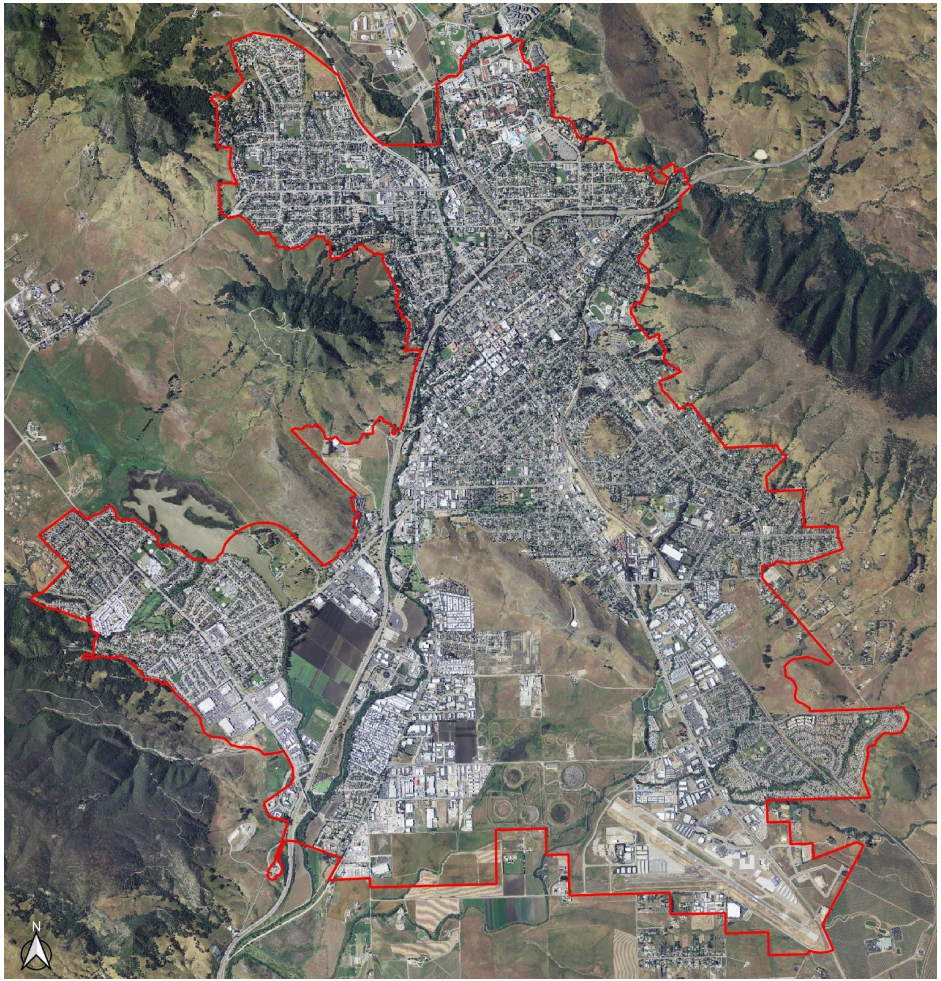
Estimating Urban Canopy Cover in San Luis Obispo

