

## Final Report

# California Division of Occupational Safety and Health Industrial Hygienist and Safety Engineer Workload Study

**SUBMITTED BY:**

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## **Purpose**

The California Division of Occupational Safety and Health (Cal/OSHA) entered into an agreement with CPS HR Consulting (CPS HR) in March 2020 to conduct an independent workload and staffing analysis of the Industrial Hygienist (IH) and Safety Engineer (SE) classification groups. This report presents the development of time expectancies and the required staffing to meet the mission-critical and mandated work of the Cal/OSHA staff in the two classification groups. This includes a characterization of completed workload requirements, staffing gaps identified by unmet work requirements and work backlog, and the identification of trends and new future work that may impact future workload.

*The purpose of this analysis is to provide support and justification for the recommended staffing required within each classification group to meet the identified workload.*

## **Section I: Methodology and Terminology**

This study utilized a three-part process to define the workload and staffing requirements.

### **Characterization of Mission Critical Work**

**Definition of Classification groups.** The workload assessed in this study is conducted by Industrial Health (IH) and Safety Engineer (SE) classification groups, with each group having multiple levels as experience as gained. The IH positions are the subject matter experts on health hazards or concerns in the workplace while SE positions are the subject matter experts on work related to workplace safety hazards or concerns. Despite having the two expertise areas, the current staff composition consists mostly of SE positions with a few IH positions and a subgroup of the SE's with expertise in both areas as former IH positions that had changed into the SE classifications.

The time and corresponding staffing requirements for each classification group is based on content of the assessed workload rather than the current classifications conducting the work, splitting out required IH and SE time separately based on the functional expertise required.

**Identification of Program-Specific Responsibilities.** The work to be measured in this study was defined in a standardized list of work tasks describing program-specific processes and responsibilities. The task list was developed based on a review of duty statements, classification descriptions, and department procedures. Final tasks were grouped into task categories based on function to aid in the organization and utility of the list. Subject Matter Experts (SMEs) reviewed the list for clarity and comprehensiveness prior to finalization.

The finalized task list included three task categories.

- **Administrative Program Support** – This category consists of three tasks covering administrative activities that do not directly move program-specific work forward but are required for organizational functionality (e.g., individual administrative/professional duties, training, and supervisory responsibilities when standing in for a District Manager). The average time spent on these tasks per

individual is deducted from the overall available work year (defined below) to ensure staff have time for administrative program support tasks, with the remaining time categorized as *available work hours (AWH)* to be distributed among core program-specific functions.

- **Programmatic Support** – This category consists of five tasks covering continuous support functions that are key to the completion of the Cal/OSHA mandated work but are not tied to specific inspections (e.g., Duty Officer of the Day, desk reviews of non-formal/non-serious complaints, equipment maintenance, permitting activities, and outreach activities). The average time spent per month on each of these continuous support functions is utilized as a baseline representation of the time required.
- **Inspection Activity** (*has a related inspection number*) – This category consists of nine tasks covering the inspection process for onsite inspections (e.g., preparation, on-site activities, reporting, follow-up on recommended actions, and pursuit of enforcement for non-compliance). The inspection process utilized the same tasks regardless of inspection type. The time spent on inspection activities was parsed out based on inspection domain (safety, health) and type (accident, complaint, fatality, follow-up, program planned, programmed related, referrals, and unprogrammed related) to identify average processing time per inspection within each type.

The final task list with administrative program support, programmatic support, and inspection activities is presented in Appendix A.

**Historical Metrics.** Tasks were classified as either discrete with a countable volume/metric, or continuous reflecting a task that requires a portion of time but does not have a specific countable metric. Discrete tasks included the administrative program support and inspection tasks, utilizing the number of filled positions and number of each type of inspection as the countable metric. Continuous tasks included the programmatic support tasks. Discrete task metrics from fiscal year (FY) 16-17, FY 17-18, and FY 18-19 were collected for trend analysis with the FY 18-19 metrics utilized in the calculation of time per task standards. Continuous tasks did not have metrics and utilized total hourly requirements per month.

**Frequency and Time Implications of Cross-Domain Inspections.** The historical metrics included the domain and type of inspections however it did not identify the number of inspections that included both domains. A focus group with SMEs<sup>1</sup> identified the percentage of each type of health inspection that had a safety component and the percentage of the time attributed to the safety component of the inspection when applicable. Similarly, SMEs identified the percentage of safety inspections with a health component and time attributed to health inspections. The percentages of inspections and time allocations are provided in Appendix B.

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<sup>1</sup> The SME panel utilized in this study included 5 individuals with a cumulative 109 years of health inspection and 89 years of safety inspection experience.

### ***Calculation of Time per Task Standards***

The following factors and processes were utilized to calculate the time per task standards.

***CSHO Time Tracking Reports.*** Cal/OSHA provided a *State Time Tracking Weekly Details by CSHO Report*, documenting the time records for all staff in the included work departments for FY 18-19. This was supplemented by additional inspection related information from a Scan Summary Report to align detailed inspection categories and information with the time records. These records utilized detailed coding that identified specific support and inspection activities. The detailed coding was utilized to align tracked time with the standardized task list, with SMEs confirming the alignment. This allowed for the use of the timesheet records to obtain the time spent on each task, including time on each inspection type. The alignment of the time records report and the standardized task list is presented in Appendix A.

***Available Work Year.*** The *Available Work Year (AWY)* reflects the base number of hours staff were available to contribute to the workload after removing leave time. The CSHO time tracking report for FY 18-19 was utilized to determine the average percentage of time that staff were available to contribute to work activities. The time records identified 311,791.2 worked hours and 52,604.8 leave hours, resulting in staff being available an average of 85.6% of the possible work time after removing leave time. Applying this to the Cal/OSHA standard work year of 2,080 hours produced an average available work year of 1,779.7 hours per personnel year (PY). This information is utilized in determining the time per task standards as it documents actual time worked, however program management indicated that they utilize a standard of 1,776 hours as equivalent to one PY. This information is utilized in determining how many PY are needed to meet the future workload requirements.

### ***Utilized Positions.***

The *State Time Tracking Weekly Details by CSHO Report* was utilized to identify the number of filled positions for FY 18-19 that contributed to the completion of the FY 18-19 workload. The report included records for 236 different employees, however not all employees worked the full year and the Senior Safety Engineer positions only included time spent on inspection activity as a part of their time was dedicated to other functions. The overall time records accounted for an equivalent of 175.2 PY contributing to the assessed FY 18-19 workload.

***Time per Task Standard Calculation.*** Time per task standards, or average time spent on each task, were developed by dividing the time spent in each task by the corresponding FY 18-19 metric for discrete tasks or by 12 to get the average time per month on continuous tasks. The time was further parsed out to identify the average IH and SE focused time within each inspection type based on SME judgements as discussed in the “Frequency and Time Implications of Cross-Domain Inspections” above. The resulting time per task standards based on the full years’ worth of time data are presented in Appendix C.

### ***Quantification of Unmet Work Requirements and Trends***

***Unmet Work Requirements.*** An operational unit has an unmet work requirement when the number of incoming requests for a specific task exceed the number completed. This includes recurring *unmet work requirements* and *one-time projects/backlog* of work requiring a temporary allocation of staff to catch up. Unmet requirements only included recurring work necessary to meet the Cal/OSHA mission and statutory and strategic mandates. Backlogs that would require a one-time allocation of additional staff hours to catch up are noted but not included in the overall required program work hours used to determine the number of needed staff since it does not reflect on ongoing need or permanent staff increase.

CPS HR conducted a focus group with the SME group to identify and quantify any unmet work requirements within each programmatic support task and each inspection type. The identified unmet work requirements included work that the district managers were currently completing to maintain coverage on tasks typically covered by the IH and SE classifications and work that is required to maintain and enforce health and safety standards in California work sites.

SMEs identified the required inspections to sufficiently ensure compliance with these standards with consideration to the impact of violations in each inspection category and the practicality of obtaining staff to meet the work needs. Unmet work requirements were validated through SME consensus and a review of historical work volumes and reports, when applicable, prior to adding the time requirements to the total needed program work hours. Time per task standards were utilized to determine the required hours when the unmet work aligned with the standardized task list and SME estimations were utilized when the unmet work was not currently being done and therefore had no time standards.

***Future Work Trends/Projections.*** The historical work volumes for each type of inspection from FY 16-17, FY 17-18, and FY 18-19 were reviewed to identify any consistently increasing or decreasing trends and any anomalous years that may reflect a special circumstance or change in regulatory guidelines. Each trend was discussed with the SME group to identify the factors driving the changes or anomalies and to determine if the trend was expected to continue for the next three years. Additionally, anticipated future changes based on regulatory changes, reallocation of tasks, and/or new tasks to address current public concerns were discussed and summarized, taking note if the changes applied to the IH, SE, or both workloads.

The historical work volumes and corresponding trends were determined to be more a reflection of staff capabilities given current staffing levels rather than a reflection of current work requirements. However, it was determined that the historical work volumes could be utilized to establish a conservative baseline volume using either the FY 18-19 volume or the three-year historical average. The identified unmet work requirements and trends were then applied to consecutively project out work requirements for three years from FY 20-21 to FY 22-23. For the purposes of this study, time required on continuous tasks remained consistent for future projections unless it was linked to a trend during the SME focus group.

The work volume metrics for the FY 19-20 year were also reviewed to assess the impact of the COVID-19 pandemic which occurred during this study. The volume counts from July 1 to February 29 were assessed to determine if the pattern was consistent with prior years. Work volumes from March 1 to June 30 (using extrapolated counts for June given similar conditions to the available March through May metrics) were utilized to assess the impact of the pandemic on work volumes. It was determined that FY 19-20 was an anomalous year that should not be used in calculating the baseline, however the impact of the pandemic on the work volumes was taken into consideration when discussing future trends for the next three years.

### ***Staffing Calculations***

**Staffing Requirement Summary.** The total time required for each classification group includes time expended on the work being completed in addition to the time required to fulfill unmet recurring work requirements. The results of this study identified the Base hours utilized in FY 18-19 on the completed work, the Needed hours to meet the projected work requirement in FY 22-23 utilizing the established time-per-task standards applied to the projected volume counts, and the Gap which reflects the difference between the Base and Needed hours to identify the additional needed staff, if applicable, to meet future workload requirements. The Needed projections utilize the expected workload for FY 22-23 to allow time for future planning and the completion of BCPs as necessary. The Base, Needed, and Gap hours are summarized in Table III-1.

**Future Staffing Calculations.** The calculation of Needed staff is based on the total required hours, obtained by applying the projected workload metrics to the time-per-task standards established by this study. The projected metrics were determined by applying the identified trends to the FY 18-19 workload metrics and incorporating unmet work requirements and anticipated future work requirements. The total required hours are then divided by the available work hours (time per PY after reserving time for Administrative Program Support) to obtain the number of PY needed to complete the workload.

This study projected the workload metrics out three years through FY 22-23 and applied the time-per-task standards to identify the needed hours and staffing each year within each classification group. A summary of the hours needed within each task category is presented for FY 20-21 through FY 22-23, with hourly requirements for each individual task, along with the trend utilized to project the workload metrics presented for FY 22-23 in Appendix D.



## ***Section II: Industrial Hygienist and Safety Engineer Overview***

### ***Responsibilities***

Cal/OSHA is a division within the California Department of Industrial Relations responsible for protecting and improving the health and safety of the California workforce in the work environments. This study examined the work of the Industrial Hygienist (IH) and Safety Engineer (SE) positions in the Enforcement Branch conducting a majority of the inspections, split among four regions (San Francisco, Sacramento, Santa Ana, and Monrovia), the High Hazard Unit, and the Labor Enforcement Task Force. The study did not include staff in the Mining and Tunneling and Process Safety Management units within the Enforcement Branch due to the specialized nature of their assignments. The included positions are outlined in red on the June 2019 organizational chart available in Appendix D.

The primary responsibility is to enforce health and safety standards through the investigation of complaints and inspection of work sites, documenting hazards and standards violations, or in response to reports of workplace injuries, illnesses and/or deaths. Complaints are recorded and assigned to inspecting staff to conduct either a remote or in-person investigation, depending on the type and severity of the complaint. Inspecting IH and/or SE staff document the results of inspections, issue citations when identifying violations of standards, recommend actions to correct identified hazards, and follow-up to ensure compliance. The work also includes on-site monitoring of potential health hazards including taking environmental and personal breathing zone samples, comparing sampling results to acceptable standards, and documenting the results as support for enforcement and/or litigation as needed. Additionally, staff review applications and issue permits, and conduct outreach activities to provide technical advice or information to other employers, public groups, and professional organizations regarding health and safety principles, regulations, and compliance methodologies.

### ***Staffing Summary***

Staff were identified as either Industrial Hygienists, Safety Engineers, or Safety Engineers with prior Industrial Hygienist experience. Table II-1 summarizes the number of positions in each classification group included in the study, delineated by classification level for FY 18-19. This was determined through a review of the hours in the *State Time Tracking Weekly Details by CSHO Report*, utilizing the classifications listed in the FY 18-19 organizational charts. The study included 236 staff, accounting for an equivalent of 175.2 personnel years (PY) given that not all staff included worked for the entire year.

**Table II-1 –Staffing by Classification and Classification Group.**

Classification	Industrial Hygienist	Safety Engineer	Safety Engineer with prior IH experience	Total Positions
Junior Industrial Hygienist	3.1			3.1
Assistant Industrial Hygienist	0.5			0.5
Safety Engineer Technician (SET)		0.5		0.5
Junior Safety Engineer		7.3	0.2	7.5
Assistant Safety Engineer		16.4	2.3	18.7
Associate Safety Engineer		108.9	23.3	132.2
Senior Safety Engineer		8.3	4.4	12.7
<b>Total Filled Positions in Org. Chart</b>	<b>3.6*</b>	<b>141.4</b>	<b>30.2**</b>	<b>175.2</b>

\*The low number of Industrial Hygienist positions is reflective of many of the IH positions changed to the SE classifications.

