

CTR Survey Refresh - Survey Questions & Calculations

April 22, 2021

Meeting objectives

- Review and approve updated CTR survey questions
- Review and approve proposed changes to calculations

(Policy and program implications will be discussed during the next agenda item)

Before we get started...
Let's fly to the 10,000 foot level.

The survey is changing – what does that mean?

- The **questions** are different
 - Changing how we ask the question, changes the answers we receive
- **Response rate** requirements are different
- **How employees take the survey** is different
 - New survey tool will look (and function) different for users and administrators
- **The numbers won't be the same.**
 - Survey numbers from the old survey tool will not be directly comparable to new survey responses.
 - We are here to help make that transition as smooth as possible!

How we got to these
recommendations

Sprint Team process

Recommendations presented today have been reviewed multiple times by sprint team members, jurisdictions, and partners

- **February:** Sent draft of survey questions and answers to all jurisdictions for comment
- **March 11:** Presented draft survey questions to TDM Technical Committee. Recruited sprint team and partner volunteers
- **March 23 – April 14:**
 - Held 3 sprint team meetings, focused on survey questions and calculation changes
 - Reached out to partners and jurisdictions for feedback on updated survey questions
 - Incorporated feedback into draft survey questions
 - Developed calculations recommendation with sprint team

Changes to survey questions – Word document

Changes to calculations

What calculations are changing?

1. Non Drive Alone Trips (NDAT)
2. Vehicle Miles of Travel (VMT) per potential trip
3. Greenhouse gas emissions (GHG)

The calculations must be adjusted to adapt to the new questions. These adjustments are minimal and will better represent the survey responses.

On average, the difference in VMT in the 17/18 survey cycle by county is within a percentage point (0.8%)*.

While the difference due to the calculation is small, we cannot say how big the difference will be because the survey questions and answers are changing.

*This is based on comparing the 17/18 aggregate report county VMT estimates to the new calculation formula on data in the WSDOT database. The database does not contain all individual surveys that the aggregate report has so it is a subset of data.

What's different

NDAT

- Lyft, Uber, and Taxi trips taken alone (e.g. not including the driver) are **explicitly** counted as a drive alone trip.

VMT per employee potential trip

- VMT is calculated per individual trip *first* (vs. aggregating trips, then averaging)
- This calculation does **not** exclude respondents who:
 - travel less than 1 mile to work , or
 - rode a bicycle 3 or more times a week, AND have a one-way mileage of 30+ miles.

GHG

- The constant for calculating annual GHG has been updated according to guidance from the [Environmental Protection Agency \(EPA\)](#).

Decisions Needed

- Move to approve new survey questions
- Move to approve proposed calculations

Coming up next on the agenda

- Discuss surveying in fall 2021 & potential policy implications

Contacts and information

CTR survey staff

CTRSurvey@WSDOT.WA.GOV

TDM Technical Committee Approved
Recommendations (September 2020)

https://www.dropbox.com/s/a8ikwgxocldkby/Commute_Trip_Reduction_survey_recommendations_for_updates.docx?dl=0

Initial DRAFT recommendations and
background document:

https://rpubs.com/wsdot_ptd/ctr_data_update_recommendations

Updated Approved TDM Technical
Committee Recommendations:

https://www.dropbox.com/scl/fi/q78vpeex2er6h6v9rnwyc/2021-03_17_Updated_Recommendations.docx?dl=0&rlkey=2vfcx7n61ubcjlsqb7al1t9c4

Extra slides

Current CTR calculations

Links to PDF documents on WSDOT website

- [VMT per employee](#)
- [Greenhouse gas emissions \(GHG\)](#)

Proposed changes to calculations – technical notes

What calculations are changing?

1. Non Drive Alone Trips (NDAT)
2. Vehicle Miles of Travel (VMT) per potential trip
3. Greenhouse gas emissions (GHG)

The calculations must be adjusted to adapt to the new questions. These adjustments are minimal and will better represent the survey responses.

On average, the difference in VMT in the 17/18 survey cycle by county is within a percentage point (0.8%)*.

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Proposed: NDAT

$$ndat = 100\% \text{ of potential trips} - (SOV \text{ trip } \% + TNC \text{ alone trip } \%)$$

Non Drive-Along Trips (NDAT) is calculated as 100% of all potential trips minus the percentage of drive alone trips and the percentage of trips taken alone via Lyft, Uber, or taxi.

What's different?

- Lyft, Uber, and Taxi trips taken alone (e.g. not including the driver) are **explicitly** counted as a drive alone trip.

Proposed: VMT per potential trip

$$VMT \text{ per potential trip} = \frac{\text{sum}(VMT \text{ per week})}{\text{sum}(\text{potential trips})}$$

- **VMT per week** = $\text{sum}(\text{Adjusted Trips} * \text{Total Miles})$
- **Adjusted Trips** = Sum of all full and partial drive alone trips for all employees for all days of the week.
 - Full trip = 1 trip for drive alone or motorcycle
 - Partial trip = 1 trip / reported occupancy for carpool, vanpool, lyft/uber/taxi
 - All other modes do not count towards adjusted trips
- **Potential trips** = sum of all trip modes, includes compressed work week day off and telework, and excludes day off.

The following responses will be excluded from this calculations (no change):

- Respondents that list a one-way mileage of more than 150 miles
- Respondents that walked 3 or more times a week AND have a one-way mileage of 30+ miles.

Proposed: VMT per potential trip

$$VMT \text{ per potential trip} = \frac{\text{sum}(VMT \text{ per week})}{\text{sum}(\text{potential trips})}$$

What's different?

- VMT is calculated at the trip level first
- This calculation does **not** exclude respondents who:
 - travel less than 1 mile to work , or
 - rode a bicycle 3 or more times a week, AND have a one-way mileage of 30+ miles.

Proposed: GHG

$$GHG = Total\ VMT\ for\ all\ employees * 404 * 1e - 6$$

- **Total vehicle miles of travel for all employees** = VMT per week * Total employees * 100
 - **VMT per week** = VMT per potential trip * avg weekly potential trips
 - **Avg weekly potential trips** = Sum of potential trips / respondents

What's different?

- The constant for calculating annual GHG has been updated according to guidance from the [Environmental Protection Agency \(EPA\)](#).