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STATE HIGHWAY ADMINISTRATION

RESEARCH REPORT

DEVELOPING A COMPREHENSIVE SYSTEM TO ILLUSTRATE THE CAREER PATHWAYS WITHIN MDOT SHA

YAO CHENG, SAED RAHWANJI

UNIVERSITY OF MARYLAND,
COLLEGE PARK

FINAL REPORT

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16. Abstract

This project addresses the critical issue of workforce shortages within the Maryland Department of Transportation State Highway Administration (MDOT SHA), focusing on the development of a comprehensive career pathway system aimed at enhancing employee retention, job satisfaction, and organizational efficiency. Due to persistent challenges in recruiting and retaining qualified personnel, particularly for mid-level and FMT positions, this initiative targets systemic improvements in career development support provided to MDOT SHA employees.

The project's primary objective is to design and implement an integrated career advancement system within MDOT SHA's existing Cornerstone Learning Management System (LMS). This new system clearly outlined responsibilities, required competencies, benefits, and performance expectations for all job classifications, allowing employees to visualize and actively pursue personalized career paths.

Methodologically, the project employs extensive literature reviews and comprehensive surveys to capture current challenges and effective strategies in career path development. Furthermore, existing functions within Cornerstone LMS and other external resources were assessed to identify gaps and necessary additions to the system. The resultant deliverables include a detailed compilation of feasible career paths and an enriched, fully-populated LMS tailored specifically for MDOT SHA's workforce needs.

By integrating robust career planning features into a user-friendly digital platform, this initiative aims to significantly enhance job satisfaction, streamline skill development, and reduce attrition rates. Ultimately, the project is expected to foster a proactive, transparent, and supportive career development culture within MDOT SHA, thereby strengthening workforce stability and operational effectiveness.

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Chapter 1. Introduction

1.1 Research Background

Several offices within the Maryland State Highway Administration (MDOT SHA) have been facing staffing shortages for years. Employees may retire, take a break or change their job to Federal Highway Administration (FHWA), County or City Departments of Transportation (DOTs), other public agencies or private sectors. While the employees often see colleagues leave their positions, it takes a long time to find skilled and knowledgeable candidates to fill vacancies, particularly for mid-level and senior positions. This shortage of staff puts an additional burden on existing employees, decreases agency work efficiency, increases stress levels, and can lead to further resignations, creating a vicious cycle.

Such difficulty in recruiting and retaining employees in SHA can be attributed to various reasons, including both macro factors, such as economic conditions, budget constraints, competition of talent, and SHA-specific concerns. For instance, entry-level traffic engineers may find themselves having to deal with business, budget, and administrative work, which they may not be interested in or equipped with the necessary skills and knowledge to handle. Newly promoted senior staff may struggle with managing a medium-sized team due to a lack of sufficient management and leadership skills. Overall, employees may have to work on tasks that do not align with their interests, skills, or comfort level at some point.

One of the root causes of these phenomena is the absence of sufficient support for employees to define and pursue career paths. Without clear career goals and advancement paths, employees may find it challenging to identify the skills, knowledge, and certifications they need to improve themselves for their current and future positions, despite the abundance of training materials available through the Cornerstone Learning Management System (LMS). While Cornerstone LMS, as a web-based platform, provides a vast array of technical and non-technical training courses, the training materials and topics are not organized in a robust enough manner to help employees identify courses that align with their career pathways. As a result, employees may not be making the most of the available training resources to further their career development.

To address this issue, SHA considers providing additional support to employees in developing career plans and identifying relevant training resources on Cornerstone LMS. This could involve offering guidance programs to help employees create their customized career pathways, navigate the available training materials and identify courses that align with their career pathways. By providing more targeted support for employee career development, it is expected that SHA can help alleviate the staffing shortages and improve employee retention. Moreover, it is crucial for supervisors to comprehend their employees' career paths, provide timely support, and anticipate signs of resignation.

The staffing shortage and lack of supportive tools for career development are not unique issues to SHA. As of September 2022, there were 10.1 million job openings nationwide, but only 5.8 million unemployed workers available [1]. In a survey of 1,100 state and local government employees, six out of ten respondents reported an increasing number of people leaving their jobs in recent years, and 80% reported added strain on their workload [2]. Moreover, the existing

career development tools and resources, both within and outside of SHA, often fail to provide personalized and actionable insights that enable employees to clearly understand their strengths and areas for improvement, identify potential career paths, and develop the necessary skills and competencies to achieve their goals. As a result, employers are unable to retain talent and promote internal career progression, leading to high recruitment and training costs and reduced employee morale, as exemplified by the ongoing workforce shortage at SHA.

Therefore, there is an urgent need for a tool that can provide personalized career development guidance to employees at SHA. This tool should enable employees to make informed decisions about their career path and provide them with the necessary resources and support to achieve their goals within the organization. It should be user-friendly, accessible, and integrate feedback from managers to provide a holistic view of an employee's performance, strengths, and areas for development.

1.2 Research Objectives

The overarching objective of this research is to enhance SHA's ability to attract, develop, and retain a high-performing workforce through the implementation of an empirically grounded career-pathway visualization system. The specific aims of the project include:

- **Classification Mapping**: To create a complete and structured inventory of job classifications across MDOT SHA, including position definitions, promotion hierarchies, and salary grades.

- **Pathway Modeling**: To identify viable vertical and lateral advancement routes between job classifications and categorize them into meaningful progression scenarios.

- **Cornerstone LMS Integration**: To populate the agency's incumbent learning management system with updated classification data, responsibilities, and career linkages.

- **Employee Support**: To offer employees a tool that allows for intuitive exploration of advancement opportunities, required training, and long-term career planning.

By achieving these objectives, the system will serve both operational and strategic functions, facilitate immediate human resource (HR) support, and enable long-term workforce planning.

1.3 Report Organization

This report is organized into several chapters, each addressing specific dimensions of the comprehensive career pathway development effort within MDOT SHA. Each chapter systematically addresses the defined research objectives, from background context through implementation and prospective advancements, providing clear connections among the study's analytical and practical outcomes. The remaining chapters are organized as follows:

Chapter 2 explores macroeconomic factors influencing labor shortages, skill gaps, and turnover rates in government agencies, and situating SHA's challenges within a national context.

Furthermore, it critically assesses existing strategies and technologies designed to enhance employee retention and career growth, examining their applicability and limitations relative to SHA's specific organizational and operational contexts.

Chapter 3 details the empirical foundation for the career pathway analysis conducted in this project. This includes an introduction to the data collection methodologies employed, such as employee surveys, organizational charts, and official job classification specifications. The chapter describes the design, distribution, and analysis of an employee questionnaire that provides direct insights into staffing challenges, promotional bottlenecks, and employee development needs. The qualitative and quantitative findings derived from these data sources underpin subsequent analytical activities.

Chapter 4 articulates the systematic approach employed to analyze job classifications and to establish clear, structured career pathways within SHA. It describes the process of identifying classification pairs, categorizing these pairs based on their viability as advancement paths, and establishing precise criteria for defining adjacency between classification series. The methodological rigor detailed in this chapter ensures the validity and applicability of the pathways ultimately recommended for integration into the learning management system.

Chapter 5 documents the practical phase of integrating the developed career pathway framework into SHA's Cornerstone LMS. It describes in detail the steps taken to consolidate source materials, map responsibilities to job roles, and populate system modules with structured career information. Additionally, the chapter highlights the creation and provision of instructional video tutorials intended to support employee navigation of the new career pathway visualization system.

Chapter 6 offers a forward-looking exploration of how the career pathway system could be expanded and refined in subsequent project phases. Building upon feedback from the initial implementation, this chapter outlines a series of targeted enhancements, including advanced multi-level visualization of pathways, clearer definitions of cross-functional advancement routes, integration of explicit timelines for career progression, and the linkage of specific training resources to each career stage. It emphasizes the anticipated benefits of these proposed enhancements and provides preliminary considerations for successful deployment and adoption.

Chapter 7 summarizes the key accomplishments achieved through this project, synthesizing findings and practical outcomes. It highlights how the newly developed career pathway framework can directly address SHA's identified workforce development issues. Furthermore, the chapter enumerates the expected organizational benefits in terms of workforce retention, employee engagement, and strategic workforce planning. Finally, it outlines recommendations for future research and practice, suggesting avenues through which the career development system can be continuously improved and adapted to evolving organizational needs.

Chapter 2. Literature Review –Workforce Trends and Career Pathway Strategies

2.1 Macro-Level Workforce Shortages

The contemporary U.S. labor market is characterized by a persistent disequilibrium in which aggregate labor demand materially exceeds available labor supply. In September 2022, national statistics indicated approximately 10.1 million posted vacancies but only 5.8 million unemployed people, producing a vacancy-to-job-seeker ratio close to 1.75—substantially higher than pre-pandemic benchmarks. [1] The most recent Job Openings and Labor Turnover Survey (JOLTS) indicates that the United States labor market remains structurally tight. Revised January 2025 figures report 7.8 million job openings and 5.4 million hires, implying an openings-to-hire ratio of 1.44. [3] The corresponding national job-openings rate of 4.5 percent is well above the pre-pandemic range of 3 percent that characterized the 2010-2019 expansion.

Scholars attribute this persisting disequilibrium to accelerated retirements among baby-boom cohorts, health-related labor-force withdrawals, and skill mismatches generated by the rapid digitalization of work processes (e.g., advanced data analytics and remote operations technologies).

Such an imbalance is magnified in the public sector. It is reported that state and local governments employed approximately 450,000 fewer personnel in January 2023 than in February 2020, notwithstanding a full private-sector employment rebound. [4] During December 2022, state and local governments advertised 575,000 vacancies yet completed only 195,000 hires, a ratio approaching three openings per hire. Such figures corroborate earlier Bureau of Labor Statistics estimates that vacancies in government functions are clearing at a notably slower pace than private-sector equivalents.

Survey evidence underscores the behavioral dimension of the shortfall. A MissionSquare Research Institute poll of 1,100 state- and local-government employees found that 52 percent were considering voluntary separation and that 60 percent perceived workload stress and burnout as motivating factors for exit intentions. [2] Parallel polling by the Society for Human Resource Management indicates that 29 percent of U.S. workers cite lack of growth opportunities as their primary reason for contemplating resignation, while 80 percent perceive limited career advancement within their current organizations. [5] These attitudinal findings suggest that inadequate career-development infrastructure, rather than compensation alone, plays a salient role in talent attrition.

At the federal tier, workforce deficits have program-level implications. The U.S. Government Accountability Office's (GAO) 2025 High-Risk List identifies 38 areas of elevated vulnerability, and notes that skill gaps in mission-critical occupations contribute directly to 20 of those high-risk areas. GAO emphasizes that unresolved staffing shortfalls impede effective delivery of essential services and increase exposure to waste, fraud, and mismanagement. [6]

Collectively, empirical literature establishes three macro-level conditions that result in the need of the present study:

- A durable demand–supply gap persists in the national labor market, with vacancy rates unlikely to revert to pre-2020 norms in the medium term.

- Public-sector entities are disproportionately affected, exhibiting higher vacancy-to-hire ratios and slower head-count recovery relative to private employers.

- Systemic skill gaps constitute a recognized operational risk, as evidenced by federal oversight diagnostics.

These macro-economic observations provide essential context for the agency-specific workforce challenges examined in the following sections of this report.

2.2 Career Pathway Development

As recent scholarship and practitioner surveys conclude, structured career-pathway systems constitute a high-leverage remedy for the turnover dynamics outlined in the preceding section. A career pathway is a roadmap that shows an employee's career progression within an organization, including their current role and the roles they hope to hold in the future. Specifically, a well-developed career pathway should include essential information such as:

- Short- and long-term benchmarks.

- The employees' current role and the roles they hope to hold in the future.

- A series of education and training steps that prepare people for employment.

- A trajectory of potential future roles for the employee.

In the private sector, Gallagher's 2024 Career Well-being Report ranks "career development opportunity" as the top predictor of employee engagement and retention, even though it receives less employer attention than physical, financial, and emotional well-being dimensions. [7] Parallel evidence from the 2024 Work Institute Retention Report shows that career-related motives (development, promotion prospects, alternative career paths) have occupied the number-one position in "reasons for leaving" for five consecutive years. [8]

Within the public-service context, career pathways deliver additional organizational benefits. American Federation of State, County and Municipal Employees' (AFSCME) 2024 convention resolution on "Supporting Career Development Strategies in Public Service" highlights pathways as an essential tool for attracting diverse entrants, up-skilling incumbent staff, and preparing succession pipelines in mission-critical roles. [9] Figure 2.1 demonstrates six suggested solutions to the workforce shortage in government agencies [3], among which 'Build employee engagement' is directly supported by the development of a clear and informative career pathway. Advisory literature tailored to government employers recommends an integrated and comprehensive approach that combines career development opportunities, talent assessment, and managerial coaching to mitigate burnout and foster "career resilience." [10] For transportation agencies, such frameworks are particularly valuable because technical job families (e.g., transportation engineering, intelligent-transport-systems operations, facility maintenance)

share overlapping competency requirements yet diverge sharply in supervisory structures and certification mandates.

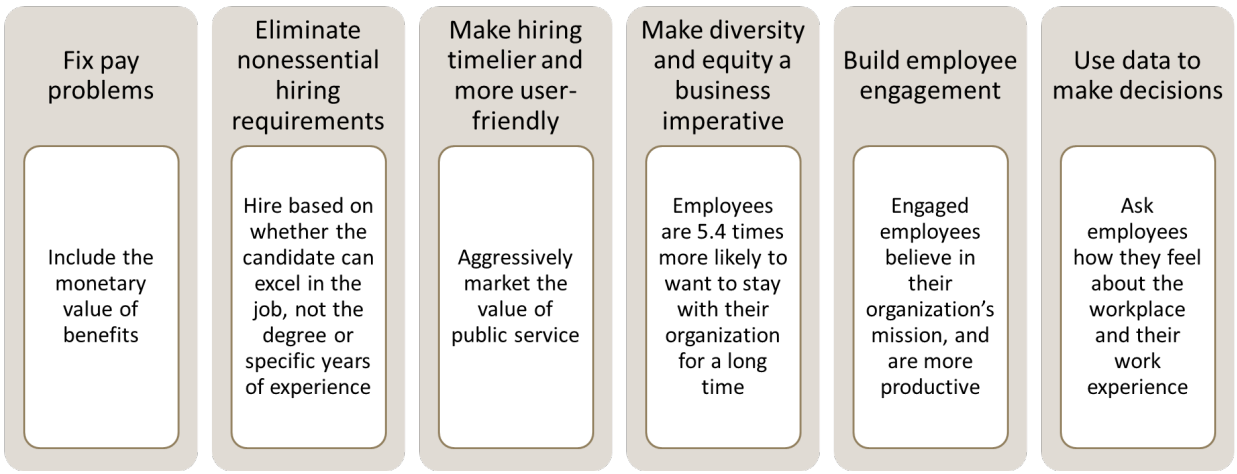


Figure 2.1 Solutions to the workforce shortage in government agencies.

Despite a broad consensus on their value, empirically documented LMS-integrated career-pathway systems remain scarce in state Departments of Transportation. Existing commercial suites (e.g., Cornerstone adopted by SHA, Workday, SAP SuccessFactors) provide generic templates but do not incorporate the granular classification hierarchies, civil-service pay bands, and union requirements characteristic of DOT environments. The development of a tailored, training-linked pathway framework for SHA therefore fills a demonstrable gap in both the scholarly literature and applied practice, positioning the agency to address the macro-level shortages identified earlier while enhancing individual career satisfaction and organizational capability.

2.3 Issues and Concerns Specific to Facility Maintenance Technician (FMT) Shortage

Facility Maintenance Technicians (FMTs) represent a mission-critical occupational group within SHA because they supply the core skills required to keep roadway, bridge, and building assets operational. However, FMT positions also illustrate, often in concentrated form, many of the structural constraints documented in the broader literature on public-sector workforce shortages.

The U.S. Bureau of Labor Statistics projects about 157,200 openings per year for general maintenance and repair workers over the 2023–2033 decade, even though employment growth is forecast at only 5 percent; most vacancies will arise from retirements and occupational transfers rather than net new positions. [11] This shortage of maintenance talent has been attributed to three inter-related factors: (1) an aging cohort of experienced technicians who are nearing retirement, (2) an inadequate influx of younger skilled workers as vocational pathways lose ground to four-year degree pursuits, and (3) rapidly evolving technologies—such as automation, Internet of Things (IoT), and predictive-maintenance platforms—that raise the technical competency bar for new entrants and incumbents alike. [12]

Within SHA, FMT workforce shortage is one of the central challenges. District-level vacancy logs show protracted time-to-fill intervals for grades II–IV, with some postings remaining open for twelve months owing to insufficient pools of qualified candidates. Industry guidance suggests four complementary strategies for mitigating Facility Maintenecne Technician shortages. First, agencies can retain experienced personnel by offering phased-retirement options—reduced hours, shared positions, or post-retirement consulting roles—to preserve institutional knowledge. Second, they can attract and develop younger technicians by providing clear advancement ladders, mentorship programs, and flexible work schedules that accommodate continued education. Third, organizations should invest in modern technical training, ensuring staff remain proficient with emerging maintenance technologies. Finally, maintaining a fulfilling and competitive work environment — characterized by collaboration with like-minded peers, regular skill-building opportunities, and tangible contributions to widely used public assets — enhances both recruitment and retention.

2.4 Existing Digital Tools for Career Development and Their Applicability to SHA

A variety of commercial talent management suites now offer integrated career-development modules. The most widely adopted platforms include Cornerstone LMS, Workday Talent Marketplace, SAP SuccessFactors Career Development Planning, and PeopleFluent Talent Mobility. All four systems share three core design principles: (i) skills-oriented employee profiles, (ii) algorithmic matching of workers to internal opportunities, and (iii) embedded learning content that supports up-skilling and reskilling.

Cornerstone LMS—SHA's incumbent platform—provides personalized learning paths, compliance tracking, and an optional "Career Centre" layer that recommends development activities and internal roles based on declared competencies. Its recent update expands these capabilities with skill-gap analytics and multimodal learning formats aimed at workforce agility use cases.

