

**ALASKA STATE LEGISLATURE
SENATE TRANSPORTATION STANDING COMMITTEE**

February 14, 2023

1:31 p.m.

MEMBERS PRESENT

Senator James Kaufman, Chair
Senator David Wilson, Vice Chair
Senator Jesse Kiehl
Senator Robert Myers
Senator Löki Tobin

COMMITTEE CALENDAR

PRESENTATION: ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES STRATEGIC INVESTMENT DECISIONS AND TRANSPORTATION PLANNING DATA

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

JAMES MARKS, MBA, Director
Division of Statewide Program Development
Department of Transportation and Public Facilities
Juneau, Alaska

POSITION STATEMENT: Provided a presentation and answered questions about DOTPF Strategic Investment Decisions and Transportation Planning Data.

ACTION NARRATIVE

1:31:30 PM

CHAIR JAMES KAUFMAN called the Senate Transportation Standing Committee meeting to order at 1:31 p.m. Present at the call to order were Senators Wilson, Kiehl, Myers and Chair Kaufman. Senator Tobin arrived soon thereafter.

**ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
STRATEGIC INVESTMENT DECISIONS AND TRANSPORTATION PLANNING DATA**

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CHAIR KAUFMAN announced the consideration of a presentation by the Alaska Department of Transportation and Public Facilities about Strategic Investment Decisions and Transportation Planning Data.

JAMES MARKS, MBA, Director, Division of Statewide Program Development, Juneau, Alaska, presented the strategic investment decisions and transportation planning data. He began with slide 2, "Vision for Decision Making." He spoke about his role delivering the promises of the Infrastructure Investment and Jobs Act (IIJA). He stated, "That which is measured is improved."

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MR. MARKS introduced slide 3, "Agenda."

1) Retrospective

- Investment Decision Making
- Transportation Data
- Challenges

2) Planning

- Analytics Maturity Model
- Performance-Based Planning & Programming
- Strategic Investment Roadmap

3) Deployment

- Data Literacy Workshop
- The Summit
- Roadmap Action Plan

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MR. MARKS continued to slide 5, "Challenges." He noted that the scope and scale of funding decisions are larger in Alaska.

MR. MARKS described slide 6, "Challenges."

- Alaska ranks 47th in highway mileage
- Vulnerable Road Users account for >28% of fatalities (2021)
- Remote Communities reliant on air and marine travel
- Our freight must travel a long way, carrying the most VMT per ton in the nation
- Costs are higher in Alaska

- Cost efficiency is important

SENATOR TOBIN joined the meeting.

SENATOR MYERS requested a definition for "vulnerable road user."

MR. MARKS responded that the term was new and pertained to those at risk of serious injury or fatality including pedestrians and bicyclists.

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MR. MARKS reviewed slide 7, "Challenges, Shortcoming of our Data Practice."

1. Vision & strategy
2. Analytics maturity
3. Data governance
4. Data literacy
5. Manual Intervention

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MR. MARKS reviewed slide 8, "New Focus and Priorities in Investment."

Strategic Investment Areas

1. Safety
2. State of good repair
3. Economic vitality
4. Infrastructure resiliency
5. Sustainable transportation

Overarching Values

1. Equity
2. Access & mobility
3. Performance-management

SENATOR MYERS asked about future maintenance planning.

MR. MARKS replied that the long-range transportation plan addresses maintenance concerns. New infrastructure influences maintenance costs.

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MR. MARKS continued to slide 9, "Existing Quality Transportation Data."

- **Pavement Condition**

- Rutting, Cracking, IRI
- **Bridge Condition**
 - Substructure, Superstructure, Deck
- **Safety Data**
 - Crashes, Injuries, Deaths
- **Travel Time Reliability**
- **Linear Reference System (Geospatial Highway Data)**

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MR. MARKS continued to slide 10, "Continuous Improvement." He spoke about the prioritization processes. He shared an example about bridge evaluation criteria. He highlighted collaboration with various experts. The criteria favored bridge replacements. He spoke to the value of preservation and replacement. The department's approach involves the evaluation of proactive criteria 40 percent of the time. The slide detailed the improvement criteria while contrasting 2022 with 2023.

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SENATOR TOBIN asked about bridge criteria and the additional funds used to retrofit bridges for vulnerable and multimodal travelers.

