



Strong Workforce Program

Information & Communications Technologies

Regional Advisory Committee Proceedings

Friday, April 5th, 2019 | 9:00 AM - 12:00 PM
 Hacker Lab: 2533 R Street, Sacramento, CA

Introduction

California is investing in the [Strong Workforce Program](#) to help fill the growing demand for “middle-skill” positions that require more than a high school diploma, but not necessarily a 4-year college degree. One million more associate degrees, certificates, or industry-valued credentials will be needed by 2025 to meet the projected industry demand.

The objective of the Strong Workforce Program is to offer more [Career Education](#) (CE) opportunities and to improve the outcomes of CE programs for both students and employers. The ability to connect the needs of students, educators and employers remains critical to building a strong regional workforce and a competitive economy while providing an opportunity for workers to gain skills and income mobility.

With these objectives in mind, the Los Rios Community College District, in partnership with Valley Vision, and in collaboration with Sierra College and the Yuba Community College District, is investing a portion of its Strong Workforce allocation to form Regional Advisory Committees. The objectives of Regional Advisory Committees are to build a strong partnership between educators and employers that:

- Provides timely information on skills gaps and workforce needs;
- Improves the efficiency of the advisory process for educators and employers;
- Reflects a regional view of workforce needs and assets;
- Provides opportunities for more systemic engagement.

Regional Advisory Committees will help inform decisions on needed investments and enhancements for CE programs.

In partnership with the **Los Rios Community College District**—and in collaboration with Sierra College and the Yuba Community College District—Valley Vision is convening Regional Advisory Committee meetings for Career Education (CE) across multiple industry sectors. This project is a [Strong Workforce Program](#) investment.

Regional Advisory Committees are envisioned to help provide timely information from employers on workforce needs; to improve efficiency of the CE advisory process for educators and employers; and to broaden opportunities for more systemic engagement.

The Strong Workforce regional advisory efforts are linked to Valley Vision’s partnership with the region’s four workforce innovation boards on a **Regional Planning** process to help streamline and strengthen employer participation in guiding education and workforce training investments. The regional planning initiative includes a focus on the [Future of Work](#) and how the digitalization of jobs and skills will impact the region’s workforce.

These projects support the [Capital Region Workforce Action Plan](#). Funded by JPMorgan Chase & Co., regional industry cluster research and analysis was conducted by Valley Vision in partnership with the Los Rios Center of Excellence. Workforce assessments identify critical **skills gaps**, **high-demand occupations**, and **investments** needed to build a skilled and competitive workforce.

Overview

The fall regional advisory committee meeting for the Information & Communications Technology (ICT) sector was held on April 6, 2019 at Hacker Lab. The focus of the advisory meeting is to ensure that our region has enough employees for industry needs, with educational program development that is influenced by industry partners.

Additionally, faculty reviewed curriculum and ICT job descriptions within varying industry sectors to discuss challenges programs face in aligning skill needs with industry. This session was conducted within the following breakout groups.

- Networking & Cybersecurity
- Office Applications & Web Development
- Programming & Database

Information and Communication Technology Cluster Definition

Information and Communications Technology (ICT) is the convergence of computer networking and telecommunications. The ICT umbrella organizes technologies related to telecommunications, computing, networks and other high-tech fields. ICT job functions impact all businesses, regardless of industry type or size of employment. However, there are a core set of industries primarily engaged in ICT activities that can be used to define the industry cluster. Subsectors include:

- *ICT Component Manufacturing*
- *System Programming, Design, Management and Training Services*
- *System Repair and Maintenance Services*
- *Telecommunication/Data Processing Center*

Source: Center of Excellence

Meeting Proceedings

Introduction & Welcome

Dr. Markus Geissler, Deputy Sector Navigator for ICT-Digital Media for the Greater Sacramento region, began the meeting at 9:00 am with an overview of the day and introductions to our guest speakers. Gina Lujan, the Founder/CEO of Hacker Lab, followed with an introduction to their new space and highlighted their work on workforce and economic development within the community.

ICT-Enabled Public Sector & Community Innovation

Ash Roughani, the City of Sacramento's Office of Innovation and Economic Development Innovation Program Manager, shared that the public sector is increasingly looking for innovative strategies and technology to communicate complex government information to the masses. He referenced public agency websites such as the [US Department of Veterans Affairs](#) that have hired private sector agencies to help design more user friendly and accessible platforms. Also, the US Digital Services unit works to improve/simplify federal websites' digital services and is standardizing federal agency platforms accordingly. Roughani highlighted the City of Sacramento's early adoption of Verizon 5G and this service will eventually be available in all of the City's public parks for free. The City has also developed the Sacramento Urban Technology Lab that supports technology development and demonstration throughout all 8 districts in Sacramento. Roughani ended his presentation by reminding the audience that technology is about people, process, and culture. To build better technology he suggests we consider the following.

1. API First – ensure that data is available and accessible
2. Lean & Agile Development – eliminate waste and measure impact constantly, updating technology frequently to incorporate new measurements
3. Human-Centered Design – process to ensure that your technology meets the needs of the people using it
4. Open Source

Industry & Innovation: Pinpoint Aerial Solutions

Nicholaus Helwig, owner of Pinpoint Aerial Solutions, shared how ICT is used in agriculture and how it impacts his company. Pinpoint Aerial Solutions uses drones to collect multispectral imaging data to break down farming management zones and save farmers money on fertilizer, pesticides, and workload. He shared that his company typically seeks employees directly from high school and college and that Federal Aviation Administration regulations and understanding the technology separately from mainstream uses are his main staffing challenges. These are important considerations for educators to assess when developing career technical education programs.

Education & Innovation: Keeping Pace with Change?

Hank Preston III, a DevNetOps Evangelist from Cisco, shared the history and role changes of network engineers due to the rapid pace of innovation growth. He emphasized the importance of network services for companies as the structures of these networks continue to change. He also shared many network engineer resources that can be accessed from his [PowerPoint Presentation](#).

Industry Input Breakout Groups

Within each breakout group, groups were given different job descriptions from local companies. Each group was asked to assess whether their programs provided avenues for students to acquire the required skills and certifications of the job posting. Each group also assessed curriculum from varying school sites. Below are the notes from each breakout group.

