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MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

IMPROVING INTERNAL COMMUNICATIONS WITH SHA EMPLOYEES

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FINAL REPORT

October 2026

This material is based on work supported by the Federal Highway Administration under the State Planning and Research program. Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the Federal Highway Administration or the Maryland Department of Transportation. This report does not constitute a standard, specification, or regulation.

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. MD-25-SHA/UM/7-13	**2. Government Accession No.**	**3. Recipient's Catalog No.**
4. Title and Subtitle Improving Internal Communications with SHA Employees		**5. Report Date** June 2026
		6. Performing Organization Code
7. Author(s) Yifan Chen, Yuanzheng Lei, Saed Rahwanji, Yan Qu, Xianfeng (Terry) Yang, Yaobang Gong		**8. Performing Organization Report No.**
9. Performing Organization Name and Address University of Maryland, College Park, MD 20740		**10. Work Unit No.**
		11. Contract or Grant No. SHA/UM/7-13
12. Sponsoring Agency Name and Address Maryland Department of Transportation (SPR) State Highway Administration Office of Policy & Research 707 North Calvert Street Baltimore MD 21202		**13. Type of Report and Period Covered** SPR-B Final Report (May 2025-June 2026)
		14. Sponsoring Agency Code (7120) STMD - MDOT/SHA
15. Supplementary Notes		

16. Abstract

This project assessed the Maryland Department of Transportation State Highway Administration (SHA)'s internal communication practices and identified strategies to improve communication effectiveness across employee groups and work settings. The study combined a review of prior research and current practices, semi-structured employee interviews, and structured surveys of non-supervisory field employees, field supervisors, office-based employees, and communication staff. The analysis examined communication satisfaction, channel access, message relevance, timeliness, and feedback mechanisms. Findings indicate that communication was strongest when it occurred close to employees' local work settings, particularly through supervisors, peers, shops, and local units, but weaker for agencywide and higher-level communication. Field employees faced barriers related to limited digital access, outdated or inconsistently maintained on-site tools, and reliance on informal relay through supervisors and coworkers. Office-based employees reported different challenges, including email volume, duplicate messages, unclear action items, and coordination gaps across offices and units. The report recommends a targeted, accessible, and role-sensitive communication approach. Key strategies include strengthening leadership visibility and feedback follow-through, improving message targeting, upgrading field-accessible infrastructure, clarifying field relay responsibilities, reducing email burden, improving shared information management, and strengthening cross-office coordination. Together, these strategies support consistent, relevant, and responsive internal communication across SHA.

17. Key Words Internal Communication; Field employees; Office-based employees; Communication access; Evaluation	**18. Distribution Statement** This document is available from the Research Division upon request.

19. Security Classif. (of this report) None	**20. Security Classif. (of this page)** None	**21. No. of Pages** 132	**22. Price**

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

Acknowledgements

The research team gratefully acknowledges the Maryland Department of Transportation State Highway Administration for its support and guidance throughout this project. The team extends its sincere appreciation to Andre Futrell, Chief Operating Officer, for providing leadership support for the project.

The research team also extends its appreciation to the Technical Team from the Office of Communications. In particular, the team thanks Barry List, Technical Team Lead, for leading the survey administration. The team also thanks Paul Milton and Jim Joyner, Technical Team members, for their continued support throughout the project. Appreciation is also extended to other communications staff at headquarters and in the districts who assisted with survey administration, interview coordination, and accompaniment during field visits and interviews.

The research team is grateful to Steve Wyatt, Research Project Manager from the Office of Policy and Research, for his guidance, coordination, and project management support. The team also thanks Saskia Herrera-Riggs from the Office of Policy and Research for preparing the Spanish translation of the field employee survey.

The research team further acknowledges the district leaders, shop leaders, communication staff, and other SHA personnel who supported the administration of the interviews and surveys. Their assistance was essential to reaching employees across different offices, districts, shops, and work settings.

Finally, the research team sincerely thanks all SHA employees who participated in interviews, completed surveys, and shared their perspectives. Their time, candor, and experience provided the foundation for this report and its recommendations.

Executive Summary

Effective internal communication is essential to the Maryland Department of Transportation State Highway Administration (SHA)'s ability to coordinate work, disseminate timely information, support operational performance, and maintain organizational alignment across districts, offices, and maintenance shops. SHA's workforce operates in diverse work environments, with substantial variation in access to email, computers, mobile devices, and other communication tools. Consequently, communication effectiveness depends not only on whether information is distributed, but also on whether employees can reliably receive, interpret, and act on information within their specific work settings.

This project assessed SHA's current internal communication practices and identified strategies to improve communication effectiveness across employee groups. The study was conducted through a review of relevant research and current practices, semi-structured interviews, and structured surveys of non-supervisory field employees, field supervisors, office-based employees, and communication staff. The analysis examined communication satisfaction, channel access, message relevance, timeliness, and feedback mechanisms. A total of 24 employees participated in interviews, and 1,186 survey responses were received across the four survey versions. After data cleaning, 845 completed responses were included in the main analytical sample. Open-ended survey comments were also reviewed to provide additional qualitative context for the structured survey findings.

The findings indicate that SHA's internal communication system is layered and strongly shaped by employees' work contexts. Communication was generally strongest when it occurred close to employees' local work settings, including communication involving direct supervisors, peers, shops, and local units. Satisfaction was highest for communication from or with direct supervisors and colleagues, while overall communication satisfaction and satisfaction with communication from top-level SHA leadership were lower. These results suggest that local communication channels are important strengths, but that broader agencywide and higher-level communication may be less consistently visible, responsive, or connected to employees' work.

The findings also show that employees need messages that are more clearly tailored to their roles, locations, responsibilities, and work conditions. Field and office-based employees both placed high value on practical information that supports their work, including work plans, project or workflow updates, training, human resources information, safety messages, weather-related updates, equipment information, and licensing or certification requirements. When messages are too broad, overly generic, or distributed to employees for whom they are not relevant, important information may be overlooked or may contribute to unnecessary communication burden.

Field employees face distinct barriers related to limited digital access and inconsistent on-site communication tools. Field respondents were substantially less likely than office respondents to report email as a frequently used or preferred communication channel, and many non-supervisory field employees reported checking SHA email only monthly or less. Interview and open-ended survey findings suggest that this is primarily an access and infrastructure issue rather than a simple matter of employee preference. Field employees often work away from desks, computers, and the SHA network, and some encounter barriers related to outdated shop computers, login or authentication requirements, limited time to check email, and inconsistent maintenance of bulletin boards, flyers, or digital displays.

The results further indicate that field communication relies heavily on supervisors, team leaders, shop-based office staff, and coworkers. This interpersonal communication structure is a major strength because it supports direct, trusted, and practical information exchange. However, it also creates operational risk when communication depends too heavily on individual memory, availability, judgment, or informal handoffs. Survey findings suggest that field supervisors can often move information downward, but horizontal sharing among field employees and upward feedback are less consistent. This indicates a need to strengthen, rather than replace, supervisor-led and face-to-face communication by providing clearer relay expectations, field-ready message supports, and backup communication paths for critical information.

Office-based employees face a different set of communication challenges. Email remains the dominant office communication channel, but it also creates a substantial communication burden. Many office employees reported high daily email volume and

periodic information overload. Open-ended comments suggest that this overload reflects both message-management issues, including duplicate emails, repeated forwarding, overly broad distribution, unclear action items, and lengthy messages, and broader workload-related pressures. The findings also identify unclear cross-office coordination as a distinct office-specific challenge, particularly for project or program information, workflow updates, routing, communication responsibility, and confirmation of action.

Based on these findings, the report recommends a targeted, accessible, and role-sensitive communication approach rather than a single agencywide solution. Major recommendations include strengthening leadership visibility and feedback follow-through; improving message targeting and role relevance; upgrading field-accessible communication infrastructure; clarifying field relay responsibilities and backup paths; reducing duplicate and unnecessary emails; improving email structure and shared information management; and strengthening cross-office coordination through clearer communication responsibility, routing, and confirmation practices.

Implementation should include both longer-term organizational improvements and near-term practical supports. Longer-term recommendations require leadership engagement, management follow-through, infrastructure investment, and coordination across offices, districts, and units. Near-term supports include role-based communication training and clearer standards and operating guidance. These supports can help SHA improve message clarity, strengthen field relay practices, reduce email burden, clarify feedback and follow-up expectations, improve cross-office coordination, and maintain more reliable shared information sources. Collectively, these actions would support a more consistent, accessible, relevant, and responsive internal communication system for both field and office-based work settings.

Table of Contents

Acknowledgements iii

Executive Summary iv

Table of Contents vii

Chapter 1. Introduction 1

1.1 Background 1

1.2 Objectives 2

1.3 Report Organization 3

Chapter 2. Review and Current Practices 4

2.1 Theoretical Foundations of Internal Communication 4

2.2 Current Practices of Internal Communication among State DOTs 5

2.3 Current SHA Internal Communication Practices 9

2.4 Evidence from Prior SHA Internal Communication Studies 14

2.5 Summary 18

Chapter 3. Methodology 20

3.1 Interview 20

3.2 Survey 22

Chapter 4. Results and Findings 28

4.1 General Challenges 28

4.2 Field-Specific Challenges 33

4.3 Office-Specific Challenges 37

4.4 Summary and Suggested Implementation Strategies 42

Chapter 5. Conclusion 45

References 47

Appendix A: Interview Guides 49

A.1 Non-supervisory Field Employee 49

A.2 Field Supervisors (RME/ARME/FMS/FMT IV) 50

A.3 Office Employee 52

A.4 Communication Staff 54

Appendix B: Survey Questionnaires 57
B.1 Non-supervisory Field Employee 57
B.2 Field Supervisors 62
B.3 Office Employee 70
B.4 Communication Staff 76
Appendix C: Descriptive Analysis of the Structured Survey 86
C.1 Respondent Profile 86
C.2 Satisfaction with Current Internal Communication Practices 87
C.3 Communication Channels 90
C.4 Internal Communication Performance 95
C.5 Bottom-Up Communications 101
C.6 Expectations of Internal Communication 103
C.7 Word Clouds from Open-Ended Comments 109
C.8 Standardized Open-Ended Comments 111
Appendix D. Special Analysis on District Six Field Employees 123

Chapter 1. Introduction

1.1 Background

Effective internal communication is essential to the Maryland Department of Transportation State Highway Administration (SHA)'s ability to align employees with organizational goals, keep staff informed of key developments, support operational performance, and promote a cohesive agency culture. As a statewide transportation agency, SHA serves a diverse workforce that includes office-based employees, field employees, and employees with hybrid responsibilities. These employees work in different operating environments and have varying levels of access to computers, email, mobile devices, and other information and communication technologies. As a result, effective internal communication practices must support employees with varying levels of technology access, including those who regularly use digital tools and those who spend most of their workday away from a desk or office setting.

SHA currently employs multiple methods to communicate with employees, including email, message boards, intranet postings, meetings, and other formal and informal channels. These methods serve an important role in distributing organizational information, including agency announcements, human resources updates, training opportunities, policy changes, operational guidance, safety information, and employee resources. However, a uniform communication approach may not sufficiently address the needs of all employee groups. Communication methods that are effective for office-based employees may be less effective for field employees, particularly those who do not have assigned office space, regular computer access, or state-issued work phones.

Prior SHA-sponsored and SHA internal research on communication practices indicates that internal communication challenges are particularly salient among field employees. Research involving Facilities Maintenance Technicians (FMTs) (Yang et al., 2025) found that some field employees had difficulty receiving or accessing important information, including training opportunities, professional development resources, human resources updates, and leadership messages. Field employees also identified the need for

more accessible communication methods, such as bulletin boards, printed flyers, and QR codes. Similarly, a District 6 survey (List, 2023) conducted by the Office of Communications examined how FMTs received SHA news through email, staff meetings, printed postings, electronic message boards, and potential personal-device communication. Another study (Jalloh et al., 2024) identified broader barriers such as limited email access, information overload, and second-hand information. Together, these findings suggest that SHA's internal communication is lacking with respect to both channel accessibility and message targeting. Communication effectiveness depends not only on whether information is distributed widely across channels, but also on whether employees can successfully receive, understand, and use that information within their day-to-day work environment.

The purpose of this project was to assess SHA's current internal communication practices and identify strategies to improve communication effectiveness across the agency. The project considers both the perspectives of employees who are the primary recipients of internal communication and the perspectives of message creators and distributors. By examining current practices, employees' current levels of satisfaction, and identifying their communication needs and areas for improvement, the project provides evidence-based insights to support the strengthening internal communication across SHA.

1.2 Objectives

This project aims to achieve the following objectives:

- Conduct a **comprehensive review** of existing research on internal communications and examine current practices employed by other state transportation agencies across the country.
- Understand SHA's current **internal communication practices** for office-based and field employees and assess their effectiveness across employee groups.
- Assess **employee satisfaction** with SHA's internal communications, analyze the communication needs of both office-based and field employees, and determine potential areas for improvement.
- Develop **evidence-based strategies** to strengthen SHA's internal communication framework and provide targeted recommendations to ensure effective message creation, sharing, and reception.

1.3 Report Organization

The remainder of this report is structured into four additional chapters:

Chapter 2. Review and Current Practices

Summarizes relevant research on internal communication, identifies communication methods used by other state transportation agencies, and describes SHA's current communication environment.

Chapter 3. Methodology

Describes the interview and survey components of the study, including the data collection approaches, research participants' profiles, interview and survey procedures, and data analysis methods.

Chapter 4. Results and Findings

Integrates evidence from interviews and surveys to identify major communication methods, employee needs, current strengths, communication gaps, differences across employee groups, recommendations for improving SHA's internal communication practices, and possible implementation strategies.

Chapter 5. Conclusion

Summarizes the project approach, key findings, and major recommendations for improving SHA's internal communication system across field and office-based work settings.

Chapter 2. Review and Current Practices

2.1 Theoretical Foundations of Internal Communication

Internal communication is central to organizational effectiveness, particularly in public agencies where transparency, employee alignment, and mission clarity are essential. Earlier communication models, including Lasswell's model, the Shannon-Weaver model, and Berlo's model, conceptualized communication primarily as the transmission of information from senders to receivers (Berlo, 1960; Lasswell, 1948; Shannon, 1997). More recent approaches of internal communication emphasize employee engagement, relationship building, trust, listening, and shared meaning (Kim, 2007; Lemon, 2019; Qin & Men, 2021; Shen & Jiang, 2019). The evolving theoretical frameworks highlight the shift from a traditional functional perspective toward a cocreational view of internal communication, where employees are important relationship partners and co-creators of organizational meaning and culture rather than merely targets of organizational messages (Lemon, 2019; Shen & Jiang, 2019).

Within this paradigmatic shift, relationship management theory is especially relevant because it conceptualizes internal communication as a process that shapes the relationship between employees and their organizations (Men, 2014). Employees are more likely to trust and identify with an organization when communication is transparent, responsive, and reciprocal. Symmetrical communication similarly emphasizes mutual exchange rather than one-way dissemination, allowing employees to ask questions, provide feedback, and feel included in organizational dialogue.

Channel selection is also a critical component of effective internal communication. Men (2022) found that both interpersonal channels, such as face-to-face meetings and supervisor communication, and mediated channels, such as email and intranet platforms, can enhance perceived transparency during organizational change. However, interpersonal channels may have stronger effects because they provide opportunities for clarification and dialogue. Complex or strategic information may therefore be better suited to supervisor meetings, town halls, or other interactive formats, while routine announcements may be appropriate for email, newsletters, or intranet postings.

Leadership communication serves as another influential component of internal communication. Importantly, leaders at different levels within organizations facilitate both the top–down transmission of messages to employees and the bottom–up communication of the employees' opinions and concerns to the top management (Men & Jiang, 2016). In line with this notion, research has documented that transformational leadership, openness, responsiveness, and consistency are associated with stronger employee satisfaction, credibility, and engagement (Kang & Sung, 2017; Men, 2014).

Together, these studies show that effective internal communication depends on clear and relevant messages, appropriate channels, strong leadership support, and opportunities for feedback. These considerations matter, as internal communication serves as critical antecedents to employee outcomes. Walden et al. (2017) found that internal communication influences job engagement, which then predicts organizational commitment. In the long term, robust internal communication is key to organizational success as it enhances employee productivity and strengthens organizational culture.

2.2 Current Practices of Internal Communication among State DOTs

Effective internal communication remains a persistent challenge for state transportation agencies. State DOTs use multiple channels to communicate with employees, including email updates, electronic newsletters, printed newsletters, intranet or internal websites, text messages or SMS alerts, digital bulletin boards or kiosks, social media, and supervisor-led meetings (American Association of State Highway and Transportation Officials, 2017; Marks & Jasper, 2023; Minnesota Department of Transportation, 2014). These channels vary in purposes, frequency of use, and accessibility across employee groups. Table 1 summarizes common internal communication tools and the types of information typically distributed through each method.

Table 1 Examples of Different Types of Communication Tools

Method	**Frequency**	**Major Information Type**
Email News Updates	On Demand (Urgent) Weekly or Biweekly	• Organizational initiatives • IT news and announcements • Human resources updates • Employee spotlights
E-Newsletter	Monthly or Bimonthly	• Employee spotlights • Organizational initiatives • Project highlights • Human resources updates
Printed Newsletter	Monthly or Quarterly	Similar to e-newsletter content, but more concise for field readability
Intranet / Internal Website	Updated Daily or On Demand	• Organizational announcements • Forms, policies, procedure manuals; • Employee resources (benefits, trainings)
Text Messaging / SMS Alerts	On Demand	• Safety alerts • Breaking news • Immediate operational changes
Digital Bulletin Boards / Kiosks	Daily or On Demand	• Safety messages • Organizational initiatives • Human resources updates
Social Media	Daily or On Demand (urgent)	• Project highlights • Organizational initiatives
Supervisor-Led Meetings	Daily, Weekly or On Demand	• Safety topics • Immediate operational changes • Policies or procedures

An MnDOT survey (Minnesota Department of Transportation, 2014) of 25 state DOTs found that electronic newsletters and email were among the most frequently identified internal communication methods. However, these channels are most effective for employees with regular access to the networks. For field employees, a broader mix of communication methods, including printed materials, bulletin boards, digital displays, and supervisor-led briefings, are often needed.

A recurring challenge across state DOTs is reaching field employees who work outside central offices and have limited access to email, computers, or intranet platforms. DOT workforces are often geographically dispersed, which further complicates internal communication. For example, Pennsylvania DOT communicates across multiple central offices and eleven engineering districts, New Hampshire DOT has approximately 1,600

employees across ninety facilities, and Virginia DOT reported that about one-third of its workforce lacked access to email or the agency intranet (American Association of State Highway and Transportation Officials, 2017; Marks & Jasper, 2023; Minnesota Department of Transportation, 2014)

These examples illustrate a critical communication gap. While digital tools are efficient for broad distribution, access to these tools is not guaranteed for field employees. Field staff often work offsite, travel between locations, operate in areas with limited internet connections, or rely on supervisors to pass along information. Therefore, to further improve the reach and efficiency of communication, agencies need to diversify communication approaches to reduce reliance on real-time network access.

State DOTs have adopted a range of strategies to address field communication challenges. Some agencies have employed on-site digital devices to improve access to important information. For example, Indiana DOT installed touchscreen kiosks at field locations to provide updated safety tips, agency announcements, training information, human resources forms, district-specific content, and weather information. Virginia DOT uses electronic bulletin boards at worksites and district-level newsletters to reach field employees.

Other agencies use hybrid or paper-based methods. North Dakota DOT distributes newsletters by email to all employees and relies on supervisors to print and share copies with employees without email access during work hours. Arkansas State Highway and Transportation Department distributes printed newsletters to field offices. Missouri DOT combines printed newsletters with PowerPoint slides displayed in maintenance sheds. Massachusetts DOT posts paper flyers on bulletin boards and supplements them with staff meetings. Mississippi DOT sends printed publications to district contacts, while Ohio DOT and Illinois DOT have also used printed materials to be distributed across field divisions.

Still others have sought to improve digital access by providing mobile devices. Montana DOT equipped field personnel with iPads or smartphones, and Wisconsin DOT reported that many field employees already had access to mobile devices. However, mobile-based strategies must account for employee concerns related to privacy, message overload, and information relevance.

Across these examples, supervisor-led communication remains a prominent

communication method. Daily tailgate meetings, shop briefings, and crew meetings provide opportunities for supervisors to explain information, answer questions, and confirm employee understanding. For field employees, supervisors often serve as a practical link between headquarters and worksites, translating top-management communication into information that is relevant to daily operations.

The literature also identifies two major communication challenges: targeting and clutter. Targeting concerns whether messages effectively reach the intended audience (Marks & Jasper, 2023). The targeting process involves clearly defining target audience distribution lists, and message objectives. Without targeting, important information can be buried in general announcements or sent to employees for whom it is not relevant.

Clutter occurs when employees receive too many messages across a wide range of channels (Marks & Jasper, 2023). Frequent communications via email, newsletters, intranet posts, messaging apps, meetings, and internal platforms can increase message volume and redundancy. As such, employees may experience information overload and thus respond by skimming, ignoring, or deleting messages. Fragmentation also occurs when different offices send messages independently without clear responsibility, sequencing, or follow-up. These conditions can obscure message priorities and make reliable information hard to find (Axios HQ, 2022; Kendall, 2022).

Recommended strategies include reducing unnecessary communication, improving message targeting, consolidating related information, using concise language, and aligning content with employees' roles and responsibilities (Kendall, 2022; Marks & Jasper, 2023). Organizations are also encouraged to provide two-way feedback mechanisms, such as surveys, suggestion systems, feedback tools, supervisor discussions, and in-person meetings, enabling employees to voice their feedback and concerns (Kendall, 2022; Marks & Jasper, 2023).

Workforce diversity further complicates internal communication. Within State DOTs, employees may differ by age, language, educational background, work location, schedule, and technology literacy, leading to greater demands for communication accommodation. In particular, because agencies' workforces may include multiple generations of employees, communication preferences can vary widely. Some employees may prefer face-to-face communication or email, while others may be more comfortable with brief,

asynchronous, or technology-based messages. Marks and Jasper (2023) recommend recognizing employees' diverse communication needs, documenting their preferences, and communicating through multiple channels and formats to accommodate their needs.

2.3 Current SHA Internal Communication Practices

SHA's current internal communication system integrates agencywide digital communication, local shop-based communication, field coordination, emergency alerts, and informal peer-to-peer exchanges. Table 2 summarizes the major communication methods currently used by SHA, the primary responsible units, and the major types of information distributed through each method. The purpose of this section is not to thoroughly review each channel in the table, but to describe how these channels function together as an internal communication system.

Table 2 Examples of Different Types of Communication Tools

Method	**Primary Responsible Unit**	**Major Information Type**
Email	All offices and units	• Work-related emails • Organizational announcements (policy and standard updates; IT and technical updates; personnel announcements) • Job opportunities • Training and development (Professional training; mentoring; career development resources) • Events (training & recognition events; social & fundraising activities; community outreach) • Benefits (healthcare; retirement benefits; employee discounts; incentive programs)
E-news	Office of Communications	• Agency news • Leadership news • Peer stories • Organizational updates • Benefits • Safety • Events
SharePoint (SHA Intranet)	Office of Communications, IT, and content-owning offices	• Policies • Forms • HR resources • Internal guidance • Project and office information

		• Employee resources
Staff Meetings / Shop Meetings	Leaders (e.g., shop leaders)	• Work assignments • Safety updates • Operational priorities • Training reminders • Policy updates • Shop-level information
Supervisor-Led Briefings	Direct supervisors	• Daily assignments • Urgent updates • Safety reminders • Weather-related changes • Field coordination
Two-Way Radio	Field employees	• Field coordination • Urgent work update • Emergency response coordination
Phone Calls	Supervisors, coworkers, and SOC	• Operational instructions • Emergency call-downs • Contractor/vendor coordination • Urgent clarifications
Text Messaging	Supervisors and coworkers	• Quick reminders • Urgent coordination • Informal or time-sensitive updates
Everbridge	Designated alert administrators	• Emergency alerts
Visix Boards	Office of Communications and/or district administration	• HQ event notices • Safety awareness • Weather information • HR or agency announcements
Bulletin Boards / Flyers	Shop and district staff (office staff)	• Safety memorandums • Training announcements • Operational updates • HR notices • Project goals
Informal Peer-to-Peer Communication	Employees and coworkers	• Small updates • Reminders • Coordination • Social connection

At the agency level, formal communication is distributed through multiple digital and content-management channels. Email serves as a major formal communication channel and is used broadly for work-related messages, organizational announcements, job opportunities, training information, events, and benefits-related updates. SharePoint functions as SHA's intranet and internal information repository, providing access to human

resources forms, policy updates, internal guidance, and other employee resources. E-news is primarily posted on SharePoint, with important updates also distributed by email. These channels are especially important for employees with regular access to computers, email, and the SHA network.



Figure 1 Example Emails

In maintenance shops responsible for field operations, work-related communication follows a local operational chain and daily communication routine. Before crews depart for the field, information is typically relayed from shop leadership to team leaders and then to field crews through in-person briefings. During the workday, communication becomes more direct and field-based, relying primarily on phone calls, two-way radios, and face-to-face exchanges among team leaders and FMTs.

In the face of emergencies, communication follows a more structured call-down process. Notifications begin with Statewide Operations Center (SOC) notification and moving through the maintenance hierarchy to mobilize crews and report status updates. Table 3 summarizes this communication timeline. Overall, shop communication depends heavily on supervisor-led communication, verbal coordination, and concise, practical messages tied to immediate work needs.

Table 3 Daily Work-Related Communication Timeline for An Example Maintenance Shop

Time / Phase	Communication Flow	Main Participants	Primary Channels	Main Communication Content
Before field deployment	Information is gathered and prepared before the daily shop briefings.	RME, ARME and FMS	• Email • Phone • Internal systems	• Overnight issues • SOC notifications • CCMS requests • Staffing • Equipment availability • Weather • Scheduled work, training or meeting reminders
6:30 AM to 7:00 AM	Shop leadership meets in person to convert work requests and conditions into the daily work plan.	RME, ARME, FMS	In-person meeting	• Scheduled maintenance jobs • CCMS requests and calls • Coordination with SHA partners and district offices • Staff and equipment availability • Weather and safety considerations, • Training, meetings, or special events
7:00 AM to 7:30 AM	Information moves from FMS to team leaders.	FMS and team leaders	In-person meeting, phone as needed	• Crew assignments • Job locations • Equipment needs • Safety reminders • Priority changes • Special instructions
7:30 AM to 8:00 AM	Team leaders brief FMTs before crews leave the shop.	Team leaders and FMTs	Face-to-face	• Daily assignments • Work locations • Materials & equipment • Safety issues • Weather-related changes • Reminders from headquarters or the shop
8:00 AM to 4:00 PM	Communication becomes field-based and direct after crews deploy.	Team leaders, FMTs, FMS / shop leader	• Face-to-face • Phone • Two-way radio	• Field progress • Unexpected conditions • Traffic issues • Equipment problems • Reassignment requests • Emergency response needs
Emergency or urgent event, any time	Urgent information moves through the call-down	SOC, RME, ARME, FMS, team	• Face-to-face • Phone • Two-way radio	• Incident type & location • Crew assignment • Equipment needs • Closures

	chain and back through status reporting.	leaders, FMTs		• Time estimates • Field status updates • Completion reports
End of shift / return to shop	Crews report completed work and back to the shop.	Team leaders, FMS, RME, ARME	• Verbal • Internal systems	• Completed work • Unresolved issues • Photos, equipment status, documentation

* RME: Resident Maintenance Engineer; ARME: Assistant Resident Maintenance Engineer; FMS: Facility Maintenance Supervisor; and FMT: Facility Maintenance Technician. See Figure 2 for an example organization chart of a maintenance shop.

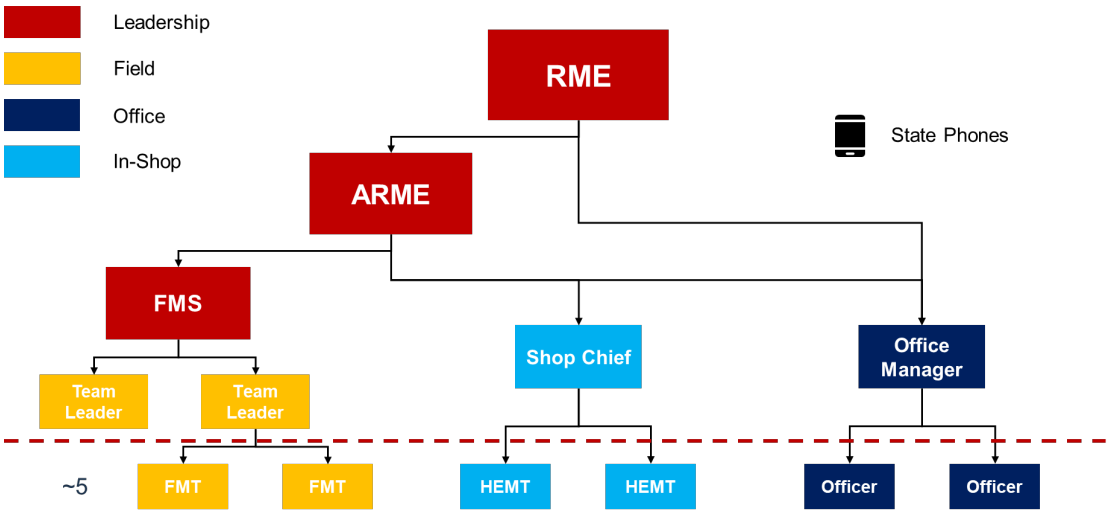

Figure 2 An Example Organization Chart of a Maintenance Shop

Administrative communication in maintenance shops is often coordinated through the Office Manager or other office staff, although some information may be directed to the RME. External communications from contractors, vendors, customers, or the public may either reach the RME directly or enter through the shop office before being routed to the RME or other responsible staff for review, approval, response, or follow-up. In this arrangement, the shop office often serves as a local filtering and routing point, connecting external parties, shop leadership, field staff, and headquarters offices.

Training and licensing communication also follows a multi-step process. Training assignments and licensing requirements may originate from headquarters and be distributed to employees through official SHA email accounts. At the shop level, the RME, Office Manager, ARME, or other office staff may track upcoming requirements, remind employees, print notices, or communicate requirements during morning meetings. Field employees may complete required online training using shared shop computers, sometimes with support from office staff. Completion is then recorded and reported upward through

systems or through shop leadership.

On-site and informal channels supplement SHA's formal communication system. Bulletin boards, flyers, Visix boards, and shop-level meetings help make information visible in shop settings and provide opportunities to reinforce key messages. Informal exchanges, including group chats, texts, calls, and peer-to-peer reminders, also support daily coordination and workplace connection. These channels operate alongside official communication methods and are especially useful for local, time-sensitive, or shop-specific coordination.



Figure 3 Example Bulletin Boards and Flyers On-Site

Overall, SHA's current practices reflect a layered communication system. Office-based employees are more likely to rely on email, SharePoint, and e-news, while field employees and shop personnel depend more heavily on supervisors, meetings, phones, radios, printed postings, and direct verbal communication. This distinction is important for understanding how SHA's current communication practices operate across different work settings and justifies the need to examine employee access, preferences, and communication gaps separately.

