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

DIRECT TESTIMONY
OF
VIRGINIA J. MAYES
ON BEHALF OF THE
UNITED STATES POSTAL SERVICE

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ASSOCIATED LIBRARY REFERENCES

USPS-LR-K-88: Dropship Cost Avoidances for Standard Mail and Periodicals

The cost studies contained in this library reference include the updated calculation of the transportation and non-transportation components of Standard Mail dropship cost avoidances, and the non-transportation component of Periodicals dropship cost avoidances. This library reference performs the same role in this case as did USPS-LR-J-68 in Docket No. R2001-1.

USPS-LR-K-89: Parcel Post and Bound Printed Matter Transportation Costs, and Development of Costs for Bulk Parcel Return Service

The cost studies contained in this library reference include the updated calculation of the transportation costs associated with the rate categories of Parcel Post, the transportation costs of Bound Printed Matter, and the cost of Bulk Parcel Return Service. This library reference performs the same role in this case as did USPS-LR-J-64, Attachments B, C, F, and H, in Docket No. R2001-1.

USPS-LR-K-90: Description and Program Documentation of Cube-Weight Relationship Estimation

The purpose of this library reference is to describe and document the regression analyses used to estimate the cubic feet per piece at different weight increments for Inter-BMC, Intra-BMC, and Parcel Select Parcel Post. The results of this analysis are used in USPS-LR-K-89 to develop the distribution of transportation costs to the rate categories within Parcel Post. This library reference is an update of the analyses presented in USPS-LR-J-66 in Docket No. R2001-1.

DIRECT TESTIMONY
OF
VIRGINIA J. MAYES

AUTOBIOGRAPHICAL SKETCH

My name is Virginia J. Mayes. I am the Manager of Special Studies in Corporate Financial Planning, part of the Finance Department at the United States Postal Service Headquarters. I have previously testified before the Postal Rate Commission on several occasions.

In Docket No. R2001-1, I testified on the estimated cost avoidances used to support the Standard Mail and Periodicals destination entry discounts. In Docket No. R2000-1, I testified as the Postal Service's witness on rate level proposals. I testified on rate design for Parcel Post in Docket Nos. R97-1 and MC97-1, Parcel Reclassification Reform. I designed rates for both domestic and international Express Mail in 1990, and testified on behalf of the Postal Service on domestic Express Mail rate design in Docket No. R90-1. I was a rebuttal witness on behalf of the Postal Service in Docket No. MC93-1, the Bulk Small Parcel Service case. At the request of the Internal Revenue Service, I provided testimony on revenue forgone and rate development for preferred rate mail categories, to be used in the case of *United Cancer Council v. Commissioner*, Docket No. 2008-91 X.

I joined the Postal Service in 1987 as an Economist in the Rate Development Division, subsequently renamed Pricing, where I worked on revenue forgone and rate design issues. I also completed a detail assignment in Forecasting. Prior to joining the Postal Service, I was employed with the economic consulting firm of Robert R. Nathan Associates. I had also worked as a statistician at the Bureau of the Census and as an economic analyst with the International Trade Commission. I received a Bachelor's Degree in economics and psychology from Washington University in St. Louis, Missouri and completed a Master's Degree in economics at Brown University.

I. PURPOSE AND SCOPE OF TESTIMONY

This testimony presents the updated calculation of the transportation and non-transportation components of Standard Mail destination entry cost avoidances, the non-transportation component of Periodicals destination entry cost avoidances, the transportation costs for Parcel Post and for Bound Printed Matter, and the costs of Bulk Parcel Return Service for the test year 2006. These analyses are being provided in light of the Postal Rate Commission's views expressed in Docket No. R94-1. PRC Op., R94-1, Vol. I, at 10. The non-transportation cost avoidances for Standard Mail dropship activity are provided to witness Cutting (USPS-T-26). The cost avoidances associated with Standard Mail and Periodicals dropship activity, the transportation costs of Parcel Post and Bound Printed Matter, and the costs of Bulk Parcel Return Service are provided to witnesses Robinson (USPS-T-27) and Taufique (USPS-T-28). The Parcel Post transportation costs are relied upon by witness Moser (USPS-T-23) for use in developing the final adjustments to the rollforward cost forecasting model.

II. GUIDE TO TESTIMONY

The cost models used to estimate the dropship cost avoidances for Standard Mail and Periodicals are found in the Category 2 library reference USPS-LR-K-88. The Parcel Post and Bound Printed Matter transportation cost analyses and the estimation of the cost of Bulk Parcel Return Service are found in the Category 2 library reference USPS-LR-K-89. In addition to these two library references, I am also sponsoring library reference USPS-LR-K-90. Library reference USPS-LR-K-90 contains the description and program documentation of the estimation of the cube-weight relationships for the major rate categories within Parcel Post. The results of the cube-weight analyses are used in the development of the Parcel Post transportation costs in USPS-LR-K-88.

