

BEFORE THE
POSTAL REGULATORY COMMISSION
WASHINGTON, DC 20268-0001

Periodical Reporting
(Proposal Thirteen)

Docket No. RM2015-7

PUBLIC REPRESENTATIVE COMMENTS
(March 18, 2015)

I. INTRODUCTION

Pursuant to the Commission's Notice in this proceeding,¹ the Public Representative hereby comments on the Postal Service's Petition requesting the Commission to consider a proposed change in analytical principles, proposal thirteen, relating to the Postal Service's periodic reports.² The subject of the Petition is an update of the Postal Service's City Carrier Street Time cost model. The Postal Service anticipates implementing this methodology change as the basis for its FY 2015 reporting of city carrier street time costs. Petition at 2.

These Comments focus primarily on matters relating to the Postal Service's package and accountable field study. The Public Representative identifies several issues that may have biased the variability estimates for in-receptacle, deviation and accountable packages. Some of the issues identified also affect cost pool formation.

II. BACKGROUND OF UPDATED CITY CARRIER STREET TIME MODEL

The city carrier street time model is used to determine the attributable street time costs in cost segment 7, City Carriers–Street Activities. Summary at 1. The city carrier

¹ Notice and Order on Petition for Rulemaking (Proposal Thirteen), Order No. 2294, December 18, 2014. Comments are due no later than March 11, 2015. Reply comments are due no later than April 8, 2015.

² Petition of the United States Postal Service for the Initiation of a Proceeding to Consider Proposed Change in Analytical Principles (Proposal Thirteen), December 11, 2014 (Petition).

network is the largest part of the Postal Service's delivery network, incurring a total direct labor cost in Fiscal Year (FY) 2013 of almost \$16 billion, of which over \$12 billion were in street time costs. Summary at 1. These city carrier street time costs represented 16.7 percent of total Postal Service FY 2013 costs. *Id.*

The current development of attributable city carrier street time costs was calibrated with data collected in 2002. Report at 1. Since that time delivery point sequencing (DPS) has been widely adopted, delivered mail volumes have dropped dramatically, the city carrier network has been restructured, and the flats sequencing system (FSS) was introduced.

In 2010, when the Commission considered future priorities for data collection and analytical work for periodic reporting, the Commission noted the current estimates for city carrier street time collected in 2002 were outdated and noted the need for a new cost study.³ Developments since the previous city carrier street time reduced reliance on one-time studies and permitted the collection of data from existing collection systems. In 2010, the Commission said:

The data underlying the current estimates of the variability of City Carrier street time were collected in 2002, and the subsequent update of the input data in 2004 produced substantially different results which have not been fully examined in public. Current (and future) operations may differ from those measured in 2002 due to volume declines, route adjustments, and the introduction of FSS. The expense of an appropriate study and its potential to broadly impact attributable cost estimates are likely to be substantial. Therefore, it would be preferable to develop a consensus as to the general design and scope of a study before beginning any data collection. It may also be appropriate to investigate the suitability of data from existing collection systems (*e.g.*, Delivery Operations Information System) to reduce the need for reliance on one-time studies. Docket No. RM2011-3, Attachment at 1 of 3.

³ Docket No. RM2011-3, *Priorities for Future Data Collection and Analytical Work Relating to Periodic Reporting*, Notice and Order of Proposed Rulemaking on Periodic Reporting, Order No. 589, November 18, 2010. See also; Notice of the United States Postal Service of Filing Proposal to Update City Carrier Costing, December 11, 2014.

Subsequently, at a technical conference August 7, 2013, the Postal Service explained its basic approach to a new study is to infer the effect of delivery Operation Information System (DOIS) volumes on cost pools on street delivery time divided into regular delivery activity and allied activity derived primarily from recent route evaluation data from Form 3999.⁴ The DOIS data is supplemented with data reflecting volumes collected by carriers from customer receptacles via a special data collection study over 12 delivery days on all routes in 300 ZIP Codes. To estimate volume variability of parcels and accountable mail, the Postal Service sampled the volumes of large parcels requiring delivery by deviation from regular delivery routes and the volume of accountable mail, as well as the time spent for these activities. *Id.* at 4.