MR. MARKS replied that the United States Department of Transportation published policy statements. He mentioned the federal Bridge Investment Formula Program, which provides Alaska approximately \$45 million annually. The criteria displayed in slide 10 enables the department to evaluate their own assets. He pointed to the department's Community Bridge Investment Program (CBIP). The expenses require no match. The department will solicit applications for community bridge projects.

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CHAIR KAUFMAN asked if the criteria changes altered the slate of projects.

MR. MARKS replied that the changes allow for a more diversified portfolio investment. He expected prioritization to change with the new criteria.

CHAIR KAUFMAN noted interest in seeing how the prioritized list changed as a result of the changes in project criteria.

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MR. MARKS continued to slide 12, "Analytics Maturity Model." He informed the committee that descriptive analytics illustrate past data. Diagnostic analytics show insight. Predictive analytics allow for potentials. Prescriptive analytics foresee project optimization.

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CHAIR KAUFMAN asked about the graph and the axis labeled "difficulty." He wondered if difficulty was the most accurate description.

MR. MARKS answered that difficulty pertained to the level of effort, competency and sophistication of the information systems. The funding component contributes to the difficulty axis.

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SENATOR WILSON asked about a comprehensive maintenance plan.

MR. MARKS responded that the analytical models do not detail comprehensive maintenance plans.

SENATOR KIEHL asked about the anticipated outcomes or results. He assumed that the model provided analytics related to pavement life. He asked how the data can be used for econometrics and a more prosperous roadway through a given area. He wished to know more about the uses of the analytics maturity model.

MR. MARKS responded that other states and agencies use similar models to evaluate projects and their effect on the economy and equity gaps in transportation infrastructure.

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MR. MARKS continued to slide 13, "Cyclical Improvement." The reports include reconnaissance studies, institution creation, and community coordination. He spoke about project delivery as the final step. Feedback loops help inform future planning efforts. The diagnostic information allows the department to anticipate future project needs.

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MR. MARKS continued to slide 14, "Strategic Investment Decision Making." He quoted Stephen Covey, "Begin with the end in mind." The department plan spans 20 years. Midrange planning is more tangible as it looks back 15 years. He mentioned the 12-year comprehensive highway program and questions about advancing and

choosing the right projects. He informed the committee that the state had billions of dollars' worth of project needs.

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SENATOR TOBIN expressed curiosity about long-term horizon projects in Alaska. Project necessity changes with time. She asked how the legislature can help plan and complete large projects.

MR. MARKS replied that once federal dollars are contributed to a project, the expectation is to carry the project to completion. If the project is not completed on time, the state must pay the federal government back with state funds. Some projects do not obligate future investment. With socioeconomic changes over time, a project may not be appropriate anymore. He spoke about identifying "off-ramps" for projects that do not make sense any longer. He referenced portfolio projects that span decades without completion.

SENATOR TOBIN asked what the legislature can do to help the department create the mentioned "off-ramps." She pointed to a project in Anchorage where the federal funds were already spent, and Anchorage cannot afford to absorb the costs.

MR. MARKS replied that he will confer with his associates and provide the committee additional information.

SENATOR WILSON contributed examples of incomplete long-horizon projects in Alaska. He wondered how to streamline projects. He asked how the legislature can help facilitate efficiency with transportation planning. He proposed Department of Transportation and Public Facilities (DOTPF) quadfurcation.

CHAIR KAUFMAN echoed his colleagues' statements. He requested a response from the department.

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MR. MARKS replied that he and the commissioner were men of action. The commissioner initiated an effort called "Transportation X," which involves a focus on high-risk projects. Addressing safety issues wholistically is a large priority for the department. He mentioned a risk profile method to prioritize projects. The department was acutely aware of the issue the community brought forward.

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CHAIR KAUFMAN discussed the value of growth models for predictive planning. A poorly planned project was prone to incompleteness. He suggested nimble project plans. He provided an example about the jet propulsion industry and its history with project planning.

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MR. MARKS continued to slide 15, "What is PBPP?"

Performance-based Planning & Programming (PBPP)

- is a data-informed framework that ensures decisions make progress toward goal attainment
- communicates performance implications of different decisions
- data informs, it does not dictate

Data: focuses the conversation and provides a level playing field for comparison.

Defensible Decision-Making: that drives performance and ensures equity.

Judgement: interprets the data in the right context and sets priorities.

MR. MARKS stated that the federal government requires performance-based planning and programming.