Kyle Nessen

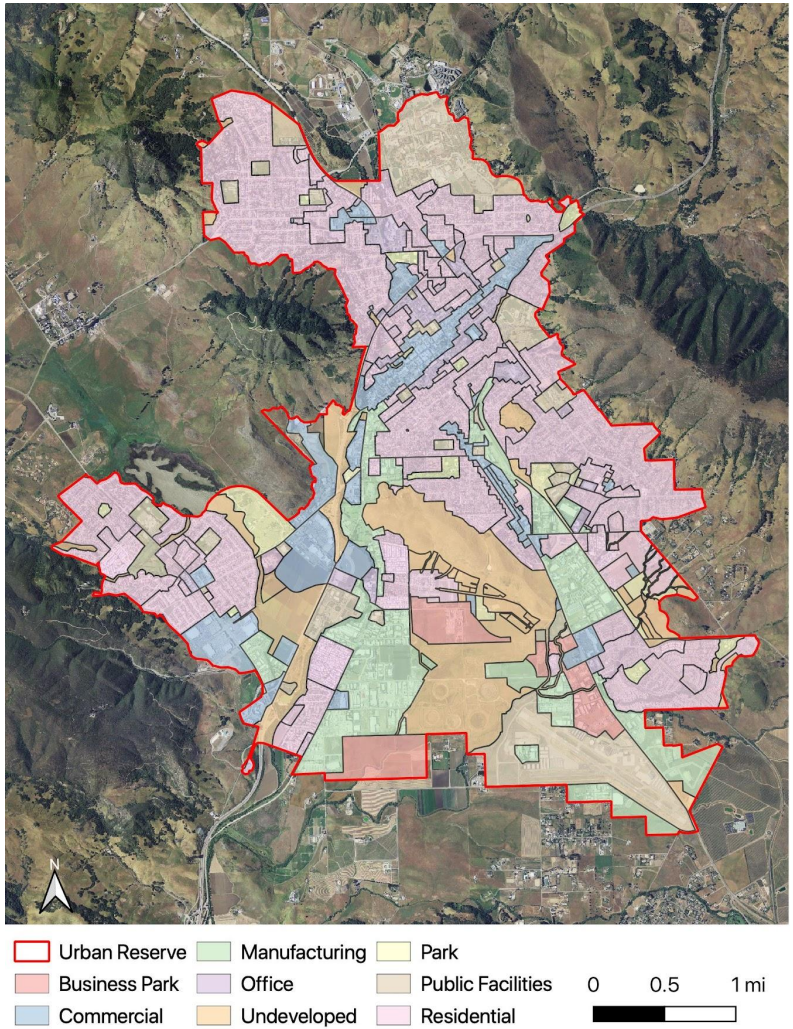
Urban Reserve

- Subset of City of SLO boundary
- Encompasses core urban features
- Downloaded from City of SLO GIS portal



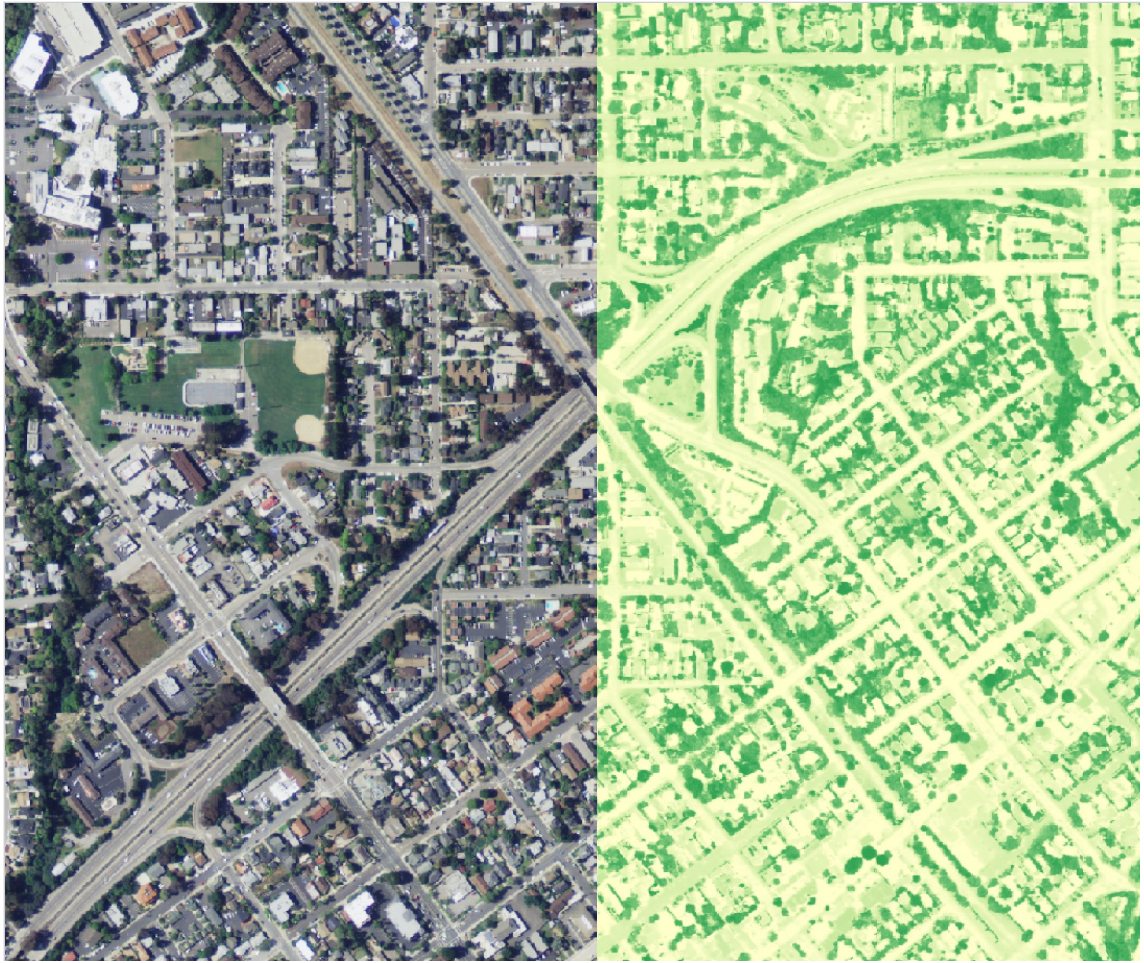
Land Use

- Land use data from City of SLO
- Simplified original labels to broad categories based on city zoning
- Modified data in areas that have been developed since 2012



NDVI

- NDVI is a simple index to measure “greenness” of vegetation
- Used to classify vegetated areas
- Derived from NAIP imagery taken in May, 2012



LiDAR Height Model

- LiDAR uses lasers to measure the height of terrain and structures
- Above ground features can be extracted through the use of a height model
- LiDAR data was collected by PG&E during March 2011 and February 2013.

