



# The Future of OFM Forecasting and Research

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# THE FUTURE OF OFM FORECASTING AND RESEARCH

## OFM FORECASTING AND RESEARCH: OUR VISION

The OFM mission statement is: “Better information. Better decisions. Better government.” The OFM Forecasting and Research Division actively supports all three aspects of this vision. In 2011, the Forecasting and Research Division discussed our unique contribution to this vision which was captured in the statement: “High-quality data. Objective analysis. Useful information.”

Forecasting and Research has a special role in state government. As the research arm of the Governor’s budget and policy operations, we are statutorily required or called up for unbiased, rigorous research on topics ranging from education to human services to population characteristics, trends and growth projections, to economic issues and economic and revenue forecasts. Because we are not associated with individual state programs or institutions, we are seen as an “honest broker” of information and data about program outcomes, policy options, and trends. We rely on our expertise and technical skill to walk a fine line between answering to a specific Governor and being an independent source of objective information.

The forecasting work of Forecasting and Research has evolved over the years, particularly following the creation of the Economic and Revenue Forecast Council and the Caseload Forecast Council. Our forecasting work includes supporting these organizations as well as offering the executive branch and others an independent view of the work of those organizations. We also do specialized forecasts of population, revenue, and caseloads for local governments, agency customers, the Governor’s budget and policy organizations, and legislative requests.

Our vision for the future of Forecasting and Research builds upon our role among research organizations in state government and in broader policy debates around the country:

- ◆ **We promote methodological debate and transparency.** We do not seek uniformity among state agencies and other researchers. Instead, we encourage work that educates readers and clearly states methods so the sources of disagreements are clear. We believe this leads to better decisions and more informed decision makers.
- ◆ **We provide data and analysis when called upon for independent or statewide information.** We are frequently asked to oversee contracts for research or provide our own analysis of projects of statewide significance. Recent examples include economic development projects and federal implementations of multiagency initiatives.
- ◆ **We promote open data.** Our independence from individual state programs contributes to our belief in the value of open data. It is a cornerstone of our effort to promote a thriving research and program evaluation community in Washington.
- ◆ **We support agency-level research operations.** We believe research functions are essential to state agencies and support the creation and development of agency-level research organizations. It is important for program administrators to be close to accurate, timely program information and evaluation. OFM Forecasting and Research supports these efforts through information sharing events (like the Data Governance Seminar we sponsored at L&I) and through creation of unique databases for use by multiple agencies (like the Unified Business Data set).

Our vision includes growing the intellectual capacity and skills of our people. We are actively seeking useful, technically interesting research tasks and services for the public. Our staff thrive on challenging, interesting work and our vision includes expanding those opportunities as much as possible in a collaborative, engaging work environment. Our vision includes providing the technical resources and autonomy that we need to make use of the best available technologies to do our work and meet customer needs.

## **PART ONE: OFM FORECASTING AND RESEARCH DIVISION VISION FOR EXTENDING THE ERDC MODEL**

The Education Research and Data Center combines several elements that illustrate a path forward for the other OFM examples within Forecasting and Research:

- ◆ Core competencies that support statewide mission of better data for decision making. Such competencies include: (1) linking data sources across agencies and subject areas; (2) identity matching; (3) cohort building; and (4) deidentification of individually identified data.
- ◆ Division of labor that respects agency-specific needs and skills including: (1) subject matter expertise; (2) deep interaction with programs; and (3) transactional data needs.
- ◆ Proven track record of using governance to solve technical, institutional, and methodological problems across the education community, not just within state agencies or across state agencies. We do this without changing organizational charts of member agencies. Particular role in situations where multiple agencies represent segments of a policy area and OFM can be useful as convener, broker or catalyst for action.
- ◆ Deep commitment to open data and to methodological transparency.

The ERDC example shows each of these characteristics in practice.

- ◆ ERDC data competencies are explicitly based on enterprise-wide solutions to our P20W data warehouse effort. Our skills and technologies are intentionally designed to promote better access to both data and information. OFM is positioned to create data sets for internal and external researchers, often combining external data which is linked and de-identified and returned to the customer. We provide increased capacity for external researchers as well as producing original research ourselves. This capacity answers the critical “what’s in it for us” question that agencies rightly ask.
- ◆ The ERDC is serious about its cross-sector role in education, encouraging the use of agency-specific researchers for agency-specific research as much as possible. Research and analysis resources need to be in agency settings as well as state-wide settings. We do not have an agenda to grow the ERDC at the expense of other important agency-level resources.
- ◆ The ERDC example includes extensive use of governance strategies around the education research agenda for the state, data sharing, and technical issues associated with data sharing. Each of these functional areas requires a governance body composed of appropriate agency and partner staff. The ERDC model assumes that agencies are staffing themselves appropriately. Efficiencies and larger research questions can be addressed through collaboration that respects agency boundaries.
- ◆ State agencies are increasingly aware of the importance of “open data” and “data transparency.” But the OFM mission statement and practice over the issues show that OFM is particularly attuned to the need for open data. In the case of the ERDC, the warehouse project leadership specifically advance the goal of enhancing the performance of the entire education research community, not just state agencies.

