

Project 2030 Donors

- Blue Cross/Blue Shield of Montana
- Montana Agricultural Experiment Station
- Montana Area Agencies on Aging Association
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- Montana Extension Service
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- PPL Montana

Project 2030 Montana Ageing

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This presentation and the associated report can be found at

<http://www.econedmontana.org>



Project Outline

1. Ageing Population
2. Selected Government Expenditures
3. Selected Tax Revenues

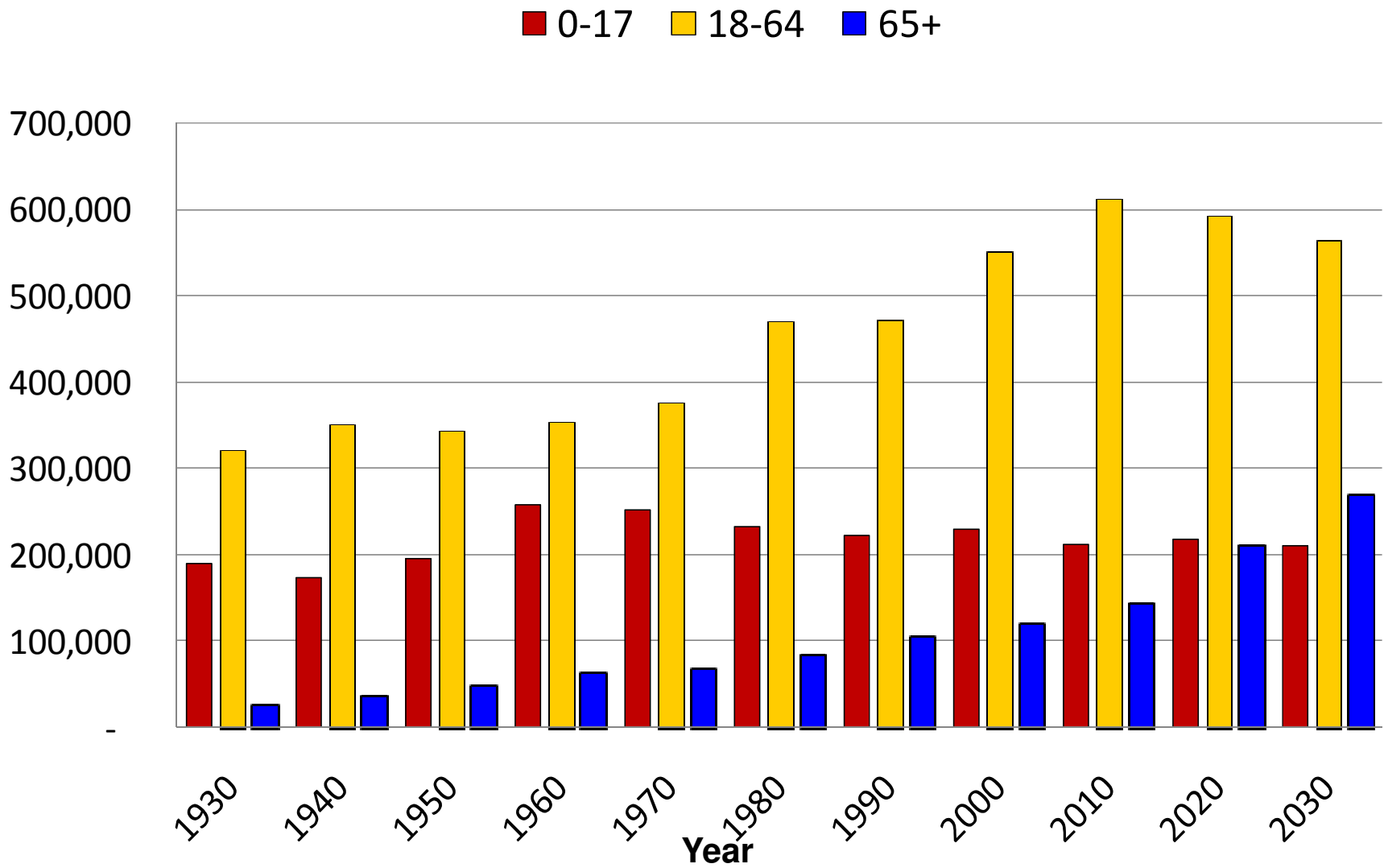
Project Outline

1. Ageing Population
2. Selected Government Expenditures
3. Selected Tax Revenues

Ageing Population

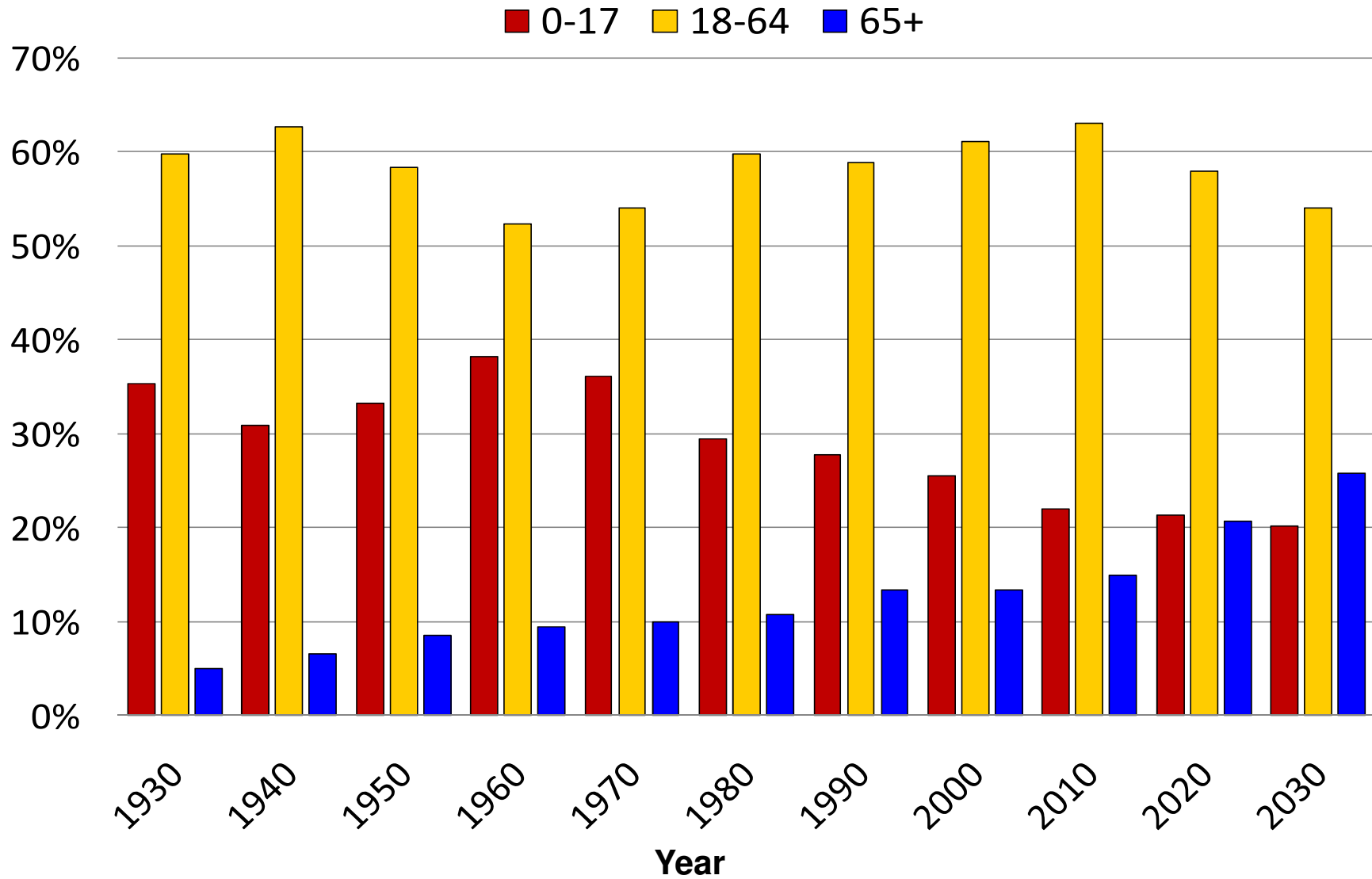
1930 – 2030

Figure 1. Montana Population by Age Group



Sources: U.S. Census Bureau, NPA Data Services, Inc.

Figure 2. Percentage of Population



Dependency Ratios

- Total Age Dependency Ratio (TDR)
 - # non-working age / # working age
 - # non-working age
 - 0 – 17 years of age (youth)
 - 65 and older (elder)
 - # working age
 - 18 – 65 years of age

Dependency Ratios

- Young Age Dependency Ratio (YDR)
 - # 0 – 17 years of age / # working age
- Old Age Dependency Ratio (EDR)
 - # 65 years and older / # working age