Height Model

N

0 100 200 300 ft

NDVI

N

0 100 200 300 ft

NDVI + Height Model

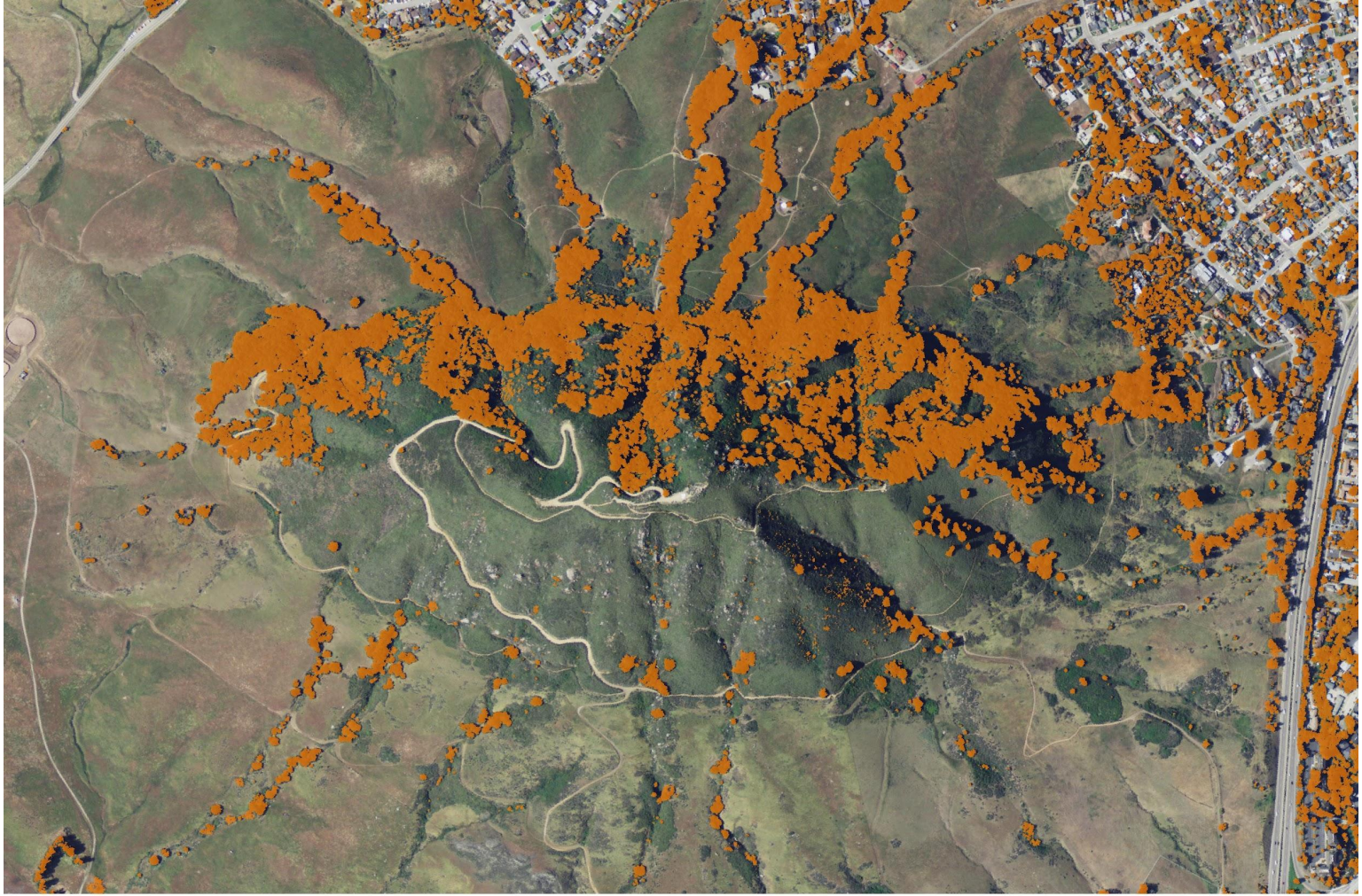
N

0 100 200 300 ft

0 250 500 ft

0 250 500 ft

0 1000 2000 ft



0 1000 2000 ft

N

0 250 500 ft

N

0 250 500 ft

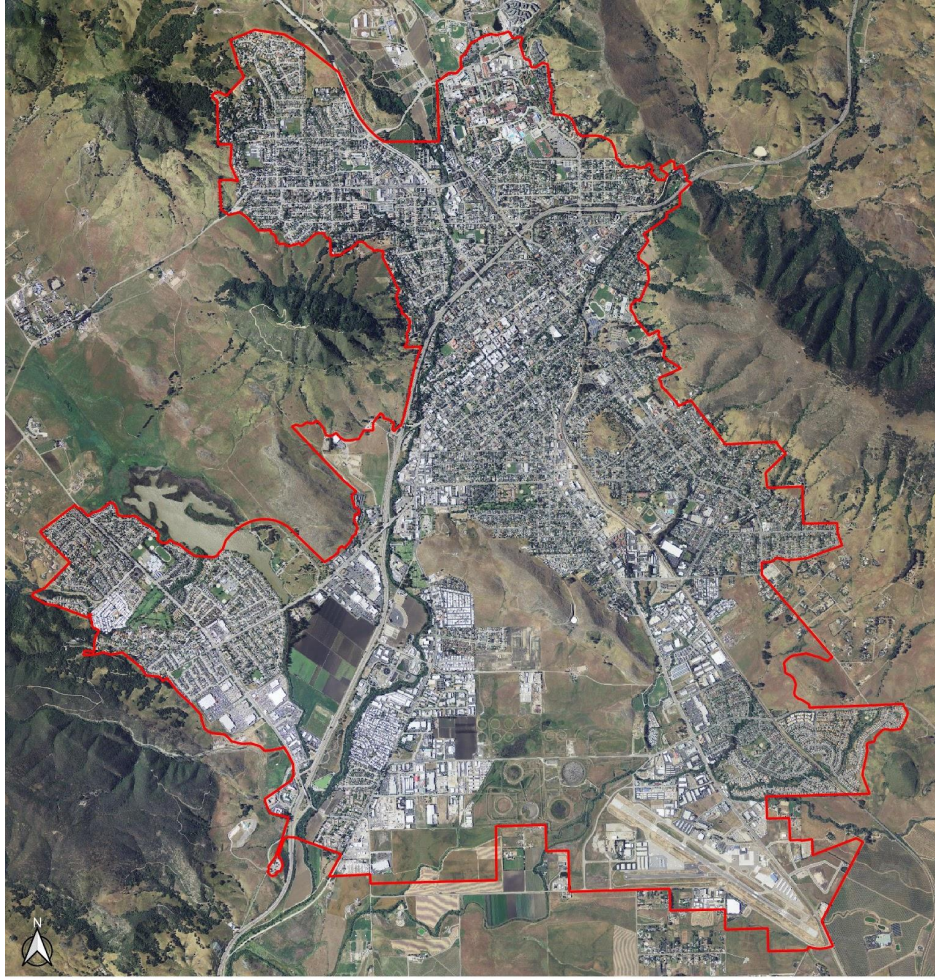
N

