



March 20, 2006

PAUL E. VOGEL  
VICE PRESIDENT, NETWORK OPERATIONS MANAGEMENT

SUBJECT: Management Advisory – Status Report on the Evolutionary Network Development Initiative (Report Number NO-MA-06-001)

This management advisory presents the results of our self-initiated review of the Evolutionary Network Development (END) initiative<sup>1</sup> (Project Number 05WG005NO000). This review is part of an ongoing audit to evaluate the END initiative which affects the \$25.5 billion processing and distribution infrastructure. Our overall objective was to evaluate progress on END and identify key challenges in the planning, development, and implementation process.

Although this report contained no recommendations, we provided U.S. Postal Service management the opportunity to provide comments. Management generally agreed with the issues discussed.

### **Background**

The President's Commission on the Postal Service (the President's Commission)<sup>2</sup> said that the Postal Service has more infrastructure than needed and many assets are not effectively aligned with changing requirements. The infrastructure includes over 450 mail processing facilities, along with one of the world's largest transportation networks featuring some 215,000 vehicles and more than \$5 billion in annual contracts for highway, air, rail, and water transport. The President's Commission believes these operations are inefficient and cost the Postal Service billions of dollars in unnecessary expenses. The President's Commission called the END initiative the most important deliverable in the *Transformation Plan*.<sup>3</sup>

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<sup>1</sup> Various names have been used for the END initiative including Network Integration and Alignment and Network Rationalization. For consistency, we are using END throughout this report.

<sup>2</sup> *Report of the President's Commission on the United States Postal Service*, dated July 31, 2003.

<sup>3</sup> *United States Postal Service's Transformation Plan*, dated April 2002.

Postal Service management recognized the problem with its infrastructure and the need to consolidate or close facilities, and standardize and modernize those that remained. As part of the Postal Service's *Transformation Plan*, they developed the END initiative to optimize its processing and transportation network. The END initiative contains processes and tools for analyzing the optimal number, location, and functions of mail processing and transportation facilities. The charter of END is to create a flexible logistics network that reduces Postal Service and customers' costs, increases operational effectiveness, and improves consistency of service.

The Postal Service's *Strategic Transformation Plan 2006-2010* states that efforts to create a flexible network to increase productivity and effectiveness will continue as an evolutionary process.

### **Objective, Scope, and Methodology**

The objective of our review was to evaluate progress on the END initiative and identify key challenges in the planning, development, and implementation process.

To accomplish our objective, we reviewed the *Transformation Plan; Transformation Plan Progress Reports*; the Postal Service's response to Congress on infrastructure and workforce rationalization;<sup>4</sup> the *Postal Service Strategic Transformation Plan 2006-2010*; and other documents related to the END project. We also reviewed the *Report of the President's Commission on the United States Postal Service* and pertinent Government Accountability Office (GAO) reports and testimonies. In addition, we interviewed Postal Service Headquarters officials and researched various planning approaches. We did not conduct tests of internal controls because of the limited scope of our review and did not rely on any computer-generated data to support our report.

We conducted this review from March 2005 through March 2006 in accordance with the President's Council on Integrity and Efficiency, *Quality Standards for Inspections*. We discussed our observations and conclusions with management officials and included their comments where appropriate.

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<sup>4</sup> *Response to Congress – Infrastructure and Workforce Rationalization: Funding Key Capital Investments, United States Postal Service, January 2004.*

## Prior Audit Coverage

The U.S. Postal Service Office of Inspector General (OIG) issued a whitepaper<sup>5</sup> and two audit reports<sup>6</sup> on the END initiative. The whitepaper described the END project, reported its status, and identified external project oversight functions. The first report stated that the Postal Service conducted limited verification and validation of the END models, but they were not independent or fully documented. Management agreed with the OIG's recommendation to use an independent Postal Service team to conduct verification and validation of the models. The second report explained how the OIG assisted the Postal Service's END Independent Verification and Validation team. That report made no recommendations.