The ERDC example is also based on an essential statewide resource, the P20W longitudinal data warehouse. This resource is fundamentally designed to explore education inputs and outcomes, including workforce outcomes. The wide range of outcome measures makes it a flexible and powerful tool for program evaluation and other research efforts beyond education. Indeed, the current work plan to complete the warehouse includes a significant expansion of ERDC capability to add additional data sources to the warehouse.

## **Examples of Future OFM Research and Data Centers in Additional Policy Areas**

The ERDC model could be replicated for Health Policy, Social Services, Corrections, Population Studies and maybe other areas. These institutions would follow the ERDC example in terms of research coordination, data collection and linking, data sharing and written analysis. The power of the model is strengthened by the existence of the P20W longitudinal data warehouse.

*The P20W longitudinal data warehouse becomes the foundation for many additional policy areas because it includes important outcome variables, particularly where education is a goal of a policy.*

A good example of this model would be criminal justice research. In 1989, an Executive Order (89-03) created the criminal justice Statistical Analysis Center which receives a federal grant for creating a corrections data clearinghouse. When the Sentencing Guidelines Commission was defunded, one staff person for the remaining work was assigned to OFM Forecasting and Research. OFM Forecasting and Research has won national awards for our high quality web site making this data available.

A variation on the Research and Data Center model could be created with the existing Criminal Justice Statistical Analysis Center as its core. This would be led by the existing OFM staff person, coordinating research efforts across agencies and promoting data sharing. Corrections data and related data sources could be linked to the P20W data warehouse to promote program evaluation research.

The ERDC framework could also be used to both promote and enhance the existing population-related State Data Center (SDC) program in Washington. The SDC program is a cooperative program between the states and the Census Bureau created in 1978 to make data available locally to the public through a network of state agencies, universities, libraries, and regional and local governments. The Business and Industry Data Center (BIDC) program was added in 1988 to meet the needs of local business communities for economic data. The population division within forecasting is responsible for administering these programs in Washington. For decades, the population division has made Census Bureau data more accessible in various ways such as by providing repackaged data and data links on our website, by guiding data users to the best data sources, by providing subject matter and statistical expertise, and by training data users on how to access the Census Bureau data.

State agencies, policymakers, and researchers are aware of the importance of using data to inform decisions, plans and research. The population unit and the SDC has been in the position of providing that data reactively, but we should be doing so more proactively. By conducting more research and analysis on demographic trends, we could help frame the relevant issues the state will be facing going forward, whether it is the aging population, migration trends, caseload expansions or contractions, or trends among categories of workers. In addition, more work on data evaluation needs to be conducted. The demographic data has changed dramatically in the last decade, with the loss of the census long form and the addition of the American Community Survey. We need to make sure we fully understand the strengths and weaknesses of the data we have available to us to ensure that we, and the rest of Washington's data users, can use it with confidence. Lastly, OFM has been less involved with the Business and Industry Data Center data available from the Census Bureau. With the downsizing of the Labor Market and Economic Analysis branch of Employment Security, OFM may need to play a larger role in disseminating the Census Bureau's economic data.

## **Resource Models**

As part of OFM, the Forecasting and Research Division is acutely aware of the need to be financially responsible, particularly about staffing levels. In recent years, the division has contributed several FTEs to the effort to reduce personnel costs in the agency, reducing staff in every part of the division: the social and health services area, the population unit, the Education Research and Data Center and administrative

support. We are aware of the budget pressures facing the state and we offer these staffing suggestions only as options should we be asked to suggest ways in which additional resources could be useful.

**Education Research and Data.** This section could benefit from additional staffing in two areas. An essential goal would be to convert one-time, grant-funded positions into ongoing staff positions. First, the ERDC data warehouse project is explicitly designed to increase the autonomy of ERDC staff in relation to adding additional data sources to the warehouse, matching identities across data sources and assembling comparison groups. Succeeding at that effort in the future would warrant converting grant funded staff to permanent staff. Second, Washington is becoming data rich and analysis poor. The ERDC could benefit from additional research staff to mine the increasingly rich data environment and support the research needs of state agencies and others in the education research community.

