**AQ Summary:** There has been persistent soupy conditions in the southern SJV for last few days, but it is cleaner in the northern end because of a generally northerly flow. Tonight, winds are expected to pick up and could be locally breezy (>10 kts), so PM2.5 levels may drop a bit. The SJV APCD forecaster expects Fresno levels to drop the most with marine flow through the Pacheco Pass (near Madera) – this flow typically fizzes by Hanford. For Wednesday, Bakersfield, Visalia, and Porterville should be in the 60’s ug/m3 and Fresno should drop to the 40’s ug/m3. For Thursday and Friday, PM2.5 levels are likely to drop (e.g., Bakersfield & Fresno : 20-30s), but the forecaster doesn’t expect the SJV to be cleaned out like during the event around Jan. 27th; this forecast is somewhat uncertain for Thursday & Friday.

**Weather Summary**

**WEDNESDAY:** SJV Region free of clouds throughout the day. Fog likely to be present in the morning, but stronger winds after frontal passage will prevent it from becoming dense. Low level clouds may impact Bakersfield and Porterville (like Monday).

**PODEX** Models indicate that a somewhat extensive clear patch of water is present off of the SF and LA coasts. However, they do not agree about the extent of low clouds and the presence of high clouds. NWS Monterey and Oxnard gave a 50/50 chance right now of that clear patch being present (depends on the cold front today). The farther west, the more clear of clouds right now.

**THURSDAY:**

**SJV** Strong trough moving brings first cirrus and then nimbostratus to the region by Thursday afternoon and into Friday.

**PODEX** Models indicate some clearing after the passage of the cold front, but disagree again on extent of coverage and the types of cloud present. NWS Oxnard and Monterey indicate the same forecast for Thursday as for Wednesday, with the possibility of clear patches of water, but the uncertainty is very high (depends on that second cold front).
### San Nicolas

<table>
<thead>
<tr>
<th></th>
<th>Today</th>
<th>Tonight</th>
<th>Wednesday</th>
<th>Wednesday Night</th>
<th>Thursday</th>
<th>Thursday Night</th>
<th>Friday</th>
<th>Friday Night</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather</td>
<td>WNW 15kt</td>
<td>NW 20kt</td>
<td>NW 15kt</td>
<td>NW 15kt</td>
<td>NW 20kt</td>
<td>WNW 25kt</td>
<td>NW 30kt</td>
<td>NW 30kt</td>
<td>WNW 25kt</td>
</tr>
<tr>
<td>Wind</td>
<td>&lt; 1ft</td>
<td>&lt; 1ft</td>
<td>&lt; 1ft</td>
<td>&lt; 1ft</td>
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</tbody>
</table>

### Monterey

<table>
<thead>
<tr>
<th></th>
<th>Today</th>
<th>Tonight</th>
<th>Wednesday</th>
<th>Wednesday Night</th>
<th>Thursday</th>
<th>Thursday Night</th>
<th>Friday</th>
<th>Friday Night</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather</td>
<td>Mostly Cloudy</td>
<td>Partly Cloudy</td>
<td>Mostly Sunny</td>
<td>Increasing Clouds</td>
<td>Chance Showers</td>
<td>Showers Likely</td>
<td>Chance Showers</td>
<td>Partly Cloudy</td>
<td>Sunny</td>
</tr>
<tr>
<td>High</td>
<td>52 °F</td>
<td>42 °F</td>
<td>53 °F</td>
<td>41 °F</td>
<td>50 °F</td>
<td>41 °F</td>
<td>51 °F</td>
<td>40 °F</td>
<td>51 °F</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Palmdale

<table>
<thead>
<tr>
<th></th>
<th>Today</th>
<th>Tonight</th>
<th>Wednesday</th>
<th>Wednesday Night</th>
<th>Thursday</th>
<th>Thursday Night</th>
<th>Friday</th>
<th>Friday Night</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather</td>
<td>Breezy</td>
<td>Mostly Clear</td>
<td>Sunny</td>
<td>Mostly Clear</td>
<td>Mostly Sunny</td>
<td>Chance Rain</td>
<td>Chance Rain</td>
<td>Mostly Sunny</td>
<td>Sunny</td>
</tr>
<tr>
<td>High</td>
<td>68 °F</td>
<td>63 °F</td>
<td>68 °F</td>
<td>63 °F</td>
<td>59 °F</td>
<td>50 °F</td>
<td>48 °F</td>
<td>49 °F</td>
<td>48 °F</td>
</tr>
<tr>
<td>Low</td>
<td>42 °F</td>
<td>42 °F</td>
<td>42 °F</td>
<td>41 °F</td>
<td>41 °F</td>
<td>40 °F</td>
<td>33 °F</td>
<td>33 °F</td>
<td>49 °F</td>
</tr>
</tbody>
</table>
Current Conditions

