

CIVILIAN TALENT MANAGEMENT: A PROPOSED APPROACH FOR THE ABERDEEN PROVING GROUND WORKFORCE

**SENIOR SERVICE COLLEGE FELLOWSHIP STRATEGY RESEARCH
PROJECT (SRP) REPORT**

RESEARCH REPORT 10-002



April 2010

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ABSTRACT

The Base Realignment and Closure (BRAC) act of 2005 presents extraordinary challenges for the workforce at Aberdeen Proving Ground (APG), Maryland. In total, over 5,000 government civilian positions will be relocated to APG, and many will arrive unencumbered. In addition, the U.S. Army Civilian Human Resources Agency anticipates that over 25 percent of the current APG workforce will be eligible to retire over the next five years. The combination of these trends suggests that APG will need to hire over 25,000 civilians in the next five years, most of whom will need to possess scientific, engineering, project management, and other hard-to-find skills. In attempting to discern how best to navigate through this extraordinary human resources challenge, two major issues stand out. First, the hiring method that is currently used at APG and throughout the Army relies upon a traditional advertise-and-apply process. This leaves to chance as to whether the best person-job fit will be satisfied. Secondly, the professional development model for civilians is relatively unstructured, leaving most of the decision making with regard to education and assignments up to the employee. This contrasts with the military professional development model, where a progression of training and job assignments is highly structured to produce employees with the requisite experience and expertise needed to perform at increasingly higher levels as their career progresses. This research addresses the APG human resources challenge along three avenues of approach: 1) a survey of talent management best practices across government, industry, and academia; 2) a series of interviews with selected APG leaders soliciting their opinions with regard to the current challenge and possible solutions; and 3) an analysis of the magnitude of the problem based on FY09 personnel data. The research concludes with a recommendation to conduct further research leading to the creation of an APG Civilian Talent Management Program and APG Civilian Promotion and Placement Board as a centerpiece for the Team APG vision.

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CHAPTER 1

INTRODUCTION AND RATIONALE

Introduction, Background, and Problem Statement

The Base Realignment and Closure (BRAC) act of 2005 presents extraordinary challenges for the workforce at Aberdeen Proving Ground (APG), Maryland. By the end of fiscal year 2011, Fort Monmouth, New Jersey, is to be closed and its mission is to be relocated to APG. Also, the headquarters of the U.S. Army Test and Evaluation Command, the Army Evaluation Center, the Joint Program Office for Chemical and Biological Defense, and several other organizations are to be relocated to APG as part of the BRAC decision. In total, over 5,000 government civilian positions will be relocated to APG and many will be unencumbered. In addition, the U.S. Army Civilian Human Resources Agency (CHRA) anticipates that over 25 percent of the current APG workforce will be eligible to retire over the next five years. Putting these together, Mr. Gary Martin, Deputy to the APG Senior Mission Commander, estimates that APG will need to hire over 25,000 civilians in the next five years, most of whom will need to be scientists, engineers, and other hard-to-fill positions. The competition for capable scientists and engineers is already high, but APG's ability to meet its hiring targets is made even more difficult by three additional factors. First, the BRAC law also calls for relocating the Defense Information Systems Agency (DISA) from Washington, D.C., to Fort Meade, Maryland, which is only 65 miles away from APG. DISA and the Fort Monmouth community generally rely upon the same skill sets, i.e., communications-electronics engineers, information assurance specialists, technical analysts, etc., and these are some of the most difficult to fill specialties in the entire engineering field. Secondly, APG is in a relatively remote location. Many potential transients from Fort Monmouth and Washington D.C., have commented, via personal communication with the researcher, that they do not wish to relocate to APG because it is too far from the urban setting

that they have become accustomed to. A related issue is that there is no established university community in the local APG area, notwithstanding the efforts of the local community college to attempt to fill the gap. A third issue that compounds the complexity of the problem is that APG is composed of over 65 different organizations (see list in Appendix A), each of which is managed separately and distinctly from the other. Each organization at APG uses the standard competitive process for filling vacancies, and there is no organization or structure for managing the fill process. As a result, if a scientist or engineer does decide to work at APG, he or she can



Figure 1. Competitive Environment for Labor at APG

offer his/her services to the highest bidder at any point he or she chooses, creating additional turbulence and uncertainty in an already fragile labor force environment. With the advent of pay banding, this marketing of oneself to the highest bidder has the potential to create pay and grade inflation, leading to the risk of employees prematurely peaking in salary growth and employers with little available incentives to offer to encourage employees to take on new tasks. Thus, the labor force environment for a hiring manager at APG takes the form of a funnel, as shown in Figure 1. A manager who is able to navigate through the various levels of competition and

successfully obtain the personnel that he or she needs is fortunate, although the fortune may be fleeting if the manager cannot find creative ways to keep the new hire on board in the face of continuing competition. The bid-and-proposal type of hiring process may also lead to a sub-optimization of results for both the employer and the employee. Using the current process, the employer cannot have confidence that all of the potentially qualified employees were aware of and applied for an advertised vacancy. Also, the employees cannot place a currently advertised vacancy into a context of other possibilities that may arise in the near future. Employees have no readily available resource to allow them to determine which positions may become available in the near, mid, and far terms. They also have no easy method for determining which organizations at APG might be able to take advantage of their skills or offer them interesting opportunities. As a result, employees and employers are left to make long-term hiring decisions based on relatively blind hunches resulting from the analysis of job descriptions, resumes, and interviews at a given point in time. Although this has clearly been “the way we’ve always done it,” it seems to beg the question as to whether there might be a better way.

Recently, the Deputy Under Secretary of the Army recognized that it faced an Army-wide challenge with regard to the quantity and quality of its senior civilian leadership (Department of the Army, 2009). One component of the solution was to create a Civilian Talent Management Program (CTMP) managed by a Civilian Talent Management Office (CTMO). The CTMP is currently focused on the approximately 11,000 Army civilians at the GS-15 pay grade (or equivalents). Its intent is to create a more visible and structured career path for these employees so that they can more effectively operate at the Army enterprise level and be more competitive with the members of the military who generally have a much broader career background. The CTMP is implemented via the management of a database containing each employee’s education and training history, employment history and interests. These are then

matched to vacancies in Army Enterprise Positions. The program began in 2009, so it is too early to assess results and success, but the methodology is intriguing. Could this type of an activity provide a potential solution to the talent management challenges at APG? Would the APG community support the creation of a local implementation of this program? Should it cover more than the most senior employees? Would the benefits outweigh the costs?

Purpose of the Study

The purpose of this research is threefold: 1) to explore available best practices for managing talent in a competitive human resourcing environment, 2) obtain a sensing of the opinion of APG leadership with regard to the conditions under which an APG talent management program might be supported, and 3) estimate the effort required to administer such a program. A survey of leadership opinion is important due to the confederate nature of the APG community. Although the commander of the U.S. Army Research, Development and Engineering Command (RDECOM) is the senior mission commander on the installation, the list of APG tenants in Appendix A clearly demonstrates that APG hosts a wide variety of organizational command and control structures, many of which have no direct command and control relationship to RDECOM. Thus, if an APG community initiative is to be formed and succeed, it will need to be the result of voluntary cooperation on the part of the APG tenants. The survey of best practices is intended to provide for the APG leadership a foundation of ideas and methods that might be considered for adoption into an APG talent management program if one is deemed desirable.

Significance of the Study

APG leadership has long recognized that the BRAC offers a “once in a generation” opportunity to create new operating paradigms for the Aberdeen Proving Ground community (APG Cohort, 2009). This recognition has been acted upon by designing buildings for the “Team C4ISR” community that enable a closer working relationship amongst functionally related

personnel, creating a robust network infrastructure that is designed with present and future requirements in mind, the creation of an APG cohort training program to enable senior managers to learn about and work more closely with employees in different APG organizations and several others. This could also be an ideal time to experiment with a new method for managing the federal civil service. Beginning with talent management concepts and principles that have been developed over the past 20 years, APG has an opportunity to put into place a structured career management path for every APG employee. Founded on the assumption that an employee can complete a successful and satisfying career while residing entirely at APG, a career management pathway and structure can be put into place to allow that employee to develop and grow by taking full advantage of APG's organizational and functional diversity. Rather than relying upon an employee's individual initiative and/or personal contacts to drive decisions on when to change jobs and where to look for the next job, a structured process could be adopted, not unlike that used by the military, to periodically review each employee's record and determine, via mentored individual development plans, where the employee should go next in order to enhance his or her career. The advantage of a more structured process is that it provides both the employer and the employee a better ability to forecast vacancies and available applicants. It also allows leadership to work collaboratively rather than competitively to manage human resource shortages. Finally, it creates a career development pathway for civilians that brings the best of the military personnel management model without the turbulence associated with geographic relocation. In recognition of these advantages, the director of the U.S. Army Civilian Human Resources Agency has suggested that the APG Civilian Talent Management Program described in this research may be of interest to the broader Army, and that the APG program could serve as a pilot for Army-wide implementation as an expansion of the Army's current Civilian Talent Management Program.

Overview of the Methodology

There is no evidence indicating that the leaders of the various APG organizations have been queried as to their interest in establishing an APG talent management program. An applied research methodology was therefore used to gather descriptive data on the opinion of leadership with regard to the conditions under which they may be willing or unwilling to support such an effort. Interviews were conducted with a sampling of leaders or designated representatives of various APG tenant organizations. Data was also collected regarding the population of the APG workforce to assist in determining the scope of the possible effort. Summary data was then reviewed and analyzed to identify general tendencies for further exploration. The survey of talent management best practices was accomplished via a literature review. These best practices are expected to be particularly important and useful as input for development programs for the large number of interns that APG expects to hire over the coming years.

Research Question and Definition of Terms:

Do APG leaders support the creation of an APG Civilian Talent Management Program?

“APG leaders” are the commanders or directors of each tenant organization at APG as listed by garrison, Aberdeen Proving Ground, in Appendix A.

The “APG Civilian Talent Management Program” is defined to be:

- A database of APG employees containing information similar to that managed by the CTMO.
- A policy that outlines the operation of the program, roles, responsibilities, and intended outcomes.
- An office that manages civilian talent at APG, matching vacancies with available talent to optimize organizational mission accomplishment and individual professional development.

Research Hypotheses

H1: APG leaders will support the creation of an APG Civilian Talent Management Program if it is scoped properly and affordable.

H2: Current data management methods are sufficient to facilitate the management of an affordable APG civilian talent management program.

Limitations

This research does not seek to offer with indisputable analytical rigor the proof of a particular postulate or causality. Rather, it is designed to help bring to light and clarify the human resource challenges that APG will be facing in the coming years and suggest possible methods for managing the challenge. It is also designed to provide the opportunity for senior leaders at APG to frame the problem from their perspectives and to provide input toward the development of possible courses of action. Loosely structured interviews were therefore conducted as a primary means for determining interest in a more structured personnel management approach. The results are therefore a collection of opinions and recommendations from a sample of APG senior leaders as time was not available to survey the entire population. The researcher brings a clear bias toward creating a civilian talent management program at APG. The rationale for this bias is presented in several areas of this report without an equivalent treatment for either not creating the program or for pursuing alternative approaches that may satisfy the same objectives. This is a limitation in the study. Although the opinions of the interview subjects were expressed clearly, either positively or negatively, the reliability of the results can be readily questioned as opinions can change over time or with new information.

The population data also contains some significant limitations. The vacancies are treated as additive to the number of current positions, with the rationale being that, in several instances, vacancies exist in series and grades for which there are no current positions. Time did not allow

for a detailed scrub of this data to determine how vacancies were forecast and how the data was collected and populated. Also, the data does not facilitate comprehensive identification of positions by organization. This is a significant limitation as it does not allow the complete segregation of the population into groups that, for example, can map to organization decisions to refrain from participating in talent management programs. Attempts to obtain complete data at the organizational level from the U.S. Army Civilian Human Resources Agency are ongoing. The advent of multiple personnel management systems (General Schedule, National Security Personnel System, Acquisition Personnel Demonstration, Science and Technology Personnel Demonstration, etc.) make the collection of complete organizational statistics difficult because there is no easy method for cross-leveling grade structures within a job series.

CHAPTER 2 LITERATURE REVIEW

Introduction to the Literature Review

In their 2002 book *Execution: The Discipline of Getting Things Done*, Larry Bossidy and Ram Charan make the case that having the right people in the right place is “one job that no leader should delegate” (Bossidy, 2002, p.109). APG’s near-term concern as a result of the BRAC is not whether it will have the right people in the right places, but whether it will have enough people to fill all of the available spaces. The impetus for this research was the recent creation of the Army’s Civilian Talent Management Program (CTMP) and the question as to whether it might be a useful framework for mitigating APG’s human resource challenges. Therefore, the review begins with an overview of the Army’s CTMP policies, methods, and objectives. It then places the Army’s challenges into the context of U.S. executive branch and Department of Defense policy and guidance with regard to talent management, with a particular emphasis on the military talent management model as exemplified by the Army’s Officer Personnel Management System. Academic research is then reviewed to discern the state of the practice with regard to talent management in general and to identify macro-level best practices that should be considered when creating a talent management program. The criteria for selecting the research were currency and relevance to the issue of talent management practices or lessons learned.

The Army Civilian Talent Management Program

The U.S. Army recognized a need for a formal talent management program in January 2009 with the release of an interim policy that created the Army Civilian Talent Management Program (Department of the Army, 2009). In that policy, the Army recognized that the current operating environment requires an expanded use of civilians in the generating force, or

institutional side of the Army due to the demands on military personnel during this period of persistent conflict. At the same time, the Army recognized that the Base Realignment and Closure (BRAC) scheduled for fiscal years 2010 and 2011 would create mobility and retention challenges in the midst of an environment where the Army is already facing competition for critical skills from other government agencies and industry. The combination of these challenges provided sufficient evidence for the Army to conclude that it needed to have a succession plan for senior leaders. The Army's plan, as stated in the policy, is to create opportunities for civilians to acquire the same breadth of experience that their military counterparts routinely acquired through its military officer development program. Specifically, the stated intent of the Army Civilian Talent Management Program is to "provide civilians with the opportunity for assignments with multiple commands and educational opportunities; cultivate senior civilian leaders with a joint mindset through joint assignments; develop senior leaders who are comfortable operating in a global, multicultural environment and lay the groundwork for a program that will develop senior leaders" (Department of the Army, 2009). These objectives are in line with the first goal in the Department of Defense Human Capital Strategic Plan for 2006-2010, which states that "DoD is seeking to more effectively manage its pipeline of future leaders through aligned recruitment, selection, education, training, and development strategies" (Department of Defense, 2006, p. 10). The implementation of the Army policy is centered on the creation of Army Enterprise Positions—senior positions at pay grade levels equivalent to GS-15—that have broad purview over elements of the Army enterprise. Candidates to fill these positions would be selected from a group of Army Enterprise Employees, which are defined as Army civilians earning the equivalent of a GS-15, Step 1. The intent is to rotate personnel through these positions every 3-5 years in order to build a broad base of experience over time.

Talent Management from an Executive Branch Perspective

In his keynote address to the Excellence in Government Conference, July 20, 2009, John Berry, Director of the United States Office of Personnel Management, noted that the United States needs to be concerned about current civil servants who might be looking at the private sector as they contemplate the costs of college for their kids. He also noted the need to hire new workers to replace those who are retiring and to recapture the expertise that has been lost through outsourcing. He expressed concern that although the civil service has, by and large, the best workers in the world, it does not have the systems or policies needed to support them. He stated that this is of particular concern with “hundreds of thousands of Feds” projected to retire in the next 10 years. Most recently, the Department of Defense Quadrennial Defense Review (QDR) Report named an inadequate Defense Acquisition Workforce as one of four chronic problem areas in the defense acquisition system:

The Pentagon’s acquisition workforce has been allowed to atrophy, exacerbating a decline in the critical skills necessary for effective oversight. For example, over the past 10 years, the Department’s contractual obligations have nearly tripled while our acquisition workforce fell by more than 10 percent. The Department also has great difficulty hiring qualified senior acquisition officials. Over the past eight years, the Department has operated with vacancies in key acquisition positions averaging from 13 percent in the Army to 43 percent in the Air Force. There remains an urgent need for technically trained personnel—cost estimators, systems engineers, and acquisition managers—to conduct effective oversight (Department of Defense Quadrennial Defense Review Report, February 10, 2010, p. 76).

