Central Union High School District

Maintenance, Operations, and Pupil Transportation Program Study Assessment

December 06, 2021

December 06, 2021
Arnold Preciado
Assistant Superintendent, Business and Support Services
Central Union High School District
351 Ross Avenue
El Centro, CA 92243

Dear Mr. Preciado,

In September 2021, the Central Union High School District (CUHSD) entered into an agreement with Pupil Transportation Information, LLC (PTI) for a study to perform the following:

Scope of Review:

1. A minimum of three (3) maintenance, operations, and pupil transportation consultants will perform a field-study review (not to exceed 3.0 business days on-site) to be determined mutually between both the Central Union High School District and PTI, of the district's Maintenance, Operations, and Transportation (MOT) program and to conduct staff interviews for the purpose of reviewing pertinent operational documents, best practices, staffing, and program budget.
2. Provide a written draft report within sixty (60) business days of field study completion, providing findings and recommendations to the district per agreed scope of review. A final report will be issued within fifteen (15) business days of return draft report receipt from the district.
3. Conduct a general review of the district's Maintenance, Operations, and Transportation program to include, but not be limited to the following:

    - District's maintenance and operations program expense and how such compares to similar programs

    - District's home-to-school general education transportation program cost assessment to include district's bus cost and per-pupil cost per mile; analysis will identify the district's state revenue under the Local Control Funding Formula (LCFF) and if such is above, below, or at state average for pupil transportation

    - Assessment of maintenance, operations, and transportation program staffing, and organizational design based upon district maintenance, operations, and transportation program size and services provided

- Custodial staffing assessment based upon industry best practices and needs of the district; assessment to include support needs of the new, 60,000 square foot classroom and lab building projected to open in Spring 2022

- Assessment of MOT position descriptions

- Assessment of the work order system currently in operation at the district

- Review of the Maintenance and Operations Policy and Procedures Manual if such exists

- Review of the maintenance and operations training program identifying industry-standard best practices

- Assessment of the district's preventative maintenance and operations plan

- Visual review of the district's school and support facilities for purposes of overall assessment and comparative assessment of all sites

- Review the district's vehicle maintenance program identifying industry standard best practices, compliance with Title 13 Code of Regulations, California Air Resources Board and Local Air Quality Management District regulations, vehicle maintenance records, school bus safety checks and district fleet preventative maintenance program design and documentation, inventory control, and district fleet inventory assessment

- Assessment of the district's maintenance, operations, and transportation facility to include the terminal, shop areas, offices, vehicle maintenance repair garages, fueling infrastructure, fleet parking, county storm water requirements and adherence, hazardous materials best practices, and security

- Implemented routing methodology, bus ridership averages, and cost per mile comparison for home-to-school bus routes

- District's safety and training program design, required school bus driver record maintenance, in-service programs, renewal and original driver candidate recruitment, and training design

- Use of technology for efficiency in general MOT program support areas
- Program support of district extracurricular, co-curricular and, if applicable, external district field trip support and billing methodology
- Study Report- Findings and Recommendations
- Upon request, Cabinet and/or Board presentation of report's Findings and Recommendations

Timothy Purvis

Timothy W. Purvis
Principal Consultant
Pupil Transportation Information, LLC

Introduction..... **6**

Study and Report Composition..... **6**

Study Team..... **7**

Executive Summary..... **9**

Findings and Recommendations..... **14**

Maintenance, Operations, Grounds, Custodial..... **14**

Building Maintenance..... **15**

Grounds Maintenance..... **25**

Custodial Evaluation..... **32**

Transportation Funding and Finance..... **39**

Routing and Scheduling..... **43**

Transportation Staffing..... **45**

Vehicle Maintenance, Fleet and Facilities..... **47**

Driver Training and Safety..... **51**

Appendix **54**

Appendix 1-Central Union High School Levels of Cleaning and Time Breakdown..... **54**

Appendix 2-Southwest High School Levels of Cleaning and Time Breakdown..... **57**

Introduction

Background

The Central Union High School District (CUHSD) serves an enrollment of approximately 4,000 students residing in the general communities of El Centro, Heber, and Seely, California. El Centro Elementary School District, Heber Union School District, Meadows Union School District, McCabe Union School District and Seeley Union School District feed into the Central Union High School District. The districts are all within the County of Imperial, California. This district covers approximately 156.6 square miles. The district has an unduplicated percentage of approximately 76.6% of its students that are English Language Learners, qualify for Free or Reduced-Price meals or are homeless or in foster care. This percentage provides the district with additional resources from the state's Local Control Funding Formula (LCFF) that include supplemental and concentration grants to focus those resources on these populations.

The district educates its students in two comprehensive high schools, one independent study program, one continuation high school and an adult education program. The district passed a capital construction bond several years ago intended to fund approximately $30 million. The most prominent element of this funding is a STEM (science, technology, engineering, math) building that is currently being erected at Central Union High School. The impetus of this study is to evaluate the maintenance and custodial conditions of facilities, particularly with this new building coming online this school year. In addition, the district desired PTI to review its transportation operations.

Currently, the district operates a pupil transportation system of eleven general education bus routes and three special education bus routes designed to transport the students to and from their schools. Presently, there are approximately 571 students who are transported daily to and from school. In addition, the transportation department performs approximately 400 field trips and athletic trips on district buses and contracted coaches annually.

Study and Report Composition

PTI visited the district on September 20-22, 2021 to conduct interviews, collect data, and review documents related to the scope of the contract. This report is the result of those activities and divided into the following sections:

- Maintenance, Operations, Grounds, and Custodial Introduction and Overview
- Building Maintenance
- Grounds Maintenance
- Custodial Evaluation
- Transportation Funding and Finance
- Routing and Scheduling
- Transportation Staffing

- Vehicle Maintenance, Fleet, and Facilities
- Driver Training and Safety

Study Team

The study team was composed of the following members:

Timothy W. Purvis*
Owner, Pupil Transportation Information
Director, Transportation
Poway Unified School District
Poway, California

Mr. Purvis has been with the Poway Unified School District for 30 years, first serving as the assistant director of transportation from 1989-1992 and director since 1992. He directs the district's comprehensive transportation department providing both home-to-school transportation to over 56,500 students and special needs transportation support service to over 920 students daily. He is currently an on-line instructor with the University of Southern California, Rossier School of Education.

Chris Johnston*
Assistant Superintendent, Business Services
Pleasant Valley School District
Camarillo, California

Chris Johnston has provided consulting services to school districts since 2014, with specialization in the areas of facilities, maintenance, operations, and the alignment of operational plans with financial resources.
Mr. Johnston is currently the assistant superintendent of Business Services for the Pleasant Valley School District, where he has worked for fifteen years. Previously, Chris directed the facilities, maintenance, and operations department for the district.
Chris earned a Bachelor of Science degree from Thomas Edison State University, in the field of Technical Studies, with an emphasis in Construction Management. Chris has also completed university course work in Civil and Mechanical Engineering, and Project Management. He recently attained an MBA degree. Additionally, he has completed CASBO's Chief Business Official certification course, and serves on the CASBO Maintenance and Operations Professional Council representing the Southern Section.

Phil Medved
PTI Consultant
Surprise, AZ

Phil Medved has recently retired from his position as the vehicle maintenance supervisor for the Poway Unified School District. He held the position for over 27 years. He was responsible for the vehicle maintenance and fleet management of this 270-vehicle fleet. Previous to the school district, Mr. Medved was a fleet manager with Ryder, a transport company, for the San Diego region. In addition, Mr. Medved has 26 years of vehicle maintenance, supervision, logistic, and planning experience while on deployment for the U.S. Navy in both active and reserve-duty capacities. He holds numerous certifications in vehicle maintenance and vehicle maintenance management.

Michael G. Rea
PTI Consultant
Sonoma, California

Mr. Rea served the school districts of Sonoma County as the West County Transportation Agency JPA's executive director for 29 years. He retired in February 2017. He has experience working with or managing school transportation operations for a contractor, public school district, and for private schools. With an MBA degree in Transportation Management and full certification as a classroom teacher, he provides a broad-based understanding of childrens' needs and expertise in the field of transportation and its overall functions within a school district.

*As members of this study team, these consultants were not representing their regular employers but were working solely as independent contractors for PTI.

Executive Summary

Building Maintenance

The building maintenance department is staffed with a facilities and grounds supervisor, three HVAC technicians, two skilled trades persons, and two utility trades persons (with one of those positions vacant at this time). In addition, there are two grounds/maintenance workers who assist as assigned with maintenance projects.

The district has adequate staffing to achieve a relatively high level of building maintenance. The operation is compromised by relatively poor communication relative to work order status and the lack of a preventive maintenance program.

The district should institute a work order auditing process to ensure that work orders are completed to the satisfaction of the standards of the district. The supervisor should perform proactive site walks every two weeks to determine the status of a percentage of the work orders. In addition, these proactive walks can also identify issues and generate internal work orders to rectify items that are discovered. The district should also evaluate whether the new communication process recently put in place relative to the status of work orders is functioning properly or establish new methods of communicating this to school site staff.

There should be a preventive maintenance program. This would establish routine tasks and their frequency and input them into the work order system. It will automatically generate work orders at the preordained times.

There should also be a 10-year plan for major maintenance or deferred maintenance projects along with the necessary budget planning for these projects.

Grounds Maintenance

The current grounds staffing is adequate to maintain the grounds to a relatively high level. The bus driver/custodians ("bustodians") should be utilized to clean hardscape areas during the school day using battery-powered blowers that should not disturb classes.

PTI has determined that most grounds areas are maintained adequately, but some are not, reflecting less-than-optimal productivity. The lead grounds person should have the support or authority to ensure that every employee completes their work to the satisfaction of the district. The lead grounds person should also be involved in scheduling the work of the grounds/maintenance workers, so their grounds work is not negatively impacted by their maintenance scheduling and vice versa.

Some grounds workers argue that performing irrigation system maintenance is not a part of their job description. The job descriptions should be updated and aligned with reasonable duties. Irrigation system maintenance is a reasonable duty of the grounds staff.

The district should consider contracting out tree care and maintenance.

There were complaints regarding the district's pest control contractor. The facilities and grounds supervisor should evaluate the pest control contract and assure it aligns with the

district's expectations. Further, he should shadow the contractor on application days to ensure that they are performing the contract as expected. There was also a concern about fire ants on the campuses. The district should consider grounds staff assisting in this area. Some of the irrigation valves are experiencing failures due to silt and sand damage. This is relatively common with the use of irrigation canal water. The district should commission a project to evaluate the improved filtering of the water to minimize this damage.

Custodial Evaluation

PTI has developed a tool to evaluate the custodial needs of a school or site. There are various levels, and the PTI and CASBO recommended levels of staffing are relatively close. The district's established cleaning level and PTI's recommended cleaning level, are somewhat similar, perhaps requiring some adjustment to the district's protocol.
There is adequate custodial staffing at Central High School. Two additional custodians will be needed for the STEM building when it opens. Custodial staffing at Central will need to be revised eventually when the portable buildings will be closing after the new STEM building opens.
The staffing level at Southwest High School is also considered adequate.
PTI has recommended adding supervisory support or adjusting the structure of the department. Vice principals have a large number of responsibilities and their work hours do not align with the custodians. PTI suggests hiring a maintenance and operations director, or a separate supervisor of custodial services.

Transportation Funding and Finance

Transportation funding for school districts in California has been inadequate for many years. Prior to Proposition 13, districts reported their operational costs and were fully reimbursed for them in the subsequent fiscal year. After that time, the state gradually reduced the percentage of reimbursement. In the 1982-83 fiscal year, the state capped the funding at 80% of the reported costs, and only occasionally have given a cost-of-living increase. Subsequent reductions during the Great Recession further reduced the amount districts received. With the outset of the Local Control Funding Formula (LCFF) in the 2013-14 fiscal year, the amount was capped at the April 2013 certification, has never received a Cost-of-Living Adjustment (COLA) since, is restricted to transportation use, and has a Maintenance of Effort (MOE) requirement, meaning that districts must spend at least as much as they receive for pupil transportation. The district receives an annual apportionment of $210,945. The budgeted expenditures for the 2021-22 fiscal year are projected at $1,360,921. The annual cost per pupil for general education will be approximately $1,972, and the annual cost per pupil for special education will be approximately $9,533. The state no longer collects pupil transportation data, but the last time they did was just prior to the outset of LCFF. The average annual cost per pupil for

general education for that time was approximately $1,500 and approximately $6,500 for special education.
The district's routing efficiency is rather good for general education with approximately 50 students per route. For special education, the routing efficiency is very good, with approximately 15 pupils per route.
The district has a rather large fleet of non-school bus vans it uses for transporting small groups of students. The district does not charge a fee for this use. It only charges the fuel purchased for each trip to the group that uses the van. There should be a charge for the use of the vans to cover the capital purchases and the operating costs. As it is now, the transportation department budget is subsidizing the use of the vans.
The district does not have fuel storage or dispensing equipment. The district utilizes a cardlock station for the buses and maintenance vehicles, and commercial gasoline station credit cards for the vans. The district is not receiving the exemption from State Excise Taxes for diesel fuel as it should from the cardlock. The district is also not likely receiving its exemption from Federal and State Excise Taxes for fuel from the commercial gasoline stations.
The amount that the district charges for field trips has not changed in many years. The district should evaluate their costs and establish a charge that more closely covers their cost. When a district bus is not available, the group charters a bus, and the district covers the difference between what a district bus would have cost and the cost of the charter bus. The district should determine whether or not they should continue this practice.

