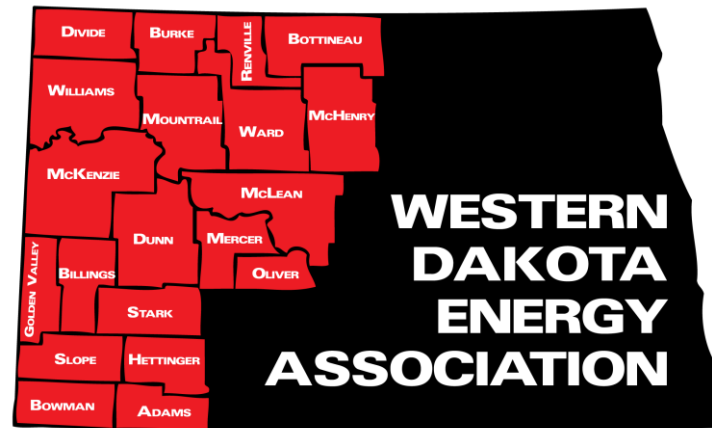


4-County Oil Impacts Analysis

Dunn, McKenzie, Mountrail, & Williams Counties

In association with:



March 8, 2018



Dunn – McKenzie – Mountrail - Williams

Why Focus on the 4-County Region with this Analysis?

- 92% of the oil and gas produced in ND in the 4-County Area
- Significant O&G revenues generated in a small area to the benefit of the whole State
- Substantial impacts with limited local revenues to support
- GPT has been an essential resource to manage impacts
 - **\$987M** in road needs funded since 2010
 - **\$230M** in capital facilities since 2014
 - **Law Enforcement Demands:** Corrections Centers - 170 new beds in 4 County Region
 - **Public Works Facilities:** to accommodate staff, fleet, and increased demand for county services
 - **Courthouse Needs:** Significant Additions and Renovations
- ***On-going development of O&G in the 4 Counties continues***
- ***Further increases expected with increased price and efficiency in the drilling process that will impact all O&G producing counties***

AGENDA

- Oil Activity in the 4-Counties**
- Population Growth & Projections**
- Taxable Values & Property Taxes**
- Revenue Sources & Expenditures**
- Capital Investments to Date**
- Projected Roads & Bridge Needs**



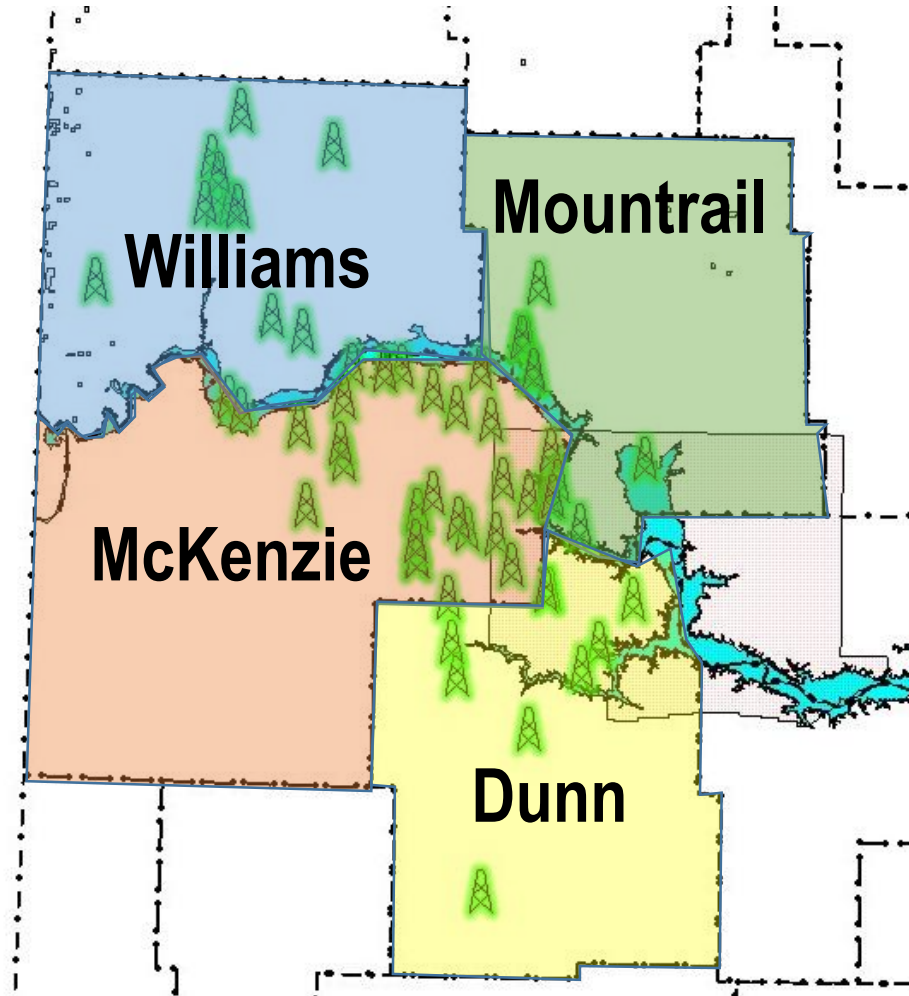
OIL ACTIVITY

OIL ACTIVITY



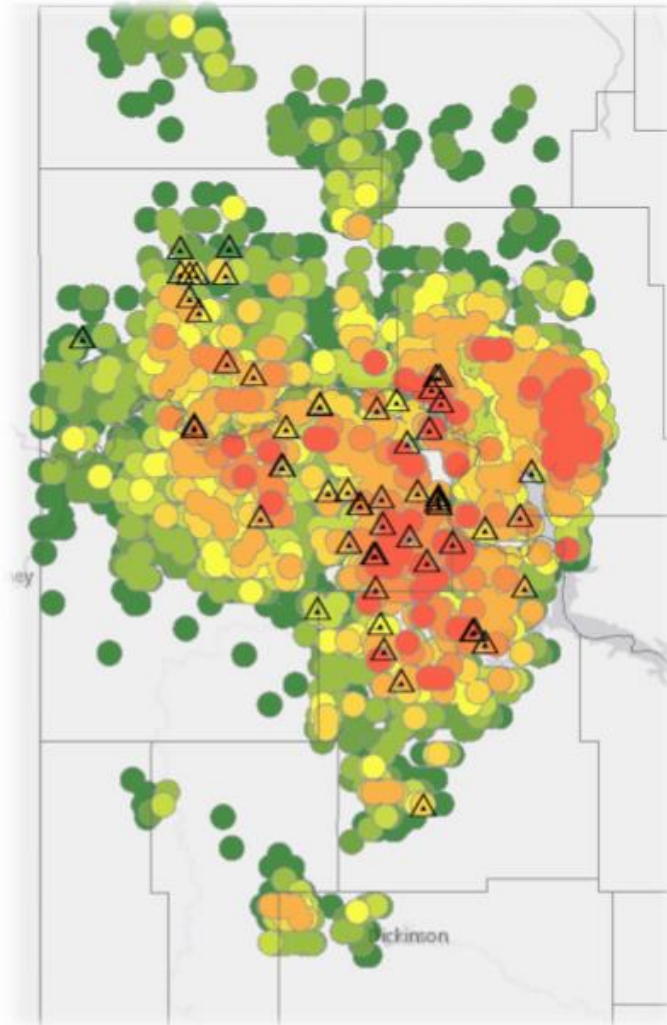
Active Rigs (59) as of 2/27/18

All Active Rigs
Currently in
Core 4
Counties

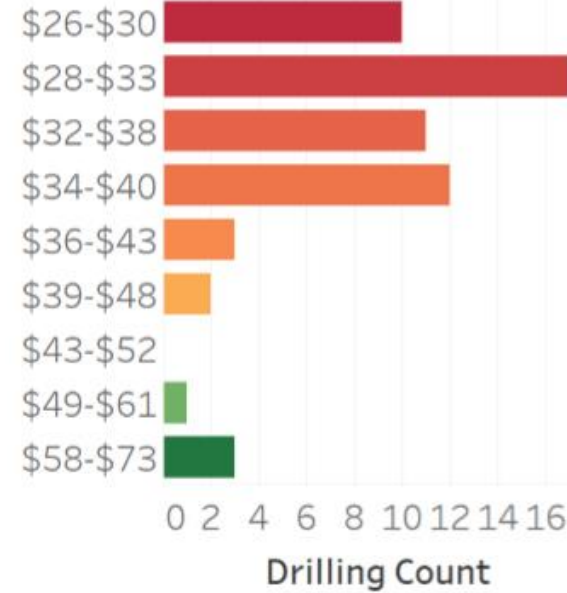




Drilling Locations – 1/22/18



Bakken Breakeven Prices \$6 - \$8 Million

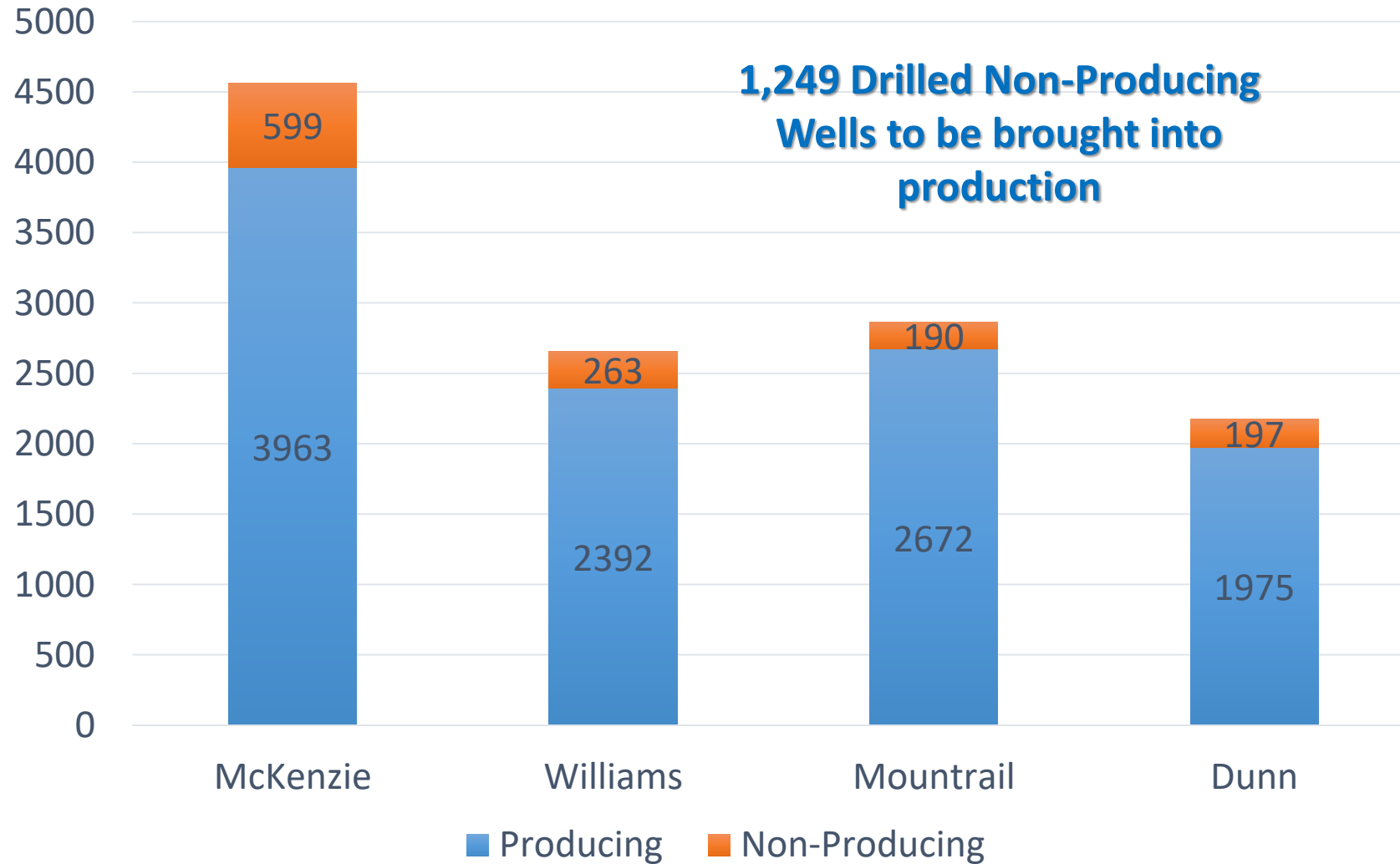


*Due to confidential status, the target production zone for many wells is unknown.

