



***Closing the Homework Gap: Connecting Our Underconnected Communities***

[www.borderlink.org](http://www.borderlink.org)



# Introductions

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# Imperial County

Located on the Southeast corner of the State

Borders with Mexico, Arizona and San Diego and Riverside Counties

Sparsely populated and mostly agricultural land - 4,482 square miles

Estimated population 183,191

Serving approximately 37,573 students in 67 schools (16 school districts)

74% of families qualify for the free and reduced lunch program

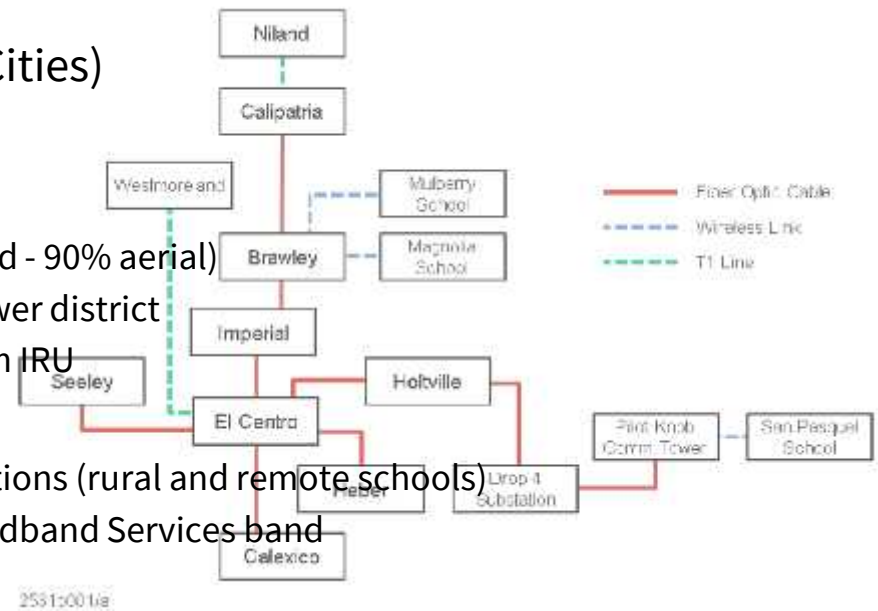
43% of students are English Language Learners

Serve many migrant families

**“Our vision is for Imperial County to be the most connected community in the nation” - Todd Finnell, Imperial County Superintendent of Schools**

# Imperial Valley Telecommunication Authority

- 9 major communities
- 30 Public Agencies (Schools, County, Cities)
- 120 total sites
- Fiber Optic
  - 100 miles of private fiber (10% underground - 90% aerial)
  - 80 miles of fiber provided by the water/power district
  - 60 miles of fiber leased through a long-term IRU
- Wireless Assets
  - Point-to-point unlicensed wireless connections (rural and remote schools)
  - 122 Mhz of spectrum in the Education Broadband Services band



# Imperial County

Consortium of **5 educational institutions** hold all the EBS channels available within Imperial County GSA.

**Imperial County Office of Education**

**Central Union High School District**

**Imperial Valley College**

**Meadows Union School District**

**Seeley Union School District**

Total capacity = **112.5 Mhz**



# The why.

**Within every district, there are hundreds, or even thousands, of students who do not have Internet access once they leave the classroom.** Nationwide, 5 million households with school-age children lack Internet access at home. Low-income students feel the impact of the Homework Gap far more than their more affluent classmates. Ultimately, this disadvantaged position jeopardizes the student's performance, grades, and even graduation rates.

## Consider this...

Roughly 7 in 10 teachers assign homework that requires access to Internet  
42 percent of teachers say their students lack sufficient access to technology outside of the classroom

Even worse, only 3 percent of teachers in high-poverty schools said that their students have the digital tools necessary to complete homework assignments  
5 million households with school-age children do not have high-speed internet service at home. Low-income households – and especially black and Hispanic ones – make up a disproportionate share of that 5 million

31% of households whose incomes fall below \$50,000 and with children ages 6 to 17 do not have a high-speed internet connection at home

High school students who have broadband Internet at home have graduation rates 6 to 8 percentage points higher than students who don't

# The what... BorderLink

Wireless overlay on our **existing fiber** network infrastructure

Procurement process **started in April of 2017** to operate our private **4th Generation LTE** network using **Band 41**

