AUTONOMOUS VEHICLES FINANCIAL AND BUDGETARY IMPLICATIONS FOR CITIES

Benjamin Clark, PhD, Assistant Professor, University of Oregon
Kerry Edinger, Sustainable Cities Initiative, University of Oregon
William Riggs PhD, AICP, LEED AP, Assistant Professor, University of San Francisco
Robert Summerill, PhD Candidate, Georgia State University

urbanism NEXT
AUGUST 2017

THE IMPACTS OF AUTONOMOUS VEHICLES AND E-COMMERCE on Local Government Budgeting and Finance

URBANISMNEXT.UOREGON.EDU

BENJAMIN Y. CLARK
SCHOOL OF PLANNING, PUBLIC POLICY & MANAGEMENT
e | bclark2@uoregon.edu

NICO LARCO
SCHOOL OF ARCHITECTURE & ENVIRONMENT
e | nlarco@uoregon.edu

ROBERTA F MANN
SCHOOL OF LAW
e | rfmann@uoregon.edu

UNIVERSITY OF OREGON

Accommodation or Adaptation

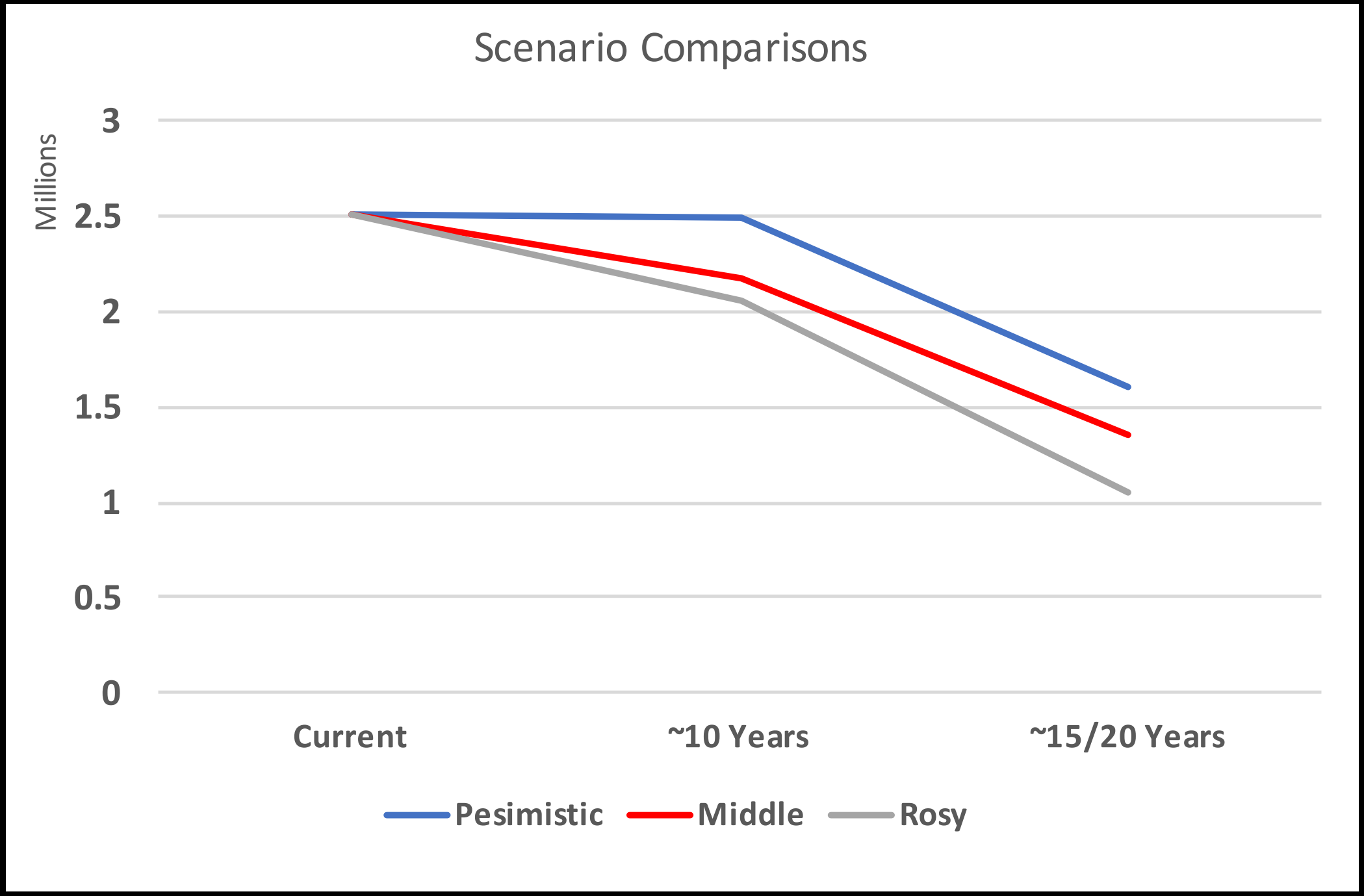
“…Some cities face roadblocks in the form of other levels of government that override or preempt local actions…”