Figure 3. Montana Age Dependency Ratios

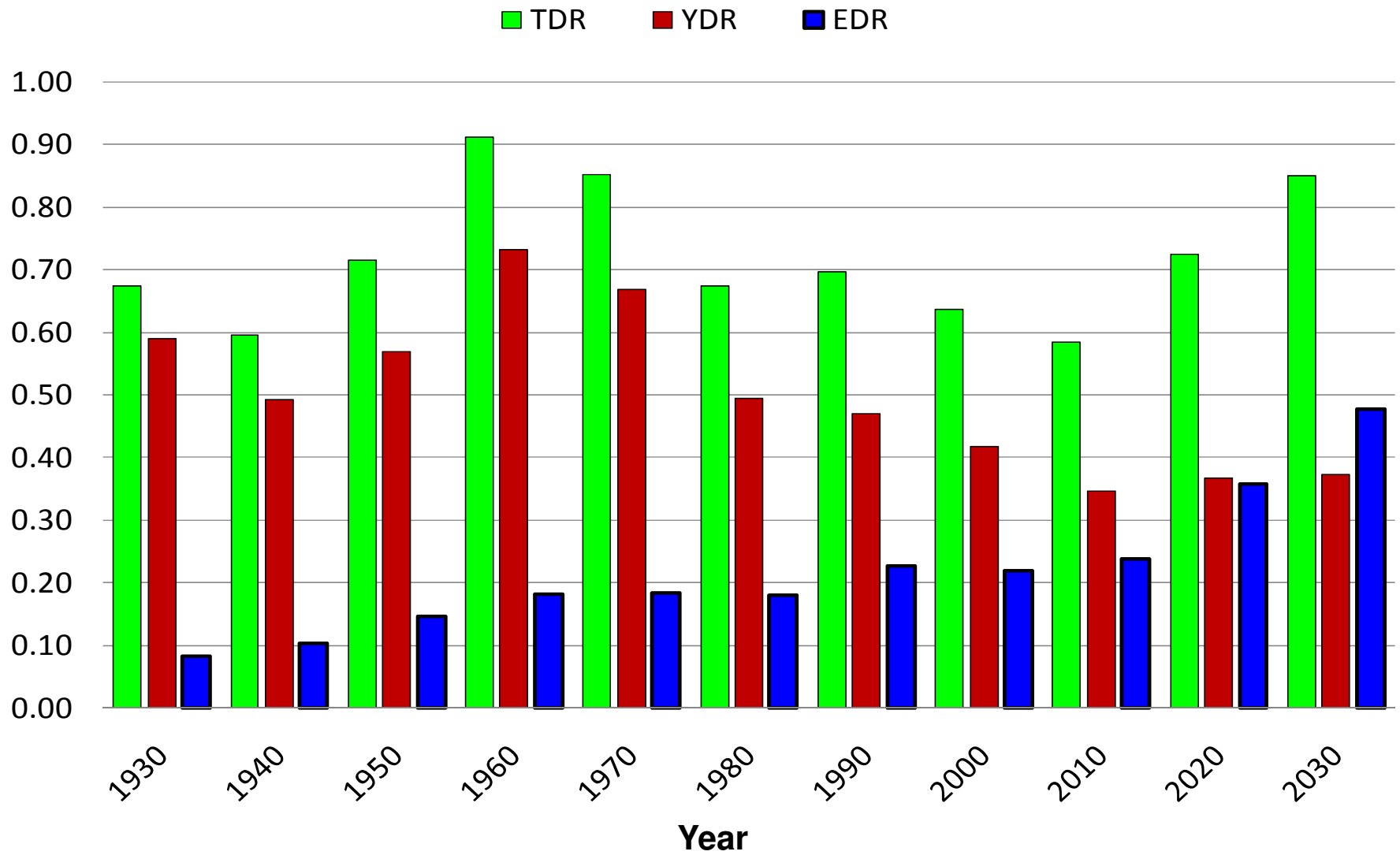


Table 1. Montana Age Dependency Ratios

<u>Year</u>	<u>YDR</u>	<u>EDR</u>	<u>TDR</u>
1930	0.59	0.08	0.67
1940	0.49	0.10	0.60
1950	0.57	0.15	0.71
1960	0.73	0.18	0.91
1970	0.67	0.18	0.85
1980	0.49	0.18	0.67
1990	0.47	0.23	0.70
2000	0.42	0.22	0.64
2010	0.35	0.24	0.58
2020	0.37	0.36	0.72
2030	0.37	0.48	0.85