In April 2001, the GAO designated the Postal Service's transformation efforts as "high-risk" because of concerns that the Postal Service would not be able to continue providing universal postal service at reasonable rates while remaining self-supporting through postal revenues. The Postal Service's transformation efforts remain on the January 2005 updated list of high-risk areas.

The GAO issued three congressional testimonies<sup>7</sup> and one audit report that examined the Postal Service's strategy for streamlining its processing and distribution network. The testimonies identified difficulties in optimizing the Postal Service's network including the lack of standardization, inefficiency, and excess capacity. The GAO stated the Postal Service's vision of right sizing its infrastructure was achievable if approached in a comprehensive, integrated fashion, with appropriate communication and coordination with stakeholders. The GAO recommended the Postal Service prepare a publicly available plan that lays out its vision and strategies for rationalizing its infrastructure. In addition, the GAO reviewed the Postal Service's mail processing infrastructure.<sup>8</sup> They recommended the Postal Service establish criteria for evaluating realignment decisions and establish a mechanism for informing stakeholders as decisions are made.

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<sup>5</sup> *Network Integration and Alignment Project* (Product Number AC-OT-03-001, dated September 23, 2003).

<sup>6</sup> *Network Integration and Alignment Models – Independent Verification and Validation* (Report Number NO-AR-04-005, dated February 24, 2004). *OIG Assistance to Evolutionary Network Development Independent Verification and Validation Team* (Report Number NO-MA-05-001, dated March 29, 2005).

<sup>7</sup> *Key Postal Transformation Issues* (Report Number GAO-03-812T, dated May 29, 2003); *Bold Action Needed to Continue Progress on Postal Transformation* (Report Number GAO-04-108T, dated November 5, 2003); and *Key Elements of Comprehensive Postal Reform* (Report Number GAO-04-397T, dated January 28, 2004).

<sup>8</sup> *U.S. Postal Service: The Service's Strategy for Realigning Its Mail Processing Infrastructure Lacks Clarity, Criteria, and Accountability* (GAO-05-261, dated April 2005).

## Results

### END Project Evolution

Although we are aware that the Postal Service END initiative continues to evolve, this report documents the progress to date of network changes and identifies some key challenges. We are not making recommendations in this report; however, future reports may contain recommendations.

The Postal Service is taking an incremental approach to streamlining the mail processing networks using END as a framework. This represents a shift from its initial focus of optimizing the performance of the entire mail processing and transportation infrastructure. Postal Service management has stated that its only realistic course is to continuously examine the network for inefficiencies and redundancies and to standardize the best operational practices. We recognize that transforming the infrastructure is difficult and complex. The Postal Service's processing and logistics network is one of the largest networks in the world and affects a \$900 billion domestic mail industry. Research<sup>9</sup> supports an incremental approach in an unpredictable environment with complex technology such as the Postal Service faces. An incremental planning approach also supports prototype and pilot testing.

### Status of END

#### Network Changes

Changes to the processing and distribution networks include:<sup>10</sup>

- The Postal Service reduced over 187 million workhours during fiscal years (FY) 2000 through 2005. The Postal Service has also eliminated more than 80,000 career positions. Throughout the changes, the Postal Service has maintained or improved service performance.
- Since 1999, the Postal Service has closed 40 remote encoding centers that use advanced technology to remotely assign barcodes to hand-addressed mailpieces located at general mail facilities.
- The Postal Service has closed 50 annexes, which are temporary plants used for mail processing when space is limited.

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<sup>9</sup> Internet article titled "Does Strategic Planning Still Fit in the 2000s?" by Jim Mackay, Managing Partner, The Berkeley Consulting Group, [www.berkeleyconsulting.com](http://www.berkeleyconsulting.com), May 2004; "Evolutionary Project Management and Product Development" by Kai Gilb, December 4, 2004.

<sup>10</sup> Some workhour reductions, transportation contracts, and facility closures may indirectly be related to END.