BAKERSFIELD CA

Humidity 87%
Wind Speed NW 3 MPH
Barometer 30.06 in
Dewpoint 43°F (6°C)
Visibility 1.75 mi
Last Update on 06 Feb 8:02 am PST

Fog

HANFORD

DENSE FOG ADVISORY until 11 am PST

Fog

Plymouth State Weather Center

Meteogram for KBFL from 1600Z 4 FEB 13 to 1600Z 5 FEB 13

Meteogram for KHJO from 1600Z 4 FEB 13 to 1600Z 5 FEB 13
Current Conditions

FRESNO CA

Fog
45°F
7°C

Humidity 90%
Wind Speed calm
Barometer 30.06 in (1018.0 mb)
Dewpoint 42°F (6°C)
Visibility 3.00 mi

Last Update on 05 Feb 7:53 am PST

Plymouth State Weather Center

Meteogram for KFAT from 1600Z 4 FEB '13 to 1600Z 5 FEB '13
Some Dense Fog: < $\frac{1}{4}$ mile visiblilities
GOES: IR at 1500 UTC (7 am) Today
GOES: Cloud Top Height at 1500 UTC (7:00 am) Today
Today: Central CA remains under the main influence of an upper ridge. However, a weak shortwave trough will move through the area today and overnight. Dry and warm.
Tomorrow (Wednesday): A weak ridge again builds in the area and dominates during the day. Dry and sunny. Another upper trough off the Pacific Northwest coast will move east; winds may briefly increase Tuesday night into early Wednesday morning.
Fresno : BUFKIT NAM 12 UTC Tuesday Feb. 5th

Today

PBL Height

Clouds

High clouds >25 Kft

Scattered low clouds

Friday

Thursday

Wednesday

Today
Scattered clouds (>23 Kft) moving in late afternoon/early evening.
San Nicolas: BUFKIT NAM 12 UTC Tuesday Feb. 5th

Today

Clouds

High clouds >25 Kft

Low clouds

Some low clouds

Fri 4a

Fr 10a

Th 4a

Th 10a

Tu 4p

Tu 10a

Tu 10p

We 4p

We 10a

Wed 4a

Wed 10a

Thu 4a

Thu 10a

Fri 4p

Fri 10p

Sat 4a

Sat 10a

Sun 4a

Sun 10a

Mon 4a

Mon 10a

Clouds

Low clouds

Some low clouds

High clouds >25 Kft
Clouds

Some low clouds
Fresno
Today: Sunny
Wednesday: Somewhat increased cloud cover, but mainly sunny

Today → Wednesday →
Hanford
Today: Sunny
Wednesday: Somewhat increased cloud cover, but mainly sunny
Bakersfield
Today: Sunny
Wednesday: Mainly sunny
Thursday: A stronger and colder upper trough will begin to move into central CA by Thursday night. Cloud cover and winds will again increase.
Friday: The trough intensifies to a closed low. Friday has the highest probability of precipitation (rain) in the valley given the position of the low center. Very cold but not much deep moisture—any snowfall constrained to higher elevations.
Fresno
Thursday: Cloud cover ~50%
Friday: Cloud cover ~85%
Hanford
Thursday: Cloud cover ~50%
Friday: Cloud cover ~85%
Bakersfield
Thursday: Cloud cover ~40%
Friday: Cloud cover ~90%

Thursday →

Friday →
Hanford
Precipitation and Thunder Forecast

Thursday →  

Friday →
Saturday: The upper trough/close low remains stationary over central CA, keeping clouds and cold air in the area.
Sunday and beyond: The upper trough remains over central CA on Sunday, but moves east by Monday. Another ridge builds into the area on Monday and dominates the region by Tuesday.
Fresno
Saturday: Decreasing cloud cover ~40%
Sunday: Cloud cover ~30%
Hanford
Saturday: Decreasing cloud cover ~40%
Sunday: Cloud cover ~20%
Bakersfield
Saturday: Decreasing cloud cover ~40%
Sunday: Cloud cover ~20%
Tomorrow: NAM – SJV remains cloud-free throughout the day. Clear patch of water off LA, increasing throughout day. However, marine clouds hard to predict this time of year.
Wednesday: GEOS5 – SJV remains cloud-free throughout the day, but morning fog present. Coastal waters clear of low level clouds, but cirrus moves in later in day.