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MR. MARKS continued to slide 16, "Building the Roadmap Focusing on Decision Points." He noted that the graph depicts the framework connecting plans with programming. He mentioned the various steps required to score, schedule and select projects for construction.

CHAIR KAUFMAN noted similarities between Performance-based Planning and Programming (PBPP) and the capital value process used in private-sector projects.

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MR. MARKS highlighted the complexity in state funding and program organization. He explained that the steps for a federal versus state program differed in planning potential. The department organizes the path a project takes for the public. He mentioned a new focus in economic vitality, which requires objectives, criteria and funding mechanisms.

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SENATOR TOBIN commented on the public confusion about the Statewide Transportation Improvement Process (STIP). She wondered how to streamline the process for communities.

MR. MARKS replied that the department is working on community engagement and information accessibility. The department solicits opinions prior to project planning and implementation. The time allowed for public comment was deemed insufficient. Initiating a complete community transportation program requires nine to twelve months because of the time spent engaging the public. The department recognizes that traditional means of engaging the public are insufficient. The department is striving for active outreach in response to public opinion.

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SENATOR TOBIN asked if the department would approach the legislature for additional resources to meet the public needs and efficiently utilize federal dollars.

MR. MARKS opined that partnerships are the solution. He mentioned a partnership with the Alaska Municipal League for community outreach. He spoke to the value of private-industry contracts.

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CHAIR KAUFMAN asked if the process is multimodal. He asked if PBPP pertained to public facility projects within the department.

MR. MARKS responded no, but the commissioner seeks integration between transportation and public facilities planning.

CHAIR KAUFMAN recalled a management process created for mega projects. He asked if the department contains a procedural management process or if sub-elements are pieced together.

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MR. MARKS explained the need for an overarching strategy to utilize investments efficiently. A repeatable evaluation process allows for clear and transparent data. He sought to make data-driven decisions. The cohesive strategy involves the department efforts to engage the issue.

CHAIR KAUFMAN restated the department goals of conceptualizing, evaluating and executing projects.

MR. MARKS agreed with the depiction of the model.

CHAIR KAUFMAN appreciated the simplification of the model and process.

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MR. MARKS continued to slide 18, "What are we doing about it?"

- Organizational data literacy & awareness
 - Data literacy workshop, Planning-data summit
- Vision & Strategy
 - Creation of Planning Data Roadmap, Strategic Investment Plan, Data Business Plan
- Analytics Maturity
 - Organizational Capacity Building, Dedicating Staff & Resources, Reorganization, Structured Training Plans
- Insufficient data governance
 - Relooking at data governance with fresh perspective

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MR. MARKS moved to slide 19, "Data Literacy Workshop."

What is Data Literacy?

It is the ability to...

- Read data
- Analyze data
- Communicate with data
- Argue with data

Data Literacy Workshop

- Raise awareness & data literacy
- Demos from data managers, stewards, and custodians
- >80 online participants
- Hold regular cadence of Data Literacy Workshops

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MR. MARKS continued to slide 20, "Planning Data Summit, Do More With Data." The goal of the summit was to engage feedback about the data that was obtained. He noted that the summit received robust attendance for the tabletop exercises and active solicitation of feedback.

MR. MARKS continued to slide 21, "Attendance." The slide details the summit attendees.

- Alaska Department of Transportation & Public Facilities
- Alaska Department of Commerce, Community & Economic Development
- Alaska Department of Natural Resources (Alaska GIS Office)
- Alaska Municipal League
- Anchorage Metropolitan Area
- Transportation Solutions (AMATS)
- City of Palmer
- Copper Valley Development Association (CVDA)
- Chronic Disease Prevention & Health Promotion
- Fairbanks Area Surface Transportation (FAST) Planning
- Federal Highways Administration (FHWA) Alaska & Headquarters
- Matanuska-Susitna Borough
- Municipality of Anchorage
- Oregon DOT
- Texas A&M Transportation Institute
- Virginia DOT
- Washington DOT
- Western Federal Lands

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SENATOR WILSON noticed that the attendees lived on road systems. He wondered about attendance from off-road communities.

MR. MARKS replied that the invitation was targeted for transportation planning organizations. The long-term goal is for an annual summit for transportation planners across the state. The summit strives for collective use of data awareness and decision making. He stated that municipality managers will be invited to next year's Planning Data Summit.

