BEFORE THE
POSTAL REGULATORY COMMISSION
WASHINGTON, D.C. 20268–0001

PERIODIC REPORTING
(PROPOSAL SEVEN)

Docket No. RM2021-1

RESPONSE OF THE UNITED STATES POSTAL SERVICE
TO QUESTION 1 OF CHAIRMAN'S INFORMATION REQUEST NO. 3
(February 23, 2021)

The United States Postal Service hereby provides its response to the above

listed question of Chairman's Information Request No. 3, issued February 17, 2021.

The questions are stated verbatim and followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorney:

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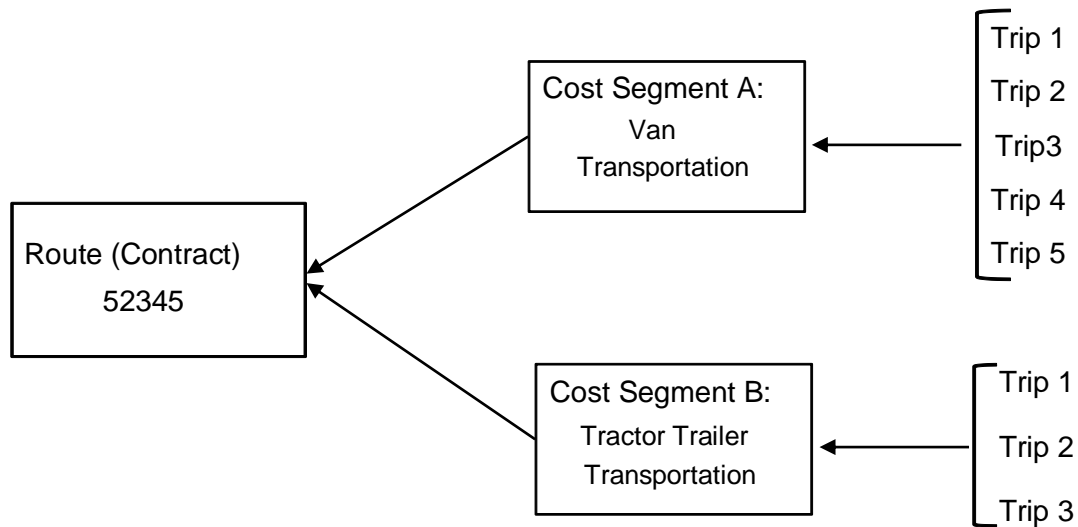eric.p.koetting@usps.gov
February 23, 2021

1. Please refer to Library Reference USPS-RM2021-1-1, November 9, 2020, folder "Christmas Transportation Models," SAS program file "XMAS INTER SCF Variability Equations.SAS," program step "Mean Center the Data" (Docket No. RM2021-1 SAS Program). Please also refer to Docket No. RM2014-6, Library Reference USPS-RM2014-6-1, June 20, 2014, SAS program file "Est.IntePDC.Clust.Area.NDC.Variab.SAS," program steps "Estimate Van Equation" and "Estimate TT Equation" (Docket No. RM2014-6 SAS Program).

   a. Please confirm that in the Docket No. RM2021-1 SAS Program, in the formula lnCFM=log(cfm/g_cfm), the term "cfm" refers to the sum of cubic foot miles for each route per cost segment. If not confirmed, please explain the meaning of the term "cfm."

   b. Please confirm that in the Docket No. RM2021-1 SAS Program, in the formula lnCFM=log(cfm/g_cfm), the term "g_cfm" refers to the mean of the sum of cubic foot miles for each route per cost segment. If not confirmed, please explain the meaning of the term "g_cfm."

   c. Please confirm that in the Docket No. RM2021-1 SAS Program, in the formula lnRL=log(atripmiles/g_stripmiles), the term "atripmiles" refers to the mean of trip miles for each route per cost segment. If not confirmed, please explain the meaning of the term "atripmiles."

   d. Please confirm that in the Docket No. RM2021-1 SAS Program, in the formula lnRL=log(atripmiles/g_stripmiles), the term "g_stripmiles" refers to the mean of the sum of trip miles for all routes and cost segments. If not confirmed, please explain the meaning of the term "g_stripmiles."

   e. If questions 1.a. and 1.c. are confirmed, please explain why the sum of cubic foot miles was used for the "cfm" term, but the mean, and not sum, of trip miles was used for the "atripmiles" term in the referenced formulas of the Docket No. RM2021-1 SAS Program.

   f. Please confirm that in the Docket No. RM2014-6 SAS Program, in the formula lnCFM=log(cfm/g_cfm), the term "cfm" has the same meaning and is calculated the same way as in the Docket No. RM2021-1 SAS Program. If not confirmed, please describe the differences in meaning and/or calculations of "cfm" in the formula lnCFM=log(cfm/g_cfm) in the two referenced SAS programs and explain the reasons for such differences.