The Postal Service's Petition includes two attachments. One is a summary of Proposal Thirteen (Summary); the other is a Report on City Carrier Street Time Study (Report). *Id.* at 1. The Report is a more comprehensive discussion of the Proposal. Petition at 1. The Postal Service concurrently filed two library references, along with an application for non-public treatment for one.⁵ A technical conference was held on January 14, 2015 at which the Postal Service summarized and explained its updated cost model. The Postal Service has responded to Chairman's Information Requests, Nos. 1 and 2 (CHIRs), issued January 6, 2015 and February 4, 2015.⁶

⁴ Summary of Recent Research Activity and Inquiry Regarding Timetable for Completing Analyses and Applying Results, Order No. 1829, September 5, 2013, at 2.

⁵ Notice of Filing of USPS-RM2015-7/1, USPS-RM2015-7/NP1, and Application for Nonpublic Treatment, December 11, 2014 (Notice). Library Reference USPS-RM2015-7/1 includes the Report the Postal Service filed along with the Petition. Library Reference USPS-RM2015-7/NP1 contains supporting non-public material.

⁶ See, Responses of The United States Postal Service to Questions 1-16 and 19-28 of Chairman's Information Request No. 1, January 12, 2015; Responses of The United States Postal Service to Questions 17-18, of Chairman's Information Request No. 1, January 15, 2015; and Responses of The United States Postal Service to Questions 1-10 of Chairman's Information Request No. 2, February 11, 2015.

III. COMMISSION REVIEW

The Postal Service is to provide reports to the Commission to enable it to evaluate the Postal Service's compliance with the various requirements and standards of the Postal Accountability and Enhancement Act (PAEA). 39 U.S.C. § 3652(a)-(c). Section 3652(e) provides that the Commission shall prescribe the form and content of those reports. Section 3652(e)(2) authorizes the Commission to initiate proceedings to improve the quality, accuracy, or completeness of the data provided in the Postal Service's annual compliance reports. The Postal Service filed its petition pursuant to 39 C.F.R. § 3050.11 of the Commission's rules implementing section 3652(e)(2).

IV. POSTAL SERVICE CITY CARRIER STREET TIME STUDY

Proposal 13 updates and refines the three main components of the model: construction of cost pools, estimation of regular delivery variabilities, and estimation of package and accountable delivery variabilities. Summary at 1.⁷ This improvement allows all three parts of the model to be based upon larger, more stable, data sets and improves the statistical foundation for calculating attributable street time costs. *Id.*

The overall impact of the study was a modest decline in volume variable costs from 48.5 percent to 47.3 percent. *Id.* at 9. The ultimate impact of the study determines changes of costs in cents, or fractions thereof, per RPW piece presented in Table 53 on the last page of the Report.⁸ The table is reproduced below.

Notably, the table indicates that the study reduces the FY 2013 CRA costs per RPW piece for all First-Class Mail (except Parcels), and Periodicals, and four Ancillary Services-Certified, COD, Insurance and Registry. The study estimates increases in FY 2013 CRA costs per RPW piece for all Standard Mail, except letters, and all Package

⁷ The study updates the first two of three steps in determining city carrier street time attributable costs—assigning street time costs to cost pools and calculating attributable costs by cost pool. The last step is not part of the study: distributing the total attributable costs by cost pool to individual products through distribution keys measuring delivered volumes. Distribution keys are updated each year with the Carrier Cost System. Report at 1-3.

⁸ The table is also presented in the Petition, Attachment at 10.

