

READING AREA TRANSPORTATION STUDY

FFY 2023-2045



LONG RANGE *Transportation Plan*

ADOPTED JULY 14, 2022

READING AREA TRANSPORTATION STUDY C/O BERKS COUNTY PLANNING COMMISSION

633 COURT STREET, 14TH FL
READING, PA 19601

Phone: (610) 478-6300

Fax: (610) 478-6316

Email: planning@countyofberks.com

Web Site: <http://www.co.berks.pa.us/planning>

It is the policy of the Reading Area Transportation Study (RATS), the federally designated Metropolitan Planning Organization (MPO) for transportation planning in Berks County, in accordance with Title VI of the Civil Rights Act of 1964, as amended, to ensure that "no person shall, on the basis of race, color, national origin, gender, age, religious creed or disability; be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity" for which the MPO receives Federal financial assistance. Furthermore, it shall be the policy of the MPO to ensure that as a recipient of Federal-aid funding, it will ensure nondiscrimination in all of its programs and activities whether Federally funded or not. The MPO is steadfast in its commitment to ensure the uniform adoption of this policy.

RATS fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. RATS' website (www.countyofberks.com/planning) may be translated into multiple languages. Publications and other public documents can be made available in alternative languages and formats, if requested. In accordance with Federal Highway Administration Regulation 23 CFR 200.9, and Title 49 CFR, Department of Transportation, Subtitle A, Office of the Secretary Part 21, and FTA Circular 4702.IB the MPO has developed procedures for prompt processing and disposition of the Title VI complaints. Any person believing the MPO has violated Title VI in the administration of its programs or activities may file a complaint with the MPO's Title VI Compliance Officer by telephone, fax, or in writing at the contacts shown above, or by email at planning@countyofberks.com. A link to the MPO's complete Title VI Complaint Procedures may be found at <http://www.co.berks.pa.us/Dept/Planning/Pages/RATSMetingSchedule.aspx>

The preparation of this report has been financed in part through grants from the U.S. Department of Transportation and the Pennsylvania Department of Transportation.

The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official policies of either the U.S. Department of Transportation, Federal Highway Administration (FHWA), Federal Transit Administration (FTA) or the Commonwealth of Pennsylvania at the time of publication. This report does not constitute a standard, specification or regulation.

Estos informes y/o documentos estarán disponibles en diversos lenguajes y formatos si es necesario. Personas que necesiten acomodo razonable o con preguntas pueden comunicarse al 610-478-6300.

TABLE OF CONTENTS

Chapter 1 – Introduction	1
Chapter 2 – Background	7
Demographics	9
Economics	21
Environmental Integration	38
Resiliency.....	42
Chapter 3 – State of the System	51
Roads and Bridges.....	53
Congestion Management Process.....	74
Safety and Security.....	79
Transit	95
Freight.....	100
Non-Motorized Transportation	111
Aviation	117
Issues and Needs.....	121
Chapter 4 – Recommendations	125
Goals and Strategic Performance Measures	127
Project Prioritization.....	130
Project and Financial Planning.....	146
Travel Demand Modeling	184
Air Quality	184
Appendix	189
Public Participation Process	191
Amendment Procedures.....	245
Highway and Transit Program Funding.....	247

