



# Using Field Data to Improve Labor Costs

January 19th 2023

## Labor Data Discovery

Over the last 60 days, we have **conducted calls with growers and harvest management companies representing more than 250,000 acres of table grapes, apples, citrus, stone fruit, and blueberries** to understand what are the common practices and metrics tracked in the field.

# Today's Focus

We hope you find a clearer understanding of the themes we have identified in grower labor data usage and creative ways growers have tackled these challenges.

- Grower Research Stats
- Data Challenges
- Observed Grower Solutions

## Growers by the Numbers

9 Out of 10

while

9 Out of 10

**Growers believe their organization  
used data effectively**

**Growers felt they could be doing more  
to make data-driven decisions**





More than **95%** of interviewees felt reports with labor data are the most important type of data to receive daily

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**8 out of 10** interviewees felt the effort required to create valuable labor reports inhibited their ability to use data effectively.

## Growers by the Numbers

5 Out of 10

**Growers believe their organization  
have an effective data  
communication strategy**

and

8 Out of 10

**Growers felt the preferred method  
of data delivery must support  
mobile access**



## Growers by the Numbers

9 Out of 10

Growers require some level of manual computation to generate useful data

and

5 Out of 10

Growers felt labor data was too delayed for the field to effectively act upon it

**“How do we better leverage the data? How do we speed this up and not have to massage all the data?” - Jon Morrill, CFO FirstFruits**

## Growers by the Numbers

7 Out of 10

Growers believe cost to be the driving factor behind their decisions

while

5 Out of 10

Growers feel they cannot control their labor costs without a negative impact



## Business Implications

Growers consistently highlighted significant business implications in relation to their data practices. The most common are listed below.

- Emotional decisions that are subjective to personal experience
- Recency bias or acute focus on the present
- Lost in the details
- Lack of rigidity and consistency in how you take action which leads to inefficiency in decision making
- Lack of action & accountability

# Data Challenges

During our analysis, we found growers excelled in data collection, however the root cause of data challenges stemmed from difficulty in putting data to work effectively. We found these three underlying themes.

## 1. Readable Data

Growers have the data, but it is slow, and in a format that makes it difficult to utilize.

## 2. Repeatability

No standard operating procedures of how to act/communicate when metrics are outside of expectations.

## 3. Single Point of Failure

Growers rely on individuals and manual process to generate information, slowing down the ability to drive change in labor performance.

# Observed Grower Solutions

The ideas and examples presented were identified through grower conversations. PickTrace has aggregated best practices across growers that address challenges with making data-driven decisions.

## 1. Readable Data

## 2. Repeatability

## 3. Single Point of Failure

### 1. Define Daily Metrics

Establish clear metrics and standardize their calculation. Identify benchmarks and thresholds that can be used to drive action.

### 2. Create Standard Operating Procedures

Define your procedures. How can your organization consistently act based on the current metrics?

### 3. Enable the Field

Enable field level management to make decisions independently through the use of real-time benchmarking and thresholds that align with your goals.



## 1. Defining Daily Metrics

Through our conversations and onsite visits, we identified a gap in tracking standardized metrics that can be easily utilized. **We identified a best practice among growers who established consistent and easily computed metrics and benchmarks that had clear distribution channels.**

# Piece Rate Wage Per Hour

Theme: Defining Daily Metrics

## Data Recommendation: Piece Rate Wage Per Hour

**Process Recommendation:** Use piece rate wage per hour reports on a daily cadence to empower crew bosses and managers to standardize assessing crew performance

## Actions/Results:

- Adjust the piece rate for the current day (rate may be too low)
- Move people around in the crew (put low producers next to high producers)
- Focus more training on low producers
- Easier to justify employment actions

Crew	Location	Employee Alt ID	Employee Name	Site	Employer Type	Paid Hours	Gross Pay	Piece Pay	Wage Adjustment	Job	Head Count	Piece Rate Wage/hr	
Crew	Location	Employee Alt ID	Employee Name	{1}	{1}	{1}	130.31	2596.85	2596.85	48.85	{1}	20	19.93

