

TECHNICAL ISSUANCE

NextGen Weather Processor Aviation Weather Display Air Traffic Operator's Manual

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Table of Contents

1	INTRODUCTION	1
1.1	Purpose of the ATOM	2
1.2	Audience	2
1.3	AWD System Overview	2
1.4	Terms, Symbols and Icons	3
2	DESKTOP	4
2.1	AWD Settings Menu	5
2.1.1	Add New View	6
2.1.2	Night and Day Themes	9
2.1.3	Screen Capture	10
2.1.4	Diagnostic Playback	22
2.2	Desktop Help Icon	30
2.3	NEXRAD Free Text Messages	31
2.4	Login/Switch User	34
2.4.1	Logging Into a Workstation	35
3	VIEWS	36
3.1	Long Range and TRACON Graphics Views	36
3.1.1	Graphics View Titlebar	38
3.1.2	Graphics View Settings Menu	39
3.1.3	View Toolbar	55
3.1.4	Product Status Buttons	61
3.1.5	Loop Toolbar	62
3.2	STATIC Image View	63
3.2.1	Static Image Products	64
3.3	TEXT View	68
3.3.1	Text View Settings Menu	69
4	OVERLAYS	73
4.1	Overlay Hotkey	73
4.2	Overlays Menu	74
4.2.1	Maps	80
4.2.2	NAS Boundaries	80
4.2.3	Flow Constrained Areas (FCA)	80
4.2.4	Airports, Heliports, and Seaports	80
4.2.5	Runways and ARENAS	81
4.2.6	Fixes and NAVAIDs	81
4.2.7	Routes and Procedures	81
4.2.8	Tech Ops Overlays	82
4.3	Custom Overlays	83
4.3.1	Range Rings	83
4.3.2	Create Line	84
4.3.3	Create Labeled Point	86
4.4	Manage Overlays	87
4.4.1	OVERLAYS Menu	88
5	WEATHER PRODUCTS	94
5.1	Primary Products	96
5.1.1	Precipitation (PRECIP)	96
5.1.2	Echo Tops (ECHO TOPS)	109
5.1.3	Turbulence (TURB)	116
5.1.4	Composite Reflectivity Mosaic (COMP REFL)	121
5.1.5	Icing (ICING)	131
5.1.6	Base Reflectivity Mosaic (BASE REFL)	136

5.2	Forecast Products.....	141
5.2.1	Traffic Flow Management Convective Forecast (TCF).....	141
5.2.2	Convective Weather Avoidance Polygons (CWAP)	146
5.2.3	CWAP Verification (CWAP VERIF).....	153
5.2.4	Fronts Forecast (FRONTS)	159
5.2.5	Turbulence Contours (TURB CNTRS).....	162
5.2.6	Icing Contours (ICING CNTRS)	168
5.2.7	Forecast Contours (FCST CNTRS).....	174
5.2.8	Forecast Verification Contours (VERIF CNTRS).....	177
5.2.9	Forecast Accuracy Scores (FCST ACCY).....	182
5.2.10	Traffic Flow Impact (TFI).....	185
5.3	Advisories	194
5.3.1	SIGMET.....	194
5.3.2	AIRMET.....	201
5.3.3	Center Weather Advisories (CWA).....	210
5.3.4	Severe Thunderstorm & Tornado Watches (WATCH).....	214
5.3.5	Volcanic Ash Advisories (VAA)	217
5.4	Observation and Analysis.....	222
5.4.1	Satellite Mosaic (SAT).....	222
5.4.2	PIREP	226
5.4.3	Observations and Terminal Area Forecasts (OBS TAFS).....	232
5.4.4	Echo Tops Tags & Storm Cell Information (ET-TAGS SCI).....	244
5.4.5	Lightning Detection (LTNG)	253
5.4.6	Tornadic Signature (TOR)	254
5.4.7	Storm Motion Vectors (STORM MOTN)	255
5.4.8	Storm Leading Edge & Projections (LEADING EDGE)	257
5.4.9	Storm Growth & Decay Trends (G&D TRENDS).....	258
6	TOOLS & FUNCTIONS	261
6.1	Loop Toolbar	261
6.1.1	Jump Buttons	262
6.1.2	Loop Toolbar Functions.....	263
6.1.3	Loop Control Menu	265
6.1.4	Valid Time Box.....	271
6.2	Preference Sets	273
6.2.1	Create a Preference Set	274
6.2.2	Load a Pref-set	276
6.2.3	Modify Pref-set	276
6.2.4	Delete Pref-set	277
6.3	Hotkeys.....	280
6.3.1	Overlay Hotkey (V)	280
6.3.2	Storm Cell Information Hotkey (S)	280
6.3.3	ET-TAGS SCI Leader Line Hotkey (D)	281
7	HELP	282
7.1	Help Dropdown Menu.....	282
7.2	Scroll ATOM Section.....	284
7.3	Search in Section	285
7.4	Search All Sections.....	287
APPENDIX A.	ACRONYMS	290
APPENDIX B.	GLOSSARY	293
APPENDIX C.	ICONS & SYMBOLS.....	295
APPENDIX D.	AVAILABLE OVERLAYS	297
APPENDIX E.	WEATHER SYMBOLS	298

Table of Figures

Figure 1-1. NextGen Weather Systems High-Level Block Diagram.....	1
Figure 2-1. AWD Desktop.....	4
Figure 2-2. AWD Settings Menu.....	5
Figure 2-3. Add New View.....	6
Figure 2-4. Desktop View Tabs.....	7
Figure 2-5. Custom Labeled View Tabs	7
Figure 2-6. Night and Day Themes.....	9
Figure 2-7. Change Theme	9
Figure 2-8. Screen Capture menu	10
Figure 2-9. Screen Capture Options.....	11
Figure 2-10. Select Screen Capture to Save	12
Figure 2-11. Save Screenshot.....	13
Figure 2-12. Screen Capture Playback Menu.....	14
Figure 2-13. Select Screen Capture Playback Source.....	14
Figure 2-14. Source AWD Selected	15
Figure 2-15. Select Playback Start Date	15
Figure 2-16. Select Playback Start Time.....	16
Figure 2-17. Select Playback Duration	16
Figure 2-18. Screen Capture Playback Mode.....	18
Figure 2-19. Screen Capture Toolbar Controls & Icons.....	19
Figure 2-20. Screen Capture Export Options	20
Figure 2-21. Complete Screen Capture Export	21
Figure 2-22. Confirm Screen Capture Export	21
Figure 2-23. Open Diagnostic Playback.....	22
Figure 2-24. Select Diagnostic Playback Archive Source.....	23
Figure 2-25. Select Diagnostic Playback Start Date	24
Figure 2-26. Select Diagnostic Playback Start Time	24
Figure 2-27. Load Diagnostic Playback.....	25
Figure 2-28. AWD in Diagnostic Playback Mode.....	26
Figure 2-29. Start or Delay Diagnostic Playback	27
Figure 2-30. Start Diagnostic Playback.....	27
Figure 2-31. Playing/Pausing Diagnostic Playback.....	28
Figure 2-32. Select Diagnostic Playback Speed.....	29
Figure 2-33. Close Diagnostic Playback.....	30
Figure 2-34. Desktop Help Icon.....	30
Figure 2-35. Select NEXRAD Sites to Monitor	31
Figure 2-36. NEXRAD Sites Selected for Monitoring.....	32

Figure 2-37. Check NEXRAD Status	33
Figure 2-38. Acknowledge NEXRAD Free Text Messages	33
Figure 2-39. AWD in its Default Configuration	34
Figure 2-40. AWD Workstation Login	35
Figure 3-1. Default Long Range View	37
Figure 3-2. Default TRACON View	37
Figure 3-3. Graphics View Titlebar	38
Figure 3-4. Open Long Range Graphics View Settings Menu	39
Figure 3-5. Open TRACON Graphics View Settings Menu	40
Figure 3-6. Open Graphics View Settings Menu from Desktop	41
Figure 3-7. Long Range Graphics View Products	42
Figure 3-8. TRACON Graphics View Products	43
Figure 3-9. Graphics View Settings OVERLAYS	44
Figure 3-10. Long Range View Domains	45
Figure 3-11. TRACON View Domains	46
Figure 3-12. Graphics View Options	47
Figure 3-13. Custom View Label	48
Figure 3-14. Change Graphics View Background Color	49
Figure 3-15. Display Mouse Pointer LAT/LONG & Elevation	50
Figure 3-16. Show Measurement Scale Legend	51
Figure 3-17. Show LAT/LONG Grid	52
Figure 3-18. Show Range Indicator	53
Figure 3-19. Activate Show North Indicator	54
Figure 3-20. Magnetic and True North Compared	54
Figure 3-21. Graphics View Toolbar	55
Figure 3-22. Minimize View Toolbar	55
Figure 3-23. Maximize View Toolbar	56
Figure 3-24. Click Home to Center View	56
Figure 3-25. View Bullseye	57
Figure 3-26. Bullseye LAT/LONG Indicator	57
Figure 3-27. View Re-centered with Bullseye	58
Figure 3-28. Zoom Out	58
Figure 3-29. Zoom In	59
Figure 3-30. Manage Overlays	59
Figure 3-31. Open Measuring Tool	60
Figure 3-32. Measuring Tool Options	60
Figure 3-33. Product Status Buttons on the Product Toolbar	61
Figure 3-34. Maximized Product Toolbar	62
Figure 3-35. Minimized Product Toolbar	62

Figure 3-36. Loop Toolbar in Long Range View.....	62
Figure 3-37. Loop Toolbar in TRACON View	62
Figure 3-38. Open Static Image View Settings Menu	63
Figure 3-39. Open Static Image View Settings Menu from the Desktop	63
Figure 3-40. Select Static View Product	64
Figure 3-41. NavCanada GFA	64
Figure 3-42. NavCanada GFA Toolbar	65
Figure 3-43. Select NavCanada GFA Region.....	66
Figure 3-44. Himawari Satellite Visible/IR Image.....	67
Figure 3-45. Add a Text View	68
Figure 3-46. Open Text View Settings Menu	68
Figure 3-47. Open Text View Settings Menu from Desktop	69
Figure 3-48. Text View Settings Menu	69
Figure 3-49. Open Wind Profiles	70
Figure 3-50. Select Airport	70
Figure 3-51. Wind Profiles Defined	71
Figure 3-52. Text View Settings Menu Options	71
Figure 3-53. Hide Wind Profiles View Toolbar	72
Figure 4-1. Overlay Quick Search Dialog Box.....	73
Figure 4-2. Enter Overlay in OVERLAY QUICK SEARCH	73
Figure 4-3. Overlay Added Using Overlay Hotkey.....	73
Figure 4-4. Open Overlays Menu from a View.....	74
Figure 4-5. Open Overlays Menu from the Desktop.....	75
Figure 4-6. Default OVERLAYS Menu	76
Figure 4-7. Filter OVERLAY Search	77
Figure 4-8. Filtered OVERLAY Search Results.....	78
Figure 4-9. Overlays Secondary Search.....	79
Figure 4-10. Add Range Rings	83
Figure 4-11. Custom Range Ring Options	83
Figure 4-12. Add Custom Line	84
Figure 4-13. Custom Line Options.....	84
Figure 4-14. Add Labeled Point.....	86
Figure 4-15. Labeled Point Options.....	86
Figure 4-16. Overlay Attributes.....	87
Figure 4-17. OVERLAYS Menu Partially Collapsed	88
Figure 4-18. Overlay Group Hidden	89
Figure 4-19. Overlays Menu Show Details	90
Figure 4-20. Overlays Menu Details Displayed	90
Figure 4-21. Change Single Overlay Attributes from Menu.....	91