\*\*The positions currently identified as Safety Engineers with prior IH experience will be reidentified as Safety Engineer positions once they are vacated – it is not intended to be a hybrid classification.

### **Significant Findings**

This section presents a summary of the time allocations for each classification group based on the FY 18-19 workload, calling out the tasks that utilize the largest percentage of staff time, a comparison of the Base and Needed hours, and a description of any external factors that may impact the interpretation of the results. The time allocated to each classification group is based on the content of the work rather than the classification currently doing the work given the low number of IH and high number of SE positions, partially attributed to the IH's who have moved into the SE classifications.

### **Industrial Hygienist Summary**

#### **Time Allocations**

The Industrial Hygienist series allocates 17.5% of time on Administrative Program Support requirements, equivalent to 25.9 hours per month per PY. This leaves 82.5% of time, or 122.1 hours a month (1,465.7 hours a year) per PY, to deliver program-specific work. Within the Administrative Program time, the largest time commitment is on Professional Duties at 14.3 hours per month, followed by delivering or receiving training at 8.5 hours per month.

The program specific tasks utilize a total of 46,879.4 hours a year across all recommended Industrial Hygienists, including 6,213.7 hours on Programmatic Support (13.3% of program work time), 32,356.7 hours on Health inspections (69.0% of program time), and 8,309.0 hours a year on health-related components of Safety inspections (17.7% of overall time).

The largest time commitments within Programmatic Support is providing Office Technical support at 438.0 hours per month collectively on Duty Officer of the Day responsibilities, followed by 32.9 hours per month on Equipment Calibration and Maintenance.

The largest Health inspection time commitment is on Complaint inspections at 1,688.4 hours per month, equivalent to 1.15 PY per month, followed by Accident inspections at 436.5 hours per month, equivalent to 0.30 PY per month. However, these time requirements reflect the volume factored by the average processing time. A review of just the processing times identifies Fatality inspections as the most time consuming with an average of 44.3 hours per inspection followed by Accident investigations at 30.5 hours per inspection, and Complaint inspections at 23.5 hours per inspection.

Within the safety-focused inspections that contain a health-related component, the largest time commitment is on Safety-Program Planned inspections at 242.6 hours per month and Safety-Accident inspections at 154.3 hours per month, equivalent to 0.17 and 0.11 PY, respectively. A review of average processing times identified a range from 0.10 hours on the Safety-Follow-up inspections to 2.1 hours per Safety-Program Planned inspection, acknowledging that these are average times when the total required IH annual time is distributed across *all* Safety inspections of each type, not just those that actually included a health-related component.

### ***Workload Analysis Conclusions***

The analysis of the workload based on work content identified a need for 31.98 IH positions to conduct the health-related work in FY 18-19. This was largely completed by SE staff due to the current staffing composition but could be completed by IH positions in the future. In addition to the completed work, the study identified a need for an additional 66.87 PY per year to meet currently unmet work requirements, as described below.

After applying the expected trends, the *Needed* workload for FY 22-23 requires a total of 140.64 IH positions to conduct health-focused inspections and work, which is 108.66 PY more than the required positions to complete the health-focused work in FY 18-19 (not counting the unmet work requirements). The increase in staffing over what was needed in FY 18-19 is due to the following backlog and anticipated trends:

#### ***Backlog:***

- Providing Calibration and Equipment Maintenance tasks in lieu of the District Managers;
- Conducting follow-up verifications on 10% non-serious and 20% of serious satisfactory complaint investigation letter responses to ensure compliance;
- Conversion of 10% of letter complaint investigations to on-site inspections;
- Incorporating 2 hours industry research/library maintenance time per week for each district office;
- Added Asbestos notifications inspections to reach 3 per month per district office;
- Added Lead notification inspections to reach 2 per month per district office;
- Additional responsibility of inspecting approximately 118 CDPH referred lead notifications, requiring sampling and monitoring;
- Additional workplace Sampling and Monitoring for 60% of health inspections,

requiring an estimated 32 hours each; and

- Conducting follow-up inspections on 20% of health inspections resulting in serious violations.

*Trends:*

- Projected addition of workplace Sampling and Monitoring for 60% of Health Inspections (excluding Follow-up and CDPH referred Lead inspections);
- Projected 20% increase in accident and fatality inspections due to the increase in pandemic response, indoor heat related, and wildfire smoke complaints;
- Projected additional 100 health complaints related to COVID-19 per month for at least the next few years;
- Projected increase in program planned inspections to incorporate asbestos and lead notifications,; and
- An increase in follow-up and programmed and unprogrammed related inspections aligning with the increase in overall health inspections.

In addition to the recurring unmet work requirements built into the needed staffing above, subject matter experts also identified a one-time need for 1,436 IH hours, equivalent to 0.98 PY, to help update laboratory layout and organization in all the district offices and to research and update the reference library with current industry standards, with both leading to more efficient inspection work.

**Safety Engineer Summary**

***Time Allocations***

The Safety Engineer series allocates 17.5% of time on Administrative Program Support requirements, equivalent to 25.9 hours per month per PY. This leaves 82.5% of time, or 122.1 hours a month (1,465.7 hours a year) per PY, to deliver program-specific work. Within the Administrative Program time, the largest time commitment is on Professional Duties at 14.3 hours per month, followed by delivering or receiving training at 8.5 hours per month.

The program specific tasks utilize a total of 210,314.2 hours a year across all recommended Safety Engineers, including 38,397.9 hours on Programmatic Support (18.3% of program work time), 169,786.9 hours on Safety inspections (80.7% of program time), and 2,129.4 hours a year on safety-related components of Health inspections (1.0% of overall time).

The largest time commitments within Programmatic Support is providing Office Technical support at 1,851.5 hours per month collectively on Duty Officer of the Day responsibilities, followed by 1,146.3 hours per month on administrative duties related to permitting and licensing.

The largest Safety inspection time commitment is on Accident inspections with a cumulative 6,019.2 hours per month, followed by Program Planned inspections at 2,789.5

hours per month, and Complaint inspections at 2,691.5 hours per month, equivalent to 4.11, 1.90, and 1.84 PY per month, respectively. However, these time requirements reflect the volume factored by the average processing time. A review of just the processing times identified Fatality inspections as the most time consuming with an average of 50.0 hours per inspection followed by Accident investigations at 32.3 hours per inspection, and Program Planned inspections at 24.4 hours per inspection.

Within the health-focused inspections that contain a safety-related component, the largest time commitment is on the Health-Complaint inspections at 127.1 hours per month and Health-Unprogrammed Related inspections at 29.1 hours per month, equivalent to 0.09 and 0.02 PY, respectively. A review of average processing times identified a range from 0.15 hours on the Health-Programed Related to 3.71 on Health-Unprogrammed Related inspections, with the processing time reflecting the average across all inspections of each type, acknowledging that some will require no time (no safety component) while others will require more than the average time.

### ***Workload Analysis Conclusions***

The analysis of the workload based on work content identified a need for 143.49 SE positions to conduct the safety-related work in FY 18-19. In addition to the completed work, the study identified a need for an additional 31.34 PY per year to meet currently unmet work requirements including the backlog tasks described below.

After applying the backlog and expected trends, the *Needed* workload for FY 22-23 requires a total of 187.46 SE positions to conduct safety-focused inspections and work, which is 43.97 PY more than the required positions to complete the safety-focused work in FY 18-19 (not counting the unmet work requirements). The increase in staffing over what was needed in FY 18-19 is due to the following backlog and anticipated trends:

#### ***Backlog:***

- Providing Duty Officer of the Day tasks in lieu of the District Managers;
- Conducting follow-up verifications on 10% non-serious and 20% of serious satisfactory complaint investigation letter responses to ensure compliance;
- Addition of one more High-Risk Permit inspection per week per district office;
- Addition of one more tree safety referral inspection per month per district office;
- Conversion of 10% of letter complaint responses to on-site inspections; and
- Conducting follow-up inspections on 20% of safety inspections resulting in serious violations.

#### ***Trends:***

- Projected 3.27% growth in Accident, Complaint, Fatality, and Program Planned inspections, aligning with the average CA GDP since safety complaints are tied to economic conditions;
- Applied historical rate of 38.9% of expected inspections requiring a Follow-up inspection, which will increase the workload with the increased inspections;

- Projected increase of 126 additional Tree Safety Referrals as part of a more proactive safety management of tree workers; and
- Anticipated increase in the number of follow-up and programmed and unprogrammed related inspections aligning with the increase in overall safety inspections.

In addition to the recurring unmet work requirements built into the needed staffing above, subject matter experts also identified a one-time need for 84 SE hours, equivalent to 0.06 PY, to help update laboratory layout and organization in all the district offices, which will in turn improve inspection efficiency.

### ***Additional Analysis Considerations***

The workload and staffing requirements recommended in this report are based on the current work requirements, the projected impact of the COVID-19 pandemic, and departmental goals for follow-up and on-site verifications of asbestos and lead notifications. The goals were based on SME consensus utilizing their combined knowledge of best practices but were not defined by empirical evidence by this study. The number of program-planned inspections related to asbestos and lead notifications is lower than desired, but the goal is to increase over time. Meanwhile, the impact of the COVID-19 is unprecedented and should be monitored moving forward to see if the additional 100 health complaints per month remains the same.

The foundational data used in the analysis was based on the *State Time Tracking Weekly Details by CSHO Report*. This report was comprehensive, detailed, and long-term, however it was noted that a small percentage of the records were unavailable due to staff being out or not submitting time records at different points during the included year. Additionally, the records did not include any potential District Manager time that was spent on enforcement inspection activity. In both cases, this results in time per task standards that are more conservative/slightly lower than reality.

### ***Section III: Workload and Staffing Requirement Analyses***

#### ***Summary of Base and Needed Hours to meet Workload***

The results of this study identified the Base hours utilized in FY 18-19 on the completed work and the Needed hours to meet the projected work requirement in FY 22-23 once incorporating the recurring unmet work requirements and anticipated trends. The future workload was determined through the application of the time per task standards documented in FY 18-19 to updated metrics which included any recurring unmet work requirements, application of any trends forecast out three years, and any future anticipated workload. It also identifies the Gap which reflects the difference between the Base and Needed hours to identify the additional needed staff, if applicable, to deliver future projected mission-based work. The Base hours documenting time utilized for FY 18-19, Needed hours documenting hours needed in FY 22-23 once unmet work requirements and workload trends were incorporated, and the Gap between the two for each classification group is summarized in Table III-1. The time requirements for individual tasks are available in Appendix C for the Base required hours and Appendix D for the Needed required hours.

Recurring unmet work requirements were built into the Needed hours, utilizing established time-per-task standards associated with the standardized tasks in the respective task category when applicable, or placed into the “Recurring Uncategorized Work Requirements” task category with verified SME estimations of time requirements when the task did not fall into an existing category. Non-recurring unmet work requirements with a one-time allocation of hours required to catch up (including backlog) are denoted as “Projected One-time Projects” on the table but are not included in the overall Total Program Work Hours since addressing the task does not require permanent additional staffing. The number of PY required for each task category was calculated by dividing the required hours by the available work hours after accounting for leave and Administrative Program Support Requirements. The individual tasks and corresponding time requirements included in the Unmet Work Requirements, One-Time Projects, and the Trends identified for inclusion in the Needed time for FY 21-22 are described in subsequent sections after Table III-1.

Table III-1: Summary of Base and Needed Time and Staffing Requirements<sup>2</sup>

Task Categories	Base FY 18-19			Needed FY 22-23		Gap	
	Total Hours	Total PY	Percent of Program Work	Total Hours	Total PY	Total Hours	Total PY
<b>Industrial Hygienists</b>							
Administrative Program Support (Reserved time per PY)	310.3 hrs. per PY						
Remaining Time available for mission-based work per PY (AWH)	1,465.7 hrs. per PY						
Programmatic Support	6,213.7	4.24	13.3%	10,051.1	6.86	+3,837.4	+2.62
Health Focused Inspections	32,356.7	22.08	69.0%	96,153.6	65.60	+63,796.9	+43.53
Safety Focused Inspections	8,309.0	5.67	17.7%	10,891.9	7.43	+2,582.9	+1.76
Recurring Unmet Work Requirements				89,045.1	60.75	+89,045.1	+60.75
Projected One-time Projects				1,436.0	0.98		
<b>Total Program Work Hours/Year</b>	<b>46,879.4</b>	<b>31.98 PY</b>	<b>100%</b>	<b>206,141.6</b>	<b>140.64</b>	<b>+159,262.2</b>	<b>+108.66</b>
<b>Safety Engineer</b>							
Administrative Program Support (Reserved time per PY)	310.3 hrs. per PY						
Remaining Time available for mission-based work per PY (AWH)	1,465.7 hrs. per PY						
Programmatic Support	38,397.9	26.20	18.3%	53,556.2	36.54	+15,158.3	+10.34
Health Focused Inspections	2,129.4	1.45	1.0%	5,057.6	3.45	+2,928.2	+2.00
Safety Focused Inspections	169,786.9	115.84	80.7%	216,141.8	147.47	+46,354.9	+31.63
Recurring Unmet Work Requirements				0.0	0.00	0.0	0.00
Projected One-time Projects				0.0	0.00		
<b>Total Program Work Hours/Year</b>	<b>210,314.2</b>	<b>143.49 PY</b>	<b>100.0%</b>	<b>274,755.5</b>	<b>187.46</b>	<b>+64,441.34</b>	<b>+43.97</b>

\*One-time backlog projects are not included in the "Total Program Work Hours" as it represents a one-time allocation of staffing, not permanent staffing.

<sup>2</sup> Full decimal values were utilized in calculations however results are rounded to the nearest tenth or hundredth for readability.



### ***Unmet Work Requirements and Backlog***

Backlog is identified when the number of incoming requests of a specific task exceeds the number of completed requests over the course of a year or an established work requirement is unmet due to staffing shortages. This does not include requests for non-mandated or non-mission critical work for the unit. This section quantifies the work requirements that are unmet on an annual basis in addition to work that should be completed to meet the mission of protecting California workers.