OIL ACTIVITY



Wells by County





POPULATION GROWTH & PROJECTIONS

POPULATION & GROWTH PROJECTIONS



Summary of Estimated Population Growth

Dunn

23%

Growth: 2010-2016

3,536 -> 4,366

McKenzie

98%

Growth: 2010-2016

6,360 -> 12,621

Mountrail

33%

Growth: 2010-2016

7,673 -> 10,242

Williams

53%

Growth: 2010-2016

22,398 -> 34,337

POPULATION & GROWTH PROJECTIONS



NDSU Population and Workforce Growth Study



OIL PRICE



JOBS



PEOPLE



HOUSING

- Impacts forecasting based on adaptations from workforce and population analyses performed by North Dakota State University with support by WDEA through VisionWest ND
- NDSU Study Focused on *County-level* Economic Activity in the Region and Effect on Workforce and Population through 2040
- Oil Price Scenario (Low/**Moderate**/High) Heavily Influences Resulting County Population Increase

POPULATION & GROWTH PROJECTIONS



Projected Population Growth by 2026 – Moderate Price Environment

Dunn

20%

Growth to 2026
4,366 -> 5,256

McKenzie

15%

Growth to 2026
12,621 -> 14,541

Mountrail

19%

Growth to 2026
10,242 -> 12,149

Williams

19%

Growth to 2026
34,337 -> 40,729

POPULATION & GROWTH PROJECTIONS



Projected Housing Needs by 2040 – Moderate Price Environment

Dunn

51%

Growth to 2040

McKenzie

90%

Growth to 2040

Mountrail

51%

Growth to 2040

Williams

76%

Growth to 2040

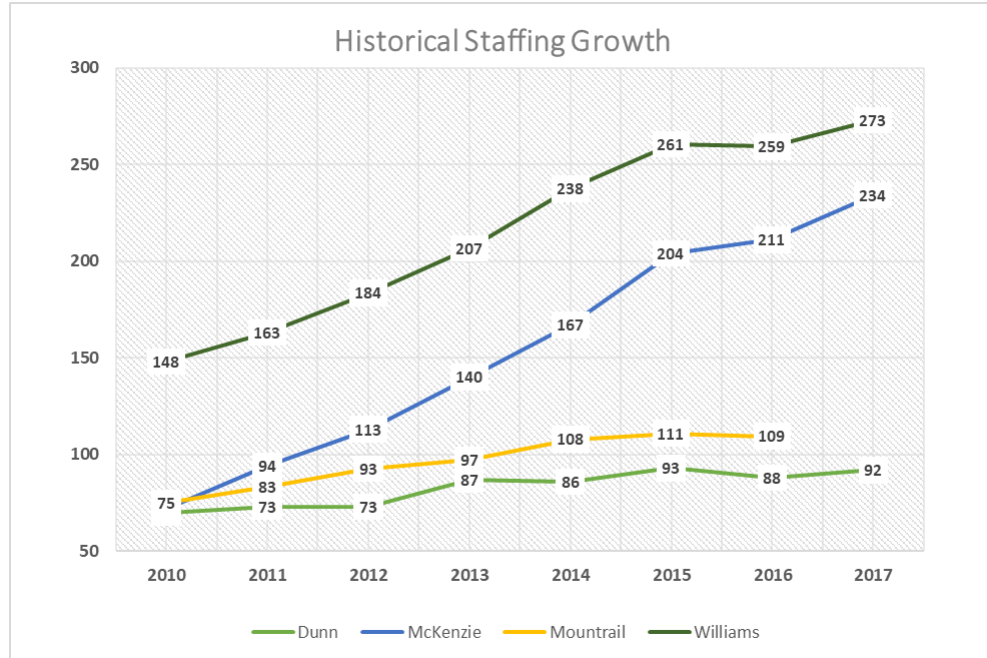


STAFFING AND PAYROLL

POPULATION & GROWTH PROJECTIONS

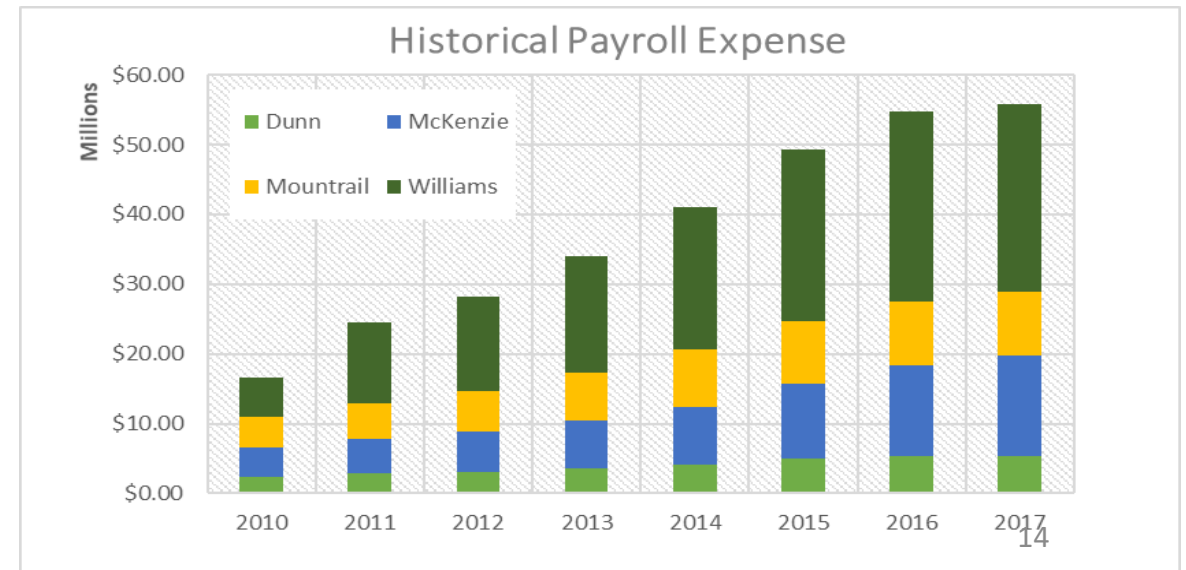


Staffing Growth



Staffing Growth Since 2010

Dunn: 31%
McKenzie: 225%
Mountrail: 46%
Williams: 84%





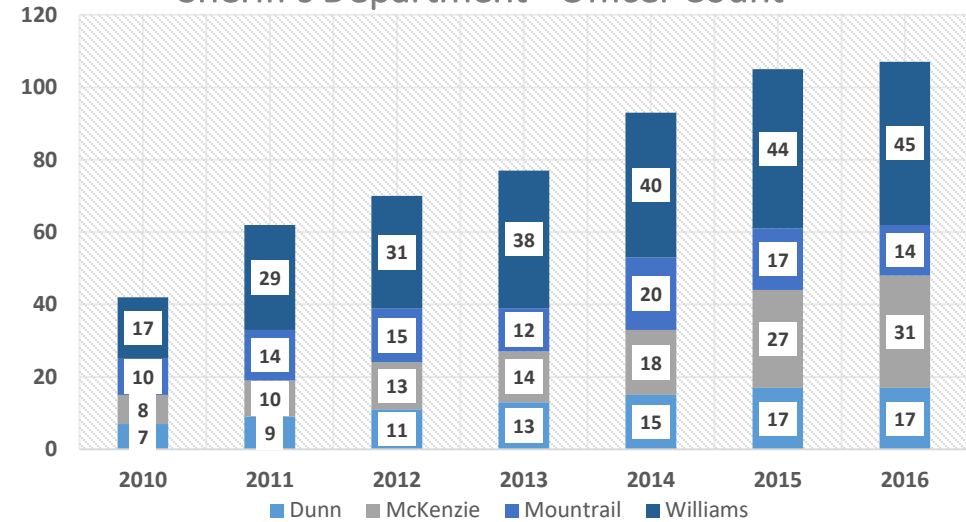
Sherriff's Dept. 2010 to 2016 Growth

Number of Officers

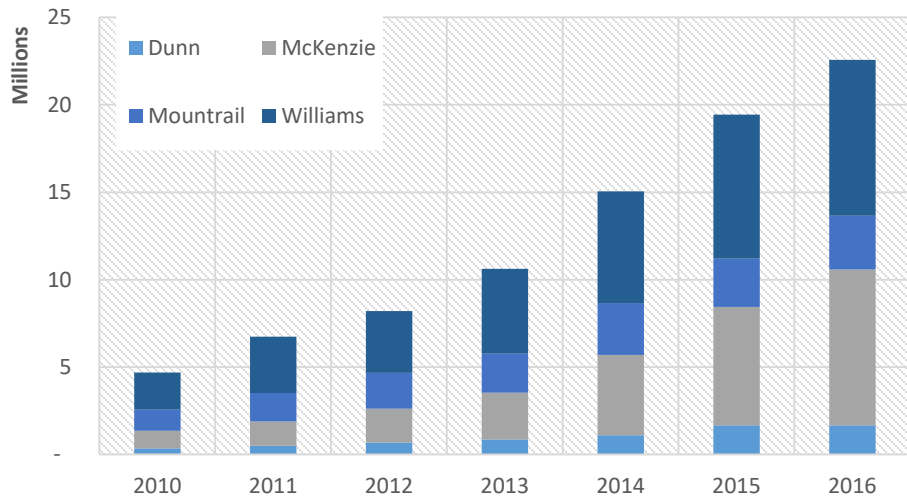
Dunn	143%	Mountrail	40%
McKenzie	288%	Williams	165%

2010-2016 Growth

Sheriff's Department - Officer Count



Sheriff's Department Budget



Budgeted Expense

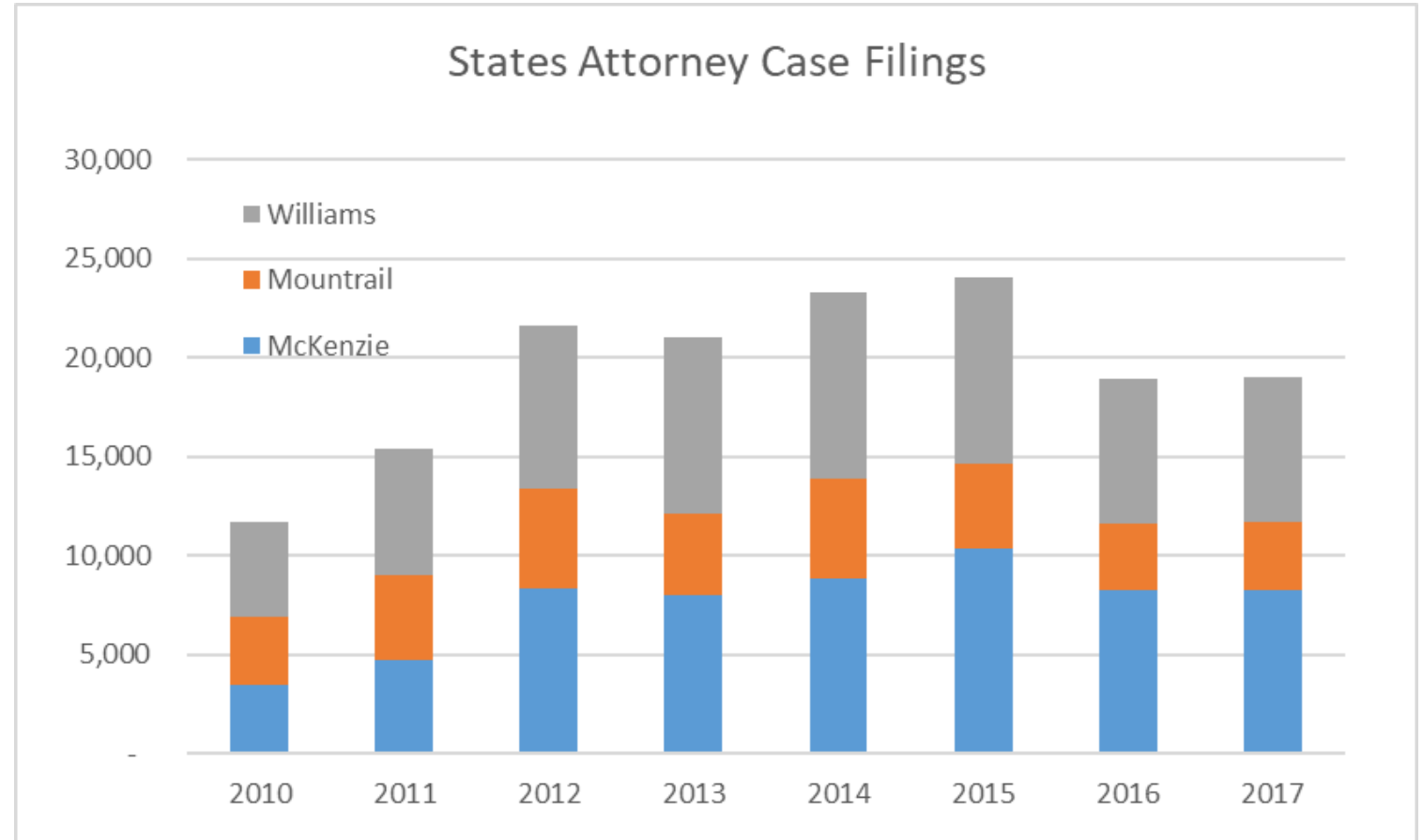
Dunn	389%	Mountrail	153%
McKenzie	784%	Williams	321%