Routing and Scheduling

General education school transportation is not mandated in California. It is provided if a district wishes to do so, and they usually have a policy or administrative regulation that stipulates the eligibility for school transportation. The district has Administrative Regulation 3541 that says students who live further than two miles from the school qualify for transportation service. The transportation department is aware of this regulation and adheres to it.
Special education transportation is provided under federal regulations that require transportation is provided for any student who has an Individualized Education Program (IEP) that determines transportation a necessary, related service for a student to access their education. There are a very small number of special education students that are transported, indicating a robust IEP process that is managed well by the special education department.
There are 11 general education bus routes, two special education bus routes, and one special education student who is transported by a district employee in a sedan to and from their program in San Diego. There is also one route that departs from each comprehensive high school transporting students home from after-school programs at 4:30 PM and 6:00 PM.

Transportation Staffing

The transportation department office and shop are currently staffed as follows:

- (1) One FTE Transportation Supervisor
- (1) One FTE Transportation Scheduler/Bus Driver
- (1) One FTE Bus Driver Trainer/Bus Driver
- (1) One FTE Service Mechanic
- (4) Four 8 Hour per Day/10-Month Bus Driver/Custodian (Bustodians)
- (5) Five 8 Hour per Day/10-Month Bus Drier Service Persons
- (1) One 8 Hour per Day/11-Month Bus Driver Service Person
- (1) One 6 Hour per Day/10-Month Bus Driver Delivery Person
- (2) Two 6.5 Hour per Day/10-Month Bus Attendant

The bus driver positions are filled; however, several are not currently performing their duties due to injury, illness, or other reasons. It was stated that the department is not using bus driver attendants at this time.

The district, as indicated above, wishes to have full-time bus driver positions, supplementing their day with other work duties. There are only three service persons working presently. They assist the mechanic with a variety of important tasks and their work is assigned by the transportation scheduler. They are very productive. The bus driver/custodians, however, are not as productive. The vice principals at the comprehensive high schools note that since classes are in session, they have few custodial duties they can perform. They re-stock and clean bathrooms, empty trash and the like. There are other cleaning duties and perhaps some grounds duties that they can perform to make their time more productive.

At the time of PTI's site visit, there was only one mechanic on staff. There was another who resigned recently. The district is in the process of recruiting for that position. It is necessary to fill that position as soon as possible.

The department is staffed appropriately for their needs and the size of the department.

Vehicle Maintenance, Fleet, and Facilities

Annually, the California Highway Patrol inspects each school bus, and they also inspect maintenance records, driver records, and federal drug and alcohol testing program records. They produce a report commonly known as the "Terminal Grade." Over the past years that CHP keeps and posts records, CUHSD has consistently received CHP's highest grade, which is "satisfactory." This indicates general compliance with most laws and regulations governing pupil transportation maintenance and operations.

School buses are required to be inspected every 45-days or 3,000-miles, whichever comes first. The district's mechanic consistently meets these deadlines.
There are 19 school buses in the fleet, 22 passenger vans, and 26 other vehicles that are maintained by the transportation shop. The vans are used to transport students. They should be maintained in a similar fashion as the school buses to protect the district's liability.
The buses are all clean, inside and out. There does not appear to be any body damage on the buses. The vans are also clean. Clean buses and vans represent the district well in the community and when they travel out of the area.
The shop and transportation facility are clean and orderly. The district does not have any fueling capability on-site. Drivers take additional time to fuel their vehicles off-site. The district should explore establishing a fueling facility on-site.
The district has never received a bus-replacement grant. Several programs have been available since the early 1990s, and generally they pay the entire cost of the replacement bus. The district should explore such grant replacement programs. Alternative fuel availability in the area has been a concern in the past, as well as the field trip range of such buses.

Driver Training and Safety

School bus driver training is highly regulated. New drivers must receive a minimum of 20 hours of classroom training and a minimum of 20 hours of behind-the-wheel training. Each category takes closer to 35 hours to adequately teach all the curriculum in the California Department of Education's training program. In addition, certified drivers must receive a minimum of 10 hours of appropriate training each year. All training must be documented properly. PTI reviewed a sampling of the documentation of the school bus driver training and found the records to be well-organized, and those drivers to have up-to-date training.
Drivers must be enrolled in the DMV's Employer Pull Notice Program (DMV-EPN) that requires commercial bus and truck operators to register every driver, so they receive a copy of each driver's driving record and a report of any moving violation, accident, or other reportable offense. Every school bus driver was enrolled. Teachers and coaches who drive students in vans, and other district employees could be enrolled, but are not. The district should enroll all district employees in the DMV EPN program who drive a district vehicle. The district should develop a defensive driving program for teachers and coaches who drive students.
Commercial drivers must also be enrolled in a compliant federal drug and alcohol testing program. The school bus drivers are enrolled. California Vehicle Code section 34520.3 also requires that any school employee who drives students in non-school bus vehicles as a primary element of their employment must also be enrolled in a similar, but separate drug and alcohol testing program. The individual who drives the special education student to and from San Diego must be enrolled in such a program.

The program has a Transportation Safety Plan as required by law, but it needs to be updated.

Findings and Recommendations

Maintenance, Operations, Grounds, Custodial

Introduction and Overview

As an introduction to PTI's analysis of CUHSD's maintenance and operations functions, it is important for the reader to be aware that the primary methodology of the study is a deficit model analysis. In order to assist the district in achieving its goals, PTI's analysis primarily focuses on areas of weakness that should be addressed: the deficits of the district's maintenance, grounds, and custodial functions. While this methodology may seem overly pessimistic, please consider the usefulness of this methodology in evaluating a car. An excellent engine, beautiful paint, and premier safety features are all useless if the car has four flat tires. Repairing the most critical deficit is the first step in achieving premium performance from the car. Similar to cars, school organizations are complex, with numerous interrelated moving parts. Getting the best possible performance requires studying the operational systems, identifying major deficits that impair or impede success, correcting those issues, and then refining the areas of strength.

A second important analytic tool which PTI employs is the level of service analysis. While school district leaders may be familiar with standardized staffing formulas, like the CASBO Custodial Staffing Formula, PTI employs a deeper level of analysis that aligns end user needs, district leadership expectations, and the resources necessary to deliver those services. The level of service analysis provides recommendations which align staffing levels with the district's desired service outcomes and available resources.

For the report to be most helpful to the district, it is useful to provide further context on the level of service staffing analysis. This begins with clearly defining maintenance and operations work. Maintenance, custodial, and grounds are service departments tasked with providing students, staff, and the larger community with clean, safe, attractive, and functional school facilities. As service departments, staffing analysis therefore centers on the level of service provided to end users. Key questions must be answered: What level of service are the schools receiving? What level of service is appropriate? Is staffing sufficient to achieve the desired level of service? What operational factors or practices can be changed or leveraged to improve the level of service being delivered? The analysis provided in this report answers these questions and considers maintenance, custodial, and grounds services through the lens of level of service.

Service level analysis includes the end user experience when requesting and receiving services, assessment of existing physical conditions, and assessment of unseen conditions that impact student and facility management costs. As an example of unseen conditions, consider preventative maintenance work on air conditioning units. Fan belts have a limited

lifespan, and when they break, the air conditioning unit fails, sometimes incurring damage in the process. If fan belts are replaced preemptively, on a routine schedule when the school is unoccupied, the chances of failure during a school day are greatly reduced, and costly repairs can be avoided. Service level analysis, therefore, considers all three critical factors: end user experience, observable physical conditions, and deeper, unseen factors that impact costs and functionality.

The PTI analysis compares the level of service that end users are receiving against the level of service that is appropriate for schools and desired by district leadership. After juxtaposing the level of service provided against the level of service expectation, this report will note factors and practices that are impeding the successful delivery of services. Recommendations are provided as a roadmap for achieving improved services.

Multiple factors converge to deliver the level of service provided by the maintenance and operations functions. The first, and most influential factor, is staffing. Staffing levels must be sufficient to meet a district's needs. A simple analogy highlights the principles behind staffing levels: two men digging ditches will exceed the productivity of one man with a shovel. Put simply, a district must have the correct amount of people to accomplish the workload of the organization.

Building Maintenance

Levels of Service and Staffing

The function of the Maintenance Department is to ensure that district buildings and building systems perform safely and reliably. This is accomplished through inspection, repair, and replacement of parts and components. The Building Maintenance department best serves the educational program when the building environment necessary to support teaching and learning is safe and functional, with as few interruptions to building performance as possible. Consider, as an example, air conditioning for classrooms. When an air conditioning unit fails, the building systems are no longer performing properly, and the classroom becomes too hot to occupy. With proper preventative maintenance, inspection, and equipment replacement, air conditioning failures can be kept to an absolute minimum.

The CUHSD maintenance department is led by the facilities and grounds supervisor, who has an extensive background as a heating, ventilation, and air conditioning (HVAC) technician. The maintenance department has seven FTE line staff:

- Three HVAC technicians
- Two skilled trades workers, one of whom specializes in plumbing (currently vacant)
- Two utility trades technicians

Furthermore, the district has two maintenance/grounds workers whose primary duties are grounds maintenance, but who are periodically used to assist maintenance staff. Because the department does not track the time usage of these individuals, no FTE (full-time equivalent) distribution is possible.

The Association of Physical Plant Administrators (APPA) provides a formula for determining appropriate maintenance staffing based on the desired level of service. PTI uses this formula as the starting point for maintenance staffing analysis for the number of in-house maintenance FTE positions. PTI also considers the age of facilities, usage of facilities, and types of building systems unique to the facilities under evaluation.
The APPA levels of service and corresponding PTI level of service designations are as follows:

Level 1 – Showpiece Facility / State of the Art (the highest standard)
Level 2 – Comprehensive Stewardship / High Level (this is the recommended staffing level for K-12 public schools)
Level 3 – Managed Care / Moderate Level (work order response time can be lengthy, and facilities' conditions remain stagnant)
Level 4 – Reactive Management / Moderately Low Level (facilities' conditions deteriorate at an accelerated rate)
Level 5 – Crisis Response / Low Level (maintenance staff can only respond to emergencies)

Using the APPA formula for maintenance staffing, and analyzing the district's facilities, the following table shows the number of FTE maintenance positions the district needs for each level of service. Under this model, all routine maintenance tasks and the majority of preventative maintenance tasks are performed in-house:

Level of Service	# FTE
Level 1 - Showpiece Facility / Very High Level	8.6
Level 2 - Comprehensive Stewardship / High Level	6.6
Level 3 - Managed Care / Moderate Level	4.9
Level 4 - Reactive Management / Moderately-Low Level	4.2
Level 5 - Crisis Response / Low Level	2.3

The following descriptions provide further detail of what maintenance looks like at each level of service.

<u>Level 1 Maintenance:</u>
Most maintenance work is preemptive or preventative in nature. Work requests are addressed immediately. Building finishes appear in nearly new condition. Interruptions to building functionality are extremely rare and are remedied immediately. Even when the building is of old construction, the level of maintenance results in a consistent appearance of quality and functionality. This is the level of service generally reserved for hospitals.

Level 2 Maintenance:
This is the recommended standard for schools. Preventative maintenance prevents many equipment or building system failures. Urgent repair requests are responded to immediately. Non-urgent repair requests are typically addressed within a week. Finishes appear clean and in good repair, if not new. Building functionality is rarely interrupted by equipment or building system failures. If this level of service is provided consistently, the facilities conditions improve with time. At this level, the district is investing sufficient resources to counteract the wear and tear of time and usage.

Level 3 Maintenance:
This is the minimum standard acceptable for schools. Preventative maintenance is rare, and most repairs are reactive in nature. Urgent issues are addressed quickly. Routine repair requests are addressed within two weeks. Interruption of building functionality due to equipment failures is occasional. Building finishes look worn. At this level, facilities conditions remain stagnant, and age begins to overtake the efforts of maintenance staff.

Level 4 Maintenance:
This is generally unacceptable for schools. All work is reactive in nature. Equipment failures and interruptions to building functionality increase. Safety issues are not immediately addressed. Building finishes look old and worn or neglected. Routine work orders sometimes take months to address. At this level of service, conditions decline rapidly.

Level 5 Maintenance:
This is crisis response. Maintenance workers primarily respond to a series of equipment and building functionality failures. School facilities appear neglected. Response to routine work orders is so delayed that most staff members stop making maintenance requests. Conditions quickly deteriorate to an unsafe or non-functional condition.

At Central Union High School District, with 7.0 maintenance FTE plus additional time from grounds/maintenance worker assistance, the CUHSD maintenance department has the necessary staffing to achieve a Level 2, “High Level” of service for the school sites. Based on maintenance department records, interviews with the maintenance department leadership, the reported experience of end users, and the physical conditions of CUHSD facilities as observed by PTI staff, CUHSD’s schools are receiving a low, Level 3 maintenance service. In several areas, Level 4 conditions are evident.
As a reminder, under Level 3 service, preventative maintenance is rare. Maintenance department leadership reported to PTI staff that the department has no preventative maintenance plans. Some HVAC staff, of their own initiative, may complete preventive maintenance work, but this is neither assigned nor monitored. Other building systems, like

plumbing systems, appear to have no preventative maintenance work at all. As a reminder, preventative maintenance work prevents systems failures.

Under Level 3 service to school sites, most repairs are reactive in nature. This is evident from the nature of the work orders that CUHSD maintenance staff complete. Things break, sites put in a work order, then repairs are made. PTI staff were not provided with any examples of proactive repairs by maintenance department staff. Department leadership reported that most work is reactive.