At present, staff are required to consistently reprioritize work to ensure the most critical complaints are addressed, resulting in lower priority inspections and proactive actions being delayed or undone with current staffing. However, these lower priorities are still critical for meeting the Cal/OSHA mission as these inspections and proactive actions establish a reasonable expectation that a work site may be selected for an on-site inspection. This encourages employers to respond appropriately to complaints investigated by letter and ensure compliance with health and safety requirements to minimize or avoid workplace complaints due to the working conditions or environment.

A group of SMEs consisting of management and supervisors with extensive experience in either Health, Safety, or both, quantified the current unmet work requirements based on their collective experience and available metrics/reporting. To ensure the veracity of the provided unmet work requirements, CPS HR required consensus among the group of SMEs, with a focus on average processing time requirements. In an effort to balance practical staffing needs with the work requirements, SMEs identified a minimal number of on-site inspections needed to ensure compliance, acknowledging it was notably lower than best practices but an improvement over current staff capability. The number of needed on-site inspections was based on a percentage of overall notifications, or complaints, with SMEs utilizing conservative work volume estimations as a baseline to further minimize the impact of requested staffing.

Table III-2 defines the unmet work requirements that would be needed to minimally meet the mission of protecting California workers, with the intent to continue efforts to increase the number of inspections to get closer to the best practices in the future. The time to process the backlog was linked to established time-per-task standards developed as a part of this study when possible. In the event that the unmet work requirement did not link directly to an assessed task, SMEs provided an estimate through consensus based on their collective experience, with the time standards denoted with an asterisk in the table below. The documented backlog supports a need for an additional 66.87 Industrial Hygienist (30.67 PY linked to time-per-task standards, 36.20 PY based on SME experience/consensus) and 31.34 Safety Engineer (28.91 PY linked to time-per-task standards, 2.44 PY based on SME experience/consensus) positions on an ongoing basis in addition to one-time allocation of 0.98 IH and 0.06 SE positions to complete one-time projects that have been delayed due to staffing availability.

Table III-2 – Unmet Work and One-Time Backlog Time Requirements

Task or Activity	Requirement to Complete	Time Standard	Metrics	Total Annual Time (Industrial Hygienist)	Total Annual Time (Safety Engineer)
<b>Projected One-Time Backlog</b>					
<b>Safety Engineers and Industrial Hygienists</b>					
<b>PW-05: Calibration/Equipment Maintenance</b> Overhaul/update laboratory layout, organization, and inventory records at each District Office.	<b>Mission-Driven:</b> Organized labs are required to maintain efficient preparation and complete mandated inspection work.	40 hours per office, split proportionally between staff *	21 District Offices <sup>3</sup>	756 hrs.	84 hrs.
<b>Industry Research/Library Maintenance:</b> Researching current industry standards, methodologies; updating and organizing physical and online libraries of information for reference on inspections.	<b>Mission Driven:</b> Ensures staff are aware of current industry standards; able to efficiently research and find applicable standards.	40 IH Hours per District Office (DO) *	17 District Offices	680 hrs.	0 hrs.
<b>One-Time Backlog Hours Total</b>				<b>1,436 hrs.</b>	<b>84 hrs.</b>
<b>Equivalent PY</b>				<b>0.98 PY</b>	<b>0.06 PY</b>
<b>Projected Annual Backlog</b>					
<b>Health and Safety Shared Unmet Work Requirements</b>					
<b>PW-01: Office Technical Support</b> District Managers backfill Duty Officer of Day responsibilities; should be IH/SE.	<b>Mission Driven:</b> Required public interface to answer questions, receive complaints, referrals, and accident reports.	13 hours/ month per DO, split proportionally *	17 District Offices (excl. High Hazard and LETF)	507.3 hrs.	2,144.7 hrs.

<sup>3</sup> The 21 District Offices include 5 District Offices in Region I, 4 each in Regions II, III, and IV, 2 in High Hazard Unit, and 2 in LETF Unit. The 17 District Offices excludes the offices in High Hazard and LETF units.

Task or Activity	Requirement to Complete	Time Standard	Metrics	Total Annual Time (Industrial Hygienist)	Total Annual Time (Safety Engineer)
<b>PW-02: Letter Complaint - Response Verification/ Investigations</b> Conduct follow-up inspections on 10% of satisfactory responses to Non-serious complaints and 20% of Serious complaints to verify the veracity/acceptability of the response.	<b>Mission Driven:</b> Possibility of an on-site inspection encourages employers to meet/comply with health/safety regulations.	<b>Health Follow-up:</b> 14.4 IH and 0.3 SE hours.  <b>Safety Follow-up:</b> 0.1 IH and 20.1 SE hours	<b>Health Inspection:</b> 11 Serious, 335 Non-Serious <b>= 346 total</b>  <b>Safety Inspection:</b> 48 Serious, 311 Non-Serious <b>= 359 total</b>	<b>Health:</b> 4,982.4 hrs.  <b>Safety:</b> 35.9 hrs.	<b>Health:</b> 103.8 hrs.  <b>Safety:</b> 7,215.9 hrs.
<b>PW-02: Letter Based Complaint Investigations</b> District Managers are assisting with IH/SE workload, reviewing letters; Non-supervisory related work of processing the complaints.	<b>Labor Code 6309a:</b> Requires complaints from employees to be investigated within 3 to 14 days, depending on severity.  <b>Mission Driven:</b> On-site inspections encourage employers to meet/comply with health/safety regulations.	8 hours/ month per DO (96 hrs./yr.), split proportionally*	17 District Offices	312.2 hrs.	1,319.8 hrs.
<b>PW-05: Calibration/Equipment Maintenance</b> Relieve District Managers of IH/SE work on monthly maintenance, calibrating equipment, sending/processing samples, inventory.	<b>Mission-Driven:</b> Maintained equipment is necessary for efficient distribution for inspection work	1 hr./week (52/yr.) per DO *	21 District Offices	982.8 hrs.	109.2 hrs.

## Section III: Workload and Staffing Analysis

Task or Activity	Requirement to Complete	Time Standard	Metrics	Total Annual Time (Industrial Hygienist)	Total Annual Time (Safety Engineer)
<b>On-site Complaint Inspections:</b> 10% of complaints that were responded to via letter due to staffing shortages should have elicited full on-site inspections instead.	<b>Labor Code 6309a:</b> Requires complaints from employees to be investigated within 3 to 14 days.  <b>Mission Driven:</b> Possibility of on-site inspections encourage employers to meet/comply with health/safety regulations.	<b>Health Complaint Inspections:</b> 23.5 IH and 1.8 SE hrs.  <b>Safety Complaint inspections:</b> 1.3 IH and 23.9 SE hrs.	Health Complaints 10% letters = 373  Safety Complaints 10% letters = 356	<b>Health:</b> 8,765.5 hrs.  <b>Safety:</b> 462.8 hrs. Deduct 10% of Letter time (52.3 hrs.)  <b>Total:</b> <b>9,176.0 hrs.</b>	<b>Health:</b> 671.4 hrs.  <b>Safety:</b> 8,508.4 hrs. Deduct 10% of Letter time (221.1 hrs.)  <b>Total:</b> <b>8,958.7 hrs.</b>
<b>Industry Research/Library Organization:</b> Organizing current methodology/reference materials in physical and online repositories.	<b>Mission Driven:</b> Maintains staff knowledge of current industry standards (improved methods, litigation responses).	2 IH hours per week per DO *	17 District Offices	1,768.0 hrs.	0.0 hrs.

Task or Activity	Requirement to Complete	Time Standard	Metrics	Total Annual Time (Industrial Hygienist)	Total Annual Time (Safety Engineer)
<b>Health-Related Unmet Work Requirements:</b>					
<b>Program Planned Health Inspections: Asbestos Notifications</b> Industry practice suggests 10% of activity notifications be inspected to ensure compliance with permissible levels of asbestos and with safe work practices, equating to 27 per month per DO, which is not practicable. To balance practicality with need, a decreased goal of 3 per month per DO was established (accounts for 1.1% of registrations).	<b>Labor Code 6501.5:</b> Requires sites over 100 Sq. Ft. to notify of asbestos removal activities or exposure  <b>Title 8, Section 1529:</b> Outlines permissible amounts, monitoring or removal compliance requirements  <b>Mission Driven:</b> Possibility of on-site inspections encourage employers to meet/comply with health/safety regulations.	Program Planned Inspection (Health): 21.7 IH and 0.2 SE hours.	17 District Offices, 3 per month each (36/yr.)  Deduct 37 already done by current staff  <b>= 575 Total undone</b>	12,477.5 hrs.	115.0 hrs.
<b>Program Planned Health Inspections: Lead Notifications</b> Industry practice suggests 10% of notifications be inspected for compliance with permissible levels of lead and with safe work practices, equating to 2.8 per month per DO; To balance practicality with focused need on lead, goal of 2 per month per DO was established (accounts for 7.2% of notifications)	<b>Title 8, Section 1532.1:</b> Outlines permissible amounts, monitoring or removal compliance requirements  <b>Mission Driven:</b> Possibility of on-site inspections encourage employers to meet/comply with health/safety regulations.	Program Planned Inspection (Health): 21.7 IH and 0.2 SE hours.	17 District Offices, 2 per month each (24/yr.)  Deduct 16 done by current staff  <b>= 392 Total undone</b>	8,506.4 hrs.	78.4 hrs.

Task or Activity	Requirement to Complete	Time Standard	Metrics	Total Annual Time (Industrial Hygienist)	Total Annual Time (Safety Engineer)
<b>Complaint Health Inspections: CDPH Elevated Blood Lead Notifications</b> California Dept. Public Health (CDPH) is required to report blood tests with high levels of lead to Cal/OSHA. These inspections require more exhaustive inspections, sampling, and monitoring to ensure compliance with permissible amounts and mitigated exposure.	<b>AB35:</b> Requires DPH to report lab results with more than 20 micrograms lead per deciliter of blood.  <b>Labor Code 147.3.</b> Report of Lead Poisoning as Complaint against Employer.  <b>Title 8, Section 1532.1:</b> Outlines permissible amounts, monitoring or removal compliance requirements  <b>Mission Driven:</b> Possibility of on-site inspections encourage employers to meet/comply with health/safety regulations.	Time requirements are outlined in first 5 tasks for Sr. IH and IH in approved BCP for FY 20-21 in compliance with AB35.  <b>66.2 IH hours per inspection</b>	<b>118</b> backlogged inspections referred by CDPH (see BCP 20-21)	7,811.6 hrs.	0.0 hrs.
<b>Workplace Sampling and Monitoring:</b> Industry practice indicates a bare minimum of 60% of Health inspections should include monitoring air quality to identify and evaluate worker exposures to hazardous materials, and to other health hazards such as noise, heat, and ergonomics. This includes calibrating/installing equipment, taking and analyzing samples, reporting, providing follow up, technical support, and litigation support. <i>Current estimate is that only 5% receive monitoring now; includes all health inspections except Follow-ups and CDPH Lead notifications which already have monitoring built into time).</i>	<b>Mission Driven:</b> Protect CA workers from hazardous environmental conditions (airborne chemicals, noise levels, etc.); Samples utilized to verify employer compliance or in support of enforcement and litigation.	32 IH hours per monitored site *	55% of 1350 completed and 60% of 1,340 undone health inspections  <b>= 1,546.5 Total undone</b>	49,488.0 hrs.	0.0 hrs.

## Section III: Workload and Staffing Analysis

Task or Activity	Requirement to Complete	Time Standard	Metrics	Total Annual Time (Industrial Hygienist)	Total Annual Time (Safety Engineer)
<b>Health Follow-Up/Re-Inspections</b> Health inspections that identify serious violations, and abatement plans require follow-up to ensure the employer has resolved the violation and implemented actions to mitigate future violation. 20% of inspections with serious violation shall be re-inspected. <i>Estimate of 24 undone is conservative estimate based on assumption that all 29 of the completed were attached to these inspections with serious violations.</i>	<b>Labor Code 6320:</b> Requires at least 20% of inspections that had a serious violation shall be re-inspected at end of abatement period.	<b>Health Follow-up:</b> 14.4 IH and 0.3 SE hrs.	53 requiring follow-up (20% of 263); 29 were done by current staff  <b>=24 undone</b>	<b>345.6 hrs.</b>	<b>7.2 hrs.</b>
<b>Safety-Related Unmet Work Requirements:</b>					
<b>High Risk Project Permits (Building/Excavation) Inspections</b> Industry practice suggests 25% of required high-risk construction activity notifications and project permits be inspected for safety compliance, which is not practical. To balance practicality with need, a goal of 1 additional per week per DO was established (accounts for 5.9% of notifications and permits).	<b>Labor Code 6500:</b> Requires contractors to obtain an annual permit for work tasks with substantial risk of injury.  <b>Mission Driven:</b> Possibility of on-site inspections encourage employers to meet/comply with health/safety regulations.	Program Planned Inspection (Safety): 2.1 IH and 24.4 SE hrs.	17 District Offices, 1 per week each (52/yr.)  Deduct 200 done by current staff  <b>= 684 Total undone</b>	<b>1,436.4 hrs.</b>	<b>16,689.6 hrs.</b>
<b>Tree Work Safety Referrals</b> Tree safety referrals occur when staff identify safety concerns related to equipment or procedures when out doing other Cal/OSHA work. In order to improve vigilance and follow-up on unsafe practices, goal was set to identify/complete 1 per month per district office.	<b>Title 8: Section 3427</b> Requires employers to ensure safety equipment/tools are available and inspected by qualified tree workers  <b>Mission Driven:</b> The chance for follow-up enforces and encourages accepted preparation and safety checks by employers.	Safety Referral Inspections: 1.2 IH and 14.3 SE hrs.	17 District Offices, 1 per month (12/yr.)  Deduct 78 done by current staff  <b>= 126 Total undone</b>	<b>151.2 hrs.</b>	<b>1,801.8 hrs.</b>

Task or Activity	Requirement to Complete	Time Standard	Metrics	Total Annual Time (Industrial Hygienist)	Total Annual Time (Safety Engineer)
<b>Safety Follow-Up/Re-Inspections</b> Safety inspections that identify serious violations, and abatement plans require follow-up to ensure the employer has resolved the violation and implemented actions to mitigate future violation. 20% of inspections with serious violation shall be re-inspected. <i>Estimate of 368 undone is conservative as it assumes the 113 done were all part of the required 20%.</i>	<b>Labor Code 6320:</b> Requires at least 20% of inspections that had a serious violation shall be re-inspected at end of abatement period.	<b>Safety Follow-up:</b> 0.1 IH and 20.1 SE hrs.	481 requiring follow-up (20% of 2406); 113 done by current staff  <b>= 368 undone</b>	<b>36.8 hrs.</b>	<b>7,396.8 hrs.</b>
<b>Annual Backlog Hours Total</b>				<b>98,018.13</b>	<b>45,940.9</b>
<b>Annual PY Needed to meet Backlog</b>				<b>66.87 PY</b>	<b>31.34 PY</b>

### **Workload Trends and Future Workload Impact**

Workload trends were assessed through a review of historical workload volumes and SME knowledge of industry trends. Discussion with SMEs indicated the workload is changing rapidly with the onset of the COVID-19 pandemic and addition of new regulatory areas requiring inspection and reporting. This makes the historical trends in number of inspections less predictive and more of a starting place to apply the pending changes. Given the volatile nature of the current pandemic and the novelty of new areas of monitoring and inspection, the following trends should be reassessed every couple of years, using new quantifiable metrics of the workload when possible.