This was also a key concern of the Under Secretary of Defense for Acquisition, Technology and Logistics (USD[AT&L]) in his June 2007 release of the AT&L Human Capital Strategic Plan. In the plan, he noted that between 1997 and 2002, the number of North American

students receiving an engineering degree as their initial degree remained stable at about 100,000 while the number of Asian students receiving engineering degrees increased by 50 percent to 500,000. He also noted that between 2004 and 2014, the expected growth rate for individuals aged 45 years and above in the U.S. labor force is 13.1 million but the expected growth rate of for those aged 44 and below is just 1.7 million. More critically, the U.S. labor force in the group of 35-44 years is expected to decline by almost 3 million during the same period. Thus, at the time when the Army needs to backfill the ranks of the baby boomers with technically skilled senior leaders, it will find that the available labor pool for that age group is smaller than it has been since World War II, that the subset of that group with the requisite technical skills will be proportionately stagnant and that the competition for this small number of technically qualified 35-44 year olds will be stronger than ever, with the number of science and engineering jobs increasing by 26 percent during the period 2002-2012 (Department of Defense, 2007).

Military Talent Management: The Army Officer Personnel Management System

The stated purpose of the Army's Civilian Talent Management Program is to develop a "structured professional development system" for civilians that is comparable to the system currently in use by the military (Department of the Army, 2009). The emphasis is on the variety of assignments that will enable future senior leaders to operate comfortably across and in coordination with multiple levels and organizations throughout the Army. The Army's interim policy for civilian talent management thus creates enablers for management and employees to effect this broadening of assignments through registration in a central database, designation of Army Enterprise Positions (AEPs) that are suited for rotational assignments, posting of vacancy announcements, and implied preferential treatment for Army Enterprise Employees to fill AEPs. These are, indeed, elements that can correlate to the assignments portion of the Army's Officer Personnel Management System (OPMS). There is, however, far more to OPMS than diversity of

assignment. At its outset, DA PAM 600-3, Commissioned Officer Professional Development and Career Management, highlights the foundational role that culture plays in the execution of OPMS:

Soldiers enter the Army with their own values, developed in childhood and nurtured through experience. We are all shaped by what we have seen, what we have learned, and whom we have met. But once soldiers put on the uniform and take the oath, they have opted to accept a warrior ethos and have promised to live by Army Values. (DA PAM 600-3, 2010, p. 2).

Thus, from the very beginning of their careers, Army officers sign up to a new value system, a new culture, and an agreement to “fight through all conditions to victory no matter how much effort is required” (DA PAM 600-3, 2010, p.1). All officers undergo an extensive period of initial training, whether via the academies, the Reserve Officer Training Corps or the Officer Candidate School, which provides the foundational elements for cultural adaptation and a common baseline of shared experience. From there, each officer is further trained in a branch or functional specialty and is then assigned to duty. Further training and education is then intermingled with varied duty assignments, most of which are for periods of three years or less. Thus, as officers reach the 20-year point in their careers, they will have had extensive training and education, provided according to standards set by the Army Training and Doctrine Command, and they will have completed five or more assignments at various levels and in various organizations.

Conflicting Views and Purposes: The Department of the Army Civilian

The Army civilian workforce is different in many respects. Obviously, the civilians do not undergo the rigorous initial physical and skills development training provided to the military. Civilians are also, in general, not bound to a particular uniform and are free to accept and decline assignments as they desire. Culturally, officers and civilians work within the same set of Army

values (loyalty, duty, respect, selfless service, honor, integrity, and personal courage) but the civilian can, in most cases, choose to take another assignment or resign from service at any time he or she so chooses. Also, the stated role of civilians in the Army is different, with emphasis placed on “stability and continuity during war and peace” (Army Civilian Corps Creed, 2010). Stability and continuity are in fact key elements of value that the civilian corps brings to the Army enterprise. With military leaders rotating assignments every 2-3 years, it is typically the civilians who hold the corporate memory and facilitate the smooth continuation of multi-year efforts. With stability and continuity being then a core value of the civilian corps, it is no surprise that the civilian workforce lacks the breadth of experience desired by senior leaders. Thus, the Army CTMP will face a cultural incongruence, one that may also impact the success of a more localized implementation at APG.

The differences between the military and civilian promotion systems present a challenge to the Army CTMP. Military officers, like civilians, are evaluated by their first- and second-line supervisors. Military promotions, however, are decided by a board of officers who generally do not personally know the officer in question. Certain specific requirements (education, physical fitness, valid photo, etc.) must be met in order to qualify for promotion. Beyond that, decisions are made by the board based on the raters’ evaluation of performance in assignments, type of assignments completed, skill requirements of the Army, etc. Assignments are made with respect to an officer’s rank. Thus, a promotion decision is made by an impartial board based on an officer’s potential for a higher level of service and an assignment is then provided which will then exercise that higher level of performance. In the civilian system, promotions are generally accomplished as a result of an individual employee’s ability and desire to compete for a vacant position at a higher level. If the employee successfully competes, then the promotion is granted and the employee is considered to be competent at that level unless he or she proves otherwise.

No specific requirements need to be met in order to be hired into a higher level position other than demonstrated experience at the next lower level, usually for at least one year. The promotion decision is made by the hiring authority at the local organization, with fitness for the particular job at hand and relative merit to the available competition being the primary determinants of the hiring and promotion decision. Civilians therefore reach the level of colonel equivalent (GS-15) by competing for available positions with a local focus on the part of both the employee and the hiring manager. With the advent of the Army CTMP, however, a paradigmatic shift is being proposed at the GS-15 level. Although the specific application and hiring actions may still be executed between individuals, the Army is proposing to intervene as an institution, suggesting that employees should be time limited in their positions and that they be reassigned to positions that are organizationally, functionally, and/or geographically different than previous positions. This, then, is a change in the psychological contract between employee and employer at one of the most difficult times—the latter stages of one’s career. This change is significant, especially in light of the differing cultural underpinnings between the military and civilian promotional environments. From the beginning of a military officer’s career, his or her promotion decisions are made by the institution, thus engendering an allegiance to the institution. Civilian promotions, conversely, are fundamentally founded on personal relationships. Typically, the final hiring decision is made after a personal interview. Once the hiring decision is made, a natural affinity is created between the employee and the hiring authority. Future evaluations of the employee will be focused through the prism of the hiring decision and working relationships will be adjusted on both sides to retain and reinforce the merits of the hiring decision. The Army CTMP therefore offers a significant departure from the traditional tenets of the Army civilian corps culture. Talent management research suggests that successful efforts will fit into the

culture of the organization. The Army may therefore be challenged in its effort to implement the CTMP unless the tenets of the program are inculcated throughout all levels of the workforce.

Talent Management from an Academic Perspective

The loss of knowledge due to the retirement of baby boomers, a projected shortage of workers, and an overall aging workforce is what Thomas Calo calls a “perfect storm” that managers will have to endure for many years. He also notes that the phenomenology that is hypothesized by this APG-oriented paper—that previous methods of acquiring talent may not be effective in the future—is actually a global reality. A 2006 study published in *McKinsey Quarterly* noted that, while companies view the ability to manage talent effectively as a strategic priority, research indicates that “senior executives largely blame themselves and their business line managers for failing to give the issue enough time and attention. They also believe that insular ‘silo’ thinking and a lack of collaboration across the organization remain considerable handicaps. Moreover, executives who think that their companies' succession-planning efforts are deficient don't, on balance, see talent-management processes and systems as the chief problem (Guthridge, 2006, p.6). Thus, this research is grounded in the expectation that many, if not most APG leaders may not recognize talent management as an emerging problem in their organizations and may not be initially supportive of actions and expenses that may be needed to address the problem. A crisis of talent does not instantly and obviously appear. Instead, it emerges slowly over time and does not become apparent until organizational results begin to decline relative to expectations (Semb, 2009). There is evidence to indicate that the United States has been suffering from an emerging talent crisis for over 20 years, but its appearance is fleeting depending upon the ebb and flow of economic conditions. Many credit Peter Senge with planting the seeds for a focus on talent in 1990 with the release of his seminal book, *The Fifth Discipline: The Art and Practice of the Learning Organization*. Senge described a learning organization as

one "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together" (Senge, 1990). People who demonstrated these abilities were considered to be "talented" and organizations began to clamor for this talent as the advent of the World Wide Web portended of a new way of doing things and of a "new economy" (Nasar, 1988). Talent management, as a distinct component of human resources management, traces its popular roots to a 1998 McKinsey report that exposed the "war for talent" as a critical driver of corporate performance (Chambers, 1998). In 2004, the *Human Resource Planning* journal listed web-based job markets, e-learning, fair treatment of employees and employee retention as key issues/trends that would need to be addressed if companies wanted to win "the war" (Frank,2004). Since that time, numerous studies have been conducted internationally to define what "talent" is, how to manage it and how an organization can be successful in a talent-constrained environment.

Competing Perspectives

There is not universal agreement on this issue. Some claim that talent management is an attempt on the part of human resources professionals to simply repackage their role in a more enticing manner to enhance their legitimacy, but Xin studied this intensively and determined that talent management, as a discipline, is indeed distinct from conventional human resources management (Xin, 2009). Collings (2009), upon an exhaustive review of the field to date, has defined talent management to be "activities and processes that involve the systematic identification of key positions which differentially contribute to the organization's sustainable competitive advantage, the development of a talent pool of high-potential and high-performing incumbents to fill these roles, and the development of a differentiated human resource architecture to facilitate filling these positions with competent incumbents and to ensure their

continued commitment to the organization (p.311). In seeking a deeper understanding of the talent management process, Calo cites Peter Cappelli's definition of talent management as "simply a matter of anticipating the need for human talent and then setting out a plan to meet it" (Cappelli, 2003) and then notes that the old ways of planning to meet it may not work anymore.

[Cappelli] claimed that most organizations have not proactively addressed the challenge of talent management because they have either considered the issue meaningless, or they have relied upon outside hiring whenever a need for talent has arisen. As the demand for talent continues to grow, however, so will the competition for that talent. Organizations that rely primarily upon external hiring to buy the knowledge lost through turnover and retirements will find that strategy to be decreasingly effective. When the talent supply exceeded demand, external hiring may have made sense as a primary strategy, but the talent pool is shrinking and the demand for talent is escalating. Even if external talent can be bought, the competitive costs will continue to increase (Calo, 2008, p. 409)

Competitive costs should be of particular concern for APG at the present time, as budgetary pressures are beginning to shed more scrutinizing light on the federal payroll. A recent *USA Today* analysis of 2008 data from the Bureau of Labor Statistics noted that the average government salary was higher than the private sector in 80 percent of the occupations studied, to include the science and engineering occupations that are most critical to the APG mission (Cauchon, 2010). Even if increasing costs were not an issue, Calo notes that reliance on external hiring presents issues with organizational and cultural fit and can also create concerns on the part of those who are passed over for promotion in deference to the outside hires. To combat these issues, he suggests that managers be more proactive in identifying potential vacancies and successors and then creating an accelerated learning plan for the identified successors that facilitates the transfer of knowledge from the incumbent workers to the successors. He also

suggests that a more modern view of retirement be adopted into policy so that older workers will not feel compelled to retire as soon as they are eligible. Concepts such as flextime, part-time, telecommuting, and phased retirement can be used to ease the transition from one generation to the next by reducing personnel turbulence and by facilitating knowledge transfer. He takes this a step further by promoting the idea of “age appropriate career tracks,” where jobs are adjusted to fit the capabilities of the individual rather than having the individual strive to fit the needs of a particular, pre-defined job. This would include tasks such as mentoring and coaching so that explicit and tacit knowledge can be effectively transferred to new hires. Cappelli notes that policies such as these, which encourage older workers to remain in the workforce, can have the beneficial effect of increasing the total size of the workforce, thus mitigating the impact of the baby bust with the side benefit of increasing the average knowledge level of the overall workforce. He also suggests that the fear of a leadership crisis emerging as a result of senior level, baby boomer retirements and a reduced pool of baby bust talent available to replace them is actually overblown. Despite the general flattening of organizational structures in response to the increasing use of information technology, he asserts that the organizational pyramid will remain and that the supply of potential leadership candidates will continue to exceed demand simply because the number of executive positions will remain far less than the number of managerial positions. He also strongly cautions against believing in the notion that demographics have a significant impact on the available labor pool. He notes that the unemployment rate, even in boom times, has never been low enough to trigger an inflationary cycle all on its own. He suggests instead that the primary issue facing organizations today is retention. The breaking of the psychological contract between employers and employees in the downsizing activities of the early 1990s caused employees to rethink values such as loyalty and stability, thus causing any particular employer to believe there was a labor shortage simply because he could not keep

positions filled. It is interesting to note that Cappelli's article was written in 2003 after the fall of the dot-coms was complete and a recovery was beginning. As the recovery from the current recession continues, the same dynamics will likely play out again. As organizations at APG begin to suffer from a sizable number of vacancies, managers will need to look closely to determine if it is due to a labor availability problem or a labor retention problem. If it is the latter, a deeper look should identify the reasons why employees chose to change jobs and where they decided to work instead. Research conducted by Dr. Alan Jenkins at the Naval Air Warfare Center suggests that engineers and scientists in the Defense Acquisition Workforce are easier to retain if they can see a direct linkage between their efforts and the mission of the organization (Jenkins, 2009). If employees see it in their best interest to relocate from one employer to another, all within the confines of APG, is this beneficial or detrimental to the organizations, the Army and/or to the employees? A talent management activity at the APG level may help to provide some answers to these difficult questions.

Valarie Garrow, an associate director at the Institute for Employment Studies in the United Kingdom (UK), describes talent management as being about “positive things—doing things for you best people, investing in developing them, building on potential and, therefore, helping people makes the best use of their strengths and improve on their weaknesses (Garrow, 2008, p. 389). Alternatively, her colleague at the same institute, Peter Reilly, considers the term “talent management” to be not much more than hyperbole, similar to “employee engagement” (Reilly, 2009). The definitions are far from clear, yet the terms have value because they capture the general notion that managers need to pay attention to the developmental needs of their employees. The Defense Acquisition University, for example, has recast their version of the Army's “MyBiz” portal that it uses for managing individual development plans and performance appraisals as a “talent management system” (DAU, 2009). This gets to the question of whom or

what is considered “talent?” Is it the entire workforce, the up and comers, or only those who already occupy senior positions? Or is it a set of traits, qualifications, or metrics of performance? Researchers in the U.K. have devoted extensive effort to this issue. In 2006, the Chartered Institute of Personnel and Development settled on “the systematic attraction, identification, development, engagement/retention, and deployment of those individuals with high potential who are of particular value to the organization” as their definition of talent management (CIPD, 2006). Boris Groysberg, an associate professor at the Harvard Business School, refers to talent management more directly, describing it as “competing for the best, the brightest and the hardest working: those overachievers who regularly outshine the merely competent” (Groysberg, 2008). The Army has currently defined “talent” to be those who are paid at a level equivalent to GS-15, Step 1 on the General Schedule pay scale (Department of the Army, 2009). The Army has suggested that its talent management program may expand to include lower grades but this has not yet occurred. Reilly points out that the definition of who is included in any talent management program is the key to defining the activities of the program. He recalled Shell Oil Company’s notion from the 1960s that “HAIR” made all the difference when it came to defining talent. “HAIR stood for "helicopter," which meant being able to survey the problem from a distance, yet dive into the detail if necessary; "analytical" ability; "imagination" to be creative in solutions; and a sense of "reality" so that good ideas are well grounded in what will work in practice (Reilly, 2009, p. 382). Research tended to back this up at the time, but the HAIR moniker has since lost its appeal in management literature. Nonetheless, a more rigorous and scientifically founded definition has yet to be found. There are other aspects to consider as well. To what extent should a talent management program be used to promote diversity in the senior ranks? This is an important concern, as the representation of women holding senior executive positions in the U.S. federal government, 29.1 percent, lags behind the 46.3 percent of women in

the U.S. labor force and the 43.2 percent of women in the U.S. federal government workforce (Crumpacker, 2008). Also, how should talent management address the demographic shift issues that were highlighted by in the USD(AT&L) Human Capital Plan? Calo identifies two areas of significant concern. Of greatest concern to the public sector is the loss of knowledge associated with the retirement of the baby boomer generation. Employees tend to remain employed in the same jobs in the public sector for longer periods than in the private sector, so the amount of knowledge that they build up is theoretically greater. What role should talent management play in capturing, retaining and transferring this knowledge to the next generation? Conversely, in cases where employees are choosing to work longer, which appears to be the trend in the current economic environment, what role does talent management play in updating the skills of the older workers so that they can continue to be productive in a web-based work environment? Calo also notes that motivational factors change as workers age, with evidence suggesting that their desire for personal achievement is replaced with a desire to have a positive sense of self and a positive impact in the job. These differing motivational factors will need to be considered as part of the deployment of any talent management program.

