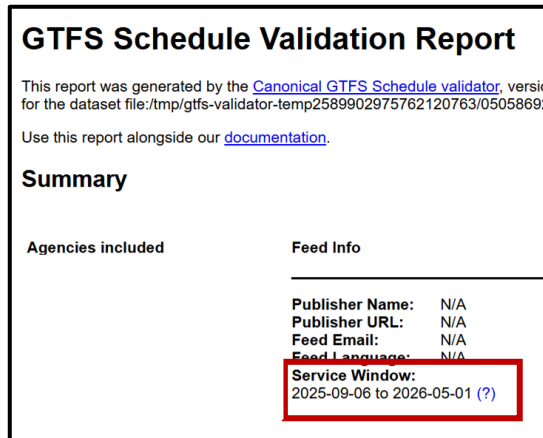
Imagine if you were publishing paper schedules with the year 2024 on them – riders wouldn't know if they could trust the information within.

- When preparing your annual report, ensure your feed's service window includes service through your NTD report year end.
- Run your feed through the Mobility Data validator or glance at the calendar.txt and calendar_dates.txt files



```
calendar_dates.txt - Notepad
File Edit View

service_id,date,exception_type
2509-2509-Weekday-00,20251127,2
2509-2509-Weekday-00,20251225,2
2509-2509-Weekday-00,20260101,2
2509-2509-Weekday-00,20260119,2
2509-2509-Weekday-00,20260216,2
2509-2509-Saturday-00,20260119,1
2509-2509-Saturday-00,20260216,1
2509-2509-Sunday-00,20251127,1
2509-2509-Sunday-00,20251225,1
2509-2509-Sunday-00,20260101,1
```



GTFS Schedule Validation Report	
This report was generated by the Canonical GTFS Schedule validator , version 2.1.0 for the dataset file: /tmp/gtfs-validator-temp2589902975762120763/05058692	
Use this report alongside our documentation .	
Summary	
Agencies included	Feed Info
	Publisher Name: N/A
	Publisher URL: N/A
	Feed Email: N/A
	Feed Language: N/A
	Service Window: 2025-09-06 to 2026-05-01 (?)

agency_id helps us relate the data in your GTFS feed to other data we receive in NTD

View & Manage General Transit Feed Specification (P-50)

Add New Weblinks

Transit agencies are required to provide GTFS feeds for all fixed-route modes. Please click "Add New Weblink" to populate a row for each fixed-route mode you operate. If you are unable to provide a weblink with URL below for any fixed-route mode, you must instead upload a GTFS file by selecting "Upload" below. If you do upload a file, you will be prompted for justification for why the weblink cannot be hosted online. If you are unable to provide either option, please contact your NTD analyst by email with an explanation.

#	Organization	Mode	Types of Service	Weblink	Agency ID	File	Justification for File	Remove
1	Select an Organization	---Select A value---	---Select A value---	Example: https://www.0/500	123456	0/255	UPLOAD	