- The Postal Service has closed two international service centers that process international mail.
- The Postal Service has reduced highway contract miles by over 65 million miles during FYs 2004 and 2005.
- Using *Area Mail Processing (AMP) Guidelines*, the Postal Service has consolidated mail processing operations at 28 plants since 1995, helping to reduce excess capacity and streamline processing operations. During 2005, they moved mail processing operations at the Marina Del Rey Processing and Distribution Center (P&DC) to the Los Angeles and Long Beach P&DCs, resulting in closing the Marina Del Rey facility. The Postal Service uses AMP guidelines to implement the goals of END and plans to use AMP consolidations more in the near future.<sup>11</sup>
- The Postal Service has converted Priority Mail processing centers, which process only Priority Mail, to logistics and distribution centers which process multiple types of mail.
- The Postal Service will convert P&DCs, which process and dispatch First-Class Mail, Periodicals, and parcels, to local and destinating processing centers. These facilities generally perform distribution of collection mail for transport to regional distribution centers (RDC)<sup>12</sup> or delivery units.
- The Postal Service is converting airport mail centers to air transfer centers. The role of the air transfer center is to tender mail to and from air transportation suppliers. During FYs 2002 through 2005, the Postal Service converted 13 airport mail centers. Processing operations were moved from airport mail centers to processing centers.
- The Postal Service's Hub and Spoke Program will be converted to surface transfer centers that will help maximize transportation capacity. Surface transfer centers will consolidate containers from multiple facilities to maximize transportation utilization.
- The Postal Service is converting bulk mail centers (BMC), which process and distribute bulk Standard Mail and parcels, to RDCs to address redundancies in the network. RDCs will also process other types of mail.

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<sup>11</sup> AMP is the consolidation of mail processing functions, typically from several facilities into one centralized facility, for the purpose of eliminating excess capacity, increasing operational efficiency, and making better use of existing space, staffing, processing equipment and transportation capacities.

<sup>12</sup> RDCs will consolidate trays and tubs containing letters to maximize transportation utilization. Priority Mail will be sorted to destinating RDCs and parcels will be dispatched to airport transfer centers, destinating RDCs, and surface transportation centers.

See Appendix A for a table showing significant network changes made since 1995. In addition, the OIG has conducted 42 mail processing efficiency and transportation reviews. A list of related OIG reviews is included in Appendix B.

END Mailflow Concept

As part of the END initiative, the Postal Service developed a distribution concept that standardizes and simplifies mailflows. This future network is based on RDCs, LPCs and DPCs. The Postal Service will convert most BMCs to RDCs and most P&DCs to LPCs and DPCs. (Diagram 1 displays a simple version of the new mailflow concept).