Talent Management Best Practices

In a survey of multiple talent management best practice studies, researchers at Duke Corporate Education, have found (Fulmer, 2009, p.18) that companies that have the best leadership development programs follow strategies that include:

- A high-profile “Talent Management Conference” or “Leadership Summit” that directly links strategy and talent development.
- A curriculum of education or action learning for key transition points.
- Coaching of senior executives to allow them to practice “leading as teachers.”

- Asking the Board to meet and assess “rising stars.”
- A comprehensive plan for accelerating development and linking it to developing business needs.
- Alignment and linkage of talent development and other human resources initiatives to business strategy.

Duke also noted that success should be linked to rewards. In multiple studies that they reviewed, linking competency development to base pay, annual incentive pay, and long-term incentive pay was much more common for the top companies than for the comparison firms. Access and exposure to senior management for high-potential managers was also found to be almost universal among the best practice firms, as were ample internal training opportunities and special development assignments. In fact, the most important tool for the development of high potentials was found to be the rotation of managers across disciplines, divisions, and geographies. These developmental opportunities were coupled with special, “nomination-only” leadership development programs. Limiting participation in these highly sought-after programs allows costs to be contained and it provides an opportunity for highly motivated employees to identify themselves and be further identified to other senior leaders. This led to another important discriminator between the top companies and the comparison group: mentoring and coaching. Once the top potential talent was identified, individuals were paired with more senior, experienced mentors so that their years of experience could be transferred quickly through action learning opportunities. Karacay-Aydin (2008) proved that mentoring can be an effective tool for successful talent management applications to attract, retain, motivate, and develop talent, especially for female employees and employees from socially disadvantaged backgrounds. Duke cited PepsiCo’s Chairman and CEO, who is an Indian mother of two daughters, as an example of a best practices company for succession planning. Like the Army, PepsiCo recognized that a

significant percentage of its executives would become retirement eligible within five years. PepsiCo focused on three key components that it called, “identify, develop, and move.” Each of the three elements of talent management focused on certain tools and approaches. To develop readiness, the organization used experiences, on-the-job training, coaching/feedback/mentoring, and formal training. The third component, movement, focused on individual developmental needs that allowed employees to accumulate experience and contribute to the talent pool for the organization’s senior-most roles.

Peter Cappelli suggests that supply chain management and talent management are not too far apart and that, in today’s economic and demographic environment, supply chain management principles may be helpful in getting a better handle on talent-related challenges. He offers four principles for dealing with talent management in the contemporary environment. Like with inventories, the primary risk deals with uncertainty, i.e. how much of a certain item must I have on hand in order to meet requirements while ensuring that I am not overstocking? Whereas risk involves costs and probabilities, and where the probabilities are uncertain, one successful strategy is to reduce the costs of making a wrong decision. For example, in the talent management business, it is becoming easier to find needed talent, wherever it may reside in the world, than it is to develop the requisite talent in house. “Although the cost of outside hires typically is greater than the cost of candidates developed internally, that difference pales in comparison to the cost of losing a developed candidate to a competitor” (Cappelli, 2009, p.5). He notes that producing too much talent, or having a deep bench, is very costly and that, unlike other forms of inventory, high-quality talent does not sit on the shelf waiting to be used. Instead, it walks out the door for better opportunities elsewhere. This is a particularly important aspect of modern society that the Army should consider. Traditionally, the military spends a great deal on the training and development of its employees, both uniformed and civilian, with the expectation

that these employees will remain on staff and be able to return the benefits of their development back to the government. However, as the number of federal civilian employees covered by the Federal Employee Retirement System becomes the majority, and the demographic culture of the federal workforce becomes more populated with members of Generation X, Y, and beyond, the natural expectation of employees to remain with the government throughout their careers may not be met. Cappelli's first principle, therefore, is to apply a "make and buy" strategy to talent management by using a mix of outside hires and internally developed employees. Although uncertainty will still remain, the cost of making a wrong decision or suffering an undesirable outcome will be reduced.

Cappelli's second principle is to reduce the uncertainty of talent demand. He suggests that long-term succession plans are a mistake because they assume that we know what jobs will need to be filled in the future and which current employees will be around to fill them. In the military systems acquisition business, we already know that this cannot be done. The changing nature of the threat, the rate of change in requirements, and the changing nature of the fundamental role of the military is evidence that long-term succession planning is not likely to be productive. Instead, Cappelli suggests a portfolio management approach. Rather than developing employees to fit narrow, specialized jobs, groups of employees should be enabled with a broad range of competencies that can fit a variety of jobs. These employees can then occupy a variety of vacancies as they occur and "just-in-time training" and coaching can be applied to fill in the detailed knowledge for that particular job at that particular time. In the Army acquisition community, the Army's Senior Service College Fellowship (SSCF) program may serve as a useful example of this portfolio-based approach. It is a nine-month program for 24 students spread evenly across the Army's three geographic centers for systems acquisition (Huntsville, Alabama; Warren, Michigan; and Aberdeen Proving Ground, Maryland). The program covers a

wide range of topics, including intensive case studies in military systems acquisition, national security strategy, principles of leadership, and interpersonal communications skills. Upon completion of the program, the graduates are armed with a broad range of competencies that can be applied to a variety of senior vacancies throughout the Army acquisition community. Specific, job-related training will need to accompany placement in a particular position, but the bulk of what the graduate can deliver is already a known quantity as a result of the portfolio of education and experience that these graduates possess. Scott Brooks, the Director of the Consulting Center of Excellence Kenexa's Global Survey Practice, takes this a step further. He points to Amazon and Google as harbingers of certain preferences that can apply to talent management (Brooks, 2009). Amazon has whet the world's appetite for being able to find virtually anything that is desired and seeing it displayed in comparison with a variety of other options and competitors, all in a standardized format that allows for rapid comparison. Google has demonstrated that search algorithms work better than organized directories. Putting these together, one can see that the time is not far off when even Army employers will want to enter their talent requirements into a search tool and expect to see a list of names pop up, complete with profiles, costs, performance reviews, and contact information. In fact, the Army Enterprise Employee Toolkit on the Civilian Talent Management Office website (<https://www.csldo.army.mil/CTMO/CTMOIndex.aspx#>) is positioned to support exactly this type of activity. Army Enterprise Employees (all GS-15 equivalents) are encouraged to enter their personal information into the toolkit, which can then be shared with any potential Army employer. The Army is also ensuring that the information is standardized and can be used for credible comparability. It is the Army, not the employee, who populates the fields covering salary, performance appraisals, awards, and training. In this way, the Army has set the conditions for meeting future talent requirements by utilizing a Google/Amazon approach to the problem. This investment in automation as a talent management

enabler is also in line with trends in industry. The October 2009 issue of *HR Focus* reported that many employers are planning to replace their manual talent management processes with automated ones that “integrate compensation, recruiting, performance management, learning management, career development and succession planning” (p.8). Improved automation is critical for an organization the size of the Army, and it will be a key investment requirement in order to establish a feasible talent management program at APG and should be considered as part of the overall investment cost of training and development. Improved automation of employee data actually helps to improve the return on the overall training and development investment, which is Cappelli’s third principle.

Just as with just-in-time inventories in supply chain management, a greater return on developmental investment can be achieved through relying on shorter-term, higher-confidence requirements forecasts. The Army’s SSCF program can again serve as a useful example. The SSCF program begins at the end of July each year and ends in the middle of May the following year. All 24 students are therefore looking for vacancies to fill in the month of May. Cappelli might suggest that the time phasing of the three geographic locations be shifted with three months of separation between them so that a smaller number of graduates becomes available more frequently throughout the year. Of course, this would need to be balanced against the logistical issues associated with smaller but more frequent classes, but the point is well taken. There is a sweet spot between long-term succession planning and no succession planning that can help to gain more value from developmental investments. Another way to get more value from developmental investments is to ask the beneficiaries to devote some of their time to additional projects beyond their primary job duties or by offering a self-nomination to try out certain senior-level positions. Cappelli points out that acting or temporary fills for critical senior

positions are one of the lowest cost and lowest risk methods for determining who is interested in those positions and what the best fit might be.

This then leads to Cappelli's fourth principle, which is for the employer to take back a little more control in employment marketplace. In the industrial age of the early part of the last century, it was not uncommon for employers to spot potentially key talent and groom them for senior positions to the exclusions of all others. This was considered the right of the employer but it fell victim to the trappings of human nature, where competence and potential tended to look like the mirror image of the person doing the hiring. Emphasis on equal opportunity employment then created a backlash, where the employer essentially withdrew from the process and allowed the available labor pool to determine who would be hired based on who desired to compete for an available position. Cappelli argues again that there is a most effective middle ground in this area. Employers frequently do have a solid sense of whom inside or outside their organization may be best suited for a particular position, but they also should be fair and open when considering possible candidates. He notes that this is one of the newest developments in talent management, where employers are attempting to mitigate risk by negotiating compromises between the employer's and the employee's interest in career advancement. Some employers are doing this by offering information about possible career paths and describing how some individuals have been able to advance in the past, while others are taking a more aggressive approach by directly negotiating compromises between the interests of the employer and those of the employees.

Focus and Fit: Applying Talent Management Principles to APG

Valarie Garrow identifies "focus" and "fit" as being two key areas that need to be thoroughly addressed as part of a sound talent management program. Focus deals with the organization's own understanding of what it wants to achieve from a talent management effort.

Beginning with the organization's mission, vision, goals, and objectives, talent management efforts should align to these as a step toward successful organization mission accomplishment. A gap analysis can be performed by looking at those personnel-related barriers that may inhibit successful mission accomplishment. Typical issues may be lack of depth in a leadership pipeline, insufficient functional and/or cultural, racial or gender diversity, insufficient pool of and/or quality of applicants for entry-level positions. Richard Arvey, head of the Management Department at the University of Singapore, offers that one way to accomplish this is by looking at talent in the same way that businesses evaluate other types of assets, focusing on risk assessment. In other words, what type of talent does the organization possess versus what is needed? How should the gap be addressed—from the outside or by increasing development efforts on the inside? What are the costs, risks, and returns (Arvey, 2009)? Every organization will have unique areas of focus to address their particular needs, but there are four broad categories for management to consider. If an organization already has a framework for developing candidates for senior-level positions, then a light touch, step-by-step approach may be all that is needed to ensure that future needs are met. This involves identifying potential candidates and then proactively ensuring that they take the right steps in their career progression so that they have the requisite skills and experience to fill senior positions. The most common focus for talent management is on filling the leadership pipeline. This requires an understanding of who is potentially in that pipeline and what their developmental requirements might be in order to progress further up the ladder. Some organizations begin this process by identifying potential senior leaders, or fast-trackers, very early in their careers and then grooming them through successive educational and assignment opportunities. Other organizations simply look at the next level down to determine the pool of potential candidates; in some cases they may need to look outside of the organization if the in-house talent is deemed to be insufficient. There are

pros and cons with each of these approaches, with the primary concerns being the impact on both the selectees and the non-selectees if an early grooming approach is chosen and the lack of a viable succession plan if an early, proactive approach is not taken. Many organizations use a hybrid approach, identifying potential fast-trackers early in their career but also opening up the competition to a broader audience in the interest of preserving fairness of opportunity and allowing for the identification of viable candidates who may have been missed as part of the grooming process.

A third type of talent management focus is not about career progression or leadership development but on functions, levels, or workgroup shortages that may be challenging to satisfy. This is frequently accomplished in the DoD acquisition community, where specialties such as engineering and contracting are targeted for recruitment. Also, moving from one level to the next can be a particular focus of a talent management effort. For example, members of the DoD acquisition workforce are expected to achieve Level III certification in their primary career field and they are also encouraged to become certified in multiple career fields. Rather than being a leadership pipeline development program, this type of talent management focus is oriented more toward attaining a particular level of competency within the workforce, although competence is clearly a desirable trait for senior leaders. On occasion, it may be necessary to focus a particular talent management effort on critical but hard to fill positions. An illustrative example may be the position of a university president or chancellor. Garrow notes that a dedicated outside recruitment is usually required for these types of positions, as it is unlikely that an individual who has been in the organization for a long time will have the breadth of knowledge and experience desired for such a position. The main point about focus is that the organization needs to fully understand the problem that it is trying to solve with a talent management program and that the program be designed to solve that problem before it proceeds toward implementation.

Once the focus of a talent management program has been established, the “fit” of the program to the organization, its employees and its culture is of critical importance. Garrow notes, however, that the introduction of a talent management program may be a method for signaling the need for a more general culture change as a result of changes in the operating environment. This could easily apply to APG, where there may be a desire to transition the “Team C4ISR” concept, originally in place at Fort Monmouth, New Jersey, to a “Team APG” concept. In that type of scenario, “fit” would involve both an understanding of how to successfully implement a talent management program for the individuals at APG while also applying a new “focus” toward a paradigmatic shift in how the various organizations at APG interoperate with each other as members of a team. A proper fit requires an understanding of the workforce and of the psychological contract between employees and employers. For example, at APG, do employees feel more closely aligned to their organization, their functional specialty, their location, or some other factor? Will employees see a talent management program as an enhancement or a breach of their psychological contract? Managing expectations is a critical component of “fit.” Once certain employees are chosen to be in a “talent pool,” the employees who were not chosen may consider themselves to be unfairly treated. Those who are chosen may expect certain benefits to accrue as a result of being chosen, and managers may expect more commitment, dedication, and effort from those who are chosen. If these and other expectations are not managed carefully, a well-intentioned talent management program can create more problems than it solves. Conducting open and frequent discussions about expectations and providing multiple opportunities for employees to participate are some known methods for ensuring a good fit of the program to the workforce. Fitting the program with human resource policies is also important. Current policy may have been designed without consideration for the need for talent management and therefore policy may need to be adjusted, waived, or experimented with in

order to successfully implement a talent management program. Human resources personnel are key members of the planning and implementation process and should be brought in early as strategic partners with senior leadership in order to ensure that talent management and policy work together. A final aspect of “fit” involves the development of a *talent mind-set*. This is a shared view of the effort on the part of senior leaders, management, and especially first-line supervisors. Senior leadership needs to demonstrate commitment and remain committed throughout the process. Line managers need to understand the broader objectives and be willing to participate in the face of potentially losing a valuable employee to a developmental opportunity. This is best accomplished by managing the program via a board of assessors or evaluators comprised of a horizontal and vertical sampling across the communities that participate in the program. These “talent panels,” supported by human resources professionals, are the key to successful implementation outcomes and require a measure of sophistication, especially when evaluating employee potential and developmental need in areas such as leadership.