In addition to the material described above, the cost models also rely on data inputs that have been generated by other postal witnesses in this case. Witness Tayman (USPS-T-6) provides productive hourly wage rates (USPS-LR-K-50); Witness Thress (USPS-T-7, Attachment A) provides base year volumes and test year volume forecasts; Witness Smith (USPS-T-13) provides piggyback factors (USPS-LR-K-52); Witness Van-Ty-Smith (USPS-T-11) provides deaveraged wage rates, overhead factors and premium pay factors (USPS-LR-K-55), and volume variability factors (USPS-T-11,

Table 1); Witness Taufique (USPS-T-28) provides the volumes associated with the Negotiated Service Agreements (USPS-T-28, Exhibit A), used to adjust the test year volumes; Witness Miller (USPS-T-20) provides the Media Mail average modeled cost and adjustment factors (USPS-K-46); Witness Waterbury (USPS-T-10) provides test year transportation costs (USPS-K-7); Witness Meehan (USPS-T-9) provides base year transportation costs (USPS-LR-K-5); and Witness Moser (USPS-T-23) provides the calculated final adjustments to Standard Mail Cost Segments 8 and 14 (USPS-K-59). I also rely on USPS-LR-K-92 (sponsored by witness Loetscher, USPS-T-32) for the mail entry profile of Standard Mail and data on the characteristics of Periodicals Mail; on USPS-LR-K-77 (a Category 1 library reference) for the billing determinants for Parcel Post and Bound Printed Matter; and on the detailed Parcel Post data provided in USPS-LR-K-47 (sponsored by witness Miller, USPS-T-20) for use in developing the estimated cube-weight relationships provided in USPS-LR-K-90.

III. STANDARD MAIL DESTINATION ENTRY COST AVOIDANCES

This testimony is an update of the Standard Mail destination entry cost avoidance testimony presented in Docket No. R2001-1, USPS-T-23. In general, the cost methodology that was presented by witness Crum (USPS-T-27) in Docket No. R2000-1 has been used again in this docket to develop the destination entry cost avoidances for Standard Mail. The changes in the estimated cost avoidances from those presented in Docket No. R2001-1 are due to the use of new input data and updates of parameters to reflect the most recent available data and a different test year.

A. Standard Mail Destination Entry Transportation Cost Avoidances

The analysis of transportation cost avoidances provided in this case uses the same approach first presented by witness Acheson in Docket No. R90-1, and most recently by witness Mayes (USPS-T-23) in Docket No. R2001-1. The first step in this approach is to calculate the total transportation cost that the Postal Service would avoid if all Standard Mail were entered by the mailers at the destination delivery unit (DDU), the furthest downstream entry point. Under these circumstances, the Postal Service would avoid most purchased transportation costs (cost segment 14) and certain postal-owned vehicle costs (cost segment 8).

The total cost per pound of transporting all Standard Mail to the destination delivery unit in the test year is calculated in Appendix B, Table 2 of USPS-LR-K-88 by dividing the test year adjusted Standard Mail transportation costs by total test year Standard Mail pounds. As was noted by witness Crum in Docket No. R2000-1, some transportation costs are incurred on the basis of weight, but the costs in the highway and railroad cost components are incurred on the basis of cubic feet. However, for these purposes, weight is considered to be an adequate proxy for costs incurred on the basis of cubic feet, due to the relative uniformity of the material comprising Standard Mail and the relatively similar density.

The total cost per pound of transporting all Standard Mail to the destination delivery unit is viewed as the weighted average of the unit costs of transporting Standard Mail entered at different upstream facilities. The development of an equation to represent this summation of costs is shown at Table 9 of Appendix B of library reference USPS-LR-K-88.

In the equation noted, $(Y^{origin} * X^{origin}) + (Y^{DBMC} * X^{DBMC}) + (Y^{DSCF} * X^{DSCF})=Z^{T}$, the unit cost to the Postal Service of transporting all Standard Mail to the destination delivery unit is Z^{T}. Y^{origin} is the percentage of mail dropshipped to non-destination facilities or plantloaded to all facilities (in a plantload situation, the Postal Service is providing the transportation); X^{origin} is the unit cost to the Postal Service of transporting Y^{origin} mail to the destination delivery unit. The percentages of Standard Mail dropshipped to destination bulk mail centers (BMC) and to destination sectional center facilities (DSCF) are Y^{DBMC} and Y^{DSCF}, respectively, and the unit costs to the Postal Service of transporting that mail to the DBMC and DSCF are X^{DBMC} and X^{DSCF}, respectively.

All of the variables in the transportation equation are estimated except for X^{origin}, which represents the costs avoided by mail that is dropshipped to the DDU. This is the variable for which the equation is solved, and the basis for the calculation of the cost avoidances. For example, the costs avoided by mail that is dropshipped to the DBMC can be represented as the value of $(X^{origin} – X^{DBMC})$.

An entry profile for Standard Mail, provided in Appendix A, Table 1 of USPS-LR-K-88, gives the distribution of test year Standard Mail pounds by entry point. These

pounds are then distributed to flowpaths describing the set of facilities through which the mail travels on the way to the destination delivery unit, and to the type of transportation leg in Appendix B, using the flowpaths provided in Tables 2 and 3 of Appendix A. These flowpaths are essentially the same ones presented in Docket Nos. R97-1, R2000-1 and R2001-1. The summary of the distribution of pounds to flowpath and transportation leg is provided in Table 3 of Appendix B.

The distribution of pounds is then matched with the costs by transportation category. The base year transportation costs by account from the base year Cost and Revenue Analysis (CRA) report, as presented in the testimony and workpapers of witness Meehan (USPS-T-9), are translated into test year costs using projection factors developed in Table 5 of Appendix B. These projection factors represent the ratio of the test year cost segment 14 components as presented by witness Waterbury (USPS-T-10) to their base year counterparts. The estimated test year volume variable transportation costs are adjusted based on the proportion of intra-SCF and postal-owned vehicle costs that support the transportation network of Standard Mail pieces and are not incurred in other types of activities such as delivery. The adjusted test year volume variable transportation costs are divided into three categories: intra-BMC, intra-SCF and Other (Appendix B, Table 8). Only the costs on the intra-BMC and intra-SCF transportation legs are necessary to solve the transportation cost equation.