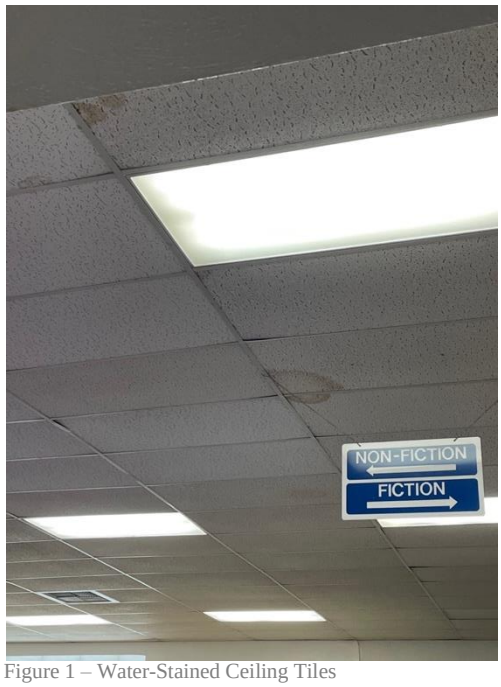


Figure 1 – Water-Stained Ceiling Tiles

Under Level 3 maintenance, urgent issues are addressed quickly, and routine repair requests are completed within two weeks. Site conditions and staff experiences validate that most urgent issues are resolved quickly. However, for routine work orders, PTI staff saw numerous examples of Level 4 service, where finishing details are neglected, and routine work orders take months to complete. Examples of Level 4 service include numerous water-stained ceiling tiles. These stained ceiling tiles were observed in September, presumably four to six months after the most recent rains. This is generally considered an unacceptably long time to replace ceiling tiles, remove wet insulation materials that could harbor mold, or repair roof leaks.

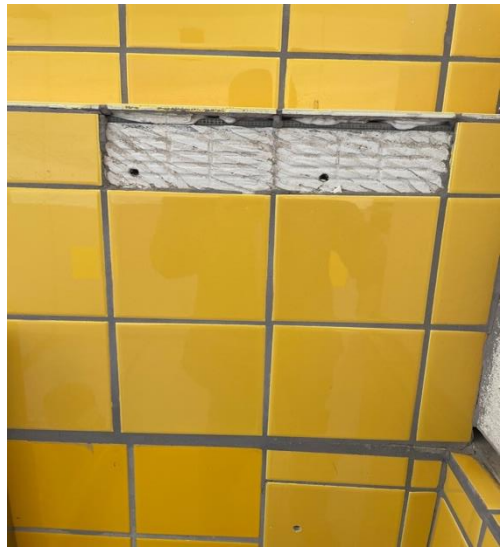


Figure 2 – Title

Less consequential, but equally bad in appearance is the delayed replacement or repair of damages to exterior surfaces.

The failure to remedy these conditions in a timely manner gives the appearance of neglect or apathy that does not reflect the excellence of the schools.

On the subject of maintenance department staffing, it is important to discuss the extreme weather in El Centro, and the impact on staffing. Even for individuals who are accustomed to living in extreme heat, worker productivity declines at higher temperatures. While numerous studies have been completed on this subject, there is no single agreed upon calculation for the loss of productivity due to heat. For the sake of discussion, let us consider the impact on productivity if maintenance employees were 25% less productive on extremely hot days, which we will define as days having an average temperature over 85 degrees Fahrenheit. According to the National Oceanic and Atmospheric Association (NOAA), El Centro sees seven months per year when the daily average high temperature exceeds 85 degrees. For further consideration, let us assume than no more than 50% of maintenance work is completed indoors, in temperature-controlled environments. The resulting calculation is that productivity of 25% is lost for 50% of the work time in 7 out of 12 months in the year. This results in a total productivity loss of approximately 7.3% due to heat, using estimates that intentionally err on the side of overestimating productivity loss. Even factoring in this productivity loss multiplied by CUHSD's 7.0+ maintenance FTE, the department is still appropriately staffed to provide Level 2 service to the school sites.

Figure 3 – Paint

A final area of discussion regarding heat and staffing is the statement that "our air conditioning units have to work harder" because of the extreme heat. This statement implies that CUHSD maintenance staff face an increased work burden due to the heat, which in turn may be used to justify falling behind on other work orders. In order to address this issue, another automotive analogy may be helpful. If one were to attach a trailer hitch to a four-cylinder engine sedan and tow around a trailer full of bricks, the engine would be working extremely hard. If one were to tow that same trailer with an eight-cylinder, one-ton pickup truck, the engine would not strain at all. The difference is size. More specifically, the difference in size designed to meet the load. When equipment is properly sized to meet the load, it does not face undue strain, and operates with a standard level of maintenance. PTI staff observed a sampling of HVAC equipment in CUHSD and observed that the designing mechanical engineers significantly upsized HVAC equipment proportional to building size in order to meet the strain of the high heat. Going

back to the analogy, PTI observed the equivalent of powerful trucks designed to carry the proper load. This means that the equipment is not overloaded or working harder than intended.

Rather than being overloaded, it is more likely that a high frequency of HVAC work orders and repairs is due to lack of formalized preventative maintenance on the HVAC units.

This section on HVAC repairs should not be interpreted as criticism of the district's decision to have three HVAC technicians. PTI recognizes the wisdom of this staffing configuration. Because of the extreme heat, HVAC repairs take on additional urgency for CUHSD. Having three HVAC technicians ensures that even with absences or multiple, simultaneous breakdowns, the district is always adequately staffed to quickly bring HVAC equipment back online. However, when not engaging in HVAC preventative maintenance or repairs, those HVAC technicians should be utilized for other maintenance tasks. HVAC technicians possess a broad range of skills necessary for HVAC repair: mechanical knowledge, electrical safety and troubleshooting, brazing and soldering, sheet metal work, all of which are applicable to a variety of lower-paying maintenance tasks. As such, within their existing job classification it is reasonable to expect the HVAC technicians to be versatile and involved in a variety of repairs and troubleshooting. The decision to have three HVAC technicians therefore should not be viewed as deductive to the total staffing.

In summary, while the extreme heat of the El Centro area does affect the maintenance department, mitigating efforts have already been accomplished. Even with the heat, the maintenance department is appropriately sized and equipped to deliver a Level 2 service to the school sites.

The following findings, best practices, and suggestions identify key areas of improvement that will work to raise the level of service to the school sites from Level 3 or 4 up to the Level 2 service that students deserve, and administration expects.

Work Order Auditing

During document analysis and site visits, PTI staff observed numerous examples of confusion and inconsistency, wherein work orders appeared to be entered by the schools, and closed out by maintenance staff, but repairs appeared to not be completed. It was unclear what had occurred. Was the repair completed, but not to an acceptable standard? Was the repair ignored? Was there confusion about where the repair needed to be made? Most districts address this confusion and bring accountability to maintenance line staff through a work order auditing process.

The supervisor of facilities and maintenance should be tasked with auditing 15 work orders per week across all trades. A recommended process for auditing work orders could include this: at the end of the week the supervisor randomly selects 15 completed work orders and prints out the work order summary report. The supervisor then inspects the completed work to see if the work was 1) completed and 2) completed to the district's expected standard.

If the work order was completed but not to the appropriate quality standard, the supervisor should take the opportunity to train staff on better quality work. If the work order was reported as closed out, but the work was incomplete, the supervisor should investigate further and if no clear reason for closing out the work order exists, address the matter with the staff member through the progressive discipline process.
The supervisor should keep records of the 15 work orders inspected per week, and his follow up actions on these work orders. This practice brings accountability to staff, highlights training needs for staff, and underlines that the supervisor is ultimately responsible for the outcomes of the department. If the supervisor is regularly visiting school facilities, as is typical and expected of this position, the few extra minutes reviewing work, while already on site, should in no way be considered an extra work burden.

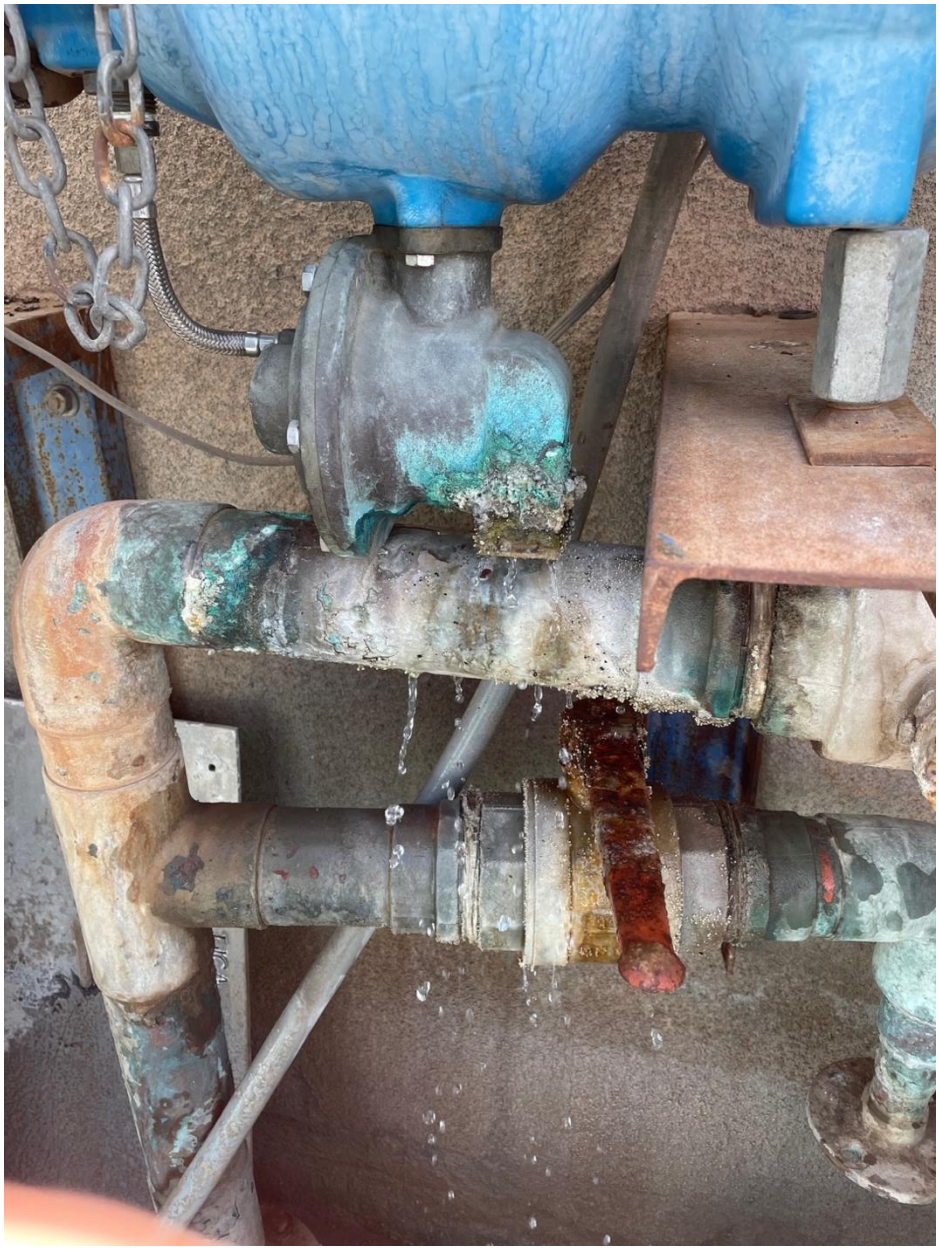
Proactive Site Walks to Generate Work Orders

As noted elsewhere in this report, proactive steps are both more efficient than reactive steps and result in a better level of service to the end user. As such, identifying issues when they are small is a critical component of a successful maintenance program. A career maintenance or tradesperson can more quickly spot maintenance needs in a proactive manner as opposed to a site administrator without this level of expertise. The supervisor of facilities and maintenance should be conducting site walks in which he observes site conditions and generates work orders. With his experience and training, he will be able to observe issues that others would not see until later, when the problem is more pronounced. This practice essentially shifts from reactive maintenance via site requests to preemptive action. Considering site conditions, PTI suggests that these site walks be scheduled for once every two weeks. As a measure of the effectiveness of this action, PTI suggests a goal of observing a 25% reduction in site-generated work orders within six months.

Work Order Communication

During the course of this study, a consistent theme observed by PTI was confusion and frustration around work order status and outstanding repairs. Site staff (the end users) appeared to not have information about the status of repairs. A need for improved communication is evident. The maintenance department reported that in September they implemented a feature of their work order system that requires maintenance staff to input status details, which can be retrieved by site staff. Ostensibly, this will resolve many of the communication breakdowns. As a service department, the building maintenance department should be concerned with the effectiveness of this implementation. They should survey the end users after the first 3-4 months of use, to see if this practice has been implemented with fidelity, and if the desired effect has been achieved and if conditions have improved. If the end users do not report a marked improvement in communication about work orders, a different system should be implemented. Such an evaluation tool has been developed, but never implemented.

PTI suggests that if the existing work order system does not prove to be an effective means of communication, that an alternative work order system be considered which could improve communication between the department and end users.
PTI also recommends communication training for maintenance staff, so that they understand why communication with end users is so important. The following photographs provide examples of communication breakdowns.