**Social, Health and Criminal Justice.** An expanded Criminal Justice Statistical Analysis Center could be constructed using existing staff. A more robust version of the data center would acknowledge the lessons of the ERDC and create a full time position for data governance. Similar positions would make sense for health or other data centers associated with this section. It is also possible that outside funding opportunities exist in the policy areas associated with this section. OFM might explore a pilot project to add a development staff person to raise non-state funds for research topics that interest the executive branch and others. Under this pilot, we would test the proposition that outside money is available and discontinue the position if it turns out to be a net loss in practice.

On the health care front, OFM Forecasting and Research is part of a statewide effort to secure federal funding to increase health care pricing transparency. In collaboration with the Governor's Office, the Office of the Insurance Commissioner and the Puget Sound Health Alliance, OFM would administer an effort to expand data sharing and access to health care pricing data. Unlike the ERDC effort described above, the resulting data warehouse would not be hosted by the state; the goal is an accessible, non-profit source for comprehensive data. Awards under this grant are anticipated in the fall of 2013.

**Economics and Revenue.** With the shrinking of the Labor Market and Economic Analysis branch of Employment Security, the OFM Forecasting and Research team of economists has an increasingly large role in supporting other agencies with economic research, agency revenue forecasts, enhancing revenue forecasting methods and in direct creation of economic analysis for decision makers. The division creates opportunities for greater transparency around state revenue forecasting methodologies, particularly during the Economic and Revenue Forecasting Council model reviews as required under Substitute Senate Bill 6636. The division has created a unique multi-agency database that combines tax and revenue sources from key agencies. Time constraints have limited our ability to mine this remarkable data source. A recent budget proviso directing us to look at income categories across the state shows the potential for using this data set for additional studies. We are also developing tools that will support interesting economic impact analysis using different methodologies. As the executive branch and Legislature become increasingly interested in job impacts and program evaluations, the capacity of the economic side of Forecasting and Research will become more important and our staffing needs will be greater.

**Population.** The population unit could benefit from additional staffing to support the unit's research and analysis functions, particularly given the staff reductions in this area. Staff put worked numerous additional hours and banked vacation times in order to meet deadlines. In addition, the unit must update a number of antiquated estimate systems with current methods and technologies. And we need to devote appropriate time to evaluation of our own estimates while developing new estimate and forecast methods due to changes in census and administrative data. Most of our current products are 'data products' with limited interpretation and information about that data. We need to go deeper in data analysis. We have the skills to perform more program assessment and analysis of broad demographic trends, but we currently lack the capacity to do so given other demands. Finally, the population unit staff are the primary source of GIS administration for the agency. We also represent the agency as several key state GIS workgroups that are of long term interest to the state and OFM. As more units use GIS as a regular part of their work our workload has increased.

Looking across the divisions with Forecasting and Research, there may be potential for a full time job that just focuses on the issues related to expanding access to data. This role would include technical capabilities around geographic information systems, deep knowledge of the data available within OFMFR, the authority and capability of manipulating and posting data in creative ways.

The next section of this document describes initiatives that Forecasting and Research staff have proposed either for existing resources or for additional resources. In most cases, the initiatives are scalable to reflect the resources available under different budget scenarios.

## **PART TWO: THE OFM FORECASTING AND RESEARCH VISION FOR 2013-15 INITIATIVES**

This section will describe initiative within each of the Forecasting and Research units, but we are also committed to a division wide focus on **lean management** practices. Forecasting and Research were selected as one of the leaders in lean practices at OFM, developing tools and expertise through a review of the data request process in the ERDC. We have been preparing an additional distinct effort around annexation data and our population estimates. Even as we pursue discrete projects, we are aware of the broader goal of making “lean” a part of our culture. Staff in the population unit have been working on the “A3” tool and will be sharing those lessons across the division, for example. We look forward to working with the person who fills the newly created lean leadership position for OFM.

Another potentially division-wide effort is our **visual management** strategy. We are currently developing a dashboard to track inputs, outputs and customer interactions with the Education Research and Data Center. Originally conceived as an internal management tool, it quickly became apparent that this visual management system would be valuable to all our customers and stakeholders as a means to monitor progress on data set delivery, upcoming reports and progress with the data warehouse. We will complete the “Results ERDC” visual management tool in early summer. Lessons learned from that effort may guide us to further visual management dashboards for other units in the division.

It is time to revisit the elimination of the **State Population Survey (SPS)**. When it existed, the SPS was widely regarded as a useful, unique source of information to track issues that were not adequately covered by national surveys. The SPS was a victim of budget reductions. It was hoped that the national American Community Survey would sufficiently cover many of the issues that were tracked in the SPS. With the demands of Results Washington, the dramatic changes in health care delivery, and the clear shortcomings of the ACS, we need to revisit the importance of the SPS. Forecasting and Research will develop an agency request proposal to relaunch the SPS with a new survey collection strategy and an updated survey instrument. Given the connection between SPS data and statewide outcomes, it may make sense to fund this effort through the performance audit account.

