



Mapping the External Lighting and Illumination of Campuses

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Garland ISD has:

- 7 High Schools
- 12 Middle Schools
- 47 Elementary Schools
- 2 Pre K Centers
- 2 Sports Stadiums
- 1 Event Center
- Plus Several Special Use and Admin Facilities

Garland ISD serves:

- About 85 Total Facilities
- Over 8 million square feet of covered space
- 57,000 Students

We Use GIS For:

- Facilities
 - AutoCAD building data is converted to GIS Features using model builder.
 - Various Assets are kept in our Database.
- Geocoding and performing demographic analysis of Students.
- Bus Routing
- We also produce maps and apps in response to requests from several departments.

Last year our GIS Department was approached by Security to see how we might help them with night time campus lighting inspections.

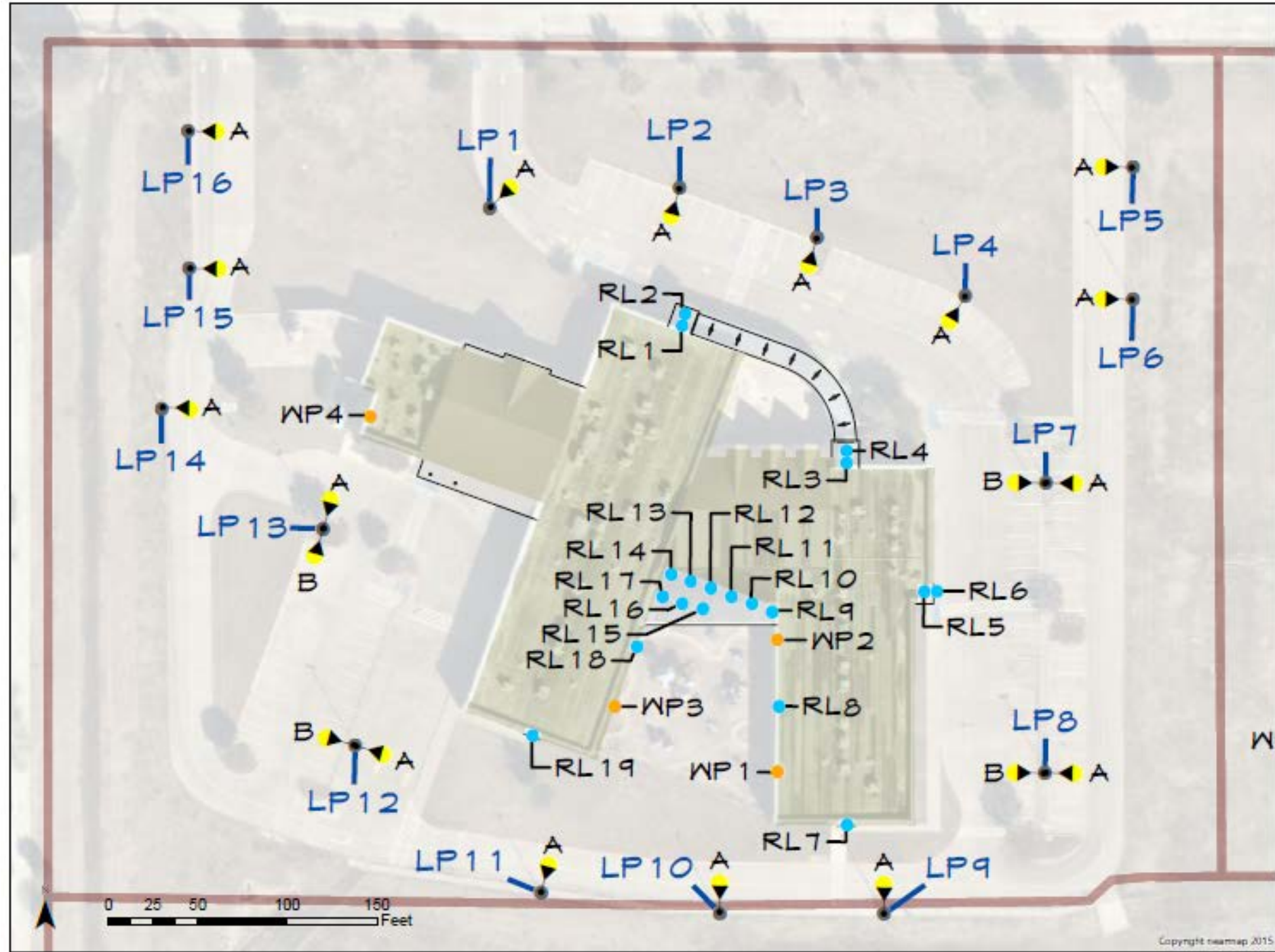
Previous to GIS involvement Security had printed PDF maps and manually marked them up with the locations of outdoor light fixtures, whether or not the lights were working, and a subjective assessment of “low light areas”.

It was immediately apparent to us that this project should be divided into two related but parallel projects.

