

BEFORE THE
POSTAL REGULATORY COMMISSION
WASHINGTON, D.C. 20268-0001

FIRST-CLASS PACKAGE SERVICE (FCPS)
SERVICE STANDARD CHANGES, 2021

Docket No. N2021-2

**NOTICE OF FILING REPLACEMENT
DIRECT TESTIMONY OF STEPHEN B. HAGENSTEIN ON BEHALF OF
THE UNITED STATES POSTAL SERVICE (USPS-T-1)
(June 21, 2021)**

On June 17, 2021, the United States Postal Service filed the Direct Testimony of Stephen B. Hagenstein on Behalf of The United States Postal Service (USPS-T-1). That testimony did not include line numbers. For ease of reference by the Commission and participants in this docket, the United States Postal Service is today filing the attached replacement testimony that is identical to the testimony filed on June 17, except that it includes line numbers.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

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AUTOBIOGRAPHICAL SKETCH

1
2 My name is Stephen Hagenstein. Since February 2020, I have served as
3 Director, Logistics Modeling and Analytics at the United States Postal Service. My
4 office is responsible for providing analytics and insights to help the organization review
5 scenarios, plan for future needs, and make strategic decisions. My team directly
6 supports Surface Logistics, Air Transportation Operations, Processing Operations, and
7 strategic teams.

8 I began my career with the Postal Service in 2004 as a Field Industrial Engineer
9 where my responsibilities included implementing automation and mechanization
10 equipment in a mail processing facility; forecasting volumes and scheduling processing
11 equipment; and analyzing processes and recommending changes to improve efficiency.

12 In 2007, I was promoted to Area Operations Industrial Engineer. In this position, I
13 served as the Material Handling and Processing Equipment Coordinator. In that role, my
14 responsibilities included developing and reviewing material handling project requests
15 and business cases. I also analyzed and managed equipment utilization through
16 scheduling and reallocation of resources throughout the region. In that position I also
17 led process improvement teams, and identified, analyzed, and reported key
18 performance indicators to drive process improvement behaviors.

19 My next position with the Postal Service was as a Lead Operations Industrial
20 Engineer beginning in 2011. As a Lead Operations Industrial Engineer, I played a key
21 role in the planning and implementation of facility consolidations and restructuring,
22 involving over 60 Processing and Distribution facilities in ten states. I also strategized
23 with Postal Service senior management to develop service and productivity

1 performance improvement programs, and coordinated staffing modeling to determine
2 the authorized complements in Processing and Distribution Centers.

3 In 2018, immediately prior to assuming my current position, I was promoted to
4 Plant Manager at the 315,000 square foot Pennwood Place, Pennsylvania Processing &
5 Distribution Center, located just outside of Pittsburgh, Pennsylvania, with 470
6 employees, serving Western Pennsylvania, Ohio, and West Virginia. In this role I was
7 directly responsible for all operations, including processing and distribution, facility and
8 equipment maintenance, and transportation. I was also in charge of implementing a
9 process to track and improve on-time trip departures, and a scanning visibility analysis
10 and tracking process to improve container and bundle visibility.

11 Prior to joining the Postal Service, I worked as an Industrial Engineer for Thomas
12 G. Faria Corporation from 2003 to 2004. In that role, I implemented Lean manufacturing
13 principles, reducing inventory levels and improving production line efficiency; I also
14 coordinated and balanced production lines and work-cells using time studies, among
15 other duties.

16 I am a graduate of the University of Rhode Island's International Engineering
17 Program, from which I earned a Bachelor of Arts in French and a Bachelor of Science in
18 Industrial and Manufacturing Engineering.

19

PURPOSE OF TESTIMONY

1
2 The purpose of my testimony is to describe the nature of the changes in service
3 that the Postal Service proposes to implement in fiscal year 2021¹ to revise the current
4 service standards for First-Class Package Service (FCPS). FCPS is a mailing service
5 available for lightweight packages—for retail mailers, the weight of the package cannot
6 exceed 13 ounces; for commercial mailers, the weight of the package cannot exceed
7 15.999 ounces. The most significant revisions to FCPS would increase the service
8 standards for certain categories of FCPS from a current two-to-three-day service
9 standard to a two-to-five-day service standard for FCPS originating and destinating
10 within the contiguous United States. We also propose to adjust the service standards
11 associated with the non-contiguous states and territories, including Alaska, Hawaii,
12 Guam, American Samoa, and the U.S. Virgin Islands.²

13 These revisions will allow for significant improvements in reliability and cost-
14 efficiency in a number of inter-related ways. First, they will allow the Postal Service to
15 increase the volume of FCPS moved by surface transportation, which is a better
16 balance of reliability and cost-effectiveness than air transportation. Second, the
17 revisions will further enable the Postal Service to improve its service capability by both
18 (a) increasing the efficiency of the surface transportation network through improved
19 routing efficiency and utilization of vehicle volume, and (b) more realistically aligning the

¹ All references to years in this testimony refer to Postal Service fiscal years (October 1 - September 30).

² Changes to First-Class Package service standards would also incidentally affect international mail service standards for small packets and bulky letters, in that First-Class Package service standards generally apply to inbound international small packets and bulky letters from domestic origin airports to delivery points, and for outbound international mail from origin to International Service Center. We are not proposing any service standard changes regarding packages or changes to caller service through this proceeding, nor are we proposing pricing changes for any product here.

1 Postal Service's FCPS service standards with the Postal Service's operational
2 capabilities.³ Third, and with respect to the adjustments to the offshore territories,
3 adding a day to the service standards aligns with the changes to the proposed service
4 standards for the contiguous United States and adds opportunity for the Postal Service
5 to utilize lower-cost commercial air carriers rather than higher-cost cargo air carriers.
6 Overall, this will result in network operations that better match current and projected
7 mail and package volumes, and the Postal Service anticipates that the changes will
8 result in cost savings and a network that is more consistent, reliable, and efficient.

9 Additionally, my testimony provides the modeling methodology used to evaluate
10 the effects of the Postal Service's FCPS service standard changes. My testimony, as
11 demonstrated via the models described below, explains how the proposed service
12 standard changes under review in this docket will enable the Postal Service to increase
13 efficiency in the transportation network and lower unit transportation costs.

14 My testimony also describes how the Postal Service intends to implement the
15 proposed service standards and, equally importantly, how the Postal Service has
16 carefully considered the impacts of the changes on all relevant stakeholders, including
17 its customers, Postal Service personnel, commercial air and surface transportation
18 suppliers, and the Postal Service itself. I further discuss how the Postal Service's
19 proposed network operations changes are consistent with the policies and requirements
20 of Title 39 of the United States Code.

21

³ This is consistent with the positions taken by the Postal Service in PRC Docket No. N2021-1, First-Class Mail and Periodicals Service Standard Changes, 2021.

ASSOCIATED LIBRARY REFERENCES

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I sponsor the following public USPS Library References that are associated with my testimony:

USPS-LR-N2021-2-2; USPS-LR-N2021-2-3; and USPS-LR-N2021-2-4.

I also am sponsoring the following non-public USPS Library Reference associated with my testimony:

USPS-LR-N2021-2-NP2.

1 **I. INTRODUCTION**

2
3 The Postal Service continually seeks ways of improving its network operations
4 efficiency, reducing costs, and maintaining the high quality of service the public expects
5 and to which it is entitled from the Postal Service. In evaluating its current network
6 operations and service standards for First-Class Package Service (FCPS), the Postal
7 Service has noted its current abilities to meet existing service standards leave room for
8 improvement. Adding up to two additional days for FCPS has the potential to improve
9 the Postal Service's service capabilities, improve achievement of service standards,
10 reduce mail transportation costs, and enhance the reliability of mail.

11 **A. Discussion of Current Inability to Meet Existing Service Standards**

12
13 The Postal Service's existing service standards generally require First-Class
14 Package Service items to be delivered in two to three days where mail originates and
15 destines within the contiguous United States or certain ZIP Codes in Alaska, Hawaii,
16 and Puerto Rico. A three to five-day service standard applies for limited categories of
17 mail between Hawaii and Guam, Hawaii and American Samoa, and within Alaska.

18 There is substantial room for improvement in service performance vis-à-vis the
19 goals that the Postal Service has set for itself. As shown in USPS-LR-N2021-2-NP2
20 and folder NP30 in Docket No. ACR 2020, service performance for FCPS has been
21 below target, but FCPS items traveling by surface have experienced better performance
22 than those transported by air.⁴

⁴ Effective April 17, 2020, in response to issues concerning the COVID-19 pandemic, the Postal Service included an additional transportation day for FCPS. As indicated in the FY 2020 Annual Compliance Report (folder USPS-FY20-NP30), service performance scores for FCPS for FY2020 reflect this change.

1 **B. Potential Improvements in Service Capability and Improved**
2 **Achievement of Service Standards**

3
4 The Postal Service's current service standards for FCPS do not account for
5 transit time within the contiguous United States between origin Processing &
6 Distribution Centers or Facilities (P&DC/Fs), Area Distribution Centers (ADCs), and
7 Sectional Center Facilities (SCFs). In order to meet these service standards, a
8 significant quantity of FCPS must be transported within the contiguous United States by
9 air, rather than by more cost-effective and reliable surface transportation.

