



SECOORA

Technical & Programmatic Introduction

Thursday, October 10, 3:30 - 4:30 PM

Session overview

30 min: Summary of technical considerations for camera installations

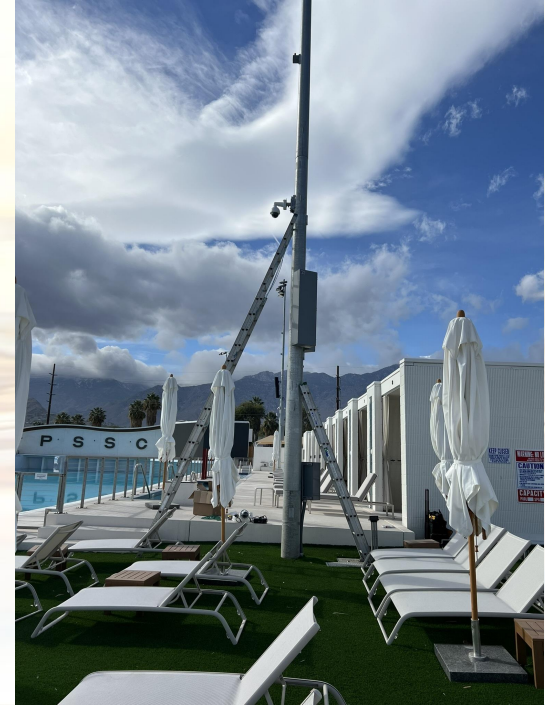
- Lead = Paul Ganev & Dennis Murphy, Surfline
- Surfline: installations & camera needs for a site
- Siting
 - Power, Internet, Infrastructure
 - Elevation, Field of View
 - Partners
- Case study?
- Hardware: more information tomorrow

30 min: Programmatic decisions & decision tree

- How to integrate cameras of opportunity
- When to use a contractor (e.g. in the IRA)
- What technical requirements are there for different product applications
- Decision tree/matrix about how to grow WebCOOS/include new cameras
- What happens to cameras after the OTT grant?



Surflife: Installations



Surfline: Camera needs for a site



- Role in WebCOOS
 - Camera install contractor
 - Help you evaluate potential camera sites
- Location and Purpose/Use case
 - Partnership / agreement with host/owner/organization
 - Location should have
 - Power
 - Solar is an option; helpful for storm monitoring
 - Internet
 - Cellular and Satellite options also
 - Structure to mount camera to
 - Building
 - Pole/post
 - Consider view of camera and footprint of equipment when choosing host location



Power: what is the source of electricity?

- 110 VAC (wall outlet)
 - GFCI: not ideal, can trip (Might be required by code)
 - [PoE](#): Power over Ethernet (Single cable to camera)
- 12/24 VDC: Solar + Battery
 - Sizing depends on gear & environment (latitude, weather, climate, shade)
- Manual battery swapping is an option where data are not needed in near real-time.



By Olli Nie
CC0, WIKI

solar



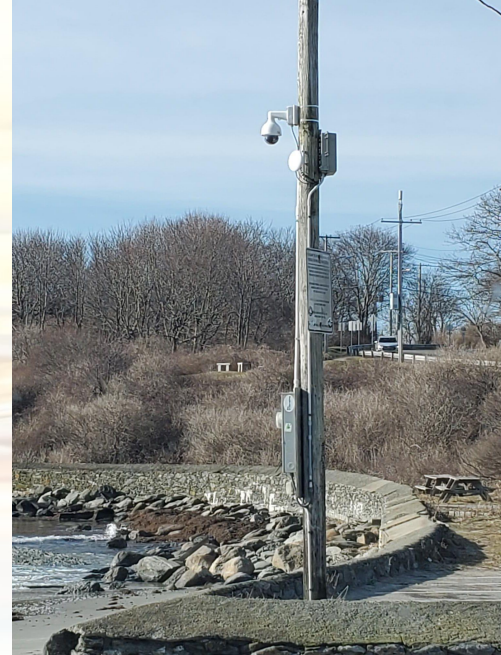
Connectivity: how is imagery being transmitted?