Changes in Costs Per RPW Piece

	FY 2013 CRA With New Study	FY 2013 CRA	Difference
FIRST-CLASS MAIL			
SINGLE-PIECE LETTERS	\$0.259	\$0.275	-\$0.016
SINGLE-PIECE CARDS	\$0.261	\$0.278	-\$0.016
PRESORT LETTERS	\$0.116	\$0.119	-\$0.002
PRESORT CARDS	\$0.079	\$0.081	-\$0.002
FLATS	\$0.878	\$0.890	-\$0.011
PARCELS	\$2.400	\$2.361	\$0.040
STANDARD MAIL			
HIGH DENSITY & SATURATION LETTERS	\$0.063	\$0.060	\$0.003
HIGH DENSITY & SATURATION FLATS & PARCELS	\$0.095	\$0.074	\$0.021
EVERY DOOR DIRECT MAIL - RETAIL	\$0.058	\$0.039	\$0.018
CARRIER ROUTE	\$0.196	\$0.187	\$0.009
LETTERS	\$0.102	\$0.105	-\$0.003
FLATS	\$0.459	\$0.452	\$0.008
PARCELS	\$1.586	\$1.524	\$0.062
PERIODICALS			
IN COUNTY	\$0.150	\$0.144	\$0.006
OUTSIDE COUNTY	\$0.369	\$0.363	\$0.006
PACKAGE SERVICES			
BOUND PRINTED MATTER FLATS	\$0.566	\$0.568	-\$0.002
BOUND PRINTED MATTER PARCELS	\$1.238	\$1.216	\$0.022
MEDIA AND LIBRARY MAIL	\$3.967	\$3.940	\$0.027
Ancillary Services			
CERTIFIED	\$2.149	\$2.288	-\$0.138
COD	\$7.348	\$7.609	-\$0.261
INSURANCE	\$2.612	\$2.699	-\$0.086
REGISTRY	\$12.395	\$12.500	-\$0.105

Services, except Bound Printed Matter Flats. Report at 122, Table 53.

Total package and accountable delivery time involves three separate activities: (1) delivering packages into mail receptacles, (2) delivery requiring deviation from regular procedures and (3) delivery of accountables requiring a signature or customer contact.

Separate equations are specified to estimate variabilities for in-receptacle package deliveries and deviation package and accountable deliveries. A field study collected data using a sample drawn from the same 300 ZIP codes included in the collection volume study.⁹ Carriers were asked to record for 12 days their package and accountable volumes and use scanners to record package and accountable delivery times. Petition, Attachment at 7-8. The overall impact of the study was a modest decline in volume variable costs from 48.5 percent to 47.3 percent. *Id.* at 9.

V. PUBLIC REPRESENTATIVE COMMENTS

A. The Public Representative has reviewed the Postal Service's proposal.

The Public Representative has reviewed the Postal Service's proposal and concludes that the study is an improvement in the overall quality, accuracy, and completeness of the data provided in the Postal Service's annual compliance reports of carrier street time costs. However, the Public Representative has several concerns related to the Package and Accountable Field Study.