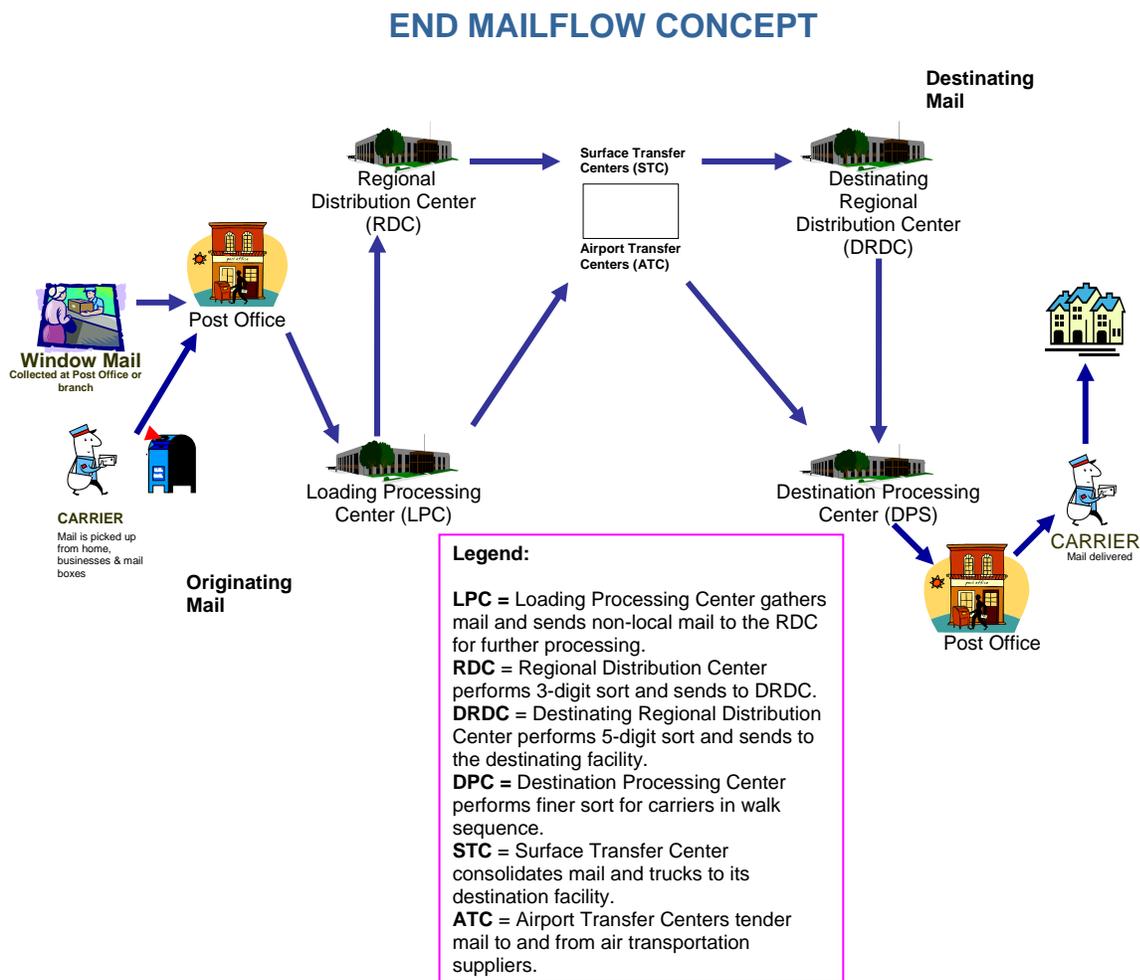


Diagram 1

## Major END Challenges

Streamlining the networks presents the Postal Service with many challenges.<sup>13</sup> The following program management challenges are key to effectively evolving the mail processing and distribution networks:

- Opposition to Infrastructure Changes: Most network changes the Postal Service has proposed have met vigorous opposition from local communities and their elected representatives. We recommended in our audit report titled *Area Mail Processing Guidelines*<sup>14</sup> that the Postal Service develop a process for addressing resistance to mail processing consolidations and facility closures. Our review showed that opposition to proposed network consolidations affected the approval and implementation of changes.
- Project Management Structure: The END project manager, who managed the modeling efforts, directly reports to the vice president, Network Operations Management. As the project matures and requires involvement across the Postal Service (e.g., Engineering, Facilities, Labor, Operations, and Contracts), project management may need to be elevated to a formal END steering committee. Without the END steering committee, management could have difficulty integrating business processes across the Postal Service and ensuring that all components of the organization responsible for its success are included in the process.
- Integration of AMP with END: Postal Service management stated that AMP was a tool they were using to incrementally implement END; however, documentation supporting the link between END and AMP was not always available. END uses a top-down approach to develop network solutions based on optimization and simulation models and has national implications. AMP uses a bottom-up approach to develop solutions based on a separate process to evaluate the consolidation of mail processing functions and has local implications. Without clear guidance, the Postal Service may waste funds if network changes are not consistent with the END framework.
- Short-Term Integrated Plan for Network Changes: The GAO report on the Postal Service's infrastructure<sup>15</sup> recommended the Postmaster General develop a process for implementing decisions.<sup>16</sup> Without a short-term plan for achieving network changes, there is no assurance that management will properly sequence

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<sup>13</sup> The END initiative will also encounter other challenges not discussed in this report. Examples include projected declines in First-Class Mail, increasing number of delivery points, the rising cost of fuel, and funding.