Figure 4-22. Change Overlay Category Attributes	92
Figure 4-23. Remove Overlay.....	93
Figure 4-24. Delete Overlay Category.....	93
Figure 5-1. PRECIP	96
Figure 5-3. Past & Current Precipitation Filtered	98
Figure 5-4. Past, Current, & Forecast Precipitation Filtered.....	98
Figure 5-5. PRECIP ALL OFF Filter	99
Figure 5-6. All Past & Current Precipitation Filtered	99
Figure 5-7. PRECIP Filter Bar Extended	100
Figure 5-8. PRECIP Product Options Menu	100
Figure 5-9. Activate PRECIP Altitude Filter.....	101
Figure 5-10. Set PRECIP Altitude Filter.....	102
Figure 5-11. PRECIP Radar Coverage Map	103
Figure 5-12. Display PRECIP Radar Coverage Map.....	103
Figure 5-13. PRECIP with Altitude Filter Active and Radar Coverage on.	104
Figure 5-14. Winter Weather.....	104
Figure 5-15. Disable Winter Weather	106
Figure 5-16. Winter Weather Off.....	106
Figure 5-17. Winter Weather Not Available	107
Figure 5-18. PRECIP Opacity.....	107
Figure 5-19. ECHO TOPS.....	109
Figure 5-20. ECHO TOPS Filter Bar	109
Figure 5-21. Past & Current Echo Tops Filtered.....	110
Figure 5-22. Forecast Echo Tops Filtered.....	110
Figure 5-23. ECHO TOPS ALL OFF Filter.....	111
Figure 5-24. ECHO TOPS Product Options Menu	111
Figure 5-25. ECHO TOPS Radar Coverage Map.....	113
Figure 5-26. Display ECHO TOPS Radar Coverage Map	113
Figure 5-27. Topped Echo Tops.....	114
Figure 5-28. Topped Echo Tops Displayed	114
Figure 5-29. ECHO TOPS Opacity	115
Figure 5-30. TURB	116
Figure 5-31. Filter TURB by EDR	117
Figure 5-32. Filter TURB by Altitude	118
Figure 5-33. Filter Turbulence by Altitude Layer	118
Figure 5-34. Set TURB Altitude Layer Filter.....	119
Figure 5-35. TURB Single Altitude Filter.....	119
Figure 5-36. Set TURB Single Altitude Filter.....	120
Figure 5-37. TURB Opacity	120

Figure 5-38. COMP REFL.....	121
Figure 5-39. COMP REFL Filter Bar	121
Figure 5-40. COMP REFL Filtered by Intensity	123
Figure 5-41. COMP REFL – Filter all Precipitation	123
Figure 5-42. COMP REFL – Hide/Display all Precipitation.....	124
Figure 5-43. COMP REFL Product Options Menu.....	124
Figure 5-44. COMP REFL Altitude Filter	125
Figure 5-45. Set COMP REFL Altitude Layer Filter.....	125
Figure 5-46. COMP REFL Altitude Layer Filter Active.....	126
Figure 5-47. COMP REFL Single Altitude Filter	126
Figure 5-48. Set COMP REFL Single Altitude Filter.....	127
Figure 5-49. COMP REFL Single Altitude Filter Active.....	127
Figure 5-50. COMP REFL Radar Coverage with Impairment	128
Figure 5-51. COMP REFL Radar Coverage without Impairment	128
Figure 5-52. COMP REFL Radar Coverage With Impairment Filtered by Altitude	129
Figure 5-53. Select COMP REFL Radar Coverage	129
Figure 5-54. COMP REFL Opacity	130
Figure 5-55. ICING	131
Figure 5-56. ICING Filtered by Severity	131
Figure 5-57. ICING Product Options Menu	132
Figure 5-58. ICING Altitude Filter Menu	132
Figure 5-59. Adjust ICING Altitude Filter Floor & Ceiling	133
Figure 5-60. ICING Altitude Layer Filter Active	133
Figure 5-61. Open ICING Single Altitude Filter.....	134
Figure 5-62. Adjust ICING Single Altitude Filter	134
Figure 5-63. ICING Single Altitude Filter Active	135
Figure 5-64. ICING Opacity.....	135
Figure 5-65. BASE REFL	136
Figure 5-66. BASE REFL Filter Bar.....	136
Figure 5-67. BASE REFL Filtered by Intensity	137
Figure 5-68. Filter BASE REFL ON/OFF	137
Figure 5-69. BASE REFL Product Options Menu.....	138
Figure 5-70. BASE REFL Radar Coverage Without Impairment.....	138
Figure 5-71. BASE REFL Radar Coverage With Impairment	139
Figure 5-72. BASE REFL Radar Coverage Map Options	139
Figure 5-73. BASE REFL Opacity	140
Figure 5-74. TFM Convective Forecast.....	141
Figure 5-75. TCF with PRECIP	142
Figure 5-76. TCF Toolbar	142

Figure 5-77. TCF Product Options Menu.....	143
Figure 5-78. Display TCF Tops	143
Figure 5-79. Hide TCF Legend	144
Figure 5-80. TCF Opacity	144
Figure 5-81. CWAP with PRECIP.....	146
Figure 5-82. CWAP Product Options Menu	147
Figure 5-83. CWAP Default Settings.....	148
Figure 5-84. CWAP Altitude Selected.....	149
Figure 5-85. CWAP Forecast Time Selected.....	150
Figure 5-86. Hide CWAP Legend	151
Figure 5-87. CWAP Opacity	152
Figure 5-88. CWAP VERIF with PRECIP.....	153
Figure 5-89. CWAP VERIF Product Options Menu	154
Figure 5-90. CWAP Forecast Selected for Verification.....	155
Figure 5-91. Verify CWAP Forecast	156
Figure 5-92. Hide CWAP VERIF Legend	157
Figure 5-93. CWAP VERIF Opacity	158
Figure 5-94. FRONTS with PRECIP	159
Figure 5-95. FRONTS Product Options Menu.....	159
Figure 5-96. Front Type Hidden	160
Figure 5-97. FRONTS Opacity	160
Figure 5-98. TURB CNTRS with PRECIP.....	162
Figure 5-99. TURB CNTRS Filtered by EDR	163
Figure 5-100. TURB CNTRS Product Options Menu.....	163
Figure 5-101. Filter TURB CNTRS by Altitude Layer	164
Figure 5-102. Adjust TURB CNTRS Altitude Layer Filter.....	164
Figure 5-103. TURB CNTRS Single Altitude Filter	165
Figure 5-104. Set TURB CNTRS Single Altitude Filter	165
Figure 5-105. TURB CNTRS Single Altitude Filter Displayed.....	166
Figure 5-106. Hide TURB CNTRS Legend	166
Figure 5-107. TURB CNTRS Opacity.....	167
Figure 5-108. ICING CNTRS	168
Figure 5-109. ICING CNTRS Filtered	168
Figure 5-110. ICING CNTRS Product Options Menu.....	169
Figure 5-111. Filter ICING CNTRS by Altitude Layer	170
Figure 5-112. Set ICING CNTRS Altitude Layer	171
Figure 5-113. ICING CNTRS Altitude Filter Layer Activated	171
Figure 5-114. Open ICING CNTRS Single Altitude Filter	172
Figure 5-115. Set ICING CNTRS Single Altitude Filter.....	172

Figure 5-116. ICING CNTRS Single Altitude Filter Active	173
Figure 5-117. Hide/Show ICING CNTRS Legend	173
Figure 5-118. ICING CNTRS Opacity	174
Figure 5-119. FCST CNTRS with PRECIP.....	174
Figure 5-120. FCST CNTRS Product Options Menu	175
Figure 5-121. FCST CNTRS with Two Forecast Horizons	175
Figure 5-122. Hide FCST CNTRS Legend	176
Figure 5-123. FCST CNTRS Opacity.....	177
Figure 5-124. VERIF CNTRS with PRECIP	177
Figure 5-125. VERIF CNTRS Product Options Menu.....	178
Figure 5-126. VERIF CNTRS Explained	179
Figure 5-127. Hide VERIF CNTRS Legend	180
Figure 5-128. VERIF CNTRS Opacity	181
Figure 5-129. FCST ACCY with PRECIP.....	182
Figure 5-130. FCST ACCY Scoring Regions.....	182
Figure 5-131. FCST ACCY Product Options Menu	183
Figure 5-132. Select FCST ACCY Scoring Regions	183
Figure 5-133. FCST ACCY Scoring Regions Displayed	184
Figure 5-134. FCST ACCY Opacity.....	184
Figure 5-135. Traffic Flow Impact Default View.....	185
Figure 5-136. TFI Product Options Menu.....	186
Figure 5-137. Traffic Flow Region Selected for TFI	186
Figure 5-138. View FCAs.....	187
Figure 5-139. TFI for ZJX FCAs Displayed	187
Figure 5-140. ARTCC FCA Boundaries Displayed.....	188
Figure 5-141. One FCA displayed	189
Figure 5-142. Select FCA Graph	190
Figure 5-143. Open TFI Graph.....	190
Figure 5-144. TFI Graph Explained	192
Figure 5-145. Traffic Flow Impact Opacity	192
Figure 5-146. SIGMET.....	194
Figure 5-147. Hide SIGMETs.....	195
Figure 5-148. SIGMETs Hidden	195
Figure 5-149. SIGMET Deactivated	196
Figure 5-150. SIGMET Callout Box	196
Figure 5-151. Close SIGMET Callout Box.....	198
Figure 5-152. SIGMET Product Options Menu.....	198
Figure 5-153. Hide SIGMET Labels	199
Figure 5-154. Hide Advisories Legend.....	199