Workforce

New data types
New employee skills
New privacy concerns
New opportunities

Asheville, North Carolina

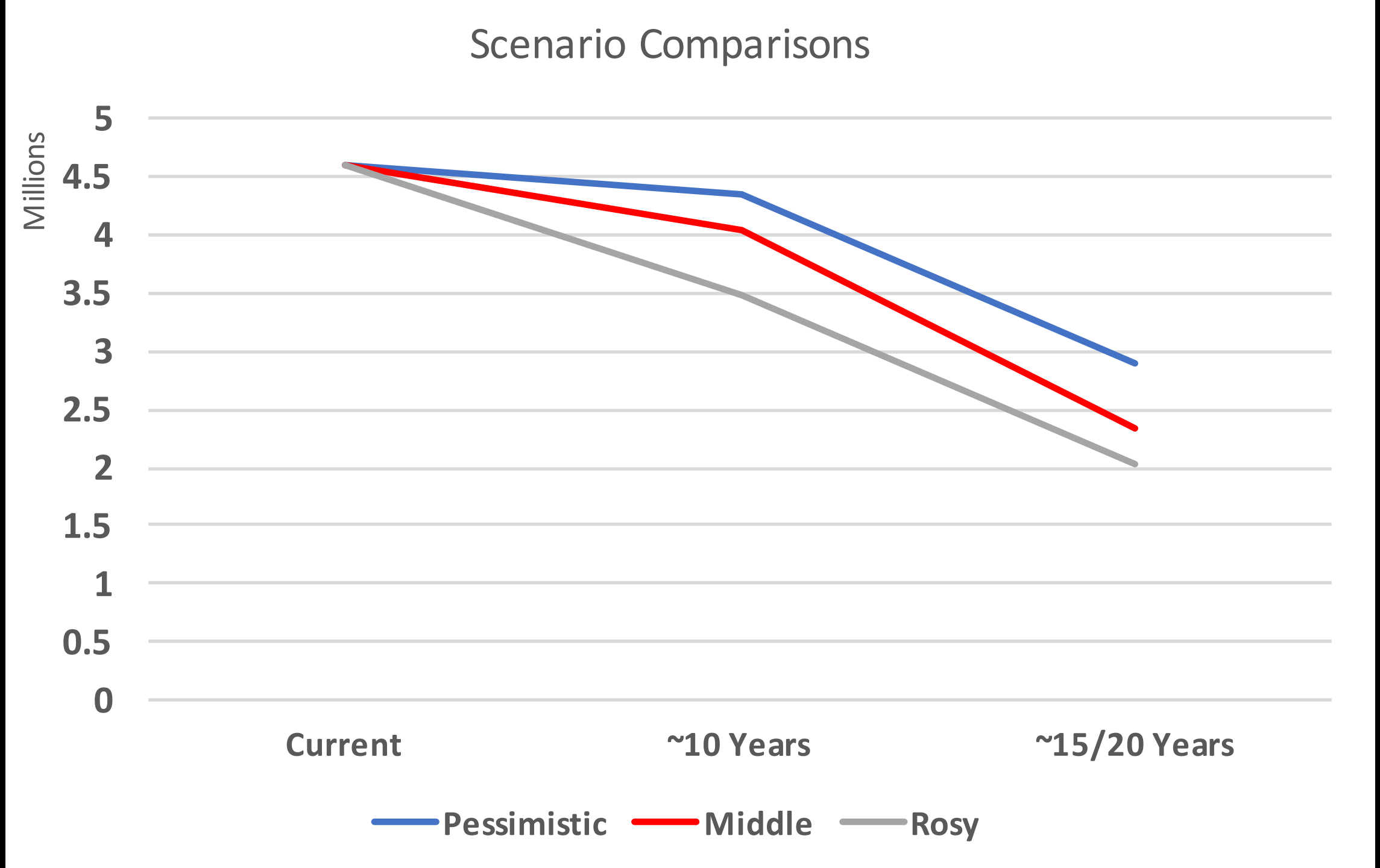
Population: 89,248 (2014)


