ALBUQUERQUE
SMART COMMUNITIES

CREATING SMART COMMUNITIES BY COMBINING THE LATEST SMART TECHNOLOGIES WITH INNOVATIVE SOLUTIONS

ONE ALBUQUERQUE

PROSPECTUS PRESENTATION

THE SMART CITY INITIATIVE

The Smart City initiative is all about combining smart hardware and software into smart solutions. The goal is not just to produce data, but to improve safety, communication, and mobility. By adding Smart City technology to key points in Albuquerque, we can use trash cans, bus stops, or crosswalks to identify ongoing issues or opportunities in an automated and intelligent way.

Our Proving Grounds at Pino Yards allow us to take the Smart City initiative from concept to application, allowing us the opportunity to put various smart technologies, both hardware and software, to a real-word test.

This presentation provides an overview of both the technologies themselves and the problems we are solving through smart solutions. These solutions are applied to multiple scenarios, creating greater value than fixing individual problems.

CONTENT

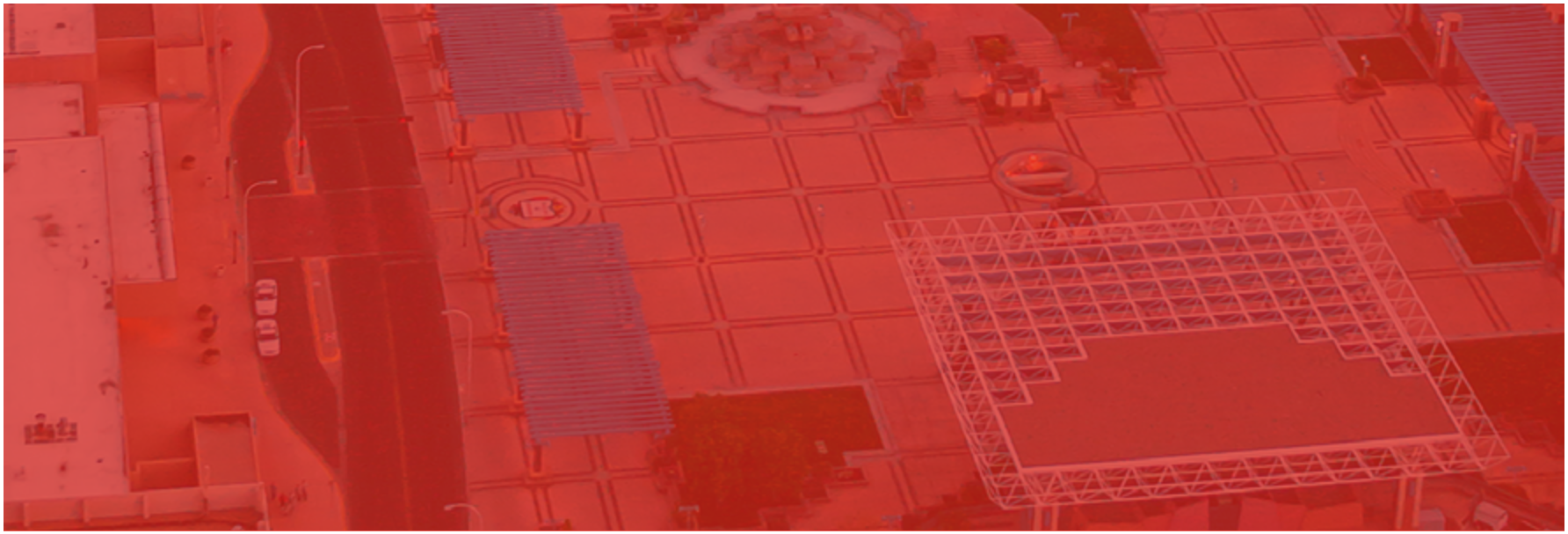
LET'S GO SOMEWHERE BOLD

WELCOME TO ALBUQUERQUE!

Albuquerque has long been a source of innovation. Looking at our past successes, we can proudly say the first cleanroom was developed here. Microsoft was created here. Central New Mexico Community College, University of New Mexico, Sandia National Laboratories, Air Force Research Labs, and Los Alamos National Laboratory are continuing this tradition of innovation. From idea to conception to development, we accomplish much with fewer resources than others. Our achievable goal is to be a Smart City hub for the nation and the world.

At the City of Albuquerque, we don't use technology for technology's sake. We're not gathering data just because we can. Instead, we're looking at real-world problems and opportunities that can be overcome or realized to positively impact the lives of residents and visitors. We combine people, technologies, and data in an innovative and responsible way.

Smart City development should be about looking at solution sets. We aren't looking for an answer to a single problem, but rather how can we reuse



proven ideas and components and apply them to different scenarios.

At the same time, we want to be cognizant of concerns, e.g. privacy and equality, that these technologies raise. We want to create something that will help us feel more secure without also making us fearful. We're taking a holistic view as we continue to develop solutions sets for our Smart City initiatives. Albuquerque, the 32nd largest city in the United States, is already a reflection of what the rest of the country will look like in the future in regard to demographics. Albuquerque is a mix of old and new, from 300-year-old buildings to brand new. We know that we face real challenges and that others face the same challenges across the globe.

We're using Smart City technology to prepare for the challenges of the present and the future. Our Proving Labs – controlled, real-world environments – allow us to safely test and experiment with the aim of answering these questions and many more.

