Designing a Roadmap for Success
Workforce Planning for DOTs in Today's Economy

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August 20, 2019
Technical Session C2

VDOT OF TOMORROW

Building the agency for the future

VDOT Chief Deputy Commissioner Rob Cary, P.E., L.S.

Virginia: A Leading State + DOT

▶ **Virginia is ranked No. 1 by CNBC as the 2019 Top State for Business**

▶ **Virginia is 7th in the nation for the number of Fortune 1000 companies**

▶ **Home to more than 60 colleges and universities**

▶ **8.5 million citizens**

▶ **Virginia is the 3rd largest state DOT**

Key People Trends at VDOT

49	**15**	**17%**	**34%**	**71%**	**50%**
AVERAGE AGE OF EMPLOYEES	AVERAGE YEARS OF SERVICE	ARE MORE THAN 60 YEARS OLD	HAVE COLLEGE DEGREE	EMPLOYEES HAVE NETWORK ACCESS	DISTRICT EMPLOYEES HAVE NETWORK ACCESS

RETIREMENT	**VACANCY**	**RETENTION**	**TELEWORKING**
Retirement eligibly is high	Vacancies have seen a slight uptick from normal, specifically in positions in rural areas	Technical job retention is lower than other positions in VDOT	Teleworking is only used by 22% of those eligible

Data effective April 1, 2019

VDOT Business Plan

We will develop a highly-trained workforce, able to meet today's objectives while being prepared to anticipate and tackle tomorrow's opportunities.

- **Define Workforce of Tomorrow**
- **Develop Leaders of Tomorrow**
- **Strengthen the Knowledge Base**

VDOT's Vision of the Future

A future transportation system that delivers safer, faster and more-efficient mobility.

- Frictionless, automated, personalized travel in **Urban Areas**

- Connected, resilient **Rural Areas** across the Commonwealth of Virginia

- Interconnected highways, bridges, tunnels, waterways and transit hubs through **Smart Infrastructure**

- Innovation through connected, electric, and **Autonomous Vehicles** and shifting attitudes toward mobility

- **New Funding Streams** through dynamic user charging and new monetization strategies

Industry Trends, Disruptors + Accelerators

The broadest forces shaping the future of transportation.

WORK
The fundamental nature of the work performed to achieve mission outcomes

WORKFORCE
The portfolio of talent and skills tapped to perform the work

WORKPLACE
The environment and policies – not just the physical structures or location – utilized to maximize collaboration and consistency of the talent experience and efficiency and cost-effectiveness for VDOT
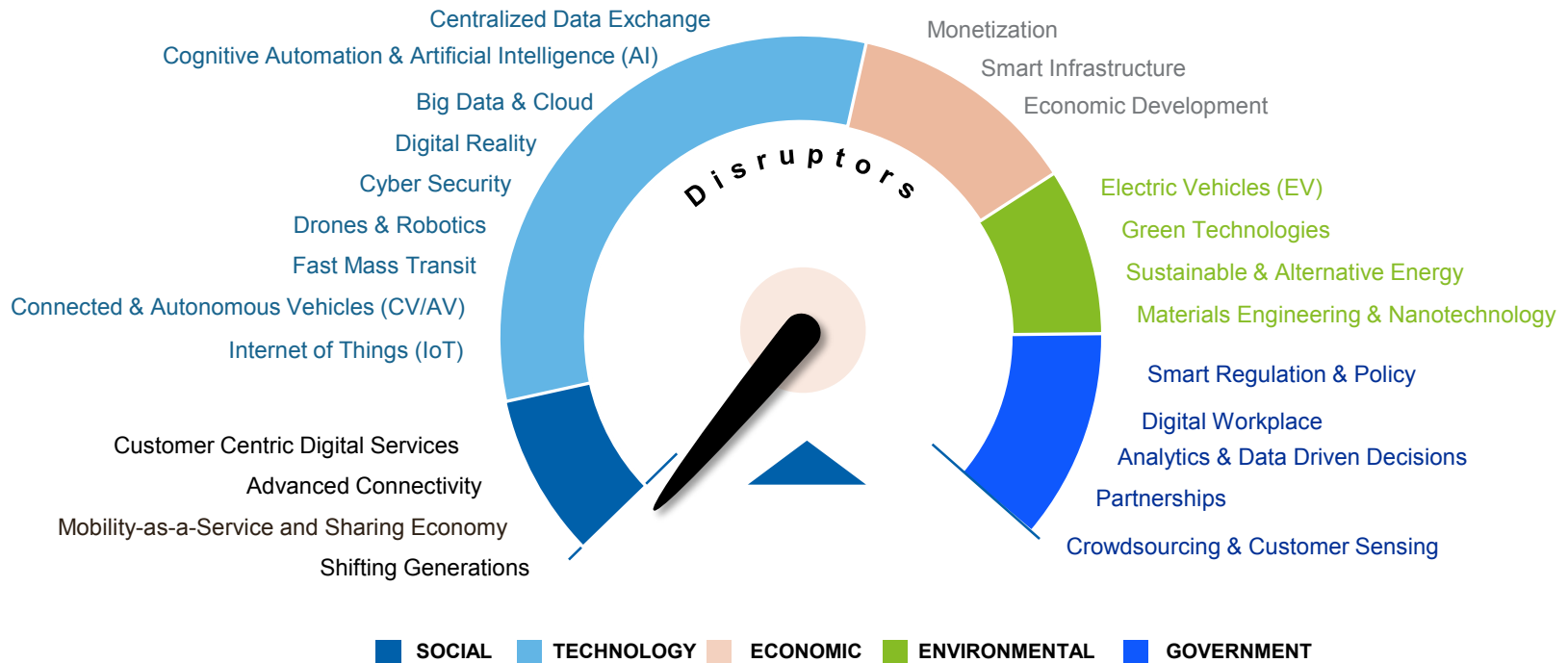
Technology