LIST OF TABLES AND FIGURES

County Population Between 2000 and 2019	10
County Population Projections 2010-2045	10
County Migration for 2011-2012 and 2017-2018.....	11
Population Density by County.....	11
Number of Households by County 2013-2018.....	11
Total Employment by County and Pennsylvania 2013-2018.....	21
Berks County Employment 2011-2018.....	24
Berks County Labor Force 2011-2018.....	24
Berks County Percent of Population by Age in Labor Force 2013-2018.....	25
Berks County Employment Projections 2031	25
Berks County 2018 Annual Averages.....	26
Top 25 Employers in Berks County 2020.....	27
Berks County Gross Domestic Product in 2018.....	28
Commuting Patterns by County 2014-2018.....	29
Where Most Enter Berks County to Work.....	29
Where Most Leave Berks County to Work	29
Berks County Distance to Work Comparison	30
Mode of Travel to Work by Age Group in Berks County 2013-2018	30
Mode of Travel to Work by Industry in Berks County 2013-2018	31
Travel Time to Work in Berks County 2013-2018.....	31
Comparison of Berks County DVMT and GDP 2010-2018.....	32
Berks County Existing Land Use 2013.....	34
Berks County Future Land Use 2030 Update	35
Potential Project Impacts	41
Berks County Roads by Ownership	53
Berks County Roads by Functional Class.....	53
Miles of National Highway System (NHS) in Berks County	54
Miles of Roads in Berks County Eligible for Federal Aid.....	54
DVMT by Road Ownership	59
DVMT by Road Class.....	59
Licensed Drivers in Berks County 2016-2020.....	60
Registered Vehicles in Berks County 2010, 2015, 2020.....	61
Pennsylvania Gasoline Prices 1996-2020	62
International Roughness Index (IRI) Scale.....	62
IRI of Interstate Highways in Berks County 2016-2020.....	64
IRI of NHS Highways not on the Interstate System in Berks County 2016-2020	64
IRI of Non-NHS Roads with More than 2000 AADT in Berks County 2016-2020.....	64
IRI of Non-NHS Roads with Less than 2000 AADT in Berks County 2016-2020.....	65
Berks County Bridge Inventory 2016-2020	65
Berks County Closed Bridges 2016-2020	66
Berks County Posted Bridges 2016-2020	66
Berks County Poor Rated Bridges 2016-2020	66
Most Congested Corridors Ranked by TTI and AADT	75
Top 10 Crashes by County 2015-2019.....	79

Top 10 Fatal Crashes by County 2015-2019.....	79
Berks County Crashes by Type 2015-2019	80
Persons and Vehicles Involved in Crashes in Berks County 2015-2019	80
Fatal Crashes in Berks County 1999-2019	84
Fatal Crashes in Berks County by Type of Driving Behavior 2015-2019.....	84
Crash Locations Where Fatal Injury Occurred in Berks County 2015-2019.....	85
Fatal Crashes in Berks County by Mode 2014-2018	85
Crash Locations Where Suspected Serious Injury Occurred 2015-2019.....	86
Injury Crashes in Berks County 1998-2019	87
Percent Seatbelt Use in Berks County Crashes 2009-2019	87
Unbelted Occupants in Berks County Crashes 2015-2019	87
Passenger Fatalities by Seatbelt Use in Berks County Crashes 2014-2018.....	88
Driving Behaviors that Lead to Crashes in Berks County 2015-2019.....	88
Top 3 Most Common Driving Behaviors that Lead to Crashes in Berks County 1999-2019.....	88
Road Conditions at the Time of Crash in Berks County 2015-2019.....	89
Crashes at Intersection Type in Berks County 2015-2019.....	89
Crashes in Special Zones (School, Work) in Berks County 2015-2019.....	89
Crashes by Vehicle Type 2015-2019.....	90
Crashes Involving At-Risk Drivers in Berks County 2015-2019.....	90
Crashes Involving Vulnerable Road Users (VRU) in Berks County 2015-2019.....	91
Crashes Involving Motorcycles in Berks County 2014-2018.....	91
Crashes Involving Large Trucks 2015-2019.....	92
Fatal Crashes Involving Large Trucks 2015-2019.....	92
Injury Crashes Involving Large Trucks 2015-2019.....	92
Berks County Freeway Service Patrol Assists and Actions Taken by Quarter 2019-2020.....	93
BARTA Fixed Route Service Ridership 2016-2020.....	96
BARTA Fixed Route Service by Route 2019-2020.....	96
BARTA Special Services Ridership 2016-2020	98
Commuter Services of PA Rideshare Program Enrollment in Berks County 2016-2020.....	99
Commuter Services of PA Rideshare Program Performance Measures 2016-2020.....	99
Freight Originating and Arriving in Berks County by Type and Tonnage 2020.....	101
Rail/Road Crossings with Greater than 5,000 Trips per Day in Berks County.....	106
Top Ten Road/Rail Crossing with Greatest Potential for Crashes in Berks County.....	107
Crashes Involving Horse & Buggy in Berks County 2015-2019	112
Percent of Berks County Workers that Walk and Bike to Work 2000-2018.....	112
Reading Regional Airport Aircraft Inventory 2020.....	118
Reading Regional Airport Historical and Forecast Operations 2016-2020	118
Berks County Airports.....	119
Berks County Heliports	119
Highway, Bridge and Transit Projects – Short, Mid and Long Range Planning Periods	150-163
Transportation Plan Estimated Funding Summary.....	171
Projected Reading MPO Transportation Funding by Year.....	174-175
Reading Regional Airport Capital Improvement Plan.....	178-179
Unfunded Projects.....	182-183
Ozone Emissions Analysis Results and Conformity Test (Summer Weekday).....	186