2010-2016 Growth



State's Attorney Case Filings

- **States Attorney caseloads peaked in 2014-2015**
- **Caseloads leveling off at numbers higher than early boom**





TAXABLE VALUES & PROPERTY TAXES

PROPERTY TAX SUMMARY



Summary of Taxable Value Increase

Dunn

333%

Increase since 2010

\$15.2M -> \$65.9M

McKenzie

1062%

Increase since 2010

\$21.2M -> \$246.8M

Mountrail

266%

Increase since 2010

\$35.9M -> \$131.2M

Williams

425%

Increase since 2010

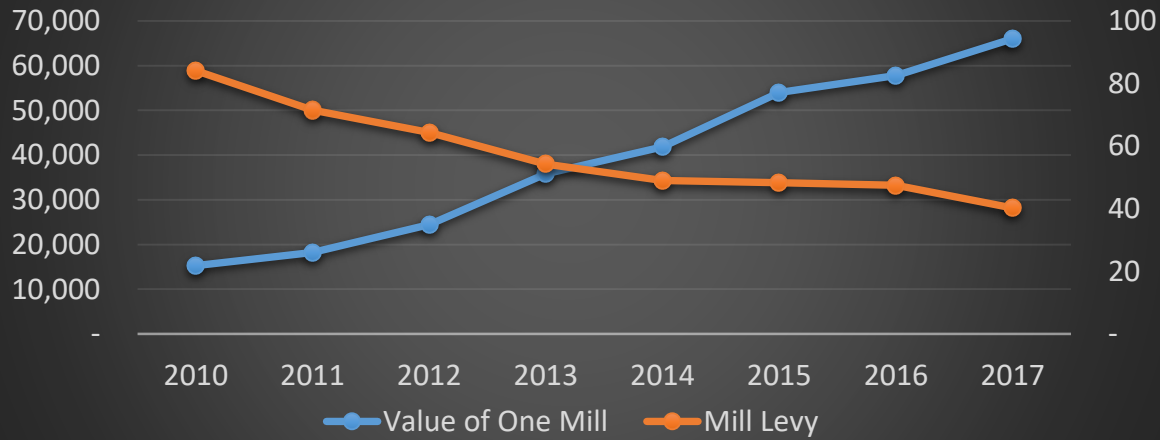
\$68.7M -> \$360.4M

PROPERTY TAX SUMMARY

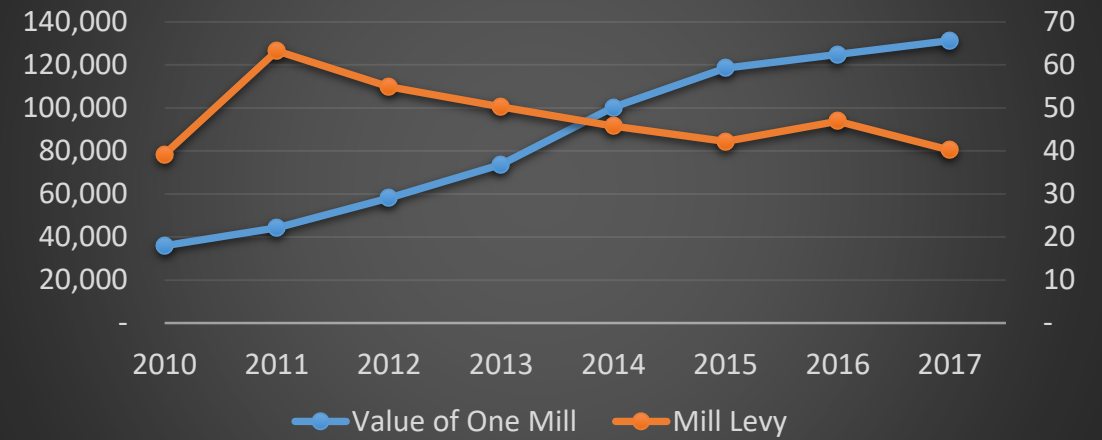


Mill Levy vs. Value of One Mill

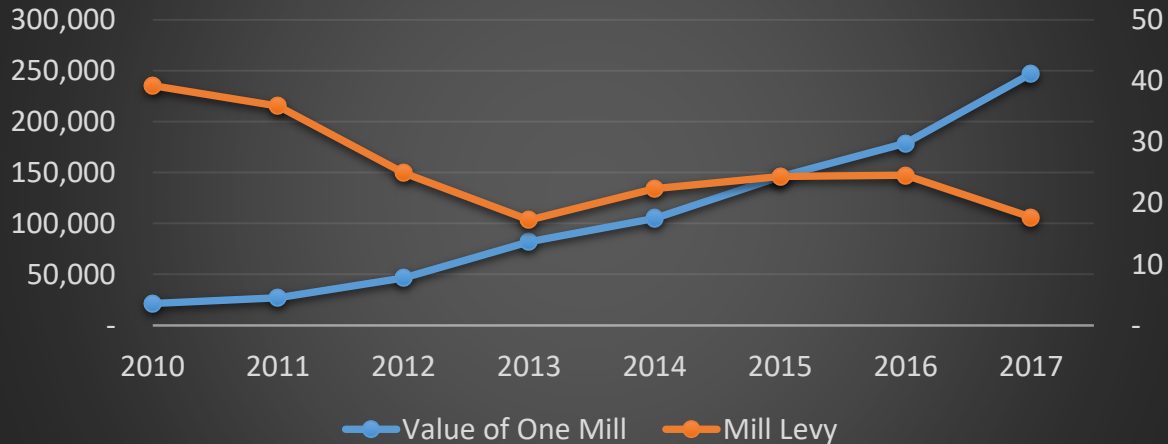
Dunn County



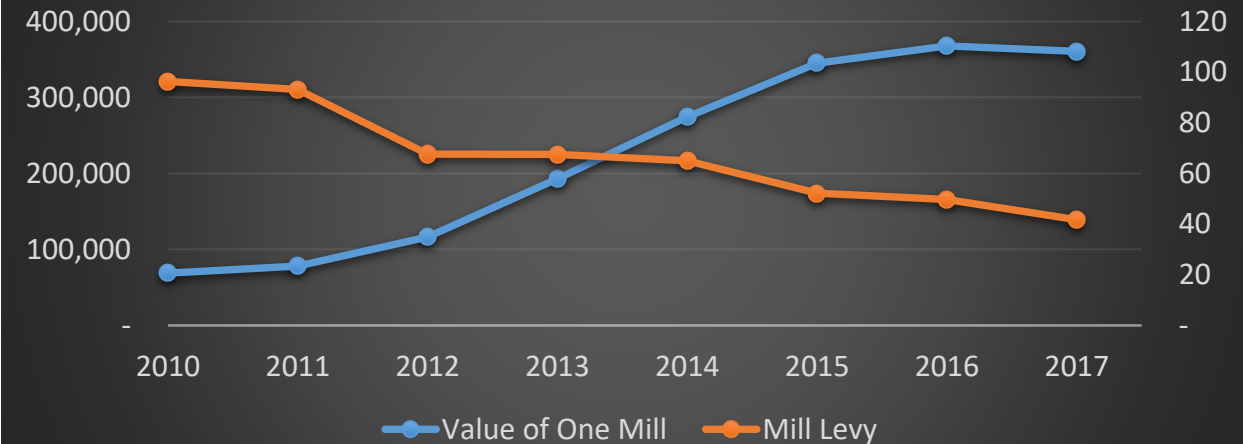
Mountrail County



McKenzie County



Williams County



PROPERTY TAX SUMMARY



Summary of Increase in Dollars Levied

Dunn

107%

Increase since 2010

\$1,282,936 -> \$2,655,495

McKenzie

424%

Increase since 2010

\$833,459 -> \$4,368,801

Mountrail

107%

Increase since 2010

\$2,532,926 -> \$5,232,868

Williams

121%

Increase since 2010

\$6,438,509 -> \$14,235,939

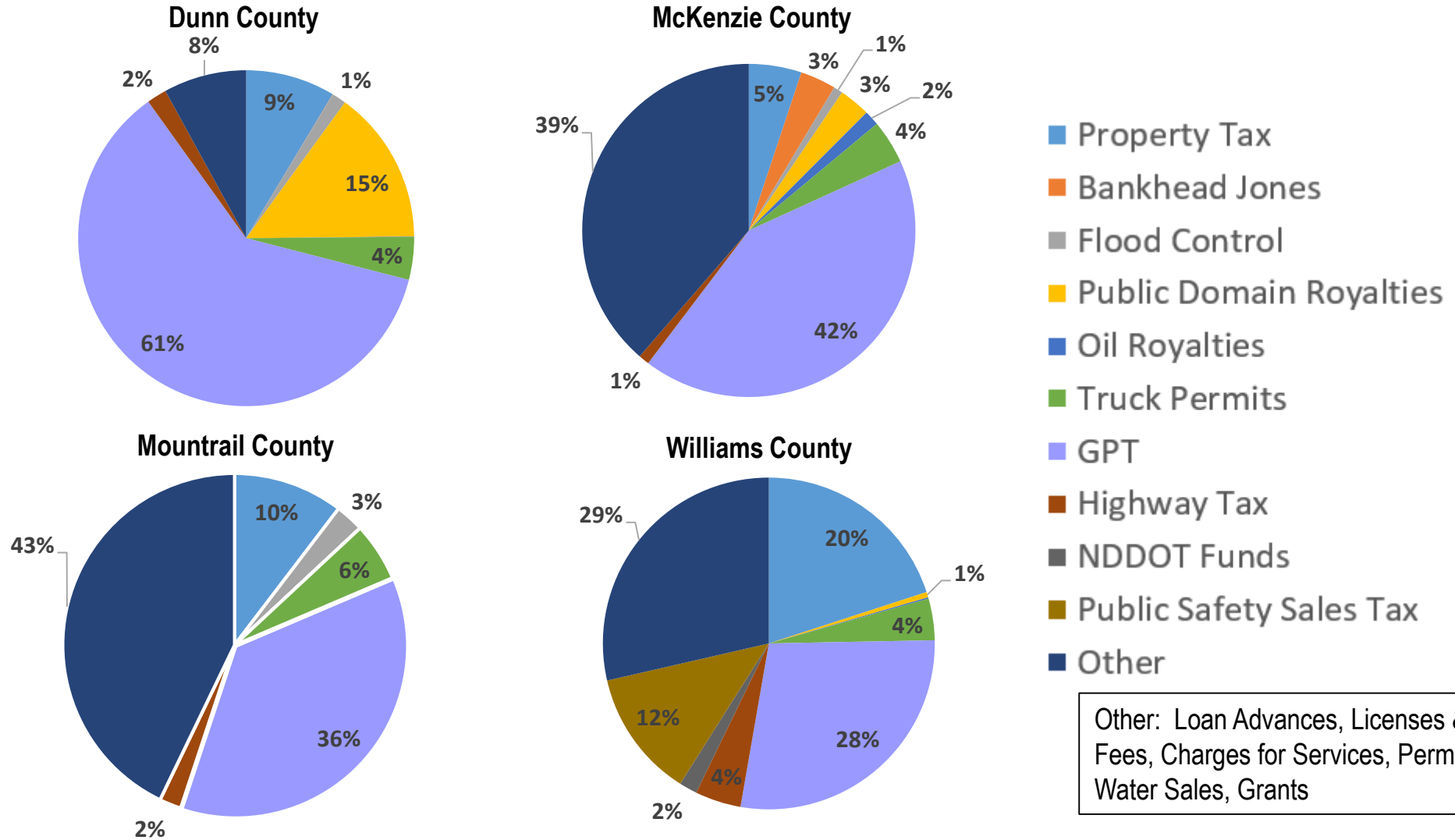


REVENUES SOURCES & EXPENDITURES BY FUNCTION

TOTAL BUDGET



2017 Actual Revenue Sources

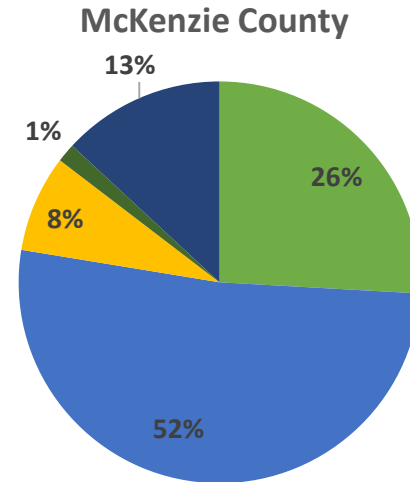
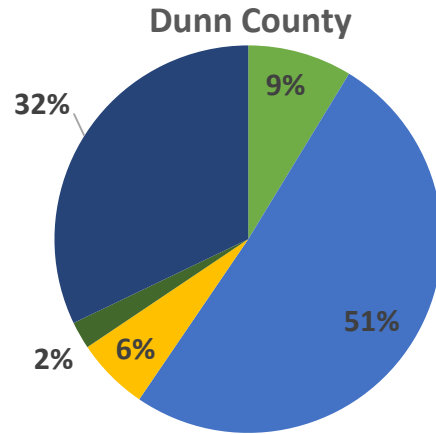


