

Montecito Community Microgrid Renewables-driven Resilience for Critical Facilities



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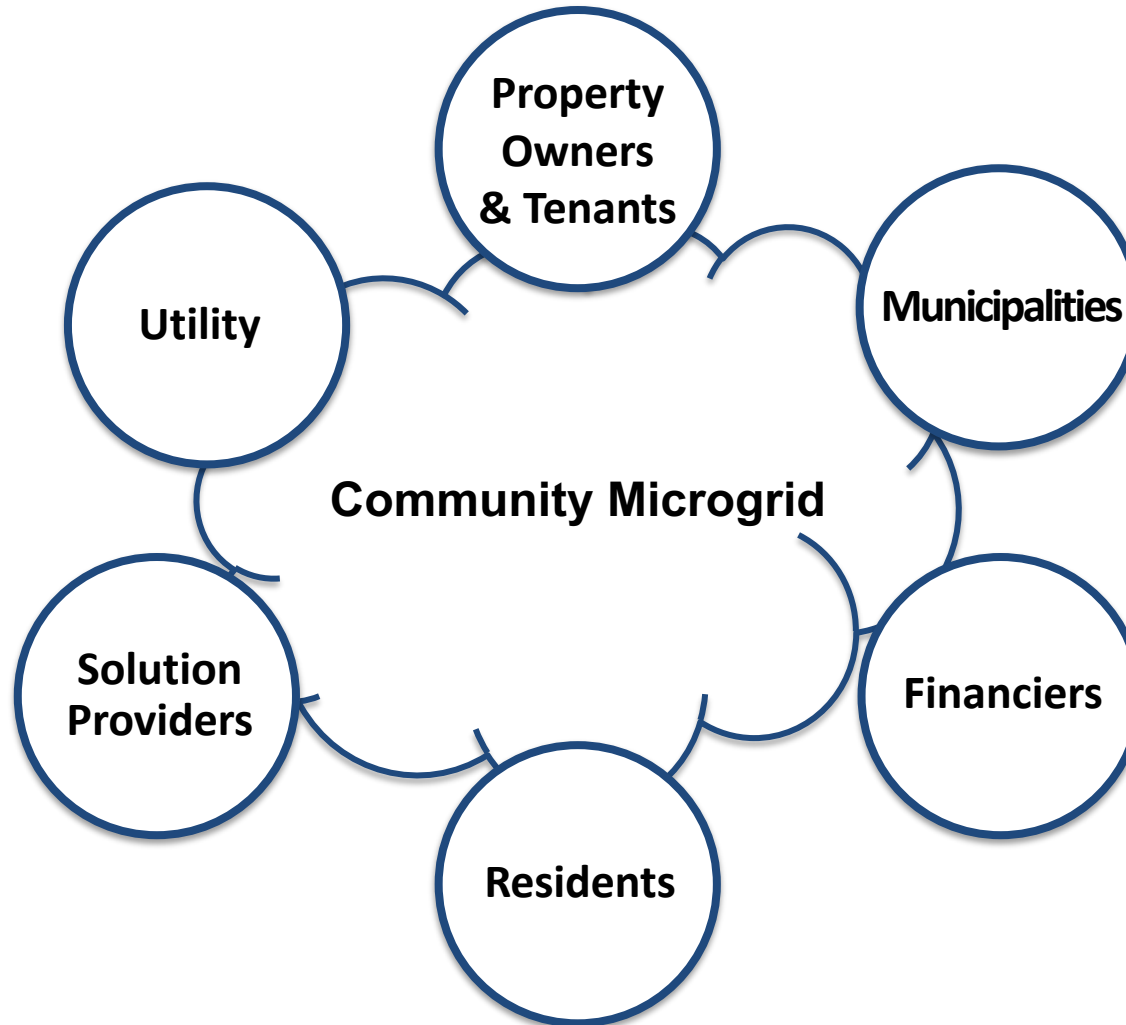
To accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise

A Community Microgrid is a new approach for designing and operating the electric grid, stacked with local renewables and staged for resilience.

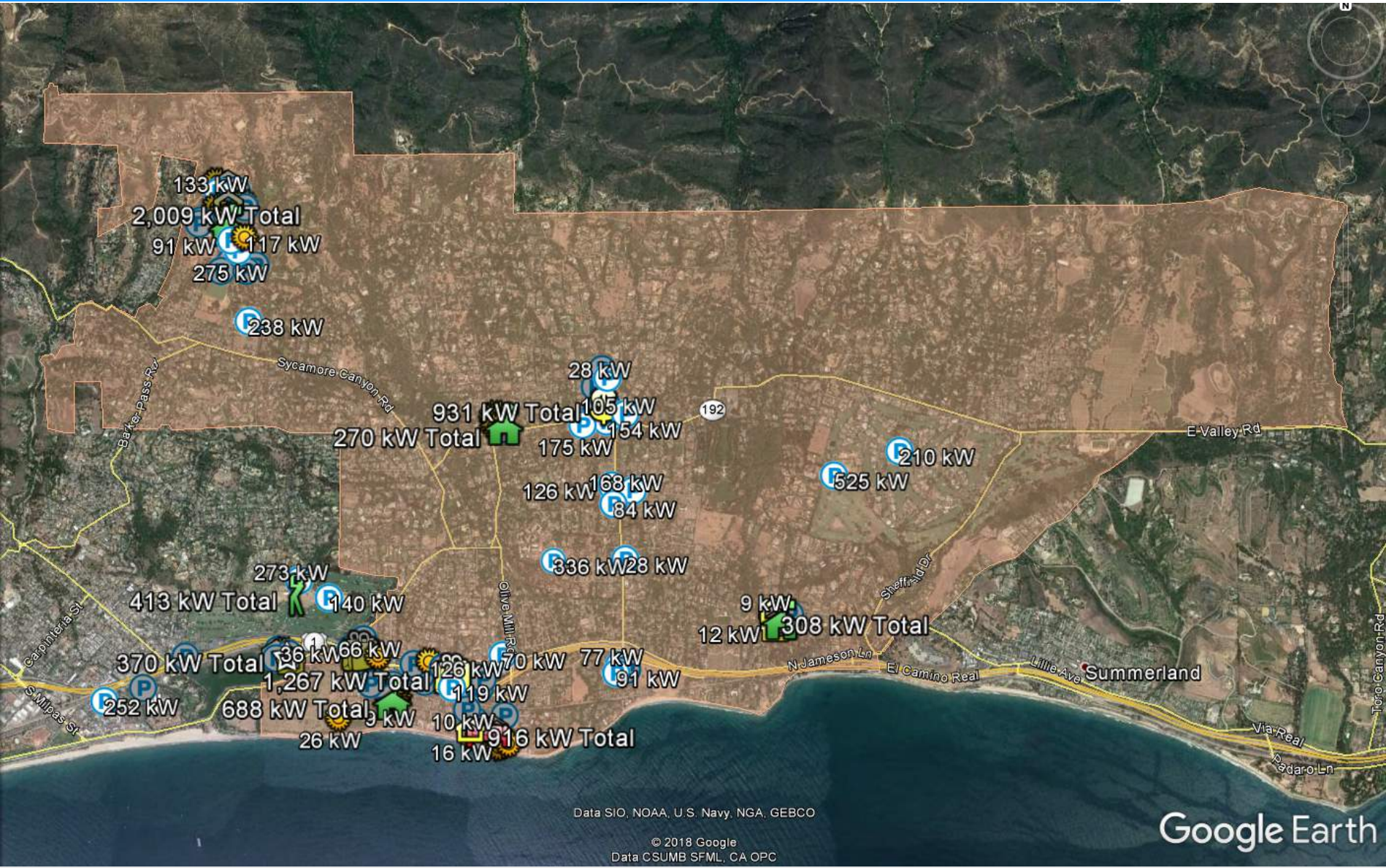
Key features:

- A targeted and coordinated local grid area served by one or more distribution substations
- High penetrations of local renewables and other Distributed Energy Resources (DER) such as energy storage and demand response
- Staged capability for ongoing renewables-driven power backup for critical and prioritized loads across the grid area
- A solution that can be readily extended throughout a utility service territory – and replicated into any utility service territory around the world





Solar Siting Survey (SSS) for Montecito

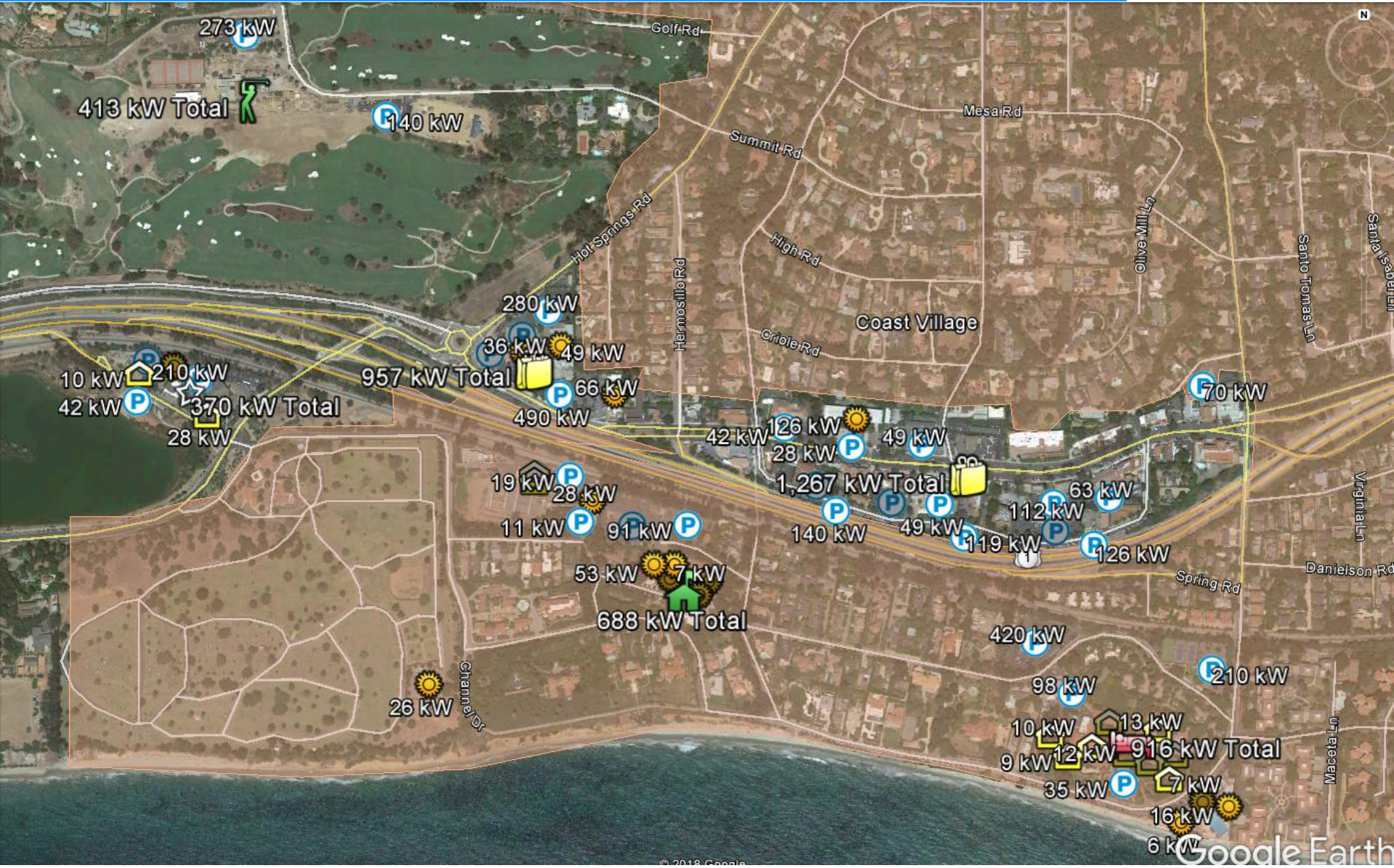


Data SIO, NOAA, U.S. Navy, NGA, GEBCO

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Data CSUMB SFML, CA OPC

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Montecito Community Microgrid map view