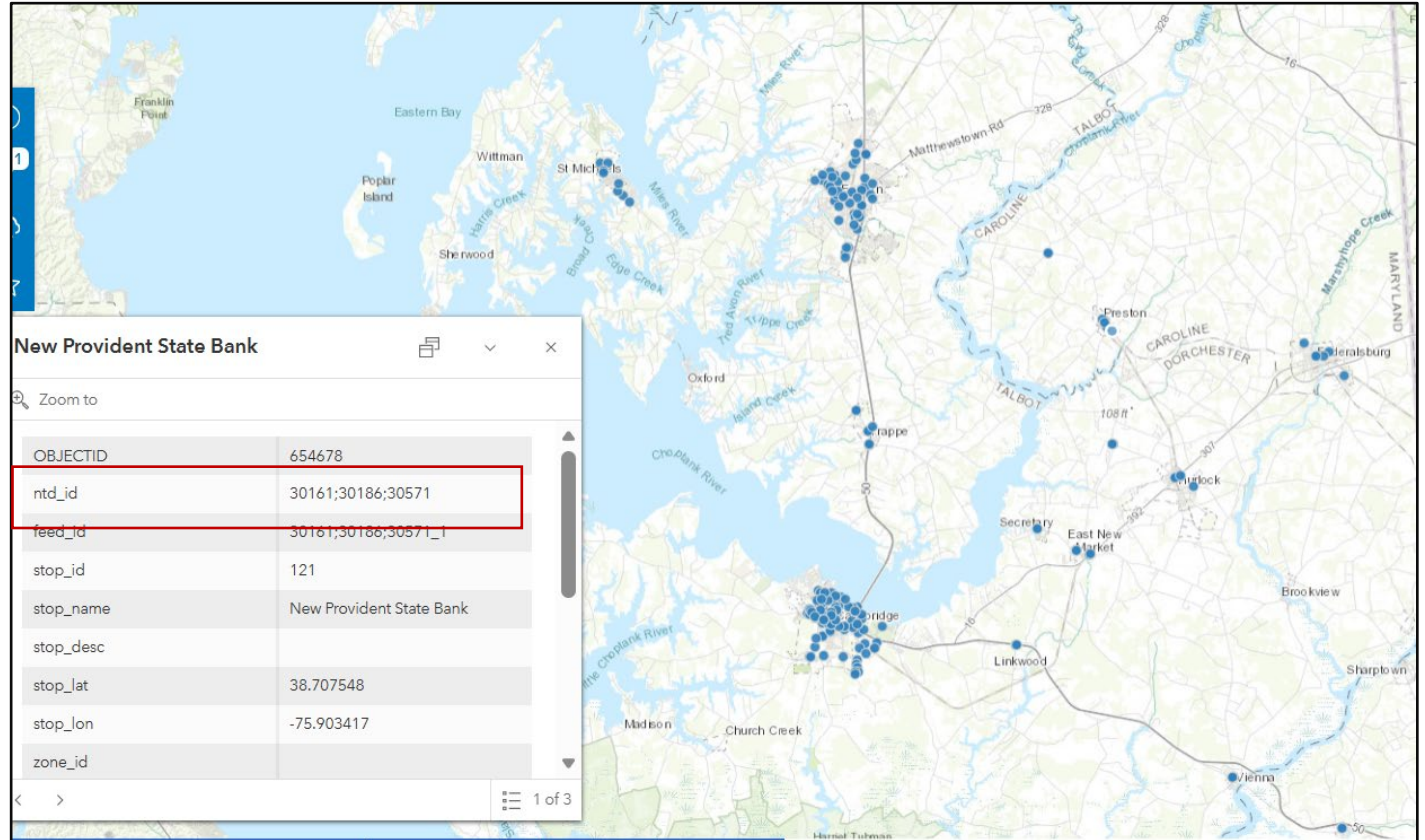
CANCEL SUBMIT

In this example, MYTransit has a feed with two agency_id values. They would put "1" as their agency_id on the P-50 form. OTHRapid would put "2" when they fill out the P-50

```
agency_id,agency_name,agency_url,agency_timezone,agency_lang
1,MY-TRANSIT,http://www.mytransit.com,America/Chicago,en
2,OTHRapid Transit,http://www.othrradpis.com,America/Chicago,en
```

agency_id helps us relate the data in your GTFS feed to other data we receive in NTD

We want to be able to easily ID who serves which stop, so we can know more about your service. We also understand this stop might be shared by all 3 agencies!

