Round 8.1 Land Use Forecasts

Presentation to the
TPB Travel Forecasting Subcommittee

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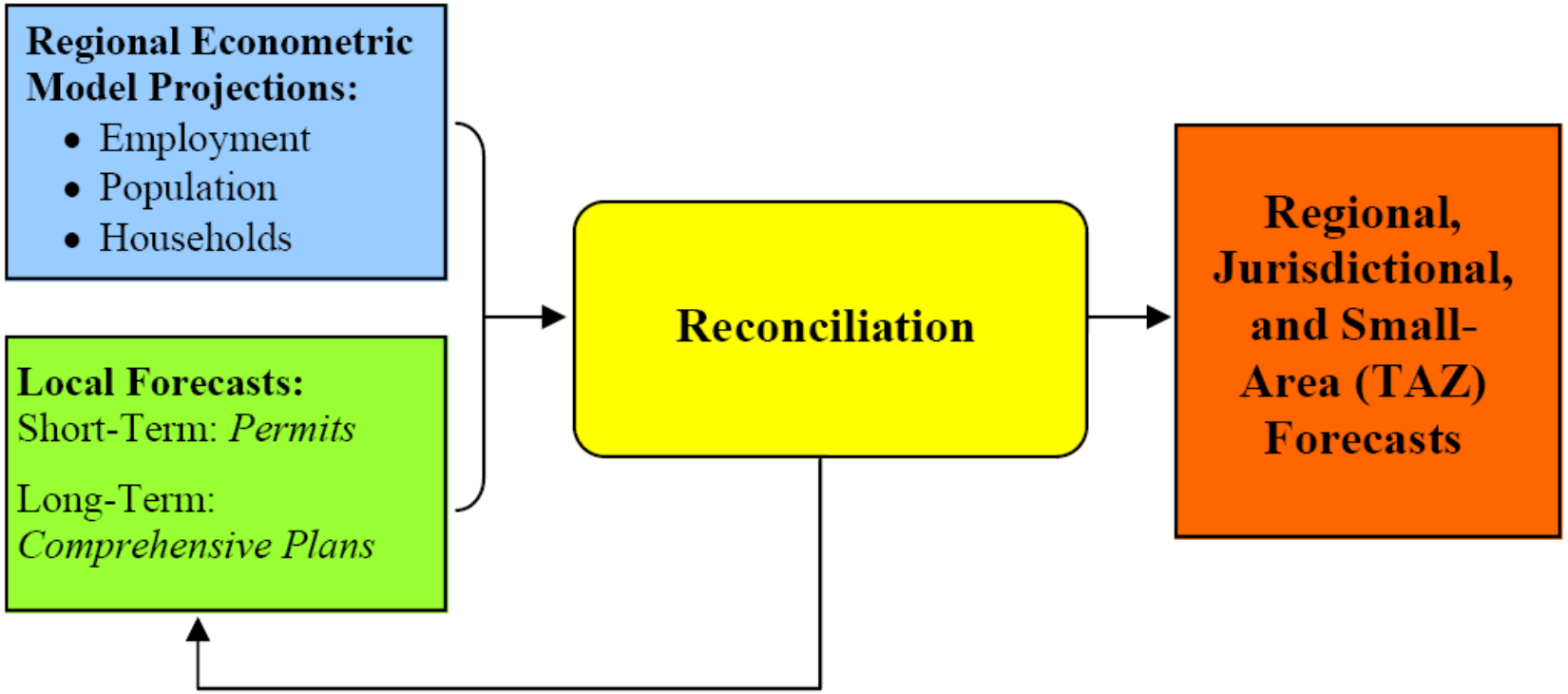
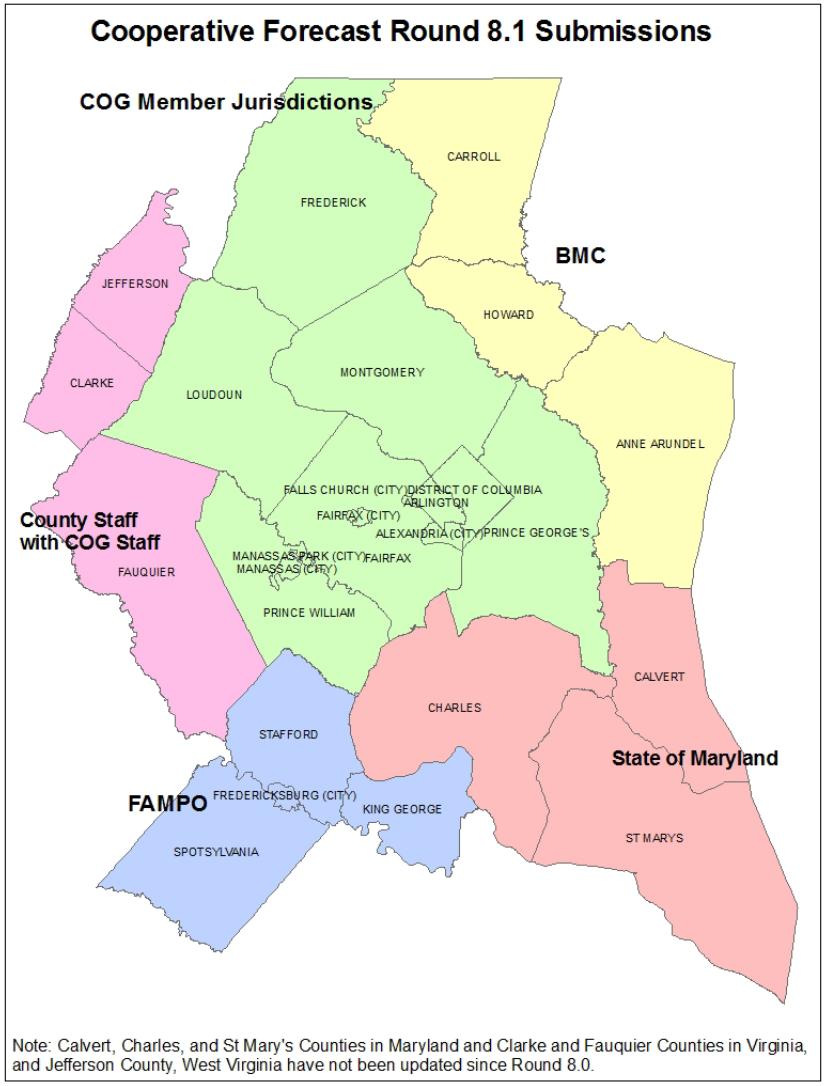
National Capital Region Transportation Planning Board (TPB)
Metropolitan Washington Council of Governments (MWCOG)