We will now turn to a list of future products or initiatives that were generated by staff in the units of Forecasting and Research based on years of experience with applied research and policy making. Some are more directly linked to customer requests than others. They are intended to illustrate the kind of work that we think would be useful and to be consistent with the role and vision of Forecasting and Research. The final list of action items and our business plan will be more organically linked to the needs of the Governor’s budget and policy offices, legislators, agency projects, statewide customers and other decision-makers. Given limited resources, our work agenda has to be as useful and timely as possible.

## Human Services Unit Initiatives

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### 1. Health Care Projects

- \* a. **Continue Health Care Provider Surveys Analyses.** The three health care provider surveys conducted by OFM in 2011 and 2012 continue to provide opportunities for analyzing Washington's health care system in ways not possible through other data sources. Staff will continue to analyze data from the three surveys in support of the Affordable Care Act (ACA) implementation and other healthcare personnel shortage discussions.
- \* b. **Continue Health Care Consumer Survey Analyses.** The health care consumer survey provides a current snapshot of how adults in Washington access health care for routine, urgent and emergency services. Analysis of this rich data source will continue throughout the year in support of the implementation of the ACA.
- \* c. **Develop Affordable Care Act Monitoring and Tracking.** The ACA represents the biggest change in healthcare policy in the last 50 years. Monitoring and tracking the law's implementation will be essential for understanding its impact and guiding future actions. Staff will coordinate with staff from partner agencies to develop a plan for monitoring and tracking progress toward full implementation of the ACA. Work will focus on development of a core set of high-level statewide outcome measures.
- \* d. **Finalize and Expand MONAHRQ website.** MONAHRQ is a software tool that allows the state to quickly generate a website to track health care quality and utilization. The files for three years of data have been generated and are ready to post once a host has been selected. Additional components will be included in the near future.
  - i. Update MONAHRQ with the most recent data
  - ii. Post currently developed web pages
  - iii. Add hospital specific data
- \* e. **Complete Critical Access Hospitals Profiles.** Understanding the role critical access hospitals play in providing care to rural and underserved populations is crucial to developing strategies for improving access. Using data from the Comprehensive Hospital Abstract Reporting System (CHARS), staff will assess market shares for critical access hospitals. Analysis includes:
  - i. Cesarean deliveries
  - ii. Mental health
  - iii. Surgical
- \* f. **Continue Analyses of Medicaid Claims Data.** The ProviderOne system pays medical claims for Medicaid and other medical assistance services in the state. The system contains detailed data on all claims paid. Several initial projects are planned, so that staff can develop an understanding of the data and how it can be used to inform Medicaid budget and policy decisions. The initial projects are:
  - i. Develop emergency department utilization measures for Medicaid clients
  - ii. Develop a basic profile of Medicaid utilization (selected year[s])
  - iii. Develop Medicaid utilization reports
  - iv. Test ability to analyze distance Medicaid clients travel to providers
- g. **Develop a Health Policy Data Base.** Develop a data base of demographic, health, healthcare and economic data at multiple geographic levels for use in decision making and analyses.
- \* h. **Develop a Health Care Data Consortium.** Work with health agencies to improve access to and sharing of health-related data. The process would develop strategies for improving data availability and accessibility, standards and infrastructure across partner agencies.
- \* i. **County Population Estimation Model.** The County Population Estimation Model generates population estimates by demographics, income as percent of the federal poverty level and health insurance status. It also allows for generating estimates for scenarios with alternative assumptions. Staff will continue to refine and update the model as new American Community Survey data become available.

\*Denotes staff suggestions for fiscal year 2013-14 initiatives.



- \* j. **Track Changes in Health Professional Licensing.** Tracking health professional licensing will be a critical component of monitoring the implementation of the Affordable Care Act. Staff will use Department of Health (DOH) licensing data to show changes in licensing patterns for all types of health professions regulated by DOH.