Figure 4. Youth Dependency Ratio, 2010

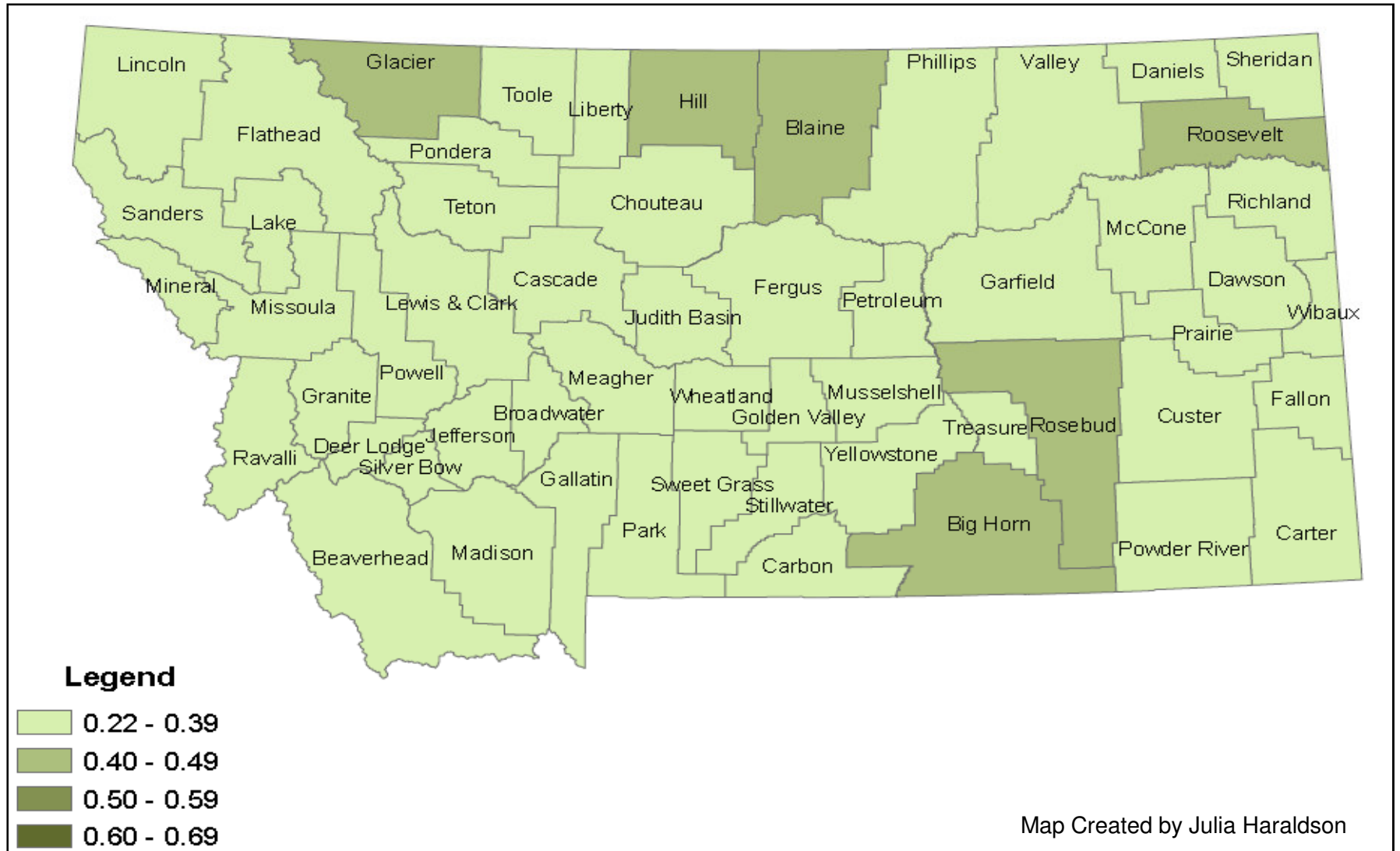


Figure 5. Youth Dependency Ratio, 2030

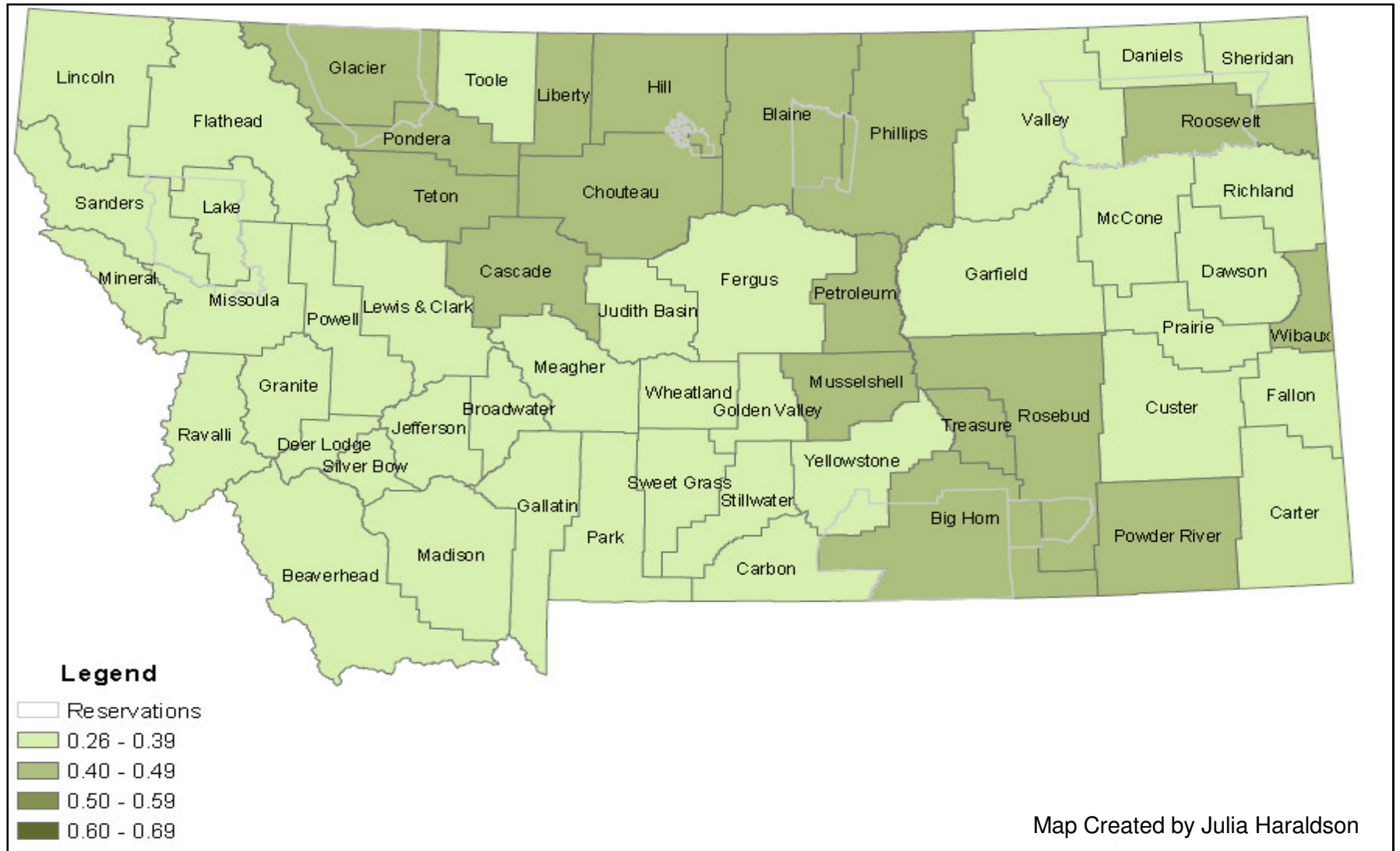
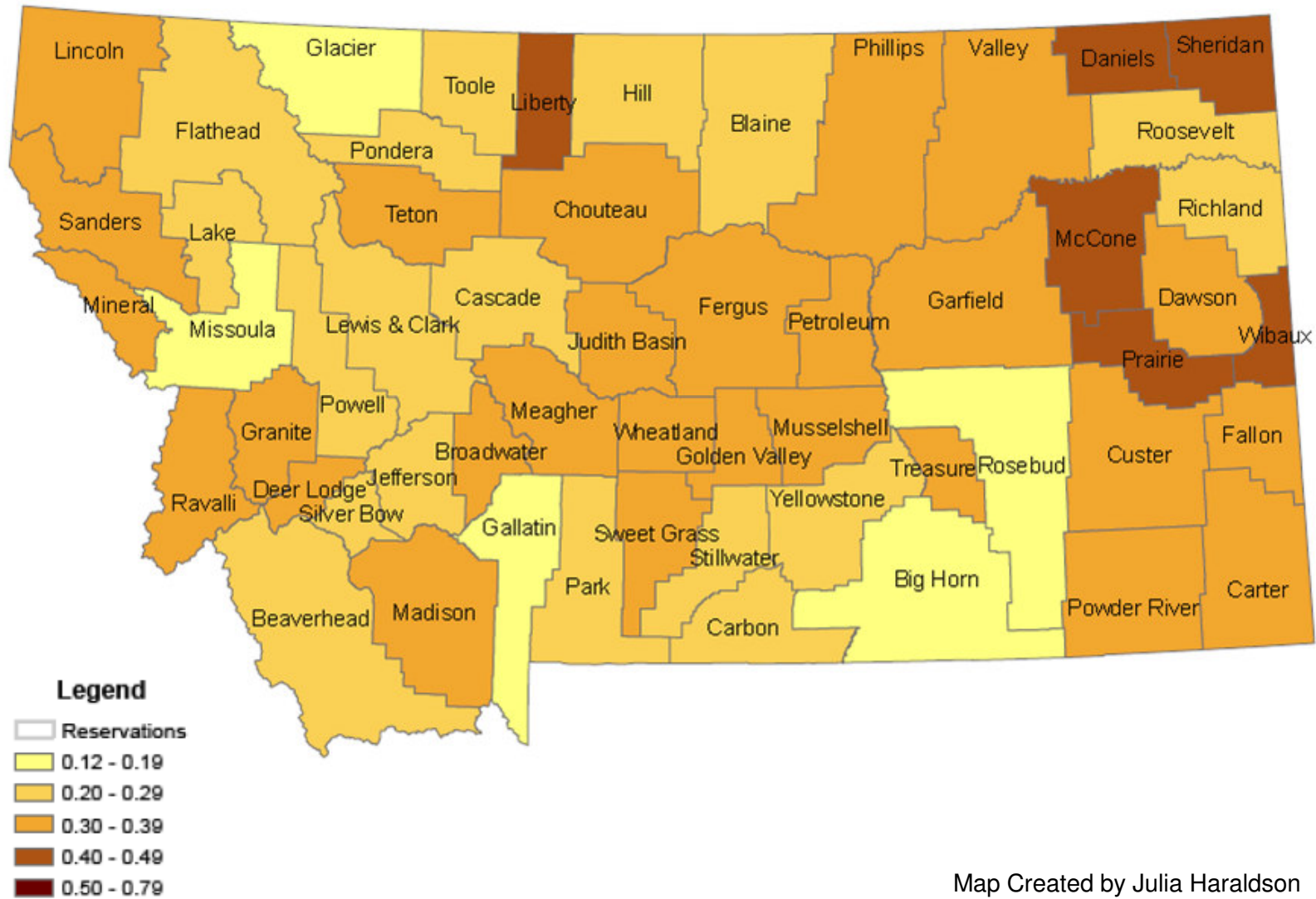
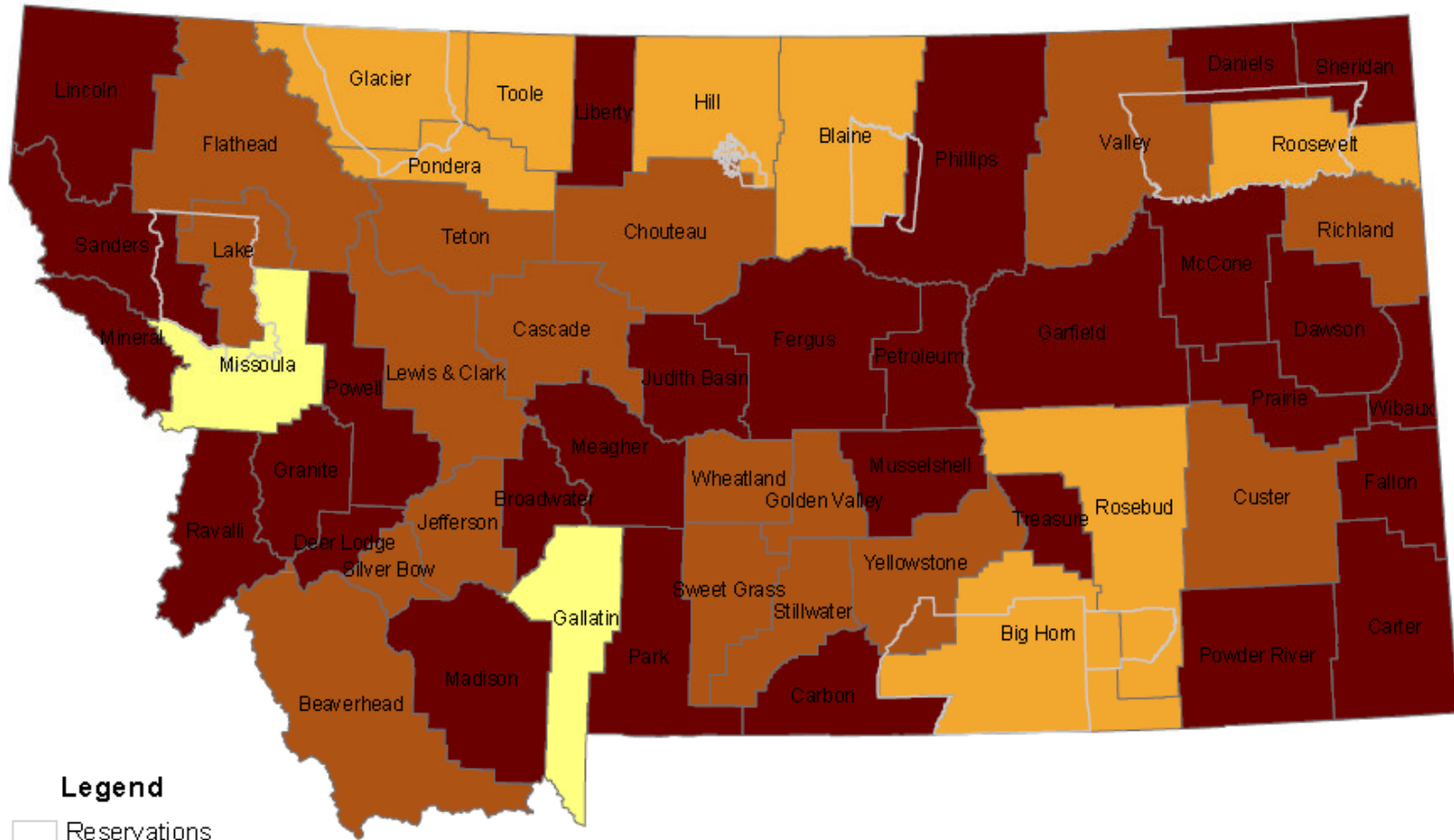


Figure 6. Elderly Dependency Ratio, 2010



Map Created by Julia Haraldson

Figure 7. Elderly Dependency Ratio, 2030



Legend

- ▭ Reservations
- ▭ 0.12 - 0.19
- ▭ 0.20 - 0.29
- ▭ 0.30 - 0.39
- ▭ 0.40 - 0.49
- ▭ 0.50 - 0.75

Map Created by Julia Haraldson

Expenditure and Revenue Projection Methods

- U.S. Census Bureau Projections by Age
- *Assume nothing else changes except age distribution: **No changes in:***
 - Income per Capita
 - House Values
 - Participation Rates
 - Expenditure per Participant
 - Tax Policy
 - Constant Money Value

**Table 2. State and Local Government Finances, FY 2006
Dollars per Person; Current and Capital**

General Expenditures		General Revenues	
Education	2,322	Property Tax	1,125
Social Services	1,411	Indiv. Income Tax	817
Transportation	814	Corp. Income Tax	164
Public Safety	497	Sales Tax	550
Envir./Comm. Dev.	602	Other Taxes	552
Administration	450	Federal Gov't.	2,158
Other	518	Charges/Misc.	1,784

Project Outline

1. Ageing Population
2. Selected Government Expenditures
 - **Education**
 - Corrections
 - Elderly Medicaid
3. Selected Tax Revenues

Table 3. K-12 Education in Fiscal Year 2006-07

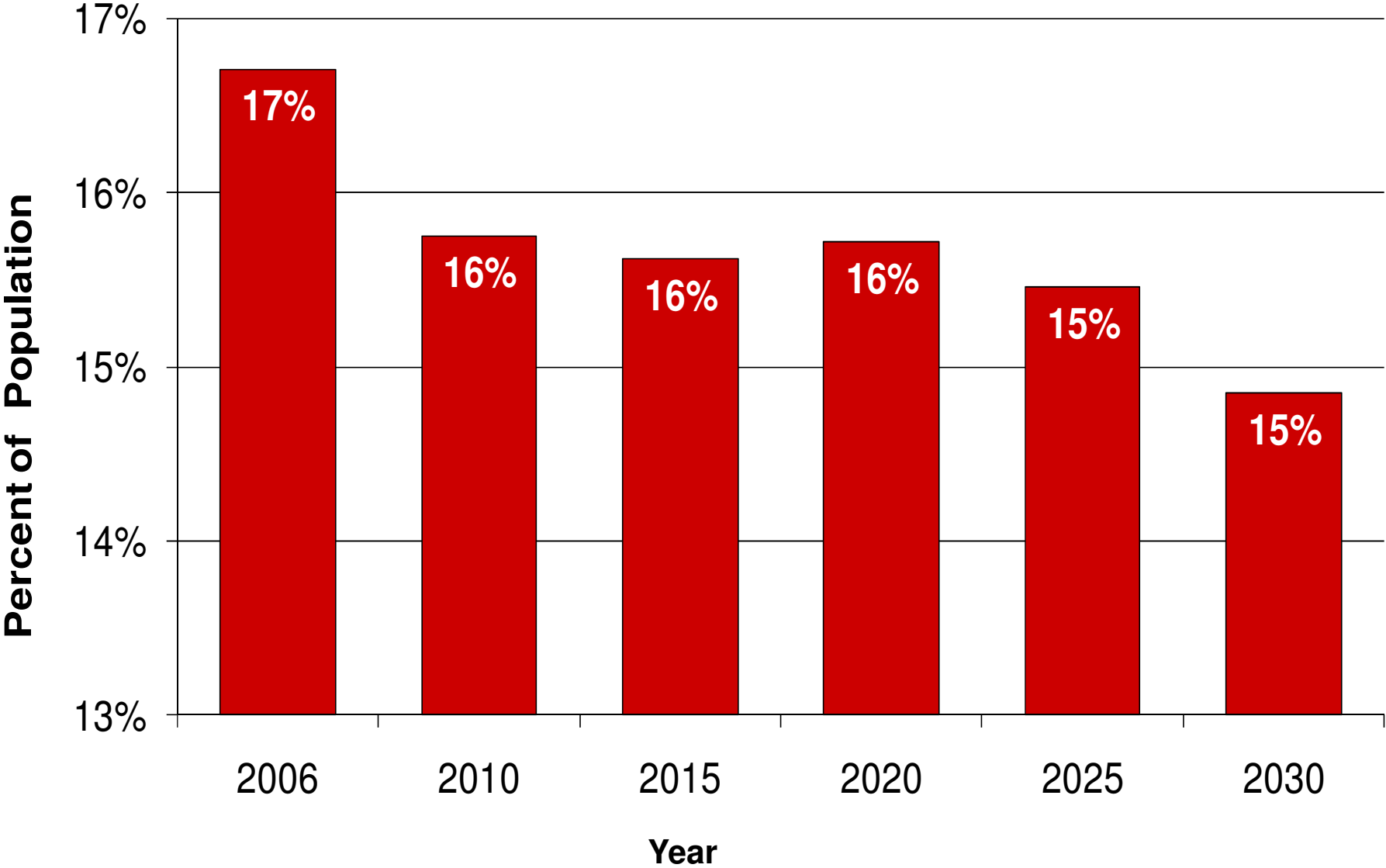
Expenditure	\$1,352,420,501
Public School Enrollment Fall, 2006	144,418
Participation Rate: Enrollment/Population 5-17	91.9%
Expenditures per Student	\$9,365
Expenditures per Montanan	\$1,438