<sup>14</sup> *Area Mail Processing Guidelines* (Report Number NO-AR-06-001, dated December 2005).

<sup>15</sup> *U.S. Postal Service: The Service's Strategy for Realigning Its Mail Processing Infrastructure Lacks Clarity, Criteria, and Accountability* (GAO-05-261, dated April 2005).

<sup>16</sup> The GAO also recommended that the process include evaluating and measuring the results, as well as the actual costs and savings resulting from the decisions.

and integrate the various incremental network changes. In addition, oversight groups may have difficulty validating the Postal Service's methodology when questions are raised.

### Conclusion

The Postal Service is making some progress in their ongoing effort to streamline the mail processing and transportation networks. Given the size and complexity of this effort, it appears that taking an incremental approach to network changes represents an acceptable method for reducing inefficiencies and standardizing best operational practices. As identified in this report, major challenges remain and need to be addressed.

### Management's Comments

Management agreed with our observations with several exceptions. Management requested we discuss airport mail center conversions to airport transfer centers and postal automated technology programs such as Automated Package Processing System and Flat Sequencing System separately from END. Management stated that each AMP proposal is validated against the END modeling output to ensure alignment with the long-term network strategy. Further, they asserted that the difference in approaches (top-down vs. bottom-up) between the two processes actually complements the overall network design. Management's comments, in their entirety, are included in Appendix C of this report.

### Evaluation of Management's Comments

We kept our discussion of airport mail center conversions in this report since these centers are addressed in the Postal Service's *2006-2010 Strategic Transformation Plan* as part of the END effort. While we believe that automated technology challenges are important components of the END effort, we removed our discussion about them and will address technology issues in other reports. Lastly, because the Postal Service did not provide us with END-generated outcomes, we could not validate any link between AMP and END during the course of this review. Postal Service officials stated they are constantly adjusting the END outputs for mail volumes and local operational issues. For those reasons, any network design may be subject to change during the course of this transition. We plan to re-address the AMP and END integration issue later this fiscal year.

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Robert J. Batta, director, Network Operations – Processing, or me at (703) 248-2300.



Colleen A. McAntee  
Deputy Assistant Inspector General  
for Core Operations

Attachments

cc: William P. Galligan  
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David E. Williams  
Steven R. Phelps

## APPENDIX A. NETWORK CHANGES SINCE 1995

<b>NETWORK CHANGES</b>				
<b>TRANSPORTATION AND PROCESSING FACILITIES</b>	<b>INVENTORY AS OF OCTOBER 1, 2002</b>	<b>NUMBER AND TYPE OF CHANGE</b>		<b>INVENTORY AS OF SEPTEMBER 30, 2005</b>
		<b>RENAMED</b>	<b>CLOSED</b>	
Processing and Distribution Centers to Local Processing/Destination Processing Centers	271	0	1	270
Priority Mail Processing Centers to Logistics and Distribution Centers	12	12	0	12
Air Mail Centers/Facilities to Air Transfer Offices	71	13	0	71
Hub and Spoke Program to Surface Transfer Centers	14	14	0	14
Bulk Mail Centers to Regional Distribution Centers	21	0	0	21
<b>OTHER FACILITIES<sup>17</sup></b>				
	<b>Changes Since 1995</b>			
Remote Encoding Centers	55		40	15
Annexes	115		50	65
International Service Centers	7		2	5
<b>OTHER CHANGES</b>				
Area Mail Processing	28 consolidations since 1995 (includes two in FY 2004 and one in FY 2005)			
Workhour reductions	Over 187 million workhours eliminated since FY 2000			
Career positions	Over 80,000 career positions eliminated since FY 2000			
Transportation Network	Over 65 million highway contract miles reduced during FYs 2004 and 2005			

<sup>17</sup> The Postal Service has approximately 195 customer service facilities. These facilities have limited mail processing capacity and were not included in the above table.