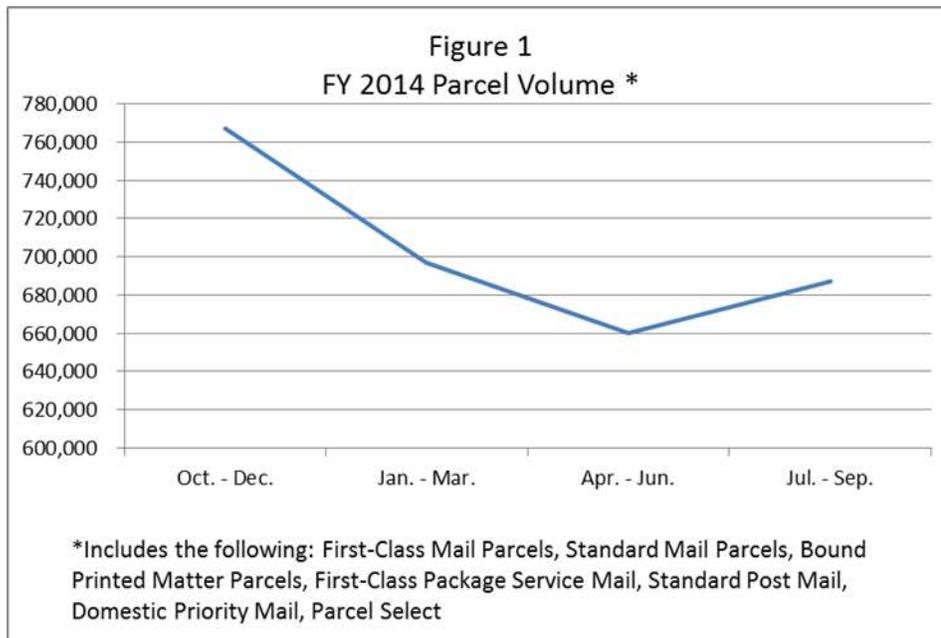
B. Data Collection Issues

The Package and Accountable Field Study is likely biased by the selected time period for data collection and the brevity of the collection period. Collection volumes

⁹ Of the original 300 ZIP Codes in the sample, 289 participated in the study and 282 provided scan and volume data for at least one week.

were obtained for 12 delivery days from Monday, April 29 through Saturday, May 11, 2013. Report at 32.

As Figure 1 shows, Parcel volumes were at their peak in the first quarter, and at the lowest point in the third quarter of FY 2014. Third quarter volumes are 6 percent less than average quarterly volume in FY 2014 and 14 percent less than the peak volume in the first quarter.



During the technical conference, consultant to the Postal Service, Dr. Michael Bradley referred to the time period reflected in the study as “vanilla¹⁰.” He further explained that mail volumes were at neither seasonal peaks nor seasonal troughs with respect to mail volume during a 12-month period. In fact, for parcels, which are the focus of the study, volumes are at their lowest point in the third quarter of the year. Therefore, the time period selected cannot be representative of the average volume of parcels.

The short duration of the study is also problematic. For the study to be meaningful, the underlying data needs to span a time frame adequate for the analysis of

¹⁰ Technical Conference for Docket No. RM2015-7 (Proposal 13), audio file.

changes in the level of cost drivers. The Postal Service has offered no evidence to support a conclusion that volume variability that is produced by peak or trough volume patterns can be captured by such a limited data collection time frame. Although the duration of data collection captures daily variations in parcels volume, it does not capture monthly, quarterly, seasonal, or annual changes. For example, it fails to capture the unusually large number of parcels and their comprising a significantly large portion of mail during the winter holiday season. Variations in volume throughout the year affect the need for overtime by city carriers and the use of casual and temporary employees. These volume-driven adjustments to labor may affect productivity, and consequently variability.

The Postal Service estimates its in-receptacle and deviation delivery time models using the data collected during the Package and Accountable Field Study. These models are used to calculate the in-receptacle package, deviation package and accountable variabilities. As the study suffers from sampling bias due to its limited duration and the uncharacteristic time period, the resulting variabilities are also questionable.

The Postal Service also uses data collected in the Package and Accountable Field Study to calculate the proportion of total street time dedicated to package and accountable delivery. Report at 16. These proportions are used to modify the street time proportions used to construct the cost pools. Report at 17. The Postal Service's selection of the April 29 through May 11, 2013 time period, likely understates the proportion of total street time dedicated to package and accountable delivery, reducing the costs attributed to parcels. As most parcel products are competitive, understating the costs attributable to parcels has serious compliance implications.