Table III-3 summarizes the projected trends based on SME knowledge of the current and upcoming changes and how the trend was quantified to project future staffing requirements if the trends occur as anticipated. The metrics/volume count of inspections for FY 18-19 were based off department records and were utilized in determining the time per task standards in this study. Additionally, the volume metrics were reviewed for FY 16-17, FY 17-18, and FY 18-19. If the volume fluctuated over time, the average was used as a baseline for projections, however if it historically showed consistent increases/decreases, the most recent year was utilized as a baseline for projection as the most representative.

The FY 19-20 metrics were collected for July through February to look for workload trends prior to the COVID-19 pandemic and again for March through May to extrapolate the expected workload for June in pandemic conditions and to assess the



impact of the pandemic on overall workload. An assessment of the completed inspections from July 2019 through February 2020 was already trending towards completing 12% fewer safety inspections and 8% fewer health inspections in FY 19-20 compared to FY 18-19. Once the pandemic hit, the number of inspections able to be completed further decreased due to business closures and safety concerns prohibiting site visitations. This resulted in a projected 27% decrease in safety and 12% decrease in health inspections compared to FY 18-19. When looking at the number of health and safety complaint intakes, the number of safety-related complaint intakes per month decreased by 66% while the number of health-related complaint intakes increased by 150% during the assessed pandemic months. Given the volatility of the volume metrics in FY 19-20, the FY 18-19 metrics were utilized as a baseline when applying discussed trends for future year volume projections. The discussed trends considered the increase in work expected due to the pandemic.

**Table III-3: Trend Identification and Quantification**

Work Category/Task	Metrics (18-19 from records, 19-20 to 22-23 projected)					Trend Identification Summary
	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	
PW-01: Office Technical Work	2,289.5 hrs./mo.	n/a	3,644.9	3,714.1	3,788.4	Increases proportionally with the increase in total health and safety inspections. This includes a 59.2% increase in FY 20-21 from the FY 18-19 baseline; followed by a 1.9% and 2.0% increase in FY 21-22 and FY 22-23, respectively.
PW-02: Complaint Investigation	91.8 hrs./mo.	n/a	146.2	149.0	152.0	Increases proportionally with the increase in total health and safety complaints. This includes a 59.2% increase in FY 20-21 from the FY 18-19 baseline; followed by a 1.9% and 2.0% increase in FY 21-22 and FY 22-23, respectively.
PW-05: Calibration/ Equipment Maintenance	36.6 hrs./mo.	n/a	58.2	59.3	60.5	Increases proportionally with the increase in total health and safety inspections. This includes a 59.2% increase in FY 20-21 from the FY 18-19 baseline; followed by a 1.9% and 2.0% increase in FY 21-22 and FY 22-23, respectively.
<b>Health-Focused Inspections</b>						
Health/Accident	172	131	206	206	206	20% increase to FY 18-19 baseline due to increases in pandemic response; heat illness due to climate change and addition of indoor heat complaints, and wildfire smoke complaints.  This is lower than the 50% increase in health intake (which would have projected 258 inspections assuming the same portion of intake turns into inspections), however SMEs believe this will plateau and

### Section III: Workload and Staffing Analysis

						decrease in future years resulting in a projected 20% increase once heat and wildfire were added into consideration.
Health/Complaint	862	595	2,076	2,076	2,076	SMEs identified an extra 100 inspections per month related to COVID for at least the next couple years, spiking as things reopen. Applied the additional 1200 to the historical average of 876 inspections per year.
Health/Fatality	40	61	48	48	48	Historically aligning with accident rates, the 20% increase due to increases in pandemic response, heat illness, and wildfire smoke was applied to the historical average of 40 fatality inspections per year.
Health/Follow-Up	29	16	166	166	166	Historically aligning with the number of overall inspections, the number of required follow-ups (20% of those with serious violations) would align proportionally with the number of Health inspections. Based on FY 18-19, 19.5% of Health Inspections (all types other than follow-up) had serious violations. Applying the 19.5% to the expected 4,257 total health inspections projects 830 would have serious violations. In order to re-inspect 20%, it would require at least 166 follow-up inspections per year.
Health/Program Planned	98	150	1,435	1,435	1,435	Program planned includes inspections on asbestos and lead notifications, and silica hazards in addition to inspecting medical facilities to ensure sufficient PPE. As discussed in the backlog, it is not practical to inspect 10% of all notifications so the baseline reflects the historical average plus the district office goals discussed in the backlog. With the addition of silicosis and PPE inspections, SMEs indicated a reasonable expectation would be an additional 15 inspections for each of the 21 district offices, acknowledging that this still does not come close to the 10% desired. This accounts for 315 additional inspections on top of the baseline (100 historical average plus 612 Asbestos and 408 lead).
Health/Program Planned – CDPH Notifications	n/a	n/a	118	118	118	In addition to the lead inspections planned around contractor notifications, SMEs project an average of 118 referred lead inspections from CDPH requiring more intense sampling and on-site time, as outlined in the FY 20-21 BCP.
Health/Programmed Related	5	12	62	62	62	Historically, the number of Program Related inspections aligns proportionally with the number of Program Planned. Based on historical volume metrics from FY 16-17, FY 17-18, and FY 18-19, an average of 4.3% of Program Planned result in a Programmed

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						Related. This percentage was applied to the expected 1,435 Program Planned inspections.
Health/Referral	79	85	120	120	120	The decrease in referrals in historical volume metrics is related to shortage in staffing to pass referrals to. The historical average of 120 inspections is utilized, acknowledging that more could be done if staffing increases and other work is managed.
Health/Unprogrammed Related	94	64	192	192	192	Historically, the number of unprogrammed related inspections aligns proportionally with the number of accident and complaint inspections. Based on historical volume metrics from FY 16-17, FY 17-18, and FY 18-19, an average of 8.4% of accident and complaint inspections result in an Unprogrammed Related. This percentage was applied to the expected 2,282 accident and complaint inspections.
Workplace Sampling and Monitoring	67.5	n/a	2,483	2,483	2,483	Intent is to conduct monitoring at a minimal of 60% of health inspections (excluding follow-ups and CDPH notifications which have time built in already for this function). Expected 4,139 inspections at 60% results in 2,483 planned monitor/sampling per year.
<b>Total Health Inspections<sup>4</sup>:</b>	<b>1,379</b>	<b>1,114</b>	<b>4,423</b>	<b>4,423</b>	<b>4,423</b>	
<b>Safety-Focused Inspections</b>						
Safety/Accident	2,234	1,737	2,307	2,382	2,460	SMEs indicated the number of safety inspections was tied to economic conditions, with more work (and correspondingly more safety accidents) during good economic times. The Department of Economic Analysis reported a ten-year average GDP growth of 3.27% for California between FY 09/10 and FY 19/20. This average increase was applied to the FY 18-19 baseline and to each subsequent year.
Safety/Complaint	1351	838	1,395	1,441	1,488	The number of complaints is also tied to economic conditions, with more complaints as more work is being done. The ten-year average GDP growth of 3.27% was applied to the FY 18-19 baseline and to each subsequent year.
Safety/Fatality	204	155	211	218	225	Similar to Health, the number of fatalities aligns with the proportional change in number of accidents. The ten-year GDP average growth was applied to the FY 18-19 baseline and each subsequent year.
Safety/Follow-Up	113	84	564	580	598	Historically aligning with the number of overall inspections, the

<sup>4</sup> The Total Health Inspections does not include the number of Environmental Sampling and Monitoring to avoid double-counting inspections as this row only identifies 60% of the total health inspections eligible for monitoring.

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						<p>number of required follow-ups (20% of those with serious violations) would align proportionally with the number of safety inspections. Based on FY 18-19, 38.9% of Health Inspections (all types other than follow-up) had serious violations.</p> <p>Applying the 38.9% to the expected 7243 / 7461 / 7686 total safety inspections projects 2817 / 2902 / 2990 (for FY 20-21, 21-22, and 22-23, respectively) would have serious violations. In order to re-inspect 20%, it would require at least 564 / 580 / 598 follow-up inspections per year.</p>
Safety/Program Planned	1371	961	2,077	2,145	2,215	<p>The number of Planned Program inspections would increase proportionally with the number of expected inspections. Given that the number of inspections is tied to the economy, the average GDP growth rate of 3.27% was applied to the baseline (historical average of 1,327 plus added 684 High Risk Permit inspections from backlog discussion) for each subsequent year.</p>
Safety/Programmed Related	77	70	94	97	100	<p>Historically, the number of Program Related inspections aligns proportionally with the number of Program Planned. Based on historical volume metrics from FY 16-17, FY 17-18, and FY 18-19, an average of 4.5% of Program Planned result in a Programmed Related. This percentage was applied to the expected Program Planned inspections for each projected year.</p>
Safety/Referral	379	339	567	567	567	<p>The decrease in referrals in historical volume metrics is related to shortage in staffing to pass referrals to. The historical average of 441 inspections in addition to the 126 additional tree referrals to meet the district office goal discussed in the backlog is utilized to project the number of referrals per year, acknowledging that more could be done if staffing increases and other work is managed.</p>
Safety/Unprogrammed Related	573	404	592	612	632	<p>Historically, the number of unprogrammed related inspections aligns proportionally with the number of accident and complaint inspections. Based on historical volume metrics from FY 16-17, FY 17-18, and FY 18-19, an average of 16.0% of accident and complaint inspections result in an Unprogrammed Related. This percentage was applied to the expected total accident and complaint inspections each year.</p>
<b>Total Safety Inspections:</b>	<b>6,302</b>	<b>4,588</b>	<b>7,807</b>	<b>8,041</b>	<b>8,284</b>	
<b>New Anticipated Work</b>						
Workplace Violence and Indoor Heat– currently under regulatory development – but will bring more work/safety complaints. No current						

quantification.	
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### ***Overall Findings and Observations***

The workload staffing analysis identified a need for 140.64 IH and 187.46 SE positions to meet the projected workload in FY 22-23, which is notably higher than the 3.6 IH and 171.6 SE filled as of FY 18-19.

#### **Additional Findings and Observations**

- There is presently a structural imbalance in the number of allocated IH and SE positions when compared to the corresponding health and safety workloads. This imbalance has resulted in significantly more health-related work being unmet, as demonstrated by the large increase in needed IH staff to meet the workload. Based on discussions with management, this is partially attributed to many of the IH positions changing to an SE position due to the pay scale difference and complexity of the IH work.
- Cal/OSHA staff are required to continually reprioritize the workload to meet the demands of incoming complaints and subsequent inspections. This results in staff working in a reactionary capacity, with minimal time to complete preventative tasks to proactively prevent the occurrence of health and safety violations. A majority of the unmet work requirements (e.g., program planned inspections) in this study are designed to identify and prevent hazardous conditions through proactive inspections of work sites. Staffing additions would increase the ability to complete preventative actions would potentially lead to fewer urgent/reactionary actions and better equip staff to achieve the mission of protecting California workers.
- The workload is contingent upon many external variables that are often outside of Cal/OSHA's control, resulting in variability to the workload requirements. For example, the occurrence of the COVID-19 pandemic is going to drive higher health concerns for the immediate future, the increase in wildfires drives an increase in smoke health concerns and an increase in re-building, which increases the potential for safety concerns; and the addition of new regulations regarding indoor heat and workplace violence will potentially increase the number of complaints or incidents being investigated. Many of the assumptions of the time required to meet this volatile workload are based on SME estimations of the workload impact and required processing times. Although these time and frequency estimates were not able to be verified during this study due to the work not currently being done, it is still considered a part of the critical workload that should be updated as better measurements can be obtained.

## Appendix A: Standardized Task List

This appendix presents the standardized task list defining the work activities and the corresponding Time Categories from the provided *State Time Tracking Weekly Details by CSHO Report*, pulled from the OIS database.