Cooperative Forecasting Process



Population includes both household population and Group Quarters
Employment is broken down into Retail, Office, Industrial, and Other categories

Round 8.1 Submissions



- COG Members Submitted
- FAMPO Submitted
- BMC updated to Round 7C in Round 8.0A
- State of Maryland updated Pop/HH totals to match Census
- Clarke, Fauquier, and Jefferson did not update their forecast in 8.1, put plan to do so in 8.2

Recent Cooperative Forecasts: Background

- Round 8.1
  - Expected to be adopted in July, 2012; simultaneously with the approval of the CLRP Update
  - Developed for the 3722-TAZ system
  - Land activity provided from 2010 to 2040, in five-year increments
  - Based on a 2010 Base Year (informed by the 2010 Census)

Data Checks

- Differences at Jurisdictional and TAZ level
  - Population, Household, all Employment Types
- Household population in TAZs with no households
- Average Household Size by TAZ and Jurisdiction
- Unexpected changes in Employment at TAZ level

Significant Updates in Round 8.1

- Prince George's County
  - Census 2010 revealed larger household sizes
- Arlington County
  - Increased total Employment by 28K
  - Revised office employee space ratio for Crystal City
- Frederick County
  - First adjustment in several rounds, thoroughly done
  - Decreased 2010 Employment estimate by 44K