Synthesis of the Research and Critical Analysis

Extensive research across the private sector shows that the evolving information-based society and emergence of the “learning organization” has created increased emphasis on talent, which is a varying mix of analytical intelligence, emotional intelligence, creativity, and productivity. Managing talent requires a linkage between organizational strategy and talent development. It also requires a curriculum of education or action learning for key transition points, coaching and mentoring of “rising stars,” and a comprehensive plan for accelerating development and linking it to developing business needs. The challenges that APG faces are not yet this sophisticated. Rather than being primarily concerned with whether or not it has sufficient talent within its workforce in order to beat the competition, APG’s primary concern is whether or

not it will be able to find and retain a sufficient number of qualified people in order to accomplish its mission at all. This is similar to the Army's concern with its talent management program. The Army is not attempting to create an Army enterprise workforce that is composed of the best possible employees; rather, it is simply trying to staff enterprise-level jobs with employees who meet basic expectations for breadth of experience. As such, perhaps the Army and APG efforts should be recast simply as human resource management programs rather than talent management programs. Nonetheless, despite Peter Reilly's caution of hyperbole, the term talent management does appear to capture attention and distinguish more creative and intensive human resource management methods from more conventional, transactional processes. For APG, the key points to be taken are that talent management requires proactive effort on the part of management and leadership. None of the talent management practices described in literature leave it to the employee to determine how best to progress in his or her career. Through mentoring, coaching, and evaluating, management actively seeks to position employees for ever-increasing opportunities to contribute. The challenge for all Army managers is to determine at what level this is to be done. Should a branch chief be concerned about an employee's ability to someday be successful as a branch chief, or should he be thinking of how to develop employees to be division chiefs, directors, and members of the Senior Executive Service? Should managers in one Army organization be concerned about how to develop employees in order to be successful in the next higher-level organization? No examples could be found in the literature to explain the roles and responsibilities of each level of the Army civilian chain of command with regard to development of employees to be successful at the next level. With several headquarters organizations to be co-located with their subordinate organizations, APG has an opportunity to create the methods and processes needed to establish the path for a leadership pipeline from entry-level intern to the Senior Executive Service, all within the confines of APG. This would

gives the employers and employees at APG the same type and amount of focus on linking business strategy with human resource strategy as is currently practiced in the private sector.

A key take-away from the literature is the agreement of opinion on the part of both the institutional uniformed Army and Valarie Garrow with regard to how to achieve the right “fit” between the person and the job. The Army relies upon independent promotion boards to look at each of its officers from the perspective of their potential for higher levels of service—not to a particular boss or a particular unit—but to the Army. Garrow calls this a *talent mind-set*—a shared view of the effort on the part of senior leaders, management, and especially first-line supervisors. Line managers need to understand the broader objectives and be willing to participate in the face of potentially losing a valuable employee to a developmental opportunity. Garrow suggests that this is best accomplished by managing the program via a board of assessors or evaluators composed of a horizontal and vertical sampling across the communities that participate in the program. These “talent panels,” supported by human resources professionals, are the key to successful implementation outcomes and require a measure of sophistication, especially when evaluating employee potential and developmental need in areas such as leadership. This single concept—the idea of making civilian promotions a community decision—is powerful. It changes the entire mindset of the employee and the employer with regard to what is important. It necessarily creates a sense of community and also provides an element of transparency, objectivity, and fairness that is currently lacking in the civilian personnel management system. It is an idea worth considering for APG.

Literature Review Conclusion

From the highest levels of government to the working-level agency, there is a consistent concern about the government’s ability to attract and retain talent in a demographically driven human resource shortage environment. The USD(AT&L) Human Capital Strategy highlights the

challenge, especially for the Defense Acquisition Workforce, and provides broad objectives and metrics to begin the process of addressing the problem. The Army's Civilian Talent Management Program makes a leap forward by establishing a policy, a database, and a staff to begin more intensive management of the most senior career Army employees. The Army's Officer Personnel Management System is offered as a potential model for management of employees, providing a viable growth path for each officer throughout his or her career and also satisfying the Army's need for a continuously refreshed leadership pipeline. Valarie Garrow believes this is a good way to create a talent mindset and get the best fit between the person and the job. A review of the scholarly literature in talent management provides a number of different approaches for career management and leadership development, but all are built on the central theme that having the right people in the right places is one job that a leader cannot delegate.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

There is no evidence indicating that the leaders of the various APG organizations have been queried as to their interest in establishing an APG-oriented talent management program. An applied research methodology was therefore developed to gather descriptive data on the opinion of leadership with regard to the conditions under which they may be willing or unwilling to support such an effort. A draft survey was developed that would be provided to each leader of each APG tenant organization, via the Internet, with survey attribution being preferred but not required. The intent was that summary data would then be reviewed and analyzed to identify trends or general tendencies for further exploration. The survey was tested via informal conversations with senior APG leaders about the Army CTMP and the prospect of using it at APG. In each of these conversations, the Army's CTMP produced an immediate negative reaction, the causes of which led to a brief focus on organizational behavior as part of the research effort's literature review. As these informal conversations unfolded, however, and more was explained about possible ways that the same Army-oriented principles, theories, practices, and concepts could be implemented locally; the tone changed; and some leaders began to respond positively to the idea. This conversational pilot survey indicated that senior leaders were more comfortable engaging in dialog than in completing non-interactive surveys and that a lack of dialog on the subject might yield a negative bias that may not accurately reflect true opinion if the respondents might otherwise had been given an opportunity to ask clarifying questions and consider possible implementation options. Therefore, an interview format for data collection was developed that would allow each respondent to express their opinions and suggestions in a way that allowed each to be at the same comfort level with the topic and the questions regarding the

topic. In this sense, “comfort” was the control variable, and the reactions, opinions, and suggestions became the data that proved to be invaluable at the initial stage of this research effort.

In addition, the Army’s database of civilian personnel vacancies was analyzed to determine how many positions might be considered for coverage under an APG talent management program, which job series would need to be addressed, and what the grade levels were of the employees in each of the various job series at APG. This database is located within the Army’s Civilian Personnel Online portal at <http://cpol.army.mil/employment/projected.htm> and then selecting “projected opportunities.” The U.S. Army Civilian Human Resources Agency also provided a sampling of data indicating the number of and type of existing positions in various organizations at APG. This is a critical data item that will need to be comprehensively managed if an APG talent management program is to succeed.

Research Design

Senior leader interviews were conducted using a common format with allowances for branches and sequels as the situation dictated. First, the context of the research as an element of the Defense Acquisition University’s Army Senior Service College Fellowship program was explained, with a further explanation of the objectives of this particular research project. The subject was then asked if he or she was familiar with the Army’s Civilian Talent Management Program, and we then discussed particular elements of that program so that a common base of knowledge with regard to concepts and terminology could be achieved. The questions then shifted to whether or not the subject believed that there would be any utility in establishing a local version of the Army’s program at APG, with a possible expansion beyond the GS-15 grades. Key data being sought here was whether the respondent felt positively or negatively toward the idea of applying this type of personnel management structure to his/her own

organization in the context of an APG-wide program, and whether the leader had any concerns or suggestions that should be considered for further research.

Research concerning the scope of the problem was based on data that is made available to the public by the Army's Civilian Personnel Online data portal. Using this portal, anyone can select "potential opportunities" in the employment section to see how many current positions and vacancies exist for any given job series in any given state. To accomplish this research, data from all job 513 job series in the Army were reviewed for applicability to APG. The data is as of the end of September 2009 and contains current positions and projected vacancies out to the end of March 2010. To further scope and define the research effort, job series with four or fewer current positions at APG were eliminated from inclusion in the analyzed data, with the rationale being that the uniqueness of these positions did not offer a sufficient opportunity for rotational assignments. A rough order of magnitude estimate is that this eliminated no more than 200 total positions, or 2.6 percent of the studied population, from consideration in the study. Also, wage grade positions were not included in this study. The number of wage grade positions at APG could not be determined definitively within the time constraints of this study, but an estimated magnitude is on the order of 1,000, plus or minus several hundred. The rationale for eliminating the wage grades from this study was based on the literature review, where talent management was frequently coupled with knowledge work as opposed to skilled labor. Although some wage grade positions could be considered knowledge work, the majority are skilled labor and would therefore not be amenable to the benefits associated with a talent management program. Elimination of the wage grades from the study was also incentivized by the recognition that most of the wage grades are covered by union agreements, and that any talent management initiative would require significant bargaining with unions in order to be implemented. With these two reductions in the total population of APG employees to be considered in the study, data was then

collected on the number of currently occupied positions and projected vacancies at APG by job series. Where the information was available, the data was further described in terms of organizational allocation.

Research Questions and Definitions of Terms:

Research Question 1: Under what conditions would APG leaders support the creation of an APG Civilian Talent Management Program?

Definitions:

“APG leaders” are the commanders or directors of each tenant organization at APG as listed by garrison, Aberdeen Proving Ground in the Appendix.

The “APG Civilian Talent Management Program” is composed of the following components:

- A database of APG employees, containing information similar to that managed by the CTMO.
- A policy that outlines the operation of the program, roles, responsibilities, and intended outcomes.
- An office that manages civilian talent at APG, matching vacancies with available talent to optimize organizational mission accomplishment and individual professional development.

Research Question 2: What is the size of the population at APG that could be considered for coverage under a civilian talent management program and how is the population distributed by job series, pay grade and organization?

Research Hypotheses

H1: APG leaders will support the creation of an APG Civilian Talent Management Program if it is scoped to a level that is executable and affordable.

H2: There is sufficiently available data at the APG level to permit the initiation of a civilian talent management program.

Subject Participants, Population, and Sample

Appendix A provides the complete list of tenant organizations at APG as of the end of calendar year 2009. This list changes periodically as organizations arrive, depart, or change names as part of the overall BRAC transition process. The sample of senior leaders chosen for this study was designed to provide a cross-section of opinion from research, development, and testing organizations at APG and also the human resources management organizations. This focus was chosen as it complements the career development objectives of the Defense Acquisition Workforce Improvement Act with regard to encouraging a breadth of experience across the entire materiel acquisition life cycle. The Senior Service College Fellowship speakers program was leveraged extensively to facilitate the interviews conducted in support of this study. If, based upon the outcomes of this research, APG leaders decide to pursue the creation of a local talent management program, then a more comprehensive set of interviews and meetings will need to be conducted to more clearly determine each organization's interests in a future program.

Bias and Error

The researcher brings a clear bias toward creating a civilian talent management program at APG. The rationale for this bias is presented in several areas of this report without an equivalent treatment for either not creating the program or for pursuing alternative approaches that may satisfy the same objectives. This is a limitation in the study. The bias toward creation of a program influenced the line of questioning in the interviews. A negatively biased interview, highlighting the difficulty, complexity, cost, and possible unintended consequences of a civilian talent management program could have produced significantly different results. The researcher suggests that this study be placed in the context of the initial stages of the creative problem

solving process (Puccio, 2007), where the first step is to clarify and obtain consensus on a shared vision and definition of challenges, then transform these into ideas for improvement and solution design and then implement the solution by exploring acceptance and formulating a plan of action. This research is offered as a first step toward creation of a vision and a test of the initial acceptance of that vision. As further research is conducted, greater clarity, reliability, and validity should be obtained with regard to the consensus opinion of how best to meet APG's human resource challenges.

Validity and Reliability

The data concerning the number of positions and vacancies at APG is treated as accurate and reliable as of the end of September 2009. The date is an important caveat, as the BRAC movements have been ongoing since 2006 and will continue until at least the end of 2011. The vacancies are treated as additive to the number of current positions, with the rationale being that in several instances, potential vacancies exist in series and grades for which there are no current positions. Time did not allow for a detailed scrub of this data to determine how vacancies were forecast and how the data was collected and populated. The intended use of this data was to provide a general sensing as to the magnitude of the problem to be managed, an indication of how much effort would be required in order to obtain the needed data to execute a civilian talent management program and an indication of the distribution of employees across job series, grade levels and organizations. For these purposes, the available data is deemed sufficiently reliable and valid to use in support of this research.

Methodology Summary

This research was designed to determine if the creation of an APG civilian talent management program would be of interest to APG leadership and feasible to implement. It is considered a first step in the creative solving process, seeking to clarify the nature of a perceived

problem, test the acceptance of the problem definition, offer a potential solution, and test the acceptance of the solution. As a first step, this research offers one version of the problem definition and concept for a solution and has solicited opinion through open-ended interviews to determine possible acceptance. The research has also produced data that helps to better understand the magnitude of the problem and provide indicators as to how the problem may be scoped to make implementation feasible and manageable. There is a known bias in the collection of the opinion data, and there are questions regarding the complete accuracy and validity of the employee population data. These limitations notwithstanding, the methodology is believed to be sufficient to provide enough information to allow senior leaders to make a decision with regard to the extent and direction of follow-on efforts leading to implementation.

CHAPTER 4 RESULTS

Introduction

Eight senior leaders were interviewed as part of this research, representing a sampling of about 12 percent. This is a smaller sample than desired, but the sample selection is believed to be sufficient to provide a sensing of the potential opinion of the larger APG community. A comprehensive list of current positions and potential vacancies was obtained and analyzed to provide an indication of the scope of the problem and ways to address it. A sampling of position data by organization was also obtained. A complete database of positions by organization is difficult to obtain due to the use of multiple personnel management systems at APG. This challenge can be solved given the appropriate amount of time and interest in pursuing follow-on research and implementation actions.

Population, Sample, and Participants

To obtain the opinion of APG senior leaders with regard to their potential acceptance of a civilian talent management program at APG, the following senior leaders or designated representatives were interviewed:

- Headquarters, U.S. Army Research, Development and Engineering Command (RDECOM)
 - Mr. Gary Martin (SES), Deputy to the Commander
 - July 31 and Sept. 19, 2009
- U.S. Army Edgewood Chemical Biological Center (ECBC)
 - Mr. Joseph Wienand (SES), Director, Program Integration
 - Sept. 9, 2010
- U.S. Army Research Laboratory (ARL)

- Mr. Len Husky, Office of the Director
 - Feb. 4, 2010
- U.S. Army Communications–Electronics Research, Development and Engineering Center (CERDEC)
 - Mr. Gary Blohm (SES), Director
 - March 10, 2010
- U.S. Army Civilian Human Resources Agency (CHRA)
 - Ms. Barbara Panther (SES), Director, and Mr. Clifford Dickman, Deputy Director
 - March 17, 2010
- U.S. Army CECOM Life Cycle Management Command
 - Mr. Edward Thomas (SES), Deputy to the Commander
 - April 15, 2010
- U.S. Army Aberdeen Test Center (ATC)
 - Mr. John Wallace, Technical Director
 - April 16, 2010
- U.S. Army Civilian Human Resources Agency, Northeast Region
 - Ms. Erin Freitag, Director
 - April 16, 2010

The noted eight organizations are clearly a small subset of the 65-plus organizations resident at APG. However, it does represent a large portion of the total population of APG, as these organizations will comprise the majority of the employees who will reside at APG upon full implementation of the BRAC movements. Also, the inclusion of RDECOM and CHRA leadership in the opinion survey is viewed as a good barometer for gauging the overall APG

organizational opinion, as these organizations have an APG-wide mission and are therefore more aware of the opinions and positions of other organizations at APG.

The complete data set of APG employee position data is contained in Appendix B. Position data by organization is included at Appendix C.

Interview Results

From this limited number of interviews conducted, certain general themes emerged. First, it is clear that where you stand depends on where you sit. While everyone who was interviewed was aware of what the Army's CTMP was, none considered it to be a useful, valuable, or viable program. The major impediment expressed by those interviewed was the implied requirement of the CTMP for employees to be geographically mobile. While the CTMP policy clearly indicates that mobility may be functional (different type of job), organizational (essentially the same job, but done at a higher level organization) or geographical (a physical relocation of the job more than 50 miles beyond the employee's current commuting distance; could be the same job in a different organization or could be coupled with functional and/or organizational mobility), it is the geographic mobility requirement that tended to get the most attention. CHRA made the point that the Army may have negatively influenced the program's success by limiting the definition of "talent" to those employees with salary levels equivalent to within the GS-15 pay grade. CHRA noted that people in this pay grade are the most senior of the GS ranks and are therefore the most likely to be older, with children in high school or college, living in relatively expensive homes that are difficult to resell, and have probably settled in to the location where they are most comfortable. This, then, makes them the least likely of all employees to want to physically relocate for a lateral (same pay) position simply so that they can occupy an Army Enterprise Position and/or be more competitive for a possible promotion to the SES. While this is an

interesting point for the broader Army to consider, it does not have relevance to an APG-oriented CTMP, where all jobs would be located within the same commuting distance.