C. The Postal Service's Estimate of "Average Time per Study Scan" is Unreasonable and Inconsistently Applied

The Postal Service developed delivery time estimates for various route activities by having carriers record the time they spent at each activity. Report at 91. Carriers

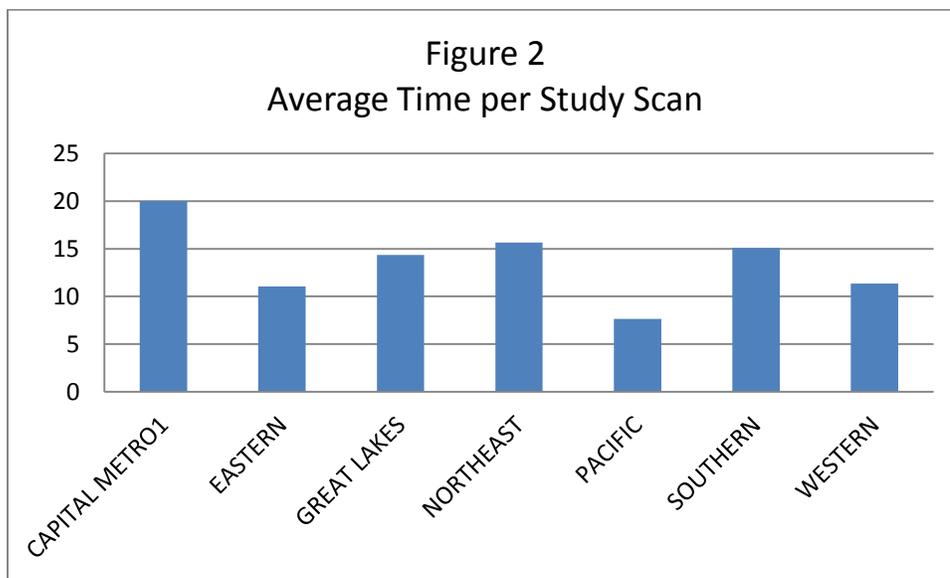
used hand-held scanners to scan a limited number of special barcodes, which indicate the beginning and end of an activity. *Id.* The elapsed time for each activity was measured as the difference between the initial scan and the terminal scan. *Id.* However, the elapsed time includes the time to perform the terminal scan. Consequently, the Postal Service adjusts the elapsed time to exclude the time to perform the terminal scan. It does this by calculating an “average time per study scan” and subtracting it from the elapsed time for the activity. *Id.* at 99. The “average time per study scan” was developed from data provided by Local Coordinators. Local Coordinators at select postal sites maintained a record of the additional street time incurred by carriers participating in the study. The Postal Service aggregated the responses from all responding postal sites. It calculated the “average time per study scan” by dividing the aggregate additional street time incurred by the number of study scans performed by the carriers at the select postal sites.

Conceptually, the Public Representative agrees that adjusting the elapsed time to account for time to perform the terminal scan is reasonable. However, the Public Representative questions the Postal Service’s methodology for calculating the “average time per study scan.”

The Postal Service’s assumption that all extra route time by carriers is caused by performing the extra scan is baseless. The Postal Service does not provide a “control” or base time to determine whether carriers performed their delivery activities at their usual pace. Externalities, including weather and traffic conditions may have contributed to the extended time spent on the street. Moreover, carriers may have a financial incentive to over report extra time associated with scanning because carriers are paid by the hour.

In its Response to CHIR 2, Question 8, the Postal Service provided the data by region it relied upon for the calculation of “average time per study scan.” It appears that the extra time was reported in hours, which makes it nearly impossible to derive a precise per scan time in seconds. The greatest possible error when measuring is considered to be one half of the measuring unit. If, in fact the extra time was reported in

hours, the measurement error could be as much as half an hour, or 900 seconds. Furthermore, as Figure 2 illustrates, “average time per study scan” varies significantly by region. This is counterintuitive, because the steps involved in scanning are the same regardless of the region. Twelve seconds is a long time for scanning, when compared with the scan time reported for Delivery Confirmation (6.23 seconds). Since carriers used the same scanners for the study that they use regularly on their routes, the possibility that unfamiliarity with the scanning device may have increased the time needed to perform the scans is unlikely. The Public Representative concludes that Postal Service’s estimate is too crude to be relied upon to adjust the elapsed time.