Now underway in the cities of **Brawley, El Centro, Heber, Seeley, and Westmorland**

Provide service to approximately **1,600 students**

Equipment:

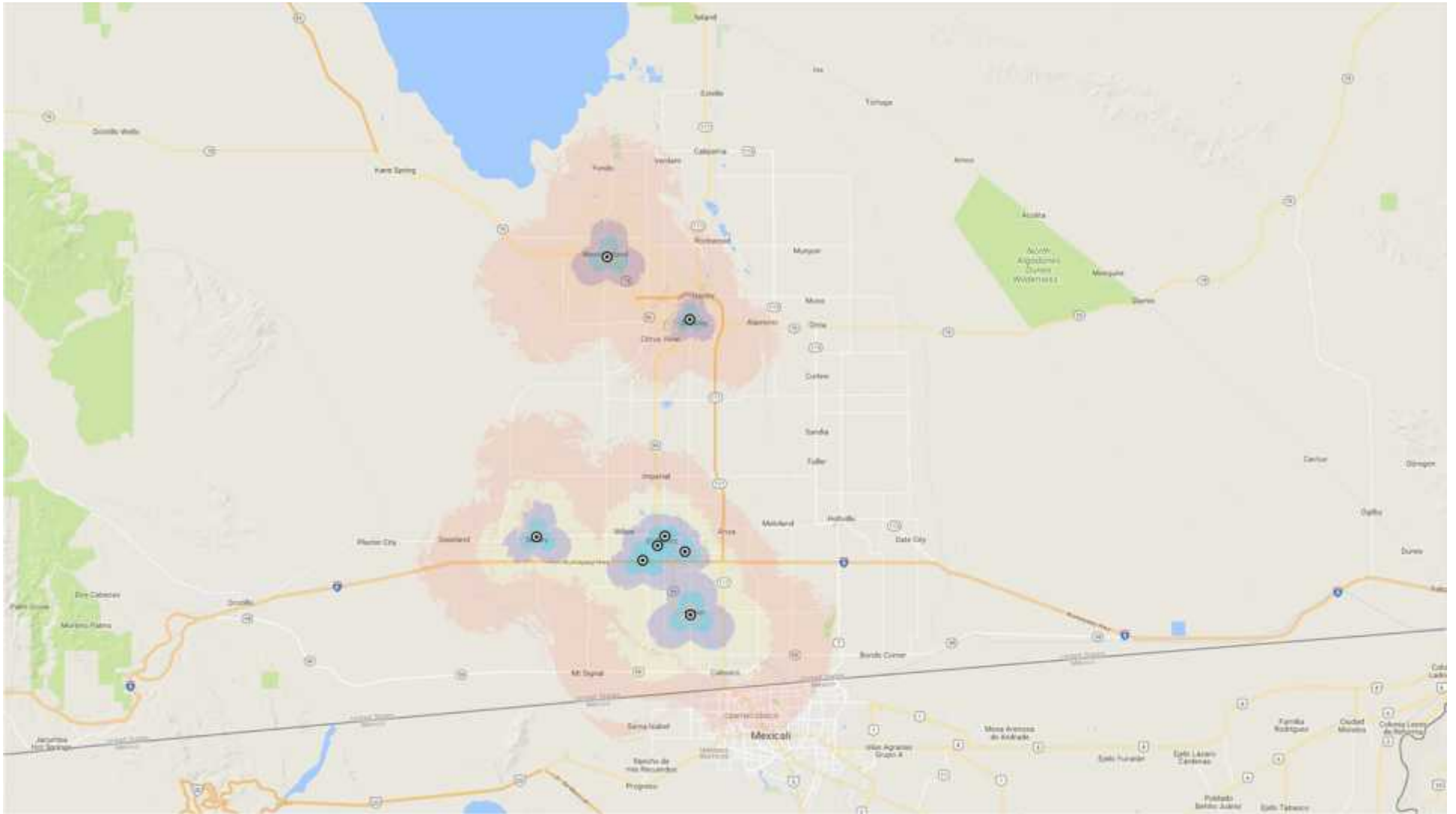
- 6 cell sites

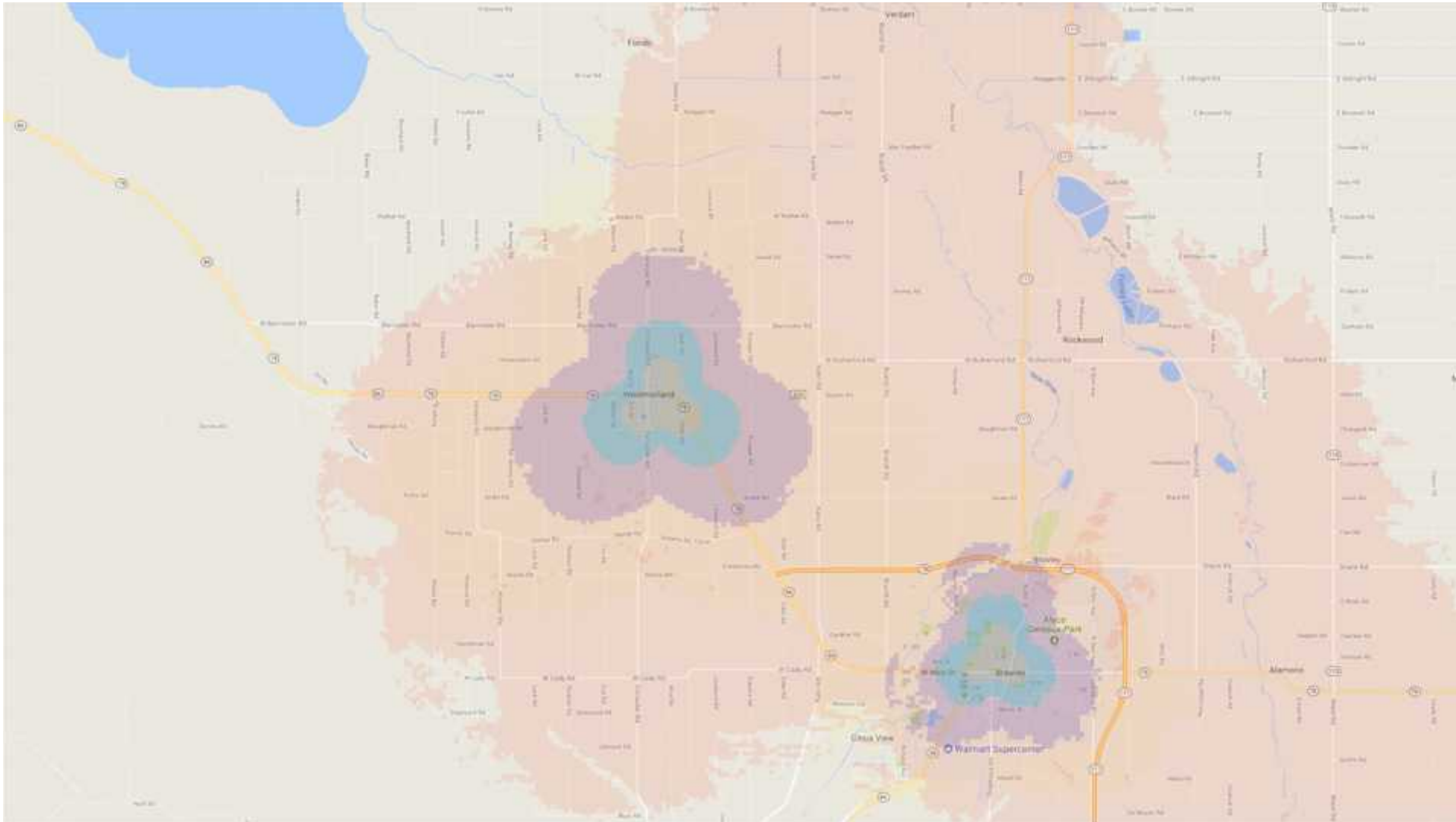
