City and County of San Francisco

Office of the Controller – City Services Auditor

DPWSTAT

A Case Study Of San Francisco Public Works' Performance Management Program

February 12, 2015, v1.0

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- Operating a whistleblower hotline and website and investigating reports of waste, fraud, and abuse of city resources.
- Ensuring the financial integrity and improving the overall performance and efficiency of city government.

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Acknowledgements:

A special thank you to the following members of Public Works' past and current team for helping to make DPWStat and this case study possible: Rachel Alonso, Douglas Legg, and Ephrem Naizghi.

The co-authors would also like to recognize the following members of Public Works' past and current team for helping to make DPWStat what it is today: Ken McCormick, Eddy Ching, Geoffrey Schneider, Yan Chao, Wayne Chang, Christine Nath, Shwe Hnin, Eliot Chang, and Carla Hansen.

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EXECUTIVE SUMMARY

This case study is for anyone who is curious to learn more about DPWStat (Department of Public Works Statistics) or is interested in initiating a Stat management program. It discusses why San Francisco Public Works (Public Works)[1] developed DPWStat, how the department has benefited from the program, how the program works, and the insights that the department has gained about how to develop Stat programs effectively.

I. Introduction & Background

DPWStat is a performance management program that enables Public Works leadership and staff to work together to monitor and improve the performance of core operational activities. This section briefly describes the motivations behind DPWStat's development.

II. Benefits

DPWStat helps program participants recognize organizational strengths, identify operational challenges, and generate effective solutions. This section describes specific examples of the positive outcomes that the program has generated.

III. How It Works

This section describes the logistical coordination behind DPWStat meetings and outlines how meetings are structured.

IV. Insights

This section describes lessons learned and offers recommendations for other agencies that are interested in starting a Stat program. It emphasizes continuous executive support, data infrastructure, and data quality as key to launching a successful Stat program. This section also highlights the importance of fostering an organizational culture of mutual trust and respect, dedicating staff to program administration, starting small, and celebrating incremental success once the program is up and running.

[1] San Francisco Public Works is responsible for permitting, inspecting, coordinating, and maintaining the City and County of San Francisco's ("City's") assets in the public right of way, including streets, sidewalks, plazas, litter receptacles, and street trees. The department also performs sewer repairs and provides architectural, engineering, construction management, and building repair services for City-owned buildings and other facilities. For more information, please visit www.sfpublicworks.org.

I. INTRODUCTION & BACKGROUND

DPWStat is a performance management program that helps Public Works leadership, managers, and supervisors monitor the performance of core operational activities and improve the quality of the services they deliver to the public.[2] The department's director, managers, and staff meet monthly to discuss and analyze key performance measures, brainstorm ways to improve, develop action plans, and address previously identified issues.

DPWStat officially launched in October 2010 and continues today. Departmental efforts over several years – strategic planning, research and documentation of practices, and building technical infrastructure – have supported and aligned with the development of the program.

Strategic Planning

In 2008, under the direction of Edward Reiskin, Public Works embarked on a year-long strategic planning process. The plan, released in 2009, included three relevant strategic objectives: [3]

- Improve the effectiveness and efficiency of Public Works processes and organizational structure by encouraging and rewarding innovation;
- Leverage technology to improve services and increase operating effectiveness and efficiency; and
- Deliver clear, coordinated, and timely information within and across bureaus at all levels of the organization.

Since the establishment of DPWStat, subsequent Public Works strategic plans include key initiatives for its progress and improvement.

Public Works Accreditation

For several years, as a strategic initiative, San Francisco Public Works worked to gain accreditation from the American Public Works Association (APWA), which recognizes compliance with recommended public works management practices. In April 2010, Public Works became the fourth agency in California and the 57th agency in the country to receive APWA accreditation. APWA emphasizes the importance of reviewing and documenting procedures, while DPWStat helps clarify and improve business processes.

Business Intelligence and Data Warehouse Project

When Ed Reiskin became the Director of Public Works in 2008, he wanted comprehensive data on the department's operations. Public Works had many separate electronic databases for tracking activities, while some work was recorded on individual spreadsheets or text documents, or even paper lists.

[2] See Public Works' mission at http://www.sfdpw.org/index.aspx?page=28

[3] See Goal 3 - Deliver World Class Public Service-Embrace Organizational Efficiency and Innovation, Objectives 3.5, 3.7, and 3.13 in the web document http://sfdpw.org/ftp/uploadedfiles/sfdpw/director/DPW Strategic Plan in Brief 11x17Poster 02 2009.pdf

Public Works' Information Technology (IT) team worked to integrate service data from multiple sources, and structure it so that it could be analyzed and reported to support data-driven decision-making. For example, street cleaning and pothole repair were tracked in separate databases, but each contained data organized by service order. These could be combined, with a set of common dimensions of interest, such as: date received, type of work needed, location, and date completed. Data from other sources, such as geographic and financial systems, could be included. The IT team established a data structure to allow users to select and to summarize data, such as the number of service requests or projects within a part of the City.[4] IT created a similar integrated data source for architectural and engineering projects,[5] and built tools to extract this warehoused data and perform calculations, such as number of days from start to completion.

This business intelligence and data warehouse project formed the technical foundation for the DPWStat program, in that the tools integrate and transform raw data from operations and project management systems into a central source of information that can be analyzed, displayed, discussed, and acted upon. The project is ongoing through 2017, as Public Works further integrates service, budget, financial, labor, and contracting data.

New Service and Project Tracking Systems

In recent years, Public Works' IT developed two new transactional systems: Computerized Maintenance Management System (CMMS) and Enterprise Project Management (EPM). Their implementation was strongly entwined with the DPWStat program. Adoption of these systems where tracking had been inconsistent has greatly increased the amount of information available for management analysis. And where necessary, DPWStat reports have focused on the gaps, pointing out missing data and encouraging staff to use the systems consistently.

Performance Stat Program Best Practices

Public Works investigated best practices for establishing performance management programs and key service measurements. For example, in February 2010, staff researched the CompStat (Computer Statistics or Comparative Statistics) program at the San Francisco Police Department (SFPD).[6] The findings from this research shaped the initial blueprint for DPWStat.[7]

[4] IT created multidimensional data "cubes," or Online Analytical Processing or OLAP cubes, in which data relationships are established. Users can connect to the data in an OLAP cube using Excel, Tableau, or other analytical software to perform analyses.

[5] Because the nature of the data differs between project and service order work, these are two separate, smaller "data marts" within a larger, and still developing, data warehouse.

[6] See SFPD CompStat webpage at http://www.sf-police.org/index.aspx?page=3254

[7] See Public Works' organizational chart at http://www.sfdpw.org/index.aspx?page=1088. Mr. Douglas Legg (Public Works' former Finance, Budget & Performance Manager) subsequently received a SPUR 2014 MFAC Public Managerial Excellence Award partially for his work on DPWStat.