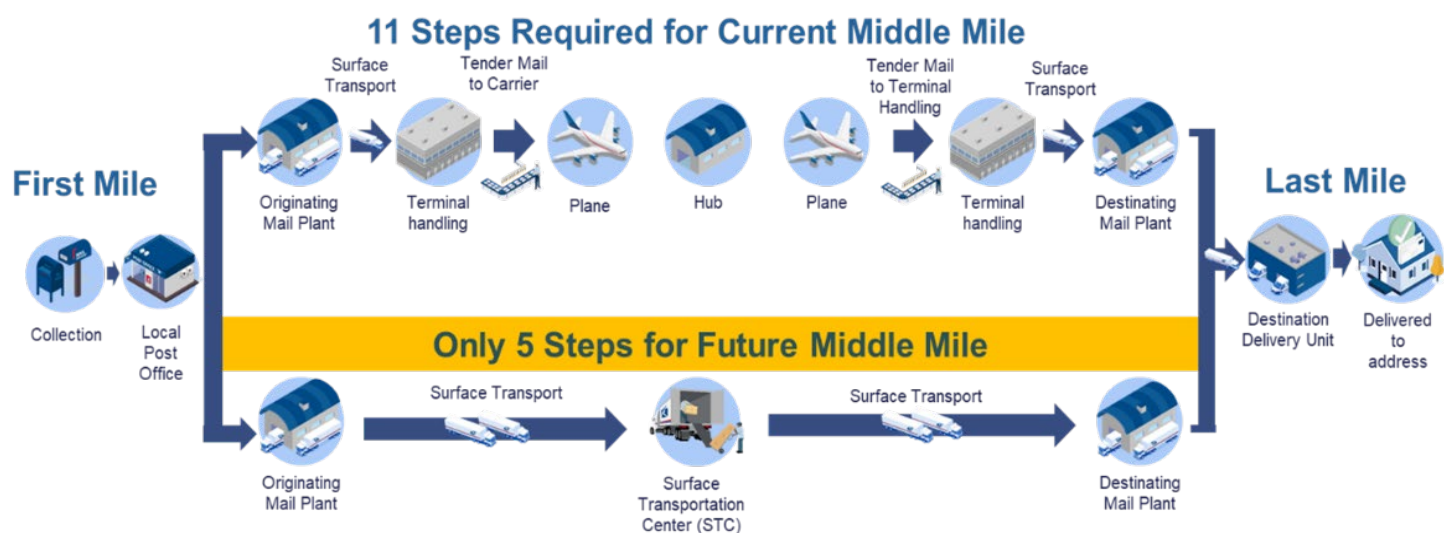
10 The Postal Service's historical service performance measurements indicate that
11 volume transported via surface modes has better on-time performance than volume
12 transported by air.⁵ A number of factors contribute to the better performance reliability
13 of surface transportation over air transportation. For example, much of the Postal
14 Service's mail volume currently transported by air is carried by commercial passenger
15 air carriers. These carriers' flight schedules can be volatile and subject to last-minute
16 changes based upon weather delays, network congestion, and air traffic control ground
17 stops. Delays and schedule alterations occur less with surface transportation,
18 improving its overall on-time reliability.

19 The Postal Service does not anticipate that shifting volume from air to surface
20 would negatively affect surface transportation reliability. While some surface
21 transportation schedule changes would be necessary, current average utilization of
22 surface transportation capacity is approximately 42 percent. That is to say, the surface
23 transportation network has ample existing capacity to absorb volume from air

⁵ See Library Reference USPS-LR-N2021-2-NP2, filed concurrently with this testimony, for detailed service performance results for FCPS.

1 transportation and shifting volume from air to surface would not introduce factors to
 2 surface transportation, like weather delays and ground stops, that have negatively
 3 affected air transportation reliability. Moreover, through improved surface transportation
 4 capacity utilization and consolidation, we expect to require fewer surface transportation
 5 trips over a given period than we currently require.⁶

6 By moving the transportation of FCPS from air to surface, the Postal Service will
 7 also be able to reduce the total number of touch points for each mail piece:



8 Accordingly, the Postal Service believes that transporting a greater volume of
 9 FCPS mail by surface transportation, where feasible within service standards, will
 10 improve on-time performance. Increasing FCPS service standards by one and, in some
 11 cases, two days, will therefore serve multiple purposes: enabling the Postal Service to
 12 transport a greater volume of FPSC mail within the contiguous United States by more-
 13 reliable surface transportation rather than by air transportation; enabling the Postal

⁶ As a result, we do not anticipate increased challenges with respect to driver shortages/availability or motor vehicle accidents.

1 Service to better meet the revised service standards; and reducing cost to the Postal
2 Service by favoring the less expensive surface transportation modes.

3 Reducing First-Class Mail and Packages from the air network will also result in a
4 reduction of costly ad hoc charter flights currently utilized to help cover capacity
5 shortfalls in the current air network. An estimated 14 to 48 percent reduction in the
6 number of air charters may be possible depending on the final volume of the lanes
7 identified to shift from air to surface transportation. This percent reduction is multiplied
8 by the charter cost in order to calculate a potential additional savings from charters.
9 Charters were used in FY 2020 to mitigate the lack of commercial air capacity
10 availability during the COVID-19 pandemic. However, given the continued high levels of
11 network package volumes, even as commercial air capacity improves as pandemic
12 conditions evolve, absent the proposed changes in service standards, charters would
13 continue to be required to handle this package volume.

14 Additionally, the proposed service standard change supports the transition of the
15 Network Distribution Centers (NDCs) to Regional Distribution Centers (RDCs),
16 dedicated to package processing as outlined in the 10-year Plan, Delivering for
17 America. Letter and flat products from the current NDCs will be merged into
18 streamlined, shape-based mail flows within our Processing and Distribution Centers
19 (P&DCs). This effort will increase density in our containers and trucks and facilitate
20 greater use of our ground transportation assets. Once the coast-to-coast First-Class
21 surface network is established, the current NDC-to-NDC network will be consolidated
22 into the preferential surface network. This consolidation is estimated to reduce between

1 14 and 28 percent of the current inter-NDC trips and between 6 and 8 percent of the
2 intra-NDC trips.

3 **C. Potential Reductions in FCPS Mail Transportation Costs Outside the**
4 **Contiguous United States**

5
6 In addition to achieving cost reductions by moving FCPS packages within the
7 contiguous United States from air to surface transportation, the Postal Service can
8 further reduce its FCPS mail transportation costs for transportation by air to and from
9 Alaska, Hawaii, and the territories through a service standard change for these
10 categories of FCPS. The Postal Service anticipates that a service standard change
11 would enable it to reduce air transportation costs by adding flight schedule flexibility that
12 does not exist with the current service standards and operating plan. In order to meet
13 current service standards, the Postal Service must frequently transport FCPS mail to
14 and from Alaska, Hawaii, and the offshore territories using more expensive air cargo
15 transportation carriers, rather than less expensive commercial air carriers, because
16 commercial air carriers' flight schedules frequently would not permit the Postal Service
17 to achieve its current service standards.

18 **II. OVERVIEW OF EXISTING AND PLANNED CHANGES TO SERVICE**
19 **STANDARDS**

20
21 As set forth in greater detail below, the Postal Service proposes to increase
22 service standards for delivery of certain FCPS materials within the United States and
23 territories by one to two days. The changed service standards will result in nearly
24 system-wide changes in mail transportation, and the effects, while not altering all
25 service standards in all areas, will result in service impacts within the entire United
26 States and offshore territories.

1 **A. Existing Service Standards**

2
3 Service standards are comprised of two components: (1) a delivery day range
4 within which mail in a given product is expected to be delivered;⁷ and (2) business rules
5 that determine, within a product's applicable day range, the specific number of delivery
6 days after acceptance of a mail piece by which a customer can expect that piece to be
7 delivered, based on the 3-Digit ZIP Code prefixes associated with the piece's point of
8 entry into the mail-stream and its delivery address.

9 Business rules are based on Critical Entry Times (CETs). The CET is the latest
10 time on a particular day that a mail piece can be entered into the postal network and still
11 have its service standard calculated based on that day (this day is termed "day-zero").
12 In other words, if a piece is entered before the CET, its service standard is calculated
13 from the day of entry, whereas if it is entered after the CET, its service standard is
14 calculated from the following day.⁸ For example, if the applicable CET is 5:00 p.m., and
15 a package is entered at 4:00 p.m. on a Tuesday, its service standard will be calculated
16 from Tuesday, whereas if the package is entered at 6:00 p.m. on a Tuesday, its service
17 standard will be calculated from Wednesday.

18 Ordinarily, a two-day service standard is applied to intra-SCF FCPS properly
19 accepted before the day-zero CET, as well as to inter-SCF domestic FCPS properly
20 accepted before the day-zero CET if the drive time between the origin P&DC/F and
21 destination SCF is 6 hours or less. A three-day service standard is applied to inter-SCF

⁷ There are separate delivery day ranges for mail within the contiguous 48 states and mail that originates or destines outside the contiguous 48 states.

⁸ If the following day is a Sunday or holiday, then the service standard is calculated from the next Postal Service delivery day.

1 domestic FCPS properly accepted before the day-zero CET if the drive time between
2 the origin P&DC/F and destination SCF is more than 6 hours and the origin and the
3 destination are within the contiguous 48 states. A three-day service standard is also
4 applied to instances involving states and U.S. territories outside the contiguous 48
5 states where:

- 6 1. The origin is in the contiguous 48 states, and the destination is in any of
7 the following: Anchorage, Alaska (5-digit ZIP Codes 99501 through
8 99539); the 968 3-digit ZIP Code area in Hawaii; or the 006, 007, or 009 3-
9 digit ZIP Code areas in Puerto Rico;
- 10 2. The origin is in the 006, 007, or 009 3-digit ZIP Code areas in Puerto Rico,
11 and the destination is in the contiguous 48 states;
- 12 3. The origin is in Hawaii, and the destination is in Guam, or vice versa;
- 13 4. The origin is in Hawaii, and the destination is in American Samoa, or vice
14 versa; or
- 15 5. Both the origin and destination are within Alaska.

16 A four-day service standard is applied where:

- 17 1. The origin is in the contiguous 48 states and the destination is in any of
18 the following: any portion of Alaska other than Anchorage (5-digit ZIP
19 Codes 99501 through 99539); any portion of Hawaii other than the 968 3-
20 digit ZIP Code area; or the U.S. Virgin Islands;
- 21 2. The destination is in the contiguous 48 states and the origin is in Alaska,
22 Hawaii, or the U.S. Virgin Islands; or

- 1 3. The origin and destination are in different non-contiguous states or
2 territories, excluding mail to and from Guam and mail between Puerto
3 Rico and the U.S. Virgin Islands.

4 A five-day service standard is applied to all remaining FCPS volume properly accepted
5 before the day-zero CET.

6 **B. Proposed Changes to Existing Service Standards**

7
8 Under the new service standards, a two-day service standard would apply to
9 intra-SCF FCPS properly accepted before the day-zero CET, as well as to inter-SCF
10 domestic FCPS properly accepted before the day-zero CET if the drive time between
11 the origin P&DC/F, destination ADC, and destination SCF is 8 hours or less.