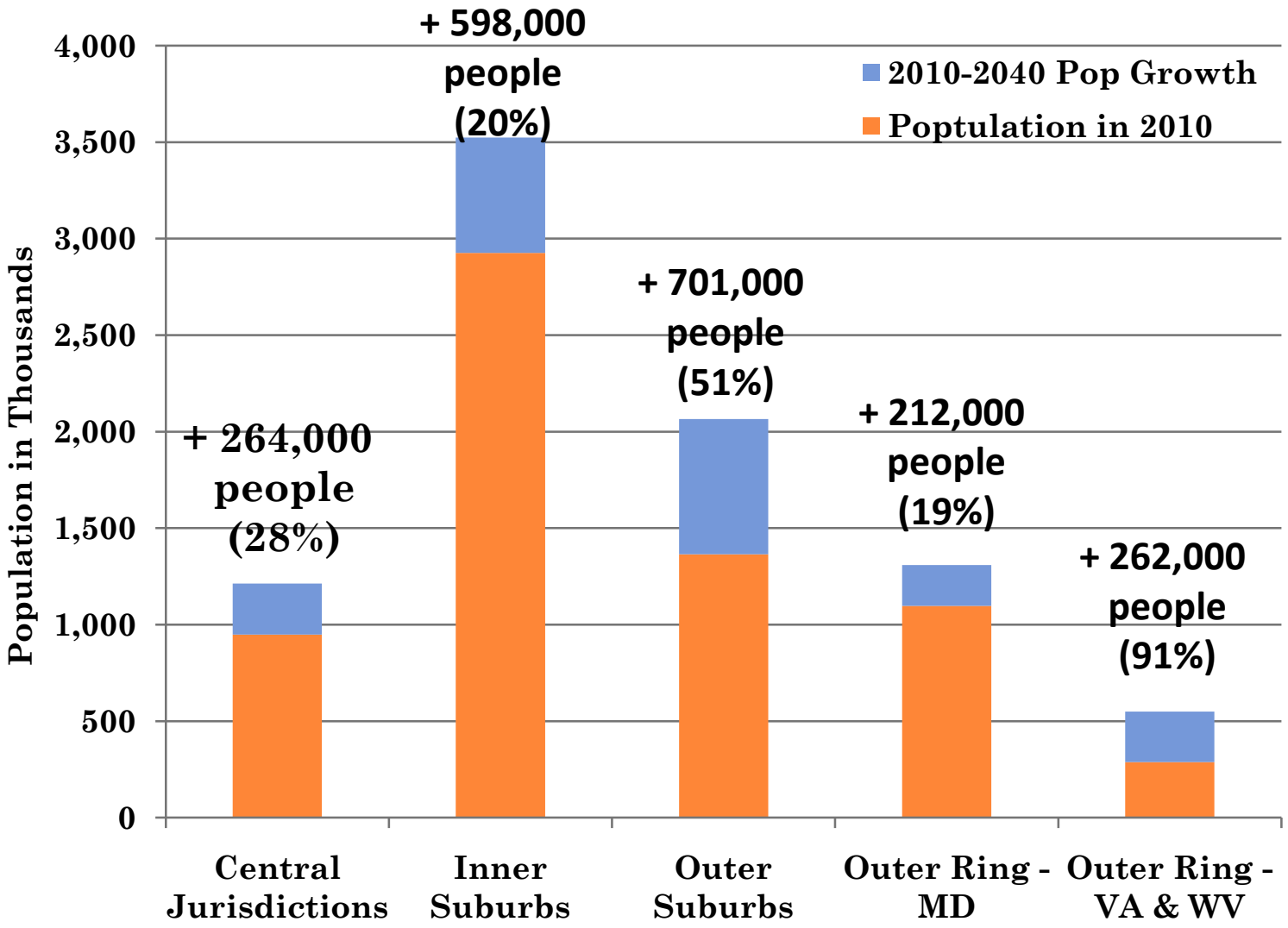
Round 8.1 Growth Forecasts

TPB Modeled Area	2010	2040	Change 2010- 2040	Percent Change
Jobs (in Millions)	4.0	5.6	+1.6	+41%
Households (in Millions)	2.5	3.3	+0.9	+35%
Population (in Millions)	6.6	8.7	+2.0	+31%