Networking & Cybersecurity:

Technical Skills Identified	Soft Skills Identified
Health Informatics	Customer Service
Quality Management	Project/Team Management
Privacy Laws	Stress Management
VM Ware	Time Management
Microsoft	Basic Business Coordination
Basic IT Certification	Attention to Detail
Cross Platform	Analytical Thinking
Legacy Tech	Confidentiality
Operating Systems Network	Privacy Laws
Troubleshooting	Vendor Management
Installation & Configuration	
Web Development	
Vendor Management	
Industry Sectors Identified	
Health	Law
Network/Tech	Printing
Public Service/Government	Education
Agriculture	Construction
All Sectors	

Additional Job Description Notes:

- Job description requirements do not always properly align with the correct degree/certification – HR departments need to be better informed to designate the correct requirements to the skills they are looking for
- Technology is growing at a rapid rate, we need more industry partners to support educators on a more frequent basis.

Curriculum Review Notes:

- American River College's Network Administration Essentials program (2005) is outdated.
- Sacramento City College and American River College need to evaluate programs and course description continuity across Los Rios community College District
- It would be beneficial to see examples of stacks of microcredentialing programs in our region

Office Applications & Web Development:

- SMUD: Awareness of base IT framework
- Entry level employees should have basic understanding of front-end/back-end interaction
- Programs should teach soft skills such as teamwork and IC3 digital literacy certifications
- Business info worker: statewide branded pathway; 500 K job requiring office and customer service skills; business English offered at 60 colleges
- Foundational programs: Word, Excel, PowerPoint, Google

Programming & Database:

- Students need to demonstrate work experience, as noted in one of the job descriptions.
 - GitHub > start work experience early
 - Source code management is a recommended skill for IT professionals
 - Contributing to the Open Source community is important
 - A Roseville HS student posted his cybersecurity competition scoring engine for Linux to GitHub
 - GitHub profile and webpage can become a resume!
- CSUS recommended agnostic course descriptions, so that new tools and programming languages can be introduced as they become available
- Industry partners noted the need for potential employees to work collaboratively with technical and non-technical staff
- Breadth/Scope of languages (Python, Java, Arduino, etc.)
 - Don Isbell inquired about the tradeoffs of changing languages during a course
- Communication is an important soft skill – potential employees need to translate user needs to technology solution
- Community college and university faculty discussed the need to reinforce persistence and grit in high school, as students will need the soft skill for advanced degrees
- CSUS faculty noted that data visualization is a skill that should be taught in high schools
- Art integration as a way to create more diverse interests in ICT courses
- As noted in the industry sectors above, it is important to make students aware of the breadth of careers requiring computing
- Nepris can be used as a tool to connect industry partners to ICT classrooms
- CS + X: makerspace partnership with an art focus
 - STEM equity at SCC
 - Training/best practices for makerspace
 - IoT as a Makerspace

Closing Remarks + Next Steps

The next advisory meeting will be held at the Sacramento County Office of Education on Friday, November 1st, 2019.



ADVANCING INNOVATION WITH ICT

ICT Regional Industry Advisory Committee Meeting

Friday, April 5th, 2019 | 9:00 AM - 12:00 PM
 Location: Hacker Lab, 2533 R Street, Sacramento, CA



Golden Sierra



City of SACRAMENTO



AGENDA

- 8:30-9:00 AM **Registration & Networking**
- 9:00-9:10 AM **Welcome & Overview**
Markus Geissler, ICT/Digital Media Deputy Sector Navigator, Greater Sacramento Region
- 9:10-9:30 AM **Innovation in the Public Sector**
Ash Roughani, Office of Innovation & Economic Development, City of Sacramento
- 9:30-9:50 AM **Industry and Innovation: Agriculture**
Nicholaus Helwig, Pinpoint Aerial Solutions, Owner
- 9:50-10:15 AM **Education & Innovation: Keeping Pace with Change?**
Hank Preston III, Cisco DevNet, Developer Advocate
- 10:15-10:30 AM **Networking Break**
- 10:30-12:00 PM **Industry Input Breakout Groups**
 - Networking & Cybersecurity - Coleen Morehead
 - Office Applications & Web Development - Tammy Cronin
 - Programming & Database - Jared Amalong
 - Review Current Job Postings (skills in demand)
 - Review Curriculum Proposals/Existing ICT Curriculum

NEXT MEETING: Friday, November 1st, 2019 at 8:30-12:00 PM
 SCOE, 10474 Mather Blvd, Mather, CA 95655



Hacker Lab

ADVANCING INNOVATION WITH ICT

ICT Regional Industry Advisory Committee Meeting

Friday, April 5th, 2019 | 9:00 AM - 12:00 PM

Location: Hacker Lab, 2533 R Street, Sacramento, CA

PARTICIPANT LIST

First Name	Last Name	Job Title	Organization
Jared	Amalong	Career Technical Education Coordinator	Sacramento County Office of Education
Angela	Anderson	Director of School Engagement	Project Lead the Way
Kevin	Anderson	Professor	Sacramento City College
Tina	Angell	Career Technical Education Teacher	Placer County Office of Education
David	Bayne	Teacher	Pioneer High School
Michael	Bell	Advanced Manufacturing DSN	California Community Colleges
Cameron	Bennett	ICT Teacher	Ponderosa High School
Herb	Bennett	Chief Training Officer, Founder	Veterans Re-Entry Training Center
Ebony	Benzing	Research Manager	Center of Excellence
Chris	Bombard	Teacher	Western Placer Unified School District
Tim	Choi	Planner	County of Sacramento
Angela	Cordell	Business & Entrepreneurship DSN	California Community Colleges
Brad	Crockett	Teacher	RJUHSD
Tammy	Cronin	Project Leader	Valley Vision
Henry	Davis	Curriculum Pathway Specialist	Siatech
Yzabelle	Dela Cruz	Project Associate	Valley Vision
Walter	Di Mantova	Creator	Generative Futures Lab
Debra	DiBiase	Director of Opportunity Youth Programs	SiaTech
Sonia	Duenas	Project Associate	Valley Vision
Marjorie	Duffy	Professor, CIS	Cosumnes River College
Markus	Geissler	ICT/Digital Media DSN	California Community Colleges
Wendy	Ghyselinck	Teacher	Woodcreek High School
Sean	Glantz	Teacher	Da Vinci Charter Academy, DJUSD
Terri	Griffin	Career Specialist	Placer County Office of Education
Crystal	Grooms	Career Technical Education Coordinator	Woodland Joint Unified School District
Melissa	Hale	Teacher	Cosumnes Oaks High School
Brittanie	Hancock	Employment Services Specialist	Yolo County Health and Human Services
Nicholaus	Helwig	Owner	Pinpoint Aerial Solutions