One possible substitute for the 12 seconds used by the Postal Service, is the FY 2014 Delivery Confirmation transaction time, which is 6.23 seconds. The Public Representative modified the Postal Service’s Deviation Delivery Time Model and its In-receptacle Package Delivery Time Model to reflect the 6.23 second scan time. The resulting variabilities are shown in Table 1.

Table 1		
Calculated Package and Accountable Variabilities		
Variability		
	12 second per scan time	6.23 second per scan time
Shape		
In Receptacle Package	48.80%	45.99%
Deviation Package	31.10%	28.71%
Accountable	18.00%	18.11%

Reducing the adjustment, results in lower variabilities for in-receptacle and deviation parcels. Conversely, the variability of accountables increased slightly from the Postal Service's estimate.

The effect on unit costs for the market dominant parcel categories are presented in Table 2. With the exception of Standard Mail High Density and Saturation Flats and Parcels, the lower scan time reduced the unit costs for market dominant parcels.

Table 2		
Changes in Costs Per RPW Piece		
	FY 2013 CRA With New Study (12 second per scan)	FY 2013 CRA With New Study (6.23 second per scan)
FIRST-CLASS MAIL PARCELS	\$2.400	\$2.390
STANDARD MAIL HIGH DENSITY & SATURATION FLATS & PARCELS	\$0.095	\$0.096
STANDARD MAIL PARCELS	\$1.586	\$1.574
PACKAGE SERVICES BOUND PRINTED MATTER PARCELS	\$1.238	\$1.225
PACKAGE SERVICES MEDIA AND LIBRARY MAIL	\$3.967	\$3.955

The Public Representative has one additional concern regarding the scan time included in the elapsed time measure. The Postal Service adjusts the elapsed time measure to account for scan time in the variability models, but it uses the unadjusted elapsed time for cost pool formation. The Postal Service uses the unadjusted total delivery time compared to the total street time to calculate the proportion of total street time dedicated to package and accountable delivery. Because unadjusted delivery time is greater than delivery time with scan time removed, the proportion of street time dedicated to parcels is overstated.

The Public Representative recommends that the Commission reject the Postal Service's estimate of the "average time per study scan" and consider using the FY 2014 Delivery Confirmation transaction time instead as a reasonable proxy for time per scan. In addition, the Postal Service should adjust the proportion of street time dedicated to parcels to account for scan time inadvertently included in carrier street time .

D. Relationship between In-receptacle and Deviation Parcels

The Postal Service asserts that the "actions required to deliver in-receptacle packages are not related to the actions required to deliver deviation packages and accountables." The Postal Service therefore contends that it is appropriate to specify separate equations to estimate the separate variabilities for in-receptacle package deliveries and deviation package and accountable deliveries. Petition at 7.

The Public Representative is concerned that the proposed methodology fails to recognize the relationship between in-receptacle parcels and deviation parcels. More specifically, the Postal Service omits necessary explanatory variables from its equations and its data collection method may have mistakenly identified some deviation parcels as in-receptacle parcels.

The Postal Service mistakenly assumes that there are two types of parcels, small parcels and large parcels (excluding accountables¹¹). Small parcels are those that fit into a mail receptacle. Large parcels are those that do not fit into such a receptacle and therefore, require the carrier to deviate from the route to make delivery. The Postal Service provides no data to support its binary view of parcels. The Public Representative however, suggests that there are three types of parcels. There are large parcels that require the carrier to deviate from the route, small parcels that fit into the receptacle, and small parcels that also require the carrier to deviate from the route.

¹¹ Accountable items include registered, certified, insured, or COD, as well as mail for which a return receipt or a return receipt for merchandise is requested or for which the sender has specified restricted delivery.