Crew	Location	Employee Alt ID	Employee Name	Site	Hourly Rate	Pieces	Piece Rate	Unit Type	Paid Hours	Gross Pay	Piece Pay	Wage Adjustment	Job	Head Count	Piece Rate Wage/hr
Jose Sanchez's Crew	12 Gala	50971	Uriel Gutierrez Godinez	Springday	14.49	4.50	28.00	BINS	6.52	126.00	126.00	0.0	Piece Harvest	1	19.34
Jose Sanchez's Crew	12 Gala	52036	Emanuel Gomez Gutierrez	Springday	14.49	6.00	28.00	BINS	6.45	168.00	168.00	0.0	Piece Harvest	1	26.05
Jose Sanchez's Crew	12 Gala	53203	Ilse Arteaga Valle	Springday	14.49	3.00	28.00	BINS	6.6	95.63	95.63	11.63	Piece Harvest	1	14.49
Jose Sanchez's Crew	12 Gala	52756	Abdael Delgado Mendoza	Springday	14.49	7.00	28.00	BINS	6.78	196.00	196.00	0.0	Piece Harvest	1	28.90
Jose Sanchez's Crew	12 Gala	51904	Abraham Sanchez Gutierrez	Springday	14.49	6.00	28.00	BINS	6.45	168.00	168.00	0.0	Piece Harvest	1	26.05

# Cost Per Acre per Task

Theme: Defining Daily Metrics

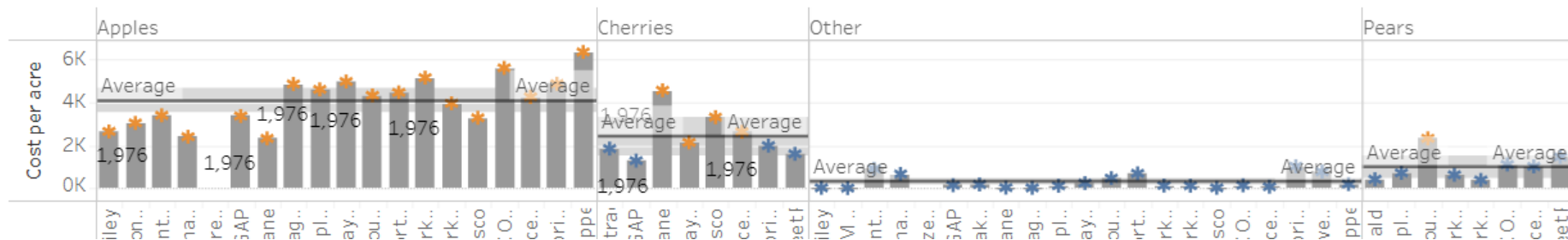
**Data Recommendation:** Cost per acre, tasks, sites, locations, and varieties.

**Process Recommendation:** Establish a consist process of measuring cost per acre by task, broken out by crop, ranch, and variety.

## Actions/Results:

- Standardized cost that enables comparisons
- Easy to compare cost against budget per acre
- Quickly identify tasks that have inflated costs when compared with like locations
- Easier to justify changes in field actions