Social

Environment

Economic

Government

Transportation Disruptors

Underpinning macro trends are 25 significant internal and external forces challenging DOTs to operate in new ways

Centralized Data Exchange
Cognitive Automation & Artificial Intelligence (AI)
Big Data & Cloud
Digital Reality
Cyber Security
Drones & Robotics
Fast Mass Transit
Connected & Autonomous Vehicles (CV/AV)
Internet of Things (IoT)

Monetization
Smart Infrastructure
Economic Development

Electric Vehicles (EV)
Green Technologies
Sustainable & Alternative Energy
Materials Engineering & Nanotechnology

Disruptors

Customer Centric Digital Services
Advanced Connectivity
Mobility-as-a-Service and Sharing Economy
Shifting Generations

Smart Regulation & Policy
Digital Workplace
Analytics & Data Driven Decisions
Partnerships
Crowdsourcing & Customer Sensing

■ SOCIAL ■ TECHNOLOGY ■ ECONOMIC ■ ENVIRONMENTAL ■ GOVERNMENT

Information-seeking Stage

12 **Focus groups** conducted across VDOT's districts and directorates with 80+ participants

8 **Interviews** conducted to gather leadership perspective
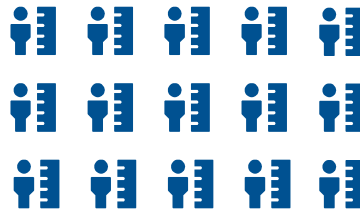
27 **Technical and human skills identified** as critical to VDOT's future

8 **Non-traditional competitors** analyzed to gather insights on how they are recruiting the key talent that VDOT needs

15 **Key HR data metrics** reviewed

24 **Diverse voices from across VDOT came together** to prioritize the work and workforce initiatives that VDOT – and this project – should focus on first

Virginia Department of Transportation

VDOT

How We Get There

1 PREPARE OUR PEOPLE	2 EMPOWER INNOVATION	3 MODERNIZE OUR METHODS
▪ Development ▪ Strategic hiring ▪ Training ▪ Mentoring	▪ Challenge the norm ▪ Create ▪ Adapt ▪ Think differently	▪ Improve processes ▪ Create efficiencies ▪ Modernize procedures ▪ Update strategies

Strategic Initiatives | VDOT of Tomorrow

1	**TECH FLUENCY**		**6**	**IT STRATEGY**
2	**CYBER-RISK AWARENESS**		**7**	**INNOVATION STRATEGY**
3	**TWO-WAY MENTORING**		**8**	**BUILDING FUTURE SKILLS**
4	**FIELD-BASED LEARNING**		**9**	**DATA SCIENCE HUB**
5	**BOT MANAGEMENT**		**10**	**FUTURE WORKPLACE**