II. BENEFITS

DPWStat meeting discussions focus on understanding and improving performance results, changing inefficient business practices, and allocating resources more effectively. In general, DPWStat has helped to generate five types of positive outcomes for the department:

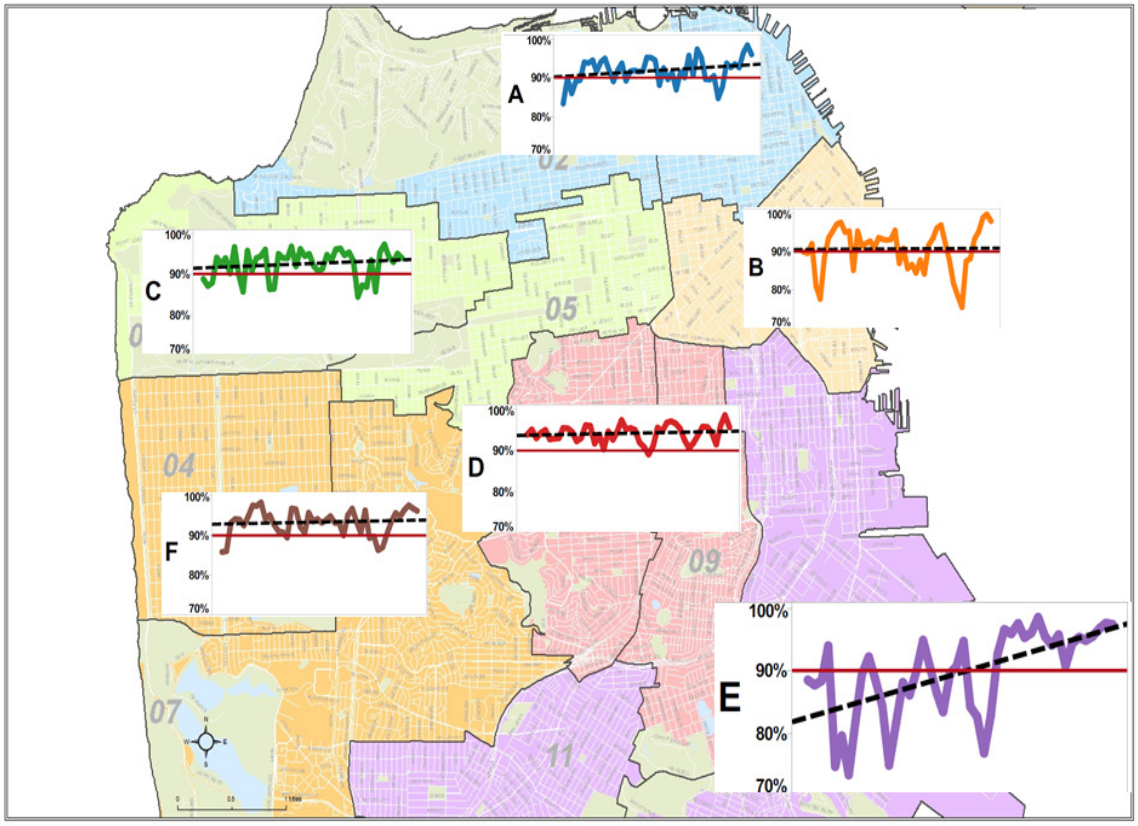
1. Better information
    - Regular reporting and reviewing data leads to improvement in the information itself, as staff see the need to enter timely and accurate data to reflect the work they do, and to correct erroneous information.
2. Better analysis
    - As available data becomes more accurate and comprehensive, and as Public Works has dedicated staff to acquire tools and training, the department is able to monitor time trends, seasonal variation, geographic differences, productivity measures, etc.
3. Better communication
    - Managers and colleagues understand field conditions and issues;
    - Staff understand management expectations; and
    - SF Public Works staff shares information across operational units, and with external partners and clients.
4. Better decision-making
    - Managers can use data and analysis rather than habit or anecdote to allocate resources.
5. Better service
    - The department aligns its resources to demand for services.
    - Service delivery, especially response time, improves.

The following discussion includes specific examples of the data visualizations that DPWStat uses to solve problems during its meetings and the positive outcomes that have resulted.[8]

[8] The data behind the visualizations included in this section has not been audited by Controller's Office staff.

Benefit #1 – Improved Equity in Service Delivery of Street Cleaning

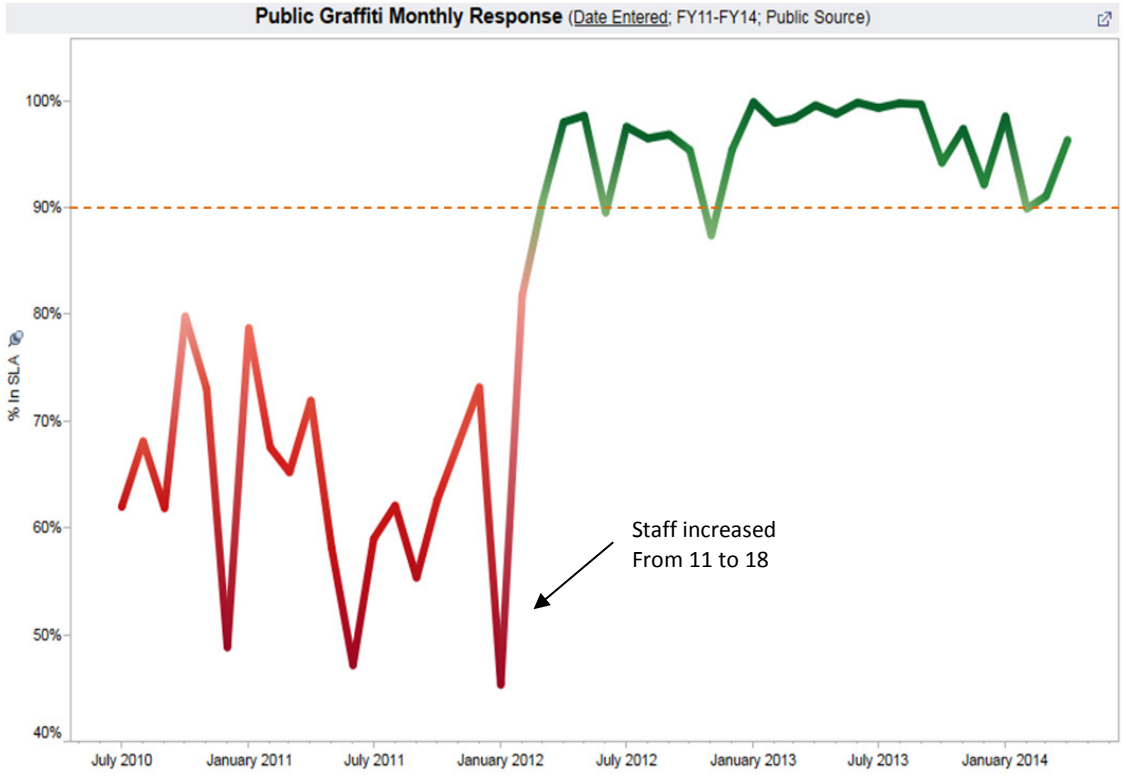
The following map and subcharts show Public Works' street cleaning performance over time and across the city. The lines on each subchart below reflect the percentage of street cleaning responses that occurred within the target time period. Tracking performance by geographic area helps equalize service delivery across neighborhoods. By reviewing the map during DPWStat meetings, the department identified longer response times in the Bayview and, by reallocating resources, drastically improved its performance in that area over time (see subchart E). Now response to street cleaning requests in the Bayview is on par with response in other areas of San Francisco.



Legend for subcharts labeled A to E:
Lines are percentages of street cleaning responses that occurred within the target time period.
Red lines indicate the target response rate of 90%.
Dashed lines are long term trend lines.
Data source: Public Works' 28Clean database, extracted via Public Works' data warehouse.