Figure 5-155. SIGMET Opacity	201
Figure 5-156. AIRMET	202
Figure 5-157. AIRMET Callout Box	202
Figure 5-158. Close AIRMET Callout Box.....	204
Figure 5-159. Filter AIRMETs by Weather Category	204
Figure 5-160. AIRMET Product Options Menu.....	205
Figure 5-161. AIRMETs Filtered by Type	206
Figure 5-162. All AIRMET Types Displayed	207
Figure 5-163. AIRMET Labels Hidden.....	207
Figure 5-164. Hide Advisories Legend.....	208
Figure 5-165. AIRMET Opacity	209
Figure 5-166. CWA with PRECIP	210
Figure 5-167. CWA Callout Box	210
Figure 5-168. CWA Product Options Menu	211
Figure 5-169. CWA Labels Hidden.....	211
Figure 5-170. CWA Hide Advisories Legend.....	212
Figure 5-171. CWA Opacity	213
Figure 5-172. WATCH with PRECIP	214
Figure 5-173. WATCH Callout Box.....	214
Figure 5-174. WATCH Product Options Menu	215
Figure 5-175. WATCH Toggled Off	215
Figure 5-176. WATCH with Advisories Legend Hidden	216
Figure 5-177. WATCH Opacity.....	216
Figure 5-178. Volcanic Ash Advisories	217
Figure 5-179. Volcano Detected	218
Figure 5-180. Volcano Plume & Tops.....	218
Figure 5-181. VAA Callout Box	219
Figure 5-182. VAA Product Options Menu.....	219
Figure 5-183. VAA 6-Hour Forecast	220
Figure 5-184. VAA Hide/Show Plume Tops.....	220
Figure 5-185. VAA Hide/Show Legend.....	221
Figure 5-186. VAA Opacity	221
Figure 5-187. SAT with PRECIP	222
Figure 5-188. SAT Infrared to Visible Transition	223
Figure 5-189. SAT Coverage	224
Figure 5-190. SAT Product Options Menu	225
Figure 5-191. SAT Opacity	225
Figure 5-192. PIREP with PRECIP.....	226
Figure 5-193. PIREP Callout Box.....	227

Figure 5-194. PIREP Product Options Menu	228
Figure 5-195. PIREP Altitude Filter	229
Figure 5-196. Activate PIREP Altitude Filter.....	230
Figure 5-197. PIREPs Filtered by Altitude	230
Figure 5-198. Hide PIREP Legend	231
Figure 5-199. PIREP Opacity.....	231
Figure 5-200. OBS TAFS.....	232
Figure 5-201. OBS TAFS Callout Box.....	234
Figure 5-202. OBS TAFS Product Options Menu.....	235
Figure 5-203. OBS TAFS without Winds	236
Figure 5-204. OBS TAFS Flight Category and Winds Selected.....	237
Figure 5-205. Display Observations by Region	238
Figure 5-206. Observations for Displayed Airports.....	239
Figure 5-207. Maritime Observations Displayed	239
Figure 5-208. OBS TAFS MFVR Ceiling 3,000'.....	240
Figure 5-209. OBS TAFS MVFR Ceiling 5,000'.....	241
Figure 5-210., Hide/Display OBS TAFS Legend.....	242
Figure 5-211. OBS TAFS Legend Hidden.....	242
Figure 5-212. OBS TAFS Legend Displayed.....	243
Figure 5-213. OBS TAFS Opacity	243
Figure 5-214. ET-TAGS SCI with PRECIP	244
Figure 5-215. ET-TAGS.....	244
Figure 5-216. ET-TAGS SCI Product Options Menu.....	245
Figure 5-217. ET-TAGS SCI Altitude Filter Menu	245
Figure 5-218. Adjust ET-TAGS Altitude Filter Floor	247
Figure 5-219. ET TAGS Filter Active.....	247
Figure 5-220. Change ET-TAGS SCI Leader Line Direction	248
Figure 5-221. Echo Tops Tags Hidden	249
Figure 5-222. Interrogate Individual Storm Cells for SCI	250
Figure 5-223. All Available SCI Displayed	251
Figure 5-224. ET-TAGS SCI Opacity	252
Figure 5-225. LTNG with PRECIP	253
Figure 5-226. LTNG Opacity	253
Figure 5-227. TOR with PRECIP	254
Figure 5-228. TOR Opacity	254
Figure 5-229. STORM MOTN with PRECIP	255
Figure 5-230. STORM MOTN Opacity	256
Figure 5-231. LEADING EDGE	257
Figure 5-232. LEADING EDGE Opacity.....	257

Figure 5-233. G&D TRENDS.....	258
Figure 5-234. G&D TRENDS Product Options Menu	258
Figure 5-235. Hide G&D TRENDS Legend.....	259
Figure 5-236. G&D TRENDS Opacity	259
Figure 6-1. Loop Toolbar in Long Range View.....	261
Figure 6-2. Loop Toolbar in TRACON View	261
Figure 6-3. Default Long Range Loop Toolbar.....	262
Figure 6-4. Loop Toolbar with Filtered Time Periods.....	262
Figure 6-5. Loop Toolbar with Unavailable Time Periods	262
Figure 6-6. Loop Toolbar Functions	263
Figure 6-7. Minimize Loop Toolbar	263
Figure 6-8. Maximize Loop Toolbar	264
Figure 6-9. Open Loop Control Menu	265
Figure 6-10. Select Loop Intervals.....	266
Figure 6-11. Set Loop Dwell Times.....	267
Figure 6-12. Set Loop Speed	268
Figure 6-13. Set Start Loop Time.....	269
Figure 6-14. Set End Loop Time	270
Figure 6-15. Loop Toolbar with Filtered Time Periods.....	271
Figure 6-16. Valid and Relative Time	271
Figure 6-17. Open Supplemental Time Box	272
Figure 6-18. Valid Time & Supplemental Time Boxes	272
Figure 6-19. Current Pref-set	273
Figure 6-20. Create Pref-set.....	274
Figure 6-21. Confirm and Save New Pref-set	275
Figure 6-22. New Pref-set Created	275
Figure 6-23. Load a Pref-set.....	276
Figure 6-24. Modify Pref-set	276
Figure 6-25. Confirm Pref-set Modification	277
Figure 6-26. Delete Pref-set.....	278
Figure 6-27. Pref-set Deleted	279
Figure 6-28. Overlay Hotkey Opens Overlay Quick Search	280
Figure 6-30. SCI Hotkey Toggles Global SCI On.....	281
Figure 6-31. ET-TAGS Leader Line Hotkey.....	281
Figure 7-1. AWD Default Help Window	282
Figure 7-2. Open Help Dropdown Menu.....	283
Figure 7-3. Select Section from Help Dropdown Menu	283
Figure 7-4. Section Selected from Help Dropdown Menu Displayed	284
Figure 7-5. Scroll Within Section.....	284

Figure 7-6. Open Search in Section	285
Figure 7-7. Search in Section Dialog Box.....	285
Figure 7-8. Enter Search in Section Keyword.....	286
Figure 7-9. Search in Section from TOC Results.....	286
Figure 7-10. Search in Section from Section Results	287
Figure 7-11. Open Search All Sections	287
Figure 7-12. Search All Sections Dialog Box	288
Figure 7-13. Search All Sections Results	288
Figure 7-14. Select Section from Search All Sections Results	289
Figure 7-15. Section from Search All Section Results Displayed.....	289

Table of Tables

Table 5-1. Primary Products.....	94
Table 5-2. Forecast Weather Products	94
Table 5-3. Advisory Products	95
Table 5-4. Observation & Analysis Products.....	95
Table 5-5. Turbulence Effect on Aircraft.....	117

1 INTRODUCTION

Together, the Common Support Services - Weather (CSS-Wx) and Next Generation Air Transportation System (NextGen) Weather Processor (NWP) systems have replaced and subsumed Weather and Radar Processor (WARP), Corridor Integrated Weather System (CIWS), and Consolidated Storm Prediction for Aviation (CoSPA) functionality.

CSS-Wx disseminates raw weather data and weather products to user display systems, while NWP ingests raw weather data to generate high-resolution aviation-specific weather products.

The Aviation Weather Display (AWD), an NWP subsystem, consolidates CIWS/CoSPA Situation Display (SD) and WARP Briefing Terminal (BT) functionality into one system. In addition to weather products formerly available on WARP, CIWS, and CoSPA, the AWD delivers new and advanced weather products that were previously not available.

The AWD delivers graphic weather products that display past, current, and forecast weather designed to support Air Traffic Control (ATC) supervisory and Traffic Flow Management (TFM) functions. The AWD's vast suite of aviation-specific weather products were designed for use without the need of professional meteorological interpretation. This Air Traffic Operator's Manual (ATOM) provides detailed instructions on how to use the AWD's Graphical User Interface (GUI), weather products, and hotkeys.

AWD weather products are available on AWD workstations deployed at select Federal Aviation Administration (FAA) ATC facilities, and on the internet via the AWD web server. AWD workstations include a Central Processing Unit (CPU), monitor, keyboard, and mouse (Figure 1-1. NextGen Weather Systems High-Level Block Diagram).

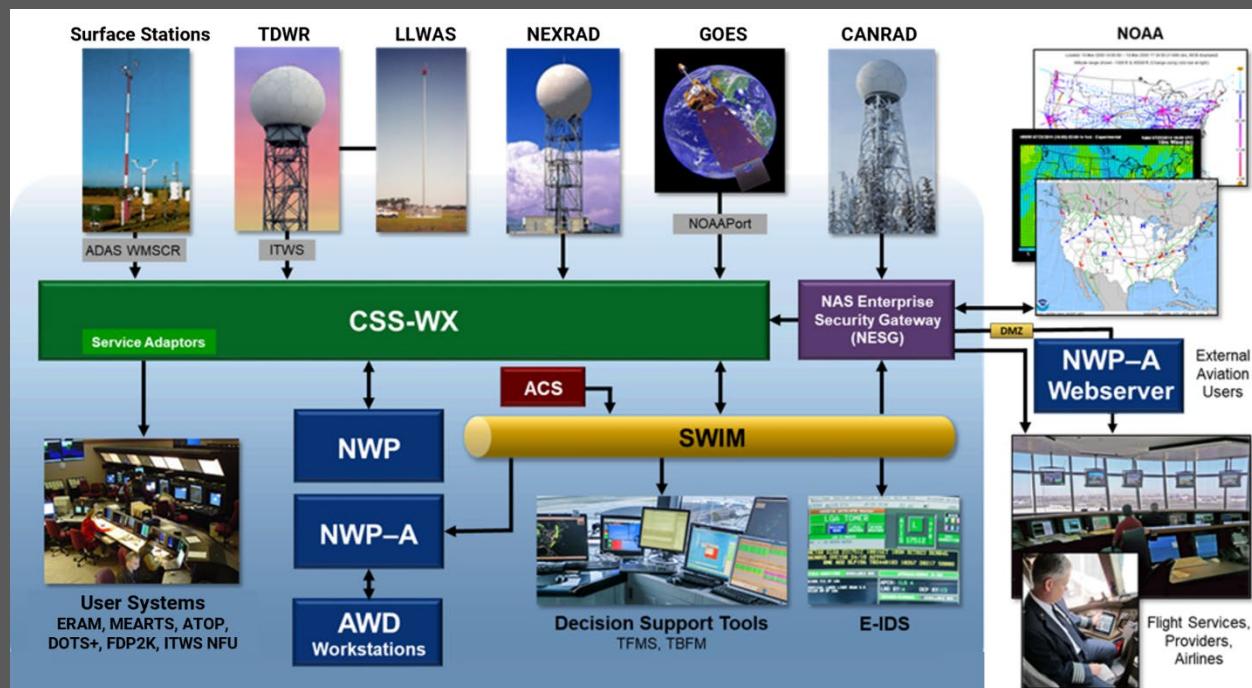


Figure 1-1. NextGen Weather Systems High-Level Block Diagram

1.1 Purpose of the ATOM

The AWD ATOM provides written and graphical instructions on how to use the AWD, the AWD GUI, weather products available on the AWD, and tools that augment the AWD experience.