The cost per pound by transportation category is estimated in Table 9 of Appendix B by matching the test year pounds by transportation category developed in Table 3 with the test year costs developed in Table 8. The equation is then solved for the cost per pound of transporting mail entered at origin facilities to the destination delivery unit, given the proportions of mail entered at destination SCFs, destination BMCs and origin facilities. The cost avoidances estimated for DBMC, DSCF and DDU entry are developed by subtraction. The potential transportation cost avoidances are provided in Table 1 at the end of this testimony.

B. Standard Mail Destination Entry Non-Transportation Cost Avoidances

The non-transportation cost avoidances associated with destination entry of Standard Mail are estimated using the equation first presented in Docket No. R90-1 by witness Acheson and most recently presented by witness Mayes in Docket No. R2001-1 (USPS-T-23). The equation estimates the total cost per pound of crossdocking Standard Mail. The equation for the non-transportation portion of the destination entry cost avoidance is virtually identical in approach to the transportation cost equation. The first step is to calculate the total crossdocking cost that the Postal Service would avoid if all Standard Mail were entered by mailers at the destination delivery unit (DDU).

The total cost per pound of crossdocking all Standard Mail before it reaches the destination delivery unit in the test year is calculated in Appendix C, Table 4 of USPS-LR-K-88 by dividing the test year Standard Mail total handling cost by total test year Standard Mail pounds. The total test year handling cost is developed by reference to the same mailflows used to estimate the transportation cost portion of the destination entry cost avoidances. The percent of Standard Mail pounds that is transported on each of the mailflows is calculated. The weighted average unit costs of handling sacks, trays and pallets at the intermediate facilities are calculated in Appendices C and D, and are used to determine the total handling costs at the intermediate facilities. The mail characteristics data provided in Tables 8 and 9 of Appendix C are used to weight the unit costs.

The total cost per pound of crossdocking all Standard Mail before it reaches the destination delivery unit is viewed as the weighted average of the unit costs of crossdocking Standard Mail entered at different upstream facilities. The development of an equation to represent this summation of costs is shown at Table 1 of Appendix C of USPS-LR-K-88.

In the equation, $(Y^{origin} * X^{origin}) + (Y^{DBMC} * X^{DBMC}) + (Y^{DSCF} * X^{DSCF})=Z^{T}$, the unit cost to the Postal Service of crossdocking all Standard Mail before it reaches the destination delivery unit is Z^{T}. Y^{origin} is the percentage of mail dropshipped to non-destination facilities or plantloaded to all facilities; X^{origin} is the unit cost to the Postal Service of crossdocking Y^{origin} mail on its way to the destination delivery unit. The percentages of Standard Mail dropshipped to destination bulk mail centers (BMC) and

to destination sectional center facilities (DSCF) are Y^{DBMC} and Y^{DSCF}, respectively, and the unit costs to the Postal Service of crossdocking that mail before it reaches the destination delivery unit are X^{DBMC} and X^{DSCF}, respectively.

All of the variables in the non-transportation equation are estimated except for X^{origin}, which represents the costs avoided by mail that is dropshipped to the DDU. This is the variable for which the equation is solved, and the basis for the calculation of the cost avoidances. The cost avoidances are calculated as the difference between X^{origin} and the crossdocking costs estimated to be incurred at each of the destination facilities. For example, the value of $(X^{origin} - X^{DBMC})$ represents the crossdocking costs avoided by mail that is dropshipped to the DBMC. The potential non-transportation cost avoidances associated with destination entry of Standard Mail are provided in Table 1 at the end of this testimony.

As both the transportation costs and the non-transportation costs potentially avoided by Standard Mail when it is entered at downstream facilities have been estimated on a per-pound basis, they can be added together to develop the estimated per-pound destination entry cost avoidances. The results of adding the transportation and non-transportation cost avoidances together are provided in Table 1 at the end of this testimony.

IV. PERIODICALS DESTINATION ENTRY NON-TRANSPORTATION COST AVOIDANCES

This testimony is an update of the Periodicals destination entry non-transportation cost avoidance testimony presented in Docket No. R2001-1, USPS-T-23. A discount for Periodicals based on entry at the destination SCF was first developed in Docket No. R84-1 based on the cost work prepared by witness Byrne. The cost analysis was revised in Docket No. R87-1 and by witness Acheson in Docket No. R90-1, at which time a savings estimate was developed to support the destination delivery unit discount. Updated versions of the analysis were presented in Docket Nos. MC95-1, R97-1, R2000-1, and R2001-1. In Docket No. R2001-1, a cost avoidance for entry at the destination Area Distribution Center (DADC) was introduced.

A. Approach to Calculating Periodicals Destination Entry Cost Avoidances

In general, the cost methodology that was presented by witness Mayes (USPS-T-23) in Docket No. R2001-1 has been used again in this docket to develop the destination entry non-transportation cost avoidances for Periodicals. Periodicals that are entered by mailers at origin SCFs or intermediate facilities upstream from the destination SCF must undergo mail processing operations of a bulk transfer type, such as crossdocking, at the non-destination facilities. By entering their Periodicals at destination facilities, mailers save the Postal Service the cost of these bulk transfer operations. The purpose of this testimony is to update the estimated mail processing cost avoidances associated with the destination entry of Periodicals. The changes in the estimated cost avoidances from those presented in Docket No. R2001-1 are due to the use of new input data and updates of parameters to reflect the most recent available data and a different test year.

