



U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF INSPECTOR GENERAL

**PHMSA Has Improved Its Workforce Management
but Planning, Hiring, and Retention
Challenges Remain**

PHMSA

Report No. ST2018010

November 21, 2017





PHMSA Has Improved Its Workforce Management but Planning, Hiring, and Retention Challenges Remain

Mandated by the Protecting our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act

Pipeline and Hazardous Materials Safety Administration | ST2018010 | November 21, 2017

What We Looked At

Safety oversight of the Nation's aging pipeline infrastructure is an ongoing public concern. The Pipeline and Hazardous Materials Safety Administration's (PHMSA) Office of Pipeline Safety (OPS), along with State inspectors, administers the Department's national regulatory program to ensure the safe transportation of natural gas, petroleum, and other hazardous liquids by pipeline. In 2016, a Congressional Research Service (CRS) report highlighted a long-term pattern of understaffing at OPS. Enacted shortly afterward, the Protecting our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act of 2016 directed us to review PHMSA's management of its workforce.

What We Found

PHMSA has not updated its workforce plan since 2005. Because of this, the Agency cannot be sure that it has adequately aligned its resources to meet its mission or identified current and future staffing opportunities and constraints. In addition, PHMSA does not fully take advantage of monetary employee retention incentives allowed under Office of Personnel Management (OPM) guidelines, and may have lost opportunities to retain the most qualified staff. PHMSA, however, is taking actions to improve its hiring practices and the way it integrates new staff, for example, by upgrading its training program.

Industry-specific conditions, rather than macroeconomic factors, have created recruitment challenges for PHMSA. Our economic analysis confirmed a significant salary gap between private industry and Federal salaries, resulting in strong competition with the industry. Special hiring authority, such as direct-hire authority, may not provide PHMSA the tools it needs in a competitive environment driven by salary. OPM, however, has the authority to establish higher rates of basic pay to help agencies address these recruiting and retention challenges.

Our Recommendations

PHMSA concurred with our three recommendations to improve its workforce management practices and proposed appropriate action plans.

Contents

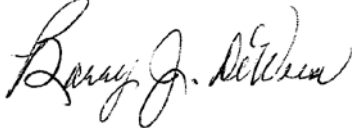
Memorandum	1
Results in Brief	3
Background	4
PHMSA Does Not Have a Current Workforce Management Plan or Fully Use Retention Tools, but Has Improved How It Engages New Staff	5
Industry-specific Conditions, Not Macroeconomic Factors, Created Recruitment Challenges That May Not Be Eased by Special Hiring Authorities Alone	11
Conclusion	15
Recommendations	15
Agency Comments and OIG Response	16
Exhibit A. Scope and Methodology	17
Exhibit B. Organizations Visited or Contacted	19
Exhibit C. List of Acronyms	20
Exhibit D. Major Contributors to This Report	21
Appendix. Agency Comments	22



Memorandum

Date: November 21, 2017

Subject: ACTION: PHMSA Has Improved Its Workforce Management But Planning, Hiring, and Retention Challenges Remain
Report No. ST2018010

From: Barry J. DeWeese 
Assistant Inspector General for Surface Transportation Audits

To: Pipeline and Hazardous Materials Safety Administrator

Safety oversight of the Nation's aging pipeline infrastructure is an ongoing public concern. In May 2015, for example, nearly 3,000 gallons of crude oil spilled in Santa Barbara, CA, damaging beaches and the ocean and impacting wildlife. Later that year, an underground natural gas facility in Aliso Canyon in southern California released 5.4 billion cubic feet of natural gas, the largest methane leak recorded in U.S. history. In September 2016, a spill in Shelby County, AL, released about 250,000 gallons of gasoline, shutting down a pipeline that connects refineries in Houston, TX, with the rest of the country and prompting governors in Alabama and Georgia to declare a state of emergency.

The Pipeline and Hazardous Materials Safety Administration (PHMSA) develops and enforces regulations for the safe, reliable, and environmentally sound operation of the Nation's 2.7-million-mile pipeline transportation system and nearly 1 million daily shipments of hazardous materials by land, sea, and air. More specifically, PHMSA's Office of Pipeline Safety (OPS) inspection and enforcement staff, along with State inspectors, administer the Department's national regulatory program to ensure the safe transportation of natural gas, petroleum, and other hazardous liquids by pipeline. A 2016 Congressional Research Service (CRS) report¹ highlighted a long-term pattern of understaffing of OPS, with the greatest shortfall of vacant positions occurring in 2015.

¹ Paul W. Parfomak, "DOT's Federal Pipeline Safety Program: Background and Key Issues for Congress," Congressional Research Service (May 2016).

The Protecting our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act of 2016,² which became law soon after the CRS report was released, directed us to review PHMSA's management of its workforce. Accordingly, our audit objectives were to determine (1) whether PHMSA has developed a comprehensive workforce management plan to address gaps and challenges and (2) whether macroeconomic conditions affected the ability to fill OPS vacancies and whether special hiring authorities could have alleviated such difficulty.

We conducted this audit in accordance with generally accepted Government auditing standards. We interviewed PHMSA staff at its Headquarters, all of its five regional offices, and at its Training and Qualifications Center in Oklahoma City, OK, and analyzed relevant PHMSA documentation. Additionally, we analyzed the Department of Labor's Occupational Employment Statistics (OES) National Data files, OPS employment and salary data, and the number of applications received for OPS vacancies. Exhibit A details our scope and methodology. Exhibit B lists the entities we visited or contacted.