- 1,600 CPE devices

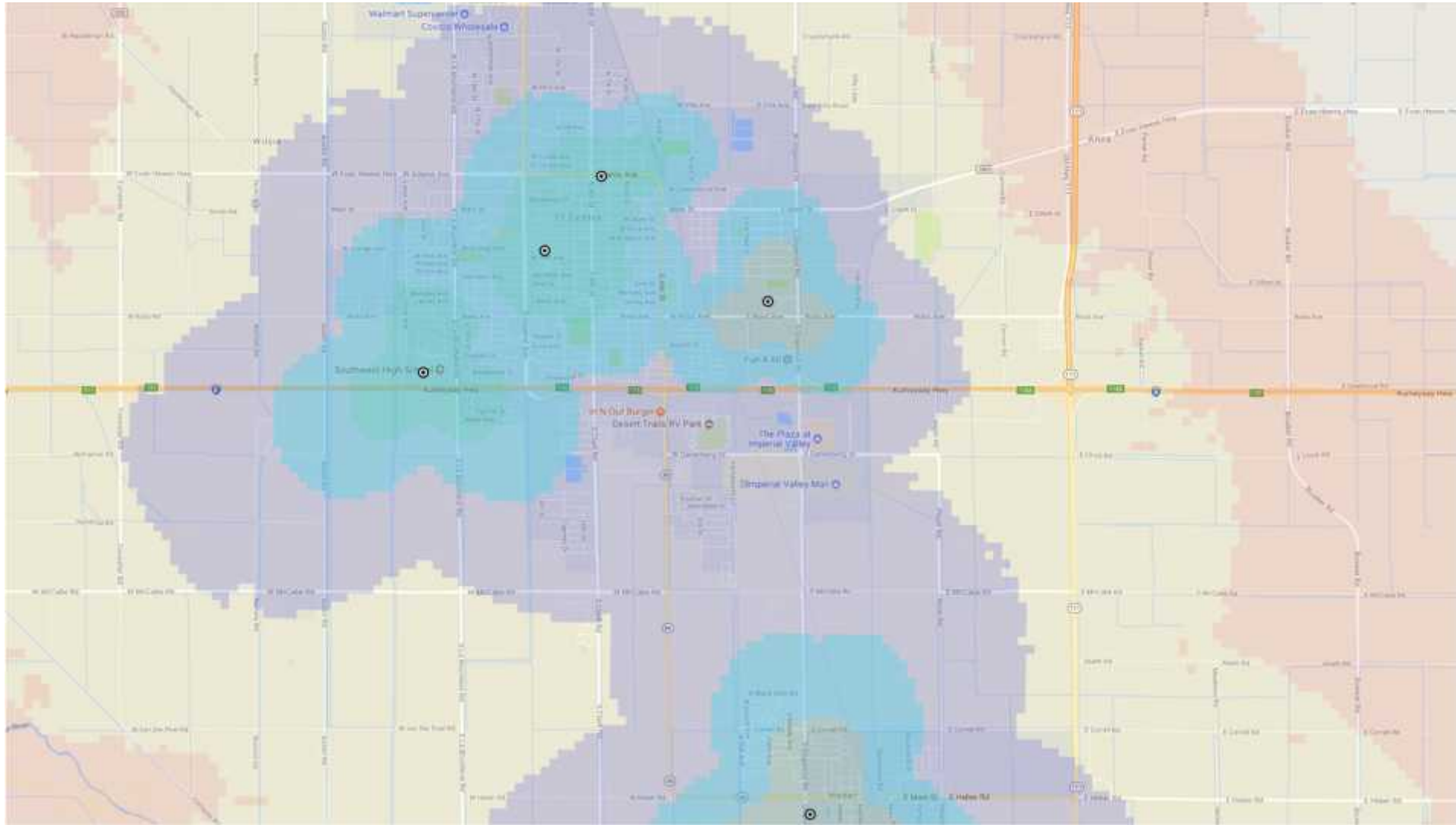
- 1 LTE core with capacity to serve 200,000 subscribers