TOTAL BUDGET

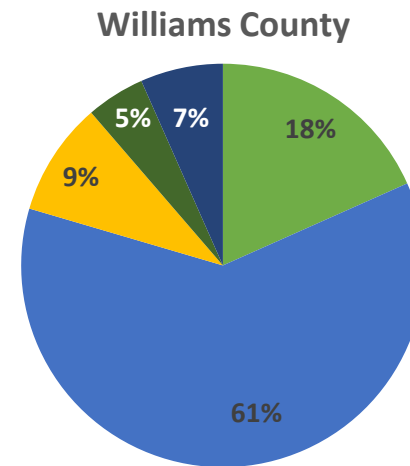
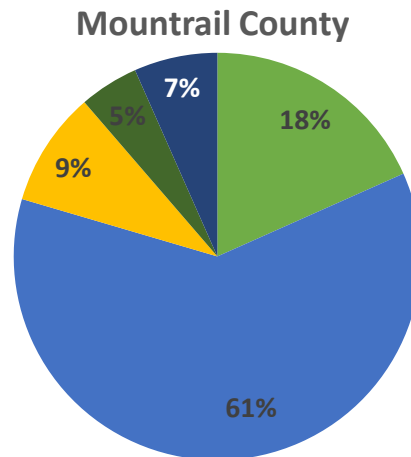


2017 Budgeted Expenditures

**Road & Bridge Expenditures
Comprise over Half
of Total County
Budgets**



- General Govt
- Road & Bridge
- Public Safety
- Human Services
- Other Govt Services



HISTORICAL CAPITAL IMPROVEMENTS



2010 TO 2017 Facility Investments

	Dunn	McKenzie	Mountrail	Williams	Total
Corrections Center	\$ -	\$ 46,448,020	\$ 26,530,330	\$ 25,165,826	\$ 98,144,176
Administration/Courthouse	\$ 14,300,000	\$ 16,206,900	\$ -	\$ 19,457,318	\$ 49,964,218
Other	\$ -	\$ 4,176,366	\$ 1,746,847	\$ 9,608,856	\$ 15,532,069
Court Facilities	\$ 1,152,935	\$ 3,000,000	\$ -	\$ -	\$ 4,152,935
Shop/Public Works Facilities	\$ 4,795,022	\$ 22,920,037	\$ 8,725,243	\$ 25,535,621	\$ 61,975,923
	\$ 20,247,957	\$ 92,751,323	\$ 37,002,420	\$ 79,767,621	\$ 229,769,321
<i>Increased Jail Beds</i>	<i>n/a</i>	<i>114</i>	<i>28</i>	<i>28</i>	<i>170</i>

<u>GPT Tied to Debt:</u>	<u>Amount of Loan</u>	<u>Term</u>	<u>Estim Annual Pmt</u>	<u>Purpose</u>
McKenzie	45,550,000	10	4,800,000	LE Center
Williams	12,200,000	10	1,000,000	Highway Complex
Williams	23,450,000	10	2,300,000	Courthouse/LEC/Admin/Master Plan

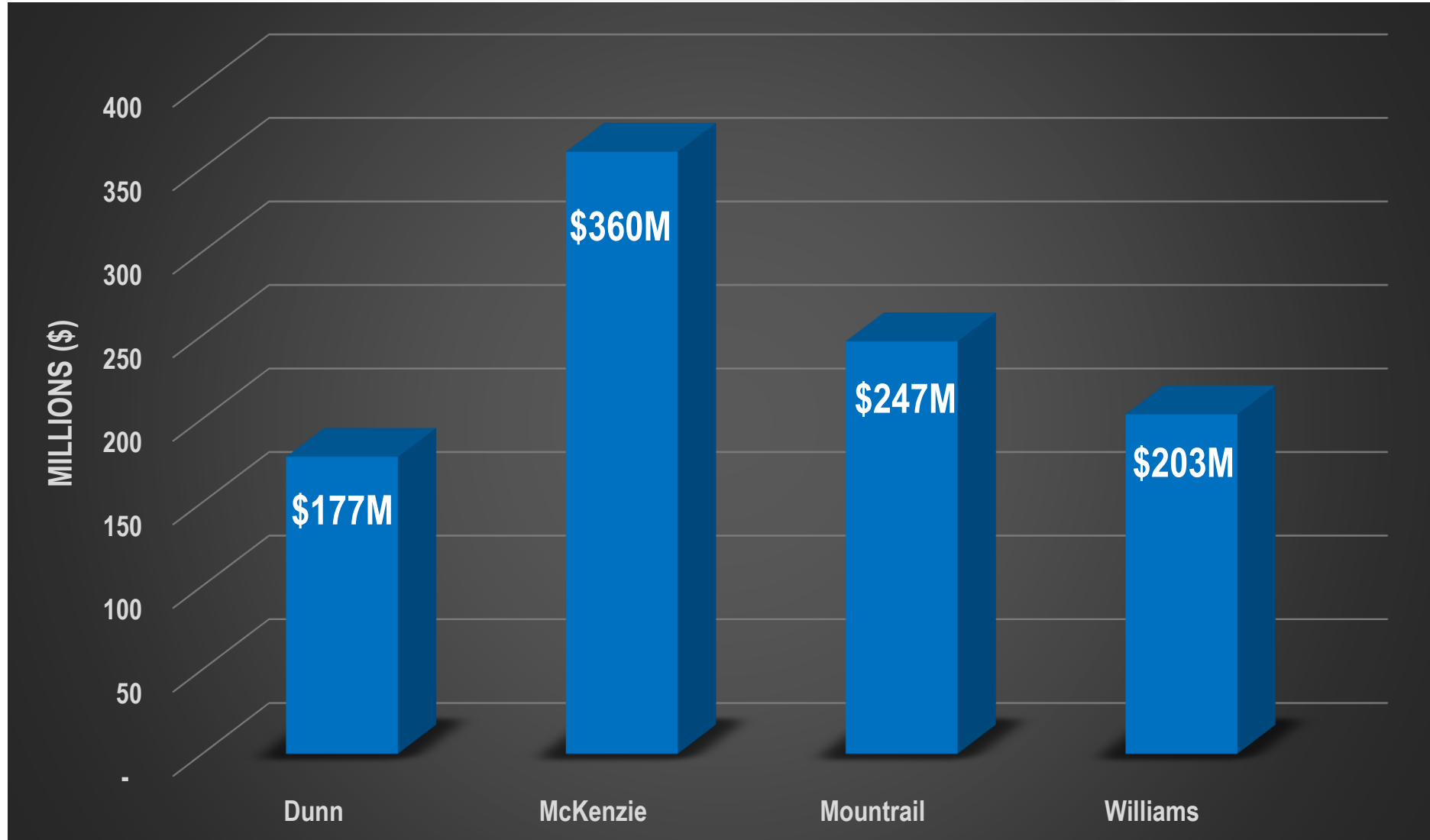
ROADS AND BRIDGES



2010 – 2017 Road and Bridges Investment

4-County road needs
funded since 2010:

\$987M





ROADS AND BRIDGES

ROADS AND BRIDGES

Capital Improvement Plan – Dunn County

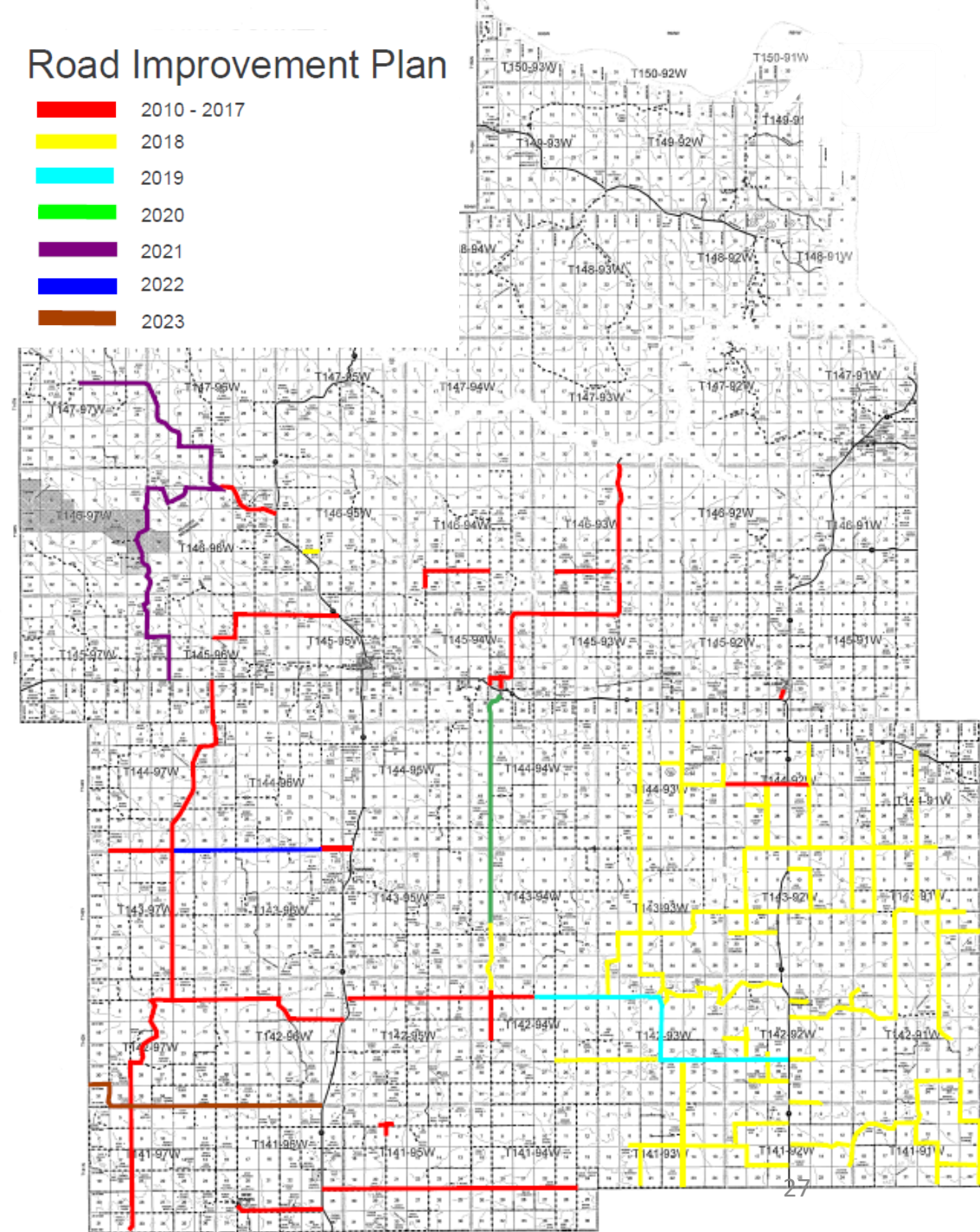
2010-2017:

- Gravel Reconstruction – 157 Miles
- New Pavement – 39 Miles
- Reconstructed Pavement – 14 Miles
- Resurface (Chip Seals/Overlays) – 53 Miles
- Bridges/Structures – 4 Total

2018-2022:

- Gravel Reconstruction – 59 Miles
- New Pavement – 24 Miles
- Reconstructed Pavement – NA
- Resurface (Chip Seals/Overlays) – 53 Miles
- Bridges/Structures – NA