Crop and Site





# Introduce Percentiles

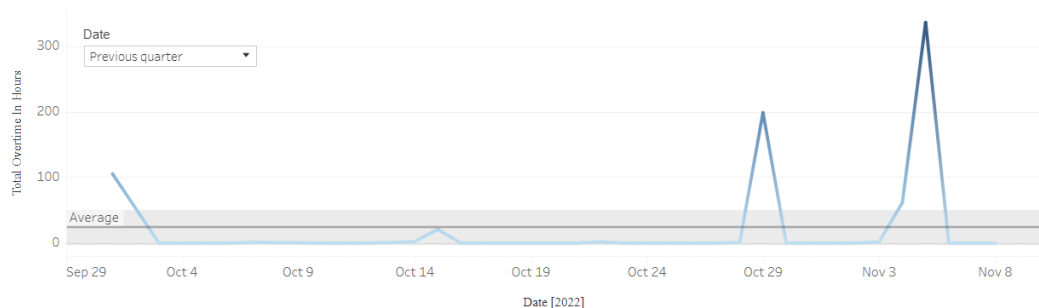
Theme: Defining Daily Metrics

**Data Recommendation:** Overtime, Wage Adjustments, Turnover

**Process Recommendation:** Use percentiles across data sets focused on problem themes to highlight anomalies in your ranches, locations, crews, jobs

## Actions/Results:

- Highlights problem areas within themes
- Reduces information overload
- Faster decisions through focus
- Identifies both over and under performances



Values above the 90th percentile across categories

Site1		Location1		Crew1		JOB	
GAP	292.9	V Pink Lady	262.5	Daniel Sanchez's Crew	310.5	Hourly Harvest	430.5
Pasco	172.1	8 Pink Lady	100.5			General	126.6
		A Granny Smith	69.8				
		E Fuji	57.2				

## 2. Create Standard Operating Procedures

**A best practice is identified in documenting standard operating procedures for each tracked metric.** This resulted in more than \$300,000/yr savings for a pure FLC based grower in California.

# Ex: Establish Training Crews Using Benchmarks

Theme: Create SOP's

**Data Recommendation:** Crew Performance, Minimum Wage, Percentiles

**Example Process Recommendation:** Establish training crews and use benchmarking to identify individuals that require placement into training crews.

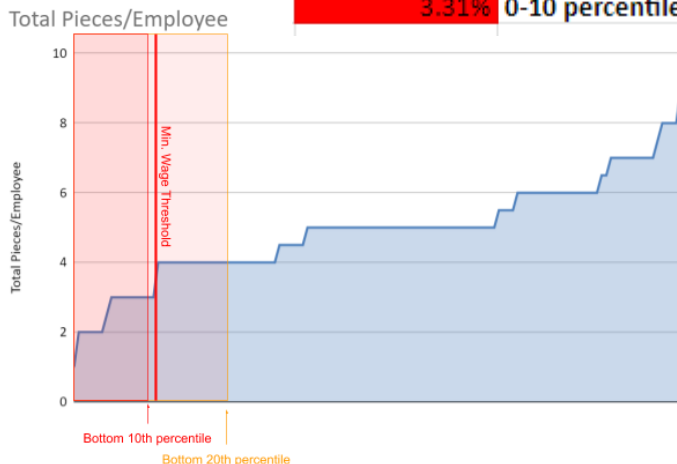
## Actions/Results:

- Use training crew as a motivator for bottom performers
- Bad process may be identified during benchmarking process
- Clearer expectations throughout workforce

## Example Benchmarking

Thresholds	Bottom 2-5%
	2 days of less than minimum wage
	New to picking/job
Requirements	Must stay within crew for 3 days
	No absences
	Training days must be consecutive
	Must be on time each day
Outcomes	Above minimum wage by 2nd day of training crew
	Upward trend in piece rate work for 1 week
	3 day average is above the bottom 20th percentile