K-12 Education Expenditure

Projecting Expenditure to 2030

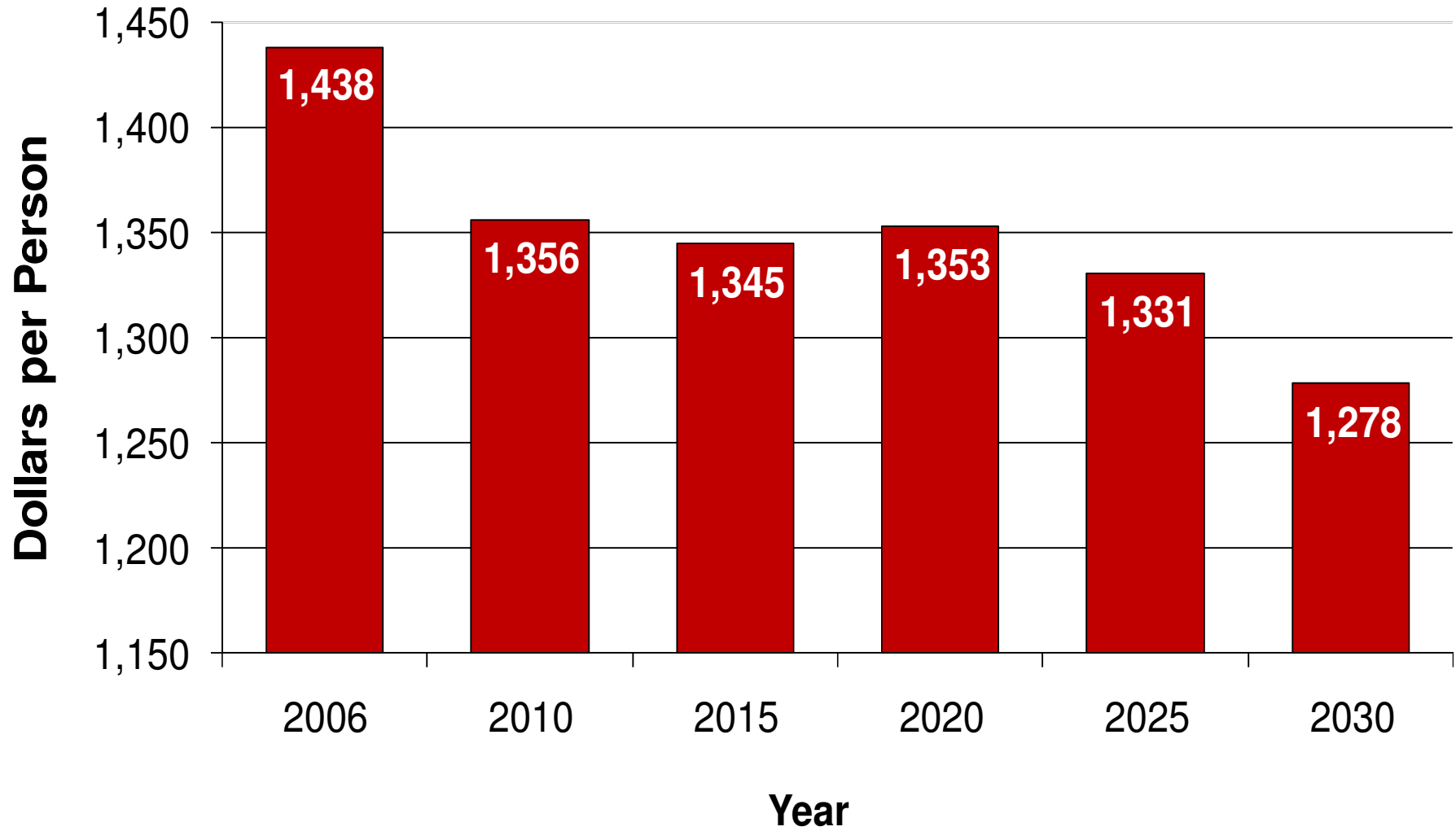
- Projected Enrollment
 - $91.9\% \times \text{Population 5-17 in 2030} = 142,621$
- Projected Expenditure
 - $\text{Projected Enrollment in '30} \times \$9,365 = \$1,335,593,462$
- Projected Expenditure per Montanan
 - $\$1,335,593,462 / \text{Total Population in 2030} = \$1,278$

Figure 8. Population Aged 5-17



Source: U.S. Census Bureau

Figure 9. K-12 Expenditure per Montanan



Sources: OPI and LFD, U.S. Census Bureau

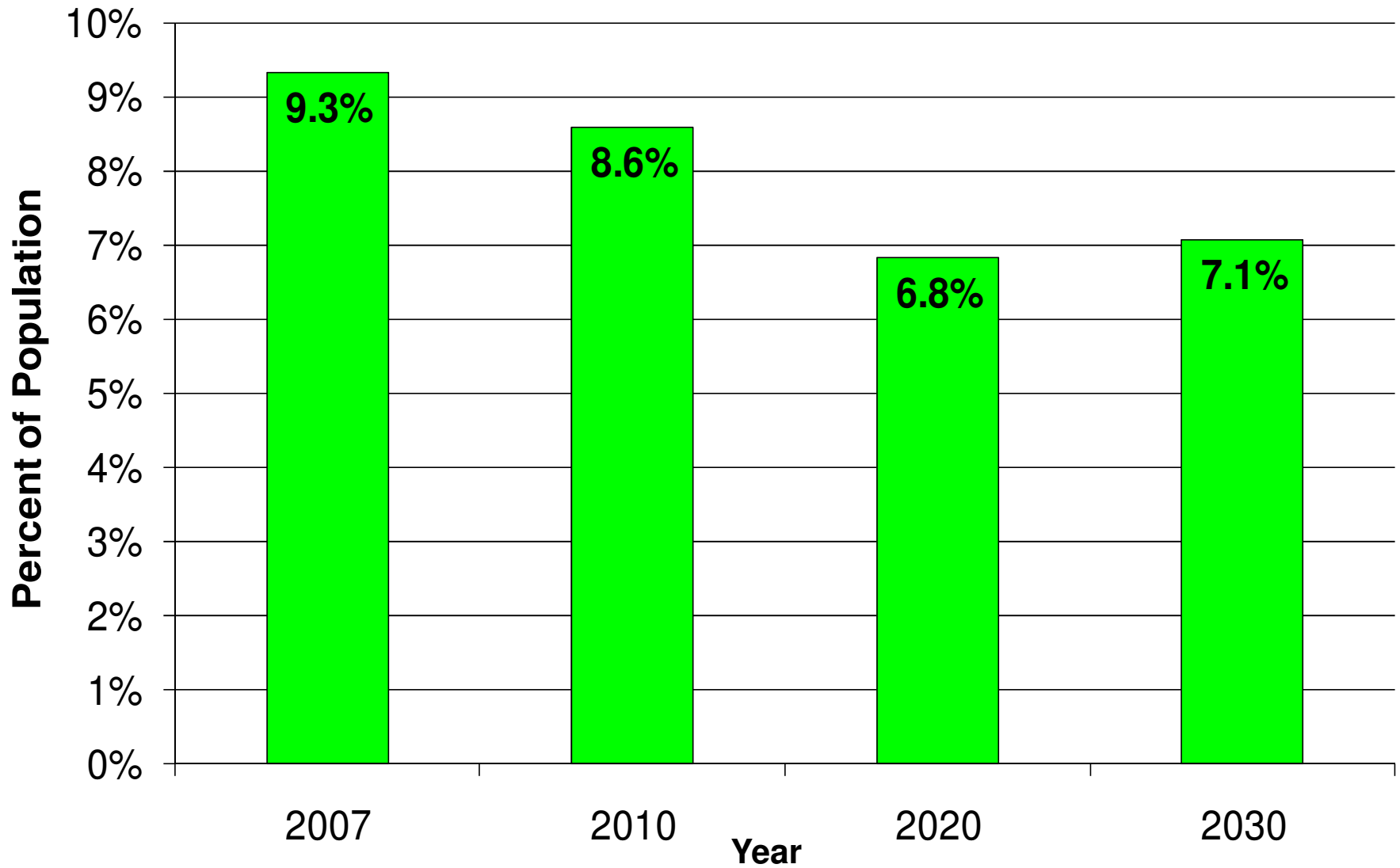
**Table 4. Appropriations for University System
Instructional Expenditures**

State Appropriation	\$126,231,060
Local Appropriations	\$6,780,690
Total Appropriations	\$133,011,750
FTE Resident Enrollment	28,296
Enrollment/Population 18-24	32.0 %
Cost per Student	\$4,701
Cost per Montanan	\$140

Sources: MUS and IPEDS. Instruction only.