Hot Springs Feeder is the key to success



Montecito Community Microgrid block diagram

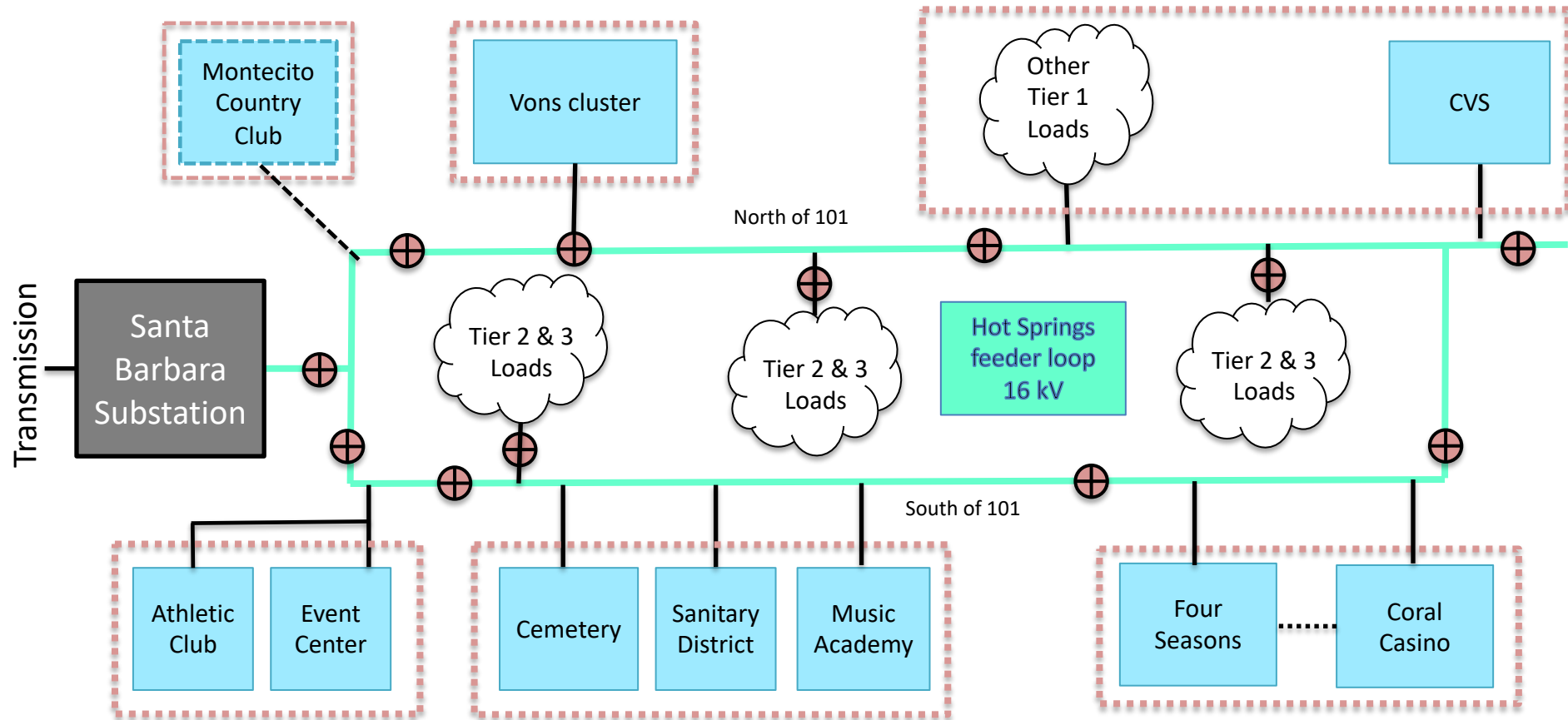


Diagram Elements



Autonomously Controllable Microgrid
Relay/Switch (open, closed)

Montecito SSS summary

Solar Siting Survey

Summary by Structures

Count	Count	kW_Total	PV W_AC >=	250 kW	> and >=	100 kW	Less than	100 kW
Sites	Structures		Structures		Structures		Structures	
Totals: 33	107	11,251 kW	11	4,223 kW	28	4,380 kW	68	2,648 kW

Summary by Structure Types

Roof_Flat	kW_Total	Roof_Angled	kW_Total	Pkg_Lot	kW_Total
24	936 kW	18	256 kW	65	10,059 kW

Montecito Community Microgrid has solar siting potential of 4.6 MW, over 40% of the total Montecito SSS findings; of which about 90% is on parking lots.

Solar Siting Survey

Summary by Sites

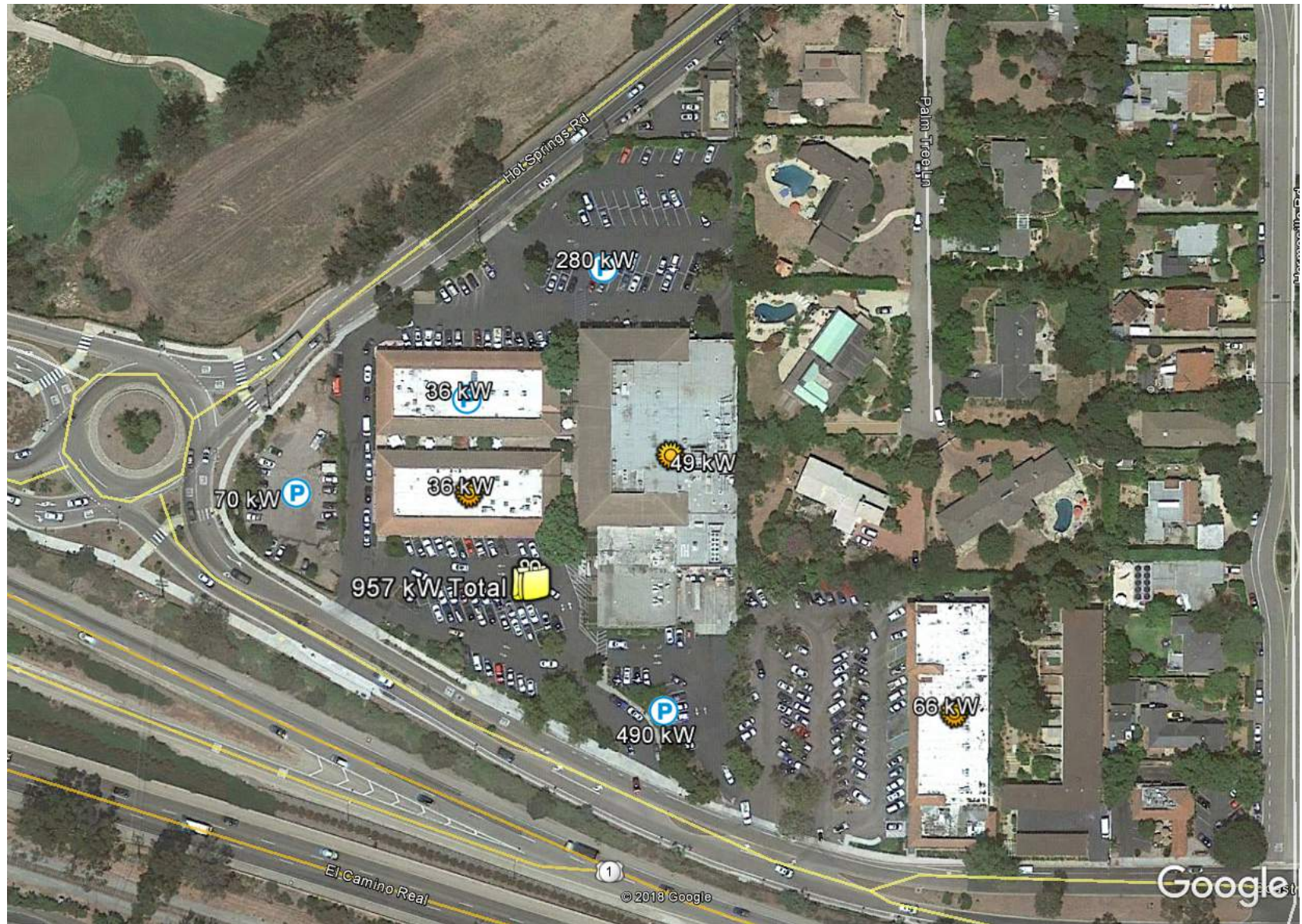
Count	kW_Total	PV W_AC >=	500 kW	> and >=	100 kW	Less than	100 kW
Sites		Sites		Sites		Sites	
Totals: 33	11,251 kW	7	6,948 kW	14	3,606 kW	12	697 kW