## 2. Criminal Justice

- \* k. **Complete Development of Database of Juveniles Having a Declination Hearing or Undergoing the Auto-decline Process.** Washington does not currently have a system for tracking juveniles who have been charged with serious felony offenses that could result in juvenile court declining jurisdiction to adult court. Development of a database to track these juveniles is funded under the 2012 State Justice Statistics (SJS) grant award and will be used for development of fiscal notes and assessing the process.
- \* l. **Develop a Criminal Justice Data Consortium.** Sharing of criminal justice data across agencies has been limited. Under the 2013 SJS grant, staff will evaluate the development of a consortium or data warehouse for sharing of data. The process would develop strategies for improving data availability and access, standards and infrastructure across partner agencies.
- \* m. **Improve the Criminal Justice Data Book Application.** The Criminal Justice Databook application, CrimeStatsOnline, has not had a comprehensive update in six years. CrimeStatsOnline, and the related UCR Query systems, will be updated to improve data visualization capabilities.
- \* n. **Update the Statistical Analysis Center Website.** The website for the Statistical Analysis Center (SAC) has not had a major overhaul in the last five years. The website needs to be revamped.
- \* o. **Continue Support of the Sentencing Guidelines Commission and the Sex Offender Policy Board.** In 2011, OFM assumed responsibility for staffing the Sentencing Guidelines Commission and the Sex Offender Policy Board. This workload includes typical board staffing tasks, but also includes researching topics such as the development of racial impact statements.

## 3. Social Services

- \* a. **Update WorkFirst Measures.** Staff will work with the WorkFirst partners to improve program performance indicators including development of targets and presentation formats for several management levels.
- \* b. **Continue Improvement of Forecasting Methodologies.** In coordination with the Caseload Forecast Council, staff will develop quarterly forecasts for the WorkFirst and Working Connections Childcare Programs.

## Economic and Revenue Unit Research Initiatives

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### \* 1. Add state and local government as a sector in the Washington State I-O Model

This project would make the state and local government sector endogenous to the Washington State Input-Output Model. This would allow changes to industry sectors in the state I-O model to impact state and local government revenues and expenditures. Useful for meeting the JLARC mandate to look at impact of large tax changes on state government finances.

### 2. Improve the Study on the Distribution of Income, Wealth and Taxes Across WA Households

The original 2012 study studied Washington households over the period of 2005 through 2009. Some improvements to the study would significantly increase its usefulness. Those improvements include:

- a. Improve definitions of households
- b. Provide further information on households in the bottom decile
- c. Remove Downward Bias for Upper Income Households and Upper Wealth Households
- d. Compare Washington distribution to U.S.
- e. Add 2010 when data is available

### **3. Expand the Study on the Distribution of Income, Wealth and Taxes Across WA Households**

The original 2012 study of Washington households provides a base of data and information that could be expanded into some interesting policy areas. Some of those expansions include:

- a. Analyze long-term changes in income distribution by adding an earlier year or two to get a 10-year span of data
- b. Provide More Information on Income Mobility
- c. Analyze the distribution of consumption
- d. Life-Cycle Impacts – Analyze how much of income/wealth/consumption/tax distribution is from life cycle effects compared to economic and other effects. What percent of the poorer households are temporarily poor because they are young or elderly?
- e. Measure the effect government programs
- f. Measure impact of proposed policies – Create a model to measure the potential impact of proposed legislation that would impact household taxes or transfers to households

### **\* 4. Impact of Privatization of Liquor**

Use data before and after liquor initiative along with data from another state that did not have a major policy change (Oregon), to measure the impacts of liquor privatization on prices, consumption and tax revenues.

### **\* 5. Impact of Recession and ACA on offer rates and costs of Employer-sponsored Health Care Insurance**

Use the Employee Benefits Survey (EBS) over time to look at the impact of:

- a. The recession and recovery
- b. Impact of Affordable Care Act

### **\* 6. REMI Policy Plus Model**

Acquire the updated Regional Economic Modeling Incorporated (REMI) Policy Plus Model and develop expertise in its use. Attend some training conferences and develop some analyses to show value of the model. Could also be used to address the JLARC mandate as well.

### **\* 7. Develop Additional Uses and Presentations for the Merged Business Cost Database**

1. Translate Gross Business Income into Gross Domestic Product so that analysis can be compared to other states
2. Build a longitudinal database in order to address questions such as small business survival and job creation
3. Add other imputed business costs
4. Explore the possibility of adding employee data

## **Education Research Unit Initiatives**

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Our education research agenda is driven by the “critical questions” process in the Education Research and Data Center statute. We are also customer driven in terms of data requests, legislatively mandated reports, and ad hoc report requests.

### **\* 1. Create the best Early Learning Database in the United States**

The P20W data warehouse is on track to incorporate data from a range of state-funded early learning programs. We are also strong relationships with Head Start providers. Our goal for these activities should be no less than the best early learning data warehouse in the country.