Benefit #2 - Public Graffiti Response Time Improved

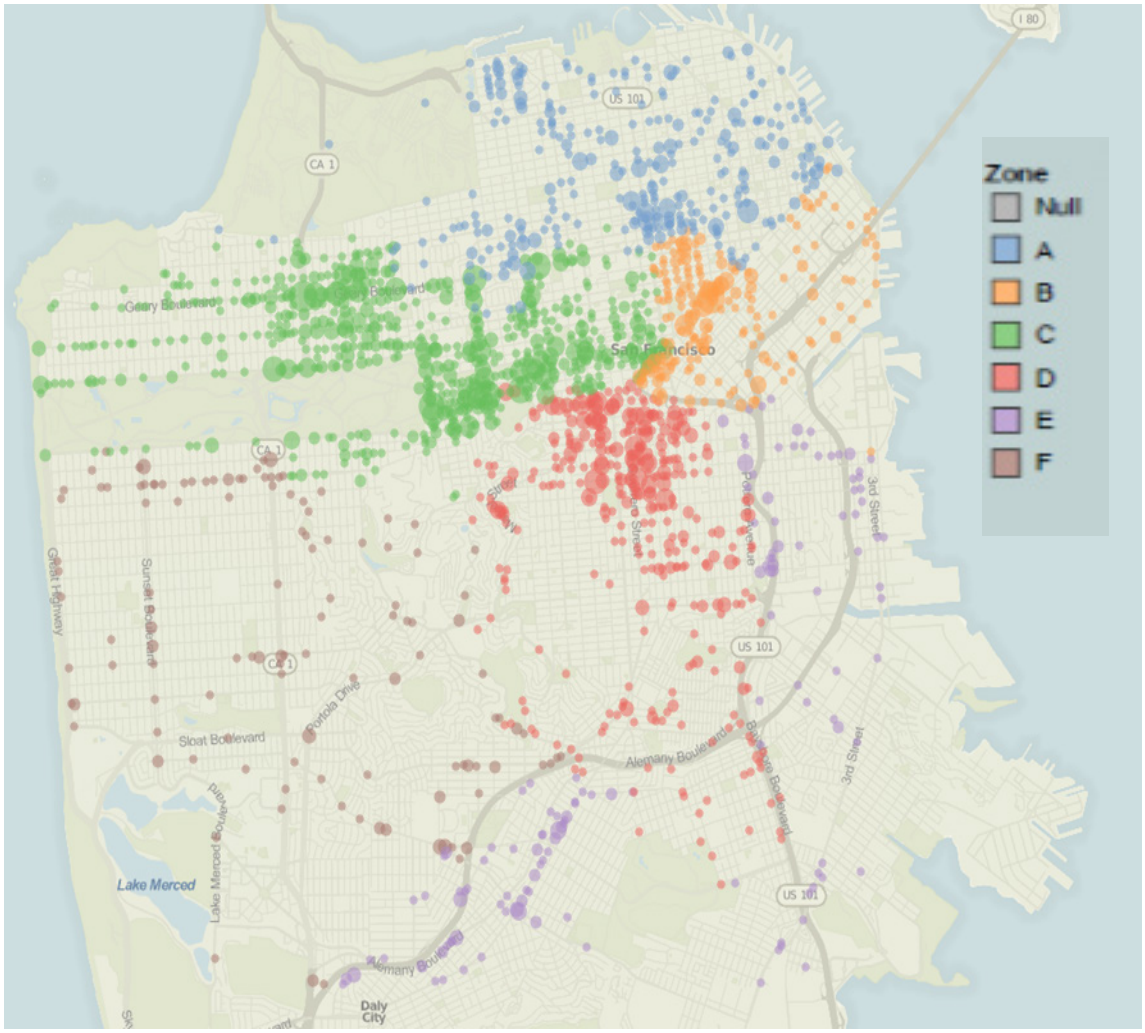
Once the department gained the ability to visualize patterns in public graffiti response times during DPWStat meetings, Public Works' Bureau of Street Environmental Services (BSES) quickly realized that its FY 2010-11 performance (red line) was substantially below its target of 90% of responses within 48 hours (orange dashed line). DPWStat data allowed managers to justify adding resources. As staffing increased in February 2012, response times improved dramatically. Public Works has consistently achieved the 90% target since early 2012 (green line).



Data source: Public Works' 28Clean database, extracted via Public Works' data warehouse.

Benefit #3 - Justification for Resource Reallocation to Reduce Graffiti

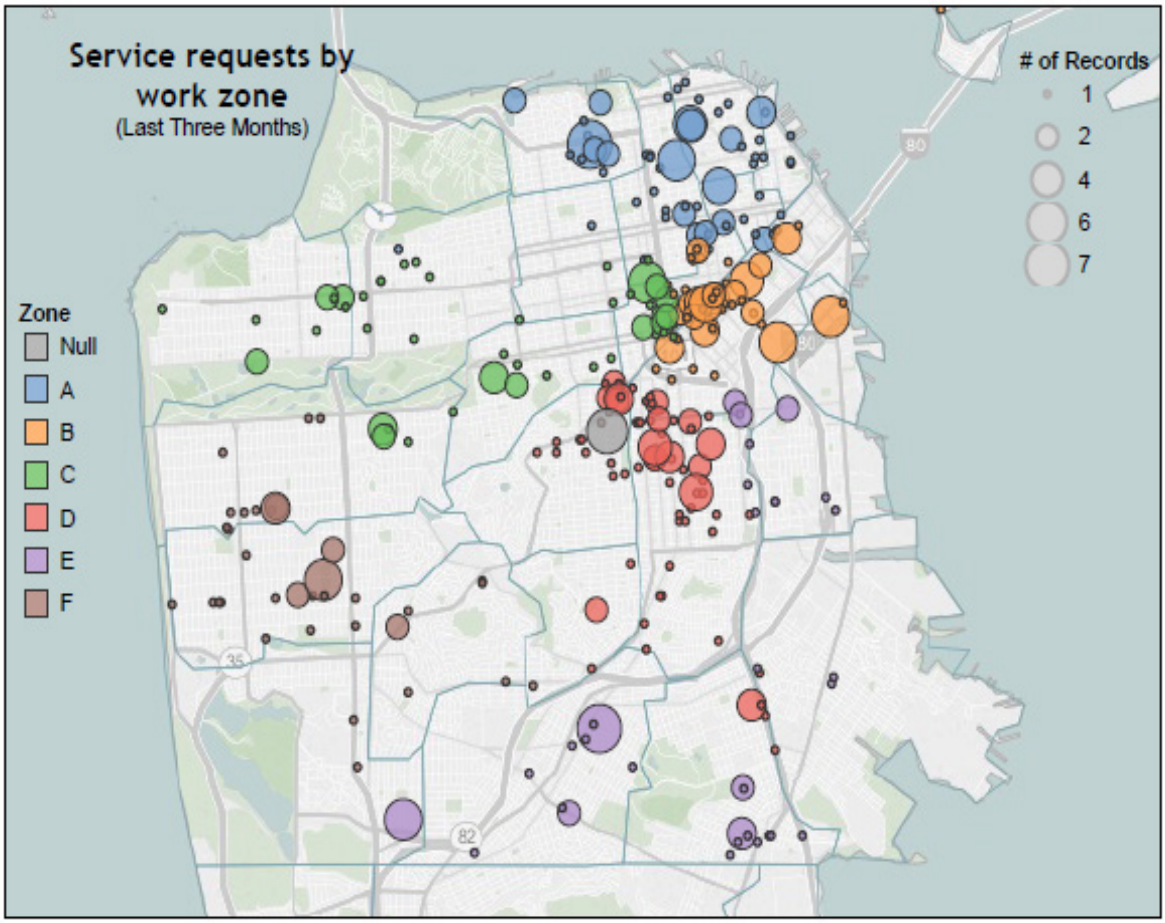
DPWStat's visualization tool allows the program team to create maps easily and to view the data from different operational perspectives. The map below shows where Public Works has received requests for graffiti abatement across the City. Presented the data geographically, historical graffiti hot spots within the City are immediately observable. This map helps to justify the reallocation of resources to reduce graffiti in areas of the city where requests occur most frequently.



Data source: Public Works' 28Clean database, extracted via Public Works' data warehouse.

Benefit #4 – Improved Coordination Around Litter Receptacle Service Requests

Public Works is responsible for the installation, maintenance, and removal of litter receptacles. DPWStat led to new ways of effectively tracking service requests related to trash receptacles. Public Works set deadlines for addressing each type of request and regularly reviews the volume of requests, the locations they pertain to, and the timeliness of staff response. Moreover, this detailed information about trash receptacle locations and the number of requests received has helped Public Works and Recology, the City's refuse collector, work together to identify strategies and address issues in specific locations.