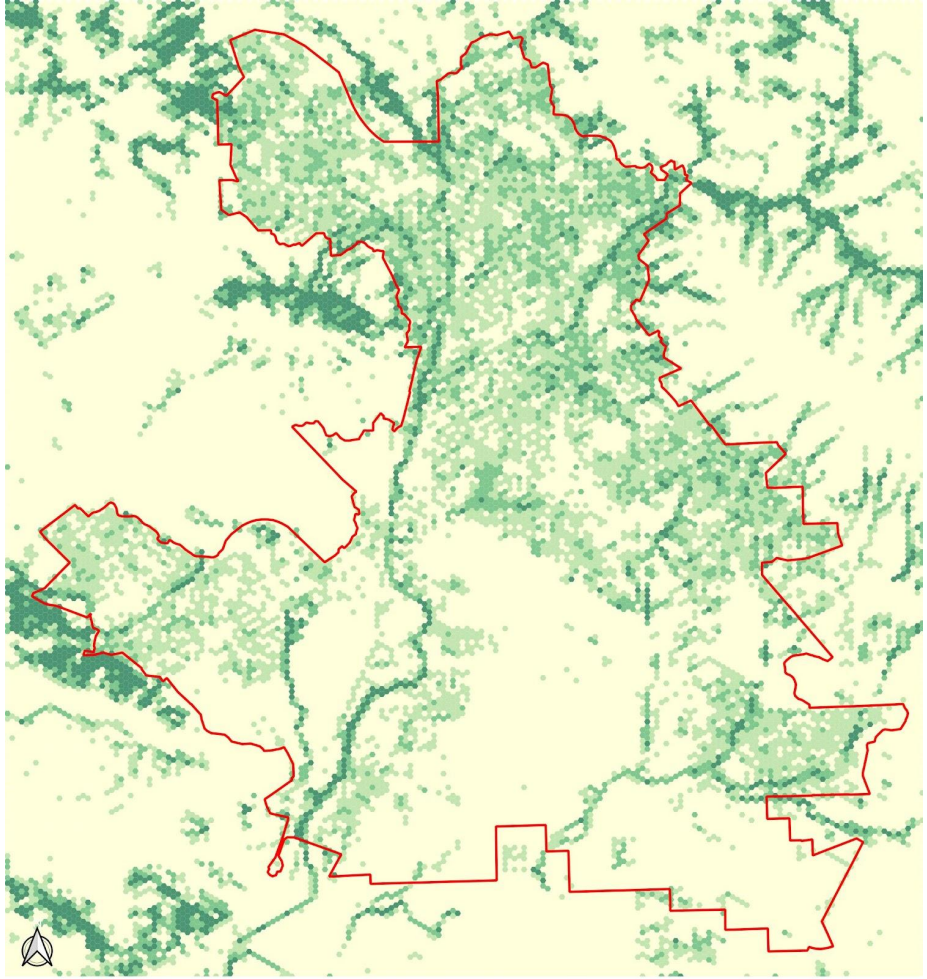
0 600 1200 ft

N

0 600 1200 ft

N





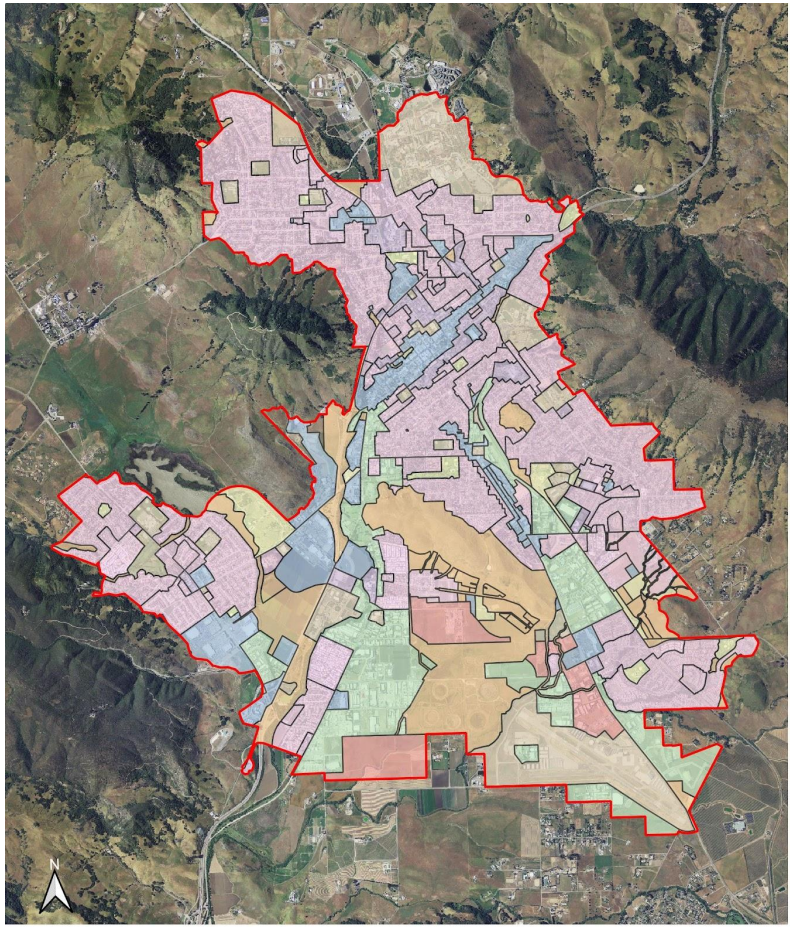
Overview of Canopy Cover in SLO

Urban Reserve
0 - 10%
10 - 25%
25- 50%
50 - 100%

0 0.5 1 mi

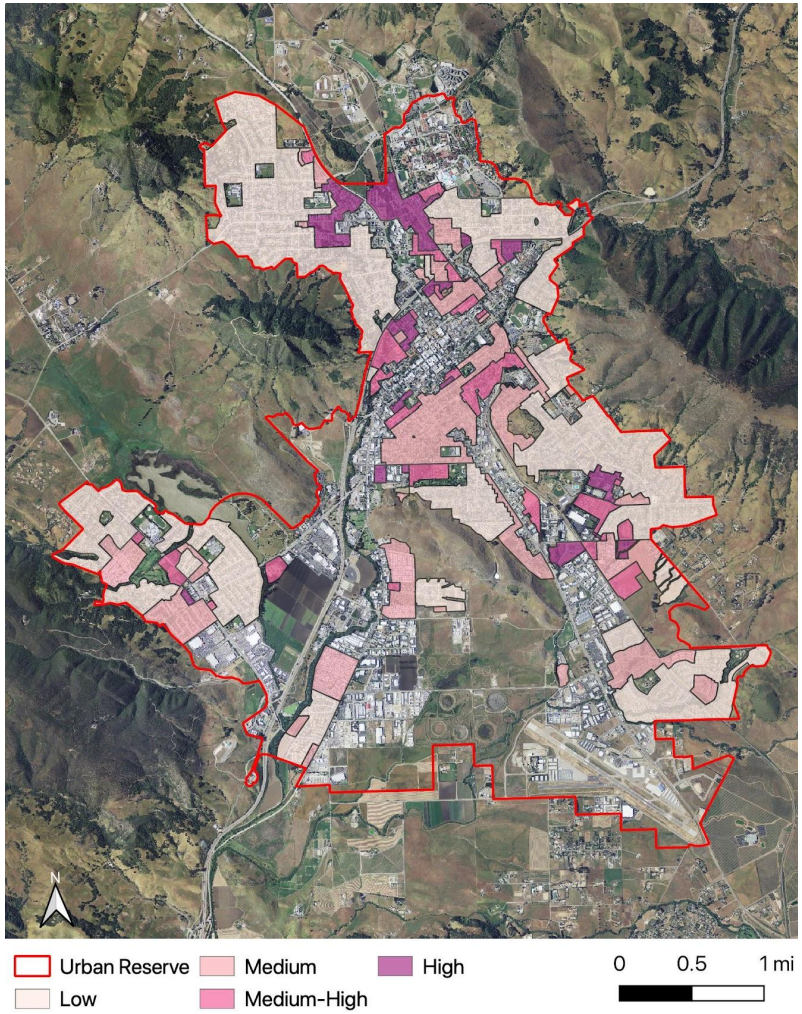
Canopy Cover by Land Use Category