1.2 Audience

The following personnel that perform TFM, ATC supervisory, or Center Weather Service Unit (CWSU) meteorologist functions are the ATOM's primary audience:

- Traffic Management Coordinator (TMC)
- Supervisory Traffic Management Coordinator (STMC)
- Operational Supervisor (OS)
- Controller-in-Charge (CIC)
- National Traffic Management Specialist (NTMS)
- National Traffic Management Officer (NTMO)
- Operations Manager (OM)
- National Operations Manager (NOM)
- Traffic Management Officer (TMO)
- CWSU Meteorologist

1.3 AWD System Overview

The AWD provides access to advanced aviation-specific weather products generated by CSS-Wx, NWP, and the National Weather Service (NWS). In addition to providing new and advanced weather products that were not previously available, the AWD consolidates weather products and functionality from the following legacy FAA weather systems that have been or soon will be decommissioned:

- WARP BT
- CIWS SD
- CoSPA

AWD workstations are deployed in the Air Traffic Control System Command Center (ATCSCC), all Air Route Traffic Control Center (ARTCC) facilities, all Center Radar Approach Control (CERAP) facilities, select Terminal Radar Approach Control (TRACON) facilities, and select Airport Traffic Control Tower (ATCT) facilities.

With credentials, authorized users internal and external to the FAA can access the AWD via the internet through the AWD web server.

1.4 Terms, Symbols and Icons

Reviewing this section will make reading the ATOM easier. The following terms, symbols, and icons are used throughout the ATOM:

- View – The terms “view” and “window” are synonymous. An AWD view is like a personal computer (PC) window. Like windows on a PC, AWD views can be opened, moved, resized, maximized, minimized, and closed. All AWD weather products are opened and reside in views.
- Desktop – The entire AWD display is the AWD desktop, and all views reside on the desktop. When views are opened and manipulated (moved, resized, minimized, etc.) they are manipulated on the desktop.
- Titlebar – A banner at the top of the desktop and views that includes icons and alphanumeric characters which provide access to desktop or view functions and provide specific information about the desktop or view.
- Hamburger Icon – The Hamburger icon (three stacked horizontal lines resembling a hamburger), resides in the upper left corner of the Desktop Titlebar. Click the Hamburger icon to open the AWD Settings menu for access to AWD products, overlays, domains, and other AWD options.
- Help Icon – Help icons (question marks) are located on the Desktop Titlebar, View Titlebars, and other locations where help is available. Refer to Section 7, HELP, for specific information on how to use Help.
- Gear Icon – The Gear icon looks like a gear and provides access to numerous AWD tools, functions, and settings.
- Toolbar – There are three toolbars included in all graphics views: the View Toolbar, Loop Toolbar, and Product Toolbar. The three toolbars are view specific, not product specific.
- Filter Bar – Certain AWD products have associated filter bars that provide capability to filter weather products by altitude, intensity, and other criteria. Filter bars are product specific and have different functions depending on their associated product.
- Carets – Carets (< or >) are located throughout the AWD and work as toggles to minimize/maximize or collapse/expand toolbars and menus. Depending on where they are used, carets point up, down, left, or right.
- Click – Click means to click the left mouse button one time. The ATOM will specify instances when a right-click or double-click is required.
- Enter – Press the Enter key on the keyboard one time.

2 DESKTOP

The AWD desktop encompasses the entire AWD display and functions like a PC desktop. The desktop cannot be moved, resized, or closed. Views including overlays and weather products reside on the desktop. AWD views can never overlay (block) the Desktop Titlebar.

The AWD's Desktop Titlebar includes four icons, an alphanumeric data-block, and a system clock. Desktop titlebar icons provide access to AWD settings, tools, and functions; the data-block identifies the Workstation ID or the user currently logged on the AWD, and the clock displays the current time in GMT.

The image of the default AWD desktop below includes labels that identify each Desktop element (Figure 2-1. AWD Desktop).

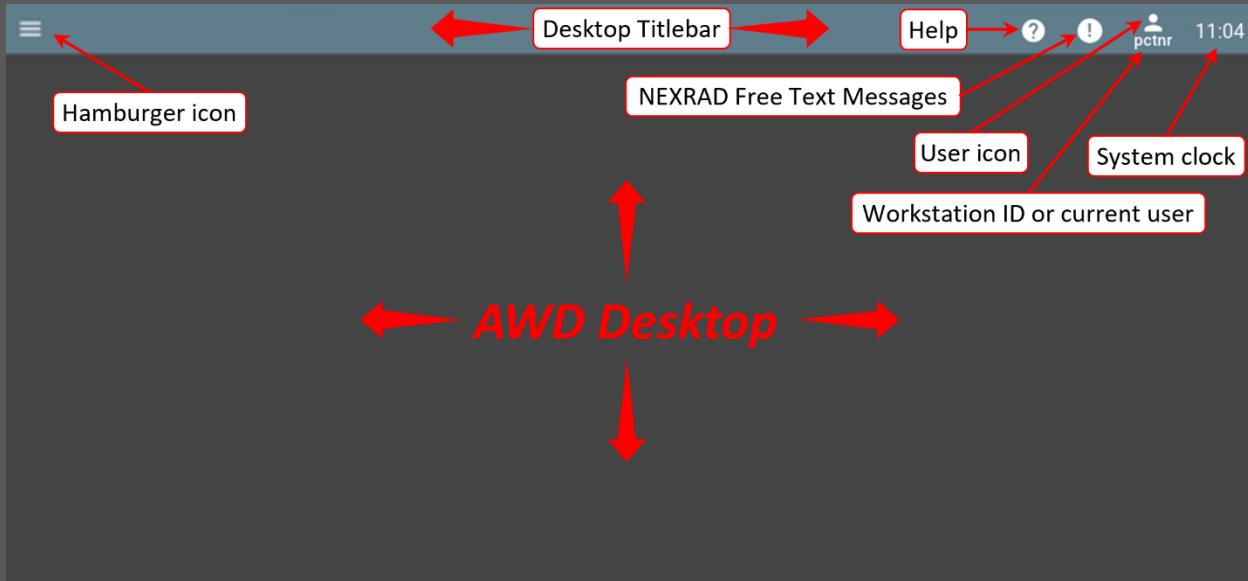


Figure 2-1. AWD Desktop

- Hamburger icon – Click the Hamburger icon to open the AWD Settings menu where you can add views, edit existing views, select day or night theme, save screenshots, playback a series of screenshots, or use Diagnostic Playback to view past weather events.
- Help icon – Click the Help icon to open the ATOM's hyperlinked Table of Contents.
- Next Generation Weather Radar (NEXRAD) Free Text Messages icon – Click the NEXRAD Free Text Messages icon to select and view NEXRAD Free Text Messages that provide status information on individual NEXRAD sites.
- User icon – Click the User icon to log in. When logged in, you can access Preference Sets (Pref-sets) which are custom configurations you create and save for future recall. For instructions on how to use Pref-sets, refer to Section 6.2, Preference Sets.
- Current User – Alphanumeric below the User icon display the username (e.g., zhuea, pctnr, znyjt, etc.) of the specialist currently logged on the AWD, or if no user is logged on, the AWD's unique workstation ID (e.g., zhu01, zid02, zny03, pct01, etc.).
- System clock – Current time GMT.

2.1 AWD Settings Menu

To add a new view, edit an existing view, select day or night theme, save screenshots, playback a series of screenshots, or playback a weather event, click the Hamburger icon to open the AWD Settings menu (Figure 2-2. AWD Settings Menu).

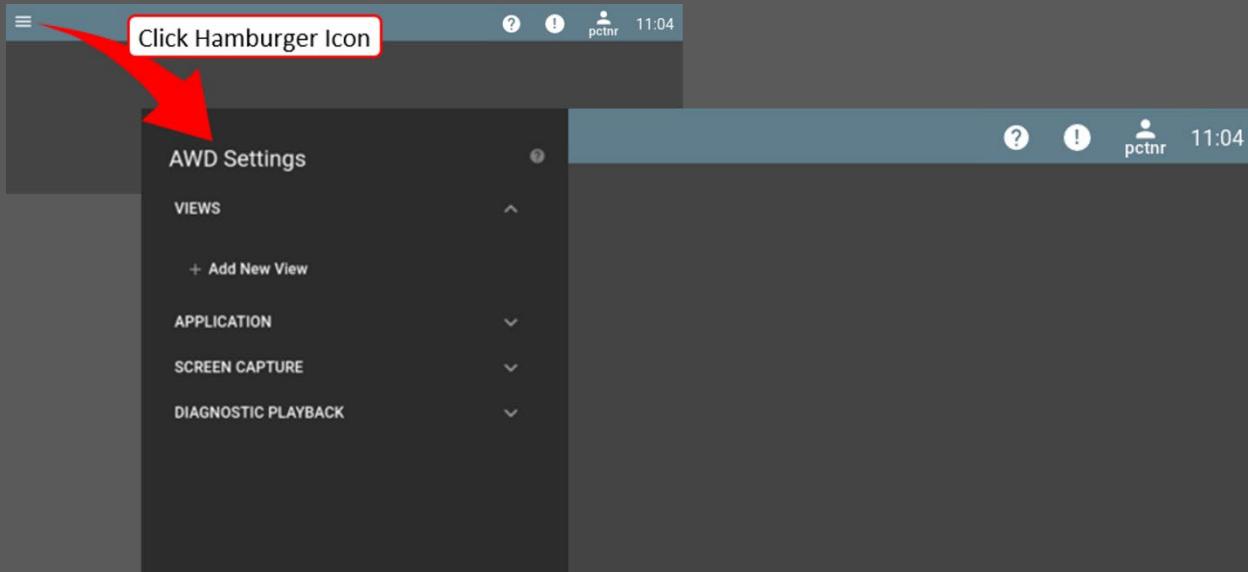


Figure 2-2. AWD Settings Menu

The AWD Settings menu includes the following four submenus:

- VIEWS – Use this submenu to add one or more new views to the desktop or to edit existing views.
- APPLICATION – Use to select Day or Night theme. Night theme (the default) is generally more suitable for low light settings (e.g., ARTCCs, CERAPs, & TRACONs.), while Day theme may be more suitable in brighter settings (e.g., tower cabs).
- SCREEN CAPTURE – Use to save individual screenshots, playback a series of screenshots, or export a series of screenshots for later retrieval.
- DIAGNOSTIC PLAYBACK – Provides capability to replay archived weather events from any AWD workstation in your facility.