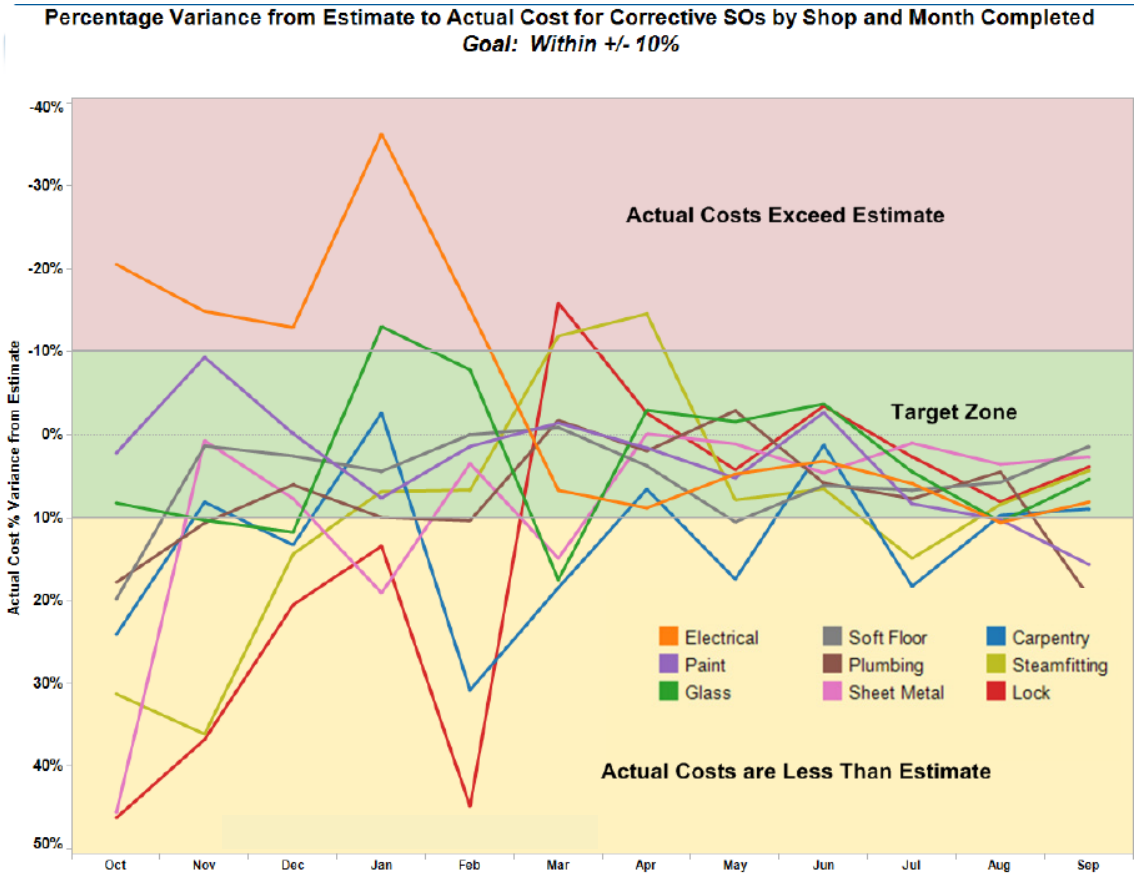
Overflowing Can Hotspots (Last Three Months)

Data source: San Francisco's 311 Customer Service Center.

Benefit #5 - Service Order Cost Estimate Deviations Improved From 2012 to 2013

At DPWStat meetings, the department recognized that some building repair shops (denoted by colored lines in the chart below) were having trouble accurately estimating service order costs within the target +/- 10% of actual cost (green band in chart). Accurate estimates are important to the client agencies that pay for Public Works' building services. Improved estimating has also allowed for better resource planning and allocation.

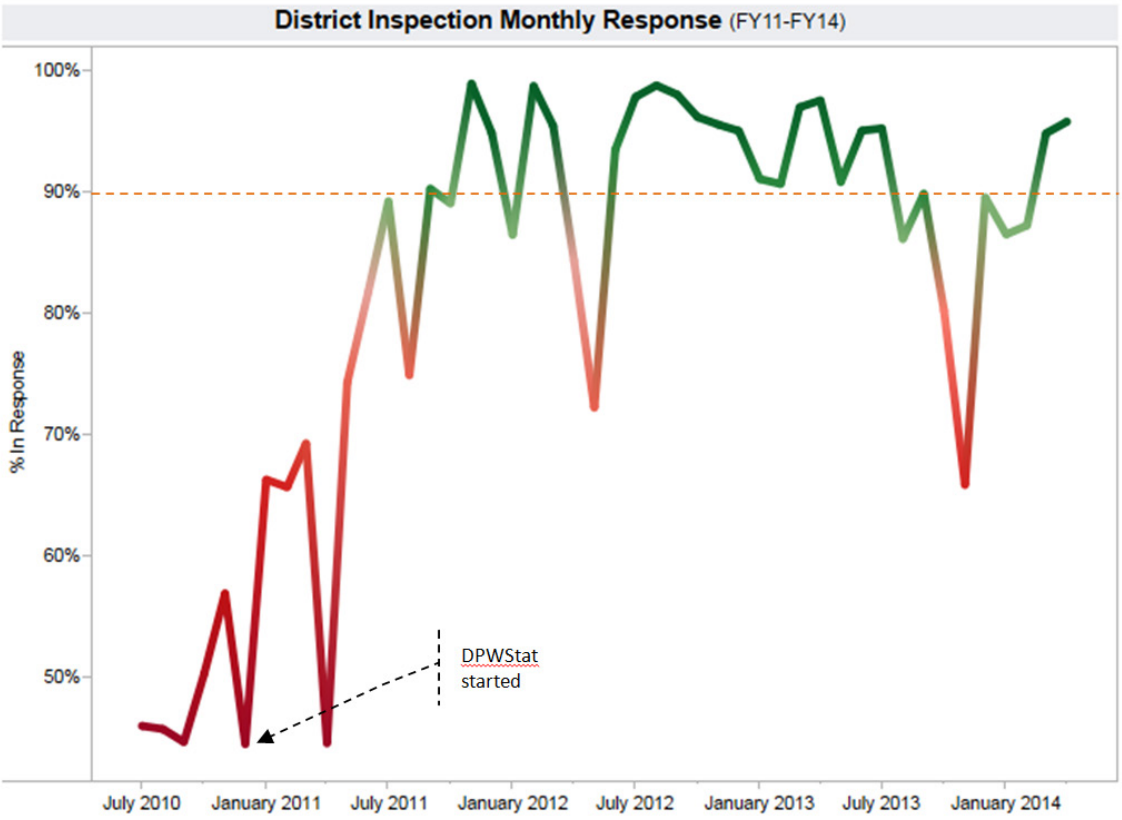
While some shops underestimated their costs, others overestimated theirs. Upon recognizing this challenge, the shops began to share tips and solutions during the regularly scheduled DPWStat meetings over the next 12 months. Within the year, most shops were able to reduce their estimation deviations to within the +/-10% band.



Data source: Public Works Computerized Maintenance Management System, extracted via Public Works' data warehouse.

Benefit #6 – Right of Way Inspection Response Time Improved Over a Four Year Period

The Bureau of Street Use and Mapping inspects issues such as defects in or obstruction of streets and sidewalks. Depending on the type of request and priority, inspections usually occur within two to five business days from day of request. DPWStat has given the department the ability to visualize the timeliness of their responses to complaints about street and sidewalk conditions. The chart below shows the average percentage of inspections that the Bureau of Street Use and Mapping (BSM) conducted on time. DPWStat helped BSM prioritize inspections and manage workloads differently. The bureau manager also instituted a weekly internal meeting for staff to proactively review data, identify successes, and identify strategies to continue to improve.

