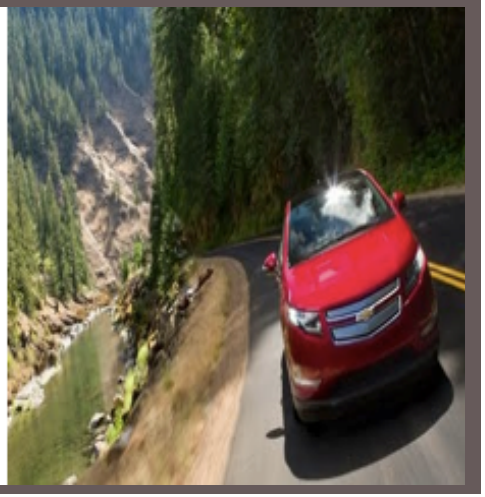
OREGON LEADERSHIP IN SUSTAINABILITY
UNIVERSITY OF OREGON
MARCH 20, 2013

AVOIDING THE PUMP:
Gas and Diesel Consumption Reduction in Eugene, Oregon





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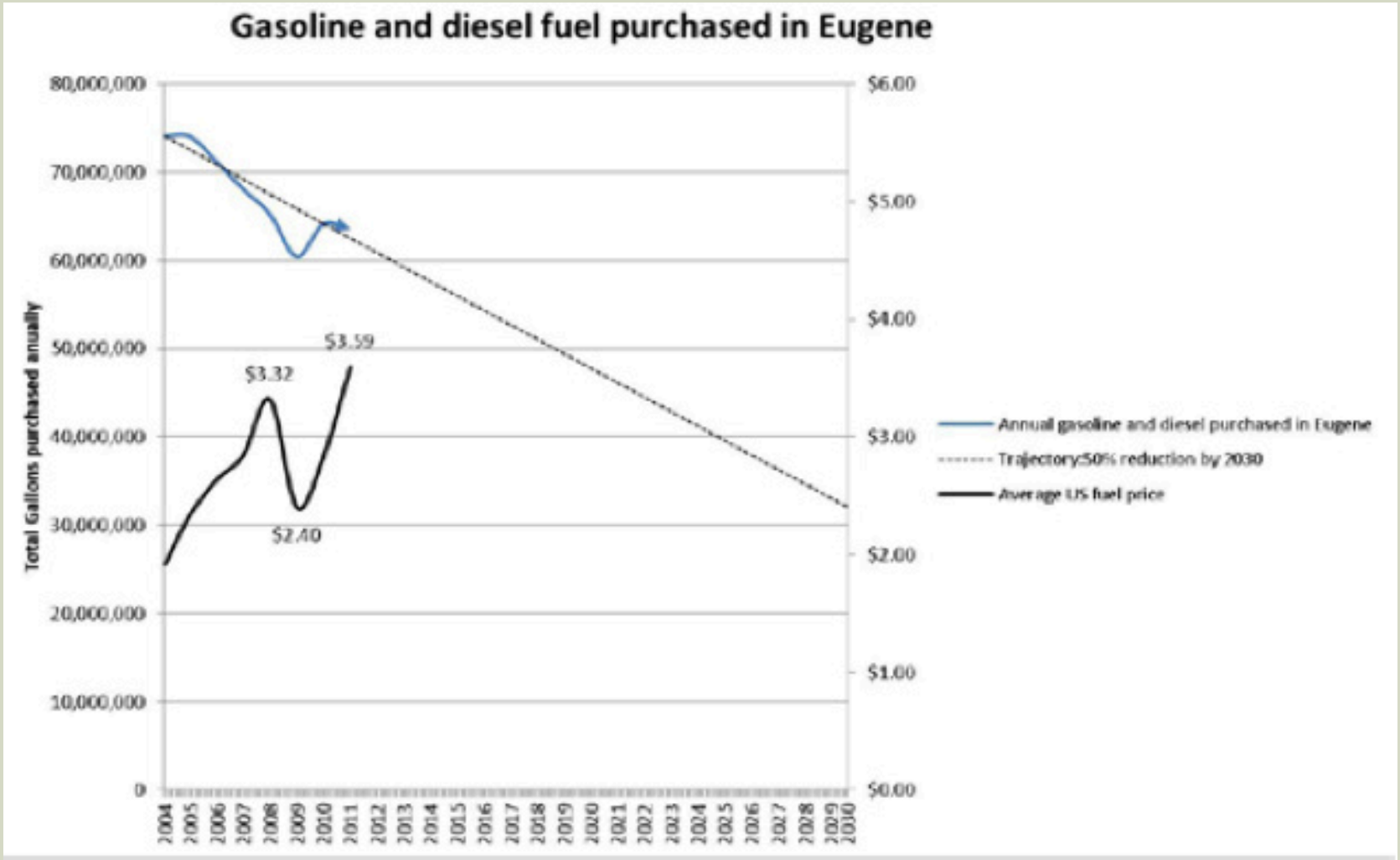
OVERVIEW OF PRESENTATION