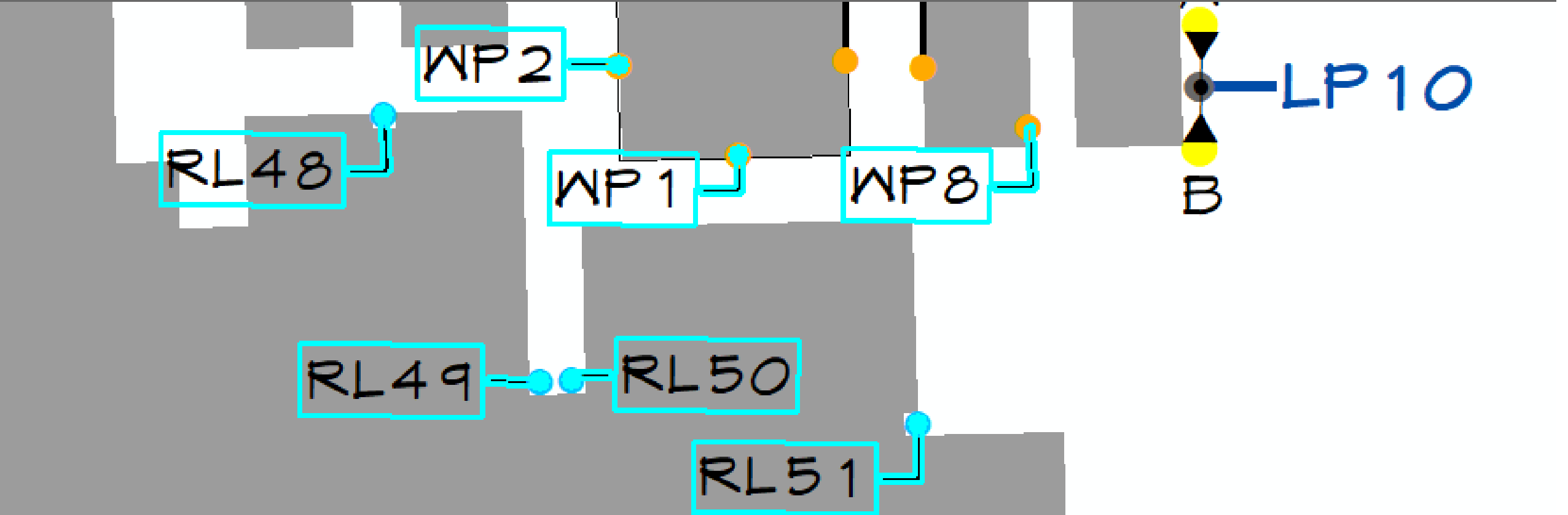
1. An inventory of lighting assets.
2. An objective assessment of night time Illumination.

Inventory of Lighting Assets.

1. First we talked to the stake holders, mainly security and maintenance.
2. We planned the schema for our data based on what was available and needed.
3. We digitized the assets.



- Lights**
- Recessed Light - RL (19)
 - Wall Pack - WP (4)
 - Pole Light - PL (19)
- LightPoles**
- Light Pole - LP (15)
 - CAMPUSES (2)
 - BUILDINGS (1)

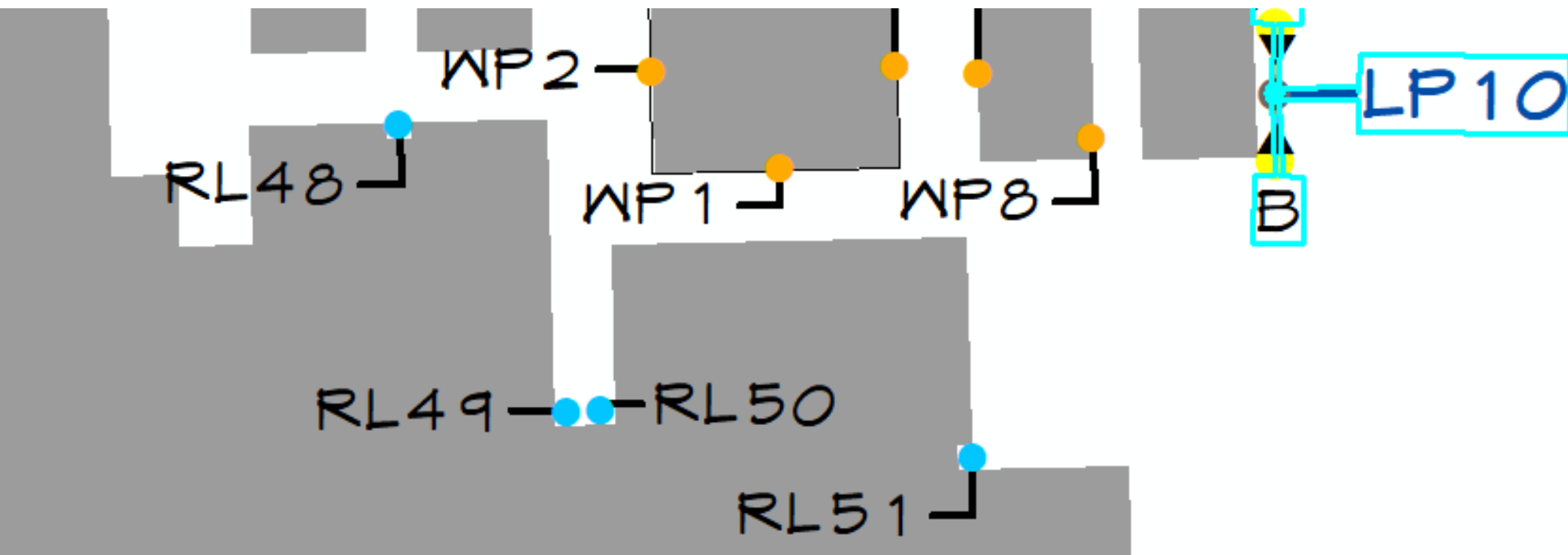


Table



Lights

	Loc *	CampID *	ID *	LightID *	FixtureType *	Fixture *	PanelRoom	PanCampR	Height	Azm	
	052	052.1	RL51	052.1_RL51	Recessed Light - RL	MISC - Recessed Light	<Null>	<Null>	<Null>	<Null>	<N
	052	052.1	RL49	052.1_RL49	Recessed Light - RL	MISC - Recessed Light	<Null>	<Null>	<Null>	<Null>	<N
	052	052.1	RL50	052.1_RL50	Recessed Light - RL	MISC - Recessed Light	<Null>	<Null>	<Null>	<Null>	<N
	052	052.1	WP2	052.1_WP2	Wall Pack - WP	MISC - Wall Pack	<Null>	<Null>	<Null>	<Null>	<N
	052	052.1	WP1	052.1_WP1	Wall Pack - WP	MISC - Wall Pack	<Null>	<Null>	<Null>	<Null>	<N
	052	052.1	RL48	052.1_RL48	Recessed Light - RL	MISC - Recessed Light	<Null>	<Null>	<Null>	<Null>	<N