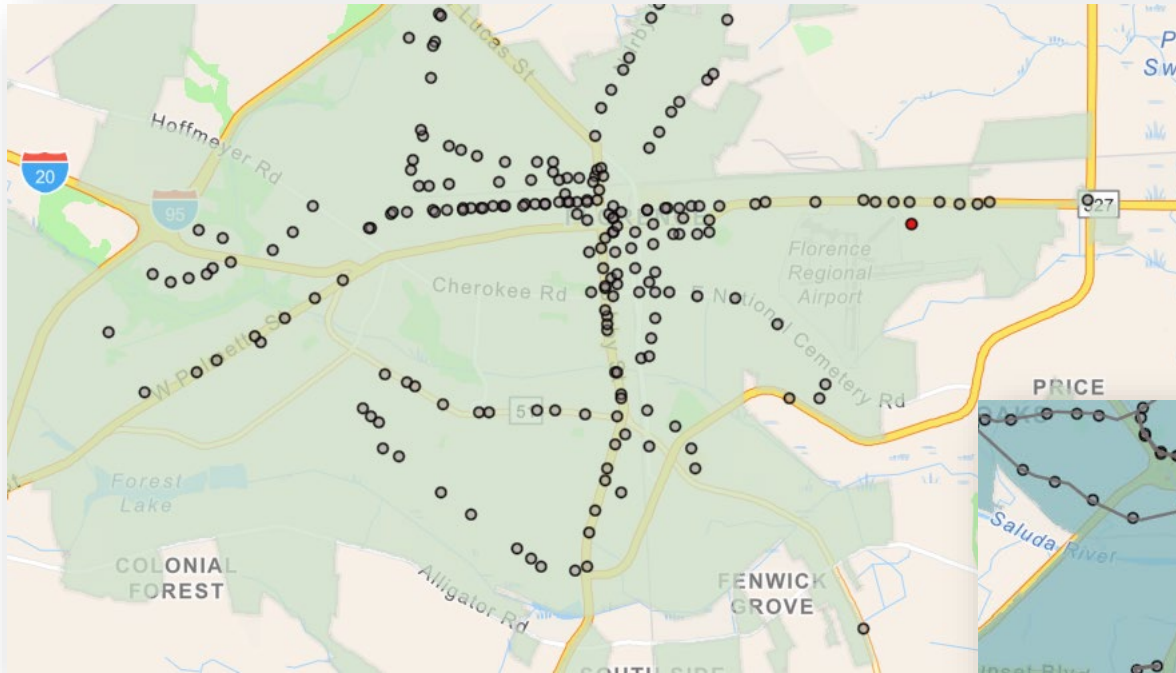


The image shows a map of the New Providence area in Maryland, with a popup window displaying data for a specific stop. The popup window is titled "New Provident State Bank" and contains a table with the following information:

OBJECTID	654678
ntd_id	30161;30186;30571
feed_id	30161;30186;30571_1
stop_id	121
stop_name	New Provident State Bank
stop_desc	
stop_lat	38.707548
stop_lon	-75.903417
zone_id	