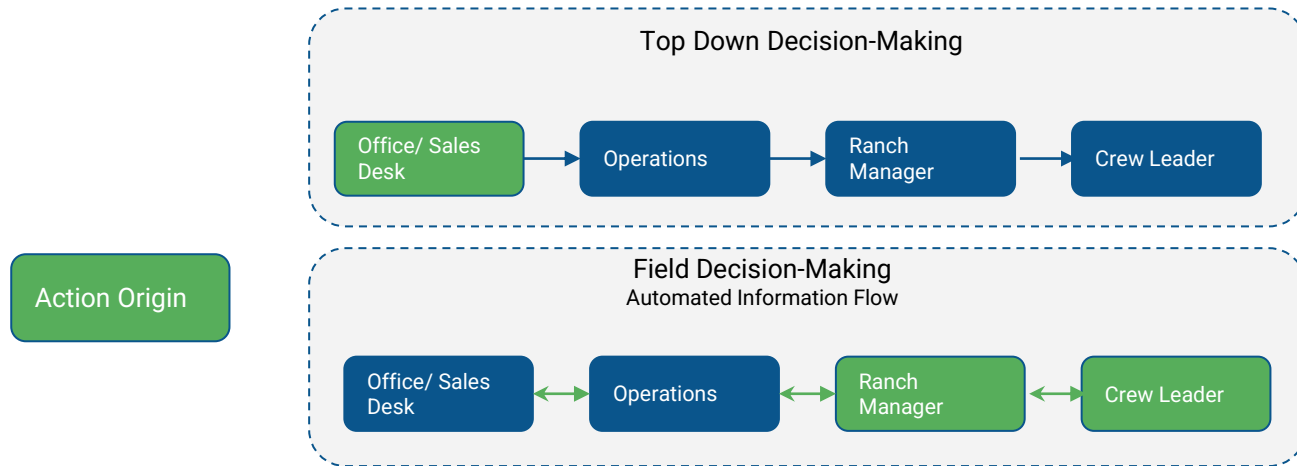
Contribution	Percentile
29.96%	80-100 percentile
21.65%	60-80 percentile
20.79%	40-60 percentile
16.50%	20-40 percentile
11.26%	0-20 percentile
3.31%	0-10 percentile





### 3. Enable the Field

A best practice identified is to establish automated and consistent reporting to field-level management combined with SOP's to drive semi-automated action.



# Enabling Field Management: Labor Performance Analysis

Theme: Enable the Field

**Data Recommendation:** Crew Performance Summary Reports, Historical Benchmarks, Hour Based Budgets, etc.

**Process Recommendation:** Enable field level management to make decisions independently through the use of real-time *localized* benchmarking and thresholds that align with your goals.

## Actions/Results:

- Present data in a way that is easier for your field team to act upon
- Current internal processes will be challenged
- Field will bring up questions and observations that you have never had before
- Standardized thresholds enable field to be more autonomous in addressing challenges

D Gala 14.4 Acres 1/9 - 1/15						
Jobs	Total Cost	Cost Budget	Cost Per Acre	Total Hours	Hours Budget	Hours Per Acre
Piece Pruning	\$7,862.56	\$6,000	\$546.01	396.48	400	27.53
Hourly Pruning	\$479.81	\$500	\$33.32	27.2	35	1.89
Total	\$8,342.37	\$6,500	\$579.33	423.68	435	29.42

# Crew Comparisons

Theme: Enable the Field

**Data Recommendations:** Crew summaries, production, headcount, actual costs

**Process Recommendations:** Enable your Field/Ranch Managers to address field issues with confidence using crew comparison reports (in addition to field observation), instead of waiting on the office.

## Actions/Results:

- Build crew comparison reports that highlight your defined metrics and enable enforcement of previously defined SOPs
- On a daily or weekly cadence, review crew comparison reports to identify anomalies that fall outside of horticulture explanations
- Increase in field management personnel asking questions and challenging established data flows

Date	Site	Block	Job	High Wage Per Hour	Low Wage Per Hour	Avg Wage Per Hour	Piece Rate	Piece Cost Per Acre	Crew Name	Crew Size	Hours	Pieces	Pieces per Person
1/5/22	Coyote	A Gala	Piece Pruning	\$18.25	\$5.08	\$9.51	\$1.10	\$27.27	Juan Martinez	11	69.9	595	54.1
1/5/22	Coyote	A Gala	Piece Pruning	\$19.31	\$8.81	\$14.95	\$1.10	\$55.87	Raul Arroyo	16	89.1	1,219	76.2
1/5/22	Maple	B Organic Pears	Piece Pruning	\$18.64	\$10.47	\$15.34	\$4.00	\$43.89	Jaime Lazo	11	69.5	271	24.6
1/5/22	Maple	B Organic Pears	Piece Pruning	\$22.94	\$13.41	\$18.18	\$3.25	\$26.84	Ernesto Lazo	7	37.3	204	29.1