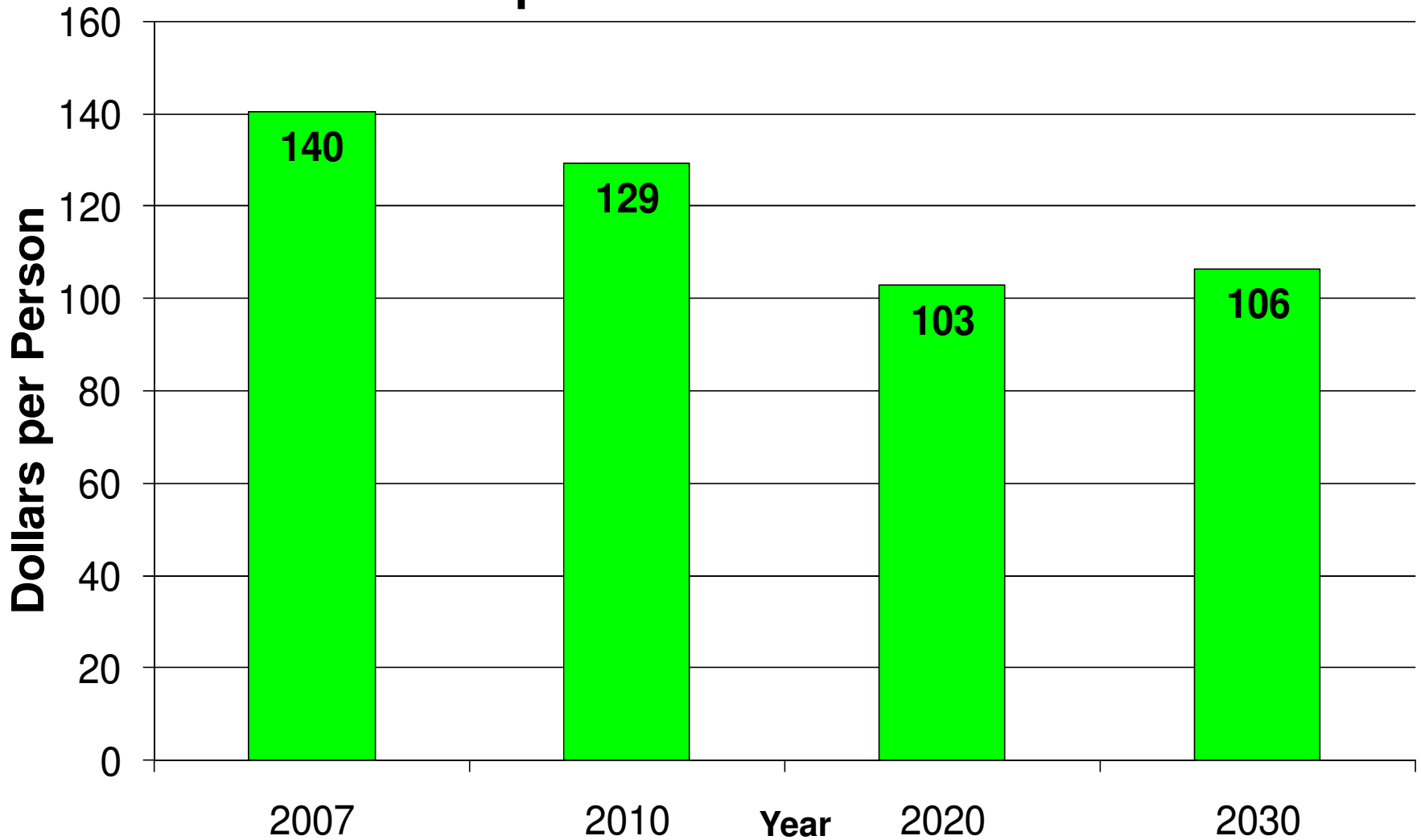
Excludes MAES, ES, Forestry School, Fire School, Bureau of Mines, etc. and One Time Only

Figure 10. Montana Population Aged 18-24



Source: U.S. Census Bureau

Figure 11. Higher Education Expenditure per Montanan



Sources: MUS OCHE and U.S. Census Bureau

Project Outline

1. Ageing Population
2. Selected Government Expenditures
 - Education
 - **Corrections**
 - Elderly Medicaid
3. Selected Tax Revenues

Table 5. Participation and Daily Cost of Corrections

	Number July, 2008	Daily Cost 2006
Inmates (Excluding County Jails)	2,814	\$69.83
Probation/Parole	8,395	\$4.57
Youth Services - DOC	158	\$222.61
Youth Courts - DOJ (2006)	6,540	\$2.32
Other Services	1,735	\$49.89

Figure 12. Correctional Expenditure per Person by Age

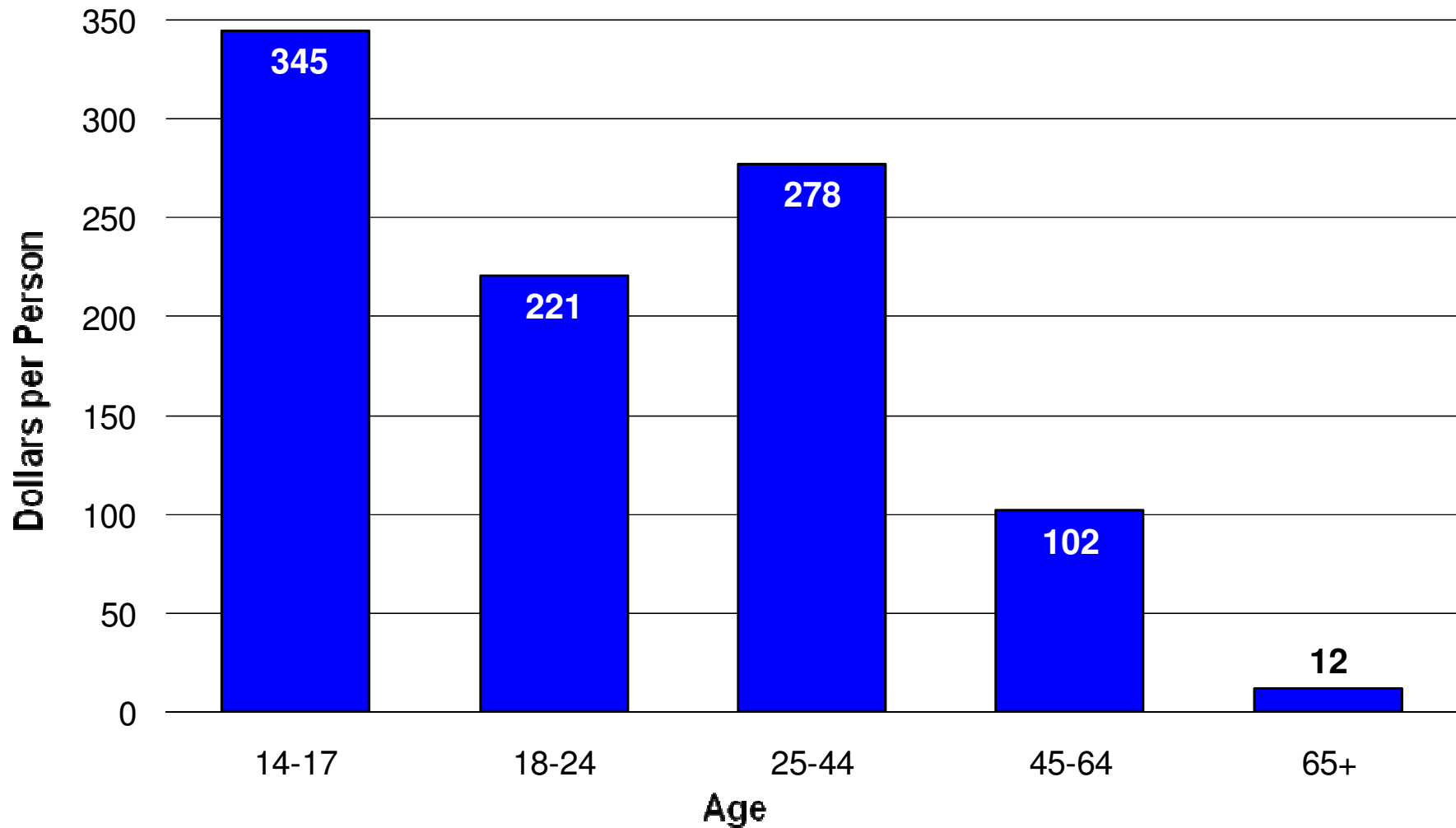
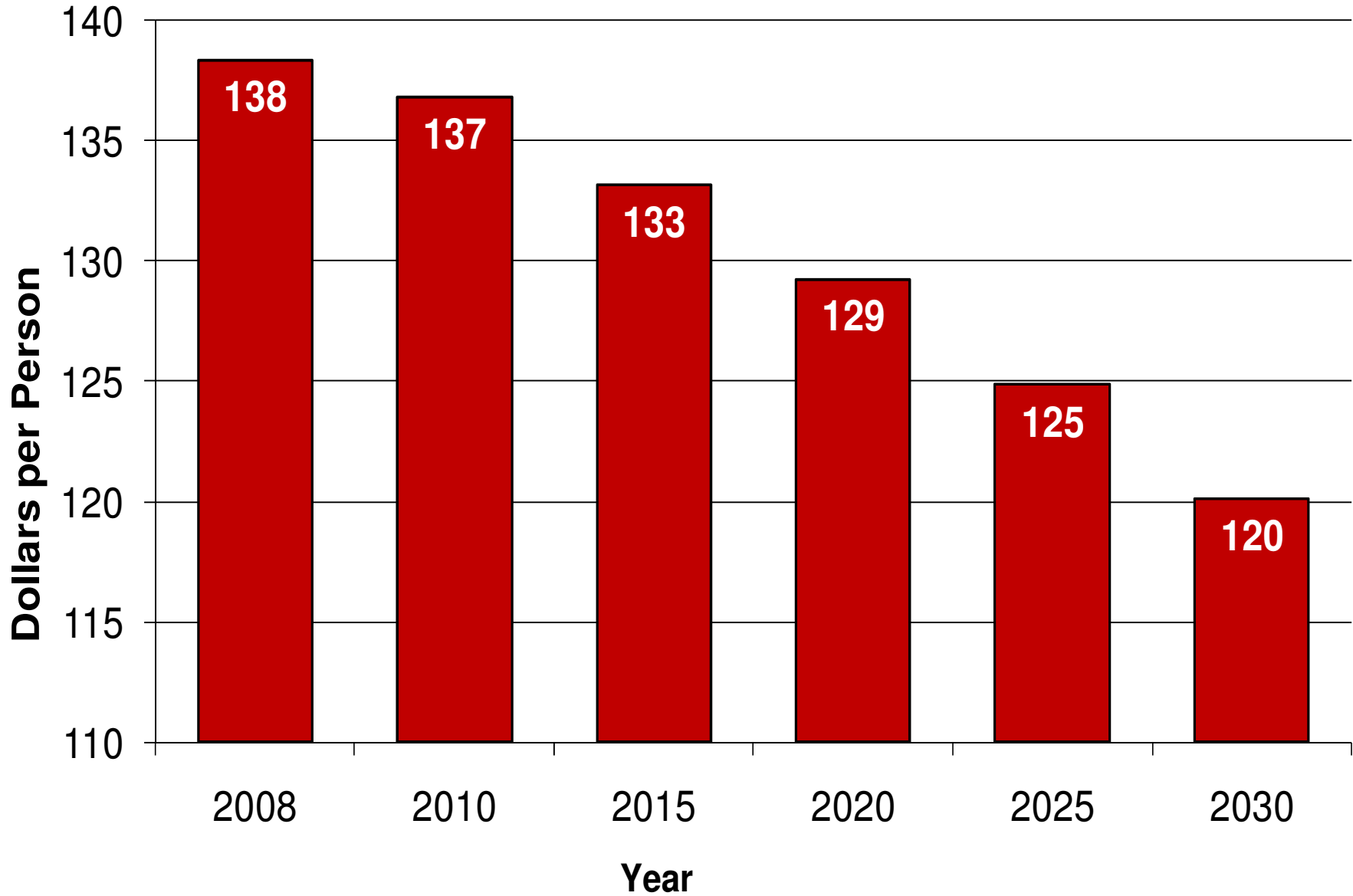