When the AWD Settings menu is open, submenus are either expanded or collapsed. Carets adjacent to submenus work as toggles that when clicked, expand or collapse their respective submenus. Expanded submenus have an up-pointing caret to the right of the submenu name and are ready to use. Collapsed submenus have a down-pointing caret to the right of the submenu name and must be expanded before they can be used.

2.1.1 Add New View

For information on the different type views, how to use views, and what different type views are used for, refer to Section 3, VIEWS. The following four type views can be added to the AWD desktop:

- Long Range Graphics View, also referred to as Long Range View
- TRACON Graphics View, also referred to as TRACON View
- Static Image View
- Text View

To add a new view to the desktop, click the **Hamburger** icon, then from the AWD Settings menu, click **+ Add New View**. From the dropdown list, click the view (Long Range, TRACON, Static Image, or Text) you want to add (Figure 2-3. Add New View).

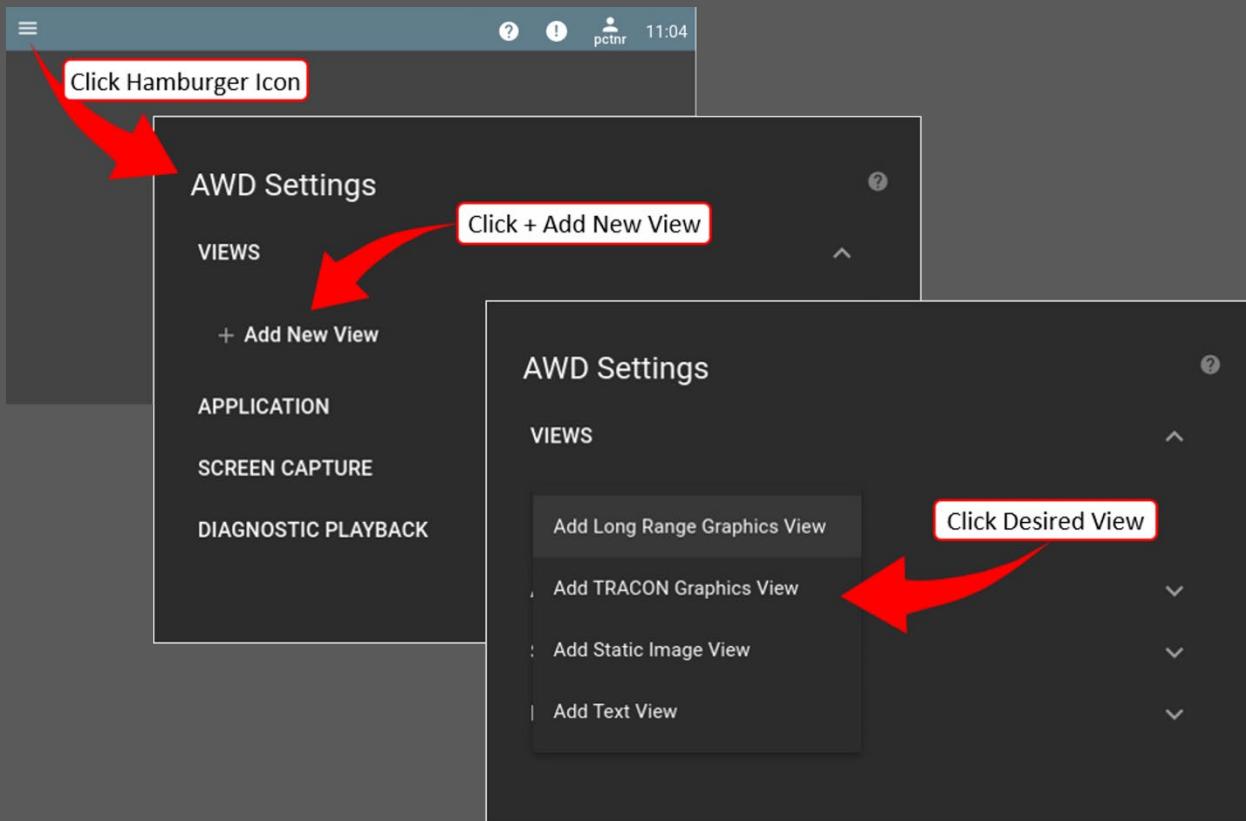


Figure 2-3. Add New View

Note: No more than five (5) graphics views (Long Range and TRACON combined) can be open at one time.

2.1.1.1 Desktop View Tabs

When a new view is added to the desktop, its associated View tab is added to the Desktop Titlebar. View tabs are added from left to right in the order their respective views were added. The View tab for the first view opened resides to the immediate right of the Hamburger icon (Figure 2-4. Desktop View Tabs).

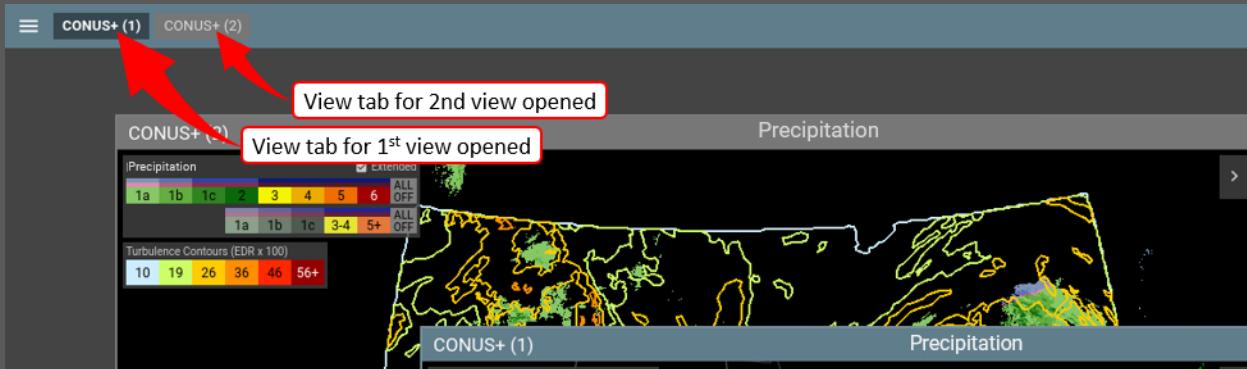


Figure 2-4. Desktop View Tabs

Graphics views are automatically named by their domain. For example, a new Long Range View with the CONUS+ domain is named CONUS+. If more than one view with the same domain is opened, their respective View tabs are numbered. For example, two Long Range Views with the CONUS+ domain are named CONUS+(1) and CONUS+(2).

The view currently in use is the active view which sits on top of all other views. Clicking a view or a view's associated view tab makes it the active view. The active view is identified by a steel blue titlebar while titlebars for other views are gray. If you like, you can add a custom label to a view which will appear on both the View Titlebar and the Desktop Titlebar. Refer to Section 3.1.2.4.1. for instructions on how to custom label a view.

In the following example, a Long Range View with a CONUS+ domain custom labeled ZHU West High, and a TRACON View with the PCT domain custom labeled WOOLY & BUFFR are open. In both examples, the custom labels are added to the end of the default view name (Figure 2-5. Custom Labeled View Tabs).

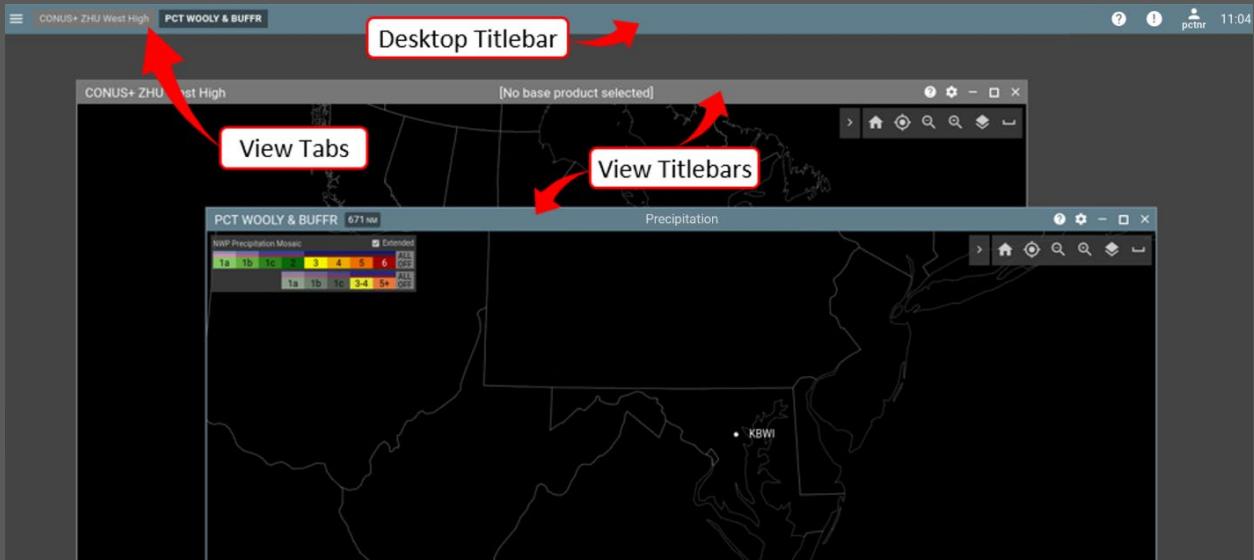


Figure 2-5. Custom Labeled View Tabs

2.1.2 Night and Day Themes

The AWD has a Night theme (the default) and Day theme. Themes determine menu background colors, font colors, Desktop Titlebar colors, and View Titlebar colors. When Night theme is used, AWD menus have light characters on dark backgrounds. When Day theme is used, menus have black characters on white backgrounds (Figure 2-6. Night and Day Themes).