7 am 10 am 1 pm 4 pm

GEOS5 – Low level

GEOS5 – Mid level

GEOS5 – High level
Tomorrow: Canadian – SJV remains cloud-free throughout the day, with exception of morning fog. Coastal waters show more cloud cover than NAM and GEOS5. GFS – Both SJV and most of the coastal water study regions remain cloud-free throughout the day.
GFS - Low level

GFS - Mid level

GFS - High level
Thursday: NAM – High level clouds move into the area from the north and west.
Thursday: GEOS5 – Low level clouds move offshore as the upper trough approaches. Cirrus moving in ahead of that trough and the low level clouds.

7 am

GEOS5 – Low level

10 am

GEOS5 – Mid level

1 pm

GEOS5 – High level

4 pm

GEOS5 – Low level
Thursday: GFS – Cirrus moving into the study regions from the NW (though less than NAM and GEOS5), but low level clouds approaching the coast.
Friday: NAM keeps cirrus over the SJV and off the coasts throughout most of the day. Some increase in low level clouds by afternoon. (But the storm hits today???)
Friday: GEOS5 – Sizable low level cloud deck off the coast decreases throughout the day, with mid-level clouds developing over the SJV during afternoon.

7 am

GEOS5 – Low level

10 am

GEOS5 – Mid level

1 pm

GEOS5 – High level

4 pm
AREA FORECAST DISCUSSION
NATIONAL WEATHER SERVICE SAN JOAQUIN VALLEY – HANFORD CA
227 AM PST TUE FEB 5 2013

.SYNOPSIS...
THERE IS LITTLE CHANGE EXPECTED FOR THE LOCAL AREA WITH DRY CONDITION...PATCHY LATE NIGHT THROUGH MORNING FOG AND NEAR NORMAL TEMPERATURES CONTINUING THROUGH WEDNESDAY AFTERNOON. AN APPROACHING SYSTEM LATER THIS WEEK WILL BRING INCREASED CHANCES FOR PRECIPITATION TO THE AREA.

&

.DISCUSSION...
CONTINUED WARM DAYS AND FOGGY NIGHTS IN THE SJV ARE EXPECTED THROUGH WEDNESDAY. DFA IN EFFECT FOR THE SJV UNTIL LATE MORNING. TEMPERATURES WILL ONCE AGAIN RISE ABOVE NORMAL FOR THIS TIME OF YEAR AND A GRADUAL INCREASE IN HIGH CLOUDS IS EXPECTED AS THE NEXT SYSTEM APPROACHES THE REGION TODAY.

A WEAK RIDGE WILL BREAK DOWN ON WED AS AN UPPER TROUGH OF LOW PRESSURE WILL MOVE THROUGH THE REGION. INCREASE IN CLOUDS AS THE FRONT MOVES THROUGH. IT APPEARS TO BE DRY AT THIS TIME AND WE MAY SEE AN INCREASE IN WINDS BRIEFLY ON WED PM AS THE TROUGH MOVES THROUGH.

ONCE THE TROUGH MOVES THROUGH...THIS WILL OPEN THE DOOR FOR A STRONGER AND COLDER SYSTEM THAT IS EXPECTED TO MOVE IN HERE THURSDAY PM AND CONTINUE THROUGH THE WEEKEND AS THE CLOSED LOW CENTER WILL REMAIN STATIONARY OVER THE OVER SRN NEVADA AREA AND FINALLY KICKS EAST BY MONDAY. VERY COLD AIRMASS ASSOCIATED WITH THIS FEATURE WILL BRING VERY LOW SNOW LEVELS. THERE IS NOT MUCH DEEP MOISTURE ASSOCIATED WITH THE SYSTEM AND WE ARE NOT EXPECTING A MAJOR SIERRA SNOW EVENT AT THIS TIME. HOWEVER...THE BIGGEST IMPACT WILL BE THE VERY SNOW LEVELS AND POSSIBLE IMPACT ON THE CENTRAL CA INTERIORS HIGHLY TRAVELED PASSES IN THE KERN COUNTY MOUNTAINS.