12 A three-day service standard would apply to FCPS if the drive time between the
13 origin P&DC/F, destination ADC and destination SCF is more than 8 hours but less than
14 32 hours (inclusive).

15 A four-day service standard would apply to FCPS where:

- 16 1. The origin and destination are within the contiguous 48 states and the
17 drive time between the origin P&DC/F, destination ADC and destination
18 SCF is more than 32 hours but less than 50 hours (inclusive);
- 19 2. The origin is in the contiguous 48 states, and the destination is in any of
20 the following: Anchorage, Alaska (5-digit ZIP Codes 99501 through
21 99539); the 968 3-digit ZIP Code area in Hawaii; or the 006, 007, or 009 3-
22 digit ZIP Code areas in Puerto Rico;
- 23 3. The origin is in the 006, 007, or 009 3-digit ZIP Code areas in Puerto Rico,
24 and the destination is in the contiguous 48 states;

- 1 4. The origin is in Hawaii, and the destination is in Guam, or vice versa;
- 2 5. The origin is in Hawaii, and the destination is in American Samoa, or vice
- 3 versa; or
- 4 6. Both the origin and destination are within Alaska and not intra-SCF.

5 A five-day service standard would apply to all other FCPS, meaning where:

- 6 1. The origin and destination are within the contiguous 48 state and the drive
- 7 time between the origin P&DC/F, destination ADC and destination SCF
- 8 exceeds 50 hours;
- 9 2. The origin is in the contiguous 48 states and the destination is in any of
- 10 the following: any portion of Alaska other than Anchorage (5-digit ZIP
- 11 Codes 99501 through 99539); any portion of Hawaii other than the 968 3-
- 12 digit ZIP Code area; or the U.S. Virgin Islands;
- 13 3. The destination is in the contiguous 48 states and the origin is in Alaska,
- 14 Hawaii, or the U.S. Virgin Islands; or
- 15 4. The origin and destination are in different non-contiguous states or
- 16 territories, excluding mail to and from Guam and mail between Puerto
- 17 Rico and the U.S. Virgin Islands.

18 **III. MAINTENANCE OF CURRENT NETWORK OPERATIONS AND SERVICE**
 19 **STANDARDS PREVENTS POSTAL SERVICE'S REALIZATION OF**
 20 **OPERATIONAL AND COST EFFICIENCIES**

21 Current FCPS service standards account for surface transit times with respect to

22 two-day service standards, but not for service standards of three or more days. The

23 current two-day service standard is determined based upon transit time between the

24 origin P&DC/F and the destination SCF. Specifically, the two-day service standard

25

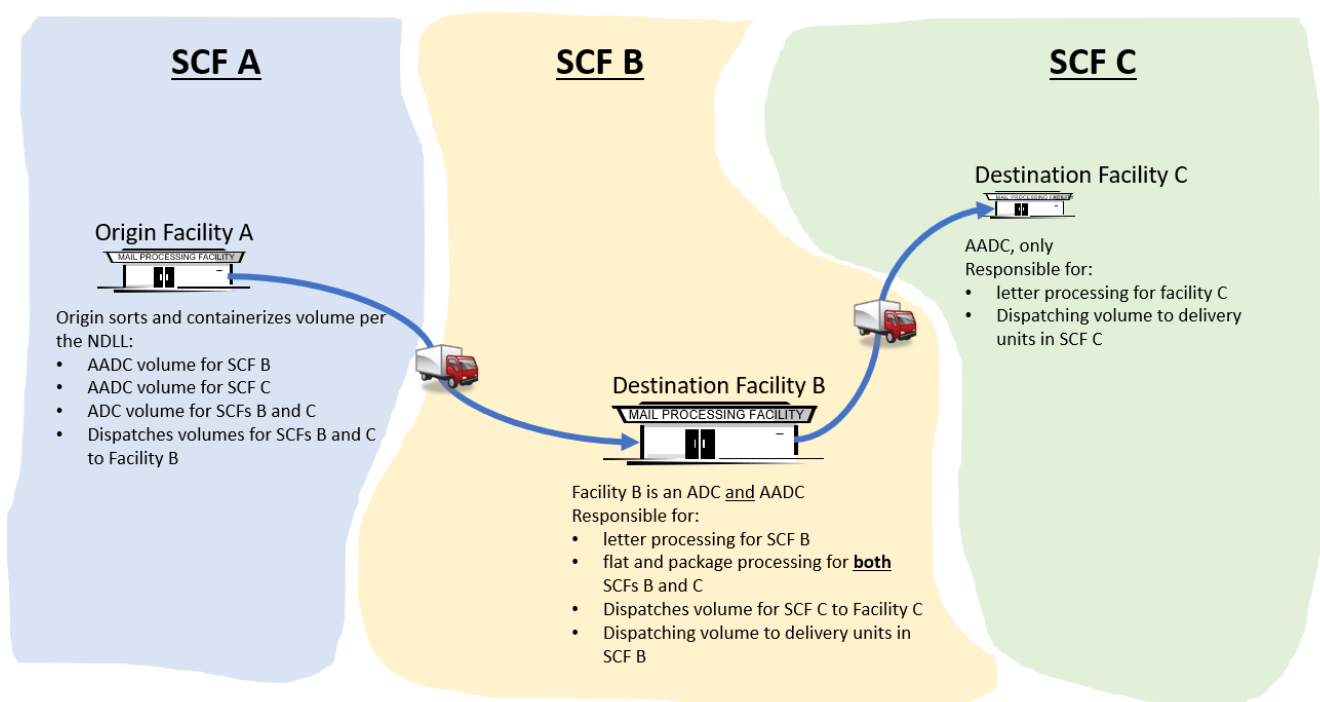
1 applies when the transit time is 6 hours or less. And the three-day service standard
2 applies to all other FCPS packages where the origin and destination are within the
3 contiguous United States. In practice, the three-day service standard is achievable only
4 by forcing the Postal Service to prioritize air transportation, which is both more costly
5 and less reliable than surface transportation.

6 More particularly, FCPS volume with a three-day service standard must arrive at
7 the destination ADC/SCF by 20:00 hours on Day 2. Assuming that the FCPS mail
8 departs from its origin at 04:00 hours on Day 1, this permits the Postal Service to use
9 surface modes of transportation only where the transit distance is approximately 1,800
10 miles or less (assuming an average transit speed of 46.5 miles per hour). Origin and
11 destination points that are either beyond this range or, for other reasons, cannot be
12 reached by the Day 2 CET, are routed via the air network. As noted above, utilization of
13 the air network is both more costly and less reliable than surface transportation.

14 **A. Postal Service Processing and Distribution Centers**

15
16 The Postal Service has several types of processing and distribution centers.
17 ADCs are typically the larger facilities that handle the processing and distribution of
18 letters, flats, and packages. Internally, all origin facilities must sort flats and packages
19 to the ADC separations as defined in the National Distribution Labeling List (“NDLL”).
20 Automated Area Distribution Centers (“AADCs”) are facilities categorized as having
21 automated letter processing, and the minimum separations required for an origin facility
22 to make for AADCs are also defined in the NDLL under the AADC list. SCFs are the
23 destination processing facilities that have a distinct area of responsibility for processing
24 and finalizing volumes for dispatch to delivery units within that area. SCFs are typically

1 AADCs, and not all AADCs are ADCs. ADCs can have subordinate AADCs and SCFs.
 2 For internal surface routing purposes, origin facilities will typically route to the parent
 3 ADCs, and local transportation from the ADCs will transfer volumes shorter distances to
 4 the downstream AADCs/SCFs. Under the present business rules, there are cases
 5 where the SCF is closer to origin facilities and has a 2-day service standard, while the
 6 parent ADC is beyond the 6-hour drive time and therefore has a 3-day service standard.
 7 In these situations, to meet the service commitments to the subordinate SCF, the origin
 8 facility must make a separation for the SCF's volume and in some cases plan specific
 9 transportation to the SCF to meet the service commitments.



10

11 **B. Postal Service Modes of Transportation**

12

13 The Postal Service currently employs two primary modes of transportation for the

14 delivery of mail and packages: air and surface transportation. In this context, “surface

15 transportation” refers primarily to transportation by trucks of various dimensions and

1 automobiles. In very isolated cases, mail and packages are also transported by barge,
2 hovercraft, snowcat, rail, and mule. Mail and packages transported by air are primarily
3 flown by either cargo or various commercial passenger air carriers and, in some cases
4 contracted or chartered carriers.⁹

5 The Postal Service divides surface transportation, in general, into two types of
6 service: local and network.

7 “Local surface transportation” refers to the transportation of mail and packages
8 between delivery units, mailers, and business mail entry units (collectively, “acceptance
9 sites”), on the one hand, and P&DC/Fs on the other. More particularly, under the rubric
10 of local surface transportation, in the afternoon, postal employees or contractors collect
11 mail and packages from acceptance sites and transport them to processing facilities,
12 where the items will be further sorted for delivery or transportation to a subsequent
13 processing facility. In the morning, postal employees or contractors transport
14 destinating mail and packages, which were sorted at the processing facility overnight, to
15 local delivery units. The Postal Service effects local transportation of mail and
16 packages through the services of both postal employees, *i.e.*, the Postal Vehicle
17 Service (PVS), and Highway Contract Route (HCR) suppliers.¹⁰

18 “Network surface transportation” refers to mail and packages that are transported
19 between processing facilities, such as SCFs, ADCs, and P&DC/Fs. Mail that does not
20 both originate and destinate within the geographic area of an SCF must be further

⁹ Transportation of mail by air between points within Alaska is affected by a regulated equitable distribution of volume among qualified carriers, which serve primarily or exclusively the Alaska market. See 39 U.S.C. § 5402(g). Such transportation is not the subject of this testimony.

¹⁰ Certain HCR suppliers who primarily transport mail between processing facilities occasionally also transport mail to individual delivery units located along a processing-facility-to-processing-facility route.

1 transported to downstream processing facilities for further sortation, transportation, and
2 delivery. The Postal Service enters contracts with HCR suppliers to perform the vast
3 majority of these trips.