2.4 Evidence from Prior SHA Internal Communication Studies

Existing studies on SHA communication provided useful baseline evidence regarding employee communication needs, channel access, and message preferences. An earlier SHA communications audit (Cotten & Gold, 2006) assessed how information moved through the agency, where communication breakdowns occurred, what checks and balances

existed, what constraints affected possible improvements, and how communication breakdowns affected public-facing work. The study used multiple methods, including interviews with four communications staff, seven focus groups with 86 employees across three locations, three telephone interviews with senior managers, and 18 electronic questionnaire responses from senior managers.

The audit identified multiple barriers to information flow among leadership, managers, supervisors, and front-line employees within SHA. These barriers involve both resource-related constraints, such as technology access and staffing, and organizational factors, such as limited motivation, trust, follow-through, and accountability. Table 4 summarizes the ten major barriers and associated recommendations identified in the audit.

Table 4 Summary of Major Barriers and Recommendations from the 2006 SHA Communications Audit

Barrier	**Recommendation**
Limited technology availability	Coordinate technology planning, review IT access policies, and prioritize investments through an IT steering process.
Challenges associated with email use	Provide Outlook and email-use training, improve message construction, and reduce overreliance on email when another channel is more appropriate.
Limited or difficult access to manuals, policies, and documentation were limited or difficult to access.	Inventory available documentation, place manuals and policies online, and make them searchable through the intranet.
Insufficient attention to job training	Balance mandatory administrative training with job-specific and skill-building training, including online or video-based options.
Inefficient meeting procedures	Provide meeting management guidance, improve agendas and minutes, and use conference calls, video conferencing, or other alternatives when appropriate.
Telecommuting issues	Review and enforce telework procedures, clarify availability expectations, and evaluate telework suitability case by case.
Fragile relationships between senior management and line employees	Reduce overreliance on email, increase face-to-face interaction, and consider liaison or ombudsman roles to improve accountability and follow-through.
Redundant documentation procedures	Review and simplify procedures that require double or triple documentation.
Workload, efficiency, and morale concerns due to increased consultant use created.	Review the appropriate use and placement of consultants through workforce planning, with attention to job design and compensation.
Loss of institutional knowledge due to retirement of long-time employees.	Strengthen succession planning, allow more time for knowledge transfer, and create incentives for longer transition periods before retirement.

The audit also revealed several other findings that warrant attention. First, the audit identified limited field access to email that made email-centered communication impractical for some roles, demonstrated through an example of an employee spending nearly 95% of work time away from a desk. Second, the audit reported challenges related to email overload, delayed or unanswered responses, misunderstood content, irrelevant messages, and limited organizational capability to track whether messages were opened, understood, or acted upon. In addition, the audit highlighted issues related to policy, documentation, and telework issues, including standard operation procedures (SOPs) that were difficult to locate or inconsistently followed, uneven network access, unclear availability expectations, and weak enforcement of telework procedures. Finally, the audit emphasized insufficient follow-through on employee feedback, noting that employee input was not always acted upon or explained and that information sometimes stalled in the communication chain. Recommended responses included more face-to-face communication, clearer accountability, stronger follow-up practices, and the establishment of liaison or ombudsman roles.

Overall, the 2006 audit provides useful historical evidence for understanding SHA internal communication. However, its applicability to the current internal communication practices is limited. The audit does not reflect SHA's current staffing, technology access, communication tools, or work environment. It also relied primarily on focus groups, interviews, and senior manager questionnaire responses without incorporating a statistically representative agencywide survey. The report does not provide a detailed participant breakdown by field versus office status, which limits the ability to assess the extent to which field employees were represented. Therefore, the audit is best interpreted as historical qualitative evidence of recurring communication themes, while providing less quantitative insight into how prevalent those issues were across SHA or among field employees specifically.

The 2023 District 6 survey provided early insight into how field employees receive SHA news and announcements (List, 2023). The Office of Communications conducted the in-person paper survey during the District 6 Training and Recognition Day. The survey included 94 total respondents, of whom 48 identified the field as their primary workplace. The findings suggested that field employees relied on a combination of email, staff

meetings, printed postings, and electronic message boards; however, no single channel reached all employees effectively. Among all respondents, email was the most preferred news channel, selected by 21 respondents (44%), followed closely by staff meetings, selected by 20 respondents (42%). Text to cell phone was selected by 7 respondents (15%). A notable share of respondents reported receiving Northbound News by email (55%) or seeing printed versions posted at their shop (64%), while 42% of respondents identified staff meetings as a preferred channel. At the same time, electronic message boards had lower reported use, and many employees (61.7%) were reluctant to receive work-related texts or install a work app on personal phones. The survey also suggested that field employees were most interested in practical, work-related content, particularly promotions, hiring, and upcoming shop events.

The LEAD Fall 2024 Effective Internal Communication effort provided broader evidence on internal communication across SHA (Jalloh et al., 2024). The team used online and paper-based surveys and received 114 responses from field and office personnel. The findings identified several barriers to effective internal communication, including information overload and limited device access. The study also found that email remained the dominant preferred communication channel, while text messaging received some interest. SharePoint and Visix boards were identified as relatively lower-preference channels. In addition, the study highlighted concerns about personal-device communication, including device tracking, personal information, spam, and unwanted notifications. Informed by these findings, the team recommended expanding employees' choices in receiving information, increasing transparency around personal-device privacy, diversifying communication channels (e.g., Visix boards, town halls, standing kiosks, posters, and signs), and reducing email volume to limit overload.

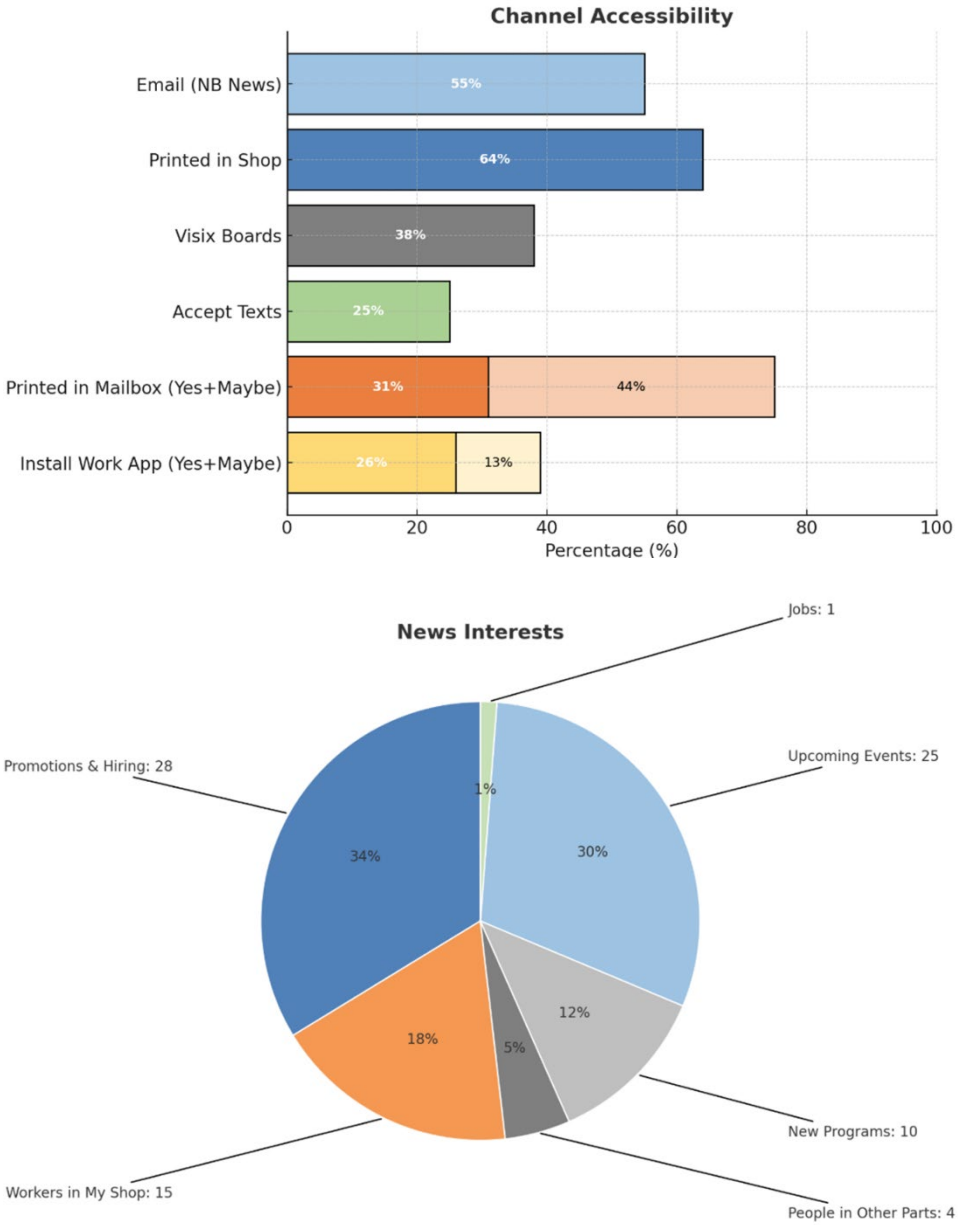

Figure 4 News Channel Accessibility and Interests of District 6 Workforce (List, 2023)

2.5 Summary

Chapter 2 reviewed internal communication theories, current practices among state transportation agencies, SHA's current internal communication practices, and key findings from prior SHA communication research. The literature indicates that effective internal communication depends on more than information distribution. It requires clear and relevant messages, appropriate channels, credible leadership, two-way feedback, and

attention to employees' work settings. Examples from other state transportation agencies further demonstrate that field employees often require a hybrid communication approach, as email, intranet platforms, and other digital tools may not consistently reach employees who work away from desks or have limited access to computers.

SHA's current communication practices reflect a layered system. Agencywide information is distributed through email, SharePoint, Visix boards, and other formal channels, while shop and field communication relies more heavily on supervisors, meetings, phones, two-way radios, printed postings, and direct verbal exchange. Prior SHA studies reinforce the importance of this distinction. Collectively, these studies identify recurring themes, including limitations in field access, email overload, message relevance, concerns related to personal-device communication, the importance of supervisor-supported communication, and the need for multiple communication channels.

Taken together, these findings provide the context for the current study. They suggest that SHA's internal communication needs cannot be addressed through a single channel or a uniform agency-wide approach. Instead, communication strategies should account for differences between office-based and field employees, reduce unnecessary message volume, provide clear guidance to access reliable information, and strengthen feedback and follow-up mechanisms. Although prior research provides valuable baseline evidence, the existing evidence remains limited in its ability to provide a current and comprehensive understanding of SHA internal communication across employee groups and work settings. This project addresses that gap by assessing current communication practices, employee experiences, communication needs, and opportunities for improvement across SHA.

Chapter 3. Methodology

The project combined semi-structured interviews and structured employee surveys to assess SHA's internal communication practices and develop evidence-based recommendations. The mixed-method findings are based on the integration of interview insights, quantitative survey data, and open-ended survey responses. Detailed survey results are provided in the appendices.

3.1 Interview

Purposive semi-structured interviews were conducted as an exploratory component of the project. The primary purpose of the interviews was to examine how SHA internal communication is enacted in daily work settings, including maintenance shops and field operations. The interviews helped the research team gain preliminary insights into how employees receive information, which communication channels they have access to during the workday, what types of information are most relevant to their roles, and where communication may be delayed, filtered, duplicated, or missed. The interviews also informed the survey design by identifying relevant survey topics and potential response options that reflected employees' actual communication experiences.

Interviews were conducted with participants from four employee categories: non-supervisory field employees, field supervisors, office-based employees, and communication staff. Interview guides were developed for each employee category and are provided in **Appendix A.** The guides provide enough flexibility, allowing participants to describe their communication experiences, concerns, and examples that were not anticipated.

Interview topics were adapted to each participant group. For non-supervisory field employees, discussions were centered around how they receive information before, during, and after field deployment, including work assignments, safety reminders, weather-related information, training notices, licensing requirements, and broader SHA messages. For field supervisors, interviews focused on their roles as both message recipients and communication intermediaries, including how they receive information, decide what

should be shared with crews, and relay or adapt messages for field employees. For office-based employees, interviews addressed email management, internal information sources, message clarity, repeated messages, action items, and routing responsibilities. Communication staff interviews focused on message design, channel selection, distribution barriers, and challenges in reaching employees with different levels of digital access.

Across participant groups, the interviews commonly addressed issues related to message clarity, timeliness and relevance, as well as employee trust and feedback, organizational follow-through, and other communication barriers. Participants were encouraged to provide examples of messages that were effective, messages that were missed or misunderstood, and situations where communication affected daily operations. Informal interviews with higher leadership, including District Engineers, were also conducted when leaders were available.

The interview processes were tailored to each participant's role and work setting; thus participants responded only to questions relevant to their experience. The interview findings help to build contextual understanding of how communication operates in the field and office settings. Moreover, these findings were also analyzed alongside and integrated with the survey results to facilitate a holistic understanding of the strengths and weaknesses of SHA internal communication from an employee perspective. Illustrative quotes, where used, were rewritten and standardized for clarity, consistency, and confidentiality. Identifying details were anonymized to protect participants' identities.

Interviews were conducted during shop visits between September and October 2025 at four maintenance shops: Salisbury Shop in District 1, La Vale Shop in District 6, Golden Ring Shop in District 4, and Fairland Shop in District 3. These sites were selected to provide variation in geography and operating contexts. Participants were identified in coordination with district and shop leaders, who helped introduce the researcher to employees during site visits, often during or immediately after the morning meetings.

A total of 24 participants were interviewed. Interview duration varied by participant availability and the level of detail provided in each discussion. Interviews generally ranged from approximately 10 minutes to 1 hour, with an estimated average duration of 30 minutes. Table 5 summarizes the 22 shop-based participants by location and employee category. In addition, one communication staff member and one District Engineer were

interviewed but are not included in the shop-based counts shown in the table.

Table 5 Summary of Interview Participants by Shop and Participant Group

Shop	Region	Setting	Field	Field Supervisor	Office
Salisbury	Eastern Shore	Rural	2	3	1
La Vale	Western Maryland	Rural	2	2	2
Golden Ring	Baltimore Metropolitan	Urban	3	2	1
Fairland	Washington Metropolitan	Urban	1	2	1

Interviews were conducted in one-on-one settings. For non-supervisory field employees, interviews typically occurred after morning briefings and before crews leaving for field operations. Additional informal conversations occurred during field observations of work activities. Interviews with office-based employees, field supervisors, and other participants were conducted in offices or during the workday, depending on staff availability and shop operation schedules.

Prior to each interview, participants were informed of the study purpose, the voluntary nature of participation, the potential benefits and risks associated with participation, and measures implemented to protect confidentiality. Interviews were audio recorded only with participants' approval. When recording was not approved or not feasible, extensive notes were taken during the interview. Audio recordings were transcribed verbatim using a controlled AI transcription tool that did not use interview data for further model training.

Interview notes and transcripts were analyzed using a thematic review process. The research team first reviewed the materials to identify recurring communication issues, examples, and improvement suggestions. Themes were developed using both the interview topics, such as communication channels, clarity, timeliness, relevance, access barriers, improvement needs, and additional issues raised by participants. Comments were then grouped by participant type and theme to compare patterns across employee groups. Because the interviews were exploratory and purposively sampled, the findings were used to provide contextual evidence and support interpretation of the survey results, rather than to estimate prevalence across SHA.

3.2 Survey

An anonymous survey was administered as the quantitative component of the mixed-method study. Its objective was to assess SHA employees' perceptions of current internal

communication practices, identify communication needs across employee groups, and inform evidence-based recommendations for improving communication effectiveness.

The survey design was informed by prior research and the qualitative interviews conducted earlier in the project. While the interviews identified salient communication issues from a small group of participants, the survey assessed the extent to which these issues were observed across a large employee sample. The interviews also informed the development of survey questions and response options so that the survey measures accurately reflected how internal communication occurs in daily work settings, particularly among field employees.

Four versions of survey questionnaires were developed targeting at four employee categories, including non-supervisory field employees, field supervisors, office-based employees, and communication staff. The four versions maintained a consistent set of core topics while adapting questions to each group's work context. Non-supervisory field employees and office-based employees were surveyed primarily as recipients of internal communication. Field supervisors and communication staff, by contrast, were surveyed as both receivers and senders because they their roles may involve receiving information as well as relaying, summarizing, distributing, or managing information for other employees.

The survey included both closed-ended and open-ended questions. Closed-ended questions were presented in several formats, including five-point Likert-type scales, multiple-choice questions, and open-ended response fields. Table 6 summarizes the main survey topic areas, the items included in each area, and the corresponding question formats. The four complete survey questionnaires are provided in **Appendix B**.

The survey was administered in both online and paper formats. Online surveys were implemented through Qualtrics. Paper surveys were administered to non-supervisory field employees and field supervisors to improve response rates among employees who may not regularly use email or other digital systems during the workday.

Table 6 Summary of Survey Content Areas and Question Formats

Content area	**Purpose / what it measured**	**Question format**
Respondent information	Role, district or office, shop or division, and SHA tenure	Open text and categorical multiple-choice items
Satisfaction with internal communication	Satisfaction with communication from peers, direct supervisors, shop or office, top-level SHA leadership, and overall communication	Five-point Likert scale (1=Very dissatisfied, 5=Very satisfied)
Direct supervisor communication	Perceptions of supervisor availability, awareness of employee problems, understanding, and recognition of employee potential	Five-point Likert scale (1=Very disagree, 5=Very agree)
Timeliness and missed information	The extent to which employees receive relevant information early enough to act and whether they miss important or timely information	Five-point Likert scale (1= Very often, 5 = Never)
Information types and interests	Types of information received in a timely manner, types that are unclear, and topics employees want or need to receive	Multiple-choice (select-all-that-apply)
Channel use	Channels employees usually receive information from or use to distribute information	Multiple-choice (select-all-that-apply)
Channel preference	The extent to which employees would like SHA to use each channel for general messages, or how much senders prefer using channels to deliver information	Five-point Likert scale
Channel effectiveness	How effective each channel is for receiving or delivering SHA messages in a timely and accurate manner	Independent five-point Likert ratings
Email access and overload	Email-checking frequency, daily internal email volume, and frequency of information overload	Multiple-choice
Feedback and upward communication	Awareness of whom to contact, comfort speaking up, ease of giving feedback, the degree to which feedback leads to action, and preferred feedback methods	Five-point Likert scales (1=Not at all, 5 =Extremely)
Sense of belonging	The extent to which SHA communication helps employees feel like an important part of the organization	Five-point Likert scale (1=Not all all, 5 =Very much)
Potential communication improvements	Perceived usefulness of possible improvements to communication channels, message quality, access, training, and information management	Independent five-point Likert ratings
Open-ended comments	Additional comments, suggestions, examples, explanations of ineffective channels, or delivery barriers	Open-ended text responses

Survey distribution was coordinated by the Technical Team from the Office of Communications, with support from SHA's Chief Operating Officer, district leadership, and shop leadership. For non-supervisory field employees and field supervisors, paper copies were mailed to RMEs, and shop leaders were asked to encourage participation and return completed surveys. Online survey links were also provided, and flyers with QR codes were distributed and posted at maintenance shops. A Spanish version of the field employee survey was prepared by the Office of Research and Policy and administered to accommodate Spanish-speaking employees. For office-based employees and communication staff, the surveys were administered online only through email invitations. Survey distribution was phased across different weeks in March and April 2026 to reduce confusion among employee groups, ensure that each group received the appropriate survey version. Email reminders were sent approximately one week after the survey launch.

A total of 1,186 survey responses were received across the four questionnaire versions. Table 7 summarizes the frequencies of survey responses by participant group. Paper-based survey responses were digitized using a combination of manual data entry and AI-assisted optical character recognition (OCR). Some responses were manually entered into the analysis dataset by research assistants, while others were processed using an AI-assisted OCR tool. The AI-assisted OCR tool did not use the survey data for further model training. After digitization, the entered responses were reviewed by the research team for completeness, consistency, and accuracy before analysis. Online responses and digitized paper responses were combined into a single analysis dataset and reviewed for completeness and data-entry or OCR-related errors. A response was classified as incomplete and excluded from the main analysis if any required closed-ended survey question was not answered. Demographic questions were not treated as required because respondents were allowed to choose not to disclose demographic information for confidentiality reasons. Open-ended questions were also not required and could be left unanswered. After this cleaning process, 845 responses remained in the final analytical sample. Item-level percentages and means were calculated using valid responses for each question.

Table 7 Summary of Survey Administration

Participant group	Total responses	Paper responses	Online responses	Completed responses	Open-ended comments
Non-supervisory field employees	368	318	50	304	58
Field supervisors	142	99	43	139	26
Office-based employees	662	0	662	394	110
Communication staff	14	0	14	8	4
Total	**1186**	**417**	**767**	**845**	**198**

For reporting purposes, non-supervisory field employees and field supervisors were combined into a general field employee group, while office-based employees and communication staff were combined into a general office employee group.

Five-point Likert items were coded from 1 to 5. The specific response anchors for each item, including the meanings of values 1 and 5, are summarized in Table 6 and provided in the complete survey instruments in Appendix B. Negatively worded items, such as missing timely information and information overload, were reverse-coded before mean calculation so that higher scores consistently reflected more favorable attitudes or perceptions. Likert-scale means and standard deviations (s.d.) were calculated as indicators of employees' level of satisfaction, perceived timeliness, perceptions of direct supervisor communication, feedback effectiveness, sense of belonging, among others. Spearman rank-order correlations were used to examine associations among selected Likert-scale variables, including satisfaction, feedback, timeliness, and related communication outcomes. Correlation results were interpreted as associations rather than evidence of causation.

For categorical items, such as information interests and channel use, percentages were reported for each response category. For other variables using Likert-type scale, including channel preference, channel effectiveness, and perceived usefulness of potential improvements response options were collapsed into general positive response categories (e.g., merging "very much" and "extremely", "effective" and "very effective", "useful" and "very useful") and reported their percentages in the sample.

Open-ended responses were reviewed separately using a qualitative thematic approach. Non-substantive responses, such as "no," "none," "N/A," and clearly irrelevant comments, were excluded. Remaining comments were organized by recurring themes, and

wording was standardized for clarity and consistency. Names, locations, and other highly identifiable details were removed or generalized to protect respondent identity. Detailed descriptive statistics, including frequencies/percentages and means, for the key measures in structured survey, are provided in **Appendix C**.

Chapter 4. Results and Findings

This chapter presents the major findings from the interview and survey analyses and identifies the major challenges affecting SHA's internal communication practices. The results are organized around six challenges that reflect agencywide, field-specific, and office-specific communication issues. For each challenge, the chapter synthesizes quantitative survey results, interview findings, and open-ended survey comments to characterize the issue, examine its implications for different employee categories, and identify corresponding recommendations. The chapter concludes by summarizing broader implementation considerations, including longer-term organizational improvements and near-term supports related to role-based communication training, standards, and operating guidance.

4.1 General Challenges

Challenge one: Communication satisfaction is stronger closer to local work and weaker at higher organizational levels

Overall, satisfaction with current communication practices was higher for communication that occurs closer to employees' local work context and lower for communication that comes through agency leadership levels. Across all valid responses, satisfaction was the highest for communication from or with direct supervisors (mean = **3.75**, s.d. = 1.16) and communication with colleagues or peers (mean = **3.68**, s.d. = 0.98), followed by communication from the local office, unit, or shop (mean = **3.42**, s.d. = 1.07). Respondents' overall communication satisfaction (mean = **3.33**, s.d. = 1.02), and satisfaction with communication from top-level SHA leadership (mean = **3.12**, s.d. = 1.14) were the lowest.

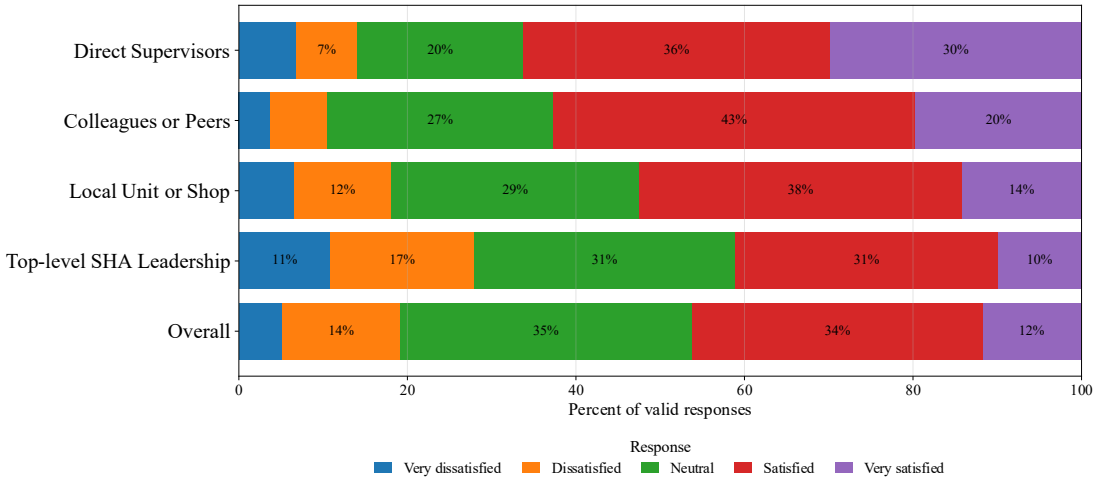

Figure 5 Distribution of Satisfaction Ratings

The interview findings help explain why communication is stronger near local work. In maintenance shops, information is built into daily routines, including morning briefings, direct supervisor communication, and field-based verbal coordination. These local channels work well because they translate information into practical instructions employees can use that day. They are also direct, clear, visible, and closely tied to immediate tasks, therefore more trustworthy to employees.

Lower satisfaction with communication from top-level SHA leadership appears to reflect several related issues. First, agencywide messages often pass through multiple organizational layers before reaching employees, potentially leading to information distortion. One RME noted during a maintenance-shop interview that information sometimes *"changed between the leadership meeting and the yard"*. In other words, information shared in leadership-level meetings may not always reach field crews in the same form, because messages can be modified or condensed as they move through the organizational chain. As a result, top-level communication may reach employees indirectly and can possibly be filtered, shortened, delayed, or reinterpreted through the chain of command.

Second, some open-ended survey responses indicate that employees do not judge leadership communication only by whether announcements are sent. They also judge it based on leaders' visibility, approachability, and responsiveness. For example, one office-based employee commented, *"Upper management should be approachable and listen to*

employee issues and problems." In other words, employees expressed desire for upper management to be more approachable and receptive to employee concerns.

Third, lower satisfaction with leadership communication appears closely related to feedback closure. Correlation analysis showed that satisfaction with communication from top-level SHA leadership was positively associated with the degree to which employees perceived that their feedback leads to an organizational response or action (**$\rho = 0.511$, $p < .001$**). Across all valid responses, employees generally reported that they knew where to go for help or concerns (mean = **3.90**, s.d. = 1.10), but were less confident that feedback leads to a response or action (mean = **2.89,** s.d. =1.11). Open-ended comments similarly called for better listening and follow-through as well as stronger accountability for employee feedback. **Fourteen comments** directly reflected concerns that employees may hesitate to raise issues because they expect limited follow-up or fear negative consequences. Together, these findings suggest that less favorable perceptions of leadership communication are connected to lack of follow-through after employees raise concerns.

Therefore, SHA should focus on strengthening leadership communication and enhancing feedback follow-through. The objective is not simply to increase the volume of leadership messages, but to facilitate effective transmission of leadership messages, while ensuring leadership communication more visible, responsive, and easier to be translated into local work contexts.

More specifically, SHA could:

- Increase visible leadership engagement.

Top-level leadership should consider using recurring listening sessions, rotating shop or office visits, Town Halls, and smaller group discussions to hear employee feedback directly. These efforts should be accompanied with follow-up summaries that inform employees what was heard, what will be reviewed, and what actions will be taken.

- Improve feedback closure, responsibility, and escalation.

SHA should strengthen existing feedback processes by making acknowledgement, routing, responsibility, escalation, and follow-up more visible to employees. Employees should understand not only whom to contact first, but also how their concerns will be routed, who is responsible for addressing them, how unresolved issues can be escalated,

and when a response or status update can be expected.

- Create support for leadership-to-local message translation

For major agencywide messages, communication staff should prepare concise talking points, key actions, deadlines, and role-specific notes to be distributed for supervisors, shop leaders, and office/unit leaders. These materials would help local leaders explain what the message means for employees' local work settings and reduce inconsistent interpretation across shops, offices, units, and districts.

Challenge Two: Messages were not always tailored to employees' roles, locations, and daily work

Employees are more likely to value internal communication when it directly relates to their work responsibilities, safety, schedule, training requirements, HR needs, licensing requirements, equipment, or local operations. This notion is clearly reflected in the survey findings. Among office employees, the most helpful information types were project or office workflow updates (**73.8%**), followed by training or professional development (**66.3%**), HR information (**60.4%**), and IT or equipment updates (**59.1%**). Among field respondents, the most helpful information types were also practical and job-related, including daily work plans (**67.2%**), training or professional development (**64.3%**), weather-related work updates (**61.0%**), work or operations updates (**60.1%**), HR information (**58.1%**), and safety alerts or emergency messages (**56.6%**).

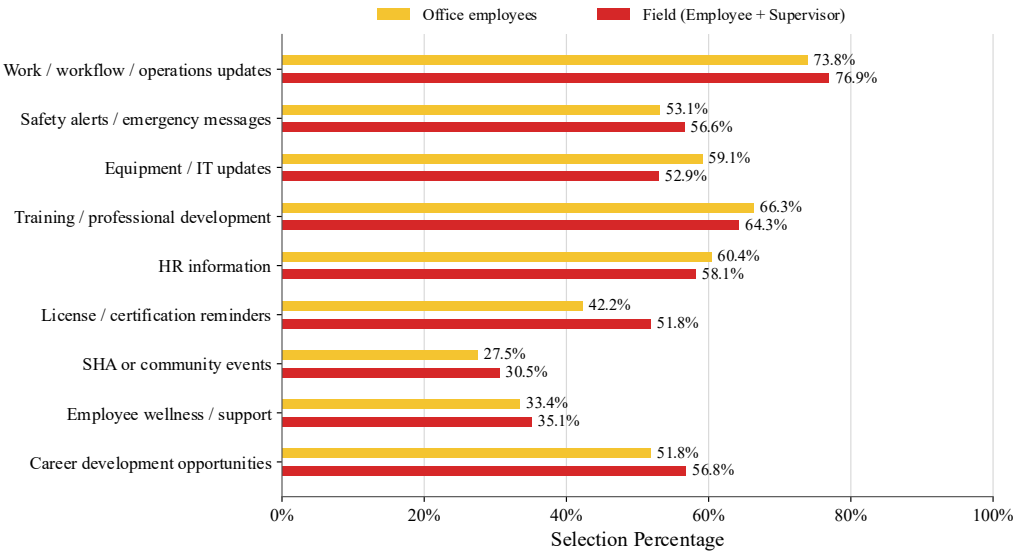

Figure 6 Most Helpful Information Types

The interview findings contextualize this pattern within employees' work routines. Field employees were more likely to notice and value messages that are directly connected to immediate work needs, such as pay, schedules, equipment, licensing, training, safety, weather, and shop-specific updates. Broader SHA news, events, wellness items, and general announcements may also facilitate engagement, but they may crowd out information employees see as more immediately useful. Open-ended comments from survey responses also similarly reflected frustration with the fact that general organizational messages were often sent to employee groups for whom the information was not relevant or intended. For example, an office-based employee commented *"Fundraising messages are too frequent and too broadly distributed"*.