Scenario Comparisons
Millions
3
2.5
2
1.5
1
0.5
0
Current
~10 Years
~15/20 Years
Pesimistic
Middle
Rosy

Assumptions Summary		Current	~10 Years	~15/20 Years	
Rosy					
Capital Costs Increase	20%				
Wage Escalation for Monitoring	120%				
Wage Escalation for Data Analysis	140%				
# of Truck Monitors		0	1	1	
# of Data Analysts		0	1	1	
# of Trucks (Packers)		2	2	1	
# of Trucks (Automated)		7	5	3	
Middle					
Capital Costs Increase	30%				
Wage Escalation for Monitoring	140%				
Wage Escalation for Data Analysis	150%				
# of Truck Monitors		0	1	1	
# of Data Analysts		0	1	1	
# of Trucks (Packers)		2	2	2	
# of Trucks (Automated)		7	6	5	
Pessimistic					
Capital Costs Increase	60%				
Wage Escalation for Monitoring	140%				
Wage Escalation for Data Analysis	150%				
# of Truck Monitors		0	1.75	1.75	
# of Data Analysts		0	1	2	
# of Trucks (Packers)		2	2	2	
# of Trucks (Automated)		7	6	6	

Cary, North Carolina

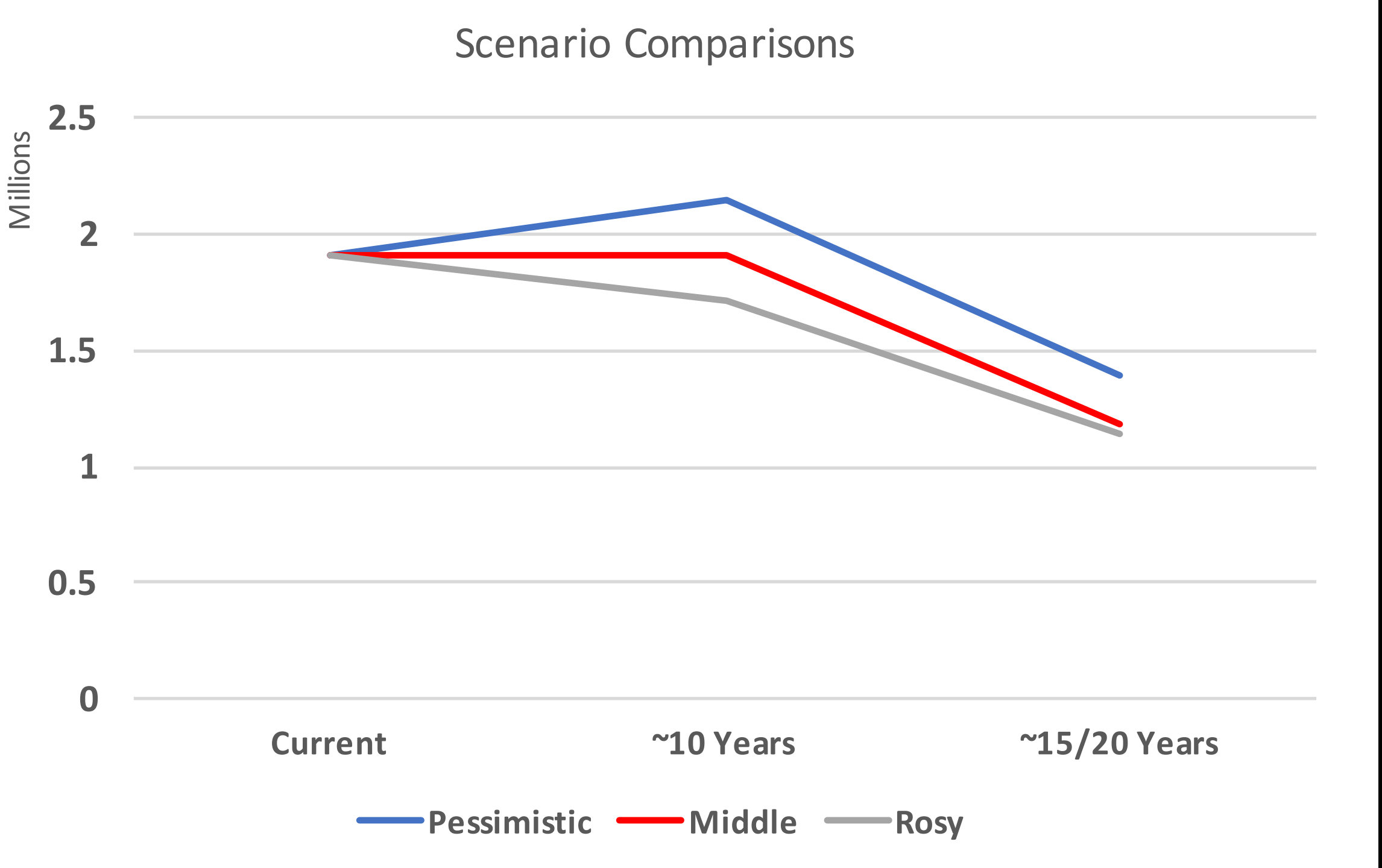
Population: 148,333 (2014)