## APPENDIX B. RELATED PRODUCTS

### Network Operations - Processing

*Efficiency Review of the Washington Bulk Mail Center* (Report Number NO-AR-06-003, dated February 22, 2006)

*Efficiency of the Chicago Airmail Records Unit at the J.T. Weeker International Service Center* (Report Number NO-AR-06-002, dated December 22, 2005).

*Efficiency Review of the Canton, Ohio Processing and Distribution Facility* (Report Number NO-AR-05-013, dated September 22, 2005).

*Efficiency of the Airmail Records Unit at the San Francisco International Service Center* (Report Number NO-AR-05-012, dated September 6, 2005).

*Efficiency of the Los Angeles International Service Center* (Report Number NO-AR-05-011, dated June 17, 2005).

*Efficiency of the Airmail Records Unit at the Los Angeles International Service Center* (Report Number NO-AR-05-010, dated April 28, 2005).

*Efficiency Review of the Akron, Ohio Processing and Distribution Center* (Report Number NO-AR-05-009, dated March 30, 2005).

*Efficiency Review of the Mansfield, Ohio Main Post Office* (Report Number NO-AR-05-004, dated December 8, 2004).

*Efficiency of the New York International Service Center* (Report Number NO-AR-04-009, dated September 24, 2004).

*Efficiency of the Air Mail Records Unit at the New York International Service Center* (Report Number NO-AR-04-011, dated September 24, 2004).

*Efficiency of the San Francisco International Service Center and the General Services Administration Facility* (Report Number NO-AR-04-006, dated March 31, 2004).

*Efficiency of the Oakland International Service Facility and the Regatta Facility* (Report Number NO-AR-04-007, dated March 31, 2004).

*Efficiency of Work Performed by Business Mail Entry Clerks in the Springfield, Virginia Business Mail Entry Unit* (Report Number NO-AR-04-004, dated February 9, 2004).

*Efficiency of Work Performed by Business Mail Entry Clerks in the Columbia, Maryland Business Mail Entry Unit* (Report Number NO-AR-04-002, dated December 26, 2003).

*Efficiency of Work Performed by Business Mail Entry Clerks at the Southern Maryland Business Mail Entry Unit* (Report Number NO-AR-04-001, dated December 24, 2003).

*Efficiency of Work Performed by Business Mail Entry Clerks within the San Francisco District* (Report Number AO-AR-03-002, dated September 25, 2003).

*Efficiency of Work Performed by Business Mail Entry Clerks within the Los Angeles District* (Report Number AO-AR-03-001, dated July 31, 2003).

*Work Performed by Business Mail Entry Employees in the Seattle, Minneapolis, and Des Moines Bulk Mail Centers* (Report Number CQ-AR-03-001, dated March 28, 2003).

*Work Performed by Business Mail Entry Employees in the Colorado/Wyoming Performance Cluster* (Report Number CQ-AR-02-001, dated September 26, 2002).

## **Network Transportation**

*Surface Transportation - Bulk Mail Center Highway Transportation Routes – Western Area* (Report Number NL-AR-06-001, dated February 14, 2006)

*Commercial Air Network Operations* (Report Number NL-AR-05-015, dated September 28, 2005).

*Mail Transport Equipment Service Center Network, Highway Transportation Routes, New York Metro Area* (Report Number NL-AR-05-014, dated September 28, 2005).

*Bulk Mail Center Transportation Routes, Northeast Area* (Report Number NL-AR-05-013, dated September 26, 2005).

*Bulk Mail Center Transportation Routes, Pacific Area* (Report Number NL-AR-05-012, dated September 21, 2005).

*Intermodal Rail and Highway Transportation Between the Pacific and Southeast Areas* (Report Number NL-AR-05-011, dated September 19, 2005).

*Bulk Mail Center Transportation Routes, Capital Metro Area* (Report Number NL-AR-05-009, dated September 2, 2005).