Planning + Implementation

		FY20				FY21				FY22			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

QUICK WINS

1. Enhance tech fluency across VDOT's workforce
2. Promote cyber risk awareness through a comprehensive cyber education strategy
3. Establish two-way mentorship program
4. Create and implement interactive scenario-based learning for field operations
5. Build bot management capacity with a Digital Worker Implementation Team

MOMENTUM MAKERS

6. Conduct technical skills assessment, workforce planning, and recruitment analysis for prioritized workforce segments
7. Build an agency-wide information technology (IT) strategy
8. Scale innovation capacity across VDOT through a strategic, coordinated approach
9. Consolidate VDOT's data science expertise through a "hub and spoke" nerve center model
10. Develop future workplace strategy to support recruitment & retention

Ongoing change management and communications activities to ensure employee engagement, excitement, and understanding of the VDOT of Tomorrow project

*VDOT FY: July 1 - June 30

VDOT

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Designing a Road Map for Success

GDOT's Innovative and Collaborative Approach to Workforce Planning in Today's Economy

Brian Robinson, Deputy HR Director

Georgia Department of Transportation

Mission

- Deliver a transportation system focused on innovation, safety, sustainability and mobility

Strategic Goals

- *Recruit, train and retain a quality workforce*
- Invest in safety for Georgians and GDOT employees
- Efficiently take care of what we have
- Deliver all projects on time and on budget
- Invest to improve reliability, congestion, and connectivity

National Workforce Trends

- Increase in number of employees eligible for retirement
- Employees entering workforce today are interested in multiple "careers" throughout their work life
- Decrease in average tenure on job
- Rapid changes in work due to increase in new technologies
- Increase in competition for qualified employees

Impact to GDOT?

- In order to be competitive in today's market place, GDOT must be strategic in how we:
  - Recruit and attract new employees
  - Train and develop our existing staff
    - To be successful in current role
    - To be prepared for future positions
  - Retain our existing workforce

- Requires targeted workforce planning and development
  - Data driven focus

Workforce Planning and Development

- Balancing Act
  - Current vs future workforce needs
  - Build, buy or borrow needed skills

- Constraints
  - Budget
  - Authorized head counts
  - Time
  - State classification and compensation structures
  - Marketplace

Workforce Planning and Development

- GDOT involved in extensive workforce planning efforts since 2013

- Identify the number of employees required to meet strategic objectives and re-evaluate business operations in order to deliver a significantly larger program within authorized headcount
  - Align organizational structure with strategic goals
  - Perform gap analysis and develop workforce plans for each office/district
  - Identify operational efficiencies
  - Capture and document staffing levels
  - Update job descriptions and qualifications
  - Link to performance management

Strategic Workforce Data Analysis

- Data analysis provides opportunities for HR to collaborate with GDOT management on strategic workforce planning decisions
    - Forecast retirements and analyze positions with weak "bench strength"
    - Engage in knowledge management activities
    - Coordinate a variety of succession planning efforts
    - Develop specialized recruitment plans

HR's Innovative and Collaborative Approach to Data Analysis

- Partnered with GA Tech in the development of a workforce planning and data tool to leverage and analyze employee data
  - Retirement Projections
  - Knowledge Loss Risk Assessments
  - Network Analyses
  - Succession Planning

Screenshot of Mapping Feature Engineers with PE License

Name	District-Area	Working Title	Tenure at Position	Pay Grade	PE	EIT	Address	<0	0-1	1-3	3-5	5-10	>10
	6-0	Mgr 2, Civil Engineering	1-3	O	Yes		500 Joe Frank Harris Pkwy , Cartersville, GA 30120	0	0	0	0	1	0
	0-0	Civil Engineering 3	1-3	K	Yes		600 West Peachtree NW, Atlanta, GA 30308	0	0	0	0	0	1
	0-0	Program Mgr (Non-IT) 2	1-3	O	Yes		600 West Peachtree NW, Atlanta, GA 30308	1	0	0	0	0	0
	0-0	Sr Mgr 1, Transport Specialist	1-3	Q	Yes		600 West Peachtree NW, Atlanta, GA 30308	0	0	0	0	0	1
	0-0	Transportation Specialist 5	1-3	M	Yes		600 West Peachtree NW, Atlanta, GA 30308	0	0	0	0	1	0
	0-0	Mgr 1, Civil Engineering	1-3	N	Yes		600 West Peachtree NW, Atlanta, GA 30308	0	0	0	0	0	1