Task Code	Task Activity	CSHO Time Categories
<b>Administrative Program Support</b>		
GW-01	<b>Professional Duties</b> – completing administrative paperwork (timesheets, expense reports, work tracking reports), maintaining current on professional/technical standards, publications; reviewing division policies/procedures; serving on boards or committees; maintaining current on industry hazards through research.	<b>Program Support:</b> <ul style="list-style-type: none"> <li>Professional Duties</li> </ul>
GW-02	<b>Training</b> – participating in field or formal training opportunities; providing training to compliance inspectors, and conducting safety awareness meetings with Regional/District staff	<b>Program Support:</b> <ul style="list-style-type: none"> <li>Formal Training Provided</li> <li>Formal Training Received</li> <li>Field Training Provided</li> <li>Field Training Received</li> <li>Instructing CalOSHA staff</li> </ul>
GW-03	<b>Supervisory Work</b> – prioritizing, delegating, and evaluating work <i>while standing in for district manager</i> in the event of absence, providing technical guidance to compliance inspectors on procedures, safety related issues, safety orders, and the use of personal protective equipment.	<b>Program Support:</b> <ul style="list-style-type: none"> <li>Supervisory Duties</li> </ul>
<b>Programmatic Support</b>		
PW-01	<b>Office Technical Support</b> – Acting as Duty Officer of the Day, including receive/review health and safety complaints, accident reports, and referrals; complete intake forms, notifying District Manager of urgent matters (fatality, imminent hazards); answering public inquiries.	<b>Program Support:</b> <ul style="list-style-type: none"> <li>Other</li> </ul>
PW-02	<b>Complaint Investigation</b> –reviewing and responding to non-formal, non-serious, or non-formal serious complaints via mail/letters instead of on-site inspections or investigation; reviewing employer responses.	<b>Unavailable Time:</b> <ul style="list-style-type: none"> <li>Central Office Support</li> <li>Processing UPA</li> </ul>
PW-03	<b>Administrative Duties</b> – conducting Permit Safety Conferences and pre-job conferences, reviewing applications, and issuing permits and licenses.	<b>Program Support:</b> <ul style="list-style-type: none"> <li>Admin Duties</li> </ul>
PW-04	<b>Cal OSHA Outreach</b> – providing technical advice, information, or guidance not related to a specific inspection to other employees, employee groups, employers, public groups, professional organizations or trade unions. This includes sharing information, preparing presentations, or providing training on safety principles, regulations, and compliance methods; and providing guidance and feedback on IIPP standards.	<b>General CA Time:</b> <ul style="list-style-type: none"> <li>To Employees, Employee Groups and Trade Unions</li> <li>To Employers and Employer Associations</li> <li>To Professional Groups/ General Public</li> </ul>
PW-05	<b>Calibration/Equipment Maintenance</b> - calibrating testing equipment; maintaining personal protection equipment; ensuring all equipment is in working order and available for inspections; developing and implementing personal protective equipment controls and sample measuring techniques	<b>Program Support:</b> <ul style="list-style-type: none"> <li>Equipment/PPE Maintenance</li> <li>Calibration/Testing</li> </ul>

Task Code	Task Activity	CSHO Time Categories
<b>Inspection Activity (has a related inspection number)</b>		
IT-01	<b>Inspection Preparation</b> – Inspection Preparation: review the nature/scope of inspection, research related hazards, equipment; review employer 5-year inspection history; determine need for SMEs, gather needed forms, sample collection, and Personal Protective Equipment.	<b>Activity Time:</b> • Preparation
IT-02	<b>Inspection Related Travel</b> – traveling to/from site; making travel arrangements	<b>Activity Time:</b> • Travel
IT-03	<b>Onsite Inspection</b> - initiating contact with employer, obtaining consent for inspection; conducting opening conference outlining requirements; conducting walkaround/site inspection, safety surveys, and employee interviews; collecting samples, documenting observations, determining violations; verifying posted safety information; collecting evidence, photographs; conducting exit conference noting preliminary findings.	<b>Activity Time:</b> • Onsite
IT-04	<b>Report Preparation</b> - Prepares technical reports to document inspection visit, findings, identified hazards and violations, determining appropriate enforcement actions (citations, memorandum, special actions, special orders) with referenced regulations/codes, calculated penalties, obtaining management approval. Ensuring case file has all required information, notes, measurements, evidence and regulation references; Includes time researching standards, evaluating tests, completing required documentation, forms, and data entry into the OIS database.	<b>Activity Time:</b> • Report Preparation • Non-OIS Professional Services
IT-05	<b>Denial/Warrant</b> – on-site inspection time in which the employer denies access or ability to conduct inspection, conferring with Legal Unit attorneys, obtaining a warrant to search site including filing with the clerk of the court and appearing to obtain the warrant; following up on post-warrant documentation. This only includes the extra time required when needing the extra steps to complete the on-site inspection; once warrant is obtained - time is tracked under IT-03.	<b>Activity Time:</b> • Denial/Warrant
IT-06	<b>Technical Support</b> – obtaining technical assistance, subject matter expertise related to an inspection; including time identifying subject matter experts, coordinating time to obtain information, and obtaining the technical information.	<b>Activity Time:</b> • Technical Support
IT-07	<b>Off-site Conferences</b> – coordinating, participating in additional conferences off-site including informal conferences between the employer and District manager, off-site employee interviews, and internal inspection related conferences with other Cal/OSHA staff.	<b>Activity Time:</b> • Informal Conference • Other Conference
IT-08	<b>Abatement Process</b> - document abatement agreements, reviewing employer's response to ensure timely and satisfactory response to the identified hazard(s).	<b>Activity Time:</b> • Abatement
IT-09	<b>Litigation Process Support</b> – preparing for appeals, traveling to serve subpoenas, time spent interviewing and preparing witnesses, testifying at depositions and administrative hearings; representing/ testifying for the Division at Appeals Board and Criminal Court hearings.	<b>Activity Time:</b> • Litigation • Settlement Agreements



## Appendix B: Time Allocations for Dual Domain Inspections

The following table identifies the frequency of each inspection type within each domain (health, safety). A focus group with 5 subject matter experts with a cumulative 109 years in health inspections and 89 years in safety inspections identified the percentage of each type of inspection that contained both a health and safety component. They further identified the breakdown of time within those inspections to identify the percentage of time spent on health tasks versus safety tasks. A group consensus was reached for each inspection type and is documented in the table below, applying the information to the FY 18-19 metric. This allows the time required on each inspection type to be parsed out by health or safety domain in the subsequent analyses, corresponding to the number of IH or SE required on average for each inspection type.

Inspection Type	Total FY 18-19 Health Inspections	% with Safety component	For Health Inspections with Safety Components – how is time distributed?
Health/Accident	172	20%	90% Health, 10% Safety
Health/Complaint	862	35%	80% Health, Safety 20%
Health/Fatality	40	20%	90% Health, 10% Safety
Health/Follow-Up	29	15%	85% Health, 15% Safety
Health/Program Planned	98	10%	90% Health, 10% Safety
Health/Programmed Related	5	10%	90% Health, 10% Safety
Health/Referral	79	35%	80% Health, Safety 20%
Health/Unprogrammed Related	94	40%	50% Health, 50% Safety
<b>Health Total</b>	<b>1,379</b>		
Inspection Type	Total FY 18-19 Safety Inspections	% with Health component	For Safety Inspections with Health Components – how is time distributed?
Safety/Accident	2,234	25%	90% Safety, 10% Health
Safety/Complaint	1,351	50%	90% Safety, 10% Health
Safety/Fatality	204	25%	90% Safety, 10% Health
Safety/Follow-Up	113	5%	90% Safety, 10% Health
Safety/Program Planned	1,371	80%	90% Safety, 10% Health
Safety/Programmed Related	77	80%	90% Safety, 10% Health
Safety/Referral	379	75%	90% Safety, 10% Health
Safety/Unprogrammed Related	573	75%	90% Safety, 10% Health
<b>Safety Total</b>	<b>6,302</b>		
<b>OVERALL TOTAL</b>	<b>7,681</b>		



## ***Appendix C: Fiscal Year 2018-2019 Workload Detailed Time per Task Standards***

Staff time utilized on Administrative Program Support tasks including individual administrative/organizational tasks, providing and receiving training, and supervisory time standing in for District Managers is deducted from the overall available work year for each PY prior to applying time to the programmatic support and inspection activities. This reserves time for each employee to ensure time to complete the necessary administrative tasks.

The following tables summarize the time per task standards for the work conducted in FY 18-19 based on the analysis of the *State Time Tracking Weekly Details by CSHO Report* covering all included IH and SE staff for FY 18-19, corresponding workload volume metrics, and the SME evaluation of inspection time on those requiring both Industrial Health and Safety Engineer components. The table includes separate time per task standards for Industrial Hygienists and Safety Engineers for each task within each of the Health and Safety inspection categories. Subsequent tables include the aggregated time requirements per inspection type. It is noted that not all inspections of each type will have a component from the second domain (i.e., time required on Safety in a Health Inspection or vice versa), however in order to provide staffing needs that can be applied to future workload projections, the current time requirements per inspection for both the IH and SE is spread across all completed inspections to obtain the average time per inspection.

The following table summarizes the time per task standards, utilizing the following column headers to define the work.

- Time per Task – identifies the **average time per inspection, time per month, or time per PY**. Time standards are calculated by dividing total allocated time by the workload volume or number of PY.
- Task Volume – identifies **how often the task occurred in FY 18-19** based on the number of PY in the Administrative Program Support Tasks, number of annual months (12) for continuous support tasks in the Programmatic Support tasks, and the number of recorded inspections from *State Time Tracking Weekly Details by CSHO Report* for the Inspection tasks.
- Annual Hours – the overall annual time requirement per classification group on each task calculated as the “Time per Task x Task Volume”<sup>5</sup>.

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<sup>5</sup> Time standard and annual time data were calculated in a spreadsheet using all decimal places, however results are presented to the nearest hundredth.

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
Administrative Program Support						
GW-1: Professional Duties	171.85 hrs. per PY	3.6 PY	618.65 hrs./yr.	171.85 hrs. per PY	171.6 PY	29,488.97 hrs./yr.
GW-2: Training	102.59 hrs. per PY	3.6 PY	369.34 hrs./yr.	102.59 hrs. per PY	171.6 PY	17,605.38 hrs./yr.
GW-3: Supervisory Work	35.86 hrs. per PY	3.6 PY	129.11 hrs./yr.	35.86 hrs. per PY	171.6 PY	6,154.25 hrs./yr.
Total Administrative Program Support	310.3 hrs. per PY per year		1,117.10 hrs./yr.	310.3 hrs. per PY per year		53,248.60 hrs./yr.
Summary <sup>6</sup>	Staff time utilized to Administrative Program Support, including organizational needs, required training, and supervisory time standing in for District Managers, is deducted from the overall available work year for each PY prior to applying time to programmatic support and inspection time requirements. The current documented workload identified a need for the following hours for each PY to fulfill these Administrative Program Support responsibilities. <ul style="list-style-type: none"><li>Each PY in the Industrial Hygienist or Safety Engineer classifications utilize an average of 310.3 hours per year (25.86 hours per month) on Administrative Program Support tasks, encompassing 17.47% of their available work time, resulting in 1,465.70 hours per PY available for program specific requirements.</li></ul>					
Programmatic Support						
PW-01: Office Technical Support	437.98 hrs./month	12 months	5255.76 hrs./year	1,851.51 hrs./month	12 months	22,218.14 hrs./year
PW-02: Complaint Investigation	17.57 hrs./month	12 months	210.81 hrs./year	74.27 hrs./month	12 months	891.19 hrs./year
PW-03: Administrative Duties	0.00 hrs./month	12 months	0.00 hrs./year	1,146.29 hrs./month	12 months	13,755.50 hrs./year
PW-04: Cal OSHA Outreach	29.36 hrs./month	12 months	352.28 hrs./year	124.10 hrs./month	12 months	1489.22 hrs./year
PW-05: Calibration/Equipment Maintenance	32.90 hrs./month	12 months	394.83 hrs./year	3.66 hrs./month	12 months	43.87 hrs./year
Total Programmatic Support			6,213.68 hrs./year = 4.24 PY			38,397.92 hrs./year = 26.20 PY

<sup>6</sup> Programmatic and inspection subtotals in subsequent sections will be divided by the available program work hours (1465.7) to get the number of PY needed for that task area, while accounting for the time utilized in fulfilling administrative program support requirements by each PY.

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
<b>Health Focused Inspections</b>						
<b>Health – Accident Inspections</b>						
IT-01: Inspection Preparation	1.22 hrs./ inspection	172 inspections	209.13 hrs./year	0.02 hrs./inspection	172 inspections	4.27 hrs./year
IT-02: Inspection Related Travel	2.76 hrs./ inspection	172 inspections	475.40 hrs./year	0.06 hrs./inspection	172 inspections	9.70 hrs./year
IT-03: Onsite Inspection	3.04 hrs./ inspection	172 inspections	522.14 hrs./year	0.06 hrs./inspection	172 inspections	10.66 hrs./year
IT-04: Report Preparation	20.77 hrs./inspection	172 inspections	3572.00 hrs./year	0.42 hrs./inspection	172 inspections	72.90 hrs./year
IT-05: Denial/Warrant	0.01 hrs./ inspection	172 inspections	1.96 hrs./year	0.00 hrs./inspection	172 inspections	0.04 hrs./year
IT-06: Technical Support	1.19 hrs./ inspection	172 inspections	204.33 hrs./year	0.02 hrs./inspection	172 inspections	4.17 hrs./year
IT-07: Off-site Conferences	1.17 hrs./ inspection	172 inspections	201.88 hrs./year	0.02 hrs./inspection	172 inspections	4.12 hrs./year
IT-08: Abatement Process	0.13 hrs./ inspection	172 inspections	23.03 hrs./year	0.00 hrs./inspection	172 inspections	0.47 hrs./year
IT-09: Litigation Process Support	0.17 hrs./ inspection	172 inspections	28.42 hrs./year	0.00 hrs./inspection	172 inspections	0.58 hrs./year
<b>Total Health Accident Inspections</b>	<b>30.46 hrs./ Inspection</b>		<b>5,238.30 hrs./year = 3.57 PY</b>	<b>0.62 hrs./ inspection</b>		<b>106.91 hrs./year = 0.07 PY</b>
<b>Health – Complaint Inspections</b>						
IT-01: Inspection Preparation	1.09 hrs./ inspection	862 inspections	943.86 hrs./year	0.08 hrs./inspection	862 inspections	71.04 hrs./year
IT-02: Inspection Related Travel	2.20 hrs./ inspection	862 inspections	1,894.50 hrs./year	0.17 hrs./inspection	862 inspections	142.60 hrs./year
IT-03: Onsite Inspection	3.33 hrs./ inspection	862 inspections	2,873.89 hrs./year	0.25 hrs./inspection	862 inspections	216.31 hrs./year
IT-04: Report Preparation	14.99 hrs./inspection	862 inspections	12,923.56 hrs./year	1.13 hrs./inspection	862 inspections	972.74 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	862 inspections	4.19 hrs./year	0.00 hrs./inspection	862 inspections	0.32 hrs./year
IT-06: Technical Support	0.57 hrs./ inspection	862 inspections	491.97 hrs./year	0.04 hrs./inspection	862 inspections	37.03 hrs./year
IT-07: Off-site Conferences	0.86 hrs./ inspection	862 inspections	738.05 hrs./year	0.06 hrs./inspection	862 inspections	55.55 hrs./year