4 As noted above, the Postal Service provides surface transportation using either
5 postal employees (PVS) or HCR suppliers. In general, the Postal Service employs PVS
6 only for local surface transportation. In a few instances, however, PVS may provide
7 network surface transportation between plants close to employees' home facilities.
8 HCR suppliers provide the bulk of network surface transportation. The Local
9 Distribution Transportation (LDT) Services Group manages the Postal Service's LDT
10 contracts in Largo, Maryland. Longer-haul transportation contracts, *i.e.*, Process
11 Network Transportation (PNT) contracts, are managed by the PNT Transportation
12 Group in Memphis, Tennessee.¹¹

13 Costs for local surface transportation currently average \$2.55 per mile, and
14 typically range from \$1.70 per mile to as much as \$2.90 per mile. The cost of network
15 surface transportation currently averages approximately \$2.20 per mile, and ranges
16 from \$1.90 per mile to over \$3.00 per mile.¹² Network surface transportation is typically
17 more cost-efficient than local surface transportation due to a number of factors,
18 including the ratio of time spent loading and unloading vehicles vs. their time actually in
19 transit, and the greater amount of time in a day during which network surface

¹¹ Contract Delivery Service contracts for last-mile delivery, typically on rural routes, although performed by HCR contractors, are not at issue here.

¹² These costs are used to compare the cost effectiveness of different modes in the model discussed below.

1 transportation assets, e.g. trucks, are utilized vs. idle when compared to local surface
2 transportation assets.¹³

3 Two main criteria determine whether the Postal Service transports mail and
4 packages by air or by surface: time and cost. The first consideration, time, refers to
5 whether the Postal Service can physically transport the volume from one point to
6 another in time to meet applicable service standards and operating plans. If it is
7 possible to transport mail and packages on a timely basis by surface transportation and
8 if the volume warrants it, then the Postal Service employs surface transportation modes.
9 If the volume of mail and/or packages on a particular lane is insufficient to justify the
10 cost of surface transportation, or if surface transportation is too time-consuming to
11 permit the Postal Service to meet applicable service standards, then the Postal Service
12 transports that volume by air. In some cases, letters and flat mail cannot be routed on
13 surface transportation due to the transit time constraints, but First-Class Packages can
14 be routed via surface transportation due to the later Critical Entry Time (CET) at
15 destination. As noted above, FCPS within the contiguous United States must often fly
16 in order to meet the current service standards.

17 FCPS must also fly between the contiguous 48 states and Alaska, Hawaii, and
18 the offshore territories to meet the current service standards. Three-to-five-day volumes
19 must arrive before the CET at the destination processing center typically by 20:00
20 hours, day 2, to meet the operating plan for processing and transfer to downstream
21 territories or processing centers for final processing and delivery.

¹³ Occasionally, the Postal Service enters into emergency transportation contracts, the cost of which can exceed the amounts stated herein. Such emergency transportation contracts are not, themselves, significant cost drivers.

1 **IV. PROPOSED CHANGES AND BENEFITS**

2

3 In this section, I discuss more specifically the Postal Service's proposed

4 transportation network changes, FCPS mail processing changes, and service

5 standards, as well as their effects on Postal operations.

6 **A. Proposed Transportation Changes and Benefits**

7 The Postal Service's proposed changes to FCPS service standards will enable

8 the Postal Service to implement cost-saving and efficiency-improving transportation

9 network changes. Such changes will help the Postal Service achieve a better balance

10 of cost effectiveness and reliability by moving more volume by surface transportation.

11 Further, they will enable the Postal Service to more efficiently utilize surface

12 transportation.¹⁴ This will enable the Postal Service to provide much more reliable and

13 consistent service performance.

14 This proposal will also offer customers expanded reach for the two-day service

15 standard because the business rule for that standard would increase from a six-hour to

16 an eight-hour drive time. This, in turn, would enable four percent of FCPS volume to

17 experience a shorter service standard than that currently in place. While this will impact

18 the Postal Service's ability to adopt efficiency-enhancing measures for this volume, it

19 does so only modestly, and the Postal Service has determined that providing an

20 expanded 2-day reach is an important factor in the highly competitive package delivery

21 market. This is discussed further in the testimony of witness Foti.

¹⁴ They may also eventually enable the Postal Service to more effectively consider modes of surface transportation, such as rail, that are arguably underutilized. See *generally* U.S. Postal Serv., RARC-WP-12-013, Strategic Advantages of Moving Mail by Rail (July 16, 2012).

1 Expanding the available transit window for three-day volume opens opportunities
2 to route volumes more efficiently. Currently, the three-day service standard applies to
3 all FCPS with an origin and destination within the contiguous United States if a shorter
4 service standard does not apply. In practice, to meet this standard, the Postal Service
5 currently transports most FCPS packages by surface transportation where the transit
6 window is 38 hours or less. The Postal Service proposes to modify the three-day
7 service standard to apply only to volume that the Postal Service can transport via
8 surface transportation from origin P&DC/F to destination SCF within 32 hours, including
9 any transfer times from the ADC. This change would add sufficient time to allow for
10 efficiency-increasing measures, such as (a) increasing the use of transfers via
11 aggregation sites and surface transfer centers (STCs), (b) combining trailer loads for
12 one destination with loads for other destinations (load sequencing), or (c) routing “multi-
13 stop” lanes where the Postal Service could pick up volume from multiple origins along
14 the line of travel for final destination.

15 Adding a four-day service standard for FCPS originating and destinating within
16 the 48 contiguous states with a surface transit time from P&DC/F to Destination SCF of
17 50 hours or less would have similar efficiency-increasing effects. In addition to the
18 added available time in the transit windows between origin and destination pairs within
19 the current three-day network, adding an additional day also significantly extends the
20 surface transportation reach capability and allows for more efficient surface routings and
21 capacity utilization. Finally, adding a five-day service standard within the 48 contiguous
22 states will allow the Postal Service to shift additional volume from the more costly and

1 unreliable air transportation network to the more economical and reliable surface
2 transportation network with routing capacity utilization benefits as well.

3 Beyond the potential cost savings from shifting volume from air to surface and
4 enhancing the efficiency of the surface network, the proposed addition of one or two
5 days to current service standards will help to ensure that all mail volumes are properly
6 loaded onto designated transportation within the time constraints of the operating plan.
7 Early dispatches, which are frequently necessary to achieve current service standards,
8 risk departing from origin points without all committed volumes, leading to operational
9 plan failures and missed service standard targets.

10 Moreover, adding a day to the FCPS service standards currently applied to
11 offshore volumes will allow the Postal Service to increase the use of lower-cost
12 commercial air carrier providers, rather than cargo air carriers, while meeting our
13 service performance targets.

14 **B. Proposed Mail Processing Changes**

15 Minor processing changes are anticipated as a result of the proposed FCPS
16 service standard changes. Currently, outgoing network air volumes sorted on package
17 sorting equipment and in mail operations must be assigned to an airline as either part of
18 the sort operation or in a subsequent airline assignment operation. For lanes shifting
19 from air to surface modes, some of the volume may be containerized into pallet boxes
20 and staged for dispatch on surface transportation. The reduction in airline assignments
21 and associated handling at origin, plus the reduction in sack handling at destination, is
22 expected to improve efficiencies in the processing centers. This efficiency gain is
23

1 expected to reduce workhours, but not to a degree anticipated to impact employee
2 complement.

3 **V. PROCESS UTILIZED TO ANALYZE TRANSPORTATION CHANGES**

4
5 This portion of my testimony describes the evaluation of how the proposed
6 service standard modification allows for additional transport time and increased
7 efficiencies across the network for FCPS. Adding one to two days to the service
8 standard between certain origin P&DCFs, destination ADCs, and destination SCFs pairs
9 (OD Pairs) will enable approximately 31 percent of current FCPS volume to shift to
10 surface transportation from air transportation.

11 **A. Overview**

12
13 My analysis quantifies the potential shift of FCPS volume from the air network to
14 the surface network, the impact to the surface network from the additional diverted
15 volume, and the routing efficiencies gained to the existing surface network due to the
16 increased transportation window. The network scenarios were modeled using logistics
17 industry optimization software, Blue Yonder[®] Transportation Modeler (TMOD).¹⁵

18 The service standard changes reviewed in this docket will impact both Origin and
19 Destination Pairs (OD Pairs) that are currently served by surface transportation and
20 those currently served by air transportation. Due to the impact to the current surface
21 network and the introduction of new OD Pairs to the surface network, the modeling was
22 an iterative process to maximize network efficiencies and ensure accurate comparative
23 analysis of results. The iterative process first created a model to optimize the current

¹⁵ TMOD specializes in optimizing both large and small transportation networks by providing users with a vast array of customizable variables and inputs. Here, TMOD build 2019.1 and PC*Miler 30[®] were employed. The software ran on a virtual desktop server.

1 surface pairs, then introduced current air OD Pairs into the model, and finally analyzed
2 cost effectiveness of the model's routing results for current air OD Pairs.

3 The first modeling iteration uses TMOD to optimize six consecutive days of
4 current surface OD Pairs using the proposed service standard changes (and, as noted
5 below, the proposed service standards for FCM and end-to-end Periodicals being
6 considered in Docket No. N2021-1). The result of this model is an optimized surface
7 network which better maximizes transportation efficiencies. For the next model
8 iteration, which introduces six consecutive days of current air OD Pairs, the routings in
9 the first model result are "locked" to ensure that the model would not create inefficient
10 routings of current surface pairs to accommodate the air OD Pairs. This model then
11 determines the optimized surface routings for current air OD Pairs either by utilizing the
12 "locked" routings from the first iteration or developing new routings exclusively for the
13 current air OD Pairs. Finally, surface routes created exclusively for the current air OD
14 Pairs, that launched on day one, are evaluated to determine if those new surface routes
15 are more cost effective than transporting via the air network. The evaluation of a
16 proposed air-to-surface lane compares the estimated cost for the surface trip to the
17 estimated cost to fly that volume by converting the pieces to weight and applying current
18 air carrier market shares with associated costs.¹⁶ The final surface routing model result
19 is a combination of the new surface routings added exclusively for current air OD Pairs
20 that are determined to be cost effective and the optimized surface routings that
21 combined both current surface and air OD Pairs in the second model iteration.

¹⁶ The model uses an estimated cost for surface trips of \$2.50 per mile (rounded up from \$2.48 per mile).
See *ProcurementIQ Procurement Report: 52869612 National Trucking Services* (April 2020).