Screenshot of Network Analysis Module
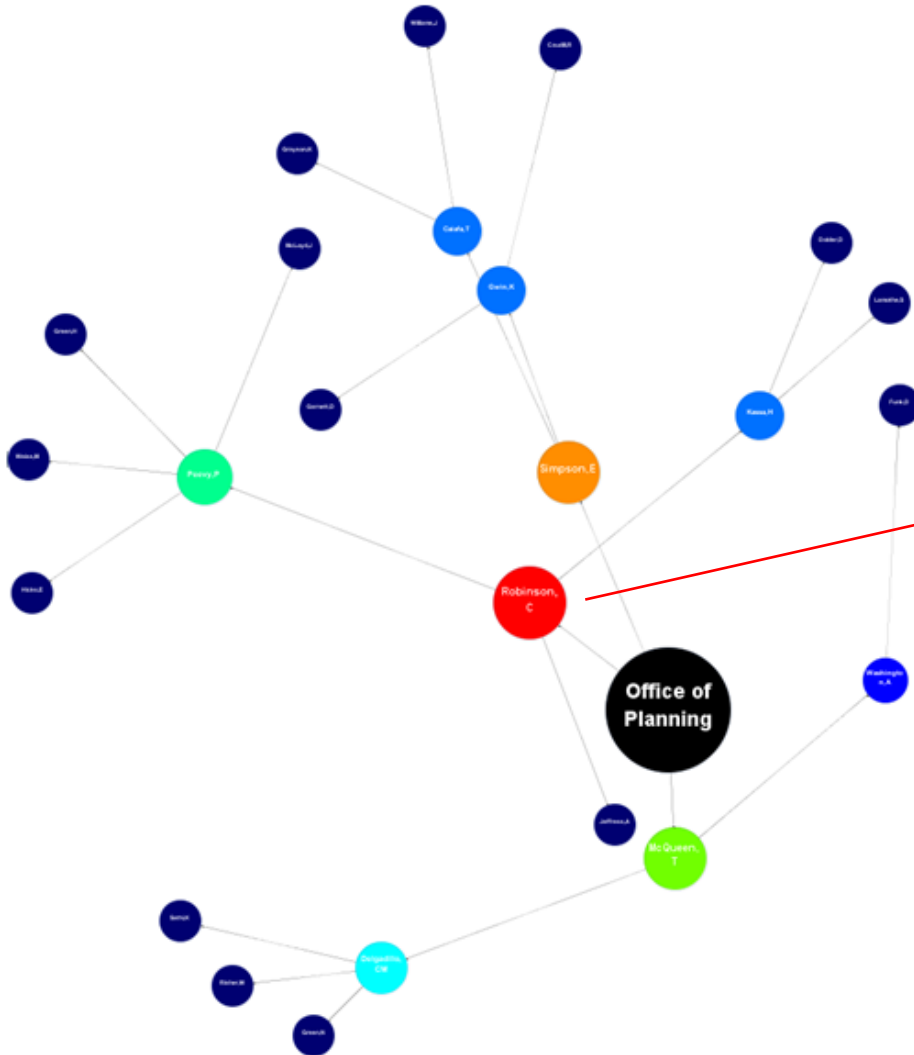
Department ID	4840190012
Department	Planning Urban
Charge Dept ID	484C019001
Charge Dept	PLANNING
Fund Source ID	See Project
Fund Source	
Program ID	4181901
Program	Planning
Employee ID	00915886
Name	
Gender	M
Ethnic Group	2
Age	42
Job Code	TRM064
Job Title	Sr.Mgr1,Planning Ast Off Head
Job Entry Date	08/16/2017
Position Entry Date	08/16/2017
Position Number	00129623
FLSA	E
Pay Grade	P
Annual Rate	
Pay Group	SS1
Original Hire Date	11/16/2006
Rehire Date	11/16/2006
Tenure	12
Regular/Temporary	R
Drug Test Flag	N
County	Dekalb
Classified Indicator	
PE	true
EIT	true
Reports To	00129619
Supervisor Name	
Supervisor Job COde	TRM065
Supervisor Job Title	Sr Mgr 2,Planning Office Head
Position Level	2