Workday Talent Marketplace positions itself as a skills-based opportunity hub that connects employees to short-term projects, stretch assignments, and permanent roles. Its recommendation engine leverages Workday's native skills cloud to suggest matches that advance both organizational and individual goals. Marketing materials emphasize transparency and internal mobility as primary drivers of retention. [13]

SAP SuccessFactors Career Development Planning offers competency libraries, visualizations of career paths, and goal alignment tools. Semiannual releases add iterative enhancements such as AI-generated development goals and embedded mentoring workflows. [14]

PeopleFluent Talent Mobility focuses on configurable pathing and "career lattices" designed for large, complex organizations. [15]

While existing suites provide a useful architectural baseline, they do not by themselves resolve the specific challenges of career-path opacity and misalignment with training needs identified at SHA. The present project, therefore, focuses on extending Cornerstone—already licensed by the agency—with a bespoke classification map, competency matrix, and pathway visualizations that respect union rules and facilitate cross-functional mobility.

Chapter 3. Data Sources and Survey Findings

3.1 Overview of Data Inputs

To ensure the comprehensiveness of the career pathway development for SHA, the research team at UMD has adopted multiple methods to collect data, aiming to understand the career structure and how employees can be promoted in SHA. Our methods include:

- an employee survey distributed to SHA offices to gather insights into current job hierarchies and office-specific career pathways,
- a comprehensive inventory of SHA job classifications and specifications,
- detailed organizational charts illustrating reporting structures and role hierarchies across 24 offices, and
- Excel-based datasets linking classification codes with official job descriptions.

Together, these inputs provide a multi-faceted foundation for analyzing current workforce structures, identifying mobility patterns, and diagnosing systemic gaps in career progression. The sections below will introduce each data collection method one by one.

3.2 Design and Distribution of the Employee Survey

The research team developed an employee questionnaire to obtain first-hand insight from Maryland SHA employees on:

- the current job hierarchy within each office, district, and division;
- recruitment and retention pain-points (posts that are difficult to fill or keep filled, and typical promotion bottlenecks); and
- suggested improvements to career pathway management, including training, mentoring, and culture-building measures.

The survey builds the qualitative foundation for diagnosing pathway gaps and for co-designing targeted HR interventions. The development of the questionnaire followed a three-step process:

- **Literature and policy review** – initial themes were mapped to public-sector career-pathway scholarship and to SHA competency models.
- **UMD internal discussions** – the research team iteratively drafted and tested question wording for clarity and brevity.
- **Joint design meetings** – the draft questionnaire was jointly reviewed and discussed by the UMD research team and SHA technical team, ensuring

alignment with SHA data needs and employee terminology.

The final instrument contains 20 items organized into four thematic parts as shown in Table 3.1. The full wording of the questionnaire is presented in Appendix A. The questions are designed to ensure the anonymity of the participants.

Table 3.1 Organization of the questionnaire survey to MDOT SHA employees

Part	Items	Focus	Example Prompt*
Basic information	1 – 5	Work context	"Which office/district/division do you work in?"
Job positions	6 – 10	Staffing challenges & promotion flows	"What positions in your unit are hardest to staff or retain?"
Career-pathway improvement	11 – 18	Training, mentoring, external resources	"What external resources or training would complement Cornerstone?"
Other information	19 – 20	Final comments & follow-up	"May we contact you for a brief follow-up interview?"

The questionnaire was designed in Microsoft Forms to ensure both web and mobile accessibility, as well as convenient compilation of the responses. The survey was sent to the pilot offices, including the Office of Administration (OOA), District 3, the Chief Engineer's Office and the Office of Planning and Preliminary Engineering (OPPE). The plan is to collect responses and determine whether further surveys are needed based on the quality of the responses. It was distributed on 12/07/2023, and responses were collected over the following several weeks.

3.3 Employee Survey Findings

During this preliminary survey wave (December 2023 – January 2024), five employees completed the on-line questionnaire. Three came from District 3 field units—Construction, District-wide Operations, and the Fairland Maintenance Shop—while two represented the Headquarters Office of Administration. All but one respondent occupied supervisory or managerial roles. Although the sample is small, it spans both operational and administrative contexts and therefore offers an early cross-section of views that shape staffing decisions as well as lived career experiences. An additional response received after March 2024 did not materially alter the thematic patterns reported below.

Staffing Pressures

Every participant identified positions that consistently remain vacant or experience rapid turnover. Technical engineering grades (Transportation Engineering Technicians (TET) and Transportation Engineers (TE), levels I through V) dominate the list, largely because external markets offer higher wages and clearer advancement steps. A parallel strain appears in project-

delivery management roles—particularly TE-IV/V project managers and district project engineers—which competing county governments can recruit with more competitive pay. Administrative units face their own pinch points: program manager posts in the Administrator III band were called out for "salary compression" that lags other state agencies. Procurement officers, whose specialised skills are in short statewide supply, were singled out as the longest to backfill.

Promotion Pathways and Bottlenecks

Respondents describe a nominally linear ascent—TET I → TET V → TE I → TE V—but emphasize that the number of higher-grade "pins" is too small to accommodate demand. Once those pins are occupied, advancement stalls and qualified staff either wait or exit the agency. Administrative staff perceive an even lower ceiling; one comment characterizes support titles as "dead-end positions" because promotion decisions are "handled in silos and not transparent." Thus, while promotion opportunities exist in principle, employees remain uncertain about how to access them in practice.

Training Resources and Development Needs

Cornerstone LMS emerges as the primary portal for training, and employees do rely on Cornerstone LMS as one of the major sources for training opportunities. Nevertheless, most respondents use it mainly for generic writing or communication courses and find trade-specific offerings lacking. Desired additions include a revival of concepts like the discontinued "OHD University," preparation courses for Project Engineer (PE) and Project Management Professional (PMP) examinations, construction-management certificates, and workshops on interpersonal skills such as "managing up." Roughly half of the respondents report no formal professional-development plan in their unit, underscoring inconsistent take-up of existing HR frameworks.

Retention and Workplace Culture

Pay differentials stand out as the dominant retention challenge; five of the six total respondents explicitly cite higher salaries elsewhere as the main reason colleagues depart. Other factors mentioned in multiple answers include excessive workload due to vacancies, a sense of being under-appreciated, limited leadership support, and scarce opportunities "to learn and grow." One participant described office culture as "self-preservation," with limited professional-society engagement or informal team-building.

Implications for the Career-Pathway Model

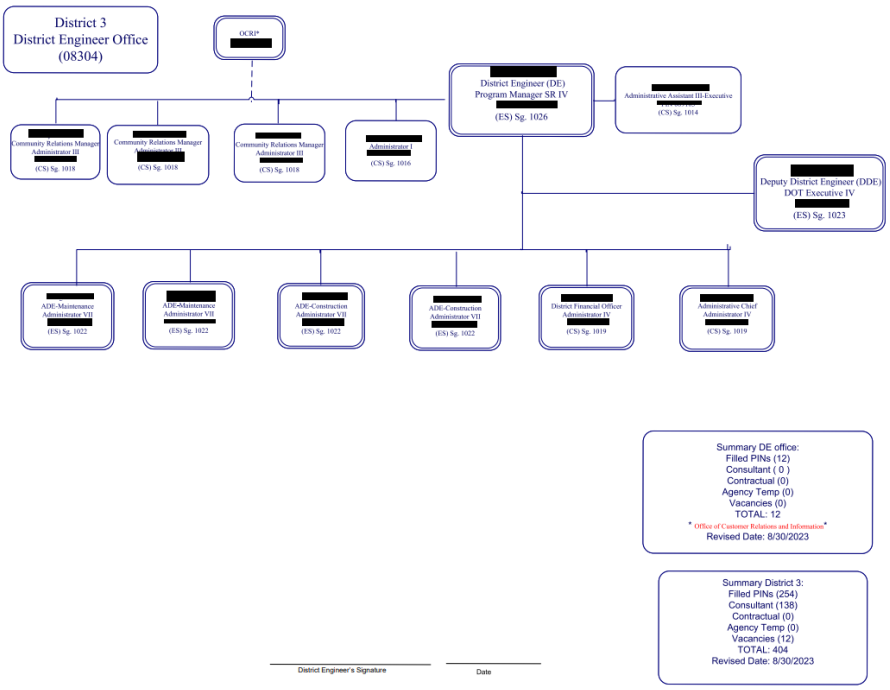
The survey underscores three systemic gaps that guide the analytic procedures in the following sections. First, critical technical tracks lack both competitive compensation and sufficient higher-grade positions. Second, opaque and siloed promotion criteria leave many employees—especially in administrative and support roles—uncertain about viable advancement routes. Third, current training inventories, while anchored by Cornerstone LMS, do not yet bridge agency needs with external certifications and leadership development that employees request. Addressing these gaps is essential to designing a transparent, incentive-rich career-pathway system capable of attracting, developing, and retaining talent across SHA.

3.4 Organizational Charts

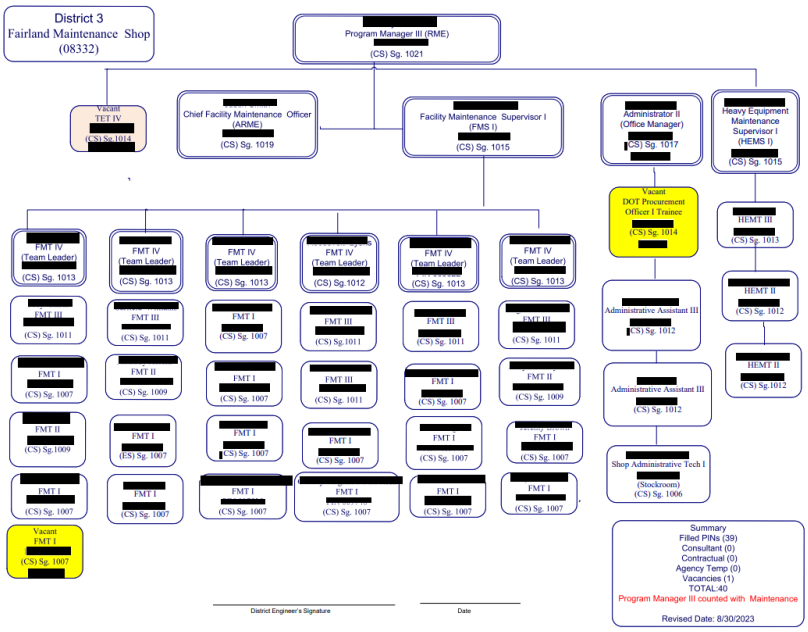
To further understand the internal career structures and reporting relationships within SHA, the research team obtained official organizational charts from 24 MDOT SHA offices via OOA. These charts provide a visual representation of staff positions, supervisory hierarchies, and functional subdivisions across maintenance, engineering, and administrative units.

Each organizational chart provides a snapshot of the reporting structure within the office, showing how job classifications are arranged across levels and how supervision flows among positions. Some charts are relatively concise—one or two pages—while others span six to ten pages, reflecting greater complexity in functional responsibilities. The number of layers and diversity of job types also vary significantly between offices.

For example, the District 3 chart, as shown in Figure 3.1, includes multiple layers of supervision under the District Engineer, encompassing roles such as Area Maintenance Administrators, Program Managers, Facility Maintenance Technicians (FMTs) at multiple levels (FMT I through FMT IV), Heavy Equipment Maintenance Technicians (HEMTs), and various administrative and procurement staff. The organizational charts also clarify lateral and vertical structures across job functions—e.g., maintenance crews under Program Managers are often organized by geographic regions such as Fairland, Gaithersburg, Laurel, and Marlboro within a single district. This level of granularity enables a cross-office comparison of career trajectories, supervisory spans, and classification consistency.



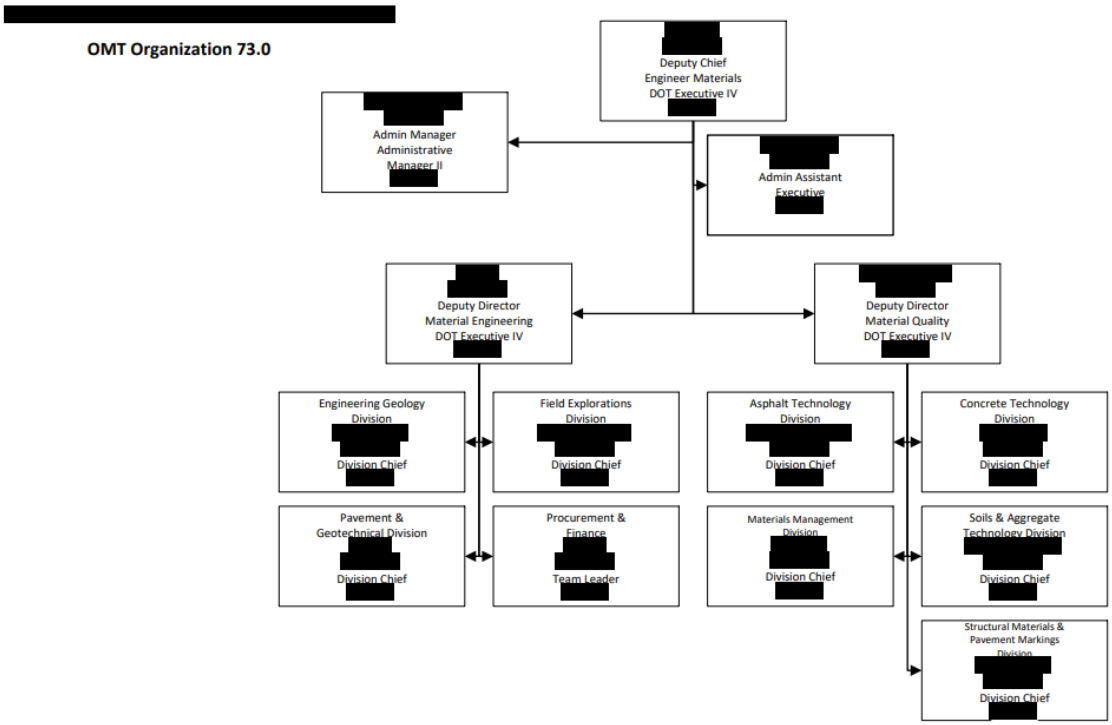
(a) District Engineer's Office



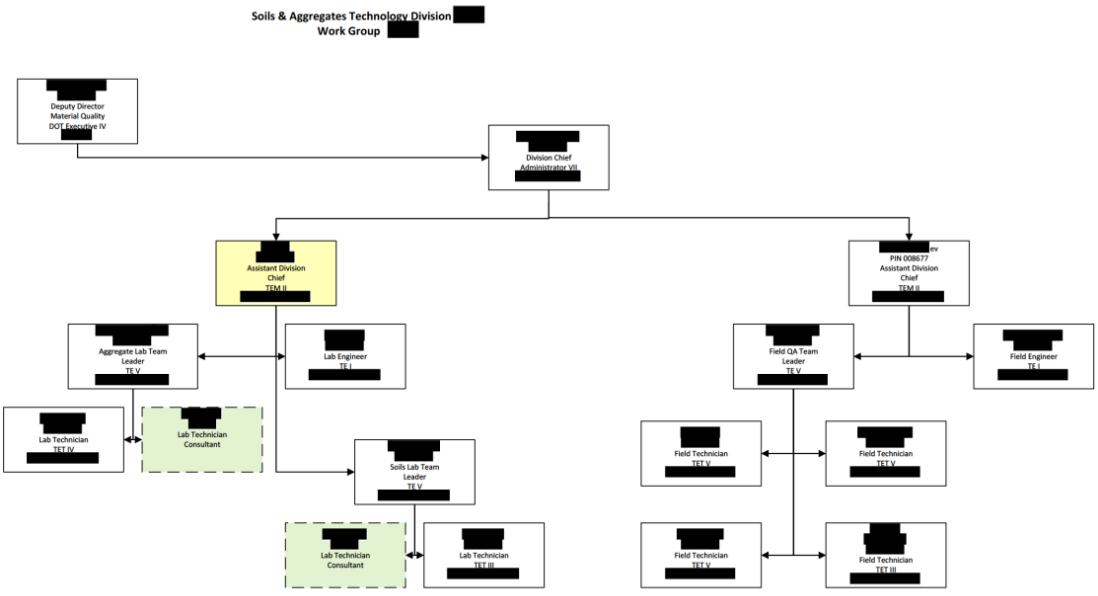
(b) Fairland Maintenance Shop

Figure 3.1 Sample pages in the District 3 Organizational Chart

As another example, the Office of Materials Technology (OMT) organizational chart, as shown in Figure 3.2, outlines a highly specialized structure anchored by two Deputy Directors overseeing the domains of Material Engineering and Material Quality, respectively. The chart features Division Chiefs for core technical areas such as Asphalt Technology, Concrete Technology, Soils and Aggregate Technology, and Structural Materials and Pavement Markings. These divisions are supported by administrative roles such as Administrative Managers and Executive Assistants, reflecting a functional structure centered on technical expertise and laboratory operations.



(a) OMT Administration



(b) Soils and Aggregates Technology Division

Figure 3.2 Sample pages in OMT Organizational Chart

Notably, the charts delineate salary grades (e.g., “Sg. 1007” for entry-level FMT I positions), which help trace promotional pathways and job classification groupings.

The research team uses these organizational charts in conjunction with SHA’s official job classification definitions to extract insights into the alignment between documented job structures and actual staffing patterns. This integrated data source plays a foundational role in identifying potential bottlenecks, advancement opportunities, and classification overlaps within SHA’s workforce system.

3.5 Job Classification Specifications

In addition to the employee survey and organizational charts, the research team obtained a comprehensive dataset of job classification specifications from the SHA technical team, compiled in a single Excel spreadsheet. Each row in the spreadsheet corresponds to a distinct classification, identified by a unique code and title, salary grade, and includes hyperlinks—hosted on the Department of Budget and Management (DBM) website—to full specification documents in PDF or Word format. These documents adhere to the State’s standard classification format, providing a detailed breakdown of the classification definition, minimum qualifications, examples of work, required knowledge, skills, and abilities (KSAs), as well as any special requirements.

Not all listed classifications were germane to SHA’s mission. Positions clearly associated with other modal administrations (e.g., Maryland Transit Administration) or with functions outside highway operations (such as correctional-facility support) were excluded. The remaining set—filtered for SHA relevance—was retained for pathway analysis.