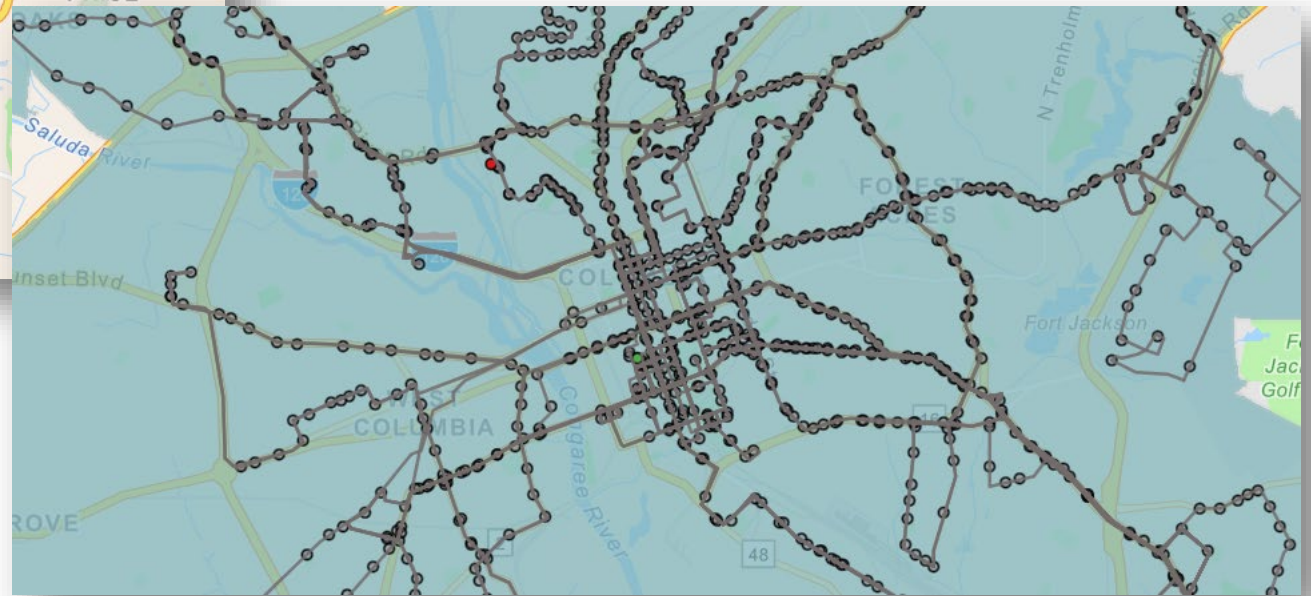
The popup window also includes a "Zoom to" button and a "1 of 3" indicator at the bottom right.

shapes.txt helps us illustrate where your service goes, supporting planning decisions

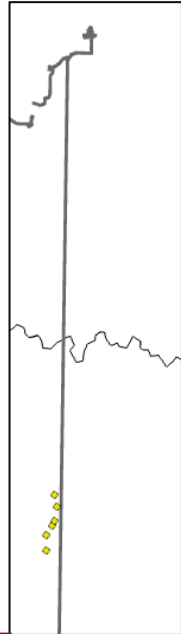


shapes.txt is required for all reporters beginning in next year. It is a simple add-on that NRTAP can help you build, and it adds so much more detail to your GTFS feed

20% of rural GTFS feeds already have shapes.txt

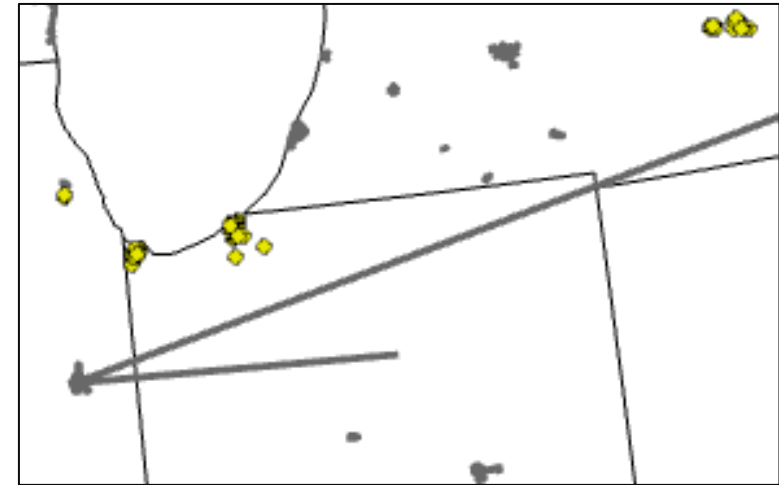


If your transit network has suddenly grown an arm, crossed state lines, or entered the ocean...



shape_id	shape_pt_lat	shape_pt_lon	shape_pt_sequence	shape_dist_traveled
langstonbryantmallout	1	-97.26395	66	1.72

Erroneous Latitude Value



ROUTE_7non_SHAPE	41.11480	-87.86214	401
ROUTE_7non_SHAPE	41.11375	-87.86234	402
ROUTE_7non_SHAPE	41.11370	-41.11370	403
ROUTE_7non_SHAPE	41.11381	-87.86345	404