The second major concern was with the construct of mobility in general. There seems to be a direct correlation, not verified statistically, between the depth of technical expertise required by an organization and the extent to which functional and/or organizational mobility is deemed valuable to one's career. ARL, for example, saw no value in participating in any kind of mobility or broadening program because its measure of merit for its employees is directly related to the employees' recognized level of technical expertise. A post-doctoral fellow, for example, can remain in essentially the same job series at the same organization throughout his or her entire career and attain SES-equivalent salary levels by becoming an internationally published and recognized expert in his or her field. Thus, ARL saw no incentive to encourage its employees to gain experience in different settings. On the contrary, ARL believed that broadening would actually dilute an employee's expertise and therefore reduce his or her value to the organization. ECBC expressed a similar concern, noting that its mission is an extremely hazardous one that requires strong personal relationships to be established so employees can literally trust each other with their lives. ECBC noted that the amount of training, expertise, and trust required to perform its mission is extensive, and that rotational employees would not have the time needed to become effective before moving on to their next assignment.

CERDEC, RDECOM, and ATC expressed a greater interest in the merits of mobility. It should be noted that RDECOM is the parent headquarters for CERDEC, ARL, ECBC, and many other organizations that reside on APG and beyond. As such, the focus of RDECOM Headquarters is at a higher level and their interest is in developing and articulating broad consensus positions across their commands. Individuals who have a variety of experiences in more than one of their respective subordinate organizations are more highly valued than

individuals with a singular experience profile and experience in other types of organizations can also add value depending upon the type of experience gained. It is also important to note that CERDEC, RDECOM, and ATC are all participants in the Army's Acquisition Workforce, whereas ARL and ECBC are not. The acquisition workforce is a set of employees in the Department of Defense who encumber positions that are designated as being covered by the Defense Acquisition Workforce Improvement Act (DAWIA). The DAWIA mandates certain training and certification requirements for acquisition workforce employees, with most of the training provided by the Defense Acquisition University. The DAWIA encourages employees to seek certification in more than one career field and also encourages employees to seek different types of jobs within the acquisition life cycle (research, development, testing, evaluation, fielding, sustainment, and disposal). Thus, a cultural and experiential base has been developed that values a broad experience profile among senior employees and is therefore more amenable to creating broadening experiences within APG. Rather than being concerned about the value of these experiences, these organizations expressed more concern about the cost, complexity, and feasibility of implementation. This, then, is the recommended focus for follow-on research: to develop an action research proposal that outlines various alternatives for implementing a CTMP at APG and recommends a path forward for senior leaders to consider.

Position Data Analysis Results

The collection of APG job position data available via the Army's Civilian Personnel Online website reveals that there were 7,419 current positions at APG as of the end of September 2009 and another 1,141 projected vacancies during the period October 2009 through March 2010. This excludes wage grade positions and series occupied by less than five APG employees. These numbers will change as the BRAC implementation continues. For example, Mr. Edward Thomas of the CECOM LCMC noted that his organization is anticipating that approximately

2,000 of his organization's positions may be unencumbered when they move to APG. An indication of the distribution of the current positions and vacancies across job series is depicted in Figure 2.

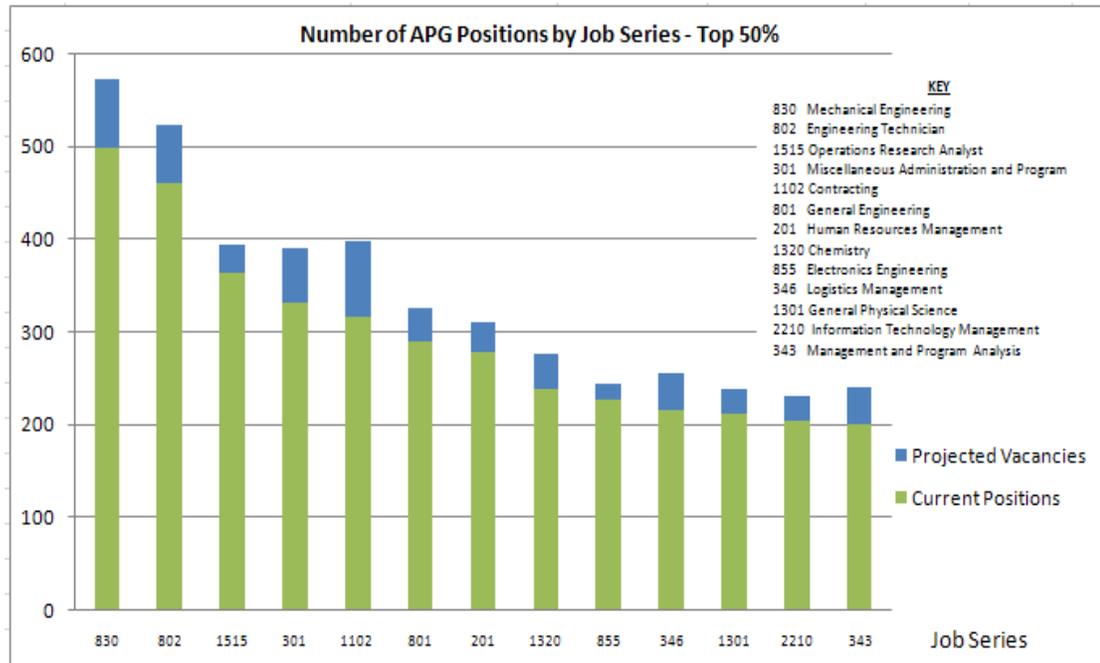


Figure 2. Number of Current Positions and Projected Vacancies By Job Series – Top 50%

The figure provides a visual depiction of which types of jobs are most prevalent at APG. There are over 117 different job series at APG, not including those series with less than five current positions in place and not including wage grade positions. Time and space will not allow for a complete analysis of all of the data collected, but a few sample analyses from the most populated job series should provide a sufficient illustration of what could be accomplished with a structured talent management program at APG. Figure 3 provides a distribution of APG mechanical engineers (series 830) by grade. A total of 107 are accounted for out of 498 current positions

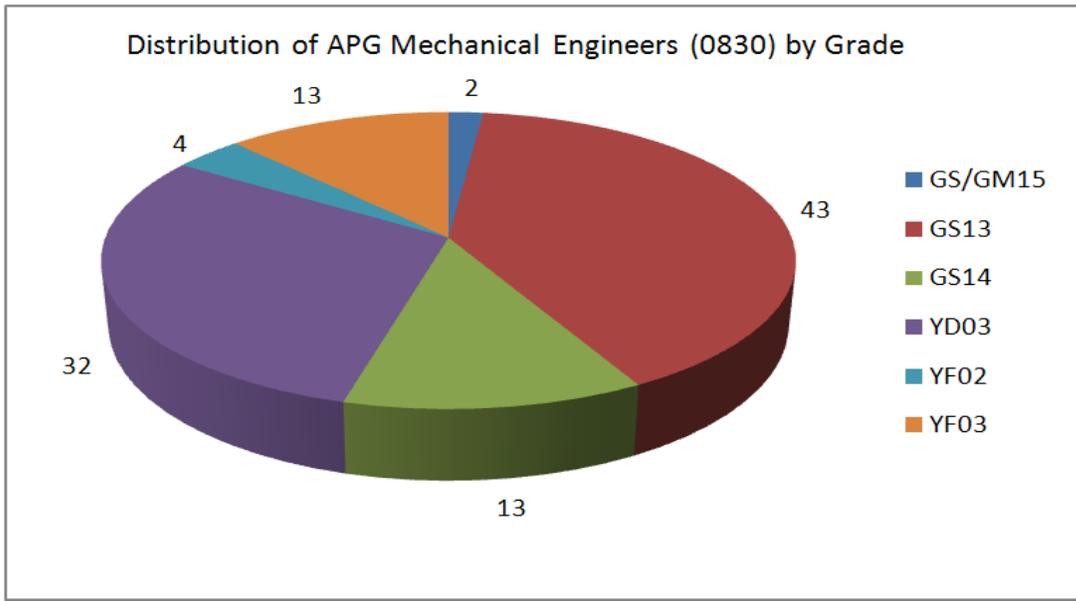


Figure 3. Distribution of a Portion of APG’s Mechanical Engineers by Grade

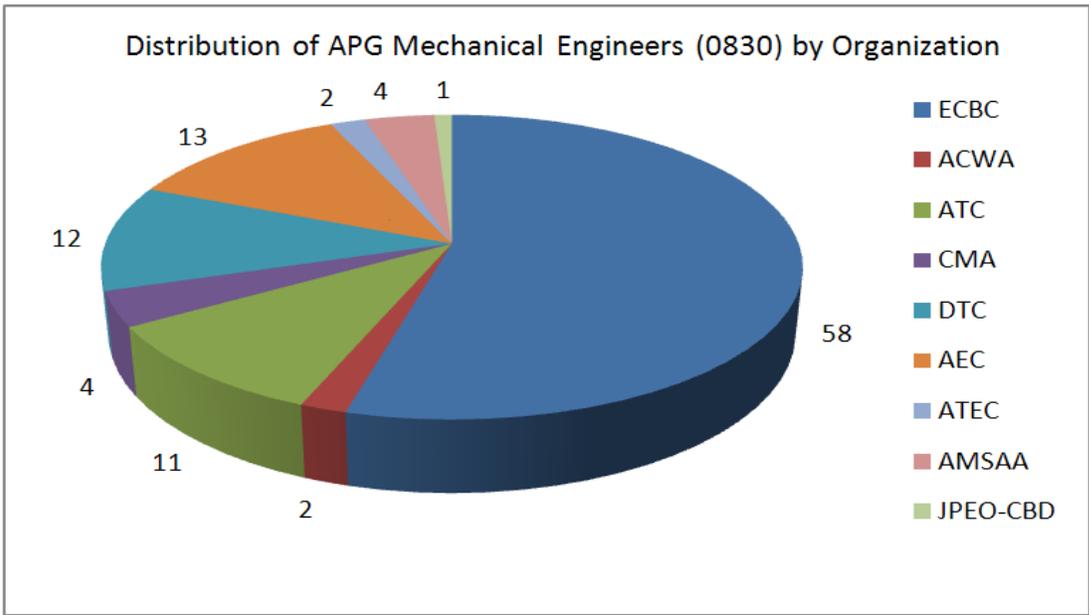


Figure 4. Distribution of a Portion of APG’s Mechanical Engineers by Organization

listed in the Army database. Similarly, Figure 4 provides a distribution of these same engineers by organization. A total of nine organizations are listed or about 14 percent of the organizational

elements resident at APG, which account for about 21 percent of the mechanical engineers. This snapshot only covers the GS-13 and above grades and their equivalents. Data from the Science and Technology Demonstration (DB) pay system was not available for this study. Clearly absent from this analysis are the ARL organizations, as well as CERDEC and several of the program management offices. The data does exist and can be made available, but it requires a significant effort to gather and place into a manageable form. Nonetheless, we can see from this example that, in the case of mechanical engineers, there are a variety of organizational and promotional opportunities available at APG. Many employees may not know that opportunities exist in these other organizations and they may not know where to look for their next promotion. If nothing else is done with civilian talent management at APG, by providing access to this relatively small amount of data for each job series, an employee will be much better equipped to plan his or her own career at APG and possibly take on assignments that may not otherwise be visible. By taking additional initiative, leaders at APG can begin to look at where the talent is located and how needs may shift in the future. The total number of mechanical engineering positions, for example, could be managed so that jobs and employees could be better fit, surge requirements could be better met, and promotions could be accomplished from a position of visibility of the entire mechanical engineering workforce at APG rather than through the smaller lens within a single organization.

CHAPTER 5 INTERPRETATION AND RECOMMENDATIONS

Introduction

A majority of the subjects interviewed were intrigued with the idea of creating a local version of the Army Civilian Talent Management program and provided encouragement to introduce the proposal at APG leadership discussion opportunities such as the SES quarterly luncheon and the APG Board of Directors meetings. Comprehensive data on the number of employees at APG, their job series, grade, organization, and position exists but is difficult to assimilate due in part to the varying types of pay systems currently in use at APG. Nonetheless, data is available and this research was able to obtain and analyze a sampling to provide focus for further research.

Summary of Results

The advent of the BRAC at APG will exacerbate the already challenging competitive environment for key scientific and engineering talent. Some organizations are more concerned about this than others, but all agree that they face similar challenges. An organized framework for the management of APG workforce requirements and resources is proposed to mitigate the negative effects of the current vacancy satisfaction paradigm, modeled after the Army's relatively new Civilian Talent Management Program. Local organizations at APG are split, although not evenly, as to whether: a) there is a problem, b) an APG-wide program would help to alleviate the perceived problem, and c) an APG-wide program is feasible and executable. A recommendation for further research is to review the latest research concerning talent management in other types of organizations; develop several alternative frameworks/approaches for talent management programs that may work at APG; seek feedback on and evaluation of

these alternative approaches; and recommend a course of action that appears to be most valuable and viable for the employees, the participating organizations, and the Army.

The objectives of this research effort were, in priority order, to: 1) build a stronger sense of community amongst the various organizations at APG through the creation and implementation of an APG Talent Management Program; 2) create opportunities for satisfying workforce requirements and individual career advancements at APG through the application of a more structured process than is currently utilized; and 3) provide opportunities for APG employees to serve productively at the Army enterprise level by linking the proposed APG Talent Management Program to the Army's existing Civilian Talent Management Program.

Recommendations for Further Research

The steps to be taken in this endeavor are relatively straightforward. The first and most important step is to convince the organizational leadership at APG that a local talent management program would be beneficial. To some extent, this was already accomplished as a result of the conduct of this research effort. The general feedback from leadership was that they were generally opposed to job rotations that extended beyond the boundaries of the proving ground but that they were supportive and intrigued by the prospect of local rotations. Many of the leaders have asked for a presentation on the proposal at their next luncheon gathering or Board of Directors meeting. Another step that was suggested by the CHRA Director is to present the proposal to Army senior leadership, specifically the Deputy Chief of Staff for Personnel (G1) and the Under Secretary of the Army. The intent of this presentation would be to obtain their support for making APG a targeted pilot effort for an Army-wide program.

Another key implementation step is to continue to scope the problem and calculate the administrative requirements that would need to be satisfied in order to implement a viable program. To this end, the APG civilian personnel office is continuing to gathering data on the

number of administrative, scientific, and engineering employees at APG who are in pay grades of GS-13, 14, and 15 and equivalent. This would comprise the vast majority of supervisory employees who could likely benefit from rotational assignments across the various organizations at APG. From this data, illustrations of the density of employees at each organization, sorted by job type and grade, will be produced. This should provide a general idea of the scope of the effort to be managed.

The next issue to be addressed is the policy that should accompany the effort. Job rotations are only one component of a management development program, and rotations without a goal may not provide sufficient benefit to justify the effort. The intent is to initiate a conversation amongst the leadership across APG as to what they might consider the ideal management development program and how that ideal might be implemented at APG. It is anticipated that this discussion will yield a demarcation amongst organizations: those who support the idea, those who are on the fence, and those who are adamantly opposed to participation. Ultimately, those organizations who choose to participate will decide how they would like to see the program structured. From these ideas, a set of program components and courses of action will be drafted and presented to the participating leaders. Positive and negative aspects of each course of action will be identified, to include rough estimates of cost and effort involved. Along the way, it is anticipated that the researcher will receive a sizable amount of advice, suggestions, and criticism that will need to be taken into account as implementation planning unfolds.