An illustrative example is the Facility Maintenance Supervisor II specification (Code 7897, Salary Grade 0016), which defines a managerial maintenance role responsible for directing field and building activities across major facilities, specifies the required supervisory experience, and details both technical and administrative duties. Likewise, the Administrative Officer I–III series (Codes 2711, 3235, 2247; Salary Grades 0013–0015) exemplifies a tiered administrative staff progression, with each level differentiated by years of professional experience and the complexity of analytical and supervisory responsibilities.

These authoritative specifications form a critical input for mapping SHA career pathways, as they define the entry requirements, role responsibilities, and progression criteria that underpin potential promotion sequences. The team extracted key elements—such as qualification thresholds, certification requirements, and typical time-in-grade—from each applicable specification to identify advancement routes and competency expectations that were later encoded in the pathway-mapping process.

Chapter 4. Methodology

4.1 Overview

Building on the data inputs described in the preceding chapter, this section presents an analytical framework developed to define and categorize career-progression paths within SHA. The methodology focuses on identifying relationships between job classifications and grouping them into structured advancement pathways based on organizational logic, salary grades, and classification-series adjacency. The process begins with compiling a structured inventory of job titles, continues by defining classification pairs, and concludes by developing criteria for categorizing promotion scenarios. These steps—supplemented by stakeholder input—form the technical basis for the career-pathway models implemented in the Cornerstone LMS. Because clear career trajectories are critical for retention and organizational effectiveness, the framework emphasizes transparent mapping of current roles, promotion ladders, and lateral mobility options.

Figure 4.1 demonstrates the operation flow and data flow of the developed methodology. This methodological approach began by identifying and organizing all relevant job titles and classifications, forming a foundational database that clearly indicates hierarchical relationships among positions across different offices and districts. Following this initial data compilation, the analysis progressed to defining pairs of classifications—sets of positions closely linked in terms of potential career advancement. These classification pairs were subsequently categorized based on predefined criteria into three distinct progression scenarios: straightforward, multi-level, and limited progression.

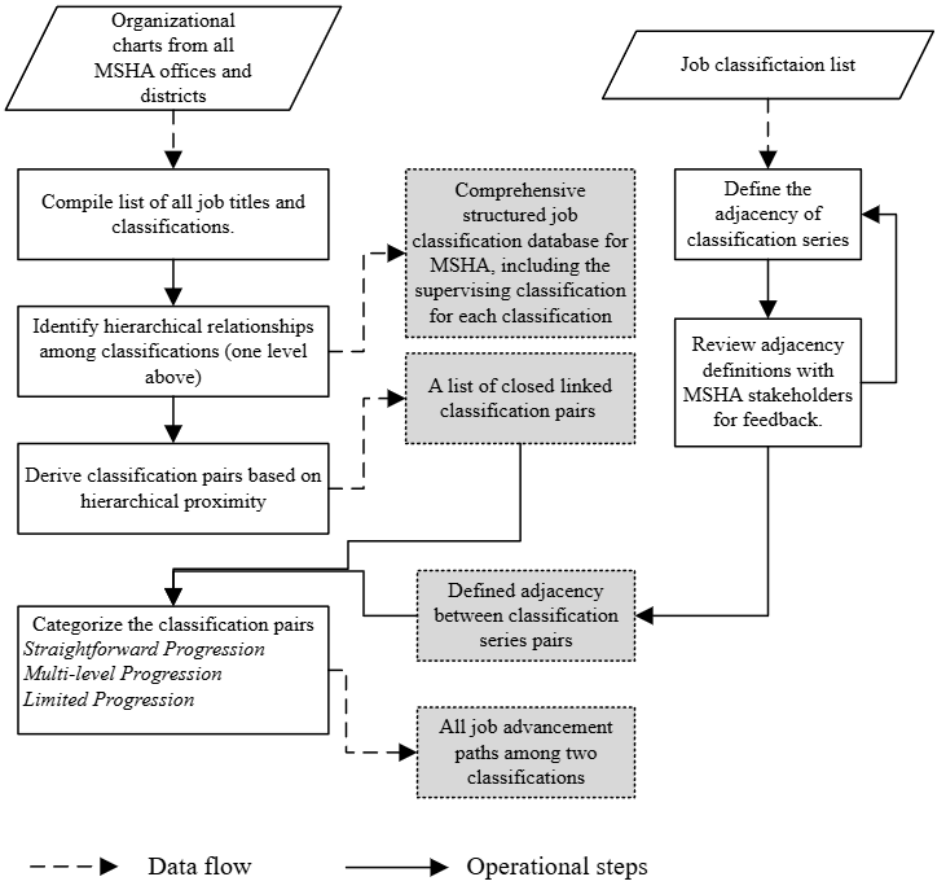


Figure 4.1 Methodological workflow for identifying career advancement pathways in MDOT SHA

A critical component of this methodology is the precise definition and evaluation of adjacency among classification series. Adjacency, in this context, signifies the realistic potential for employee promotion from one classification series to another, determined by analyzing both the structural positioning of classifications within organizational charts and their associated salary grades. This definition has been iteratively refined through consultations and feedback from SHA stakeholders in OOA, ensuring its alignment with organizational realities and expectations. With such information, all possible job advancement steps can be identified.

The following sections will elaborate the procedure introduced in Figure 4.1.

4.2 Identification and Structuring of Job

The first step in developing the career-pathway framework involved compiling a comprehensive inventory of job titles and classifications across all offices and districts within SHA. This master list includes the classification code, official title, salary grade, and organizational unit for every position, providing the foundational database essential for subsequent analyses. Each job classification was systematically recorded along with its associated job title, and its place in the reporting chain was captured by listing the immediate supervisory title and classification level.

The structured database, as illustrated in Figure 4.2, was carefully designed to maximize usability, featuring keyword search, filterable columns, and drop-down validation to ensure consistency. It is also deliberately flexible—new positions can be added or obsolete ones deactivated—so the file stays current as organizational needs evolve. This adaptability ensures the database remains a relevant and functional tool, accommodating future changes in organizational structures or job-classification systems.

Figure 4.2 Structured database for the job classifications in MDOT SHA

The structured job classification inventory not only supports internal career planning and management processes but also facilitates transparency, enabling employees to readily understand their current positioning within SHA's organizational structure and the potential paths available for career progression. The finalized inventory is maintained as a central reference, accessible to various stakeholders involved in employee development and strategic workforce planning.

4.3 Identification of Classification Pairs

Building upon the structured inventory of job classifications, the next step was to generate classification pairs—two classifications that reflect an adjacent supervising relationship. Each classification pair represents two job classifications that exhibit a direct linkage or potential career progression opportunity. This linkage is based on the documented hierarchical relationships in the structured database and provides a clear indication of viable career paths within the organizational structure. The resulting pairs were systematically documented, facilitating further analysis and categorization. All identified pairs, along with sample offices where those pairs are identified, are listed in Appendix B.

The comprehensive listing of classification pairs serves as the backbone of the subsequent analysis, enabling detailed scoring and grouping of links into well-defined progression scenarios. By capturing every formally documented reporting relationship, the table gives employees and supervisors a single, transparent reference for “what comes next” and promotes uniform career guidance across districts and job families. It is important to note,

however, that the presence of a pair merely indicates a supervisory link in an organizational chart; some links represent administrative oversight only and may not constitute a realistic promotion opportunity. These cases are to be screened out with systemic approaches introduced in the later sections.

4.4 Categorization of Job Classification Pairs

With the classification pairs identified, the next logical step is to categorize these pairs according to their potential for career advancement. The categorization aims to clearly delineate different scenarios for employee progression, ensuring transparency and feasibility in career planning. The classification pairs will be categorized into three distinct scenarios, following the rule set outlined in Table 4.1.

Table 4.1 Definition of classification pair categories

Classification pair category	If two classifications in a pair are	Example
Category 1	Sequential within a series	Transportation Engineer I to Transportation Engineer II
	Sequential across ***adjacent*** series, one being the highest grade in the existing series and the other being the lowest grade	Transportation Engineer V to Transportation Engineer Manager I, Administrative Assistant III to Administrative Office I
	At ***adjacent*** salary grade and within two ***adjacent*** classification series	Administrator V to DOT executive II
Category 2	Not directly sequential (at least 2 salary grades apart) but have progression path between them	Transportation Engineer II to Transportation Engineer Manager II, Administrator I to DOT Executive IV
Category 3	Not likely to have a career progression ladder between them	Administrative Assistant I to DOT Executive II

Straightforward Progression (Category 1): Classification pairs demonstrating clear and direct career advancement possibilities, typically involving immediate sequential transitions within or between closely related series.

Multi-level Progression (Category 2): Pairs where progression is achievable but requires multiple intermediary steps or involves a significant jump in classification or salary grade.

Limited Progression (Category 3): Classification pairs that are unlikely to facilitate direct or immediate career progression due to significant barriers such as wide gaps in organizational structure, salary grades, or required qualifications.

During the categorization of the classification pairs, the research team recognizes the importance of a deeper understanding of the relationships between classification series. In general, when two classifications in a pair belong to classification series that are structurally connected, such as appearing in proximity on organizational charts or having overlapping salary ranges, it is more likely that the pair represents a straightforward progression. Conversely, if the two classifications stem from series that are not typically linked in SHA's hierarchy, the pair is

less likely to indicate a viable advancement path. Recognizing this dependency, the next stage of analysis will focus on defining and clarifying these inter-series relationships to support accurate and meaningful categorization.

4.5 Definition of Adjacency Between Classification Series

To operationalize the categorization framework described above, it was necessary to define what constitutes an "adjacent" classification series. Adjacency, in this context, refers to the structural proximity between two classification series that allows for plausible career transitions. This concept enables the systematic evaluation of whether two classifications can reasonably be connected through a promotion path.

The assessment of adjacency was guided by two principal criteria: (1) whether classifications from the two series appear in adjacent levels within an organizational chart, and (2) whether the salary grades of the highest position in the lower series and the lowest position in the higher series are either equal or differ by no more than one grade level. More importantly, the experiences and knowledge about SHA structure are utilized to determine whether two classification series are possibly adjacent.

This working definition of adjacency was then shared with the technical team at SHA for review and validation. Their review and input were essential to ensure that the definition aligned with actual promotion practices and the agency's structural design. Based on feedback from the technical team, the research team refined the adjacency framework to reflect operational realities while maintaining consistency across classification systems.

This finalized list of adjacent classification series pairs, as shown in Table 4.2, provided the foundation for evaluating and categorizing each classification pair, ensuring that the methodology remained grounded in both data structure and professional practice. These definitions and the corresponding series relationships covered all classification pairs observed from available organizational charts.

Table 4.2 Adjacent classification series pairs in MDOT SHA

Classification Series 1	**Classification Series 2**	**Adjacent**?
Administrative Officer	Administrator	Yes
Administrative Officer /Unit Training Coordinator	Administrator	Yes
Administrative Specialist	Administrative Officer	Yes
Administrator	Program Manager Sr	Yes
Agency Procurement Specialist Lead	Administrator	Yes
Chief Facility Maintenance Officer	Program Manager	Yes
District Procurement Officer	Administrator	Yes
DOT Executive Associate	DOT Executive Assistant	Yes
DOT Executive Assistant	Administrator	Yes
DOT Executive Officer	DOT Executive Assistant	Yes
Environmental Analyst	Environmental Manager	Yes
Environmental Analyst	Administrator	Yes
Environmental Analyst	Transportation Engineer	Yes

Facility Maintenance Technician	Facility Maintenance Technician Supervisor	Yes
Facility Maintenance Technician Supervisor	Chief Facility Maintenance Officer	Yes
HEMTA	Heavy Equipment Management Technician	Yes
Heavy Equipment Management Technician	Heavy Equipment Management Supervisor	Yes
IT Programmer Analyst	Administrator	Yes
IT Programmer Analyst	IT Programmer Analyst Lead	Yes
IT System Technical Specialist Supervisor	DOT Executive	Yes
Landscape Architect	Program Manager	Yes
Maintenance Technician	Maintenance Supervisor	Yes
OSH Compliance Officer Manager	Administrator	Yes
OSH Compliance Program Specialist	OSH Compliance Officer Manager	Yes
Personnel Officer	Administrator	Yes
Planner	Administrator	Yes
Procurement Associate	Administrator	Yes
Procurement Officer	Administrator	Yes
Program Manager	Administrator	Yes
Program Manager	Program Manager Sr	Yes
Program Manager	DOT Executive	Yes
Real Property Specialist	Real Property Supervisor	Yes
Real Property Supervisor	Real Property Manager	Yes
Resident Maintenance Engineer	Administrator	Yes
Transportation Design Engineer	DOT Executive	Yes
Transportation Design Engineer	Transportation Engineering Manager	Yes
Transportation Engineer	Transportation Design Engineer	Yes
Transportation Engineer	Transportation Engineering Manager	Yes
Transportation Engineer	Program Manager	Yes
Transportation Engineer Manager	DOT Executive	Yes
Transportation Engineer Manager	Program Manager	Yes
Transportation Engineer Manager	Administrator	Yes
Transportation Engineer Technician	Transportation Engineer	Yes
Transportation Manager	Administrator	Yes
Transportation Planner	Administrator	Yes

4.6 Revisiting the Definition of Adjacency for Classification Pairs

With the adjacency framework between classification series established, the next step was to apply that framework directly to classification pairs identified in section 4.3. This revisitation was essential to ensure that the classification pairs could be evaluated not only by their immediate hierarchical relationship but also by the structural alignment of their respective classification series.

Based on the criteria established in Section 4.5, two job classifications are considered adjacent, and therefore placed in Category 1 of Table 4.1, if they meet one of the following conditions:

- **Within-Series Progression**: The two classifications belong to the same classification series and represent sequential levels (e.g., Transportation Engineering Technician I → Transportation Engineering Technician II).

- **Endpoint Transition Between Series**: One classification is at the highest level of a lower classification series, and the other is at the lowest level of a higher but adjacent classification series, as defined in Table 4.2 (e.g., Facility Maintenance Technician IV → Facility Maintenance Technician Supervisor I).

- **Inter-Series Structural Adjacency**: The two classifications come from different but adjacent classification series, as defined in Table 4.2, and have only one salary grade difference. (e.g. Transportation Planner II → Administrator III)

These refined conditions enabled the research team to systematically assess the structural closeness of each classification pair. Pairs that failed all three tests were routed to Category 2 (multi-level) or Category 3 (limited) as appropriate, providing a clear, evidence-based partition of the entire set. This step aligns the pathway model with both organizational norms and practical career-mobility expectations, thereby strengthening the framework's validity and usefulness.

4.7 Summary of Methodology Outcomes

The methodology outlined in this chapter provides a repeatable and scalable approach for analyzing career progression opportunities within SHA. Through the creation of a complete classification inventory and the identification of more than 700 hierarchical and lateral classification pairs, the research team mapped the full landscape of job relationships. Each pair was then evaluated against organizational structure, salary-grade proximity, and series adjacency, enabling consistent assignment to one of three progression categories – straightforward, multi-level, or limited.

The resulting framework offers SHA a transparent view of both promotion ladders within a classification series and less common cross-series moves. The categorization was vetted with HR and technical stakeholders, ensuring that only realistic pathways advance to the digital mapping stage. These outputs – particularly the vetted adjacency rules and the categorized pair table – constitute the operational foundation for the implementation work described in Chapter 5, where the pathways are integrated into Cornerstone LMS for agency-wide use.

Chapter 5. Implementation of Career Pathways in the Cornerstone System

5.1 Review of Current Interface and Determination of Elements to be Populated

This section introduces the existing interface of the Cornerstone Learning Management System (LMS), utilized by SHA, and outlines the specific elements selected for development and enhancement as part of this project.

Cornerstone LMS provides employees with access to professional development resources, training programs, and career progression information. However, early user-testing sessions with the technical team revealed three gaps that limit its value as a pathway tool:

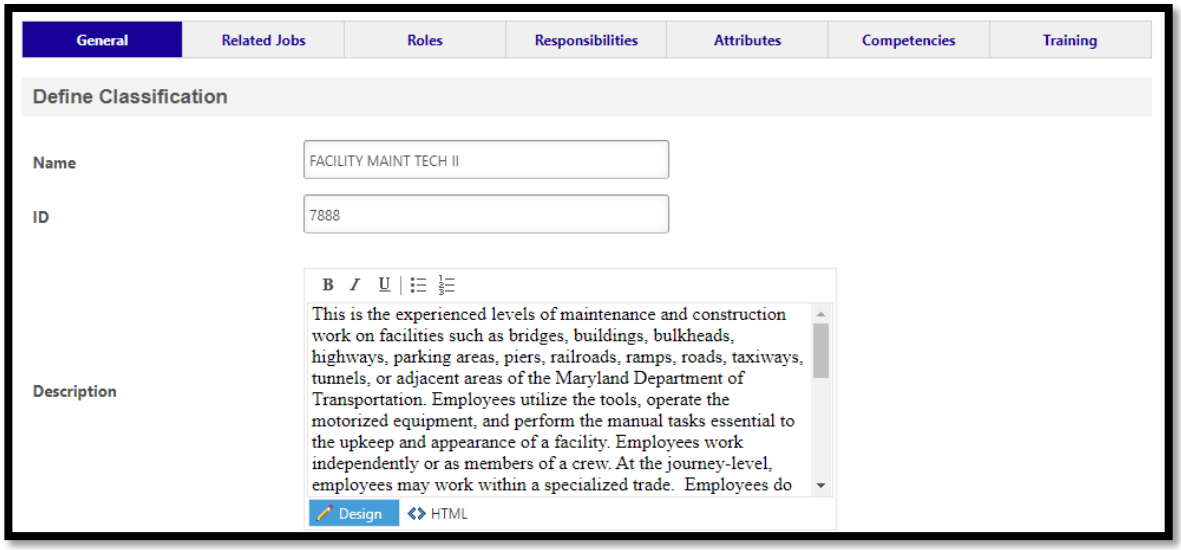
- The "Related Jobs" widget is present but empty for some classifications, leaving employees with no indication of prior or next classifications.
- Several classification pages lack standardized job descriptions, creating inconsistent detail across roles.
- Key duties and responsibilities are either missing or copied verbatim from legacy documents, offering little practical guidance.