Duplicated Latitude Value

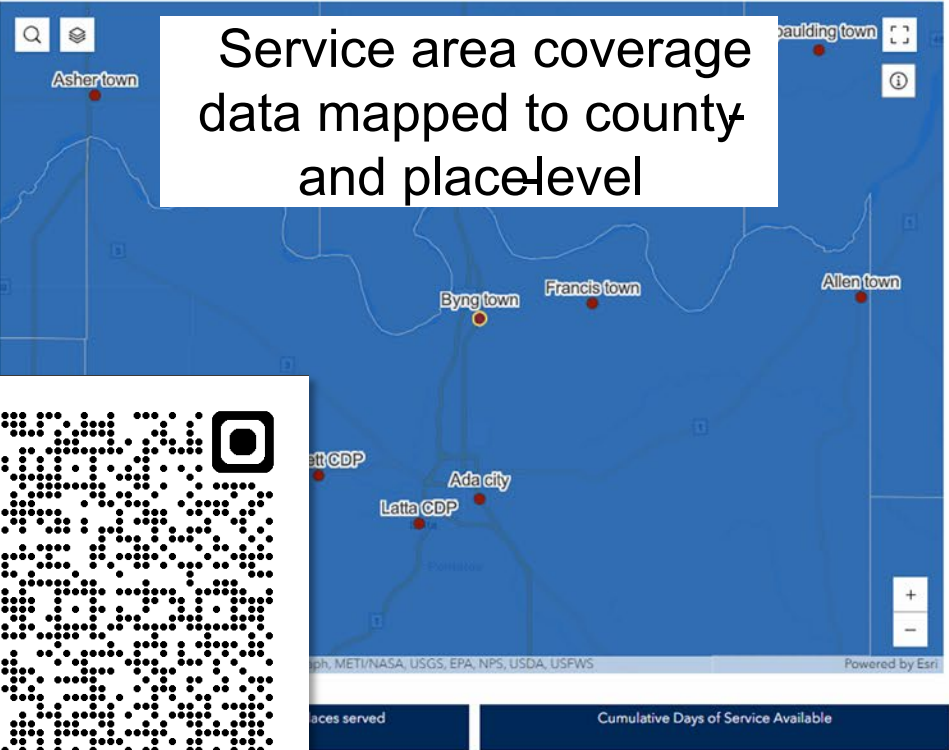
There are some accessible tools you can use to inspect your GTFS shapes and stops

You don't need ArcGIS or to be a GIS expert to look at the spatial data in your GTFS before submitting to NTD

- Excel 3D Map feature (may depend on your license)
- Google Sheets and MyMaps
- QGIS with GTFS Loader or GTFS-GO plug-ins
 - Fully open source GIS resource with a large community of users

Find more about these tools using your search engine of choice!

FTA Demand Response Explorer – interactive mapped sourced from NTDB-15 form data



Service area coverage data mapped to county and place level

Click through to find DR providers for over 24,000 towns, villages and cities

Ada city, OK

Demand Resp

Agency Name	Type of Service	Fare	Advance Reservation Requirement	Service Open to General Population (1 = Yes)	URL
Big Five Community Services, Inc.	DO	2	1 Hours	1	http://www.bigfive.org
Pontotoc County Public Transit Authority	DO	3	1 Days	1	http://www.okladot.state.ok.us/tran/s5311/callride.htm
Chickasaw Nation	DO	2	1 Days	1	http://www.chickasaw.net/

