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

EVOLUTIONARY NETWORK DEVELOPMENT SERVICE CHANGES, 2006	Docket No. N2006-1

RESPONSES OF THE UNITED STATES POSTAL SERVICE TO PRESIDING OFFICER'S INFORMATION REQUEST NO. 1
(April 18, 2006)

The United States Postal Service hereby provides the responses to Presiding Officer's Information Request No. 1, issued on April 4, 2006. Each question is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

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April 18, 2006

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1. This question concerns what role changes in service performance plays in the END models.
   a. Is service performance considered in the optimization model?
      i. If so, how is it measured?
      ii. Is it a variable, a constraint, or an output?
      iii. If it is a constraint, under what circumstances can it be relaxed?
      iv. What weight is given to service performance in the optimization model?
   b. Is service performance considered in the simulation model?
      i. If so, how is it measured?
      ii. Is it a variable, a constraint, or an output?
      iii. If it is a constraint, under what circumstances can it be relaxed?
      iv. What weight is given to service performance in the simulation model?

RESPONSE

a. No, service performance is not considered within the optimization model.

(i-iv) N/A

b. Yes.

(i) Service performance is measured on the basis of the network's ability to flow mail from an origin 3-digit ZIP Code to a destination 3-digit ZIP Code within a given service standard.

(ii) Service performance is an output.

(iii-iv) N/A

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2. This question concerns how and when consideration of critical entry times enters into the END models.
   a. i. Are critical entry times considered in the optimization model?
      ii. If so, are they variables, constraints, or output?
      iii. If they are constraints, when can they be relaxed?
      iv. What weight is given to critical entry times in the optimization model?
   b. Are critical entry times considered in the simulation model?
      i. If so, are they variables, constraints, or output?
      ii. If they are constraints, when can they be relaxed?
      iii. What weight is given to critical entry times in the simulation
      iv. model?

RESPONSE

a. Yes, critical entry times are considered in the optimization model.

(i) They are constraints based on a specific operating plan for a given proposed distribution concept and are used to define the set of feasible assignments from which the model can choose.

(ii) They are only relaxed in order to provide at least one feasible path for the model.

(iii) No weight is given.

b. Yes, critical entry times are considered in the simulation model.

(i) They are an output which results from a given operating plan and a number of other factors such as capacity required, arrival profiles, and available capacity.

(ii) The simulation model does not relax the operating plan specified for each facility and thus the implied CET is not relaxed.

(iii) No weight is given.

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3. This question seeks clarification on how service standards are considered in the AMP process.
   a. Are upgrades and downgrades in service standards considered in the aggregate or by ZIP Code pair? For example, if 20,000 pieces in each of two ZIP Code pairs get a downgrade in service and 50,000 pieces in one ZIP Code pair get an upgrade in service, would this result be considered an upgrade or downgrade in service for the AMP as a whole? Please explain fully.
   b. During each stage of the AMP review (i.e., facility level, district level, and headquarters level) what weight is given to service performance changes in deciding whether to approve or reject an AMP? Please explain fully.
   c. Are specific guidelines used consistently across all AMPs that balance expected changes in service performance against the dollar amount saved? For example, a degradation in service for X number of pieces is acceptable as long as Y amount of dollars are saved.
   d. How are changes in the time the mail gets to the delivery unit arising from consolidating mail facilities considered in the AMP process?
   e. How are changes in cut-off times and critical dispatch times considered in the AMP process?