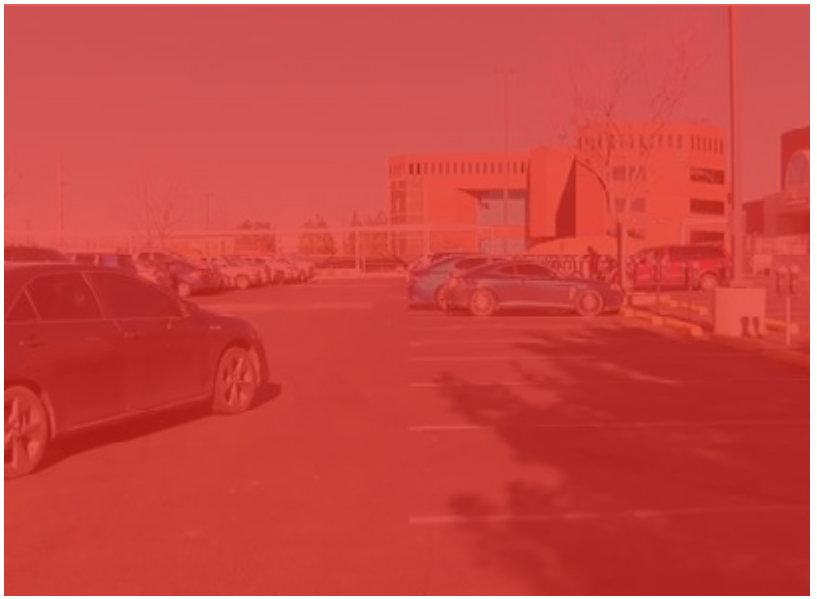
Mark Leech | DIRECTOR

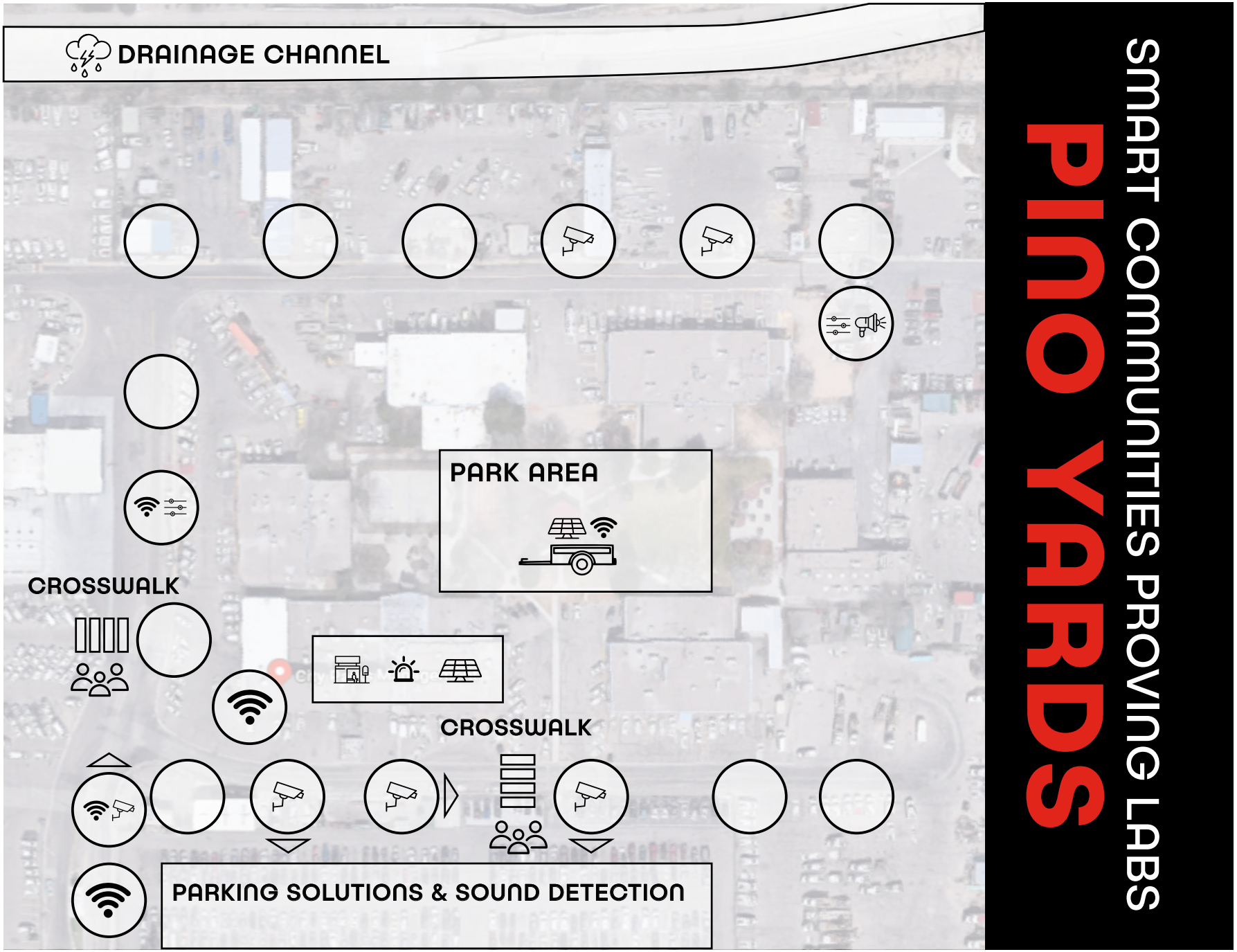
NOT JUST DREAMING, DOING

TESTING THE LATEST TECHNOLOGIES WITH REAL-WORLD SCENARIOS

The Proving Grounds includes Pino Yards, Tiguex Park, Sunport Airport, and the intersection of Central/Cornell. These locations provide the opportunity to put various smart technologies, both hardware and software, to a real-word test.

These locations are working, living environments with a varied urban framework covering a large area. Outside contractors and collaborators can perform tests and demonstrations of various hardware and software.





SMART COMMUNITIES PROVING LABS

PINO YARDS

PEDESTRIAN & VEHICLE BEHAVIOR

Provides data on pedestrian and vehicle patterns and interactions at crosswalks. Also provides parking lot data, e.g. available spots and security alerts.

FLOOD ALERTS

Provides data on pedestrian and vehicle patterns and interactions at crosswalks, and parking lot data, e.g. available spots and security alerts.

EMERGENCY CONTROL PANEL

Emergency systems and communication equipment that provide reliable communications and improve public safety on freeways, parking lots, campuses, parks and recreational areas.

WIFI TRAILER

Solar powered and highly mobile, this trailer can be deployed easily at events.

SMART BUS STOP

Smart lighting, cameras, and WiFi placed on bus shelters provides smart coverage and improves safety and communication access.

AI PROCESSING/WIFI

Integrated edge artificial intelligence WiFi, microphones, cameras, and lighting control in one platform. Improve public safety, manage traffic, and deliver public WiFi.

SMART LIGHTING

Placed on light poles and are accessed remotely to control brightness/intensity.

CAMERAS

Provides data on pedestrian and vehicle patterns and interactions at crosswalks, and parking lot data, e.g. available spots and security alerts.

ENVIRONMENTAL SENSOR

A multi-input sensor that gathers environmental conditions, e.g. air quality and temperature.

SOUND DETECTION

Provides alerts for security-related events.

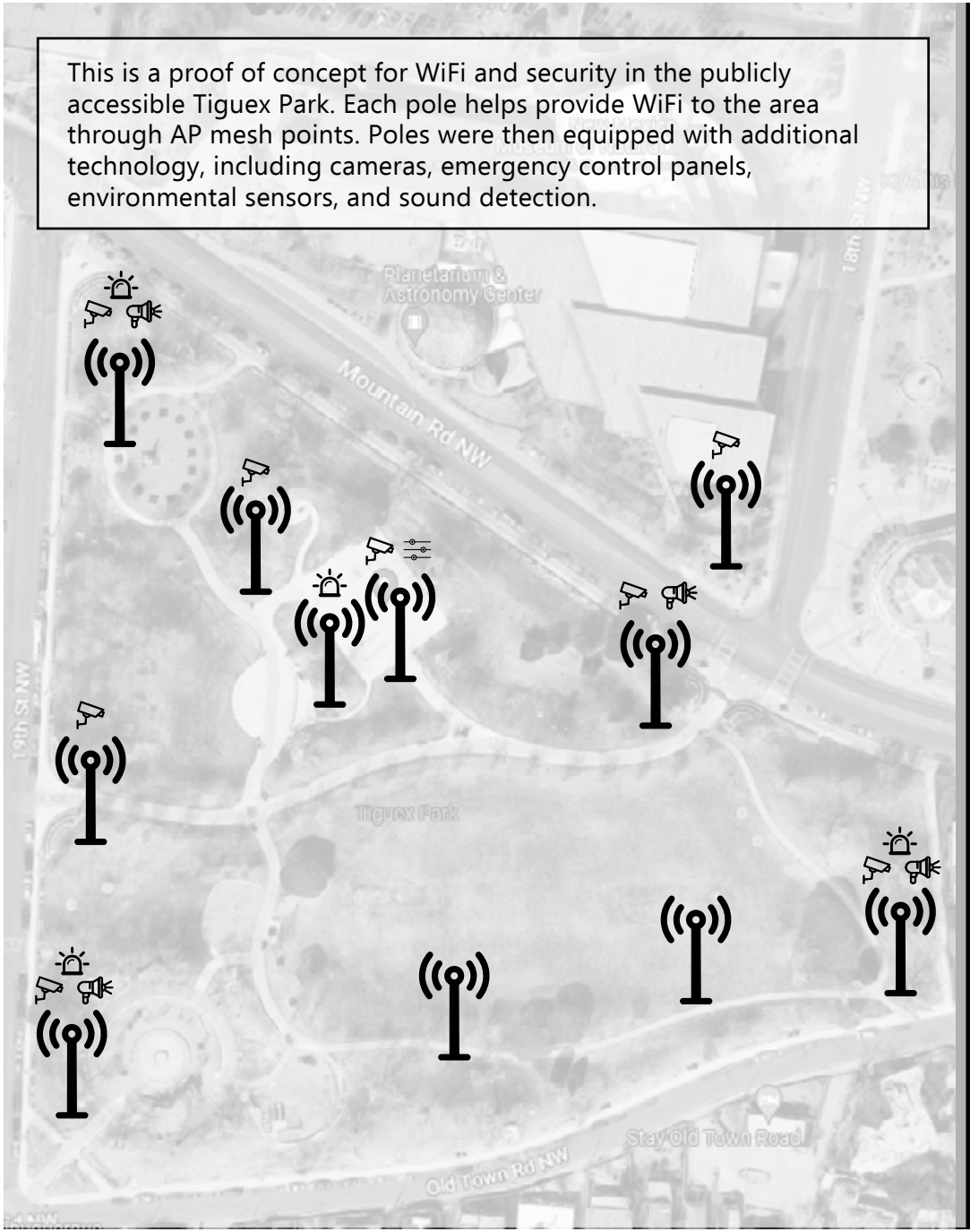
DEMO SOLAR PANEL

Smart Solar Street Lights are a multi-functional street lighting solution powered by solar energy.