The common issue is not that employees prefer only operational information. Rather, employees need messages with clear relevance. When communication is too broad, overly generic, or insufficiently connected to the employee's role, location, or responsibilities, it can be easily overlooked.

Therefore, SHA should improve message targeting so employees can quickly identify which messages are applicable and why they matter. The objective is not to diminish broad communication, but to make agencywide messages easier to sort, interpret, and connect to daily work.

More specifically, SHA could:

- Use more targeted distribution when possible.

SHA should use targeted distribution lists or create audience-specific messages to tailor communication to certain employee groups, offices, districts, shops, or roles. Employing more targeted communication would help employees more easily identify and process messages that are relevant to their work while still preserving broad communication when the message truly applies to the whole agency.

- Make messages more relevant to employees' roles and daily work.

SHA should design messages so that employees can quickly assess whether the information directly relates to their role, location, responsibilities, or daily tasks. For broad agencywide messages, communication staff could include brief role-specific explanations to help clarify what the message means for field employees, office-based employees, or specific offices and districts.

4.2 Field-Specific Challenges

Challenge Three: Digital access and on-site communication tools were not reliable enough for field employees

Digital access remains a central field communication barrier. Field respondents were substantially less likely than office respondents to report email as a frequently used communication channel (**39.1%** compared with **97.7%**), and they were also less likely to prefer using email as a channel for receive information (**40.7%** compared with **87.9%**). Among non-supervisory field employees, **51.5%** reported checking SHA email monthly or less, while only **20.1%** checked SHA email daily. These findings indicate that email and other office-based digital channels did not serve as reliable default channels for reaching field employees.

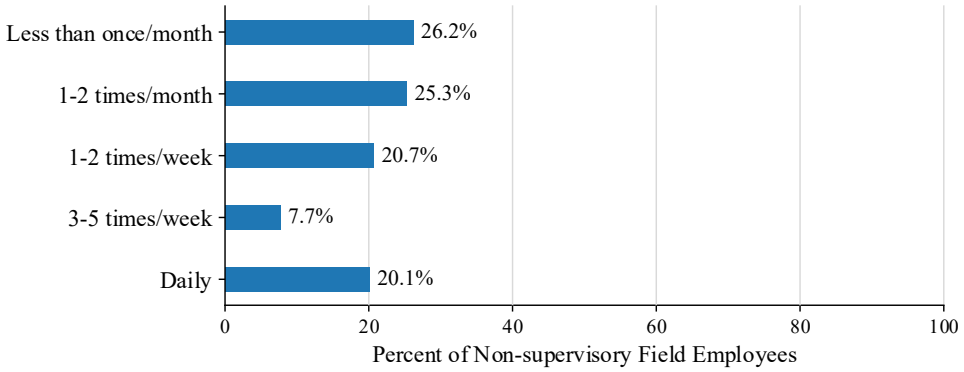

Figure 7 Email Checking Frequency among Non-Supervisory Field Employees

Interviews and open-ended comments from survey respondents indicate that this issue is primarily an access and infrastructure concern rather than simply a matter of employee preference. Field employees often work away from desks, computers, and the SHA network for most of the workday. Interview findings identified recurring issues of limited computer access, outdated hardware, password or authentication barriers, and limited time or motivation to check email. Open-ended comments from survey respondents similarly emphasized the need for easier digital access, newer computers, dedicated time to check email, and solutions to tackle IT barriers. For example, one field supervisor commented, *"Make email easier to access by providing more computers and possibly an app for important SHA information."* Another non-supervisory field employee recommended,

"Improve communication, equipment access, desk availability and tool access". These findings suggest that field employees may miss email-based communications not because they are uninterested, but because the current communication infrastructure does not adequately serve field work conditions.

Suggested improvements reinforce this point. **Replacing outdated shop computers** was among the top priorities of field improvement, indicated by **64.9%** of non-supervisory field employees and **71.7%** of field supervisors. Field respondents also supported communication approaches that are well suited to shop and field settings, including urgent text or SMS alerts and electronic kiosks. These findings indicate that field employees need practical and reliable access points for digital information, particularly in shops where employees begin the workday, receive assignments, complete required training, or check important notices.

Physical and on-site tools also remain important, but their effectiveness depends on consistent maintenance and content management. Shop visits suggest that bulletin boards and flyers are visible and regular in shop settings, but they can become outdated, cluttered, or less useful due to inconsistent responsibility and unclear updating responsibility. Visix boards provide a professional and consistent agencywide channel, but interview participants identified concerns related to low engagement, repeated content, limited local relevance, and occasional equipment malfunctions. These findings suggest that physical and on-site tools should not be abandoned. Instead, they need clearer responsibility, regular updates, improved management, and more locally relevant content.

Therefore, SHA should improve field-accessible communication infrastructure so that field employees can receive digital information more reliably. The objective is not to replace face-to-face communication with supervisors and peers, but to enhance digital accessibility to field employees and expand their access to official, timely, and relevant information.

More specifically, SHA could:

- Upgrade and maintain shop-based digital access points.

SHA should prioritize replacing outdated shop computers, improving the availability of shared computers, reducing login or access barriers, and ensuring that field employees have practical opportunities to review essential digital information during the workday.

- Use email as an official record, coupled with alternative field-accessible delivery methods.

Important field-related messages should not rely on email alone. Important updates should also be reinforced through field-accessible channels, such as supervisor briefings, morning meetings, shop postings, phone calls, text alerts where appropriate, or other local communication methods.

- Improve responsibility and upkeep of physical and on-site tools.

Bulletin boards, flyers, kiosks, and Visix boards should have clearly assigned content owners, update schedules, and moderation processes for outdated information. Local content should also be actively incorporated so to enhance content relevance in the shop, district, or field work context.

Challenge Four: Field communication overly relied on people rather than systems

Field communication often functions effectively because supervisors, team leaders, shop-based office staff, and coworkers compensate for limitations in the formal internal communication system, including limited or unreliable digital access and inconsistent on-site communication tools for field employees. This is a strength because field employees often receive information through individuals they know and trust, but it also creates operational risk. When communication depends heavily on individual memory, judgment, and availability, important information can be missed, filtered, delayed, or delivered inconsistently across crews, shops, or districts.

The survey findings demonstrate the central role of interpersonal communication in field operations. Field respondents most frequently reported receiving information through **supervisors or managers** (**71.0%**) and **local meetings** (**59.1%**). They also preferred these channels most, with **68.3%** preferring supervisor communication and **61.8%** preferring local meetings. As information senders, field supervisors reported that they deliver information primarily through **face-to-face communication** (**90.1%**), followed by **phone calls** (**71.1%**), **text or SMS** (**62.8%**), and **morning meetings** (**59.5%**). These findings indicate that field communication is structured largely around direct, local, and interpersonal channels.

Interview findings further illuminate why these channels are most popular. In maintenance shops, supervisors and team leaders translate broader information into daily

work instructions, including assignments, equipment needs, safety reminders, weather-related updates, emergency instructions, and operational changes. As one field employee explained, *"We just talk in the shop before heading out. It is not formal; we just make sure everyone knows where to go."*

Shop-based office staff also mediated the communication process by routing external requests, preparing paperwork, tracking training, printing notices, posting updates, and helping field employees access systems. This work is essential to how information moves in shops, but it is less visible in formal communication processes. For example, one office staff participant explained, *"Most of our field staff do not check email, so we print it or tell them during the morning meeting."*

However, the survey also indicates the weaknesses of interpersonal communication dynamics. Field supervisors reported relatively effective downward communication, with **73.0%** saying they can pass down important information to field employees in time. But the rest of the relay loop was weaker: only **46.7%** reported that field staff pass information along to others; **52.5%** reported that field staff provide feedback on shared information; and **50.0%** reported that they can pass feedback upward. These results suggest that supervisors can often move information downward, but the broader communication loop is less reliable for information sharing among crews and upward communication from field staff to management are less consistent.

The open-ended comments from field employees echo this concern. Comments showed that when supervisors do not communicate consistently, take concerns seriously, or share relevant information with affected staff, employees may miss information or hesitate to speak up. For example, a non-supervisory field employee emphasized the need to *"share work, training, and development information consistently and fairly so employees do not have to rely on informal channels or overhearing conversations to learn about opportunities."* Another non-supervisory field employee recommended *"Reduce restrictions on communication from local management and protect employees and direct supervisors from negative consequences when they speak up."* These findings suggest that SHA's field communication system is functional, but too dependent on whether the right person receives, understands, prioritizes, and relays the message at the right time.

Therefore, SHA should strengthen the existing interpersonal field communication

system by providing additional support for supervisors, team leaders, and other local communication intermediaries. The objective is not to replace supervisor-led or face-to-face communication, because these are among the strongest field channels. Instead, the objective is to make field communication more consistent, transmitted accurately, and less dependent on individual memory, informal handoffs, or uneven relay practices.

More specifically, SHA could:

- Improve clarity around relay responsibilities for field communication.

SHA should provide clear guidance to supervisors and shop-based office staff regarding which types of information need to be passed to field crews, when they should be shared, and which channels are most appropriate. This guidance is especially important for safety, training, HR deadlines, licensing, weather, equipment, and operational changes.

- Provide better field-ready message supports.

Important messages targeted at field employees should be accompanied by key talking points, required actions, deadlines, and points of contact. These materials would help supervisors, team leaders, and shop-based office staff communicate the same core message consistently while still explaining it in practical field language.

- Strengthen backup paths for critical information.

For required or time-sensitive field updates, SHA should use alternative channels to ensure message delivery, such as morning meeting reminders, posted notices, phone or text messaging where appropriate, and simple confirmation steps when action is required. This approach would reduce the risk that critical information depends on a single verbal handoff.

4.3 Office-Specific Challenges

Challenge Five: Office employees experienced email overload

Email is a double-edged sword for office employees. While it serves as the primary communication channel for these employees, it is also a major source of communication burden. Survey results show that **97.7%** of office employees reported email as a frequently used communication channel, and **87.9%** rated email as a preferred channel. At the same time, reported email volume was substantial: more than half of office employees (**54.6%**) reported receiving more than 20 internal emails per day, including **31.7%** who received 21 to 40 emails, **14.4%** who received 41 to 60 emails, and **8.5%** who received 60 or more

emails. Nearly one-quarter (**22.9%**) reported receiving 41 or more internal emails per day. Information overload was also common: Nearly two thirds (**65.4%**) of office employees reported experiencing overload sometimes, including **39.4%** sometimes and **26.0%** often or very often.

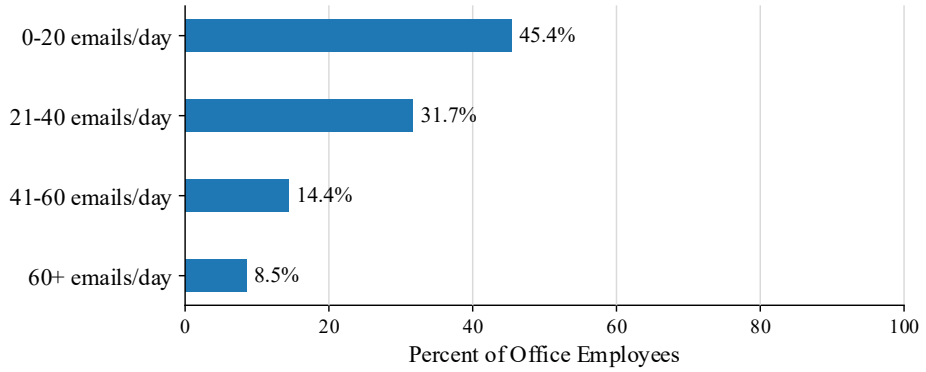

Figure 8 Daily Internal Email Volume among Office Employees

Open-ended comments suggest that office email overload is manifested in two aspects. The first is **message-management overload**, including duplicate emails, repeated forwarding of the same message, broadly distributed messages that apply only to a narrow group, unclear action items, and voluminous messages that are difficult to prioritize. For example, one office-based employee commented, *"Repeated emails from multiple senders, reply-all messages, and irrelevant fundraising or newsletter emails create unnecessary email overload."* This is supported by the survey results: **71.8%** of office employees rated reducing repeated or inconsistent messages as useful or very useful for communication improvement, and **78.3%** rated clearer email structure or templates as useful or very useful. Employees also supported improving SharePoint/Intranet usability (**51.0%**), suggesting that some reference information, recurring updates, forms, or policies may be better managed outside of individual email chains.

The second is **workload-related overload**, which comes from broader workload, staffing, and operational pressure. As stated by an office-based employee, *"email overload and workload pressures also limit communication effectiveness"*. This suggests that employees may feel overwhelmed not only because too many messages are sent, but also because they are already managing numerous tasks, deadlines, and responsibilities that compete for attention. Therefore, reducing duplicate or irrelevant emails may help, but it

will not fully solve the problem if employees lack enough time or capacity to read, interpret, and respond to necessary messages.

This distinction is important. Admittedly, some repetition can be useful to ensure message delivery and enhance employees' understanding, absorption, and retention of key information. However, unmanaged duplication creates overload and inbox fatigue when the same or similar message is forwarded repeatedly, sent by multiple sources, or distributed to employees who do not need it. The issue is not repetition itself, but uncoordinated repetition without clear targeting, responsibility, or action guidance.

Therefore, SHA should keep email as a core office communication channel while improving how email is targeted, structured, and managed. The goal is not simply to reduce the number of emails, but to reduce avoidable overload and make important messages easier to recognize, prioritize, and act on.

More specifically, SHA could:

- Reduce duplicate and unnecessary emails.

SHA should improve coordination among senders to reduce the likelihood that employees receive the same or similar emails repeatedly from multiple sources. In cases when email repetition is necessary, senders should adapt the original email by highlighting key points, clarifying details, or providing additional context to reinforce important information, rather than simply resending the same email. Additionally, messages should be sent to the appropriate audience whenever possible, rather than defaulting to agencywide distribution.

- Improve email structure and clarity.

Important emails should clearly identify the audience, purpose, required action, deadline, point of contact, and official source, highlighting key information through formatting such as bold text, italics, or color cues. Clearer email templates or standard structures would help employees quickly determine whether a message requires attention or action.

- Use SharePoint, intranet spaces, or digests for reference and lower-priority content.

Optional, recurring, or reference information, such as forms, policies, general announcements, and non-urgent updates, could be shared on SharePoint or intranet spaces or grouped into periodic digests. This would reduce the need for employees to search

through email chains to find current information.

- Recognize work task overload separately from email duplication.

SHA should distinguish between message-management overload caused by duplicate or poorly managed emails and overload caused by workload pressure. Email improvements can reduce unnecessary burden, but broader workload and staffing constraints may be the underlying sources of communication overload.

Challenge Six: Cross-office coordination was not always clear

Cross-office and interdepartmental communication emerged as a distinct office-specific challenge. This issue is different from top-down communication from leaders to employees. Instead, it concerns how information moves horizontally across districts, headquarters offices, organizational units, project teams, and other organizational groups before it reaches the employees responsible for interpreting or acting on it.

Survey results suggest that information needed for cross-office coordination was oftentimes unclear. Among office employees, **project or program information** was the most commonly unclear information type (**35.3%**). At the same time, **project or office workflow updates** were the most helpful information type for office employees (**73.8%**). This indicates a potential mismatch: the information that office-based employees most need to perform their work may also be among the information types most likely to be communicated without sufficient clarity. Responses from communication staff also support this concern: 7 out of 7 completed responses rated better coordination across offices as useful or very useful for communication improvement, and 6 out of 7 selected clearer communication chains as desirable improvement solutions.

Open-ended comments help explain this pattern. Employees described communication problems among districts, headquarters offices, and organizational units, including missed input, duplicated work, uncertainty about which office or unit is responsible for a process, uncertainty about the official source of information, and confusion about messages coming from unfamiliar sources. For example, one office-based employee comment stated, *"Divisions need better communication about projects, datasets, maps, file access, and work occurring across divisions to reduce redundant work, confusion, and fragmented processes."* Another office-based employee commented, *"Important SOPs and directives should come from recognizable office leadership or a*

clear information owner. Otherwise, employees may miss the message and staff may not receive needed information." These comments suggest that cross-office communication problems are not limited to message volume, but also involve unclear responsibility, unclear routing, and uncertainty about which source should be treated as authoritative.

Interviews also suggest that some communication failures are associated with weak confirmation loops. While emergency communication is enacted through clearer relay paths and involves reporting back after work is completed, routine cross-office communication does not always have the same confirmation mechanism. As such, senders may not know whether information was received, understood, routed to the right person, or acted upon. This is especially problematic for messages related to project changes, training requirements, and other routine matters that require coordination across offices or districts.

Therefore, SHA should improve cross-office coordination by establishing clearer information responsibility, routing process, and confirmation mechanisms in routine communication. The objective is not to add more meetings or messages, but to help employees better understand who owns the information, who needs to be involved, who is responsible for follow-up, and whether important updates reached the right groups.

More specifically, SHA could:

- Improve visibility of information responsibility in cross-office communication.

Routine messages that affect multiple offices, districts, or units need to more clearly identify the responsible offices or information owners, the affected groups, the expected action, and the point of contact. This would help employees understand whether a message applies to their work and who is responsible for follow-up.

- Strengthen confirmation practices for important routine updates.

For project changes, training requirements, deadlines, and other required messages, simple confirmation steps could be used to verify that the appropriate offices or units received the information and understood any required action. These steps could include a brief acknowledgement from the receiving office, confirmation from a designated point of contact, or a shared tracking log for updates affecting multiple offices. This would reduce uncertainty about whether information reached the right groups and clarify follow-up responsibility.

4.4 Summary and Suggested Implementation Strategies

SHA's internal communication challenges are not limited to one channel, one employee group, or one level of the organization. The challenges are multifaceted, multi-channeled, and multilayered in nature. Communication was strongest near employees' local work, but weaker at higher organizational levels. Employees are also in greater demand for messages more relevant to their roles, locations, and responsibilities. Field-specific findings identified issues of unreliable digital access, uneven upkeep of on-site tools, and heavy reliance on supervisors, shop-based office staff, and informal handoffs. Office-specific findings pointed to email overload and unclear cross-office coordination.

The proposed recommendations for these challenges can be organized into two categories: longer-term recommendations and near-term recommendations. **Longer-term recommendations** focus on cumulative improvement to organizational management and operations, including increasing visible leadership engagement, strengthening feedback accountability, upgrading field-accessible communication infrastructure, and addressing workload-related communication overload. These recommendations require **leadership action, management follow-through, equipment provision and/or investment, and coordination across offices and districts**.

Near-term recommendations are implementation oriented and more immediately practical. Two main strategies are proposed: **strengthening role-based communication training** and **improving internal communication standards and operating guidance**. Employees identified a need for more communication training because many communication issues involved not only tools, but also message clarity, feedback practices, supervisor communication, email practices, and workflow communication. Survey results support this need: **61.0%** of office employees and **57.5%** of field employees rated training on communication tools and systems as useful or very useful for communication improvement. Employees also called for improved standards and operating guidance because communication challenges primarily involved unclear expectations for channel use, inconsistent practices, poorly structured messages, weak relay processes, ambiguous information responsibility, and inconsistent follow-up. Improved standards and operating guidance are key to address these issues.

Table 8 summarizes the suggested implementation strategies for general recommendations

Table 8 Suggested Implementation Strategies on General Recommendations

Area	**Recommendations**	**Training Improvements**	**Standards and Guidance Improvement**
Message quality and relevance	• Make messages more relevant to employees' roles and local work; • Create support for leadership-to-local message translation; • Provide better field-ready message supports.	• Improve training for senders, communication staff, supervisors, and local leaders on writing clearer, role-relevant messages. • Emphasize brief "what this means for you" language for different employee groups, locations, and work settings.	• Improve message standards for important communications. • Require messages to identify the intended audience, purpose, required action, deadline, official source, and point of contact. • Include role-specific notes when needed.
Email and information overload management	• Reduce duplicate and unnecessary emails; • Improve email structure and clarity; • Recognize work task overload separately from email duplication.	• Improve training for frequent senders and managers on clearer email writing. • Emphasize audience targeting, appropriate forwarding, reply-all practices, and action clarity. • Help employees distinguish email-management overload from broader workload-related overload.	• Improve email standards for message structure and audience targeting. • Reduce duplicate messages and unnecessary forwarding. • Use digests when appropriate. • Move reference or lower-priority content to SharePoint or intranet spaces. • Distinguish email duplication from workload-related overload.
Field communication consistency	• Improve clarity around relay responsibilities for field communication; • Strengthen backup paths for critical field information.	• Improve training for supervisors and team leaders on relaying information clearly. • Emphasize translating messages into field-ready language. • Support confirmation of understanding and use of backup channels when needed.	• Improve field communication guidance for what information should be relayed, when it should be shared, and who should share it. • Clarify when backup paths should be used.

			• Identify appropriate backup paths, such as morning meetings, posted notices, phone calls, text reminders, or confirmation steps.
Feedback follow-up and accountability	• Improve feedback closure, responsibility, and escalation.	• Improve training for supervisors, managers, and leaders on acknowledging employee concerns. • Emphasize respectful responses, explanation of next steps, and handling difficult conversations. • Encourage reporting back when possible.	• Improve feedback follow-up standards. • Make acknowledgement, routing, responsibility, escalation, response expectations, and status updates more visible. • Maintain response accountability as part of the broader feedback recommendation.
Cross-office coordination	• Improve visibility of information responsibility in cross-office communication; • Strengthen confirmation practices for important routine updates.	• Improve training for employees and frequent senders on identifying affected offices or units. • Emphasize clarifying points of contact, routing information appropriately, and confirming receipt or action when needed.	• Improve cross-office guidance for routine messages. • Require messages to identify the office responsible, affected groups, expected action, point of contact, and routing expectations. • Include simple confirmation steps when needed.
Shared-source and information responsibility	• Use SharePoint, intranet spaces, or digests for reference and lower-priority content; • Improve visibility of information responsibility in cross-office communication	• Improve training for employees on where to find official information. • Improve training for content managers on how to post, update, organize, and archive shared information.	• Improve SharePoint or intranet maintenance standards. • Ensure official content is updated, reviewed, archived, organized, and searchable. • Assign clear responsibility for maintaining shared information.

Chapter 5. Conclusion

This project assessed SHA's current internal communication practices through a review of prior research and current practices, semi-structured employee interviews, and structured surveys with non-supervisory field employees, field supervisors, office-based employees, and communication staff. The project examined how employees receive, interpret, share, and act on internal information, with attention to differences in work environment, channel access, message relevance, satisfaction, feedback, and opportunities for improvement.

The findings show that SHA's internal communication system is layered and highly dependent on employees' work context. Communication is generally strongest when it is close to employees' local work settings, including communication involving direct supervisors, peers, shops, and local units. However, communication becomes less effective when messages move through higher organizational levels, multiple offices, or channels that employees cannot reliably access. Employees also need messages that are more clearly connected to their roles, locations, responsibilities, and daily work.

Field employees face barriers related to limited digital access, outdated or inconsistently maintained on-site communication tools, and overreliance on supervisors, team leaders, shop-based office staff, and informal handoffs. These interpersonal communication channels present unique strengths because they support direct, trusted, and practical information exchange. However, they also create limitations when the accuracy, consistency, or timeliness of information depends heavily on individual availability, judgment, or relay practices. In contrast, office-based employees face a different set of challenges, including high email volume, duplicate messages, unclear action items, and coordination gaps across offices, districts, and units.

Overall, the findings suggest that SHA needs a targeted, accommodating, and role-sensitive communication approach rather than a simple agencywide solution. Table 9 summarizes these challenges and their corresponding recommendation summaries in a

point-to-point format. While some of the recommendations may require substantive leadership actions, many can be implemented more immediately through improved role-based training and clearer standards and operating guidance.

Table 9 Summary of Identified Internal Communication Challenges and Recommendations

Challenges	**Recommendations**
Communication satisfaction is stronger closer to local work and weaker at higher organizational levels	Strengthen leadership visibility, improve feedback follow-through, and support local translation of agencywide messages so employees can better connect SHA-level communication with their daily work.
Messages were not always tailored to employees' roles, locations, and daily work	Improve message targeting and role relevance so employees can quickly identify which messages apply to them and how they connect to daily work.
Digital access and on-site communication tools were not reliable enough for field employees	Upgrade shop-based digital infrastructure and maintain field-accessible communication tools so field employees can reliably receive official, timely, and relevant information during the workday.
Field communication overly relied on people rather than systems	Strengthen field communication by clarifying relay responsibilities, providing field-ready message supports, and using backup paths for critical information so communication remains practical but less dependent on individual handoffs.
Office employees experienced email overload	Keep email as a core office channel while reducing duplicate messages, improving email structure and targeting, moving reference or lower-priority content to better-organized shared spaces, and distinguishing avoidable email overload from broader workload-related overload.
Cross-office coordination was not always clear	Improve cross-office coordination by making information responsibility, routing, and confirmation clearer so routine updates reach the right groups and are acted on consistently.

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Appendix A: Interview Guides

A.1 Non-supervisory Field Employee

Introduction

Good morning/afternoon, and thank you for meeting with me today. My name is [Interviewer's Name], and I am a member of a University of Maryland research team. This interview is being conducted to better understand how SHA employees like yourself experience internal communications— including messages beyond work updates, such as employee stories, recognition, and events. There are no right or wrong answers, and I'm here to learn from your experience.

Before we begin, I want to assure you that your participation is **voluntary**. You may choose not to answer any question and may stop the interview at any time without any penalty. With your permission, I'd like to **audio-record** our conversation so I can focus on listening and ensure accuracy. The recording and notes will be kept confidential, accessible only to the research team, and any report will aggregate findings **without names or identifying details**. The interview will take about **20–30 minutes**.

Do you consent to participate, and do I have your permission to record?

[Wait for verbal consent; confirm and proceed.]

Thank you. Let's begin.

Warm-Up

1. To start, could you briefly describe your role and what a typical workday looks like for you?

Work-Related Communication

2. When it comes to work-related updates, such as HR notices, training opportunities, or shift details, what is the most reliable way for you to receive this information?
3. Can you describe a recent time when you received an urgent update (like a weather closure or safety alert)? How did it reach you, and did it feel timely and clear?

4. Do you subscribe to SHA's version of Everbridge, the app you can download to your work or personal phone that allows officials to send notifications via email or text about emergencies and other major events ? If not, why not?

Beyond Work-Related Communication

5. Besides work-related updates, what kinds of SHA messages do you usually notice or pay attention to? (If needed, prompt: recognition, staff stories, or social events.) Which ones stand out most to you?
6. Thinking about those messages, what makes some of them feel meaningful or valuable to you? Can you share an example of a message that left an impression, and why?
7. When you see messages from different levels (your shop/district vs. statewide), which ones feel most relevant to your experience? Why?
8. During your work day, when are you most likely to **notice and actually read** this kind of content—for example, at start-of-shift huddles, on break room boards, during breaks, or after your shift? Why does that timing work best for you?
9. Which **channels or formats** work best for you to get this type of information—bulletin boards, supervisor announcements, overhead video screens, texts, or emails? Why does that channel work best for you?
10. Can you recall a time when a message—of any type—made you feel more connected to SHA or to your coworkers? What about that message made it impactful?
11. How do you feel about the amount of these broader messages right now? What would you like to see more (or less) of? What do you find just right about it, if anything?
12. What would make these messages more **engaging or useful** for you? (For example, making them more local to your district, using more visuals, or sharing them through a supervisor or peer.)
13. If SHA wanted to make its messages more engaging or meaningful for you, what would you recommend? What's the first change you'd suggest?
14. In general, how do you think your fellow workers feel about the way SHA communicates with you? Positive? Negative? Why?

Closing

Thank you very much for your time and insights. Your input will help SHA and the Office of Communication fine-tune messages that build pride and connection while keeping work information clear and timely. Is there anything else about SHA communications—especially broader communications—that you'd like to add before we wrap up?

A.2 Field Supervisors (RME/ARME/FMS/FMT IV)

Introduction

Good morning/afternoon, and thank you for meeting with me today. My name is [Interviewer's Name], and I am a member of University of Maryland research team.

The purpose of this interview is to understand how shop leads and crew supervisors experience SHA communications—both how you **receive** messages yourself, and how you **pass them on** to your crews. We're also interested in broader messages beyond urgent or HR updates—such as employee recognition, staff stories, or announcements that help people feel connected across SHA.

Your participation is voluntary. You may choose not to answer any question and may stop the interview at any time. With your permission, I'd like to record our conversation so I can focus on listening. The recording and notes will be kept confidential, and no report will include your name or identifying information. The interview should take about **20–30 minutes**.

Do you consent to participate, and do I have your permission to record?
[Wait for verbal consent; confirm and proceed.]
Thank you. Let's begin.

Warm-Up

1. To start, could you describe your role as a shop lead or supervisor, and what a typical day looks like for you and your crew?

Receiving Messages (as a supervisor)

2. How do you usually receive SHA messages yourself—such as emails, texts, Everbridge alerts, or updates from managers? Thinking about the messages you receive, can you share an example of one that was timely and clear—or one that wasn't? What made the difference?
3. In your view, which kinds of messages work best when delivered directly to employees, and which are more effective when passed through supervisors? Can you share an example?
4. Do you feel that Everbridge, the app that allows officials to send notifications via email or text about major events, is useful as a communications tool? Do members of your team use it? If not, why not?

Sending Messages (to crews)

5. When you pass information on to your crew—for example, during morning huddles, team meetings, or one-on-one—what approaches work best?
6. Can you describe a situation where it was challenging to explain SHA messages to your crew? What made it difficult, and what would have helped?

7. When you pass on SHA messages to your team, do you ever adapt or reframe them? Can you give an example of how and why?

Beyond Work-Related Communication

8. Beyond work updates, what kinds of broader SHA messages (for example, recognition, success stories, or event announcements) usually reach you? How do you decide whether to share them with your team?
9. Which kinds of these broader messages seem to matter most to your crew members? (For example, shop/district achievements, statewide updates, safety milestones, or staff spotlights.)
10. Are there times when you wish you had better tools, templates, or visual materials to help present these broader messages in a way that feels engaging to your crew?
11. Thinking about times you've shared these broader updates, how have crew members reacted? Can you describe a message that worked well and one that didn't? What made the difference?
12. What kinds of tools, materials, or support would make it easier for you to share these broader messages with your team in an engaging way?
13. Do you or your shop hold weekly or daily meetings with your workers? What do you think of holding regular face-to-face meetings?
14. If SHA wanted to move an overhead message board where it would be better noticed, where should it go?

Closing

Thank you very much for your time and your insights. As a supervisor, you play a critical role in how SHA communication flows to crews. Your feedback will help SHA and the Office of Communication design messages that are clearer, more engaging, and more supportive of connection and engagement. Is there anything else you would like to add about your experience receiving or sharing SHA communications?

