

# Unmanned Aerial Systems and Airport Master Plans



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# The “Drones” are coming...

- \* UAS mainly used by US military until recent years
- \* Much promise for civilian UASs
  - \* Pipelines
  - \* Security/law enforcement
  - \* Firefighting
  - \* Agriculture
  - \* Freight



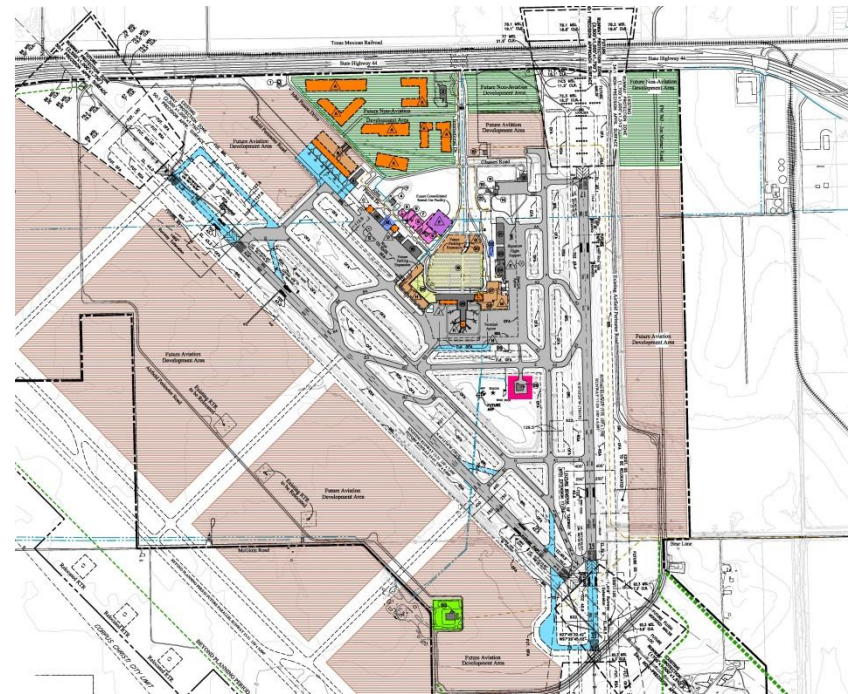
# UAS and Airports

- \* Need to safely integrate UAS into the NAS
- \* Potential for simultaneous operations of UAS and conventional aircraft in and around airports



# Purpose & Methods

- \* Investigative research study to establish best practices that may lead to a model for integrating UAS operations into airport master plans.
- \* Qualitative, observational, and case analysis to determine best ways to incorporate UAS integration into the airport planning process, specifically airport master plans.



# Locations

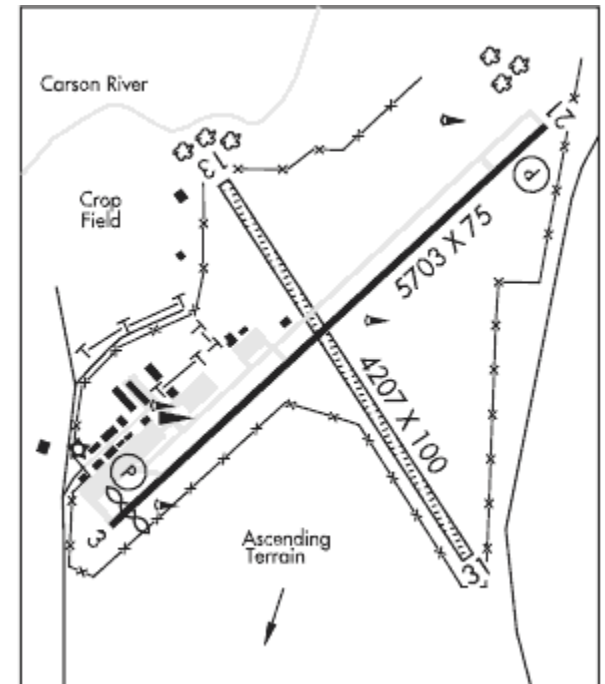
- \* Specific requirements for a “UAS friendly” operational environment and its impact on an airport master plan will be evaluated at Fallon Municipal Airport, Fallon, NV.
- \* Silver Springs Airport, Silver Springs, NV.