Julie	Holt	Health DSN	California Community Colleges
Todd	Higley	Teacher	RJUHSD
Jerry	Huang	Career Technical Education Teacher	Sacramento New Technology High School
Sue	Huddard	Career Technical Education Program Specialist	Elk Grove Unified School District
Don	Isbell	ICT Instructor	Placer High School
Abdelaziz	Kaina	Assistant Professor	Sacramento City College
Emma	Koefoed	Project Associate	Valley Vision
Bryan	Krofchok	Professor, Computer Science	Sacramento City College
Doug	Lewin	High School Teacher	Vista Del Lago, FCUSD
Myra	Little	Professor, Computer Information Science	Sacramento City College
Aisha	Littlejohn	Employment Services Specialist	Yolo County HHSA
Gina	Lujan	CEO	Hacker Lab
Salony	Mehrok		
Theresa	Milan	Dean, Workforce & Economic Development	Los Rios Community College District
Tyler	Millsap	Principal	Da Vinci Charter Academy, DJUSD
Coleen	Morehead	Director of Education and Workforce Alignment	Align Capital Region
Arij	Mousa	Computer Program Director	Placer School for Adults
Azizi	Penn	Software Developer	CA DOJ
Carrie	Peterson	Agriculture DSN	California Community Colleges
Wendy	Porter	ICT/Digital Media DSN	California Community Colleges
Joel	Powell	Dean, Business and Family Science	Cosumnes River College
Hank	Preston	Developer Advocate	Cisco DevNet
Lucie-Anne	Radimsky	Business Development Lead	Kai Partners, Inc.
Carl	Reed		
Ash	Roghani	Innovation Program Manager	City of Sacramento
John	Schmidt	Advanced Manufacturing DSN	California Community Colleges
Amy	Schulz	Dean of Career, Continuing, & Technical Education	Sierra College
Christopher	Shuping	Business/Technology Teacher	Franklin High School
Mayank	Sood	Team Lead	SMUD
Elizabeth	Swithenbank	Professor	Folsom Lake College
Joeleen	Takano-Alcantara	Teacher	Twin Rivers
Jonathan	Taylor	Manager, IS Disaster Recovery	Sutter Health
Joseph	Taylor	Assistant Professor	California State University, Sacramento
James	Town	Assistant Professor/Lab Coordinator	Sacramento City College
Miela	Zitelli	Career Technical Education Coordinator	Sacramento City College



Welcome to the ICT Regional Industry Advisory





Today's Guest Speakers:

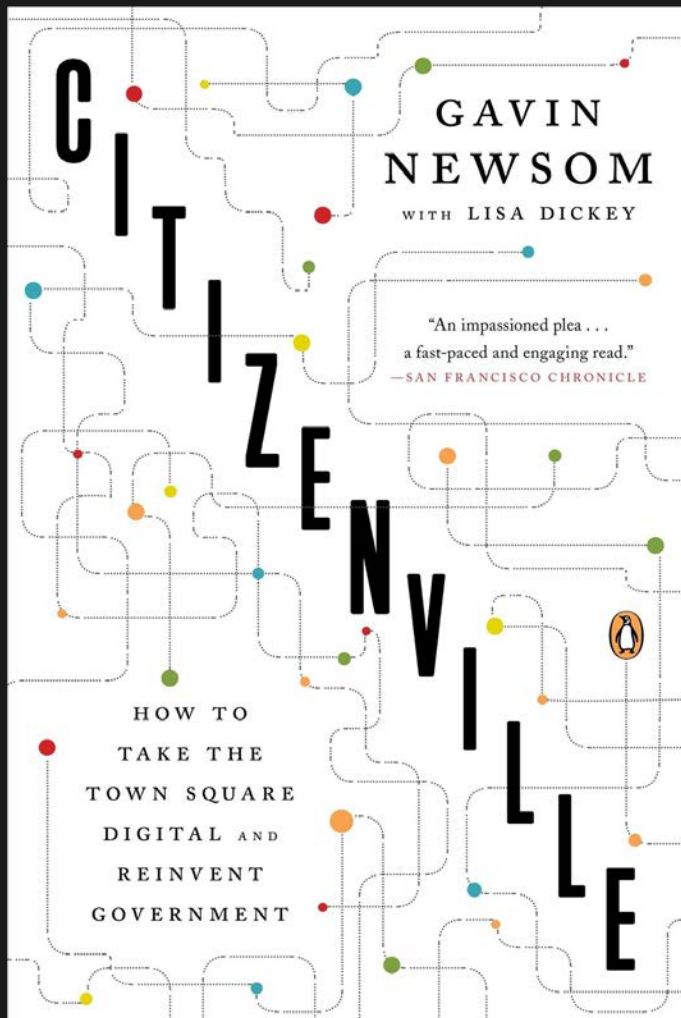
- **Ash Roghani**, Innovation Program Manager, Office of Innovation & Economic Development, City of Sacramento
- **Nicholaus Helwig**, Owner, Pinpoint Aerial Solutions
- **Hank Preston III**, Developer Advocate, Cisco DevNet



ICT Enabled Public Sector + Community Innovation

Ash Roughani, Innovation Specialist

City of Sacramento Office of Innovation & Economic Development



“There is huge potential to use technology to transform the way government and citizens interact, communicate and solve problems. We are challenging local leaders across the country to push the boundaries of innovation to advance government to work for the citizenry of the 21st century.”