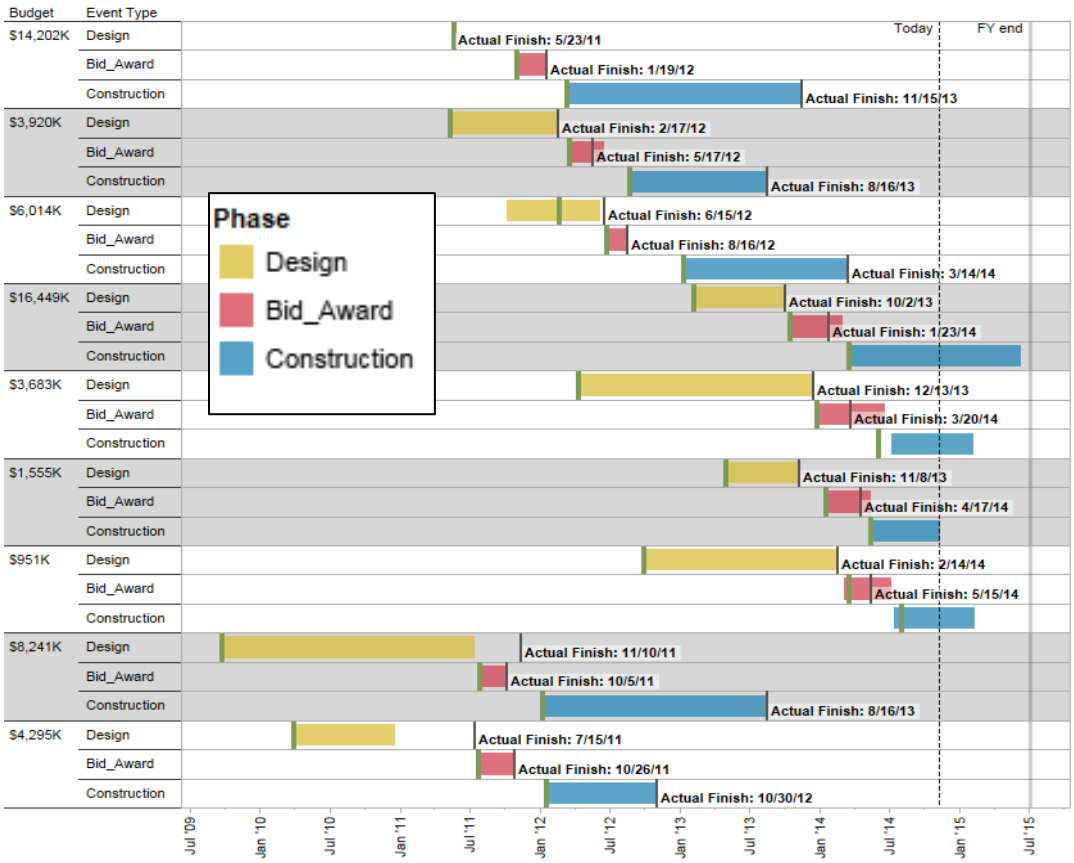


Data source: Public Works' Bureau of Street Use and Mapping Inspections database, extracted via Public Works' data warehouse.

Benefit #7 – Capital Projects Reporting Improved

As part of the newer DPWStat for Design & Construction (DPWStat DC) meetings, the director, managers, and staff review the volume and status of capital projects, broken down by phase, lead Public Works division, and client department. This has improved transparency and the accountability for the department's capital projects and programs.

Schedule performance, in the form of a Gantt chart below, is reviewed for each project phase, where baseline schedules are compared with estimated and actual project timelines. Changes to baselines are tracked and need a manager's approval. Public Works regularly monitors and identifies projects at risk of falling behind schedule. The department also reports on specific areas of project and contract management, such as change orders and the contract closeout process.



Legend: the gold/red/blue horizontal bars represent baseline project phase durations for a project and the short vertical lines represent actual milestone dates.
Data source: Public Works' Enterprise Project Management system, extracted via Public Works' data warehouse.

In addition to overall project statistics, monthly DPWStat DC meetings focus on a rotating selection of major clients, including the following City departments and programs: Recreation & Parks, Municipal Transportation Agency, Public Utilities Commission, Public Health, and the first phase of the Earthquake Safety and Emergency Response Bond program. DPWStat DC meetings also focus on projects associated with sewer construction, paving, streetscape, roadway repair, and curb ramp programs.

Benefit #8 – Improved Balancing of Priorities and Goals

DPWStat has not just been about accountability and reporting. It has promoted curiosity about organization-wide goals, educated staff about the relationships between these goals, and allowed staff to explore how to balance priorities. For example, Public Works had the goal of closing 90% of service requests within 48 hours, but DPWStat demonstrated that this target was not sufficient on its own, as it did not reveal how quickly the department closed service requests that took longer than 48 hours. That is, the department was not tracking whether these non-performing service requests actually took 72 hours or 720 hours to close. On the other hand, an exclusive focus on reporting response time statistics on most recent services requests can discourage tackling older services requests cases from backlog.

Benefit #9: Evidence-Based Hypothesis Testing

Last but not least, DPWStat has allowed the department to systematically prove and disprove performance-related hypotheses. For example, at one point, some managers suspected that the department received most calls for street cleaning over the weekend or on Mondays. A DPWStat chart demonstrated that this theory was incorrect and participants moved on to testing other hypotheses. DPWStat has saved the department time and money by ensuring that participants base solutions on evidence rather than hunches, anecdotal accounts or opinions.

III. HOW IT WORKS

At the heart of DPWStat are the monthly meetings in which participants analyze and discuss operational problems revealed by the data. This section describes the essential elements of the meetings, including the people involved, when and where meetings are held, the preparatory steps behind the meetings, and the typical meeting format.

Meeting Participants

DPWStat meetings involve the following participants:

- *Public Works' Director - Mohammed Nuru (Executive Sponsor)*
  Mohammed Nuru leads the monthly DPWStat meetings and ensures that discussions remain relevant and productive. He also provides feedback and makes requests of the participants. His consistent participation has been crucial in driving DPWStat's long-term success. Please see page 19 for more information about the critical importance of executive sponsorship.

- *Bureau managers and select staff*[9]
  These participants review the performance data and dashboards[10] provided by the DPWStat team prior to the monthly meetings. During the meetings, they present and explain the data, report on successful trends, and brief the Director on issues affecting their performance. They also collaborate with the DPWStat team to maintain the relevance and usefulness of the performance dashboards.

- *Information Technology (IT) team - led by Ephrem Naizghi (Chief Information Officer)*
  Public Works' IT team provides critical access to the performance data that resides in the department's data warehouse and other systems. The team also refines the system's infrastructure as necessary.