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
IT-08: Abatement Process	0.21 hrs./ inspection	862 inspections	180.23 hrs./year	0.02 hrs./inspection	862 inspections	13.57 hrs./year
IT-09: Litigation Process Support	0.24 hrs./ inspection	862 inspections	210.18 hrs./year	0.02 hrs./inspection	862 inspections	15.82 hrs./year
<b>Total Health Complaint Inspections</b>	<b>23.50 hrs./ inspection</b>		<b>20,260.42 hrs./year = 13.82 PY</b>	<b>1.77 hrs./ inspection</b>		<b>1524.98 hrs./year = 1.04 PY</b>
<b>Health – Fatality Inspections</b>						
IT-01: Inspection Preparation	1.45 hrs./ inspection	40 inspections	57.82 hrs./year	0.03 hrs./inspection	40 inspections	1.18 hrs./year
IT-02: Inspection Related Travel	3.01 hrs./ inspection	40 inspections	120.54 hrs./year	0.06 hrs./ inspection	40 inspections	2.46 hrs./year
IT-03: Onsite Inspection	4.90 hrs./ inspection	40 inspections	196.00 hrs./year	0.10 hrs./ inspection	40 inspections	4.00 hrs./year
IT-04: Report Preparation	31.44hrs./inspection	40 inspections	1,257.63 hrs./year	0.64 hrs./inspection	40 inspections	25.67 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	40 inspections	0.00 hrs./year	0.00 hrs./ inspection	40 inspections	0.00 hrs./year
IT-06: Technical Support	1.41 hrs./ inspection	40 inspections	56.35 hrs./year	0.03 hrs./ inspection	40 inspections	1.15 hrs./year
IT-07: Off-site Conferences	2.05 hrs./ inspection	40 inspections	81.83 hrs./year	0.04 hrs./ inspection	40 inspections	1.67 hrs./year
IT-08: Abatement Process	0.06 hrs./ inspection	40 inspections	2.45 hrs./year	0.00 hrs./ inspection	40 inspections	0.05 hrs./year
IT-09: Litigation Process Support	0.00 hrs./ inspection	40 inspections	0.00 hrs./year	0.00 hrs./ inspection	40 inspections	0.00 hrs./year
<b>Total Health Fatality Inspections</b>	<b>44.32 hrs./ inspection</b>		<b>1,772.62 hrs./year = 1.21 PY</b>	<b>0.90 hrs./ inspection</b>		<b>36.18 hrs./year = 0.02 PY</b>
<b>Health – Follow-up Inspections</b>						
IT-01: Inspection Preparation	0.62 hrs./ inspection	29 inspections	18.08 hrs./year	0.01 hrs./ inspection	29 inspections	0.42 hrs./year
IT-02: Inspection Related Travel	1.52 hrs./ inspection	29 inspections	43.99 hrs./year	0.03 hrs./ inspection	29 inspections	1.01 hrs./year
IT-03: Onsite Inspection	1.67 hrs./ inspection	29 inspections	48.39 hrs./year	0.04 hrs./ inspection	29 inspections	1.11 hrs./year
IT-04: Report Preparation	9.83 hrs./ inspection	29 inspections	285.04 hrs./year	0.23 hrs./ inspection	29 inspections	6.56 hrs./year

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
IT-05: Denial/Warrant	0.00 hrs./ inspection	29 inspections	0.00 hrs./year	0.00 hrs./ inspection	29 inspections	0.00 hrs./year
IT-06: Technical Support	0.42 hrs./ inspection	29 inspections	12.22 hrs./year	0.01 hrs./ inspection	29 inspections	0.28 hrs./year
IT-07: Off-site Conferences	0.34 hrs./ inspection	29 inspections	9.97 hrs./year	0.01 hrs./ inspection	29 inspections	0.23 hrs./year
IT-08: Abatement Process	0.03 hrs./ inspection	29 inspections	0.98 hrs./year	0.00 hrs./ inspection	29 inspections	0.02 hrs./year
IT-09: Litigation Process Support	0.00 hrs./ inspection	29 inspections	0.00 hrs./year	0.00 hrs./ inspection	29 inspections	0.00 hrs./year
<b>Total Health Follow-up Inspections</b>	<b>14.44 hrs./ inspection</b>		<b>418.66 hrs./year = 0.29 PY</b>	<b>0.33 hrs./ inspection</b>		<b>9.64 hrs./year = 0.01 PY</b>
<b>Health – Program Planned Inspections</b>						
IT-01: Inspection Preparation	1.03 hrs./ inspection	98 inspections	101.08 hrs./year	0.01 hrs./ inspection	98 inspections	1.02 hrs./year
IT-02: Inspection Related Travel	2.76 hrs./ inspection	98 inspections	270.27 hrs./year	0.03 hrs./ inspection	98 inspections	2.73 hrs./year
IT-03: Onsite Inspection	2.83 hrs./ inspection	98 inspections	277.70 hrs./year	0.03 hrs./ inspection	98 inspections	2.81 hrs./year
IT-04: Report Preparation	13.75 hrs./ inspection	98 inspections	1,347.29 hrs./year	0.14 hrs./ inspection	98 inspections	13.61 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	98 inspections	0.00 hrs./year	0.00 hrs./ inspection	98 inspections	0.00 hrs./year
IT-06: Technical Support	0.16 hrs./ inspection	98 inspections	15.35 hrs./year	0.00 hrs./ inspection	98 inspections	0.16 hrs./year
IT-07: Off-site Conferences	0.44 hrs./ inspection	98 inspections	43.07 hrs./year	0.00 hrs./ inspection	98 inspections	0.44 hrs./year
IT-08: Abatement Process	0.53 hrs./ inspection	98 inspections	52.27 hrs./year	0.01 hrs./ inspection	98 inspections	0.53 hrs./year
IT-09: Litigation Process Support	0.24 hrs./ inspection	98 inspections	23.27 hrs./year	0.00 hrs./ inspection	98 inspections	0.24 hrs./year
<b>Total Health Program Planned Inspections</b>	<b>21.74 hrs./ inspection</b>		<b>2,130.28 hrs./year = 1.45 PY</b>	<b>0.22 hrs./ inspection</b>		<b>21.52 hrs./year = 0.01 PY</b>
<b>Health – Programmed Related Inspections</b>						
IT-01: Inspection Preparation	0.79 hrs./ inspection	5 inspections	3.96 hrs./year	0.01 hrs./ inspection	5 inspections	0.04 hrs./year
IT-02: Inspection Related	1.09 hrs./ inspection	5 inspections	5.45 hrs./year	0.01 hrs./ inspection	5 inspections	0.06 hrs./year

## Appendix C: FY 18-19 Time per Task Standards

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
Travel				inspection		
IT-03: Onsite Inspection	1.58 hrs./ inspection	5 inspections	7.92 hrs./year	0.02 hrs./ inspection	5 inspections	0.08 hrs./year
IT-04: Report Preparation	8.81 hrs./ inspection	5 inspections	44.06 hrs./year	0.09 hrs./ inspection	5 inspections	0.45 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	5 inspections	0.00 hrs./year	0.00 hrs./ inspection	5 inspections	0.00 hrs./year
IT-06: Technical Support	0.99 hrs./ inspection	5 inspections	4.95 hrs./year	0.01 hrs./ inspection	5 inspections	0.05 hrs./year
IT-07: Off-site Conferences	1.09 hrs./ inspection	5 inspections	5.45 hrs./year	0.01 hrs./ inspection	5 inspections	0.06 hrs./year
IT-08: Abatement Process	0.00 hrs./ inspection	5 inspections	0.00 hrs./year	0.00 hrs./ inspection	5 inspections	0.00 hrs./year
IT-09: Litigation Process Support	0.00 hrs./ inspection	5 inspections	0.00 hrs./year	0.00 hrs./ inspection	5 inspections	0.00 hrs./year
<b>Total Health Programmed Related Inspections</b>	<b>14.36 hrs./ inspection</b>		<b>71.78 hrs./year = 0.05 PY</b>	<b>0.15 hrs./ inspection</b>		<b>0.73 hrs./year = 0.00 PY</b>
<b>Health – Referred Inspections</b>						
IT-01: Inspection Preparation	0.39 hrs./ inspection	79 inspections	30.69 hrs./year	0.03 hrs./ inspection	79 inspections	2.31 hrs./year
IT-02: Inspection Related Travel	1.55 hrs./ inspection	79 inspections	122.30 hrs./year	0.12 hrs./ inspection	79 inspections	9.21 hrs./year
IT-03: Onsite Inspection	1.70 hrs./ inspection	79 inspections	133.92 hrs./year	0.13 hrs./ inspection	79 inspections	10.08 hrs./year
IT-04: Report Preparation	8.67 hrs./ inspection	79 inspections	684.95 hrs./year	0.65 hrs./ inspection	79 inspections	51.56 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	79 inspections	0.00 hrs./year	0.00 hrs./ inspection	79 inspections	0.00 hrs./year
IT-06: Technical Support	0.09 hrs./ inspection	79 inspections	6.98 hrs./year	0.01 hrs./ inspection	79 inspections	0.53 hrs./year
IT-07: Off-site Conferences	0.57 hrs./ inspection	79 inspections	45.11 hrs./year	0.04 hrs./ inspection	79 inspections	3.40 hrs./year
IT-08: Abatement Process	0.02 hrs./ inspection	79 inspections	1.40 hrs./year	0.00 hrs./ inspection	79 inspections	0.11 hrs./year
IT-09: Litigation Process Support	0.55 hrs./ inspection	79 inspections	43.25 hrs./year	0.04 hrs./ inspection	79 inspections	3.26 hrs./year
<b>Total Health Referral</b>	<b>13.53 hrs./</b>		<b>1,068.57 hrs./year</b>	<b>1.02 hrs./</b>		<b>80.43 hrs./year</b>

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
<b>Inspections</b>	<b>inspection</b>		<b>= 0.73 PY</b>	<b>inspection</b>		<b>= 0.05 PY</b>
<b>Health – Unprogrammed Related Inspections</b>						
IT-01: Inspection Preparation	0.44 hrs./ inspection	94 inspections	41.12 hrs./year	0.11 hrs./ inspection	94 inspections	10.28 hrs./year
IT-02: Inspection Related Travel	0.71 hrs./ inspection	94 inspections	66.40 hrs./year	0.18 hrs./ inspection	94 inspections	16.60 hrs./year
IT-03: Onsite Inspection	1.34 hrs./ inspection	94 inspections	126.00 hrs./year	0.34 hrs./ inspection	94 inspections	31.50 hrs./year
IT-04: Report Preparation	10.47 hrs./ inspection	94 inspections	984.16 hrs./year	2.62 hrs./ inspection	94 inspections	246.04 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	94 inspections	0.00 hrs./year	0.00 hrs./ inspection	94 inspections	0.00 hrs./year
IT-06: Technical Support	0.52 hrs./ inspection	94 inspections	48.80 hrs./year	0.13 hrs./ inspection	94 inspections	12.20 hrs./year
IT-07: Off-site Conferences	0.74 hrs./ inspection	94 inspections	70.00 hrs./year	0.19 hrs./ inspection	94 inspections	17.50 hrs./year
IT-08: Abatement Process	0.38 hrs./ inspection	94 inspections	36.00 hrs./year	0.10 hrs./ inspection	94 inspections	9.00 hrs./year
IT-09: Litigation Process Support	0.25 hrs./ inspection	94 inspections	23.60 hrs./year	0.06 hrs./ inspection	94 inspections	5.90 hrs./year
<b>Total Health Unprogrammed Related Inspections</b>	<b>14.85 hrs./ inspection</b>		<b>1,396.08 hrs./year = 0.95 PY</b>	<b>3.71 hrs./ inspection</b>		<b>349.02 hrs./year = 0.24 PY</b>
<b>Total for ALL Health Driven Inspections</b>			<b>32,356.71 hrs. = 22.08 PY</b>			<b>2,129.39 hrs. = 1.45 PY</b>
<b>Safety Focused Inspections</b>						
<b>Safety – Accident Inspections</b>						
IT-01: Inspection Preparation	0.04 hrs./ inspection	2,234 inspections	98.77 hrs./year	1.72 hrs./ inspection	2,234 inspections	3,851.84 hrs./year
IT-02: Inspection Related Travel	0.08 hrs./ inspection	2,234 inspections	178.83 hrs./year	3.12 hrs./ inspection	2,234 inspections	6,974.27 hrs./year
IT-03: Onsite Inspection	0.11 hrs./ inspection	2,234 inspections	235.09 hrs./year	4.10 hrs./ inspection	2,234 inspections	9,168.61 hrs./year
IT-04: Report Preparation	0.52 hrs./ inspection	2,234 inspections	1,166.14 hrs./year	20.36 hrs./ inspection	2,234 inspections	45,479.56 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	2,234 inspections	0.01 hrs./year	0.00 hrs./ inspection	2,234 inspections	0.49 hrs./year



Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
IT-06: Technical Support	0.03 hrs./ inspection	2,234 inspections	61.29 hrs./year	1.07 hrs./ inspection	2,234 inspections	2,390.21 hrs./year
IT-07: Off-site Conferences	0.03 hrs./ inspection	2,234 inspections	63.49 hrs./year	1.11 hrs./ inspection	2,234 inspections	2,476.01 hrs./year
IT-08: Abatement Process	0.00 hrs./ inspection	2,234 inspections	7.13 hrs./year	0.12 hrs./ inspection	2,234 inspections	277.88 hrs./year
IT-09: Litigation Process Support	0.02 hrs./ inspection	2,234 inspections	41.33 hrs./year	0.72 hrs./ inspection	2,234 inspections	1,611.87 hrs./year
<b>Total Safety Accident Inspections</b>	<b>0.83 hrs./ inspection</b>		<b>1,852.07 hrs./year = 1.26 PY</b>	<b>32.33 hrs./ inspection</b>		<b>72,230.73 hrs./year = 49.28 PY</b>
<b>Safety – Complaint Inspections</b>						
IT-01: Inspection Preparation	0.07 hrs./ inspection	1,351 inspections	97.98 hrs./year	1.38 hrs./ inspection	1,351 inspections	1,861.62 hrs./year
IT-02: Inspection Related Travel	0.11 hrs./ inspection	1,351 inspections	154.58 hrs./year	2.17 hrs./ inspection	1,351 inspections	2,937.02 hrs./year
IT-03: Onsite Inspection	0.18 hrs./ inspection	1,351 inspections	244.88 hrs./year	3.44 hrs./ inspection	1,351 inspections	4,652.72 hrs./year
IT-04: Report Preparation	0.80 hrs./ inspection	1,351 inspections	1,086.40 hrs./year	15.28 hrs./ inspection	1,351 inspections	20,641.51 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	1,351 inspections	0.43 hrs./year	0.01 hrs./ inspection	1,351 inspections	8.08 hrs./year
IT-06: Technical Support	0.03 hrs./ inspection	1,351 inspections	43.28 hrs./year	0.61 hrs./ inspection	1,351 inspections	822.23 hrs./year
IT-07: Off-site Conferences	0.04 hrs./ inspection	1,351 inspections	48.47 hrs./year	0.68 hrs./ inspection	1,351 inspections	920.84 hrs./year
IT-08: Abatement Process	0.01 hrs./ inspection	1,351 inspections	7.46 hrs./year	0.10 hrs./ inspection	1,351 inspections	141.74 hrs./year
IT-09: Litigation Process Support	0.01 hrs./ inspection	1,351 inspections	16.40 hrs./year	0.23 hrs./ inspection	1,351 inspections	311.60 hrs./year
<b>Total Safety Complaint Inspections</b>	<b>1.26 hrs./ inspection</b>		<b>1,699.86 hrs./year = 1.16 PY</b>	<b>23.91 hrs./ inspection</b>		<b>32,297.34 hrs./year = 22.04 PY</b>
<b>Safety – Fatality Inspections</b>						
IT-01: Inspection Preparation	0.05 hrs./ inspection	204 inspections	9.21 hrs./year	1.76 hrs./ inspection	204 inspections	359.09 hrs./year
IT-02: Inspection Related	0.11 hrs./ inspection	204 inspections	21.65 hrs./year	4.14 hrs./ inspection	204 inspections	844.35 hrs./year



## Appendix C: FY 18-19 Time per Task Standards

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
Travel		inspections		inspection		
IT-03: Onsite Inspection	0.14 hrs./ inspection	204 inspections	28.08 hrs./year	5.37 hrs./ inspection	204 inspections	1,095.22 hrs./year
IT-04: Report Preparation	0.86 hrs./ inspection	204 inspections	176.29 hrs./year	33.70 hrs./ inspection	204 inspections	6,875.21 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	204 inspections	0.00 hrs./year	0.00 hrs./ inspection	204 inspections	0.00 hrs./year
IT-06: Technical Support	0.04 hrs./ inspection	204 inspections	9.07 hrs./year	1.73 hrs./ inspection	204 inspections	353.73 hrs./year
IT-07: Off-site Conferences	0.05 hrs./ inspection	204 inspections	9.48 hrs./year	1.81 hrs./ inspection	204 inspections	369.53 hrs./year
IT-08: Abatement Process	0.00 hrs./ inspection	204 inspections	0.63 hrs./year	0.12 hrs./ inspection	204 inspections	24.38 hrs./year
IT-09: Litigation Process Support	0.04 hrs./ inspection	204 inspections	7.15 hrs./year	1.37 hrs./ inspection	204 inspections	278.85 hrs./year
<b>Total Safety Fatality Inspections</b>	<b>1.28 hrs./ inspection</b>		<b>261.55 hrs./year = 0.18 PY</b>	<b>50.00 hrs./ inspection</b>		<b>10,200.35 hrs./year = 6.96 PY</b>
<b>Safety – Follow-up Inspections</b>						
IT-01: Inspection Preparation	0.00 hrs./ inspection	113 inspections	0.47 hrs./year	0.83 hrs./ inspection	113 inspections	94.33 hrs./year
IT-02: Inspection Related Travel	0.01 hrs./ inspection	113 inspections	1.55 hrs./year	2.73 hrs./ inspection	113 inspections	308.75 hrs./year
IT-03: Onsite Inspection	0.01 hrs./ inspection	113 inspections	1.53 hrs./year	2.70 hrs./ inspection	113 inspections	304.77 hrs./year
IT-04: Report Preparation	0.06 hrs./ inspection	113 inspections	7.12 hrs./year	12.54 hrs./ inspection	113 inspections	1,416.68 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	113 inspections	0.08 hrs./year	0.13 hrs./ inspection	113 inspections	14.93 hrs./year
IT-06: Technical Support	0.00 hrs./ inspection	113 inspections	0.15 hrs./year	0.26 hrs./ inspection	113 inspections	28.86 hrs./year
IT-07: Off-site Conferences	0.00 hrs./ inspection	113 inspections	0.26 hrs./year	0.45 hrs./ inspection	113 inspections	51.04 hrs./year
IT-08: Abatement Process	0.00 hrs./ inspection	113 inspections	0.21 hrs./year	0.37 hrs./ inspection	113 inspections	41.79 hrs./year
IT-09: Litigation Process Support	0.00 hrs./ inspection	113 inspections	0.07 hrs./year	0.12 hrs./ inspection	113 inspections	13.93 hrs./year

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
<b>Total Safety Follow-up Inspections</b>	<b>0.10 hrs./ inspection</b>		<b>11.43 hrs./year = 0.01 PY</b>	<b>20.13 hrs./ inspection</b>		<b>2,275.07 hrs./year = 1.55 PY</b>
<b>Safety – Program Planned Inspections</b>						
IT-01: Inspection Preparation	0.07 hrs./ inspection	1,371 inspections	93.73 hrs./year	0.79 hrs./ inspection	1,371 inspections	1,077.87 hrs./year
IT-02: Inspection Related Travel	0.22 hrs./ inspection	1,371 inspections	299.56 hrs./year	2.51 hrs./ inspection	1,371 inspections	3,444.94 hrs./year
IT-03: Onsite Inspection	0.30 hrs./ inspection	1,371 inspections	408.44 hrs./year	3.43 hrs./ inspection	1,371 inspections	4,697.06 hrs./year
IT-04: Report Preparation	1.43 hrs./ inspection	1,371 inspections	1,958.35 hrs./year	16.43 hrs./ inspection	1,371 inspections	22,521.05 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	1,371 inspections	0.00 hrs./year	0.00 hrs./ inspection	1,371 inspections	0.00 hrs./year
IT-06: Technical Support	0.03 hrs./ inspection	1,371 inspections	43.41 hrs./year	0.36 hrs./ inspection	1,371 inspections	499.19 hrs./year
IT-07: Off-site Conferences	0.03 hrs./ inspection	1,371 inspections	42.52 hrs./year	0.36 hrs./ inspection	1,371 inspections	488.98 hrs./year
IT-08: Abatement Process	0.04 hrs./ inspection	1,371 inspections	49.09 hrs./year	0.41 hrs./ inspection	1,371 inspections	564.51 hrs./year
IT-09: Litigation Process Support	0.01 hrs./ inspection	1,371 inspections	15.67 hrs./year	0.13 hrs./ inspection	1,371 inspections	180.23 hrs./year
<b>Total Safety Program Planned Inspections</b>	<b>2.12 hrs./ inspection</b>		<b>2,910.77 hrs./year = 1.99 PY</b>	<b>24.42 hrs./ inspection</b>		<b>33,473.83 hrs./year 22.84 PY</b>
<b>Safety – Programmed Related Inspections</b>						
IT-01: Inspection Preparation	0.04 hrs./ inspection	77 inspections	3.38 hrs./year	0.51 hrs./ inspection	77 inspections	38.92 hrs./year
IT-02: Inspection Related Travel	0.10 hrs./ inspection	77 inspections	7.78 hrs./year	1.16 hrs./ inspection	77 inspections	89.52 hrs./year
IT-03: Onsite Inspection	0.16 hrs./ inspection	77 inspections	12.70 hrs./year	1.90 hrs./ inspection	77 inspections	146.10 hrs./year
IT-04: Report Preparation	1.03 hrs./ inspection	77 inspections	79.26 hrs./year	11.84 hrs./ inspection	77 inspections	911.44 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	77 inspections	0.00 hrs./year	0.00 hrs./ inspection	77 inspections	0.00 hrs./year
IT-06: Technical Support	0.08 hrs./ inspection	77 inspections	6.36 hrs./year	0.95 hrs./ inspection	77 inspections	73.14 hrs./year

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
				inspection		
IT-07: Off-site Conferences	0.04 hrs./ inspection	77 inspections	3.38 hrs./year	0.51 hrs./ inspection	77 inspections	38.92 hrs./year
IT-08: Abatement Process	0.01 hrs./ inspection	77 inspections	0.48 hrs./year	0.07 hrs./ inspection	77 inspections	5.52 hrs./year
IT-09: Litigation Process Support	0.00 hrs./ inspection	77 inspections	0.00 hrs./year	0.00 hrs./ inspection	77 inspections	0.00 hrs./year
<b>Total Safety Programmed Related Inspections</b>	<b>1.47 hrs./ inspection</b>		<b>113.35 hrs./year = 0.08 PY</b>	<b>16.93 hrs./ inspection</b>		<b>1,303.55 hrs./year = 0.89 PY</b>
<b>Safety – Referral Inspections</b>						
IT-01: Inspection Preparation	0.04 hrs./ inspection	379 inspections	15.68 hrs./year	0.51 hrs./ inspection	379 inspections	193.33 hrs./year
IT-02: Inspection Related Travel	0.13 hrs./ inspection	379 inspections	49.61 hrs./year	1.61 hrs./ inspection	379 inspections	611.89 hrs./year
IT-03: Onsite Inspection	0.16 hrs./ inspection	379 inspections	58.97 hrs./year	1.92 hrs./ inspection	379 inspections	727.33 hrs./year
IT-04: Report Preparation	0.75 hrs./ inspection	379 inspections	282.80 hrs./year	9.20 hrs./ inspection	379 inspections	3,487.81 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	379 inspections	0.15 hrs./year	0.00 hrs./ inspection	379 inspections	1.85 hrs./year
IT-06: Technical Support	0.03 hrs./ inspection	379 inspections	10.09 hrs./year	0.33 hrs./ inspection	379 inspections	124.41 hrs./year
IT-07: Off-site Conferences	0.04 hrs./ inspection	379 inspections	13.61 hrs./year	0.44 hrs./ inspection	379 inspections	167.89 hrs./year
IT-08: Abatement Process	0.01 hrs./ inspection	379 inspections	2.25 hrs./year	0.07 hrs./ inspection	379 inspections	27.75 hrs./year
IT-09: Litigation Process Support	0.02 hrs./ inspection	379 inspections	6.11 hrs./year	0.20 hrs./ inspection	379 inspections	75.39 hrs./year
<b>Total Safety Referral Inspections</b>	<b>1.16 hrs./ inspection</b>		<b>439.27 hrs./year = 0.30 PY</b>	<b>14.29 hrs./ inspection</b>		<b>5,417.63 hrs./year = 3.70 PY</b>
<b>Safety – Unprogrammed Related Inspections</b>						
IT-01: Inspection Preparation	0.08 hrs./ inspection	573 inspections	46.98 hrs./year	1.01 hrs./ inspection	573 inspections	579.42 hrs./year
IT-02: Inspection Related Travel	0.10 hrs./ inspection	573 inspections	58.15 hrs./year	1.25 hrs./ inspection	573 inspections	717.15 hrs./year

## Appendix C: FY 18-19 Time per Task Standards

Task Description	Industrial Hygienists			Safety Engineers		
	Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
IT-03: Onsite Inspection	0.17 hrs./ inspection	573 inspections	96.44 hrs./year	2.08 hrs./ inspection	573 inspections	1,189.37 hrs./year
IT-04: Report Preparation	1.22 hrs./ inspection	573 inspections	701.84 hrs./year	15.11 hrs./ inspection	573 inspections	8,656.06 hrs./year
IT-05: Denial/Warrant	0.00 hrs./ inspection	573 inspections	0.00 hrs./year	0.00 hrs./ inspection	573 inspections	0.00 hrs./year
IT-06: Technical Support	0.09 hrs./ inspection	573 inspections	52.30 hrs./year	1.13 hrs./ inspection	573 inspections	645.00 hrs./year
IT-07: Off-site Conferences	0.07 hrs./ inspection	573 inspections	40.64 hrs./year	0.87 hrs./ inspection	573 inspections	501.17 hrs./year
IT-08: Abatement Process	0.01 hrs./ inspection	573 inspections	4.05 hrs./year	0.09 hrs./ inspection	573 inspections	49.95 hrs./year
IT-09: Litigation Process Support	0.04 hrs./ inspection	573 inspections	20.30 hrs./year	0.44 hrs./ inspection	573 inspections	250.31 hrs./year
<b>Total Safety Unprogrammed Related Inspections</b>	<b>1.78 hrs./ inspection</b>		<b>1,020.68 hrs./year = 0.70 PY</b>	<b>21.97 hrs./ inspection</b>		<b>12,588.42 hrs./year = 8.59 PY</b>
<b>Total for ALL Safety Driven Inspections</b>			<b>8,308.98 hrs. = 5.67 PY</b>			<b>169,786.92 hrs. = 115.84 PY</b>
<b>OVERALL TOTAL (Programmatic, Health Inspections, Safety Inspections)</b>			<b>46,879.37 hrs. = 31.98 PY</b>			<b>210,314.23 hrs. = 143.49 PY</b>

### ***Appendix D: Fiscal Year 2021-2022 Workload Projections/Trend Documentation***

Identified trends were applied to the Fiscal Year 2018-2019 workload metrics (including backlog when applicable) and consecutively projected out for three years to Fiscal Year 2022-2023. Inspection related tasks utilized the identified trends, applied to either the three-year historical average from FY 16-17 to FY 18-19 or the FY 18-19 baseline metric including any backlog, to project the task frequency. Continuous tasks under the Programmatic Support utilized the average processing time per month as defined in the time per task standards or applied the percentage increase in overall inspections to the monthly requirement if it was linked to the inspection frequency.