- Project Background
- Vehicle Miles Traveled
- Methodology
- Findings
- Lessons Learned
- Recommended Next Steps
- Conclusions and Q&A

PROJECT BACKGROUND

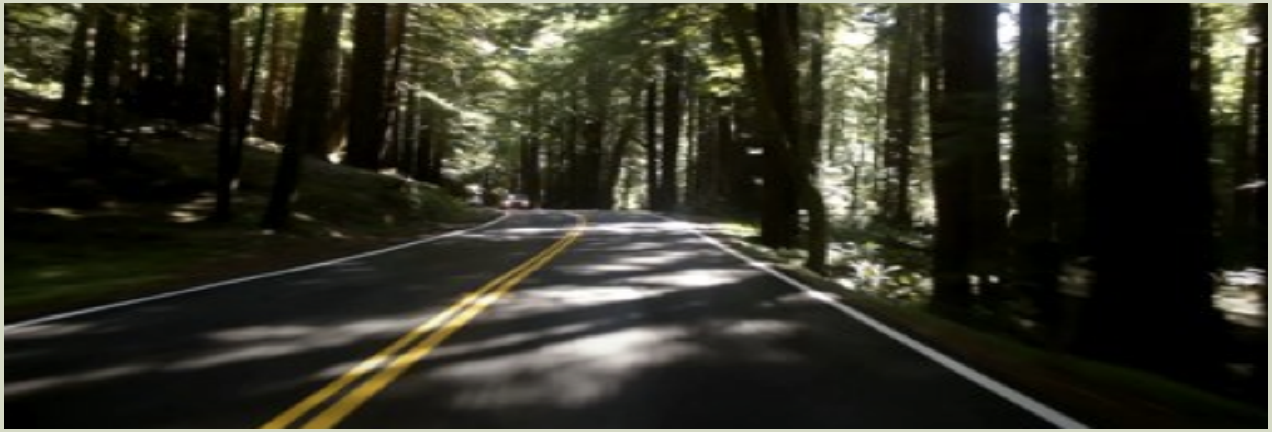
- Eugene's gas and diesel consumption has declined by **15%** over the past **eight years (2003-2011).**
  - Statewide → 1% decline
  - Springfield → 5% decline
  - Region's estimated VMT has remained fairly flat
- **How and why is this happening?**
- How we broke it down:
  1. Passenger vehicle age
  2. VMT estimates
  3. Opportunities for collaboration

THE DECLINE


Gasoline and diesel fuel purchased in Eugene
Total Gallons purchased anually
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
0
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$0.00
$3.59
$3.32
$2.40
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
Annual gasoline and diesel purchased in Eugene
Trajectory:50% reduction by 2030
Average US fuel price