The photograph adjacent shows a leaking backflow prevention device at a school site (apparently this work is outsourced to a contractor). Water was running across the parking lot, out into the street. School site administration, when questioned by PTI staff, had no information to share about the status of the repair, or even if maintenance staff had looked at the issue. Even without a technology platform for communication in place, a simple note, such as, "Getting parts- will be repaired soon," taped to the fence would be significantly more helpful than a void of information.
The next photograph shows broken lockers in a school locker room. School site administrators were told that locker repair parts were unavailable. Were the parts on order? Are the lockers on schedule for

Figure 4 – Leaking Backflow Prevention Device

replacement as part of a larger project? No information was available for school site leadership.

Figure 5 – Broken Lockers

Preventative Maintenance Planning

Preventative maintenance work is critical to a successful maintenance program. Simple tasks such as greasing bearings, replacing fan belts, exercising valves, and re-caulking roof flashings cost little to complete, but prevent expensive and time-intensive repairs later. The district should develop a comprehensive preventative maintenance plan. A preventative maintenance plan starts with a listing of all facilities, the structures at each facility, and the building components and systems for each structure. Examples of building components and systems are: roofs, gutters, floors, doors, plumbing valves, HVAC units, bleachers, etc. (The Uniformat II Classification for Building Elements, Level 3 "individual elements" is a helpful starting point for cataloguing the various building components and systems that require preventative maintenance. That information can be found here: https://www.csiresources.org/practice/standards/uniformat.) For each building system or building component listed, the plan should note the monthly, quarterly, semi-annual, seasonal, and yearly tasks needed to proactively maintain those systems. The plan should

also note if the work will be completed by district staff or contractors. Lastly, the plan must note costs associated with each task. A comprehensive preventative maintenance plan will prevent many emergency response situations, improve facilities functionality, and aid in budget planning.
Districts that employ a preventative maintenance approach to school maintenance report better facility conditions, better end-user experiences, and overall increased productivity. Of course, in order to be effective, the facilities and operations department must use the preventative maintenance plan. The district's work order system has an optional module available that will automate the preventative maintenance work orders. This module should be implemented. If used effectively, the preventative maintenance module only needs to be entered once. The system will automatically generate the work orders at the intervals prescribed in the preventative maintenance plan and track the completion of the work.

Major Maintenance / Deferred Maintenance Plan
All building systems have a finite lifespan. While minor repairs and maintenance can extend that lifespan, at some point major repair, renovation, or replacement is necessary. A major maintenance or deferred maintenance plan is the tool that districts use to plan this major work. Currently the assistant superintendent for business and support services oversees this planning, with input from maintenance staff. Typically, a person within the maintenance department would spearhead this effort.
PTI recommends that during the next iteration of planning that the district's plan be updated to a ten-year major maintenance plan and include the following components:

- A list of all facilities, preferably by distinct building
- A list of all building systems for each facility (this list will likely mirror the building systems list noted above under preventative maintenance planning and is used for the development of the preventative maintenance plan)
- The original construction or reconstruction date of the building system
- The typical life expectancy of the building system
- The current condition of the building system
- The restoration or replacement tasks necessary to ensure the facility functions as designed, along with the timing intervals of need
- A cost estimate for the purpose of planning budget and project financing

Recommendations

The district should:

1. Have a work order auditing process in place to ensure that work orders are completed to the satisfaction of the standards of the district.
2. Perform proactive site walks every two weeks and evaluate if this practice reduces the total number of site-initiated work orders.

3. Evaluate the process put in place to assist with work order communication. Strive to improve communication so the schools know the accurate status of all work orders.
4. Establish a preventive maintenance program and input it into the work order system so it automatically generates these work orders at the prescribed intervals.
5. Establish a 10-year plan for major maintenance and deferred maintenance items with related budget planning.

Grounds Maintenance

Levels of Service and Staffing

The function of the grounds department is to ensure that district grounds and athletic facilities are safe, clean, and attractive.

PTI provides a method of staffing analysis for grounds maintenance based on the levels of service model, customized for K-12 education. The staffing analysis uses industry productivity rates (from RSMeans, the National Association of Landscape Professionals, and the Association of Physical Plant Administrators), task analysis of what local conditions require, the specific needs of high school athletic fields, consideration regarding local factors such as growing season, landscaping and hardscaping details, and grounds facilities conditions. The PTI grounds analysis model levels and descriptors of service are as follows:

Level 1 – Very High Level (the highest standard)
Level 2 – High Level (this is the recommended level of service for most areas of schools)
Level 3 – Moderate Level (this is the recommended level of service for some areas of schools)
Level 4 – Moderately Low-Level
Level 5 – Minimum Level

The detailed description of each level of service is as follows:

<u>Level 1 Grounds Maintenance:</u>

This level results in immaculate grounds conditions. All turf areas are edged, mowed, and weeded at least weekly. Sprinkler heads are adjusted weekly to ensure even coverage and minimal overspray. Turf areas are composed of uniform grass species. Turf areas are regularly fertilized and over seeded. Planter beds are free of all weeds with regular replanting to ensure seasonal color. Litter is cleaned from hardscaped surfaces throughout the day. This level of grounds maintenance is typically reserved for display areas of botanical gardens or high-profile areas. This is not a recommended level of grounds maintenance for K-12 public education facilities.

<u>Level 2 Grounds Maintenance:</u>

This is the recommended standard for most, but not all, areas of school grounds: athletic fields, playgrounds, ornamental landscaping at the front of schools, etc. At this level of service, hardscaped areas like parking lots and playgrounds are blown off weekly, with time

allotted for spot removal of litter. Turf is mowed weekly, with a 5%-time allocation for sprinkler head adjustment and repair. Turf areas are edged weekly. Planter beds are weeded weekly and pruned twice per month. Athletic fields are mowed weekly, aerated twice per year, over seeded, fertilized, and prepped for games. At this level of service, grounds are attractive and clean with plant materials maintained in good health.

Level 3 Grounds Maintenance:
This is the recommended level of grounds maintenance for less visible or less frequently used areas of school grounds such as back parking lots, infrequently used playfields, etc. Level 3 grounds maintenance yields clean, healthy grounds, but the appearance is less neat than Level 2 maintained areas. Hardscaped areas are blown down once every seven-eight business days, with time available for weekly spot litter clean up. Turf is mowed every seven-eight business days during the growing season, with 2% time allocated for sprinkler head adjustment and repair. Turf areas are edged every seven-eight business days. Planter beds are weeded three times per month and pruned twice per month. Athletic fields are mowed weekly, aerated once per year, fertilized twice per year, and prepped for games.

Level 4 Grounds Maintenance:
This level should be reserved for rarely used areas. At this level of grounds maintenance, hardscaped surfaces are blown down twice per month. Mowing and edging is accomplished twice per month. Planter beds are weeded once per month. At this level of grounds maintenance, conditions appear unkempt, weeds begin to proliferate, and playfields become unsafe to use for competitive sports.

Level 5 Grounds Maintenance:
This level is only recommended for fallow land, like the areas on the east side of the campuses. Mowing and other maintenance tasks are completed only once per month. With the Level 5 grounds maintenance, school facilities appear neglected.

The PTI staffing model of staffing includes a calculation that provides a recommended per-site staffing FTE that is sufficient to provide a Level 2 service to most areas of the campus, and a Level 3 service to less frequently used areas of the campus. This accounts for the fact that some areas of a school, such as athletic fields and ornamental areas, require a high level of service, while other areas, like back parking lots, and fallow land, require lesser levels of service. It is important to note that these recommended staffing levels include an FTE allocation for hardscape maintenance such as blowing off and litter and debris removal. Using the PTI analysis method for grounds staffing, PTI would recommend the following staffing levels:

School Site	# FTE
Central Union High School	2.5
Desert Oasis and District Office	0.15
Southwest High School	2.5
Total	**5.15**

On paper, grounds maintenance receives up to 5.0 FTE support, comprised of a lead grounds worker, two groundskeeper II positions, and two maintenance/groundskeeper positions. In practice, the two maintenance/groundskeepers are sometimes pulled away from grounds tasks to assist with maintenance work. The facilities and maintenance supervisor does not track this time, so PTI cannot quantify the FTE reduction impact to grounds duties. It is however, accurate to state that in practice that grounds receive less than 5.0 FTE of support, while slightly more than 5.0 FTE of support is needed to achieve the recommended level of service.

The general conditions of the grounds at the time of the PTI fieldwork reflect mostly a Level 2 high level of service, contrasted with a few areas in very poor condition. With the majority of areas reflecting a proper level of service, it appeared that the service deficiencies were related to the performance of particular staff members rather than the department as a whole. Put another way, the grounds department appears to provide an overall high level of service commensurate with the staffing resources available, with certain individuals in the department falling short on their particular job performance. The recommendations in this section are therefore focused on systems of accountability for individual staff members, rather than thorough systems improvement, which is needed for maintenance.

Before continuing with recommendations and findings, it is important to speak to the impact of heat on grounds staff performance. As noted earlier in this report, extreme heat has a well-documented and negative impact on employee productivity. Grounds maintenance staff work almost exclusively outdoors. Although early morning start times are an effective mitigation strategy for coping with the heat, with seven out of twelve months in El Centro seeing average daily temperatures exceeding 85 degrees, PTI conservatively estimates a 10% loss in yearly productivity compared to grounds staff working in a milder climate. This loss of productivity is factored into the staffing recommendations presented above.

Cleaning of Hardscaped Surfaces

During the on-site portion of this study, PTI heard a variety of opinions about who should be responsible for cleaning of hardscaped surfaces: custodians or grounds staff. PTI's position is that both are responsible. In general, grounds staff should be responsible for weekly

blowing and cleaning of hardscaped surfaces on the campuses. Additionally, grounds staff should always clean grass clippings off sidewalks after mowing or edging. Custodians should be responsible for daily trash pick-up on hardscaped surfaces.
CUHSD should also consider using the "bustodians" (bus drivers who complete their full-time assignment as school custodians) for hardscaped surface cleaning during their custodial service time. Because students are in classrooms during most "bustodian" time, aside from checking restrooms, "bustodians" appear to have time available that could be more productively used. Site leaders report that "bustodians" do not currently clean hardscaped surfaces because gas-powered blowers are disruptively loud during school hours and generate too much airborne dust. CUHSD should explore the use of battery-powered blowers, which are both quiet and have more modulated airflow. Other districts have been able to successfully clean hardscaped surfaces during school hours by using battery powered blowers. Using "bustodians" in this way would more productively use their time and would help to mitigate the slight understaffing of the grounds department. PTI suggests assigning particular areas for "bustodian" hardscaped surface responsibility-particularly the sidewalks adjacent to the classrooms.

Authority and Accountability

As noted above, in aggregate the grounds department appears to be providing close to the level of service required, with some exceptions. PTI did not find department-wide deficits, but instead challenges related to individual team members' job performance. Therefore, efforts to improve the level of service from the grounds department should focus on accountability structures more than department systems.
Lead worker positions are often created out of budget necessity, but sometimes defy best practices for organizational structures. This is because lead workers are viewed as responsible for the total work product of the department but lack the authority to discipline staff. While not the first tool of choice for leading and motivating staff, the authority to discipline is a critical element.
Best practice for organizational design is seen when one can draw a through line from the outcomes the employee is responsible for achieving, across to the ability and skills of that employee, onward to the tools and or authority to effect actions necessary to achieve the desired results. For brevity, this may be referred to as the responsibility-skills-tools progression. Restated in a different way, in order to succeed an employee needs to know what they need to achieve, have the skills necessary to do the work, and have the tools and authority to do what is necessary to achieve the goal. Without all three steps of the progression, employees fail to perform and become frustrated or disengaged.
Consider the following simplified examples. If a custodian knows that the carpet needs to be vacuumed every day, and knows how to operate a vacuum, that employee is two thirds of the way toward success. But if that employee does not have a functioning vacuum nothing will happen. The employee needs the tools to do the job. Another example is a maintenance worker who needs to remove concrete. If he has the assignment (remove the

concrete), and a jackhammer (the tool) but lacks the knowledge of how to operate a jackhammer, he will fail in the task. All three components are necessary for employee success.

As a brief aside, CUHSD is fortunate to have clearly articulated objectives and responsibilities (the first component of the progression). District wide leadership have clearly articulated that mediocrity is unacceptable and that excellent performance is required of all employees and departments.

When examining leadership positions through the lens of the responsibility-skills-tools progression it is important to recognize that authority is a critical tool. The ability to direct the work of others and hold them accountable for performing that work is arguably a fundamental tool for every leader.

In CUHSD, the lead maintenance worker has clearly defined outcomes that he knows he needs to achieve. He also has the skills and knowledge to achieve those outcomes. However, he lacks the full authority over staff which is necessary to achieve the desired results.

In districts where lead positions work well, it is because there is a clear chain of command that establishes mechanisms of authority for enforcement on behalf of the lead worker. This authority comes from the person to whom the lead worker reports. In CUHSD, without the supervisor of facilities and maintenance providing clear direction to grounds staff that they must follow the lead groundskeeper's instructions, the tools for him to achieve results are limited.

As final note on grounds department leadership, since the lead groundskeeper is responsible for the results of the department, he should have purview over scheduling department staff. If the maintenance/groundskeeper staff members are primarily scheduled for grounds work, and occasionally pulled away to assist with maintenance work, the scheduling of those workers should go through the lead groundskeeper. He should not find out after the fact that lawns were not mowed because staff members were reassigned to maintenance work. He should be involved in the scheduling of shifts from the beginning, so that he can reprioritize work.