A.3 Office Employee

Introduction

Good morning/afternoon, and thank you for meeting with me today. My name is [Interviewer's Name], and I am a member of University of Maryland research team. This interview is being conducted to better understand how SHA employees like you experience internal

communications—including messages beyond work updates, such as employee stories, recognition, and events. There are no right or wrong answers, and I'm here to learn from your experience.

Before we begin, I want to assure you that your participation is voluntary. You may choose not to answer any question and may stop the interview at any time without any penalty. With your permission, I'd like to audio-record our conversation so I can focus on listening and ensure accuracy. The recording and notes will be kept confidential, accessible only to the research team, and any report will aggregate findings without names or identifying details**.** The interview will take about 20–30 minutes**.**

Do you consent to participate, and do I have your permission to record?

[Wait for verbal consent; confirm and proceed.]

Thank you. Let's begin.

Warm-Up

1. To start, could you briefly describe your role and the kinds of tasks you typically handle during a workday?

Work-Related Communication

2. On a typical day, how do you manage the different SHA messages you receive—such as emails, intranet updates, or SharePoint notifications?
3. Can you recall a recent time when you had difficulty finding or noticing an important work message? What was challenging about it, and what could have helped?

Beyond Work-Related Communication

4. Beyond your work tasks, what kinds of SHA messages do you usually notice? (If needed, prompt: recognition, staff stories, social or cultural events.) Which ones stand out most to you?
5. Thinking about the messages you've noticed, which kinds feel most meaningful or useful to you personally? Can you share an example of one that resonated and why?
6. Can you recall a time when a message made you feel more connected to SHA or to your colleagues? What about it created that sense of pride or engagement?
7. When you see messages from different levels (your office/division vs. statewide), which ones feel most relevant or engaging to you? Why?
8. When you get a lot of messages, how do you decide which ones to read first or take seriously? Can you describe your process?

9. How have repeated messages across different channels (for example, emails, intranet updates, SharePoint notifications, or other formats) been for you—helpful, overwhelming, or both?
10. Which channels feel the most official or reliable to you for these kinds of broader messages (e.g., recognition, staff stories, events)? Why?
11. What would make these broader communications more engaging or useful for office staff? (For example, more targeted by role, shorter summaries with links, or better intranet search.)
12. If SHA wanted to make these kinds of messages more useful or engaging for office staff, what would you suggest as the top priority?
13. If SHA wanted to move an overhead message board where it would be better noticed, where should it go?
14. In general, how do you think your fellow workers feel about the way SHA communicates with you? Positive? Negative? Why?

Closing

Thank you very much for your time today. Your feedback will help SHA and the Office of Communication improve how information is shared— especially the kinds of broader messages that help strengthen connection. Is there anything else you would like to add about your experience with SHA communications that we haven't covered?

A.4 Communication Staff

Introduction

Good morning/afternoon, and thank you for meeting with me today. My name is [Interviewer's Name], and I am a member of University of Maryland research team. The purpose of this interview is to learn about how staff who prepare and send messages—such as those in Communications, IT, or HR—design and manage SHA communications. We are especially interested in how you choose channels, address challenges in reaching employees, and gather feedback on what works.

Your participation is voluntary. You may skip any question or stop the interview at any time. With your permission, I'd like to record this conversation so I can focus on listening. The recording and notes will remain confidential, and no report will include your name or identifying details. The interview should take about **20–30 minutes**.

Do you consent to participate, and do I have your permission to record? [Wait for verbal consent; confirm and proceed.] Thank you. Let's begin.

Warm-Up

1. To start, could you briefly describe your role in preparing or sending communications at SHA?

Message Design and Delivery

2. When you prepare and send messages, can you walk me through how you decide which channels to use? Can you give an example of a message where this choice worked well—or not as well?
3. Can you describe a challenge you've faced in reaching all employees—especially those who don't check email often? How did you handle it?
4. Have you experienced overlapping or conflicting messages from different departments? What happened, and how was it resolved?
5. When designing broader messages that go beyond urgent or HR updates (for example, recognition or staff stories), what feels most challenging? Can you give an example?
6. Do you find that people are using Everbridge to get information about emergencies and major events? If not, why not?

Tools, Policies, and Limitations

7. Which communication tools or platforms help you most, or cause the most difficulty or frustration for you as a sender?
8. Are there policies, IT limitations, or privacy concerns that prevent you from using certain channels more effectively?
9. If SHA wanted to move an overhead message board where it would be better noticed, where should it go?

Feedback and Improvement

10. How do you currently know if employees have seen or acted on a message? Can you share an example of when feedback was reliable—or when it wasn't?
11. If you had data showing whether your team opened and read emails or text messages, or saw messages another way, how would that change the way you design or deliver messages?

12. If you had the chance to change one part of SHA's communication system right now, what would you prioritize, and why?

Closing

Thank you very much for your time today. Your perspective as someone who sends and manages communications is essential to this project. Your feedback will help SHA and the Office of Communication strengthen systems so messages are clearer, more reliable, and more effective. Is there anything else you would like to add about your experience preparing or sending SHA communications that we have not discussed?

Appendix B: Survey Questionnaires

B.1 Non-supervisory Field Employee

About This Survey
This survey is conducted by Dr. Yaobang Gong and his research team at the University of Maryland, in collaboration with MDOT SHA. The purpose of this study is to understand how employees receive, interpret, and rely on internal communication, so that future communication practices can be improved.

Voluntary Participation
Your participation is completely voluntary. You may choose not to participate, decline to answer any question, or stop completing the survey at any time. There are no penalties or consequences for choosing not to participate.

Anonymity and Confidentiality
This survey is anonymous. Please do not write your name or any identifying information anywhere on the questionnaire. All responses will be kept strictly confidential and used only for research and organizational improvement. No individual responses will be shared with supervisors, managers, or SHA leadership. Results will be reported only in summary form, and no individual respondent will be identifiable.

Minimal Risks
There are no anticipated risks to participating in this study. Some questions may ask about your work experience; you may skip any questions you prefer not to answer.

Benefits
You may not receive direct personal benefits from participating, but your responses will help SHA improve internal communication and strengthen employee support.

Time Required
Completing the survey should take approximately **10–15 minutes**.

Consent to Participate
By completing and returning this survey, you indicate that you have read this information, that your questions (if any) have been answered, and that you voluntarily agree to participate in this study.

If you have questions about this survey, please contact:
Dr. Yaobang Gong
University of Maryland
Email: ybgong@umd.edu

1. **What is your current role/job in MDOT SHA?_____**
2. **District: _____**
3. **Shop: _____**
4. **How many years have you worked for SHA?**
   - ○ Less than 1 year
   - ○ 1–5 years
   - ○ 6–10 years
   - ○ 10-20 years
   - ○ More than 20 years
5. **How satisfied are you with internal communication at SHA?**

Item	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Communication with peers (colleagues/those you work with)	○	○	○	○	○
Communication from/with your direct supervisor	○	○	○	○	○
Communication from your shop	○	○	○	○	○
Communication from top-level SHA leadership	○	○	○	○	○
Overall satisfaction	○	○	○	○	○

6. **Thinking about your <u>direct supervisor</u>, how much do you agree with these sentences?**

Item	Very disagree	Disagree	Neutral	Agree	Very agree
My direct supervisor is available when I need help	○	○	○	○	○
My direct supervisor knows when I have problems at work	○	○	○	○	○
My supervisor understands my problems	○	○	○	○	○
My supervisor sees my potential.	○	○	○	○	○

7. **How often do you receive information early enough to act upon that is relevant to your current work or responsibilities (e.g., work updates, operational changes, deadlines, safety alerts, policy updates)?**
   - ○ Never
   - ○ Rare
   - ○ Sometimes
   - ○ Often
   - ○ Very often

8. **How often do you miss information that is relevant to your current work or responsibilities (e.g., work updates, operational changes, deadlines, safety alerts, policy updates)?**
   ○ Never
   ○ Rarely
   ○ Sometimes
   ○ Often
   ○ Very often
9. **Which types of information do you typically receive in a timely manner? (select all that apply):**
   □ Training
   □ HR updates
   □ Safety messages
   □ License reminders
   □ Daily work plans
   □ Other: _____
   □ None of the above.
10. **What types of information are you most interested in receiving? (Select all that apply)**
   □ Daily work plans
   □ Safety alerts and emergency messages
   □ Weather-related updates affecting work
   □ Work or operational updates
   □ Equipment or fleet updates
   □ Training or skill-building opportunities
   □ HR updates (pay, leave, benefits, policies)
   □ License or certification reminders
   □ SHA or community events
   □ Employee wellness programs or available resources
   □ Career development opportunities
   □ Other: _____
11. **Which of the following do you usually receive information from? (Select all that apply)**
   □ Face-to-face communication with supervisor
   □ Morning meetings
   □ Town Hall meetings
   □ Phone call
   □ Text/SMS
   □ Bulletin board / flyers
   □ Email
   □ Visix overhead screens
   □ Other: _____

12. **For each channel listed below, please rate how much you would like SHA to use that channel to send you general messages.**
    Instruction: Please rate each channel independently (this is not a ranking).

Channel	Not at all	A little	Somewhat	Very much	Extremely
Supervisor	○	○	○	○	○
Morning meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○
Phone call	○	○	○	○	○
Text/SMS	○	○	○	○	○
Bulletin board	○	○	○	○	○
Email	○	○	○	○	○
Visix screens	○	○	○	○	○

13. **How often do you check your SHA email?**
    ○ Less than once a month
    ○ 1–2 times per month
    ○ 1–2 times per week
    ○ 3–5 times per week
    ○ Daily
14. **To what extent are you aware of whom you should go to when you need help or have a concern about your work?**
    ○ Not at all
    ○ Slightly
    ○ Somewhat
    ○ Mostly
    ○ Very much
15. **To what extent do you feel comfortable speaking up about communication problems in SHA?**
    ○ Not at all
    ○ Slightly
    ○ Somewhat
    ○ Mostly
    ○ Very much
16. **How easy or difficult is it for you to give feedback in general when you want to?**
    ○ Very difficult
    ○ Difficult
    ○ Neither easy nor difficult
    ○ Easy
    ○ Very easy
17. **When you give feedback, how often does it lead to a response or action?**

○ Never
○ Rarely
○ Sometimes
○ Often
○ Always
○ Not applicable

18. **For each method listed below, please rate how much you would prefer using that method to share feedback or concerns.**
    Instruction: Please rate each method independently (this is not a ranking).

Method	Not at all	A little	Somewhat	Very much	Extremely
Talking directly to my supervisor (in person)	○	○	○	○	○
Anonymous box or anonymous form	○	○	○	○	○
Direct emails to supervisors or managers	○	○	○	○	○
Using an official SHA feedback channel (feedback email, online form, hotline)	○	○	○	○	○
Sharing during morning meetings	○	○	○	○	○
Sharing during Town Hall	○	○	○	○	○
Having a clear point-of-contact person for feedback	○	○	○	○	○
Other: _____	○	○	○	○	○

19. **To what extent does communication at SHA make you feel like being an important part of it?**
    ○ Not at all
    ○ Slightly
    ○ Somewhat
    ○ Mostly
    ○ Very much
20. **How useful do you believe each of the following potential communication improvements would be?**

Improvement	Not useful at all	Slightly useful	Moderately useful	Useful	Very useful
Having bulletin boards that are clearly organized and updated regularly	○	○	○	○	○
More timely and accurate updates on Visix screens	○	○	○	○	○
Short text/SMS alerts for urgent or time-sensitive information	○	○	○	○	○
Providing a state-issued phone or device to improve access to work communication	○	○	○	○	○
More consistent town hall meetings for information sharing and feedback	○	○	○	○	○
Clear responsibility for who updates and maintains communication channels (boards, Visix, messages)	○	○	○	○	○
Reducing repeated or inconsistent messages from different sources	○	○	○	○	○
Weekly digest for non-urgent updates	○	○	○	○	○
Training to help staff better use communication tools and systems	○	○	○	○	○
Replacing aging or outdated computers in the shop	○	○	○	○	○
Electronic kiosks in offices and shops	○	○	○	○	○
Being issued an SHA mobile phone	○	○	○	○	○

21. Do you have any other comments or suggestions about internal communication at SHA?

_____

B.2 Field Supervisors

About This Survey

This survey is conducted by Dr. Yaobang Gong and his research team at the University of Maryland, in collaboration with MDOT SHA. The purpose of this study is to understand how employees receive, interpret, and rely on internal communication, so that future communication practices can be improved.

Voluntary Participation
Your participation is completely voluntary. You may choose not to participate, decline to answer any question, or stop completing the survey at any time. There are no penalties or consequences for choosing not to participate.

Anonymity and Confidentiality
This survey is anonymous. Please do not write your name or any identifying information anywhere on the questionnaire. All responses will be kept strictly confidential and used only for research and organizational improvement. No individual responses will be shared with supervisors, managers, or SHA leadership. Results will be reported only in summary form, and no individual respondent will be identifiable.

Minimal Risks
There are no anticipated risks to participating in this study. Some questions may ask about your work experience; you may skip any questions you prefer not to answer.

Benefits
You may not receive direct personal benefits from participating, but your responses will help SHA improve internal communication and strengthen employee support.

Time Required
Completing the survey should take approximately **10–15 minutes**.

Consent to Participate
By completing and returning this survey, you indicate that you have read this information, that your questions (if any) have been answered, and that you voluntarily agree to participate in this study.

If you have questions about this survey, please contact:
Dr. Yaobang Gong
University of Maryland
Email: ybgong@umd.edu

Respondent Information

1. **What is your current role in MDOT SHA?:_____**
2. **District: _____**
3. **Shop: _____**
4. **How many years have you worked for SHA?:**
   - ○ Less than 1 year
   - ○ 1–5 years
   - ○ 6–10 years
   - ○ 10-20 years
   - ○ More than 20 years

Receiver

Please consider the following questions from the perspective of receiving communication in your role. Think about how you typically receive information related to your daily work, operations, safety, HR, or other job-related updates.

5. **How often do you receive information early enough to act upon that is relevant to your current work or responsibilities (e.g., work updates, operational changes, deadlines, safety alerts, policy updates)?**
   ○ Never
   ○ Rare
   ○ Sometimes
   ○ Often
   ○ Very often
6. **How often do you miss information that is relevant to your current work or responsibilities (e.g., work updates, operational changes, deadlines, safety alerts, policy updates)?**
   ○ Never
   ○ Rarely
   ○ Sometimes
   ○ Often
   ○ Very often
7. **Which types of information do you typically receive in a timely manner? (select all that apply):**
   □ Daily work plans
   □ Operational updates
   □ Training
   □ HR updates
   □ Safety messages
   □ License reminders
   □ Other: _____
   □ None of the above.
8. **What types of information are you most interested in receiving? (Select all that apply)**
   □ Daily work plans
   □ Safety alerts and emergency messages
   □ Weather-related updates affecting work
   □ Work or operational updates
   □ Equipment or fleet updates
   □ Training or skill-building opportunities

□ HR updates (pay, leave, benefits, policies)
□ License or certification reminders
□ SHA or community events
□ Employee wellness programs or available resources
□ Career development opportunities
□ Other: _____
□ None of the above.

9. **In your view, what would make field staff more interested in receiving or paying attention to internal communication?**

_____

10. **Which of the following channels do you usually receive information from?(Select all that apply)**

□ Face-to-face communication with supervisor
□ Morning meetings
□ Town Hall meetings
□ Phone call
□ Text/SMS
□ Bulletin board / flyers
□ Email
□ Visix screens
□ SharePoint / Intranet
□ Other: _____

11. **For each channel listed below, please rate how much you would like SHA to use that channel to send you general messages.**
Instruction: Please rate each channel independently (this is not a ranking).

Channel	Not at all	A little	Somewhat	Very much	Extremely
Supervisor	○	○	○	○	○
Morning meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○
Phone call	○	○	○	○	○
Text/SMS	○	○	○	○	○
Bulletin board	○	○	○	○	○
Email	○	○	○	○	○
Visix overhead screens	○	○	○	○	○

12. **How effective do you feel each channel is for receiving SHA messages in general?**

Channel	Not effective at all	Slightly effective	Moderately effective	Effective	Very effective
Supervisor	○	○	○	○	○
Morning meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○

Channel	Not effective at all	Slightly effective	Moderately effective	Effective	Very effective
Phone call	○	○	○	○	○
Text/SMS	○	○	○	○	○
Bulletin board	○	○	○	○	○
Email	○	○	○	○	○
Visix overhead screens	○	○	○	○	○

13. **For the communication channels you rated as not effective at all or slightly effective, what specific improvements would make them more helpful for your work?**

    _____

14. **To what extent are you aware of whom you should go to when you need help or have a concern about your work?**
    ○ Not at all
    ○ Slightly
    ○ Somewhat
    ○ Mostly
    ○ Very much
15. **To what extent do you feel comfortable speaking up about communication problems in SHA?**
    ○ Not at all
    ○ Slightly
    ○ Somewhat
    ○ Mostly
    ○ Very much
16. **How easy or difficult is it for you to give feedback in general when you want to?**
    ○ Very difficult
    ○ Difficult
    ○ Neither easy nor difficult
    ○ Easy
    ○ Very easy
17. **When you give feedback, how often does it lead to a response or action?**
    ○ Never
    ○ Rarely
    ○ Sometimes
    ○ Often
    ○ Always
    ○ Not applicable
18. **For each method listed below, please rate how much you would prefer using that method to share feedback or concerns.**
    Instruction: Please rate each method independently (this is not a ranking).

Method	Not at all	A little	Somewhat	Very much	Extremely
Talking directly to my supervisor (in person)	○	○	○	○	○
Anonymous box or anonymous form	○	○	○	○	○
Direct emails to supervisors or managers	○	○	○	○	○
Using an official SHA feedback channel (feedback email, online form, hotline)	○	○	○	○	○
Sharing during morning meetings	○	○	○	○	○
Sharing during Town Hall	○	○	○	○	○
Having a clear point-of-contact person for feedback	○	○	○	○	○
Other: _____	○	○	○	○	○

Sender

In this section, please consider the following questions from the perspective of delivering communication in your role. Think about how you typically share or pass down information to field staff, supervisors, or other team members.

19. **Are you able to pass down important information in a timely manner (e.g., face-to-face updates, morning meetings, on-site conversations, or quick briefings)?**
    ○ Never timely
    ○ Rarely timely
    ○ Sometimes timely
    ○ Often timely
    ○ Very often timely
20. **To the best of your knowledge, how often do field employees pass along the information you give them to others who need it (e.g., crew members sharing updates with coworkers, ensuring information reaches all relevant staff)?**
    ○ Never
    ○ Rarely
    ○ Sometimes
    ○ Often
    ○ Very often
21. **Which channels do you usually use to deliver information to field staff or crews?**

(Select all that apply)

□ Face-to-face communication (on-site conversations, shop discussions)
□ Morning meetings
□ Town Hall meetings
□ Phone call
□ Text/SMS
□ Bulletin board / flyers
□ Group messaging apps (if used internally)
□ Email
□ Other: _____

22. For each channel listed below, please rate how much you would prefer using that channel to deliver information.
Instruction: Please rate each channel independently (this is not a ranking).

Channel	Not at all	A little	Somewhat	Very much	Extremely
Face-to-face communication	○	○	○	○	○
Morning meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○
Phone call	○	○	○	○	○
Text/SMS	○	○	○	○	○
Bulletin board/flyers	○	○	○	○	○
Email	○	○	○	○	○
Other: _____	○	○	○	○	○

23. How effective do you feel each channel is for delivering information to field staff? (For this question, "effective" refers to delivering information in a timely and accurate manner.)

Channel	Not effective at all	Slightly effective	Moderately effective	Effective	Extremely
Face-to-face communication	○	○	○	○	○
Morning meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○
Phone call	○	○	○	○	○
Text/SMS	○	○	○	○	○
Bulletin board/flyers	○	○	○	○	○
Email	○	○	○	○	○
Other: _____	○	○	○	○	○

24. Which communication tools or channels slow down your work when you need to deliver messages, and what improvements would help?

_____

25. **How often do field staff or crews give you feedback about the information you share with them?**
    - ○ Never
    - ○ Rarely
    - ○ Sometimes
    - ○ Often
    - ○ Very often
26. **How often are you able to pass along field staff's feedback to your supervisor, District, or HQ when needed?**
    - ○ Never
    - ○ Rarely
    - ○ Sometimes
    - ○ Often
    - ○ Very often

General Questions

27. **How satisfied are you with internal communication at SHA?**

Item	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Communication you receive from top-level SHA leadership	○	○	○	○	○
Communication from/with your direct supervisor	○	○	○	○	○
Communication with peers (colleagues at similar levels)	○	○	○	○	○
Communication you deliver to field employees / crews	○	○	○	○	○
Communication from your shop					
Overall internal communication in SHA	○	○	○	○	○

28. **To what extent does communication at SHA make you feel like being an important part of it?**
    - ○ Not at all
    - ○ Slightly
    - ○ Somewhat
    - ○ Mostly
    - ○ Very much
29. **How useful do you believe each of the following potential communication improvements would be?**

Improvement	Not useful at all	Slightly useful	Moderately useful	Useful	Very useful
Having bulletin boards that are clearly organized and updated regularly	○	○	○	○	○
More timely and accurate updates on Visix screens	○	○	○	○	○
Short text/SMS alerts for urgent or time-sensitive information	○	○	○	○	○
Providing a state-issued phone or other devices to improve access to work communication	○	○	○	○	○
More consistent town hall meetings for information sharing and feedback	○	○	○	○	○
Clear responsibility for who updates and maintains communication channels (boards, Visix, messages)	○	○	○	○	○
Reducing repeated or inconsistent messages from different sources	○	○	○	○	○
Weekly digest for non-urgent updates	○	○	○	○	○
Training to help staff better use communication tools and systems	○	○	○	○	○
Replacing aging or outdated computers in the shop	○	○	○	○	○
Electronic kiosks in offices and shops	○	○	○	○	○

30. Do you have any other comments or suggestions about internal communication at SHA?

_____

B.3 Office Employee

About This Survey

This survey is conducted by Dr. Yaobang Gong and his research team at the University of Maryland, in collaboration with MDOT SHA. The purpose of this study is to understand how employees receive, interpret, and rely on internal communication, so that future communication practices can be improved.

Voluntary Participation

Your participation is completely voluntary. You may choose not to participate, decline to answer any question, or stop completing the survey at any time. There are no penalties or consequences for choosing not to participate.

Anonymity and Confidentiality
This survey is anonymous. Please do not write your name or any identifying information anywhere on the questionnaire. All responses will be kept strictly confidential and used only for research and organizational improvement. No individual responses will be shared with supervisors, managers, or SHA leadership. Results will be reported only in summary form, and no individual respondent will be identifiable.

Minimal Risks
There are no anticipated risks to participating in this study. Some questions may ask about your work experiences; you may skip any questions you prefer not to answer.

Benefits
You may not receive direct personal benefits from participating, but your responses will help SHA improve internal communication and strengthen employee support.

Time Required
Completing the survey should take approximately **10–15 minutes**.

Consent to Participate
By completing and returning this survey, you indicate that you have read this information, that your questions (if any) have been answered, and that you voluntarily agree to participate in this study.

If you have questions about this survey, please contact:
Dr. Yaobang Gong
University of Maryland
Email: ybgong@umd.edu

1. **What is your current role in MDOT SHA?:_____**
2. **Office/District: _____**
3. **Division/Shop: _____**
4. **How many years have you worked for SHA?:**
   - ○ Less than 1 year
   - ○ 1–5 years
   - ○ 6–10 years
   - ○ 10-20 years
   - ○ More than 20 years
5. **How satisfied are you with the internal communication at SHA?**

Item	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Communication with peers (colleagues)	○	○	○	○	○

Item	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Communication from/with your direct supervisor	○	○	○	○	○
Communication from your office/unit	○	○	○	○	○
Communication from top-level SHA leadership	○	○	○	○	○
Overall satisfaction	○	○	○	○	○

6. Thinking about your <u>direct supervisor</u>, how much do you agree with these sentences?

Item	Very disagree	Disagree	Neutral	Agree	Very agree
My direct supervisor is available when I need help	○	○	○	○	○
My direct supervisor knows when I have problems at work	○	○	○	○	○
My supervisor understands my problems	○	○	○	○	○
My supervisor sees my potential.	○	○	○	○	○

7. How often do you receive information early enough to act upon that is relevant to your current work or responsibilities (e.g., work updates, operational changes, deadlines, safety alerts, policy updates)?

○ Never
○ Rarely
○ Sometimes
○ Often
○ Very often

8. How often do you miss timely information that is relevant to your current work or responsibilities (e.g., work updates, operational changes, deadlines, safety alerts, policy updates)?

○ Never
○ Rarely
○ Sometimes
○ Often
○ Very often

9. Types of information that are often unclear to you (select all that apply):

□ HR updates
□ Leadership announcements
□ Project information
□ IT/technical updates
□ Safety information

□ Training
□ Other: _____
□ None of the above

10. **Which types of information do you typically receive in a timely manner? (select all that apply):**
□ HR updates
□ Leadership announcements
□ Project information
□ IT/technical updates
□ Safety information
□ Training
□ Other: _____
□ None of the above

11. **What types of information are most helpful for you in your office role? (Select all that apply)**
□ Project or office workflow updates
□ Safety alerts or emergency notifications
□ Department or division announcements
□ IT or equipment updates (computers, software, systems)
□ Training or professional development opportunities
□ HR information (pay, leave, benefits, policies)
□ Required certifications or compliance reminders
□ SHA or community events
□ Employee wellness or support resources
□ Career development pathways and opportunities
□ Other: _____

12. **Which channels do you usually receive SHA internal communication from? (Select all that apply)**
□ Email
□ Teams / internal messaging
□ Supervisor/manager
□ Meetings
□ Town Hall
□ SharePoint/Intranet
□ Visix overhead screens
□ Text/SMS
□ Other _____

13. **For each channel listed below, please rate how much you would like SHA to use that channel to send you general messages.**
Instruction: Please rate each channel independently (this is not a ranking).

Channel	Not at all	A little	Somewhat	Very much	Extremely
Email	○	○	○	○	○
Internal messages (e.g., Teams)	○	○	○	○	○
Meetings with supervisor	○	○	○	○	○
Office meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○
SharePoint	○	○	○	○	○
Visix screens	○	○	○	○	○

14. How many internal emails do you receive per day?

○ 0–20
○ 21–40
○ 41–60
○ 60+_____(please specify approximate number)

15. How often do you experience information overload in your work?

○ Never
○ Rarely
○ Sometimes
○ Often
○ Very often

16. To what extent are you aware of whom you should go to when you need help or have a concern about your work?

○ Not at all
○ Slightly
○ Somewhat
○ Mostly
○ Very much

17. To what extent do you feel comfortable speaking up about communication problems in SHA?

○ Not at all
○ Slightly
○ Somewhat
○ Mostly
○ Very much

18. How easy or difficult is it for you to give feedback when you want to?

○ Very difficult
○ Difficult
○ Neither easy nor difficult
○ Easy
○ Very easy

19. When you give feedback, how often does it lead to a response or action?

○ Never
○ Rarely
○ Sometimes
○ Often
○ Always

20. For each method listed below, please rate how much you would prefer using that method to share feedback or concerns.
Instruction: Please rate each method independently (this is not a ranking).

Method	Not at all	A little	Somewhat	Very much	Extremely
Talking directly to my supervisor (in person)	○	○	○	○	○
Anonymous box or anonymous form	○	○	○	○	○
Direct emails to supervisors or managers	○	○	○	○	○
Using an official SHA feedback channel (feedback email, online form, hotline)	○	○	○	○	○
Sharing during morning meetings	○	○	○	○	○
Sharing during Town Hall	○	○	○	○	○
Having a clear point-of-contact person for feedback	○	○	○	○	○
Other: _____	○	○	○	○	○

21. How much does communication at SHA help you feel like an important part of it?
○ Not at all
○ Slightly
○ Somewhat
○ Mostly
○ Very much

22. How useful and impactful do you believe each of the following potential communication improvements would be?

Improvement	Not useful at all	Slightly useful	Moderately useful	Useful	Very useful
Clearer email structure and content (such as having one main topic per email and clearly stating when action is required)	○	○	○	○	○
Weekly digest for non-urgent updates	○	○	○	○	○

Improvement	Not useful at all	Slightly useful	Moderately useful	Useful	Very useful
AI-assisted Outlook tools to summarize or prioritize information	○	○	○	○	○
Clear responsibility for who updates and maintains which communication channels	○	○	○	○	○
Reducing repeated/inconsistent messages from different sources	○	○	○	○	○
Improved user experience on SharePoint/Intranet	○	○	○	○	○
More Town Hall meetings sharing key information and collecting feedback	○	○	○	○	○
Training to help staff better use communication tools and systems	○	○	○	○	○
Electronic kiosks in offices and shops	○	○	○	○	○
Being issued an SHA mobile phone	○	○	○	○	○

23. Do you have any other comments or suggestions about communication at SHA?

_____

B.4 Communication Staff

About This Survey

This survey is conducted by Dr. Yaobang Gong and his research team at the University of Maryland, in collaboration with MDOT SHA. The purpose of this study is to understand how employees receive, interpret, and rely on internal communication, so that future communication practices can be improved.

Voluntary Participation

Your participation is completely voluntary. You may choose not to participate, decline to answer any question, or stop completing the survey at any time. There are no penalties or consequences for choosing not to participate.

Anonymity and Confidentiality

This survey is anonymous. Please do not write your name or any identifying information anywhere on the questionnaire. All responses will be kept strictly confidential and used only for research and organizational improvement. No individual responses will be shared with supervisors, managers, or SHA leadership. Results will be reported only in summary form, and no individual respondent will be identifiable.

Minimal Risks

There are no anticipated risks to participating in this study. Some questions may ask about your work experience; you may skip any questions you prefer not to answer.

Benefits
You may not receive direct personal benefits from participating, but your responses will help SHA improve internal communication and strengthen employee support.

Time Required
Completing the survey should take approximately **10–15 minutes**.

Consent to Participate
By completing and returning this survey, you indicate that you have read this information, that your questions (if any) have been answered, and that you voluntarily agree to participate in this study.

If you have questions about this survey, please contact:
Dr. Yaobang Gong
University of Maryland
Email: ybgong@umd.edu

Respondent Information

1. **What is your current role in MDOT SHA?:_____**
2. **District: _____**
3. **Shop: _____**
4. **Office: _____**
5. **How many years have you worked for SHA?:**
   - ○ Less than 1 year
   - ○ 1–5 years
   - ○ 6–10 years
   - ○ 10-20 years
   - ○ More than 20 years

Receiver

Please consider the following questions from the perspective of receiving communication in your role. Think about how you typically receive information related to your daily work, operations, safety, HR, or other job-related updates.