The types of bulk transfer handlings incurred at non-destination facilities include the unloading of Periodicals containers (pallets, sacks and trays) from trucks at inbound docks, movement of these containers through the facilities to the outbound docks, and loading these containers onto trucks at the outbound docks. In this case, the possible combinations of containers, facilities and container movements have been modeled using the models in Appendix F of USPS-LR-K-88. The models incorporate estimates of productivities for BMC and SCF crossdocking operations, adjusted by the appropriate volume variability estimates; container conversion factors; container volume proportions derived from the mail entry profile provided in USPS-LR-K-92; and other data, such as updated wage rates and piggyback factors. The inputs used in the models appear in Tables 1 and 2 of Appendix F. The models develop average costs for handlings at the BMC and at the SCF, using the estimated proportions of Periodicals in each type of container and incurring each type of handling. These weighted average costs are then used in combination to derive the costs avoided at each possible type of destination entry facility.

B. Assumptions Used in Periodicals Destination Entry Models

The savings estimates generated in Appendix F of library reference USPS-LR-K-88 are calculated relative to Zone 1&2 Periodicals mail processing costs. In previous

proceedings, the Postal Service has estimated that non-destination SCF Zone 1&2 periodicals will incur one transfer through a non-destination transfer hub before it is dispatched to the appropriate destination SCF. The costs of crossdocking mail at a BMC are used as proxies for the costs of crossdocking mail at transfer hubs because it has been assumed that most transfer hubs are BMCs.

In previous proceedings, it has been assumed that 20 percent of non-destination SCF Zone 1&2 Periodicals incur a trip through a non-destination SCF/ADC before being dispatched to the destination SCF. It has also been assumed that 3.14 percent of non-destination SCF Zone 1&2 Periodicals go directly from the destination transfer hub to the destination DDU, bypassing intermediate handlings at the destination ADC or destination SCF. Those assumptions were utilized in the current calculations.

A discount for Periodicals entered at the destination Area Distribution Center (ADC) was introduced in Docket No. R2001-1 by witness Taufique (USPS-T-34). The cost analysis underlying that discount assumed that mail entered at the DADC bypassed a crossdocking at the destination transfer hub. The calculation of the costs avoided by a DADC entry incorporates the adjustments for the 3.14 percent of the time that Periodicals are assumed to go straight from the transfer hub to the DDU and the 80 percent of the time that Periodicals are assumed to go straight from the transfer hub to the DSCF, bypassing the DADC.

The results of the estimation of Periodicals destination entry non-transportation cost avoidances on a per-pound basis appear in Table 1 at the end of this testimony.

V. BOUND PRINTED MATTER TRANSPORTATION COSTS

This testimony is an update of the development of transportation unit cost per pound for the Bound Printed Matter (BPM) categories: non-dropship, DBMC, DSCF and DDU presented in Docket No. R2001-1 by witness Eggleston (USPS-T-25). In general, the cost methodology that was presented by witness Eggleston has been used again in this docket. The changes in the estimated costs from those presented in Docket No. R2001-1 are due to the use of new input data and updates of parameters to reflect the most recent available data and a different test year. The cost model is provided in library reference USPS-LR-K-89, Attachment A.

The first step in developing the BPM transportation cost estimates is to divide base year transportation costs (from USPS-LR-K-5) into four functions: local, intermediate, long-distance zone-related (ZR) and long-distance non-zone-related (NZR). The next step in the development requires estimating the test year highway, rail, water and air costs for each of the four functions. In Docket No. R2001-1, witness Eggleston was required to make adjustments between the base year and the test year for some transportation cost categories due to the fact that the FedEx agreement had not been in place during the base year, but was expected to be in place during the test year. As there is no such disconnect between the base year and the test year in this case, those adjustments were not necessary.

The next step in the analysis is to estimate the local and intermediate cost-per-pound-leg. First, the average numbers of legs of transportation are estimated separately for all BPM and for DBMC BPM. This is shown on page 1 of Attachment A. Next, the local cost-per-pound-leg is calculated by dividing total BPM local costs by the product of BPM average number of local legs and total BPM pounds. The intermediate cost-per-pound-leg is calculated in the same manner. The results of these calculations are shown on page 4 of Attachment A.

These cost-per-pound-leg estimates are then used to allocate local and intermediate costs to BPM DBMC. Local DBMC costs are calculated by multiplying the local cost-per-pound-leg by the DBMC average number of local legs and total DBMC cubic feet. Intermediate DBMC costs are calculated by multiplying the intermediate cost-per-pound-leg by the DBMC average number of intermediate legs and total DBMC cubic feet. Total DBMC transportation costs are the sum of the local and intermediate costs.

The estimation of the DBMC cost per pound by zone begins with the allocation of the local costs to zone using the percentage of BPM DBMC pounds per zone. DBMC intermediate costs are assumed to be zone-related, and therefore are distributed to zone using pound-miles. Costs per zone are then divided by total pounds in each zone to estimate the unit cost per pound for each zone. See page 4 of Attachment A for these calculations.

DSCF and DDU BPM transportation costs are developed on page 5 of Attachment A. The unit cost per pound is estimated and used to estimate the total DSCF and DDU costs. The DSCF unit cost per pound is assumed to be the same as the local DBMC unit cost per pound. Total DSCF costs are estimated by multiplying the unit cost per pound by total DSCF pounds. DDU BPM pieces are assumed to avoid 83.6 percent of the DSCF unit cost per pound. Total DDU costs are calculated as the DDU unit cost per pound multiplied by total DDU pounds.