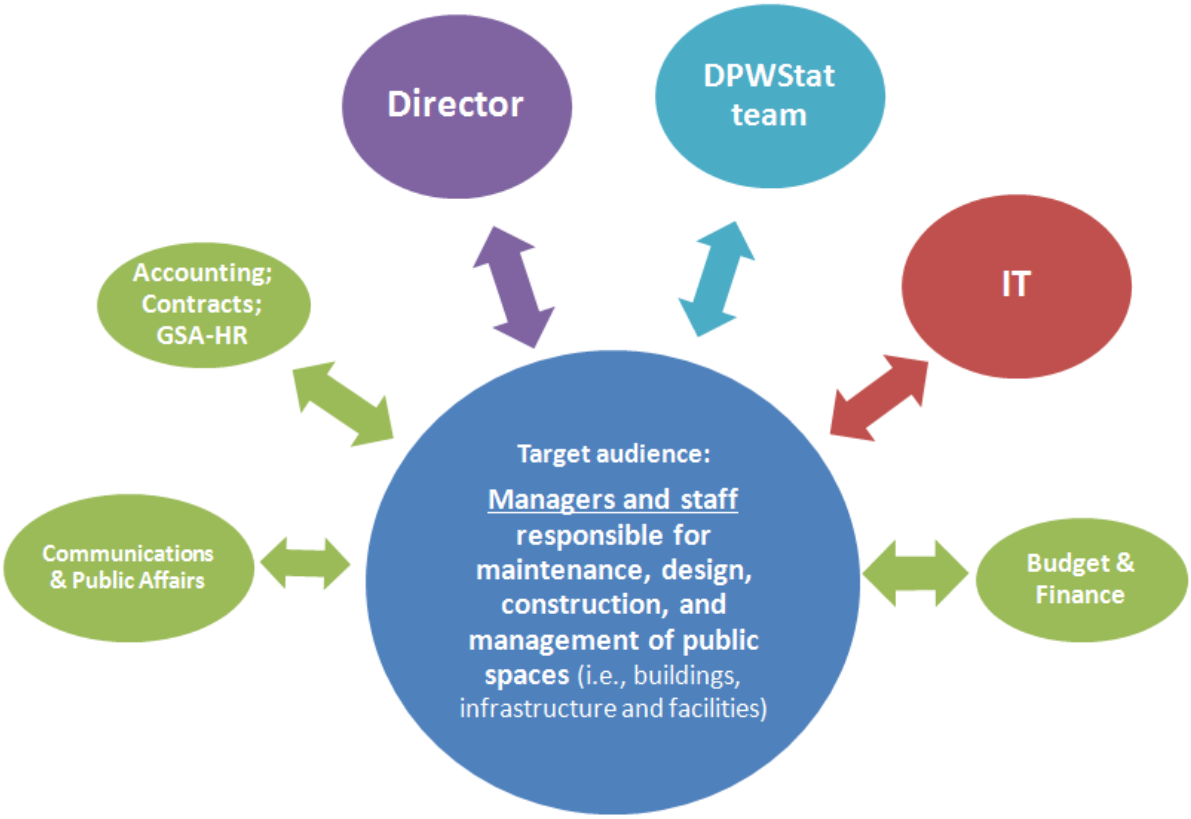
- *DPWStat team - Alexandra Bidot, Rachel Alonso, and Anne Jenkins (Analysts)*
  The program's team currently consists of three full time employees that coordinate DPWStat meetings and produce the data visualizations that are displayed at the meetings. The DPWStat team is also involved in special analytical and strategic planning initiatives as needed. When called upon to create operational dashboards that monitor critical business processes, the DPWStat team works closely with the department's bureau staff to determine program goals, the scope of services to be monitored, and performance metrics and targets. The DPWStat team also works closely with the bureaus to continually improve the dashboards and data quality.

[9] See DPW organization chart at http://www.sfdpw.org/index.aspx?page=1088 and DPW Bureau descriptions and services provided at http://www.sfdpw.org/index.aspx?page=1096

[10] A dashboard is a collection of charts and/or other displays of related data, often used for measuring performance.

- *Budget, Finance, Accounting, Contracts, Human Resources, and Communications*
  All of these functions support operational performance, and representatives frequently participate in DPWStat meetings.

The relationship between each of these participants in DPWStat meetings is depicted by the following visual:



Meeting Location, Length, & Frequency

DPWStat meetings on operational performance occur on the second Tuesday of each month at the Public Works Yard. The meetings typically run for two hours (from 10am to 12pm). Regular meetings reinforce the importance of continuous performance improvement and provide an opportunity to review data, solve problems, and assess the effectiveness of solutions over time.

In October 2012, DPWStat expanded to include those bureaus that specialize in the design and construction of capital projects. Design and construction bureaus use DPWStat dashboards to discuss project timelines with major clients and with key staff in contract administration, and to address issues such as project delays. DPWStat meetings on design and construction performance are held on the third Tuesday of each month from 10am to 12pm. These meetings typically occur at City Hall.

Meeting Preparation

The DPWStat team prepares an agenda and updates performance dashboards prior to DPWStat meetings. For each meeting, the team performs the following specific tasks:

1. Approximately one week before the meeting, the DPWStat team updates dashboards with performance data through the end of the previous month. Some bureau managers and staff initiate their own data review, connecting with the same data as the DPWStat team via Excel or Tableau.

2. The team then emails drafts of the dashboards and the agenda to bureau staff, and uploads workbooks to Tableau server so that staff with licenses can examine data as needed. The bureaus then review performance measures, flag or fix data issues, and prepare for the meeting.

3. If necessary, the DPWStat team attempts to address any concerns and issues raised by bureau staff before the meeting.

4. The day before the meeting, the DPWStat team prints hard copies of the finalized agendas and dashboards. These documents are also uploaded to the Public Works SharePoint portal so that staff can access meeting materials from anywhere.

Meeting Format and Typical Agenda

Bureau managers, staff, and management provided an overview of their operations at the first few DPWStat meetings to give audience members an understanding of where they fit within the larger Public Works organization. Since then, the format of DPWStat meetings has remained relatively stable:

1. After a brief introduction by the Director, supervisors from each service area take the floor one by one.
2. Both the manager and select frontline staff from each service area present their performance using their respective Tableau dashboards. The order of these presentations changes every meeting, and relevant staff members are notified in advance of the approximate time they should expect to present. Their presentations often lead to questions from executive leadership, and Tableau's interactive and drill-down features usually allow for service area representatives to answer these questions on the spot. The discussion that results often focuses on deeper strategic issues and areas for operational improvement. These discussions are most fruitful when they involve the participation of key support staff from Human Resources, Budget, and Communications.
3. Lastly, the DPWStat team follows up with the bureaus on the action items identified in previous meetings and summarizes action items going forward.

A sample meeting agenda[11] is included below:

Agenda

Tuesday, May 13, 2014 Meeting

10 AM – 12 PM / 2323 Cesar Chavez (Training Trailer)

I.	Welcome	10:00 - 10:05
II.	**Graffiti (BSES)** New: labor hours	**10:05 - 10:15**
III.	**Street Cleaning (BSES)**	**10:15 - 10:30**
IV.	**Inspections & Permits (BSM)** Note: ASAP and SIRP will not be reviewed this month	**10:30 - 10:55**
V.	**Tree Maintenance & Landscaping (BSES/UF)**	**10:55 - 11:10**
VI.	**Roadway Repair, Cement Shop, and Sewer Repair (BSSR)** New: revised Cement Shop dashboards	**11:00 – 11:35**
VII.	**Building Repair (BBR)**	**11:35 - 11:55**
VII.	**Closure** a. Next meeting's objectives b. Feedback about previous DPWStat meeting	**11:55 - 12:00**

[11] The acronyms in the agenda stand for the following bureau names:

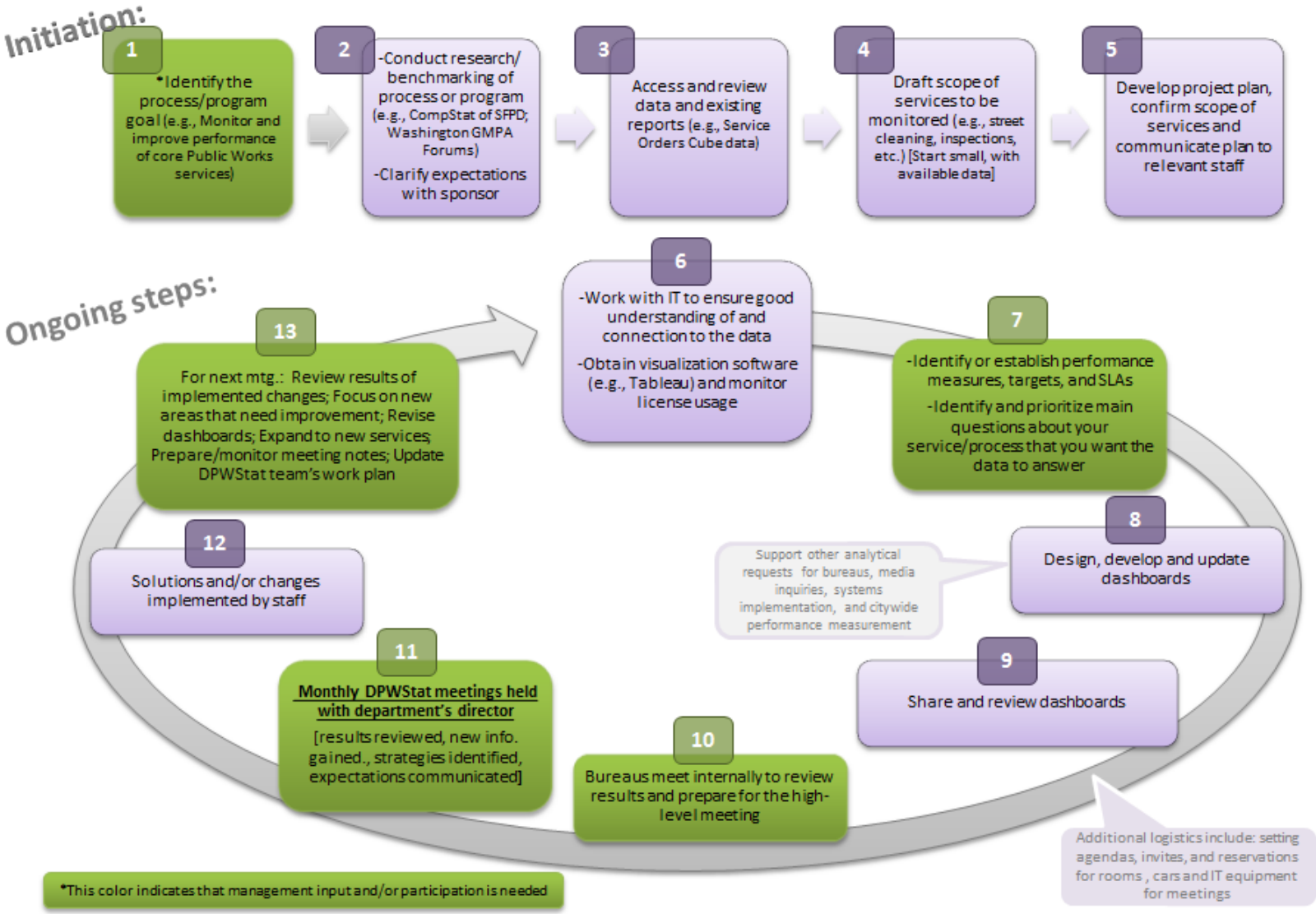
- BSES/UF – Bureau of Street Environmental Services and Urban Forestry
- BSM – Bureau of Street-use and Mapping
- BSSR – Bureau of Street and Sewer Repair
- BBR – Bureau of Building Repair

IV. INSIGHTS

DPWStat came to fruition organically, incrementally, and strategically. In retrospect, the DPWStat team has identified the steps outlined on the next page as essential to initiating and maintaining their program. Steps 1-5 outline how the team originally planned and initiated the program, and Steps 6-13 show the steps that the team goes through cyclically to develop the program overtime.[12]

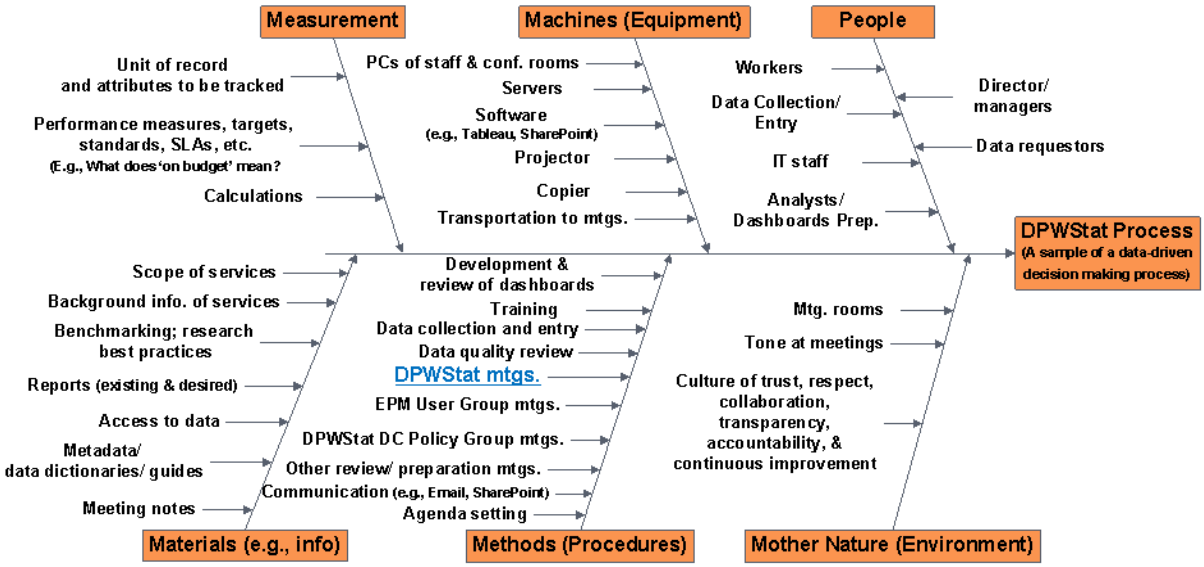
[12] Several of these steps are discussed in more depth throughout this case study. For example, Section III outlines what occurs in monthly DPWStat meetings (Step 11).

DPWStat Initiation & Maintenance Processes



Inspired in part by the processes on the previous page, staff from the City Performance Unit at the Controller's Office have prepared a guide to developing Stat programs for all City departments. The guide includes more detailed information on each of the steps departments should undergo to initiate and maintain a Stat program.

The DPWStat team has also identified the following elements as essential to developing a mature program: [13]



Staff from the City Performance Unit of the Controller's Office have used this visual to create a checklist that City departments can use to assess how ready they are to implement a Stat program. The checklist includes more detailed information on each of the required components.

For the purposes of this case study, the DPWStat team would like to emphasize the following factors as particularly critical to developing a successful program:

Continuous Executive Support

In his book *The PerformanceStat Potential*, Harvard professor Robert D. Behn writes that executive leadership is crucial to program success. While a chief executive need not run program meetings, he or she should attend the meetings to "make it unambiguously clear that [Stat] is important, that it is central to the management of the organization, and that the meetings are an integral part of his or her leadership strategy." [14]

[13] The acronyms in the mind map stand for the following: SLA: Service Level Agreement, EPM: Enterprise Project Management systemDPWStat DC: DPWStat for Design & Construction

[14] Behn, Robert D., *The PerformanceStat Potential: A Leadership Strategy for Producing Results*, Brookings Institution Press, Washington, DC, 2014, p. 177

When DPWStat launched in October 2010, the department's director at the time, Mr. Ed Reiskin, fully supported and promoted the program. He fostered organization-wide buy-in by personally presenting dashboards in early DPWStat meetings and demonstrating the program's potential. By instituting regular DPWStat meetings and remaining consistent in his approach, he created a common understanding throughout the department about the ways in which operational areas fit together and how DPWStat could help all involved achieve performance goals. When Director Reiskin left to become the Executive Director of the San Francisco Municipal Transportation Agency (MTA), he took the program idea with him and created MTA TransStat (Transportation Statistics) in 2011.