able



DIRECTIONAL LIGHTS

Loc *	CampID *	ID *	LightID *	FixtureType *	Fixture *	PanelRoom	PanCampRm	Height	Azm	Notes	Status	LifeCycle	MF
052	052.1	PL10A	052.1_PL10A	Pole Light - PL	MISC - Pole Light	<Null>	<Null>	<Null>	0	<Null>	<Null>	Active - ACTV	<Null>
052	052.1	PL10B	052.1_PL10B	Pole Light - PL	MISC - Pole Light	<Null>	<Null>	<Null>	180	<Null>	<Null>	Active - ACTV	<Null>

Campus Illumination

1. Background Concept, Brookhaven College Student work from several years past.
2. Searched for best way to collect light readings and GPS.
3. Found Phone app for proof of concept.
4. Purchased Light sensor but have not yet gotten it working with tremble unit.
5. Project so far has been done with phone app.



Physics Toolbox Sensor Suite

Vieyra Software

Tools

UNINSTALL

UPDATE

Contains ads

What's new

Last updated Apr 23, 2019

New bubble level in the inclinometer mode.

Fixed tone generator crashes.

Bug fixes.

[READ MORE](#)

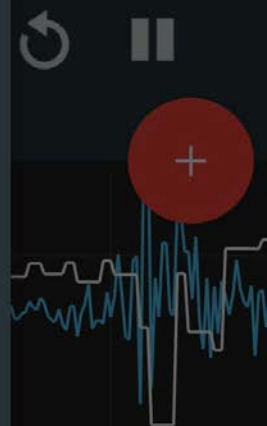
Rate this app

Tell others what you think



[Write a review](#)

- Ruler
- Magnetometer
- Compass
- GPS
- Inclinometer
- Light Meter
- Color Detector
- Sound Meter
- Tone Detector
- Oscilloscope (Audio)
- Spectrum Analyzer (Audio)
- Spectrogram (Audio)
- Multi Record