SMART COMMUNITIES PROVING LABS

TIGUEX PARK

This is a proof of concept for WiFi and security in the publicly accessible Tiguex Park. Each pole helps provide WiFi to the area through AP mesh points. Poles were then equipped with additional technology, including cameras, emergency control panels, environmental sensors, and sound detection.



WIFI

Internet access (made possible by AP mesh points, present on all poles) available via WiFi throughout the park.

EMERGENCY CONTROL PANEL

Emergency systems and communication equipment that provide reliable communications and improve public safety.

SOUND DETECTION

Provides alerts for security-related events.

CAMERAS

A variety of camera types, including PTZ (pivot tilt zoom) and quad (4 axis) provide a comprehensive view of the area to quickly spot problems.

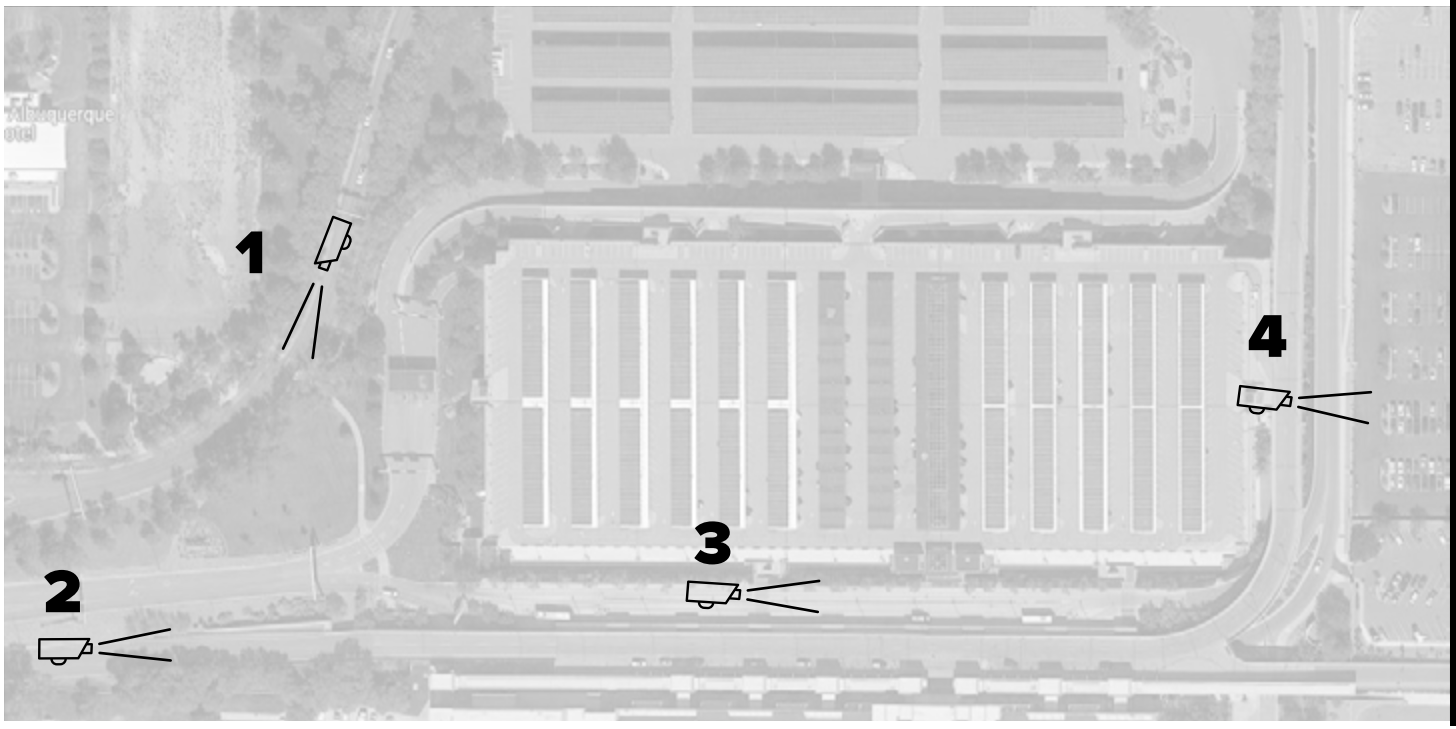
ENVIRONMENTAL SENSOR

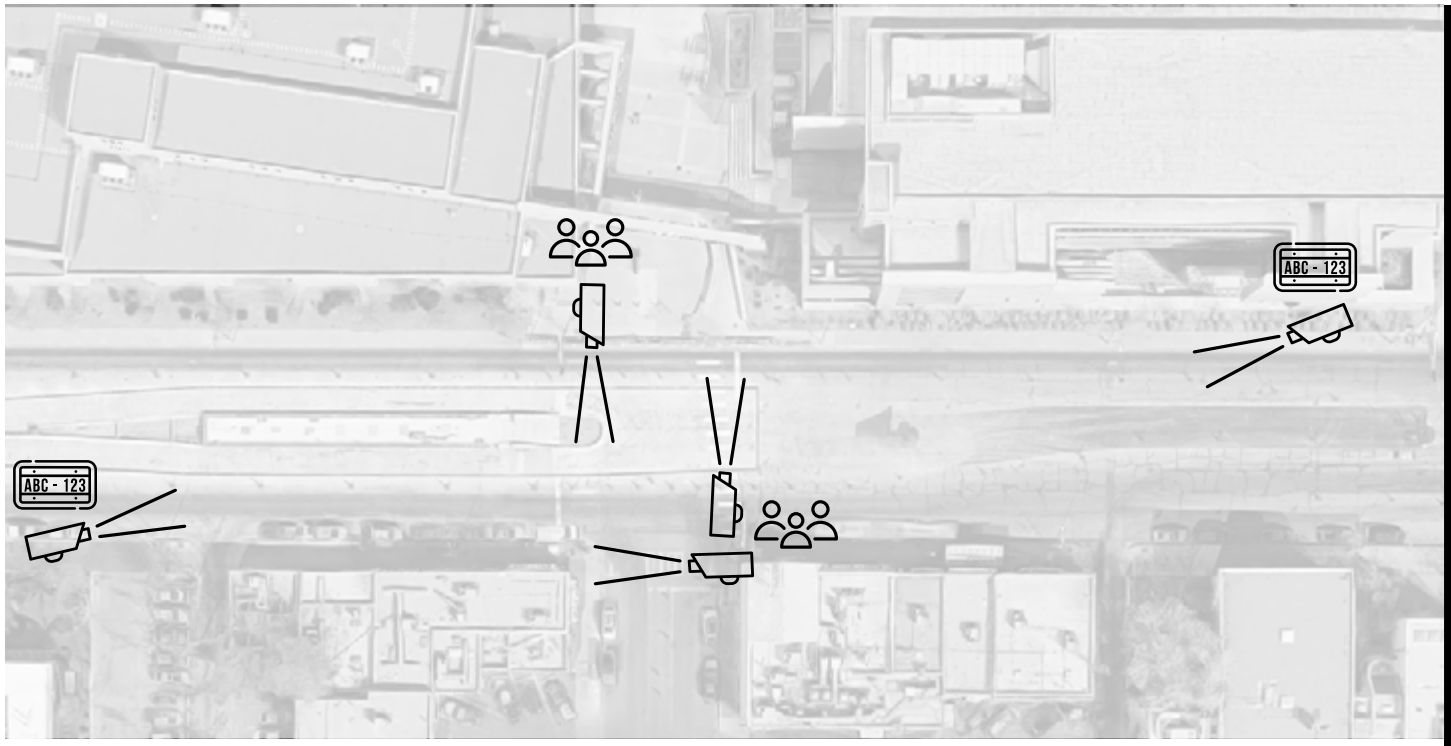
A multi-input sensor that gathers environmental conditions, e.g. air quality and temperature.