We appreciate the courtesies and cooperation of Department of Transportation representatives during this audit. If you have any questions concerning this report, please call me at (202) 366-5630 or Kerry R. Barras, Program Director, at (817) 978-3318.

cc: The Secretary
DOT Audit Liaison, M-1
PHMSA Audit Liaison, PH-3

² Pub. L. 114-183 (June 22, 2016).

Results in Brief

PHMSA does not have a current workforce management plan or fully use retention tools, but has improved how it engages new staff.

DOT's January 2016 Workforce Planning Guide³ assigns responsibility for developing a workforce plan to Operating Administrations; however, PHMSA has not updated its workforce plan since 2005. According to PHMSA officials, the Agency delayed an update in order for it to adjust to a recent reorganization in which it established the Office of Planning and Analytics to facilitate information sharing, lessons learned, and consistency in how the Agency collects and uses data. Because of this delay, PHMSA cannot be sure that it has adequately aligned its resources to meet its mission or identified current and future staffing opportunities and constraints. Furthermore, we noted that PHMSA does not fully take advantage of monetary employee retention incentives allowed under OPM guidelines.⁴ Due to instructions on incentive payments, which reduced incentive funding available without permission of the Department's Assistant Secretary for Administration, PHMSA did not use monetary incentives such as repayment of student loans. By not taking full advantage of retention incentives, PHMSA may have lessened its opportunity to retain the most qualified staff. Nevertheless, PHMSA is taking actions to improve its hiring practices—adding 96 full-time equivalents (FTEs)⁵ to OPS since 2014—and the way it integrates new staff, such as by upgrading its training program. Although the Agency has nearly reached its staffing goal for OPS, these actions are currently underway, and it is too early to determine their long-term impact.

Industry-specific conditions, not macroeconomic factors,⁶ created recruitment challenges that may not be eased by special hiring authorities alone.

Hiring in the oil and gas pipeline industry grew dramatically throughout the 2007–2009 recession, but decreased in 2012. Salaries offered by private industry for oil, gas, and pipeline engineers create a significant recruitment challenge for PHMSA that may not be eased by special hiring authorities alone. While PHMSA

³ *Departmental Workforce Planning Guide*, January 2016, p. 4.

⁴ OPM, *Human Resources Flexibilities and Authorities in the Federal Government* (August 2013), pp. 42–43.

⁵ Full-time equivalent employment is defined as the total number of regular straight-time hours (not including overtime or holiday hours) worked by employees divided by the number of compensable hours applicable to each fiscal year. Full-time equivalent employment is not a count of the number of employees or positions in an organization.

⁶ Macroeconomic factors operate at the level of the national economy. Examples include recessions, general inflation, and domestic productivity growth.

has filled 96 percent of its planned FTE level based on enacted appropriations for fiscal year 2017, Agency officials stated that this fill rate was made possible by a decrease in industry hiring. Our economic analysis confirmed a significant salary gap between private industry and Federal salaries for the types of engineers PHMSA hires, resulting in strong competition with the industry. Special hiring authority, such as direct-hire authority, may not provide PHMSA the needed tools under a competitive environment driven by salary. Direct-hire authority gives agencies an opportunity to hire any qualified applicant, after public notice is given, without regard to the traditional competitive hiring selection procedures, and is designed for situations where there is either a demonstrated critical hiring need or a severe shortage of candidates. But while direct-hire authority is geared toward improving the speed of hiring for specific candidates, it is not clear how it alone would resolve long-standing staffing challenges such as competing with a well-paying industry over a limited talent pool. OPM, however, has the authority to establish higher rates of basic pay to help agencies address significant handicaps in recruiting or retaining well-qualified employees or staffing problems caused by private industry pay rates significantly higher than those in the Federal Government.

We are making three recommendations to improve PHMSA's workforce management practices.

Background

PHMSA regulates nearly 3,000 companies, which together operate pipelines across the Nation, about 150 liquefied natural gas plants, and more than 7,500 hazardous liquid breakout tanks.⁷ Within PHMSA's OPS, Headquarters is responsible for safety research, rulemaking and setting standards, inspector training and qualification, and enforcement. With assistance from State inspectors, regional offices,⁸ where approximately 49 percent of PHMSA's OPS personnel are located, carry out the national pipeline inspection and enforcement program. PHMSA's human resources function provides services to OPS.

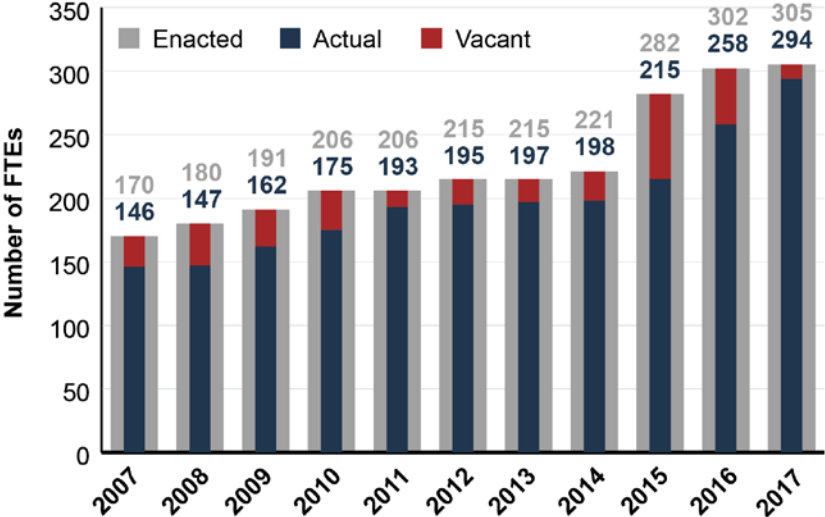
As of April 29, 2017, OPS had filled 96 percent of its planned FTE level based on enacted appropriations—only 11 fewer FTEs than it was funded to fill. OPS' funded FTEs grew from 170 in fiscal year 2007 to 221 in fiscal year 2014. PHMSA stated that the allocation provided by Congress funded a total of 282 FTEs in