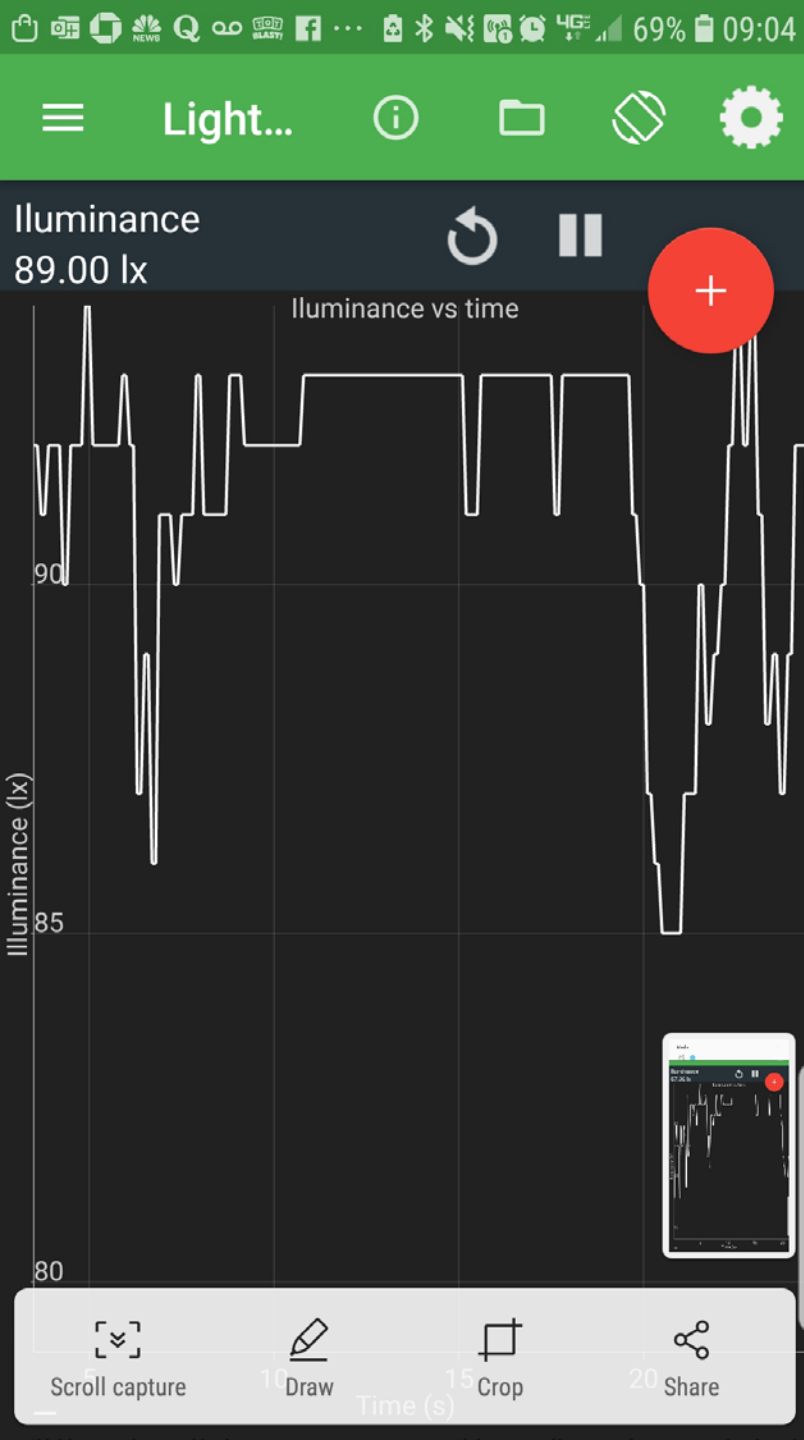


DISMISS

Data recording started

- ☐ g-Force
- ☐ Linear Accelerometer
- ☐ Gyroscope
- ☐ Barometer
- ☐ Hygrometer - Sensor not available
- ☐ Thermometer - Sensor not available
- ☐ Magnetometer
- ☒ Light Meter
- ☐ Inclinometer
- ☐ Sound Meter
- ☒ GPS





Multi...

File Name

2019-04-2405.25.56

OK

☐ Barometer

☐ Hygrometer - Sensor not available

☐ Thermometer - Sensor not available

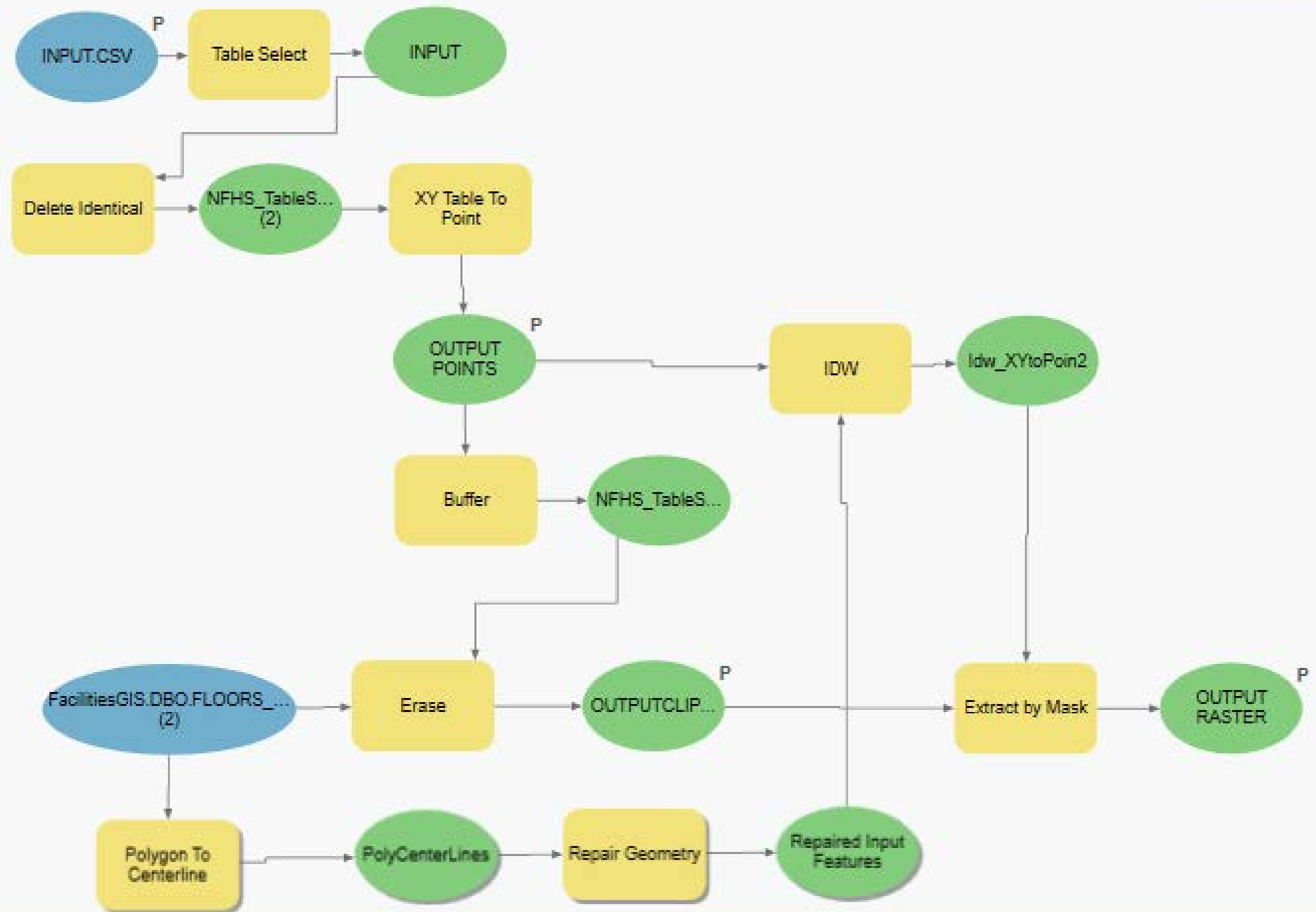
English (US)