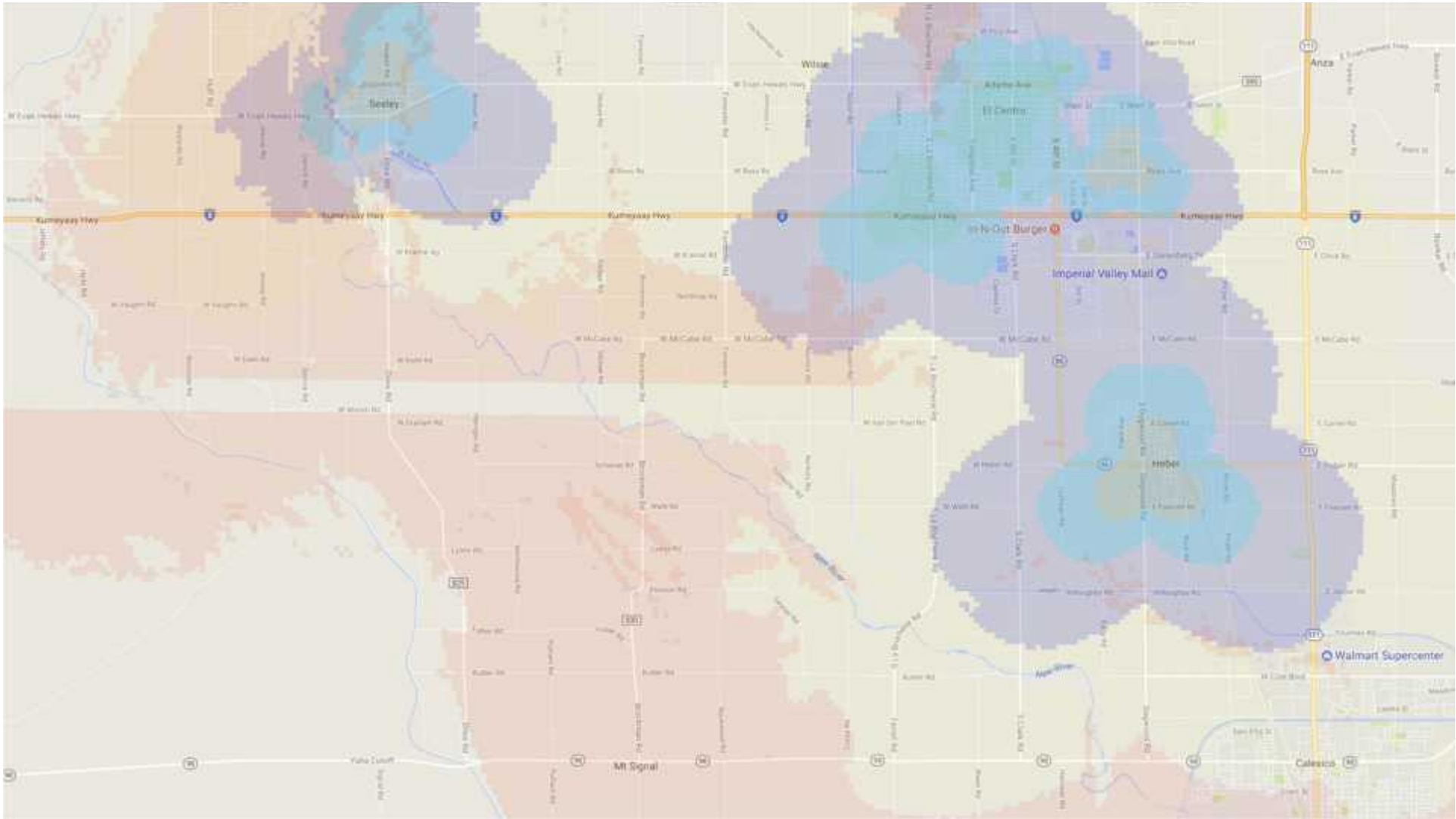












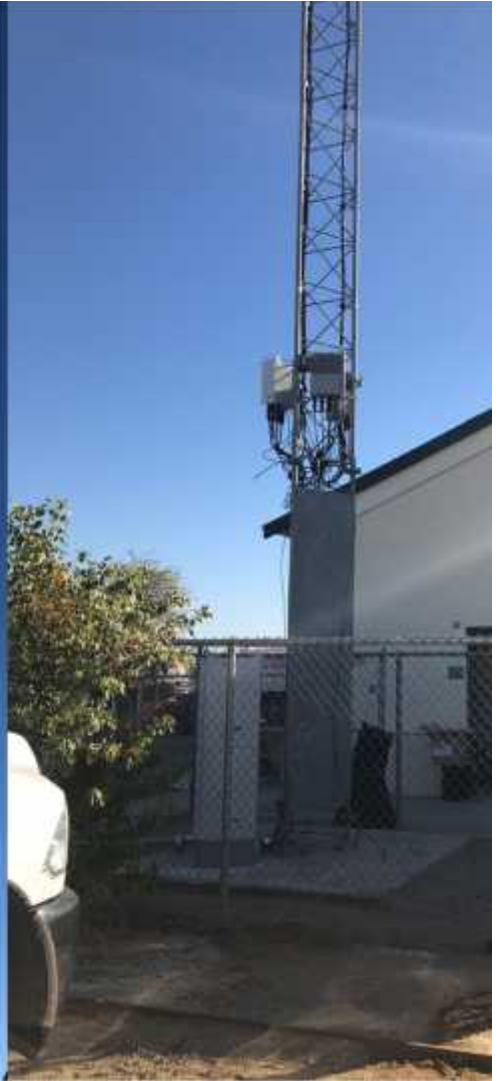


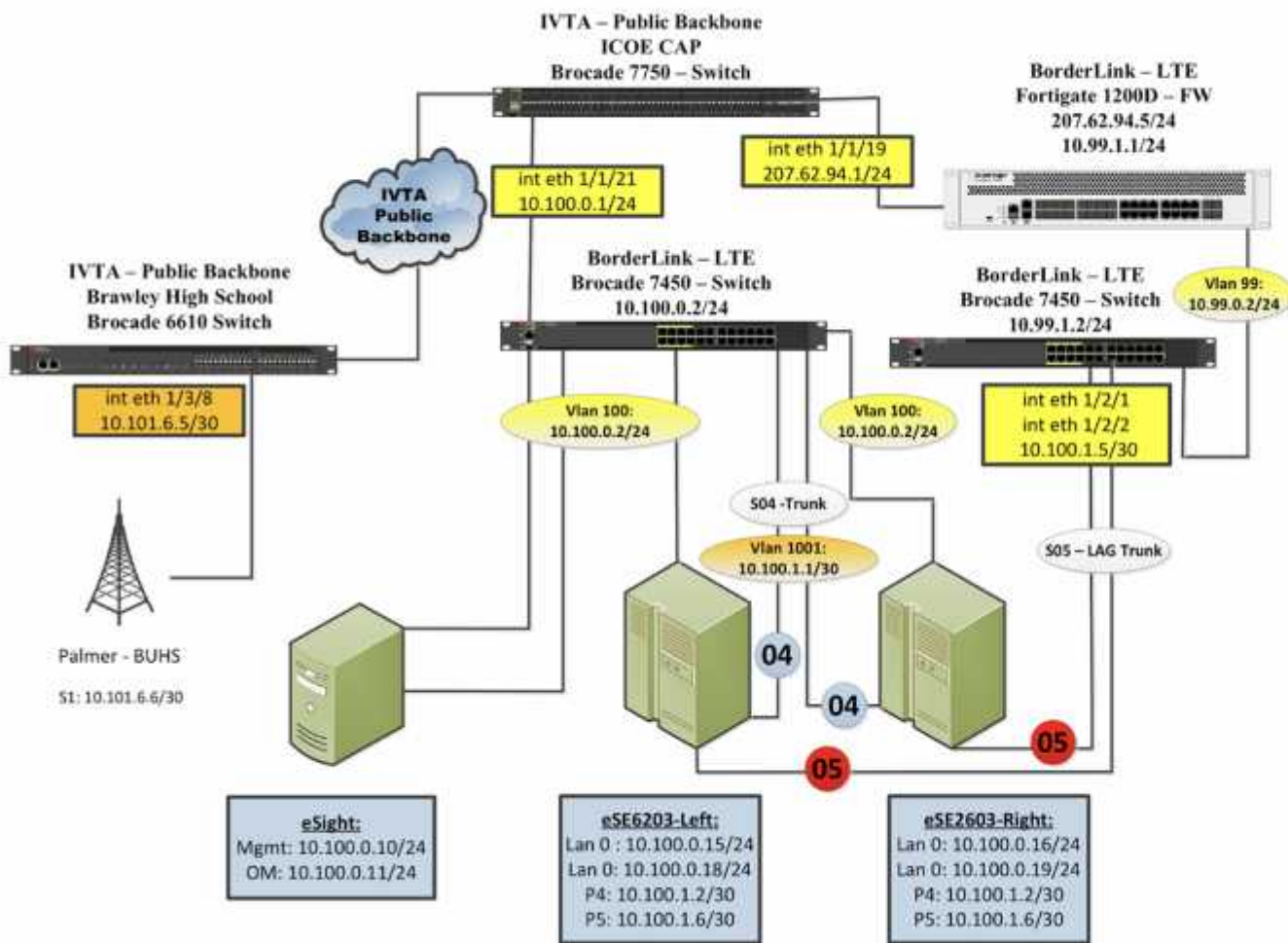




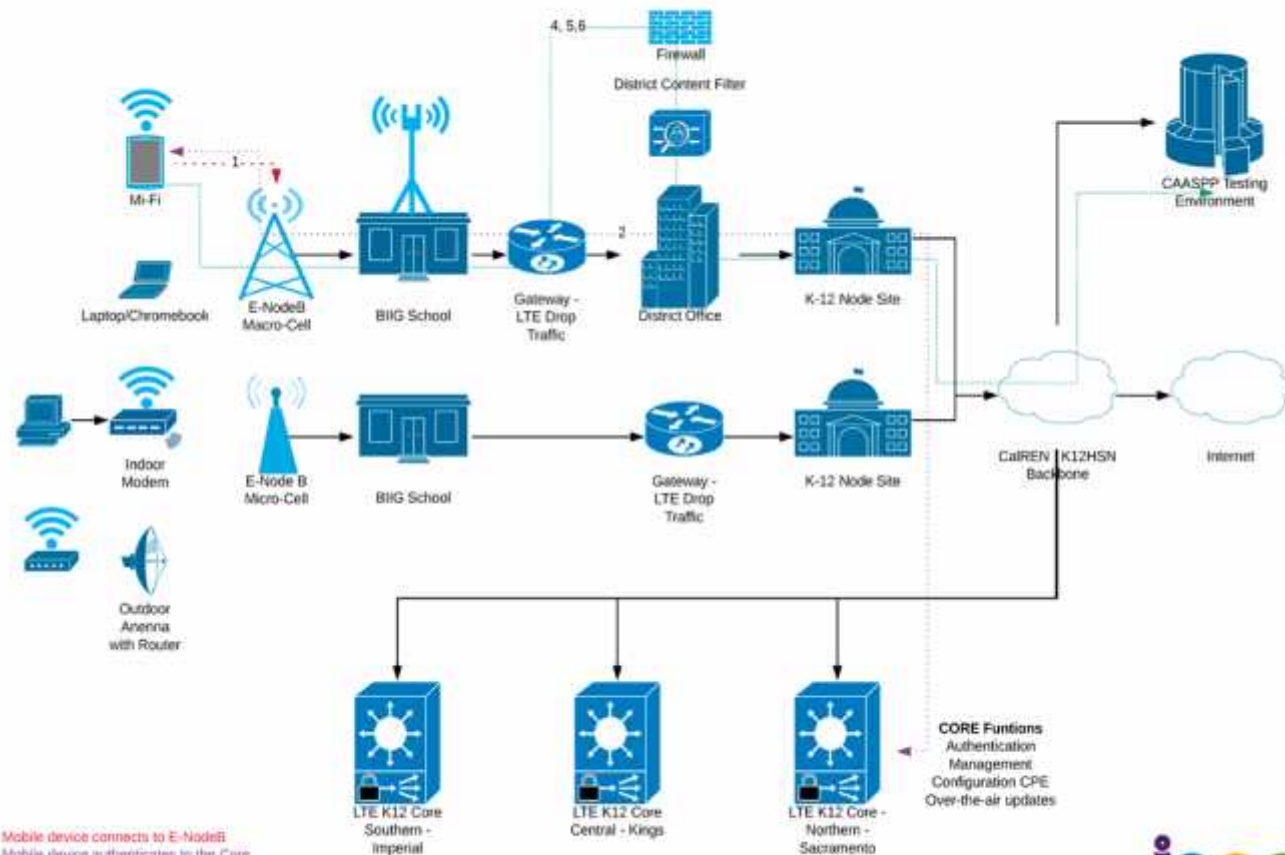








## Closing the Homework Gap in California Proof of Concept



1. Mobile device connects to E-NodeB
2. Mobile device authenticates to the Core
3. Mobile device receives configuration
4. Mobile device data traffic is dropped on District/COE network
5. Traffic if processed through District/COE Filters and Security
6. Mobile device can access district resources, Internet or CAASPP Testing environment



Questions/Additional Information

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