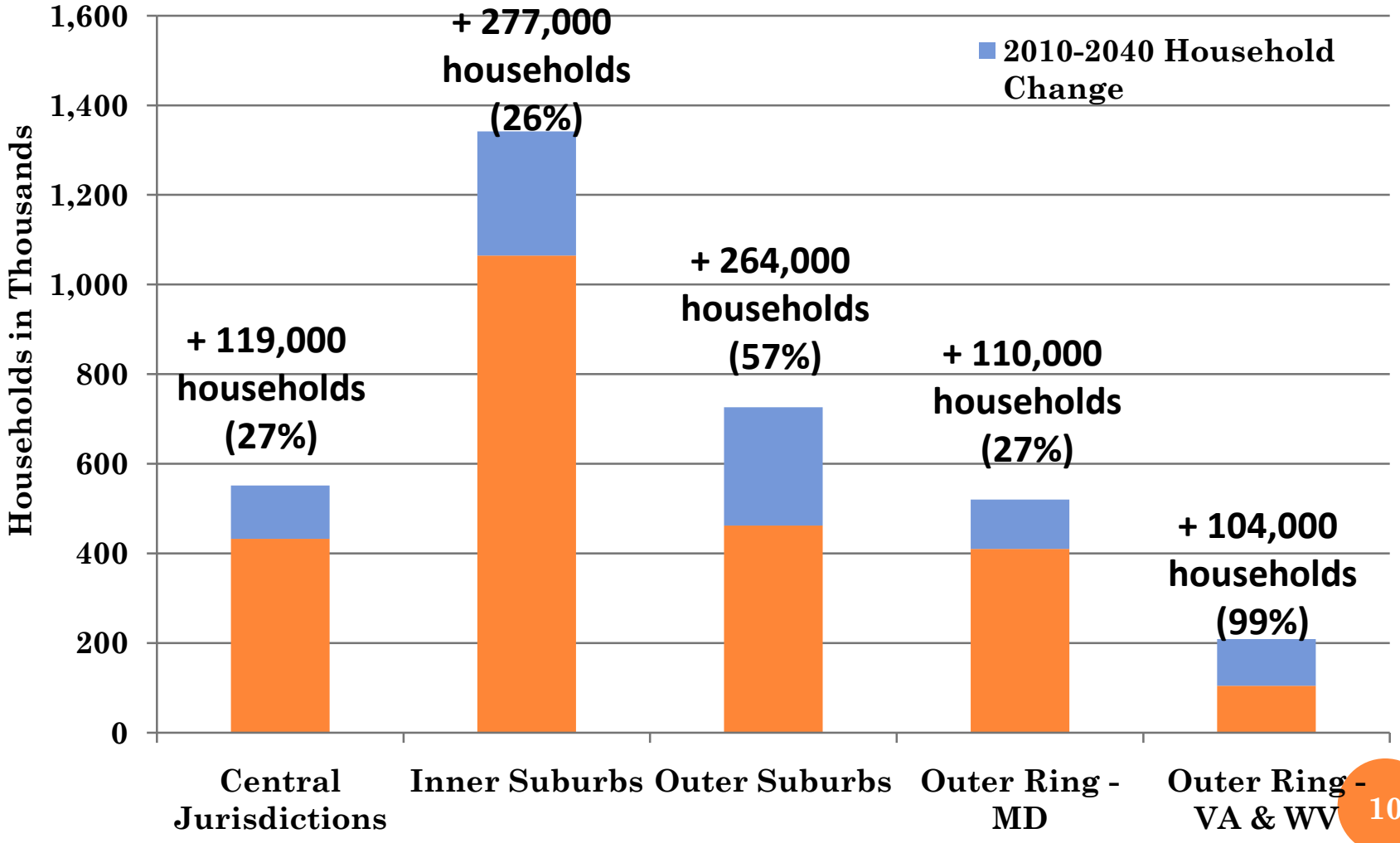
Forecasts for Jurisdictions in TPB Modeled Area Have Been Grouped Geographically for Analysis Purposes