⁷ A breakout tank relieves surges in a hazardous liquid pipeline system or receives and stores hazardous liquid transported by a pipeline for reinjection and continued transportation by pipeline.

⁸ PHMSA regional offices are divided into Western, Central, Eastern, Southern, and Southwest territories.

fiscal year 2015, 302 FTEs in fiscal year 2016, and 305 FTEs in fiscal year 2017 (figure 1). On average, over the 11 years, OPS filled 87 percent of planned FTEs annually. In fiscal year 2015, PHMSA started a hiring surge to attempt to fill the additional FTEs.

Figure 1. PHMSA’s OPS Full-Time Equivalents, FY 2007–2017



Source: OIG, based on PHMSA data, as of April 29, 2017.

PHMSA Does Not Have a Current Workforce Management Plan or Fully Use Retention Tools, but Has Improved How It Engages New Staff

PHMSA’s workforce management plan is not current, and the Agency is not fully using available retention tools. However, PHMSA has taken actions to enhance the way it recruits, hires, allocates, and trains its pipeline inspection staff.

PHMSA Lacks a Comprehensive, Current Workforce Management Plan

While PHMSA has plans addressing various elements typically included in a workforce plan, the Agency has not conducted workforce management planning that is coordinated and comprehensive, or that reflects the current state of its

workforce. Strategic workforce planning is a process to define and plan for the staff needed to achieve an Agency's mission. According to the Department's January 2016 Workforce Planning Guide, this systematic process identifies and addresses gaps between an Agency's current workforce and its future human capital needs. PHMSA last developed such a comprehensive workforce management plan for OPS in 2005. This 2005 plan has not been updated to account for changing conditions, such as the significant change in the size of its workforce, changing priorities, shifts in workforce demographics, or evolving organizational responsibilities.

Federal regulations⁹ direct agencies to integrate strategic plans into their human capital management plans. In addition, the Department's January 2016 Workforce Planning Guide instructs Operating Administrations on:

- Projecting occupations, staff, and competencies needed to achieve the mission, strategic priorities, performance goals, and objectives;
- Assessing the current state of the workforce and the availability of relevant resources in the external labor market;
- Identifying potential shortfalls and surpluses in human resources; and
- Developing human capital strategies to address issues that could prevent accomplishment of the mission.

Since PHMSA's 2005 plan was created, various factors have made it obsolete. For example, PHMSA's OPS workforce has grown from 97 FTEs in March 2005 to 294 FTEs, as of April 29, 2017—more than triple the size of the workforce when the plan was written. Also, in 2015, PHMSA shifted from a strategy of hiring only experienced engineers to hiring transportation specialists and engineers with fewer years of experience than the Agency had targeted previously. Finally, PHMSA's approach to inspections has changed as regulations have become less prescriptive and more performance-based. Inspectors have to make judgments about an operator's assessment of risk or interpretation of sufficiency. These changes require inspectors to use professional judgment to determine if the company has made sound decisions, if the process the company employs to achieve the desired performance is reasonable or good enough, and if the performance levels achieved are acceptable. This new approach requires stronger and different skill sets, such as auditing, than were required in the past.

According to PHMSA officials, a study was conducted of PHMSA in 2016 that contained some staffing elements, and which resulted in a reorganization of

⁹ 5 CFR § 250.204, "Agency Roles and Responsibilities."

OPS.¹⁰ However, this study was focused on functions other than inspections, and did not drill down to the inspection level. PHMSA has developed strategies for hiring, geographic allocation plans, and conducted strategic planning for its training function—all of which are elements of workforce planning. However, these plans were developed in isolation and are not compliant with the Department’s January 2016 Workforce Planning Guide, which calls for plans to reflect the agency’s strategic priorities and build on each other.

A PHMSA contractor created a high-level framework for establishing a workforce management plan that included the integration of strategic planning into human capital planning. However, that framework was set aside when PHMSA chose to work with a different contractor, in part so the Agency would have time to adjust to the recent reorganization. As a result, the Agency has not yet taken the next step and begun to develop its workforce management plan. Because the framework is written at a high level, there is a risk that its final output might not incorporate all of the elements listed in the Department’s January 2016 Workforce Planning Guide. Due to the lack of a current workforce management plan, PHMSA does not have assurance that it has aligned the staff to effectively meet its mission or identified current and future resource needs.