Road Improvement Plan



ROADS AND BRIDGES



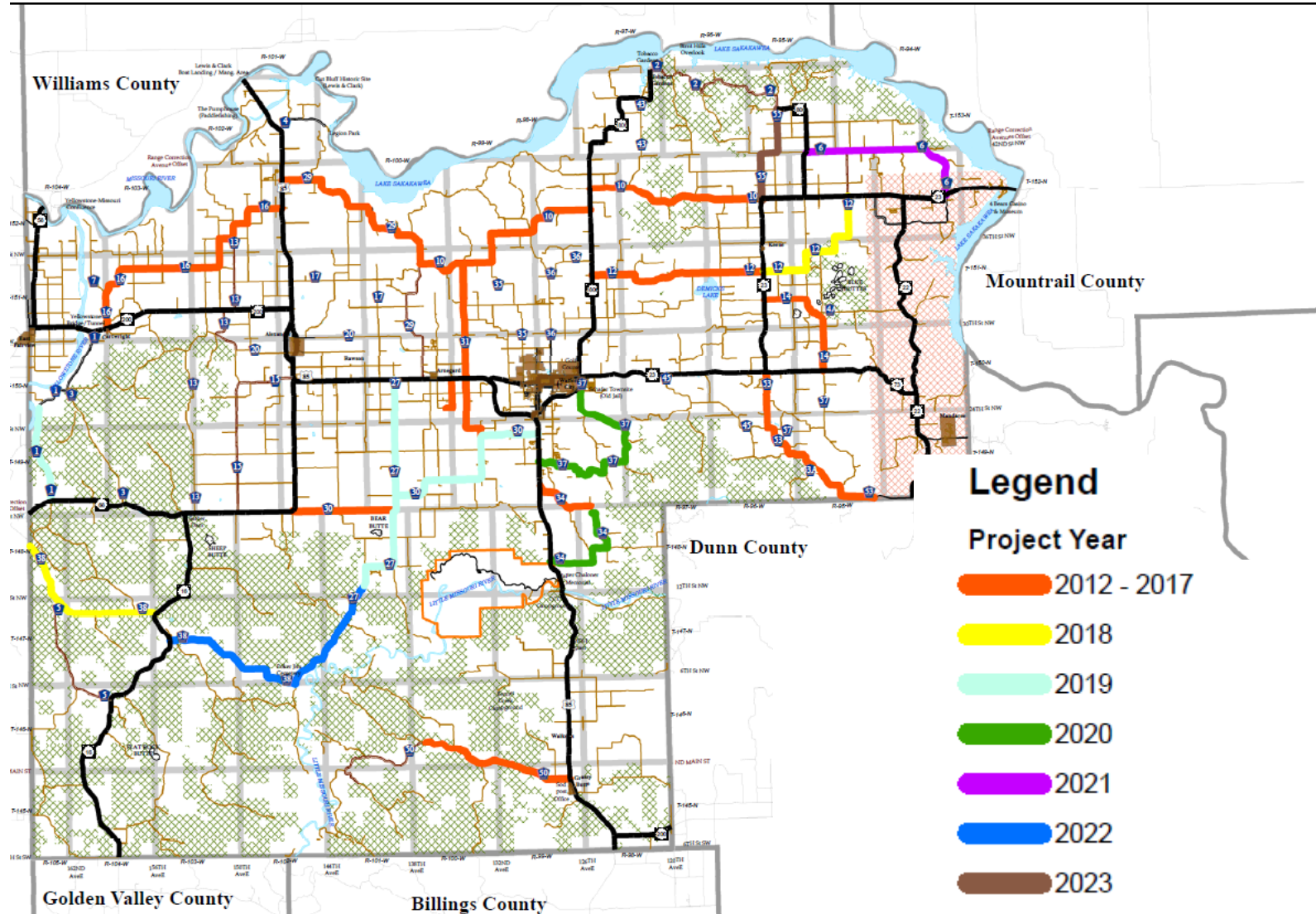
Capital Improvement Plan – McKenzie County

2010-2017:

- Gravel Reconstruction – 97 Miles
- New Pavement – 111 Miles
- Reconstructed Pavement – 11 Miles
- Resurface (Chip Seals/Overlays) – 6 Miles
- Bridges/Structures – 14 Total

2018-2022:

- Gravel Reconstruction – 75 Miles
- New Pavement – 73 Miles
- Reconstructed Pavement – 42 Miles
- Resurface (Chip Seals/Overlays) – NA
- Bridges/Structures – 15 Total

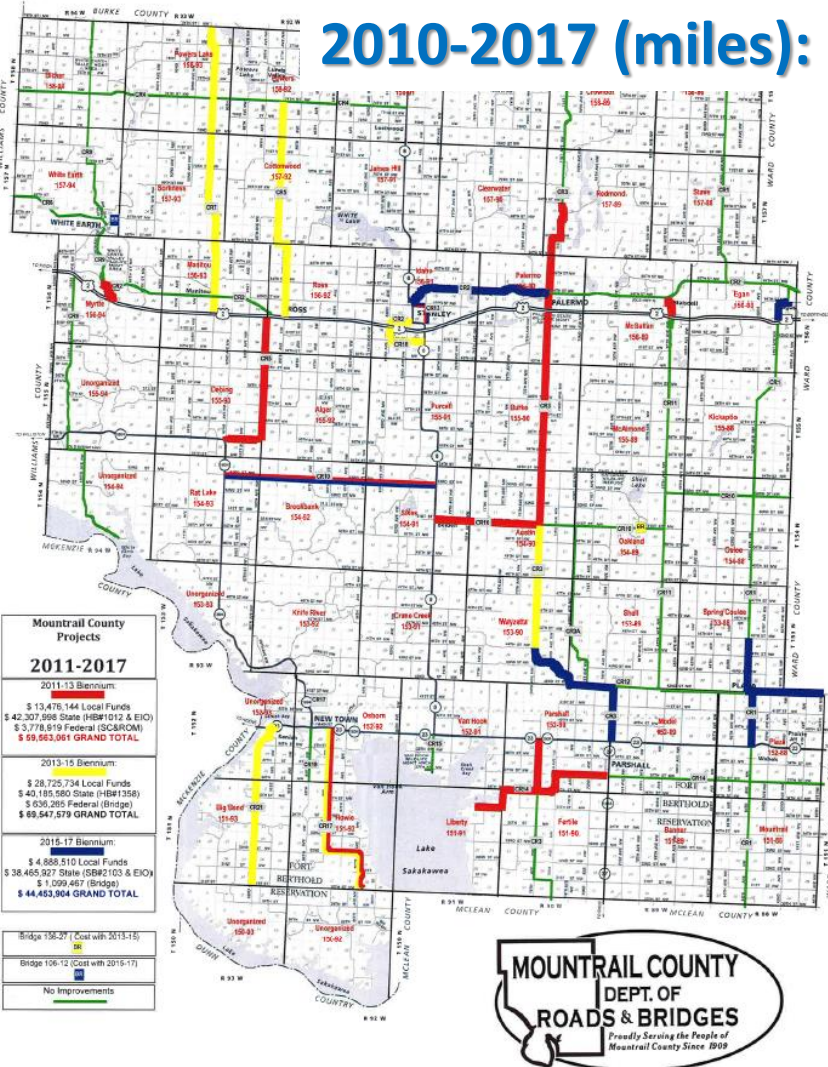


ROADS AND BRIDGES



Capital Improvement Plan – Mountrail County

2010-2017 (miles):



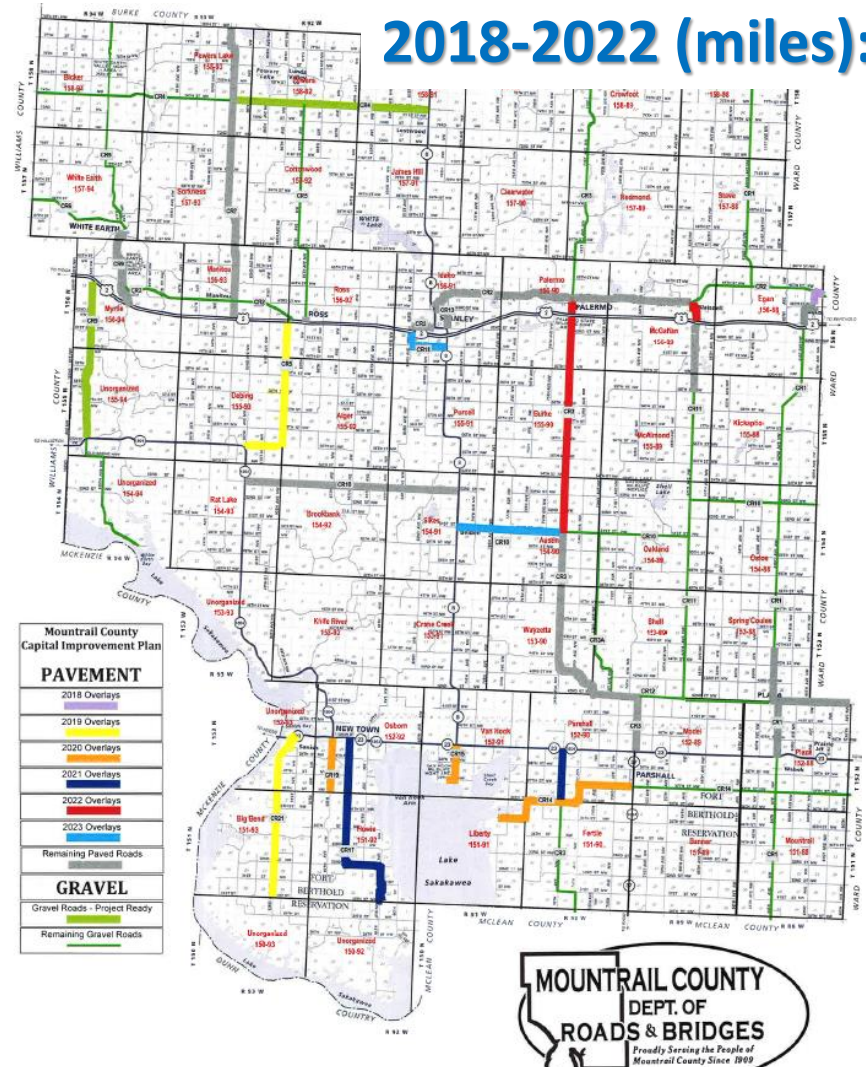
2010-2017 (miles):

- Gravel Reconstruction – 17
- New Pavement – 138
- Reconstructed Pavement – 26
- Resurface – 17
- Bridges/Structures – 2 Total

2018-2022 (miles):

- Gravel Reconstruction – NA
- New Pavement – 20
- Reconstructed Pavement – 1
- Resurface – 58
- Bridges/Structures – NA

2018-2022 (miles):



ROADS AND BRIDGES



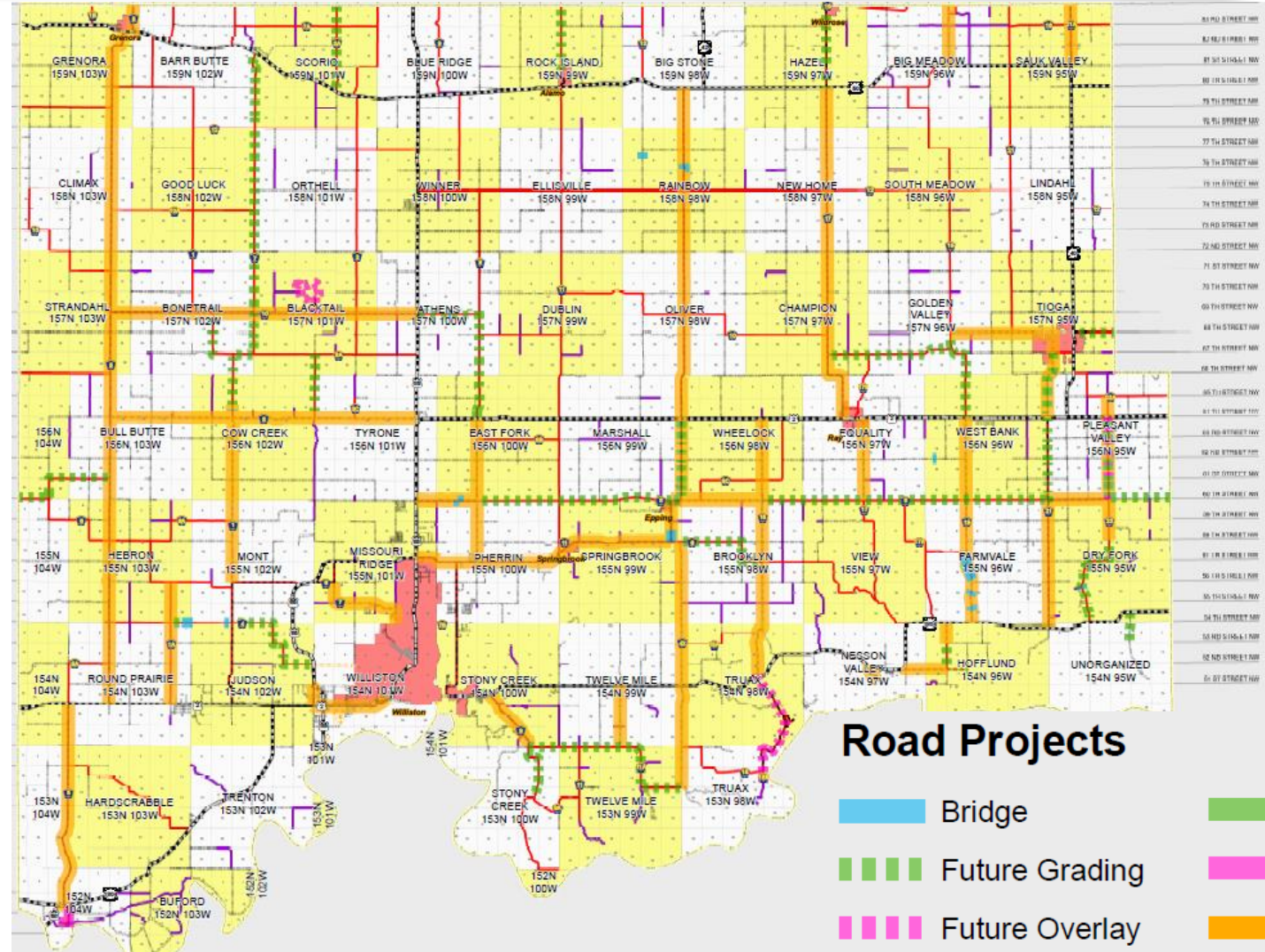
Capital Improvement Plan – Williams County