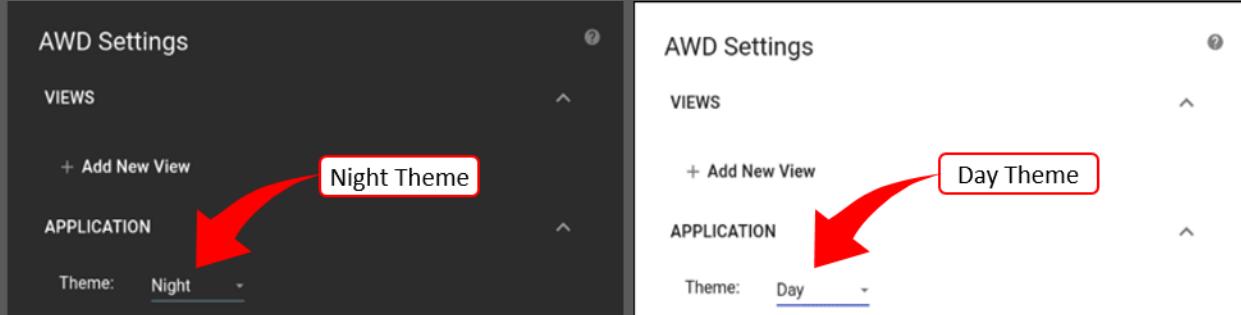


Figure 2-6. Night and Day Themes

To change themes, click the Hamburger icon to open the AWD Settings menu. Below the APPLICATION submenu, the current theme is identified to the right of the word **Theme**. Click the desired theme if the theme you want is not already selected (Figure 2-7. Change Theme).

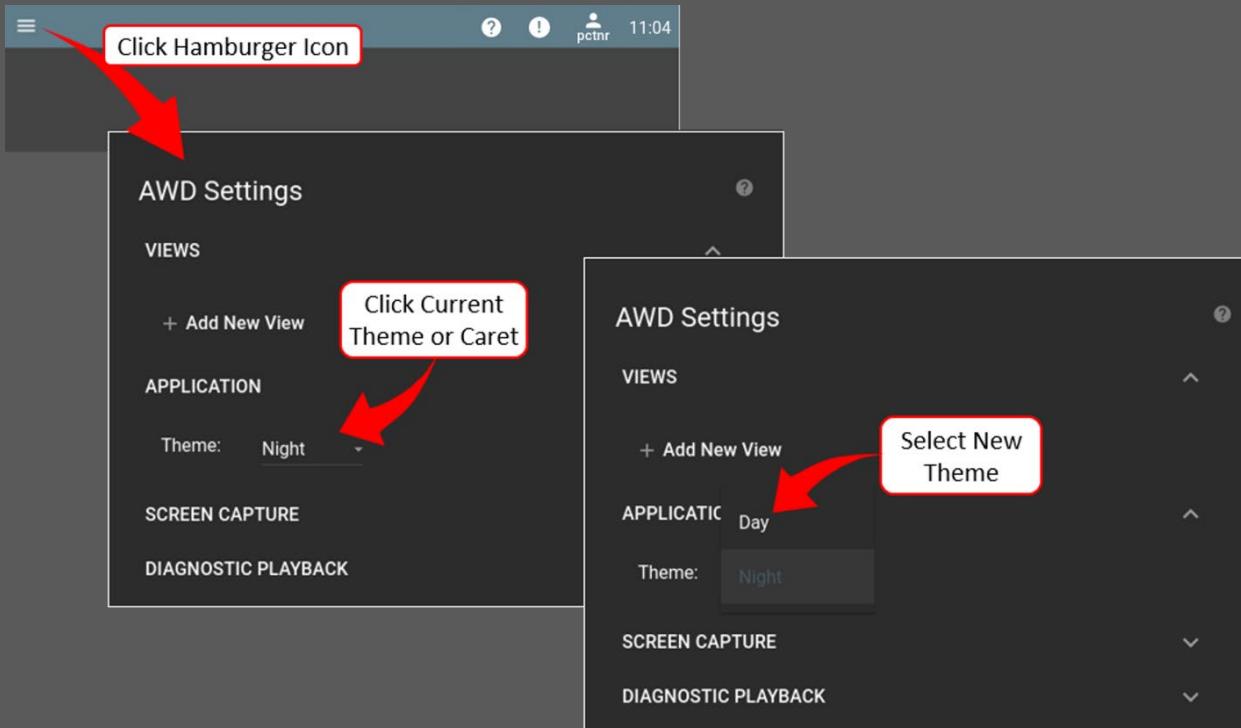


Figure 2-7. Change Theme

2.1.3 Screen Capture

Use Screen Capture to save screenshots of the AWD desktop or views. The Screen capture function provides the following three options:

- **Save** – When you select the Screen Capture Save option, you save one screenshot from your local machine (the workstation you are currently using). You can choose to save a screenshot of the entire desktop or a screenshot of a specific view. By default, the AWD automatically names screenshots or you can create your own custom file name for the screenshot.
- **Playback** – AWD workstations automatically archive screenshots whenever the desktop updates, but no more than once every second. Screen Capture Playback provides the capability for you to save a series of screenshots to play back at a later time, select the specific AWD in your facility from where to retrieve those screenshots, the date/time of the first screenshot in the series, and duration (e.g., 2 hours and 15 minutes) of the playback series.
- **Export** – You choose the date and duration of a batch of screenshots from your local machine that are exported to a file for later retrieval. Like Playback, Export saves screenshots of the entire desktop, not individual views. Screenshots for the time period you select are batched into a zip file and stored on your local machine.

To use Screen Capture, click the Hamburger icon to open the AWD Settings menu, then click SCREEN CAPTURE to expand the Screen Capture menu (Figure 2-8. Screen Capture menu).

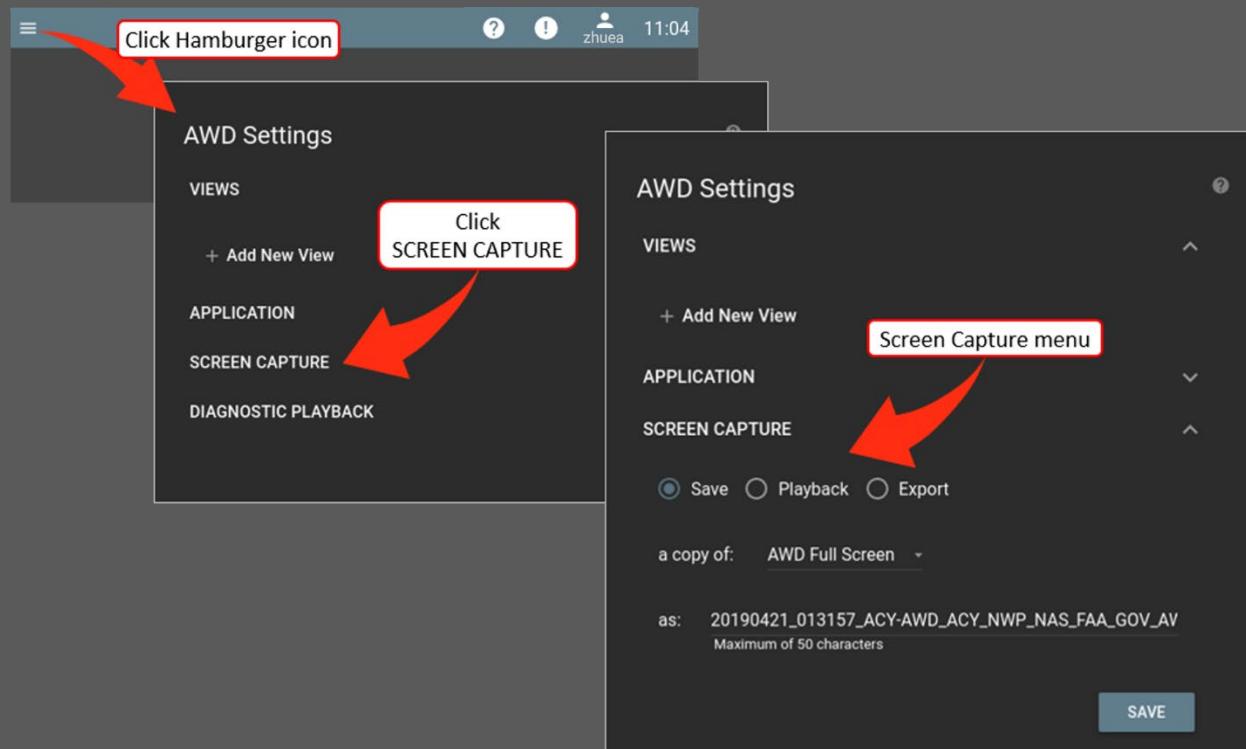


Figure 2-8. Screen Capture menu

When you expand the Screen Capture menu, you can select Save (the default), Playback, or Export (Figure 2-9. Screen Capture Options).

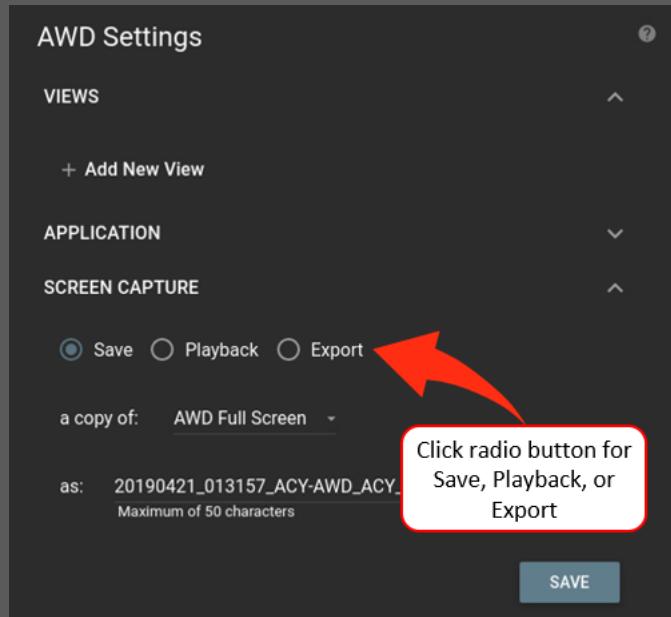
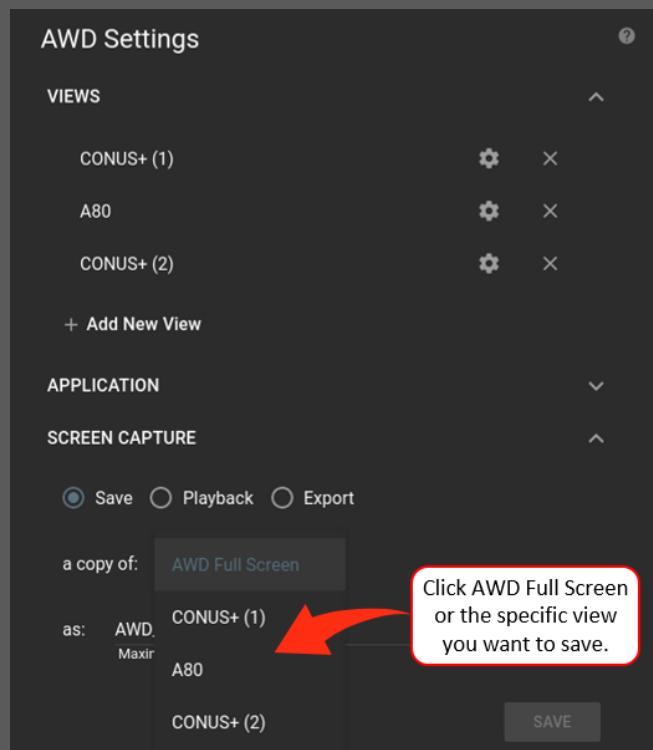


Figure 2-9. Screen Capture Options

2.1.3.1 Screen Capture Save

The Screen Capture Save option saves a screenshot of the desktop by default, but you can choose to save a screenshot of one specific view. To save a screenshot of a view, click a **copy of:** then click the specific view you want to save from the dropdown list (Figure 2-10. Select Screen Capture to Save).