# Interviews/Discussions: Fallon

- \* Consultant on airport master plan development
- \* City of Fallon Public Works Director
  - \* City seeking to make airport more attractive to revenue streams
  - \* UAS is an option due to airport location

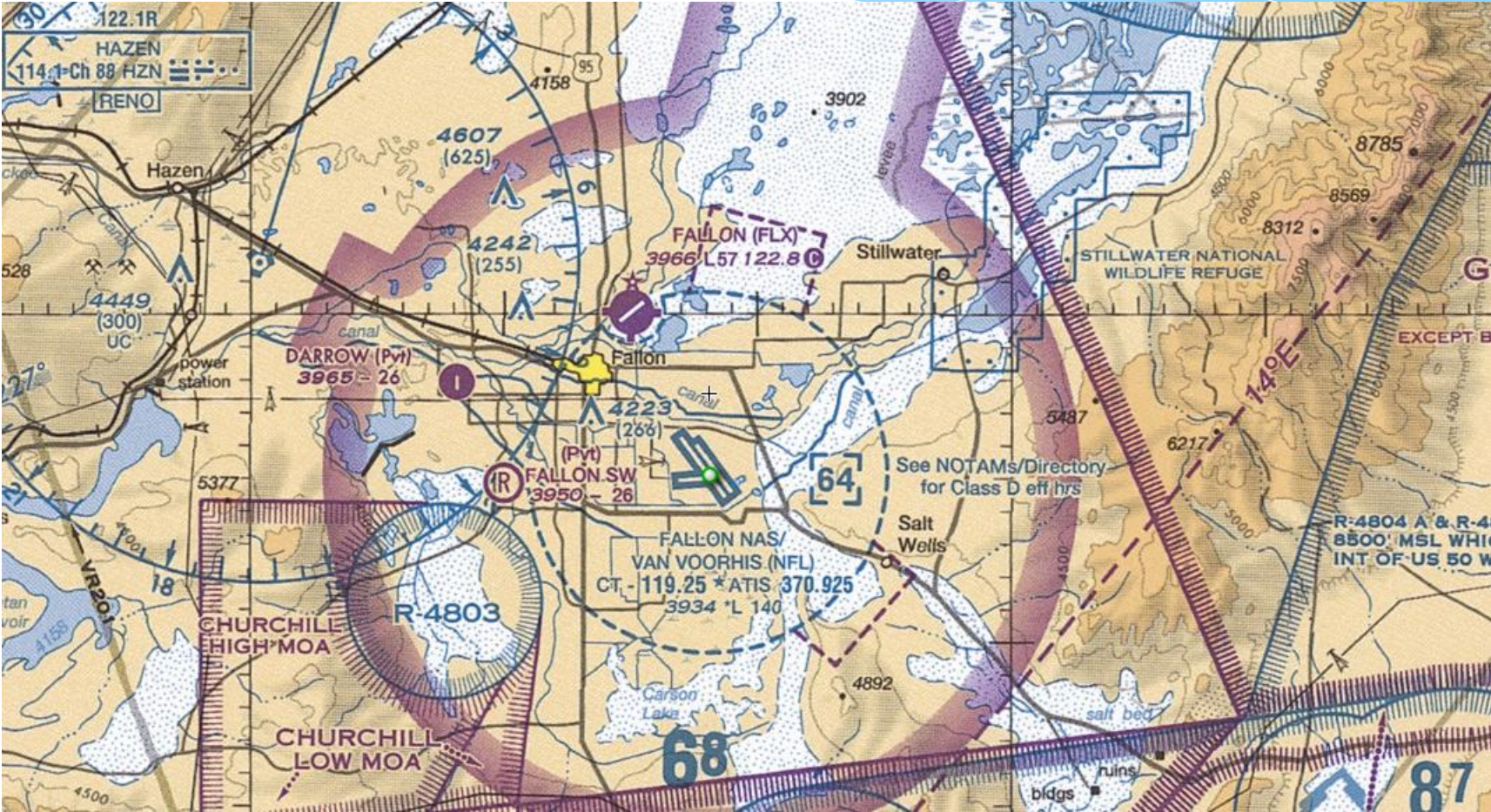


# Fallon Airport

- \* Identified advantages:
  - \* Limited Air Traffic Control issues
  - \* Airport suited to handle groups 2, 3, & 4 UAS
  - \* Possible funding from state and federal sources
  - \* Multiple possible applications of UAS



# Fallon Airport





# Staging and Support



N39°30'18"

W118°45'54"

W118°45'18"

W118°44'42"

W118°44'6"

N39°29'42"

W118°44'6"