2010-2017 (miles):

- Gravel Reconstruction – 121
- New Pavement – 3
- Reconstructed Pavement – 26
- Resurface – 93 Miles
- Bridges/Structures – 3 Total

2018-2022 (miles):

- Gravel Reconstruction – 74
- New Pavement – 15
- Reconstructed Pavement – 15
- Resurface – 100
- Bridges/Structures – 9 Total



Williams
COUNTY

Legend

- US / State Highway
- Township Paved Road
- County Gravel/Chip Road
- County Paved Road
- County Gravel Road
- Gravel Road
- Low Maintenance Road
- Airport
- Sections
- City Limits

*Williams County
Highway Project Map*

Road Projects

- Bridge
- Future Grading
- Future Overlay
- Grading
- Overlay
- Completed Projects



Township Summary

**Township Roads
are essential
infrastructure
serving the
agriculture and
energy industries**

➤ Township Summary:

	Dunn	McKenzie	Mountrail	Williams
Organized	None	34	49	51
Unorganized	53	62	6	6
<i>TWP Road Maintenance Agreements</i>	<i>N/A</i>	34	36	51 <i>(on call)</i>

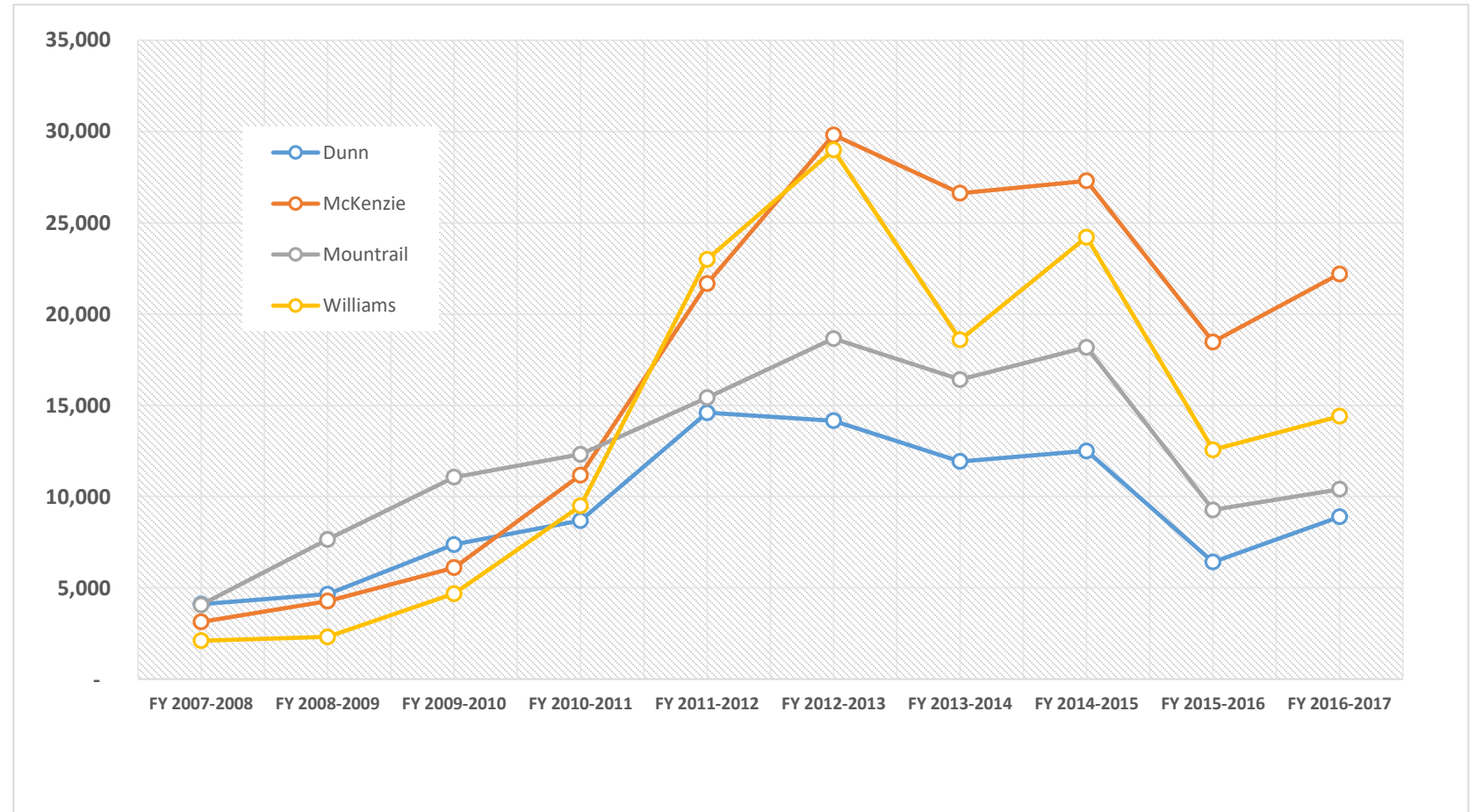
➤ Certified Township Road Miles (2016):

	Dunn	McKenzie	Mountrail	Williams
Organized	-	382	1,258	1,217
Unorganized	876	720	54	142
Total	876	1,102	2,312	1,359



Load Pass Permits

The Load Pass Permit System is administered by the Western Dakota Energy Association



Permits Sold FY 2007/2008 – FY 2016/2017



4-County Road and Bridge Needs Overview:

- **Projected Needs**
- **Planned Improvements**
- **Revenues Available for Use**
- **Projected Funding Gap**



Total Projected Need

Data captured from NDSU Upper Great Plains Transportation Institute (UGPTI) Study and County Road and Bridge CIP:

- *Infrastructure Needs: North Dakota's County, Township, and Tribal Roads and Bridges: 2017-2036*
- Study Projected Paved, Unpaved, and Bridge Needs by County for 3 Rig Count Scenarios (30, 60, and 90 Rig Annual Average)

Unpaved Needs Analyzed:

- Graveling Frequency
- Blading Frequency
- Intermediate Practices
- Asphalt Surfacing

Paved Needs Analyzed:

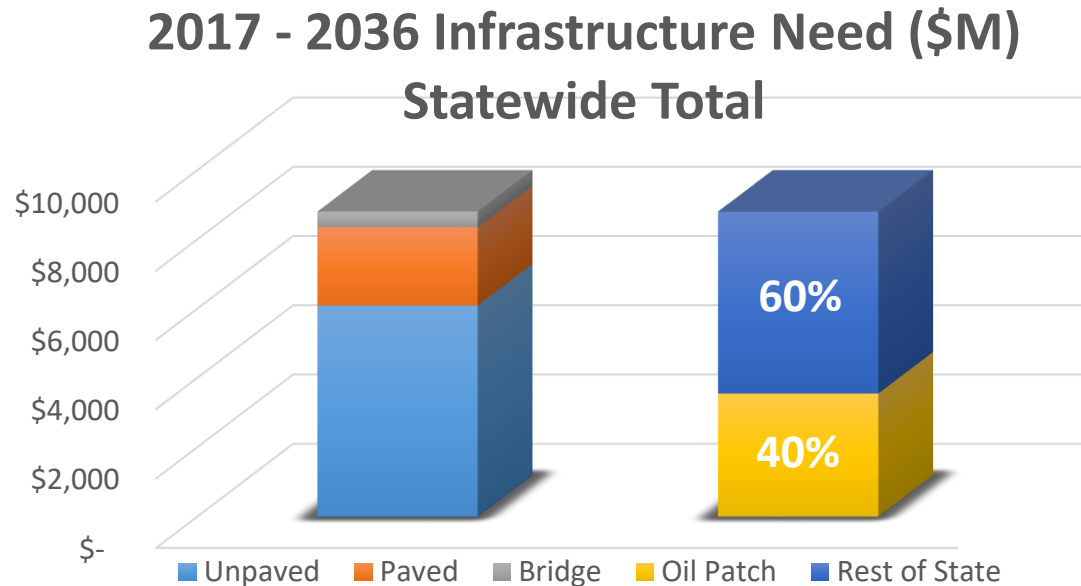
- Sealing
- Resurfacing
- Widening
- Reconstruction



Total Projected Need

UGPTI Study Summary:

- **Statewide Total of \$8.8 Billion (2016\$) over 20 years**
- **~40% of total projected need in 17 Oil Producing Counties**



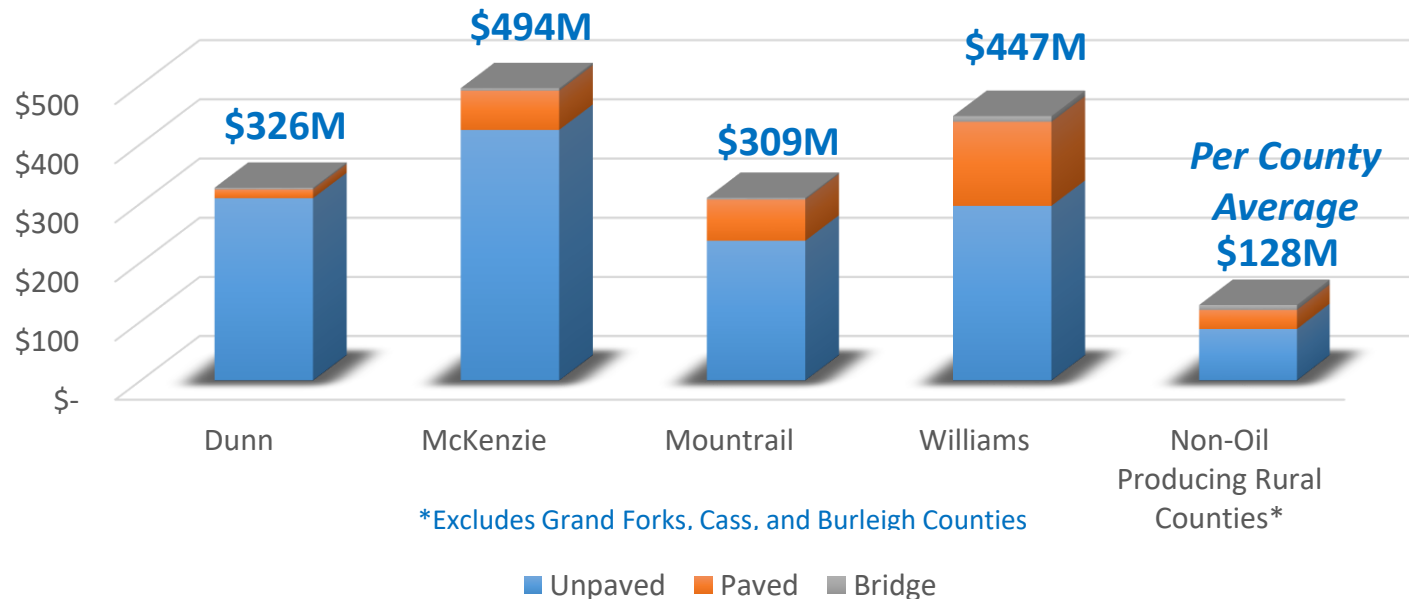
ROADS AND BRIDGES



Total Projected Need (2016\$)

Projected Need in 4-County Area as compared to non-oil producing rural counties

2017 - 2036 Road & Bridge Infrastructure Need (\$M)
Cumulative Total by County (60-Rig Scenario)