Total BPM non-dropship transportation costs are calculated to be the difference between total BPM costs and "properly-dropped" BPM transportation costs. "Properly-dropped" BPM transportation cost refers to the sum of DBMC, DSCF and DDU transportation costs. Some BPM mail that does not meet the dropship requirements may still be entered at the destination facility; hence, the sum of DBMC, DSCF and DDU is referred to as "properly dropped".

Unit transportation costs per pound per zone for non-dropship BPM are presented on page 6 of Attachment A. Zone-related costs are distributed to zone using percent of pound-miles. The unit costs per pound for zone-related costs are calculated by dividing the zone-related costs by total pounds in each zone. Non-zone-related unit costs per pound are calculated by dividing total non-zone-related costs by total non-dropship pounds. Since by definition, non-zone-related costs do not vary by zone, this unit cost is identical for every zone.

The summary of the Bound Printed Matter transportation unit costs per pound by zone and rate category is provided in Table 1 at the end of this testimony.

VI. PARCEL POST TRANSPORTATION COSTS

This testimony is an update of the development of transportation cost analysis provided by witness Eggleston (USPS-T-25) in Docket No. R2001-1. This cost analysis uses the transportation costs allocated to Parcel Post and develops the unit cost per cubic foot estimates for each zone for each of the Parcel Post rate categories: Inter-BMC, Intra-BMC, DBMC, DSCF and DDU. The changes in the estimated costs from those presented in Docket No. R2001-1 are primarily due to the use of new input data and updates of parameters to reflect the most recent available data and a different test

year. However, in Docket No. R2001-1, witness Eggleston was required to make adjustments between the base year and the test year for some transportation cost categories due to the fact that the FedEx agreement had not been in place during the base year, but was expected to be in place during the test year. As there is no such disconnect between the base year and the test year in this case, those adjustments were not necessary. The Parcel Post transportation cost model employs the basic methodology developed by witness Hatfield in Docket No. R97-1, incorporating two major concepts: dividing transportation costs into transportation function (local, intermediate, and long distance) and dividing costs into zone-related (ZR) and non-zone-related (NZR). These two concepts are described below. The cost model is provided in library reference USPS-LR-K-89, Attachment B.

A. Definitions of Transportation Cost Functions

The transportation functions are defined in the Parcel Post transportation cost model as follows:

- Local: Costs associated with the transportation of parcels between facilities that are within the service area of a Processing and Distribution Center (P&DC), primarily between Associate Offices (AOs) and P&DCs. Local costs include the costs of postal-owned vehicles (cost segment 8).
- Intermediate: Costs associated with the transportation of parcels between facilities that are within the service area of a BMC, primarily between P&DCs and BMCs.
- Long distance: Costs associated with the transportation of parcels between facilities that are within the service areas of two different BMCs. Long distance cost is associated only with Inter-BMC parcels.

The distance between the 3-digit origin and the 3-digit destination of a parcel is measured in Great Circle Distance (GCD)[1]. Distance as measured with GCD determines the designation of zones, and can be quite different from the distance that a parcel actually travels. Since the true cost of transportation is associated with the distance a parcel actually travels, GCD is not always an accurate indicator of the cost incurred with transporting that parcel. A distinction must be made between the

instances in which the distance a parcel travels is related to GCD (and is zone related) and when it is not related to GCD (non-zone-related). These distinctions are not necessary for DSCF and DDU since they are unzoned rate categories and only incur local costs.

Local costs are non-zone-related for all Parcel Post rate categories. Intermediate costs are considered non-zone-related for Inter-BMC and Intra-BMC, but are zone-related for DBMC. Long distance costs are not relevant for Intra-BMC or DBMC. For Inter-BMC, the majority of long distance costs are considered to be zone-related, but there are some exceptions related to the Christmas Network and passenger air costs, noted on page 7 of Attachment B.

B. Methodology Used in Development of Parcel Post Transportation Costs

The development of the Parcel Post transportation costs follows the methodology used in Docket No. R2001-1. For a detailed discussion regarding this approach, please refer to Docket No. R97-1, USPS-T-16.

In order to estimate the total cubic feet in each zone for each rate category, necessary to develop Parcel Post transportation costs, is the set of cube-weight relationships for the three major rate categories. The regression analysis used to estimate the cube-weight relationships is described fully in USPS-LR-K-90. The cube-weight relationships are estimated for Intra-BMC, Inter-BMC and Parcel Select (including DBMC, DSCF and DDU). Individual analyses cannot be performed for DBMC, DSCF and DDU separately because the necessary detailed cubic feet and weight data are not available for the three rate categories separately. The model used to estimate each relationship is the same as the model recommended by the Commission in Docket No. R94-1 (PRC Op., Docket No. R94-1, page V-116), and is the same as the one used in Docket No. R2001-1 in USPS-LR-J-66. The results of the regression analysis are shown in USPS-LR-K-90 and in USPS-LR-K-89, Attachment B. Page 1 of Attachment B displays the equation results, and page 2 shows the results graphically.