# Business Outcomes

Below are captured real outcomes and true stories of growers acting on their labor data

- Season action
  - Save hundreds of thousands from minimum wage adjustments
  - Total overtime cost represented just .12% of total gross payroll costs by creating competition within the foreman - tracked information accurately so that they can have bragging rights.
- Same day action
  - Reduced cost per piece by 38.5% by catching performance anomaly
  - Identified bottleneck and prevented downstream delays



Thank you!

Questions & Comments? Feel free to contact me!

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# Labor Performance Metrics

A list of metrics used by surveyed growers. Not all are supported by PickTrace today.

Metric	Calculation
Pieces Per Crew*	Total Pieces by crew
Pieces Per Hour*	Total Pieces / Piece Hours Worked
Cost Per Piece*	Total Labor Cost / Total Pieces
Cost Per Acre*	Total Cost / Total Acres
Avg. Pieces Per Employee*	Total Pieces / Total Piecework Headcount
Time Per Piece*	Total Piece Hours / Total Pieces
Avg. Pieces Per Plant	Total Pieces / Total Plants
Duration	Total Hours
Labor Cost*	Total labor cost (hourly+piece+adjustment)
Start Time	Timestamp of the employee's first check in
Minimum Wage Adjustment*	Unearned compensation paid to ensure piecework employees receive the associated minimum wage
Piece Rate Wage Per Hour*	(Piece Rate x Pieces) / Total Piece Hours

\* Indicates a more commonly tracked metric

## Labor Performance Metrics Continued

Metric	Calculation
Total Employees	Sum of All Employees, by employer and employment type
Total Employees Missed Minimum Wage	Sum of All Employees that missed minimum wage
Total Piece Cost	Sum of all Piece Jobs Pay Out ((Piece Rate x Pieces) + Wage Adjustment + Piece Break) including Piece Breaks.
Total Hourly Cost	Sum of all Hourly Jobs Pay Out (Hourly Rate x Hours) including Breaks
Avg. Pieces / Employee	Total Units / Total Employees
Cost Per Plant	Labor Cost / Plant Count
Projected Cost Per Acre	Cost Per Piece x Unit Count / Acres
Cost Per Employee	Labor Cost / Total Employees
Total Hours Per Acre	Total Hours / Acres

## Labor Performance Metrics Continued

Metric	Calculation
Total Piece Hours Per Acre	Total Piece Hours / Acres
Total Hourly Hours Per Acre	Total Hourly Hours / Acres
Units Remaining	Pieces - Plant Count or Pieces - Estimate
Percent Complete	Pieces / Plant Count or Pieces / Estimate
Avg. Worked Hours by Worker in a day	Total Hours / Total Days Worked
Total Days Worked	Sums number of days an object such as location or job or employees worked.
Overtime Hours	Total Paid Hours - OT Thresholds
Plants Per Unit	Number of plants per unit.
Minimum Units Needed	$((\text{Minimum Wage} \times \text{Avg. Hours a day worked per piece worker at Location A}) / \text{Piece Rate})$
Total Cost + FLC Premium	Total Cost + FLC Premium (35% x Total Cost)
Avg. Employee per Day	Total Employees / Total Days Worked

# Harvest Management Report Examples

A list of harvest reports used by surveyed growers. Not all are supported by PickTrace today.

