

Talking Points
Meteorological Trends at Nine Mile Point
NUMUG 2005

Slide 1: Meteorological Trends

Slide 2: Background Information

Slide 3: Lake Ontario Map

- Located in SE Corner of Lake Ontario
- 160 mile fetch to west

***Hidden -* Slide 4: Wind Speed Trend**

Slide 5: 200' WS

- Has decreased 0.6mph (4%) in 20 years
- Max=15.8 Min=14.0
- Trend line is a 2nd order polynomial

Slide 6: 30' WS

- Has decreased 0.5mph (6%) in 20 years
- Max=9.9mph Min=8.4mph
- Trend line is a 2nd order polynomial

Slide 7: All WS levels

- Speed increases with height (expected)
- Each level exhibits similar pattern
- Trend line is a 2nd order polynomial

***Hidden -* Slide 8: Wind Direction Trend**

Slide 9: 200' WD

- WSW most frequent elevated prevailing wind sector (14 of 20 years) (70%)
- SE and W each prevail (3 of 20 years) (15%)

Slide 10: 30' WD

- SE most frequent ground level prevailing wind sector (11 of 20 years) (55%)
- WSW 2nd most frequent sector (5 of 20 years) (25%)
- High frequency of Southerly sectors (SE, SSE, S) driven by Land Breeze (700 hours/yr.)(8%) or (102 days/yr.)(28%)

Slide 11: Wind Roses

- 200' Left, 30' Right
- 200' note westerly winds & 30' note southerly winds
- Stronger winds speeds at 200'

Slide 12: WD frequency - Split 5yr vs. 20yr.

- Of interest at this years REMP audit(s)
- Is 30 yr. old data still valid ?
- Similarity of pattern noted

Slide 13: WD frequency - 8 yr. vs. 20 yr.

- Very similar in pattern
- 8 yr. is a sub-set of the 20 yr.

Slide 14: WD frequency – Most recent 5 yr. vs. 20 yr.

- Again very similar in pattern
- Most recent 5 yr. is a sub-set of the 20 yr.

Slide 15: WD frequency – Most recent 5 yr. vs. the 30 yr. old Split 5 yr.

- Similar in pattern
- Data sets are independent (25 yrs. Apart)

Hidden - Slide 16: Temperature-Dew Point Trend

Slide 17: Annul Average Temperature (1974-2004)

- Average Temp increases 2.2°F over 30 yrs.
- Trend line is a 2nd order polynomial

Slide 18: Annual Average Temp. & Dew Pt. (1986-2004 Line Graph)

- Similar patterns evident in the Temp and Dew Pt. lines

Slide 19: Annual Temp & Dew Pt. (1986-2004 Bar Graph)

- Annual RH ~75%
- 1998 only annual average Temp >50°F (El-Nino) (Dew Pt=42°F)

Slide 20: Monthly Temperature & Dew Pt. (Bar Graph)

- July warmest (not quite reaching 70°F)
- January coldest month (~24°F)

Hidden - Slide 21: Precipitation Trend

Slide 18: NMP Yearly Average Precip (1985-2004)

- No apparent trends observed
- Max ~43”(1996) Min ~24”(1987)

Slide 19: NMP Monthly Average Precip (1985-2004)

- Annual Average ~33”
- Driest month = February (Winter)
- Wettest month(s) = October & November (Fall)

Slide 20: Conclusions