To close these gaps, the project team determined to focus on the following key elements within Cornerstone LMS, as shown in Figure 5.1:

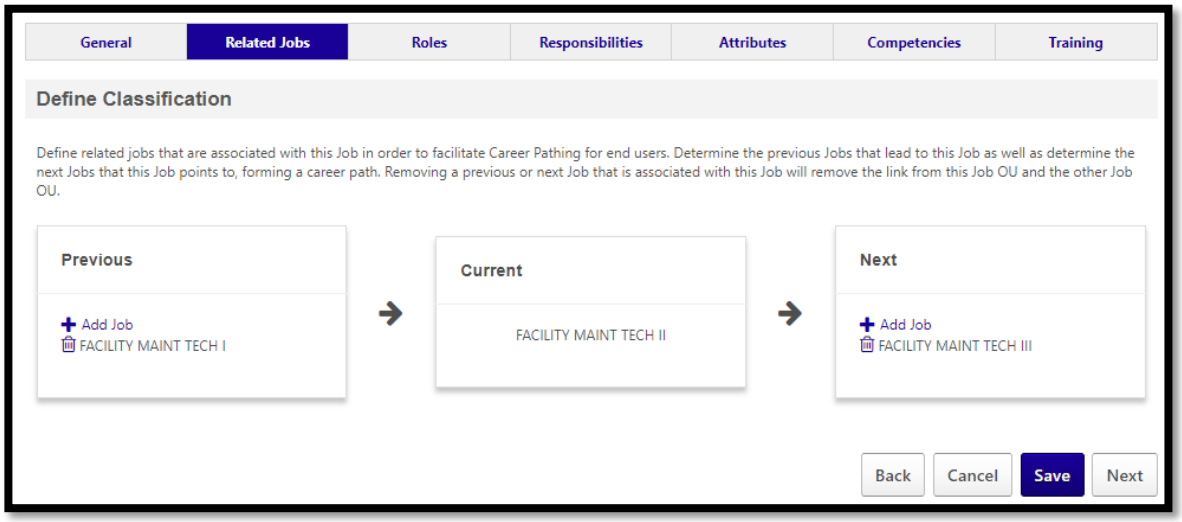
Job Descriptions (in general tab): Detailed and standardized descriptions sourced from official classification specifications provided by the technical team.

Related Job Classifications: Identification of immediate previous and next-level jobs based on adjacency analysis conducted in Chapter 4, aiding in visualizing potential career advancements.

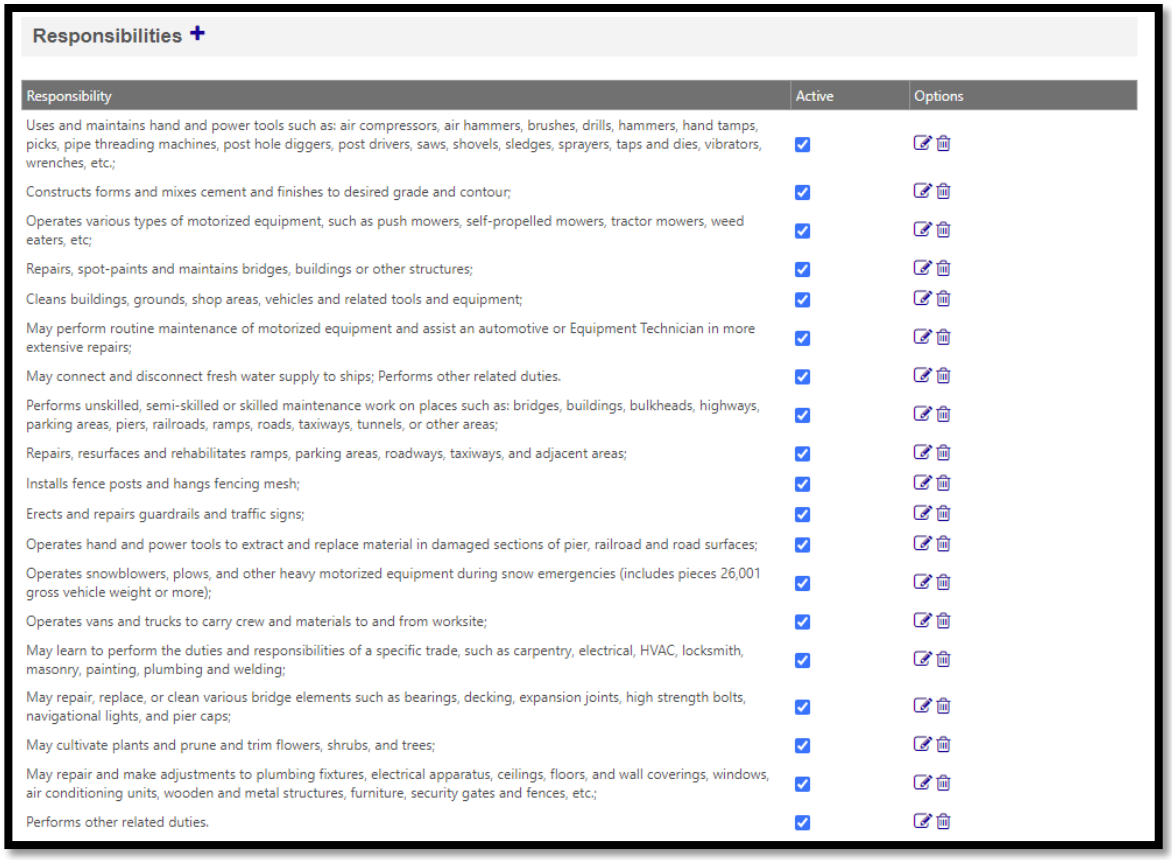
Responsibilities: Clear articulation of roles and responsibilities for each classification level to ensure employees understand their job expectations and career progression opportunities.



a) Classification descriptions



b) Related Job Classifications



Responsibilities +

Responsibility	Active	Options
Uses and maintains hand and power tools such as: air compressors, air hammers, brushes, drills, hammers, hand tamps, picks, pipe threading machines, post hole diggers, post drivers, saws, shovels, sledges, sprayers, taps and dies, vibrators, wrenches, etc.;	☑	
Constructs forms and mixes cement and finishes to desired grade and contour;	☑	
Operates various types of motorized equipment, such as push mowers, self-propelled mowers, tractor mowers, weed eaters, etc;	☑	
Repairs, spot-paints and maintains bridges, buildings or other structures;	☑	
Cleans buildings, grounds, shop areas, vehicles and related tools and equipment;	☑	
May perform routine maintenance of motorized equipment and assist an automotive or Equipment Technician in more extensive repairs;	☑	
May connect and disconnect fresh water supply to ships; Performs other related duties.	☑	
Performs unskilled, semi-skilled or skilled maintenance work on places such as: bridges, buildings, bulkheads, highways, parking areas, piers, railroads, ramps, roads, taxiways, tunnels, or other areas;	☑	
Repairs, resurfaces and rehabilitates ramps, parking areas, roadways, taxiways, and adjacent areas;	☑	
Installs fence posts and hangs fencing mesh;	☑	
Erects and repairs guardrails and traffic signs;	☑	
Operates hand and power tools to extract and replace material in damaged sections of pier, railroad and road surfaces;	☑	
Operates snowblowers, plows, and other heavy motorized equipment during snow emergencies (includes pieces 26,001 gross vehicle weight or more);	☑	
Operates vans and trucks to carry crew and materials to and from worksite;	☑	
May learn to perform the duties and responsibilities of a specific trade, such as carpentry, electrical, HVAC, locksmith, masonry, painting, plumbing and welding;	☑	
May repair, replace, or clean various bridge elements such as bearings, decking, expansion joints, high strength bolts, navigational lights, and pier caps;	☑	
May cultivate plants and prune and trim flowers, shrubs, and trees;	☑	
May repair and make adjustments to plumbing fixtures, electrical apparatus, ceilings, floors, and wall coverings, windows, air conditioning units, wooden and metal structures, furniture, security gates and fences, etc.;	☑	
Performs other related duties.	☑	

c) Responsibilities

Figure 5.1 Modules to be populated in Cornerstone LMS

By focusing on these elements, the team ensures that the pages for each classification deliver a complete snapshot of the role and its career context, thereby transforming Cornerstone LMS into a practical pathway reference rather than a static learning catalogue.

5.2 LMS Content Population Process

This section describes the process undertaken by the project team to populate the Cornerstone LMS with comprehensive, structured content based on the findings and resources compiled in previous chapters.

Step 1 – Consolidate Source Material. The team extracted the classification descriptions from the document provided by the technical team and lightly edited them for plain-language clarity, but no substantive duties were altered. They were added to the “General” Tab.

Step 2 – Craft Responsibilities. For each classification, a series of action-oriented bullets were added to the Responsibilities tab, translating formal specifications into everyday tasks and highlighting competencies required for advancement.

Step 3 – Map "Related Jobs." Each adjacent classification pair identified based on the rules demonstrated in Chapter 4 will be represented in the "Related Jobs" tabs of both classifications, giving employees a one-click view of realistic next and previous steps.

The actual population process involved systematically uploading and validating each classification entry within Cornerstone LMS, ensuring accuracy, completeness, and ease of navigation. All classifications whose information has been updated, totaling 177, have been summarized in Table 5.1, where the previous and next roles for each classification are also presented.

Table 5.1 All classifications that have been updated in Cornerstone LMS

Previous classification	Current classification	Current classification ID	Next Role
	ADMIN ASSISTANT I - SG	4836	ADMIN ASSISTANT II - SG (4837)
ADMIN ASSISTANT I - SG	ADMIN ASSISTANT II - SG	4837	ADMIN ASSISTANT III (8403)
ADMIN ASSISTANT II - SG	ADMIN ASSISTANT III	8403	ADMIN ASSISTANT, EXEC
ADMIN ASSISTANT III	ADMIN ASSISTANT, EXEC	8404	
	ADMIN SPECIALIST I	1755	ADMIN SPEC II
ADMIN SPECIALIST I	ADMIN SPEC II	1756	ADMIN SPEC III
ADMIN SPEC II	ADMIN SPEC III	2043	ADMIN OFFICER I
ADMIN SPEC III, ADMIN SPECIALIST I	ADMIN OFFICER I	2711	ADMIN OFFICER II
ADMIN OFFICER I	ADMIN OFFICER II	3235	ADMIN OFFICER III
ADMIN OFFICER II	ADMIN OFFICER III	2247	ADMINISTRATOR I
ADMIN OFFICER III; TRANSPORTATION PLANNER II; PROCUREMENT ASSOCIATE III	ADMINISTRATOR I	2586	ADMINISTRATOR II
ADMINISTRATOR I; AGENCY PROCUREMENT SPECIALIST LEAD; ENVIRONMENTAL ANALYST III; PERSONNEL OFFICER III	ADMINISTRATOR II	2587	ADMINISTRATOR III
ADMINISTRATOR II; DOT EXECUTIVE ASST I; TRANSPORTATION PLANNER III; RESIDENT MAINTENANCE ENGINEER	ADMINISTRATOR III	2588	ADMINISTRATOR IV

Previous classification	Current classification	Current classification ID	Next Role
ADMINISTRATOR III; DOT EXECUTIVE ASST II; ENVIRONMENTAL ANALYST IV; TRANSPORTATION PLANNER IV; IT PROGRAMMER ANALYST I	ADMINISTRATOR IV	2589	ADMINISTRATOR V
ADMINISTRATOR IV; DOT EXECUTIVE ASST III; PROGRAM MANAGER I; TRANSPORTATION PLANNER V- SUPERVISOR; IT PROGRAMMER ANALYST II	ADMINISTRATOR V	3184	ADMINISTRATOR VI
ADMINISTRATOR V; DOT EXECUTIVE ASST IV; PROGRAM MANAGER II; TRANS ENGINEERING MANAGER I; IT PROGRAMMER ANALYST LEAD/ADVANCED	ADMINISTRATOR VI	0886	ADMINISTRATOR VII ; IT DIRECTOR III
ADMINISTRATOR VI; DOT EXECUTIVE ASST V; PROGRAM MANAGER III; TRANS ENGINEERING MANAGER II; IT PROGRAMMER ANALYST SUPERVISOR	ADMINISTRATOR VII	0939	
	AGENCY PROCUREMENT SPECIALIST I	0848	AGENCY PROCUREMENT SPECIALIST II
AGENCY PROCUREMENT SPECIALIST I	AGENCY PROCUREMENT SPECIALIST II	0849	AGENCY PROCUREMENT SPECIALIST LEAD
AGENCY PROCUREMENT SPECIALIST II	AGENCY PROCUREMENT SPECIALIST LEAD	0850	ADMINISTRATOR II
	COMPUTER INFO SERVICES SPEC I	4408	COMPUTER INFO SERVICES SPEC II
COMPUTER INFO SERVICES SPEC I	COMPUTER INFO SERVICES SPEC II	4409	COMPUTER INFO SERVICES SPEC SUPV
COMPUTER INFO SERVICES SPEC II	COMPUTER INFO SERVICES SPEC SUPV	4410	COMPUTER INFO SERVICES SPEC MANAGER
COMPUTER INFO SERVICES SPEC SUPV	COMPUTER INFO SERVICES SPEC MANAGER	4502	
FACILITY MAINT SUPV II (Already There)	CHF FACILITY MAINT OFFICER	7898	PROGRAM MANAGER I (Already there)

Previous classification	Current classification	Current classification ID	Next Role
	DATABASE SPECIALIST I	4479	DATABASE SPECIALIST II
DATABASE SPECIALIST I	DATABASE SPECIALIST II	4480	DATABASE SPECIALIST SUPV
DATABASE SPECIALIST II	DATABASE SPECIALIST SUPV	4481	DATABASE SPECIALIST MANAGER
DATABASE SPECIALIST SUPV	DATABASE SPECIALIST MANAGER	4482	
	DOT EXECUTIVE ASSOCIATE I	7333	DOT EXECUTIVE ASSOCIATE II
DOT EXECUTIVE ASSOCIATE I	DOT EXECUTIVE ASSOCIATE II	7334	DOT EXECUTIVE ASSOCIATE III
DOT EXECUTIVE ASSOCIATE II	DOT EXECUTIVE ASSOCIATE III	7335	DOT EXECUTIVE OFFICER I
DOT EXECUTIVE ASSOCIATE III	DOT EXECUTIVE OFFICER I	7337	DOT EXECUTIVE OFFICER II
DOT EXECUTIVE OFFICER I	DOT EXECUTIVE OFFICER II	7338	DOT EXECUTIVE OFFICER III
DOT EXECUTIVE OFFICER II	DOT EXECUTIVE OFFICER III	7339	DOT EXECUTIVE ASST I
DOT EXECUTIVE OFFICER III	DOT EXECUTIVE ASST I	7340	DOT EXECUTIVE ASST II; ADMINISTRATOR III
DOT EXECUTIVE ASST I	DOT EXECUTIVE ASST II	7341	DOT EXECUTIVE ASST III; ADMINISTRATOR IV
DOT EXECUTIVE ASST II	DOT EXECUTIVE ASST III	7342	DOT EXECUTIVE ASST IV; ADMINISTRATOR V
DOT EXECUTIVE ASST III	DOT EXECUTIVE ASST IV	7343	DOT EXECUTIVE ASST V; ADMINISTRATOR VI
DOT EXECUTIVE ASST IV; IT DIRECTOR III (Already There)	DOT EXECUTIVE ASST V	7344	DOT EXECUTIVE ASST VI; ADMINISTRATOR VII
DOT EXECUTIVE ASST V	DOT EXECUTIVE ASST VI	7345	
PROGRAM MANAGER I; TRANS DESIGN ENGINEER III	DOT EXECUTIVE I	8028	DOT EXECUTIVE II
DOT EXECUTIVE I; IT SYSTEMS TECHNICAL SPECIALIST SUPV; PROGRAM MANAGER II; TRANS DESIGN ENGINEER IV; TRANS ENGINEERING MANAGER I	DOT EXECUTIVE II	8029	DOT EXECUTIVE III

Previous classification	Current classification	Current classification ID	Next Role
DOT EXECUTIVE II; PROGRAM MANAGER III; TRANS DESIGN ENGINEER V; TRANS ENGINEERING MANAGER II	DOT EXECUTIVE III	8030	DOT EXECUTIVE IV
DOT EXECUTIVE III; PROGRAM MANAGER IV; TRANS DESIGN ENGINEER VI	DOT EXECUTIVE IV	8031	DOT EXECUTIVE V
DOT EXECUTIVE IV; IT DIRECTOR III; TRANS DESIGN ENGINEER VII	DOT EXECUTIVE V	8032	DOT EXECUTIVE VI
DOT EXECUTIVE V	DOT EXECUTIVE VI	8033	
	EMERGENCY RESPONSE TECH	1425	EMERGENCY RESPONSE TECH SR
EMERGENCY RESPONSE TECH	EMERGENCY RESPONSE TECH SR	1426	
	ENVIRONMENTAL ANALYST I	8433	ENVIRONMENTAL ANALYST II
ENVIRONMENTAL ANALYST I	ENVIRONMENTAL ANALYST II	8434	ENVIRONMENTAL ANALYST III
ENVIRONMENTAL ANALYST II	ENVIRONMENTAL ANALYST III	8435	ENVIRONMENTAL ANALYST IV; ADMINISTRATOR II; TRANS ENGINEER III
ENVIRONMENTAL ANALYST III	ENVIRONMENTAL ANALYST IV	8436	ENVIRONMENTAL MANAGER I; ADMINISTRATOR IV; TRANS ENGINEER V
ENVIRONMENTAL ANALYST IV	ENVIRONMENTAL MANAGER I	8437	ENVIRONMENTAL MANAGER II
ENVIRONMENTAL MANAGER I	ENVIRONMENTAL MANAGER II	8438	
??	EQUAL OPPORTUNITY OFFICER I	2815	EQUAL OPPORTUNITY OFFICER II
EQUAL OPPORTUNITY OFFICER I	EQUAL OPPORTUNITY OFFICER II	3423	EQUAL OPPORTUNITY OFFICER LEAD/ADVANCED
EQUAL OPPORTUNITY OFFICER II	EQUAL OPPORTUNITY OFFICER LEAD/ADVANCED	2442	
	FACILITY MAINT TECH I	7887	FACILITY MAINT TECH II (Already There)
FACILITY MAINT TECH I	FACILITY MAINT TECH II	7888	FACILITY MAINT TECH III (Already There)
FACILITY MAINT TECH II	FACILITY MAINT TECH III	7889	FACILITY MAINT TECH IV (Already There)
FACILITY MAINT TECH III	FACILITY MAINT TECH IV	7890	FACILITY MAINT SUPV I