PHMSA Does Not Fully Utilize Staff Retention Tools

PHMSA is not taking full advantage of the retention incentives defined by OPM. While PHMSA officials indicated that retention is not currently a problem, our analysis shows that retention could become an issue if industry hiring increases. OPM provides guidance¹¹ for agencies on using retention incentives. Some retention incentives, such as student loan repayment, are available to agencies without additional approval from OPM. With OPM approval, agencies may establish higher rates of pay for an occupation or group of occupations nationwide, worldwide, or in a local area—particularly when the Government’s retention efforts are significantly handicapped without those higher rates.

According to PHMSA officials, the Agency has used superior qualification¹² and service credit¹³ authorities for recruitment, but has not used financial authorities

¹⁰ The reorganization established a cross-cutting Office of Planning and Analytics within OPS to facilitate information sharing, lessons learned, and consistency in how the Agency collects and uses data.

¹¹ OPM, *Human Resources Flexibilities and Authorities in the Federal Government*.

¹² This authority allows agencies to pay a newly appointed employee more than the minimum rate for the employee’s General Schedule (GS) grade because of the superior qualifications of the candidate.

¹³ When determining the employee’s annual leave accrual rate, service credit authority allows agencies to provide credit for service that would not otherwise be creditable (for example, service in the private sector).

for staff retention, issued retention bonuses, or offered student loan repayments in the past 3 years. In 2011, the Department, acting in accordance with OPM and Office of Management and Budget (OMB) guidance, instructed agencies not to exceed their fiscal year 2010 spending levels on recruitment and retention incentives. For PHMSA, this amount was \$3,600. This guidance was in place until February 2016, when the Department's Office of Human Resource Management allowed exceptions with approval from the Department's Assistant Secretary for Administration.

PHMSA has not sought approval to exceed its monetary cap and states that the amount of funding available without this approval is too small to distribute equitably in a meaningful way. As a result, PHMSA's ability to retain the most qualified staff may be adversely impacted.

PHMSA Took Actions To Improve Recruitment and Hiring, Geographic Allocation, and Training of Inspection Staff

PHMSA implemented a hiring surge and a variety of workforce management changes in 2015, due to the congressionally appropriated increase in funding. In response to the need to hire and integrate 84 new FTEs—a 42-percent increase from its 198 actual FTE level in 2014 (figure 1)—the Agency changed its strategies for recruitment and hiring, geographic allocation, and training of pipeline safety inspectors. Because of these efforts, we have concluded that PHMSA has nearly reached its full staffing goal for OPS and is better prepared for managing potential future retirements and other workforce fluctuations.

PHMSA Took Actions To Improve Recruitment and Hiring

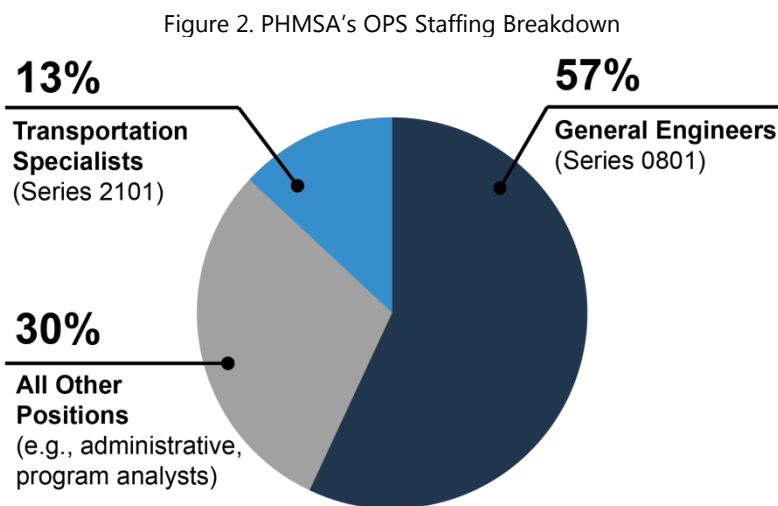
PHMSA has revised its concept of the types of candidates it needs for various positions and broadened the talent pool from which it recruits and hires. According to the Government Accountability Office's (GAO) *Standards for Internal Control in the Federal Government*, management should demonstrate a commitment to recruit and develop competent individuals and tailor training based on the needs of the position.¹⁴ Historically, PHMSA officials had targeted experienced engineers, who required less training time before they could conduct inspections independently. Officials believed that, given their small inspection force, they did not have the luxury of waiting for less experienced engineers to be trained and ready. Once the number of PHMSA employees increased due to the

¹⁴ GAO 14-704G, principle #4.05 (September 2014), p. 37.

hiring surge, PHMSA determined it could invest more time in training employees and is now recruiting engineers with less experience.

Additionally, PHMSA now also recruits candidates without engineering degrees for its inspector positions. The non-engineering transportation specialist position was designed to take advantage of the skills and experience of individuals in related pipeline fields—e.g., corrosion control, welding—who lacked the engineering background required under PHMSA’s traditional recruitment model (figure 2).

Figure 2. PHMSA’s OPS Staffing Breakdown



Source: OIG, based on PHMSA data, as of April 29, 2017.

PHMSA regularly monitors and reports quarterly data to OPM on time-to-hire challenges. The Department-wide goal for time to hire is 90 days. In 2012, PHMSA’s average time to hire was 102 days. Time to hire decreased to 83 days in 2013 and 75 days in 2014, but increased again to 93 days in 2015 and 104 days in 2016. Agency officials attribute the current longer hiring times to increases in the volume of hires and security-screening time.