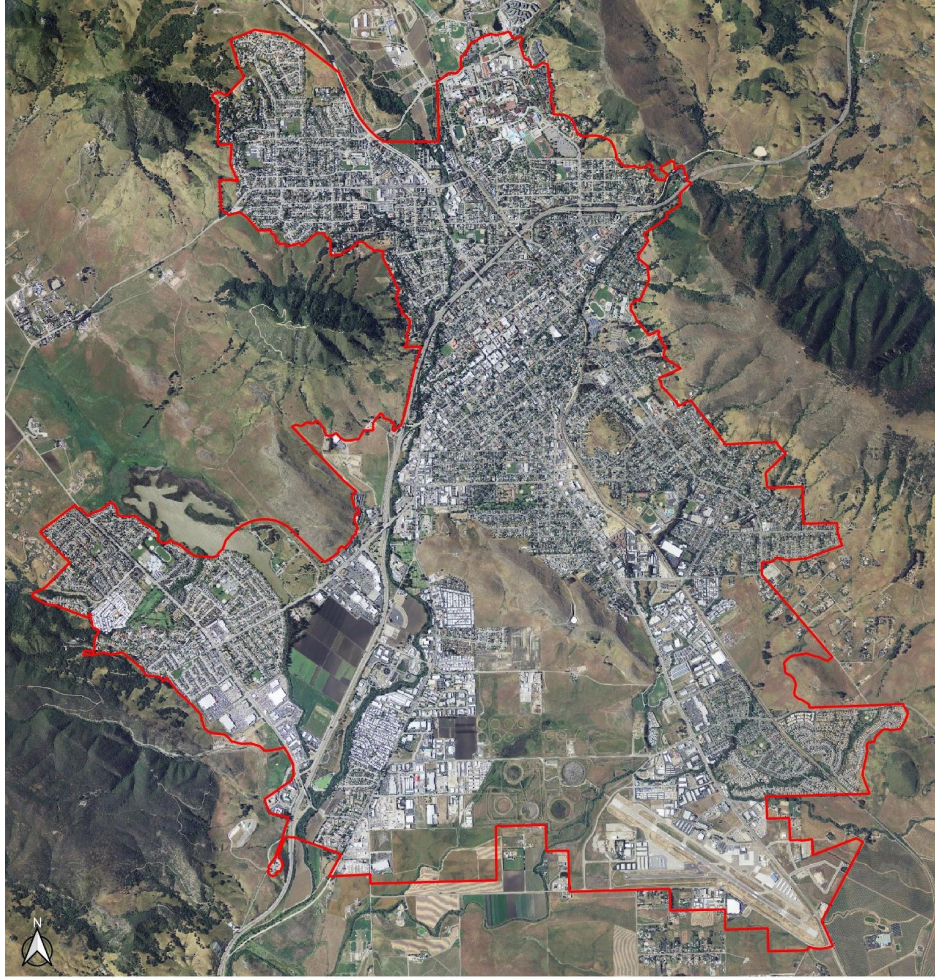
Land Use Category	Percent Canopy Cover	Canopy Cover (acres)	Cover (acres)	Canopy Percent in Urban Reserve	Cover Percent in Urban Reserve
Residential	19.2%	635.7	3313.1	60.6%	41.5%
Public Facilities	9.4%	91.8	981.4	8.7%	12.3%
Undeveloped	7.2%	84.8	1171.5	8.1%	14.7%
Manufacturing	7.6%	76.9	1013.0	7.3%	12.7%
Commercial	9.4%	69.3	737.1	6.6%	9.2%
Office	19.6%	45.6	232.4	4.3%	2.9%
Park	17.3%	38.2	220.2	3.6%	2.8%
Business Park	2.5%	7.9	311.7	0.8%	3.9%
Grand Total	**13.2%**	**1050.0**	**7978.2**	**100.0%**	**100.0%**