SMART COMMUNITIES PROVING LABS
SUNPORT AIRPORT

The goal of the project is to use Automated License Plate Readers (ALPR) to track traffic entering and exiting the Sunport. We're also installing a camera on the north end of the traffic loop near the crosswalk to track pedestrian and traffic data (e.g. speed of traffic, near misses, pedestrian count). The analytics from the ALPRs will give us data related to number of cars visiting the Sunport, out-of-state traffic, dwell time, suspicious cars, wanted cars, etc.

1. Upper Level Departures
2. Parking Entry/ Arrivals/ Departures
3. Exiting Airport from All Areas
4. Upper/Lower Exit from Terminal





SMART COMMUNITIES PROVING LABS

CENTRAL/CORNELL

PEDESTRIAN CAMERA

Provides data on pedestrian and vehicle patterns and interactions at crosswalks.

ALPR CAMERA
LICENSE PLATE READER

Provides the ability to track traffic automatically. The analytics from the ALPRs provide data related to number of cars passing a specific area, out-of-state traffic, dwell time, suspicious cars, wanted cars, etc.

The goal of the project is to use cameras and radar to determine and analyze traffic interaction with pedestrians. Examples of data we'd like to track include the following:

- How many times do pedestrians step out of the crosswalk?
- How many times do cars/buses stop in the crosswalk?
- How fast is traffic going?
- How many red lights were run?
- How many people crossed when the light was red?
- How many near misses were there in a given time?

SMART SOLUTIONS

TAKING THE HYPE OUT OF THE HYPOTHESIS

If a trash truck can become a multi-data sensor that can monitor street issues (e.g. potholes, abandoned vehicles), then the same sensors placed on a drone to obtain the same data during an emergency situation. Data collection should lead to decision automation as well as problem pre-emption.

We're working on solutions that apply to multiple problems by blending people, technology, and data to bring value to our vibrant, diverse community. This creates greater value than fixing individual problems.

DARING

SMART PARKING

PROBLEM

- Obtain real-time information on parking lot status, e.g. open bays.

SOLUTION

Monitor bays, leading to:

- Better availability information
- Better enforcement:
  - Monitoring duration/time vehicles have been in a particular spot
  - Detecting double-parked cars
  - Alert suspicious activity or vandalism

RESULT

- Parking lot safety and efficiency increases.

SMART LIGHTING

PROBLEM

- Effectively direct large groups during an emergency.

SOLUTION

- Smart Node-equipped street lights programmed to light in sequence toward an exit, providing a clear and easy path for people to follow.

RESULT

- In situations where panic may take over, (e.g. security threat at a sporting event), easily communicated directions may save lives.
- It may also allow more efficient parking before the start of an event.

SMART CROSSWALKS

PROBLEM

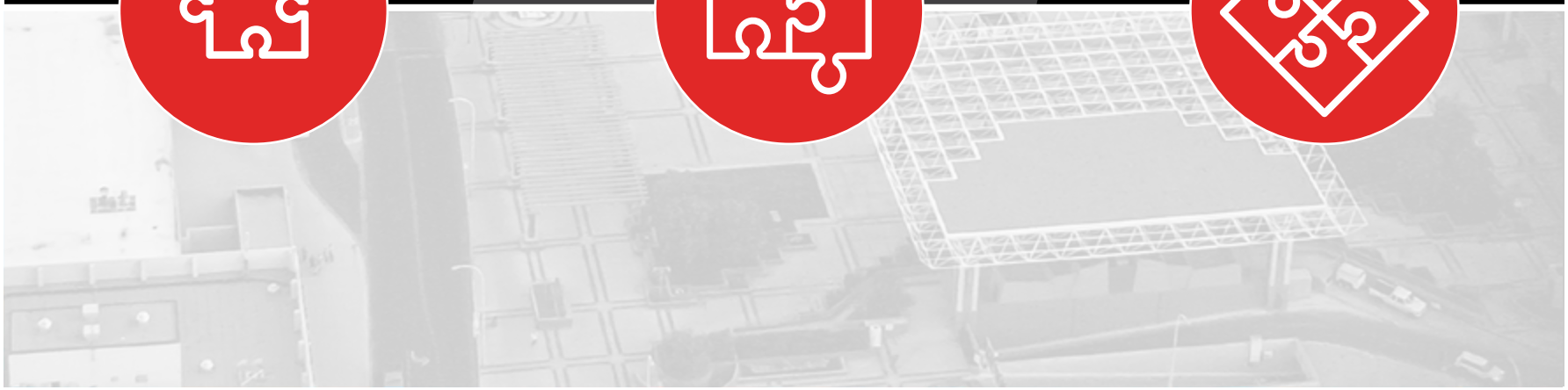
- Identify unsafe situations, e.g. trips and falls, in the crosswalk area.
- Keep pedestrians using crosswalks safe from vehicles and improve Albuquerque's high pedestrian fatality rate.

SOLUTION

- Alert traffic that an unsafe situation (e.g. vehicle at high speed and pedestrian in crosswalk) exists.
- Heat map analysis of pedestrian crossing behaviors near crosswalks (e.g. using the crosswalk, jaywalking) to identify design potential improvements.

RESULT

- Enforcement actions use real data to make crosswalks safer with specific improvements at individual sites (e.g. unique visibility or mobility concerns at particular crosswalks).



SMART SOUND DETECTION

PROBLEM

- Reduce record homicide rate in New Mexico (63% of which involve guns) by quickly informing the public or APD of a dangerous event e.g. a gunshot.
- Improve the quality of data by accurately associating reports with calls. This provides a better understanding of when and where incidents take place.

SOLUTION

- Automatically detect events e.g. a gunshot which then allows Real Time Crime Center to take further action:
  - Automated dispatch of officers:
    - Improved environmental response. Smart Node-equipped street lights used by RTCC provide changes to area brightness that meets the needs of the tactical situation. Other options include flashing, strobing, or other visual cues in order to alert nearby civilians.

RESULT

- By monitoring data, we aim to discover trends of areas with higher than average incidents and implement preventative action.

THE TECHNOLOGIES

CUTTING EDGE INNOVATIONS GETTING IT DONE

Incredible new technologies for Smart Cities are available now and more are on the way. Technologies (e.g. smart lighting, cameras) are at their best when combined with other hardware and software components. On its own, smart lighting can help monitor light outages and intelligently regulate brightness to save power.

Paired with hardware and software, e.g. gunshot detection, the impact can be even greater because an alert from the gunshot detection system could automatically notify police of shots fired, and the smart lighting could illuminate the scene.

SMART LIGHTING

TRL 4: PRODUCTION **IN PRODUCTION**

TRL (TECHNICAL READINESS LEVEL)

- Remotely controlled with full brightness/intensity options.
- Used for event-specific lighting and outage reports.
- Nodes allow preventative maintenance which reduces the carbon footprint.
- Can detect outages but also potential risks, e.g. leaning poles.