PHMSA Took Actions To Improve Geographic Allocation

In 2015, PHMSA reviewed the number of staff it assigned to each region because it received additional staff. PHMSA’s geographic allocation plan took into account Federal inspection workloads, State program workloads, incident and accident investigations, and risks associated with pipelines operating near high-consequence areas, such as population centers. PHMSA updates its geographic allocation plan every 4 to 5 years. The formulas on which the plan is based were most recently revised in 2014. While PHMSA has not updated its 2005 workforce

management plan as a whole, these specific actions covering geographic allocation of resources satisfied GAO's *A Model of Strategic Human Capital Management*, which states that "The appropriate geographic and organizational deployment of employees can further support organizational goals and strategies."¹⁵

PHMSA Took Actions To Improve Training of Inspection Staff

In 2015, PHMSA hired an education and training specialist to direct its Inspector Training and Qualifications (TQ) Division in Oklahoma City. TQ provides centralized formal training for OPS. Early in the new Director's tenure, the TQ Department developed a PHMSA Inspector Training and Qualifications Division Strategic Plan for 2015–2020. This plan analyzed the strengths, weaknesses, opportunities, and threats related to the program and includes specific training initiatives to improve Agency and individual performance. According to the Director, the Agency revisits and updates the training strategic plan annually. PHMSA officials stated that the Director has engaged PHMSA management to address challenges identified in the strategic plan, such as the need to develop a standardized inspector qualification program. Moreover, the strategic plan identified two key goals to strengthen PHMSA's training program: transition all courses to the Analysis, Design, Development, Implementation and Evaluation (ADDIE) Model,¹⁶ and seek formal accreditation from several organizations, such as the American Council on Education.

According to GAO's *Best Practices and Leading Practices in Human Capital Management*¹⁷ an agency should identify specific training initiatives that improve individual and organizational performance, ensure effective and efficient delivery of training opportunities in an environment that supports learning and change, and demonstrate how training efforts contribute to improved performance and results. Our review found that PHMSA's training program has been modified in response to changing requirements, such as developing a "boot camp" to quickly ramp up training for dozens of inspectors during PHMSA's hiring surge, and that the Division is again adapting the training program to account for more regularly paced hiring.

¹⁵ GAO-02-373SP (March 2002), p. 22.

¹⁶ The ADDIE Model is an approach used by instructional designers to create instructional course materials. It provides guidelines for building training in five phases.

¹⁷ GAO, "Issue Summary: Strategic Workforce Planning," *Key Issues: Best Practices and Leading Practices in Human Capital Management* (accessed September 8, 2016).

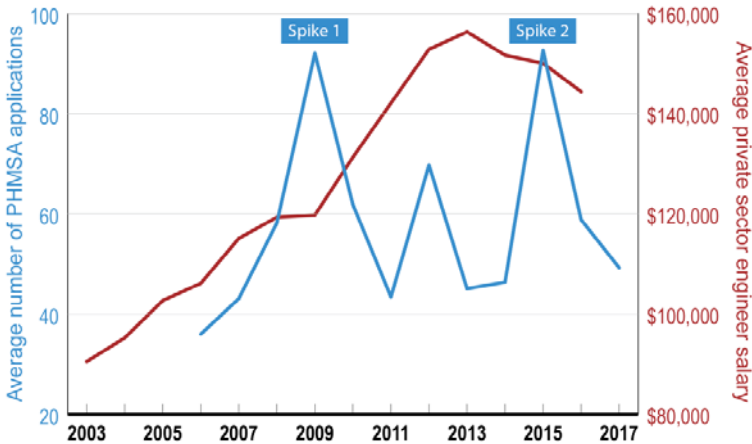
Industry-specific Conditions, Not Macroeconomic Factors, Created Recruitment Challenges That May Not Be Eased by Special Hiring Authorities Alone

PHMSA faces a number of challenges, some long-standing, in hiring and retaining employees needed to fulfill its safety inspection mission, such as qualified pipeline engineers and transportation specialists. According to PHMSA officials, it is often difficult to recruit pipeline safety inspectors because their specialized technical skill set is also highly sought by private industry. Furthermore, while PHMSA hired a large number of employees during the hiring surge, Agency officials told us that the success of the hiring surge was due, in part, to the economic downturn in the pipeline industry.¹⁸ Therefore, as industry economic conditions improve, PHMSA will again face increased competition for qualified talent.

Taking a broader view, industry-specific conditions, rather than macroeconomic factors, have created recruitment challenges for PHMSA. For example, hiring in the oil and gas pipeline industry grew dramatically throughout the 2007–2009 recession, but in 2012, hiring in the oil and gas industry decreased. According to PHMSA officials, this decrease in hiring was a factor in PHMSA achieving its current 96-percent fill rate. We did not find a direct correlation between the number of applications PHMSA receives per OPS opening and the health of the oil and gas industry (figure 3). Still, we determined that there was a spike in 2009 (spike 1) in the average number of applications that corresponded with a leveling off in private sector salaries, and another spike in 2015 (spike 2) that occurred after multiple years in which private sector average salaries decreased.

¹⁸ Data from the U.S. Energy Information Administration confirm that oil prices fell nearly 74 percent from about \$107 per barrel in June 2014 to about \$28 in February 2016. PHMSA operations supervisors stated that when the price of oil goes down, the industry lays off staff, and more industry workers appear in the available applicant pool.