By default, the Save option generates a file name for your screenshot, but if you like, you can overwrite the default name with your own custom file name. To custom name your screenshot, use the mouse to place the cursor to the right of as: then type in your custom file name. When you are finished, click SAVE or press Enter (Figure 2-11. Save Screenshot).

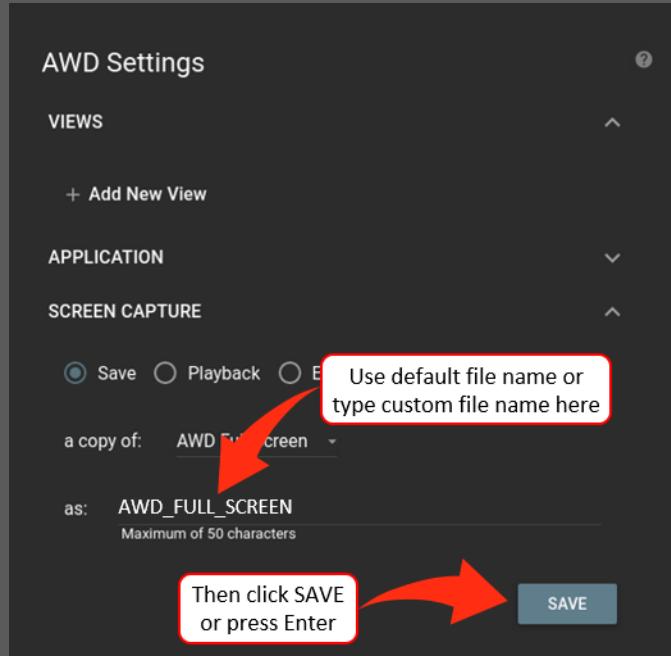


Figure 2-11. Save Screenshot

2.1.3.2 Screen Capture Playback

When you select the Playback option, you will need to make the following selections before starting the playback:

- **Position** – You can select your local machine (the AWD you are currently using), or any other AWD in your facility from where to acquire the screenshots.
- **Start Date** – The date of the first screenshot in the series of screenshots you want to play back.
- **Start Time** – The time of the first screenshot in the series of screenshots you want to play back.
- **Duration** – The duration of your playback series (can be minutes, whole hours, hours and minutes, but cannot exceed three hours)

When Playback is selected, the first option is Position. Click Position to open the dropdown menu for a list of available sources for your screenshot series (Figure 2-12. Screen Capture Playback Menu).

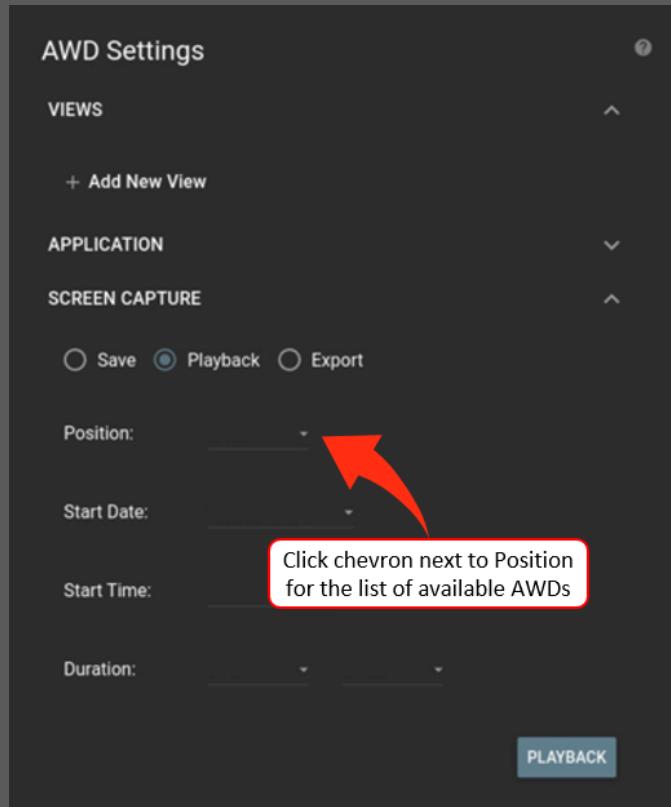


Figure 2-12. Screen Capture Playback Menu

From the dropdown list, click local (the AWD you are currently using), or select any other AWD in your facility (Figure 2-13. Select Screen Capture Playback Source).

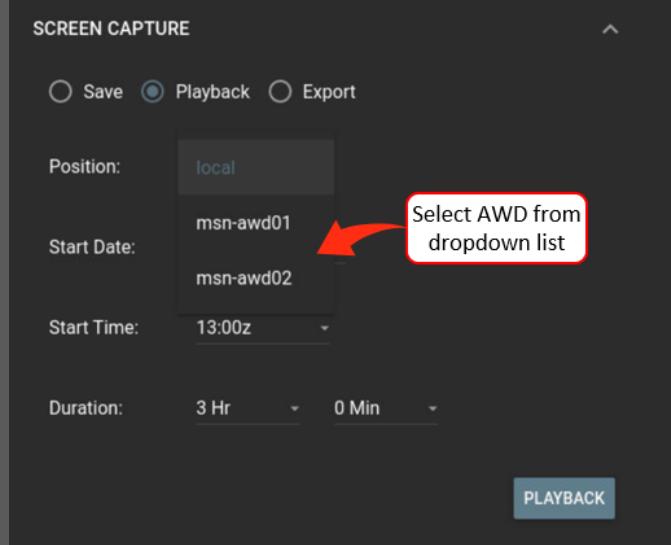


Figure 2-13. Select Screen Capture Playback Source

After you have selected the screenshot series source, click Start Date or the chevron next to Start Date to view the list of available start dates for your playback series. Screenshots up to fifteen days old are archived and available for playback (Figure 2-14. Source AWD Selected).

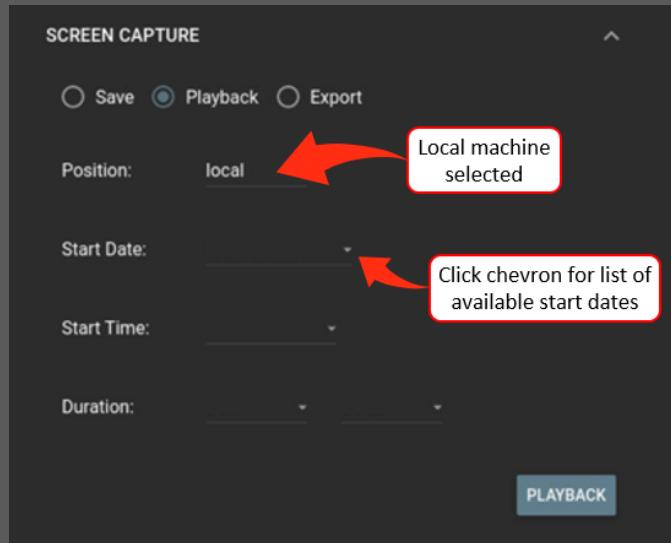


Figure 2-14. Source AWD Selected

From the Start Date dropdown list, click the date of the first screenshot in your screenshot playback series (Figure 2-15. Select Playback Start Date).

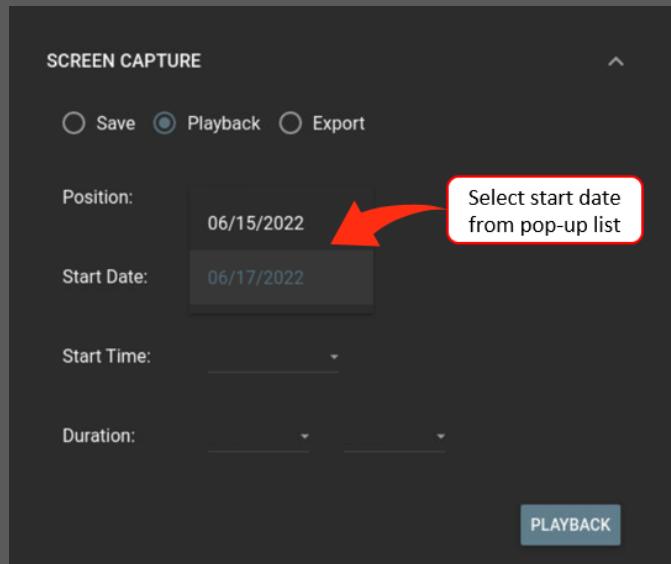


Figure 2-15. Select Playback Start Date

After you select the playback start date, click between **Start Time** and the chevron to the right of Start Time, then from the dropdown list, click the hour (e.g., 14:00z, 15:00z, etc.), that you want your playback series to start (Figure 2-16. Select Playback Start Time).