AMBITIOUS

ENVIRONMENTAL SENSOR

TRL2: LABORATORY PROOF OF CONCEPT **NEXT LEVEL: Q2 2024**

- Multi-input sensor that gathers environmental conditions, e.g. air quality, allergies, and temperature.
- Location-specific data gathered by deployment at various locations and elevations.
- Can detect unexpected pollution/spills from industrial partners.

INNOVATIVE

PARKING LOT CAMERA

TRL2: LABORATORY PROOF OF CONCEPT NEXT LEVEL: Q2 2024

- These cameras provide data (e.g. available spots, security alerts, and more) when used in conjunction with AI.

ALPR CAMERA

AUTOMATIC LICENSE PLATE READER

TRL4: PRODUCTION | IN PRODUCTION

- These cameras provide the ability to track traffic automatically. The analytics from the ALPRs provide data related to number of cars passing a specific area, out-of-state traffic, dwell time, suspicious cars, wanted cars, etc.

EMERGENCY CONTROL PANEL

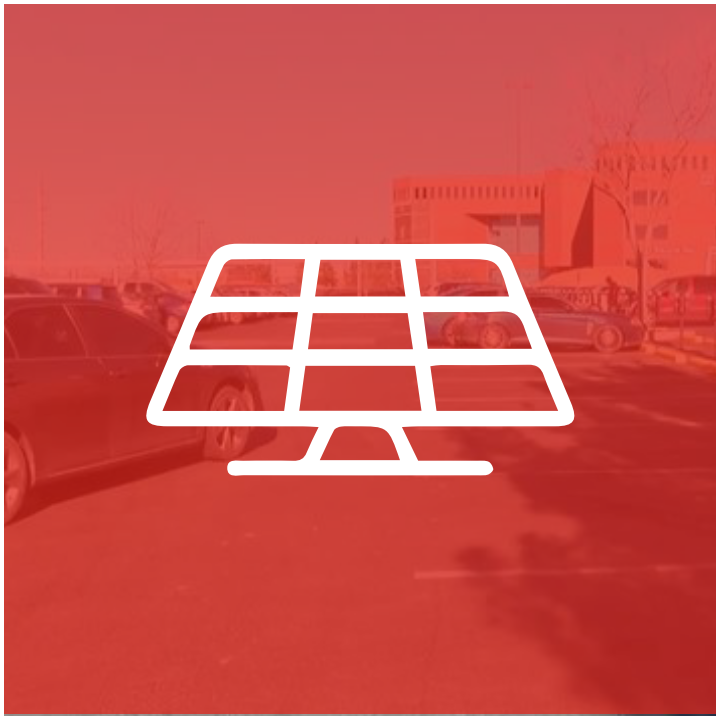
TRL2: LABORATORY PROOF OF CONCEPT NEXT LEVEL: Q4 2024

- Emergency systems and communication equipment that provide reliable communications and improve public safety on freeways, parking lots, campuses, and on remote roadways, parks and recreational areas.
- The Blue Light Tower is a high-visibility, solar-powered, weatherproof, wireless emergency phone designed to function in virtually every setting - even remote locations.

STREET LIGHT SOLAR PANEL

TRL2: LABORATORY PROOF OF CONCEPT **NEXT LEVEL: Q4 2024**

- A multi-functional street lighting solution powered by solar energy.
- This wrap-around solar panel is an innovative design that can be easily incorporated into urban planning, whether it be for streets, highways, or industrial zones.



ARTIFICIAL INTELLIGENCE PROCESSING/WIFI

TRL2: LABORATORY PROOF OF CONCEPT CURRENT LEVEL: Q1 2024

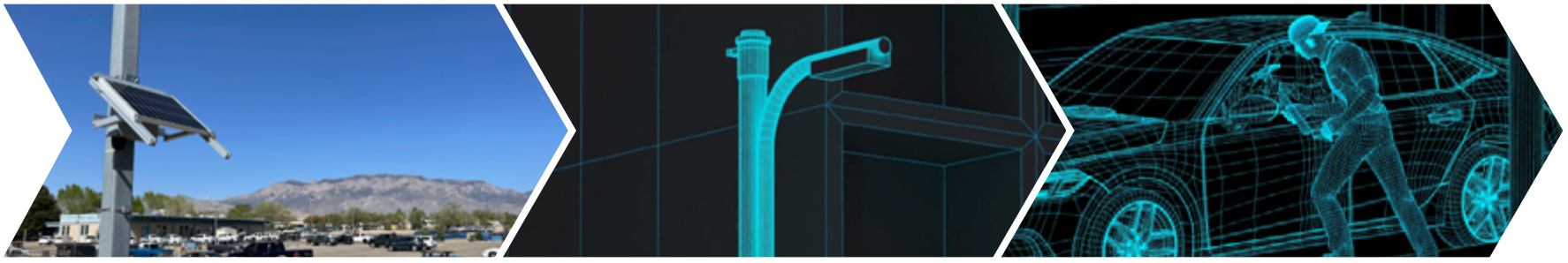
- Integrated edge AI, Wi-Fi, microphones, cameras, and lighting control in one platform.
- Designed to help improve public safety, manage traffic, and deliver public Wi-Fi with greater ease and less cost (by using existing streetlight infrastructure).
- AI features will allow the ability to study traffic analytics, street analytics, public safety analytics and video/audio streaming.

SOUND DETECTION

TRL4: PRODUCTION

IN PRODUCTION

- Microphones (nodes) with AI software to listen for events. These nodes are more sensitive than the human ear. Each node has a listen radius of over ½ mile.
- Louder events (cars, guns, etc.) are detected from over ½ mile away, while softer events (verbal, glass, etc.) can be heard up to 1000 feet.



DRONE

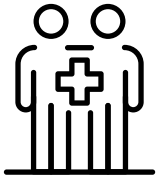
TRL2: LABORATORY PROOF OF CONCEPT NEXT LEVEL: Q2 2024

- Adding smart cameras and environmental sensors to a drone during an emergency where streets are not accessible allows emergency managers to assess damages by using AI to compare images taken before and after the event.
- Monitor and report on tree canopy conditions.
- Drones are able to conduct safer and more efficient roof inspections.

THE INITIATIVES

PUTTING IT ALL TOGETHER WITH REAL RESULTS

Combining smart hardware and software into smart solutions creates real-world improvements in economic development, public safety, and environmental health.



PUBLIC SAFETY

Beyond providing alerts (e.g. gunshot detection or trip and fall incidents), smart spots can gather usage data at public points. We can monitor pedestrian and vehicle patterns to predict yield rates at intersections and crash rates. Crosswalks that frequently have crashes or other incidents can get extra on-site monitoring or design changes. Deploying and evaluating other design enhancements, e.g. flashing lighting or special paint, can help provide insight on their impact on the overall safety of the crosswalk.

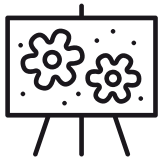
SMART ECONOMICS

With the famous Kirtland Air Force Base and Sunport, many Albuquerque residents likely assume much of our cargo distribution is by air. Instead, trucking is how about 90% of goods, materials, and products sold in stores get here. With smart transport and connected access, we can make it easier for goods created or received here to be distributed via self-driving trains or trucks. We can become a hub for both production and distribution of goods - made easier by smart and connected technologies.

We can attract companies to Albuquerque with Smart City technology. By adding smart transport to more than 250 acres of undeveloped land near the airport, we can make air cargo an attractive opportunity for companies.

ENVIRONMENTAL HEALTH

A large part of the appeal of Smart City technology is actionable data. By placing environmental sensors throughout Albuquerque, for example, we can get an ongoing, real-world understanding of criteria, e.g. pollutants. This can let us run comparative data and test other technologies. For example, is the net air quality better at bus stops when using electric buses or diesel buses?