B. Inputs

1 **B. Inputs**
2
3 A number of inputs, appropriate to this type of modeling and described below,
4 were utilized in the modeling. Package volume was derived from the Postal Service's
5 Product Tracking & Reporting (PTR) System. The second highest Wednesday volume
6 from October 2020 was selected. The Postal Service observed unprecedented growth
7 in package volumes during the pandemic, and it was believed that a significant portion
8 of that volume would remain after the end of the pandemic. Package volume trends
9 were monitored and appeared to stabilize in the September and October timeframe, and
10 October was selected for a representative volume for packages. All other volume in the
11 model is based on March 2019 WebODIN¹⁷ (renamed from ODIS) data that is a monthly
12 total by Origin 3-digit ZIP Code, Destination 3-digit ZIP Code, class, and shape. FCPS
13 volumes were compared and scaled to match the USPS monthly Revenue & Volume
14 Comparison (RVC) report for March 2020. March is historically an average month in the
15 seasonal mail volume cycle and is not skewed by holiday impacts. The volume used for
16 the modeling represents the second-highest Wednesday in the month of March. To
17 estimate the second-highest Wednesday volume, total container scans for the month of
18 March were first pulled from the Surface Visibility (SV) database. The daily proportion
19 of containers was determined by dividing the daily count by the total. The proportion of
20 the second highest Wednesday containers to the total containers was applied to the
21 ODIN piece-level data to estimate the second highest Wednesday volume. This volume
22 was further compared to data from the Informed Visibility (IV) system to ensure
23 accuracy. The shipments were then replicated for six days. The six days of data were

¹⁷ USPS-LR-N2021-2-2 (1_WebOdin_Public.txt); USPS-LR-N2021-2-NP2 (1_WebOdin_Private.txt).

1 modeled to allow efficient connection throughout the end-to-end network. For example,
2 this allows shipments from origins dispatched on day-1 to pair with shipments
3 dispatching on day-2 from another origin in the line of travel to a final destination.

4 The volume mapping files consist of the Transportation Optimization Planning
5 and Scheduling (TOPS) originating mapping file¹⁸ and the National Distribution Labeling
6 List (NDLL) file.¹⁹ The TOPS file contains origin 3-digit ZIP Codes that are mapped to
7 their corresponding processing facilities. This file provides a mapping for every Origin
8 3-digit ZIP Code, class, and shape to a processing facility. The NDLL file contains
9 destination 3-digit ZIP Codes mapped to their corresponding destination processing
10 facilities. The file provides all processing facilities across the country with the required
11 separations and destination location for every 3-digit ZIP Code, class, and shape.

12 The Mode Mapping file,²⁰ a current state mode matrix, is pulled from the USPS
13 Distribution Table Maintenance System (DTMS). The matrix is presented by Origin 3-
14 digit ZIP Code, Destination 3-digit ZIP Code, class, shape, and day of the week. For the
15 model the Wednesday mode matrix was used. This table designates the approved
16 mode of transportation, air or surface, between every origin and destination pair in the
17 country.

18 For the Containerization file,²¹ volumes are converted to All Purpose Containers
19 (APCs) using the USPS Management Operating Data System (MODS), Manual M-32,

¹⁸ USPS-LR-N2021-2-2 (2_Transportation Optimization Planning and Scheduling (TOPS) originating mapping file.xls).

¹⁹ USPS-LR-N2021-2-2 (2_National Distribution Labeling List (NDLL).xlsx).

²⁰ USPS-LR-N2021-2-2 (3_Mode Mapping_Public.xlsx); USPS-LR-N2021-2-NP2 (3_Mode Mapping_Private.xlsx).

²¹ USPS-LR-N2021-2-2 (4_Containerization File.xls).

1 conversion rates by product. Pieces were converted to APCs to provide a universal unit
2 of volume for the modeling software, since 10 letter pieces do not require the same
3 space as 10 parcels. However, by converting all mail to equivalent APCs, the Postal
4 Service can now accurately create shipments for the software to analyze using volume
5 inputs that are directly comparable. This model assumes the average APC would be 75
6 percent full. Volume requiring more than a 75 percent full APC was rounded to the next
7 highest number of containers. For example, if a lane converts piece volume to 1.2
8 APCs, this was modeled as 2 APCs. Performing the above conversions and
9 calculations outside of the model significantly reduced the complexity of calculations
10 that would have to take place inside the software.

11 The Shipment Table²² contains the shipment data, or origin to destination pair
12 volumes used in the model. Each shipment must consist of an origin, destination,
13 transportation window, product, and volume. These are the minimum required inputs to
14 run a model for optimization in TMOD. The model optimizes the routing of the
15 shipments referenced in this table, with the objective of minimizing transportation miles
16 while adhering to all parameters and constraints.

17 The Location Table²³ contains every location used in the model. Every origin
18 and destination from the Shipment Table must be defined in this table. For this model,
19 National Air and Surface System (NASS) facility codes from TOPS and the NDLL are
20 used as locations. Surface Transfer Centers (STCs) are used as hub locations for the

²² USPS-LR-N2021-2-2 (5_Shipment Table_Public.xlsx); USPS-LR-N2021-2-2 (5_Shipment Table_Private.xlsx).

²³ USPS-LR-N2021-2-3 (6_Location Table.xlsx).

1 model. Every NASS location is associated with its current address and latitude and
2 longitude coordinate from the Facilities Database (FDB).

3 By default, PC*Miler is used to calculate the time and distance between all pairs
4 represented in the model. PC*Miler uses the road speed limits to determine transit time
5 and does not currently adjust for traffic. The Transit Override Table²⁴ is an optional table
6 that can be used in tandem with the results from PC*Miler to allow users to define a
7 custom transit time between pairs in the model. For this model, we are using this table
8 because it allows us to use USPS Supply Management's standard of 46.5 miles per
9 hour for transportation planning for pairs under 1,000 miles, and 55 miles per hour for
10 those pairs 1,000 miles or more.

11 The Access Rating Tools (ART) Database²⁵ is a Microsoft Access file with a
12 custom user interface. This file defines all valid paths of travel and assigned tariffs for
13 pre-defined segments. While optimizing routings, the model checks proposed routings
14 against the ART file to ensure they are valid and determine whether a tariff is applied to
15 influence desired routing behavior.

16 The Strategy File²⁶ is a TMOD-specific file that gives instructions to the software
17 on how to perform the optimization. This file allows users to define the order in which
18 certain optimizations are performed. For the modeling developed for this docket, the file
19 was designed with the help of Blue Yonder modeling experts to help optimize around
20 the Postal Service's complex business rules. To achieve this, all the processes that the
21 model must solve were mapped out, creating many different strategy files to test. The

²⁴ USPS-LR-N2021-2-3 (7_Transit Override Table.xlsx).

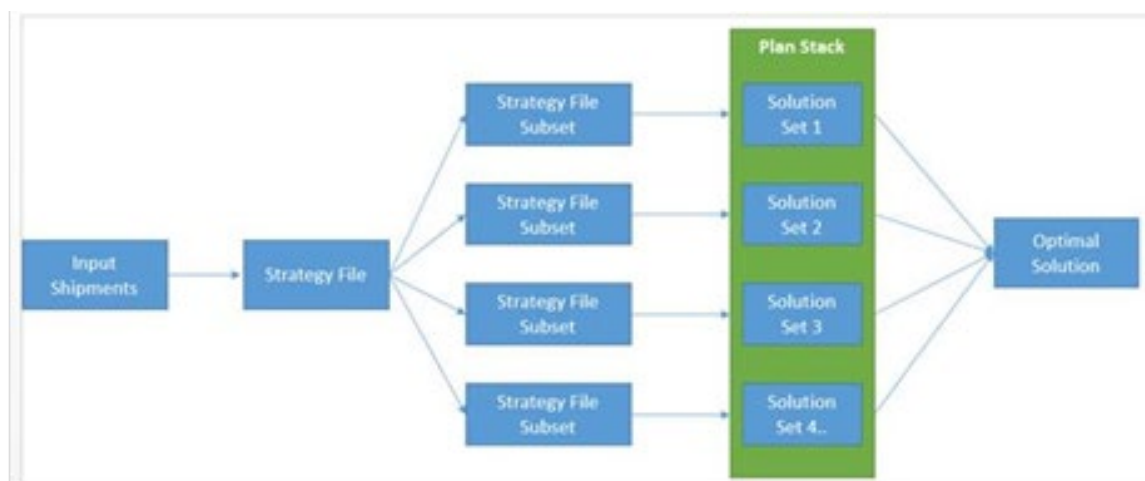
²⁵ USPS-LR-N2021-2-3 (8_Access Rating Tool.mdb).

²⁶ USPS-LR-N2021-2-3 (9_Strategy File.strat).

1 run time, solution, and complexity of each strategy file was taken into consideration
 2 when deciding on the final version.

3 The version used in this modeling effort gives the best solution without sacrificing
 4 the run time or being overly complex. Reducing the complexity is important, because
 5 small changes in the rules could require significant changes in a more complex strategy
 6 file, making comparisons across different model runs increasingly difficult. The strategy
 7 file used in this model builds the solution using a series of optimization functions within
 8 a PLAN STACK, or repository of saved solutions. The results are then reset, a new set
 9 of functions are run, and the results are saved to the PLAN STACK. Once all functions
 10 have run, the strategy file will then reference the PLAN STACK (which has all of the
 11 different solutions stored) and select the optimal solution from all saved solutions. The
 12 below diagram illustrates this process.

13 **Figure 1: Optimization Functions Process**



14
 15 More specifically, the strategy file first builds the optimal direct routes and multi-
 16 stop routes and saves the solution to the PLAN STACK. It then builds the optimal hub
 17 routings and stores those in the PLAN STACK. It will then take the best of both of these
 18 solutions for the final resulting routings.

1 The Parameter File²⁷ is also a TMOD-specific file. It contains a set of global
2 optimization parameters. Many of the parameters are also defined at a more granular
3 level. They include maximum volume per trip, maximum stops in transit (for multi-
4 stops), maximum allowed transit duration, and maximum legs per shipment (which
5 controls multiple hub usage). TMOD uses the most granular level of each parameter,
6 and the high-level global parameters are used to fill any gaps where specificity is not
7 defined.