*\*Denotes staff suggestions for fiscal year 2013-14 initiatives.*

## 2. Return on Investment Study

How are educational resources associated with students' outcomes, measured by educational achievements/attainments and workforce status and wage? The scope of analysis is to track students' education resource consumption from K-12 to workforce. Students' participation in financial aid programs would be one of the key pieces of information needed for this study

## 3. Blended Learning

Identify the key factors associated with postsecondary students' choices for blended learning (traditional learning combined with online/virtual learning). Investigate the association between blended learning and postsecondary and workforce outcomes.

## 4. An Extended Study of the Swirl Study

The focus for the extended study would be on students' college course taking and changes across majors (i.e. STEM field, social science, etc.). The outcome would be measured by degree completion and workforce status.

## \* 5. Create Additional Handbooks

Create handbooks that better describe the strengths and weaknesses of the data items, and how the data can be used in research throughout the various sectors. Similar to the Employment Handbook, handbooks could be focused on assessments, attendance and course taking.

## 6. Develop an Annual Higher Education Report Based on the Delta Metrics

This report would answer these questions:

- a. Where does the money in higher education come from?
- b. How is it spent?
- c. What does it buy?

## 7. Do a Research Study that Goes Beyond the Delta Metrics

Take a closer, longer look at trends in higher education revenues and expenditures (how have the institutions allocated resources over the years; trends in faculty status/rank and student/faculty ratios; trends in financial aid, tuition discounting, loans; trends in credits per degree; etc.).

## 8. Develop a Pivot Table for Degrees Awarded

Develop an on-line interactive database (pivot table) for degrees awarded in Washington by CIP by institution by year by gender by race/ethnicity.

## 9. Develop a K-12 “Efficiency Index” (Either by District and/or Building)

- a. The state auditor did something along this line with its performance report on K-12 spending that came out last June.
- b. The Center for American Progress developed a “return on educational investment” for every district in every state (districts cannot be compared across state lines). See: [www.americanprogress.org/issues/education/news/2011/01/19/8877/interactive-map-return-on-educational-investment/](http://www.americanprogress.org/issues/education/news/2011/01/19/8877/interactive-map-return-on-educational-investment/) or [www.americanprogress.org/issues/education/report/2011/01/19/8902/return-on-educational-investment/](http://www.americanprogress.org/issues/education/report/2011/01/19/8902/return-on-educational-investment/). Spending per student is compared to test scores and the districts are placed on a ROI evaluation matrix consisting of nine cells (lowest, medium, or highest cost by lowest, medium, or highest achievement).
- c. The Texas state comptroller has a “financial allocation study for Texas” (FAST) on school spending and student progress. See: <http://www.fastexas.org/>

## **10. Develop a Higher Education Max/Min Model**

Can a model be developed to show how to maximize degree attainment for low-income students and minimize state costs utilizing different levels of tuition, financial aid and state support? While this is an interesting question, not all the data may be available. One would need data on

- a. Combinations of tuition, state support and financial aid packages along with other expenses for education (room and board, books, etc.)
- b. Educational tracks (research, comprehensive, community college transfer)
- c. Selected student groups (low-income)

## **\*11. Stabilize and Expand the P20W Reports**

- a. For example, for the K-12 P20W report some subgroups could be added based on K12 program participation (running start, migrant services, etc.).
- b. A K-12 P20W report could also be added that just looks at Fall enrollment (the Franklin/Pierce – Tim Stensager report).

## **\*12. Develop More Years of Data for the 2-Year, 4-Year and Early Learning P20W Reports**

## **\*13. Collaborate on Additional Studies With DSHS**

ERDC is meeting with Research and Data Administration of DSHS to discuss additional joint studies that could be done after RDA finishes the five studies funded under the grant. ERDC is also exploring funding options with RDA to support this collaboration.

## **\*14. Generate Additional Data Sets That we Have Planned Already to**

- a. Post on data.wa.gov
- b. For LEAP to post or analyze and post
- c. Support research in state agencies
- d. Support research by state agencies

## **\*15. Process More Data Sources for the Data Warehouse, Including**

- a. Professional licenses
- b. DSHS data (most likely flags for program participation)
- c. DOH health data
- d. ACS Community Characteristics
- e. WA Kids
- f. College Bound participants

## **\*16. OFM/ERDC Participation in WRIS II**

With the WDQI grant, ERDC is essentially taking over a substantial portion of ESD's data provision work. A valuable addition to the P20W data collection would be employment data from other states. The Wage Record Interchange System 2 (WRIS 2) allows states to share their wage data in aggregate form with Third Party Entities under certain conditions. If OFM/ERDC could become a participant in WRIS 2, then data from the many states that participate in WRIS 2 would be available for analysis and research, such as finding Washington post-secondary graduates in jobs in other states.