- **Landline internet** (Coax, Fiber, DSL)
 - Most reliable & most options
 - Evaluate connection reliability (High)
- **WiFi**
 - Maintenance & signal issues
 - Limited NDAA-compliant options
 - Extenders/repeaters can help
 - Latency introduced
- **Cell plans**
 - No-contract SIM options (Pay as you go)
 - Hotspot or cellular router
 - Challenges = bandwidth, performance, cost, & NAT'd (filtered) connection
- **Others? Starlink/Satellite, [MRnet](#)**
- **Manual data retrieval/swapping is an option where data are not needed in near real-time.**



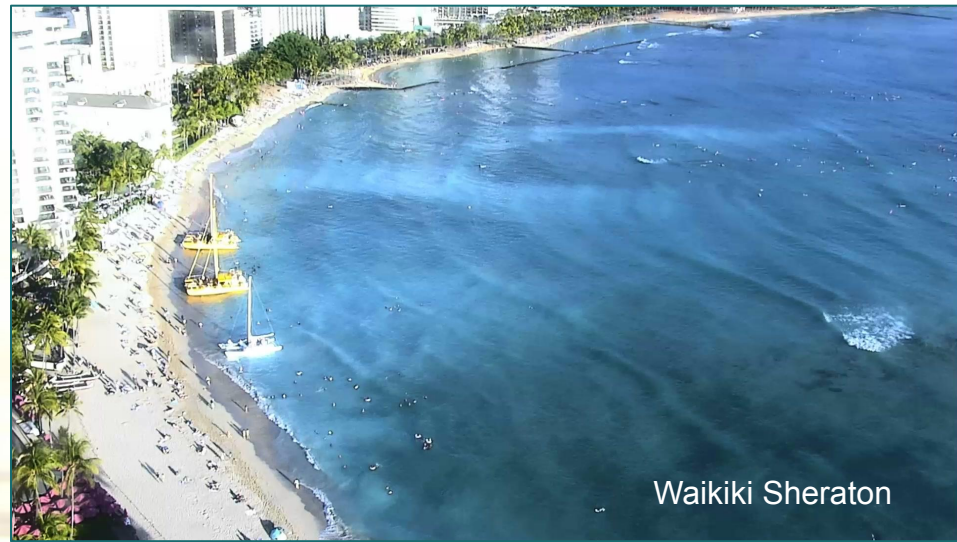
Infrastructure: what is the camera attached to?

- Buildings
- Piers
- Posts
- Permitting
- Others?



Elevation: how high off the ground is the camera?

- Higher elevation better for most use cases
- Precise elevation needed depends on use case of interest, distance to the area of interest, potential camera hosts



Waikiki Sheraton

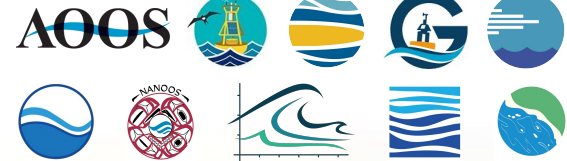


Duke Marine Lab



Partner(s): who are we working with?

- Community engagement & buy-in
- Outreach opportunities
- Low-level maintenance (clean lens, reset GFCI, etc)
- Location context & history
- Provide imagery for applications of interest → help solve problems, build awareness, support decisions, etc



Technical requirements for different product applications

<u>Application</u>	<u>Video/ snapshot</u>	<u>Elevation</u>	<u>PTZ</u>	<u>Other</u>
Rip current detection	Video	As high as possible, close to surf zone	Stationary cams preferred. If PTZ, hold 10+ minutes in any 1 position.	<ul style="list-style-type: none"> • Disable built-in AI for people detection & tracking • Prefer cams with options for glare reduction (e.g. polarizing filter mounts, or dome material).
Urban/ infrastructure flood monitoring	Snapshot or video	Higher preferred	PTZ cams acceptable to maximize coverage. Hold 10+ minutes in any 1 position	-
Wave runup, shoreline tracking, erosion observations	Video desirable, snapshots can provide some info	High = max view area; Low still useful	Stationary cams preferred. If PTZ, hold 10+ minutes in any 1 position	-
People or animal counting	Snapshot or video	High = max view area; Low still useful	PTZ cams acceptable to maximize coverage. Hold 10+ minutes in any 1 position	<ul style="list-style-type: none"> • Counted objects w/in 100yds