The number of cubic feet in each zone for each of the five rate categories (Inter-, Intra-, DBMC, DSCF and DDU) must be developed in order to estimate the unit

[1] DMM § GO301.1.

transportation cost per cubic foot. The cubic feet in each zone for each rate category is developed by multiplying the test year before rates volume estimates in each rate cell (zone and weight increment combination) by the corresponding estimated cubic feet per parcel from the cube-weight regression. The development of the cubic feet in each zone was performed differently in this docket than it was in Docket No. R2001-1. In R2001-1, the test year before rates volume estimates for each rate category were distributed to rate cells within each rate category using the base year billing determinants as distribution keys within the rate category. However, when the rate categories within the subclass are forecasted to grow or decline at disparate rates, the mail mix of the subclass will change from base year to test year. The rollforward cost forecasting model from which the test year transportation cost estimates are derived relies on the base year cost segments, tied to the base year mail mix. The rollforward does not have the wherewithal, absent final adjustments, to reflect the impact of changes in mail mix in the cost forecast. Thus, the test year forecasted cost really reflects an underlying assumption that the mail mix within the subclass had remained steady since the base year. The volume forecast is performed at a more disaggregated level than is the rollforward cost model. Thus, using the test year billing determinants would be matching a different volume mix to the cost forecast than the mail mix from which it was forecasted.

Therefore, in this case, I used the base year volume distributions for Parcel Post from the billing determinants (USPS-LR-K-77) and deflated the distributions wholesale by applying the ratio of the test year before rates total Parcel Post volume to the base year total Parcel Post volume. This resulted in a set of volume estimates by rate cell that was identical to that which was implicitly assumed to underlie the forecasted costs in the rollforward model. These volume estimates are found at pages 17-19 of Attachment B of USPS-LR-K-89.

These adjusted volume estimates were multiplied by the cubic feet per parcel by weight increment from the regression equation to obtain the estimated cubic feet per parcel by rate cell, shown on pages 3-5 of Attachment B. The total cubic feet per zone for each of the rate categories are summarized on page 6 of Attachment B. This page also displays the total cubic-foot miles for the Inter-BMC and DBMC rate categories.

These data, obtained from USPS-LR-K-47, are necessary to distribute the distance-related costs.

Base year transportation costs (USPS-LR-K-5) are separated into the transportation functions: local, intermediate, long distance zone-related and long distance non-zone-related. As noted above, in Docket No. R2001-1, it was necessary to perform some adjustments to reconcile the absence of the FedEx transportation agreement in the base year with the presence of the agreement in the test year. No such adjustment was necessary in this case. After the base year costs have been separated into the transportation functions, the percentage of the costs associated with each of the transportation functions is calculated for each of the transportation modes (highway, air, rail, water). These distribution keys are shown on page 7 of Attachment B of USPS-LR-K-89. These distribution keys are then applied to the forecasted test year transportation costs by cost component on page 8 of Attachment B to allocate total test year costs to each transportation function. Test year postal-owned vehicle costs (USPS-LR-K-7), including the appropriate piggybacked costs (USPS-T-11), are added to local transportation costs on page 9 of Attachment B.

The resulting test year transportation costs by local, intermediate, long distance zone-related and long distance non-zone-related are shown on page 9 of the attachment. Plant load costs and Alaska non-preferential costs are not included in intermediate costs. This is because these two costs are not allocated to all rate categories. By definition, DBMC, DSCF and DDU Parcel Select Parcel Post must be dropped at the destination facility by the mailer. Thus, plant load costs are only allocated to Inter-BMC and Intra-BMC rate categories. Alaska non-preferential air costs are not allocated to DBMC because Parcel Post destinating in Alaska is not eligible for the DBMC rate.

In order to distribute the test year costs to each rate category, the average number of legs of transportation that a parcel in each rate category travels on each transportation function must be estimated. For example, if a parcel follows the full path of the Inter-BMC mailstream, it will incur costs associated with:

- 2 legs of local transportation (origin AO to origin plant and destination plant to DDU)

- 2 legs of intermediate transportation (origin plant to origin BMC and DBMC to DSCF), and
- 1 leg of long distance transportation (Origin BMC to DBMC)

In actuality, not all parcels travel the full path associated with their mailstream. For example, some Intra-BMC parcels are held out at the local AO and do not travel to their service area BMC for mail processing. Attachment B, page 9 displays the assumed number of legs for Parcel Post by rate category and transportation function.

Test year costs to the five rate categories (Inter-BMC, Intra-BMC, DBMC, DSCF and DDU) on the basis of total cubic feet in the rate category and the number of legs traveled in that transportation function. This distribution is also shown on page 9 of Attachment B. The next step is to calculate the unit cost per cubic foot for each rate category.

For Inter-BMC, the percentage of cubic feet in each zone is used to distribute the non-zone-related costs (local, intermediate and long distance non-zone-related) costs to zones. The distribution of the percentage of cubic foot miles to each zone is then used to allocate the zone-related long distance costs to each zone. The calculation of the unit cost per cubic foot in each zone is performed by dividing the total transportation costs in each zone by the total Inter-BMC cubic feet in each zone. These calculations are shown on page 10 of Attachment B.

None of the Intra-BMC transportation costs are zone-related, so the methodology used to calculate the Intra-BMC unit cost per cubic foot by zone differs from that used to develop the Inter-BMC figures. It is assumed that half of the Intra-BMC parcels entered within the Local zone (as defined in the rate charts) are held out at the AO. These held-out parcels will avoid most of the transportation costs with the exception of the local (in the sense of transportation function) costs that are incurred below the delivery unit. These costs, the intra-city and box route costs, are pulled out of the local costs, and distributed separately.