Job Description Alignment within the Grounds Department

Within a department (barring specific licensing issues) the supervisor or lead worker should be able to back up line staff and cover the significant portion of line staff duties during an absence or emergency. Conversely, (barring specific safety issues) although tasked with higher level work, supervisors and lead workers should be able to ask line staff to assist them on tasks or projects. During interviews PTI staff heard several reports of grounds department line staff stating that assisting the lead groundskeeper with irrigation project work was not in their job description. Having line staff who cannot or refuse to assist the lead worker is not functional.

Based on the job descriptions of the lead groundskeeper and other department staff, it is unclear why some grounds staff members believe that assisting with irrigation projects is

outside of their duties. The supervisor of facilities and maintenance should direct grounds staff to assist the lead groundskeeper. However, if the issue persists, the grounds department job descriptions should be updated to include assisting with irrigation projects as scheduled by the lead groundskeeper. This updating of job descriptions to ensure alignment of duties within the department is not expected to result in reclassification or salary schedule adjustment, rather clarification of subsumed duties. As a point of reference, the groundskeeper I, II job description includes an example job duty of "burns appropriate trash" which indicates that the job description is overdue for review.

Tree Maintenance

Based on PTI's analysis of staffing availability, and an observation that tree care appears to at times be a deferred task, PTI recommends that CUHSD consider contracting out for tree trimming services. While CUHSD has some equipment and a knowledgeable lead groundskeeper, the grounds crew lacks the time for proper tree care. Commercial tree trimming crews have the equipment and training to efficiently manage the district's tree care needs, leaving staff time available for other important tasks. Contracting out tree care is an effective strategy for matching the workload to the staff available.

Pest Control

CUHSD currently uses a contractor for pesticide applications. While it is not the role of PTI to evaluate external contractors, it is within the scope of this report to express that PTI staff heard numerous complaints from end users about the results of the service. This end user dissatisfaction does not mean that the contractor is not fulfilling the contract. It is possible that contract deliverables and requirements may not adequately capture what CUHSD is looking to achieve from a pest control contract. The supervisor of facilities and grounds should be assigned a project to evaluate the contract deliverables against the district's actual needs and make recommendations on contract adjustments that could better serve the school sites. The supervisor of facilities and maintenance should also shadow the contractor on a sampling of application dates. This will ensure that the areas treated for pests align with school site needs and the Healthy Schools Act of 2000. Because application takes place outside of school hours, there is possibly a communication breakdown that needs to be bridged by the supervisor.

One of the issues noted during site visits was "fire ant" (possibly Solenopsis invicta, Red Imported Fire Ants or the less noxious Southern Fire Ant) colonies popping up on campuses. A common challenge with ants on school grounds is that ant control during active periods requires a nimbler approach than a contracted service can provide through weekly or bi-weekly applications. Ant control requires immediate spot treatment. Fortunately, there are several highly effective "crack and crevice" and bait products available that are exempt from the pesticide posting requirements. This means that if properly trained, CUHSD grounds staff could be equipped with these products for spot treatment, to better control ants. Application typically takes under two minutes. Many school districts have found this

hybrid approach to pest control (contracted regular treatment and spot treatment by district staff) to be highly effective.

Silt Issues in the Irrigation System

Figure 6 – Seeping Valves

PTI staff observed irrigation control valves seeping due to failure to fully shut off. CUHSD staff members also reported seeping valves and valves that regularly fail to turn off. PTI staff saw examples of fine sand and silt build up in the valves, which appears to be a primary source of frequent irrigation system problems. The use of well water and canal water for irrigation systems is not unique to CUHSD, and many technologies have been developed to filter fine sands and sediments out of canal water, enabling trouble-free operation of irrigation systems. CUHSD should commission a project to improve filtering of the irrigation water. Centrifugal and so-called "hydrocyclone" sand and silt filtering is not inexpensive, but the severity of the problem justifies the investment. Finer micron filtering may be another option for CUHSD. Because the district has invested in irrigation system booster pumps, the pressure loss from additional filtering is not a concern. Hiring an irrigation system expert to solve this problem is a worthy investment.

Recommendations

The district should:

1. Utilize "bustodians" to clean hardscape areas of campuses utilizing battery powered blowers.
2. Ensure that the lead grounds person has the support or authority to ensure that every employee completes their work to the satisfaction of the district standards. Lead grounds person should also be involved in the scheduling of the

grounds/maintenance workers, so their grounds work is not negatively impacted by their maintenance scheduling (and vice-versa).

3. Align and update grounds job descriptions with reasonable duties.
4. Consider contracting out tree care and maintenance.
5. Have the facilities and operations supervisor evaluate the pest control contract and ensure it aligns with district expectations. He should further shadow the contractor on application days to ensure that they are performing the contract as expected.
6. Consider using grounds staff to assist with fire ant invasions in addition to the contractor.
7. Consider commissioning a project to evaluate the improved filtering of irrigation water to minimize irrigation valve damage due to silt and sand.

Custodial Evaluation

The function of the custodial department is to provide clean, sanitary, and safe school facilities for students and staff. In the era of Coronavirus, the critical nature of disinfected school facilities has taken on much greater importance.

The following analysis of custodial staffing excludes the Central Union Adult Academy, which is staffed at 1.0 FTE custodian. The district is aware that 1.0 FTE exceeds the staffing that would normally be recommended for the facility. However, the district administration has determined that the unique needs of the facility warrant the staffing allocation, and that this staffing is outside of the district's general fund. PTI has no recommendation to alter this arrangement.

Level of Service and Staffing

Custodial staffing needs can be assessed in several ways. The U.S. Department of Education suggests a square-foot-of-cleaning-per-hour per service level model, which is helpful for roughly estimating the number of FTE custodians needed. The California Association of School Business Officials (CASBO) established a widely-used custodial staffing formula which uses average cleaning times based on four measurements (number of students, number of teachers, number of classrooms, and square feet). While commonly used, the CASBO custodial staffing formula, because it is a tool of averages, does not account for district-specific needs or the additional custodial duties required to guard against the COVID-19 pandemic.

PTI developed a staffing allocation model that adds an additional layer of precision. The PTI model uses a task-based approach. It is presented not in lieu of the CASBO model but building upon the CASBO model. The concept behind this approach follows basic logic: the more tasks a custodian completes, the longer it takes. If a custodian only empties the trash, this is far faster than emptying the trash, mopping the floor, and wiping down the desks. PTI's method recognizes that every school district has unique needs, that additional tasks are necessary to respond to the COVID-19 pandemic, and that task loads may need to be adapted to account for unavailability of staffing. Staffing recommendations are therefore

nuanced. PTI's custodial staffing model provides recommended staffing at various levels of cleaning.
The following list describes various levels of cleaning. Category titles are generic, giving districts room for adaptation to specific communicated needs. For example, in some districts PTI's "Most Basic Cleaning" may be titled "Health and Safety Only." Below are the categories and descriptions. It is important to note that cleaning times are for a standard classroom measuring between 940 and 1,000 square feet. Larger rooms take more time to clean, but cleaning time does not increase in a 1:1 linear relationship with square foot expansion.

"Most Basic Cleaning"
This is the minimum level of cleaning PTI recommends per room per day. This level of cleaning ensures health and safety during severe staffing shortages. However, after multiple days of "Most Basic Cleaning" rooms will soon begin to look dirty and unkempt. With "Most Basic Cleaning" the custodian must accomplish the following tasks:

- Empty trash/recycling; replace liners
- Fill dispensers
- Spot clean floor
- Electrostatic disinfection of room
- Travel to the next room

"Most basic cleaning" requires an average of 8 minutes per standard room for the average custodian. Travel time is built into the task time.

"Basic Cleaning"
This is a step up from "Most Basic Cleaning." PTI recommends this level of cleaning only for times of staffing shortages, as conditions will deteriorate over time without a higher level of cleaning.

- Empty trash/recycling; replace liners
- Fill dispensers
- Spot clean floor daily
- Complete vacuuming or microfiber mopping of floor once per week
- Electrostatic disinfection of room
- Travel to the next room

"Basic Cleaning" requires an average of ten minutes per standard room for the average custodian. Under this model 1/5 of the rooms receive extensive floor care per night. Four-fifths of the rooms will take eight minutes to clean, with the remaining 1/5 requiring the extra time for floor care.

"Basic Cleaning Plus Touch Points"

This is what PTI recommends as a target level of cleaning during extended staffing shortages. While less than ideal, with this level of cleaning classrooms will be disinfected, generally clean in appearance, and not moving backwards. Under "Basic Cleaning Plus Touch Points" the following tasks are required:

- Empty trash/recycling; replace liners
- Fill dispensers
- Spot clean floor daily
- Complete vacuuming or microfiber mopping of floor once per week
- Electrostatic disinfection of room
- Clean/disinfect high frequency touch points with a saturated rag (high frequency touch points include light switches, door handles, sinks, pencil sharpeners, etc.); PTI recommends use of a dual-purpose cleaner that both degreases and disinfects with a short dwell time; products meeting these criteria are carried by all major distributors of custodial products
- Travel to the next room

"Basic Cleaning Plus Touch Points" requires on average 12.5 minutes per standard room.

"Basic Cleaning Plus Touch Points, Bi-Weekly Floor Cleaning, and Dusting"

PTI's recommended minimum level of ongoing custodial care is "Basic Cleaning Plus Touch Points, bi-weekly floor cleaning, and dusting." Under this level of cleaning, the following tasks are required:

- Empty trash/recycling; replace liners
- Fill dispensers
- Spot clean floors daily
- Complete vacuuming or microfiber mopping of floor twice per week
- Electrostatic disinfection of room alternated with wiping down of desks with a saturated rag
- Clean/disinfect high frequency touch points with a saturated rag
- Light dusting once per week
- Travel to the next room

This level of cleaning requires an average of 16.5 minutes per standard room for CUHSD facilities. When this level of cleaning is maintained over time, classrooms are disinfected and appear clean and well maintained.

The CUHSD district standard, as codified in the "Classroom Cleaning Flowchart" includes the following cleaning tasks:

- Empty pencil sharpeners and wipe down exterior

- Empty trash; reline
- Spot clean floor
- Clean/sanitize/disinfect desktops and tabletops daily
- Clean whiteboards
- Clean/disinfect fixtures daily
- Vacuum/dust mop/spot wet mop daily
- Straighten desks/tables/chairs

This level of cleaning requires 22 minutes per standard room.

The calculation of the time necessary per room is derived from industry standards and standard productivity rates established by ISSA (The Worldwide Cleaning Industry Association), RS Means, and the U.S. Department of Education.
Aside from cleaning tasks required, an understanding of custodial allocation requires consideration of functional minutes per shift. It is important to note that although there are 480 minutes in a standard eight-hour shift, not all these minutes are functional minutes, spent achieving work tasks. First of all, employees are entitled to two 15-minute paid breaks. Secondly, custodians require time to stock their carts and complete miscellaneous tasks like filling out timesheets or supply order sheets. Fifteen minutes per shift is a standard allocation for this. Lastly, human beings are not perfectly efficient in their use of time. A standard reduction of 15% inefficiency is reasonable. Aggregated together, this leaves approximately 370 functional minutes per custodial shift. Scheduling significantly more than 370 minutes of work per shift is not reasonable.

For Central Union High School, the following table lists the levels of cleaning and the FTE necessary to provide that cleaning. This data is presented without the inclusion of the new STEM wing, slated to open in early 2022. A set of detailed evaluation tables are included as *Appendix 1*.

Level of Cleaning	# FTE
Most Basic Cleaning	4.3
Basic Cleaning	5.1
Basic Cleaning Plus Touch Points	5.9
PTI Recommended Minimum	7.2
CUHSD District Standard	9.2

On paper the school is staffed at 8.5 FTE custodial. Functionally, the 0.5 FTE “bustodian” position does not accomplish a significant amount of direct cleaning, but instead tends to mid-day restroom issues and miscellaneous tasks. This fact should be included in analysis of

the staffing levels. The CASBO custodial staffing formula estimates the school's staffing need at 7.6 FTE. PTI recommends a minimum staffing level of 7.2 FTE, with higher FTE preferred. Considering this variety of similar data points, PTI recommends that the 8.5 FTE custodial allocation (without inclusion of the STEM wing) is optimal and should be maintained. While not sufficient to accomplish the entire CUHSD district standard cleaning, PTI recommends adjusting the cleaning protocol to the PTI recommendation instead of adding staffing.
The new STEM wing, which is scheduled to open in January of 2022 is an impressive, state-of-the-art facility. PTI performed a staffing need analysis based on the planned size and programming of the space. In order to achieve PTI's minimum recommended level of cleaning, 2.0 FTE is recommended. It is not clear yet when the opening of this new wing will result in the closing of other classrooms on the campus. Unless and until that facilities shift takes place, a staffing shift cannot be achieved, and the district may find it necessary to clean both the old and new spaces.

For Southwest High School the FTE staffing table is found below:

Level of Cleaning	# FTE
Most Basic Cleaning	4.4
Basic Cleaning	5.3
Basic Cleaning Plus Touch Points	6.4
PTI Recommended Minimum	7.9
CUHSD District Standard	9.9

A set of detailed evaluation tables are included as *Appendix 2*.