Report Examples	Descriptions
FLC Production Requirement	Ability to set a standard for what FLCs need to complete using historical and crew performance data.
Percentage Complete	Access percentage complete to properly manage crop load and crew size while communicating with sales desk.
Internal Historical Benchmarks	Benchmarks to compare how crew or location is performing compared to previous years metrics.
Crop Load Estimates	Crop load estimates and location characteristics to calculate percentage complete and days left.
Production Reconciliation	Compare packout vs what was actually picked.
Employee Metric Tracking	Access individual employee performance metrics, especially for new hires to evaluate training needs and overall performance.
Workforce Percentile by Crew	A performance report focused on individual employee ranking by percentile showing both in crew ranking and total workforce ranking.
Labor Cost vs Sales Break Even Points	Use break even points with actual costs and sales data to know when to stop or continue with specific variety/pack style.
OT & Doubletime Analysis	Analyze overtime and doubletime data in order to adjust crew and employee schedules relevant to current costs/budgets.
OT & Doubletime Analysis on Crew Retention	Analyze overtime and doubletime data as it relates to crew retention.
FLC Production Requirement	Ability to set a standard for what FLCs need to complete using historical and crew performance data.

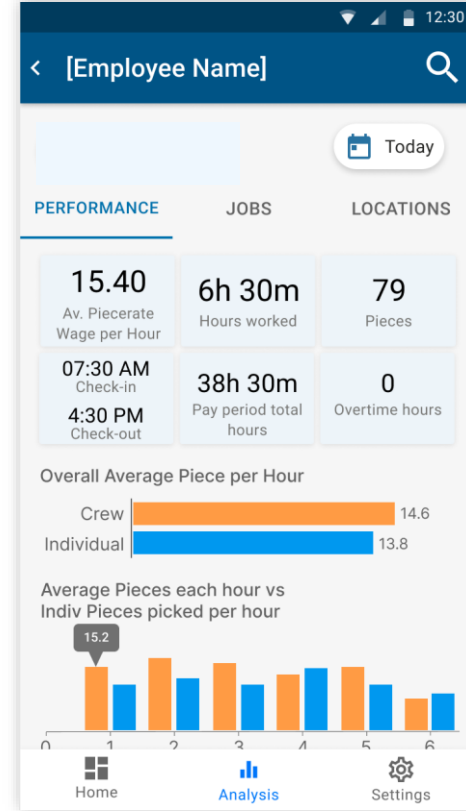


## PickTrace Solution

The following slides are a glimpse into how PickTrace intends to improve our existing Insights App based on the findings we have found. All of the images below are purely mockups. These are not intended to represent current product or future final created products.