VEHICLE MILES TRAVELED

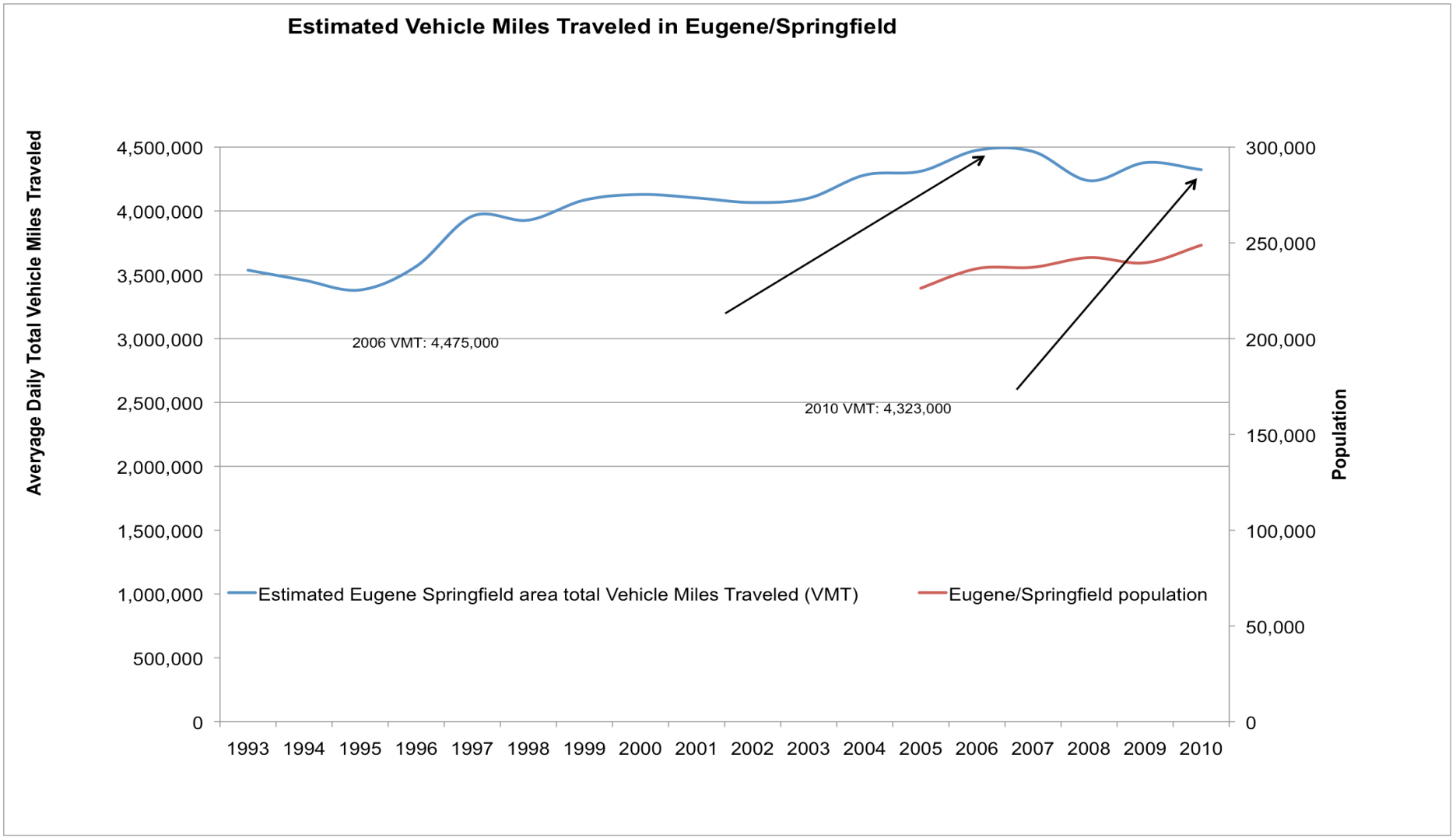
- VMT provides an *estimate* of the number of miles vehicles travel within a given boundary over a given period of time.
  - Helps assess traffic and emissions impacts.
  - Influences transportation & infrastructure funding.