On paper the school is staffed at 8.0 FTE full-assignment custodians, with an additional "bustodian" allocation like at Central Union High School. As with Central Union High School, functionally, the "bustodian" position does not accomplish a significant amount of direct cleaning, but instead tends to mid-day restroom issues and miscellaneous tasks. PTI did not receive consistent information about the "bustodian" FTE allocation for Southwest High School, so we do not present a number here. The CASBO custodial staffing formula estimates the school's staffing need at 8.6 FTE. PTI recommends a minimum staffing level of 7.9 FTE, with higher FTE preferred. Considering this variety of similar data points, PTI recommends that the 8.0 FTE custodial allocation and additional "bustodian" FTE allocation is appropriate and should be maintained. While not sufficient to accomplish the entire CUHSD district standard cleaning, PTI recommends revising the cleaning protocol instead of adding staffing.

Desert Oasis has 1.0 FTE staffing, which closely aligns with the CASBO staffing formula allocation for the site (0.9 FTE) and PTI's recommendation of 1.0 FTE for minimum recommended level of cleaning.

Having established the levels of staffing which are necessary to achieve specific cleaning performance levels, PTI recommends that schedules developed within the desired levels are achievable with the available FTE. PTI staff examined a sampling of classrooms and other areas of the schools and interviewed school site staff. PTI found that there is wide variation in the level of performance of custodians as exemplified as some areas being in excellent condition while others appearing dirty.

Leadership Structures and Responsibility

The responsibility-skills-tools progression concept was introduced earlier in this report. For evaluating custodial leadership structures PTI would like to again employ this framework. The school site lead custodians do not have the authority to discipline staff. They have some responsibility for custodial results at the site, possess the skills to ensure proper cleaning, but do not have the proper tools (in this case authority) to enact change. Interviews revealed that some site custodians treat lead custodian feedback as an optional suggestion, rather than an imperative. This is one of the factors that results in inconsistent and sub-standard levels of cleaning in some areas of the school sites.

The district has tried to remedy this challenge by assigning responsibility for school site custodians to the assistant principals for student services. School site assistant principals of student services are held responsible for school site cleaning results; have strong leadership skills, but not technical experience as custodians; and lack an important tool: infinite time. School site assistant principals arrive on school sites early in the morning. Most custodians work until 11:30 PM. Custodial supervision is a time-intensive task, in which training and progressive discipline of underperforming staff members requires hands-on supervision. The assistant principals do not have the proper time or work schedule alignment with custodians to do this work.

This report has noted two important responsibility-skills-tools misalignments in the maintenance and operations areas: with leadership and accountability for school site custodians and groundskeepers. In both cases the lack of organizational design that can ensure staff accountability for excellent services to schools leads to underperformance of staff members.

It is important to note a possible third area of misalignment. This report recommends several communication, planning, and accountability structures for the maintenance department. The assistant superintendent for business and support services is heavily involved in daily maintenance department leadership, problem solving, and planning. Although he has responsibility for the results, and strong skills to achieve the results, he appears to lack a key tool: a support staff member to whom he can entrust with directing, overseeing, and accomplishing some of this work. Without such support PTI finds that the

assistant superintendent is involved in daily maintenance issues to a degree not matched by other assistant superintendents of districts sized similarly to CUHSD.
Given multiple areas where an improvement in organizational structures is needed, PTI recommends that CUHSD add a leadership staff member in the area of facilities, maintenance, grounds, and custodial. Two options are suggested here. PTI recommends the implementation of at least one of these options and notes that if the district is able to implement a combination of both options, this would be ideal.
The first, and most highly recommended option would be to hire a director of facilities, maintenance, and operations. This person would have the skillset required to implement the necessary systems for department success and hold staff members accountable to the high-performance level desired by district leadership (and deserved by the students of the district). The positions that would directly report to the proposed director would be the department secretary, the lead groundskeeper, and the supervisor of facilities and maintenance. However, under this structure the supervisor of facilities and maintenance duties would be shifted so that he would directly oversee site custodians. This would require a schedule shift, with a minimum of 2-3 days per week matching the custodians schedule (working until 11:30 PM).
The second option would be to hire a supervisor of custodians, on a schedule matching the night custodians. This person would have the authority to direct and progressively discipline underperforming staff members. This supervisor of custodians would directly report to the assistant superintendent of business and support services.

Recommendations

The district should:

1. Maintain the current level of custodian staffing for Central High School (does not include STEM building) and revise the district standard cleaning regimen.
2. Hire two additional custodians for the new STEM building and determine other staffing re-alignment or reduction if other areas of the campus will be closing when this building opens.
3. Maintain the custodian staffing level at Southwest High School and consider reducing the district standard cleaning regimen.
4. Consider adding additional supervisory support positions and adjusting shift schedules to accommodate the oversight of custodians and the department.

Transportation Funding and Finance

School transportation in California has been inadequately funded for many years. Up to 1977, school districts reported their operational costs to the State Department of Education, and the state reimbursed those costs in the subsequent year. Capital costs were never reimbursed. After the passage of Proposition 13 in 1978, the state gradually reduced the percentage of reimbursement. In the 1982-83 school year only 80% of reported costs

were reimbursed, and in that year the state capped the apportionment to each district at 80% of their reported cost amount. Only occasionally through the years have there been any cost-of-living adjustments. As costs have risen, and the revenue has remained rather static, the state's share of the funding covered only approximately 45% of reported costs in the 2008-09 school year. That was the highest recent year of funding, and it was identified as each participating school districts' "approved apportionment." During the Great Recession, the state reduced all categorical program funding, including transportation, by approximately 20%. This reduction effectively means that the state is now covering less than approximately 35% of the statewide cost of pupil transportation, with individual districts varying widely in the percentage amount of their funding.

With the implementation of the State's Local Control Funding Formula in the 2013-14 fiscal year, school districts continued to receive the amount certified in April 2013. Under LCFF, transportation revenue has never received a COLA, is restricted to transportation use and is subject to a Maintenance of Effort (MOE), that requires districts to spend at least as much as they receive. For Central Union High School District, that revenue amount allocated as a separate add-on to the base grant is $210,945.

The district had school transportation department expenditures in the recent years as follows:

Fiscal Year	Amount
2018-19	$1,390,381
2019-20	$1,358,298
2020-21	$1,160,562
2021-22	$1,360,921

The above expenditures relate most directly to the in-house transportation department's costs and the revenue the district receives from the state. The district does account separately for general education transportation and special education transportation. With the move to LCFF, there is no need to do so (but it is a positive practice), as the funding arrives to the district as a lump sum, and not separately as it was prior to LCFF (and there was a requirement to spend at least the amount received in each category). It does not appear that there are any capital bus acquisition costs in any of these years. The most recent model year bus or van in the fleet is 2018, so it must have been received in the 2017-18 fiscal year.

At the outset of LCFF, the state ceased collecting and reporting school transportation data and costs, so it is impossible for PTI to accurately determine statewide school transportation cost averages. The district will receive approximately 15.5% of its school transportation revenue from the state for the 2021-22 fiscal year (this budget year) for their in-house operations, which is lower than the statewide contribution compared to statewide costs, based on the last known state school transportation data.

There are approximately 571 students transported on the district's 14 bus routes. Based on the budgeted transportation costs for the 2021-22 fiscal year, the annual cost per student will be approximately $2,383 per student. The annual cost per bus route was approximately $97,208. Since CUHSD accounts for general education transportation costs and special education transportation costs separately, it is possible to get the cost per pupil in each category. That would be approximately $1,972 per general education student per year, and $9,533 per special education student per year. At the time the state ceased collecting school transportation data, the average general education cost per pupil was approximately $1,500 per year and the average special education annual cost per pupil was approximately $6,500. CUHSD spends close to what would be the average general education cost per pupil for transportation but seems a little high on the average annual cost for transporting special education students. Neither the cost per pupil or the average bus cost per year seem alarming to PTI based on what we see across the state at this time.

The district does not currently pay special education parents in-lieu of providing transportation (although they have in the past), and does not utilize any other outside, contracted modes of transportation to transport their students to their educational programs.

The district's routing efficiency is quite good. There are reportedly approximately 50 students on most general education routes, with one route reporting approximately 35-40 students. One special education route has 16 students, the other has 14. The third special education route is performed in a sedan and takes one special education student to their program in San Diego. This is a reasonable and legal use of a non-school bus vehicle.

The district has a rather large number of non-school bus vans that are used to transport small teams and small groups. Teachers or coaches typically drive these vehicles. The capital purchase cost of these vans is charged to the transportation department. The maintenance cost of these vans is charged to the transportation department. The district does not charge any fee for the use of these vehicles but does charge the fuel that is used for each trip to the school or department. The essentially free use of these vans discourages school bus use, and potentially opens the district up to excessive liability (as students are approximately 70 times safer on a school bus, according to the National Safety Council). Further, the schools view the use of the vans as far less expensive than a school bus, and in some cases, teams choose to take multiple vans rather than a school bus. School buses are statistically far safer than vans driven by teachers or coaches. If there ever was an accident in one of these vans and a student was injured, it would be difficult for the district to support the lower standard of care transporting students in a van compared to a school bus. Under California Vehicle Code Section 545 (2), a non-school bus vehicle can be used to transport students as long as the vehicle is designed for and carries no more than nine passengers and the driver for a total of ten. Many school districts use vans or other non-school bus vehicles for transporting small groups of students, however, most school districts will charge a fee for their use to defray the capital and operating costs of the vehicle. Most districts charge in excess of $1.00 per mile to the school or group that is using

it. If the district decides to charge for the use of the vans, it should include the capital cost (depreciation amount), maintenance costs, and the cost of fuel, and that amount should be evaluated annually. AAA has a handy calculator that can assist with setting this rate that is available on the internet. The capital purchase cost and the operating costs of the vans are all charged to the transportation department budget, making it appear that transportation department costs are higher than they should be. The transportation department is subsidizing the use of the vans.

Upon review of the collective bargaining agreement, there is no transportation article. That has become a common feature for most school districts. Transportation department operating rules such as how drivers are assigned their routes and extra work, like field trips, are covered by past practice or memoranda of understanding (MOUs). If there are ever transportation practices that are discussed in negotiations, the transportation supervisor should be involved in the discussions. The step one salary for a bus driver/service helper is $20.98 per hour. The step one salary for a bus driver/custodian is $19.80. The step one salary for a driver instructor is $23.31. These salary levels are reported to be competitive for the area. The department employees receive a set amount for health and welfare benefits. That amount covers a full family if the employee opts for the Mexican health plan. If the employee opts for health coverage north of the border, it covers far less. Although the department would benefit from a few more substitute drivers, they enjoy a driver staffing level that would be the envy of most school districts at this time. Most school districts right now are suffering with a driver shortage (national shortage) that is crippling their operations. Although the local unemployment often hovers at 20% or above due to the large number of agricultural workers in the area, many of those individuals would not qualify to be school bus drivers. The testing for school bus drivers is only conducted in English, with an expectation that school bus drivers in California are proficient in English both orally and in writing and comprehension.

Fuel for other department vehicles is charged appropriately to those department budgets. The district does not own or maintain a fuel system at its maintenance and parking yard. Drivers of each vehicle are issued a card at a local cardlock station. The card identifies their vehicle, and the invoice is also separated out by card. Credit cards for the vans typically are commercial gas station cards. School districts are exempt from Federal Excise Tax (FET) for gasoline and diesel. School districts are exempt from State Excise Tax (SET) for diesel fuel but must pay the tax for gasoline. School districts must report and pay the State Board of Equalization $0.01 per gallon of diesel on a quarterly basis in lieu of the excise tax. Upon inspection of the fuel bill from the cardlock company, they do exempt the district for Federal Excise Tax, but not the State Excise Tax for diesel, as they should. Although PTI did not review the invoices from the commercial gasoline stations (Shell, Chevron, and the like), it is highly unlikely that they exempt the district from either excise tax. Chevron does have a “government” credit card that does exempt the user from the excise taxes.

Vehicle maintenance work on other department vehicles is charged to the appropriate department. Outside work on other department vehicles is charged to the appropriate departments.

There are approximately 400 field trips or athletic trips that are performed by the transportation department annually. Other trips, mostly athletic trips that conflict with regular afternoon route times, are performed by charter bus companies. The district charges $2.15 per mile and $18.89 per hour for regular time and $20.34 for overtime. Time and a half is charged at $42.51 per hour. The trips are input into the field trip software system, and the trip data is reported by the driver after the trip. These amounts are invoiced to the appropriate group. These rates have been in place for many, many years and have not been evaluated or revised. It is likely that the rates need to be increased to reflect higher operating costs and the higher cost of salaries. When establishing such costs, it is important to include only the variable costs of operating the trip, not the fully loaded costs to operate the whole department. So, the cost per mile would be calculated with only the cost for fuel, fluids, maintenance, and tires expressed as a per mile cost, and cost per hour would be the hourly cost for the bus driver, including all salary driven benefits. These costs should be evaluated and reestablished annually.

When a district bus is not available, the group is responsible for booking a charter bus. Such buses must be certified as School Pupil Activity Buses (SPAB), with the driver also holding a SPAB certificate. These certifications should be checked by a district official to ensure the driver and the bus are SPAB certified to limit the district's liability. Currently, when a school or team books a charter bus, the district pays the difference between the cost of the charter bus, and what the trip would have cost if a district bus performed the trip.

The charter bus costs for the district have been as follows:

Fiscal Year	Amount
2018-19	$51,146
2019-20	$63,312
2020-21	$21,600

These levels of expenditures do not require the district to go to bid for these services.

Recommendations

The district should:

1. Charge schools and groups a mileage charge for the use of the vans to recover the capital purchase cost and the operating costs.
2. Communicate with their cardlock fuel provider relative to the exemption of State Excise Tax for diesel. Work with the commercial gasoline companies relative to the exemption of excise taxes.