Capital Improvements Plans

5 Year Capital Improvements Plan: 2018-2022

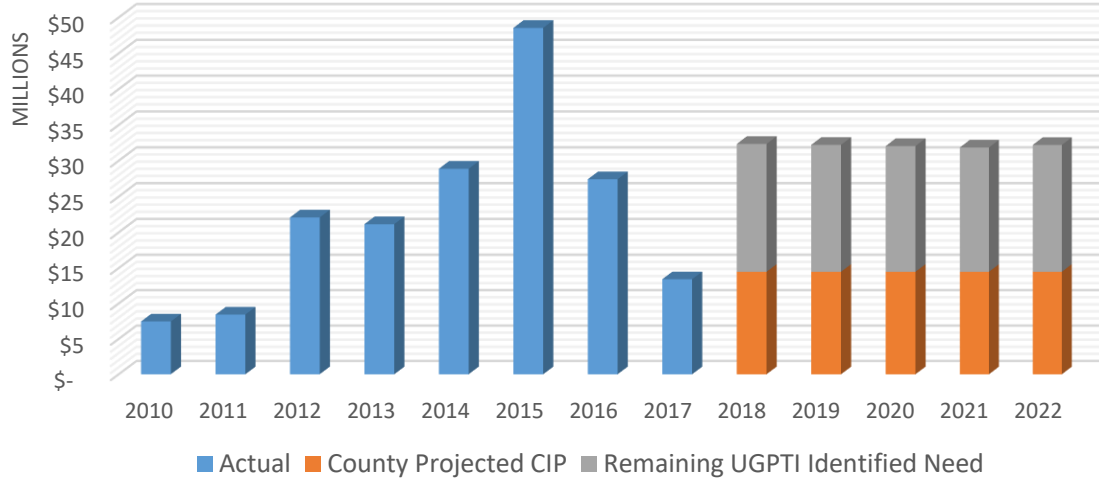
	Dunn	McKenzie	Mountrail	Williams
Gravel Reconstruction - Miles	59	75	-	74
Estimated Cost	\$ 29,500,000	\$ 52,500,000	\$ -	\$ 68,450,000
Resurface Chipseal/Overlay	53	-	58	100
Estimated Cost	\$ 2,120,000	\$ -	\$ 3,643,700	\$ 5,400,000
Pavement Reconstruction - Miles	-	42	1	15
Estimated Cost (\$1.7M/mile)	\$ -	\$ 71,400,000	\$ 1,700,000	\$ 25,500,000
New Pavement - Miles	24	73	20	15
Estimated Cost (\$1.7M/mile)	\$ 40,800,000	\$ 124,100,000	\$ 33,728,000	\$ 25,500,000
Structures (Bridges)	-	15	-	9
Estimated Cost	\$ -	\$ 10,000,000	\$ -	\$ 6,000,000
Total	\$ 72,420,000	\$ 258,000,000	\$ 39,071,700	\$ 130,850,000

ROADS AND BRIDGES

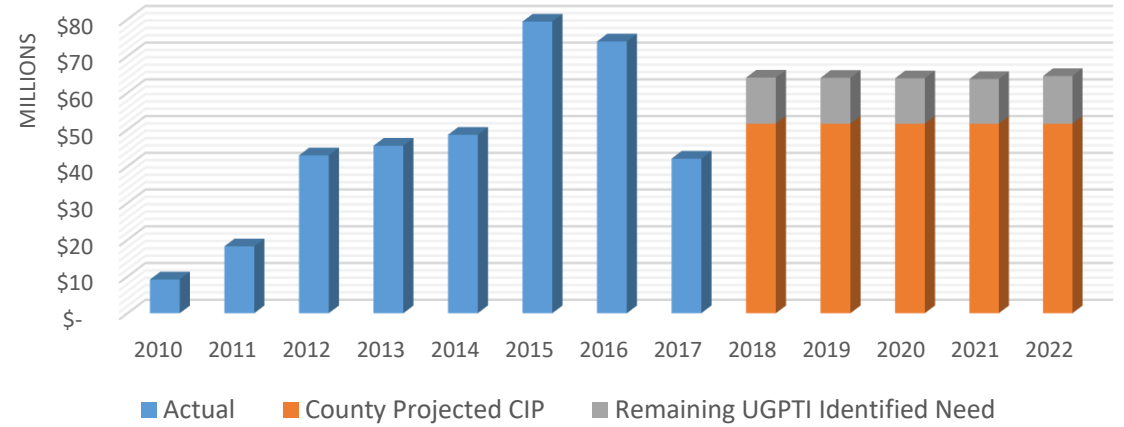


Historical Expenditures and Projected Need

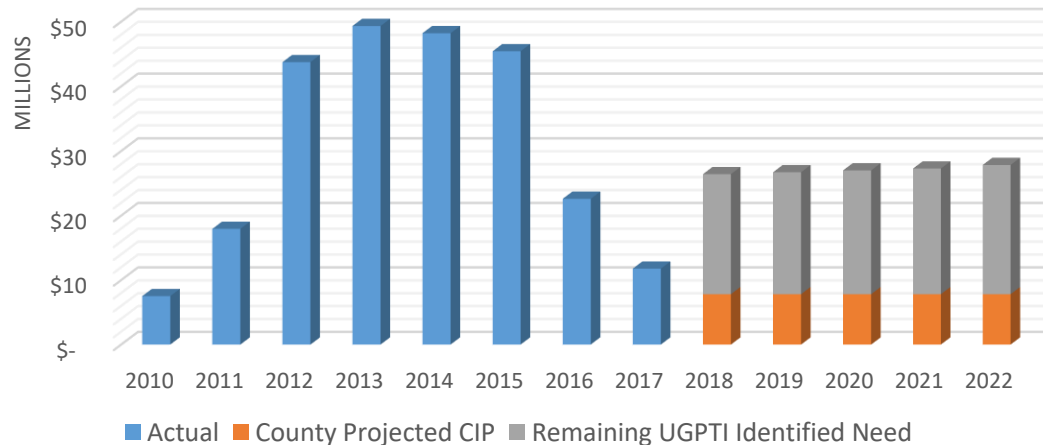
Dunn County



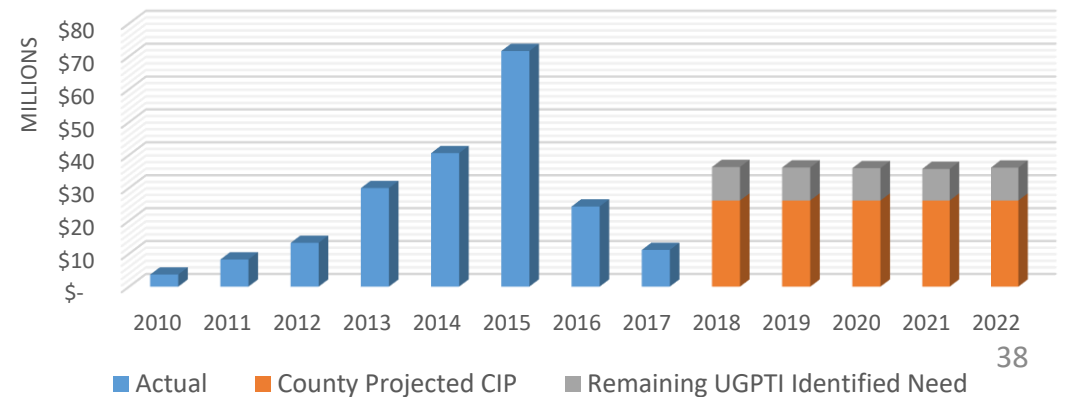
McKenzie County



Mountrail County



Williams County





Key Revenues Available for Use

Key County and Township Revenues Available for Use:

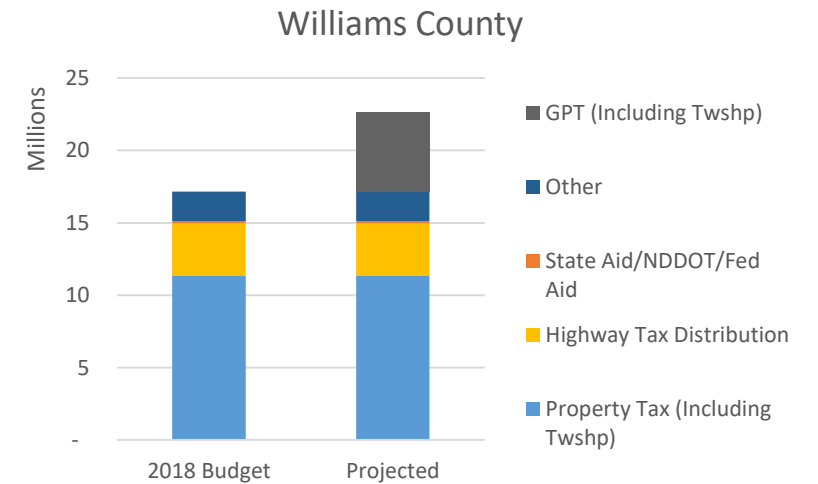
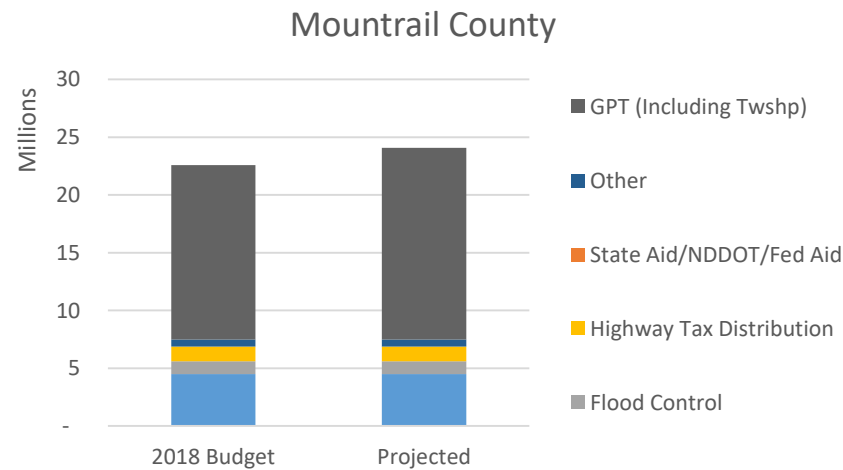
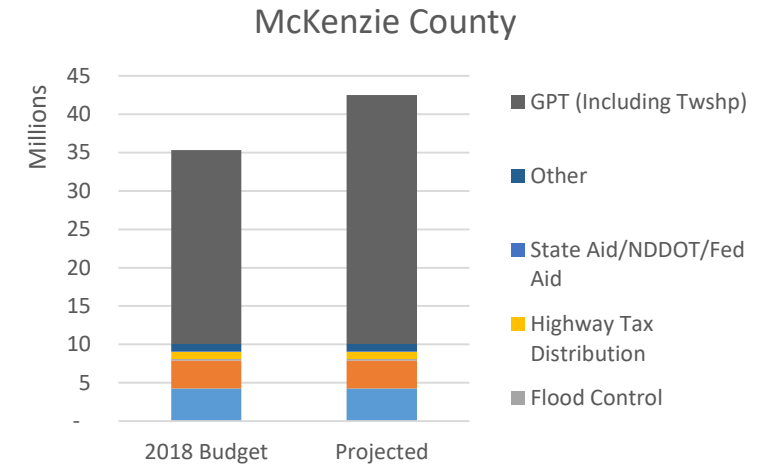
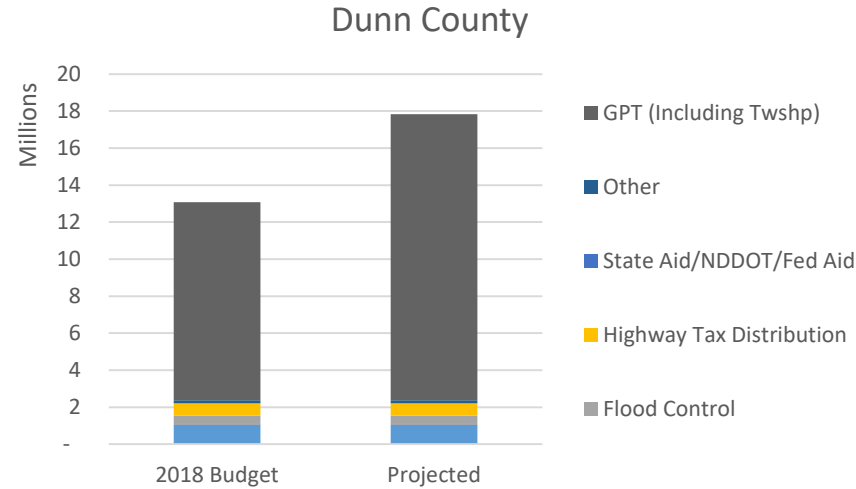
- County and Township GPT Distribution
- State Aid / NDDOT / Federal Aid
- Highway Tax Distribution
- Property Tax Levy
- Flood Control Revenues

