PLAN DOCUMENT | DECEMBER 2017

Oklahoma Freight Transportation Plan 2018–2022

Oklahoma Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

Oklahoma Division

5801 N. Broadway Ext., Ste. 300
Oklahoma City, OK 73118
Phone: 405-254-3300
Fax: 405-254-3302
www.fhwa.dot.gov/okdiv

December 4, 2017

In Reply Refer To:
HDA-OK

J. Michael Patterson
Executive Director
Oklahoma Department of Transportation
200 N.E. Lincoln Ave.
Oklahoma City, OK 73105

Dear Mr. Patterson:

The Federal Highway Administration (FHWA) Oklahoma Division Office has reviewed the Oklahoma Department of Transportation (ODOT) Freight Transportation Plan (FTP) we received on October 30, 2017. The ODOT FTP satisfies all federal requirements contained in Title 49 U.S.C. § 70202 and Title 23 U.S.C. 167 (i)(4), as a condition for obligating funds apportioned to Oklahoma under 23 U.S.C. § 104(b)(5).

The State may now obligate such funds for projects that meet all National Highway Freight Program (NHFP) eligibility requirements provided under Title 23 U.S.C. § 167, and other applicable Federal requirements.

Please be advised that the Oklahoma Division Office's finding that the Plan satisfies the requirements of 49 U.S.C. § 70202 and 23 U.S.C. § 167(i)(4) is not a determination that the projects listed in the freight investment component of the Plan as required under 49 U.S.C. § 70202(b) meet all other NHFP eligibility requirements in 23 U.S.C. § 167, or any other applicable Federal requirements. ODOT is responsible for determining such eligibility as with other federal-aid projects.

If you have any questions regarding NHFP eligibility requirements, please contact the Division Office Planner, Mr. Isaac N. Akem at (405) 254-3343.

Sincerely,

Basharat Siddiqi, P.E.
Division Administrator

Oklahoma Department of Transportation
Strategic Asset and Performance Management Division
200 NE 21st Street
Oklahoma City, OK 73105
405-521-6433

Approved December 4, 2017

CONTENTS

1.0 Introduction 1
1.1 BACKGROUND 1
1.2 PURPOSE 1
1.3 VISION AND GOALS 2
1.3.1 Guiding Freight Vision Statement 2
1.3.2 Freight Plan Context 2
1.3.3 ODOT Responsibilities and Freight Partners 2
1.3.4 Oklahoma Freight Goals 3
1.4 OVERVIEW OF THIS PLAN 5

2.0 Oklahoma's Freight Story Today 6
2.1 OVERVIEW 6
2.2 FREIGHT FLOWS 6
2.2.1 Inbound Commodity Movements by Mode 10
2.2.2 Outbound Commodity Movements by Mode 11
2.3 THE HIGHWAY SYSTEM 12
2.3.1 Oklahoma Highways and Truck Freight Flows 12
2.3.2 Top Commodities by Truck Into, Out Of, Through and Within Oklahoma 13
2.3.3 ODOT Intelligent Transportation System Program 14
2.3.4 Heavy Cargo, Heavy Loads 14
2.4 RAIL 17
2.4.1 Oklahoma's Railroads 17
2.4.2 Commodity Flows by Rail Into, Out of, Through, and Within Oklahoma 18
2.5 OKLAHOMA WATERWAY SYSTEM 19
2.5.1 Commodity Flows by Water Into, Out of, Through, and Within Oklahoma 20
2.5.2 Waterway System and Volume 20
2.5.3 Key Facilities 21
2.6 OKLAHOMA AIR CARGO SYSTEM 22
2.7 OKLAHOMA MULTIMODAL FREIGHT ASSETS 22
2.7.1 Intermodal Terminals 23
2.7.2 Transload Terminals 24
2.7.3 Grain Elevators 24
2.8 CURRENT CONDITIONS AND CHALLENGES 24
2.8.1 Truck Operations Concerns and Needs 24
2.8.2 Freight Railroad Concerns and Needs 27
2.8.3 Waterways Concerns and Needs 28
2.8.4 Challenges for All Freight Modes 29