6. **How would you rate the quality (e.g., clarity, accuracy, and completeness) of information you receive from the following sources?**

Source	Very poor	Poor	Fair	Good	Very good
HQ Leadership	○	○	○	○	○

Source	Very poor	Poor	Fair	Good	Very good
District leadership	○	○	○	○	○
Other offices	○	○	○	○	○
Your direct supervisor	○	○	○	○	○
Other information coordinators	○	○	○	○	○

7. **How often do you receive information early enough to act upon that is relevant to your current work or responsibilities (e.g., work updates, operational changes, deadlines, safety alerts, policy updates)?**
   ○ Never
   ○ Rarely
   ○ Sometimes
   ○ Often
   ○ Very often
8. **How often do you experience information overload in your work?**
   ○ Never
   ○ Rarely
   ○ Sometimes
   ○ Often
   ○ Very often
9. **Which types of information do you typically receive in a timely manner? (select all that apply):**
   □ Leadership announcements
   □ Policy or procedural changes
   □ Program or project updates
   □ Cross-department coordination messages
   □ Crisis or urgent notifications
   □ HR updates
   □ IT/technical updates
   □ Training information
   □ Requests for message distribution
   □ Other: _____
   □ None of the above
10. **Which types of information below are often unclear to you (select all that apply):**
    □ Leadership announcements
    □ Policy or procedural changes
    □ Program or project updates
    □ Cross-department coordination messages
    □ Crisis or urgent notifications
    □ HR updates

□ IT/technical updates
□ Training information
□ Requests for message distribution
□ Other: _____
□ None of the above

11. How often do you miss important information you need in order to summarize, prepare, or distribute internal messages (e.g., incomplete materials, late updates, missing attachments, conflicting instructions)?

○ Never
○ Rarely
○ Sometimes
○ Often
○ Very often

12. Which channels do you usually receive SHA internal communication from? (Select all that apply)

□ Email
□ Teams / internal messaging
□ Meetings with supervisor
□ Division or office-wide meetings
□ Town Hall meetings
□ SharePoint / Intranet
□ Leadership memos or announcements
□ Phone calls
□ Text/SMS
□ Other: _____

13. For each channel listed below, please rate how much you would like SHA to use that channel to send you general messages.
Instruction: Please rate each channel independently (this is not a ranking).

Channel	Not at all	A little	Somewhat	Very much	Extremely
Email	○	○	○	○	○
Internal messages (e.g., Teams)	○	○	○	○	○
Meetings with supervisor	○	○	○	○	○
Division/office-wide meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○
SharePoint/Intranet	○	○	○	○	○
Office-wide announcements	○	○	○	○	○
Posting updates on internal platforms (e.g., Visix, bulletin boards)	○	○	○	○	○
Phone call	○	○	○	○	○
Text/SMS	○	○	○	○	○

14. **How effective do you feel each channel is for receiving SHA messages in general? (For this question, "effective" refers to receiving information in a timely and accurate manner.)**

Channel	Not effective at all	Slightly effective	Moderately effective	Effective	Extremely
Email	○	○	○	○	○
Internal messages (e.g., Teams)	○	○	○	○	○
Meetings with supervisor	○	○	○	○	○
Division/office-wide meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○
SharePoint/Intranet	○	○	○	○	○
Office-wide announcements	○	○	○	○	○
Posting updates on internal platforms (e.g., Visix, bulletin boards)	○	○	○	○	○
Phone call	○	○	○	○	○
Text/SMS	○	○	○	○	○

15. **For the communication channels you rated as not effective at all or slightly effective, what specific improvements would make them more helpful for your work?**

    _____

16. **To what extent are you aware of whom you should go to when you need help or have a concern about your work?**
    - ○ Not at all
    - ○ Slightly
    - ○ Somewhat
    - ○ Mostly
    - ○ Very much

17. **To what extent do you feel comfortable speaking up about communication problems in SHA?**
    - ○ Not at all
    - ○ Slightly
    - ○ Somewhat
    - ○ Mostly
    - ○ Very much

18. **How easy or difficult is it for you to give feedback in general when you want to?**
    - ○ Very difficult
    - ○ Difficult
    - ○ Neither easy nor difficult
    - ○ Easy

○ Very easy

19. **When you give feedback, how often does it lead to a response or action?**
    ○ Never
    ○ Rarely
    ○ Sometimes
    ○ Often
    ○ Always
20. **For each method listed below, please rate how much you would prefer using that method to share feedback or concerns.**
    Instruction: Please rate each method independently (this is not a ranking).

Method	Not at all	A little	Somewhat	Very much	Extremely
Talking directly to my supervisor (in person)	○	○	○	○	○
Anonymous box or anonymous form	○	○	○	○	○
Direct emails to supervisors or managers	○	○	○	○	○
Using an official SHA feedback channel (feedback email, online form, hotline)	○	○	○	○	○
Sharing during morning meetings	○	○	○	○	○
Sharing during Town Hall	○	○	○	○	○
Having a clear point-of-contact person for feedback	○	○	○	○	○
Other: _____	○	○	○	○	○

21. **What changes would make it easier for you to give feedback upward?**

_____

Sender

In this section, please consider the following questions from the perspective of delivering communication in your role. Think about how you typically share or pass down information to field staff, supervisors, or other team members.

22. **Which types of information are you usually able to deliver in a timely manner? (select all that apply):**
    □ Leadership announcements

□ Policy or procedural changes
□ Program or project updates
□ Cross-office coordination messages
□ Crisis or urgent notifications
□ HR updates
□ IT/technical updates
□ Training information
□ Requests for message distribution
□ Other: _____

23. Which types of information are often unclear when you deliver information? (select all that apply):

□ Leadership announcements
□ Policy or procedural changes
□ Program or project updates
□ Cross-office coordination messages
□ Crisis or urgent notifications
□ HR updates
□ IT/technical updates
□ Training information
□ Requests for message distribution
□ Other: _____
□ None of the above

24. Which channels do you usually use to distribute or share information with office staff or organizational units? (Select all that apply)

□ Email
□ MS Teams / internal messaging
□ Meetings with supervisor
□ Division/office-wide meetings
□ Town Hall meetings
□ SharePoint / Intranet
□ Office-wide announcements
□ Posting updates on internal platforms (e.g., Visix overhead boards, bulletin boards)
□ Phone call
□ Text/SMS
□ Other: _____

25. For each channel listed below, please rate how much you would prefer using that channel to deliver information.

Instruction: Please rate each channel independently (this is not a ranking).

Channel	Not at all	A little	Somewhat	Very much	Extremely
Email	○	○	○	○	○

Channel	Not at all	A little	Somewhat	Very much	Extremely
MS Teams/Internal messages	○	○	○	○	○
Meetings with supervisor	○	○	○	○	○
Division/office-wide meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○
SharePoint/Intranet	○	○	○	○	○
Office-wide announcements	○	○	○	○	○
Posting updates on internal platforms (e.g., Visix, bulletin boards)	○	○	○	○	○
Phone call	○	○	○	○	○
Text/SMS	○	○	○	○	○

26. How effective do you feel each channel is for delivering information?
(For this question, "effective" refers to delivering information in a timely and accurate manner.)

Channel	Not effective at all	Slightly effective	Moderately effective	Effective	Extremely
Email	○	○	○	○	○
Internal messages (e.g., Teams)	○	○	○	○	○
Meetings with supervisor	○	○	○	○	○
Division/office-wide meetings	○	○	○	○	○
Town Hall meetings	○	○	○	○	○
SharePoint/Intranet	○	○	○	○	○
Office-wide announcements	○	○	○	○	○
Posting updates on internal platforms (e.g., Visix, bulletin boards)	○	○	○	○	○
Phone call	○	○	○	○	○
Text/SMS	○	○	○	○	○

27. Which communication tools or channels slow down your work when you need to deliver messages, and what improvements would help?

_____

28. How often do office staff, supervisors, or other units provide you with feedback about the messages or updates you distribute?

○ Never
○ Rarely
○ Sometimes
○ Often
○ Very often

29. How often are you able to pass along staff or unit feedback to your supervisor, District,

or HQ when needed?

○ Never
○ Rarely
○ Sometimes
○ Often
○ Very often

General Questions

30. How satisfied or unsatisfied are you with the internal communication in the following aspects?

Item	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Communication you receive from top-level SHA leadership	○	○	○	○	○
Communication from/with your direct supervisor or unit leadership	○	○	○	○	○
Communication with colleagues who also produce or relay information (e.g., OC staff, office staff, other information coordinators)	○	○	○	○	○
Communication you deliver to office staff or organizational units (not field crews)	○	○	○	○	○
Overall satisfaction	○	○	○	○	○

31. How much does the internal communication at SHA make you feel like being an important part of it?

○ Not at all
○ Slightly
○ Somewhat
○ Mostly
○ Very much

32. How useful do you believe each of the following potential communication improvements would be?

Improvement	Not useful at all	Slightly useful	Moderately useful	Useful	Very useful
Standardized templates for internal messages	○	○	○	○	○

Improvement	Not useful at all	Slightly useful	Moderately useful	Useful	Very useful
A centralized, verified “single source of truth” for leadership updates, program information, and policy changes	○	○	○	○	○
Weekly digests combining non-urgent information into one message	○	○	○	○	○
Tools or systems that summarize, organize, or prioritize large volumes of information	○	○	○	○	○
Clearer communication chain across HQ, District, and Offices	○	○	○	○	○
More consistent, scheduled office or division meetings for information sharing	○	○	○	○	○
Improving coordination between leadership, departments, and communication offices	○	○	○	○	○
Reducing repeated, duplicated, or conflicting messages from different sources	○	○	○	○	○
Clear accountability for who maintains SharePoint, Intranet, Visix, and other communication channels	○	○	○	○	○
Training to help staff better use communication tools and systems	○	○	○	○	○
Electronic kiosks in offices and shops	○	○	○	○	○
Issuing an SHA mobile phone	○	○	○	○	○

33. Do you have any other comments or suggestions about communication at SHA?

_____

Appendix C: Descriptive Analysis of the Structured Survey

C.1 Respondent Profile

The completed survey responses included 394 office employees, 338 non-supervisory field employees, 128 field supervisors, and 8 communication staff. Communication staff results should continue to be interpreted as counts because of the small sample size.

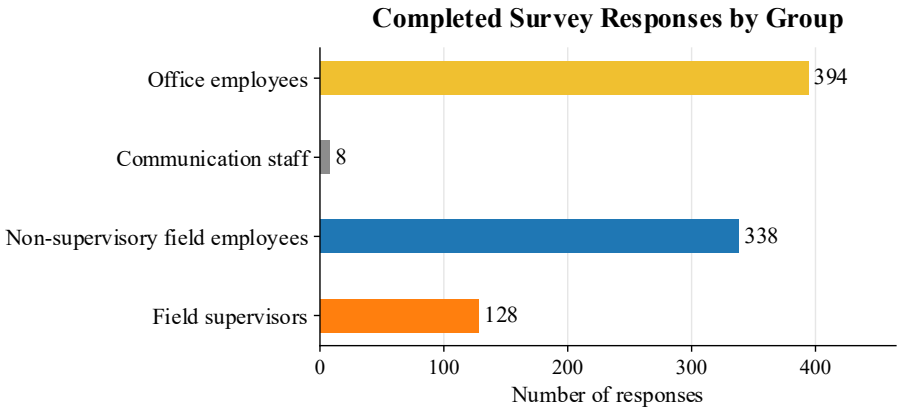


Figure C.1 Completed Survey Responses by Group

Tenure patterns differed by group. Non-supervisory field employees were concentrated in the early-career categories, especially 1-5 years (163) and less than 1 year (54). Field supervisors were more tenured, with the largest group in 10-20 years (54), followed by 6-10 years (29) and more than 20 years (25). Office employees were more evenly distributed across tenure categories, with the largest groups in 1-5 years (118), more than 20 years (99), and 10-20 years (98).

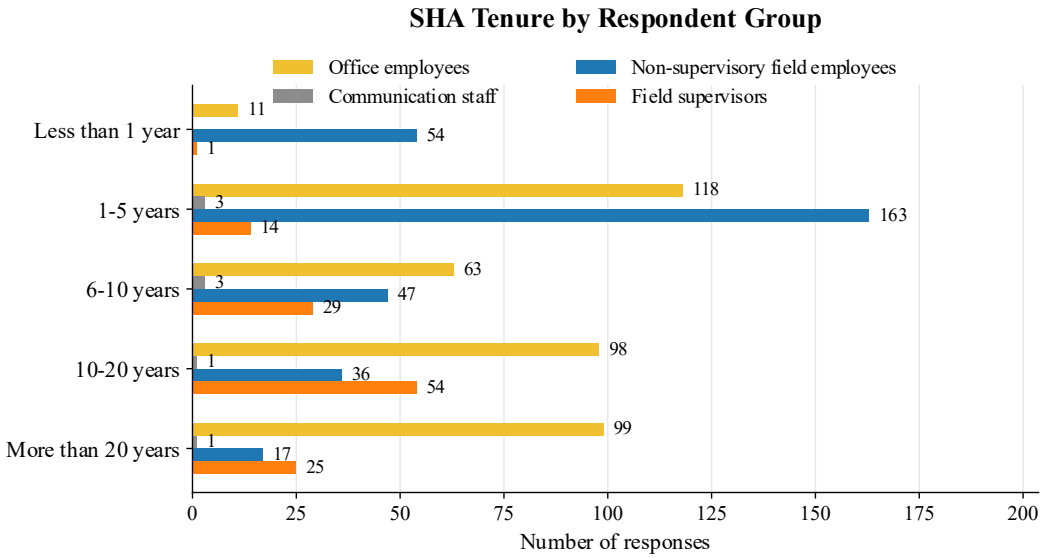


Figure C.2 SHA Tenure by Respondent Group

Field responses were unevenly distributed across districts. Among non-supervisory field employees with valid district information, District 4 had the largest count (77), followed by District 5 (64), District 2 (53), and District 7 (52). Among field supervisors, District 5 had the largest count (28), followed by District 4 (24) and District 7 (17). District 6 had a small field respondent base, with 11 non-supervisory field employees and 9 field supervisors, so District 6 subgroup findings should be interpreted cautiously.

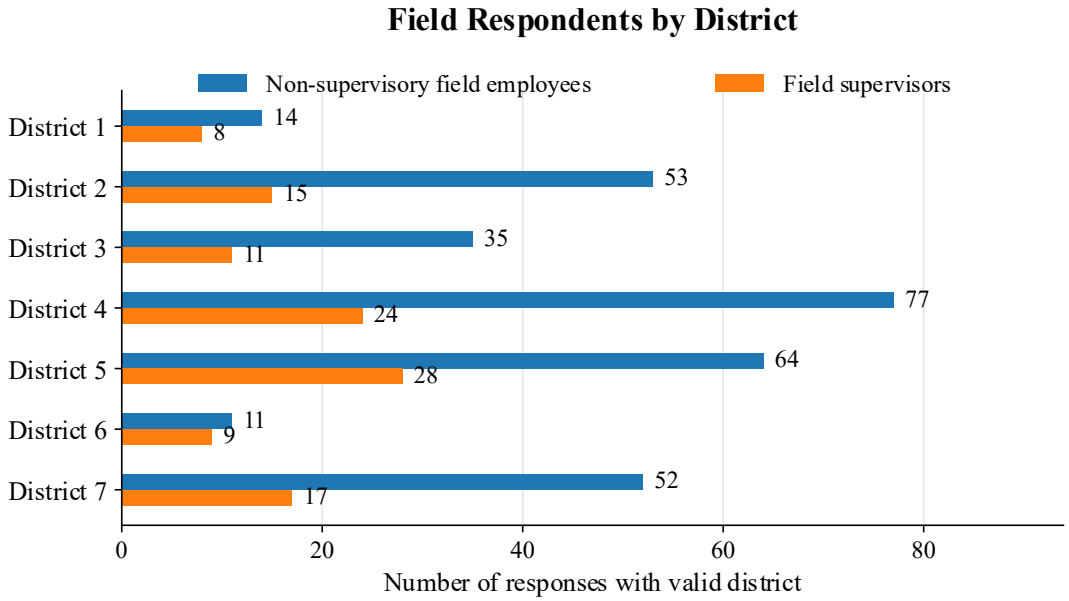


Figure C.3 Field Respondents by District

C.2 Satisfaction with Current Internal Communication Practices

Satisfaction with internal communication is strongest for communication closest to employees' daily work. In the office group, communication from or with direct supervisors had the highest mean score (3.79), followed by communication with colleagues or peers (3.71). The field group showed the same pattern, with direct supervisor communication at 3.71 and peer communication at 3.65. Overall satisfaction was only slightly above neutral for both groups (3.35 for office and 3.31 for field), while communication from top-level SHA leadership was the weakest satisfaction item (3.08 for office and 3.16 for field).

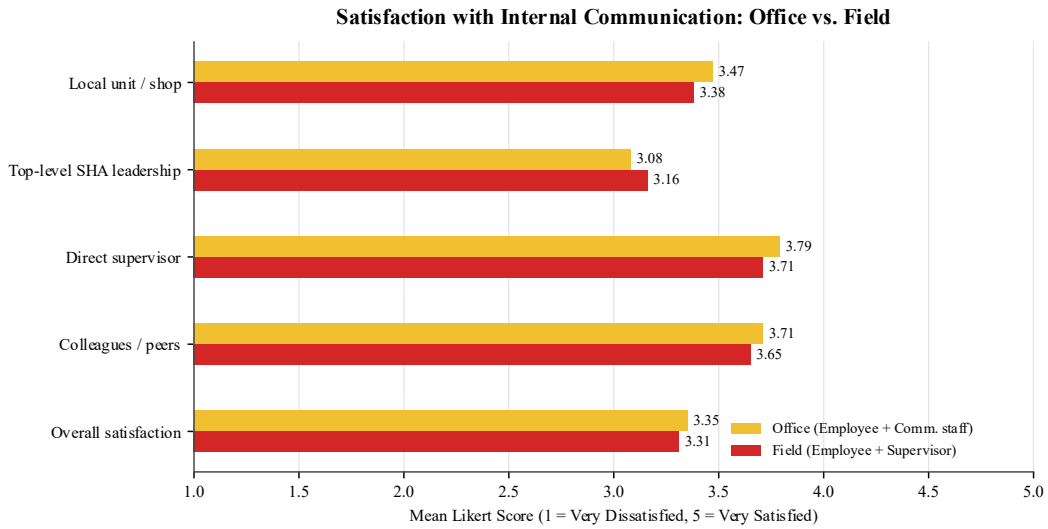


Figure C.4 Satisfaction with Internal Communication by Office and Field Groups

The field subgroup comparison shows that field supervisors rated local communication more favorably than non-supervisory field employees. Field supervisors reported higher mean scores for communication from the local unit/shop (3.55 vs. 3.31), direct supervisors (3.84 vs. 3.67), and peers (3.77 vs. 3.60). However, field supervisors reported lower overall satisfaction (3.19) than non-supervisory field employees (3.36), suggesting that supervisors may view the broader communication system more critically even though they rate local communication relationships more positively.

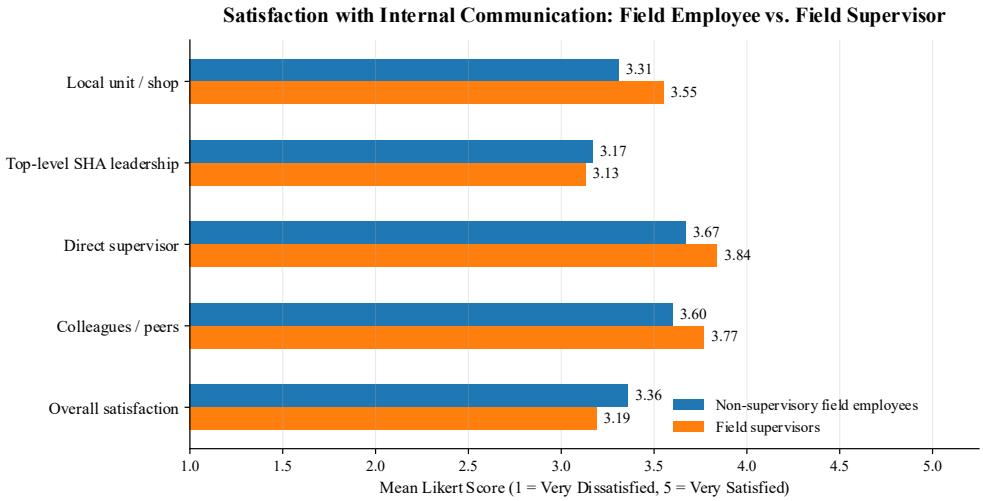


Figure C.5 Satisfaction with Internal Communication by Field Employee Group

Office-based employees and non-supervisory field employees both rated direct supervisor communication above the neutral midpoint across all four items. The highest-rated item was supervisor availability when help is needed, with office employees at 4.02 and non-supervisory field employees at 3.84. Both groups also rated supervisors relatively highly for seeing employee potential, with nearly identical scores (3.90 for office employees and 3.88 for non-supervisory field

employees). The lower items for both groups were whether supervisors know when employees have work problems and whether supervisors understand employee problems, suggesting that supervisors are viewed as generally accessible but less consistently aware of or responsive to employee challenges.

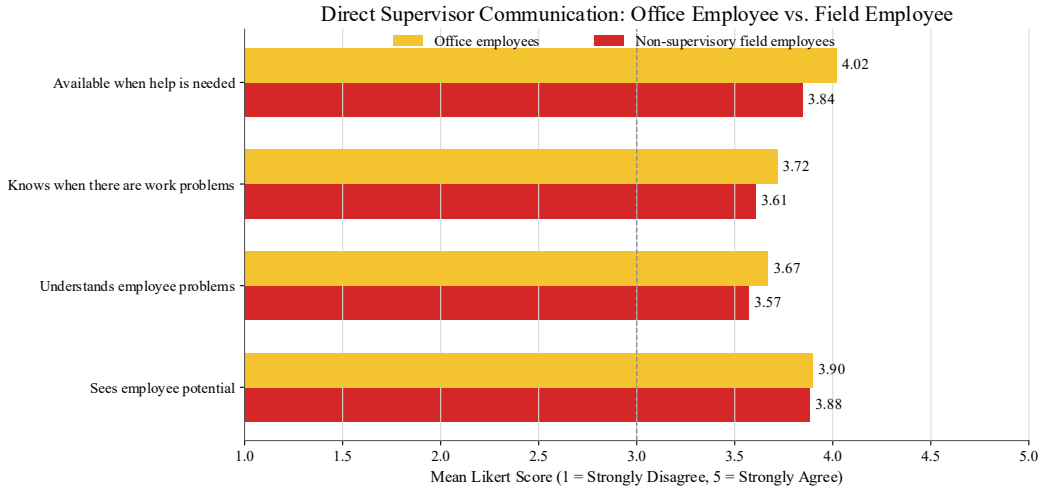


Figure C.6 Direct Supervisor Communication by Office and Field Employees

Sense of belonging was lower than many other communication measures. Office respondents reported a mean score of 3.20, while field respondents reported a lower mean score of 2.74. This suggests that internal communication is more likely to help office respondents feel connected to SHA than field respondents. Within the field group, field supervisors reported a higher sense of belonging than non-supervisory field employees. Field supervisors had a mean score of 2.92, compared with 2.67 for non-supervisory field employees. However, both field subgroup scores were at or below the neutral midpoint, suggesting that communication is not consistently helping field employees feel like an important part of SHA.

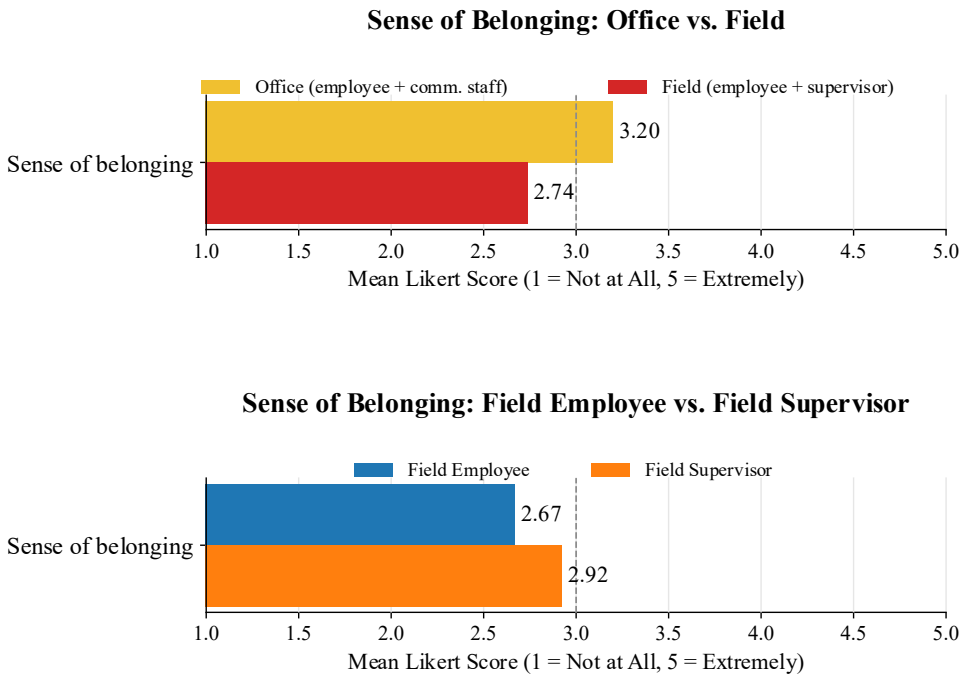


Figure C.7 Sense of Belonging by Employee Group

C.3 Communication Channels

Information Receiving Channels

Office and field respondents use different communication channels. For receiving information, office respondents most often reported receiving communication through email (97.7%), while field respondents relied more on supervisors or managers (71.0%) and local meetings (59.1%). Field respondents were less likely to report email as a current channel (39.1%) but were more likely than office respondents to report text/SMS (35.7% vs. 23.6%). Visix screens were rarely selected by either group.

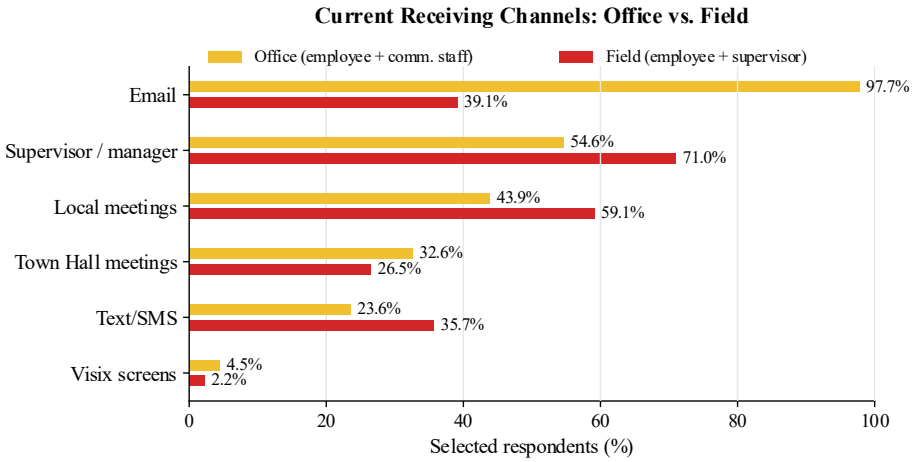


Figure C.8 Current Receiving Channels by Office and Field Employees

Both field subgroups relied most on supervisors and morning meetings, but field supervisors reported broader use of communication channels. Field supervisors were more likely than non-supervisory field employees to receive information through email (59.7% vs. 31.2%), phone calls (52.4% vs. 37.4%), and text/SMS (50.8% vs. 29.9%). This suggests that field supervisors are more connected to both local verbal channels and digital or mobile channels.

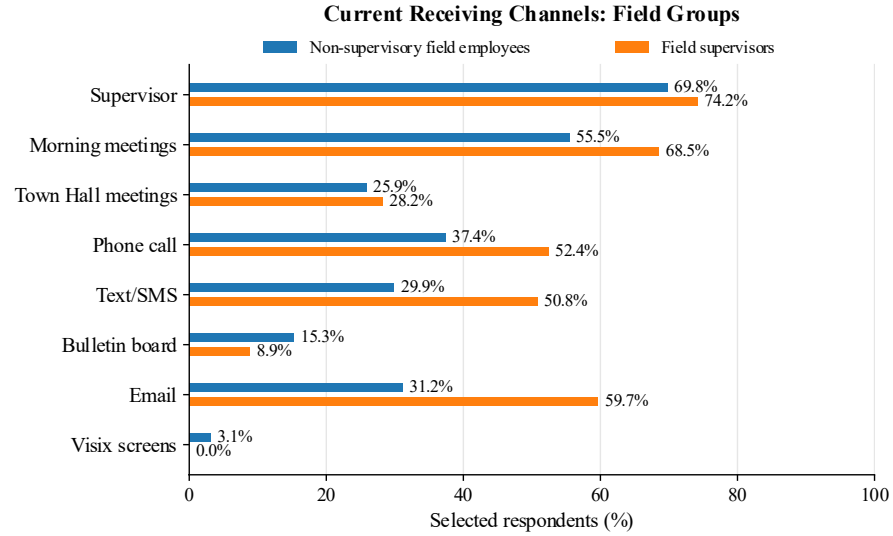


Figure C.9 Current Receiving Channels by Office and Field Employee Group

Email access differs sharply between field and office employees. Among non-supervisory field employees, 26.2% checked SHA email less than once per month and 25.3% checked it one to two times per month. Together, 51.5% checked SHA email monthly or less. Only 20.1% checked SHA email daily, and 7.7% checked it three to five times per week. This suggests that email is not

a reliable primary channel for reaching many field employees during regular operations.

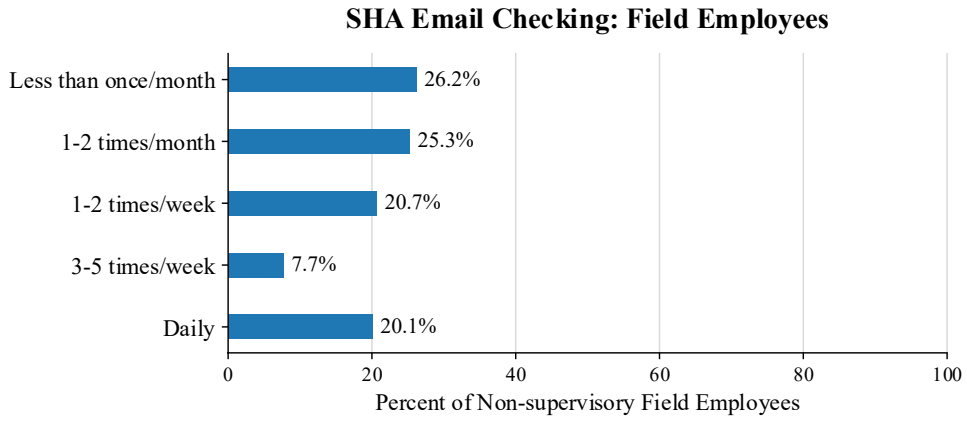


Figure C.10 Email Checking Frequency among Non-Supervisory Field Employees

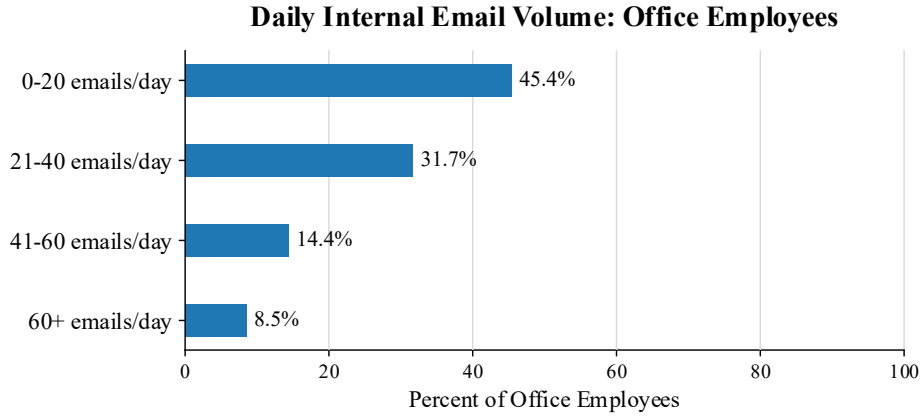


Figure C.11 Daily Internal Email Volume among Office Employees

Office employees face a different email challenge: volume. Most office employees reported receiving 0 to 20 internal emails per day (45.4%, 176 of 388), followed by 21 to 40 emails per day (31.7%, 123 of 388). However, 22.9% reported receiving 41 or more internal emails per day, including 14.4% who received 41 to 60 emails and 8.5% who received 60 or more emails. This indicates that the office-side email issue is less about access and more about volume and message management.