SNOW LEVELS WILL GET INTO THE FOOTHILLS AND WE MAY SEE SOME ACCUMULATING SNOW DOWN TO 2500 FEET. MODELS ARE COMING MORE IN LINE WITH THE SYSTEM AND BOTH THE GFS AND THE ECM ARE IN DECENT AGREEMENT ON THE TIMING AND INTENSITY OF THE SYSTEM.

UPPER RIDGE BUILDING IN FROM THE WEST WILL TAKE OVER THE REGIONS WEATHER PATTERN BY NEXT TUESDAY WITH A SLIGHT WARM UP ACROSS THE AREA AND DRY CONDITIONS.

&
DISCOVER-AQ Sites: Daily PM2.5 (ug/m³)

Interesting behaviors observed for PM2.5 levels at various stations:

- **Corcoran & Hanford** – decreasing
- **Visalia, Bakersfield, Fresno** - plateau

DISCOVER-AQ period characterized by two pollution events and one gradual clean-out.
DISCOVER-AQ Sites: Hourly PM2.5 (ug/m³)

midnight
February 4th (Monday) & 5th (Today)

Fresno-Garland

Air District Real-Time Outdoor Activity Risk

- yesterday
- today

Corcoran

Air District Real-Time Outdoor Activity Risk

- yesterday
- today

Bakersfield

Air District Real-Time Outdoor Activity Risk

- yesterday
- today

Stockton

Air District Real-Time Outdoor Activity Risk

- yesterday
- today
SJV APCD Daily Forecast – for TODAY (February 5)

- **ROAR LEVEL**
  - Level 1: Good
    - Ozone (O\textsuperscript{3}): 1-59 ppb
    - Particulate Matter (PM 2.5): 1-15 µg/m\textsuperscript{3}
  - Level 2: Moderate
    - Ozone (O\textsuperscript{3}): 60-75 ppb
    - Particulate Matter (PM 2.5): 16-35 µg/m\textsuperscript{3}
  - Level 3: Unhealthy for Sensitive Groups
    - Ozone (O\textsuperscript{3}): 76-95 ppb
    - Particulate Matter (PM 2.5): 36-55 µg/m\textsuperscript{3}
  - Level 4: Unhealthy
    - Ozone (O\textsuperscript{3}): 96-115 ppb
    - Particulate Matter (PM 2.5): 56-75 µg/m\textsuperscript{3}
  - Level 5: Very Unhealthy
    - Ozone (O\textsuperscript{3}): >115 ppb
    - Particulate Matter (PM 2.5): >75 µg/m\textsuperscript{3}
NOAA CMAQ: Wednesday 10 am = 18 Z

PODEX: Appears to be relatively clean off the LA coast as compared to conditions a week or so ago.
NOAA CMAQ: Wednesday 10 am = 18 Z
NOAA CMAQ: Wednesday 10 am = 18 Z

CO [ppm] at 1013 [hPa] Valid 18 FEB 06 2013

SO2 [ppb] at 1013 [hPa] Valid 18 FEB 06 2013

FORM [ppb] at 1013 [hPa] Valid 18 FEB 06 2013
GMAO GEOS5: San Nicolas Is.
**AQ Summary**

**NOW:** Persistent soupy conditions in the southern SJV for last few days; cleaner in northern end because of generally northerly flow.

**TONIGHT:** Winds are expected to pick up overnight and could be locally breezy (>10 kts), so PM2.5 levels may drop a bit. SJV APCD forecaster expects Fresno levels to drop the most with marine flow through the Pacheco Pass (near Madera) – this flow typically fizzles by Hanford.

**WEDNESDAY:**
- Bakersfield, Visalia, Porterville – 60’s ug/m3
- Fresno – dropping to 40’s ug/m3.

**THURSDAY/FRIDAY:**
PM2.5 levels are likely to drop a bit (e.g., Bakersfield & Fresno : 20-30s), but forecaster doesn’t expect the SJV to be cleaned out like ~ Jan. 27th. The forecast is somewhat uncertain.
Recommendations

WEDNESDAY: SJV Region free of clouds throughout the day. Fog likely to be present in the morning, but stronger winds after frontal passage will prevent it from becoming dense. Low level clouds may impact Bakersfield and Porterville (like Monday).

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