LIST OF MAPS

Map 1	Berks County Location.....	9
Map 2	Population Density by Municipality.....	12
Map 3	Persons Per Household by Municipality	13
Map 4	Poverty Rates by Municipality.....	16
Map 5	Elderly Population by Municipality.....	17
Map 6	Disabled Population by Municipality.....	18
Map 7	Limited English Households by Municipality	19
Map 8	Zero Vehicle Households by Municipality.....	20
Map 9	Minority Households by Municipality.....	22
Map 10	Largest Employers	23
Map 11	Traffic Generators	33
Map 12	Existing Land Use	36
Map 13	Future Land Use	37
Map 14	Hydrology Network	43
Map 15	Slopes Greater Than 25%.....	44
Map 16	Prime Agricultural Soils	45
Map 17	County Greenway Network	46
Map 18	Natural Heritage Areas and Trout Streams.....	47
Map 19	Easements and Agricultural Zoning	48
Map 20	Historical Resources Listed on National Register.....	49
Map 21	Functional Classification.....	55
Map 22	National Highway System	56
Map 23	Intermodal Connectors.....	57
Map 24	Traffic Volumes.....	58
Map 25	Pavement Conditions	63

Map 26	County Bridge Inventory.....	67
Map 27	Closed and Posted Bridges	68
Map 28	Hawk Mountain Region Bridge Composite Map	69
Map 29	Oley Hills Region Bridge Composite Map	70
Map 30	Southern Highlands Region Bridge Composite Map	71
Map 31	Metro Region Bridge Composite Map.....	72
Map 32	Tulpehocken Region Bridge Composite Map.....	73
Map 33, 34, 35	Top 10 Congested Corridors Based on Travel Time and Volume	76, 77, 78
Map 36	PennDOT Crash Locations with Greater than 20 Reportable Crashes 2015-2019.....	81
Map 37, 38	Top 10 High Crash Corridors in Berks County	82, 83
Map 39	Intelligent Transportation Systems (ITS).....	94
Map 40	BARTA Bus Routes	97
Map 41	Freight Generators by Sales Volume	103
Map 42	Freight Corridors	105
Map 43	Federal Railroad Administration Office of Safety Analysis Road/Rail Crossings with Greatest Potential for Crashes	108
Map 44	Trail and Sidewalk Network	116
Map 45	FAA Licensed Aviation Facilities.....	120
Map 46	Berks County LRTP Project Map	164
Map 47	Urban Area Inset LRTP Project Map.....	165
Map 48	Hawk Mountain Region LRTP Map.....	166
Map 49	Oley Hills Region LRTP Map.....	167
Map 50	Southern Highlands Region LRTP Map.....	168
Map 51	Metro Region LRTP Map	169
Map 52	Tulpehocken Region LRTP Map	170