CHAIR KAUFMAN appreciated the wholistic approach the annual transportation summit offered.

MR. MARKS stated the department objective to improve data-driven decision making.

CHAIR KAUFMAN expressed gratitude to the presenter and the department for their diligence.

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MR. MARKS continued to slide 22, "Goals and Objectives."

- Demonstrate what's possible
- Organizational data literacy
- Organizational competency
- Tabletop visioning exercises
- Create a data-informed culture
- Create workplan for 2023 to improve

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MR. MARKS continued to slide 23, "Summit Agenda."

- Lectures
- Tabletop exercise
- Poster Session
- Application Demonstration
- Professional Panels

MR. MARKS continued to slide 24, "Software Demos." He stated that the accessibility of the data was one of the major challenges and goals.

- Data Catalog
- GIS Applications
- Traffic Data Portal

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MR. MARKS continued to slides 25 and 26, "Breakout Tabletop Exercise."

Identify data challenges...

1. Inadequate staff or bandwidth
2. Training for awareness, access, and utilization
3. Timeliness of data; Missing data

4. Lack of tools

...and solutions

1. Dedicated staff to planning data analytics & science
2. Training on how to access and use
3. Common data language & lexicon

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MR. MARKS continued to slide 27, "Interactive Tabletop Exercise." The discussions involved topics like challenges, solutions, and recommendations. The tabletop exercises included subjects like data quality, completeness, and literacy.

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SENATOR TOBIN credited the department with comprehensive use of data. The summit gathering allowed for contribution toward collective goals.

MR. MARKS responded with gratitude for the committee participation and comments.

CHAIR KAUFMAN stated appreciation for the focus on data.

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MR. MARKS continued to slide 28, "Strategic Roadmap Action Plan Data Governance."

Short-term

- Develop a Strategic Data Plan that includes a dataset inventory, identified gaps, roles and processes to address challenges.

Mid-term

- Determine which datasets are of statewide significance

Long-term

- Build off data governance priorities to continue centralizing data, assessing use cases, and determining ownership.

MR. MARKS moved to slide 29 "Strategic Roadmap Action Plan."

Lead technologist / business manager: Provides strategic oversight and develops the essential skills of the team to draw meaningful insights from data. Coordinates with business leads to understand needs, provides access to raw data, develops automated reporting, and enforces appropriate data governance.

Decision scientist: Facilitates the identification of prioritization criteria in alignment with agency goals and metrics, assesses performance impacts of investments, elicits agency priorities, and coordinates the validation of scoring processes with department experts.

Data scientist: Develops and applies mathematics and statistics to quickly explore business queries, build predictive models, and develop analytical tools/products.

Business analyst: Helps translate data into compelling digital and static visualizations for internal and public-facing reports and dashboards. **Spatial analyst:** Joins disparate data to site locations to support corridor prioritizations and empower regional planners/engineers to better scope candidate projects.

Data architect/engineer: Responsible for designing, integrating, and maintaining datasets that can be leveraged for various business purposes.

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SENATOR KIEHL wondered about cultural shifts within the department.

MR. MARKS responded that the culture in the department is evolving toward data-informed decision making. Remnants of the prior culture remain; however, the humanitarian aspect of transportation planning was primary.

SENATOR WILSON wondered how to help state department cultures evolve.

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MR. MARKS replied that the cultural evolution requires collaboration and explanations about the reasons for the proposed changes. He highlighted the importance of communication and partnership.

MR. MARKS detailed slide 30, "Strategic Roadmap Action Plan Expand Agency Capabilities."

1. Continuous feedback loops
2. Evaluation & improvement of data practices
3. Evaluation & improvement of information systems
4. Individualized (by section & role) training plan
5. Develop training playbooks
6. Reorganization
7. Dedicated staff & resources

MR. MARKS moved to slide 31, "Strategic Roadmap Action Plan Resource Allocation."

Strategic Investment Areas

1. Safety
2. State of Good Repair
3. Economic Vitality
4. Resiliency
5. Sustainability

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SENATOR TOBIN stated that she will contact the department directly with further questions.

CHAIR KAUFMAN offered to funnel questions through his office. He expressed that the tipping point to change is trust. He opined that the department was moving toward more function and organization with the data-driven approach.

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There being no further business to come before the committee, Chair Kaufman adjourned the Senate Transportation Standing Committee meeting at 3:01 p.m.