In August 2011, Mohammed Nuru became Director of Public Works. He changed the DPWStat meeting structure, but the strong culture of senior leadership buy-in remained.[15] Director Nuru's new meeting structure – in which each service area presents its own dashboards – developed each of the bureaus' sense of ownership of the data and pushed them to engage with it further outside of meetings to understand it in more depth. Over time, staff has begun to refer to the data more, and has even taken the initiative to use it to improve operational performance that is not measured in regular DPWStat meetings. As data-driven problem solving and decision making becomes more ingrained in the department's culture, the more bureaus are beginning to rely on data to improve their operations and project performance.

The DPWStat team would like to emphasize that generating this type of organization-wide buy-in takes time. Do not be discouraged if resistance persists for months or years. The DPWStat program has become quite useful, but it still has its detractors in the department, and the process of developing buy-in is ongoing. Even two years into DPWStat DC and four years into the original program, the department experiences shifts in understanding and involvement from key players.

Data Infrastructure and Visualization

DPWStat was built upon an existing data infrastructure at Public Works (described in *Section I. Introduction and Background*). This infrastructure includes a data warehouse that integrates data from various systems across the department's bureaus. DPWStat uses Tableau visualization software to connect to warehoused data and develop various displays, presented in dashboards at the DPWStat meetings. Dashboard development requires a thorough understanding of business processes, and the meaning of each data dimension and measure, as well as the ability to build calculations and to use chart types, size, shape, and color effectively.

Data visualizations have helped to facilitate conversation in DPWStat meetings, by clearly presenting accomplishments and challenges: *how many, where, how fast, compared to what?* Visualizations reveal patterns of activity, and help staff identify and answer management questions. With Tableau software, the DPWStat team can interact with the summary charts in the monthly meetings. Filters allow a change of view on a chart or map, such as selection of one area of the City, or only work that came from a public complaint. Pulling up detailed data allows meeting participants to examine individual cases, and assign follow-up to the responsible person.

[15] Interview with Alexandra Bidot and Rachel Alonso. 4 February 2014.

It is important to note that Public Works staff members have the opportunity to provide feedback on the metrics used in DPWStat meetings, and their presentation. Staff regularly makes recommendations on how dashboards could be improved to highlight more relevant issues, depict data more clearly, and more accurately reflect bureau performance.

Once performance dashboards are developed, their ongoing maintenance is generally straightforward, requiring monthly updates of basic filters. However, in a changing business environment, with new transactional systems, data definitions can change from month to month, so review and preparation can involve significant communication, research, and revision.

Expansion and Continuous Improvement: Data, Dashboards, and Measures

DPWStat will always be a work in progress, as the data involved could always be improved or enhanced. One of the most important successes of DPWStat is that the program has exposed data issues and helped drive their correction. Participants in DPWStat meetings have learned what data is missing and why it is important. They have also realized that inaccurate data can be detected and, as a result, they have improved data entry and collection methods to ensure its overall quality.

The dashboards also change over time to ensure that they remain useful and relevant for tracking evolving program goals. Giving participants the chance to regularly react to the dashboards as works-in-progress has helped the program improve over time. The dashboards used at the first DPWStat meetings were noticeably incomplete. A representative of the DPWStat team explained at those first meetings that the charts included holes where data was missing. Exposing the limitations in the data in this way helped to highlight the need to accurately record data, triggered conversations around how to improve data collection methods, and held the appropriate parties accountable for making necessary changes. As a result, the department's data quality has improved incrementally over time, as has its ability to discern and analyze performance trends.

As the program has progressed, the number and complexity of measures and visualizations has grown. Public Works is measuring more programs and services, and in more ways. In FY 2015, for example, the DPWStat team is working to integrate labor data into the service analysis, and measure productivity. The explosion of data in various presentations can become overwhelming, so staff periodically reviews what might be dropped or reported less frequently in order to best support the goal of improving service.

Organizational Culture

The tone of DPWStat meetings is central to the program's success and staff's willingness to accurately present the stories the data tells. Public Works leadership has strived to create a comfortable environment that encourages staff to present data accurately and honestly in DPWStat meetings. While semi-public discussions about performance can be uncomfortable at times, leaders recognize that DPWStat meetings would be significantly less productive if staff only presented data trends that highlighted positive performance. By cultivating an organizational culture that values continuous improvement and instills mutual trust and respect, Public Works leadership has developed a Stat program that includes meaningful dialogue

between leadership and staff. At DPWStat meetings, frontline staff engages directly with the Public Works Director. They voice their concerns, receive accolades for improved performance, and discuss different ways to resolve issues depicted in the dashboards. The goal of DPWStat meetings is not to blame or shame staff over their bureaus' performance. Rather, the goal is to engage staff in solving problems.

It is understandable that managers would feel anxiety about DPWStat meetings, as it can be stressful to answer explicit questions about performance in a room full of people. Harvard professor Robert Behn acknowledges in *The PerformanceStat Potential* that, even when asked gently, certain questions will inevitably be embarrassing. However, the good news is that "the inevitability of these questions can also motivate managers to identify their own performance deficits and strategies to attack them." [16] Public Works bureau managers have internalized high performance expectations, and the expectation of presenting to the Director has helped to ensure improved performance.

Dedicated Staff

Public Works currently has three full-time analysts on the DPWStat team. Investment in dedicated staff has played a key role in the program's success over time. These analysts have committed themselves to the program's design and maintenance, and represent the institutional memory behind the program. They understand the ways in which Public Works' bureaus work together to achieve performance goals, and are able to link or replicate efforts in one part of the organization to others. Their coordinating and unifying role has kept the program focused on clear goals. The team brings experience in performance management, service standards, and stat programs, including the City's SFStat. They research business process issues that arise and investigate data using a variety of analytical tools. Finally, the DPWStat team conducts follow-up with program's participants in the aftermath of meetings and, as such, works to ensure the accountability behind the program's overall success.

Limited Scope at Launch

In October 2010, the DPWStat team launched the program examining the performance of only three services – street cleaning, graffiti abatement, and roadway repair. These services were selected because they were previously monitored under SFStat and, thus, the data that DPWStat sought to use was easily attainable. The metrics that the DPWStat team used to monitor the performance of these services were also straightforward (they included the volume of service requests, response times, and the number of service requests completed within the time allotted by service level agreements). Starting with a limited number of services and a few easily understood metrics provided an effective platform from which DPWStat successfully demonstrated its value to the rest of the department.

[16] Behn, Robert D., *The PerformanceStat Potential: A Leadership Strategy for Producing Results*, Brookings Institution Press, Washington, DC, 2014, p. 185

Celebration of Small Successes

Celebrating the small improvements in the dashboards at each meeting has helped to foster organization-wide buy-in in the DPWStat program. When the dashboards show that performance is trending in the right direction, participants feel encouraged, and, despite any initial resistance, they have come to see the program's value for their units and for the department as a whole. Moreover, celebrating incremental successes over time has helped to reinforce the idea that DPWStat is an iterative program. The performance dashboards are not designed to be static; they are meant to flex and adapt over time to the changing nature of operations and changing organizational needs. DPWStat participants have come to understand and appreciate this process, which has helped DPWStat become the successful program that it is today.

To Learn More…

- Observe DPWStat monthly meetings in-person. Please contact DPWStat team lead Alexandra Bidot (alexandra.bidot@sfdpw.org) to arrange a viewing.

- Learn more about Tableau, the data visualization tool that DPWStat employs. The City Performance Unit of the Controller's Office offers free introductory and advanced Tableau trainings through the City & County of San Francisco's Data Academy. Please contact Sherman Luk (sherman.luk@sfgov.org) or Celeste Berg (celeste.berg@sfgov.org) for more information.

- Consider starting a Stat program for your department! The City Performance Unit of the Controller's Office is ready to help. Please contact Sherman Luk (sherman.luk@sfgov.org) or Jessie Rubin (jessie.rubin@sfgov.org) for more information.