Solar Siting Survey

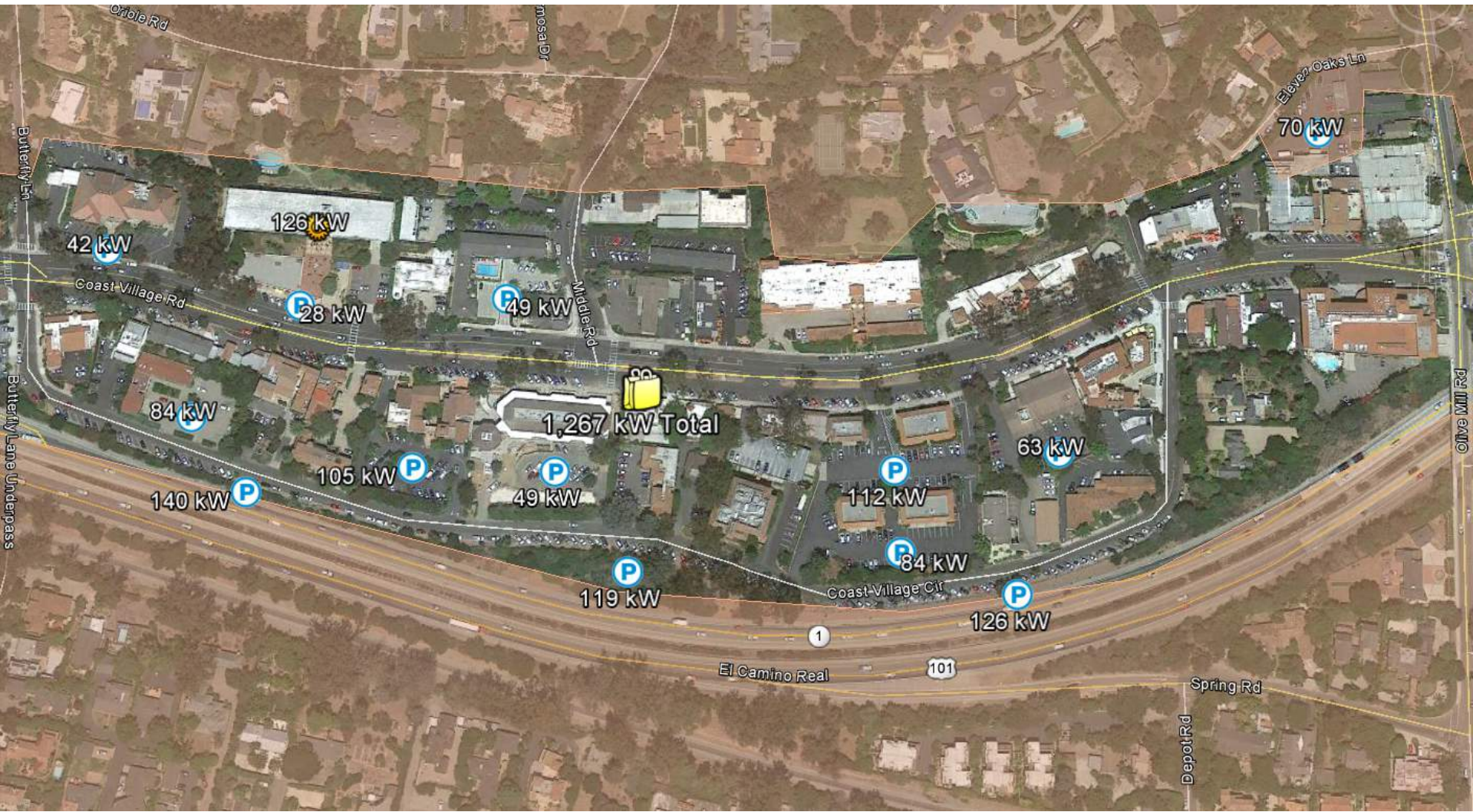
Aggregate Facilities Summary

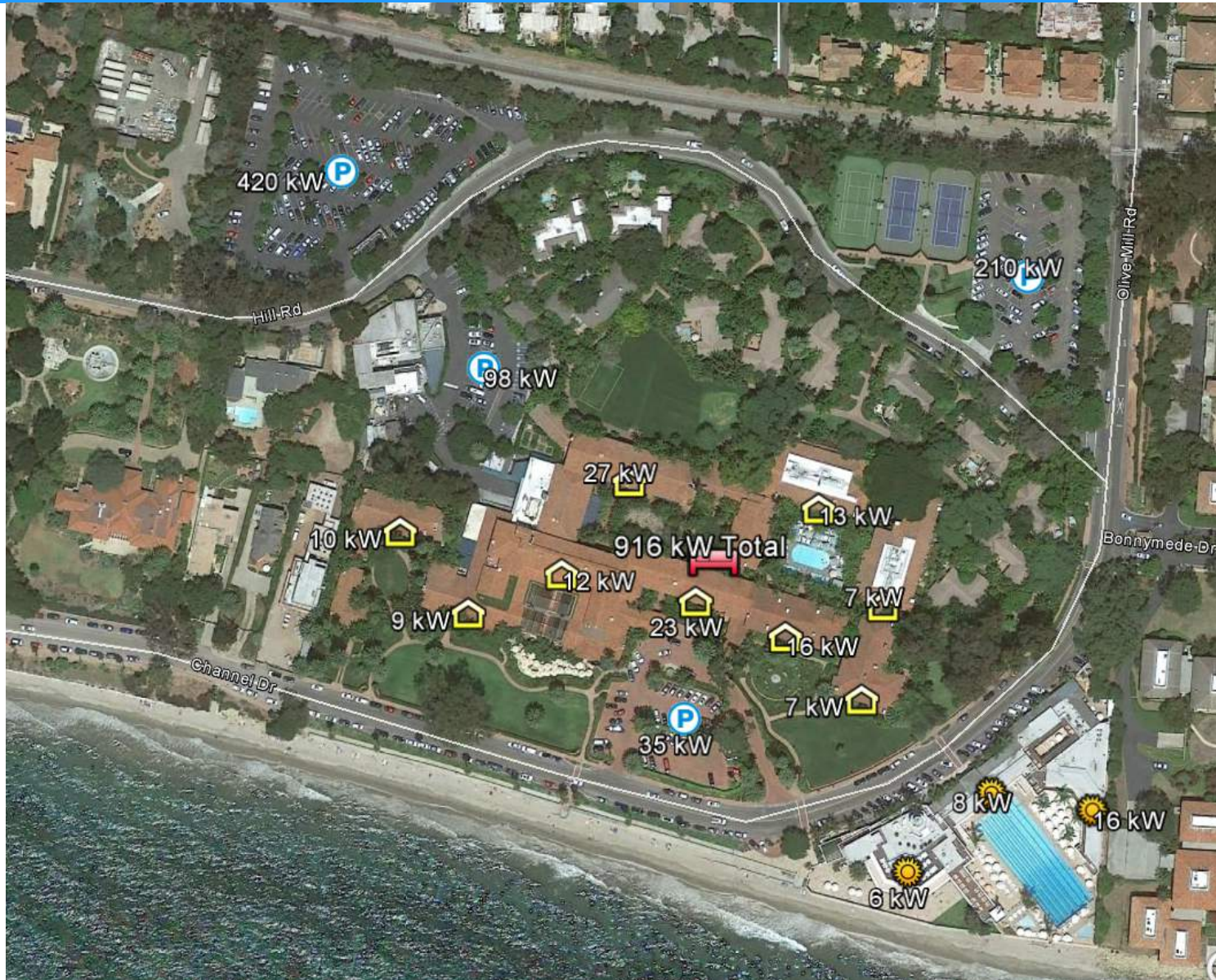
Aggregation Type Summary by Aggregation Type: PV at All Sites

Aggregation Type	Count	kW_Total	PV W_AC >=	500 kW	> and >=	100 kW	Less than	100 kW
Airport	-	-	-	-	-	-	-	-
Lodging	1	916	1	916	-	-	-	-
Biz	1	931	1	931	-	-	-	-
Edu	4	3,275	2	2,697	2	578	-	-
Shopping	2	2,224	2	2,224	-	-	-	-
Storage	-	-	-	-	-	-	-	-
Venue	1	370	-	-	1	370	-	-
Totals:	9	7,716 kW	6	6,768 kW	3	948 kW	-	- kW