For receiving channel effectiveness was asked only of field supervisors and communication staff. Field supervisors rated supervisors (66.3%), morning meetings (61.2%), email (59.2%), phone calls (58.2%), and text/SMS (57.1%) as the most effective receiving channels. Bulletin boards and Visix screens were much lower. Among communication staff, email was rated effective by 7 out of 8, followed by meetings with supervisors (6 out of 8), and Town Hall meetings and office-wide announcements (5 out of 8 each).

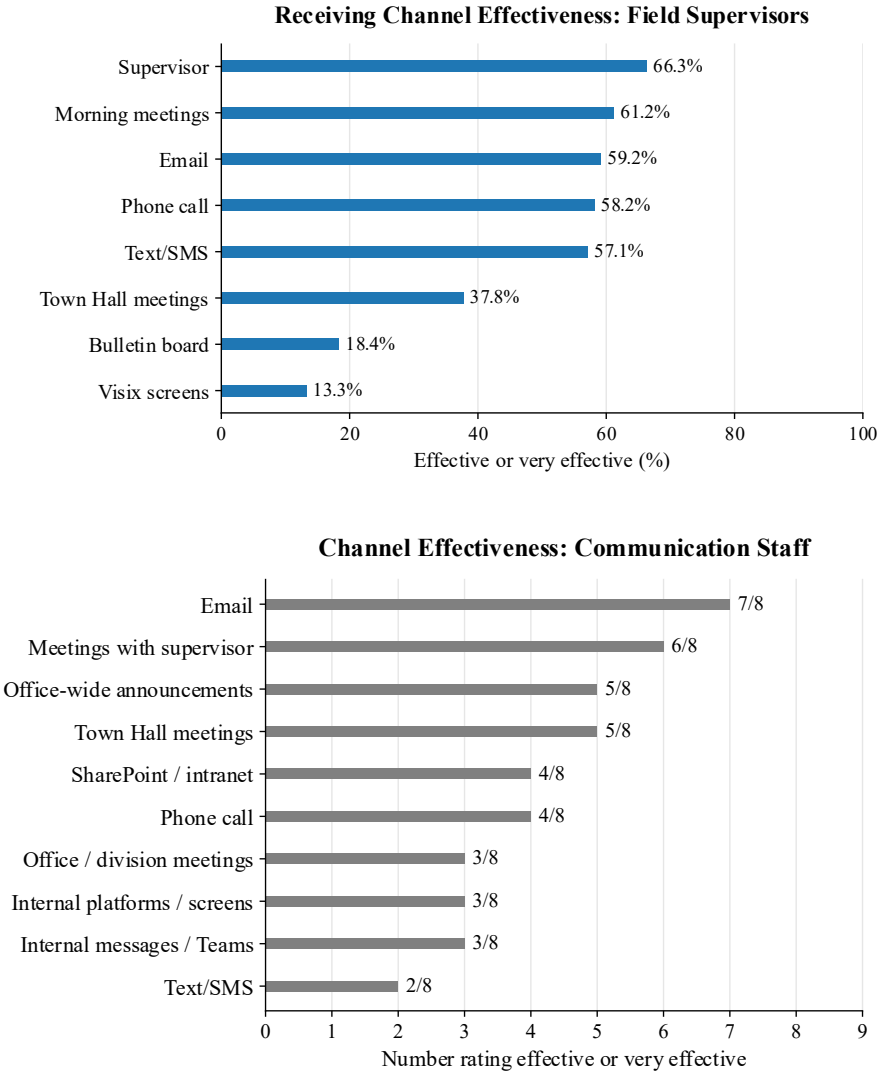


Figure C.12 Receiving Channel Effectiveness

Information Delivering Channels

Field supervisors and communication staff both serve as communication intermediaries. Field supervisors also rely heavily on direct and mobile channels when delivering messages. The most commonly used delivery channel was face-to-face communication (90.1%), followed by phone calls (71.1%), text/SMS (62.8%), and morning meetings (59.5%). Email was much less common as a delivery channel (28.1%), confirming that field supervisor communication is primarily verbal, immediate, and work-centered. Preference and effectiveness ratings followed a similar pattern: face-to-face communication, phone calls, text/SMS, and morning meetings were the strongest delivery channels, while bulletin boards, Town Hall meetings, and email were less central for direct field delivery.

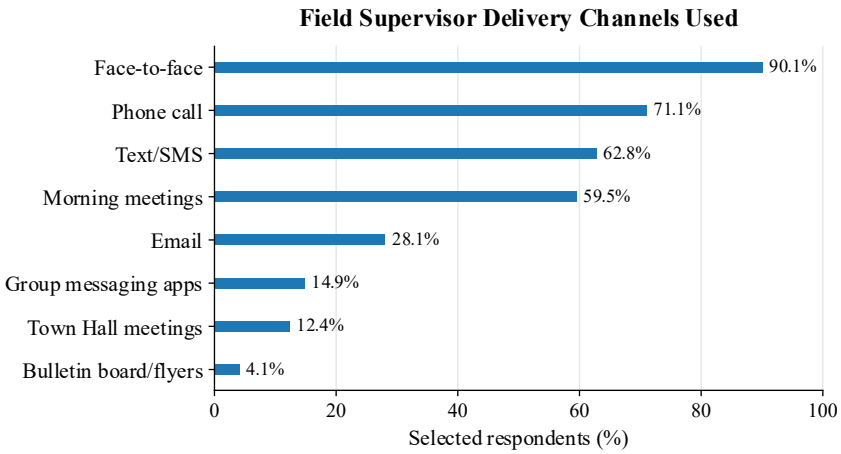


Figure C.13 Channels Used by Field Supervisors to Deliver Information

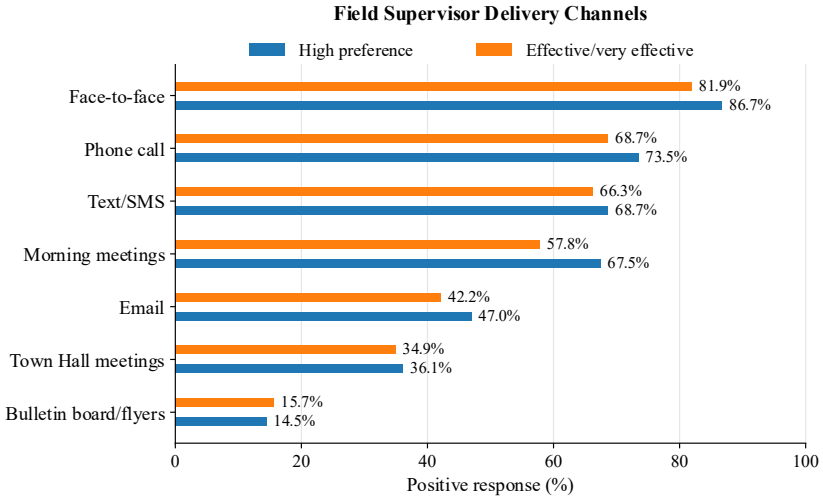


Figure C.14 Deliver Channels Preference/Effectiveness of Field Supervisors

Channel results further show that communication staff depend strongly on email for message delivery. Email was the most commonly used delivery channel (7 out of 8) and the most preferred channel (8 out of 8). However, meetings with supervisors were rated highest for effectiveness (7 out of 8), suggesting that direct interaction remains important even for communication staff. Internal platforms or Visix showed a larger gap: 6 out of 8 preferred these tools for delivery, but only 2 out of 8 rated them effective or very effective. This suggests that some internal platforms may have potential as delivery channels but are not currently perceived as highly effective.

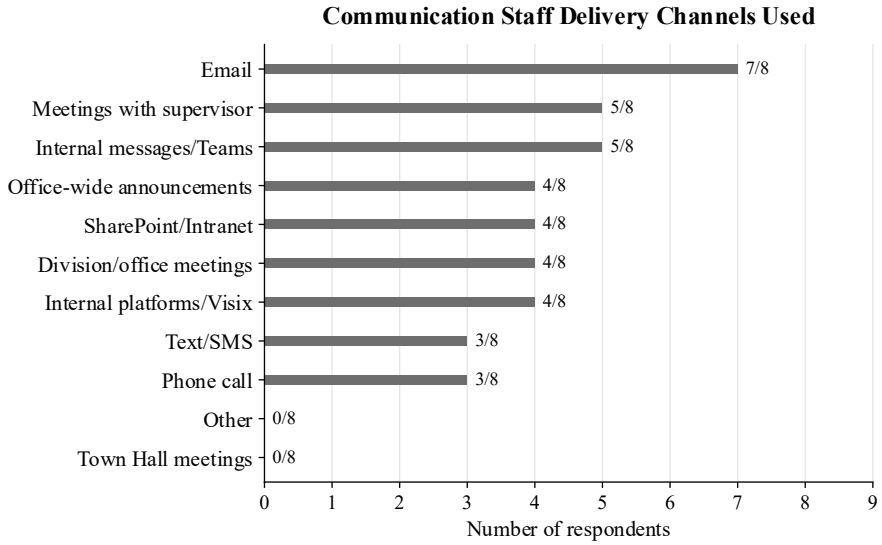


Figure C.15 Channels Used by Communication Staff to Deliver Information

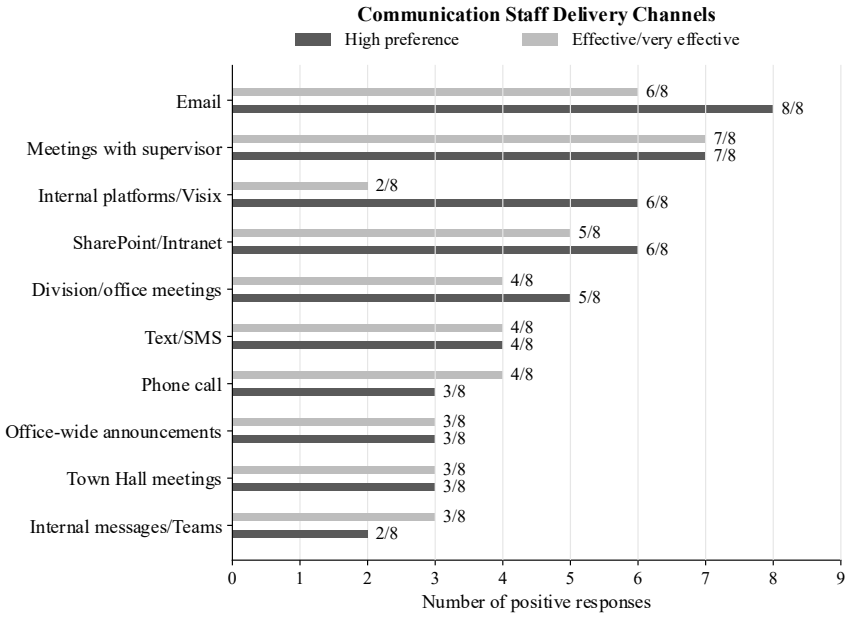


Figure C.16 Deliver Channels Preference/Effectiveness of Communication Staff

C.4 Internal Communication Performance

Receiver Side

Office and field respondents reported similar levels of communication timeliness. Office

respondents had slightly higher mean scores for receiving information early enough to act (3.48) and rarely missing timely information (3.36) than field respondents (3.42 and 3.30). Within the field group, field supervisors rated timeliness more favorably than non-supervisory field employees, especially for receiving information early enough to act (3.69 vs. 3.31).

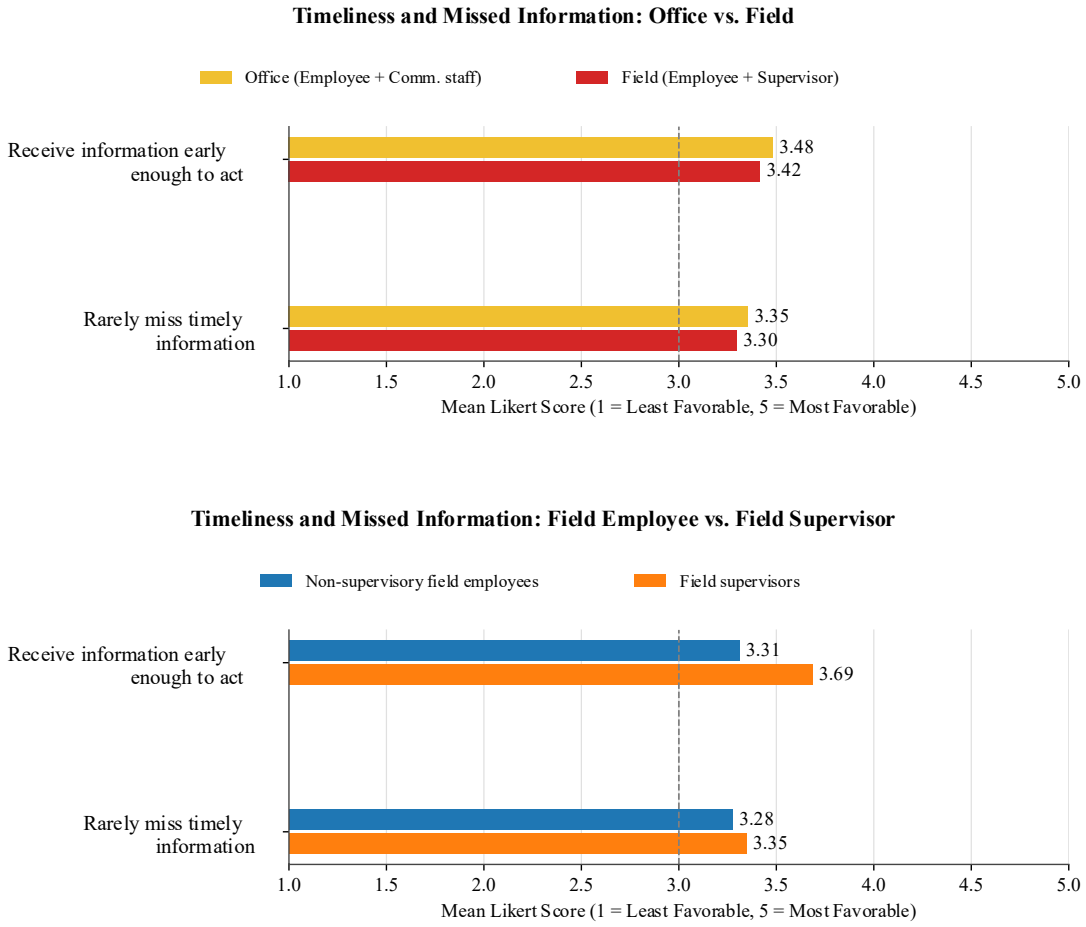
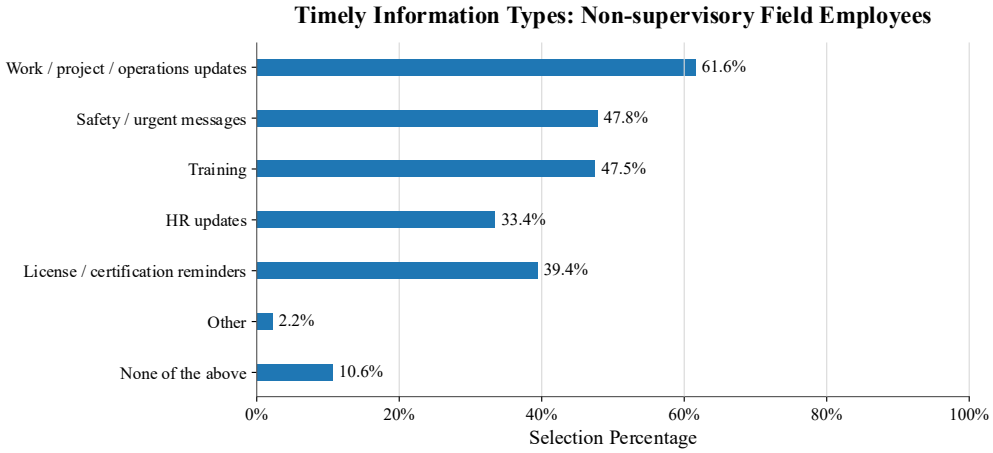
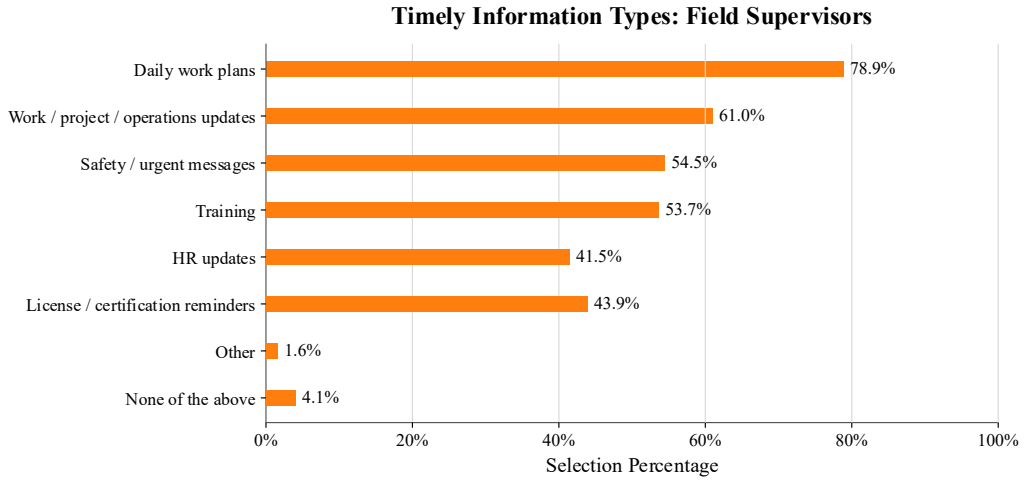


Figure C.17 Information Timeliness and Missed Information (Top: Office vs. Field; Bottom: Field Employee vs. Field Supervisor)

Across four different groups of employees, non-supervisory field employees most often reported timely receipt of work, project, or operations updates (61.6%). Safety or urgent messages and training were each below 50%, while HR updates (33.4%) and license or certification reminders (39.4%) were lower. This indicates that operational information reaches field employees more consistently than administrative or career-related information Field supervisors most often reported timely receipt of daily work plans (78.9%), followed by work, project, or operations updates (61.0%). Safety, training, license reminders, and HR updates were lower but still more frequently selected than among non-supervisory field employees. This suggests that supervisors are better positioned to receive timely operational information, but some administrative topics remain less consistent. Office employees most often reported timely receipt of safety or urgent messages (57.4%), leadership announcements (54.5%), training (53.5%), HR updates (52.5%), and

IT or technical updates (50.9%). Work, project, or operations updates were lower (36.6%), suggesting that the most job-specific information was not always received as timely by office employees. Communication staff most often reported timely receipt of safety or urgent messages (7 out of 8) and leadership announcements (6 out of 8). HR updates and training were each selected by 5 out of 8, while IT or technical updates and work, project, or operations updates were each selected by 4 out of 8. Policy or procedure updates, cross-department coordination, and message distribution requests were each selected by 2 out of 8.





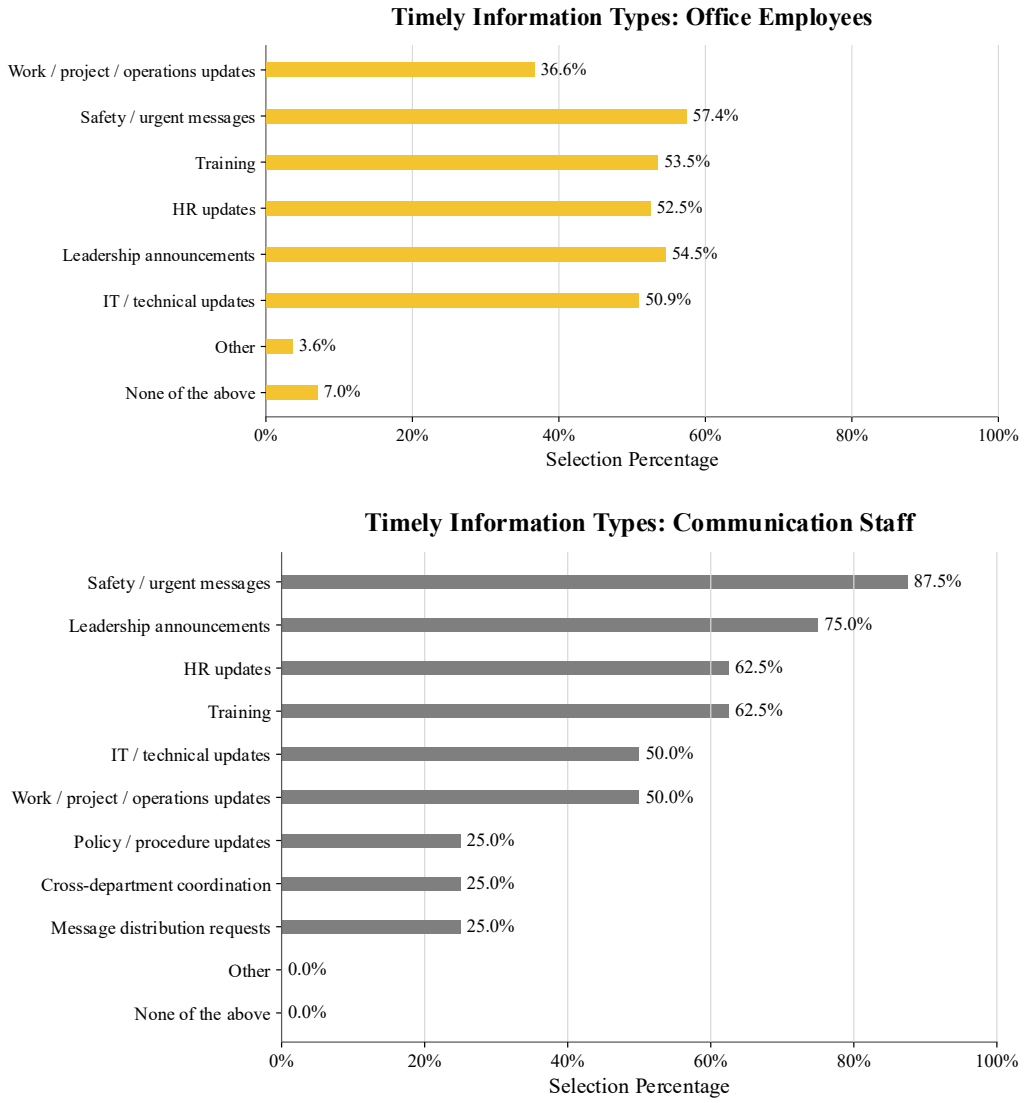


Figure C.18 Timely Information Types for Different Employee Groups

In general, office respondents were more likely to report timely receipt of safety or urgent messages, training, HR updates, leadership announcements, and IT or technical updates. Field respondents were more likely to report timely receipt of work, project, or operations updates. This suggests that office communication performs better for formal organizational updates, while field communication is more focused on daily work and operational needs.

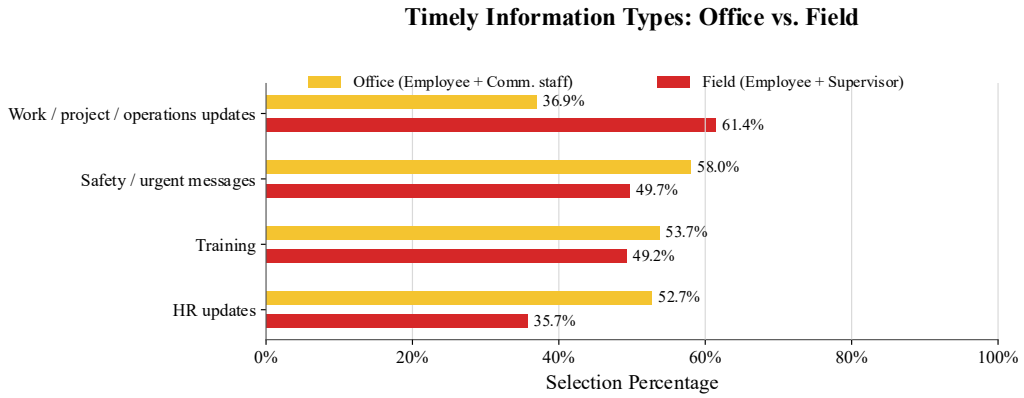


Figure C.19 Comparison of Timely Information Types (Field vs. Office)

Office employees face distinct communication challenges related to information overload and unclear information. Information overload was most often reported as occurring sometimes (39.4%, 153 of 388), while 26.0% of office employees reported experiencing overload often or very often. The reverse-coded mean for low information overload was 3.07 on a 1-to-5 scale, suggesting that overload is a moderate but meaningful issue for office employees. Email volume appears to contribute to this challenge.

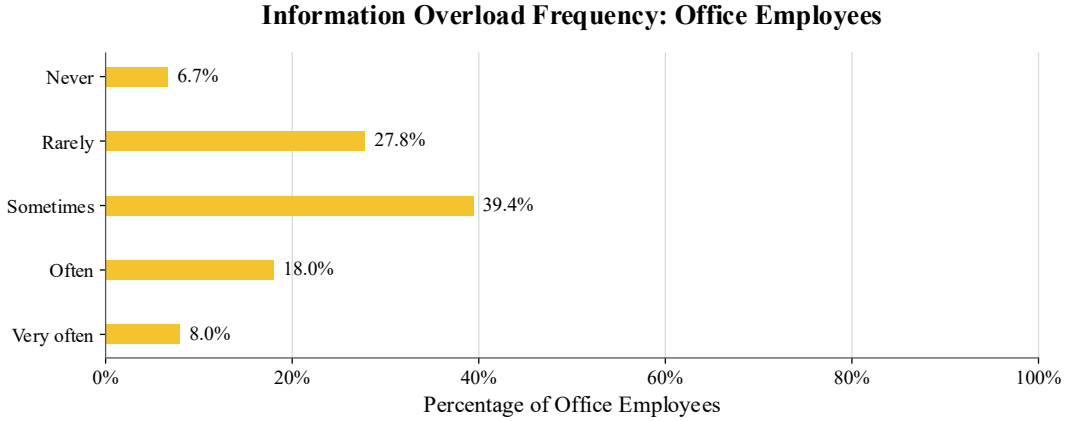


Figure C.20 Information Overload Frequency among Office Employee

Office employees also identified several types of information as unclear. The most common were project or program information (35.3%), HR updates (33.2%), and IT or technical updates (28.3%). Training information and leadership announcements were also selected by about one-fifth to one-quarter of respondents. These results suggest that unclear communication is concentrated in information areas that often require interpretation, coordination, or action.

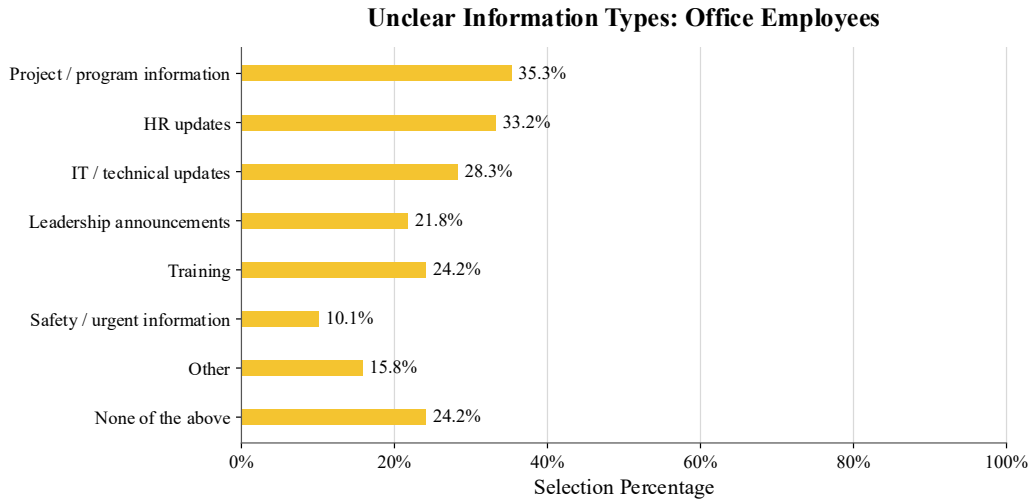


Figure C.21 Unclear Information Types among Office Employees

Sender Side

Among field supervisors, downward communication was relatively strong. 73.0% reported that they can pass down important information to field employees in time. However, the broader relay loop was weaker after information reached the field level. Only 46.7% reported that field staff pass information along to others, 52.5% reported that field staff provide feedback on shared information, and 50.0% reported that they can pass feedback upward. This suggests that field supervisors can usually move information down the chain, but two-way communication and upward feedback are less consistent.

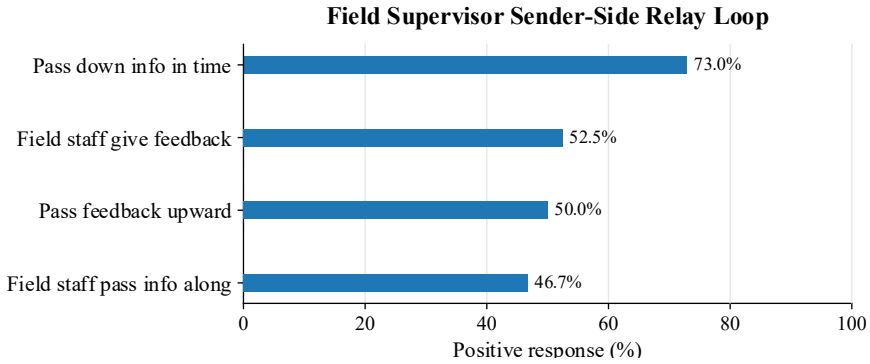


Figure C.22 Field Supervisor Sender-Side Relay Loop

Communication staff were generally positive about the communication they deliver to office staff or organizational units, with 6 out of 7 rating this communication favorably. However, feedback loops were weaker. Only 2 out of 8 reported often or very often receiving feedback on distributed messages, and 3 out of 8 reported often or very often being able to pass staff or unit feedback upward. This suggests that communication staff may be able to distribute messages, but they do not consistently receive information about whether those messages were useful, clear, or acted upon.