*Bulk Mail Center Transportation Routes, Southwest Area* (Report Number NL-AR-05-008, dated August 3, 2005).

*Bulk Mail Center Transportation Routes, New York Metro Area* (Report Number NL-AR-05-007, dated June 9, 2005).

*Mail Transport Equipment Service Center Network – Equipment Processing* (NL-AR-05-006, dated March 31, 2005).

*Bulk Mail Center Transportation Routes, Southeast Area* (Report Number NL-AR-05-005, dated March 18, 2005).

*Intermodal Rail and Highway Transportation, Pacific Area* (Report Number NL-AR-05-004, dated March 18, 2005).

*Bulk Mail Center Transportation Routes, Eastern Area* (Report Number NL-AR-05-003, dated March 17, 2005).

*Bulk Mail Center Transportation Routes, Great Lakes Area* (Report Number NL-AR-04-004, dated September 29, 2004).

*Highway Network Scheduling, Great Lakes Area* (Report Number NL-AR-04-003, dated March 29, 2004).

*Highway Network Scheduling, Eastern Area* (Report Number TD-AR-03-015, dated September 30, 2003).

*Highway Network Scheduling, Southeast Area* (Report Number TD-AR-03-014, dated September 26, 2003).

*Highway Network Scheduling, Western Area* (Report Number TD-AR-03-013, dated September 23, 2003).

*Highway Network Scheduling, Southwest Area* (Report Number TD-AR-03-010, dated July 11, 2003).

*Highway Network Scheduling, New York Metro Area* (Report Number TD-AR-03-008, dated March 31, 2003).

*Highway Network Scheduling, Capital Metro Area* (Report Number TD-AR-03-007, dated March 28, 2003).

*Highway Network Scheduling, Northeast Area* (Report Number TD-AR-03-002, dated November 25, 2002).

*Highway Network Scheduling, Pacific Area* (Report Number TD-AR-02-003, dated September 24, 2002).

## APPENDIX C. MANAGEMENT'S COMMENTS

PAUL VOGEL  
VICE PRESIDENT, NETWORK OPERATIONS MANAGEMENT



January 24, 2006

MS. STROUD

SUBJECT: Draft Management Advisory—Status Report on the Evolutionary Network  
Development Initiative (Report Number NO-MA-06- DRAFT)

This memorandum is in response to the December 23, 2005, Draft Management Advisory—Report on the Evolutionary Network Development (END) Initiative. Most of the observations related to the END initiative appear factual, with the following exceptions:

1. On page 5, the first bullet mentions the Postal Service's effort of converting its airport mail centers. This program is independent of the END initiative and should be evaluated separately. Additionally, I request that this bullet be removed from this document.
2. On page 6, the END Mail Flow Concept illustration needs to be modified to include a network facility called Airport Transfer Center. This facility will exchange mail with local processing centers, regional distribution centers, and destination processing centers.
3. On page 7, the third bullet mentions that "there is no clear link between END and AMP." The Postal Service intends to use END-generated simulated outcomes for various facilities as a basis for identifying, scheduling, and subjecting local mail processing operations to analysis and review through a modified application of existing Area Mail Processing (AMP) review procedures. The difference in approaches (top-down vs. bottom-up) between the two processes actually complements the overall network design providing a more holistic solution. Each AMP proposal is validated against the END modeling output to ensure alignment with the long-term network strategy. Using the END model as a tool in conjunction with AMP review procedures, the Postal Service intends to transition, in the long-term, to a more efficient network designed to handle multiple products with a trend toward a more shape-based mail processing streams.
4. On page 8, the first bullet describes issues related to postal automation technology programs such as Automated Package Processing System and Flat Sequencing System as part of the END program. I request that technical issues related to these programs be reviewed separately from END, and that this bullet be removed from this document.

If you have any questions, please contact Pranab Shah, Manager, Network Operations Development at 202-268-2131.

A handwritten signature in black ink, appearing to read "Paul Vogel".

Paul Vogel

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