The calculation of the Intra-BMC unit cost per cubic foot transportation cost estimates takes place on page 11 of Attachment B of USPS-LR-K-89. The cubic feet in the Local zone and the non-local zones (Zones 1&2 through Zone 5) are displayed, as are the average number of local and intermediate transportation legs. Since half of the

Local zone Intra-BMC parcels incur zero legs of local transportation and half incur two legs of local transportation, the average Local zone Intra-BMC will incur one leg of local transportation. The average number of legs of transportation is multiplied by the cubic feet to develop the average cubic feet legs for the Local and non-local zone pieces. The percentages of cubic foot legs in Local and non-local zones are used to distribute local and intermediate costs to Local and non-local zones.

The intermediate transportation costs per cubic foot by zone are developed by dividing the intermediate transportation costs associated with Local zone parcels by the cubic feet associated with Local zone parcels, and the intermediate transportation costs associated with the non-local zone parcels by the non-local zone cubic feet. The same two calculations are performed for the local transportation costs, dividing the Local zone local transportation costs by the Local zone cubic feet, and the non-local zone local transportation costs by the non-local zone cubic feet. But the local cost per cubic foot estimates also incorporate the intra-city and box route costs by dividing these intra-city and box route costs by the total (Local and non-local) cubic feet and adding the resulting unit cost per cubic foot to the calculated local transportation unit cost estimates.

It is assumed that DBMC intermediate costs are zone-related and, thus, are allocated to zone by cubic foot miles. DBMC local costs are assumed to be non-zone-related and are allocated to zone by cubic feet. DBMC has no long-distance costs. The DBMC unit cost per cubic foot by zone estimates are developed on page 12 of Attachment B of USPS-LR-K-89.

The calculation of the unit cost per cubic foot for DSCF parcels, shown on page 13 of Attachment B, is simplified by virtue of the fact that DSCF is not zoned. Thus, there is no need to develop the unit cost estimates by zone. Secondly, DSCF parcel only incur local transportation costs. Thus, the unit cost per cubic foot is estimated by dividing the total local DSCF costs by total DSCF cubic feet. Similarly, the DDU unit cost per cubic foot is estimated by dividing the total DDU transportation cost by total DDU cubic feet, as shown on page 14 of Attachment B.

The summary of the Parcel Post unit transportation costs by cubic foot is provided in Table 1 at the end of this document.

VII. BULK PARCEL RETURN SERVICE COSTS

Bulk Parcel Return Service (BPRS) was introduced in 1997 as a service that is available for the return of Standard Mail parcels to the original sender. This testimony updates the estimated BPRS cost, using the same methodology employed in Docket No. R2001-1 by witness Eggleston (USPS-T-25) to develop collection costs, mail processing costs, transportation costs, bulk delivery costs and postage due costs. Consistent with the Commission's methodology presented in the Docket No. R2000-1 Decision and Recommended Opinion, the fixed CRA factor has been adjusted to account for differences in the modeled costs of BPRS and Media Mail.

Collection costs are estimated using the collection costs of single-piece Standard Mail collection costs as a proxy. This rate category ceased to exist as of January, 1999, so the data from 1998 are adjusted forward by applying a wage adjustment factor. The wage adjustment factor is the ratio of the appropriate test year wage rate to the FY 1998 wage rate.

The mail processing costs are derived using mail processing mailflow models similar to those for Parcel Post and Media Mail. The mail characteristics of BPRS as collected in a 1998 study are used in the mail processing models. As there is no line item for BPRS in the CRA, a proxy must be used for the proportional and fixed CRA adjustment factors. Media Mail, which also contains lightweight returns, was deemed to be the best proxy. The fixed CRA adjustment factor was multiplied by the ratio of the BPRS modeled costs to the Media Mail modeled costs, as developed by witness Miller (USPS-T-20) in USPS-LR-K-46. The adjusted fixed CRA adjustment factor and the proportional adjustment factor are used to produce the mail processing unit cost, as shown on page 2 of Attachment C of USPS-LR-K-89.

The delivery costs were estimated separately for each of the eight BPRS mailers in existence during the data collection associated with the implementation of the BPRS product. Half of the mailers picked up their returns, and for these mailers, the delivery cost was assumed to be zero. However, this is not to imply that there are no costs associated with mailers picking up their mail. The costs associated with the mailers picking up this mail were not studied during the BPRS data collection study. The other half of the mailers had their BPRS pieces delivered. The cost of a local leg of

transportation is used to model the cost of delivery to these mailers. The weighted average of the delivery cost of zero and the delivery cost of one transportation leg results in the average delivery cost shown on page 13 of Attachment C.

For purposes of the BPRS study, the calculation of the postage due costs incorporates the manual sortation of parcels into a container that only contains BPRS items; the steps involved in calculating postage due; and the steps involved in auditing the postage due calculations of the BPRS recipients. Because the BPRS mailers studied varied by daily volume and type of postage due, a separate postage due cost was estimated for each BPRS recipient. These calculations are displayed on pages 15 through 22 of Attachment C. A weighted average of these costs is developed on page 14 of Attachment C by weighting the cost of postage due for each mail by that mailer's weekly volume.

The resulting BPRS unit cost is shown in Table 1 at the end of this testimony.

VIII. PROPOSED CHANGES RELATIVE TO PRC METHODOLOGY

To the extent that, in response to Commission Rule 53, I discuss and compare Postal Rate Commission (PRC) versions of costing materials in this testimony, I do not sponsor those materials, or in any way endorse the methodologies used to prepare them. In its Order No. 1380 adopting the roadmap rule, the Commission included the following statements regarding the role played by Postal Service witnesses under these circumstances:

> The comparison required by this exercise cannot be equated with sponsoring the preexisting methodology. It merely identifies and gives context to the proposed change, serving as a benchmark so that the impact can be assessed. … [W]itnesses submitting testimony under Rule 53(c) sponsor the proposed methodological changes, not the preexisting methodology. That they may be compelled to reference the pre-existing methodology does not mean that they are sponsoring it. Order No. 1380 (August 7, 2003) at 7.