Potential Risks and Unintended Consequences

Participation by every organization at APG may never be achieved, and it is likely that the program will begin with only a handful of organizational participants. As the program

unfolds, more organizations may join, and with each addition of a participant, the value of the program will also grow. The primary downside risk is that the program may be mismanaged. Mismanagement can and will occur if the required personnel management data is incomplete, out of date, difficult to work with, and/or compromises privacy. The advantage of linking the APG program to the Army program is that the Army has already created the records and databases that can be used to manage the APG program. Also, APG has the advantage of having the Army's Civilian Human Resource Agency (CHRA) on site to provide the best practices and authorities needed to operate the program properly. Mismanagement can also occur if job rotations are executed in ways that violate prohibited personnel practices or reduce the benefit to the organization, the employee, or both. Again, it is anticipated that CHRA will be able to assist in ensuring that procedures are in place to prevent these types of issues. It is also possible that there may not be a critical mass of organizations willing to participate in the program and/or the program may begin with great energy and then subsequently lose momentum due to lack of interest, participation, or support. This could also happen if, after a period of time, participating organizations determine that the costs outweigh the benefits. In either of these cases, the impact is relatively small, and a return to the status quo is always an available option.

End-State Outcomes and Benefits

In anticipating what the end-state of this effort may look like, it is important to keep in mind that the primary objective of this effort is to bring the organizations at APG a little closer together so that they are more familiar with each other's missions, goals, and objectives and can more effectively work together to solve Army problems that require cross-organizational collaboration. Organizations participating in the program should expect that by their participation, they are potentially easing their workforce turbulence issues, creating opportunities

for their workforce to develop a broader sense of what the Army's needs are and to create organizational partnerships that can be mutually beneficial. They may also gain access to talent, experience, and expertise that they may otherwise had not known about were it not for the operation of the program. Perhaps the greatest benefit for participating organizations is that, with this program, they will have a vehicle for managing not only their existing vacancies but also their anticipated vacancies, and that these will be visible to other organizations. The organizations will then have the opportunity to collaborate on how best to satisfy these vacancies from an APG perspective instead of an organizational perspective. Resumes and hiring lists would be shared, job fairs would be jointly conducted, and potential candidates could be referred from one organization to another so that the best fit is made. Employees participating in the program will be able to broaden their experience base and strengthen their resumes. In so doing, they will gain access to new information, new contacts, new ideas and new problem-solving approaches. They will also have the opportunity to learn more about themselves and their preferences, strengths, and weaknesses. This experiential knowledge, coupled with the right type of training and education at various intervals, will yield a holistic management development program that will produce a next generation of leaders and make the Army and the nation stronger. The pinnacle of this effort would be the creation of an APG Promotion and Placement Board, modeled on the military promotion and assignment process, where employees are managed so that they and the institution can get the best from each other as full members of Team APG.

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GLOSSARY OF ACRONYMS AND TERMS

ACWA – U.S. Army Element, Assembled Chemical Weapons Alternatives

AEC – U.S. Army Evaluation Center

AEP – Army Enterprise Position

AMSAA – U.S. Army Materiel Systems Analysis Activity

ARL – U.S. Army Research Laboratory

APG – Aberdeen Proving Ground

ATC – U.S. Army Aberdeen Test Center

ATEC – U.S. Army Test and Evaluation Command

BRAC – Base Realignment and Closure

C4ISR – Command, Control Communications Computers, Intelligence, Surveillance, and Reconnaissance

CECOM LCMC – U.S. Army Communications-Electronics Command Life Cycle Management Command

CERDEC – U.S. Army Communications Electronics Research, Development and Engineering Center

CHRA – U.S. Army Civilian Human Resources Agency (located at APG)

CIPD – Chartered Institute of Personnel and Development

CMA – U.S. Army Chemical Materials Agency

CTMO – Army Civilian Talent Management Office

CTMP – Army Civilian Talent Management Program

DA – Department of the Army

DA PAM – Department of the Army Pamphlet

DAU – Defense Acquisition University

DAWIA – Defense Acquisition Workforce Improvement Act

DTC – U.S. Army Developmental Test Command

DISA – Defense Information Systems Agency

DoD – Department of Defense

ECBC – U.S. Army Edgewood Chemical and Biological Center

HAIR – a collection of leadership attributes described as Helicopter (the ability to survey a situation from a distance), Analytical ability, Imagination, and a sense of Reality

JPEO-CBD – Joint Program Executive Office for Chemical and Biological Defense

OPMS – Officer Personnel Management System

RDECOM – U.S. Army Research, Development and Engineering Command

SSCF – Senior Service College Fellowship program

Team C4ISR – Informal name for the collection of C4ISR-related organizations at Fort Monmouth

USD(AT&L) – Under Secretary of Defense for Acquisition, Technology and Logistics

APPENDIX A: TENANT ORGANIZATIONS AT APG

1st Area Medical Laboratory (1st AML)	Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD)
9th Area Medical Laboratory (9th AML)	Joint Personal Effects Depot (JPED)
20th Support Command (CBRNE)	US Army Kirk Health Clinic (Kirk)
48th Chemical Brigade	US Army Materiel Command Band (AMC Band)
29th Combat Aviation Brigade and 29th Infantry Division (Light)	US Army National Ground Intelligence Center (NGIC)
5th - 80th Ordnance Battalion (Army Reserve)	US Army Research Laboratory (ARL)
203rd Military Intelligence Battalion	<ul style="list-style-type: none"> • Human Research and Engineering Directorate
Army and Air Force Exchange Service (AAFES)	<ul style="list-style-type: none"> • Survivability and Lethality Analysis Directorate
US Army Audit Agency (AAA)	<ul style="list-style-type: none"> • Vehicle Technology Directorate
US Army Public Health Command (USAPHC)	US Army Test and Evaluation Command (ATEC)
US Army Chemical Materials Agency (CMA)	<ul style="list-style-type: none"> • US Army Development Test Command (DTC)
US Army Civilian Human Resource Agency (CHRA)	<ul style="list-style-type: none"> • US Aberdeen Test Center (ATC)
<ul style="list-style-type: none"> • US Army Civilian Human Resource Agency, East Region, Northeast Area 	<ul style="list-style-type: none"> • US Army Evaluation Center (AEC)
<ul style="list-style-type: none"> • Civilian Personnel Advisory Center (CPAC) 	US Army Medical Research Institute of Chemical Defense (MRICD)
<ul style="list-style-type: none"> • Northeast Civilian Personnel Operations Center (NECPOC) 	NGB-IR Program Branch
US Army Command, Control, Communications, Computers, Intelligence, Sensors and Reconnaissance Team (C4ISR)	Ordnance Center and Schools (OC&S)
<ul style="list-style-type: none"> • US Army Communications and Electronics Command (CECOM) 	<ul style="list-style-type: none"> • 16th Ordnance Battalion
<ul style="list-style-type: none"> • US Army Communications Electronics Research, Development and Engineering Center (CERDEC) 	<ul style="list-style-type: none"> • 61st Ordnance Brigade, Ordnance Mechanical Maintenance School
<ul style="list-style-type: none"> • Program Executive Office for Command, Control, Communications Tactical (PEO C3T) 	<ul style="list-style-type: none"> • 143rd Ordnance Battalion

- Program Executive Office for Intelligence, Electronic Warfare and Sensors (PEO IEW&S)
- US Army Corps of Engineers APG (COE)
- US Army Counterintelligence, 902MI
- Defense Commissary APG
- Defense Logistics Agency, Document Automation and Production Service (DAPS)
- Defense Military Pay Office (DMPO)
- Defense Re-utilization and Marketing Office (DRMO)
- Defense Security Service (DSS)
- US Army Dental Clinics (DENTAC)
- US Army Element, Assembled Chemical Weapons Alternatives (ACWA)
- US Army Installation Management Command (IMCOM)
- US Army Environmental Command (USAEC)
 - Family, Morale Welfare Recreation Command (FMWR)
 - US Army Garrison Aberdeen Proving Ground (APG)
- Freestate ChalleNGe Academy
- Joint Personal Effects Depot (JPED)
- Ordnance Museum
 - Ordnance NCO Academy (NCOA)
 - U. S. Marine Corps Detachment 2100
 - U.S.Air Force 361st SQ
- U. S. Postal Service (USPS)
- Program Executive Office, Integration (PEO- I)
- Combined Test Organization
 - Deputy Program Manager Networks
- US Army Research, Development and Engineering Command (RDECOM)
- US Army RDECOM Managerial Accounting Division
 - US Army Research, Development and Engineering Command Contracting Center (RDECOM CC)
 - Aberdeen Contracting Division
 - Edgewood Contracting Division
 - Aberdeen Installation Contracting Division
 - US Army Armament Research, Development & Engineering Center Firing Tables & Ballistics Team (ARDEC FTB)

APPENDIX B: APG POSITION DATA

Source: <https://cpswass2.belvoir.army.mil/employment/VacancyMap.jsp>

Table 1: APG Positions Sorted in Descending Order of Position Frequency by Job Series

Job Series	Number of Current Positions	Number of Projected Vacancies	Cumulative Total of Current Positions	Cumulative Total of Projected Vacancies
830	498	73	498	73
802	460	62	958	135
1515	363	30	1321	165
301	332	57	1653	222
1102	317	80	1970	302
801	289	37	2259	339
201	279	31	2538	370
1320	238	38	2776	408
855	228	16	3004	424
346	215	41	3219	465
1301	212	27	3431	492
2210	205	26	3636	518
343	201	39	3837	557
318	193	28	4030	585
893	181	26	4211	611
83	177	38	4388	649
1550	177	25	4565	674
303	168	58	4733	732
401	140	31	4873	763
203	119	33	4992	796
560	119	17	5111	813
85	110	15	5221	828
854	88	14	5309	842
850	87	13	5396	855
80	77	14	5473	869
819	76	7	5549	876
856	72	4	5621	880
1712	72	8	5693	888
28	67	13	5760	901
81	60	11	5820	912
1310	57	5	5877	917
1311	57	7	5934	924
501	53	13	5987	937
806	53	2	6040	939
2003	53	13	6093	952
1670	51	4	6144	956

Job Series	Number of Current Positions	Number of Projected Vacancies	Cumulative Total of Current Positions	Cumulative Total of Projected Vacancies
180	47	3	6240	962
2005	41	4	6281	966
18	38	7	6319	973
1083	36	7	6355	980
810	35	6	6390	986
2001	35		6425	986
404	34	7	6459	993
510	32	3	6491	996
340	30	2	6521	998
690	30	7	6551	1005
861	30	3	6581	1008
132	29	3	6610	1011
601	28	7	6638	1018
1910	26	1	6664	1019
896	25	1	6689	1020
905	25	2	6714	1022
1105	25	4	6739	1026
1640	25	6	6764	1032
2010	25	6	6789	1038
1035	24		6813	1038
1084	22		6835	1038
341	21	1	6856	1039
640	21	3	6877	1042
809	20	2	6897	1044
679	19	6	6916	1050
1101	19	7	6935	1057
1306	19	3	6954	1060
305	18	5	6972	1065
511	18	1	6990	1066
610	18	4	7008	1070
803	18		7026	1070
86	15	2	7041	1072
344	15	5	7056	1077
403	15	3	7071	1080
561	15	2	7086	1082
1529	15		7101	1082
415	14	1	7115	1083
1601	14	2	7129	1085

Job Series	Number of Current Positions	Number of Projected Vacancies	Cumulative Total of Current Positions	Cumulative Total of Projected Vacancies
391	13	4	7142	1089
525	12	3	7154	1092
260	11	4	7165	1096
1750	11	2	7176	1098
326	10	5	7186	1103
950	10	1	7196	1104
602	9	1	7205	1105
1702	9		7214	1105
1801	9	2	7223	1107
101	8	0	7231	1107
413	8		7239	1107
620	8	2	7247	1109
621	8	1	7255	1110
671	8		7263	1110
1410	8	2	7271	1112
2102	8	1	7279	1113
414	7		7286	1113
681	7	1	7293	1114
1701	7		7300	1114
342	6		7306	1114
661	6	2	7312	1116
675	6	5	7318	1121
1001	6	1	7324	1122
1521	6	3	7330	1125
2032	6	2	7336	1127
2181	6	1	7342	1128
150	5		7347	1128
170	5		7352	1128
185	5		7357	1128
335	5	2	7362	1130
405	5	1	7367	1131
603	5	2	7372	1133
808	5	1	7377	1134
892	5		7382	1134
986	5	3	7387	1137
1071	5		7392	1137
1087	5	1	7397	1138
1340	5		7402	1138

Job Series	Number of Current Positions	Number of Projected Vacancies	Cumulative Total of Current Positions	Cumulative Total of Projected Vacancies
1374	5		7407	1138
2204	5		7412	1138
2130	4	3	7416	1141
858	3		7419	1141
Totals	7419	1141		

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
18	Safety and Occupational Health Management	DEMO	3	1	
18	Safety and Occupational Health Management	DEMO	4	1	
18	Safety and Occupational Health Management	GS	11	3	
18	Safety and Occupational Health Management	GS	12	4	2
18	Safety and Occupational Health Management	GS	13	5	1
18	Safety and Occupational Health Management	NSPS	2	21	4
18	Safety and Occupational Health Management	NSPS	3	3	
28	Environmental Protection Specialist	DEMO	3	2	
28	Environmental Protection Specialist	GS	11	1	
28	Environmental Protection Specialist	GS	12	1	
28	Environmental Protection Specialist	GS	13	1	1
28	Environmental Protection Specialist	NSPS	1	3	2
28	Environmental Protection Specialist	NSPS	2	52	8
28	Environmental Protection Specialist	NSPS	3	7	2
80	Security Administration	GS	5		1
80	Security Administration	GS	9		1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
80	Security Administration	GS	11	3	3
80	Security Administration	GS	12	1	2
80	Security Administration	GS	13	4	3
80	Security Administration	NSPS	2	12	2
80	Security Administration	NSPS	3	2	
80	Security Administration	OTHER	2	8	
80	Security Administration	OTHER	3	32	1
80	Security Administration	OTHER	4	14	
80	Security Administration	OTHER	5	1	
81	Fire Protection and Prevention	GS	5	2	2
81	Fire Protection and Prevention	GS	6	4	4
81	Fire Protection and Prevention	GS	7	33	2
81	Fire Protection and Prevention	GS	8	13	2
81	Fire Protection and Prevention	NSPS	1	6	
81	Fire Protection and Prevention	NSPS	2	2	1
83	Police	GS	5	31	13
83	Police	GS	6	82	12
83	Police	GS	7	27	10
83	Police	GS	8	8	3
83	Police	NSPS	1	28	
83	Police	NSPS	2	1	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
85	Security Guard	GS	4	1	
85	Security Guard	GS	5	91	11
85	Security Guard	GS	6		3
85	Security Guard	GS	10		1
85	Security Guard	NSPS	1	18	
86	Security Clerical and Assistance	NSPS	1	10	2
86	Security Clerical and Assistance	OTHER	1	2	
86	Security Clerical and Assistance	OTHER	2	3	
101	Social Science	NSPS	2	8	
132	Intelligence	GS	12		3
132	Intelligence	OTHER	3	14	
132	Intelligence	OTHER	4	14	
132	Intelligence	OTHER	5	1	
150	Geography	NSPS	2	5	
170	History	GS	12	1	
170	History	NSPS	2	3	
170	History	NSPS	3	1	
180	Psychology	DEMO	2	2	
180	Psychology	DEMO	3	22	1
180	Psychology	DEMO	4	10	1
180	Psychology	DEMO	5	1	
180	Psychology	GS	13	2	1
180	Psychology	GS	14	1	
180	Psychology	NSPS	1	2	
180	Psychology	NSPS	2	5	
180	Psychology	NSPS	3	1	
180	Psychology	OTHERS	0	1	
185	Social Work	GS	11	1	
185	Social Work	NSPS	2	4	
201	Human Resources Management	GS	9	2	
201	Human Resources Management	GS	13		1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
201	Human Resources Management	NSPS	1	78	5
201	Human Resources Management	NSPS	2	182	19
201	Human Resources Management	NSPS	3	16	5
201	Human Resources Management	OTHERS	0	1	1
203	Human Resources Assistant	GS	4	3	4
203	Human Resources Assistant	GS	5	29	9
203	Human Resources Assistant	GS	6	2	2
203	Human Resources Assistant	GS	7		2
203	Human Resources Assistant	GS	8	2	
203	Human Resources Assistant	NSPS	1	45	13
203	Human Resources Assistant	NSPS	2	38	3
260	Equal Employment Opportunity	NSPS	1	1	
260	Equal Employment Opportunity	NSPS	2	9	4
260	Equal Employment Opportunity	NSPS	3	1	
301	Miscellaneous Administration and Program	DEMO	2	5	2
301	Miscellaneous Administration and Program	DEMO	3	16	2
301	Miscellaneous Administration and Program	DEMO	4	5	1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
301	Miscellaneous Administration and Program	GS	7	2	1
301	Miscellaneous Administration and Program	GS	9	20	2
301	Miscellaneous Administration and Program	GS	11	17	8
301	Miscellaneous Administration and Program	GS	12	30	4
301	Miscellaneous Administration and Program	GS	13	25	6
301	Miscellaneous Administration and Program	GS	14	11	2
301	Miscellaneous Administration and Program	GS	15	1	
301	Miscellaneous Administration and Program	NSPS	1	11	2
301	Miscellaneous Administration and Program	NSPS	2	151	23
301	Miscellaneous Administration and Program	NSPS	3	37	4
301	Miscellaneous Administration and Program	OTHERS	0	1	
303	Miscellaneous Clerk and Assistance	DEMO	1	2	
303	Miscellaneous Clerk and Assistance	DEMO	2	12	4