Previous classification	Current classification	Current classification ID	Next Role
FACILITY MAINT TECH IV	FACILITY MAINT SUPV I	7896	FACILITY MAINT SUPV II
FACILITY MAINT SUPV I	FACILITY MAINT SUPV II	7897	CHF FACILITY MAINT OFFICER (Already There)
	HEAVY EQUIP MANAGEMENT OFFICER	7516	
	IT SYSTEMS TECHNICAL SPECIALIST	4488	IT SYSTEMS TECHNICAL SPECIALIST SUPV
IT SYSTEMS TECHNICAL SPECIALIST	IT SYSTEMS TECHNICAL SPECIALIST SUPV	4489	DOT EXECUTIVE II
	ITS TECHNICIAN I TRAFFIC OPERATIONS OPT	8006	ITS TECHNICIAN II TRAFFIC OPERATIONS OPT
	ITS TECHNICIAN I GENERAL OPT	8007	ITS TECHNICIAN II GENERAL OPT
ITS TECHNICIAN I TRAFFIC OPERATIONS OPT	ITS TECHNICIAN II TRAFFIC OPERATIONS OPT	8008	ITS TECHNICIAN III
ITS TECHNICIAN I GENERAL OPT	ITS TECHNICIAN II GENERAL OPT	8009	ITS TECHNICIAN III
ITS TECHNICIAN II TRAFFIC OPERATIONS OPT; ITS TECHNICIAN II GENERAL OPT	ITS TECHNICIAN III	8010	ITS TECHNICIAN SUPERVISOR
ITS TECHNICIAN III	ITS TECHNICIAN SUPERVISOR	8011	
	LANDSCAPE ARCHITECT I	4844	LANDSCAPE ARCHITECT II
LANDSCAPE ARCHITECT I	LANDSCAPE ARCHITECT II	4845	LANDSCAPE ARCHITECT III
LANDSCAPE ARCHITECT II	LANDSCAPE ARCHITECT III	4846	LANDSCAPE ARCHITECT IV
LANDSCAPE ARCHITECT III	LANDSCAPE ARCHITECT IV	4847	LANDSCAPE ARCHITECT V
LANDSCAPE ARCHITECT IV	LANDSCAPE ARCHITECT V	4848	PROGRAM MANAGER I
	MAINT CHIEF I LIC	1962	MAINT CHIEF II LICENSED
	MAINT CHIEF I NON LIC	1963	MAINT CHIEF II NON LIC
MAINT CHIEF I LIC	MAINT CHIEF II LICENSED	2811	MAINT CHIEF III LIC
MAINT CHIEF I NON LIC	MAINT CHIEF II NON LIC	2823	MAINT CHIEF III NON LIC
MAINT CHIEF II LICENSED	MAINT CHIEF III LIC	1964	MAINT CHIEF IV LIC

Previous classification	Current classification	Current classification ID	Next Role
MAINT CHIEF II NON LIC	MAINT CHIEF III NON LIC	1965	MAINT CHIEF IV NON LIC
MAINT CHIEF III LIC	MAINT CHIEF IV LIC	1972	MAINT SUPV I LIC
MAINT CHIEF III NON LIC	MAINT CHIEF IV NON LIC	1973	MAINT SUPV I NON LIC
MAINT CHIEF IV LIC	MAINT SUPV I LIC	1976	MAINT SUPV II LIC
MAINT CHIEF IV NON LIC	MAINT SUPV I NON LIC	1977	MAINT SUPV II NON LIC
MAINT SUPV I LIC	MAINT SUPV II LIC	1978	MAINT SUPV III
MAINT SUPV I NON LIC	MAINT SUPV II NON LIC	1979	MAINT SUPV III
MAINT SUPV II LIC; MAINT SUPV II NON LIC	MAINT SUPV III	2812	MAINT SUPV IV
MAINT SUPV III	MAINT SUPV IV	2813	
	OFFICE MANAGER	1443	
	OFFICE SERVICES CLERK	1376	OFFICE SERVICES CLERK LEAD
OFFICE SERVICES CLERK	OFFICE SERVICES CLERK LEAD	1377	
	OSH COMPLIANCE OFFICER I	0532	OSH COMPLIANCE OFFICER II
OSH COMPLIANCE OFFICER I	OSH COMPLIANCE OFFICER II	1344	OSH COMPLIANCE OFFICER III
OSH COMPLIANCE OFFICER II	OSH COMPLIANCE OFFICER III	1312	OSH COMPLIANCE OFFICER LEAD
OSH COMPLIANCE OFFICER III	OSH COMPLIANCE OFFICER LEAD	2170	OSH COMPLIANCE OFFICER SUPERVISOR
OSH COMPLIANCE OFFICER LEAD	OSH COMPLIANCE PROGRAM SPECIALIST	1315	OSH COMPLIANCE OFFICER SUPERVISOR
OSH COMPLIANCE PROGRAM SPECIALIST	OSH COMPLIANCE OFFICER SUPERVISOR	2171	
	PLANNER I	1167	PLANNER II
PLANNER I	PLANNER II	0999	PLANNER III
PLANNER II	PLANNER III	1082	PLANNER IV
PLANNER III	PLANNER IV	1274	PLANNER V
PLANNER IV	PLANNER V	1275	
	PROCUREMENT ASSOCIATE I - SG	4843	PROCUREMENT ASSOCIATE II - SG
PROCUREMENT ASSOCIATE I - SG	PROCUREMENT ASSOCIATE II - SG	4842	PROCUREMENT ASSOCIATE III
PROCUREMENT ASSOCIATE II - SG	PROCUREMENT ASSOCIATE III	8003	ADMINISTRATOR I

Previous classification	Current classification	Current classification ID	Next Role
CHF FACILITY MAINT OFFICER; LANDSCAPE ARCHITECT V; TRANS ENGINEER IV	PROGRAM MANAGER I	5476	PROGRAM MANAGER II; ADMINISTRATOR V; DOT EXECUTIVE I
PROGRAM MANAGER I; TRANS ENGINEER V	PROGRAM MANAGER II	5477	PROGRAM MANAGER III; ADMINISTRATOR VI; DOT EXECUTIVE II
PROGRAM MANAGER II; TRANS ENGINEERING MANAGER I	PROGRAM MANAGER III	5478	PROGRAM MANAGER IV; ADMINISTRATOR VII; DOT EXECUTIVE III
PROGRAM MANAGER III; TRANS ENGINEERING MANAGER II	PROGRAM MANAGER IV	5479	PROGRAM MANAGER SR I; DOT EXECUTIVE IV
PROGRAM MANAGER IV	PROGRAM MANAGER SR I	5482	PROGRAM MANAGER SR II
PROGRAM MANAGER SR I	PROGRAM MANAGER SR II	5483	PROGRAM MANAGER SR III
PROGRAM MANAGER SR II	PROGRAM MANAGER SR III	5484	PROGRAM MANAGER SR IV
PROGRAM MANAGER SR III	PROGRAM MANAGER SR IV	5485	
	REAL PROPERTY SPECIALIST I	4902	REAL PROPERTY SPECIALIST II
REAL PROPERTY SPECIALIST I	REAL PROPERTY SPECIALIST II	4903	REAL PROPERTY SPECIALIST III
REAL PROPERTY SPECIALIST II	REAL PROPERTY SPECIALIST III	4904	REAL PROPERTY SPECIALIST IV
REAL PROPERTY SPECIALIST III	REAL PROPERTY SPECIALIST IV	4905	REAL PROPERTY SUPERVISOR
REAL PROPERTY SPECIALIST IV	REAL PROPERTY SUPERVISOR	4906	REAL PROPERTY MANAGER
REAL PROPERTY SUPERVISOR	REAL PROPERTY MANAGER	4907	
	RESIDENT MAINTENANCE ENGINEER	2389	ADMINISTRATOR III
	SHOP ADMINISTRATIVE TECHNICIAN I	4821	SHOP ADMINISTRATIVE TECHNICIAN II
SHOP ADMINISTRATIVE TECHNICIAN I	SHOP ADMINISTRATIVE TECHNICIAN II	4822	SHOP ADMINISTRATIVE TECHNICIAN III
SHOP ADMINISTRATIVE TECHNICIAN II	SHOP ADMINISTRATIVE TECHNICIAN III	4823	
	SKILLED TRADE SPECIALIST I	7130	SKILLED TRADE SPECIALIST II
SKILLED TRADE SPECIALIST I	SKILLED TRADE SPECIALIST II	4804	SKILLED TRADE SPECIALIST III

Previous classification	Current classification	Current classification ID	Next Role
SKILLED TRADE SPECIALIST II	SKILLED TRADE SPECIALIST III	7131	SKILLED TRADE SPECIALIST SUPV
SKILLED TRADE SPECIALIST III	SKILLED TRADE SPECIALIST SUPV	7132	
	SUPPLY OFFICER I	0840	SUPPLY OFFICER Il
SUPPLY OFFICER I	SUPPLY OFFICER II	1111	OBS-SUPPLY OFFICER III
SUPPLY OFFICER Il	SUPPLY OFFICER III	0843	SUPPLY OFFICER IV
SUPPLY OFFICER III	SUPPLY OFFICER IV	2462	
TRANS ENGINEER I	TRANS DESIGN ENGINEER I	7661	TRANS DESIGN ENGINEER II
TRANS DESIGN ENGINEER I; TRANS ENGINEER II	TRANS DESIGN ENGINEER II	7662	TRANS DESIGN ENGINEER III
TRANS DESIGN ENGINEER II; TRANS ENGINEER III	TRANS DESIGN ENGINEER III	7663	TRANS DESIGN ENGINEER IV; TRANS ENGINEERING MANAGER I; DOT EXECUTIVE I
TRANS DESIGN ENGINEER III; TRANS ENGINEER IV	TRANS DESIGN ENGINEER IV	7664	TRANS DESIGN ENGINEER V; DOT EXECUTIVE II; TRANS ENGINEERING MANAGER II
TRANS DESIGN ENGINEER IV; TRANS ENGINEER V	TRANS DESIGN ENGINEER V	7665	TRANS DESIGN ENGINEER VI; DOT EXECUTIVE III
TRANS DESIGN ENGINEER V	TRANS DESIGN ENGINEER VI	7666	TRANS DESIGN ENGINEER VII; DOT EXECUTIVE IV
TRANS DESIGN ENGINEER VI	TRANS DESIGN ENGINEER VII	7667	DOT EXECUTIVE V
TRANS ENGINEERING TECHNICIAN IV	TRANS ENGINEER I	8439	TRANS ENGINEER II; TRANS DESIGN ENGINEER I
TRANS ENGINEER I; TRANS ENGINEERING TECHNICIAN V	TRANS ENGINEER II	0116	TRANS ENGINEER III; TRANS DESIGN ENGINEER II
TRANS ENGINEER II; ENVIRONMENTAL ANALYST III	TRANS ENGINEER III	0117	TRANS ENGINEER IV; TRANS DESIGN ENGINEER III
TRANS ENGINEER III	TRANS ENGINEER IV	0516	TRANS ENGINEER V; TRANS DESIGN ENGINEER IV; PROGRAM MANAGER I
TRANS ENGINEER IV; ENVIRONMENTAL ANALYST IV	TRANS ENGINEER V	2706	TRANS ENGINEERING MANAGER I; TRANS DESIGN ENGINEER IV; PROGRAM MANAGER II
TRANS ENGINEER V; TRANS DESIGN ENGINEER III	TRANS ENGINEERING MANAGER I	0515	TRANS ENGINEERING MANAGER II; DOT EXECUTIVE II; ADMINISTRATOR VI; PROGRAM MANAGER III

Previous classification	Current classification	Current classification ID	Next Role
TRANS ENGINEERING MANAGER I; TRANS DESIGN ENGINEER IV	TRANS ENGINEERING MANAGER II	2707	DOT EXECUTIVE III; ADMINISTRATOR VII; PROGRAM MANAGER IV
	TRANS ENGINEERING TECHNICIAN I	8446	TRANS ENGINEERING TECHNICIAN II
TRANS ENGINEERING TECHNICIAN I	TRANS ENGINEERING TECHNICIAN II	8447	TRANS ENGINEERING TECHNICIAN III
TRANS ENGINEERING TECHNICIAN II	TRANS ENGINEERING TECHNICIAN III	8448	TRANS ENGINEERING TECHNICIAN IV
TRANS ENGINEERING TECHNICIAN III	TRANS ENGINEERING TECHNICIAN IV	8449	TRANS ENGINEERING TECHNICIAN V; TRANS ENGINEER I
TRANS ENGINEERING TECHNICIAN IV	TRANS ENGINEERING TECHNICIAN V	8450	TRANS ENGINEER II
	TRANS FACILITIES MAINT WORKER I	0949	TRANS FACILITIES MAINT WORKER II
TRANS FACILITIES MAINT WORKER I	TRANS FACILITIES MAINT WORKER II	0948	TRANS FACILITIES MAINT WORKER III
TRANS FACILITIES MAINT WORKER II	TRANS FACILITIES MAINT WORKER III	0947	
	REAL PROPERTY REVIEW APPRAISER I	4909	REAL PROPERTY REVIEW APPRAISER II
REAL PROPERTY REVIEW APPRAISER I	REAL PROPERTY REVIEW APPRAISER II	4910	REAL PROPERTY REVIEW APPRAISER III
REAL PROPERTY REVIEW APPRAISER II	REAL PROPERTY REVIEW APPRAISER III	4911	
	PERSONNEL ASSOCIATE I	1710	PERSONNEL ASSOCIATE III
PERSONNEL ASSOCIATE I	PERSONNEL ASSOCIATE III	3680	PERSONNEL OFFICER I
PERSONNEL ASSOCIATE III	PERSONNEL OFFICER I	2245	PERSONNEL OFFICER II
PERSONNEL OFFICER I	PERSONNEL OFFICER II	2939	PERSONNEL OFFICER III
PERSONNEL OFFICER II	PERSONNEL OFFICER III	2504	ADMINISTRATOR II
	DOT PROCUREMENT OFFICER TRAINEE	4880	DOT PROCUREMENT OFFICER I
DOT PROCUREMENT OFFICER TRAINEE	DOT PROCUREMENT OFFICER I	4881	DOT PROCUREMENT OFFICER II
DOT PROCUREMENT OFFICER I	DOT PROCUREMENT OFFICER II	4882	DOT PROCUREMENT OFFICER III
DOT PROCUREMENT OFFICER II	DOT PROCUREMENT OFFICER III	4883	

Previous classification	Current classification	Current classification ID	Next Role
	IT PROGRAMMER ANALYST I	4469	IT PROGRAMMER ANALYST II; ADMINISTRATOR IV
IT PROGRAMMER ANALYST I	IT PROGRAMMER ANALYST II	4470	IT PROGRAMMER ANALYST LEAD/ADVANCED;ADMINISTRATOR V
IT PROGRAMMER ANALYST II	IT PROGRAMMER ANALYST LEAD/ADVANCED	4471	IT PROGRAMMER ANALYST SUPERVISOR; ADMINISTRATOR VI
IT PROGRAMMER ANALYST LEAD/ADVANCED	IT PROGRAMMER ANALYST SUPERVISOR	4472	IT PROGRAMMER ANALYST MANAGER; ADMINISTRATOR VII
IT PROGRAMMER ANALYST SUPERVISOR	IT PROGRAMMER ANALYST MANAGER	4473	
	IT TECHNICAL SUPPORT SPECIALIST TRAINEE	4474	IT TECHNICAL SUPPORT SPECIALIST I
IT TECHNICAL SUPPORT SPECIALIST TRAINEE	IT TECHNICAL SUPPORT SPECIALIST I	4475	IT TECHNICAL SUPPORT SPECIALIST II
IT TECHNICAL SUPPORT SPECIALIST I	IT TECHNICAL SUPPORT SPECIALIST II	4476	

This comprehensive and structured approach to populating Cornerstone LMS has laid a strong foundation for enhanced usability and career progression clarity within SHA.

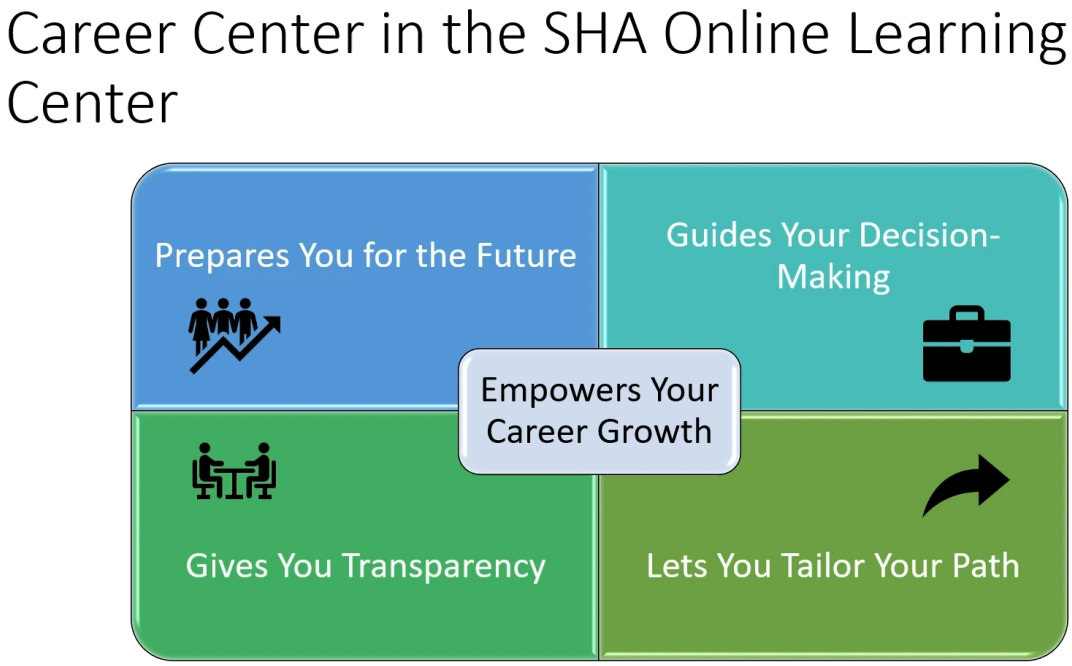
5.3 Video Tutorial Development

To further support SHA employees in navigating the enhanced Career Center in Cornerstone LMS, the research team developed a detailed video tutorial, with narrations, following the request of the technical team. The tutorial introduces users to fundamental features and provides step-by-step guidance on accessing and utilizing the Career Center effectively.

