

Top Quality GTFS Data Files Checklist

Powerful Rider Trip Planning with Top-Quality GTFS Data-
Lets bring your data up a notch!



Transit Data, like transit itself, is dynamic - moving within the ever-changing communities we serve. GTFS should reflect those changes - and so should this guide to data quality. Available online, together identify and address key data quality concerns that, while not scanned in the standardized validation process are important to empowering travelers.

Suggested in this guide are primarily rider-focused data quality improvements, not identified using the Canonical GTFS Schedule Validator. These are not data inconsistencies that are tested by the validator, but rather data within your GTFS that may not represent your agency accurately. Please always remember when you certify in your NTD, the GTFS is accurate.

We trust that the few minutes it may take for you to improve your data will return massive dividends, giving your riders a safer and more reliable, more complete trip.

Data Quality Topics in this guide include:

- Host Your GTFS with A Permalink
- Validate For Data Consistency and Meet Specification
- Errors (from Mobility Data Validation) that can be ignored
- Summary Mobility Data Validation Report
- Stop Locations/Stop Accessibility
 - Bus stop locations
 - ADA / Wheelchair Icon Omitted
 - Duplicate lat/long
 - Shared stops with adjacent agencies
- Calendar/Calendar_dates/Holidays
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 - Holiday dates
 - Reduced Service Dates
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- Reduce Rider Frustration
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 - Fares are free - riders cannot see that
 - Web links to route_url within routes fail
 - Web links to agency_url within agency fails
 - Agency phone number fails
- References & Published GTFS Best Practices

GTFS needs to be accurate from a web link. From that web link you can validate the data is internally consistent.

HOST WITH PERMALINK:

Trip planners and the NTD report require a stable or “permalink” to your GTFS data file. The file is zipped.

The file may be hosted at your agency’s website.

NOTE: Websites that use WordPress often change the file name with a year and month in the URL each time a file is uploaded. That will not meet the target of a stable or “permalink”. Ask the your agency’s website team if there is another option. Explain this web link cannot change each time the .zip GTFS data file is uploaded.

National Rural Transit Assistance Program hosts your GTFS to generate a permalink. <https://www.nationalrtap.org/Technology-Tools/GTFS-Builder#UploadGTFS>

Reach out if you need assistance: support@nationalrtap.org

VALIDATE:

Mobility Data Validator

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

GTFS is a zipped or compressed file of the text files (agency, calendar, routes, stops, etc.) It is not a zip of the folder containing these files./



[Canonical GTFS Schedule Validator](#)

GTFS is a zipped or compressed file of the text files (agency, calendar, routes, stops, etc.) It is not a .zip of the folder containing these files.

The GTFS (.zip) file could be uploaded, dragged or dropped and our suggested best practice is to test the GTFS .zip file from the agency’s permalink.

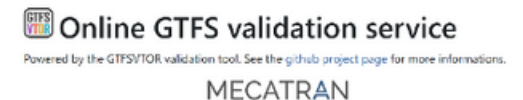
Errors must be resolved (see below for an exception to the rule “Errors must be resolved”)

Warnings should be reviewed and where possible corrected

Info should also be scanned in case they will improve the rider’s experience

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

Upload your zipped file to this validator which highlights duplicate or stops that may be too close and should be one stop_id and stop_name, as well as inconsistencies in your calendar (days of the week incorrectly assigned, dates out of range, etc)



Errors (from Mobility Data Validation) that can be ignored

The general rule is that validation errors must be resolved. Errors in the validation are missing data or data inconsistencies.

equal_shape_distance_same_coordinates

This error in validation is caused by the shapes line with two points that are so close together, they are “equal” along the shape_distance_traveled and cause this error. This error will not impact trip planning and can be ignored. Decreasing values indicates there is a zig zag, and that should be addressed. A related error only identifies decreasing_or_equal_stop_time_distance should be resolved.

The workaround for this error is to omit the optional, shape_distance_traveled when generating the stop_times data. Just leave that blank while shapes are assigned to each trip.

From the validation report:

Two consecutive points have equal shape_dist_traveled and the same lat/lon coordinates in shapes.txt.