Screenshot of Cross Training Module

Turnover Data Analysis

- Turnover in 2 major program areas
  - Field maintenance staff – high turnover early in career
  - Civil engineers – early to mid-level employees

- Impact of Turnover
  - Loss of institutional knowledge
  - Impact to operations (current and future)
  - Impact to future applicant pools

- ***Some level of turnover is natural and can actually be healthy to the success of an organization***

- ***Why high performing/high potential employees leave is important***

National Workforce Trends

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While these present challenges, they also present exciting opportunities for recruitment and retention efforts

Strategic Recruitment Activities

- Dedicated recruitment staff
  - Civil Engineering, Construction, HERO, Maintenance

- Partnerships across the state/region
  - District management and HR staff
  - ABET-accredited colleges and universities
  - Technical school system
  - Other state agencies

- Community and grass-roots efforts

- Online and social media

- Internship and Co-op programs

- Differentiating GDOT from competitors

Innovative Succession Planning and Knowledge Transfer Strategies

- Field Maintenance Staff
  - Bootcamp for new employees
  - CDL incentive program
- Civil Engineer Staff
  - Road Design's RAPID Program
  - PEDP
- Supervisor/Management Staff
  - Management Development Program
  - District Leadership Programs
  - Succession Planning Program

- Mentoring/Networking
  - GDOTConnect
  - Informal mentoring / job shadowing
- Traffic Operations
  - Innovative projects/ software development
    - AUDI
- In-House Academies
  - Foreman
  - Area Manager
  - Project Engineer

Internship and Co-op Programs
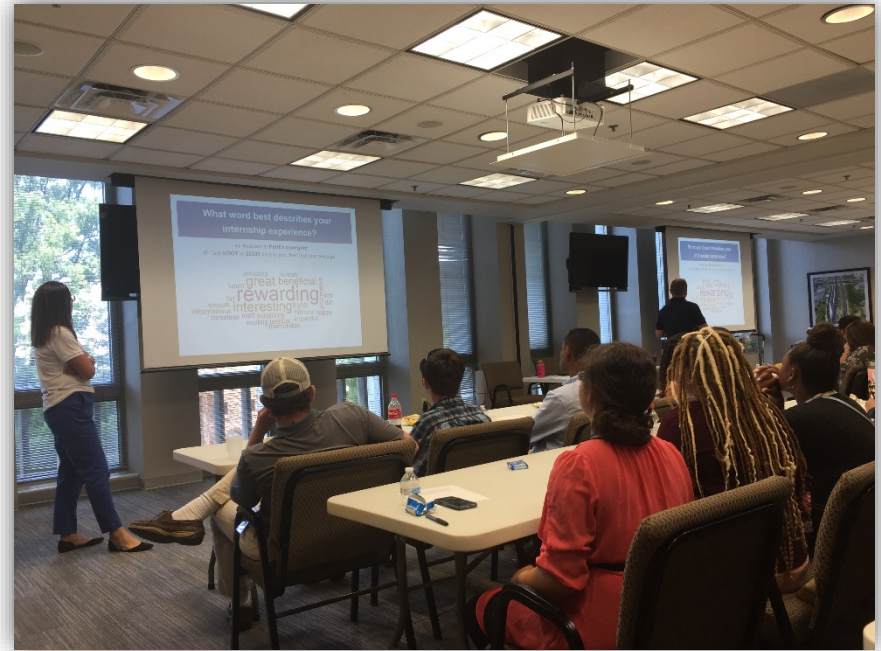
Summary

- Our workforce is our most valuable asset – our success is dependent upon our ability to recruit, train and maintain a skilled and experienced workforce – both for today and for the future

- GDOT takes a comprehensive, data driven approach to addressing workforce and succession planning challenges through innovation and collaboration

- These initiatives take the entire GDOT team, from executive management, to our district engineers, office heads, supervisors, employees and interns – all bringing innovative solutions to the table to make GDOT better and to enhance the GDOT Experience.

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