Done

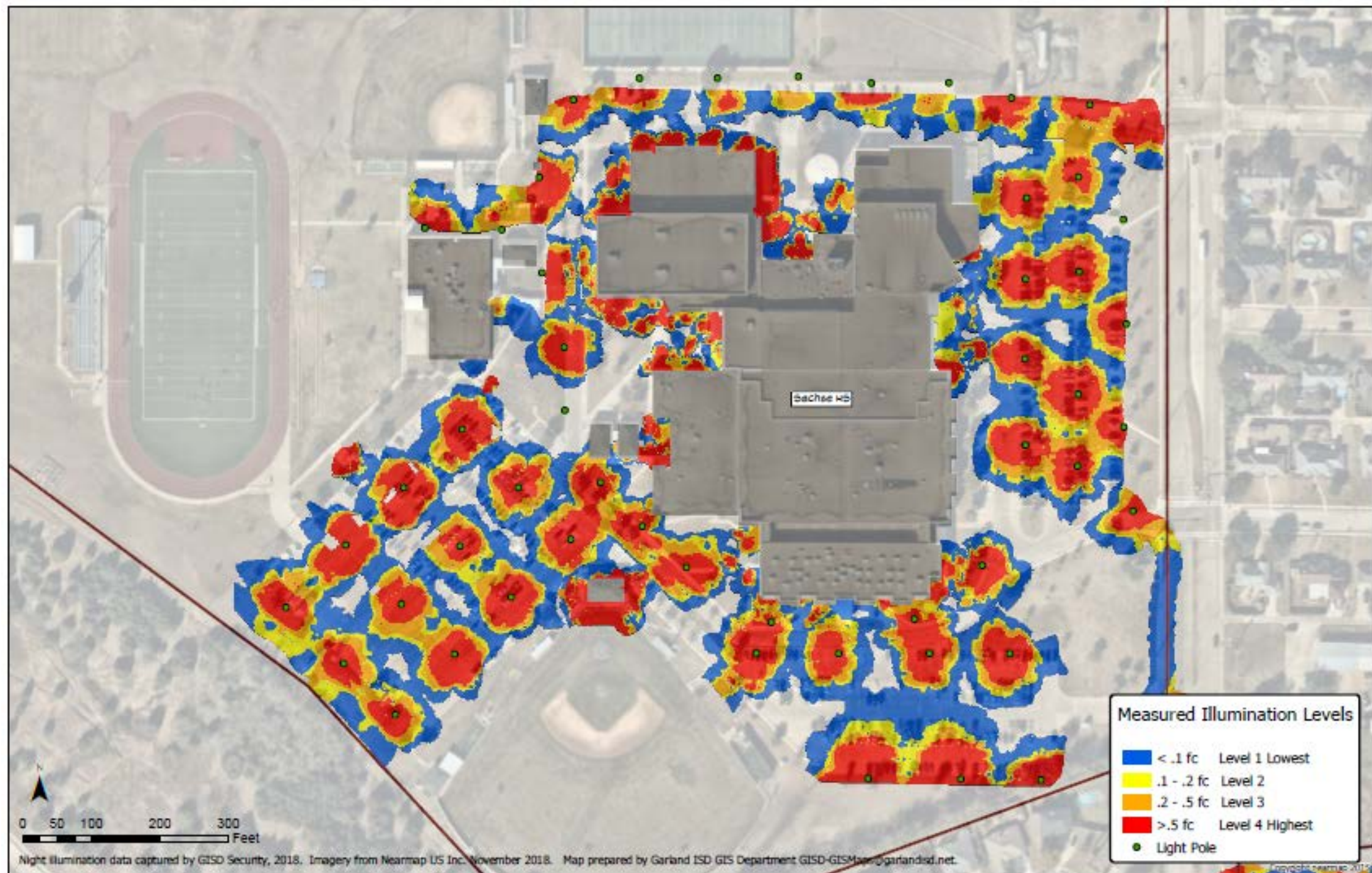
Read Only - To make changes, save a co...