ROADS AND BRIDGES



Revenue Sources

Future GPT Revenue Projections adjusted based on Revised GPT Forecast



ROADS AND BRIDGES

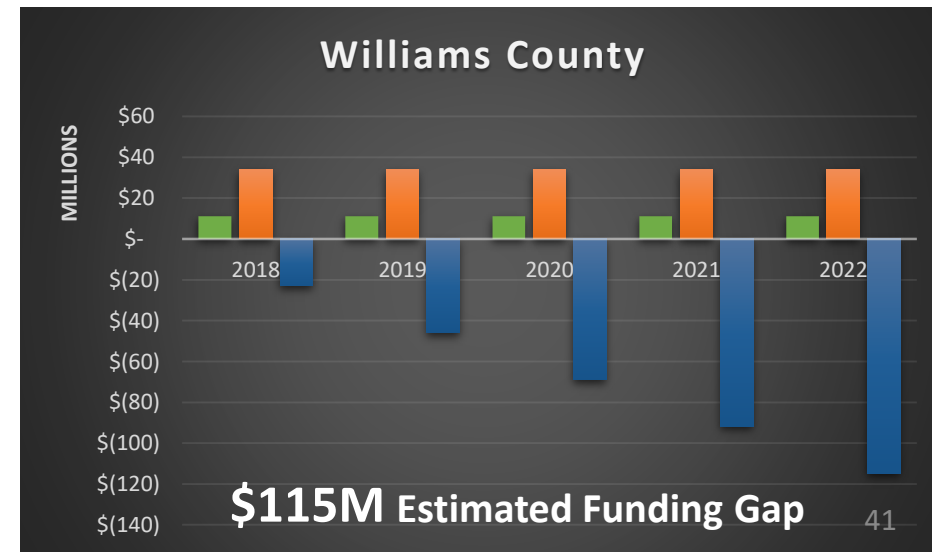
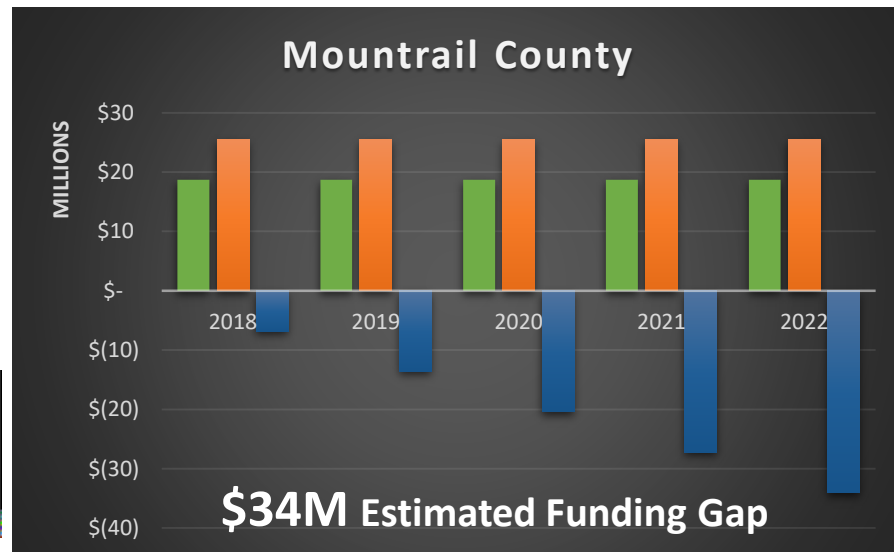
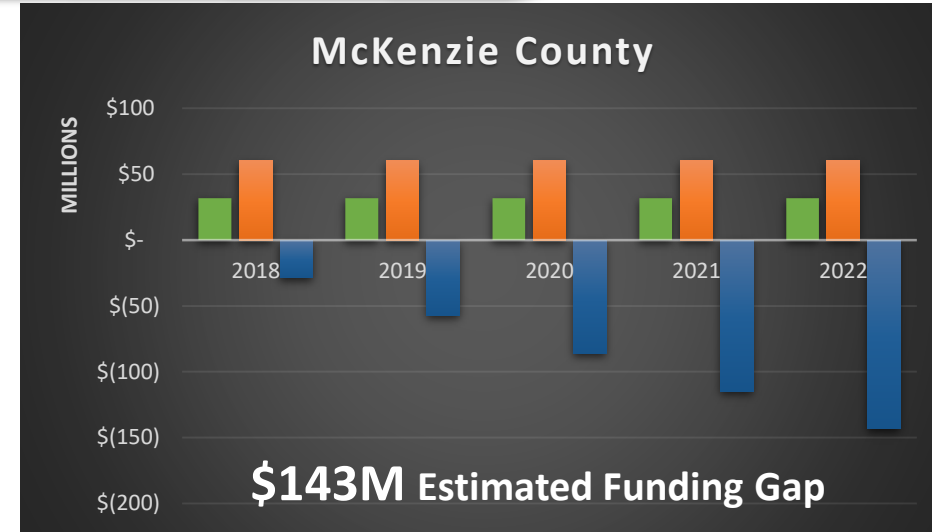
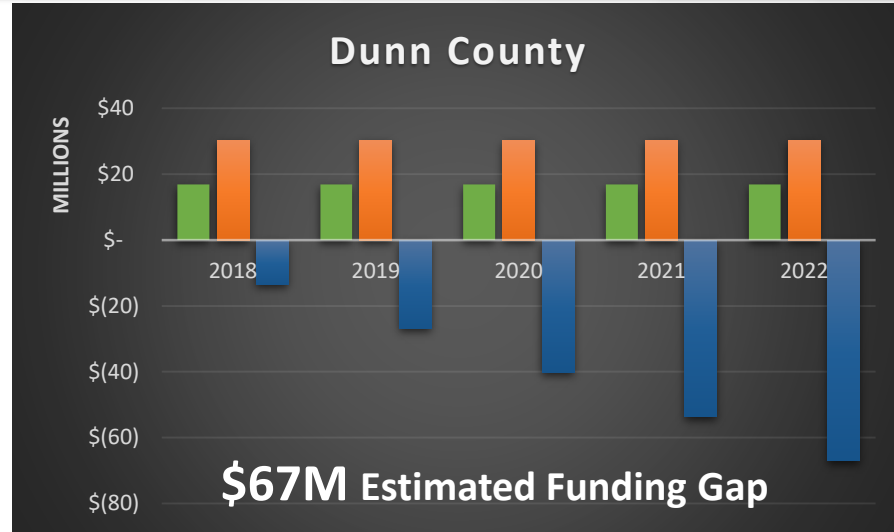


5-Year Funding Gap

Projected Revenues Available for Improvements* versus Road & Bridge Need

**Revenues Available for Improvements = total revenues less department operations expense*

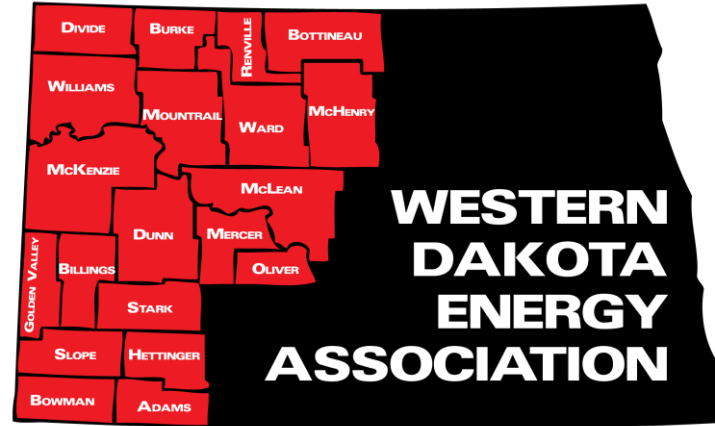
- Total Revenues Available for Improvements*
- Projected Road & Bridge Need
- Cumulative Gap





O&G Development County Impacts

- **On-going development of O&G in the 4 Counties continues**
- **Further increases expected with increased price and efficiency in the drilling process that will impact all O&G producing counties**
- **Significant past investments have been made and GPT has been an essential resource to meeting the need**
- **Moving forward, large demands remain in O&G producing counties**
- ***To meet this demand - GPT will continue to be critical tool for the O&G producing counties moving forward!***



Thank you!

March 8, 2018

TESTIMONY

Linda Svihovec

AE2S Nexus

INTERIM ENERGY DEVELOPMENT AND TRANSMISSION COMMITTEE

Bismarck, ND – March 8, 2018

Chairman Wardner and Members of the Committee, I want to thank you for the opportunity to present information to you today on behalf of the Western Dakota Energy Association (WDEA). For the record, my name is Linda Svihovec and I work for AE2S Nexus who has been contracted by WDEA to gather data for the 4 major Oil and Gas Producing Counties; Dunn, McKenzie, Mountrail, and Williams, and present the results of that data collection to you today. To complete this effort, an extensive data request was distributed to the counties early in January. Counties were given a month to gather 10 years of historical staffing, budget, finance, public safety, emergency management, property tax and road and bridge data. This presentation is intended to provide your Committee with historical and future costs, and a summary of the impacts realized by these 4 counties that are responsible for nearly 92% of the oil and gas produced in North Dakota today.

The unprecedented level of oil and gas development focused in a small geographical area, has generated revenue that has benefited the entire state of North Dakota. However, there are substantial costs associated with the challenges and impacts from this oil and gas activity that counties and their communities have struggled to manage. The prioritization of how to use limited funds to address the biggest impacts at any given time has been extremely difficult in North Dakota at both the county and State level. Gross Production Tax has been essential revenue for oil and gas producing counties to help pay for those costs.

Ongoing development of oil and gas in the 4 County region continues and has been increasing with the price of oil and new efficiencies in the drilling process. In addition to the increase in drilling activity, these four counties have over 1200 drilled but not producing wells which will be brought into production as price and available workforce allow. It is a daunting challenge to keep ahead of the anticipated activity and the heavy truck traffic that will utilize county roads to place these wells into production.

My presentation today provides 10 years of historical data for Population, Taxable Valuation, Property Taxes, and Capital Facility Investments in the 4 Counties. A key summary of the data collected is as follows:

- Population Growth 2010-2016: Dunn 23%, McKenzie 98%, Mountrail 33%, Williams 53%
- Increase in Staff since 2010: Dunn 31%, McKenzie 225%, Mountrail 46%, Williams 84%
- Increase in Public Safety staff: Dunn 143%, McKenzie 288%, Mountrail 40%, Williams 165%
- Taxable Valuations Increase since 2010: Dunn 333%, McKenzie 1062%, Mountrail 266%, Williams 425%

- Dollars Levied Increase since 2010: Dunn 107%, McKenzie 424%, Mountrail 107%, Williams 121%
- Gross Production Tax is an essential revenue source for counties – ranging from 28% to 61% of total revenues
- Road & Bridge expenditures comprise over half of total County budgets
- Since 2010, significant investments have been made in Facilities and Roads to address the demand for service and road impacts from increased population and as a result of heavy industrial traffic:
 - \$98 Million invested in Correction Center facilities, 170 new jail beds added
 - \$50 Million invested in Courthouse/Administration facilities
 - \$62 Million invested in Public Works facilities
 - \$987 Million invested in road and bridge maintenance and improvements
- Township Roads are essential infrastructure serving agriculture and energy industries
- The Load Pass Permit system administered by the WDEA shows an increase in truck traffic at the end of FY 2017 similar to the numbers in FY 2012/2013, indicating that the industry is on the move again.

In addition to the investments made to date, an analysis of future road and bridge needs under a moderate drilling and production scenario similar to current activity (60-Rigs Active) was performed. The analysis accounted for projected revenues available for use at the county level and compared them to planned improvements and UGPTI projected future maintenance needs. The results of this analysis indicate a projected five year funding gap for each of the 4 counties to maintain and improve roads for their citizens and the industry in the 4 County region as follows:

- Dunn - \$67 Million R&B Funding Gap
- McKenzie - \$143 Million R&B Funding Gap
- Mountrail - \$34 Million R&B Funding Gap
- Williams - \$115 Million R&B Funding Gap

In summary, the results of this ten year data compilation indicate that extraordinary investments have been made in these 4 Counties to address the needs, impacts, and challenges resulting from the economic boom created by the development of oil in the Bakken Shale play. The concentration of activity in the 4-County region has posed unprecedented, costly challenges which the 4 counties have managed by prioritizing improvements and the use of available funds. The ongoing maintenance and upkeep of the infrastructure needed to provide a reliable and safe road system that provides efficiency and cost savings to the oil industry will continue to be costly. Gross Production Tax is an important funding source for all oil and gas producing counties to be able to continue to manage these challenges.