

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. 5  
(Questions 1, 2, 4 through 6 and 8 through 11)

The United States Postal Service hereby provides responses to Questions 1, 2, 4-6, and 8-11 of Presiding Officer's Information Request No. 5, issued on June 9, 2006:

Each question is stated verbatim and is followed by the response. Responses to questions 3 and 7 are forthcoming.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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July 3, 2006

**RESPONSE OF THE UNITED STATES POSTAL SERVICE TO  
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1. Refer to the Responses of the United States Postal Service to Presiding Officer's Information Request No. 3, question 1.
  - a. The response to part c. states that "[t]he number of facilities where single-piece mail currently receive[s] an incoming sort will not remain unchanged." In the current network, are there any instances where different facilities perform incoming sorts for the same 5-digit ZIP Code?
    - i. If so, how many? Under what circumstances would this occur?
    - ii. If not, how will the number of sort schemes be reduced by increasing the opportunity to "pack" machines as stated in the response to part d.?
  - b. The response to part f. states that the Service assumes the average hourly throughput achieved for machines will not change between the current and future network. The response to part k. (the same question except related to outgoing rather than incoming processing) implies that the average hourly throughput achieved would go up because more mail will be processed throughout the processing window.
    - i. Is the answer to part k. referring to machine average hourly throughput achieved? If not, what is it referring to?
    - ii. In the current network are machines used in outgoing processing run at less than full speed? If so, why?
    - iii. Why does the Service assume that average hourly throughput achieved will remain the same when incoming operations are consolidated but will change when outgoing operations are consolidated?

**RESPONSE**

- a. Yes, ADCs and AADCs will primarily sort destinating network volume for SCFs to then subsequently finalize.
- b. The question was unclear as to exactly what was meant by average hourly achieved throughput; the response was in reference to whether or not an assumption was made that machines could achieve a higher hourly throughput in the future. For modeling, END used achieved throughput today as the maximum throughput per machine. Whether a machine can achieve that throughput is dependent on volume arrival profiles, as well as the total amount of volume to process within each processing window.

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**RESPONSE to Question 1 (continued):**

The Postal Service assumes that the future network will improve volume arrival profiles, increase the amount of volume per operation at many facilities, and thus increase the average hourly throughput achieved in many operations.

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2. The Responses of the United States Postal Service to Presiding Officer's Information Request No. 3, question 2.a. states, "...the resulting network was operationally infeasible and impractical to implement."
- a. Please describe the "resulting network." Include in your description a discussion of whether or not the network:
    - i. was a hub-and-spoke network;
    - ii. had a different optimal solution for different geographical regions;
    - iii. had a different optimal solution for each individual facility;
    - iv. had a different optimal solution for different mail classes or mail shapes;
    - v. contained more, fewer, or the same number of facilities as the current network; and
    - vi. contained more, fewer, or the same number of facilities as the optimal solution that resulted from the pre-defined distribution concept.
  - b. Please explain the specific reasons that this solution was deemed operationally infeasible and impractical to implement.

**RESPONSE**

- a. The resulting network was not a HASP network. It provided a non-standardized solution at the facility, regional and national level. It did result in fewer facilities than the current network and the pre-defined RDC distribution concept.
- b. While this network may have resulted in the fewest facilities and the least cost theoretical solution, the complexities created due to the non-standardized outcome would significantly increase the disruption and transition costs to migrate to such a network, as well as eliminate indirect savings associated with simplification and standardization.

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4. Is the location of DDUs an input into the END optimization and/or simulation model?

**RESPONSE:**

No, the END models only model function 1 facilities.

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5. The schematic on page 5 of LR-9 depicts no annexes in the future network. However, the Responses to the United States Postal Service to Presiding Officer's Information Request No. 3, question 3.c. states that not all annexes will be closed. Please explain.

**RESPONSE:**

Any annex remaining in the future network would perform a specific functional role and be subordinate to a particular RDC, LPC, or DPC.

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6. Refer to the Responses of the United States Postal Service to Presiding Officer's Information Request No. 3, question 4.
- a. What constitutes "enough volume" to warrant direct trucks?
    - i. Is it a specific amount? If so, what is the amount?
    - ii. Is it a percentage of truck capacity utilization? If so, what percentage?
    - iii. Is it some other measure? If so, what measure?
  - b. What percentage of current mail volume is overnight mail?
  - c. What percentage of current origin/destination pairs has enough volume to warrant direct trucks? Is this percentage expected to increase, decrease, or remain the same in the future network?

**RRESPONSE**

- a. Routing decisions are made to minimize transportation cost; the calculation evaluated the amount of volume needed to be transported and evaluates the various mode alternatives per origin / destination to make the most optimal decision.
- b. For First-Class Mail, Priority Mail, the respective percentages are approximately 45 and 20.
- c. The Postal Service has no data with which to provide a responsive estimate. It is anticipated that through origin consolidation the amount of direct transportation should increase in the future.