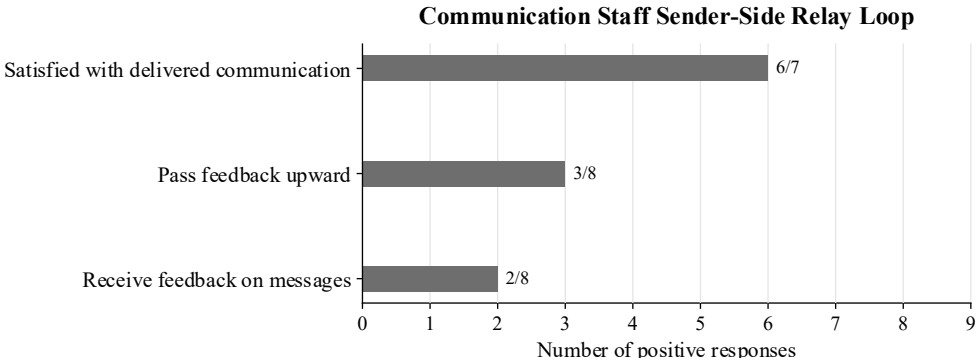


Figure C.23 Communication Staff Sender-Side Relay Loop

The communication staff sender-side results also suggest that content coordination may be uneven. Communication staff most often reported being able to deliver program or project updates in a timely manner (7 out of 8), but program or project updates were also among the more commonly unclear information types when delivering messages (3 out of 8). This indicates that even when communication staff are able to send project-related messages on time, the source information may still require clarification, interpretation, or additional coordination.

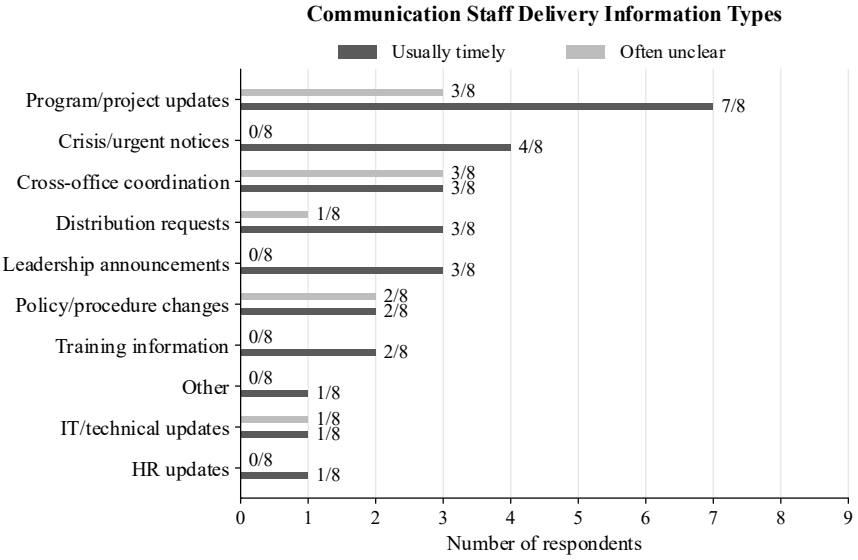


Figure C.24 Communication Staff Delivery Information Types

C.5 Bottom-Up Communications

Feedback conditions were strongest for knowing where to go for help or concerns. Office respondents had a mean score of 3.89, and field respondents had a similar mean score of 3.91. However, the remaining feedback items were weaker, especially whether feedback leads to response or action. Office respondents had a mean score of 2.71 for feedback leading to action, while field respondents had a slightly higher mean score of 2.98. This suggests that employees

generally know where to raise concerns, but feedback closure remains limited.

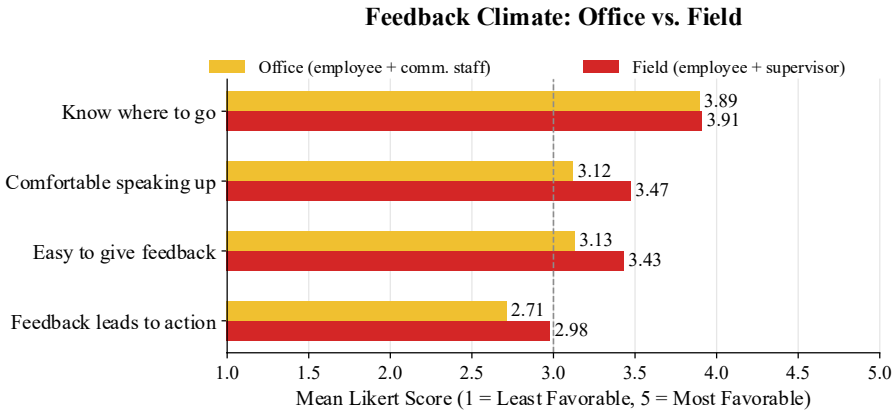


Figure C.25 Feedback Climate by Office and Field Groups

Within the field group, field supervisors rated feedback conditions more favorably than non-supervisory field employees across all four items. The largest difference was for knowing where to go for help or concerns (4.22 for field supervisors compared with 3.79 for non-supervisory field employees). Field supervisors also reported higher scores for being comfortable speaking up, ease of giving feedback, and feedback leading to action. Even so, feedback leading to action remained the weakest item for both field groups.

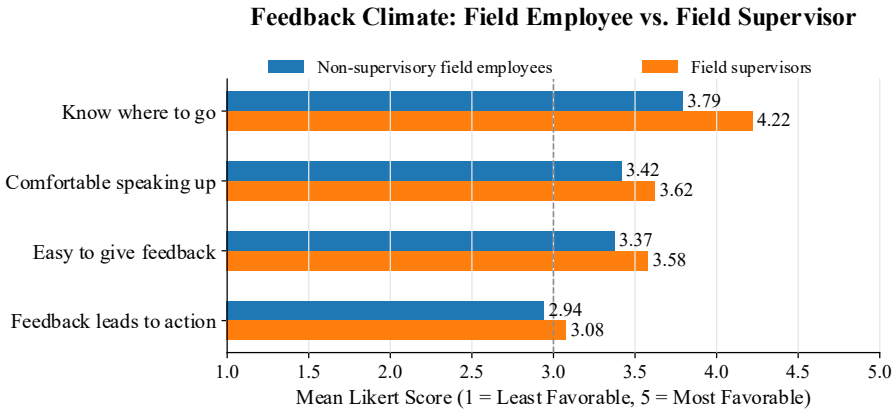


Figure C.26 Feedback Climate by Field Employee Group

Preferred feedback methods were centered on direct supervisor communication. About 70.2% of office respondents and 70.8% of field respondents preferred talking directly to a supervisor. Office respondents were more likely than field respondents to prefer direct email to supervisors or managers (60.9% vs. 38.7%) and official SHA feedback channels (34.2% vs. 21.3%). Field respondents were more likely to prefer meetings (47.4% vs. 41.0%) and Town Hall settings (31.8% vs. 21.9%).

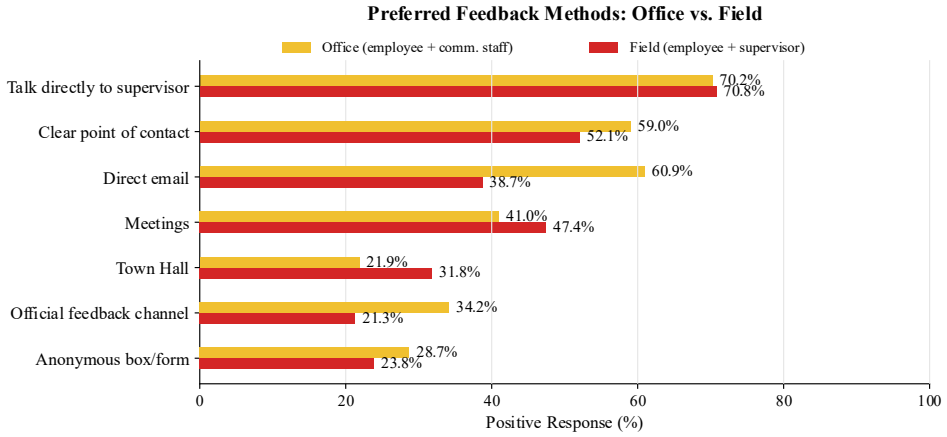


Figure C.27 Preferred Feedback Methods by Office and Field Groups

Among field respondents, field supervisors showed stronger preference than non-supervisory field employees for several structured feedback methods, including direct email (55.7% vs. 32.4%), meetings (55.7% vs. 44.4%), and clear points of contact (57.5% vs. 50.0%). Non-supervisory field employees were slightly more likely to prefer anonymous feedback options (26.1% vs. 17.9%).

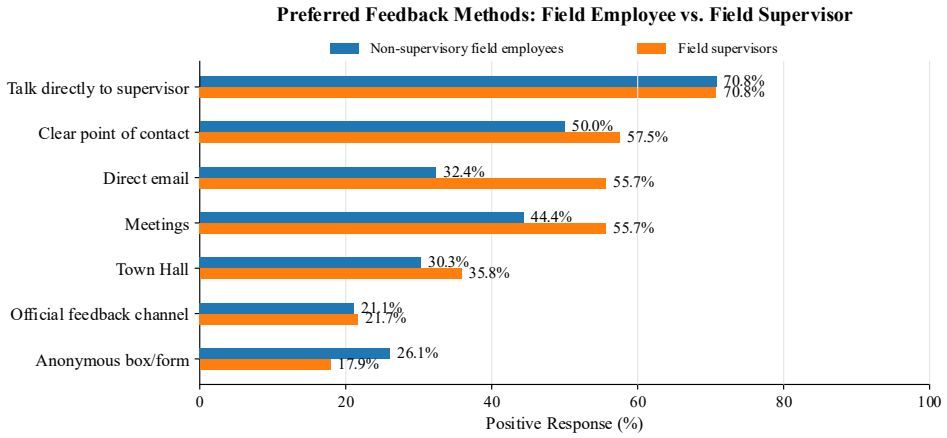


Figure C.28 Preferred Feedback Methods by Field Employee Group

C.6 Expectations of Internal Communication

For channel preferences, office respondents strongly preferred email (87.9% positive), while field respondents showed stronger preference for supervisor meetings (68.3%) and local meetings (61.8%). Email was much less preferred among field respondents (40.7%) than office respondents. Both groups showed relatively low preference for Visix or internal screens, about 16%. Field supervisors showed higher preference than non-supervisory field employees for most channels. The largest differences were for email (62.1% vs. 32.8%), morning meetings (75.9% vs. 56.6%), and

supervisor communication (80.5% vs. 63.8%). Non-supervisory field employees still preferred supervisor communication and morning meetings most, but their preferences were more moderate overall.

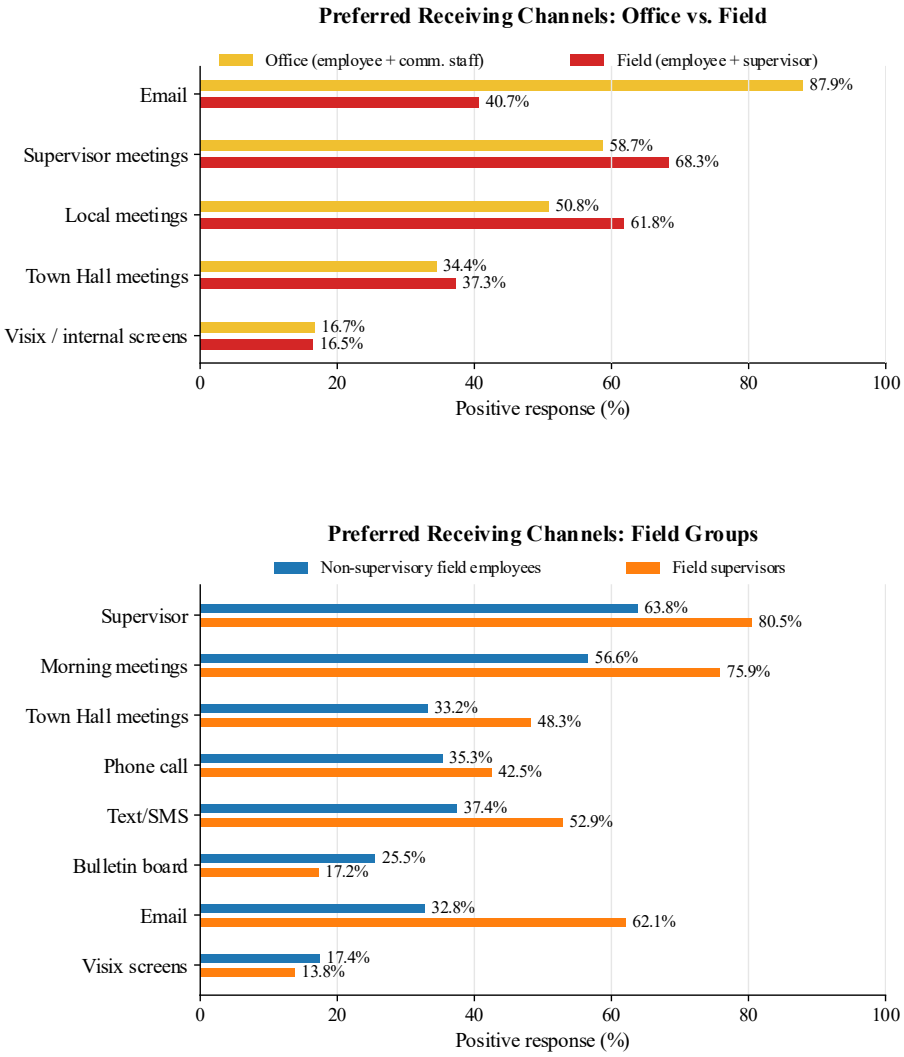
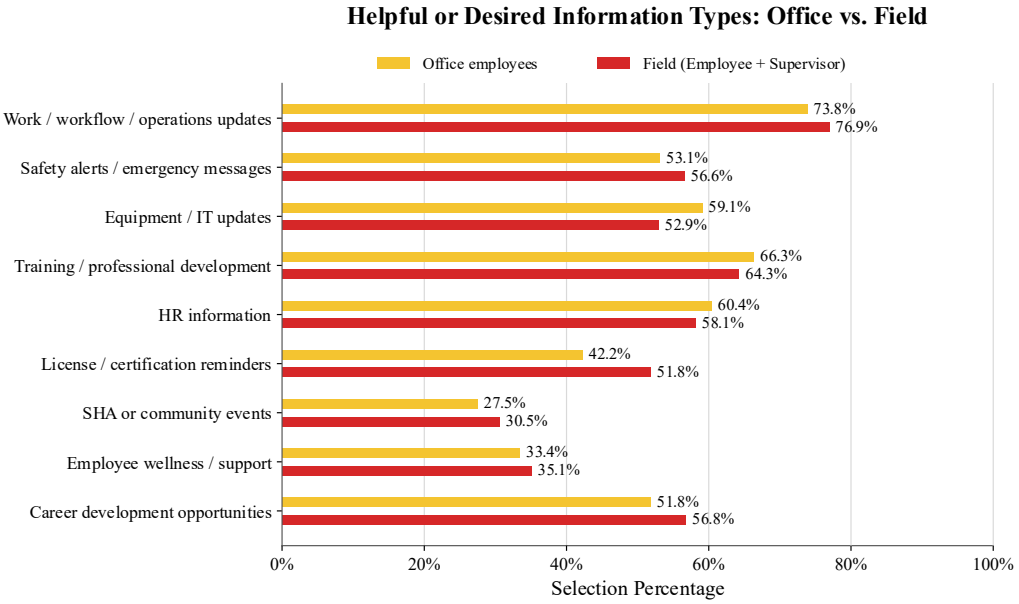


Figure C.29 Preferred Communication Channels (Top: Office vs. Field; Bottom: Field Employee vs. Field Supervisor)

Both office and field respondents placed high value on work-related information. Office employees most often selected project or office workflow updates (73.8%) as helpful, followed by training or professional development (66.3%) and HR information (60.4%). Field respondents emphasized daily work plans, work or operations updates, weather-related work updates, training, safety, HR information, and equipment-related updates. Overall, both groups prioritized practical information that helps them perform their jobs. Both field subgroups prioritized information tied to daily work and operations. Non-supervisory field employees most often selected daily work plans (66.4%) and training or professional development (65.7%). Field supervisors selected daily work plans (69.4%), safety alerts or emergency messages (68.5%), weather-related work updates

(67.7%), and work or operations updates and HR information (66.9% each). Field supervisors showed broader interest across operational, safety, HR, and equipment-related topics.



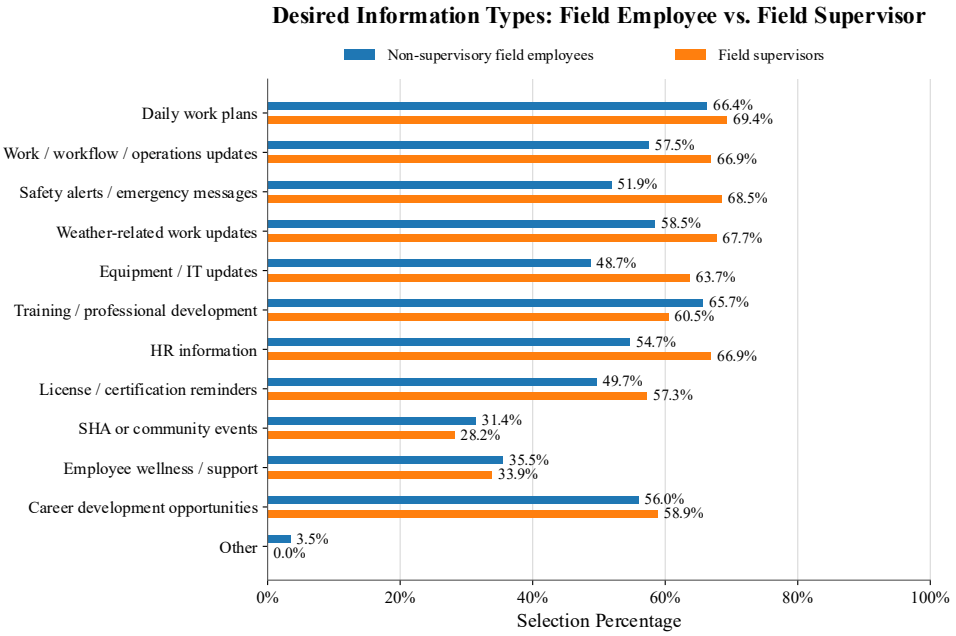


Figure C.30 Comparison of Timely Information Types (Field vs. Office)

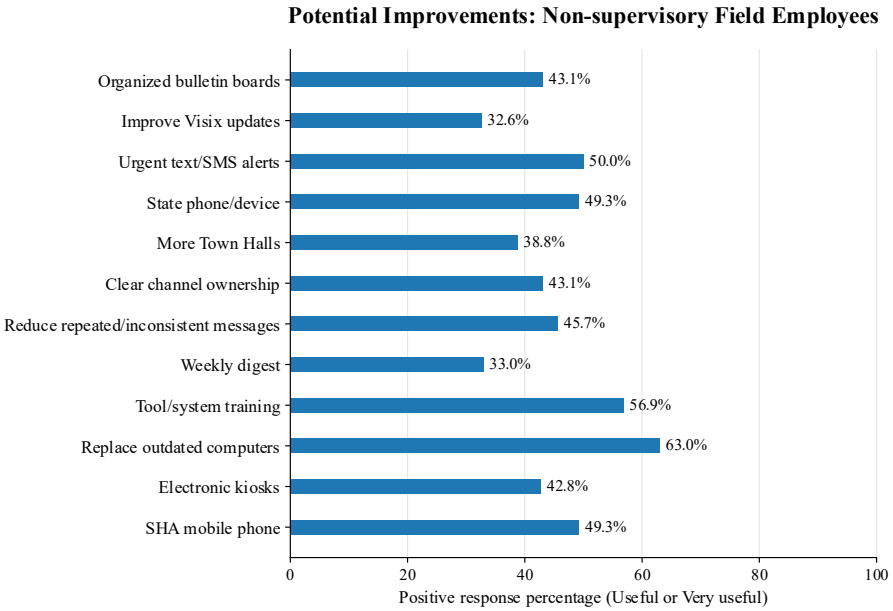
For non-supervisory field employees, the most supported improvements focused on practical access to communication tools and local information. The highest-rated improvement was replacing outdated shop computers (64.9%), followed by training on communication tools and systems (59.8%), urgent text/SMS alerts (53.4%), and SHA mobile phones or state-issued devices (51.0%). Non-supervisory field employees also placed relatively high value on organized bulletin boards (45.7%) and electronic kiosks (43.8%). These results suggest that field employees need communication improvements that fit field work routines, including better equipment, easier access

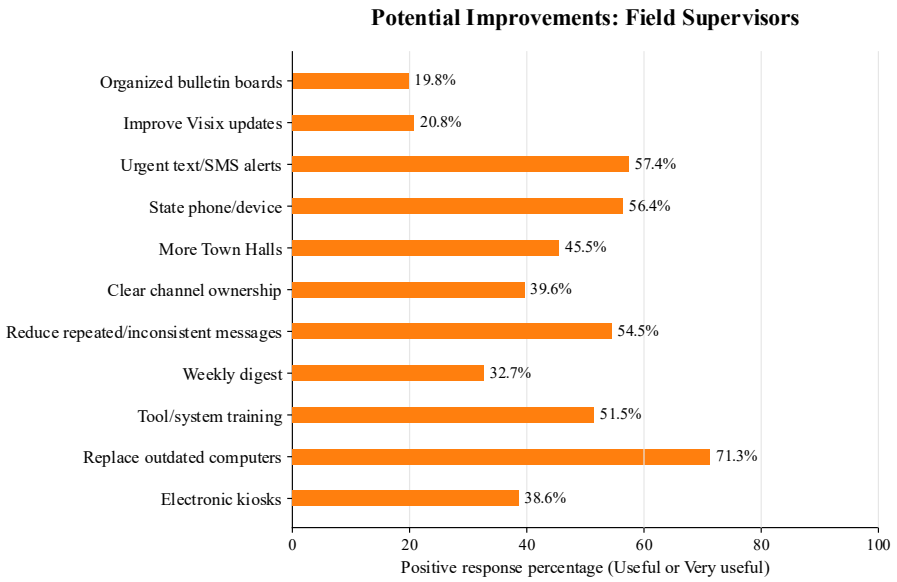
to information, and more reliable local or mobile channels.

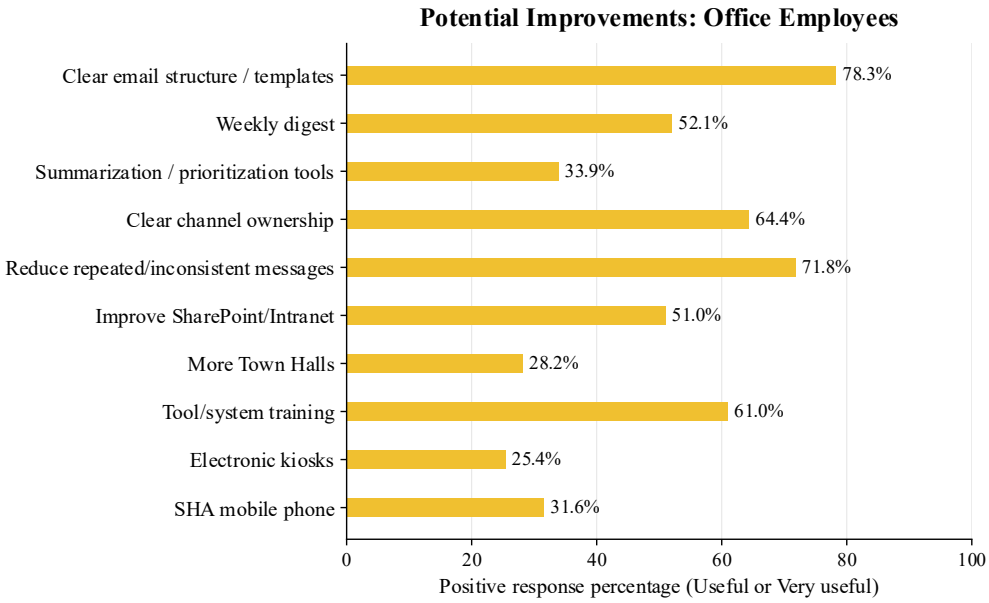
For field supervisors, the strongest improvement priority was also replacing outdated shop computers (71.7%). Field supervisors also supported urgent text/SMS alerts (57.6%), SHA mobile phones or state-issued devices (54.5%), reducing repeated or inconsistent messages (54.5%), and training on communication tools and systems (51.5%). Compared with non-supervisory field employees, field supervisors placed more emphasis on reducing repeated or inconsistent messages and on Town Hall or meeting-based communication. This reflects their role as communication intermediaries who receive, interpret, and relay information to field crews.

For office employees, improvement priorities were more focused on message management, email structure, and information governance. The highest-rated improvement was clearer email structure or templates (78.3%), followed by reducing repeated or inconsistent messages (71.8%), clear channel responsibility (64.4%), and training on communication tools and systems (61.0%). Office employees also supported weekly digests for non-urgent updates (52.1%) and improved SharePoint/Intranet usability (51.0%). These results suggest that office employees are not primarily asking for more channels, but for clearer, better organized, and less duplicative communication.

For communication staff, results are reported as counts because of the small sample size. 7 out of 7 communication staff rated training on communication tools and systems, better coordination across offices, software/computer updates, and SHA mobile phones as useful or very useful. 6 out of 7 supported clearer communication chains, consistent scheduled meetings, clear channel responsibility, weekly digests, message templates, reducing repeated or conflicting messages, and summarization or prioritization tools. These results suggest that communication staff see improvement needs not only in message delivery, but also in coordination, workflow discipline, and system modernization.




Potential Improvements: Field Supervisors
Organized bulletin boards
19.8%
Improve Visix updates
20.8%
Urgent text/SMS alerts
57.4%
State phone/device
56.4%
More Town Halls
45.5%
Clear channel ownership
39.6%
Reduce repeated/inconsistent messages
54.5%
Weekly digest
32.7%
Tool/system training
51.5%
Replace outdated computers
71.3%
Electronic kiosks
38.6%
0
20
40
60
80
100
Positive response percentage (Useful or Very useful)


Potential Improvements: Office Employees
Clear email structure / templates
78.3%
Weekly digest
52.1%
Summarization / prioritization tools
33.9%
Clear channel ownership
64.4%
Reduce repeated/inconsistent messages
71.8%
Improve SharePoint/Intranet
51.0%
More Town Halls
28.2%
Tool/system training
61.0%
Electronic kiosks
25.4%
SHA mobile phone
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80
100
Positive response percentage (Useful or Very useful)

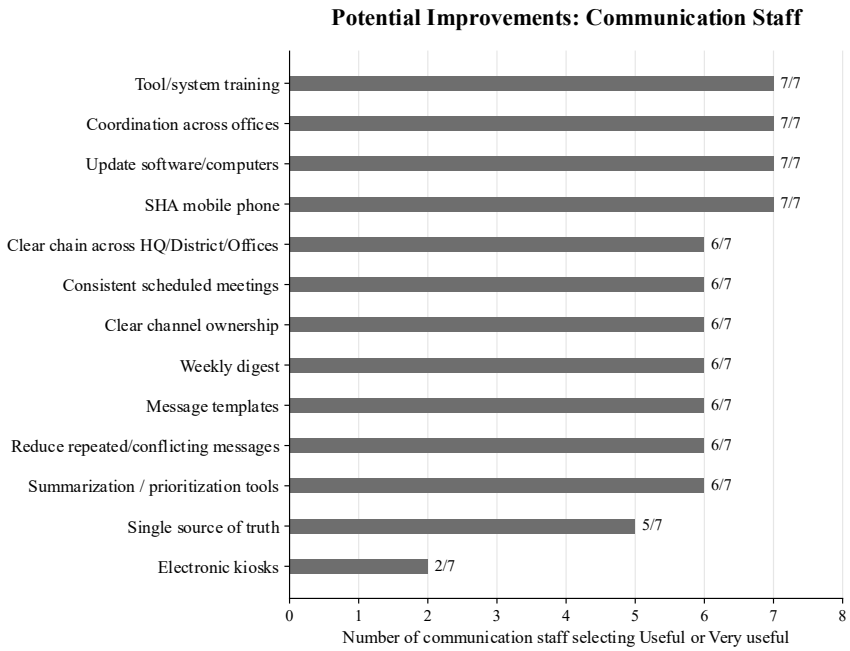

Figure C.31 Potential Improvement Suggested by Different Employee Groups

Overall, the field and office results point to different improvement priorities. Field respondents placed greater emphasis on communication access and infrastructure, including updated shop computers, mobile devices, text/SMS alerts, kiosks, bulletin boards, and meeting-based communication. These improvements reflect the practical constraints of field work, where employees may not regularly access email or SharePoint during the workday. Office respondents, by contrast, emphasized message quality, structure, and governance, including clearer email templates, fewer repeated or conflicting messages, clearer channel responsibility, weekly digests, and improved SharePoint/Intranet usability. In short, field employees need better access to communication, while office employees need better management of communication volume, clarity, and responsibility.

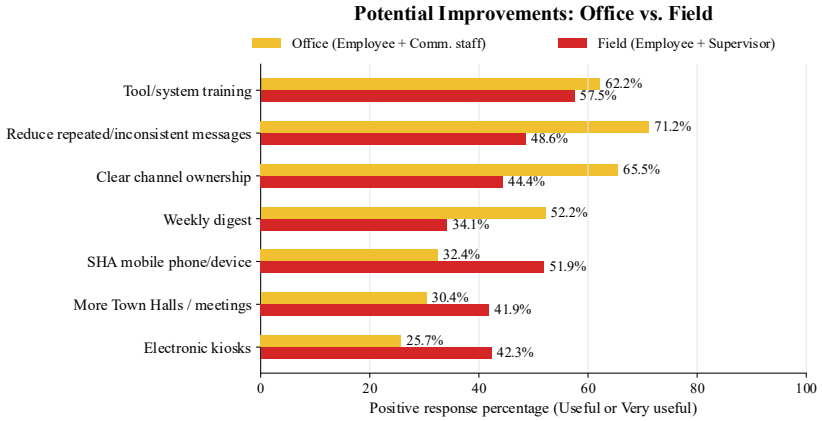

Figure C.32 Comparison of Potential Improvements Suggested by Office and Field Groups

C.7 Word Clouds from Open-Ended Comments

The following word cloud figures provide a visual summary of recurring terms in the open-ended comments. These figures are intended to support interpretation of the qualitative findings by illustrating words and concepts that appeared frequently across respondents' comments.

Prior to generating the word clouds, the open-ended responses were reviewed and cleaned. Responses with no substantive content, including "no," "none," "N/A," and clearly irrelevant entries, were excluded from the analysis. The remaining responses were standardized to reduce variation caused by spelling, grammar, abbreviations, and inconsistent wording. Names, specific locations, and other potentially identifiable details were removed or generalized to protect respondent confidentiality.

The word clouds were generated using the cleaned and standardized response text. In each figure, word size represents relative frequency within the standardized comments, with larger words indicating terms that appeared more often. Because word clouds summarize word frequency rather than full context or meaning, they should be interpreted as a visual supplement to the detailed thematic review of open-ended responses.