3.0 Outreach 31
3.1 WEBSITE 31
3.2 SURVEY 31
3.3 FREIGHT ADVISORY COMMITTEE 32
3.4 INTERVIEWS 33
3.5 PUBLIC MEETINGS 33
3.6 COORDINATION WITH OTHER STATES 34

4.0 The Freight Future 35
4.1 TRENDS 35
4.1.1 Energy Trends 35
4.1.2 Demographic Trends 37
4.1.3 Economy and Trade 39
4.1.4 Transportation Technology and Innovation 42

4.1.5 Transportation Industry Trends *44*
4.2 FUTURE GROWTH 46
4.3 CONCLUSION 48

5.0 Freight Bottlenecks and Mobility Issues 49
5.1 HIGHWAY 49
5.1.1 Truck Bottlenecks *49*
5.1.2 Safety *53*
5.1.3 State of Good Repair *53*
5.1.4 Freight-Related Bottlenecks on Highways *53*
5.1.5 Heavy-Load Route Issues *54*
5.2 RAIL MOBILITY ISSUES/CONCERNS IDENTIFIED 55
5.3 WATER CONCERNS 57
5.4 AIRPORT ACCESS CONCERNS 58

6.0 Moving Freight 59
6.1 FREIGHT FLOWS FOR 2018 THROUGH 2022 59
6.2 FREIGHT POLICIES AND STRATEGIES 59
6.2.1 Policies and Strategies Address Plan Goals *59*
6.3 FREIGHT PERFORMANCE MEASURES 61
6.3.1 Performance Measurement *61*
6.4 IMPROVEMENT PRIORITIES 62
6.4.1 Evaluating Potential Freight Projects *62*
6.4.2 Project Gaps *63*
6.5 FREIGHT INVESTMENT ELEMENT 65
6.5.1 Funding for Freight Projects *65*
6.5.2 Highlighted Freight Projects *66*
6.5.3 Freight Investment Plan Projects *69*
6.6 NETWORK DESIGNATIONS 77
6.6.1 National Highway Freight Network *77*
6.6.2 Rural Freight Corridors *80*
6.6.3 Critical Urban Freight Corridors *82*
6.7 FREIGHT FUNDING PARTNERSHIPS 84

7.0 Conclusion and Next Steps 85
7.1 CONCLUSION 85
7.2 NEXT STEPS 86

8.0 Glossary 87

Attachments

ATTACHMENT 1 – APPROVED CRITICAL RURAL FREIGHT CORRIDORS A-1
ATTACHMENT 2 – OKLAHOMA CITY (ACOG) AREA CRITICAL URBAN FREIGHT CORRIDORS A-2
ATTACHMENT 3 – TULSA (INCOG) AREA CRITICAL URBAN FREIGHT CORRIDORS A-3