Figure 13. Correctional Costs per Montanan



Sources: Montana Departments of Corrections and Justice, U.S. Census Bureau

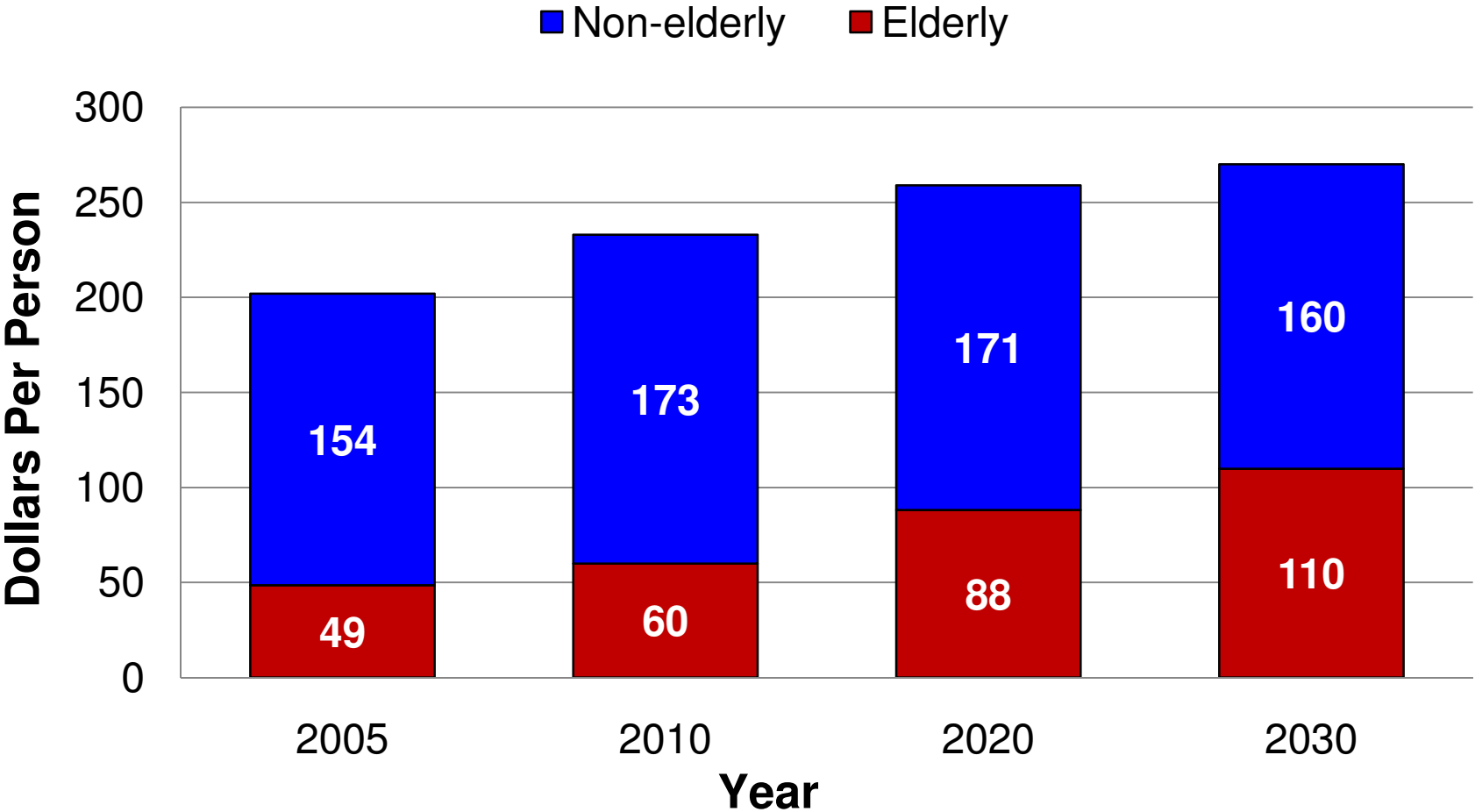
Project Outline

1. Ageing Population
2. Selected Government Expenditures
 - Education
 - Corrections
 - **Elderly Medicaid**
3. Selected Tax Revenues

**Table 7. State Portion of Medicaid Expenditures
in 2005 and 2030**

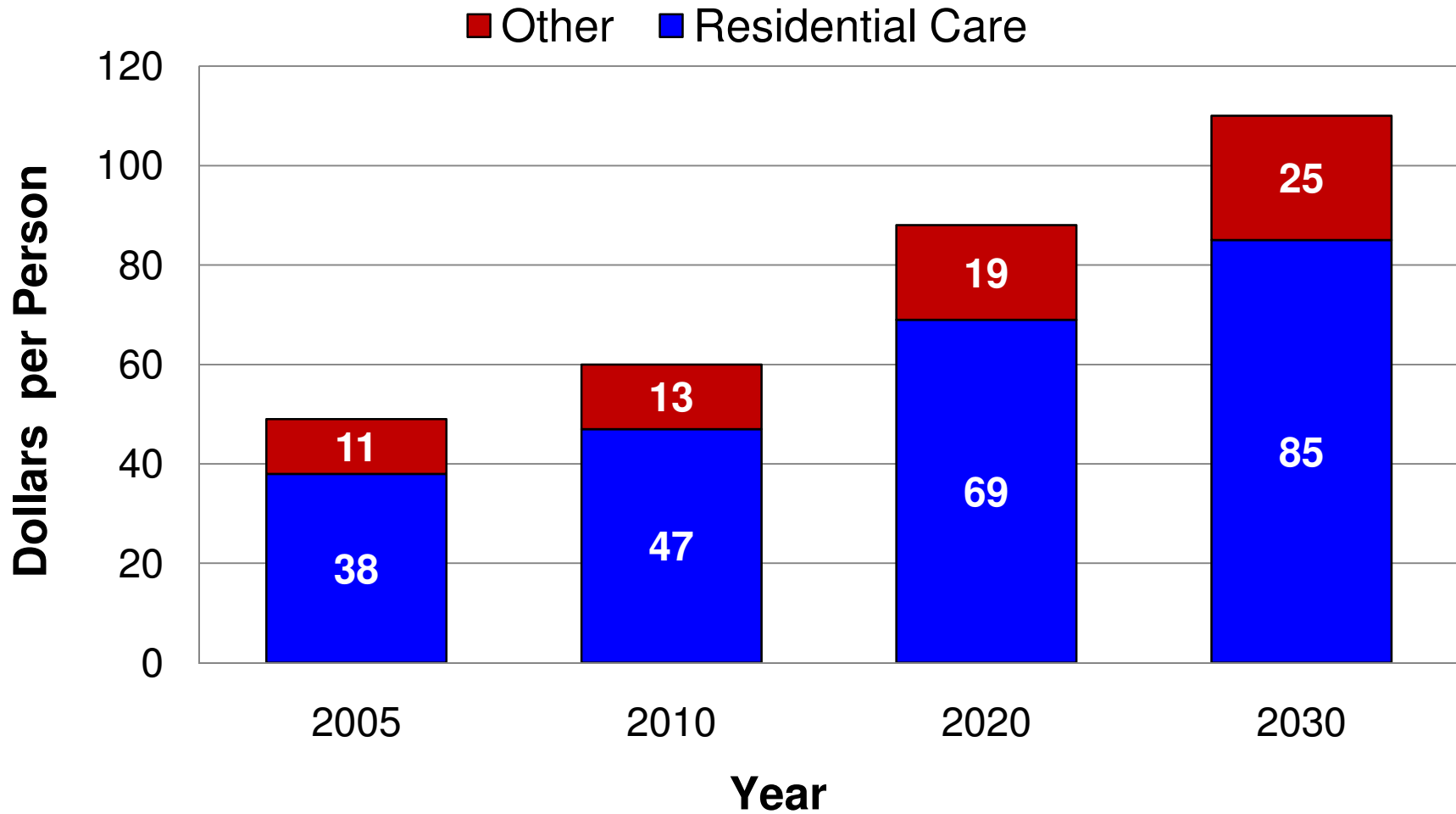
Categories	Base Year - 2005				Projected Year - 2030			
	Medicaid Expenditures	Total Population	Medicaid per capita	Total Population	Medicaid Expenditures	Medicaid per capita		
	(\$ million)	%	(#)	(\$)	(#)	(\$ million)	%	(\$)
Elderly (65+)	45	24	129,243	351	269,558	115	41	426
Non-elderly	144	76	806,427	178	775,340	168	59	216
Total	189	100	933,005	203	1,044,898	283	100	270