RESPONSE:

The use of various terms to describe different aspects of purchased highway

transportation can lead to confusion, as everyday terms like "route" or "trip" may have a

specific meaning in the postal context which is different from every day usage. To avoid

confusion, this response will use the terms as they have been defined in the TCSS

database. Specifically, in TCSS, each contract is identified by is unique route number, so the term "route" refers to a contract. Within a route or contract, there are one or more cost segments. Each cost segment specifies its own transportation type and amount of transportation. Each cost segment also has its own annual compensation. In the established methodology, the cost-to-capacity variability analysis is done at the cost segment level. Finally, each cost segment will contain one or more trips, which are defined by their individual routing of stops and frequency. The sum of the transportation specified on all of the individual trips is the amount of transportation specified on the cost segment. This structure is illustrated in the following figure.

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                                 ┌──────────────────┐        ┌ Trip 1
                                 │ Cost Segment A:  │        │ Trip 2
                                 │       Van        │ ◄──────┤ Trip3
                                 │  Transportation  │        │ Trip 4
┌──────────────────┐   ╱         └──────────────────┘        └ Trip 5
│ Route (Contract) │ ◄
│      52345       │ ◄
└──────────────────┘   ╲         ┌──────────────────┐        ┌ Trip 1
                                 │ Cost Segment B:  │        │
                                 │  Tractor Trailer │ ◄──────┤ Trip 2
                                 │  Transportation  │        │
                                 └──────────────────┘        └ Trip 3
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a. Confirmed that the term "cfm" in the formula lnCFM=log(cfm/g_cfm) is the sum of the cubic foot-miles for the individual trips contained in the cost segment. In other words, it is the total cost segment cubic foot-miles which generates the cost segment's annual compensation.

b. Confirmed that the term g_cfm in the formula lnCFM=log(cfm/g_cfm) is the global, or overall, mean for the set of cost segment cubic foot-miles (CFM).

c. Confirmed that the term atripmiles in the formula lnRL=log(atripmiles/g_stripmiles) is the mean of the trip lengths for the trips on a cost segment.

d. Confirmed that the term g_stripmiles in the formula lnRL=log(atripmiles/g_stripmiles) is the global, or overall mean, for the set of mean (or average) trip lengths for all cost segments in the relevant data set.

e. The difference arises because the two variables, CFM (cubic foot-miles) and RL (route length) play different roles in the variability equation. The cubic foot-miles variable is the cost driver in that equation, and as such, is a measure of the total transportation capacity on each contract cost segment. It is the cost segment's total transportation capacity that gives rise to its total costs. In contrast, the route length variable is included to control for a highway-transportation characteristic known as the distance taper. The distance taper is the characteristic that the cost per cubic foot-mile falls as the average distance a truck travels rises. Starting in Docket No. R87-1, the Commission established that average route length should be included in the highway transportation cost-to-capacity variability:[1]

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[1] See, Docket No, R87-1, Appendices to Opinion and Recommended Decision, Volume 2 Of 2, March 4, 1988, at page 24, Appendix J, CS XIV.

Like all studies in the record, the estimation of highway cost
functions is performed at contract level, i.e. the unit of
observation is a contract and the data set employed in
the econometric estimation process consists of annual
payments, annual cubic foot-miles and average route
lengths associated with the contracts in the sample.

The logic of including the average trip length as the measure of truck distance traveled
can be illustrated with a simple example. Suppose that a cost segment has two trips
and each trip has the same length of 150 miles. Using the average length would
provide a value for the RL variable of 150 miles, which reflects the distances the trucks
actually traveled. Using the sum of the trip lengths would provide a value of 300 miles
for the RL, which would not appropriately control for the actual distance taper for the
trucks on the cost segment.

f. Confirmed. In both cases cubic foot-miles is calculated as the product of vehicle
cube, trip length, and frequency. There was a programming change such that, in the
RM2021-1 SAS program, cubic foot-miles are calculated prior to aggregation to the cost
segment rather than after, but this change has no impact on the method of calculation.