Table D-1 presents a summary of the hours and PY required within each task category for each projected year, while Table D-2 presents FY 22-23 with time-per-task standards for each inspection type along with the trend utilized to project the workload. The total calculated time-per-task standard for each inspection type was utilized with the assumption that the portion of inspections requiring each step within the process remained consistent. Trends applied to the health inspections resulted in the same projected metrics across the three years as it identified an increase due to the onset of the pandemic and a change in regulation which carried into future years once applied. Trends applied to the safety inspections reflect a large increase in FY 20-21 to account for unmet work requirements with supplemental increases each subsequent year tied to the average economic growth.

**Table D-1: Summary of Projected Hours and PY Needed for FY 20-21, FY 21-22, and FY 22-23.**

<b>Task Groups</b>	<b>Projected Hours FY 20-21</b>		<b>Projected Hours FY 21-22</b>		<b>Projected Hours FY 22-23</b>	
	<b>Total Hours</b>	<b>Total PY</b>	<b>Total Hours</b>	<b>Total PY</b>	<b>Total Hours</b>	<b>Total PY</b>
<b>Industrial Hygienist</b>						
<b>Administrative Program Support (Reserved time per PY)</b>	<b>310.3 hrs. per PY</b>		<b>310.3 hrs. per PY</b>		<b>310.3 hrs. per PY</b>	
<b>Remaining Time available for mission-based work per PY (AWH)</b>	<b>1,465.7 hrs. per PY</b>		<b>1,465.7 hrs. per PY</b>		<b>1,465.7 hrs. per PY</b>	
Programmatic Support	9683.6	6.61 PY	9860.9	6.73 PY	10051.10	6.9 PY
Health Focused Inspections	96,153.6	65.60 PY	96,153.6	65.60 PY	96,153.6	65.6 PY
Safety Focused Inspections	10,254.2	7.00 PY	10,567.9	7.21 PY	10,891.9	7.4 PY
Recurring Uncategorized Unmet Work Requirements	89,045.07	60.75 PY	89,045.07	60.75 PY	89,045.07	60.75 PY
<b>Total Program Work Hours</b>	<b>205,136.5</b>	<b>139.96</b>	<b>205,627.5</b>	<b>140.29</b>	<b>206,141.67</b>	<b>140.64</b>
<b>Base Required Program Hours (FY 18-19)</b>	<b>46,879.4</b>	<b>31.98</b>	<b>46,879.4</b>	<b>31.98</b>	<b>46,879.4</b>	<b>31.98</b>
<b>Gap between Base and Needed Hours</b>	<b>+158,257.10</b>	<b>+107.98</b>	<b>+158,748.10</b>	<b>+108.31</b>	<b>+159,262.27</b>	<b>+108.66</b>
<b>Safety Engineer</b>						
<b>Administrative Program Support (Reserved time per PY)</b>	<b>310.3 hrs. per PY</b>		<b>310.3 hrs. per PY</b>		<b>310.3 hrs. per PY</b>	
<b>Remaining Time available for mission-based work per PY (AWH)</b>	<b>1,465.7 hrs. per PY</b>		<b>1,465.7 hrs. per PY</b>		<b>1,465.7 hrs. per PY</b>	
Programmatic Support	52,104.6	35.55 PY	52,805.0	36.03 PY	53,556.2	36.54 PY
Health Focused Inspections	5057.6	3.45 PY	5057.6	3.45 PY	5057.6	3.45 PY
Safety Focused Inspections	203,229.3	138.66 PY	209,581.3	142.99 PY	216,141.8	147.47 PY
Recurring Uncategorized Unmet Work Requirements	0.00	0.00 PY	0.00	0.00 PY	0.00	0.00 PY
<b>Total Program Work Hours</b>	<b>260,391.57</b>	<b>177.66</b>	<b>267,443.82</b>	<b>182.47</b>	<b>274,755.54</b>	<b>187.46</b>
<b>Base Required Program Hours (FY 18-19)</b>	<b>210,314.23</b>	<b>143.49</b>	<b>210,314.23</b>	<b>143.49</b>	<b>210,314.23</b>	<b>143.49</b>
<b>Gap between Base and Needed Hours</b>	<b>+50,077.34</b>	<b>+34.17</b>	<b>+57,129.59</b>	<b>+38.98</b>	<b>+64,441.31</b>	<b>+43.97</b>

Table D-2: FY 22-23 Time-per-Task standards and Projected Workload

Task Description	Utilized Trend	Industrial Hygienists			Safety Engineers		
		Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
Administrative Program Support							
GW-1: Professional Duties	Consistent Hours per year per PY	171.85 hrs. per PY	140.64 PY	24,168.98 hrs./yr.	171.85 hrs. per PY	187.46 PY	32,215.00 hrs./yr.
GW-2: Training	Consistent Hours per year per PY	102.60 hrs. per PY	140.64 PY	14,429.66 hrs./yr.	102.60 hrs. per PY	187.46 PY	19,233.40 hrs./yr.
GW-3: Supervisory Work	Consistent Hours per year per PY	35.86 hrs. per PY	140.64 PY	5,043.35 hrs./yr.	35.86 hrs. per PY	187.46 PY	6,722.32 hrs./yr.
Total Administrative Program Support				310.31 hrs. per PY per year			310.31 hrs. per PY per year
Programmatic Support							
PW-01: Office Technical Support	Increases proportionally with total number health and safety inspections	724.72 hrs./mo.	12.0 months	8,696.66 hrs./yr.	3,063.68 hrs./mo.	12.0 months	36,764.20 hrs./yr.
PW-02: Complaint Investigation	Increases proportionally with total number health and safety inspections	29.07 hrs./mo.	12.0 months	348.83 hrs./yr.	122.89 hrs./mo.	12.0 months	1,474.64 hrs./yr.
PW-03: Administrative Duties	Consistent hours per month	0.00 hrs./mo.	12.0 months	0.00 hrs./yr.	1,146.29 hrs./mo.	12.0 months	13,755.50 hrs./yr.
PW-04: Cal OSHA Outreach	Consistent hours per month	29.36 hrs./mo.	12.0 months	352.28 hrs./yr.	124.10 hrs./mo.	12.0 months	1,489.22 hrs./yr.
PW-05: Calibration/Equipment Maintenance	Increases proportionally with total number health and safety inspections	54.44 hrs./mo.	12.0 months	653.32 hrs./yr.	6.05 hrs./mo.	12.0 months	72.59 hrs./yr.
Total Programmatic Support				10,051.10 hrs. = 6.86 PY			53,556.16 hrs. = 36.54 PY
Health Focused Inspections							
Health Accident Inspections	Consistent after initial 20% increase in FY 20-21	30.46 hrs./inspection	206.4 inspections	6,285.96 hrs./yr.	0.62 hrs./inspection	206.4 inspections	128.28 hrs./yr.
Health Complaint Inspections	Consistent after initial additional 1200/yr. in FY 20-21 to account for pandemic	23.50 hrs./inspection	2,076.0 inspections	48,794.24 hrs./yr.	1.77 hrs./inspection	2,076.0 inspections	3,672.68 hrs./yr.

## Appendix D: FY 21-22 Workload Projections

Task Description	Utilized Trend	Industrial Hygienists			Safety Engineers		
		Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
Health Fatality Inspections	Consistent after initial 20% increase in FY 20-21; increase aligns with Accidents	44.32 hrs./ inspection	48.0 inspections	2,127.15 hrs./yr.	0.90 hrs./ inspection	48.0 inspections	43.41 hrs./yr.
Health Follow-up Inspections	19.5% of total health inspections each year (based on historical proportion)	14.44 hrs./ inspection	166.0 inspections	2,396.49 hrs./yr.	0.33 hrs./ Inspection	166.0 inspections	55.16 hrs./yr.
Health Program Planned Inspections	Consistent after initial increase of 315 per year in FY 20/21 to increase services	21.74 hrs./ inspection	1,435.0 inspections	31,193.42 hrs./yr.	0.22 hrs./ inspection	1,435.0 inspections	315.09 hrs./yr.
Health Programmed Related Inspections	4.3% of Program Planned based on historical proportion	14.36 hrs./ inspection	61.7 inspections	885.78 hrs./yr.	0.15 hrs./ inspection	61.7 inspections	8.95 hrs./yr.
Health Referral Inspections	Historical Average	13.53 hrs./ inspection	120.0 inspections	1,623.14 hrs./yr.	1.02 hrs./ inspection	120.0 inspections	122.17 hrs./yr.
Health Unprogrammed Related Inspections	8.4% of Complaint and Accidents based on historical proportion	14.85 hrs./ inspection	191.7 inspections	2,847.43 hrs./yr.	3.71 hrs./ inspection	191.7 inspections	711.86 hrs./yr.
<b>Total for ALL Health Driven Inspections</b>				<b>96,153.60 hrs. = 65.60 PY</b>			<b>5,057.61 hrs. = 3.45 PY</b>
<b>Safety Focused Inspections</b>							
Safety Accident Inspections	Increase of 3.27% per year (average GDP growth FY 9/10 to FY 19/20)	0.83 hrs./ inspection	2,460.4 inspections	2,039.76 hrs./yr.	32.33 hrs./ inspection	2,460.4 inspections	79,550.80 hrs./yr.
Safety Complaint Inspections	Increase of 3.27% per year (average GDP growth FY 9/10 to FY 19/20)	1.26 hrs./ inspection	1,487.9 inspections	1,872.13 hrs./yr.	23.91 hrs./ inspection	1,487.9 inspections	35,570.44 hrs./yr.
Safety Fatality Inspections	Increase of 3.27% per year (average GDP growth FY 9/10 to FY 19/20);	1.28 hrs./ inspection	224.7 inspections	288.05 hrs./yr.	50.00 hrs./ inspection	224.7 inspections	11,234.09 hrs./yr.
Safety Follow-up Inspections	38.9% of total safety inspections each year (based on historical proportion)	0.10 hrs./ inspection	598.0 inspections	60.50 hrs./yr.	20.13 hrs./ inspection	598.0 inspections	12,039.74 hrs./yr.
Safety Program Planned	Increase of 3.27% per year	2.12 hrs./	2,214.8	4,702.24	24.42 hrs./	2,214.8	54,075.75



## Appendix D: FY 21-22 Workload Projections

Task Description	Utilized Trend	Industrial Hygienists			Safety Engineers		
		Time per Task	Task Volume	Annual Hours	Time per Task	Task Volume	Annual Hours
Inspections	(average GDP growth FY 9/10 to FY 19/20)	inspection	inspections	hrs./yr.	inspection	inspections	hrs./yr.
Safety Programmed Related Inspections	4.5% of Program Planned based on historical proportion	1.47 hrs./inspection	99.7 inspections	146.72 hrs./yr.	16.93 hrs./inspection	99.7 inspections	1,687.27 hrs./yr.
Safety Referral Inspections	Historical Average plus backlog amount	1.16 hrs./inspection	567.0 inspections	657.16 hrs./yr.	14.29 hrs./inspection	567.0 inspections	8,105.01 hrs./yr.
Safety Unprogrammed Related Inspections	16.0% of Complaint and Accidents based on historical proportion	1.78 hrs./inspection	631.7 inspections	1,125.30 hrs./yr.	21.97 hrs./inspection	631.7 inspections	13,878.68 hrs./yr.
<b>Total for ALL Safety Driven Inspections</b>				<b>10,891.87 hrs. = 7.43 PY</b>			<b>216,141.77 hrs. = 147.47 PY</b>
<b>Recurring Unmet Work Requirements</b>							
Industry Research/Library Organization	Consistent annual hours per district office	104.00 hrs./district office	17.0 district offices	1,768.00 hrs./yr.	0.00 hrs./district office	17.0 district offices	0.00 hrs./yr.
CDPH Referred Lead	Consistent referrals per year	66.20 hrs./inspection	118.0 inspections	7,811.60 hrs./yr.	0.00 hrs./inspection	118.0 inspections	0.00 hrs./yr.
Environment Sampling Monitoring	60% of total Health inspections (excl. follow-ups)	32.00 hrs./inspection	2,483.3 inspections	79,465.47 hrs./yr.	0.00 hrs./inspection	2,483.3 inspections	0.00 hrs./yr.
<b>Total Recurring Unmet Work Requirements</b>				<b>89,045.07 hrs. = 60.75 PY</b>			<b>0.00 hrs. = 0.0 PY</b>
<b>OVERALL TOTAL (Programmatic, Health Inspections, Safety Inspections)</b>				<b>206,141.63 hrs.</b>			<b>274,755.54 hrs.</b>
<b>Total PY</b>				<b>140.64 PY</b>			<b>187.46 PY</b>
<b>Total Hrs./PY available for Program Specific Work</b>				<b>1,465.70 Hrs./PY</b>			<b>1,465.70 Hrs./PY</b>

## Appendix E: June 2019 Organizational Chart Identifying Included Study Positions

The following organizational chart reflects the staffing at the end of the studied FY 18-19 period. The departments housing the positions included in this study are outlined in red on the following June 2019 organizational chart, however the study only included the IH and SE positions in Regions 1 through 4 and Region 6. This is only one page of the full organizational chart and does not include other branches or administrative functions.