CREATIVE CULTURE

Interactive displays, sensors, and applications engage the community in Albuquerque's unique history, diverse culture, and thriving art scene. Technology geared toward improving the quality of our environments, for our historical neighborhoods and visitors alike, improves the quality of our community. Investing in partnerships with students, galleries, Albuquerque Museum, and the Department of public art drives economic development and a healthy, vibrant city where community members can share, connect and experiment.

SMART SPOT

MULTIPLE TECHNOLOGIES WORKING TOGETHER

TRL2: LABORATORY PROOF OF CONCEPT **NEXT LEVEL: Q4 2024**

- Turn any location into a connected, intelligent spot that provides real-time feedback and interaction to create a feedback loop between Albuquerque and its residents. The Balloon Fiesta Park, bus stops, Albuquerque parks, and mobile crime labs, are all opportunities.
- As an example: A bus stop shelter equipped with cameras, smart lighting, WiFi, and speakers. If the RTCC receives an alert or report, they can alter that location's lighting or warning sounds to the shelter loudspeakers.

SMART TRASH TRUCK

TRL4: PRODUCTION

IN PRODUCTION

- Trash trucks traverse almost every street in Albuquerque once a week.
- Smart cameras, sensors, and connectivity attached to trash trucks automatically spot and report problems, e.g. potholes or disabled street lights.

SMART CITY PARK

TRL3: PILOT

NEXT LEVEL: Q1 2024

- Improve safety and communication access in Albuquerque's 280 parks.
- Multiple Smart Spots deployed at various locations throughout a park provide improved smart coverage of a large area, e.g. the Balloon Fiesta Park. This may include improved WiFi coverage.

AMBITIOUS

SMART BUS STOP

TRL2: LABORATORY PROOF OF CONCEPT **NEXT LEVEL: Q4 2024**

- Smart lighting, cameras, and WiFi placed on bus shelters provides smart coverage and improves safety and communication access.

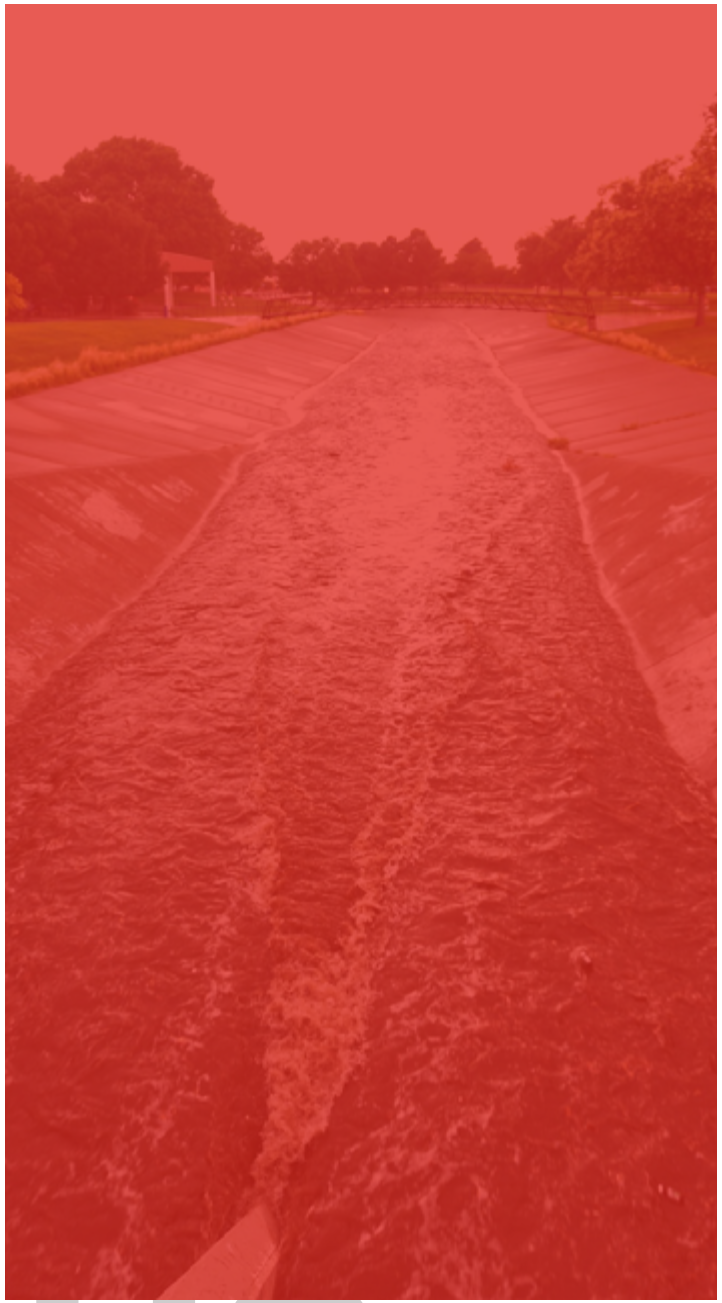
SAFETY & MOBILITY

USING TECHNOLOGY TO CREATE A SAFER, MORE MOBILE, MORE ENJOYABLE CITY EXPERIENCE

The goal of Smart City initiatives is not just to produce data, but to improve safety, communication, and mobility. By adding Smart City technology to key points in Albuquerque, we can use trash cans, bus stops, or crosswalks to identify ongoing issues or opportunities in an automated and intelligent way.

Equipping crosswalks with Smart City technology to capture pedestrian and vehicle activity can help us identify particular locations that might have a higher crash rate. They can also provide insight into what alternatives (e.g. flashing lights) may improve the safety of a crosswalk. Providing connected vehicles with signal light data could let the driver choose to avoid red lights by reducing speed.

Our goal is not to use this technology exclusively to enforce, but rather to help the decision-making process to create a safer, more mobile, and more enjoyable experience in Albuquerque.



PEDESTRIAN & VEHICLE BEHAVIOR

TRL2: LABORATORY PROOF OF CONCEPT NEXT LEVEL: Q4 2024

- Key points, e.g. crosswalks and bus stops, provide pedestrian and vehicle patterns.
- Which crosswalks have the most incidents? Which crosswalks have the best proper usage?
- We can answer these kinds of questions and use the data to make informed decisions.

CRASH ALERTS

TRL2: LABORATORY PROOF OF CONCEPT **NEXT LEVEL: Q2 2024**

- Equip crosswalks, lights, and other points to detect acoustic signatures such as squealing tires or crashes.
- Identification of high incident areas, fault type, and other actionable data, allowing resources to be deployed more effectively.

ADVENTUROUS

FLOOD ALERTS

TRL2: LABORATORY PROOF OF CONCEPT **NEXT LEVEL: Q3 2024**

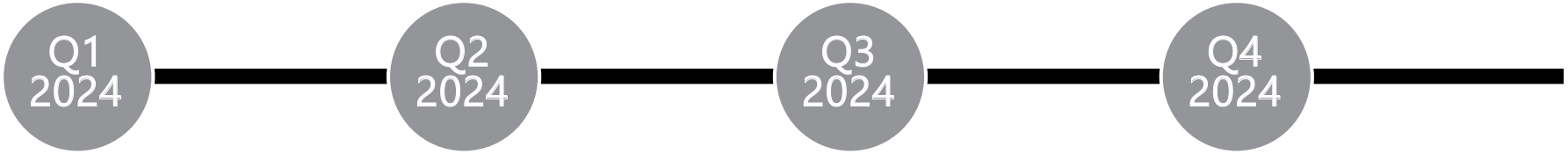
- Drowning is the second leading cause of accidental death in New Mexico for ages 1 to 44 years old. Nearly 4,000 of these drownings occur during the summer months of June, July, and August.
- Smart devices placed at key arroyo overlook spots automatically detect the height and flow of water and then alert the public.
- Smart devices can employ AI algorithms to identify potential people in the water who may require assistance.

