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

POSTAL RATE AND FEE CHANGES PURSUANT TO PUBLIC LAW 108-18	Docket No. R2005–1

RESPONSES OF POSTAL SERVICE WITNESS KELLEY
TO INTERROGATORY OF VALPAK (VP/USPS-T14-1-2.c), REDIRECTED FROM
WITNESS BRADLEY
(June 2, 2005)

The United States Postal Service hereby provides the responses of witness

Kelley to the following interrogatory of ValPak: VP/USPS-T14-2.c, filed on May 19,

2005, redirected from witness Bradley

Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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June 2, 2005

VP/USPS-T14-2.

The responses to VP/USPS-T30-1-3 state that in FY 2004 the Postal Service had the following number of city carrier routes:

	Number of Routes	Percent
Foot	11,454	7.0%
Park & Loop	87,793	53.7
Curbline	38,686	23.7
Dismount	25,418	15.6
Subtotal	163,351	100.0%
Other	2,267	
TOTAL	165,618	

c.   Please discuss why it would or would not be appropriate to treat the sample as a random stratified sample of route types, and to weight the sample results so as to provide a more accurate representation of the universe of route types.

Response

c.   It would not be appropriate. I present two reasons why this weighting scheme is inappropriate. One, the primary unit of study for the CCSTS was ZIP Code, not letter route. Treating the CCSTS as a random stratified sample of route types would necessarily bias the estimates at the ZIP Code level since each selected ZIP Code would no longer have weights as the inverse of their selection probability. Two, treating the CCSTS as a stratified random sample of route types produces biased estimates at the route level as well, since the routes no longer have weights as the inverse of their selection probability. I will justify this statement through an example. Suppose there are only two ZIP Codes in the universe, A and B, and only two route types in the universe, curbline and foot. Suppose the routes are distributed to the universe across the two ZIP Codes by

the table below, and further assume that the ZIP Code is the primary sampling

unit (as is the case in the CCSTS) and one ZIP is to be selected randomly.

ZIP	Curbline Routes	Foot Routes	Total Volume (Curbline Routes)	Total Volume (Foot Routes)
A	3	7	200	300
B	5	5	500	200

Since the sample size is one ZIP Code, there are only two possible

samples, ZIP A or ZIP B. I am about to demonstrate that if this sample design

were treated as a random sample of route types, it would produce biased

estimates of the total volume on curbline routes and foot routes.

If ZIP A is selected, then the corresponding weights are 8/3 and 12/7 for

curbline and foot routes respectively. The total estimated volume for the

population of curbline and foot routes, based on ZIP A being selected, is

200(8/3)= 533 and 300(12/7)= 514 for curbline and foot routes respectively.

Following a similar methodology, if ZIP B is selected, the volume estimates for

curbline and foot routes are (8/5)(500) = 800 and 12/5(200) = 480. Given that

ZIP Codes A and B have an equal chance of being selected, on average, the

total volume estimated from treating this sample as a stratified random sample of

route types is 667 (average of 533 and 800) and 497 (average of 514 and 480)

for curbline and foot routes respectively. However, the true population totals are

700 and 500 for curbline and foot routes respectively.

Response of Postal Service Witness John Kelley To Interrogatories Posed by Valpak, Redirected from Witness Bradley

Conversely if a weight of 2 was used (inverse of the probability of selection), the total volume estimates at the route level (average of 400 and 1000 for curbline routes and 600 and 400 for foot routes), as well as at the ZIP level, would be unbiased.

In summary, there are two reasons why I deem it inappropriate to regard the sample design in the CCSTS as a stratified random sample of route types, 1) it deviates from our objective of estimating at the ZIP Code level and 2) it produces biased estimates at the ZIP Code and route level.

CERTIFICATE OF SERVICE

       I hereby certify that I have this date served the foregoing document in accordance with Section 12 of the Rules of Practice and Procedure.

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