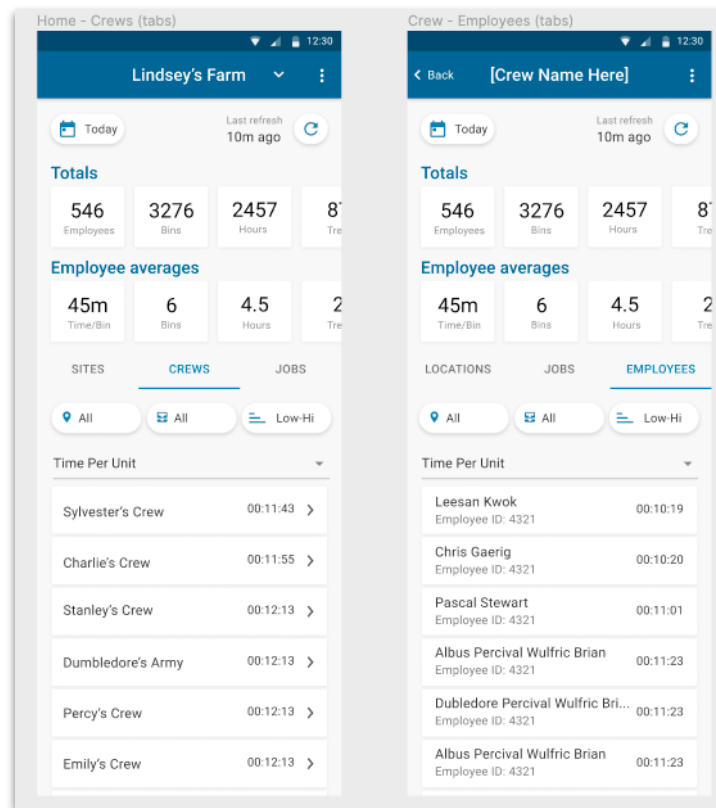
# Employee Benchmarking

Mockup of insights app improvement enabling employee level performance review and benchmarking.



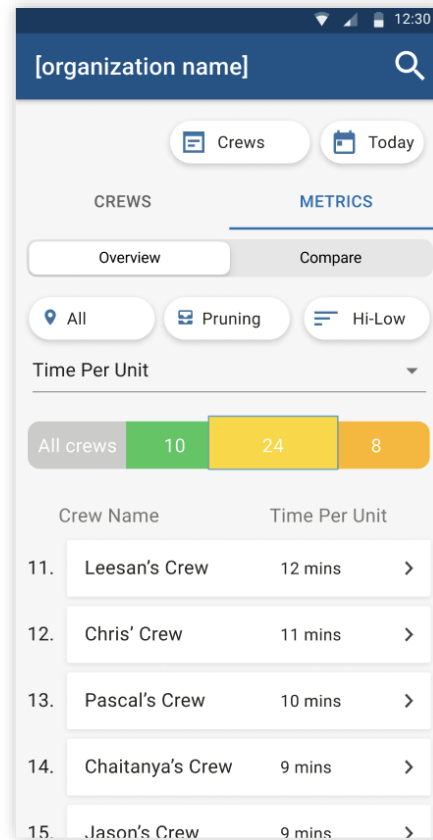
## Crew Comparisons

Mockup of insights app improvement with crew level metric tracking.



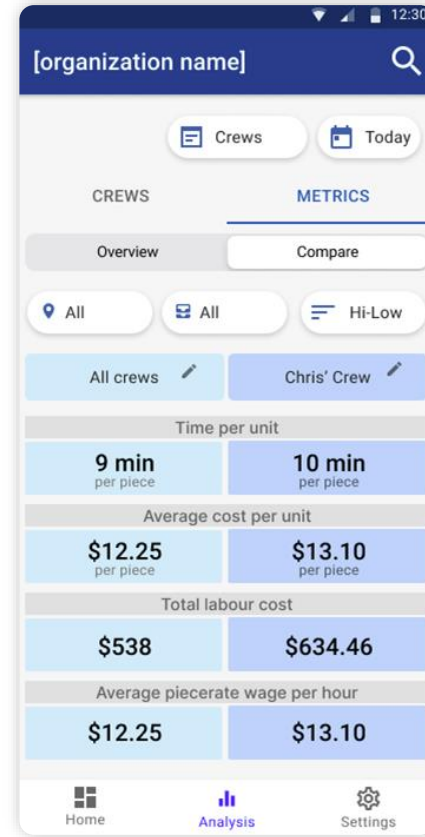
## Crew Comparisons

Mockup of insights app improvement with cross-crew level analysis. Metric comparisons across all crews.



## Crew Comparisons

Mockup of insights app improvement with crew side-by-side comparisons.





# Enhanced Reporting

New overhaul of office side reporting engine, introducing a highly configurable reporting tool.

Performance Report

ALLH2ANON-H2A

ALLPIECEWORKNONPIECEWORK

Rows and Sections

?

Create Rows By

×

^

Employee ID

Employee Alt ID

Employee Title

Hourly Rate

Pieces

Piece Rate

Unit Type

Work Type

?

Sort Rows In Sections By

^

▼

×

Date

☒ Sort Ascending

?

Column Visibility

▼

Configuration

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☒ Include Grand Total

?