*\*Denotes staff suggestions for fiscal year 2013-14 initiatives.*

## Additional Potential Education Research Efforts

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### 1. Alternate Learning Experience Programs in High School

- a. What are all the different ALE programs and where are they?
- b. Which ones are working? Is there anything we can learn from that for policy?
- c. Do ALE completers go on to postsecondary education? In what numbers and fields of study? At what rate do they complete postsecondary credentials?

### 2. Increase Student Retention and Completion Rates

- a. What policies and programs encourage students to stay in post-secondary education and complete?
- b. What policies and programs encourage former students that have a year or less of study to complete a baccalaureate degree to return and finish a degree?

### \*3. Predictive Modeling

- a. Predict degree completion rates based on demographics and characteristics of baccalaureate completers. What policy and program guidance can we learn from these predictions?
- b. Predict degree completion rates based on demographics and characteristics of baccalaureate students that take pre-college (remedial) courses. What policy and program guidance can we learn from these predictions?
- c. How well do high school course work and grades predict who needs pre-college course work in math? How well do they predict who completes a postsecondary degree?

### \*4. STEM Majors

- a. Outcomes-based policies to encourage CTCs and baccalaureates to produce more STEM majors
- b. Incentives to students to select STEM majors and complete

### \*5. Follow a Large Sample of Similar High School Students that Graduated in a Single Year

For example, track students who graduated in the 2004-05 school year into the workforce and determine how their post-high school education experience affected their employment and wages after eight-to-ten years. Select a sample of students with similar demographic and scholastic characteristics that: (a) did not participate in any postsecondary education; (b) engaged in apprenticeship programs; (c) attended two-year institutions; or (d) attended four-year institutions.

### 6. Return on Investments in Early Learning and Student Financial Aid

- a. What is the return on investment of early learning? Fewer students in special education and fewer that need addition services in K-12? Better long-term educational performance and graduation rates? Even longer-term study could look at postsecondary participation and workforce outcomes.
- b. What student financial aid structure promotes the most postsecondary graduates possible? Which structure promotes the most postsecondary graduates from disadvantaged populations? Are these two goals compatible?

### 7. What Potential do Online Postsecondary Classes Have to Increase Participation in Postsecondary Education

How rapidly will credit-bearing, online postsecondary offerings grow in the future and how rapidly will participation rates increase due to the increase in online courses? What policies should the state adopt to online courses for progress towards a degree?

\*Denotes staff suggestions for fiscal year 2013-14 initiatives.

## Population Unit Initiatives

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### \*1. Annexation Initiatives

We have been applying lean management techniques to our annexation process in the last twelve months. We have identified the issues and their causes. The following list of projects is needed to improve our business practice. We aim to finish the first two projects by the end of the next fiscal year. Bullet three requires cooperation from state agencies and local governments, changes to statutes, and therefore may take an additional year or two to finish.

- a. Standardize work practices to improve the process flow and eliminate waste.
- b. Establish a partnership with the Census Bureau. Under this agreement the Census Bureau would only use OFM approved annexations and information reported by OFM to update their files. Cities and counties would report annexation and boundary adjustments only to OFM, they would no longer need to report to the census bureau
- c. Work with cities, counties, the Department of Revenue and the Department of Transportation to establish OFM as the central intake point and repository of annexation information for the state.
- d. Develop online information system that will make annexation information available to cities, counties and all other partner agencies.

### \*2. CenEst II

This project will incorporate the available modern technology into the existing population estimation model to enhance efficiency and accuracy. The project should be managed under the Lean model of PDCA (Plan-Do-Check-Act) and can be a multi-year projects with DES and local jurisdictions.

- a. Develop a web based data collection system. This effort will make the data collection and validation process more efficient and save money by eliminating duplicate data entry efforts and forms, and also reducing possibility of human errors.
- b. Modernize the current data base structure in order to improve reporting and information tracking of county and unincorporated areas.
- c. Create new web interface to make estimate and related material more transparent and easier for local government to access.
- d. Develop and implement new functions to standardize the estimate evaluation and balance procedures.

### \*3. Consolidation of Data Management

Re-structure and expand the current database by adding the following elements:

- a. Develop a standard intake process. This includes an annual data collection schedule, which should include description of the data, source, contacts, forms and methods used to gather the data.
- b. Develop a procedure to validate the data for completeness and consistency.
- c. Develop standard SAS programs to process the data and generate “ready to use” output files with standard labels, geography names, FIP codes and documentation.
- d. Maintain and update time series and create standard charts and tables for analysis and evaluation.