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
303	Miscellaneous Clerk and Assistance	DEMO	3	1	
303	Miscellaneous Clerk and Assistance	GS	3	2	2
303	Miscellaneous Clerk and Assistance	GS	4	9	4
303	Miscellaneous Clerk and Assistance	GS	5	12	5
303	Miscellaneous Clerk and Assistance	GS	6	23	9
303	Miscellaneous Clerk and Assistance	GS	7	25	7
303	Miscellaneous Clerk and Assistance	GS	8	9	1
303	Miscellaneous Clerk and Assistance	GS	9	3	3
303	Miscellaneous Clerk and Assistance	NSPS	1	31	14
303	Miscellaneous Clerk and Assistance	NSPS	2	38	9
303	Miscellaneous Clerk and Assistance	OTHER	2	1	
305	Mail and File	DEMO	2	1	
305	Mail and File	GS	2	1	1
305	Mail and File	GS	4	6	3
305	Mail and File	NSPS	1	1	1
305	Mail and File	NSPS	2	3	
318	Secretary	DEMO	2	20	2
318	Secretary	DEMO	3	5	
318	Secretary	GS	5	3	
318	Secretary	GS	6	15	4
318	Secretary	GS	7	9	3
318	Secretary	GS	8	3	1
318	Secretary	GS	9	1	
318	Secretary	NSPS	1	42	9
318	Secretary	NSPS	2	93	8
318	Secretary	NSPS	3	2	1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
326	Office Automation Clerical and Assistance	GS	2		2
326	Office Automation Clerical and Assistance	GS	4		1
326	Office Automation Clerical and Assistance	GS	5	4	1
326	Office Automation Clerical and Assistance	NSPS	1	6	1
335	Computer Clerk and Assistant	GS	2	1	
335	Computer Clerk and Assistant	GS	5	1	
335	Computer Clerk and Assistant	GS	7	2	1
335	Computer Clerk and Assistant	GS	8	1	1
340	Program Management	GS	14	2	
340	Program Management	GS	15	1	1
340	Program Management	NSPS	2	6	
340	Program Management	NSPS	3	19	1
340	Program Management	OTHERS	0	2	
341	Administrative Officer	DEMO	2	4	
341	Administrative Officer	DEMO	3	8	
341	Administrative Officer	GS	9	2	
341	Administrative Officer	GS	12	1	1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
341	Administrative Officer	NSPS	2	6	
342	Support Services Administration	GS	10	2	
342	Support Services Administration	NSPS	2	4	
343	Management and Program Analysis	DEMO	2	4	1
343	Management and Program Analysis	DEMO	3	23	1
343	Management and Program Analysis	DEMO	4	5	
343	Management and Program Analysis	GS	7	3	1
343	Management and Program Analysis	GS	9	8	2
343	Management and Program Analysis	GS	11	14	3
343	Management and Program Analysis	GS	12	13	4
343	Management and Program Analysis	GS	13	21	9
343	Management and Program Analysis	GS	14	3	
343	Management and Program Analysis	NSPS	1	12	1
343	Management and Program Analysis	NSPS	2	85	13
343	Management and Program Analysis	NSPS	3	10	4
344	Management Clerical and Assistance	DEMO	2	1	
344	Management Clerical and Assistance	GS	7	1	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
344	Management Clerical and Assistance	GS	8	1	
344	Management Clerical and Assistance	NSPS	1	3	3
344	Management Clerical and Assistance	NSPS	2	9	2
346	Logistics Management	DEMO	2	1	1
346	Logistics Management	DEMO	3	13	
346	Logistics Management	DEMO	4	2	
346	Logistics Management	GS	9	2	1
346	Logistics Management	GS	11	3	2
346	Logistics Management	GS	12	36	12
346	Logistics Management	GS	13	84	16
346	Logistics Management	GS	14	5	3
346	Logistics Management	NSPS	1	2	
346	Logistics Management	NSPS	2	52	6
346	Logistics Management	NSPS	3	15	
391	Telecommunications	DEMO	3	12	3
391	Telecommunications	NSPS	2	1	1
401	General Biological Science	DEMO	2	2	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
401	General Biological Science	DEMO	3	3	1
401	General Biological Science	DEMO	4	1	
401	General Biological Science	GS	5	1	
401	General Biological Science	GS	7	3	3
401	General Biological Science	GS	9	8	2
401	General Biological Science	GS	11	19	2
401	General Biological Science	GS	12	22	5
401	General Biological Science	GS	13	36	10
401	General Biological Science	GS	14	11	4
401	General Biological Science	GS	15	4	
401	General Biological Science	NSPS	1	1	
401	General Biological Science	NSPS	2	26	4
401	General Biological Science	NSPS	3	1	
401	General Biological Science	OTHERS	0	2	
403	Microbiology	GS	12	1	
403	Microbiology	GS	13	6	
403	Microbiology	GS	14	1	
403	Microbiology	GS	15	1	2
403	Microbiology	NSPS	2	6	1
404	Biological Science Technician	GS	5	1	1
404	Biological Science Technician	GS	6	1	1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
404	Biological Science Technician	GS	7	6	
404	Biological Science Technician	GS	8	3	
404	Biological Science Technician	GS	9	11	2
404	Biological Science Technician	GS	10	2	1
404	Biological Science Technician	GS	11	7	1
404	Biological Science Technician	NSPS	2	3	1
405	Pharmacology	GS	13	1	1
405	Pharmacology	GS	14	2	
405	Pharmacology	GS	15	2	
413	Physiology	DEMO	4	1	
413	Physiology	GS	13	1	
413	Physiology	GS	14	4	
413	Physiology	GS	15	1	
413	Physiology	NSPS	3	1	
414	Entomology	NSPS	2	6	
414	Entomology	NSPS	3	1	
415	Toxicology	GS	11	1	
415	Toxicology	GS	13	3	1
415	Toxicology	GS	14	1	
415	Toxicology	GS	15	1	
415	Toxicology	NSPS	2	4	
415	Toxicology	NSPS	3	4	
501	Financial Administration and Program	DEMO	3	1	
501	Financial Administration and Program	GS	7	6	
501	Financial Administration and Program	GS	9	2	2

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
501	Financial Administration and Program	GS	11	3	5
501	Financial Administration and Program	GS	12	15	2
501	Financial Administration and Program	GS	13	3	1
501	Financial Administration and Program	GS	14	1	
501	Financial Administration and Program	NSPS	1	2	
501	Financial Administration and Program	NSPS	2	13	3
501	Financial Administration and Program	NSPS	3	7	
510	Accounting	DEMO	3	2	1
510	Accounting	GS	7	1	
510	Accounting	GS	9	2	
510	Accounting	GS	12	7	
510	Accounting	GS	13	2	
510	Accounting	NSPS	2	17	2
510	Accounting	NSPS	3	1	
511	Auditing	NSPS	1	4	
511	Auditing	NSPS	2	13	
511	Auditing	NSPS	3	1	1
525	Accounting Technician	GS	6	5	
525	Accounting Technician	GS	7	3	3

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
525	Accounting Technician	GS	8	4	
560	Budget Analysis	DEMO	2	5	1
560	Budget Analysis	DEMO	3	16	1
560	Budget Analysis	DEMO	4		1
560	Budget Analysis	GS	7	3	
560	Budget Analysis	GS	9	5	1
560	Budget Analysis	GS	11	3	4
560	Budget Analysis	GS	12	12	1
560	Budget Analysis	GS	13	8	1
560	Budget Analysis	GS	14	1	
560	Budget Analysis	NSPS	1	7	1
560	Budget Analysis	NSPS	2	54	6
560	Budget Analysis	NSPS	3	5	
561	Budget Clerical and Assistance	GS	7	3	1
561	Budget Clerical and Assistance	GS	8	1	
561	Budget Clerical and Assistance	NSPS	1	4	
561	Budget Clerical and Assistance	NSPS	2	7	1
601	General Health Science	DEMO	3	1	
601	General Health Science	NSPS	2	22	6
601	General Health Science	NSPS	3	5	1
602	Medical Officer	GS	14	1	
602	Medical Officer	GS	15	1	
602	Medical Officer	NSPS	2	4	1
602	Medical Officer	NSPS	4	3	
603	Physician's Assistant	GS	12	4	2
603	Physician's Assistant	NSPS	2	1	
610	Nurse	GS	10	8	2
610	Nurse	GS	11	2	1
610	Nurse	GS	12	3	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
620	Practical Nurse	GS	6	8	2
621	Nursing Assistant	GS	5	8	1
640	Health Aid and Technician	GS	6	1	1
640	Health Aid and Technician	GS	7	3	
640	Health Aid and Technician	GS	8	13	2
640	Health Aid and Technician	GS	11	1	
640	Health Aid and Technician	GS	12	1	
640	Health Aid and Technician	NSPS	3	2	
661	Pharmacy Technician	GS	6	5	2
661	Pharmacy Technician	GS	7	1	
671	Health Systems Specialist	GS	12	1	
671	Health Systems Specialist	NSPS	1	1	
671	Health Systems Specialist	NSPS	2	5	
671	Health Systems Specialist	NSPS	3	1	
675	Medical Records Technician	GS	4	1	1
675	Medical Records Technician	GS	5	2	3
675	Medical Records Technician	GS	6	1	
675	Medical Records Technician	GS	7	2	1
679	Medical Support Assistance	GS	4	1	
679	Medical Support Assistance	GS	5	17	6

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
679	Medical Support Assistance	GS	7	1	
681	Dental Assistant	GS	5	6	1
681	Dental Assistant	GS	6	1	
690	Industrial Hygiene	GS	9	1	
690	Industrial Hygiene	GS	11		1
690	Industrial Hygiene	GS	12	5	2
690	Industrial Hygiene	GS	14	1	
690	Industrial Hygiene	NSPS	2	19	3
690	Industrial Hygiene	NSPS	3	4	1
801	General Engineering	DEMO	2	4	
801	General Engineering	DEMO	3	11	3
801	General Engineering	DEMO	4	31	1
801	General Engineering	DEMO	5	2	
801	General Engineering	GS	7	1	2
801	General Engineering	GS	9	4	2
801	General Engineering	GS	12	6	
801	General Engineering	GS	13	19	5
801	General Engineering	GS	14	19	3
801	General Engineering	GS	15	5	1
801	General Engineering	NSPS	1	12	5
801	General Engineering	NSPS	2	90	8
801	General Engineering	NSPS	3	81	7
801	General Engineering	OTHERS	0	4	
802	Engineering Technician	DEMO	1	7	1
802	Engineering Technician	DEMO	2	50	5
802	Engineering Technician	DEMO	3	37	4
802	Engineering Technician	GS	3		1
802	Engineering Technician	GS	5	2	1
802	Engineering Technician	GS	6	1	
802	Engineering Technician	GS	7	2	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
802	Engineering Technician	GS	8	9	2
802	Engineering Technician	GS	9	6	2
802	Engineering Technician	GS	10	22	2
802	Engineering Technician	GS	11	64	11
802	Engineering Technician	GS	12	35	7
802	Engineering Technician	GS	13	3	
802	Engineering Technician	NSPS	1	21	14
802	Engineering Technician	NSPS	2	34	8
802	Engineering Technician	NSPS	3	156	4
802	Engineering Technician	NSPS	4	7	
802	Engineering Technician	OTHER	3	3	
802	Engineering Technician	OTHER	4	1	
803	Safety Engineering	GS	12	1	
803	Safety Engineering	GS	13	4	
803	Safety Engineering	GS	15	1	
803	Safety Engineering	NSPS	2	6	
803	Safety Engineering	NSPS	3	6	
806	Materials Engineering	DEMO	2	1	
806	Materials Engineering	DEMO	3	28	1
806	Materials Engineering	DEMO	4	24	1
808	Architecture	GS	11	1	
808	Architecture	GS	13	1	1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
808	Architecture	NSPS	2	3	
809	Construction Control	GS	7	1	
809	Construction Control	GS	9	1	
809	Construction Control	GS	11		1
809	Construction Control	GS	12	3	
809	Construction Control	NSPS	2	2	
809	Construction Control	NSPS	3	13	1
810	Civil Engineering	GS	7	2	
810	Civil Engineering	GS	9	2	1
810	Civil Engineering	GS	11	2	
810	Civil Engineering	GS	12	10	5
810	Civil Engineering	GS	13	4	
810	Civil Engineering	NSPS	2	14	
810	Civil Engineering	NSPS	3	1	
819	Environmental Engineering	GS	9	1	
819	Environmental Engineering	GS	12	1	
819	Environmental Engineering	GS	13	2	
819	Environmental Engineering	NSPS	1	3	2
819	Environmental Engineering	NSPS	2	54	4
819	Environmental Engineering	NSPS	3	15	1
830	Mechanical Engineering	DEMO	2	23	6
830	Mechanical Engineering	DEMO	3	64	7
830	Mechanical Engineering	DEMO	4	56	4