The Postal Service's methodology reflects its binary view of parcels and fails to capture the likelihood that mail volume in general but small parcel volume in particular affect the volume of parcels delivered as deviation parcels, requiring a greater amount of carrier time. As volumes increase, carriers are more likely to have to deviate from their routes to deliver small parcels due to an inability to fit these small parcels into the receptacle. Intuitively, the greater the volume of other mail, especially small parcels, the higher the likelihood that parcels small enough to fit in a receptacle may have to be delivered by deviating from the route. The equations estimated for in-receptacle and deviation parcels fail to capture this effect.

The Postal Service's binary view of parcels may have caused errors in the data collection process. As Dr. Bradley explained in the technical conference, carriers recorded the number of in-receptacle parcels, accountables, and deviation parcels before heading out to make deliveries. While carriers are generally familiar with the type and size of the receptacles on their routes, the Postal Service had no mechanism in place to ensure that the quantity of parcels recorded as in-receptacle parcels were in fact delivered to the receptacle. Even if the carrier accurately identified a parcel as an in-receptacle parcel based on its size before delivery, circumstances not known until delivery is attempted may cause the carrier to deviate from the route to deliver the parcel.

To better understand the extent to which misclassified parcels may be an issue, the Commission should require that the Postal Service analyze route level data to determine if any observations indicate that some deviation parcels may have been recorded as in-receptacle parcels. For example, observations where either there is volume recorded for in-receptacle parcels but no associated scan time or there is scan time for deviation parcels but no volume would indicate a problem. However, if the route level data show no obvious inconsistencies, the likelihood that misclassification of parcels was pervasive would likely be small.

The Public Representative examined the field study data provided by the Postal Service. She did not find any inconsistencies at the zip code level. There were no

zipcode days with a positive value recorded for in-receptacle parcel volume without a corresponding in-receptacle parcel scan time. There were also no instances where deviation time was recorded but no deviation volume. The lack of inconsistencies at the zip code level is not an indication that that parcels were not misclassified. Due to aggregation, the problem was not likely to exhibit itself at the zip code level.

The Public Representative tested whether misclassified parcels may have had an effect on the variabilities of in-receptacle and deviation parcels. Although rudimentary, the analysis provides an indication of changes in variabilities that would result from the reclassifying of parcels that may have been falsely recorded as in-receptacle parcels. Figure 3 illustrates, the changes in variability that result from moving 0.1 percent to 1.0 percent of in-receptacle parcels to deviation parcels¹². The analysis, applied the percentage changes to all zip code days.