Figure 3. Annual Average OPS Applications Per Position and Annual Average Private Sector Engineer Salaries

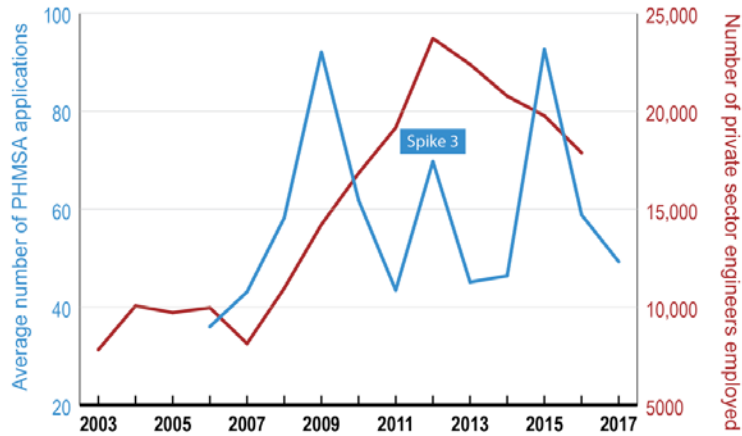


Source: OIG, based on OES and PHMSA-provided data. OES data as of May 16, 2017; OPS data as of June 14, 2017.

The smallest spike in applications to OPS (spike 3; see figure 4) corresponds to the peak of annual private sector employment, which suggests that engineers were applying to the Agency before the industry downsized.

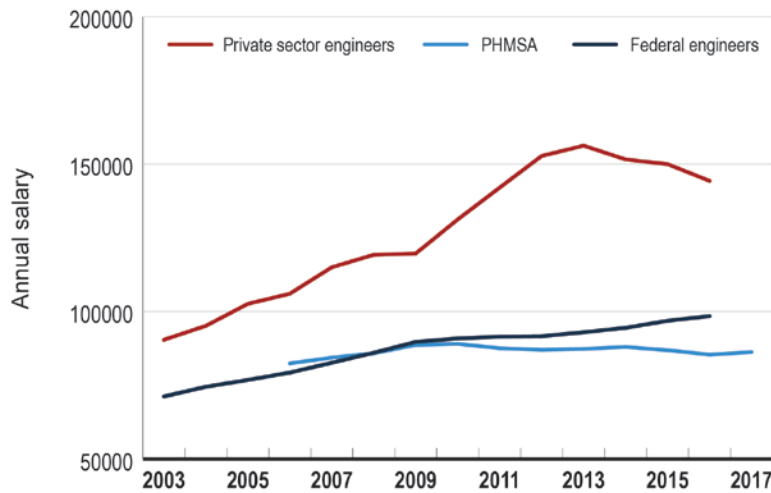
Although there is no year-for-year correlation, the economic pull of high wages and increased hiring in the oil and gas industry corresponds to years of staffing shortfalls at PHMSA. There is a significant gap between private industry and Federal salaries for the types of engineers PHMSA hires. Average salaries for engineers in the private sector have increased since 2006, with the sharpest increases starting in 2009 and continuing through 2012 (figure 5).

Figure 4. Annual Average OPS Applications and Annual Private Sector Engineer Total Employment



Source: OIG, based on OES and PHMSA-provided data. OES data as of May 16, 2017; OPS data as of June 14, 2017.

Figure 5. Mean Annual Salaries for Engineers, 2003–2017

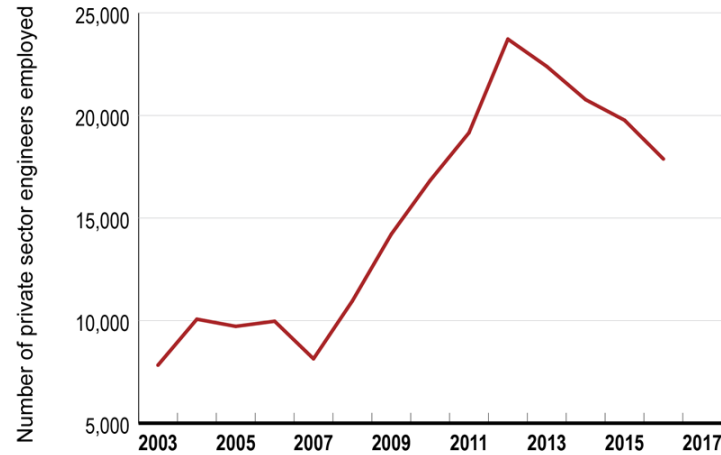


Salaries for engineers in the private sector and Federal Government, and for OPS staff at the GS-9 to GS-15 levels.

Source: OIG based on OES and PHMSA-provided data. OES data as of May 16, 2017; OPS data as of June 14, 2017.

From 2007 to 2012, employment of engineers in industries related to PHMSA’s work increased dramatically. This created strong industry-level factors pulling qualified engineers toward the private sector (figure 6).

Figure 6. Employment of Oil, Gas, and Pipeline Engineers, 2003–2017



Source: OIG, based on OES National Data Files. Data is weighted mean. Data as of May 16, 2017.