RESPONSE

a. In the AMP process, upgrades and downgrades are identified in terms of affected volume and by 3-digit ZIP Code pair. In the example provided, we would consider that 40,000 pieces were downgraded and that 50,000 pieces were upgraded. In terms of ZIP Code pairs, we would conclude that two pairs were downgraded while one pair was upgraded. We would describe the AMP consolidation as involving both upgrades and downgrades.

b. It should be remembered that the primary goal of the Evolutionary Network Development initiative is to realign and consolidate the network and to eliminate excess mail processing and transportation capacity. Local changes to service standards are not a goal of either END or the Area Mail Processing review, but can be a consequence of an AMP consolidation proposal that would achieve the goals of END. Potential service upgrade and/or downgrades are considered at every level of AMP

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RESPONSE to Question 3 (continued)

review. However, the fact that implementation of a particular AMP consolidation proposal could lead to either service upgrades or downgrades is not, by itself, determinative of whether to proceed with the proposal.

c. No.

d. During the AMP implementation planning, managers at the gaining facility AMPC and the District office evaluate the operating plans for that facility and the impacted delivery units to ensure that the plant Dispatch of Value times to the delivery units will meet the Critical Entry Times at those units. And, if it is necessary to make changes to the operating plan(s), there must be agreement about such changes. Unless noted otherwise in the AMP documentation, expectations are that the mail arrival time at the delivery unit will not change.

e. See the response to subpart (d). Unless noted otherwise in the AMP documentation, expectations are that operating plan Dispatches of Value (DOV) will be maintained, even with modifications of Critical Entry Times and/or Clearance Times.

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4. The following discussion is taken from a report to The President's Commission on The United States Postal Service.[1]

Data Requirements

In order to develop a Logistics Network Optimization Model for the USPS, a significant amount of data and understanding of the current postal delivery system is necessary. The following type of data is needed by Distribution Center:

1. Cost, revenue, and volume data by 3-digit zip code
2. Distribution Center Capacity data such as:
    a. Number and volume of trucks presenting in-bound mail to each center
    b. Tons of mail in-bound to the center
    c. Center capacity of mail sorting equipment
    d. Size of population serviced by each center
    e. Volume of mail per unit of population serviced by each center
    f. Number of employees assigned to each center
3. Inter-distribution center mail flow information:
    a. Distance in miles between centers
    b. Ton-miles of mail arriving from other centers
    c. Cost per ton-mile for moving mail to each zip code serviced
4. Detailed variable cost data by center
    a. Postmasters
    b. Supervisors & Technicians
    c. Clerks & Mail handlers
    d. City Delivery Carriers
    e. Etc.
5. Fixed cost data by center
    a. Facility costs
    b. Utilities overhead
    c. Depreciation of truck fleet
    d. Depreciation of other capital equipment

[1] *Analysis of the Postal Service's Logistics Network and Development of a Network Optimization Model*, presented by Advanced Systems, AT&T Government Solutions, Vienna Virginia, August 2003.

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Question 4 (continued)

a. Please discuss in detail how the data inputs into the END optimization model either differ or are the same as the inputs above.

b. Please provide any documentation, such as a model requirements report, related to data requirements for the END models.

RESPONSE

a. We have not benchmarked the END models against aforementioned study. With all due respect to President's Commission, the Postal Service regards the Advanced Systems study to be incomplete. Its focus on standard optimization data requirements does not reflect a sufficiently in-depth understanding of the uniqueness of the postal network. The overall approach of END was to determine a future distribution concept centered on best practices and then to develop models to optimize around the concept. This is the driver for the differences.

b. Please see the attachment to this response and the February 27, 2006, response to APWU/USPS-T1-3.

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Attachment to Response to POIR 1 Question 4(b)

Overview of Optimization Model Data Requirements – page 1

The data requirements are driven by inputs required by the optimization model. The optimization model requires the following inputs:

1) For every 3-digit ZIP Code and P&DC, the cost of assigning the 3-digit ZIP Code to that P&DC. This should include:
    a. Transportation cost to get mail from the 3-digit ZIP Codes to the P&DC
    b. Transportation cost to get mail to the 3-digit ZIP Code from the P&DC
    c. Cost of doing initial separation of mail at the P&DC
    d. Cost of doing any final sorts at the P&DC
2) For every P&DC and processing product, the cost of doing the originating product sorts at the P&DC. For this and all such calculations, a product may be broken down into sub-products (manual, presorted, etc.) with the cost being the sum of the costs for the sub-products.
3) For every product and processing concentrator (including size) for that product, the cost of doing the originating product sorts at that concentrator (and similar for dispersers).
4) For every P&DC and processing concentrator, the transportation cost of getting the product from the P&DC to the concentrator (and similar for dispersers).
5) For every P&DC and transportation concentrator, the transportation cost of getting mail from the P&DC or processing concentrator to the transportation concentrator (and similar for dispersers).
6) For every processing concentrator and transportation concentrator that can handle that mail, the cost of transporting the product from the processing concentrator to the transportation concentrator (and similar for destinating mail).
7) For each pair of 3-digit ZIP Codes, the amount of mail of each product (and sub-product if needed) to be sent from one to the other.
8) For each 3-digit ZIP Code, the amount of destinating entry volume sent by high-volume mailers to its transportation disperser.
9) For every pair of transportation concentrators/dispersers, the per unit cost of sending mail along the leg.
10) Space capacities at all facilities where processing could be done.

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Overview of Optimization Model Data Requirements – page 2

The following eight subsections explain the specific data requirements needed to calculate the 10 inputs listed above.

1.1.1 Mail flows and volumes

We need 3-digit to 3-digit piece volumes for each mail class and shape combination. We need these volumes in a file with the following fields:

- Year
- Mail Class (First-Class Presort and Single-Piece, Priority, Standard, Periodicals, Package Services)
- Shape (letters, flats, parcels)
- Origin 3-digit ZIP Code
- Destination 3-digit ZIP Code
- Piece Volume
- Pound Volume
- Cube Volume

1.1.2 Workloads

We need the number of piece handlings by operation for each plant in the current network.

1.1.3 Facility locations and ZIP Code assignments

We need the following information for each function 1 processing facility:

- Finance number
- Plant name
- Plant type
- Address, city, state, and ZIP Code
- Square feet (processing and administration)
- Origin 3-digit ZIP Code to SCF assignments by mail class (and shape where applicable)
- ADC/AADC to Destination 3-digit ZIP Code (i.e., SCF) assignments by mail class (and shape where applicable)
- SCF to Destination 3-digit ZIP Code assignments by mail class (and shape where applicable)

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Overview of Optimization Model Data Requirements – page 3

1.1.4 Facility equipment and capacities

We need the following equipment and capacity information for each facility:

- Number of machines by type for each plant
- Footprints for each type of machine
- Throughput per machine hour for each type of machine

1.1.5 Labor costs and productivities by operation/facility

We need the following data for labor costs and productivities for each operation and facility in order to develop the cost functions.

- Hours by operation along with the pieces handled during those hours for each operation
- A fully loaded wage rate

1.1.6 Operating Plan

We need to know the specific operating plans for each facility by product

1.1.7 Transportation Mileage and Times

For every origin 3-digit to destination 3-digit ZIP Code combination, we need to know the following information:

- Actual driving miles between points
- Average time needed to travel by mode: air, highway, rail, water

1.1.8 Transportation costs

We need transportation cost data by mode as described below.

- Highway Contract Costs. We need cost per truck mile
- PVS Costs. We need cost per truck mile
- Shared Networks Costs.

  Cost per cubic foot rates

  Available capacity by leg (origin to destination) per day
- Commercial Air Costs.

  Cost per pound mile rates

  Available capacity by leg (origin to destination) per day

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Overview of Optimization Model Data Requirements – page 4

- Amtrak Rates.
  - Cost per rail car by leg
  - Available capacity by leg (origin to destination) per day
- Freight Rail Rates.
  - Cost per trailer by leg
  - Available capacity by leg (origin to destination) per day
- Air Taxi Costs.
  - Cost per pound mile
  - Available capacity in pounds by leg (origin to destination) per day
- Inter-Alaska Costs.
  - Cost per pound mile
  - Available capacity in pounds by leg (origin to destination) per day
- Water Costs.
  - Cost per container per leg
  - Available capacity in pounds by leg (origin to destination) per day