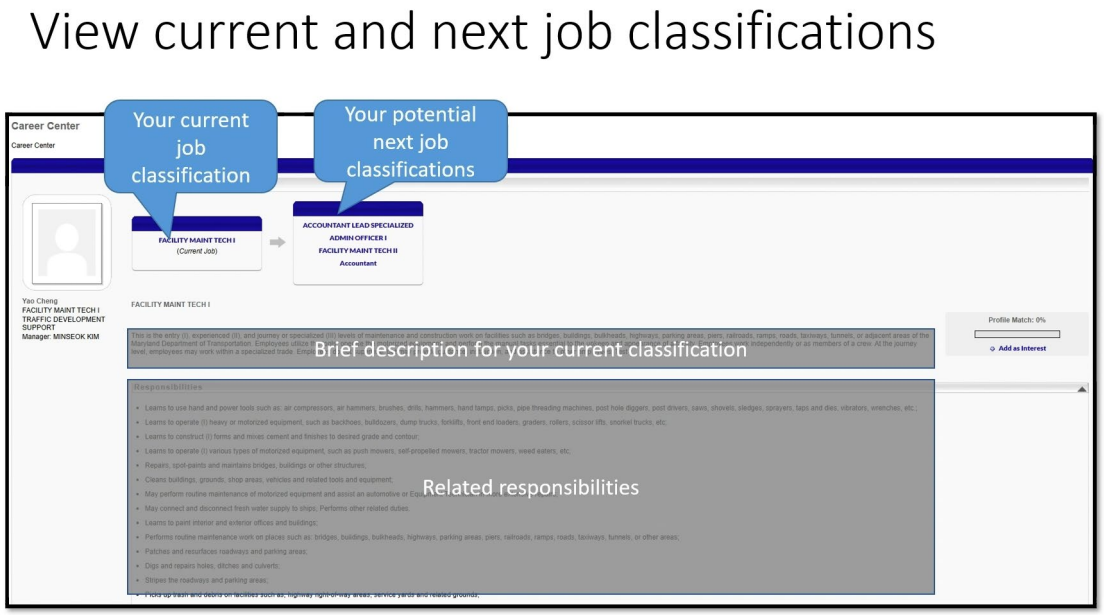
The tutorial covers the following key points:

- Logging into the SHA Online Learning Center and accessing the Career Center.
- Viewing current and potential next job classifications, along with brief descriptions and related responsibilities.
- Exploring further details of potential future jobs on the career pathway by selecting specific classifications of interest.
- Accessing useful training materials linked directly to specific classifications to facilitate career advancement.

Figure 5.2 demonstrates some screenshots of the video tutorial. This video tutorial serves as a valuable resource, ensuring users can seamlessly leverage the newly populated and enhanced career pathway information within the Cornerstone LMS. The completed video has been delivered to the SHA technical team for internal posting.



(a)



(b)

Figure 5.2 Screenshots in the video tutorial

Chapter 6. Roadmap for Enhanced Career Pathway System – Proposed Phase II Work

The initial phase of developing a comprehensive career pathway illustration system for SHA established essential groundwork by populating the Cornerstone LMS with clear job classification pathways and training resources. However, discussions between SHA's technical team and the University of Maryland research team revealed several critical limitations. These include restricted visualization capabilities, lack of inter-track and inter-office mobility information, undefined timelines for career progression, and incomplete guidance regarding necessary training programs.

Building upon these insights and prior accomplishments, this chapter presents a structured following phase outlining targeted enhancements designed to address the identified limitations. The subsequent sections detail the objectives, tasks, anticipated outcomes, and implementation strategies necessary for achieving a more robust and effective career pathway management system.

6.1 Introduction to the Work in the Subsequent Phase

Despite the progress made through previous efforts, SHA continues to face substantial workforce development challenges, such as staffing shortages, skill gaps, and elevated turnover rates, particularly at technician, mid-level, and senior roles. These ongoing issues significantly impact employee morale, productivity, and organizational efficiency. Nationally, similar challenges persist across public-sector agencies, exacerbated by competitive labor markets and growing demand for specialized professional skills.

A critical observation from the initial project phase highlights that employees at SHA experience uncertainty regarding their long-term career trajectories due to insufficient visualization of comprehensive career ladders. Moreover, the current Cornerstone LMS interface is limited to illustrating only immediate job classification transitions, obscuring the broader career advancement opportunities available to employees. This situation restricts employees' capacity to effectively plan their career progression and leverage available training resources fully.

Addressing these limitations is essential for enhancing employee motivation, career satisfaction, and organizational alignment. Therefore, the proposed next phase aims to further develop the existing career pathway visualization framework, integrating advanced functionalities such as multi-level visualization, clearly defined inter-track and inter-office pathways, explicit timelines for progression, and targeted training recommendations. These enhancements are strategically designed to provide employees with an intuitive, comprehensive tool for career planning, thereby bolstering SHA’s workforce stability, retention, and overall operational effectiveness.

The following sections describe the objectives and methodologies that will guide this next phase, ensuring the development of a holistic, user-friendly, and easily maintainable system aligned with SHA’s strategic workforce goals.

6.2 Objectives of the Proposed Enhancements

The proposed enhancements in the subsequent phase aim to expand the utility of the current system and directly respond to the limitations identified during the initial implementation. The overall goal is to provide SHA employees and supervisors with a more complete, navigable, and actionable framework for career development. The key objectives include:

- **Developing a Multi-Level Career Path Visualization**: Introduce tree-shaped diagrams that represent several hierarchical levels before and after an employee's current classification, enabling users to observe broader career trajectories in a single view.

- **Integrating Inter-Track and Inter-Office Advancement Options**: Incorporate career transitions that span different classification tracks (e.g., technical to supervisory) and office functions, helping employees identify lateral and cross-functional opportunities.

- **Defining a Career Progression Timeline**: Provide estimated years of experience typically required for advancement at each level, thus equipping employees with realistic expectations and planning benchmarks.

- **Aligning Training with Career Advancement**: Map specific training modules within the Cornerstone LMS to each stage of advancement, highlighting required competencies and facilitating targeted learning aligned with career goals.

- **Creating a Maintainable, User-Centric Interface**: Design an intuitive interface, supported by external hosting mechanisms, to ensure content updates can be efficiently managed without extensive reliance on internal Information Technology (IT) resources.

These objectives are designed to support SHA in cultivating a skilled, stable, and motivated workforce. By providing a transparent and comprehensive system, the agency will be better positioned to retain talent, foster employee engagement, and align individual growth with institutional priorities.

6.3 Preliminary Concept for Implementation

To initiate the proposed enhancements, the research team envisions a phased development process guided by the objectives outlined above. The immediate focus would be on prototyping tree-shaped visualizations that integrate multi-level classifications with associated timelines and training modules, as shown in Figure 6.1. Parallel to this, an exploratory review of inter-track transitions and cross-office job linkages will be conducted to inform additional layers in the visualization.

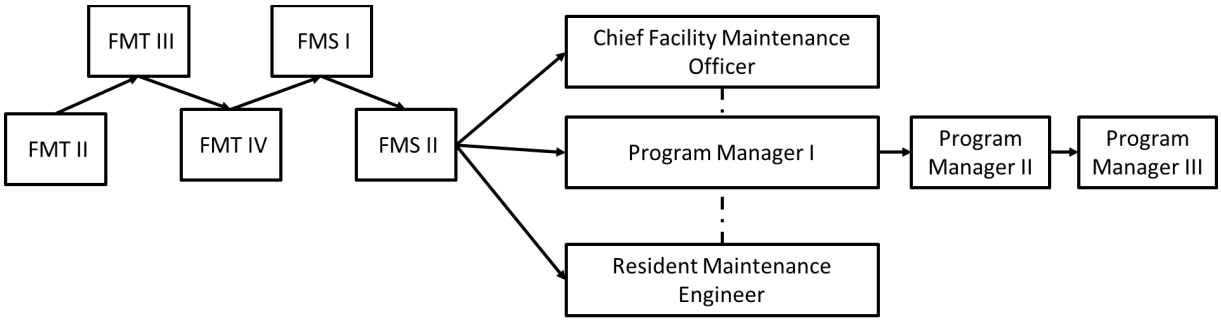


Figure 6.1 Sample tree-shaped multi-level career pathway demonstration

The tasks should also include the identification of flexible hosting solutions, such as externally linked OneDrive folders, that can deliver dynamic content updates without requiring modifications to the Cornerstone LMS function itself. This approach will facilitate quicker deployment, ongoing maintenance, and pilot testing among selected offices.

Rather than serving as a finalized implementation plan, this section outlines a conceptual direction, which will be refined based on stakeholder input, system capabilities, and feedback from early demonstrations.

6.4 Expected Outcomes and Benefits

If implemented, the proposed enhancements are expected to significantly elevate the usability and strategic value of the current career pathway system. The anticipated outcomes include:

- **Improved Career Clarity**: Employees will gain a clearer understanding of both immediate and long-term career options, supported by intuitive visualizations and structured timelines.

- **Enhanced Talent Retention**: A transparent, navigable system for career progression will increase employee engagement and reduce turnover by fostering long-term commitment to SHA.

- **Targeted Workforce Development**: With training aligned to specific advancement paths, employees can more effectively prepare for new responsibilities, and managers can more readily identify readiness for promotion.

- **Administrative Efficiency**: By hosting visualizations and guidance materials externally, SHA can maintain updated resources with minimal technical overhead, ensuring adaptability and sustainability over time.

- **Cross-Functional Mobility**: Highlighting inter-track and inter-office transitions will support flexible career planning and enable better alignment of individual growth with organizational needs.

Together, these outcomes will contribute to a more resilient and strategically aligned workforce, positioning SHA to respond more effectively to evolving operational demands and staffing challenges.

6.5 Considerations for Deployment and Adoption

To support successful deployment, early and continuous engagement with internal stakeholders will be essential. The research team recommends identifying a small group of pilot users from diverse roles and offices to test the system's usability and provide feedback on interface design and content clarity. This iterative feedback loop will ensure the final product is both intuitive and aligned with actual employee needs.

In parallel, SHA leadership may consider embedding the enhanced career pathway tools into broader workforce planning and training initiatives. Integrating system demonstrations into the new employee orientation, supervisor training, and HR advisory sessions could further institutionalize its use.

Ultimately, the long-term adoption and utility of the system will depend not only on its technical design but also on the agency's capacity to promote and normalize its use in everyday workforce decisions. Early wins in select offices or classifications could serve as success stories to encourage broader engagement across the agency.

Chapter 7. Conclusions

7.1 Summary of Accomplishments

This study presents a comprehensive approach to career pathway development within the SHA, grounded in empirical data, institutional classification structures, and stakeholder input. The research team systematically analyzed existing job classifications, organizational charts, and employee perspectives to construct a set of data-driven pathway models tailored to SHA's operational context. Key accomplishments include:

- **Development of a structured classification adjacency framework**, enabling consistent identification of vertical and lateral mobility opportunities within and across classification series;
- **Categorization of MDOT SHA job classifications into technical, supervisory, managerial, and cross-functional tracks**, accompanied by role-specific responsibilities and example progression routes;
- **Integration of pathway models into the Cornerstone Learning Management System (LMS)**, providing a transparent and interactive tool for SHA staff to explore advancement options;
- **Production of an orientation video tutorial** to support employee self-navigation of the system;
- **Formulation of future proposals** that extend the system's capacity through improved classification definitions, incorporation of workforce analytics, and support for emerging job roles.

Taken together, these components contribute to a replicable and adaptable framework for agency-wide career pathway development.

7.2 Expected Benefits to MDOT SHA

The deployment of the proposed career pathway system is anticipated to yield both immediate and long-term benefits to SHA's workforce management and organizational development. These include:

- **Improved transparency and consistency in career advancement**, addressing concerns of limited upward mobility or unclear promotion criteria that emerged in the employee survey;
- **Enhanced workforce planning capabilities**, through the alignment of job classifications with clear developmental trajectories and succession planning strategies;
- **Support for recruitment and retention**, by enabling SHA to communicate structured career growth opportunities to both prospective and current employees;

- **Empowerment of individual career planning**, through employee-facing tools that facilitate self-assessment, goal setting, and engagement with training opportunities;

- **Alignment with statewide workforce modernization goals**, particularly those related to talent development, internal mobility, and equity in public sector employment.

These benefits position SHA as a model for career pathway innovation among public transportation agencies.

7.3 Future Research

While this study establishes a foundational framework, several areas merit further investigation and development. Key directions for future research include:

- **Refinement of classification linkages using workforce data**, such as promotion histories, training completion records, and employee tenure to validate and expand adjacency definitions;

- **Analysis of career mobility outcomes**, to evaluate whether the implemented pathway tools affect actual promotion patterns, lateral moves, or employee retention across offices;

- **Integration of cross-agency mobility models**, particularly for roles that align with other state agencies or regional transportation entities, to broaden the scope of viable career trajectories;

- **Support for emerging roles**, such as those associated with sustainability, digital infrastructure, and asset management, which may require new classification structures or skill taxonomies;

- **User-centered design improvements**, based on feedback from employees and supervisors who interact with the Cornerstone system, ensuring continued relevance and accessibility of the tools.

By pursuing these extensions, SHA can further institutionalize a responsive and data-driven career development ecosystem that evolves with organizational and technological change.

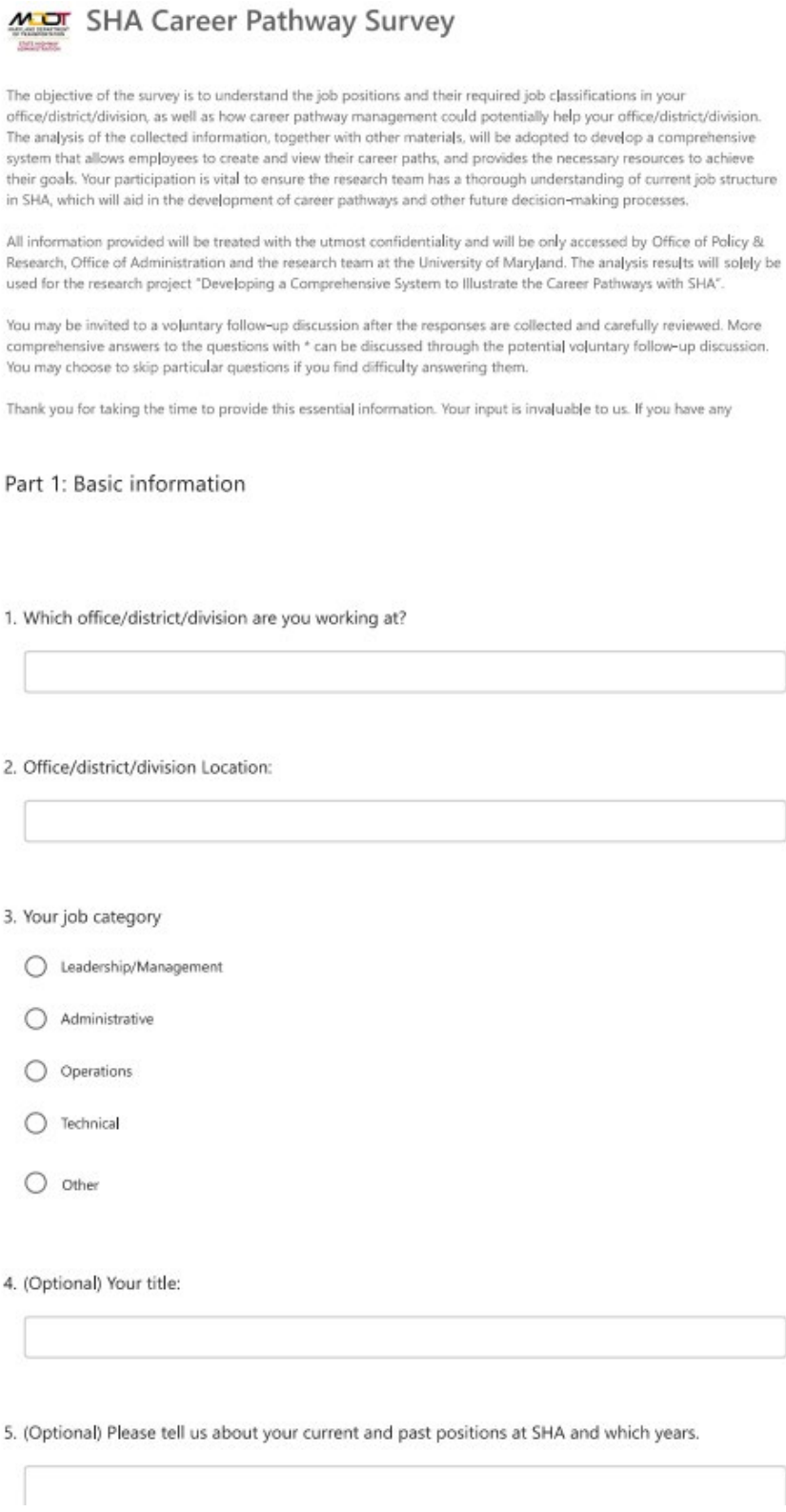
References

1. Understanding America's Labor Shortage, U.S. Chamber of Commerce, https://www.uschamber.com/workforce/understanding-americas-labor-shortage, accessed 02/20/2023
2. The Great Resignation and COVID-19: Impact on Public Sector Employment and How Employers Can Help, MissionSquare Research Institute, 2021
3. Job Openings and Labor Turnover – February 2025, US Bureau of Labor Statistics, https://www.bls.gov/news.release/pdf/jolts.pdf, accessed 04/24/2025
4. A Road Map for Dealing With Government's Workforce Crisis, Governing, https://www.governing.com/work/a-road-map-for-dealing-with-governments-workforce-crisis, accessed 04/24/2025
5. Developing Employee Career Paths and Ladders, https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/pages/developingemployeecareerpathsandladders.aspx#:~:text=Most%20organizations%20could%20benefit%20by,organization's%20continuing%20growth%20and%20productivity., Accessed 10/08/2023
6. High Risk List, US Government Accountability Office, https://www.gao.gov/high-risk-list?, accessed 04/24/2025
7. Gallagher Study Finds Career Development as a Top Factor in Employee Engagement and Retention, https://www.prnewswire.com/news-releases/gallagher-study-finds-career-development-as-a-top-factor-in-employee-engagement-and-retention-302238309.html, accessed 04/24/2025
8. 2024 Retention Report, https://info.workinstitute.com/hubfs/2024%20Retention%20Report/Work%20Institute%202024%20Retention%20Report.pdf, accessed 04/24/2025
9. Supporting Career Development Strategies In Public Service, https://www.afscme.org/about/governance/conventions/resolutions-amendments/2024/resolutions/supporting-career-development-strategies-in-public-service, accessed 04/24/2025

10. The Need for Public Sector Career Development: Recruitment and Talent Retention Strategies for a Sustainable Future, https://www.right.com/insights/need-for-public-sector-career-development-for-sustainable-future, accessed 04/24/2025
11. Occupational Outlook Handbook, General Maintenance and Repair Workers, https://www.bls.gov/ooh/installation-maintenance-and-repair/general-maintenance-and-repair-workers.htm, accessed 04/24/2025
12. Talent Shortage Among Maintenance Professionals and How a CMMS Can Help, https://maintenanceworld.com/2025/02/18/talent-shortage-among-maintenance-professionals-and-how-a-cmms-can-help, accessed 04/24/2025
13. Workday Talent Marketplace Delivers Skills-based Talent Matching to Drive Greater Agility, https://www.globenewswire.com/news-release/2020/10/15/2109255/0/en/Workday-Talent-Marketplace-Delivers-Skills-based-Talent-Matching-to-Drive-Greater-Agility.html, accessed 02/20/2023
14. SAP SuccessFactors Human Experience Management Suite, https://www.sap.com/products/hcm.html, accessed 02/20/2023
15. PeopleFluent, https://www.peoplefluent.com/, accessed 02/20/2023

Chapter 8. Appendix

Appendix A. Employee Survey



SHA Career Pathway Survey

The objective of the survey is to understand the job positions and their required job classifications in your office/district/division, as well as how career pathway management could potentially help your office/district/division. The analysis of the collected information, together with other materials, will be adopted to develop a comprehensive system that allows employees to create and view their career paths, and provides the necessary resources to achieve their goals. Your participation is vital to ensure the research team has a thorough understanding of current job structure in SHA, which will aid in the development of career pathways and other future decision-making processes.