TABLES

TABLE 1. NATIONAL FREIGHT GOALS 3
TABLE 2. OKLAHOMA'S FREIGHT GOALS AND CORRESPONDENCE TO LONG-RANGE TRANSPORTATION PLAN GOALS AND NATIONAL FREIGHT GOALS 4
TABLE 3. OKLAHOMA FREIGHT FLOWS 7
TABLE 4: OKLAHOMA HIGHWAY MILEAGE BY CLASSIFICATION (2016) 12
TABLE 5. FREIGHT ADVISORY COMMITTEE MEMBERS 32
TABLE 6. OKLAHOMA ECONOMIC SECTOR EMPLOYMENT (THIRD QUARTER, 2016) 38
TABLE 7. LONG-TERM OKLAHOMA FREIGHT GROWTH (2015 THROUGH 2045) 47
TABLE 8. MILEAGE IN THE WORST 10 PERCENT OF CRASH LOCATIONS STATEWIDE 53
TABLE 9. POSSIBLE RAILROAD MOBILITY ISSUES 56
TABLE 10. OKLAHOMA FREIGHT GROWTH (2018 THROUGH 2022) 59
TABLE 11. MULTIMODAL FREIGHT STRATEGIES BY GOAL AREAS 60
TABLE 12. OKLAHOMA'S FREIGHT GOALS AND CORRESPONDENCE TO OKLAHOMA FREIGHT TRANSPORTATION PLAN FREIGHT PERFORMANCE MEASURES 61
TABLE 13. EVALUATION CRITERIA 62
TABLE 14. BOTTLENECK LOCATIONS WITHOUT PROJECT 64
TABLE 15. POTENTIAL PUBLIC FUNDING OPTIONS 65
TABLE 16. POTENTIAL ALTERNATIVE FINANCING OPTIONS 65
TABLE 17 TOP-RANKED HIGHWAY FREIGHT MOBILITY PROJECTS (FFY 2018 THROUGH 2022) 66
TABLE 18A. FIVE YEAR FINANCIALLY CONSTRAINED FREIGHT INVESTMENT PLAN PROJECTS 70
TABLE 18B. FINANCIAL CONSTRAINT SUMMARY: ANNUAL APPORTIONMENT OF NATIONAL HIGHWAY FREIGHT PROGRAM (NHFP) FUNDS AND ANNUAL PLANNED/PROGRAMMED OBLIGATION OF NHFP FUNDS, 2016–2022 72
TABLE 19. FIVE YEAR HIGHWAY FREIGHT INVESTMENT PROJECTS FUNDED WITH TRADITIONAL FEDERAL AND STATE FUNDS 73
TABLE 20. WATERWAY FREIGHT MOBILITY PROJECTS, FFY 2018 THROUGH 2022 75
TABLE 21. RAIL FREIGHT MOBILITY PROJECTS, FFY 2018 THROUGH 2022 76
TABLE 22. OKLAHOMA NATIONAL HIGHWAY FREIGHT NETWORK MILEAGE DISTRIBUTION 78
TABLE 23. CRITICAL RURAL FREIGHT CORRIDORS 82
TABLE 24. ASSOCIATION OF CENTRAL OKLAHOMA GOVERNMENTS/OKLAHOMA CITY AREA CRITICAL URBAN FREIGHT CORRIDORS 83
TABLE 25. INDIAN NATIONS COUNCIL OF GOVERNMENTS/TULSA AREA CRITICAL URBAN FREIGHT CORRIDORS 83