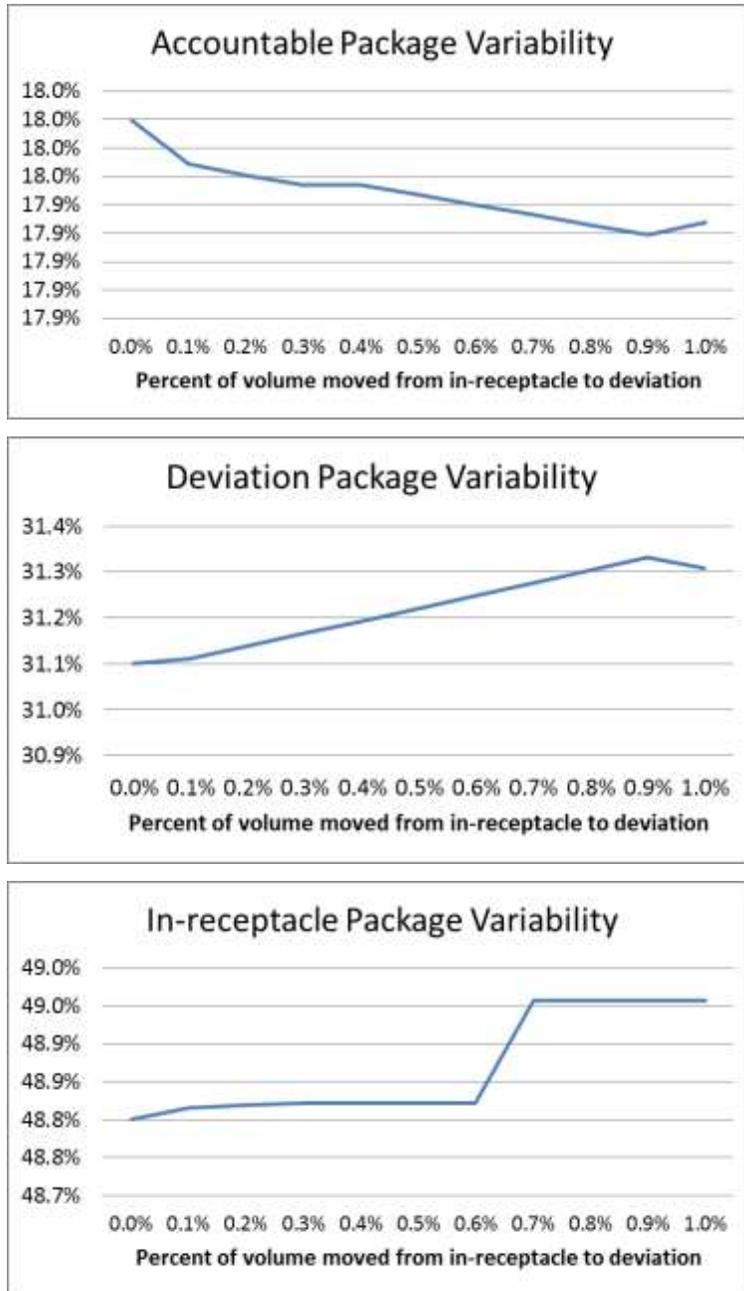
The following SAS code was used in the Deviation_Acct_Variabilities_Model and the In_Receptacle_Variabilities_Model:

```
data origvolume; set pab.package_study_volume_masked_zips;
rename in_receptacle =originreceptacle;
rename deviation=origdeviation;
newIR=.99*in_receptacle *The value set for newIR adjusts the volumes of the
two parcel types;
IRremaindr=in_receptacle-newIR;
newdev=deviation+IRremaindr;run
data volume; set origvolume;
rename newIR=in_receptacle;
rename newdev=deviation;
if zip in('85918','43477','41497','68425','94118','26979','45896') then
delete;run;
```

It was inserted in place of:

```
data volume; set pab.package_study_volume_masked_zips;
data volume; set volume;
if zip in('85918','43477','41497','68245','94118','26979','45896') then
delete;run;
```

Figure 3



As the figure 3 shows, even a small number of mistakes in the classification of small parcels as in-receptacle when the carrier had to deviate from the route, may significantly impact the variability estimates. If this type of mistake did in fact occur, the

variability estimate for in-receptacle and deviation parcels may be understated. The opposite is true for accountables.

The Public Representative recommends that future field studies distinguish between parcel size and the type of delivery. To better evaluate the extent to which deviation parcels may have been classified as in receptacle parcels, the Postal Service should do an analysis at the route level. In addition, the Postal Service should include interaction terms in its delivery equations to capture the effect of mail volume in general on the volume of deviation parcels.

E. Future Updates to the City Carrier Street Time Study

The Commission should require that the Postal Service update its City Carrier Street Time cost model in its entirety, at a minimum, every five years. However, in the interim, the Postal Service should conduct a new Package and Accountable Field Study. As discussed in these comments, the Package and Accountable Field Study has several flaws that significantly bias the study results. While the Public Representative is aware that special studies are subject to financial constraints, she urges the Postal Service to update its City Carrier Street Time cost model with data collected through a new field study as soon as possible.

VI. CONCLUSION

The Public Representative respectfully submits the foregoing comments for the Commission's consideration.

Respectfully submitted,

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