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8. Refer to the Responses of the United States Postal Service to Presiding Officer's Information Request No. 3, question 9.
- a. If ZIP Codes are assigned based on mileage alone how is the cost function used to evaluate various possible ZIP Code assignments?
  - b. Provide, in mathematical format, the cost function(s) illustrated on page 40 of USPS Library Reference N2006-1/9.
  - c. Provide the computer code used to evaluate possible role assignments.

**RESPONSE:**

- a. ZIP Codes are not assigned based on mileage. Mileage only determines the set of possible assignments for the model to choose from. Cost and capacity determine the ZIP assignment.
- b. N/A
- c. N/A

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9. The response of United States Postal Service witness Shah to interrogatory OCA/USPS-T1-5 states, "[t]he NIA process has been re-named to END (Evolutionary Network Development), as the new name reflects the evolutionary network development process the Postal Service has adopted. Both processes use the same methods, data, and models for designing the Postal Services' future network strategies. Additionally the core objectives of both NIA and END remain the same." Is there a model requirements report containing an introduction, a detailed description of the optimization model, a description of the mail processing cost model, and a section on data requirements related to NIA? If so, provide the initial document and documents related to all subsequent phases.

**RESPONSE:**

A copy of the model requirements report has been filed as USPS LR N2006-1/17.

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10. This question addresses feasibility determinations made by the END simulation model prior to any AMP review. Refer to pages 14 through 16 of USPS Library Reference N2006-1/9.
- a. Assume that the service standard between ZIP 204 and ZIP 208 is 1 day when the mail for ZIP Code 204 is processed in Plant B but would be 2 days if the mail were processed at Plant A.
    - i. When the simulation model is run to determine the feasibility of moving processing operations from Plant B to Plant A would the 1 day service standard be a constraint?
    - ii. Would moving the processing from Plant B to Plant A be determined to be infeasible because of this constraint?
  - b. Assume that the capacity at Plant C is 2.5 million pieces and that moving ZIP Codes 205 and 206 into Plant C would result in an increase in volume. Under simulation would the solution be determined to be infeasible if the consolidation resulted in total volume at Plant C of:
    - i. 2.6 million;
    - ii. 3 million;
    - iii. 5 million; or
    - iv. more than 5 million?
  - c. Assume that the total cost of processing and transporting mail at all three plants was \$200 million. Would the consolidation be determined to be infeasible if the simulation showed that moving mail from Plant B to Plants A and C resulted in a cost increase of:
    - i. \$1;
    - ii. \$1 million;
    - iii. \$2 million;
    - iv. \$20 million, or
    - v. more than \$20 million?
  - d. Assume that plant C is a 50 year-old, multi-story plant located in an urban center and plant B is a three-year-old, single floor plant with ready access to highway and air transportation. Under simulation, would the consolidation of plant B into plant C be determined to be infeasible?
  - e. If your answers to a through d above are no, explain when the solution would be determined to be infeasible.

**RESPONSE:**

- a. The simulation evaluates whether Plant B has enough processing capacity to process all of the mail assigned to it. The model then evaluates whether service was met or not. The feasibility of a facilities assignment is not

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**RESPONSE TO QUESTION 10 (continued):**

- based on its ability to meet a service commitment input into the model; it is based on the facilities ability to process and clear all the mail within the defined operating plan. The determination of whether it was feasible to move from Plant A to Plant B due to the service standard change would be decided as part of the AMP process.
- b. If the maximum capacity of Plant C was 2.5, which included adding additional equipment to maximize the sq. ft. used, then, yes, the assignment would be defined as infeasible within simulation for volume over 2.5 million.
- c. Simulation does not make decisions based on cost, the optimization model develops the cost associated with the proposed network and assignments.
- d. The physical limitations of a facility are not included in the modeling. These factors are taken into consideration as part of the post- modeling reviews and during the AMP process.

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11. Does the optimization model assign operations to the largest facilities first and then iterate to smaller facilities if an acceptable solution cannot be found in the initial run? Provide the computer code used to assign operations to facilities.

**RESPONSE:**

The optimization model, as a least cost model, minimizes the total cost of mail processing and transportation over the entire network. It takes into account capacity of the facility, fixed cost and variable cost by different mail processing operations at the facility. It also considers the feasibility of assigning a ZIP Code to a facility (mileage constraints based on the operating plan). Therefore, the model assigns operations to a facility in order to minimize the total network cost and does not begin by starting with the largest facilities and then iterate to smaller facilities. It is possible that the model may assign a ZIP Code to the smallest facility among the feasible ones.

The Postal Service has the same concerns about the disclosure of the requested computer code as are reflected in its objections to OCA/USPS-21.