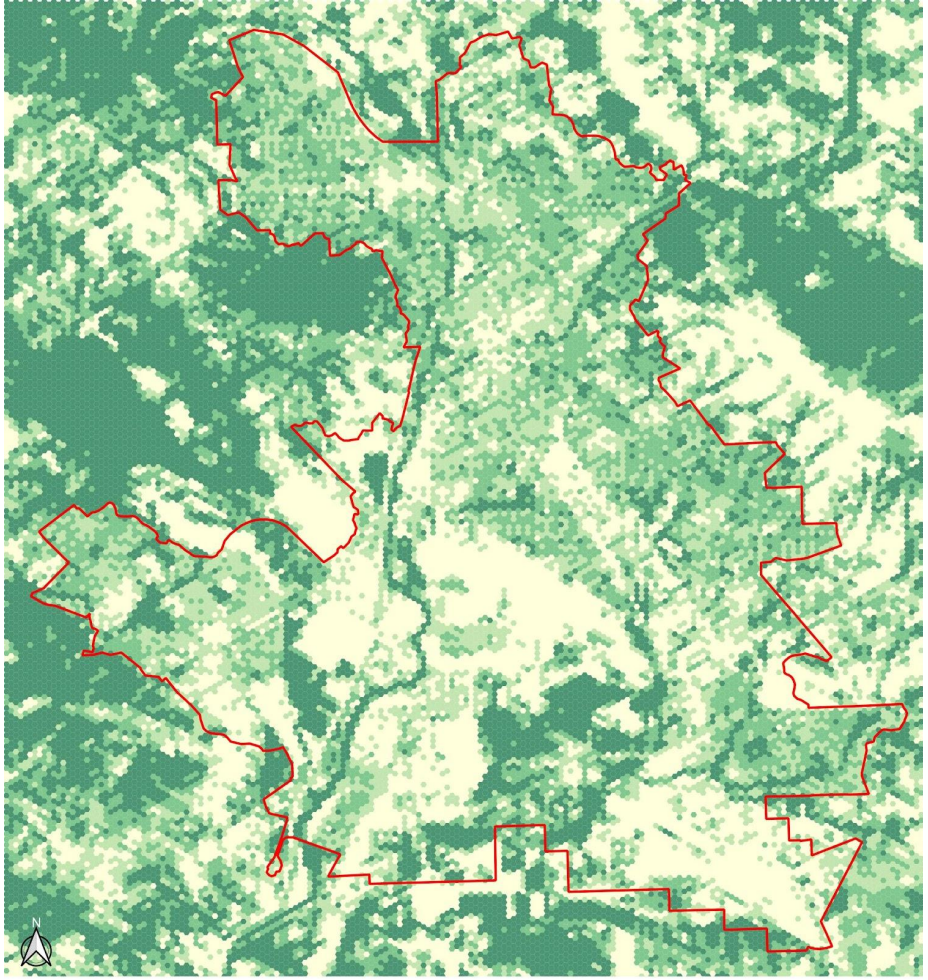


Canopy Cover by Residential Category

Residential Density	Percent Canopy Cover	Canopy Cover (acres)	Cover (acres)	Percent of Canopy in Residential	Percent of Cover in Residential
Low	20.6%	418.7	2028.1	65.9%	61.2%
Medium	15.4%	120.8	783.2	19.0%	23.6%
Medium-High	18.3%	51.3	267.1	8.1%	8.1%
High	19.2%	44.7	233.3	7.0%	7.1%
Grand Total	**19.2%**	**635.7**	**3313.5**	**100.0%**	**100.0%**