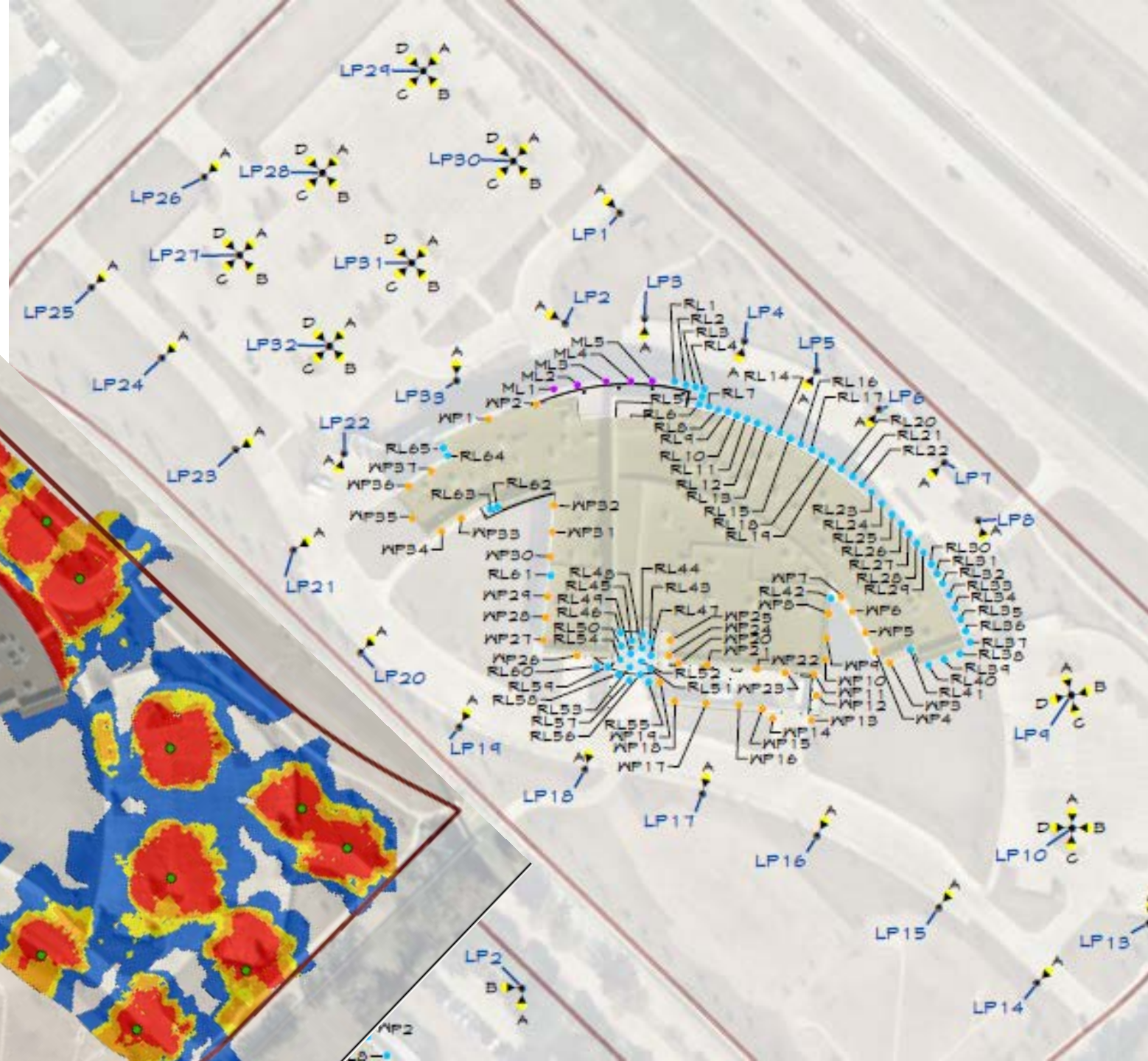
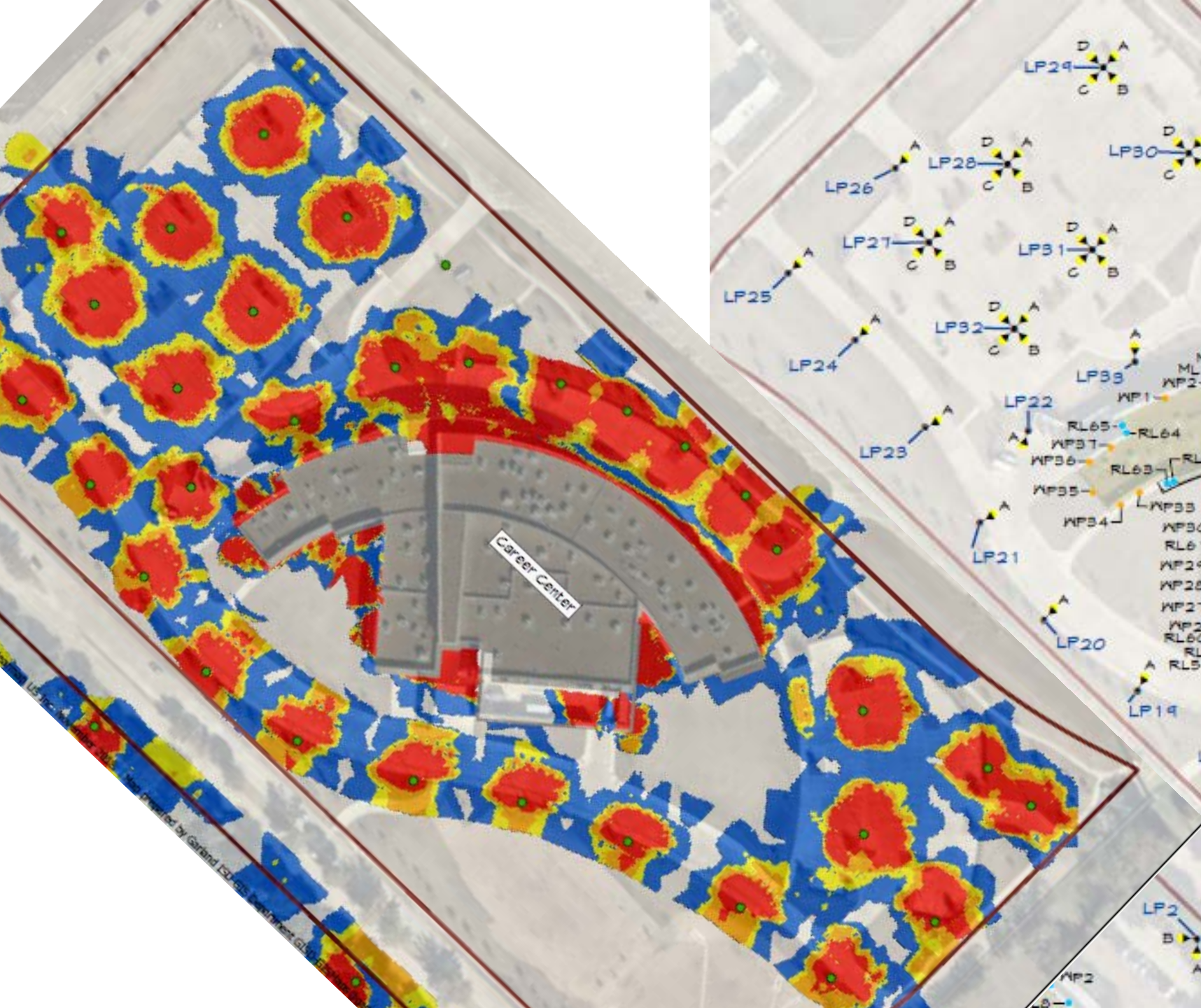
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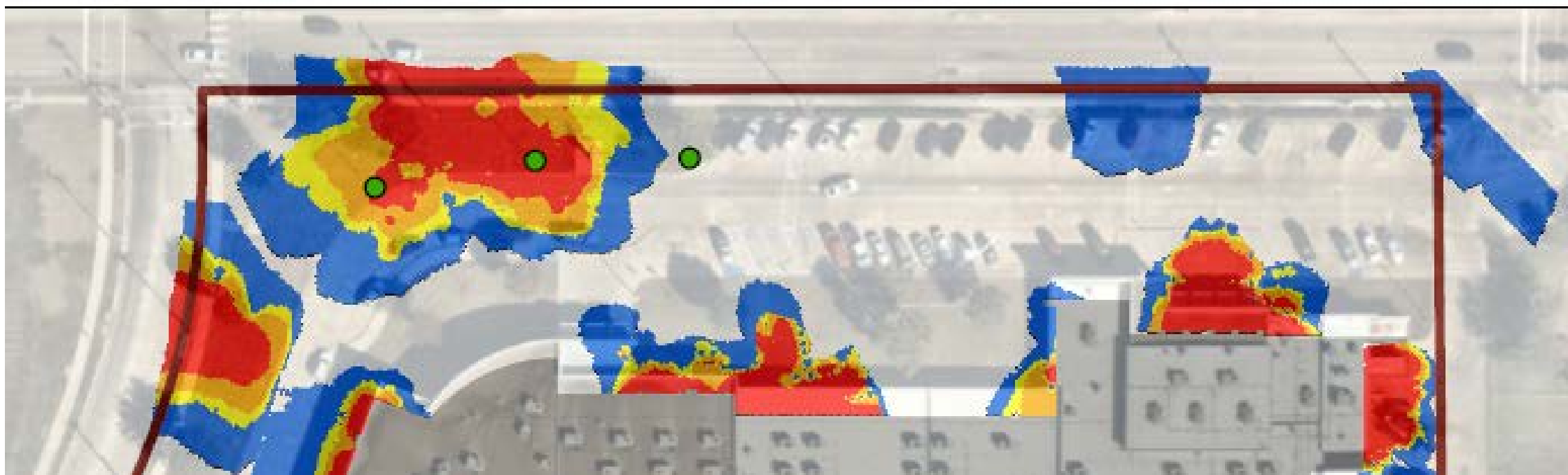