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
830	Mechanical Engineering	GS	5	1	1
830	Mechanical Engineering	GS	7	3	2
830	Mechanical Engineering	GS	9	2	1
830	Mechanical Engineering	GS	11	2	1
830	Mechanical Engineering	GS	12	22	7
830	Mechanical Engineering	GS	13	43	4
830	Mechanical Engineering	GS	14	13	2
830	Mechanical Engineering	GS	15	2	
830	Mechanical Engineering	NSPS	1	103	16
830	Mechanical Engineering	NSPS	2	123	17
830	Mechanical Engineering	NSPS	3	41	5
850	Electrical Engineering	DEMO	2	2	
850	Electrical Engineering	DEMO	3	5	
850	Electrical Engineering	DEMO	4	2	
850	Electrical Engineering	GS	5	1	
850	Electrical Engineering	GS	7	4	
850	Electrical Engineering	GS	9	1	2
850	Electrical Engineering	GS	12	9	
850	Electrical Engineering	GS	13	4	1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
850	Electrical Engineering	NSPS	1	15	3
850	Electrical Engineering	NSPS	2	37	6
850	Electrical Engineering	NSPS	3	7	1
854	Computer Engineering	DEMO	2	12	3
854	Computer Engineering	DEMO	3	34	6
854	Computer Engineering	DEMO	4	16	1
854	Computer Engineering	GS	5	1	
854	Computer Engineering	GS	12	2	1
854	Computer Engineering	GS	13	4	
854	Computer Engineering	GS	14	1	
854	Computer Engineering	NSPS	1	5	1
854	Computer Engineering	NSPS	2	11	
854	Computer Engineering	NSPS	3	2	2
855	Electronics Engineering	DEMO	2	10	1
855	Electronics Engineering	DEMO	3	64	7
855	Electronics Engineering	DEMO	4	31	
855	Electronics Engineering	DEMO	5	1	
855	Electronics Engineering	GS	7	1	1
855	Electronics Engineering	GS	12	11	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
855	Electronics Engineering	GS	13	13	1
855	Electronics Engineering	GS	14	2	
855	Electronics Engineering	GS	15	2	1
855	Electronics Engineering	NSPS	1	2	
855	Electronics Engineering	NSPS	2	57	4
855	Electronics Engineering	NSPS	3	33	1
855	Electronics Engineering	OTHERS	0	1	
856	Electronics Technician	DEMO	2	6	
856	Electronics Technician	DEMO	3	8	
856	Electronics Technician	GS	9	3	
856	Electronics Technician	GS	10	1	
856	Electronics Technician	GS	11	2	1
856	Electronics Technician	GS	12	3	1
856	Electronics Technician	GS	13	2	1
856	Electronics Technician	NSPS	2	5	
856	Electronics Technician	NSPS	3	41	1
856	Electronics Technician	NSPS	4	1	
858	Biomedical Engineering	DEMO	3	1	
858	Biomedical Engineering	GS	13	1	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
858	Biomedical Engineering	NSPS	2	1	
861	Aerospace Engineering	DEMO	2	3	1
861	Aerospace Engineering	DEMO	3	5	
861	Aerospace Engineering	DEMO	4	11	1
861	Aerospace Engineering	GS	13	1	
861	Aerospace Engineering	GS	14	1	
861	Aerospace Engineering	NSPS	1	3	1
861	Aerospace Engineering	NSPS	2	5	
861	Aerospace Engineering	NSPS	3	1	
892	Ceramic Engineering	DEMO	3	2	
892	Ceramic Engineering	DEMO	4	2	
892	Ceramic Engineering	OTHERS	0	1	
893	Chemical Engineering	DEMO	2	2	
893	Chemical Engineering	DEMO	3	13	2
893	Chemical Engineering	DEMO	4	7	
893	Chemical Engineering	GS	5	1	
893	Chemical Engineering	GS	7	11	3
893	Chemical Engineering	GS	9	6	4
893	Chemical Engineering	GS	11	1	1
893	Chemical Engineering	GS	12	37	3

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
893	Chemical Engineering	GS	13	48	7
893	Chemical Engineering	GS	14	15	2
893	Chemical Engineering	GS	15	3	2
893	Chemical Engineering	NSPS	1	4	
893	Chemical Engineering	NSPS	2	18	2
893	Chemical Engineering	NSPS	3	14	
893	Chemical Engineering	OTHERS	0	1	
896	Industrial Engineering	DEMO	2	2	1
896	Industrial Engineering	DEMO	3	4	
896	Industrial Engineering	DEMO	4	1	
896	Industrial Engineering	GS	9	1	
896	Industrial Engineering	GS	13	12	
896	Industrial Engineering	NSPS	1	1	
896	Industrial Engineering	NSPS	2	3	
896	Industrial Engineering	NSPS	3	1	
905	General Attorney	NSPS	2	7	1
905	General Attorney	NSPS	3	18	1
950	Paralegal Specialist	NSPS	1	1	
950	Paralegal Specialist	NSPS	2	9	1
986	Legal Assistance	NSPS	1	2	3
986	Legal Assistance	NSPS	2	3	
1001	General Arts and Information	GS	9		1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
1001	General Arts and Information	GS	11	4	1
1001	General Arts and Information	GS	12	1	
1001	General Arts and Information	NSPS	2	1	
1035	Public Affairs	GS	7	1	
1035	Public Affairs	GS	12	1	
1035	Public Affairs	NSPS	1	2	
1035	Public Affairs	NSPS	2	17	
1035	Public Affairs	NSPS	3	3	
1071	Audiovisual Production	DEMO	3	1	
1071	Audiovisual Production	GS	13	1	
1071	Audiovisual Production	NSPS	2	3	
1083	Technical Writing and Editing	GS	7	1	
1083	Technical Writing and Editing	GS	9	2	
1083	Technical Writing and Editing	GS	11	6	2
1083	Technical Writing and Editing	GS	12	10	2
1083	Technical Writing and Editing	GS	13	6	2
1083	Technical Writing and Editing	NSPS	1	1	
1083	Technical Writing and Editing	NSPS	2	9	1
1083	Technical Writing and Editing	NSPS	3	1	
1084	Visual Information	GS	11	3	
1084	Visual Information	NSPS	1	1	
1084	Visual Information	NSPS	2	18	
1087	Editorial Assistance	NSPS	1	2	1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
1087	Editorial Assistance	NSPS	2	3	
1101	General Business and Industry	GS	7	2	
1101	General Business and Industry	GS	9	7	3
1101	General Business and Industry	GS	12	4	3
1101	General Business and Industry	GS	13	2	
1101	General Business and Industry	NSPS	2	3	1
1101	General Business and Industry	OTHERS	0	1	
1102	Contracting	DEMO	2	1	
1102	Contracting	DEMO	3	2	
1102	Contracting	GS	7	114	23
1102	Contracting	GS	9	23	19
1102	Contracting	GS	11	23	6
1102	Contracting	GS	12	38	13
1102	Contracting	GS	13	65	12
1102	Contracting	NSPS	1	1	
1102	Contracting	NSPS	2	20	5
1102	Contracting	NSPS	3	30	2
1105	Purchasing	GS	7	2	
1105	Purchasing	GS	8	3	
1105	Purchasing	GS	9	1	
1105	Purchasing	GS	10	14	3
1105	Purchasing	NSPS	1	2	
1105	Purchasing	NSPS	2	3	1
1301	General Physical Science	DEMO	3	12	1
1301	General Physical Science	DEMO	4	15	1
1301	General Physical Science	DEMO	5	2	
1301	General Physical Science	GS	5	1	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
1301	General Physical Science	GS	11	1	
1301	General Physical Science	GS	12	11	1
1301	General Physical Science	GS	13	23	5
1301	General Physical Science	GS	14	8	
1301	General Physical Science	GS	15	8	
1301	General Physical Science	NSPS	1	12	4
1301	General Physical Science	NSPS	2	94	11
1301	General Physical Science	NSPS	3	19	4
1301	General Physical Science	OTHERS	0	6	
1306	Health Physics	DEMO	3	1	
1306	Health Physics	GS	7	1	
1306	Health Physics	GS	13	3	1
1306	Health Physics	GS	14	1	1
1306	Health Physics	NSPS	2	9	1
1306	Health Physics	NSPS	3	3	
1306	Health Physics	OTHER	4	1	
1310	Physics	DEMO	2	1	
1310	Physics	DEMO	3	12	1
1310	Physics	DEMO	4	21	1
1310	Physics	GS	11	1	
1310	Physics	GS	13	5	1
1310	Physics	GS	14	4	1
1310	Physics	NSPS	1	2	
1310	Physics	NSPS	2	8	1
1310	Physics	NSPS	3	3	
1311	Physical Science Technician	DEMO	2	11	1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
1311	Physical Science Technician	DEMO	3	4	
1311	Physical Science Technician	GS	5	1	1
1311	Physical Science Technician	GS	7	2	4
1311	Physical Science Technician	GS	9	1	
1311	Physical Science Technician	GS	10	6	
1311	Physical Science Technician	GS	11	4	
1311	Physical Science Technician	GS	12	2	
1311	Physical Science Technician	NSPS	1	6	1
1311	Physical Science Technician	NSPS	2	16	
1311	Physical Science Technician	NSPS	3	4	
1320	Chemistry	DEMO	2	3	1
1320	Chemistry	DEMO	3	18	2
1320	Chemistry	DEMO	4	18	3
1320	Chemistry	GS	5	1	1
1320	Chemistry	GS	7	3	1
1320	Chemistry	GS	9	3	1
1320	Chemistry	GS	11	5	3
1320	Chemistry	GS	12	32	6
1320	Chemistry	GS	13	55	8
1320	Chemistry	GS	14	32	8
1320	Chemistry	GS	15	8	
1320	Chemistry	NSPS	1	4	1
1320	Chemistry	NSPS	2	44	2
1320	Chemistry	NSPS	3	9	1
1320	Chemistry	OTHERS	0	3	
1340	Meteorology	NSPS	2	5	
1374	Geodetic Technician	NSPS	2	1	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
1374	Geodetic Technician	NSPS	3	4	
1410	Librarian	DEMO	3	5	1
1410	Librarian	GS	11	1	
1410	Librarian	NSPS	2	2	1
1515	Operations Research Analyst	DEMO	2	5	3
1515	Operations Research Analyst	DEMO	3	24	4
1515	Operations Research Analyst	DEMO	4	18	
1515	Operations Research Analyst	GS	7	3	
1515	Operations Research Analyst	GS	9	5	2
1515	Operations Research Analyst	GS	11	2	1
1515	Operations Research Analyst	GS	12	7	1
1515	Operations Research Analyst	GS	13	5	
1515	Operations Research Analyst	GS	14	1	
1515	Operations Research Analyst	NSPS	1	21	5
1515	Operations Research Analyst	NSPS	2	122	7
1515	Operations Research Analyst	NSPS	3	148	7
1515	Operations Research Analyst	OTHERS	0	2	
1520	Mathematics	DEMO	2	4	
1520	Mathematics	DEMO	3	9	1
1520	Mathematics	DEMO	4	4	
1520	Mathematics	GS	9	1	
1520	Mathematics	GS	12	1	
1520	Mathematics	GS	13	1	
1520	Mathematics	GS	14	1	
1520	Mathematics	NSPS	1	4	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
1520	Mathematics	NSPS	2	20	2
1520	Mathematics	NSPS	3	4	
1521	Mathematics Technician	DEMO	1	2	1
1521	Mathematics Technician	DEMO	2	2	
1521	Mathematics Technician	NSPS	1	2	2
1529	Mathematical Statistician	DEMO	2	1	
1529	Mathematical Statistician	DEMO	3	2	
1529	Mathematical Statistician	DEMO	4	6	
1529	Mathematical Statistician	NSPS	1	1	
1529	Mathematical Statistician	NSPS	2	4	
1529	Mathematical Statistician	NSPS	3	1	
1550	Computer Scientist	DEMO	2	18	7
1550	Computer Scientist	DEMO	3	67	5
1550	Computer Scientist	DEMO	4	17	1
1550	Computer Scientist	GS	7	3	
1550	Computer Scientist	GS	9	1	
1550	Computer Scientist	GS	11	2	1
1550	Computer Scientist	GS	12	9	2
1550	Computer Scientist	GS	13	5	1
1550	Computer Scientist	GS	14	1	
1550	Computer Scientist	NSPS	1	23	4
1550	Computer Scientist	NSPS	2	29	4
1550	Computer Scientist	NSPS	3	2	
1601	Equipment, Facilities, and Services	GS	11	2	
1601	Equipment, Facilities, and Services	GS	12	1	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
1601	Equipment, Facilities, and Services	GS	14	1	
1601	Equipment, Facilities, and Services	NSPS	2	9	2
1601	Equipment, Facilities, and Services	NSPS	3	1	
1640	Facility Operating Services	GS	9	2	2
1640	Facility Operating Services	GS	11	2	1
1640	Facility Operating Services	GS	12	1	1
1640	Facility Operating Services	NSPS	2	20	2
1670	Equipment Services	DEMO	2	1	
1670	Equipment Services	DEMO	3	1	
1670	Equipment Services	GS	9	4	
1670	Equipment Services	GS	11	5	1
1670	Equipment Services	GS	12	2	1
1670	Equipment Services	GS	13	3	1
1670	Equipment Services	NSPS	1	3	
1670	Equipment Services	NSPS	2	31	1
1670	Equipment Services	OTHER	3	1	
1701	General Education and Training	GS	11	1	
1701	General Education and Training	NSPS	2	5	
1701	General Education and Training	NSPS	3	1	
1702	Education and Training Technician	GS	7	1	
1702	Education and Training Technician	NSPS	1	3	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
1702	Education and Training Technician	NSPS	2	4	
1702	Education and Training Technician	NSPS	3	1	
1712	Training Instruction	GS	9		1
1712	Training Instruction	NSPS	1	1	
1712	Training Instruction	NSPS	2	71	7
1750	Instructional Systems	NSPS	2	9	2
1750	Instructional Systems	NSPS	3	2	
1801	General Inspection, Investigation and Compliance	NSPS	2	7	2
1801	General Inspection, Investigation and Compliance	NSPS	3	2	
1910	Quality Assurance	GS	11	2	
1910	Quality Assurance	GS	12	2	
1910	Quality Assurance	GS	13	8	
1910	Quality Assurance	GS	14	1	
1910	Quality Assurance	NSPS	2	12	1
1910	Quality Assurance	NSPS	3	1	
2001	General Supply	GS	7	4	1
2001	General Supply	GS	9	15	7
2001	General Supply	GS	11	1	
2001	General Supply	GS	12	1	
2001	General Supply	GS	13	2	
2001	General Supply	NSPS	2	9	
2001	General Supply	NSPS	3	1	
2001	General Supply	OTHER	2	1	
2001	General Supply	OTHER	3	1	
2003	Supply Program Management	DEMO	3	2	
2003	Supply Program Management	GS	9	2	

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
2003	Supply Program Management	GS	11	6	3
2003	Supply Program Management	GS	12	10	3
2003	Supply Program Management	GS	13	5	2
2003	Supply Program Management	GS	14	1	
2003	Supply Program Management	NSPS	1	4	
2003	Supply Program Management	NSPS	2	23	5
2005	Supply Clerical and Technician	DEMO	2	2	
2005	Supply Clerical and Technician	GS	5	1	
2005	Supply Clerical and Technician	GS	6	2	
2005	Supply Clerical and Technician	GS	7	11	1
2005	Supply Clerical and Technician	NSPS	1	16	2
2005	Supply Clerical and Technician	NSPS	2	9	1
2010	Inventory Management	DEMO	3	1	
2010	Inventory Management	GS	11	8	3
2010	Inventory Management	GS	12	9	2
2010	Inventory Management	GS	13	6	1
2010	Inventory Management	GS	14	1	
2032	Packaging	GS	12	5	1
2032	Packaging	GS	13	1	1
2102	Transportation Clerk and Assistant	NSPS	1	5	1

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
2102	Transportation Clerk and Assistant	NSPS	2	3	
2130	Traffic Management	GS	11		2
2130	Traffic Management	GS	12	2	
2130	Traffic Management	GS	13	1	1
2130	Traffic Management	NSPS	2	1	
2181	Aircraft Operation	NSPS	2	6	1
2204	Computer Technician	NSPS	1	4	
2204	Computer Technician	NSPS	2	1	
2210	Information Technology Management	DEMO	2	15	2
2210	Information Technology Management	DEMO	3	29	1
2210	Information Technology Management	DEMO	4	3	1
2210	Information Technology Management	GS	9	3	
2210	Information Technology Management	GS	11	10	1
2210	Information Technology Management	GS	12	12	1
2210	Information Technology Management	GS	13	6	1
2210	Information Technology Management	GS	14	1	
2210	Information Technology Management	NSPS	1	3	2

Series	Title	Plan	Grade	Current Employees	Projected Vacancies
2210	Information Technology Management	NSPS	2	117	14
2210	Information Technology Management	NSPS	3	6	3
Total Number of Job Specialties Analyzed: 127				Total Number of Current Employees Analyzed: 7419	Total Number of Potential Vacancies Analyzed: 1141

APPENDIX C: SUBSET OF APG POSITION DATA BY ORGANIZATION



APG_GS_13_&_Above_Equiv.xls