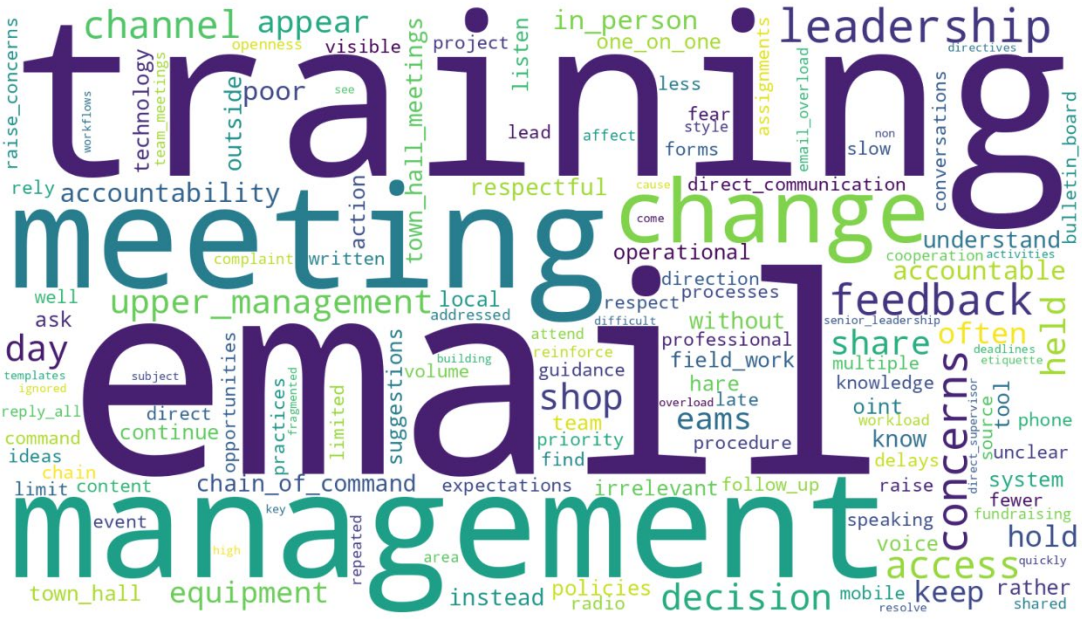

Figure C.33 Word Cloud Generated Using Comments from All Respondents

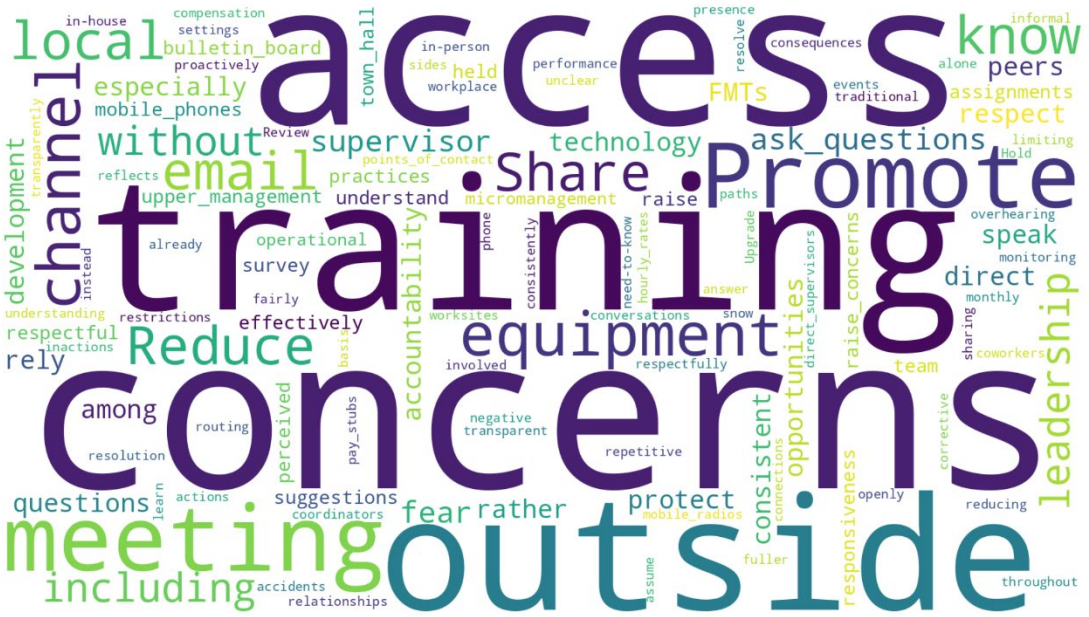

Figure C.34 Word Cloud Generated Using Comments from Non-Supervisory Field Employees



Figure C.35 Word Cloud Generated Using Comments from Field Supervisors

C.8 Standardized Open-Ended Comments

This section lists standardized versions of final open-ended comments and maps each comment to one or more of the six major communication challenges. Original comments are not included to keep the comments de-identified.

Table C.1 Standardized Overall Comments/Suggestions

Respondent group	Standardized comment	Related challenge
Non-supervisory field employees	Provide clearer and more transparent communication.	Others
Non-supervisory field employees	Improve direct communication between employees and supervisors through more consistent in-person presence.	Field message relay gap
Non-supervisory field employees	Improve communication for employees outside traditional shop settings by sharing information more openly and reducing repetitive meeting updates. Establish clearer accountability for monitoring required communication channels, especially for employees who work alone and rely on phone or email.	Field access gap
Non-supervisory field employees	Managers should address performance issues directly with the person involved rather than routing corrective messages through supervisors.	Field message relay gap
Non-supervisory field employees	Provide needed information proactively and transparently instead of limiting communication to a need-to-know basis. Communicate respectfully and do not assume employees already know important information.	Others
Non-supervisory field employees	Upgrade communication technology and strengthen communication from management throughout the organization.	Field access gap
Non-supervisory field employees	Provide clearer information on pay stubs and hourly rates so compensation information is not unclear.	Message relevance gap
Non-supervisory field employees	Increase accountability for employee actions and inactions.	Others
Non-supervisory field employees	Create clear points of contact and resolution paths so employees know who can answer questions or resolve issues.	Others
Non-supervisory field employees	Share work, training, and development information consistently and fairly so employees do not have to rely on informal channels or overhearing conversations to learn about opportunities.	Field message relay gap

Respondent group	Standardized comment	Related challenge
Non-supervisory field employees	Promote respect among coworkers and peers to support better workplace relationships.	Others
Non-supervisory field employees	Hold monthly in-house meetings with all staff.	Field message relay gap
Non-supervisory field employees	Reduce restrictions on communication from local management and protect employees and direct supervisors from negative consequences when they speak up.	Leadership communication gap
Non-supervisory field employees	Improve communication between management and FMTs, and strengthen connections with training coordinators, HR, and personnel outside the direct shop.	Field message relay gap
Non-supervisory field employees	Review concerns from all sides before responding so communication reflects a fuller understanding of the issue.	Others
Non-supervisory field employees	Establish consistent use of mobile radios during accidents, worksites, snow events, and other field operations. Provide earlier snow-event information from upper management so employees can plan for childcare and medical needs.	Field access gap
Non-supervisory field employees	Promote professional and respectful communication, especially with newer employees, and address reports of employees being singled out or spoken to disrespectfully.	Others
Non-supervisory field employees	Improve employee communication, teamwork, and work-skill development. Upper management should understand field work better, share information more effectively, and promote team-based improvement and growth.	Leadership communication gap
Non-supervisory field employees	Promote equal opportunity, respect from peers, proper job training, and clear communication for all employees, including employees who feel marginalized.	Others
Non-supervisory field employees	Strengthen upward communication by ensuring employee voices and suggestions are heard, and by speaking with employees rather than talking at them.	Leadership communication gap
Non-supervisory field employees	Improve communication from top-level leadership down to the shop level.	Leadership communication gap
Non-supervisory field employees	Improve communication through state-issued mobile phones and more accurate bulletin board updates.	Field access gap
Non-supervisory field employees	Create a safer way to raise staffing and management concerns without belittling, threats, or dismissal. Improve management responsiveness to employee concerns.	Leadership communication gap
Non-supervisory field employees	Restart town hall meetings that have not been held in several years.	Leadership communication gap
Non-supervisory field employees	Improve communication, equipment access, desk availability, tool access, and desk-phone access.	Field access gap

Respondent group	Standardized comment	Related challenge
Non-supervisory field employees	Show that survey feedback leads to visible change so employees continue to participate and view surveys as meaningful.	Leadership communication gap
Non-supervisory field employees	Share more information about what is happening.	Others
Non-supervisory field employees	Reduce nonessential email so important messages are easier to find.	Office email overload
Non-supervisory field employees	Provide team leaders with interpersonal communication and crew-management training, not just technical equipment knowledge.	Field message relay gap
Non-supervisory field employees	Modernize communication technology so SHA keeps pace with current communication practices.	Field access gap
Non-supervisory field employees	Address perceived favoritism among FMTs regarding equipment or machine use, and clearly explain the criteria for access and assignments.	Message relevance gap
Non-supervisory field employees	Listen to team concerns fully before responding.	Leadership communication gap
Non-supervisory field employees	Increase transparency and ensure employees can ask questions or raise concerns without fear of retaliation.	Leadership communication gap
Non-supervisory field employees	Address management behaviors that employees perceive as disrespectful, controlling, or dismissive, and provide an outside channel for employees to raise concerns directly.	Leadership communication gap
Non-supervisory field employees	Use a mix of channels, including face-to-face communication, bulletin boards, town halls, emails, and text messages, so office and field employees can ask questions and understand important information.	Field access gap
Non-supervisory field employees	Strengthen team-leader communication, leadership, safety practices, and responsiveness to work suggestions so employees can build confidence and trust in their leadership.	Field message relay gap
Non-supervisory field employees	Improve supervisor communication about work assignments and updates, and reduce perceived bias.	Message relevance gap
Non-supervisory field employees	Address micromanagement and protect employees from being punished or excluded from work-related meetings when they raise questions or opinions.	Leadership communication gap
Non-supervisory field employees	Encourage respectful and courteous communication.	Others
Non-supervisory field employees	Address multiple communication and operational concerns, including late training notices, unavailable policies, inconsistent treatment, micromanagement, equipment allocation, impacts of operational decisions on winter coverage and restroom access, limited recognition,	Leadership communication gap

Respondent group	Standardized comment	Related challenge
	experience-based decision-making concerns, and fear of discipline for raising issues outside the local chain of command. Provide one-on-one opportunities for drivers to speak with District management.	
Non-supervisory field employees	Improve local management communication, make managers more available to employees, and ensure employees can ask questions without fear that concerns will be held against them later.	Leadership communication gap
Non-supervisory field employees	Provide translation or communication devices so Latino and non-Spanish-speaking workers can communicate more effectively with each other.	Field access gap
Non-supervisory field employees	Provide clearer daily work plans so employees know what they need to do each day.	Message relevance gap
Non-supervisory field employees	Issue state mobile phones to improve communication access.	Field access gap
Field supervisors	Use clear and consistent internal communication.	Others
Field supervisors	Reduce duplicate email forwarding from upper management, especially when employees already received the same message.	Office email overload
Field supervisors	Train managers to receive information, address it appropriately, delegate relevant information, and avoid rambling about nonessential topics.	Message relevance gap
Field supervisors	Improve clarity, reduce message overload, and use more mobile-friendly communication tools so field staff can stay informed and respond quickly.	Field access gap
Field supervisors	Repair truck CB radios and replace portable-radio batteries.	Field access gap
Field supervisors	Important shop communication should come directly from the RME to all affected employees instead of relying on messages to trickle down the chain of command.	Field message relay gap
Field supervisors	Make internal communication more consistent.	Others
Field supervisors	Strengthen employees' ability to present and deliver information clearly.	Others
Field supervisors	Ensure top officials, managers, and field workers across shops receive consistent information and operate as one unit.	Leadership communication gap
Field supervisors	Encourage direct communication and visible follow-through instead of only saying issues will be looked into.	Leadership communication gap
Field supervisors	Improve communication among managers, especially at the district-management level.	Leadership communication gap
Field supervisors	Include supervisors in morning meetings because they are an effective communication channel.	Field message relay gap
Field supervisors	Use a clear command or authorized-source system for communication and reduce irrelevant	Office email overload

Respondent group	Standardized comment	Related challenge
	emails, such as messages about timesheets for employees who do not handle timesheets.	
Field supervisors	Improve communication during storms by keeping bulletin boards updated.	Field access gap
Field supervisors	Keep employees updated.	Others
Field supervisors	Increase communication from RME and ARME leadership.	Leadership communication gap
Field supervisors	Continue using surveys and consider an employee communication app to engage employees.	Others
Field supervisors	Communicate directly with employees when they are present instead of asking others to relay the message.	Field message relay gap
Field supervisors	Treat all teams consistently.	Others
Field supervisors	Reduce delays in information flowing down the chain of command.	Field message relay gap
Office-based employees	Upper management should be approachable, avoid ego-based defensive responses, and listen to employee issues and problems.	Leadership communication gap
Office-based employees	More officewide in-person days and in-person meetings should be used to support direct communication. Virtual meetings should be reserved for employees who cannot attend in person.	Others
Office-based employees	More interdepartmental communication channels are needed to reduce silos and improve cooperation.	Cross-office coordination gap
Office-based employees	Communication style expectations should be more flexible, because variations in communication style are sometimes viewed as poor communication or lack of attention.	Others
Office-based employees	Information is spread across email, Teams, SharePoint, word of mouth, or not shared consistently. A dedicated communication strategy and more openness are needed, but feedback on this issue has been met with hostility.	Leadership communication gap
Office-based employees	Information that does not directly affect a supervisor may not be shared with staff. Town Hall question processes also appear to limit which employee concerns are addressed.	Leadership communication gap
Office-based employees	Information is siloed within the immediate group and appears to reinforce hierarchy.	Cross-office coordination gap
Office-based employees	Construction stage changes and complaint context are not communicated well. Email overload and workload pressures also limit communication effectiveness.	Office email overload
Office-based employees	The area has not held team meetings since the COVID pandemic, and communication barriers related to conflict avoidance should be addressed.	Others
Office-based employees	Repeated emails from multiple senders, reply-all messages, and irrelevant fundraising or newsletter emails create unnecessary email overload. Better targeting and accountability are	Office email overload

Respondent group	Standardized comment	Related challenge
	needed.	
Office-based employees	Senior leadership should communicate directives clearly, include subject matter experts in key meetings, respond to internal emails, and hold non-performers accountable.	Leadership communication gap
Office-based employees	Communication through the chain of command has weakened, and employees find it difficult to communicate with leadership beyond their direct supervisor.	Leadership communication gap
Office-based employees	Important updates, personnel changes, procedure changes, and task deadlines are often communicated late or indirectly, which can cause rushed work, frustration, stress, and incomplete deliverables.	Message relevance gap
Office-based employees	Messages should be clearer, and fewer Town Hall meetings could be paired with administrator visits or one-on-one office meetings.	Leadership communication gap
Office-based employees	IT system changes are not communicated before updates occur, which can cause workstation issues that local IT staff must resolve.	Others
Office-based employees	Important SOPs and directives should come from recognizable office leadership or a clear information owner. Otherwise, employees may miss the message and staff may not receive needed information.	Cross-office coordination gap
Office-based employees	Employees need basic email training, including professional email etiquette and appropriate use of reply-all.	Office email overload
Office-based employees	Employees need clearer information about the status of consolidations.	Message relevance gap
Office-based employees	Email volume is high, which forces employees to scan and delete messages quickly and creates communication overload.	Office email overload
Office-based employees	Divisions need better communication about projects, datasets, maps, file access, and work occurring across divisions to reduce redundant work, confusion, and fragmented processes.	Cross-office coordination gap
Office-based employees	Day-to-day policies, procedures, workflows, templates, and operational guidance are unclear, even when written software guidance exists.	Message relevance gap
Office-based employees	Employees raise issues with management, but they do not see follow-up or action.	Leadership communication gap
Office-based employees	More team-building activities and division or office meetings would help employees know one another and communicate more effectively.	Others
Office-based employees	Departments need more HR updates and department-level town halls so useful information is not limited by what supervisors choose to share.	Leadership communication gap
Office-based	Comments, concerns, and ideas from employees outside leadership roles often feel ignored.	Leadership

Respondent group	Standardized comment	Related challenge
employees		communication gap
Office-based employees	Leadership should consult end users before changing programs or systems, check in regularly with staff, include end users on project teams, and use respectful language when referring to employees.	Leadership communication gap
Office-based employees	Communication within the district is good, but responses from other departments can be slow or limited.	Cross-office coordination gap
Office-based employees	Teams works well overall, but sensitive or private issues should be handled through one-on-one voice or face-to-face conversations.	Others
Office-based employees	Communication modes should be more consistent across departments. Broader use of Teams chat, supported by training or lunch-and-learn sessions, could improve collaboration.	Cross-office coordination gap
Office-based employees	Information provided late should not be considered effective communication.	Message relevance gap
Office-based employees	Detailed meeting minutes are an effective way to keep employees informed about SHA headquarters activities.	Leadership communication gap
Office-based employees	SharePoint and intranet content should be standardized across teams, divisions, and offices so forms, policies, and other information can be found easily.	Cross-office coordination gap
Office-based employees	The Office of Communication does not appear to be the clear source for communication tools, templates, letterheads, and correspondence materials.	Cross-office coordination gap
Office-based employees	Leadership does not share SHA visions, goals, obstacles, or decision drivers with day-to-day staff, which makes work planning difficult.	Leadership communication gap
Office-based employees	Email volume should be reduced by distributing announcements differently. Employees need training on new tools such as SharePoint and Visix, and a main information hub would help preserve email for day-to-day project work.	Office email overload
Office-based employees	Employees should be notified when HR forms are updated and should receive clearer descriptions of training opportunities.	Message relevance gap
Office-based employees	Fundraising messages are too frequent and too broadly distributed. Targeted email lists or a SharePoint space could reduce irrelevant email and reserve email for important updates.	Office email overload
Office-based employees	Effective communication requires both listening and supervisor follow-up.	Leadership communication gap
Office-based employees	Communication only works when people listen and respond.	Others
Office-based	Employee surveys often do not appear to lead to meaningful change.	Leadership

Respondent group	Standardized comment	Related challenge
employees		communication gap
Office-based employees	Consultants receive irrelevant state-employee emails, new technology is introduced with little guidance, and upper management does not appear interested in listening to district and shop employees or solving core problems.	Office email overload
Office-based employees	Staff should be held accountable for poor performance and failure to complete job responsibilities.	Others
Office-based employees	Communication should be clear, consistent across formats, and not burdened by mixed messages because people give and receive information differently.	Message relevance gap
Office-based employees	Divisions should acknowledge emails and be held accountable for providing review comments or feedback. Lack of response delays others' work.	Cross-office coordination gap
Office-based employees	Employees receive a high volume of emails.	Office email overload
Office-based employees	Employees should receive timely information about promotions, policy changes, and similar updates from SHA rather than from external sources.	Message relevance gap
Office-based employees	Management communication is unclear, procedures change without explanation, feedback is not accepted, approvals are slow, and written messages can sound accusatory. Verbal communication is viewed as more effective.	Leadership communication gap
Office-based employees	Upper management has not held a meeting or Town Hall in years and appears unwilling to answer employee questions.	Leadership communication gap
Office-based employees	Assignments, deadlines, and due dates are often ambiguous or poorly delegated, creating uncertainty and revealing broader communication issues.	Message relevance gap
Office-based employees	Leadership expects cooperation while employees fear threats or retaliation for speaking up. Concerns are not investigated transparently, and employees feel silenced.	Leadership communication gap
Office-based employees	Managers are not held accountable for poor communication, unprofessional conduct, or failure to address complaints, which contributes to low morale.	Leadership communication gap
Office-based employees	Simple requests and inquiries should rely more on voice telephone communication and less on email.	Others
Office-based employees	Training on when and how to use email, calls, and direct messages, including communication etiquette, would be helpful.	Others
Office-based employees	Employees need training on communicating requirements, processes, terms, definitions, and workflows clearly to stakeholders who may not share SHA-specific knowledge.	Message relevance gap
Office-based	The main issue is repeated messages from different people on the same subject.	Office email overload

Respondent group	Standardized comment	Related challenge
employees		
Office-based employees	Communication between offices and units is poor, especially when working with service offices. Staff need to read and answer questions clearly, use phone calls when needed, include email signatures, and share information more timely.	Cross-office coordination gap
Office-based employees	Lower and upper management should regularly attend mandatory communication and leadership training.	Leadership communication gap
Office-based employees	A tablet or iPad would support greater mobility in the building better than a cell phone.	Others
Office-based employees	Communication is poor because management resists ideas that do not originate from them. Managers need training in time management, workload prioritization, and principled leadership.	Leadership communication gap
Office-based employees	Self-service kiosks or intranet spaces would reduce repetitive questions and help employees find answers independently.	Others
Office-based employees	Managers need clearer and more concise communication, more internal training, and greater flexibility to adapt to new methods.	Others
Office-based employees	Training on crucial conversations and giving and receiving feedback could improve communication.	Others
Office-based employees	Shop-based employees often struggle to access email, which limits their ability to receive important updates.	Field access gap
Office-based employees	Some supervisors and shop managers need management training on respectful communication with employees and should avoid harsh, threatening, or raised-voice communication.	Leadership communication gap
Office-based employees	Receiving communication is not the problem. The problem is whether feedback leads to visible change.	Leadership communication gap
Office-based employees	Feedback is easy to give and generally received by supervisors, but resources to implement real change are lacking.	Leadership communication gap
Office-based employees	Overreliance on one-on-one meetings slows communication up the chain and delays answers from office leadership, which can stall work.	Leadership communication gap
Office-based employees	Upper management should keep an open mind, listen to employee suggestions, and avoid labeling employees negatively when they raise concerns.	Leadership communication gap
Office-based employees	Strict chain-of-command communication can prevent concerns from reaching decision-makers. Feedback may be lost, deprioritized, or receive little action.	Leadership communication gap
Office-based	Employees need an anonymous feedback channel or a clear point of contact outside the direct	Leadership

Respondent group	Standardized comment	Related challenge
employees	chain of command for serious concerns.	communication gap
Office-based employees	AI assistance has often been ineffective because systems do not understand the employee actual need and do not route the request to the right person or area.	Cross-office coordination gap
Office-based employees	Senior leadership should share more information about initiatives and future direction, seek feedback before making changes, and avoid treating everything as an emergency priority.	Leadership communication gap
Office-based employees	Ongoing initiatives and changes need more consistent follow-up, reminders, and a centralized place where employees can revisit key information.	Leadership communication gap
Office-based employees	Clearer chain-of-command communication is needed when supervisors and managers provide conflicting direction.	Leadership communication gap
Office-based employees	Training or recreational events could improve connection and awareness across offices, reducing unhealthy or combative communication.	Cross-office coordination gap
Office-based employees	Communication depends on organizational culture and leadership openness to candor, and employees need alternative channels when traditional channels fail.	Leadership communication gap
Office-based employees	Decisions affecting maintenance shops appear to be made from an office-based perspective without enough understanding of field impacts, which makes feedback feel ineffective.	Message relevance gap
Office-based employees	Managers should prioritize communication, use clear written records, understand individual communication preferences, and consider whether office-based technology decisions work for field staff.	Field access gap
Office-based employees	Communication improvement is continuous, and employees should remain alert to evolving needs.	Others
Office-based employees	Recording training sessions and using AI for meeting notes could improve documentation and allow participants to focus on discussion.	Others
Office-based employees	Employees affected by departmental changes should be included in communication about those changes before or as decisions are made.	Message relevance gap
Office-based employees	SHA communicates well overall, but communication practices are inconsistent across offices and districts.	Cross-office coordination gap
Office-based employees	The work environment should be friendly, inclusive, and open to sharing information, suggestions, and ideas so employees can do their jobs effectively.	Others
Office-based employees	Employees lack awareness of available SHA training after organizational changes, and previous feedback about this issue has not led to a response or change.	Message relevance gap
Office-based employees	Leadership should be held accountable for effective and appropriate communication with employees.	Leadership communication gap

Respondent group	Standardized comment	Related challenge
Office-based employees	Internal communications should be rebuilt around honest grassroots engagement, operational knowledge, experienced internal communications professionals, fewer fragmented communication vehicles, and less political messaging.	Leadership communication gap
Office-based employees	Communication is associated with harassment, retaliation, unprofessional behavior, and a hostile work environment.	Leadership communication gap
Communication staff	Email is the primary formal channel, but delays can occur when responses are slow, approvals are repeated, or reviews depend on multiple people.	Cross-office coordination gap
Communication staff	Visix and related broadcast tools may be useful, but comments suggest that placement and implementation need improvement.	Field access gap
Communication staff	Large meetings can be too long, too general, or insufficiently structured.	Message relevance gap
Communication staff	Feedback-related comments stressed receptivity, a clearer upward path, and in some cases the option of anonymous input.	Leadership communication gap

Table C.2 Standardized Field supervisors' Suggestions for Making Field Staff More Interested in Receiving or Paying Attention to Internal Communication

Standardized comment
Meetings sometimes combine too many topics, include non-pertinent information, and require staff to wait for the meeting before receiving updates.
Different shifts can delay message delivery, although messages eventually reach staff.
Unknown work schedules and staff availability, including telework availability, can make it difficult to reach people.
Communication takes time and can slow follow-up. The respondent suggested using AI to summarize meetings, create minutes, generate follow-up emails, assign tasks, and set reminders.
Unneeded, junk, or spam-like emails slow communication.
Email slows communication because many employees do not check it regularly.
Too many emails are not relevant to the respondent work activities.
Phone communication slows down when employees do not answer their phones.
Text messages and emails can slow communication when a quick response is needed; phone calls are viewed as faster.
Bulletins, emails, and Town Halls can slow workflow. The respondent suggested earlier planning and more field-staff input.
Outdated equipment slows communication work.
The respondent identified pre-storm and post-storm meetings and noted limited communication with management and staff.
Radios are viewed as less useful when phones are already the common contact method.

Standardized comment
Communication needs to occur in a more timely manner.
When supervisors do not know the answer, staff may have to wait while the answer is escalated.
Cell phone calls can interrupt work when employees are operating equipment.

Appendix D. Special Analysis on District Six Field Employees

The research team conducted a special subgroup analysis for District 6 because it is one of SHA's most geographically remote districts and includes field employees working across dispersed locations in Western Maryland. The purpose of this analysis was to provide additional context on how District 6 field employees experienced internal communication compared with the overall field respondent group. The findings are presented in the appendix as exploratory descriptive results and should be interpreted cautiously because the subgroup sample was small. A total of 20 District 6 field respondents participated in the survey, including 11 non-supervisory field employees and 9 field supervisors.

Within this limitation, District 6 field respondents reported lower mean scores than the overall field respondent group across all communication measures shown in Figure D. Communication from or with direct supervisors remained the highest-rated measure among District 6 respondents (Mean = 3.50), suggesting that local supervisory communication continued to function as an important communication source. However, this score was still lower than the overall field mean for direct supervisor communication (Mean = 3.71). District 6 respondents also reported lower scores for knowing whom to contact for help or concerns (Mean = 3.53 compared with 3.91 overall), receiving work-relevant information early enough to act on it (Mean = 3.15 compared with 3.42 overall), and not missing timely information (Mean = 2.90 compared with 3.30 overall).

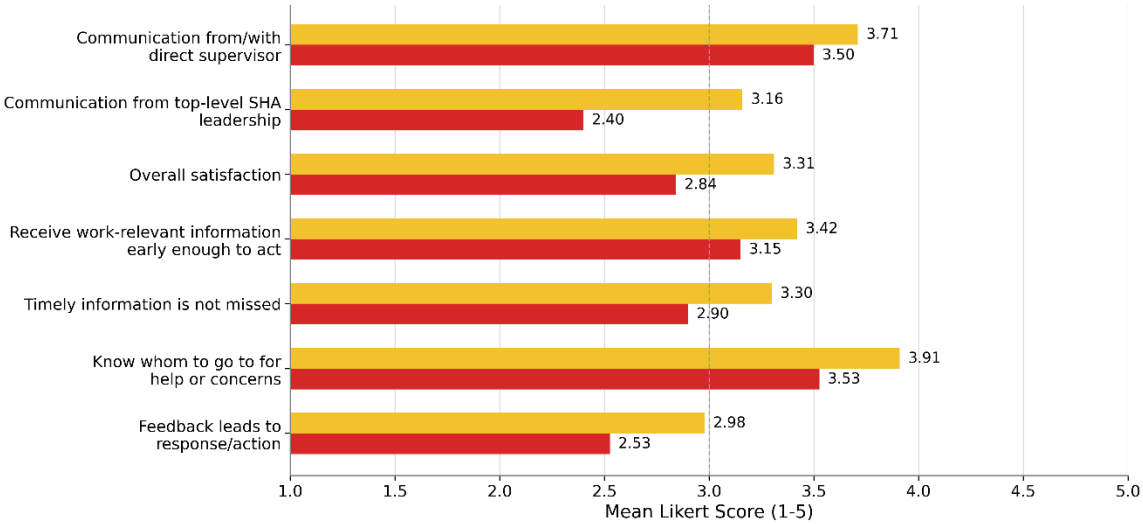

Figure D. District 6 Field Compared with Overall Field

Open-ended comments from District 6 field respondents provide additional context for these lower survey ratings. Several comments emphasized the need for clearer communication, more visible leadership engagement, and safer opportunities for employees to ask questions or raise concerns. One comment stated, *"We have not had a town hall meeting in several years."* Another

noted, *"Employees are not being told enough, and some are afraid to ask questions because they worry it may be held against them later."* Other comments expressed concern that local management was not always receptive to employee concerns, including one comment stating, *"Some employees feel local management is dismissive and controlling, and people are leaving because of it. We need someone to come ask employees directly what is going on."* A related comment stated, *"Micromanagement is a problem, and employees feel punished for voicing opinions or asking questions. Employees also need access to meetings about work-related issues."* Respondents also identified practical information needs, as reflected in the comment, *"We need better communication about training, policies, equipment, and operational changes. Employees also feel micromanaged, under-recognized, and afraid to raise issues outside the local chain. It would help if District management spoke with drivers one-on-one."*

District 6 maintenance-shop interviews were generally consistent with these themes. Interview participants described several practical communication barriers, including late notice for some training or operational updates, limited visibility of certain human resources information in shop settings, and reliance on local staff or supervisors to relay information that may not be consistently accessed through email. At the same time, the interviews also identified effective communication practices. For example, participants described phone-based or voice-message notifications for winter operations as useful when they provided clear, timely information about reporting expectations, team assignments, or shift changes. This contrast suggests that District 6 field employees may not be opposed to structured communication systems; rather, they need communication that is timely, direct, field-accessible, and clearly connected to work conditions.

The District 6 interview findings also reinforced the importance of direct engagement. Participants described a need for more regular opportunities to hear from management, ask questions, and receive clarification about upcoming changes. These concerns align with the District 6 open-ended comments, which called for clearer communication, safer direct engagement, and more opportunities for management to hear directly from field employees.

Overall, the District 6 subgroup findings align with several broader themes identified in the main report, including weaker satisfaction with higher-level communication, concerns about feedback follow-through, the importance of local supervisory communication, and the need for field-accessible communication methods. However, the District 6 results appear more pronounced than the overall field pattern. Given the small sample size, these findings should not be generalized to all District 6 employees. Instead, they should be used as an exploratory indication that District 6 field employees may benefit from additional attention to leadership visibility, direct engagement, safer feedback channels, timely operational communication, and clearer communication about training, policies, equipment, and operational changes.