VEHICLE MILES TRAVELED

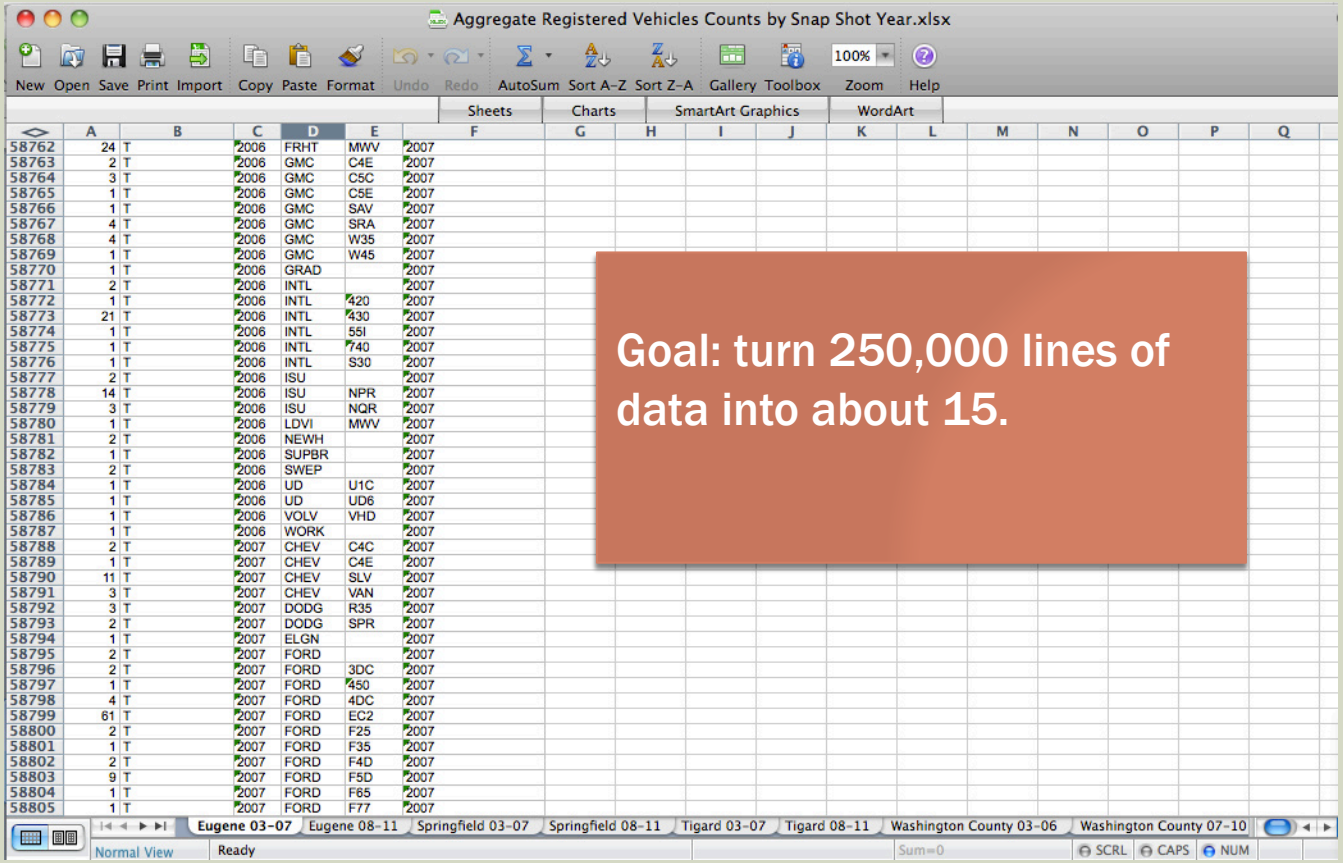
- VMT Estimate Collection Methods
  - Highway Performance Monitoring System
    - Traffic counts act as data snapshots.
    - State Departments of Transportation apply statistical models to estimate statewide traffic volume and submit to Federal Highway Administration.
  - Regional Travel Demand Model
    - Based on local survey data.
    - Designed to forecast traffic volumes, mode share and other attributes.

LOCAL VMT


Estimated Vehicle Miles Traveled in Eugene/Springfield
Averyage Daily Total Vehicle Miles Traveled
Population
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
300,000
250,000
200,000
150,000
100,000
50,000
0
2006 VMT: 4,475,000
2010 VMT: 4,323,000
Estimated Eugene Springfield area total Vehicle Miles Traveled (VMT)
Eugene/Springfield population
1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

METHODS

- Consolidate, consolidate, consolidate.