In an attempt to address staffing challenges, PHMSA sent a request to OPM in March 2015, asking for direct-hire authority for its general engineers (series 0801). Direct-hire authority gives agencies the ability to hire any qualified applicant, after public notice is given, without regard to the traditional competitive hiring selection procedures, such as competitive ranking and veterans’ preference. This authority is designed for situations where there is either (1) a demonstrated critical hiring need or (2) a severe shortage of candidates. PHMSA’s request for direct-hire authority was denied by OPM because the documentation the Agency submitted showed that it had received applications from 141 well-qualified candidates in the previous year.

Because direct-hire authority is geared toward improving the speed of hiring for specific candidates, and given the gap between private sector and PHMSA salaries, it is not clear that this authority alone would resolve PHMSA’s staffing challenge. The Department of the Interior, Bureau of Safety and Environmental Enforcement (BSEE), which also hires engineers, faced similar circumstances. According to a BSEE official, although the Agency had direct-hire authority, its success in hiring engineers had more to do with the ability to use special salary rates, beginning in 2011.

OPM has the authority to establish higher rates of basic pay—i.e., special rates—to help agencies address significant handicaps in recruiting or retaining well-qualified employees, or staffing problems caused by non-Federal pay rates that are significantly higher than those payable by the Federal Government. Without the ability to match private sector salaries, PHMSA's future hiring efforts may be hampered, particularly if pipeline industry conditions improve.

Conclusion

Effective workforce management is critical for PHMSA to accomplish its expanding and changing safety oversight mission. Congress' support through recent augmentation of PHMSA's employee allocation provides OPS with a unique opportunity to reimagine its hiring practices. More specifically, the Agency's dynamically changing workforce and employment marketplace require an equally responsive workforce management plan. For example, retention will be an important factor in PHMSA's ability to accomplish its mission as our benchmarking indicates that direct-hire authority alone is not sufficient to address its recruitment issues, and changes in the competitive nature of the market may continue to present employment challenges.

Recommendations

To improve PHMSA's management of its workforce practices, we recommend that the Pipeline and Hazardous Materials Safety Administrator:

1. Develop a comprehensive workforce plan by implementing the existing Human Capital Framework in accordance with the Department's Workforce Planning Guide.
2. Include in the workforce plan an assessment of whether the Agency should use retention incentives and, if appropriate, a plan for seeking authority to use retention incentives at levels above the fiscal year 2010 cap.
3. Include in the workforce plan an assessment of whether the Agency should use a special rate of pay for general engineers (series 0801) and, if appropriate, a plan for seeking authority to establish a higher rate of basic pay.

Agency Comments and OIG Response

We provided PHMSA with our draft report on October 5, 2017, and received its formal management response on November 3, 2017, which is included as an appendix to this report. PHMSA concurred with all three of our recommendations and proposed appropriate actions and completion dates. Accordingly, we consider the recommendations resolved but open pending completion of the planned actions.

If you have any questions concerning this report, please call Barry DeWeese, Assistant Inspector General for Surface Transportation Audits, at (202) 366-5630, or Kerry R. Barras, Program Director, at (817) 978-3318.

Exhibit A. Scope and Methodology

We conducted our work from December 2016 through October 2017 in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence provides a reasonable basis for our findings and conclusions based on our audit objectives.

The scope for our audit included a review of PHMSA's workforce management activities for OPS. Our audit objectives were to determine:

1. Whether PHMSA has developed a comprehensive workforce management plan to address gaps and challenges.
2. Whether macroeconomic conditions affected the ability to fill OPS vacancies and whether special hiring authorities could have alleviated such difficulty.

To determine whether PHMSA has developed a comprehensive workforce management plan to address gaps and challenges, we identified criteria pertaining to PHMSA's workforce management and related prior OIG and GAO audit findings and recommendations. Criteria we considered included:

- *GAO's Standards of Internal Controls in the Federal Government*
- *A Model of Strategic Human Capital Management*
- *Best Practices and Leading Practices in Human Capital Management*
- DOT's January 2016 Workforce Planning Guide
- OPM's Human Resources Flexibilities and Authorities in the Federal Government
- Title 5 CFR § 250.204, "Agency Roles and Responsibilities."

We conducted site visits to interview PHMSA officials at Headquarters, two regional offices, and the Oklahoma training center. We also interviewed the three remaining regional directors by telephone. Additionally, we interviewed Federal Highway Administration (FHWA) personnel acting as the Executive Agent for PHMSA, and staff at BSEE. We analyzed PHMSA plans, policies, documentary information, and data, such as quarterly scorecards and FTE numbers, workforce profiles, training-related information, organizational charts, and hiring strategies.

To determine whether macroeconomic conditions affected the ability to fill OPS vacancies and whether special hiring authorities could have alleviated such difficulty, OIG economists reviewed macroeconomic and industry-level data from the years 2002 through 2017 in order to develop comparative analyses and associated graphs. We compared business cycle data from the National Bureau of Economic Research to industry-level data on employment and wages (from the Bureau of Labor Statistics and PHMSA) and on pipeline construction (from the U.S. Energy Information Administration) using descriptive statistics and graphical analysis. We also used weighted aggregation methods to create a composite dataset of oil and gas industry and Federal engineering employment data that included engineering occupation types that PHMSA reported hiring. Finally, we used weighted aggregation on PHMSA's employment data from 2007–2017 to create a dataset of wage trends over time. We conducted the comparative analysis using these statistically aggregated and weighted datasets.