All information provided will be treated with the utmost confidentiality and will be only accessed by Office of Policy & Research, Office of Administration and the research team at the University of Maryland. The analysis results will solely be used for the research project "Developing a Comprehensive System to Illustrate the Career Pathways with SHA".

You may be invited to a voluntary follow-up discussion after the responses are collected and carefully reviewed. More comprehensive answers to the questions with * can be discussed through the potential voluntary follow-up discussion. You may choose to skip particular questions if you find difficulty answering them.

Thank you for taking the time to provide this essential information. Your input is invaluable to us. If you have any

Part 1: Basic information

1. Which office/district/division are you working at?

2. Office/district/division Location:

3. Your job category

- ◯ Leadership/Management
- ◯ Administrative
- ◯ Operations
- ◯ Technical
- ◯ Other

4. (Optional) Your title:

5. (Optional) Please tell us about your current and past positions at SHA and which years.

Part 2: Job positions in your office/district/division

6. When did your office/district/division update the organizational chart? Do you believe the current structure is approximately the same as the last update?

7. *What positions do you have challenges filling or keeping filled?

8. * What positions are the employees in your office/district/division commonly promoted from and promoted to, when there is an external job promotion?

9. *Please provide 2-3 sample/typical advancement paths within your office/district/division.

10. Are there any positions in your office/district/division without typical promotion possibility above their current (or certain) level?

Part 3: Potential improvements to the career pathway management

11. Are there any specific training or professional development programs in place for the staff in your office/district/division? If yes, please list them.

12. Do you use Cornerstone to learn about training opportunities in addition to the yearly Personal Development Plans? If yes, what do you focus on? If not, why not?

13. *What external resources and training (e.g., online university courses, leadership academies, professional trainings, etc.) do you think will complement the existing Cornerstone courses and training?

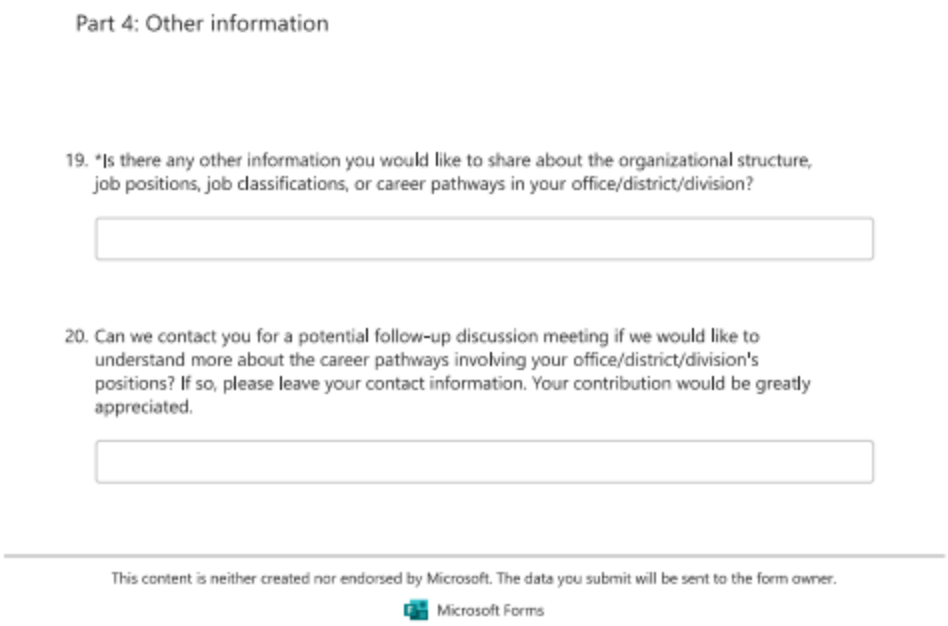
14. *What is your knowledge and/or experience in having internal promotions within the office/district/division vs external filling of vacant positions?

15. *Social professional connections (such as ITE, ASCE, etc.) are another way to advance your career connections. Does your office/district/division participate in these activities? If yes, what are these activities? And if not, what do you recommend to be included?

16. Do you know what professional shadow training is? What are some of the pros or cons?

17. *What are the reasons for the employees to leave your office/district/division or SHA?

18. "Work friends" are another way to enhance work culture and make connections for better understanding and collaboration. Does your office/district/division encourage professional outings and activities?


Part 4: Other information

19. *Is there any other information you would like to share about the organizational structure, job positions, job classifications, or career pathways in your office/district/division?

20. Can we contact you for a potential follow-up discussion meeting if we would like to understand more about the career pathways involving your office/district/division's positions? If so, please leave your contact information. Your contribution would be greatly appreciated.

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Microsoft Forms

Appendix B. Structured database for job classification pairs in MDOT SHA

Classification 1	Classification 2	Sample office/district
Administrative Assistant Executive	DOT Executive IV	Office of Planning and Preliminary Engineering (OPPE), Office of Highway Development
Administrative Assistant Executive	DOT Executive V	District 2
Administrative Assistant I	Administrator IV-Ad Chief	District 7
Administrative Assistant II	Administrator II	District 6
Administrative Assistant III	Administrative Officer I	District 3
Administrative Assistant III	Administrative Officer III	District 4
Administrative Assistant III	Administrator I	District 1, District 5
Administrative Assistant III	Administrator II	District 2
Administrative Assistant III	Administrator IV	District 1, District 3, District 4
Administrative Assistant III	Administrator VII	

Classification 1	Classification 2	Sample office/district
Administrative Assistant III	DOT Executive IV	District 3
Administrative Assistant III	DOT Executive V	Office of Org Charts
Administrative Assistant III	DOT Prof Officer Trainee	District 1
Administrative Assistant III	Officer I Trainee	District 3
Administrative Assistant III	Program Manager IV	Office of Highway Development
Administrative Assistant III	Program Manager Sr I	Equal Opportunity
Administrative Assistant III	Program Manager Sr IV	District 3
Administrative Assistant III	Transportation Design Engineer VII	Office of Highway Development
Administrative Assistant III	Transportation Engineer V	District 3
Administrative Manager II	DOT Executive IV	OMT Organization
Administrative Officer I	Administrator I	District 5
Administrative Officer I	Administrator VI	Office of Org Charts
Administrative Officer I	DOT Executive IV	Office of Real Estate
Administrative Officer II	Administrator I	District 4
Administrative Officer II	Administrator IV	Office of Policy and Research
Administrative Officer II	Administrator V	Office of Policy and Research
Administrative Officer II	Administrator VI	Office of Policy and Research
Administrative Officer III	Administrator II	Office of Highway Development
Administrative Officer III	Administrator III	Office of Highway Development
Administrative Officer III	Administrator IV	District 3, Environmental Design (Program Support)
Administrative Officer III	Administrator IV-Ad Chief	District 7
Administrative Officer III	Administrator V	Office of Policy and Research
Administrative Officer III	Administrator VI	Office of Policy and Research
Administrative Officer III	Administrator VII	District 2
Administrative Officer III	Administrator VII-Maintenance	District 7
Administrative Officer III	DOT Executive IV	Office of Planning and Preliminary Engineering (OPPE)
Administrative Officer III	DOT Executive V	District 4
Administrative Officer III	DOT Executive VI	District 1
Administrative Officer III	DOT Procurement Manager IV	Office of Procurement and Contract Management
Administrative Officer III	Transportation Engineer V	Office of Planning and Preliminary Engineering (OPPE)
Administrative Officer III	Transportation Engineer V	Office of Planning and Preliminary Engineering (OPPE)
Administrative Specialist III	Administrative Officer III	Office of Planning and Preliminary Engineering (OPPE)
Administrative Specialist III	Administrator VI	Office of Policy and Research
Administrative Specialist III	Transportation Engineering Manager II	District 3

Classification 1	Classification 2	Sample office/district
Administrator I	Administrator III	Office of Org Charts
Administrator I	Administrator IV	Environmental Design (Program Support), District 1, District 2, District 3, District 5, Office of Policy and Research
Administrator I	Administrator V	Office of Communications
Administrator I	Administrator VI	Office of Org Charts
Administrator I	Administrator VII	Office of Transportation Mobility and Operations
Administrator I	DOT Executive V	Asset Management, District 6, Office of Homeland Security and Occupational Safety
Administrator II	Administrator IV	Office of Policy and Research
Administrator II	Administrator V	Office of Communications
Administrator II	Administrator V	Office of Planning and Preliminary Engineering (OPPE)
Administrator II	Administrator VI	Office of Highway Development
Administrator II	Administrator VII	Office of Communications
Administrator II	Chief Facility Maintenance Officer	Cambridge Shop
Administrator II	Chief Facility Maintenance Officer	District 7
Administrator II	DOT Executive	Office of Org Charts
Administrator II	DOT Executive IV	Office of Communications, Office of Planning and Preliminary Engineering (OPPE)
Administrator II	DOT Executive V	District 2
Administrator II	Program Manager III	District 2
Administrator II	Program Manager IV	Office of Transportation Mobility and Operations
Administrator II	Project Manager III	District 2
Administrator II	Transportation Engineering Manager I	District 3
Administrator II	Transportation Engineering Manager II	District 4
Administrator III	Administrator IV	Office of Highway Development
Administrator III	Administrator V	Office of Communications
Administrator III	Administrator VI	Equal Opportunity, OPPE (Regional and Intermodal Planning Division)
Administrator III	Administrator VII	Office of Communications
Administrator III	Administrator VII	Office of Org Charts
Administrator III	DOT Executive IV	District 4
Administrator III	DOT Executive V	District 5
Administrator III	DOT Executive VI	District 1 (8100)
Administrator III	Program Manager III	Office of Homeland Security and Occupational Safety

Classification 1	Classification 2	Sample office/district
Administrator III	Program Manager IV	Environmental Design (Environmental Programs)
Administrator III	Program Manager Sr I	Equal Opportunity
Administrator IV	Administrator IV	Office of Planning and Preliminary Engineering (OPPE)
Administrator IV	Administrator VI	Office of Highway Development
Administrator IV	Administrator VII	Office of Policy and Research
Administrator IV	DOT Executive IV	District 4
Administrator IV	DOT Executive V	District 2
Administrator IV	DOT Executive VI	District 1 (8100)
Administrator IV	DOT Procurement Manager III	Office of Procurement and Contract Management
Administrator IV	Program Manager III	Environmental Design (Environmental Programs)
Administrator IV	Program Manager Sr IV	District 3
Administrator Specialist III	Administrative Officer III	Office of Planning and Preliminary Engineering (OPPE)
Administrator V	Administrator VII	Office of Communications
Administrator V	Administrator VI	Office of Policy and Research
Administrator V	DOT Executive IV	Office of Transportation Mobility and Operations
Administrator V	Environmental Manager II	Office of Planning and Preliminary Engineering (OPPE)
Administrator V	Program Manager III	Environmental Design (Environmental Programs)
Administrator V	Program Manager IV	Environmental Design (Environmental Compliance)
Administrator VI	Administrator VI	Office of Planning and Preliminary Engineering (OPPE)
Administrator VI	Administrator VII	Office of Org Charts
Administrator VI	DOT Executive IV	Asset Management, Office of Policy Research
Administrator VI	Program Manager IV	Office of Highway Development
Administrator VI	Program Manager Sr I	Equal Opportunity
Administrator VI	Transportation Engineering Manager II	Office of Planning and Preliminary Engineering (OPPE)
Administrator VII	DOT Executive IV	Asset Management, District 3, District 4, District 5, OMT Organization, Office of Org Charts, OPPE, District 4, Office of Communications
Administrator VII	DOT Executive V	District 2
Administrator VII	DOT Executive VI	District 1 (8100), Office of Policy and Research
Administrator VII	Program Manager III	Office of Homeland Security and Occupational Safety

Classification 1	Classification 2	Sample office/district
Administrator VII	Program Manager Sr IV	District 3
Agency Procurement Specialist II	Administrator IV	Environmental Design (Program Support)
Analyst I	Analyst Lead	Office of Real Estate
Analyst Lead	IT Technical Support Specialist Supervisor	Office of Real Estate
AOII/Unit Training Coordinator	Administrator IV	District 2
Appraiser I	Appraiser II	Office of Real Estate
Appraiser II	Appraiser III	Office of Real Estate
Appraiser III	DOT Executive IV	Office of Real Estate
Chief Facility Maintenance Officer	DOT Executive IV	Office of Policy and Research
Chief Facility Maintenance Officer	Program Manager III	Cambridge Shop
Chief Facility Maintenance Officer	Project Manager III	District 2
Chief Facility Maintenance Officer	Transportation Engineering Manager II	District 4
Computer Info	Administrator IV-Ad Chief	District 7
Computer Info Services Specialist II	Administrator I	District 4
Computer Info Services Specialist II	Administrator IV	District 2
Computer Info Services Specialist II	Computer Info Services Specialist Supervisor Sprv	District 1
Computer Info Services Specialist Supervisor	Administrator IV	District 3
Computer Info Services Supervisor	Administrator I	District 4
Computer Info Services Supervisor	Administrator IV	District 1
Computer Services Specialist Supervisor I	Administrator IV	District 6
Database Specialist	Administrator VI	Office of Org Charts
District Procurement Officer	Administrator VII	District 3
DOT Executive Assistant I	Administrator III	Equal Opportunity
DOT Executive Assistant I	Transportation Engineer III	Equal Opportunity
DOT Executive IV	DOT Executive V	Asset Management, District 5, Office of Org Charts, Office of Transportation Mobility and Operations
DOT Executive IV	DOT Executive VI	I-495 & I-270 Program Office
DOT Executive IV	Program Manager Sr IV	District 3
DOT Executive Officer III	DOT Executive Assistant I	Equal Opportunity
DOT Executive V	DOT Executive IV	Office of Highway Development
DOT Executive V	DOT Executive VI	I-495 & I-270 Program Office
DOT Functional Analyst II	Administrator I	District 4
DOT IT Functional Analyst Lead	Administrator VI	Equal Opportunity

Classification 1	Classification 2	Sample office/district
DOT NON Exempt II	Administrator VI	Office of Org Charts
DOT Non-Ex II	Transportation Engineering Manager II	District 4
DOT Procurement I	DOT Procurement Officer II	Office of Procurement and Contract Management
DOT Procurement Manager I	DOT Procurement Manager II	Office of Procurement and Contract Management
DOT Procurement Manager I	DOT Procurement Manager III	Office of Procurement and Contract Management
DOT Procurement Manager II	DOT Procurement Manager III	Office of Procurement and Contract Management
DOT Procurement Manager III	DOT Procurement Manager IV	Office of Procurement and Contract Management
DOT Procurement Officer	Administrator I	Office of Transportation Mobility and Operations
DOT Procurement Officer	Administrator II	District 2
DOT Procurement Officer I	Administrator II	District 1
DOT Procurement Officer I	DOT Procurement Officer III	Office of Procurement and Contract Management
DOT Procurement Officer II	DOT Procurement Manager I	Office of Procurement and Contract Management
DOT Procurement Officer III	DOT Procurement Manager I	Office of Procurement and Contract Management
Emergency Response Technician	Program Manager I	Office of Transportation Mobility and Operations
Emergency Response Technician Senior	Program Manager I	Office of Transportation Mobility and Operations
Emergency Response Technician - TE	Program Manager I	Office of Transportation Mobility and Operations
Emergency Response Technician	Patrol Supervisor	Office of Transportation Mobility and Operations
Emergency Response Technician Senior	Patrol Supervisor	Office of Transportation Mobility and Operations
Patrol Supervisor	Program Manager I	Office of Transportation Mobility and Operations
Engineer V	Administrator VI	Office of Planning and Preliminary Engineering (OPPE)
Environmental Analyst I	Environmental Manager II	Office of Planning and Preliminary Engineering (OPPE)
Environmental Analyst II	Administrator IV	Environmental Design (Environmental Programs)
Environmental Analyst III	Administrator IV	Environmental Design (Environmental Programs)
Environmental Analyst IV	Administrator V	Environmental Design (Environmental Programs)
Environmental Analyst IV	Environmental Manager I	Environmental Design (Landscape Programs)