Figure 14. State Medicaid Expenditures per Montanan



Source: Montana Department of Public Health and Human Services

Figure 15. State Elderly Medicaid Expenditures for Residential and Other Care



Medicaid Bed Days for Aged Nursing, Assisted Living and Swing Beds

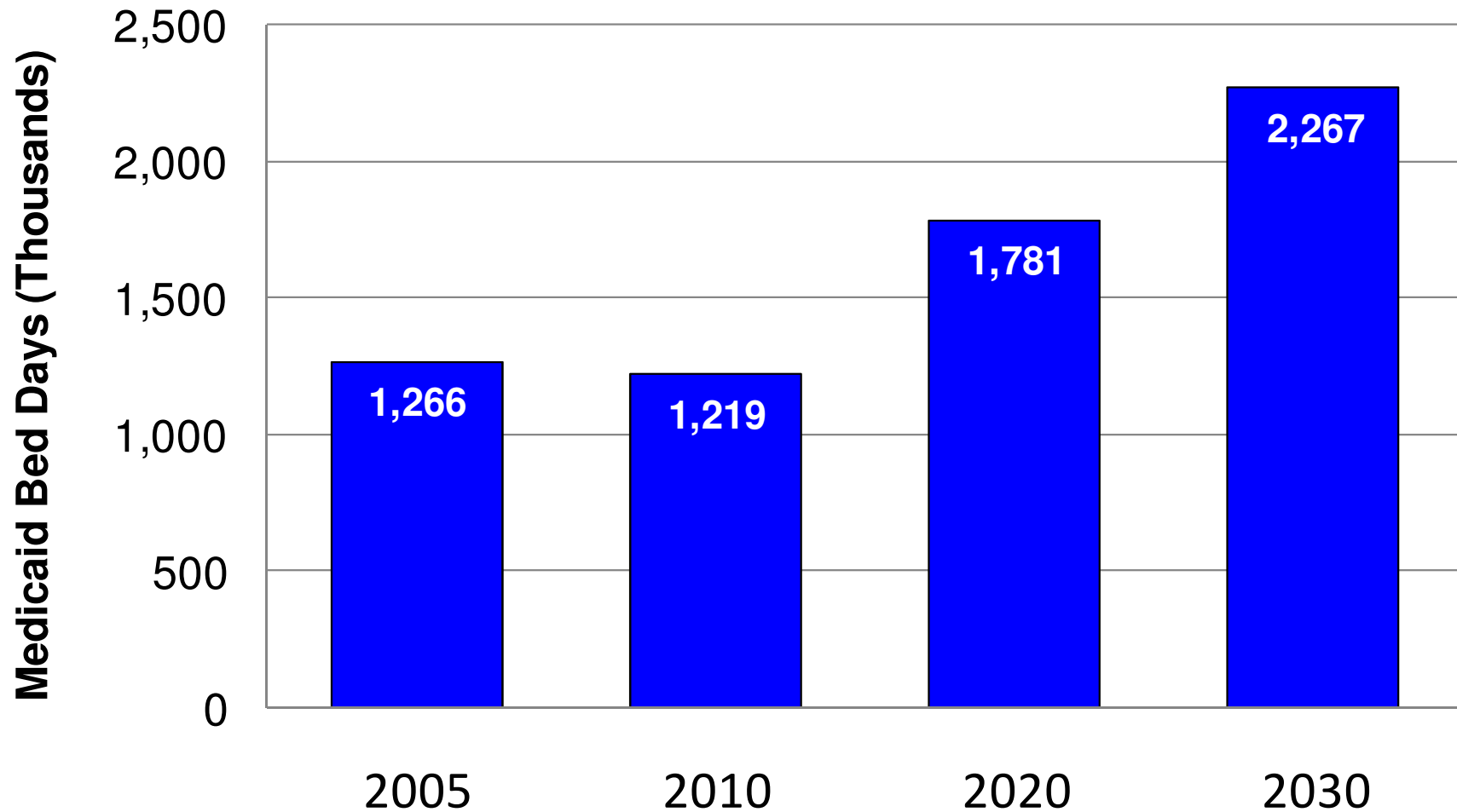
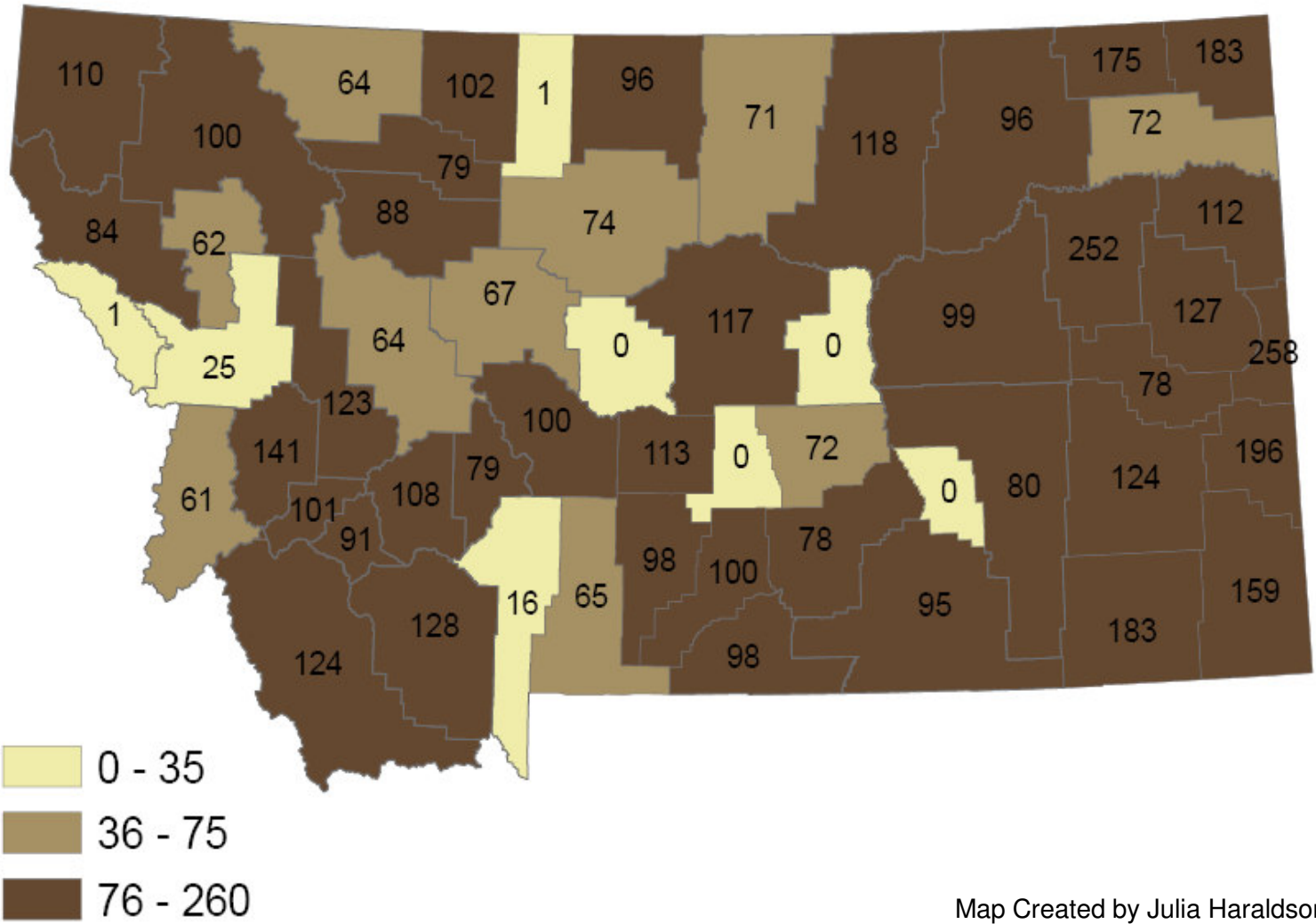


Figure 17. Montana Elderly Medicaid Expenditures for Residential Facilities, 2030 (\$ per Capita)



Map Created by Julia Haraldson

Source: Montana Department of Public Health and Human Services

Project Outline

1. Ageing Population
2. Selected Government Expenditures
3. Selected Tax Revenues
 - **Property**
 - Income

Residential Property Taxes, 2006

Levied	\$484,719,670
Percent of All S&L Taxes	17%
Revenue per Montanan	\$516

Estimating Residential Taxes by Age

- Age – Tax data are not currently available for Montana
- U.S. Bureau of Labor Statistics reports National data by age:
 - Number of households
 - Property taxes for homeowners
 - “Rent” for both renters & homeowners

Calculating Residential Taxes

- Calculate by Age:
 - Participation Rate = Probability (Head of Household)
 - Property Tax/ “Rent” Ratio
 - Estimate Property Taxes for Renters
- Obtain: Average Property Taxes by Age