8 **C. Proposed Service Standard Assignment Rules**

9
10 The following proposed service standard assignment rules were utilized in the
11 modeling. Two-day surface transportation was assigned to OD Pairs where the
12 combined distance between the origin P&DCF, destination ADC, and destination SCF
13 was up to 8 hours of combined transit time at 46.5 miles per hour, or approximately 372
14 miles.

15 Three-day surface transportation was assigned to OD Pairs where the combined
16 transit time was between 8 hours and 32 hours of transit time at 46.5 miles per hour, or
17 between approximately 373 and 1,488 miles. This distance and time were selected to
18 add time to the transit window, allowing later departure from origin and transfer through
19 a Surface Transfer Center. For example, the origin can depart a trip to a destination at
20 the outer boundary of the three-day service area as late as 07:00 from origin, allow 4
21 hours for transfer at a hub facility, and arrive at destination one hour prior to a CET of
22 20:00 hours, day-2, at destination.

²⁷ USPS-LR-N2021-2-3 (9_Parameter File.param).

1 Four-day service standards were assigned to OD Pairs where the combined
2 transit time was between 32 and 50 hours of drive time at 46.5 miles per hour, or
3 between approximately 1,489 and 2,325 miles. Five-day service standards were
4 assigned to OD Pairs requiring greater than a combined 50 hours of drive time.

5 The intent of adding incrementally more time to the transit windows as distances
6 increased was to encourage pairing of shipments at the origin locations, allow volume
7 transfers via STCs, add buffer time to absorb transportation delays, and still enter FCPS
8 volume up to the destination CET of 20:00 hours the day prior to the delivery standard.
9 Allowing such flexibility in the transit time between OD Pairs allows the model to test
10 additional routings for optimization and build efficient routings.

11 **D. Assumptions**

12
13 Several assumptions were made in the modeling. These assumptions, and the
14 reasons for making them, are described below. They are categorized as transportation
15 assumptions and general modeling assumptions.

16 For transportation, in order to generate transit times between pairs, 46.5 miles
17 per hour was used. This rate was selected as a value accepted by Supply Management
18 and used when planning and soliciting new transportation with suppliers. This general
19 mile per hour rate for long haul trips accounts for breaks and driver changes. 55 miles
20 per hour was used for OD Pairs 1000 miles apart or more.

21 Maximum volume per 53-foot trailers was modeled as 1,575 cubic feet. This
22 reflects 42 APCs at 75 percent capacity (37.5 cu-ft) per trailer. Volume conversions to
23 APCs were limited to 75 percent capacity to prevent unrealistic containerizations of 100
24 percent capacity. Originating mail processing facilities dispatch containers from multiple

1 operations, each with containers to a set of destinations. While some consolidation
2 occurs, each of those containers would not be expected to dispatch 100 percent full.

3 Trips were not allowed to flow through more than one STC or hub. All
4 transportation was either defined as a direct trip (from origin to destination, allowing
5 stops to pick-up or drop-off shipments in-between) or a non-stop trip to a single STC.
6 Volumes were aggregated at the STC from multiple origins to build trips to the final
7 destination with improved utilization. Multi-stop trips were allowed with a maximum of
8 two extra stops. In addition, trips were structured as “all picks and one drop” or as “all
9 drops and one pick.” “All picks and one drop” means the origin location loads volume
10 for a single destination and the model allows the trip to pick up additional loads for that
11 same destination (many-to-one). “All drops and one pick” means the model allows a
12 single load at an origin location to be unloaded at multiple destinations. The load would
13 be load-sequenced where the first stop would be loaded at the tail of the trailer and the
14 final destination would be loaded at the nose of the trailer. The below diagram
15 illustrates these trip structures.

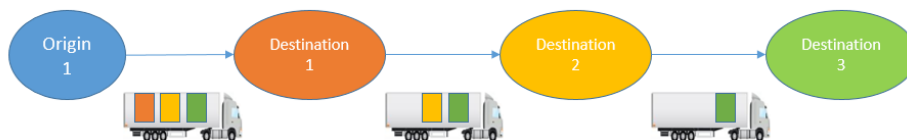
1

Figure 2: Trip Structures**Scenario 1: All picks and one drop**

- Origins 1-3 all load volume for destination
- Origins do not load or unload ANY other volumes
- Load sequencing is not required (same destination)

**Scenario 2: All drops and one pick**

- Origin1 loads volumes for destinations 1-3
- Destinations 1-3 only unload volume
- Load sequencing is required



2

3 The model does not mix multiple loads and unloads on the same trip. For
 4 example, it will not allow an origin to load volume for multiple destinations and then
 5 allow it to load volume from the first stop along the way. Combining loads and unloads
 6 was not allowed in the model in order to simplify the operation at the receiving sites.

7 The following general modeling assumptions were also made. Origin Dispatch of
 8 Values (DOVs) were based on 95th percentile machine end times, plus an additional 90
 9 minutes for dispatch preparation and staging, or 03:30, whichever was earlier. Machine
 10 end times were extracted from the USPS Web End-Of-Run (EOR) database. This
 11 database tracks the machine processing runs including start, end, and down times for
 12 the majority of mail processing machines in every facility. The 90 minutes added to the
 13 machine clearance times is the USPS-accepted expectation of when volume would be

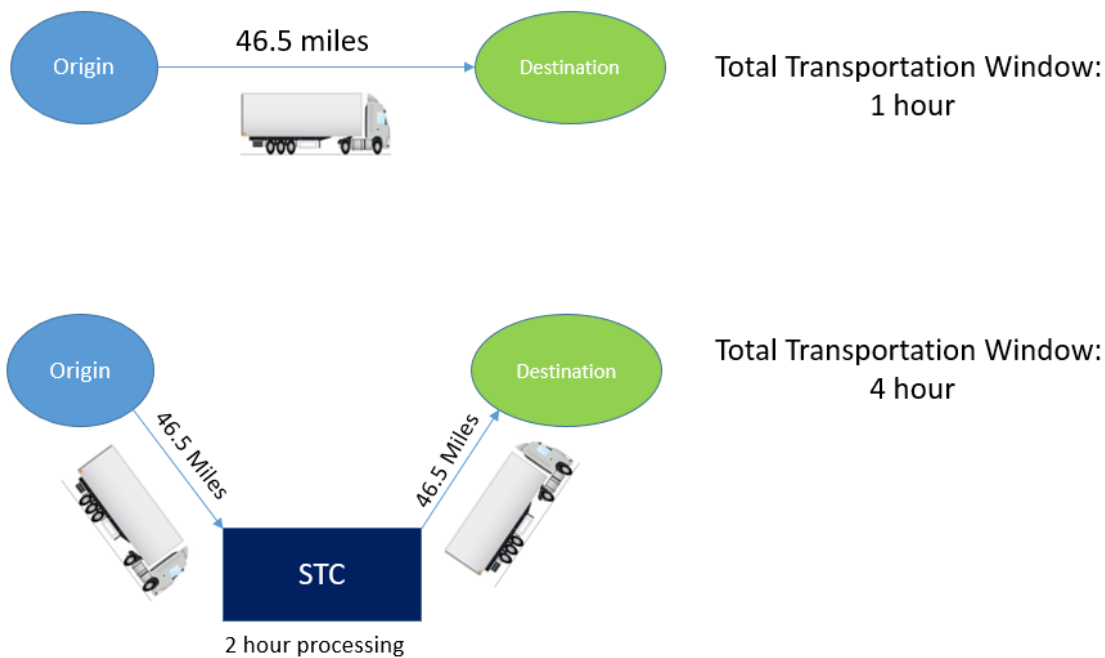
1 ready for dispatch following the completion of mail processing.²⁸ Additionally, origin
2 locations flow outbound volumes through their designated aggregate facilities, which
3 consolidate volumes to improve utilization of network trips. Destination CETs are based
4 on product and shape:

- 5 • Letters and flats have a CET of 08:00 the day prior to the scheduled day
6 of delivery, per the service standard; and
- 7 • Parcels have a CET of 20:00 the day prior to the scheduled day of
8 delivery, per the service standard.

9 Finally, STCs are given a minimum of two hours to process volume and/or cross-dock
10 containers. This two-hour minimum process time means that any shipment routed
11 through an STC will have at least two hours added to the total transit time. Current
12 contracted STCs are expected to process and transfer volumes within the two-hour
13 window. The below diagram illustrates this process.

²⁸ The 90 minutes accounts for 30 minutes to clear secondary operations after primary operations, 30 minutes for manual operations, and 30 minutes for dispatch operations.

1

Figure 3: STC Transportation Windows

2

3

STCs are only able to service destinations within an eight-hour drive time from

4

the STC. The range of certain STCs was increased to reduce the impact of the

5

proposed transportation changes. Salt Lake City was increased from eight to fourteen

6

hours to more accurately align with current state service reach, covering all the way to

7

the Pacific Northwest coast. In addition, every destination was assigned to at least one

8

STC. If a destination is not within eight hours of any STC (or within fourteen hours of

9

Salt Lake City), then it was assigned to the closest STC. And if a destination is within

10

the service area of multiple STCs, that destination is eligible to use whichever STC the

11

model selects resulting in the best solution.

1 Finally, the modeling assumed implementation of the changes to First-Class Mail
2 (FCM) service standards contemplated in Docket No. N2021-1.²⁹ Aside from the FCPS
3 service standard changes, the assumptions, inputs, and constraints utilized in the First-
4 Class Mail service standard modeling were also used in the modeling of the FCPS
5 service standard change model. Modeling the service standard change of both First-
6 Class mail and packages provides greater insight into the potential network efficiency
7 improvements. When evaluating air to surface mode shifts, the combined volume of
8 mail and packages improves trip utilization and increases the cost effectiveness of
9 shifting lanes from air to surface.

10 **E. Constraints in the Modeling and Refinements**

11
12 A number of constraints affect the modeling. As a general matter, the TMOD
13 optimization model utilizes an advanced set of heuristics, and, as with all heuristic
14 models, can produce results that are less than optimal. TMOD offers a variety of ways
15 to approach many of our business rules, and seemingly small changes can sometimes
16 have large unexpected impacts on the results due to the heuristic nature. To ensure we
17 are using the best solution, each model is run multiple times to ensure similar results
18 are obtained.