FIGURES

FIGURE 1. OKLAHOMA FREIGHT FLOWS (2015) BY DIRECTION....6
FIGURE 2. EXAMPLE COMMODITIES FLOWING INTO, AND OUT OF, OKLAHOMA....7
FIGURE 3. OKLAHOMA FREIGHT MODE SHARE BY TONNAGE AND VALUE....8
FIGURE 4: OKLAHOMA FREIGHT FLOWS – ALL MODES....9
FIGURE 5. TOP INBOUND COMMODITY GROUPS RANKED BY TONS (2015)....10
FIGURE 6. TOP OUTBOUND COMMODITY GROUPS RANKED BY TONS (2015)....11
FIGURE 7. OKLAHOMA STATE HIGHWAY SYSTEM....12
FIGURE 8. TOP OKLAHOMA-BASED COMMODITY GROUPS BY TRUCK, RANKED BY TONS (2015)....13
FIGURE 9. MAJOR OKLAHOMA TRUCK TRAFFIC HIGHWAYS (2015)....13
FIGURE 10. HEAVY-LOADED TRUCK FLOWS....16
FIGURE 11. OKLAHOMA RAIL NETWORK....17
FIGURE 12. TOP OK-BASED COMMODITY GROUPS BY RAIL, RANKED BY TONS (2015)....18
FIGURE 13. MCCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM....19
FIGURE 14. TOP OK-BASED COMMODITY GROUPS BY WATER, RANKED BY TONS (2015)....20
FIGURE 15. PAVEMENT CONDITION....26
FIGURE 16. BRIDGE CONDITION....27
FIGURE 17. HEADQUARTERS OR MAJOR BUSINESS LOCATIONS OF FREIGHT ADVISORY COMMITTEE MEMBERS....33
FIGURE 18. U.S. CRUDE OIL PRODUCTION UNDER FIVE SCENARIOS (MILLION BARRELS PER DAY)....36
FIGURE 19. PROJECTED EMPLOYMENT GROWTH (2014 THROUGH 2024)....38
FIGURE 20. PROLIFERATION OF DISTRIBUTION CENTERS....41
FIGURE 21. EXAMPLES OF INTERNATIONAL IMPORTS AND EXPORTS TO AND FROM OKLAHOMA....45
FIGURE 22. OKLAHOMA FREIGHT BY MODE, 2015 AND 2045 (MILLIONS OF TONS)....47
FIGURE 23. FINAL BOTTLENECK LOCATIONS – TOP 5 PERCENT....51
FIGURE 24. FINAL BOTTLENECK LOCATIONS, TOP 5 PERCENT – OKLAHOMA CITY AREA....52
FIGURE 25. FINAL BOTTLENECK LOCATIONS, TOP 5 PERCENT – TULSA AREA....52
FIGURE 26. BOTTLENECK LOCATIONS WITHOUT PROJECT....64
FIGURE 27. TOP HIGHWAY FREIGHT MOBILITY PROJECTS....75
FIGURE 28. OKLAHOMA NATIONAL HIGHWAY FREIGHT NETWORK....78
FIGURE 29. OKLAHOMA INTERIM NATIONAL MULTIMODAL FREIGHT NETWORK....79
FIGURE 30. HIGH TRUCK TRAFFIC VOLUME....80
FIGURE 31. HIGH PERCENTAGE TRUCK TRAFFIC....81

ACRONYMS

AADTT ..... Average Annual Daily Truck Traffic
ACOG ..... Association of Central Oklahoma Governments
CRFC ..... Critical Rural Freight Corridors
CUFC ..... Critical Urban Freight Corridors
DC ..... Distribution Center
DMS ..... Dynamic Message Signs
FAC ..... Freight Advisory Committee
FAST Act ..... Fixing America's Surface Transportation Act
FHWA ..... Federal Highway Administration
GDP ..... Gross Domestic Product
GNBC ..... Greenbelt Corporation Railroad
HPMS ..... Highway Performance Monitoring System
INCOG ..... Indian Nations Council of Governments
INFRA ..... Infrastructure for Rebuilding America
ITS ..... Intelligent Transportation System
KCS ..... Kansas City Southern Railway Company
KRR ..... Kiamichi Railroad Company
LRTP ..... Long-Range Transportation Plan
MKARNS ..... McClellan-Kerr Arkansas River Navigation System
MPO ..... Metropolitan Planning Organizations
NHFN ..... National Highway Freight Network
NHFP ..... National Highway Freight Program
NHS ..... National Highway System
NMFN ..... National Multimodal Freight Network
NPMRDS ..... National Performance Management Research Data Set
ODOT ..... Oklahoma Department of Transportation
OFTP ..... Oklahoma Freight Transportation Plan
OSOW ..... Oversize/Overweight Loads
PHFS ..... Primary Highway Freight System
POE ..... Ports of Entry
SKOL ..... South Kansas & Oklahoma Railroad
SLWC ..... Stillwater Central Railroad
SS ..... Sand Springs Railway
TRB ..... Transportation Research Board
TSU ..... Tulsa-Sapulpa Union Railway Company
TTTR ..... Truck Travel Time Reliability
U.S. DOT ..... U.S. Department of Transportation
UP ..... Union Pacific Railroad
USACE ..... U.S. Army Corps of Engineers
VMT ..... Vehicle-Miles Traveled