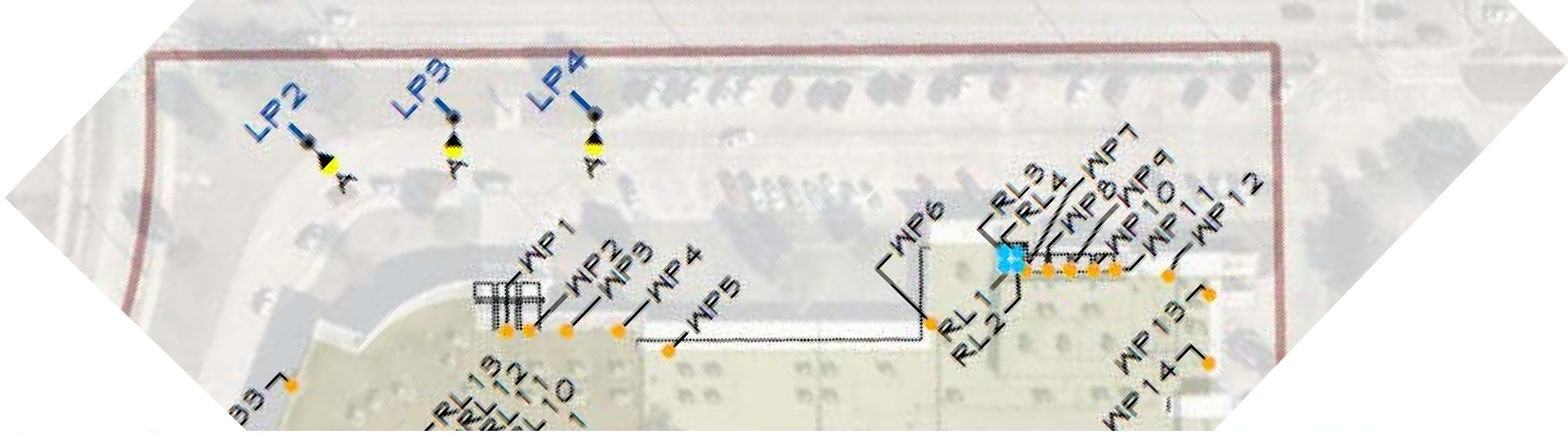
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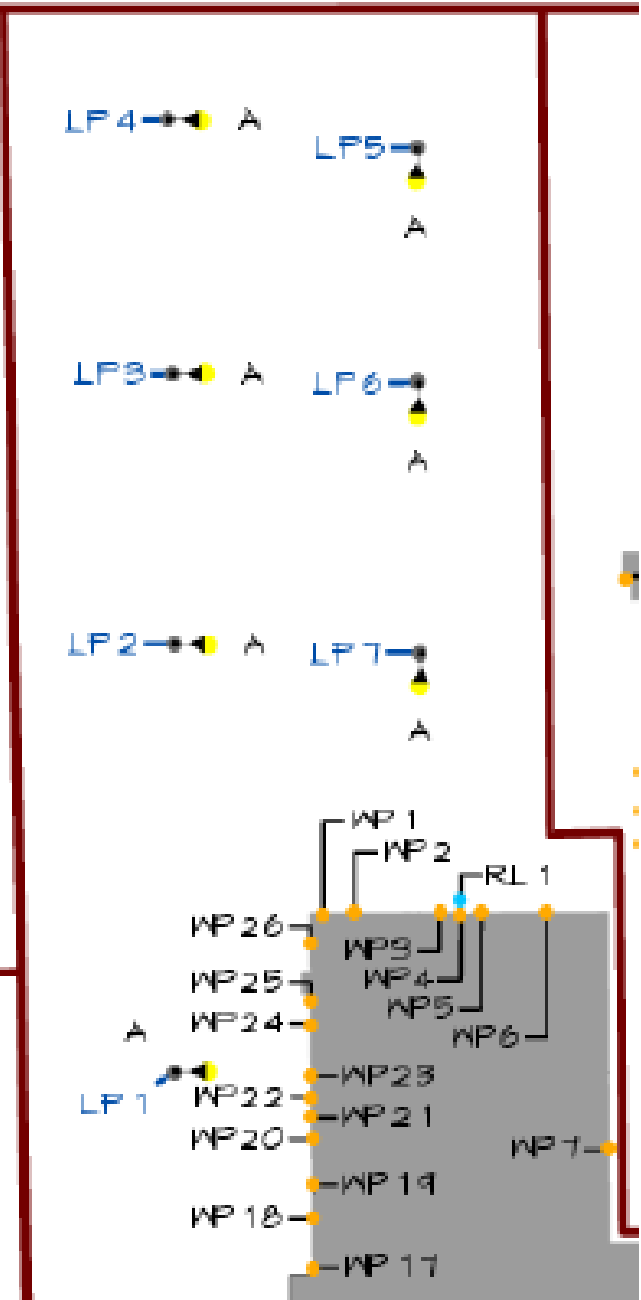