3. Evaluate, calculate, and charge the actual cost for operating field trips.
4. Use only SPAB buses and drivers for charter bus trips. Inspect the certifications for each trip to ensure that they are correct. Determine whether or not the district should subsidize the difference between the cost of a charter bus and a district bus.

Routing and Scheduling

General education school transportation is not mandated in California, but rather provided based on a school districts' policies. The district has language in its Administrative Regulation 3541 that articulates the non-service zone for general education transportation. The district does not provide transportation to any student that lives closer than two miles to their school of attendance. The transportation department articulated that they are aware of and follow this policy. The district operates 11 general education bus routes. The drivers do not perform a daily count of riders, so PTI had to rely on the number of students reported by the transportation supervisor. He reported that ten of the routes have approximately 50 students each, with one route having approximately 35-40 students. This indicates good bus utilization.

Special education transportation, however, is required to be provided under the rules of the Federal Individuals with Disabilities Education Act (IDEA). School transportation is provided as a related service if required to ensure a student access to their educational program as required under the concepts of a Free and Appropriate Public Education (FAPE) and Least Restrictive Environment (LRE). Special students' needs are determined as a part of their Individualized Education Program (IEP). When such meetings occur in the district, or as a part of the Imperial County Office of Education's Special Education Department, and if transportation is a requirement of the IEP, a staff member in the special education department communicates that need to the CUHSD transportation department either via a telephone call or an email. The department also receives the students' emergency information card, so they have important information relative to the students' disability and important family contact information. There is one special education route with sixteen students, a second special education route with fourteen students, and one student is transported in a van to and from San Diego to a special program there. These are exceptionally good student loading numbers for special education bus routes, indicating very good routing by the transportation supervisor. Of these students, only three attend district programs, with the remaining students attending Imperial County Office of Education programs.

The district has an enrollment of approximately 4,000 students. There are approximately 437 students in the district with an IEP. The percentage of students with IEPs in the school district is approximately 10.9%, which is in line with statewide averages. Approximately 31 special education students are transported by the district's transportation department. Approximately 7% of the total number of students who have an IEP in the district receive

transportation support. This is an incredibly low number compared to what PTI sees statewide. This indicates that IEPs are very tightly managed, and special education transportation (which is very expensive), is not "given away."

In addition to the general education bus routes, there are evening routes that are performed. At approximately 4:30 PM one bus departs Central High School and another bus departs Southwest High School taking students home from an after-school program. At 6:00 PM one bus departs Central High School and another bus departs Southwest High school also taking students home from an after-school program. Each of these buses covers the entire attendance area for each school. The vice principals at the school lamented that some of these students are on the buses for approximately an hour and a half. Although this could be a long ride for those who live furthest away from the schools, it is a common practice in most districts in the state to perform these types of routes in this fashion. It would be far too expensive for the district to add additional evening routes to provide shorter rides. These routes are not part of a driver's regular assignment, but are assigned as overtime work, like a field trip, and rotated among the drivers. Usually, it is challenging to find drivers who wish to perform this work, as they have worked a full day already.

The schools report that there are very few issues with the transportation service and characterize the transportation supervisor and bus drivers as very service-oriented and responsive to their needs.

The department does not use a bidding process for its drivers to choose their work, but rather assigns the route. Field trips are assigned on a rotation basis. It appears that this system has worked well for the district, and there are few grievances relative to these processes.

There is a two-page manual for the parents of special education students who receive transportation services. It covers the typical topics that one would generally see in such a manual. In addition, there are a couple of forms: one that would give the district permission to drop off a student unattended, the other lists the individuals who can meet a student. On the second page of this manual, it references PL94-142, which is the original federal law requiring education and services for "disabled" students. This has since been reauthorized and is now called the "Individuals with Disabilities Education Act" or IDEA, and this previous reference should be removed and replaced with the more current term.

The schools have similar bell times, so there is no opportunity for most of the general education bus routes to perform more than one "run" in the morning or afternoon. A couple of bus routes do perform double runs in the morning and afternoon by taking students from an area, dropping them off at school early in the morning, going back to the same community and picking up more students and dropping them off prior to bell time. This is reversed in the afternoon, requiring some additional supervision time at the schools.

The district does have some early dismissal or minimum days used for teacher collaboration. On these days, the routes just run earlier in the afternoon. There are usually one or two such days a month, and they are identified on the school district calendar.

The transportation supervisor creates the route sheets. They list the time and location of each bus stop on the route in their order. If a student requires the driver to escort them across the street with the use of the red-flashing lights, that is so marked on the sheet. The routes sheets do not have directions (right and left turns). Although the drivers are familiar with the area and are trained on the routes prior to taking them, it is a best practice to have specific directions on the route sheets.

Recommendations

The district should:

1. Replace "PL94-142" with "IDEA" in the parent special education manual.
2. Consider adding directions on the route sheets.

Transportation Staffing

The transportation department is currently staffed as follows:

- (1) One FTE Transportation Supervisor
- (1) One FTE Transportation Scheduler/Bus Driver
- (1) One FTE Bus Driver Trainer/Bus Driver
- (1) One FTE Service Mechanic
- (4) Four 8 Hour per Day/10-Month Bus Driver/Custodian (Bustodian)
- (5) Five 8 Hour per Day/ 10-Month Bus Driver/Service Person
- (1) One 8 Hour per Day/11-Month Bus Driver/Service Person
- (1) One 6 Hour per Day/10-Month Bus Driver/Delivery Person
- (2) Two 6.5 Hour per Day/10-Month Bus Attendant

The transportation supervisor reported that all the bus driver positions are filled, however, several are unable to perform their duties at this time due to injury or illness or other reasons. He further stated that there were no bus attendants utilized at this time, however, there are two listed on the department employee list. The special education director also did not believe that there were any bus attendants currently.

The district has made a commitment of making most of the bus drivers full-time employees. This is beneficial to recruit and retain qualified drivers. This practice is utilized in many small school districts across the state, and in areas where it may be challenging to recruit and retain individuals as school bus drivers. In most of these districts, it is challenging to create other duties where the non-bus driving time is productive. The vice principals at the two comprehensive high schools reported that there isn't much for the "bustodians" to do when they report to the schools. Classes are in session, so they cannot clean classrooms. They typically pick up trash, check and empty garbage cans, re-stock and clean restrooms, and the like.

There was a second mechanic on the staff who reportedly resigned about a month ago. The size of this fleet requires a second mechanic. A qualified mechanic should be hired as soon as reasonably possible. With the fleet of buses at 19, along with the 21 vans on-site and other equipment they are charged with maintaining, another mechanic is desperately needed.

There are five individuals with the bus driver/service person classification. The department reported that of these, only three are at work at this time, so it reduces the amount of work they can perform. These individuals assist the mechanic when another set of hands is necessary for a job. They also clean the van fleet, fuel the vans when necessary, assist with oil changes, tire rotations, seat repairs, and the like. They also clean and wash the field trip buses so they look sparkling when they go out of town. These are all necessary duties.

In July, one of the drivers attended the California Department of Education's School Bus Driver Instructor Training Program. He successfully completed that very rigorous, 3-week residential program and is now a fully certified school bus driver instructor. He can assist the supervisor (who is also a school bus driver instructor), with the training duties necessary for the department. Having one or more certified school bus driver instructors on staff is extremely important, especially in rural or remote areas. With little access to other contract instructors that might work at other districts, a school district must have the ability to "create" their own school bus drivers.

There is a secretary for the supervisor of maintenance and operation, but she does very little relative to the school transportation department. She does answer the telephones, takes messages for the transportation supervisor when he is away from his desk or driving a bus route, and assists with processing purchase orders. She reported she does occasionally drive students in a van when necessary (to or from school as part of a special education bus route, when regular drivers are not available).

The drivers communicate with each other using cellular devices with a direct-connect feature, much like a two-way radio. If the transportation supervisor is substituting on a bus route, he can answer their calls, and can pull over and make cellular telephone calls when necessary. Although the office is not staffed during the times that the supervisor is out on the road, it appears that most issues are handled appropriately.

Special education bus drivers typically work an 11-month schedule. This would assist the district with some summer school (extended school year or ESY) service. The department reported that it is challenging to fill all the summer routes, as not all of the drivers wish to work. This past summer, the original number of bus routes was eventually consolidated down to five bus routes. This is typical for many summer school programs in the state, as many students who sign up for the program and transportation, eventually do not attend.

Student bus misconduct is handled by the vice principals. It appears that the district's system is working well, and the drivers generally report egregious behavior on the bus, and the vice principals support the drivers and perform appropriate discipline.

For a department of this size, it appears that it is appropriately staffed.

Recommendations

The district should:

1. Re-evaluate the duties of the "bustodians," assign them to more practical tasks at the schools, which might include some grounds work, cleaning bird droppings, trimming or pruning bushes or trees, sweeping common areas and the like, which would not be so noisy during class time.

Vehicle Maintenance, Fleet, and Facilities

Vehicle Maintenance

Annually, the California Highway Patrol (CHP) Motor Carrier Inspector Unit inspects buses, vehicle maintenance records, driver records, driver timekeeping records, and federal drug and alcohol testing records. They produce a report of their findings entitled the "Safety Compliance Report/Terminal Record Update," or more commonly known as the "Terminal Grade."

The most current inspections are as follows:

- 11/4/2020: Satisfactory (vehicle maintenance)
- 10/30/2020: Satisfactory (federal drug and alcohol testing)

Upon review of the district's record of terminal inspections, they have consistently received satisfactory records as far back as the CHP maintains those records.
"Satisfactory" is the highest grade awarded to any motor carrier. It indicates general compliance with laws and regulations governing school bus safety. In essence, it is your school transportation safety report card. An "unsatisfactory" grade is very serious. In each case, CHP clearly advises that a failure to correct the deficiencies can result in a recommendation to the Public Utilities Commission (PUC) to revoke the district's motor carrier operating authority, filing a complaint with the district attorney for potential prosecution, and filing an injunction. Criminal charges can be brought against the Board and the Superintendent for failure to address these issues.
School buses are required to be inspected every 45-days or 3,000-miles, whichever occurs first, as per Title 13 of the California Code of Regulations, Section 1232 (13 CCR 1232). In addition, this section requires that each motor carrier shall have a written preventive maintenance program for its vehicles. PTI reviewed the inspection records and found that the district never exceeds the 45-day or 3,000-mile threshold, and generally schedules the inspections at 40-day intervals, which is a positive practice. The typical mileage between inspections is about 1,700, so the district rarely faces a time when they would exceed the 3,000-mile threshold. PTI also reviewed the detailed terminal inspection records for the past two years and discovered that there were not any bus defects noted. This is an

exemplary record. The district does have a preventive maintenance schedule for other necessary bus maintenance, and schedules lube, oil, and filter services at 5,000 for each bus and 3,000 miles for non-school bus support vehicles (white fleet). The 45-day, 3,000-mile inspections are recorded on the recommended CHP inspection form. The district has updated the form to include an inspection of the electronic child-check system. The form also needs to include an inspection of wheelchair lifts, as recommended by the manufacturer, and inspections of the emergency exits and their markings as per 13CCR1232 (a) 1.

It is acceptable for school buses to be out of service for longer than the 45-day intervals (like during the COVID-19 shut-down for schools, or when a bus is being repaired by an outside vendor), and not be inspected. The requirement is that they are inspected when they come back into service. The district did not consistently record the school bus out-of-service periods on the inspection record. Any out-of-service time periods must be properly documented in the maintenance records, and the inspection must be performed when the bus comes back into service.

School bus drivers are required to perform a daily pre-trip inspection on each bus they drive. Those inspections are recorded on a form. Any defects must be reported, and there must be an evident paper-trail of the report and the repair. These are all properly documented, repaired, and the records are kept the appropriate time according to the state regulation. CHP has a new requirement that any defect noted relative to the electronic child check system and its repair is kept for one year, which is more than the 90-day period that other driver pre-trip inspection records are kept.

PTI performed a visual inspection of 17 certified school buses. Two buses in the fleet were being repaired at outside vendors and were not available for inspection. There were no major or critical defects noted. The engine compartments were clean with no sign of engine oil, fuel, or coolant leaks. All the tires are new (recapped tires- which are legal for the rear axles of school buses- and appear not to be used). The tire tread depths exceeded the minimum amounts that would require replacement. All tire repairs and tire service are performed by the district's vendor, Parkhouse Tire, which has a facility immediately to the rear of the district facility. The district does not maintain a tire inventory. They do not need to do so, as the vendor is so close and can respond immediately to any district tire need. The buses were all very clean inside and out, and no body damage was noted on any bus. PTI observed the driver or service persons cleaning the exterior of buses and windows.

The mechanic has created some Excel tables in a Google drive to record and report maintenance work. Each bus also has a paper file that records all the maintenance work. The district does not utilize a vehicle maintenance software system, and frankly, for a fleet of this size that is already managed so well, a software program is not necessary. The transportation supervisor, however, does not have direct access to the vehicle maintenance records, and he should be aware of and monitor them.

As noted in the Staffing section of this report, there is one mechanic. He works from 6 AM to 4:15 PM with a 1.5-hour lunch to ensure he is available generally when all the buses are

performing their routes on the road. The mechanic is also a certified school bus driver and does drive routes when necessary. As noted in the Staffing section of the report, there was a second mechanic who recently resigned, and the district should do everything they can to recruit, train, and employ a second mechanic. Also as noted, even though there are several service person positions, only three are working at this time. These individuals perform all of the duties noted in that section and appear to keep busy, performing necessary work for the department. Their time is scheduled by the scheduler/bus driver position. Some major repairs are performed by outside shops, and this is a normal practice for school districts in California. It is impossible to have mechanics that have the time or expertise to do all the jobs, particularly time-consuming rebuilds.