When sorted by shape.shape_pt_sequence, the values for shape_dist_traveled must increase along a shape. Two consecutive points with equal values for shape_dist_traveled and the same coordinates indicate a duplicative shape point.


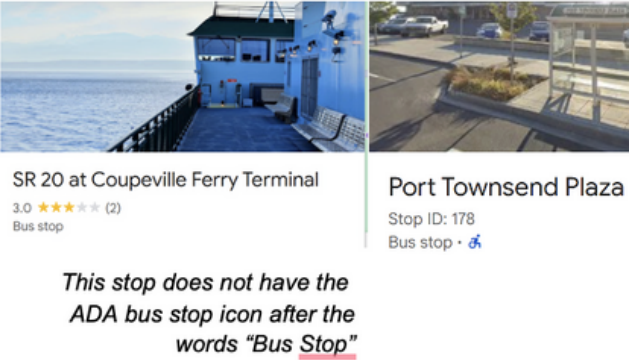
References

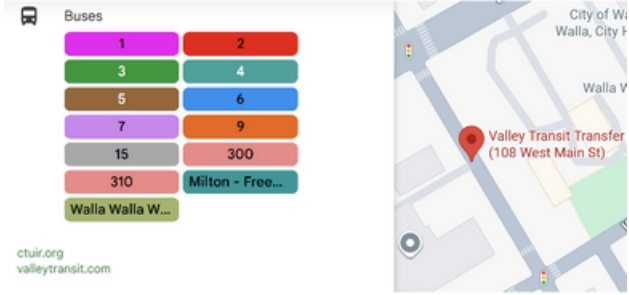
- Stop_times.txt and shapes.shape_dist_traveled

Summary Mobility Data Validation Report


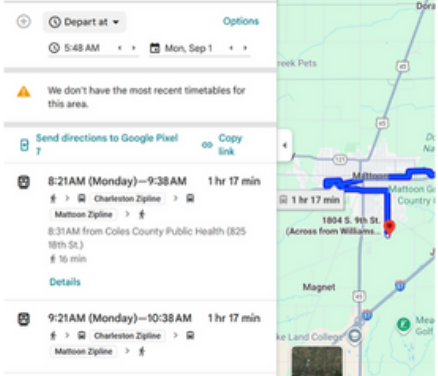
Part of GTFS Feed	How to check it is correct	Check
Agency name and Agency URL/website	Confirm spelling & click on the url, is it https? Update if needed	
Phone number	Dial it, honestly, confirm or update, if needed	
Agency_email	While optional, consider adding an email for riders who prefer not to call or other agencies needing to reach you	
Feed Info Contacts	Highly recommend you enter data to share the contact of who can answer GTFS data quality questions	
Service dates	Is your feed valid in both data elements until the end of 2026?	
Number of routes, stops, trips	Are these matching? If not look into missing data and resolve	
Shapes = zero or too few	Learn how to create and publish shapes at National RTAP or through your vendor	

Stop Locations/Stop Accessibility

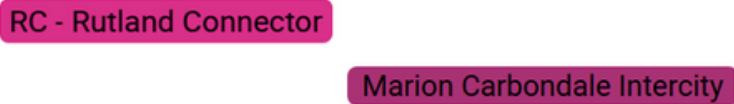
Part of GTFS Feed	How to check it is correct & What to do	Images	Check
Bus stop locations	<ul style="list-style-type: none"> • Stops are in the road or parking lot or center of a building, unclear to a rider or person with limited vision guided to the location as specified when not safely at the sidewalk • Use precise satellite imagery (mymaps.google.com) • Place stop at the pole, bench, shelter updated lat/long in stops.txt • Move from travel lanes where rider could be harmed 		
ADA / Wheelchair Icon Omitted	<ul style="list-style-type: none"> • Bus stops are not identified as wheelchair accessible (the ADA icon is omitted) <i>wheelchair_boarding = blank or 0</i> • Leaving this blank or entering zero confuses riders if the stop may allow mobility devices • For accessible bus stops update stops.txt with <i>wheelchair_boarding = 1</i>; enter =2 when not accessible • In some cases the trip planner app should be contacted; it may be a data glitch 	 <p><i>This stop does not have the ADA bus stop icon after the words "Bus Stop"</i></p>	