Therefore, although I may be compelled to refer to the PRC methodologies and versions corresponding to the Postal Service proposals which are the subject of my testimony, my testimony does not sponsor those PRC materials.

The PRC version of the estimated cost avoidances for Standard Mail and Periodicals destination entry are contained in USPS-LR-K-112. The cost models contained in USPS-LR-K-112 are expressed in the same format as the postal versions found in USPS-LR-K-88, with the exception that several cost inputs have changed. The PRC version of the dropship cost avoidance models rely on revised piggyback factors (USPS-LR-K-98), premium pay factors (USPS-LR-K-100), and volume variability factors (USPS-T-11, Table 5). All other cost model inputs are identical for both the postal and PRC versions of the dropship cost avoidance cost models.

The PRC version of the estimated transportation costs for Parcel Post and Bound Printed Matter, and the estimated cost of Bulk Parcel Return Service are contained in USPS-LR-K-113. The cost models contained in USPS-LR-K-113 are expressed in the same format as the postal versions provided in USPS-LR-K-89, with the exception that several cost inputs have changed. The PRC version of the Parcel Post and Bound Printed Matter transportation cost models and the PRC version of the cost model that estimates the cost of Bulk Parcel Return Service rely on revised piggyback factors (USPS-LR-K-98), premium pay factors (USPS-LR-K-100), and volume variability factors (USPS-T-11, Table 5). All other cost model inputs are identical for both the postal and PRC versions of these cost models.

TABLE 1:
OUTPUTS OF USPS COST MODELS AND PRC VERSION COST MODELS

COST ELEMENT	USPS MODEL OUTPUT	PRC VERSION MODEL OUTPUT
STANDARD MAIL DESTINATION ENTRY		
Transportation Cost Avoidances		
DDU	$0.1540 per pound	$0.1541 per pound
DSCF	$0.1309 per pound	$0.1309 per pound
DBMC	$0.1096 per pound	$0.1096 per pound
Non-transportation Cost Avoidances		
DDU	$0.0496 per pound	$0.0558 per pound
DSCF	$0.0379 per pound	$0.0420 per pound
DBMC	$0.0209 per pound	$0.0230 per pound
Total Cost Avoidances		
DDU	$0.2035 per pound	$0.2099 per pound
DSCF	$0.1688 per pound	$0.1730 per pound
DBMC	$0.1305 per pound	$0.1326 per pound
PERIODICALS DESTINATION ENTRY		
Non-transportation Cost Savings		
DADC	$0.0058 per pound	$0.0063 per pound
DSCF	$0.0266 per pound	$0.0297 per pound
DDU	$0.0552 per pound	$0.0618 per pound
BULK PARCEL RETURN SERVICE	$1.172 per piece	$1.268 per piece
BOUND PRINTED MATTER TRANSPORTATION COSTS		
DBMC		
Zone 1 and 2	$0.055 per pound	$0.055 per pound
Zone 3	$0.085 per pound	$0.085 per pound
Zone 4	$0.109 per pound	$0.109 per pound
Zone 5	$0.197 per pound	$0.197 per pound
DSCF	$0.043 per pound	$0.044 per pound
DDU	$0.007 per pound	$0.007 per pound
Non-Dropship		
Zone 1 and 2	$0.114 per pound	$0.115 per pound
Zone 3	$0.127 per pound	$0.128 per pound
Zone 4	$0.144 per pound	$0.144 per pound
Zone 5	$0.170 per pound	$0.170 per pound
Zone 6	$0.197 per pound	$0.198 per pound
Zone 7	$0.228 per pound	$0.228 per pound
Zone 8	$0.289 per pound	$0.289 per pound

TABLE 1 (cont'd):
OUTPUTS OF USPS COST MODELS AND PRC VERSION COST MODELS

PARCEL POST TRANSPORTATION COSTS		
Inter-BMC		
Zone 1 and 2	$4.4221 per cubic foot	$4.4327 per cubic foot
Zone 3	$4.6029 per cubic foot	$4.6134 per cubic foot
Zone 4	$4.9512 per cubic foot	$4.9617 per cubic foot
Zone 5	$5.4911 per cubic foot	$5.5016 per cubic foot
Zone 6	$6.0530 per cubic foot	$6.0635 per cubic foot
Zone 7	$6.6345 per cubic foot	$6.6450 per cubic foot
Zone 8	$7.5662 per cubic foot	$7.5767 per cubic foot
Intra-BMC		
Local	$2.4423 per cubic foot	$2.4490 per cubic foot
Zone 1 and 2	$4.5438 per cubic foot	$4.5553 per cubic foot
Zone 3	$4.5438 per cubic foot	$4.5553 per cubic foot
Zone 4	$4.5438 per cubic foot	$4.5553 per cubic foot
Zone 5	$4.5438 per cubic foot	$4.5553 per cubic foot
DBMC		
Zone 1 and 2	$1.7459 per cubic foot	$1.7517 per cubic foot
Zone 3	$3.6840 per cubic foot	$3.6897 per cubic foot
Zone 4	$5.4779 per cubic foot	$5.4837 per cubic foot
Zone 5	$11.2090 per cubic foot	$11.2148 per cubic foot
DSCF	$1.0632 per cubic foot	$1.0690 per cubic foot
DDU	$0.1873 per cubic foot	$0.1883 per cubic foot