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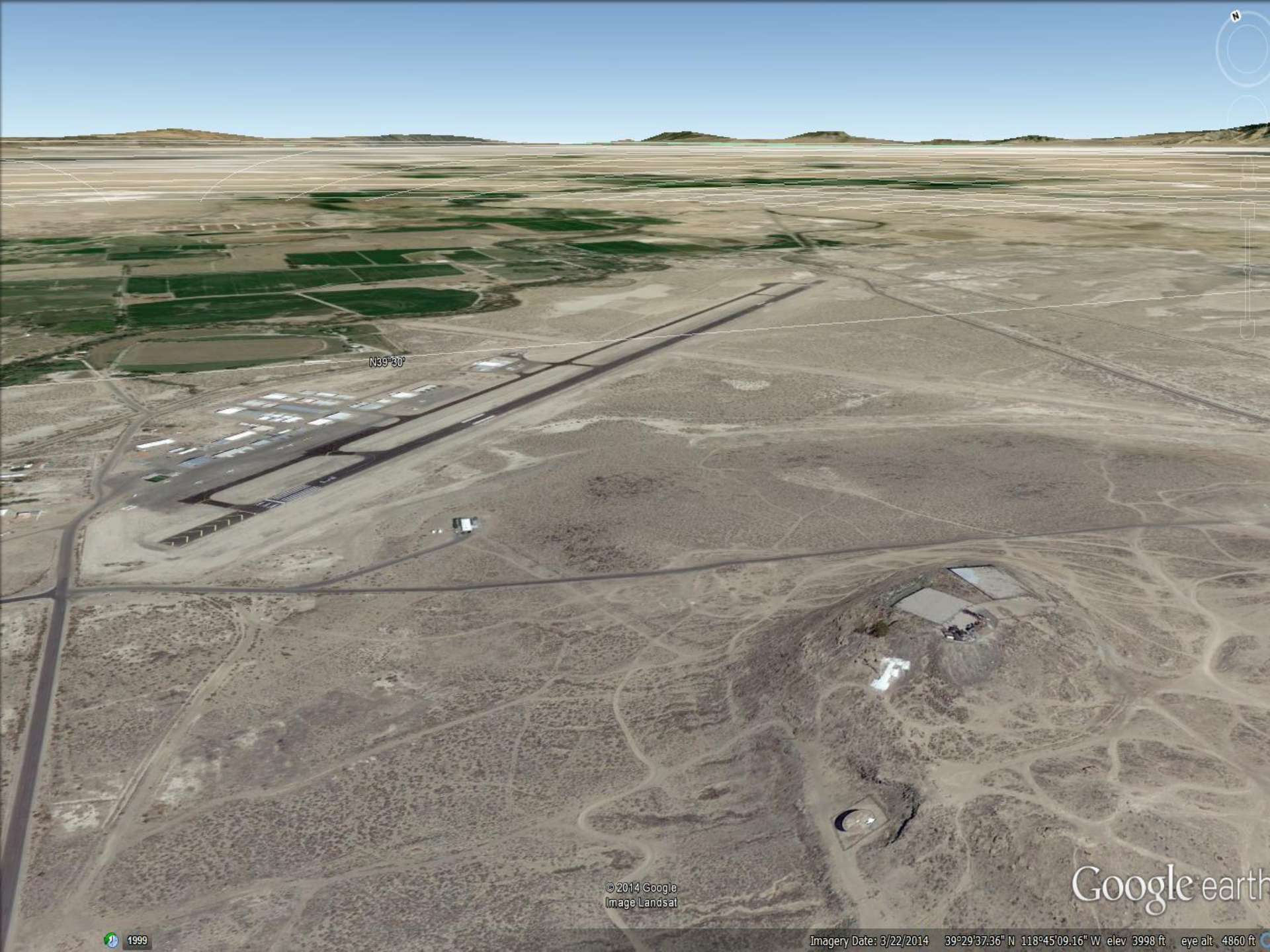
Google earth

S Line R

Imagery Date: 8/2/2013 39°29'50.87" N 118°44'46.47" W elev 3961 ft eye alt 13810 ft

1994





N39°30'

© 2014 Google  
Image Landsat

Google earth

1999

Imagery Date: 3/22/2014 39°29'37.36" N 118°45'09.16" W elev 3998 ft eye alt 4860 ft

# Interviews/Discussions: Silver Springs

- \* Airport owner/manager
  - \* Want airport to be UAS friendly
  - \* Multiple operators interested
- \* Identified advantages:
  - \* Flat open terrain
  - \* Ideal operating areas nearby
  - \* Plenty of expansion capabilities







**CTC NORCAL APP WITHIN  
20-NM ON 119.2 279.55**

**CAUTION  
INTENSIVE GLIDER  
ACTIVITY UP TO FL 180**

**SILVER SPRINGS (SPZ)  
4265 \*L 60 122.9**

Silver Springs

Lahontan Reservoir

microwave station

power station

bldgs

ranches

River

VALLEY (A34)

94

CH  
HI  
MI  
N





Silver Springs, NV, USA

Image Landsat

Google earth

1999

Imagery Date: 3/22/2014 39°24'27.00" N 119°14'53.62" W elev 4235 ft eye alt 8943 ft

# Findings

- \* Both airports appear to have the traffic volume, facilities, proximity to transportation, and access to allow operators to set up launch and recover, control, and communications facilities.
- \* At both sites, it is likely that external power (generators) would be the most effectual means of provision of electricity (Fallon has more options).



# Findings

- \* In both cases, it is likely that the airport management (Fallon – the city, Silver Springs – private owners) would need to make improvements to the airport to better facilitate UAS operations.
- \* Neither airport has significant staging areas or office/shelter space for users.





# Conclusions

- \* Airports need to plan for UAS
- \* Need to integrate UAS in their airport master plans
- \* Identify/evaluate potential of airport and facilities to handle UAS
- \* Make plans for possible UAS transient or based operations