<p>Duplicate lat/long</p>	<ul style="list-style-type: none"> • Bus stop locations should be one place for a shared stop; not a constellation of points • Assign one stop_id & stop_name for shared stops and update stop_times.txt to the single, shared stop_id 	<table border="1"> <thead> <tr> <th></th> <th>stop_id</th> <th>stop_code</th> <th>stop_name</th> <th>stop_desc</th> <th>stop_lat</th> <th>stop_lon</th> </tr> </thead> <tbody> <tr> <td>L442</td> <td>797</td> <td>797</td> <td>8064 Alameda</td> <td>8064 Unit OB</td> <td>31.723058</td> <td>-106.355589</td> </tr> <tr> <td>L2337</td> <td>4352</td> <td>4352</td> <td>Alameda/San Vicente RTS</td> <td></td> <td>31.723057</td> <td>-106.355558</td> </tr> </tbody> </table> <p>WARNING stop_lat, stop_lon Stops too close, they are 0.86m away</p>		stop_id	stop_code	stop_name	stop_desc	stop_lat	stop_lon	L442	797	797	8064 Alameda	8064 Unit OB	31.723058	-106.355589	L2337	4352	4352	Alameda/San Vicente RTS		31.723057	-106.355558	
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<p>Shared stops with adjacent agencies</p>	<ul style="list-style-type: none"> • Co-locate the stop (perhaps ask your adjacent agency for the lat/long) so riders see all next departures from that shared location and know where to stand 	 <p>The screenshot shows a bus stop interface. On the left, there is a list of bus routes with colored buttons: 1 (purple), 2 (red), 3 (green), 4 (teal), 5 (brown), 6 (blue), 7 (light purple), 9 (orange), 15 (grey), 300 (pink), 310 (light red), Milton - Free... (teal), and Walla Walla W... (light green). On the right, there is a map showing the stop location at Valley Transit Transfer (108 West Main St) in Walla Walla, WA. The map includes labels for 'City of Walla Walla, City of' and 'Walla V'. The URL 'ctuir.org valleytransit.com' is visible at the bottom left of the screenshot.</p>																						


Calendar/Calendar_dates/Holidays

Part of GTFS Feed	How to check it is correct & What to do	Images	Check
Service_end Date is Expired in calendar	<ul style="list-style-type: none"> Expired day may be extended as published with riders uncertain which agency on the page is expired Confirm both calendar and feed_info for start and end dates 	 We don't have the most recent timetables for this area.	
Holiday dates	<ul style="list-style-type: none"> Dates with no service are not updated or accurate from year to year (Example shown is service showing on Labor Day and there is no service) Keep calendar_dates accurate with exception_type=2 for no service on that date entered as YYYYMMDD 		
Reduced Service Dates	<ul style="list-style-type: none"> Riders do not know there is reduced service on “pre-holidays” or other dates Reduce service with unique service_id for “holiday” and replace regular service (weekday, service_id) in the calendar_dates with the holiday service so riders are not trying to read a footnote 		

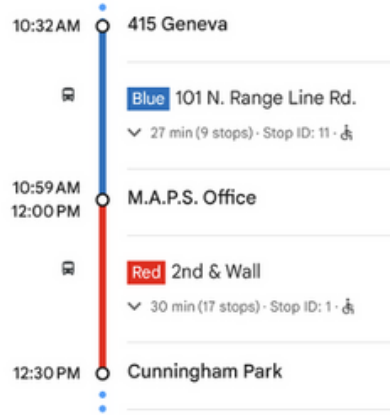
Display / View

Part of GTFS Feed	How to check it is correct & What to do	Images	Check
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 		

Shapes / Snap to the Road

Part of GTFS Feed	How to check it is correct & What to do	Images	Check
Bus not on the road - validator accepts	<ul style="list-style-type: none"> Path over a lake, confusing to see bus jump over river or road or your neighbor's house and validator will not not need highlight Snap the route to the road - ask your GTFS manager to adjust, If no other options, National RTAP offers tech support with free mapping tools 		