Scenario Comparisons
Millions
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Current
~10 Years
~15/20 Years
Pessimistic
Middle
Rosy

Assumptions Summary		Current	~10 Years	~15/20 Years	
Rosy					
Capital Costs Increase	20%				
Wage Escalation for Monitoring	120%				
Wage Escalation for Data Analysis	140%				
# of Truck Monitors		0	1	1	
# of Data Analysts		0	1	1	
# of Trucks (Packers)		2	1	1	
# of Trucks (Automated)		11	9	6	
Middle					
Capital Costs Increase	30%				
Wage Escalation for Monitoring	140%				
Wage Escalation for Data Analysis	150%				
# of Truck Monitors		0	1	1	
# of Data Analysts		0	1	1	
# of Trucks (Packers)		2	2	2	
# of Trucks (Automated)		11	10	8	
Pessimistic					
Capital Costs Increase	60%				
Wage Escalation for Monitoring	140%				
Wage Escalation for Data Analysis	150%				
# of Truck Monitors		0	1.75	1.75	
# of Data Analysts		0	1	2	
# of Trucks (Packers)		2	2	2	
# of Trucks (Automated)		11	10	9	

Chapel Hill, North Carolina

Population: 59,758 (2014)


Scenario Comparisons
Millions
2.5
2
1.5
1
0.5
0
Current
~10 Years
~15/20 Years
Pessimistic
Middle
Rosy

Assumptions Summary		Current	~10 Years	~15/20 Years	
Rosy					
Capital Costs Increase	20%				
Wage Escalation for Monitoring	120%				
Wage Escalation for Data Analysis	140%				
# of Truck Monitors		0	1	1	
# of Data Analysts		0	1	1	
# of Trucks (Packers)		7	1	1	
# of Trucks (Automated)		0	4	3	
Middle					
Capital Costs Increase	30%				
Wage Escalation for Monitoring	140%				
Wage Escalation for Data Analysis	150%				
# of Truck Monitors		0	1	1	
# of Data Analysts		0	1	1	
# of Trucks (Packers)		7	4	2	
# of Trucks (Automated)		0	2	2	
Pessimistic					
Capital Costs Increase	60%				
Wage Escalation for Monitoring	140%				
Wage Escalation for Data Analysis	150%				
# of Truck Monitors		0	1.75	1.75	
# of Data Analysts		0	1	2	
# of Trucks (Packers)		2	2	2	
# of Trucks (Automated)		11	10	9	

Where are cost reductions coming from?

Ben Clark: bclark2@uoregon.edu

UNIVERSITY OF OREGON