SEARCH & RESCUE

TRL 4: PRODUCTION

IN PRODUCTION

- Utilizing smart technology like drones and smart beacons, we can deploy sensors and survival necessities quickly and safely.
- Deploying a smart beacon (comprised of sensors like GPS, sound, health monitors, etc.) in hard to reach environments by drone is also quicker and safer than human-led alternatives. In addition to data-collecting beacons, drones can also drop survival gear.
- Using smart technology, the drone is able to make successful and safe drops, avoiding dead zones in mountainous environments through the collection and interpretation of accurate telemetry data.



SMART CITY PARK

AI PROCESSING/WIFI

ENVIRONMENTAL SENSOR

PARKING LOT CAMERA

DRONE

CRASH ALERTS

FLOOD ALERTS

CONNECTED VEHICLES

EMERGENCY CONTROL PANEL

STREET LIGHT SOLAR PANEL

SMART SPOT

SMART BUS STOP

PEDESTRIAN & VEHICLE BEHAVIOR

TRL1
Technology Identification

TRL2
Laboratory Proof of Concept

TRL3
Pilot Production

TRL4
Production

TRL5
Sunset

TECHNICAL READINESS LEVEL (TRL)

This chart shows the current anticipated time that the specified technology will complete its current stage of implementation and proceed to the next.

SMART ECOSYSTEM

WORKING CLOSELY WITH CNM, UNM, & PRIVATE SECTOR FOR TESTING

To prepare for the Smart City revolution, we need to make sure that there are enough trained technicians and data analysts who understand how to build, deploy, use smart technology across cities. We are working with our local education partners to make Albuquerque the learning center for Smart Cities.

HIGHLIGHTS

- Partnering with Deep Dive Coding IOT Bootcamp (CNM Ingenuity, Inc., "Deep Dive Coding Bootcamps", 2018, p. https://deepdivecoding.com/)
- Working with UNM, CNM and other agencies to form a joint Internet of Things (IoT) Committee to collaborate on and share ideas

CNM DEEP DIVE CODING
IOT BOOTCAMP

A PARTNERSHIP FOR REAL-WORLD TESTING

Through the fundamentals of creating and coding smart connected devices, students explore innovative solutions to real-world problems using art, science, and technology.

Past projects include a solar-powered mobile WiFi hotspot trailer, a search and rescue dront, a pumpkin smart growing station, and a hydroponics project.

TECHNOLOGIES & PARTNERS

PROUDLY PARTNERING WITH THE BEST LOCAL & NATIONAL COMPANIES

WANT TO JOIN US?

PRACTICAL SMART LIGHTING SOLUTIONS

The City of Albuquerque partnered with Dalkia to design, finance, implement and maintain a smart LED lighting infrastructure. This helps the City digitize their urban infrastructure operations, shorten the response times for repairing outages, and reduce their cost of delivery of city services.

Not only does this smart LED project achieve a 60% energy savings, it also combines hardware, software and networking to improve city residents' safety, communication, health and mobility.

New IoT-based connected services can offer a city greater options for enhanced quality of life. For example, when paired with gunshot detection software, smart lighting allow the authorities to identify the crime scene quicker.

WWW.DALKIASOLUTIONS.COM/SMART-CITIES

ShotSpotter®

PRECISION POLICING SOLUTIONS

ALBUQUERQUE POLICE DEPARTMENT STARTED USING SHOTSPOTTER RESPOND™ IN JULY 2020, TRACKING MORE THAN 800 GUNSHOT DETECTIONS IN THE FIRST THREE MONTHS.

With ShotSpotter Respond, police become aware of essentially all gunshot incidents. This technology is trusted by more than 100 U.S. cities to help make their communities safer. The system detects, locates, and alerts police to gunfire in less than 60 seconds using a network of acoustic sensors across a coverage area. Alerts include a precise location of the shooting with the tactical intelligence responders need for a safer response. This enables a new normal where police can provide a consistent, rapid, and precise response to aid victims, collect evidence, and better serve their communities.

"[ShotSpotter] is by far and away one of the most effective pieces of technology all across the globe." - Mayor Tim Keller, Albuquerque, NM

WWW.SHOTSPOTTER.COM

CISCO CONNECTED COMMUNITY INFRASTRUCTURE (CCI)

Cisco is proud to partner with the City of Albuquerque. Our solution is built on the Cisco Smart Cities platform, known as Cisco Connected Community Infrastructure (CCI), and leverages the extensive ecosystem of partners Cisco has built to provide a comprehensive system on Cisco Smart Cities and the Internet of Things (IOT). Smart Cities such as City of Albuquerque, use information technology, network communications including the Internet, and sensors to automate routine processes plus provide rapid and intelligent decision-making for creating dramatic efficiencies and cost savings in existing functions and processes.

As more cities and communities undertake digital transformation, Cisco continues to lead with powerful research, vision, technology, and business models all designed to guide our customers' journey.

WWW.CISCO.COM

Genetec Citigraf™

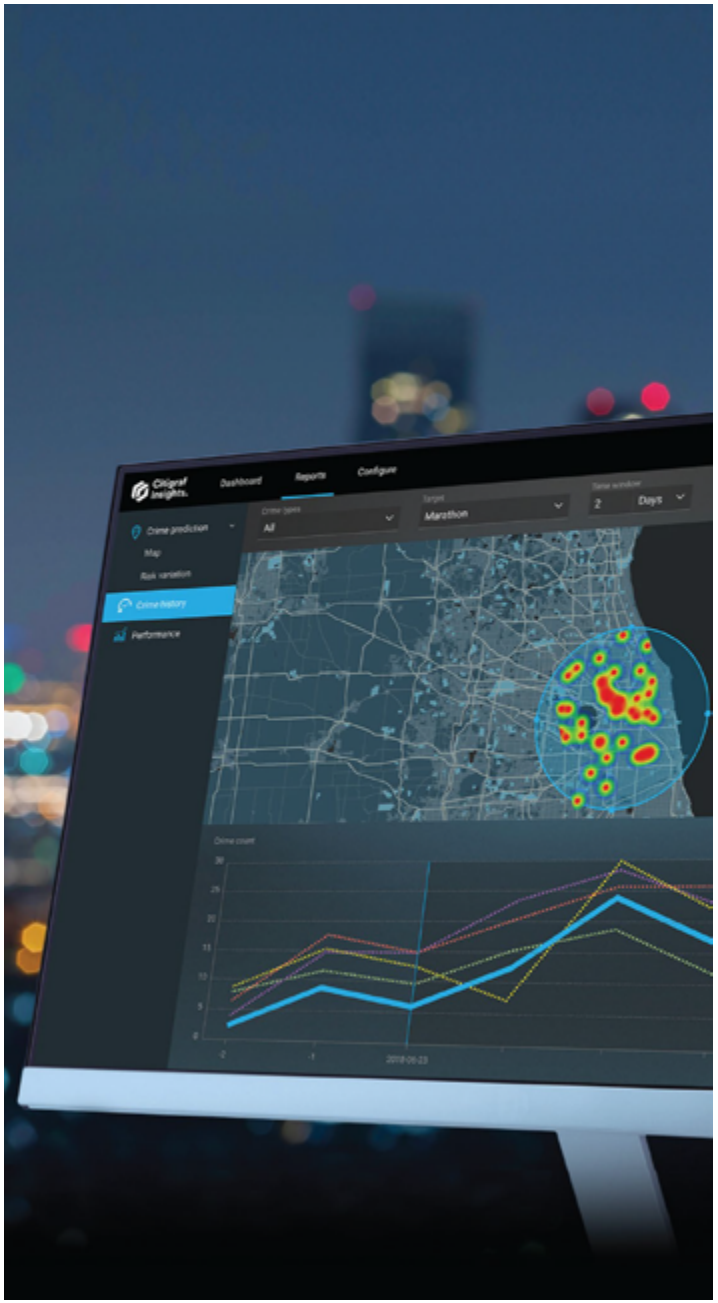
STRATEGIC DECISION SUPPORT SYSTEM

SITUATION AWARENESS AND OPERATIONAL INTELLIGENCE THROUGH THE CORRELATION OF DATA AND SENSORS IN REAL TIME

Genetec Citigraf ties together operational intelligence from a host of sources to improve decision making, collaboration and coordination as a key component of APD's state-of-the-art Smart Real Time Crime Center.