19 Several constraints of the modeling require manual input or post-processing
20 refinement to mitigate the impact of these constraints. TMOD does not inherently
21 support viable transit times based on traffic or other known factors. As such, known
22 transit time adjustments are currently manually input into the model. Currently TMOD

²⁹ See *generally* First-Class Mail and Periodicals Service Standard Changes 2021, Docket No. N2021-1, United States Postal Service Request for an Advisory Opinion on Changes in the Nature of Postal Services (April 21, 2021).

1 cannot support the complexity of our air network to completely model mode selection.
2 To accommodate this factor, the model is used to identify air pairs that are eligible to be
3 routed via surface transportation using time and distance data. The final mode
4 selection for these eligible lanes is performed outside the model.

5 Significant post-processing is necessary to refine surface network routing results
6 into actual routings that can be implemented. This is due to multiple factors including
7 the TMOD software's ability to build only one-way trips, potential relationships with
8 transportation outside the scope of this model, site-specific operational nuances, and
9 Department of Transportation requirements. The results of the model, being a decision-
10 supporting rather than a decision-making tool, will therefore be analyzed by
11 transportation planners to finalize specific lane transportation to account for limitations
12 of the model prior to implementation.

13 **VI. MODELING RESULTS**

14
15 The modeling yields the below results, which can be categorized as the expected
16 change in the number of 3-digit ZIP Code OD Pairs (3-digit OD Pairs) from a two-day
17 and three-day standard to a two-to-five-day standard in the contiguous United States;
18 the change in the percentage of volume of FCPS from a two-day and three-day
19 standard to a two-to-five-day standard in the contiguous United States; and the
20 expected change in the number of 3-digit OD Pairs and percentage of volume that is
21 modeled to be transported via surface and air in the contiguous United States. Greater
22 detail of these results is located in USPS-LR-N2012-2-4.

23 The modeling results in the following changes in 3-digit OD Pairs that are subject
24 to two-, three-, four-, and five-day service standards for FCPS. As compared to current

1 service standards in the contiguous United States, the number of 3-digit OD Pairs
 2 subject to a two-day service standard increases from 77,360 to 125,790, including
 3 48,941 current 3-digit OD Pairs shifting to a faster service standard: from three-day to
 4 two-day. The number of 3-digit OD Pairs subject to a three-day service standard
 5 decreases from 774,285 to 488,643. The number of 3-digit OD Pairs modeled to be
 6 subject to a four-day service standard is 163,557; and the number of 3-digit OD Pairs
 7 modeled to be subject to a five-day service standard is 73,655.

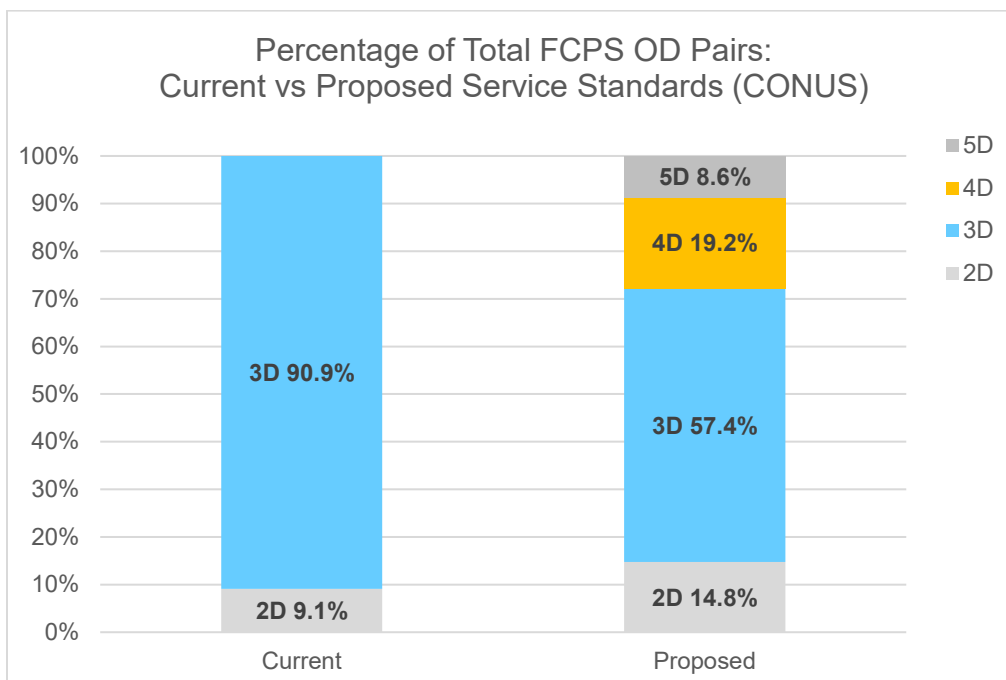
8 In terms of percentages, the percent of 3-digit OD Pairs subject to two-day and
 9 three-day service standards changes from 9.1 percent and 90.9 percent to 14.8 percent
 10 and 57.4 percent, respectively. The percentages of 3-digit OD pairs newly subject to
 11 four- and five-day service standards would be 19.2 and 8.6 percent, respectively. The
 12 following figures reflect these results.

13 **Figure 4: CHANGE IN SERVICE STANDARDS BY 3-DIGIT OD PAIRS**

| | NUMBER OF 3-DIGIT OD PAIRS* SUBJECT TO TWO-, THREE-, FOUR- AND FIVE- DAY SERVICE STANDARDS | |
|------------------|---|-----------------------------------|
| | CURRENT SERVICE STANDARDS | PROPOSED SERVICE STANDARDS |
| TWO-DAY | 77,360 | 125,790 |
| THREE-DAY | 774,285 | 488,643 |
| FOUR-DAY | 0 | 163,557 |
| FIVE-DAY | 0 | 73,655 |

14 *Includes pairs where origin and destination 3-digit ZIP Codes are the same

**Figure 5: PERCENTAGE CHANGE IN SERVICE STANDARDS
3-DIGIT OD PAIRS***



*Includes pairs where origin and destination 3-digit ZIP Codes are the same

In turn, the percentage of FCPS volume subject to a two-day service standard increases from 19.5 percent to 23.6 percent; and the percentage of volume subject to a three-day service standard decreases from 80.5 percent to 44.5 percent. The model projects 17.3 percent of volume to be subject to a four-day service standard; and 14.6 percent of volume to be subject to a five-day service standard. As such, 99.9 percent FCPS presently subject to a two-day service standard would remain as two-day; and 5.2 percent of the three-day volume will be upgraded to two-day. The model projects that 55.2 percent of FCPS presently subject to a three-day service standard would remain as three-day. The following figures reflect these results.

1

Figure 6: FCPS VOLUME BY SERVICE-STANDARD (CHART)

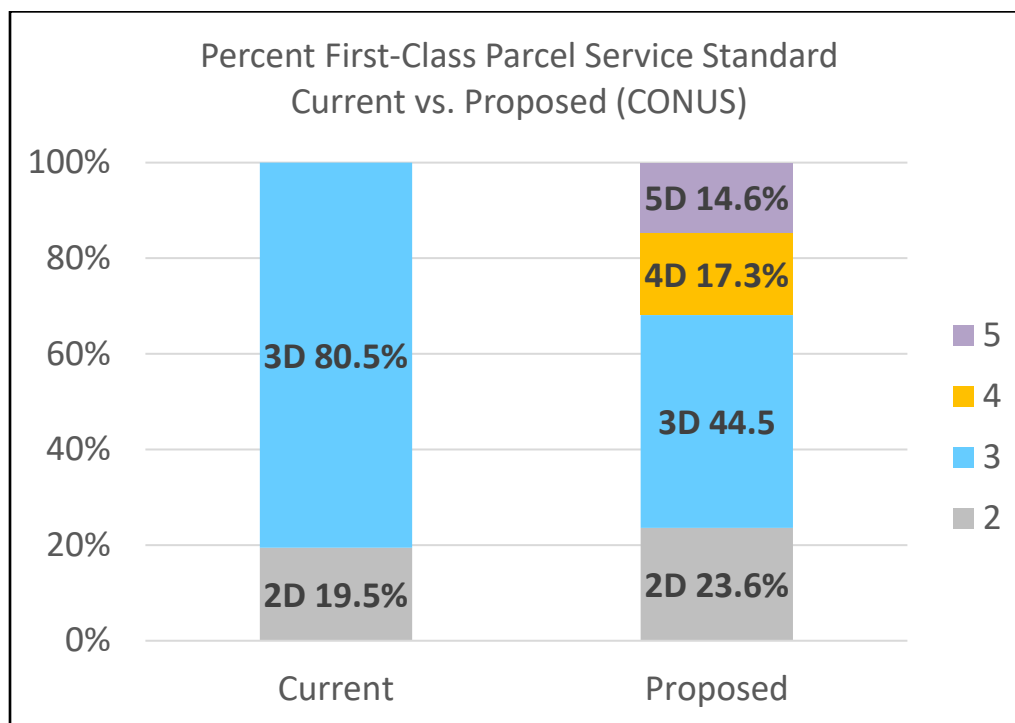
| | PERCENTAGE OF FCP VOLUME SUBJECT TO TWO-, THREE-, FOUR-, AND FIVE-DAY VOLUME | |
|-------------------------|--|-----------------------------|
| | CURRENT SERVICE STANDARDS | PROPOSED SERVICE STANDARDS* |
| TWO-DAY, or less | 19.5 | 23.6 (99.9%) |
| THREE-DAY | 80.5 | 44.5 (55.2%) |
| FOUR-DAY | 0 | 17.3 |
| FIVE-DAY | 0 | 14.6 |

*percentage of volume projected to maintain its present service standard in parenthesis

2

3

Figure 7: FCPS VOLUME BY SERVICE-STANDARD (GRAPH)



4

5 The model projects that in most circumstances pharmaceutical volume would be
 6 less impacted by the proposed service standard changes than other FCPS volume. As
 7 shown in USPS-LR-N2021-2-NP2, the percentage of pharmaceutical FCPS volume
 8 projected to be subject to a two-day service standard increases; and the percentage of

1 pharmaceutical FCPS volume projected to be subject to a three-day service standard
 2 decreases. The model projects some pharmaceutical FCPS volume to be subject to a
 3 four-day service standard, and small percentage of pharmaceutical FCPS volume to be
 4 subject to a five-day service standard.