Classification 1	Classification 2	Sample office/district
Environmental Analyst IV	Transportation Engineer V	Environmental Design (Environmental Programs)
Environmental Manager I	Environmental Manager II	Office of Planning and Preliminary Engineering (OPPE)
Environmental Manager I	Program Manager III	Environmental Design (Landscape Programs)
Environmental Manager II	Administrator VII	Office of Planning and Preliminary Engineering (OPPE)
Equipment Supervisor	Administrator VII-Maintenance	District 7
Facility Maintenance Supervisor I	Chief Facility Maintenance Officer	Cambridge Shop
Facility Maintenance Supervisor I	Facility Maintenance Supervisor II	Office of Org Charts
Facility Maintenance Supervisor I	Resident Maintenance Engineer	District 3
Facility Maintenance Supervisor II	Administrator VI	Office of Org Charts
Facility Maintenance Supervisor II	Administrator VII	District 2
Facility Maintenance Technician I	Facility Maintenance Technician II	District 1
Facility Maintenance Technician I	Facility Maintenance Technician III	Cambridge Shop
Facility Maintenance Technician I	Facility Maintenance Technician IV	District 2
Facility Maintenance Technician I	Facility Maintenance Technician Supervisor I	District 7
Facility Maintenance Technician I TE	Facility Maintenance Technician I	District 1
Facility Maintenance Technician II	Facility Maintenance Technician III	District 1
Facility Maintenance Technician II	Facility Maintenance Technician IV	District 1
Facility Maintenance Technician II	Facility Maintenance Technician Supervisor I	District 7
Facility Maintenance Technician III	Facility Maintenance Supervisor	District 6
Facility Maintenance Technician III	Facility Maintenance Technician IV	Cambridge Shop
Facility Maintenance Technician III	Facility Maintenance Technician Supervisor I	District 7
Facility Maintenance Technician III TE	Facility Maintenance Technician II	District 1
Facility Maintenance Technician IV	Chief Facility Maintenance Officer	Cambridge Shop
Facility Maintenance Technician IV	Facility Maintenance Supervisor I	District 2
Facility Maintenance Technician IV	Facility Maintenance Technician Supervisor I	District 7
Facility Maintenance Technician IV	Transportation Engineer III	District 3
Facility Maintenance Technician IV	Transportation Engineer Manager I	District 4
Facility Maintenance Technician Supervisor I	Chief Facility Maintenance Officer	District 7

Classification 1	Classification 2	Sample office/district
Heavy Equipment Maintenance Apprentice	Heavy Equipment Maintenance Supervisor I	District 7
Heavy Equipment Maintenance Supervisor I	Administrator VII	District 6
Heavy Equipment Maintenance Supervisor I	Chief Facility Maintenance Officer	Cambridge Shop
Heavy Equipment Maintenance Supervisor I	Program Manager III	District 4
Heavy Equipment Maintenance Supervisor I	Resident Maintenance Engineer	District 3
Heavy Equipment Maintenance Supervisor I	Transportation Engineering Manager II	District 4
Heavy Equipment Maintenance Technician I	Heavy Equipment Maintenance Supervisor I	District 4
Heavy Equipment Maintenance Technician I	Heavy Equipment Maintenance Technician II	District 3
Heavy Equipment Maintenance Technician I	Heavy Equipment Maintenance Technician III	District 3
Heavy Equipment Maintenance Technician II	Heavy Equipment Maintenance Supervisor I	District 1
Heavy Equipment Maintenance Technician II	Heavy Equipment Maintenance Technician III	Cambridge Shop
Heavy Equipment Maintenance Technician III	Heavy Equipment Maintenance Supervisor I	Cambridge Shop
Heavy Equipment Body Repair III	Heavy Equipment Maintenance Supervisor I	District 2
Highway Operations Technician I	Highway Operations Technician IV	Office of Transportation Mobility and Operations
Highway Operations Technician II	Highway Operations Technician IV	Office of Transportation Mobility and Operations
Highway Operations Technician III	Highway Operations Technician IV	Office of Transportation Mobility and Operations
Highway Operations Technician IV	Program Manager I	Office of Transportation Mobility and Operations
HR Associate I	Administrator I	District 5
HR Associate Sr.	Administrator II	Office of Org Charts
IMS	Administrator I	Office of Transportation Mobility and Operations
IT Programmer Analyst II	Administrator IV	Office of Highway Development
IT System Technical Specialist Supervisor	DOT Executive IV	Office of Transportation Mobility and Operations
IT System Technical Specialist Supervisor	Real Property Manager	Office of Real Estate
IT System Technical Specialist	Administrator VII	Office of Transportation Mobility and Operations
ITS Technician II	ITS Technical Support	Office of Transportation Mobility and Operations

Classification 1	Classification 2	Sample office/district
ITS Technician III	ITS Technical Support	Office of Transportation Mobility and Operations
ITS Technical Support	Administrator IV	Office of Transportation Mobility and Operations
Landscape Architect III	Landscape Architect V	Environmental Design (Landscape Programs)
Landscape Architect IV	Landscape Architect V	Environmental Design (Landscape Programs)
Landscape Architect V	Program Manager III	Environmental Design (Landscape Programs)
Maintenance Chief	Facility Maintenance Supervisor II	Office of Org Charts
Maintenance Supervisor	Administrator VI	Office of Org Charts
Maintenance Technician III	Maintenance Supervisor	Office of Org Charts
Management Officer	Administrator VI	Office of Org Charts
Officer I Trainee	Officer Manager	District 3
Officer Manager	Resident Maintenance Engineer	District 3
Officer Srvs Clerk	Administrator I	District 1
Officer Srvs Clerk	Administrator IV	District 2
OSH Compliance Officer Manager	Administrator VII	Office of Homeland Security and Occupational Safety
OSH Compliance Program Specialist	OSH Compliance Officer Manager	Office of Homeland Security and Occupational Safety
Personnel Officer III	Administrator IV	District 6
Planner III	Administrator III	Office of Planning and Preliminary Engineering (OPPE)
Procurement Officer I	Administrator II	District 2
Procurement Associate III	Administrator II	District 5
Program Manager I	Program Manager IV	Office of Transportation Mobility and Operations
Program Manager II	Program Manager IV	Office of Transportation Mobility and Operations
Program Manager III	Administrator VII	District 3
Program Manager III	DOT Executive V	Office of Homeland Security and Occupational Safety
Program Manager III	Program Manager IV	Environmental Design (Environmental Programs)
Program Manager IV	DOT Executive V	Office of Highway Development
Program Manager IV	Program Manager Sr I	Environmental Design (Environmental Compliance)
Program Manager Sr I	SHA Director of Environmental Design	Environmental Design (Environmental Compliance)
Project Management	DOT Executive IV	Office of Planning and Preliminary Engineering (OPPE)
Real Estate Manager	DOT Executive V	District 2
Real Prop Spec	DOT Executive V	District 2

Classification 1	Classification 2	Sample office/district
Real Property Manager	DOT Executive IV	Office of Real Estate
Real Property Manager	DOT Executive VI	I-495 & I-270 Program Office
Real Property Specialist III	Real Property Supervisor	Office of Real Estate
Real Property Supervisor	Real Property Manager	Office of Real Estate
Real Property Specialist I	Real Property Supervisor	Office of Real Estate
Real Property Specialist II	Real Property Supervisor	Office of Real Estate
Real Property Specialist IV	Real Property Supervisor	Office of Real Estate
Resident Maintenance Engineer	Administrator VII	District 5
Resident Maintenance Engineer	Resident Maintenance Engineer	District 3
Shop Administrative Technician II	Administrator II	District 2
Shop Administrative Technician II	Shop Administrative Technician III	District 1
Shop Administrative Technician II	Administrative Assistant III	District 1
Shop Administrative Technician III	Administrator II	District 2
Shop Administrative Technician III	DOT Proc Officer I	District 1
Shop Administrative Technician III	Administrator II	District 4
Service Specialist Supervisor	Administrator IV	District 5
Services Specialist II	Services Specialist Supervisor	Office of Highway Development
Services Specialist Supervisor	Administrator IV	Office of Highway Development
SHA Homeland Security Officer	Administrator IV	District 4
SHA OEO	Administrator IV	District 4
Shop Administrative Technician I	Administrative Assistant III	District 3
Shop Administrative Technician II	Administrative Assistant III	District 3
Shop Administrative Technician III	Administrator I	Office of Org Charts
Shop Administrator Technician III	Administrator II	District 6
Skilled Trade Specialist	Facility Maintenance Supervisor II	Office of Org Charts
Skilled Trade Specialist II	Facility Maintenance Supervisor II	Office of Org Charts
Skilled Trade Specialist III	Facility Maintenance Supervisor II	Office of Org Charts
Specialist I	Analyst Lead	Office of Real Estate
Specialist II	Comp. Info. Serv. Specialist Supr.	District 3
Supply Officer SAT III	Administrator II	District 7
Team Leader	DOT Executive IV	OMT Organization
Technician III	Services Specialist Supervisor	Office of Highway Development
Transportation Engineer Manager II/AE	Administrator VII	District 2
TFMW II	Facility Maintenance Supervisor II	District 3
Transportation Design Engineer II	Transportation Engineering Manager I	Office of Highway Development
Transportation Design Engineer III	Transportation Engineering Manager I	Office of Highway Development
Transportation Design Engineer III	Transportation Engineering Manager II	Office of Highway Development

Classification 1	Classification 2	Sample office/district
Transportation Design Engineer IV	Transportation Design Engineer VI	Office of Highway Development
Transportation Design Engineer IV	Transportation Design Engineer VII	Office of Highway Development
Transportation Design Engineer IV	Transportation Engineering Manager I	Office of Highway Development
Transportation Design Engineer IV	Transportation Engineering Manager II	Office of Highway Development
Transportation Design Engineer IV	Transportation Design Engineer V	Office of Highway Development
Transportation Design Engineer V	Transportation Design Engineer VI	Office of Highway Development
Transportation Design Engineer V	Transportation Engineering Manager II	Office of Highway Development
Transportation Design Engineer VI	Program Manager IV	Office of Highway Development
Transportation Design Engineer VI	Transportation Design Engineer VII	Office of Highway Development
Transportation Design Engineer VII	DOT Executive V	Office of Highway Development
Transportation Engineer I	Transportation Design Engineer V	Office of Highway Development
Transportation Engineer I	Transportation Engineer Manager I	Office of Planning and Preliminary Engineering (OPPE)
Transportation Engineer I	Transportation Engineer V	Concrete Technology Division Work Group
Transportation Engineer I	Transportation Engineering Manager I	District 4
Transportation Engineer I	Transportation Engineering Manager II	District 4
Transportation Engineer II	Administrator VII	District 2
Transportation Engineer II	Transportation Engineer Manager I	District 4
Transportation Engineer II	Transportation Engineering Manager II	District 3
Transportation Engineer II	Transportation Design Engineer V	Office of Highway Development
Transportation Engineer III	Administrator IV	District 2
Transportation Engineer III	Administrator VI	Equal Opportunity
Transportation Engineer III	Administrator VII	District 1, District 2, District 6
Transportation Engineer III	Engineer V	Office of Planning and Preliminary Engineering (OPPE)
Transportation Engineer III	Transportation Design Engineer V	Office of Highway Development
Transportation Engineer III	Transportation Engineer IV	District 3
Transportation Engineer III	Transportation Engineer Manager II	Construction
Transportation Engineer III	Transportation Engineer V	OMT Organization
Transportation Engineer III	Transportation Engineer Manager I	District 3
Transportation Engineer IV	Administrator II	Office of Planning and Preliminary Engineering (OPPE)
Transportation Engineer IV	Administrator III	Equal Opportunity
Transportation Engineer IV	Administrator IV	District 1, District 3, Office of Highway Development
Transportation Engineer IV	Administrator V	Environmental Design (Environmental Programs)

Classification 1	Classification 2	Sample office/district
Transportation Engineer IV	Administrator VII	District 2
Transportation Engineer IV	Administrator VII-Construction	District 7
Transportation Engineer IV	Program Manager II	Office of Transportation Mobility and Operations
Transportation Engineer IV	Transportation Design Engineer V	Office of Highway Development
Transportation Engineer IV	Transportation Design Engineer VI	Office of Highway Development
Transportation Engineer IV	Transportation Engineer Manager II	District 5
Transportation Engineer IV	Transportation Engineer Manager I	Office of Planning and Preliminary Engineering (OPPE)
Transportation Engineer IV	Transportation Engineer V	Environmental Design (Environmental Programs)
Transportation Engineer Manager I	Administrator VII	District 4
Transportation Engineer Manager I	Program Manager IV	Office of Transportation Mobility and Operations
Transportation Engineer Manager I	Project Management	Office of Planning and Preliminary Engineering (OPPE)
Transportation Engineer Manager I	Transportation Design Engineer VI	Office of Highway Development
Transportation Engineer Manager I	Transportation Engineering Manager II	District 3
Transportation Engineer Manager II	Administrator VII	Asset Management, District 2, District 3, District 4, District 5, District 6, Office of Highway Development, OMT Organization, OPPE
Transportation Engineer Manager II	Administrator VII	Construction
Transportation Engineer Manager II	DOT Executive IV	District 3
Transportation Engineer Manager II	Transportation Design Engineer VII	Office of Highway Development
Transportation Engineer Manager II	Transportation Engineering Manager II	Office of Highway Development
Transportation Engineer Manager III	Administrator VII	District 2
Transportation Engineer Manager IV	Administrator VII	District 2
Transportation Engineer V	Administrative Officer I	District 3
Transportation Engineer V	Administrator VI	Asset Management, OPPE
Transportation Engineer V	Administrator VII	Construction
Transportation Engineer V	DOT Executive IV	Office of Planning and Preliminary Engineering (OPPE)
Transportation Engineer V	Program Manager II	Office of Transportation Mobility and Operations
Transportation Engineer V	Program Manager III	Environmental Design (Environmental Programs)
Transportation Engineer V	Project Management	Office of Planning and Preliminary Engineering (OPPE)

Classification 1	Classification 2	Sample office/district
Transportation Engineer V	Transportation Engineering Manager I	District 3
Transportation Engineer V	Transportation Engineering Manager II	District 3
Transportation Engineering Manager II	Administrator VII	District 5
Transportation Engineering Technician I	Transportation Design Engineer V	Office of Highway Development
Transportation Engineering Technician I	Transportation Engineer IV	Structural Materials and Pavement Markings Division Work Group
Transportation Engineering Technician I	Transportation Engineer V	Concrete Technology Division Work Group
Transportation Engineering Technician II	Transportation Engineer III	District 3
Transportation Engineering Technician II	Transportation Engineer Manager II	Construction
Transportation Engineering Technician II	Transportation Engineer V	Structural Materials and Pavement Markings Division Work Group
Transportation Engineering Technician III	Administrator IV	District 2
Transportation Engineering Technician III	Administrator VII	District 2
Transportation Engineering Technician III	Administrator VII-Construction	District 7
Transportation Engineering Technician III	Chief Facility Maintenance Officer	District 5
Transportation Engineering Technician III	Facility Maintenance Supervisor I	District 4
Transportation Engineering Technician III	Resident Maintenance Engineer	District 3
Transportation Engineering Technician III	Transportation Design Engineer V	Office of Highway Development
Transportation Engineering Technician III	Transportation Engineer III	District 3
Transportation Engineering Technician III	Transportation Engineer IV	Office of Highway Development
Transportation Engineering Technician III	Transportation Engineer IV	District 7
Transportation Engineering Technician III	Transportation Engineer Manager I	District 4
Transportation Engineering Technician III	Transportation Engineer V	District 3
Transportation Engineering Technician III	Transportation Engineer Manager II	District 4
Transportation Engineering Technician III	Transportation Engineering Technician IV	District 7
Transportation Engineering Technician III	Transportation Engineering Technician V	District 5

Classification 1	Classification 2	Sample office/district
Transportation Engineering Technician IV	Administrator VII	District 2
Transportation Engineering Technician IV	Administrator VII-Construction	District 7
Transportation Engineering Technician IV	Chief Facility Maintenance Officer	District 5
Transportation Engineering Technician IV	Facility Maintenance Supervisor I	District 4
Transportation Engineering Technician IV	Resident Maintenance Engineer	District 3
Transportation Engineering Technician IV	Transportation Design Engineer V	Office of Highway Development
Transportation Engineering Technician IV	Transportation Engineer III	District 3
Transportation Engineering Technician IV	Transportation Engineer IV	Office of Highway Development
Transportation Engineering Technician IV	Transportation Engineer Manager I	District 4
Transportation Engineering Technician IV	Transportation Engineer Manager II	Construction
Transportation Engineering Technician IV	Transportation Engineer V	OMT Organization
Transportation Engineering Technician IV	Transportation Engineering Technician V	District 5
Transportation Engineering Technician IV Inspect	Chief Facility Maintenance Officer	District 7
Transportation Engineering Technician V	Administrator I	Office of Org Charts
Transportation Engineering Technician V	Administrator VII	District 1, District 2
Transportation Engineering Technician V	Transportation Engineer III	District 3
Transportation Engineering Technician V	Transportation Engineer IV	District 3
Transportation Engineering Technician V	Transportation Engineer Manager I	Office of Planning and Preliminary Engineering (OPPE)
Transportation Engineering Technician V	Transportation Engineer Manager I	District 4
Transportation Engineering Technician V	Transportation Engineer Manager II	Construction
Transportation Engineering Technician V	Transportation Engineer V	OMT Organization
Transportation Manager I	Administrator VII-Maintenance	District 7
Transportation Planner II	Administrator III	Office of Planning and Preliminary Engineering (OPPE)
Transportation Planner III	Administrator III	Office of Planning and Preliminary Engineering (OPPE)
Transportation Design Engineer V	Transportation Design Engineer VI	Office of Highway Development

Classification 1	Classification 2	Sample office/district
TSS(CISS)	Administrator IV	District 2