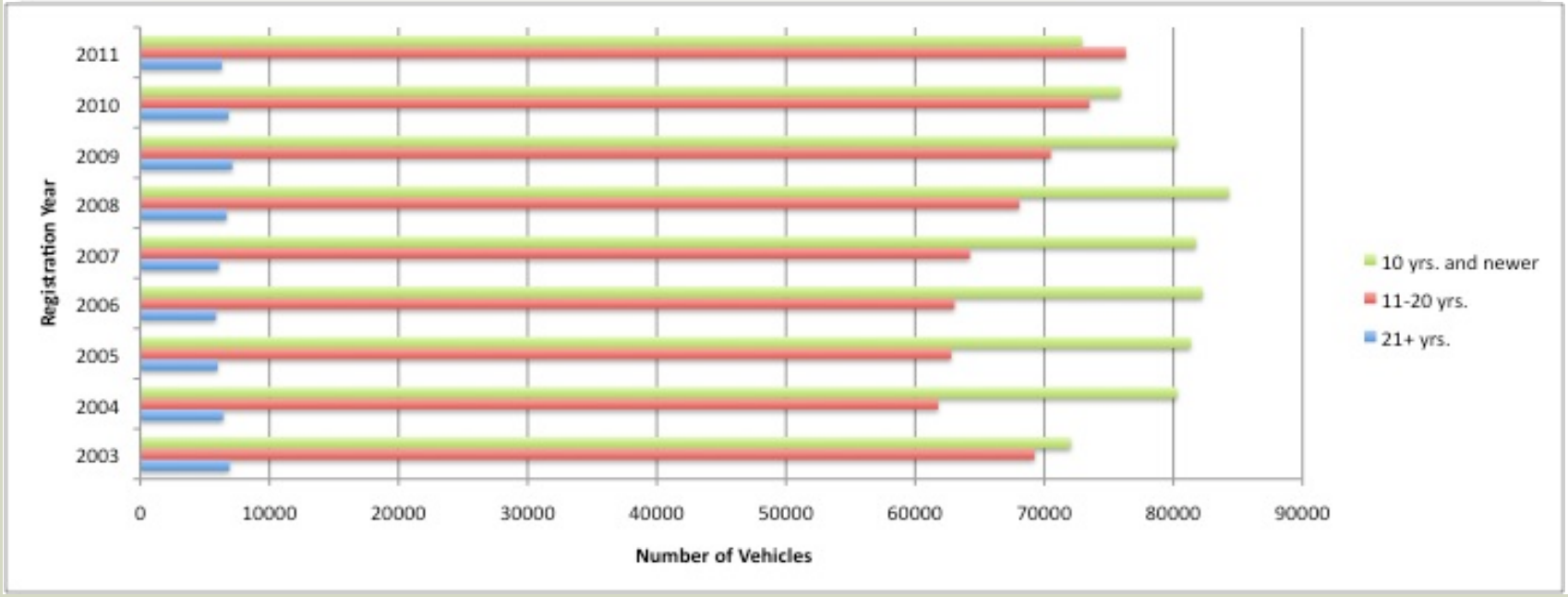


EUGENE

Table 1: Eugene Vehicle Fleet Age Mix, Registration Year 2003-2011

Eugene Vehicle Fleet Age, Registration Year 2003 - 2011									
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
21+ yrs.	6906	6425	5998	5866	6077	6692	7121	6834	6325
11-20 yrs.	69266	61792	62800	63045	64243	68078	70505	73509	76319
10 yrs. & newer	72052	80290	81335	82260	81764	84311	80285	75904	72913
Total	148224	148507	150133	151171	152084	159081	157911	156247	155557