-Lt. Gov. Gavin Newsom (2013)

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Includes debt and Self Assessment

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[Visas and immigration](#)

Visas, asylum and sponsorship

[Working, jobs and pensions](#)

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Parent link

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Grandchild link

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Grandchild link

Grandchild link

Child link

Child link

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Parent link

Page heading (h1)

The page heading communicates the main focus of the page. Make your page heading descriptive and keep it succinct.

Section heading (h2)

These headings introduce, respectively, sections and subsections within your body copy. As you create these headings, follow the same guidelines that you use when writing section headings: Be succinct, descriptive, and precise.

Subsection heading (h3)

The particulars of your body copy will be determined by the topic of your page. Regardless of topic, it's a good practice to follow the inverted pyramid structure when writing copy: Begin with the information that's most important to your users and then present information of less importance.

Keep each section and subsection focused — a good approach is to include one theme (topic) per section.

MARCH 10, 2014

Ukraine's Future/Minimum-Wage Wars/Wes Anderson

TIME

CODE RED_

Inside the nightmare launch of HealthCare.gov
and the team that figured out how to fix it

BY STEVEN BRILL



THE STATE WORKER

The State Worker

California's failed tech projects come in late and over budget. Gavin Newsom wants to fix them

BY WES VENTEICHER

MARCH 07, 2019 12:01 AM



California Governor Wants \$208M to fix DMV Problems

Newsom has requested \$46 million be appropriated in the next three months and the remaining \$162 to be included in the next state budget, starting July 1.

By [Associated Press](#)

Published Mar 30, 2019 at 5:10 AM | Updated at 3:03 PM PDT on Mar 30, 2019

OFFICE OF DIGITAL INNOVATION

A primary goal of government is the efficient delivery of government services. To further this goal, California must change the way it approaches service delivery and technology investments. Millions of Californians interact with government services every day: residents apply for drivers' licenses, students compare financial aid options, and small business owners apply for licenses or pay business taxes. Too often, outdated tools and complex systems make these interactions cumbersome and frustrating. Additionally, manual processes and the lack of digital service delivery often require individuals to take time off work and go to a physical office to interact directly with government staff.

The state must transform from a passive governance model that largely responds to individual statutory and policy mandates to one that actively establishes measurable customer service benchmarks and leading digital service delivery from a programmatic and statewide perspective.



Coding California government

Code California is an open collaboration between agencies, industry technology partners and civic technologists working to code a more innovative, collaborative and effective government that best serves the people of California.

Policy



Playbook



Platform



CITY HALL



Search addresses for records

Enter exact address, record number, neighborhood, or street name.

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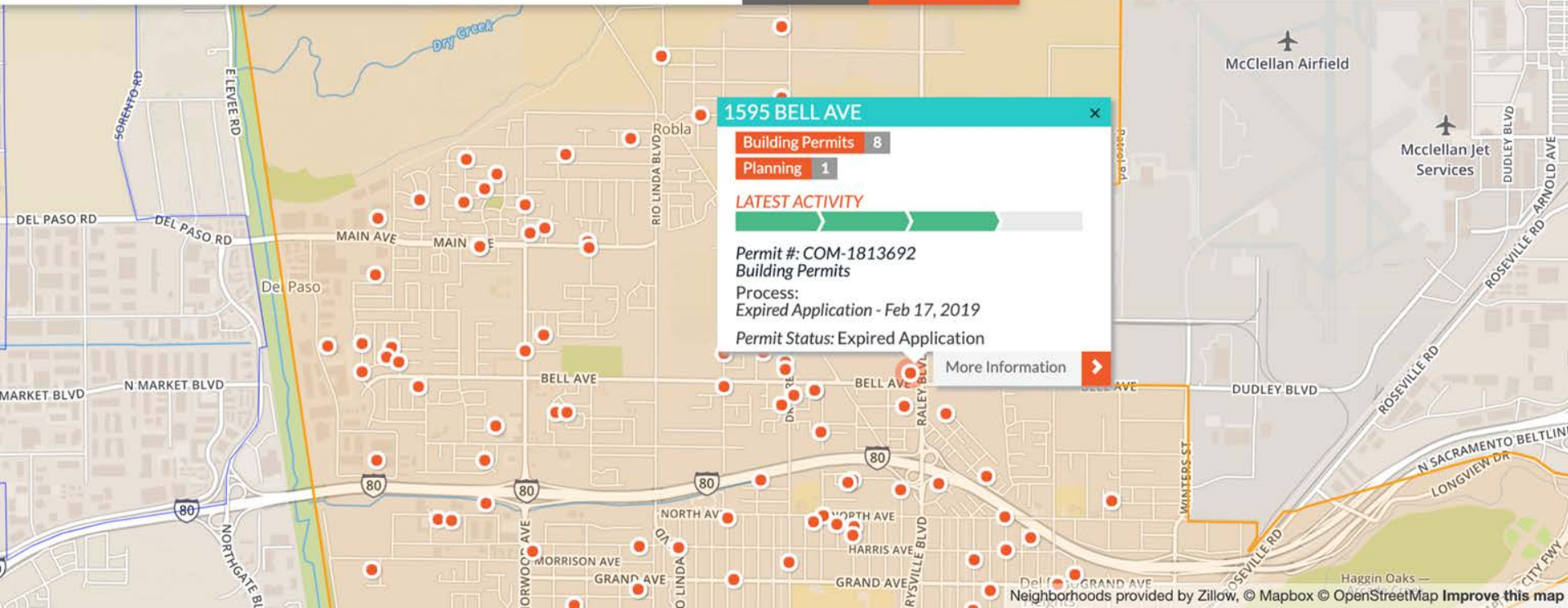
Every Building Permit Issuance in Council District 2 between 10/2018 and 04/2019

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Email Me Updates

All 9 Building Permits 8 Planning 1

Permit: #COM-1814623
ARCO CENTER REROOF OF 4,500SQFT: REMOVE BUR AND REPLACE WITH TPO (Commercial Minor)

Finaled

Application

Inspection
Dec 21, 2018

Jul
31
2018



Description:
ARCO CENTER REROOF OF 4,500SQFT: REMOVE BUR AND REPLACE WITH TPO

Last Updated: Jul 31, 2018

Less Information

Inspection

Aug
7



17 Bldg-Roof Plywood Nailing
Approved



Flag map for inaccuracies

Neighborhoods & Districts

- Raley Industrial Park (Zillow)
- Robla (School Impact Fee)
- Council District 2 (Council District)
- Sacramento (City)
- Raley Industrial Park (Neighborhood)

An aerial photograph of a city street grid, overlaid with a white rectangular frame that has a clipped bottom-right corner. Inside the frame, the text 'S.U.T.L.' is written in a white, sans-serif font, with small white dots separating the letters.