Figure 19. Residential Property Tax by Age

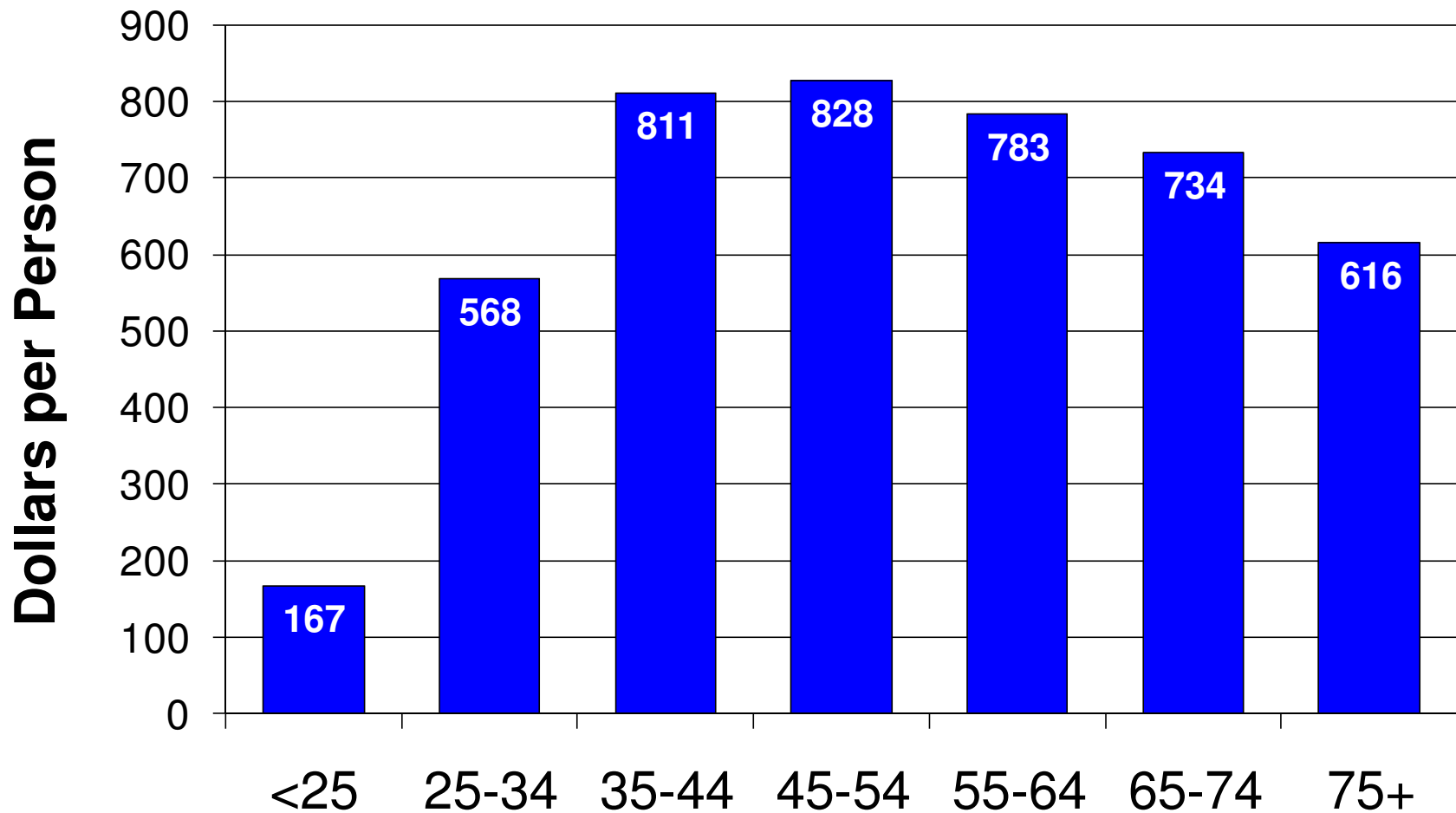
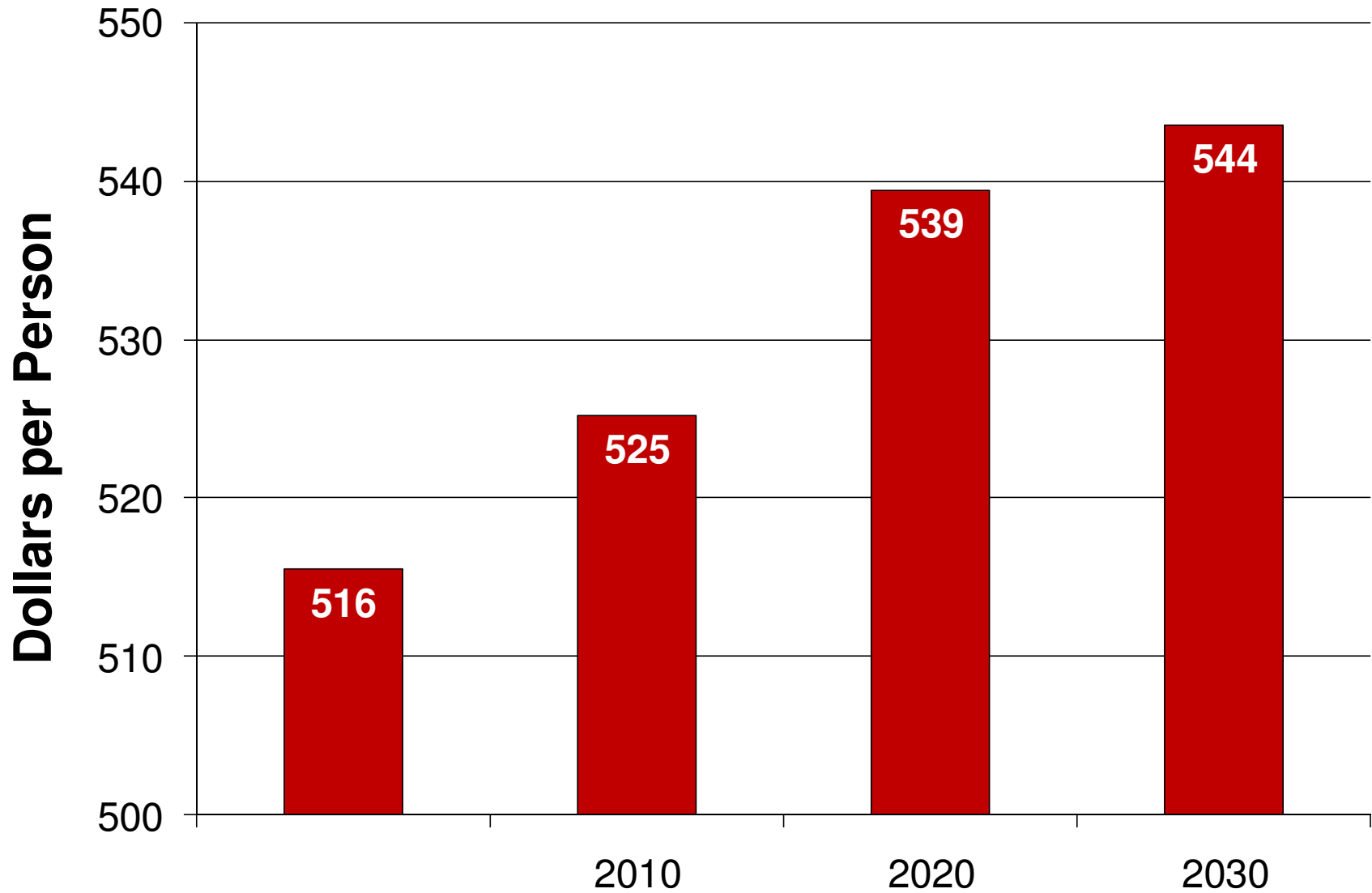


Figure 20. Residential Property Tax per Montanan



Sources: Montana Department of Revenue, U.S. Bureau of Labor Statistics and U.S. Census Bureau

Project Outline

1. Ageing Population
2. Selected Government Expenditures
3. Selected Tax Revenues
 - Property
 - **Income**

Ageing and Income Taxes

- Individual income taxes account for about 25% of state and local tax revenue
- Income taxes vary substantially with age
 - Older and younger people have less income than during middle age
 - Progressivity of income tax rates

Ageing and Income Taxes

- Montana resident income tax liability by age is unavailable
- Montana age-tax liability relationship was estimated from
 - Montana tax liability per adjusted gross income decile (Biennial Report, MDOR)
 - National income distribution by age (Annual Demographic Survey, BLS and Census)
 - Montana population projection by age (Census)

Montana Population by Age Group (%)

Year	0-14	15-24	25-44	45-64	Over 64
2005	18.9	13.9	25.2	28.2	13.9
2010	18.3	12.2	24.5	29.6	15.0
2020	17.9	10.2	24.7	26.4	20.7
2030	16.7	10.5	21.3	25.7	25.8

Ageing and Income Taxes

2005 Montana Individual Resident Income Tax Liability by Quintiles

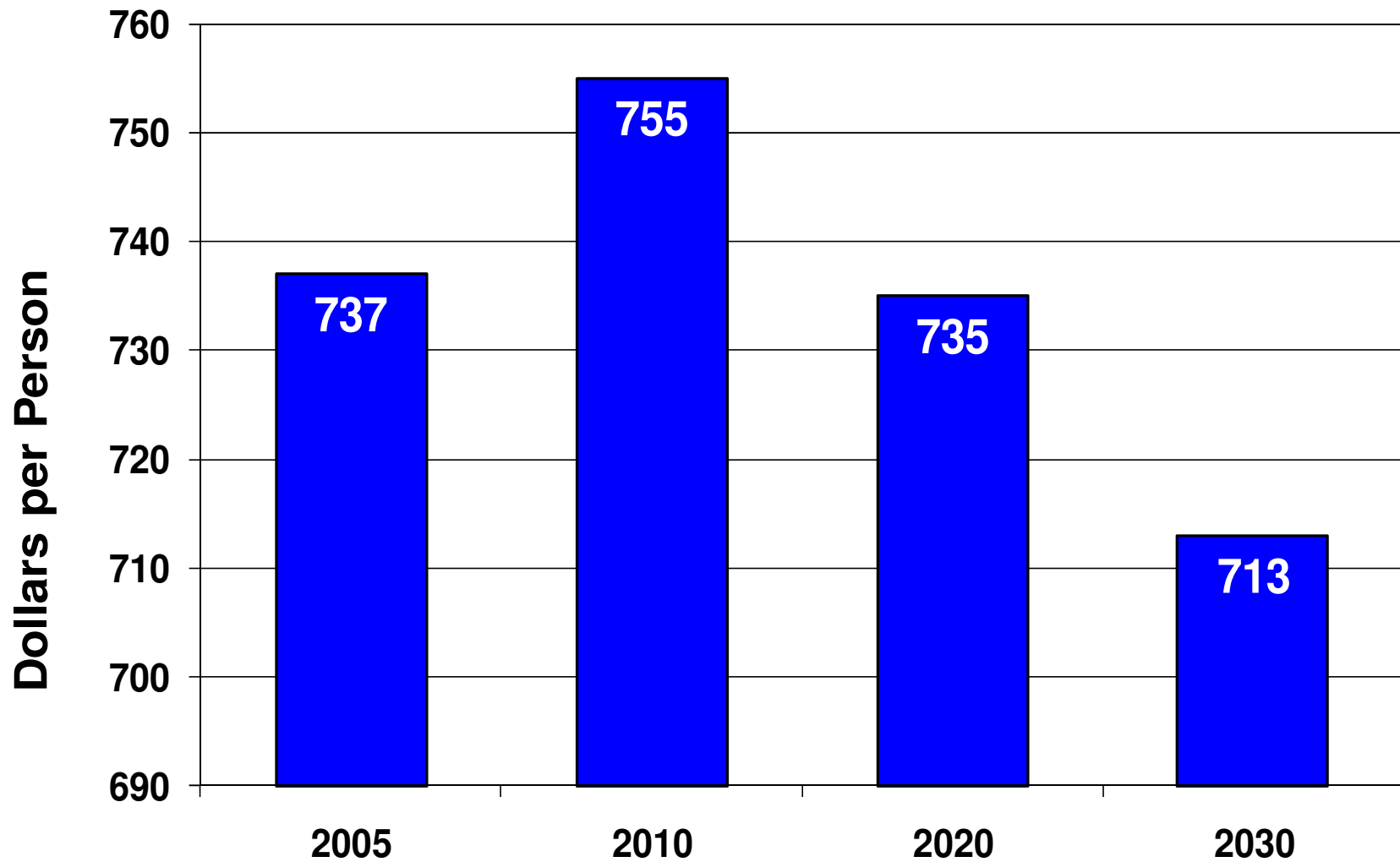
Adjusted Gross Income (\$)	Less than 7,630	7,631 to 16,688	16,689 to 27,683	27,684 to 45,106	Greater than 45,106
Average Taxpayer Liability (\$)	8.72	133.73	504.14	1,150.67	4,926.30
Percent of Taxes Paid	.2	2.4	7.5	16.8	73.2

Ageing and Income Taxes

2005 Montana Individual Resident Income Tax Liability per Person by Age

Age Group	Tax Liability per Capita
15-24	196
25-44	1,078
45-64	1,320
Over 64	480

Figure 21. Individual Resident Income Tax Liability per Montanan



Source: Montana Department of Revenue, U.S. Census Bureau

Table 10. Summary of Selected Expenditures in Dollars per Montana Resident

	2010	2030	Change
K – 12 Education	1,356	1,278	-78
Higher Education	129	106	-23
Corrections	137	120	-17
Medicaid	233	270	37
Total	1,855	1,774	-81

Table 11. Summary of Selected Tax Revenues in Dollars per Montana Resident

	2010	2030	Change
Property Taxes	525	544	19
Income Taxes	755	713	-42
Total	1,279	1,255	-23

Table 12. Summary of Revenue and Expenditure Projections in Dollars per Montana Resident

	2010	2030	Change
Tax Revenues	1,279	1,255	-23
Expenditures	1,855	1,774	-81
Net			58

Summary: What We Agreed To Do and What We've Done

- Revenue
 - ✓ Individual Resident Income Tax
 - ✓ Residential Property Tax
- Expenditure
 - ✓ K-12 Education
 - ✓ Higher Education
 - ✓ Corrections
 - ✓ Medicaid

Potential Future Studies

- Use Montana Data
- Inventory of Age-Related Expenditure
- Inventory of Age-Related Revenue
- Trends in Income and Consumption
- Trends in Costs
- Further Regional Breakdowns
- Reassess Demographic Trends
- Overall Impact on Economy & Government

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