Figure 1: Eugene Vehicle Fleet Age Mix, Registration Year 2003-2011

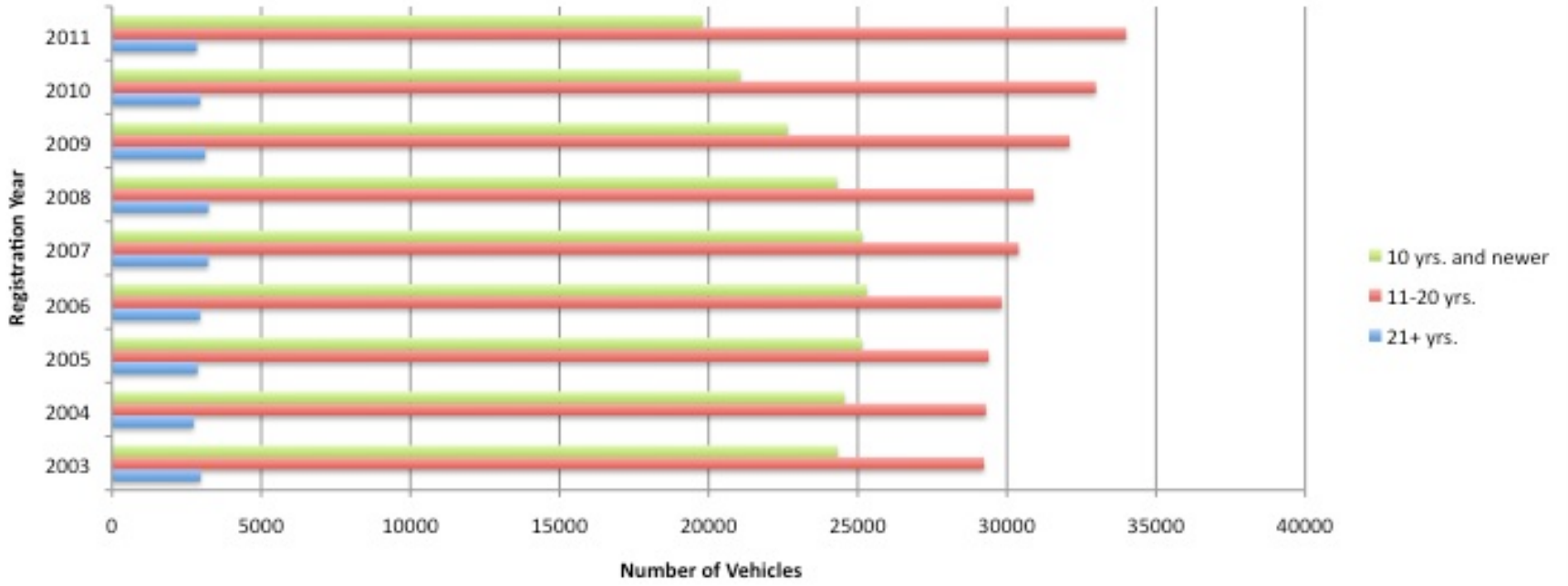


SPRINGFIELD

Table 2: Springfield Vehicle Fleet Age Mix, Registration Year 2003-2011

Springfield Vehicle Fleet Age, Registration Year 2003 - 2011									
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
21+ yrs.	2972	2740	2867	2949	3220	3230	3124	2950	2842
11-20 yrs.	29236	29295	29390	29829	30394	30903	32105	32981	34000
10 yrs. and newer	24325	24556	25138	25300	25146	24307	22643	21055	19800
Total	56533	56591	57395	58078	58760	58440	57872	56986	56642