• S • U • T • L •



SUTL

SACRAMENTO URBAN TECHNOLOGY LAB



first on

5G

verizon

asurion
Asurion is an independent business
and an authorized Verizon vendor



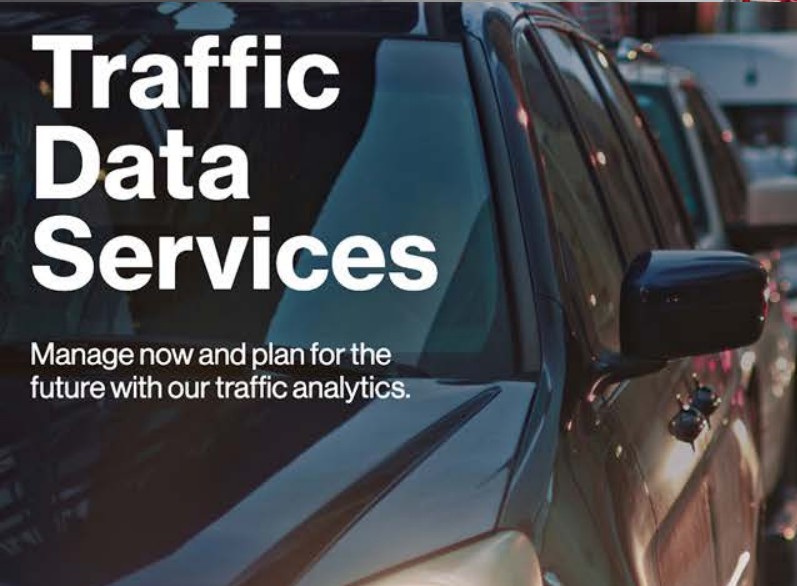
Intelligent Traffic Management

M2M technology can help reduce traffic delays and related harmful emissions.



Real Time Response System

Enhance situational awareness to help you improve decision making with a comprehensive view of your city.



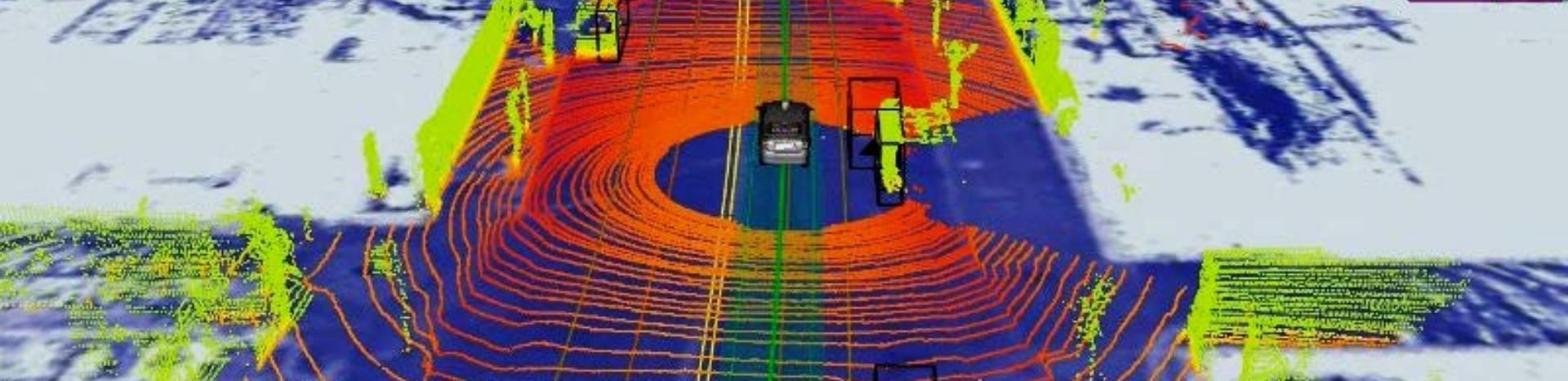
Traffic Data Services

Manage now and plan for the future with our traffic analytics.



Intersection Safety Analytics

Helps maintain safety for pedestrians, cyclists and drivers with Intersection Safety Analytics.



Pilot Activity



Rapid detection of water contamination

Optiqua

Tracking

Pilot Manager

Nancy Parker

Budget

\$12,700

Status

Delayed

3rd sensor installation r
delayed due to changes
updated two weeks ago

Strategic Initiatives

Public Safety

Timeline

FEB 2018 MAR 2020

Team Members



Public Safety

Protect and promote commun
achieve a high quality of life fo

Strategic Initiative Targets

10%

Reduction in crime rate in the Market District

Total Budgeted

\$16,480

Active Pilots

- Accident prevention & early detection
- Rapid detection of water contamination
- Neighborhood vulnerability insights

Completed Pilots

Drones for traffic accident footage

Resident Survey

Met

Measure residents' satisfaction through an online survey

TARGET SATISFACTION:

4.0

MEASURED SATISFACTION:

4.2

Transit Ridership

Met

Measure if connecting riders to transit stations with AVs increases transit ridership