Reduce Rider Frustration

Part of GTFS Feed	How to check it is correct & What to do	Images and Code	Check																								
<p>Extra hour or more waiting for a transfer</p>	<ul style="list-style-type: none"> Riders are directed to wait an hour for a transfer when in less than 5 minutes the next bus departs. The transfers.txt is omitted Specify stop_id, for example Transit Center "1" to "1" is guaranteed "1" The other example is a two minute transfer time and the stop_id need to be both directions 	 <p>from_stop_id,to_stop_id,transfer_type,min_transfer time</p> <table border="1"> <thead> <tr> <th colspan="2">transfer_</th> <th></th> <th></th> </tr> <tr> <th>from_stop_id</th> <th>to_stop_id</th> <th>type</th> <th>min_transfer_time</th> </tr> </thead> <tbody> <tr> <td>22</td> <td>22</td> <td>2</td> <td>120</td> </tr> <tr> <td>10</td> <td>10</td> <td>2</td> <td>120</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td></td> </tr> </tbody> </table>	transfer_				from_stop_id	to_stop_id	type	min_transfer_time	22	22	2	120	10	10	2	120	1	1	1						
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<p>Fares are free - riders cannot see that</p>	<ul style="list-style-type: none"> Update the following two data files fare_rules and fare_attributes, as shown 	<p>fare_rule</p> <table border="1"> <thead> <tr> <th>fare_id</th> <th>price</th> <th>currency_type</th> <th>payment_method</th> <th>transfers</th> <th>agency_id</th> <th>transfer_duration</th> </tr> </thead> <tbody> <tr> <td>free</td> <td>0</td> <td>USD</td> <td></td> <td>0</td> <td><your agency_id></td> <td></td> </tr> </tbody> </table> <p>fare_attributes</p> <table border="1"> <thead> <tr> <th>fare_id</th> <th>route_id</th> <th>origin_id</th> <th>destination_id</th> <th>contains_id</th> </tr> </thead> <tbody> <tr> <td>free</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	fare_id	price	currency_type	payment_method	transfers	agency_id	transfer_duration	free	0	USD		0	<your agency_id>		fare_id	route_id	origin_id	destination_id	contains_id	free					
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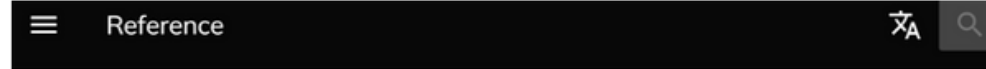
<p>Web links to route_url within routes fail</p>	<ul style="list-style-type: none">• Test ALL URL or weblinks and update, for example the route_url in the routes.txt		
<p>Web links to agency_url within agency fails</p>	<ul style="list-style-type: none">• In the validation report or agency_name with a hyperlink, if it fails, update and update to https:// as some browsers warn this is unsafe to view		
<p>Agency phone number fails</p>	<ul style="list-style-type: none">• Dial the phone number that a rider will use to call for help. Update to your agency's current customer service phone number• Best not to use letters for numbers• Consider the local not toll free number as toll free may be blocked from certain area codes or international callers		

References & Published GTFS Best Practices

- Adopted GTFS-Static Specification: <https://gtfs.org/documentation/schedule/reference/>
- Mobility Data Validator: <https://gtfs-validator.mobilitydata.org/>

For even deeper dive on best practices visit

- <https://gtfs.org/documentation/schedule/schedule-best-practices/>
- <https://dot.ca.gov/cal-itp/california-transit-data-guidelines#section-checklist>
- <https://resources.transitapp.com/article/458-guidelines-for-producing-gtfs-static-data-for-transit>
- <https://support.google.com/transitpartners/answer/6377364?hl=en&sjid=18253138810268968368-NC>



General Transit Feed Specification Reference ¶

Revised July 9, 2025. See [Revision History](#) for more details.

This document defines the format and structure of the files that comprise a GTFS dataset.

If you have any questions, reach out to the N-CATT team at helpdesk@n-catt.org