Figure 2: Springfield Vehicle Fleet Age Mix, Registration Year 2003-2011

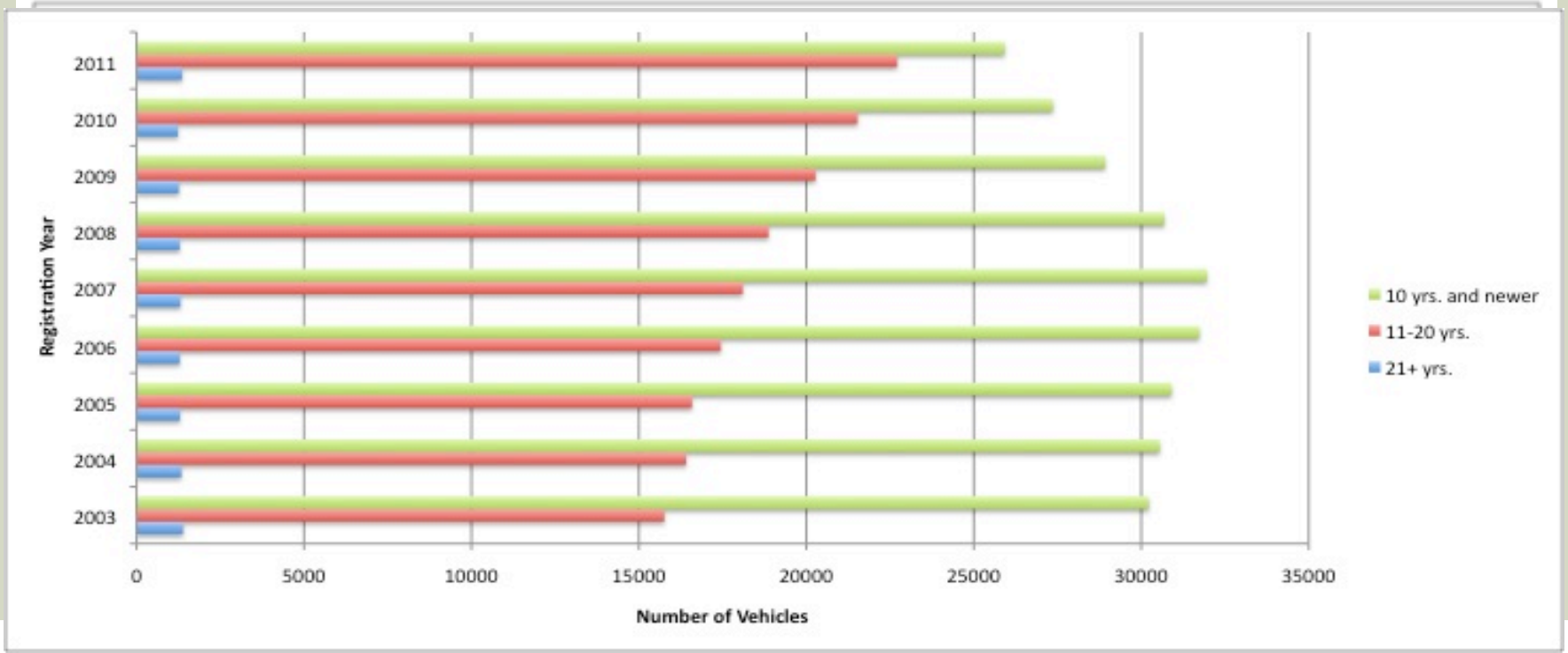


TIGARD

Table 3: Tigard Vehicle Fleet Age Mix, Registration Year 2003-2011

Tigard Vehicle Fleet Age, Registration Year 2003 - 2011									
	2003	2004	2005	2006	2007	2008	2009	2010	2011
21+ yrs.	1388	1338	1296	1291	1310	1288	1264	1238	1364
11-20 yrs.	15757	16410	16584	17443	18097	18868	20272	21525	22712
10 yrs. and newer	30220	30544	30901	31732	31957	30688	28922	27357	25920
Total	47365	48292	48781	50466	51364	50844	50458	50120	49996