Central Jurisdictions	Inner Suburbs	Outer Suburbs	Outer Ring - MD	Outer Ring – VA/WV
• District of Columbia • Arlington • Alexandria	• Montgomery • Prince George's • Fairfax (County) • Fairfax (city) • Falls Church	• Loudoun • Prince William • Manassas • Manassas Park • Calvert • Charles • Frederick County MD) • Stafford	• Anne Arundel • Carroll • Howard • St. Mary's	• Fredericksburg • King George • Spotsylvania (portion) • Clarke • Fauquier • Jefferson (WV)

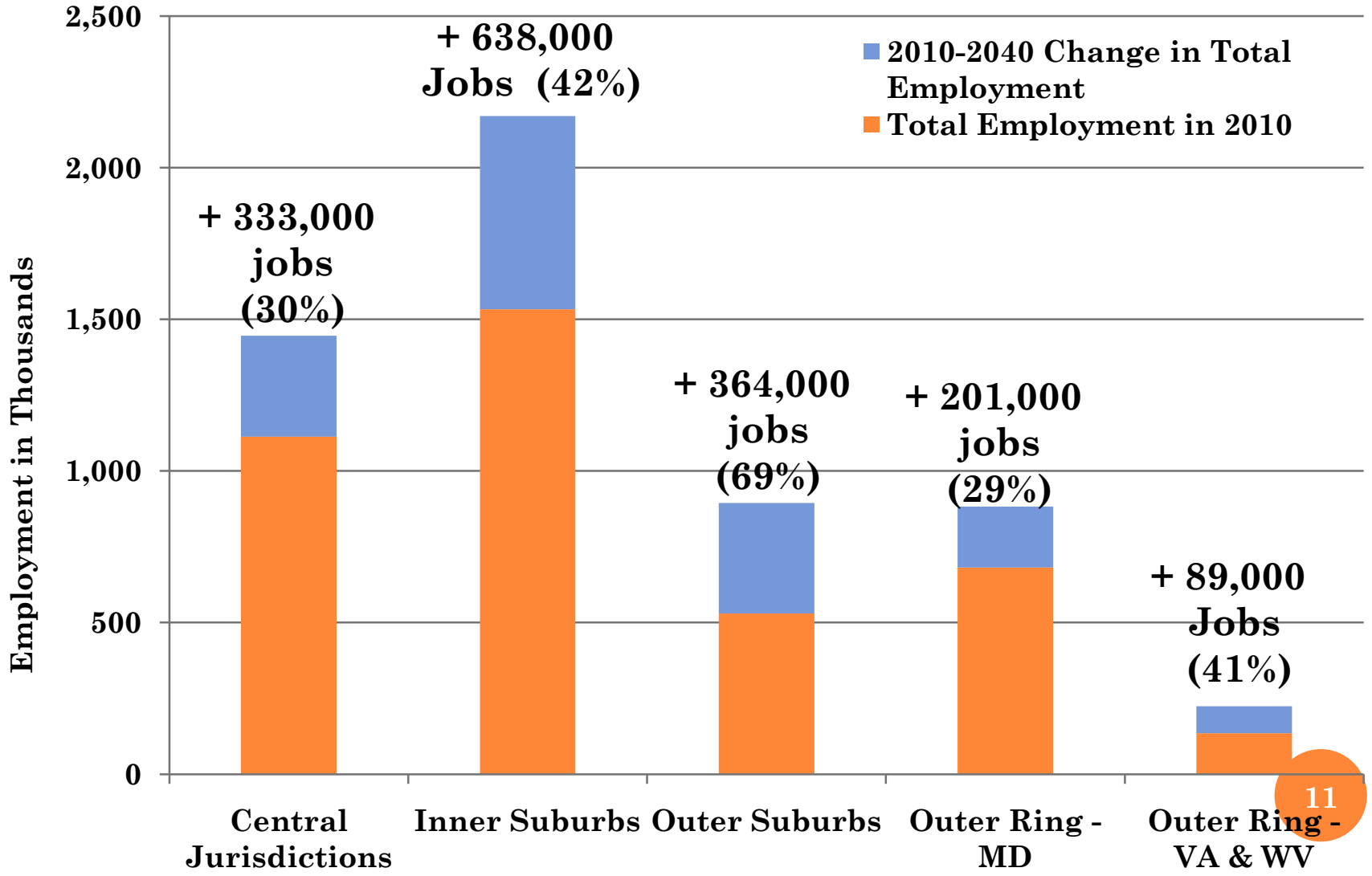
Forecast Population Growth (2010-2040)