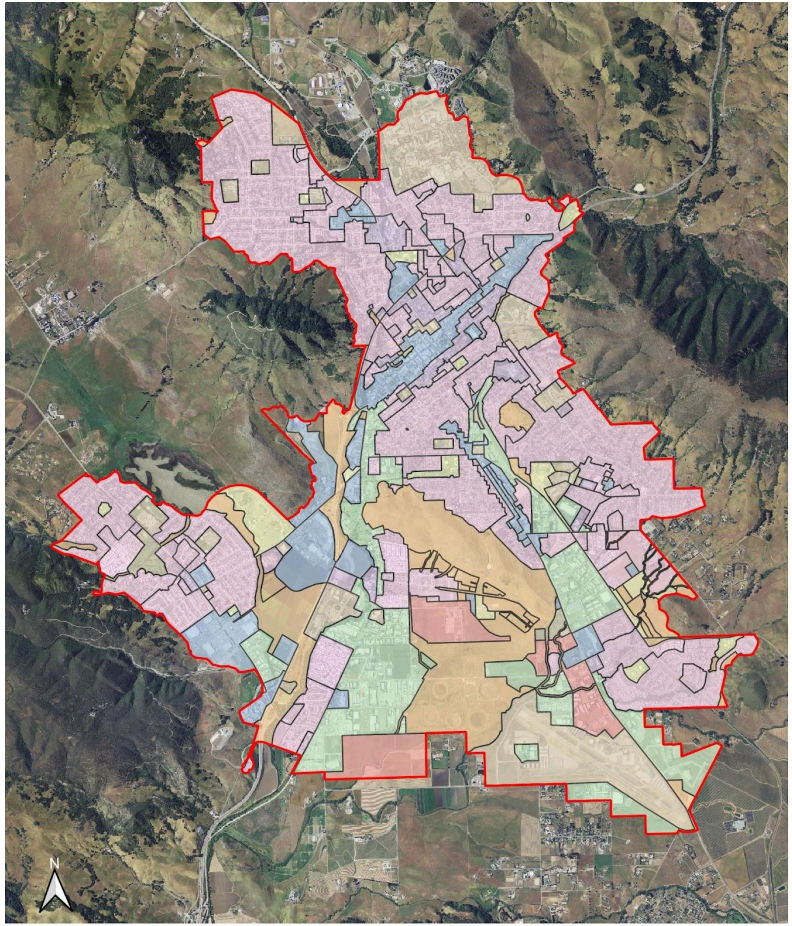
Overview of Vegetation Cover in SLO

Urban Reserve
0 - 10%
10 - 25%
25- 50%
50 - 100%

0 0.5 1 mi

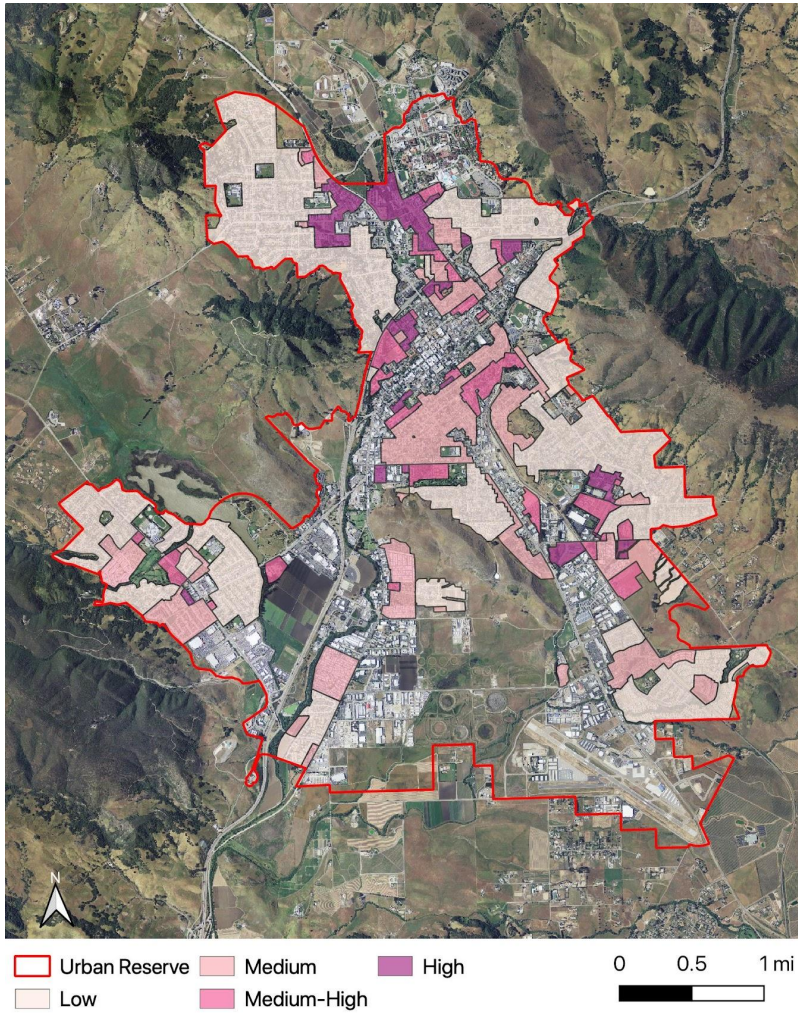
Vegetation Cover by Land Use Category

Land Use Category	Percent Vegetation Cover	Vegetation Cover (acres)	Cover (acres)	Vegetation Percent in Urban Reserve	Cover Percent in Urban Reserve
Residential	29.5%	975.8	3313.5	41.5%	45.5%
Public Facilities	24.1%	236.4	981.4	12.3%	11.0%
Undeveloped	32.4%	379.4	1171.5	14.7%	17.7%
Manufacturing	17.4%	173.4	998.7	12.5%	8.1%
Commercial	15.8%	113.7	719.8	9.0%	5.3%
Office	23.2%	54.0	232.4	2.9%	2.5%
Park	49.8%	109.7	220.1	2.8%	5.1%
Business Park	30.1%	93.8	311.6	3.9%	4.4%
Grand Total	**26.9%**	**2143.7**	**7978.2**	**100.0%**	**100.0%**



Urban Reserve
Business Park
Commercial
Manufacturing
Office
Undeveloped
Park
Public Facilities
Residential

0 0.5 1 mi

Vegetation Cover by Residential Category

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Medium	23.6%	184.8	783.2	18.9%	23.6%
Medium-High	26.4%	70.4	267.1	7.2%	8.1%
High	23.7%	55.4	233.3	5.7%	7.0%
Grand Total	**29.5%**	**975.8**	**3313.5**	**100.0%**	**100.0%**