Figure 3: Tigard Vehicle Fleet Age Mix, Registration Year 2003-2011

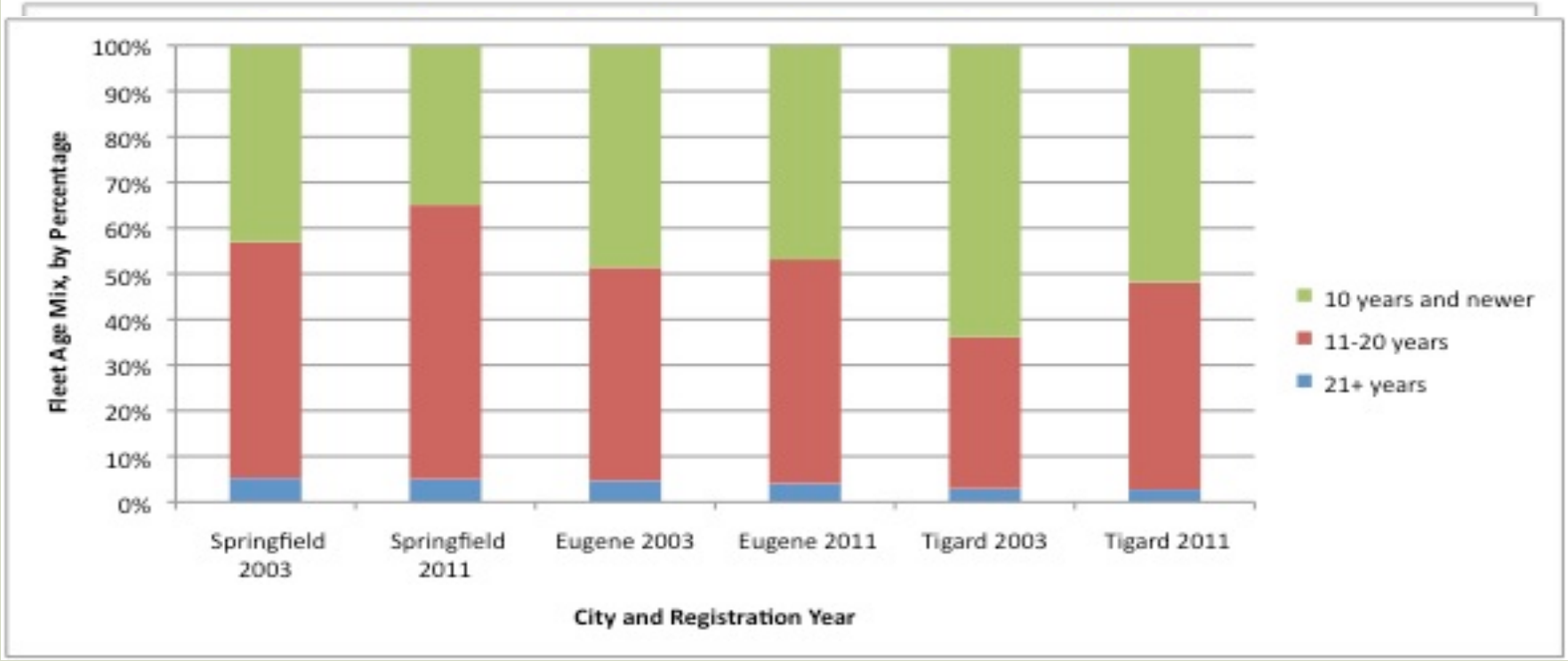


SPRINGFIELD, EUGENE & TIGARD: 2003 & 2011

Table 4: Cities' Fleet Age Mix in 2003 & 2011, As Percent of Total Fleet

Cities' Fleet Age Mix in 2003 & 2011, As Percent of Total Fleet						
	Springfield 2003	Springfield 2011	Eugene 2003	Eugene 2011	Tigard 2003	Tigard 2011
21+ years	5.26%	5.02%	4.66%	4.07%	2.93%	2.73%
11-20 years	51.71%	60.03%	46.73%	49.06%	33.27%	45.43%
10 yrs/newer	43.03%	34.96%	48.61%	46.87%	63.80%	51.84%

Figure 4: Cities' Fleet Age Mix in 2003 & 2011, As Percent of Total Fleet



THEORIES OF TRENDS AND PROGRAMS CONTRIBUTING TO FUEL CONSUMPTION DECLINE

- Cash for Clunkers Program (2009)
- Diesel Reduction Programs
  - West Coast Collaborative
  - Cascade Sierra Solutions
  - Lane Regional Air Protection Agency/Clean School Bus USA Grant
- Increase in Hybrid and Electric Vehicles

LESSONS LEARNED

- **Data Consistency**
  - Inform DMV of data inconsistencies with vehicle make and model coding.
  - Update database: 'drop-down list' model → streamline future research.

- **Opportunities for Collaboration**
  - Enhance Oregon DMV vehicle registration data by incorporating Environmental Protection Agency fuel economy data.

RECOMMENDED NEXT STEPS

- **Test Theory List**
  - Collect quantitative data for each trend and program.
  - Consider other potential theories.
- **Further Data Comparisons**
  - Compare data to a wider range of similar towns and regions.
  - Contrast data to cities with a range of traffic congestion trends.
- **Larger-Scale Data Analysis**
  - Examine historical trends of gas and diesel consumption in Eugene.
  - Review whether it is appropriate to examine Eugene and Springfield separately.

CONCLUSIONS AND Q&A