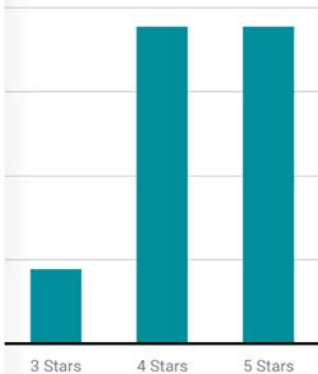
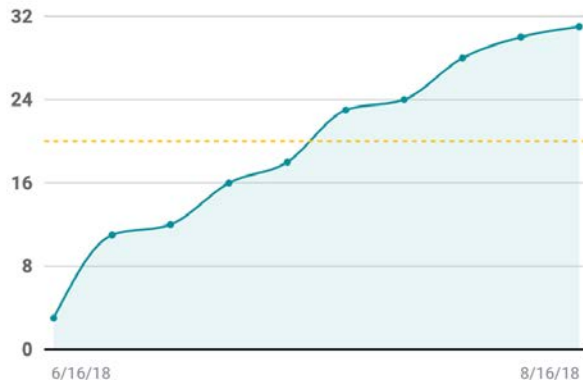
TARGET SAVINGS:

20%

MEASURED SAVINGS:

31%

Cumulative Results Target



Planning	Contracting	Tracking	Evaluating
Affordable Housing UrbanSim NEW - Form submitted 12/11/18	Analyze Social Media ZenCity Contract in progress	AV Public Transportation Waymo Next milestone: 2/9/18	Public WiFi Internal Awaiting final evaluation
Smart Irrigation HydroEpsilon Awaiting final decision	Predictive Traffic Management WayCare Contract in progress	5G Wireless Internal Surveys in progress	Procurement Chatbot Yeti Determining goal outcomes
Public Records Requests NextRequest 3 more reviews needed	Improving Transportation		Civic Engagement OpenGov Awaiting final evaluation



RAILS-

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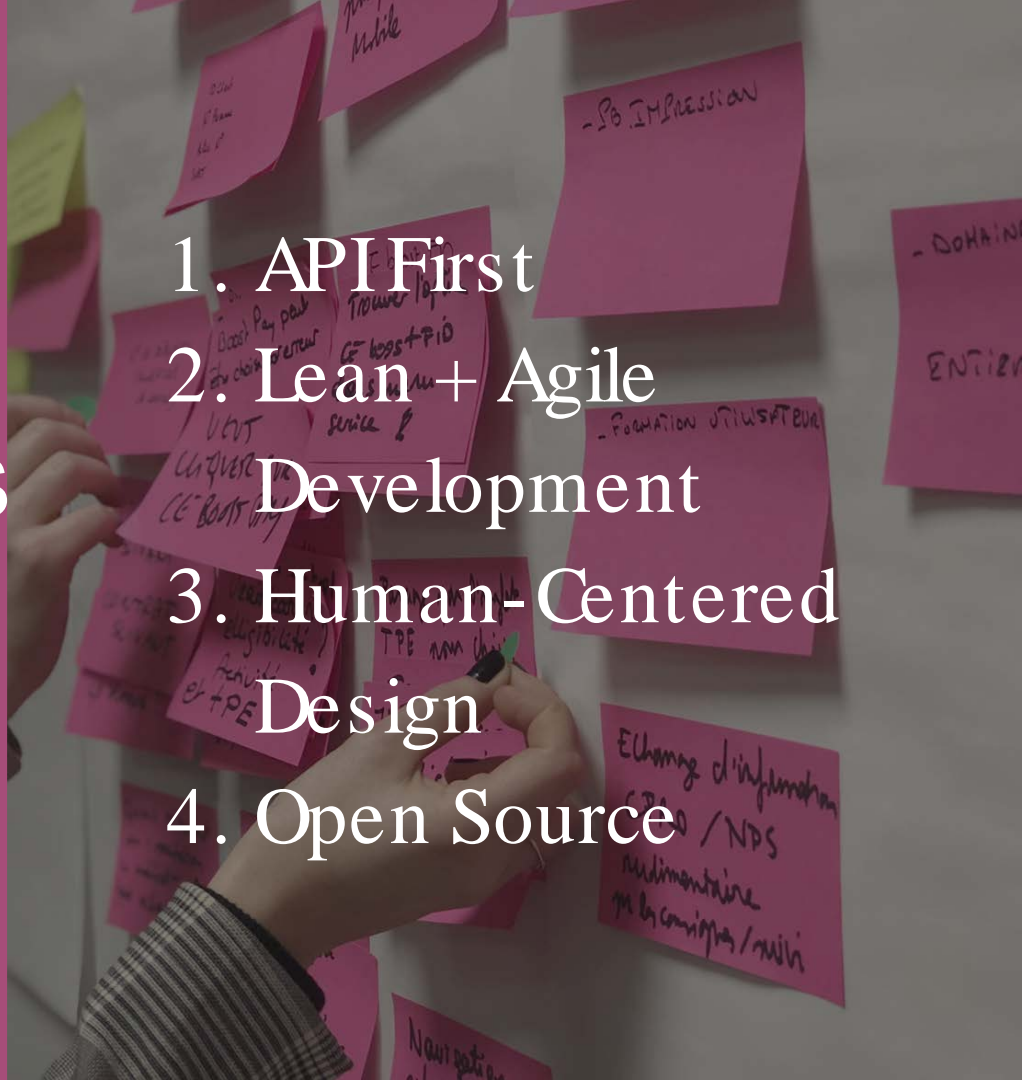
Lessons

It's about people,
process, and culture

Four Ingredients

To build better technology

1. API First
2. Lean + Agile Development
3. Human-Centered Design
4. Open Source



Questions

@Roughani
aroughani@cityofsacramento.org



Pinpoint Aerial Solutions

Nicholaus Helwig

Owner

Agenda

- Introductions
- Staffing Overview
- Technology overview
- Case studies
- Q&A



Introductions



Nicholaus Helwig

Owner

- B.S degree in Soil and Crop Science with concentration in Precision Ag
- Grew up in Yuba City farming rice and walnuts
- US Veteran



Jacob Holmes

Owner

- Masters degree from UC Davis
- Grew up in Yuba City, focusing of mentorship of todays youth
- Countless hours volunteering in community outreach programs

Staffing Challenges

Staffing Challenges:

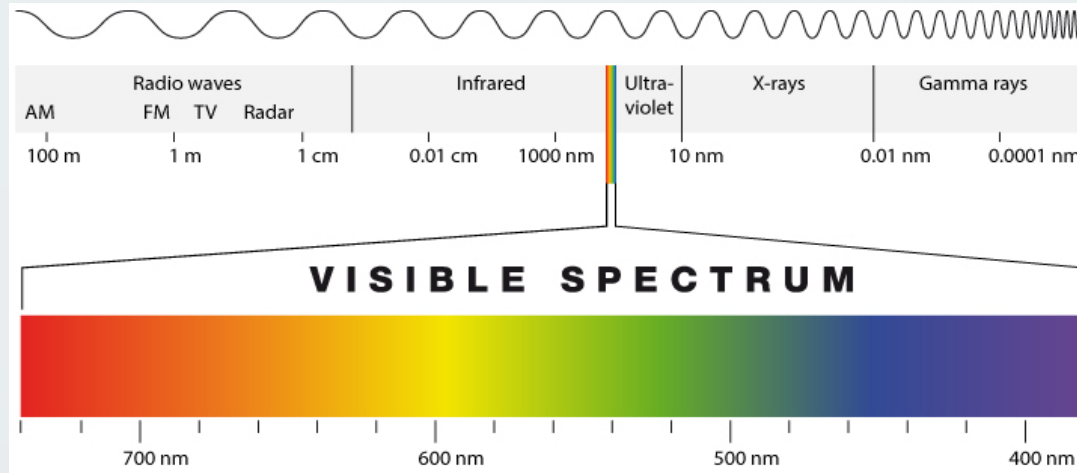
Main Points of Concern:

- Technology understanding
- Troubleshooting skills
- Regulations

How we overcome these challenges:

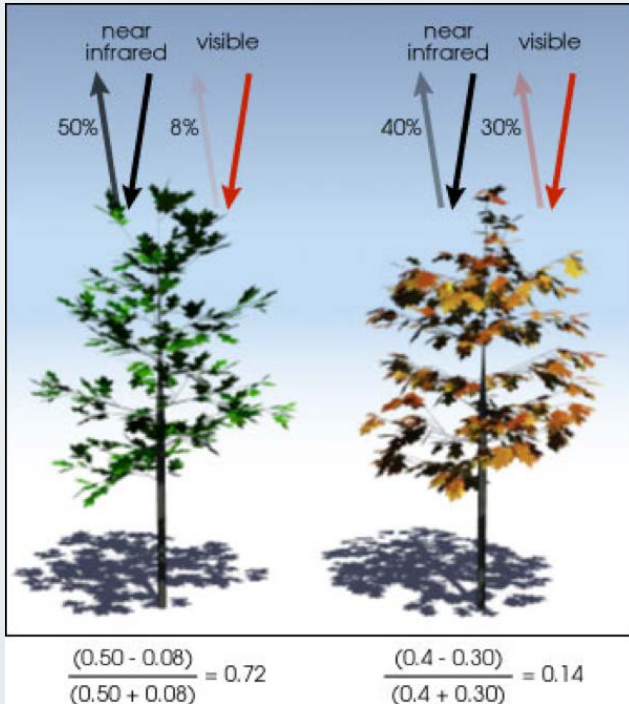
- Seek potential employees right after college or high school
- Must demonstrate basic knowledge of computer/hardware integration
- Must be able to take/pass tests to comply with FAA regulations

Technology Overview: Multispectral Imaging



- Humans can only see in the Visible light Spectrum
- We lack the ability to break down the light spectrum (White Light) but able to see individual light bands when absorbed or reflected

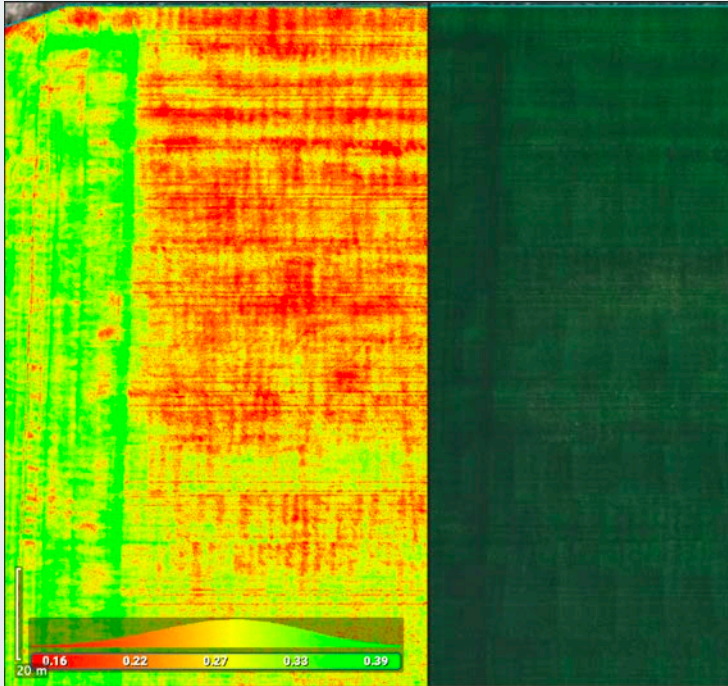
Technology Overview: Multispectral Imaging



NDVI is calculated from the visible and near-infrared light reflected by vegetation. Healthy vegetation (left) absorbs most of the visible light that hits it, and reflects a large portion of the near-infrared light. Unhealthy or sparse vegetation (right) reflects more visible light and less near-infrared light. The numbers on the figure to the left are representative of actual values, but real vegetation is much more varied (Simmon).