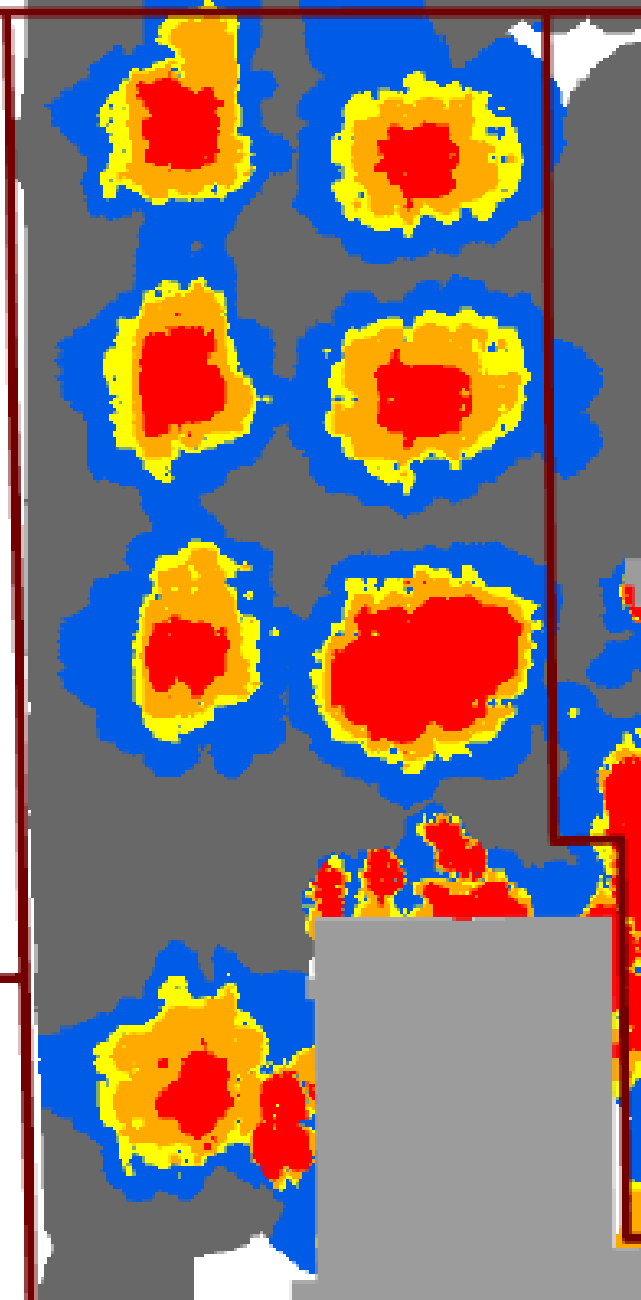




Lighting Assets



Original Lighting Survey



Resurvey Done Post LED Upgrade



Where We Are Now

- Printed Map Books and Online Apps have been produced and delivered to both Security and Maintenance.
- Asset Inventory ID numbers have been assigned to all lighting assets and are now used to improve work order communication.
- Illumination Maps are being used by security to assess where additional lighting is needed so that the best decisions can be made going forward.

Other people who made this project possible

- Jess Hudson – GISD Director of GIS
- David Q. Morris – GIS Staff
- Sana Qazi – GIS Staff
- Juston Coffman – Garland ISD Security
- Several other staff members from the Security and Maintenance departments.
- Scott Sires - Brookhaven College
- Gerald Bartz – Brookhaven College

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