Integrating 911 calls for police service, law enforcement records, gunshot detection alerts, camera feeds, IoT sensors, smart lighting, and license plate recognition, Citigraf enables officers to respond more quickly to critical incidents through enhanced, real-time awareness and in-route intelligence.

Citigraf features a dynamic mapping system, displaying live and historical data, correlated with incidents, alerts and near proximity sensors to present a smarter, more effective common operating picture for informed decision making.



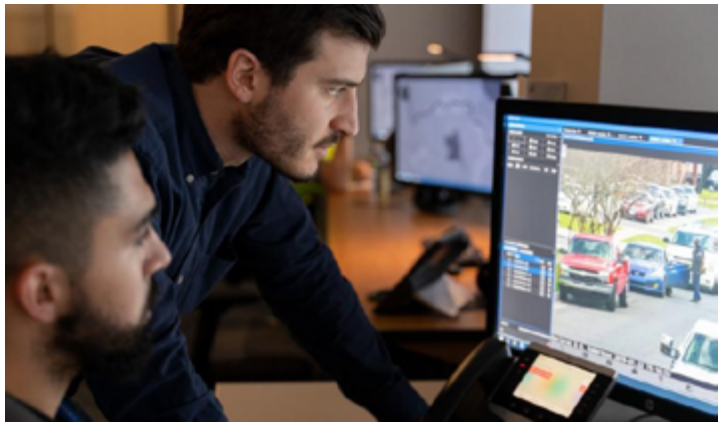
WWW.GENETEC.COM/SDSC
SCLOW@GENETEC.COM

MOTOROLA SOLUTIONS

THE FUTURE OF PUBLIC SAFETY TECHNOLOGY CHALLENGED TO DO MORE WITH LESS

For over 90 years Motorola Solutions has provided communities with the tools to be their best in the moments that matter. In partnership with the City of Albuquerque we have contributed to the Smart Cities Initiative by combining the latest smart technologies with innovative solutions, including our P25 Digital Radio System, Vesta 911 for Dispatch, Video Security Analytics (VSA) and our License Plate Recognition (LPR) software technology.

Motorola Solutions' complete ecosystem of software and mission-critical communications is designed for the mission-critical needs of first responders and public safety agencies. We understand the challenges faced; we know the crimes you investigate. Our solutions better equip public safety agencies by combining intelligence software and powerful analytics to enable agencies to develop targeted leads to close cases efficiently and effectively. With the ability to integrate these technologies, agencies can accelerate information across workflows to operate more efficiently and gain deeper insights.



1.888.325.9336
WWW.MOTOROLASOLUTIONS.COM

URBAN INFRASTRUCTURE PLATFORM

HELP CITIES AND LARGE CAMPUSES IN THE DIGITISATION OF THEIR INFRASTRUCTURE

The company is a leading player in providing the digital platform for automating and optimizing the operations of the urban infrastructure which help cities deal with the increasing challenges of urbanization. With 80+ deployments across the globe, Quantela's key focus is to digitize and automate the way cities are operated and help improve citizen lives by enabling sustainable use of Urban Infrastructure.

Quantela is disrupting the model of financing smart city projects via outcome based models, that help Cities digitize their urban infrastructure operations thereby discovering new revenue streams as well as reduce their cost of delivery of City services.

650.479.3700
WWW.QUANTELA.COM
INFO@QUANTELA.COM

LPR USE IN PUBLIC SAFETY, TRAFFIC, & PARKING

Vehicle Plate Recorder: Captures the license plate of a vehicle passing in the field of view of an LPR camera and compares it in real time against a hot-list and stores LPR data on a central repository and sends to CKC.

Traffic Proximation & Planning: iDS has data analytics for traffic flow, volume, rate and lapse time.

Open Parking Management: LPR appliance to enforce valid parking of authorized vehicles time in, out, total duration & vehicles on property.

School Zone Speed Enforcement: Records vehicles speed, direction and distance from the appliance.

Smart Trash Truck: LPR appliance installed can register number plates of parked vehicles, street signs and other markings.

408.727.3904
WWW.STREAMING-NETWORKS.COM

verizon

PUBLIC SAFETY

TRANSFORMING PUBLIC SAFETY WITH SAFE CITIES TECHNOLOGIES

At Verizon, we believe that when it comes to quality of life, there is immeasurable promise and unlimited potential in smart communities technology. We provide solutions that help solve today's biggest challenges - like public safety, traffic and energy - and we are proud to partner with the City of Albuquerque to deploy one of our many public safety solutions.

Verizon's Real Time Response System (RTRS*) is a turnkey, cloud-hosted decision support solution that integrates large amounts of data from multiple sources and presents information in an intuitive, easy-to-navigate dashboard. By providing timely access to integrated data across public safety operations and city departments, RTRS improves situational awareness, speeds response to emerging threats, and enhances collaboration and resource management among agencies, cities and the private sector.

* In the instance of our RTRS solution deployment within the City of Albuquerque, Verizon has partnered with Genetec, leveraging their Genetec Citigraf™ solution.

HTTPS://ENTERPRISE.VERIZON.COM/PRODUCTS/INTERNET-OF-THINGS/SMART-CITIES-AND-COMMUNITIES/REAL-TIME-RESPONSE-SYSTEM/

WESTWIND

END TO END TECHNOLOGY SOLUTIONS

SOLVING TOMORROW'S CHALLENGES WITH INNOVATIVE SOLUTIONS TODAY

Westwind is a proud Albuquerque based firm, and we are pleased to support our city's smart city initiatives. Our work with emerging technology manufacturers comes from our core IT offering we've been providing to our local and national customers alike for over 25 years.

Our partnerships with manufacturers who are leading the way with smart solutions focused on Public Safety, Environmental Health, AI, and large-scale data analytics give Albuquerque the local and experienced partner it needs to overcome future challenges.

Westwind is eager to help our community solve real-world problems today using the best-in-class technology providers available.

505.345.4720
WWW.WWCPINC.COM

UBICQUIA

SMART, SCALABLE SOLUTIONS

Ubicquia® is proud to be part of the City of Albuquerque's Smart Communities. As a leader in smart city, smart grid and small cell platforms, we are dedicated to helping communities like Albuquerque transform into smart cities using their existing infrastructure. Our streetlight mounted platforms, compatible with over 360 million streetlights worldwide, include **UbiCell**™ Smart Streetlight Controller and **UbiSmart**™ **AQM+**, which the City of Albuquerque has deployed.

The **UbiCell** streetlight controller enables remote scheduling of Albuquerque's new LED streetlights to reduce energy consumption; dimming to reduce lighting impact; and outage notifications to ensure safety and security for residents. Our **UbiSmart AQM+** allows communities to monitor air quality and address environmental concerns like Ozone, CO2, and fire particulates in real-time.

Ubicquia's solutions help communities become smarter,safer, and more connected.

WWW.UBICQUIA.COM
SALES@UBICQUIA.COM

PERSPECTIVE COMPONENTS INC.

PERSPECTIVE COMPONENTS

Perspective Components' key goal is to provide fast and accurate information to First Responders. Perspective Components' collaboration with the City of Albuquerque focuses on identifying security related events like burglary, reckless driving, and violence in real time using Artificial Intelligence.

Perspective Components developed NoiseVu technology to give communities a tool to condense the activity of an entire metropolitan area into a single dashboard.

NoiseVu listens for a wide range of security related events and provides a live feed of information directly to CABQ's first responders. This Smart City technology allows the City to respond to crime and accidents as they happen, allowing more time to make a difference.

www.noisevu.com

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