Research Project Brief

Report 27-R06: Exploration of Technical Developments and Data Sources that May Have Implications for Long-Range Transport Planning in Virginia

VTRC Virginia Transportation Research Council

Background

VTrans is the Commonwealth of Virginia's statewide multimodal transportation plan. Virginia's Office of Intermodal Planning and Investment maintains the plan under the supervision of the state's Commonwealth Transportation Board. The plan's methodology identifies several VTrans "trend trackers" that are quantifiable metrics updated annually; "macrotrends," which are emerging patterns of change; and Commonwealth Transportation Board objectives, or qualitative targets for which the Office of Intermodal Planning and Investment defines various metrics.

Research Objectives

The research reported herein supported the Office of Intermodal Planning and Investment's mission through three tasks related to these trackers, macrotrends, and objectives: (1) compile statistical series, historical values, and future forecasts to represent seven trend trackers in the VTrans framework; (2) estimate the differences between forecast and observed values for population and employment; and (3) investigate the possible means of using one or more of the trend trackers in a planning application.

Approach

Historical data and forecast future values purchased from Woods & Poole Economics, Inc., coupled with data from publicly available sources and a review of the literature, formed the basis of the analysis. The latest time series in the Woods & Poole dataset supplied the seven trend trackers. Time series of historical and forecasted values from several different years' editions of the Woods & Poole dataset allowed computation of the differences between forecast and observed values. Each of the exploratory planning applications used at least one Woods & Poole time series plus other publicly available data.

Outcomes

During 2020 through 2040, Virginia's population aged 65 and older is forecast to grow at an annual rate of 2.02%—nearly three times the forecast annual rate of the total population (0.69%). During the same period, total employment in the Commonwealth of Virginia is forecast to grow at a rate of 0.86% per year—also higher than the total population growth rate, implying that labor force participation will increase. Input-output expenditures suggest that the subtotal of employment in three sectors may serve as one of the defined trend trackers for macrotrend 5, the number of jobs in goods movement-dependent industries.

Research Benefits

Provisional adoption of a specific employment statistic and a specific income statistic to represent two additional trend trackers within the established VTrans framework would enlarge the set of data that informs the Commonwealth Transportation Board's deliberations. Dissemination of information about the margin for error in the two established trend trackers and in the one proposed trend tracker would enhance the user's understanding and handling of the trend trackers.

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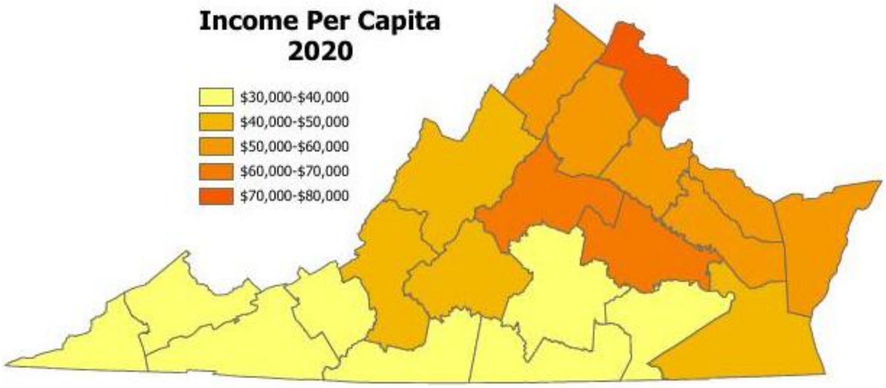
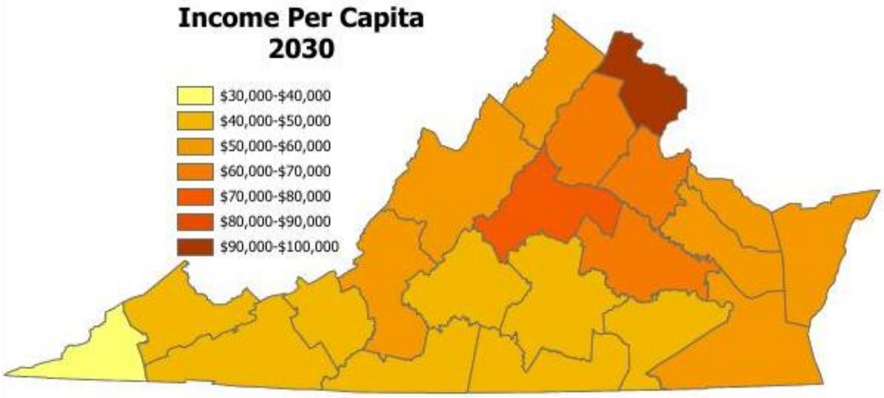
Research Findings



Personal Income: A Possible "Income" Trend Tracker

The two maps, above and to the right, show personal income per capita, adjusted to 2012 prices, in each planning district. Above, the historical 2020 values; on the right, the forecast 2030 values.



Use of Trend Trackers in Planning: One Example

The graph to the right shows historical and projected average values per square mile of real estate in the five most densely settled planning districts. The model that generated the projections used population and income as predictive factors.