Forecast Household Growth (2010-2040)



Forecast Employment Growth (2010-2040)



Round 8.1 transmission from COG to DTP

- Land activity forecasts are furnished as a single file containing land activity by milestone years
- Round 8.1 contains years 2010-2040
- Air Quality Conformity requires a base year of 2007
- Round 8.1 data delivered to DTP staff includes year-2005 data from Round 8.0A
  - DTP staff can then interpolate the 2005/2010 data to get 2007
  - Frederick Co. 2005 employment adjusted to reflect change in Round 8.1

Preparing land activity forecasts for use in the travel model

- Technical procedures used to create inputs to the Ver. 2.3 Travel Model:
  - Apply CTPP employment adjustments to land activity in many non-COG member to account for definitional differences in employment
  - Create year-specific files that comply with input requirements to the V2.3 travel model
  - Create interpolated land activity files, so that land activity inputs to the model exist for "off-years" as well as for standard years
  - Enable analysis and comparison of land activity data
    - between years (e.g., 2010 vs. 2040)
    - between rounds (e.g., Round 8.0a vs. 8.1)
- In application, input land use files are generically named: Zone.dbf

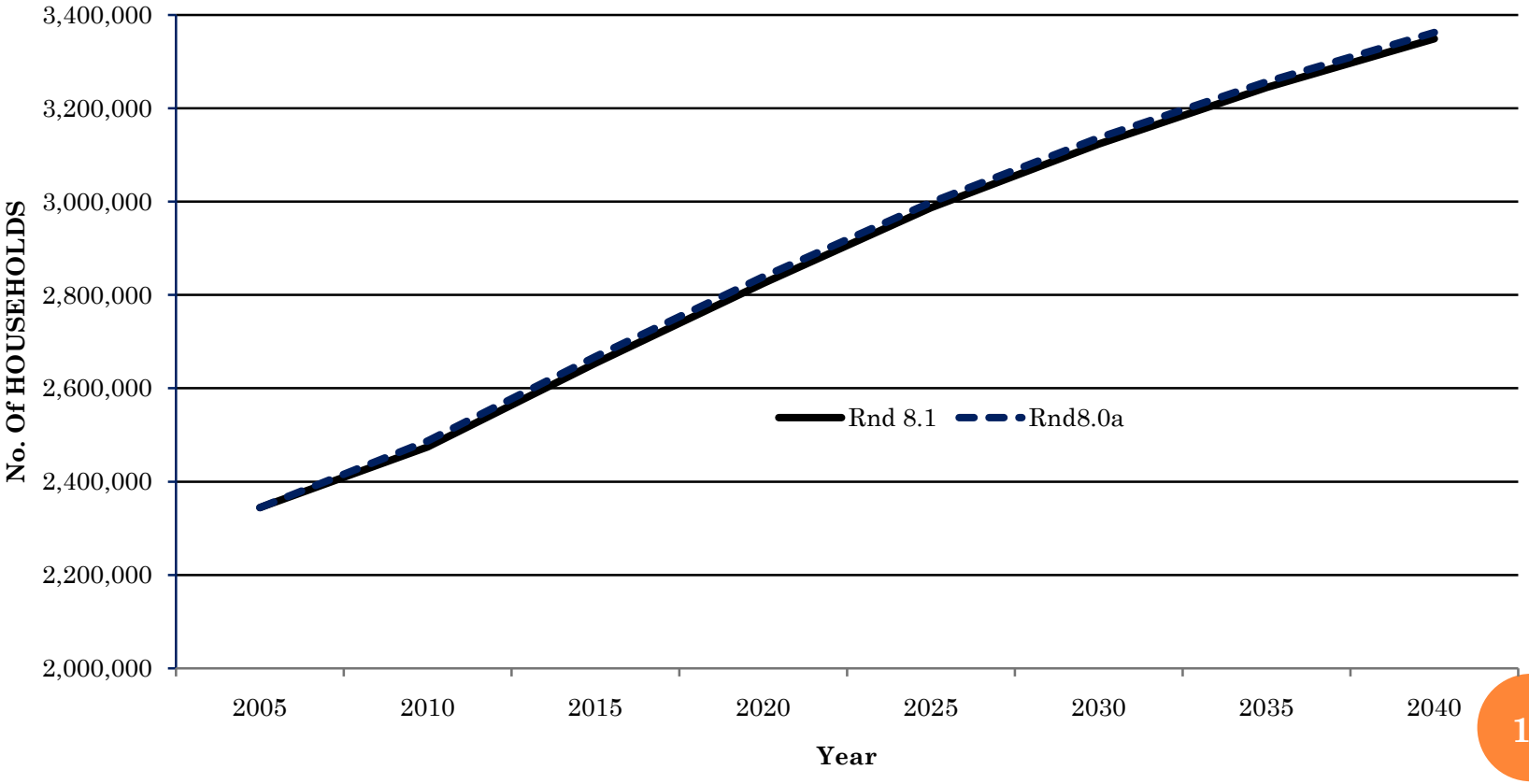
CTPP-Based Employment Adjustment Factors