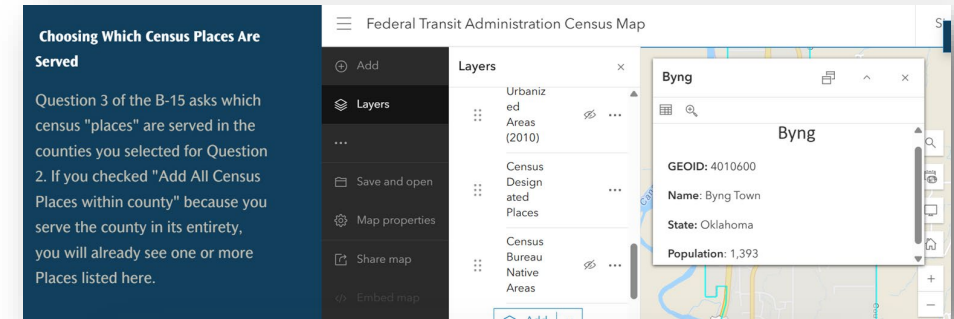
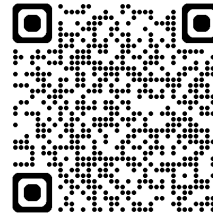
Q Type a City, Town, Village, Borough or other place name

- Byng town, OK
- Ada city, OK
- Stratford town, OK
- Vanoss CDP, OK
- Francis town, OK

GIS resources at FTA and US DOT are growing thanks to your work with GTFS

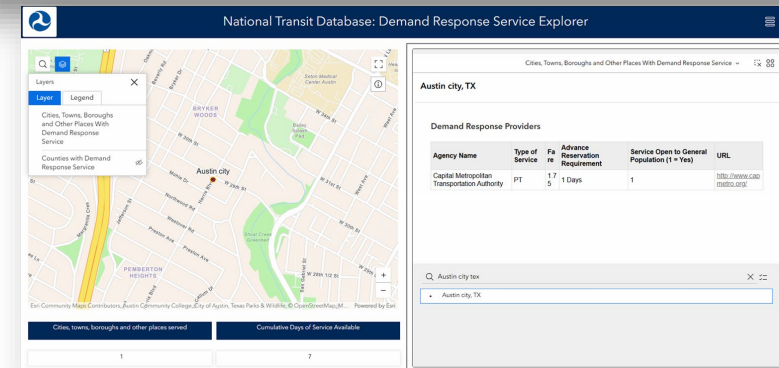
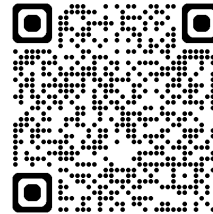
[FTA CensusMap](#)

Understand how your service relates to FTA administrative geographies like UZAs and Census Places.



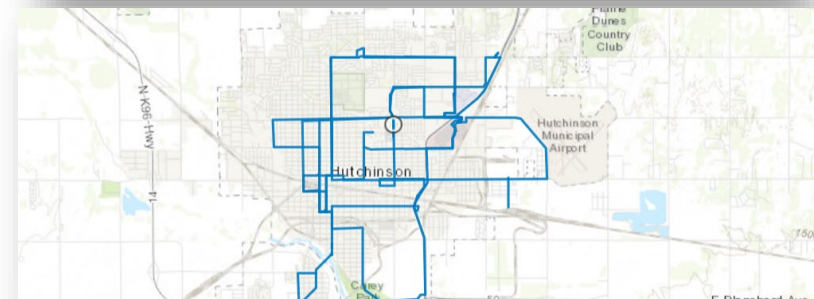
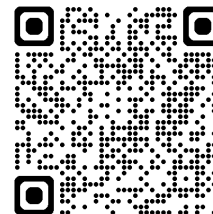
[NTDDemand Response Service Explorer](#)

Which places are served by demand response and other non -fixed route transit? Who provides service to those places?



[National Transit Map/NationalTransportation Atlas Digest](#)

A set of nationwide geographic databases of transportation facilities, networks, and associated infrastructure.



Thank you!

Joe Gallagher

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U.S. Department of Transportation
Federal Transit Administration

Questions/Panelists Discussion

Find Us - We Are Here To Help

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