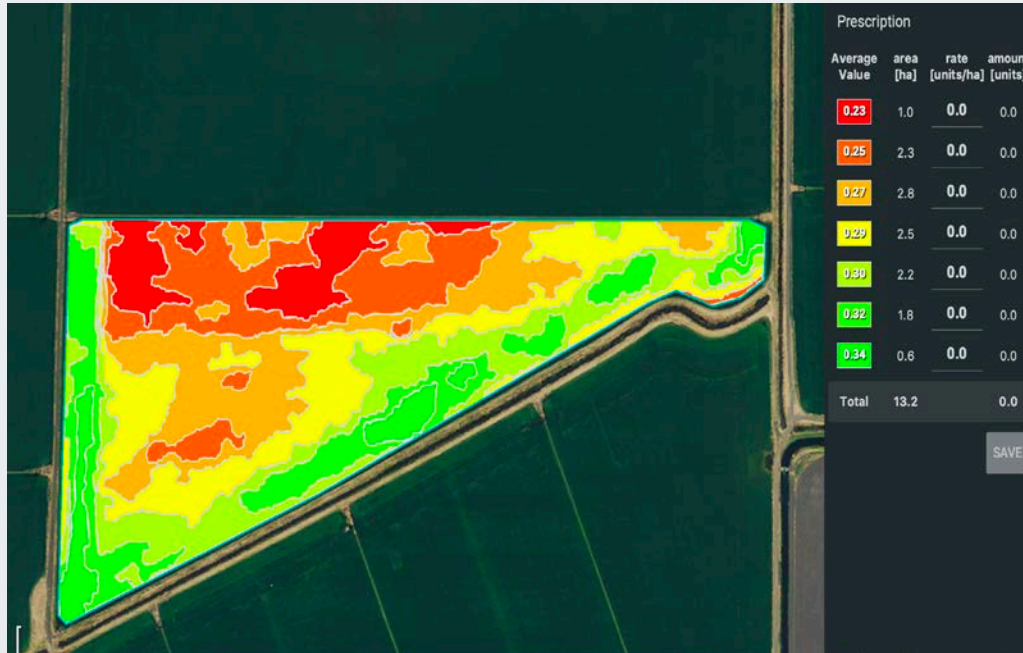
Take away: The plants ability to capture usable light for photosynthesis (energy production)

Case Studies: Foliar Nitrogen (Rice 2018)



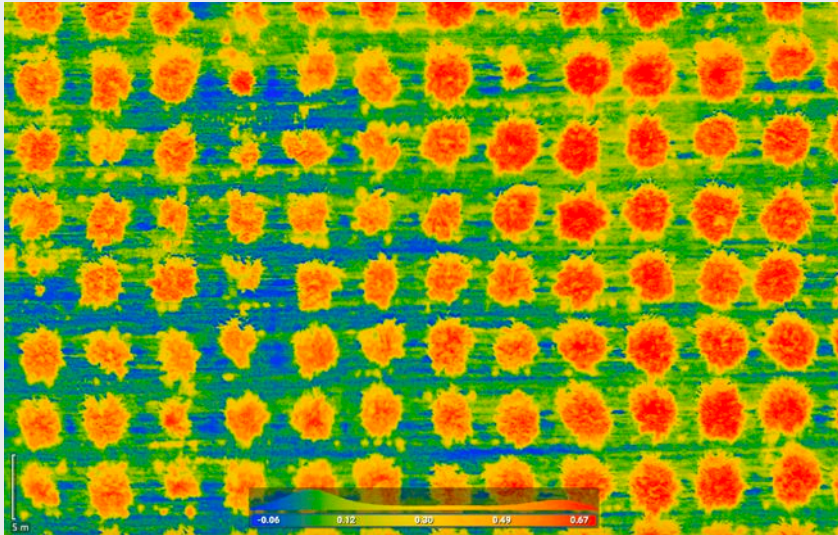
- Map created using NDRE, which allowed us to compare overall foliar nitrogen availability
- PAS and the farmer worked to create zones to adjust fertilizer rates
- Allowed us to gain insight on nitrogen leaching rates.

Case Studies: Foliar Nitrogen (Rice 2018)



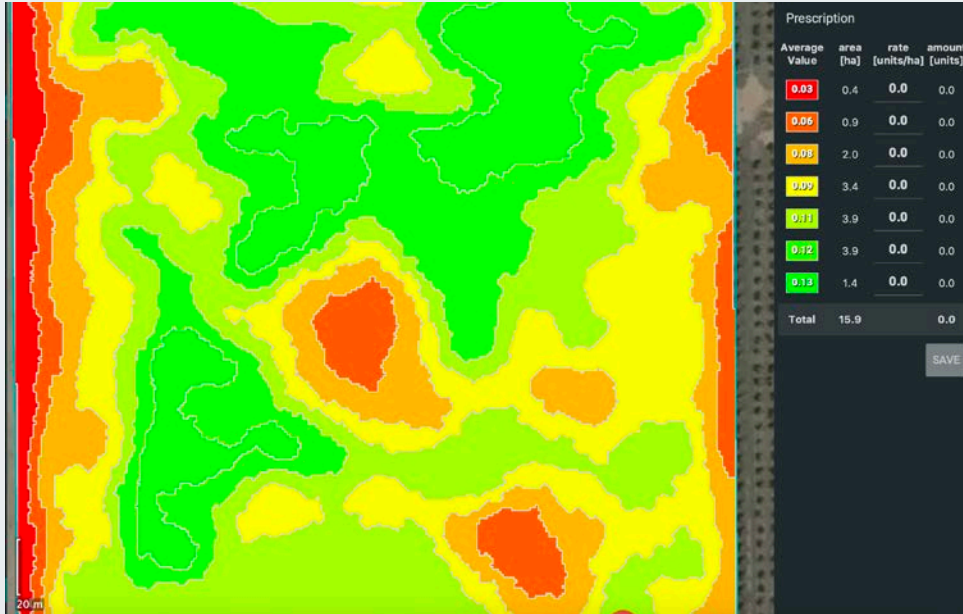
- Zonation map allows us to give each zone an average
- We use this to produce an “easy to read map” to create fertilizer plans
- These maps can be exported into variable rate sprayers if needed (Shapefile, Geojson)

Case Studies – NDVI Prunes (2018)



- NDVI map found an area of poor growth in the middle of farmers orchard
- We were able to walk to the location in the field via GPS and conduct ground truthing
- Allowed the farmer to locate a zone that he wasn't aware of before

Case Studies- NDVI Zonation Prunes (2018)



- Zonation map of the same field, we were able to locate pockets of poor growth
- Zonation maps create a field average of NDVI values of tree canopy
- Farmer was able to conduct soil sampling in the "poor growth" zones to get a better understanding what is happening in those specific zones

2019 Service Announcement

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Q&A



Thank you