- Adjustments applied because of definitional differences
- Differences in the definition of employment (BLS Wage & Salary v. BLS Wage & Salary + Self-Employed, v. BEA)
- Adjustments assumed to remain constant over each time point (e.g. 2010, 2015, etc.)

Juris	CTPP-Based Employment Factor
dc	
mtg	
pg	
arl	
alx	1.000000
ffx	
ldn	
pw	
frd	
how	0.844375
aa	0.853219
chs	1.000788
car	0.802331
cal	0.998598
stm	0.939573
kg	
fbg	1.000000
sta	
spt	
fau	1.224679
clk	1.343964
jef	1.254410

Households: Round 8.1 vs. Round 8.0A

	2005	2010	2015	2020	2025	2030	2035	2040
Rnd 8.1	**2,344,536**	**2,474,631**	**2,653,905**	**2,824,938**	**2,986,851**	**3,123,879**	**3,244,552**	**3,349,025**
Rnd8.0a	**2,344,536**	**2,486,943**	**2,668,087**	**2,839,041**	**2,998,817**	**3,136,772**	**3,257,193**	**3,362,449**
Diff=Rnd8.1 - 8.0a	**0**	**-12,312**	**-14,182**	**-14,103**	**-11,966**	**-12,893**	**-12,641**	**-13,424**