5 As such, almost all pharmaceutical volume presently subject to a two-day service
 6 standard would remain as two-day; and a majority of pharmaceutical volume presently
 7 subject to a three-day service standard would remain as three-day.

8 A focus of the Foti Testimony (USPS-T-3) is the impact that these shifts in
 9 service standards would have on consumers and businesses, including estimated
 10 contribution impacts.

11 Also projected by the modeling is the change in the number of 3-digit OD Pairs
 12 and percentage of volume expected to utilize surface and air transportation. Compared
 13 to current service standards, the number of 3-digit OD Pairs that utilize surface
 14 transportation is expected to increase from 503,116 to 565,765, while the number of 3-
 15 digit OD Pairs that utilize air transportation is expected to decrease from 348,529 to
 16 285,880. The following figure reflects these results.

17 **Figure 8: TRANSPORTATION METHOD BY 3-DIGIT OD PAIR**

| | NUMBER OF 3-DIGIT OD PAIRS UTILIZING SURFACE VS AIR TRANSPORTATION | |
|-------------------------------|---|-----------------------------------|
| | CURRENT SERVICE STANDARDS | PROPOSED SERVICE STANDARDS |
| SURFACE TRANSPORTATION | 503,116 | 565,765 |
| AIR TRANSPORTATION | 348,529 | 285,880 |

18

1 In turn, the percentage of FCPS volume that is transported via surface is
 2 expected to increase from 62 percent to 74 percent, while the FCPS volume that utilizes
 3 air is expected to decrease from 38 percent to 26 percent. The following figure reflects
 4 these results.

5 **Figure 9: PERCENTAGE OF VOLUME BY TRANSPORTATION METHOD**

| | PERCENTAGE OF FCPS VOLUME* UTILIZING SURFACE VS AIR TRANSPORTATION | |
|-------------------------------|--|----------------------------|
| | CURRENT SERVICE STANDARDS | PROPOSED SERVICE STANDARDS |
| SURFACE TRANSPORTATION | 62 | 74 |
| AIR TRANSPORTATION | 38 | 26 |

6 * Contiguous US, including turnaround Two-day volume

7 A focus of the Kim Testimony (USPS-T-2) is the estimated cost savings that
 8 result from the shifts in transportation method. Witness Kim states that implementation
 9 of the FCPS service standard change in addition to the FCM service standard change
 10 would lead to an additional savings of \$55 million. However, the analysis presented in
 11 the Kim Testimony cannot be viewed in isolation from the proposed change to FCM
 12 service standards. The savings presented here would not be applicable if FCPS service
 13 standards were to change while FCM and end-to-end Periodicals service standards
 14 remained at current levels. In particular, the more efficient surface routings created by
 15 the model are based on an ability to move both FCPS and the mail volume discussed in
 16 Docket No. N2021-2 through the surface transportation network. In addition, the other
 17 benefits from this change, including the ability to transition the mail processing network
 18 to more shape-based processing discussed above and in the 10-year plan, also
 19 depends on the service standard changes discussed in Docket No. N2021-1.

1 The Postal Service has utilized appropriate data sources and modeling
2 techniques to assess the proposed changes to the service standards for FCPS and the
3 effects that such changes will have on transportation time and efficiencies in the
4 transportation network. Although a model is not dispositive and should accordingly be
5 considered a decision-support tool, rather than a decision-making tool, the modeling
6 described in my testimony demonstrates that the proposed service changes would lead
7 to more cost-effective and efficient transportation.

8 **VII. THE POSTAL SERVICE HAS CAREFULLY CONSIDERED IMPACTS OF THE**
9 **PROPOSED CHANGES TO RELEVANT STAKEHOLDERS AND MEASURES**
10 **TO MITIGATE THOSE IMPACTS**

11
12 **A. Impact on Customers and Mitigation Measures**

13
14 The proposed changes would impact retail and commercial customers by, in
15 some instances, increasing the amount of time it would take to deliver a package to a
16 recipient. Therefore, for FCPS that must be received by a certain date, shippers would
17 sometimes have to enter the packages into the system earlier than under the previous
18 standards. In order to mitigate any harm from this change, the Postal Service will work
19 to inform retail customers about the service changes, so that they can set appropriate
20 expectations for delivery times. This is discussed in the testimony of witness Foti.

21 The proposed service standard changes would extend the two-day volume from
22 six hours to eight hours drive time, upgrading over four percent of the overall FCPS
23 volume. Sixty-four percent of FCPS volume would maintain its current service standard.
24 For pharmaceutical volume, 9 percent of volume would upgrade and 69 percent of
25 volume would be unaffected by the service standard change.

1 We recognize that some customers may need to adjust their internal processes
2 to account for the changed service standards. In order to mitigate the impact of the
3 changes on business customers' need to make mailing process changes, the Postal
4 Service will work to provide industry with timely information regarding the service
5 standard changes, including information regarding affected ZIP Code pairs so as to
6 allow orderly process adjustments. Moreover, all FCPS volume will benefit from
7 improved reliability and predictability.

8 **B. Impact on Postal Service Workforce**

9
10 These changes will not directly impact the Postal Service's workforce. As noted
11 above, increases in efficiency are expected due to reduction in air assignment
12 operations and reduced handling at origin and destination due to sorting into pallet
13 boxes instead of sacks. Transportation efficiencies are expected by consolidating more
14 volume into the same number of vehicles. Although not specifically modeled, this
15 efficiency increase could potentially enable the Postal Service to reduce overtime hours
16 required to meet service standards but is not anticipated to lead to a reduction in
17 workforce size.

18 **C. Impact on Commercial Air and Surface Transportation Suppliers and** 19 **Mitigation Measures**

20
21 The Postal Service anticipates that the proposed changes would reduce the
22 volume of FCPS carried by commercial air contractors within the contiguous United
23 States and cargo air contractors between and among the continental United States,
24 Alaska, Hawaii, and overseas territories for the transportation of FCPS volume, while
25 increasing the use of surface transportation suppliers. Because the Postal Service
26 anticipates cost savings as a result of these changes, there will likely be fewer total

1 expenses related to contracted transportation of mail. The Postal Service will work with
2 its contractors to ensure that changes are communicated effectively and that negative
3 impacts on suppliers from abrupt changes are minimized.

4 **D. Impact on Postal Service Contribution**

5
6 As noted in the testimony of Witness Foti, the Postal Service anticipates that the
7 proposed service standard changes will not result in contribution loss, and instead may
8 result in the Postal Service capturing additional package volume and driving incremental
9 market share as we improve our service reliability for our FCPS product.

10 **VIII. THE POSTAL SERVICE'S PROPOSED NETWORK OPERATIONS CHANGES**
11 **ARE CONSISTENT WITH THE POLICIES AND REQUIREMENTS OF TITLE**
12 **39, UNITED STATES CODE**

13
14 The Postal Service has designed its proposed service standard changes with
15 certain intended objectives. In particular, the Postal Service seeks to enhance the value
16 of postal services to both senders and recipients; to preserve regular and effective
17 access to postal services in all communities, including those in rural areas or where
18 post offices are not self-sustaining; and to reasonably assure Postal Service customers
19 of delivery reliability, speed, and frequency consistent with reasonable rates and best
20 business practices.

21 **A. These Changes More Responsibly and Efficiently Align Service**
22 **Standards, Transportation Costs, Projected Package**
23 **Volumes/Revenue, and Actual Performance to Ensure Continued**
24 **Provision of Adequately Prompt and Reliable Universal Service**

25
26 In order to fulfill its mission into the future for the American public, the Postal
27 Service must ensure that its operations and finances are managed responsibly and
28 efficiently. If the Postal Service cannot sustain itself financially, then it also cannot
29 continue to provide adequately prompt and reliable universal service to the country.

1 The proposed changes in service are intended to promote sustainability and therefore
2 continued universal service. They are the product of close analysis of the Postal
3 Service's projected costs, volumes, and revenues, taking into account the changing mix
4 and magnitude of the mails. Critically, the Postal Service has identified greater cost and
5 service efficiencies through enhanced use of surface transportation options. Its service
6 standards need be aligned to order to enable these changes.

7 At the same time, its standards should also be aligned to improve predictability
8 and reliability, by considering the Postal Service's operational capabilities. Data on
9 service performance from recent years confirms that the standards currently in place
10 have not aligned closely with performance. See USPS-LR-N2021-2-NP2 and Folder
11 NP30 in Docket No. ACR 2020. With the changes proposed in transportation, the
12 Postal Service will be able to significantly improve its service reliability.

13 **B. The Changes Will Have Minimal Impact on Customer Satisfaction and**
14 **the Needs of Postal Customers, Without Any Undue or Unreasonable**
15 **Discrimination**
16

17 The proposed changes will not affect the service standards for most First-Class
18 Package Service volume, while benefiting mail users by enhancing reliability and
19 affordability of service within the lightweight package market. Although certain service
20 standards will increase slightly, others will decrease, and those services will remain
21 quality and adequate services. Furthermore, pharmaceuticals volume will be less
22 affected by the service standard changes than total aggregated FCPS volume: the
23 majority of pharmaceutical volume would be unaffected by the changes, respectively,
24 with nine percent of current three-day pharmaceutical volume upgraded to a two-day
25 service standard.

1 Moreover, these changes will not cause any undue or unreasonable
2 discrimination against any users of the mail. The proposed changes do not treat
3 different groups of users in different ways. The changes are based on time and
4 distance, which is not only more efficient, but also equitable.

5 **IX. CONCLUSION**

6
7 The proposed service changes reflect the need to further reduce postal operating
8 costs and implement changes consistently across the transportation network within the
9 contiguous United States and between the contiguous United States and its outer lying
10 states and territories. Postal management deems the implementation of the service
11 changes described in this filing as necessary to assure that the Postal Service remains
12 a viable, financially healthy institution that can continue to play a vital role in serving the
13 changing communications and delivery needs of the American people well into the 21st
14 century.