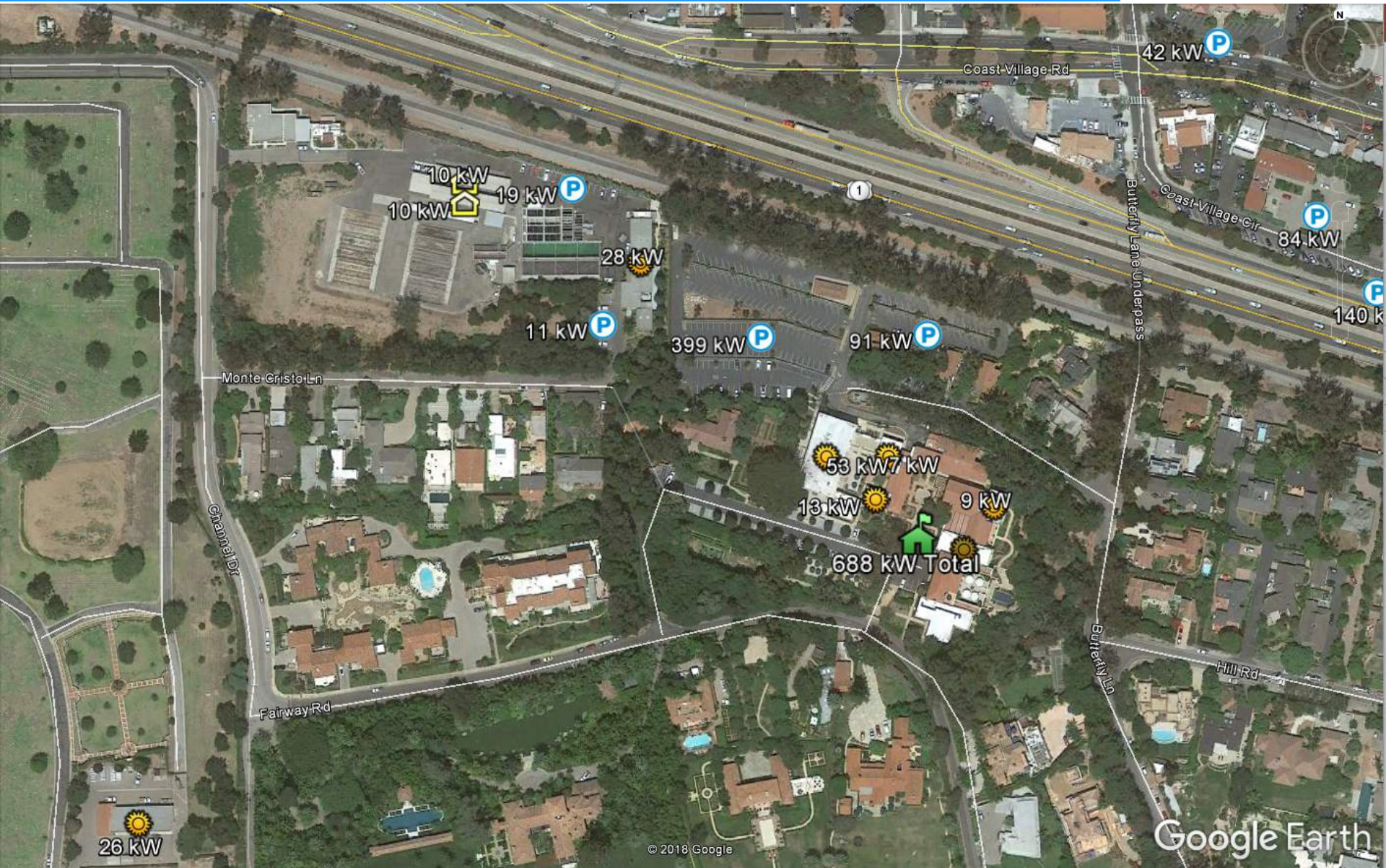


Coast Village strip

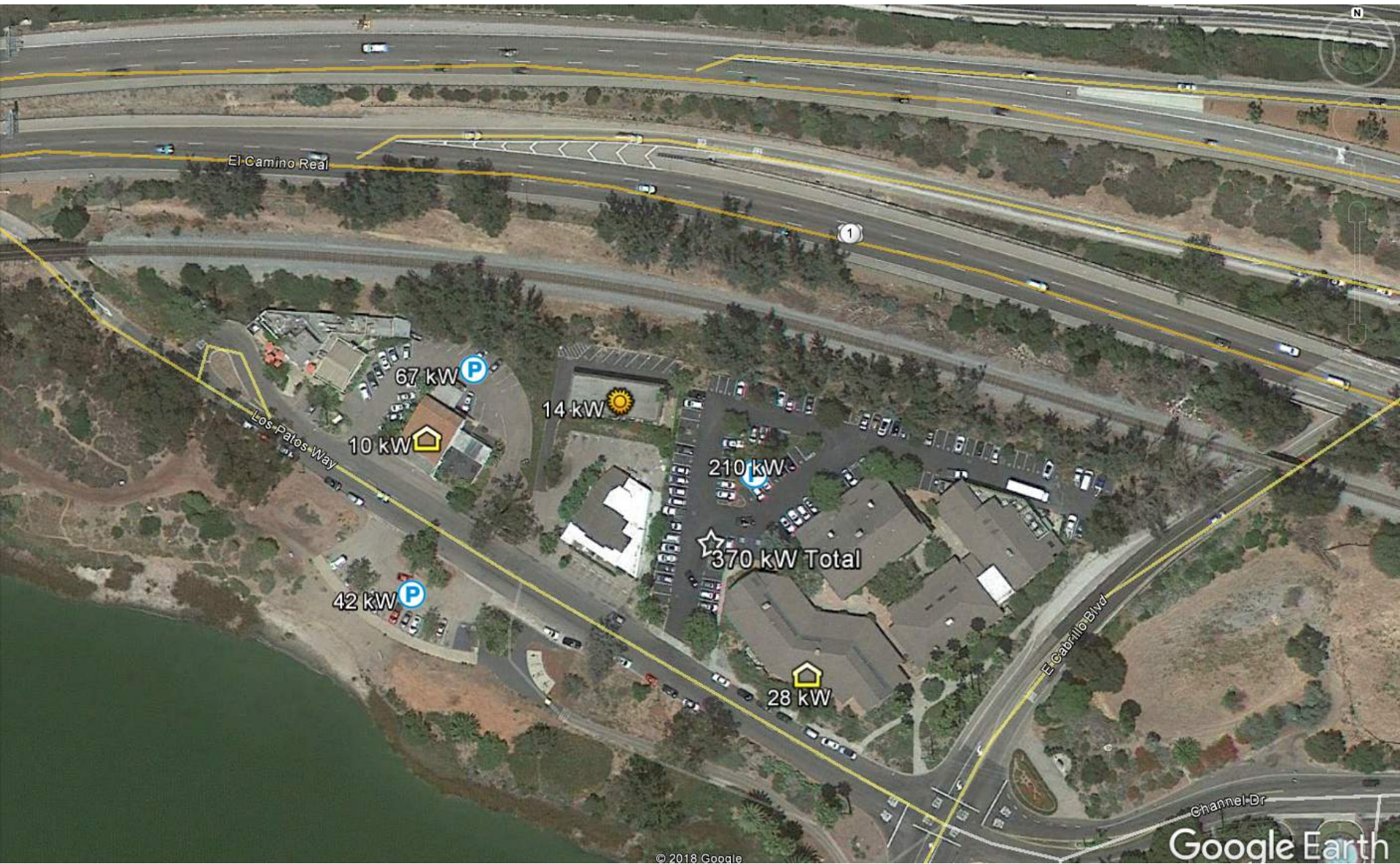




Sanitation District and Music Academy cluster

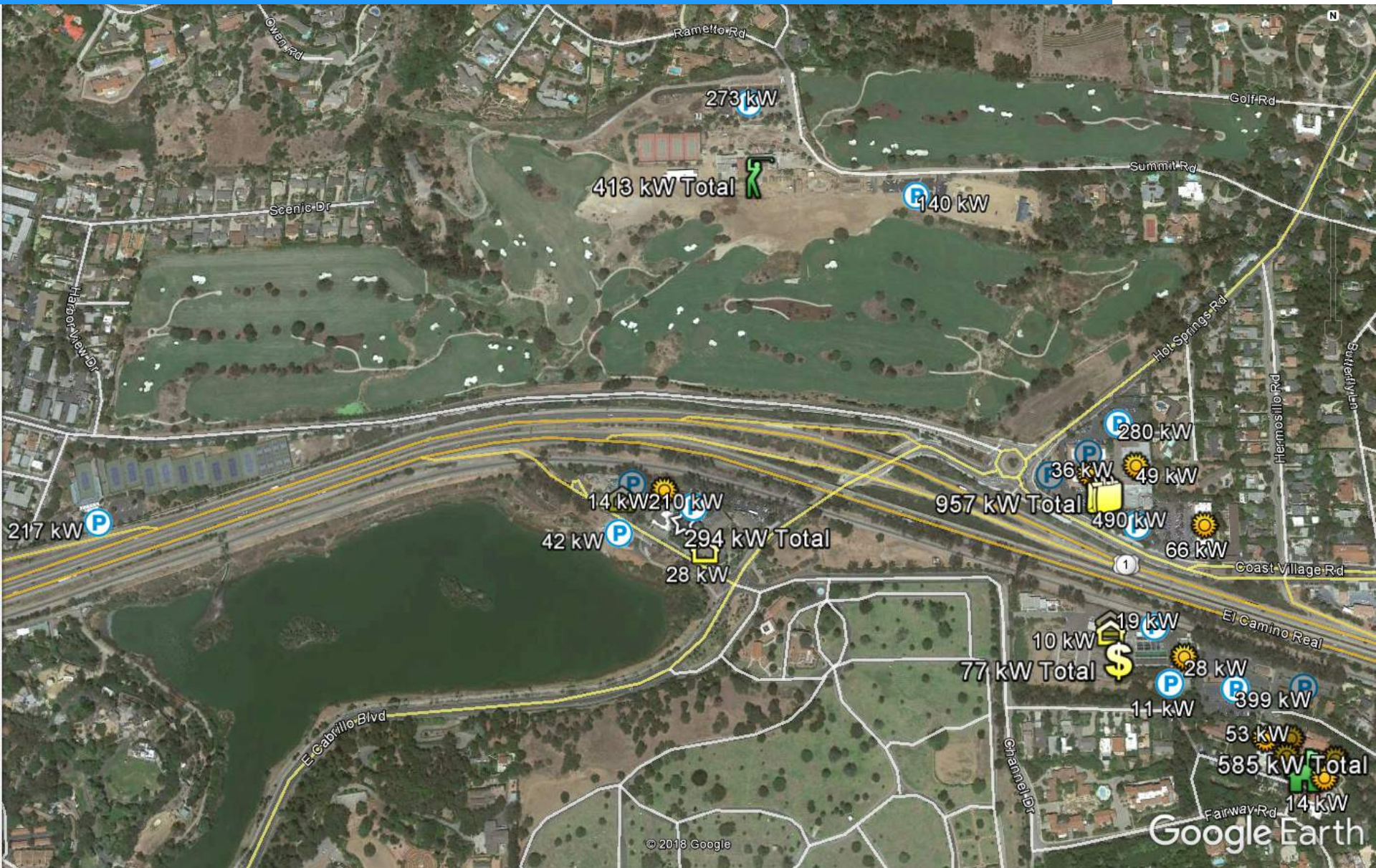


Athletic Club and Event Center cluster



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Google Earth



SSS for Montecito Country Club



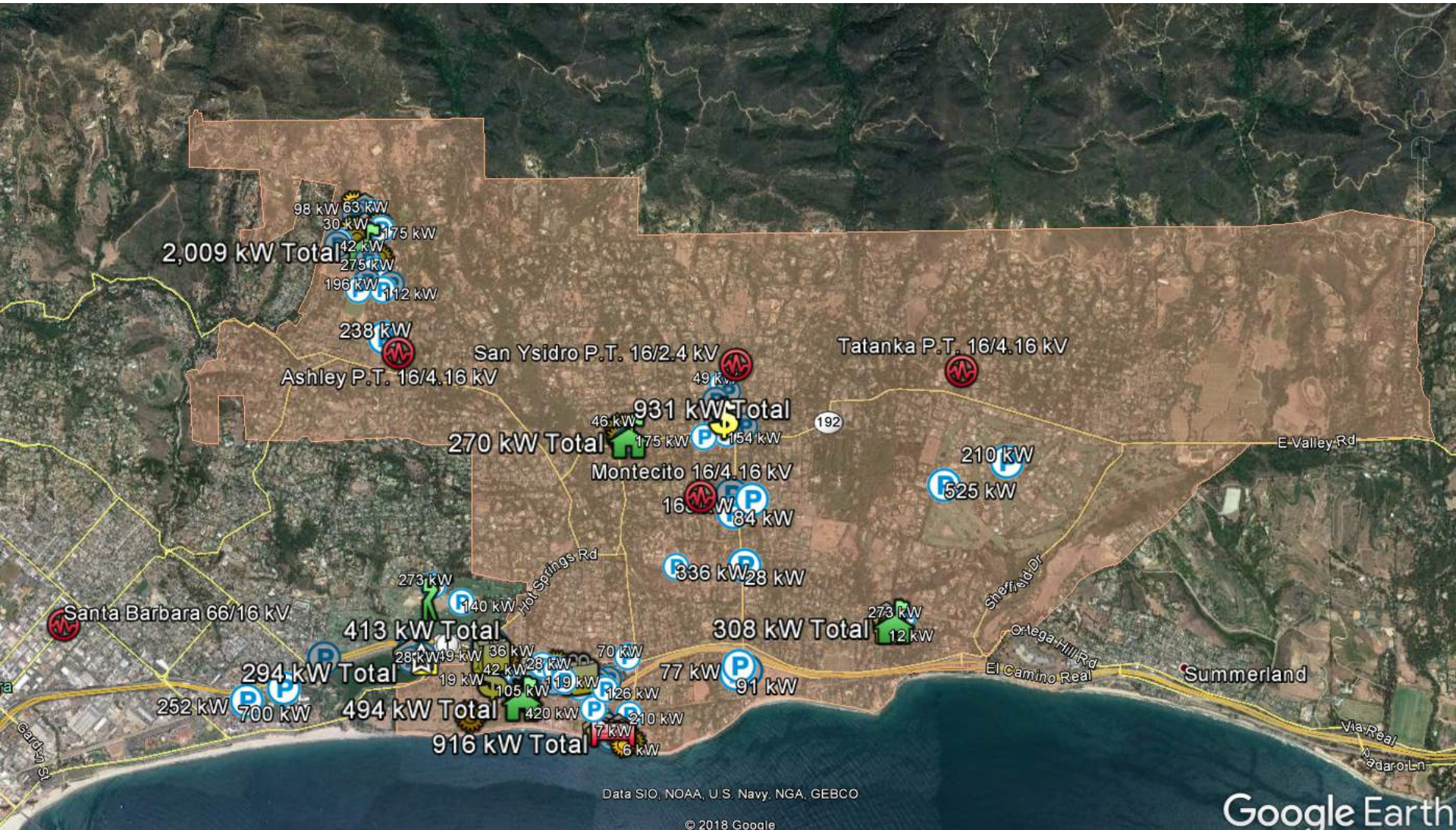
Peek at the Community Microgrid future



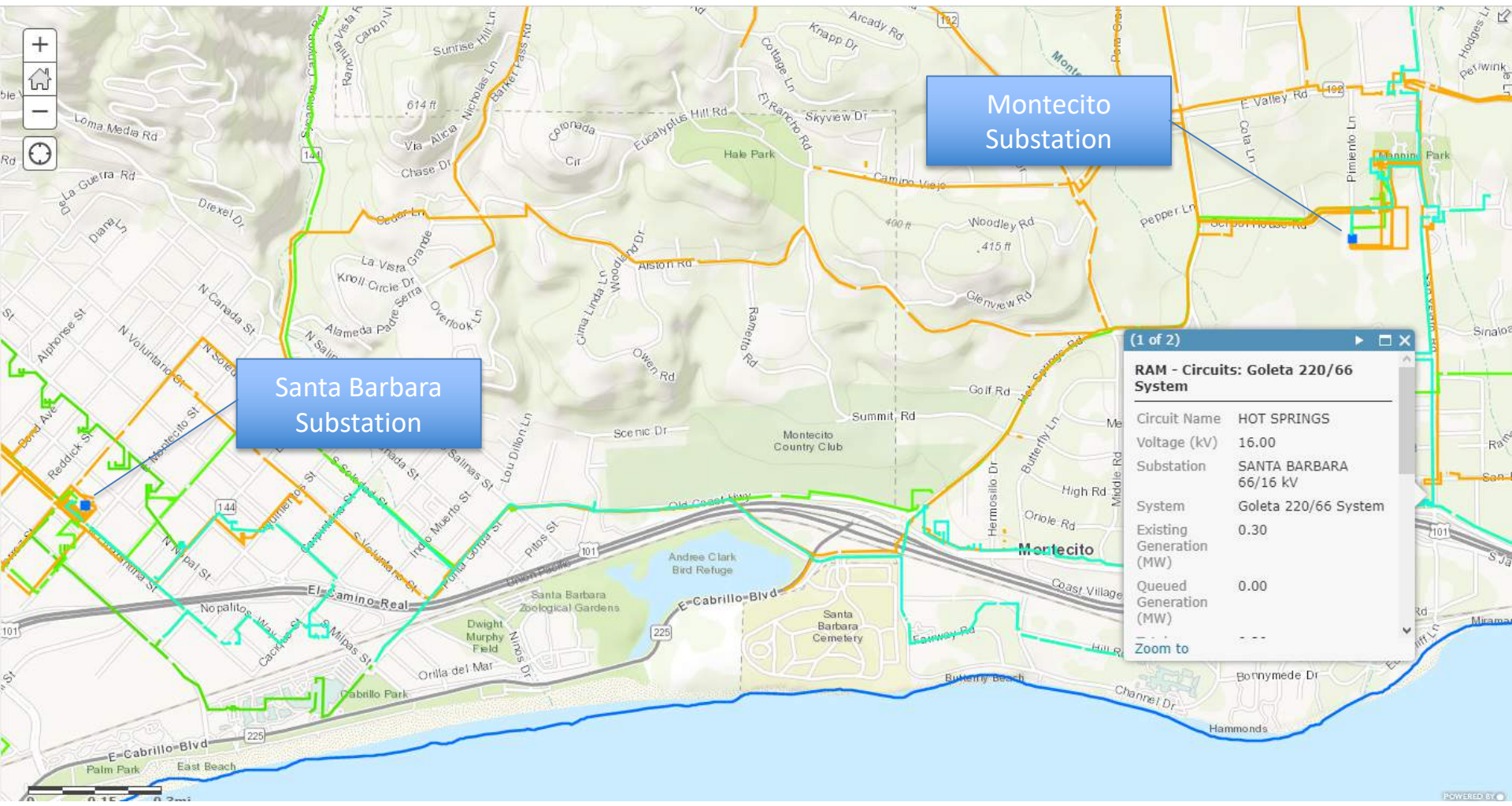
Ecoplexus project at the Valencia Gardens Apartments in SF. ~800 kW meeting ~80% of the total annual load.