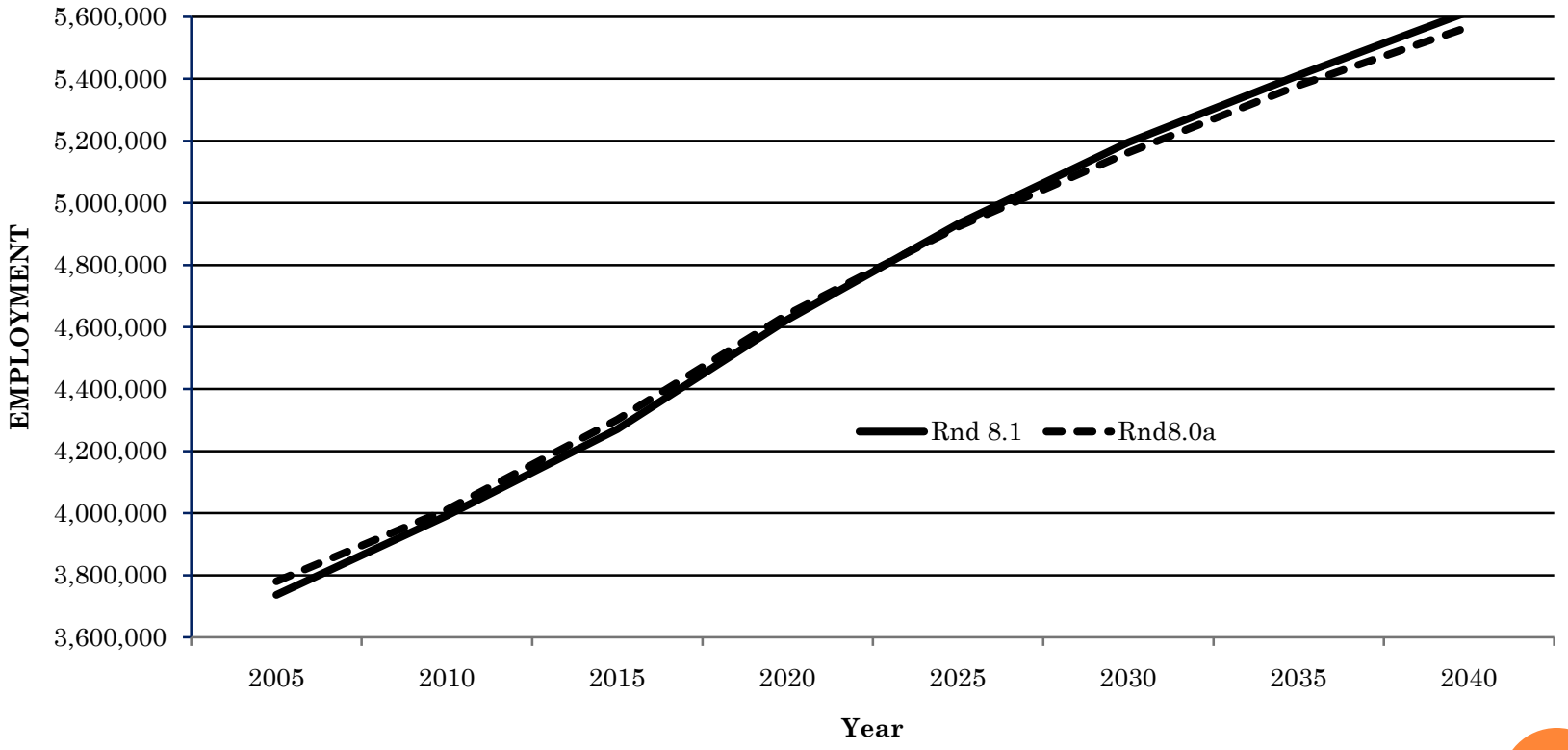


Comparison of households

- Compared to Round 8.0a, the number of households (HHS) in Round 8.1 is slightly lower (about 12-14k per year)
- Difference between the two rounds starts in 2010 and stays almost constant for the forecast years due to results from 2010 Census

Employment: Round 8.1 vs. Round 8.0A

	2005	2010	2015	2020	2025	2030	2035	2040
Rnd 8.1	**3,736,573**	**3,992,384**	**4,271,105**	**4,623,984**	**4,932,203**	**5,195,068**	**5,411,731**	**5,617,587**
Rnd8.0a	**3,780,290**	**4,011,138**	**4,301,505**	**4,641,414**	**4,923,304**	**5,162,556**	**5,378,994**	**5,567,276**
Diff=Rnd8.1 - 8.0a	**-43,717**	**-18,754**	**-30,400**	**-17,430**	**8,899**	**32,512**	**32,737**	**50,311**



Comparison of jobs

- Compared to Round 8.0A, the number of jobs (EMP) in Round 8.1 is slightly lower in the early years (17k to 14k from 2005 to 2020) and slightly higher in the later years (8k to 50k from 2020 to 2040)
- Differences result from economic downturn lasting longer than anticipated

Conclusions

- Round 8.1 land activity forecasts have been prepared for modeling
- Currently being used in this year's air quality conformity determination
- Anticipated to be adopted by July 2012
- External, through travel, and airport auto travel will be revised based on Round 8.1 and other data sources