### \*4. Improve the Current State and County Estimate Models

- a. Evaluate the existing estimate models for impacts from the current economic situation.
- b. Evaluate the addition of new variables to the Ratio Correlation model.
- c. Research existing state and county migration and projection models. Choose the model best suited to measure Washington’s migration patterns. Design and build the chosen model for testing and evaluation.
- d. In recent years we have seen significant increase in students participating in blended learning programs. In April 2013 we have signed data sharing agreement and gained access to a CEDARS data base extract. We will develop a process to track enrolment changes at the school level. More consistent and geographically precise figures will help improve the accuracy of our county (and sub county) population estimate models.

\*Denotes staff suggestions for fiscal year 2013-14 initiatives.

- e. Utilize the Census Data Center at the University of Washington to develop data for the Housing Unit Method at sub-county level. This project will use the US Census Bureau's "Master Address File" linked to 2010 enumeration records to calculate housing characteristics (vacancy rates and household sizes for various structure types) which are eliminated from decennial census but critical to OFM's yearly estimate process. Currently, the estimate is based on 2000 census, which will become obsolete by 2020. This project will provide benefits to both OFM and to the demography community nationwide.

**\*5. Develop Measures of Population Change at Sub-County Level Using Administrative Records Data**

This project will utilize geocoded data from individual records data to help OFM staff determine where population change is occurring. Demographic characteristics from driver's licenses, birth certificates and death records will be utilized to improve our knowledge of population dynamics at the local level. This research has a wide variety of potential applications including:

- a. The development of an administrative records based city/county population estimation model.
- b. Development of city-specific estimate adjustment factors based on demographic characteristics change.
- c. Improve the estimation demographic characteristics for sub county areas.
- d. Improve our understanding of the change in the state's budget driver populations; the 0-4, 5-17 and 65 and over cohorts in particular.

**\*6. Small Area Population Estimate Expansion and Consolidation**

In the fall of 2012, OFM agreed to take possession of and run a small area demographic model originally purchased by the Department of Health known as the Krupski model. By doing so, OFM is helping DOH meet its planning and assessment needs and also expanding Population Unit's existing SAEP program to include population characteristics such as age, race and gender. In the upcoming year, staff should:

- a. Receive training on the development of the 2012 estimates.
- b. Master the Krupski model's proprietary programming system so we can update and manipulate the model as needed.
- c. Produce data sets and reports by geographic areas such as legislative district and school districts.
- d. Determine standard user friendly way to distribute this data on using an externally facing web interface.

**\*7. GMA County Projection Model Re-Write**

This project contains two parts: re-write the model in SAS or in combination of SAS and Octave and enhance the model itself. This project needs to start no later than 2014 to be ready for 2017 GMA update cycle. Funds may be needed if we need external help.

- a. The first task is urgent because the model is written in J language and we do not have staff to support it.
- b. While the cohort component model is the most efficient and flexible for county projections, the current design of migration projection is a simple allocation procedure to allocate the total migration at the state level. We need to develop and test a procedure that is able to project county level migration with valid data and assumptions.
- c. Develop procedures that can automatically generate tables and charts for evaluation and comparison.

**\*8. Population Estimates and Projections By Race**

This is a long overdue project. We need to start this in the summer of 2013 and complete as soon as possible. Numerous agencies try to get along with the one we produced in 2006.

- a. Re-write the model the bridging procedures used for the previous decade are no longer needed.
- b. Construct residual migration by race and age from 2000 and 2010 census data at state level.
- c. Create migration by race data by merging IRS data with decennial census records available thru the Census Data Center at the University of Washington.

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## 9. GIS Initiatives

- a. Analyze the accuracy of the SAEP data and PopCalc tools by comparing SAEP/PopCalc estimates to annexation census counts and federal census counts. Write up the results in a research brief or academic paper.
- b. Participate in the state master address file initiative.
- c. Participate in the State GIS portal project with the goals of improving the portal for all state GIS users and by making OFM's population and GIS data available to the public thru the portal's externally facing web interfaces.

## \*10. Washington Demographic Profile

The Population Unit produces an enormous amount of information each year across a broad demographic and geographic spectrum. It is our goal to provide a review of the demographic features of the state to assist planners, the media, state agencies (legislative staff in particular) and the general public with their demographic analysis needs.

- a. Simplify the Population Trends publication so that it meets only the statutory and standard needs.
- b. Produce a Washington State demographic profile each year for all geographic levels.
- c. Topics should include; population growth distribution by age and race, housing growth, income, poverty, labor and education. Comparisons with data from ACS (WA vs. US, and among the state such as metro vs. rural, or by regions).

## 11. Research Briefs

- a. Growth and migration--- patterns of young and aged population
- b. Immigration /foreign born and diversity of the state
- c. Migration between WA and other states, targeting college age movers
- d. Change of household composition and its implication and impact

## 12. Data Display Project

Provide effective ways to allow users to create their own tables/charts for analysis.

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