▸ Backup Slides

Montecito SSS Showing SCE Substations



Hot Springs Feeder via Santa Barbara Substation



Helena & Hot Springs Feeder details

Circuit Name	HOT SPRINGS
Voltage (kV)	16.00
Substation	SANTA BARBARA 66/16 kV
System	Goleta 220/66 System
Existing Generation (MW)	0.30
Queued Generation (MW)	0.00
Total Generation (MW)	0.30
Projected Load (MW)	10.74
Current Penetration Level (%)	2.75
Maximum Remaining Generation Capacity (MW)	12.90
15% Penetration Capacity (MW)	1.32
Deliverability Note	Interconnection studies in this area have identified adequate deliverability.

Circuit Name	STANWOOD
Voltage (kV)	16.00
Substation	SANTA BARBARA 66/16 kV
System	Goleta 220/66 System
Existing Generation (MW)	0.92
Queued Generation (MW)	0.00
Total Generation (MW)	0.93
Projected Load (MW)	13.20
Current Penetration Level (%)	7.01
Maximum Remaining Generation Capacity (MW)	12.27
15% Penetration Capacity (MW)	1.05
Deliverability Note	Interconnection studies in this area have identified adequate deliverability.

Substation	Santa Barbara 66/16 kV
System	Goleta 220/66 System
Existing Generation (MW)	3.78
Queued Generation (MW)	1.31
Total Generation (MW)	5.09
Projected Load (MW)	58.60
Current Penetration Level (%)	8.68
Maximum Remaining Generation Capacity (MW)	78.91
Deliverability Note	Interconnection studies in this area have identified adequate deliverability.

Substation	Montecito 16/4.16 kV
System	Goleta 220/66 System
Existing Generation (MW)	0.38
Queued Generation (MW)	0.06
Total Generation (MW)	0.44
Projected Load (MW)	4.80
Current Penetration Level (%)	9.14
Maximum Remaining Generation Capacity (MW)	5.57
Deliverability Note	Interconnection studies in this area have identified adequate deliverability.