The audit team performed limited data-reliability testing on enacted and actual FTE information taken from the MAX A-11 Data Entry System, and on grade and step data taken from the Federal Personnel Payroll System (FPPS). This analysis included interviewing officials about internal controls over the MAX system, comparing data provided by PHMSA to published budget justifications, reviewing the latest Statement on Standards for Attestation Engagements (SSAE) No. 16 for the FPPS system, comparing actual FTE information from the MAX system to actual FTE information from the payroll system, and tracing a statistically selected sample (56 out of 290) of grade and step records from the FPPS system to their source Notification of Personnel Actions (SF-50s). Our testing concluded that actual FTE and grade and step information was reliable for audit purposes. Our testing concluded that enacted FTE data was not reliable for audit purposes because PHMSA could not provide documentation of how it derived the number of enacted FTE for OPS, but as it was the only and official source for this data, it was appropriate to use it in our audit. We did not perform data-reliability testing on time-to-hire data.

Exhibit B. Organizations Visited or Contacted

PHMSA Facilities

PHMSA Headquarters, Washington, DC

PHMSA Regional Offices:

- Southwest Region, Houston, TX
- Central Region, Kansas City, MO
- Eastern Region, West Trenton, NJ
- Southern Region, Atlanta, GA
- Western Region, Lakewood, CO
- PHMSA Training and Qualification Center, Oklahoma City, OK

Other Organizations

Department of the Interior, Bureau of Safety and Environmental Enforcement

Federal Highway Administration, Office of Human Resources

Exhibit C. List of Acronyms

BSEE	Bureau of Safety and Environmental Enforcement
CRS	Congressional Research Service
DOT	U.S. Department of Transportation
FHWA	Federal Highway Administration
FPPS	Federal Personnel Payroll System
FTE	Full-time equivalent
GAO	Government Accountability Office
PHMSA	Pipeline and Hazardous Materials Safety Administration
OES	Occupational Employment Statistics
OIG	Office of Inspector General
OMB	Office of Management and Budget
OPM	Office of Personnel Management
OPS	Office of Pipeline Safety
PIPES Act	Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016
SSAE	Statement on Standards for Attestation Engagements
TQ	Inspector Training and Qualifications Division, PHMSA

Exhibit D. Major Contributors to This Report

KERRY BARRAS	PROGRAM DIRECTOR
BETTY KRIER	CHIEF ECONOMIST
DAWN FRATRIN	PROJECT MANAGER
EMILY NORTON	SENIOR ANALYST
HENNING THIEL	SENIOR ANALYST
MARVIN TUXHORN	SENIOR ANALYST
JENNIFER HATCH	ANALYST
EVAN ROGERS	ECONOMIST
PETRA SWARTZLANDER	SENIOR STATISTICIAN
MAKESI ORMOND	STATISTICIAN
JANE LUSAKA	WRITER-EDITOR
CHRISTINA LEE	VISUAL COMMUNICATIONS

Appendix. Agency Comments



U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

Memorandum

Subject: INFORMATION: Management Response to the Office of Inspector General (OIG) Draft Report - PHMSA Has Improved Its Workforce Management but Planning, Hiring, and Retention Challenges Remain

Date: November 3, 2017

From: Howard Elliott, 
Administrator, PHMSA

To: Barry DeWeese
Assistant Inspector General for
Surface Transportation Audits

The Pipeline and Hazardous Materials Safety Administration's (PHMSA), Office of Pipeline Safety, hires staff that develops safety standards; inspects pipelines for regulatory safety compliance; and promotes research, outreach, and education to prevent spills and leaks in more than 2.7 million miles of pipeline routing energy products to our homes and businesses. The OIG report noted the significant actions PHMSA has taken to improve recruitment and hiring, geographic allocation, and training of inspection staff. PHMSA's Office of Pipeline Safety is nearly fully staffed with 294 of 305 full-time equivalent employees on board in 2017. The report also recognized the challenges PHMSA overcame to successfully hire engineers, often in a recruiting environment where demand exceeded supply.

PHMSA has completed additional actions to further enhance the Office of Pipeline Safety's workforce management practices. For example, PHMSA:

- Established an inspection planning model in pipeline safety that assigns inspecting engineers to each region, considering federal inspection workloads, state program workloads, incident and accident investigation results, and risks associated with pipelines operating near high consequence areas, such as population centers;
- Instituted a human resources toolkit with a *Talent Acquisition Guide* to plan and source recruiting; and
- Initiated specialized training to hiring managers on the federal hiring process to include conducting 1:1 pre-recruitment planning meetings when the need to fill a vacant position is identified.

Based on our review of the draft report, we concur with all three recommendations to improve PHMSA's management of its workforce practices. We plan to complete actions to implement these recommendations by December 31, 2018.

We appreciate the opportunity to review the OIG draft report. Please contact TaNika Dyson, PHMSA Audit Liaison, at 202-366-3122 with any questions.

U.S. DOT IG Fraud & Safety Hotline

hotline@oig.dot.gov | (800) 424-9071

<https://www.oig.dot.gov/hotline>

Our Mission

OIG conducts audits and investigations on behalf of the American public to improve the performance and integrity of DOT's programs to ensure a safe, efficient, and effective national transportation system.

OFFICE OF INSPECTOR GENERAL
U.S. Department of Transportation
1200 New Jersey Ave SE
Washington, DC 20590



www.oig.dot.gov