Although smog inspections and reporting are not required for the Imperial Valley, the district does perform smog inspections annually and maintains their records on file.

The department parts inventory is appropriately stocked for the size of the fleet. It is clean and organized.

Bus #10 was recently painted and is missing the bus identification number on the right and left sides of the bus.

Fleet

The district fleet of vehicles consists of the following:

- 19 school buses
- 21 non-school bus vehicles (vans) used for student transportation parked at the facility
- 1 passenger van assigned to Desert Oasis High School
- 1 cargo van assigned to the warehouse
- 2 automobiles assigned to the driver education program
- 1 truck assigned to the Agriculture Department
- 16 maintenance department vehicles of various types
- 6 technology department vehicles of various types

All of these vehicles are maintained by the transportation department's vehicle maintenance shop. Most of the passenger vans are also parked in the front of the maintenance and transportation facility so that they can be easily picked up and returned.

The district is scheduled to receive two new International coach-type buses in the coming weeks to replace two older buses. The average age of the school buses is 15 years, with the average mileage being approximately 149,000.

It does not appear that the district has taken advantage of any bus replacement grant programs over the years, but rather purchases buses with district resources. Since the early 1990's, Local Air Quality Management Districts, the California Air Resources Board, and the California Energy Commission have awarded hundreds of millions of dollars in bus

replacements to school districts across California. Many of these have been alternative fuels, demonstration fuels, conventional diesel fuels and now, electric buses. Most of these awards pay for the entire cost of the bus. Many of these programs give priority to disadvantaged communities. The district expressed that with past alternative fuels, they had a concern with local availability of the fuel and range of the buses. The district should explore and apply for such grants in the future.

The district abandoned its two-way radio communication system for school buses several years ago in favor of a cellular direct-connect device. These operate on the cellular network, and function much like a two-way radio, allowing one-way conversation with one-touch buttons. Drivers must be aware that they should not operate these devices when they are driving (to minimize distraction). It was reported that most areas of the district are within range of the devices.

There are video cameras on all buses, that can assist with student discipline. None of the buses, however, have global positioning systems (GPS), that would allow the district to pinpoint the location of the bus in the event of an emergency, or historically store the path of the bus and the significant timepoints (bus stops and the like). Many school districts have installed GPS devices and they have proven very useful. Further, many school districts have installed them on all their vehicles, to ensure that teachers and coaches driving students do not exceed speed limits and drive safely.

Facility

The transportation facility is co-located with the maintenance, operations, grounds, and IT departments. It is a relatively new facility and appears to be well-maintained. The vehicle maintenance shop work areas are clean and free of clutter, debris, or hazards.

The shop vehicle lifts are inspected and certified annually in compliance with Cal OSHA (California's Occupational Safety and Health Administration) requirements

The shop operates an air compressor for air tools. Such pressure vessels also must be inspected regularly by a state agency. It has been and is certified for use through 2025.

Vehicle maintenance shops generate some hazardous materials and waste. Such hazardous materials must be documented properly. This documentation is maintained by the transportation supervisor. All Material Safety Data Sheets are maintained in the office for any chemical or hazardous material used at the facility or the schools.

The district does not have any fueling capability at its facility. Buses and other district vehicles fuel at a local cardlock facility, and the vans often fuel at commercial fuel stations. Although there are some regulations relative to the operation of fuel tanks, it is uncommon that a school district would not have a facility with fuel tanks on-site for convenience. It often takes drivers some significant additional time to fuel off-site, and the cost of the equipment can pay for itself when the district receives lower fuel prices for bulk purchases.

Recommendations

The district should:

1. Affix bus identification numbers on Bus #10 at the appropriate locations.
2. Ensure that any out-of-service buses (greater than 45-days) are clearly noted on the inspection form including the reason for the out-of-service.
3. Update 45-day inspection form to include wheelchair lift inspections and the inspection of emergency exits.
4. Transportation supervisor should have access to electronic vehicle maintenance records and regularly monitor them.
5. Keep child-check system defect reports and repairs for one year.
6. Consider outfitting the vehicle fleet with GPS devices.
7. The district should explore bus replacement grant programs that are available to school districts in California.
8. Consider installing fueling equipment at the maintenance and transportation facility.

Driver Training and Safety

California school bus driver training is highly regulated. California school bus driver training requirements are contained in Education Code Sections 40080-40089. The education requirements for prospective drivers seeking certification are a) successful completion in a minimum of 20 hours of classroom instruction from all units in the Instructor's Manual for California's Bus Driver Training Course, and b) a minimum of 20 hours of one-on-one instruction in all skills levels of the Instructor's Behind-the-Wheel Guide for California's Bus Driver's Training Course. School bus drivers must also complete a minimum of ten hours of appropriate training each year to maintain their certificate validity. During the last year of certificate validity, drivers are required to attend and successfully complete a renewal training class. The required classroom instruction can only be conducted by or in the presence of a state-certified School Bus Driver Instructor, whereas the required behind-the-wheel training may be conducted by a delegated Behind-the-Wheel School Bus Driver Trainer or the state-certified School Bus Driver Instructor. All required training must be documented by a valid state-certified instructor on the appropriate form. Additionally, school bus drivers must submit to a background check (fingerprinting) for licensing, and for employment be enrolled in the DMV's Employer Pull Notice Program (EPN) that provides the district with an annual copy of the drivers' record as well as updates, recording any violations, citations, or accidents. As commercial vehicle operators, school bus drivers must comply with the Federal Department of Transportation (DOT) rules for drug and alcohol testing per 49CFR382.

The transportation supervisor is a state-certified School Bus Driver Instructor. One of the other drivers has also recently completed the training and is now also a state-certified School Bus Driver Instructor. The previous transportation supervisor is also a state-certified School Bus Driver Instructor and generally is the primary instructor for the Adult Education

Program. The Adult Education Program is typically the program that hosts the classroom training for new drivers (original classroom training). The transportation supervisor usually schedules the renewal classroom training program for those drivers who must renew their school bus license. In addition, the transportation supervisor also schedules a monthly in-service training program and safety meeting that is typically held on one of the minimum days when the drivers are on the clock. He has developed a comprehensive lesson plan for each session and has a sign-in sheet for each program noting the beginning and ending time of attendance for each driver.

PTI reviewed a sample of the driver training records and found that all the ones we reviewed were documented appropriately, with drivers receiving their proper amount of training.

Title 13, Section 1229 of the California Code of Regulations (13CCR 1229) requires commercial drivers to demonstrate proficiency in each type of vehicle or vehicle combination which shall include special equipment— including wheelchair lifts, ramps, or tiedowns— before operating those vehicles on the road unsupervised. The department does maintain a list of each drivers' vehicles in which they are proficient.

The Transportation Safety Plan required per Education Code 39831.3 is in place. The plan must be revised to include all specific components currently required: new child check requirements, to ensure that drivers check their bus at the conclusion of each route. A plan must be in place and available for inspection by the CHP at each school that receives home-to-school services.

Prior to each field trip, the driver must inform students of the location of emergency exits and emergency equipment as well as give reasonable safe-riding rules. Documentation of the field trip safety information provided prior to every trip is required and must be available for inspection by the CHP. The records of the evacuation drills and documentation of the field trip safety information must be stored for one year. The transportation department is aware of these laws and appears to be in compliance with this section.

California Vehicle Code Section 34501.6 requires that the district has a policy relative to drivers' authority to cease school bus operations when they determine that low visibility would hamper the safety of students and bus operations. The district does have such a policy contained in Administrative Regulation 3543.

All drivers who operate commercial vehicles (school buses are considered commercial vehicles by the definition in California Vehicle Code), must be enrolled in the DMV's Employer Pull Notice Program (EPN). The Human Resource department enrolls drivers and sends the reports to the transportation supervisor. He signs them as required and dates them and places them in the driver training files. The transportation department has a current EPN on each school bus driver, however there may be other individuals in the district who drive district vehicles or transport students who could also be enrolled. Teachers, coaches, maintenance workers, and other district employees may have a driving record that would expose the district to undue liability. Even though teachers and coaches

are required to submit a DMV record annually, there could be infractions or other events through the year that the district should know.
The human resources department enrolls, monitors, and manages the district's compliance with the Federal Department of Transportation (DOT) Drug and Alcohol Testing for commercial drivers. All school bus drivers must be enrolled in the pool, including any other commercial driver in the district. The transportation supervisor is notified of persons selected for random screening. The random tests occur in the district office after the drivers' morning routes. The transportation supervisor is also in the testing pool and would be notified by another individual in the district if his name appeared on the random testing list.
As per California Vehicle Code Section 34520.3, any employee who drives a student as their primary duty must also submit to a similar but separate drug and alcohol testing program. The district has one individual who drives a special education student daily to and from San Diego. This individual must be enrolled in a drug and alcohol testing program.
The route sheets only consist of the bus stop location and the time of the bus stop. Although many operations include driving directions (right and left turns), the district reported that they spend time training new drivers, so they know the driving directions. The route sheets list in red the location of bus stops where the driver must physically escort students across the street. At the beginning of the year, this may be a little disjointed, as the district does not register their riders, and does not always know where they live or if they need to cross the street. These are high school students, so one would assume that they are cautious enough, but the district should ensure that they are activating the red crossover lights, and that traffic has stopped when students are loading or unloading buses.
Students are required to display their student identification when boarding the bus.
As noted previously, there is a special education parent flyer that includes important service and safety information for them.
Some teachers and coaches drive students in a district vehicle occasionally for field trips or athletic trips. These drivers do not receive any defensive driver training from the district relative to these larger vehicles.
Although there are a small number of special education students who are transported by the department, it would be beneficial if the special education department provided an annual training for all drivers (as there are other special education students on the general education bus routes). This training should include a description of disabilities, the behavior that can be exhibited by such disabilities, and strategies to mitigate those behaviors on a bus.

Recommendations

The district should:

1. Ensure that the Transportation Safety Plan is updated regularly.
2. Enroll any teacher, coach, or district employee who drives a district vehicle in the DMV EPN program.

3. Enroll the non-school bus driver who transports a special education student daily to San Diego in a similar but separate drug and alcohol testing program.
4. Develop defensive driver training for teachers and coaches who drive vans.
5. Have the special education department provide annual training for school bus drivers.

Appendix

Appendix 1- Central Union High School Levels of Cleaning and Time Breakdown

Most Basic Cleaning

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Blue	193	370	177
Red	202	370	168
Dary Grey	0	0	0
Dark Green	210	370	160
Lime Green	229.6	370	140.4
Yellow	204	370	166
Orange	198	370	172
Grand Total			**983.4**

Basic Cleaning

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Blue	238	370	132
Red	256	370	114
Dary Grey	0	0	0
Dark Green	258	370	112
Lime Green	285	370	85
Yellow	253	370	117
Orange	221	370	149
Grand Total			**709**

Basic Cleaning Plus Touch Points

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Blue	290.5	370	79.5
Red	309.5	370	60.5
Dary Grey	0	0	0
Dark Green	314.5	370	55.5
Lime Green	345	370	25
Yellow	312	370	58
Orange	248.75	370	121.25
Grand Total			**399.75**

Recommended Minimum Ongoing Cleaning

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Blue	383.5	370	-13.5
Red	382	370	-12
Dary Grey	0	0	0
Dark Green	398.5	370	-28.5
Lime Green	443.5	370	-73.5
Yellow	398.5	370	-28.5
Orange	294	370	76
Grand Total			**-80**

District Standard Cleaning

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Blue	372	370	-2
Red	615	370	-245
Dary Grey	0	0	0
Dark Green	514	370	-144
Lime Green	555	370	-185
Yellow	514	370	-144
Orange	472	370	-102
Grand Total			**-822**

Appendix 2- Southwest High School Levels of Cleaning and Time Breakdown

Most Basic Cleaning

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Tiel Blue	198	370	172
Green	190	370	180
Yellow	198	370	172
Red	248	370	122
Pink	115	370	255
Gold	120	370	250
Orange	0	0	0
Purple	202	370	168
Grand Total			**1319**

Basic Cleaning

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Tiel Blue	246	370	124
Green	236	370	134
Yellow	246	370	124
Red	310	370	60
Pink	138	370	232
Gold	145	370	225
Orange	0	0	0
Purple	260	370	110
Grand Total			**1009**

Basic Cleaning Plus Touch Points

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Tiel Blue	302.5	370	67.5
Green	290	370	80
Yellow	302.5	370	67.5
Red	387.5	370	-17.5
Pink	185	370	185
Gold	200	370	170
Orange	0	0	0
Purple	324	370	46
Grand Total			**598.5**

Recommended Minimum Ongoing Cleaning

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Tiel Blue	386.5	370	-16.5
Green	370	370	0
Yellow	386.5	370	-16.5
Red	511.5	370	-141.5
Pink	215	370	155
Gold	240	370	130
Orange	0	0	0
Purple	427	370	-57
Grand Total			**53.5**

District Standard Cleaning

Route Color	Cleaning Time (Minutes)	Functional Time / Shift (Minutes)	Time Left in Shift (Minutes)
Tiel Blue	502	370	-132
Green	480	370	-110
Yellow	502	370	-132
Red	682	370	-312
Pink	245	370	125
Gold	300	370	70
Orange	0	0	0
Purple	610	370	-240
Grand Total			**-731**