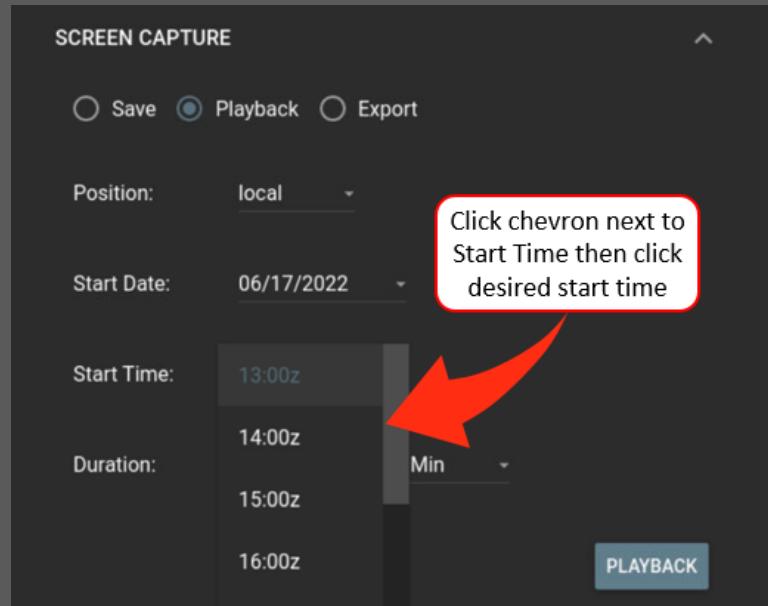


Figure 2-16. Select Playback Start Time

After choosing the start time, click the chevron to the immediate right of **Duration**, then select 0, 1, 2, or 3 hours from the dropdown list. Playback duration is limited to three hours so if you select 3 Hr, your playback series will include exactly three hours of screenshots. If you select 0, 1, or 2 hours, click the chevron to the far right of Duration then select the number of minutes you want to add to your playback series (e.g., 2 hours plus 10 Min). You can add minutes in 10-minute increments to the 0 Hr, 1 Hr, and 2 Hr durations (Figure 2-17. Select Playback Duration).

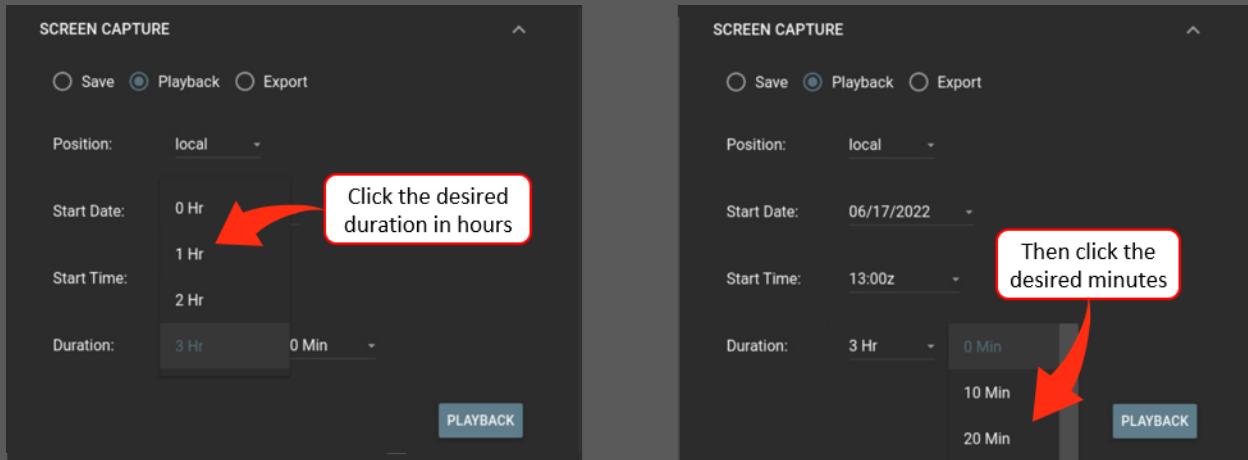


Figure 2-17. Select Playback Duration

The AWD automatically archives screenshots every time the display updates, but no more than once a second, therefore the AWD can archive up to 3,600 screenshots an hour. If an AWD user were to perform more than one function in a second (e.g., clicking +Add New View then immediately selecting a new view

After you have selected the AWD from where to obtain the screenshots, the start date of the playback series, and the duration of the playback series, click **PLAYBACK**.

The Playback toolbar populates the bottom of the AWD desktop and you are ready to start the playback (Figure 2-18. Screen Capture Playback Mode).

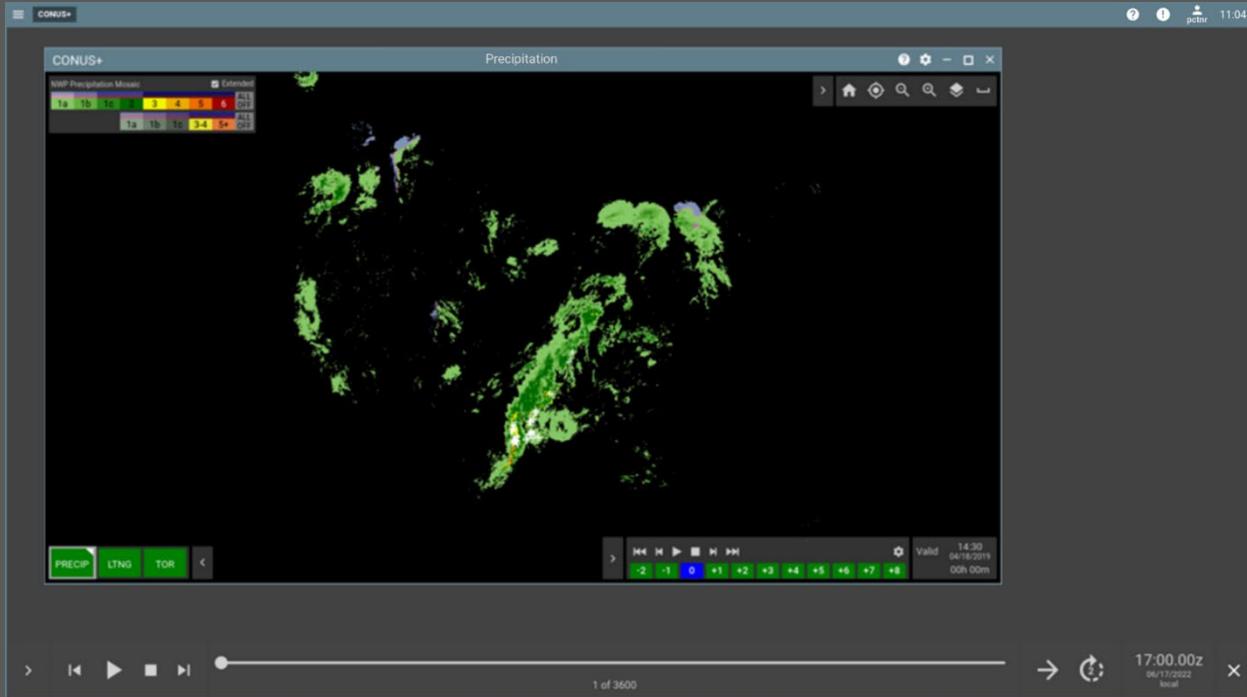


Figure 2-18. Screen Capture Playback Mode

Icons on the Screen Capture Playback toolbar, the clock, and toolbar alphanumerics are labeled in the figure below (Figure 2-19. Screen Capture Toolbar Controls & Icons).

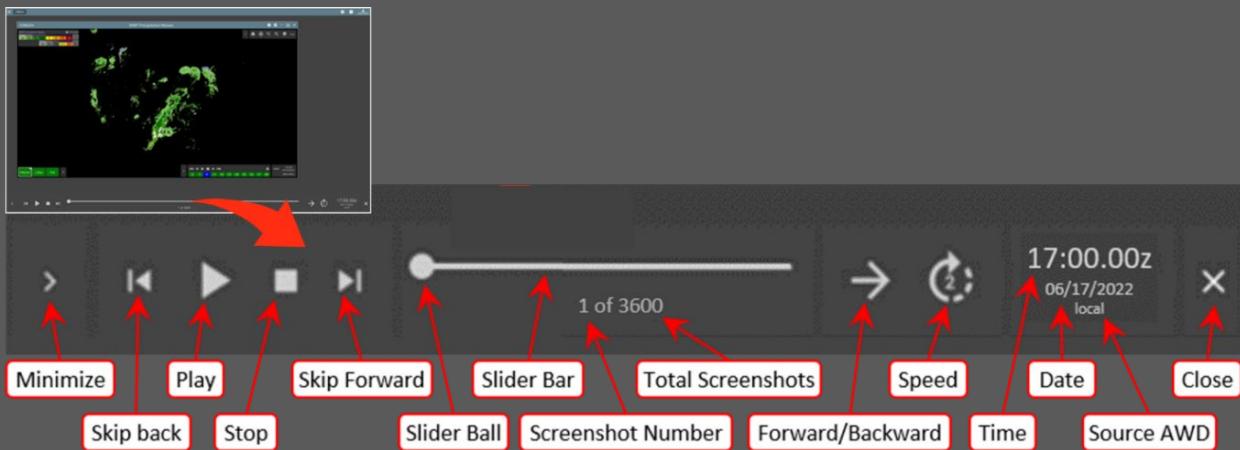


Figure 2-19. Screen Capture Toolbar Controls & Icons

Screen Capture Playback toolbar tools and functions:

- Minimize – Click to minimize the Screen Capture Playback toolbar.
- Skip Back – Click to skip back to the previous screenshot.
- Play – Click to start automatically stepping through each screenshot in the Screen Capture Playback series.
- Stop – Click to stop automatically stepping through the Screen Capture Playback series.
- Skip Forward – Click to skip forward to the next screenshot.
- Slider Ball – Click and drag the Slider ball to move forward or backward in the Screen Capture Playback series. The Slider ball's position on the Slider bar shows the relative position in the playback series.
- Slider Bar – A guide for the Slider ball to show relative position in the Screen Capture Playback series of screenshots.
- Screenshot Number – Indicates the specific number of the screenshot currently displayed in the Screen Capture Playback series.
- Total Screenshots – Indicates the total number of screenshots in the Screen Capture Playback series.
- Direction Arrow – Click to toggle the Screen Capture Playback forwards or backwards.
- Speed – Click to toggle between the three Screen Capture Playback speeds: 1 for slow, 2 for medium, or 3 for fast.
- Time – Indicates the time the currently displayed screenshot was saved.
- Date – Indicates the date the currently displayed screenshot was saved.
- Source AWD – The AWD where the screenshots in the Screen Capture Playback series were taken.
- Close – Click to close Screen Capture Playback and return to normal operating mode.

2.1.3.3 Screen Capture Export

The Screen Capture Export function exports a batch of screenshots from your local machine (the AWD you are currently working on), to a zip file that will be stored on your local machine for later retrieval. Screen Capture Export saves screenshots of the entire desktop, not screenshots of a specific view.

To use Screen Capture Export, click the Hamburger icon, then in the AWD Settings menu, click SCREEN CAPTURE. From the SCREEN CAPTURE menu, click Export (Figure 2-20. Screen Capture Export Options).

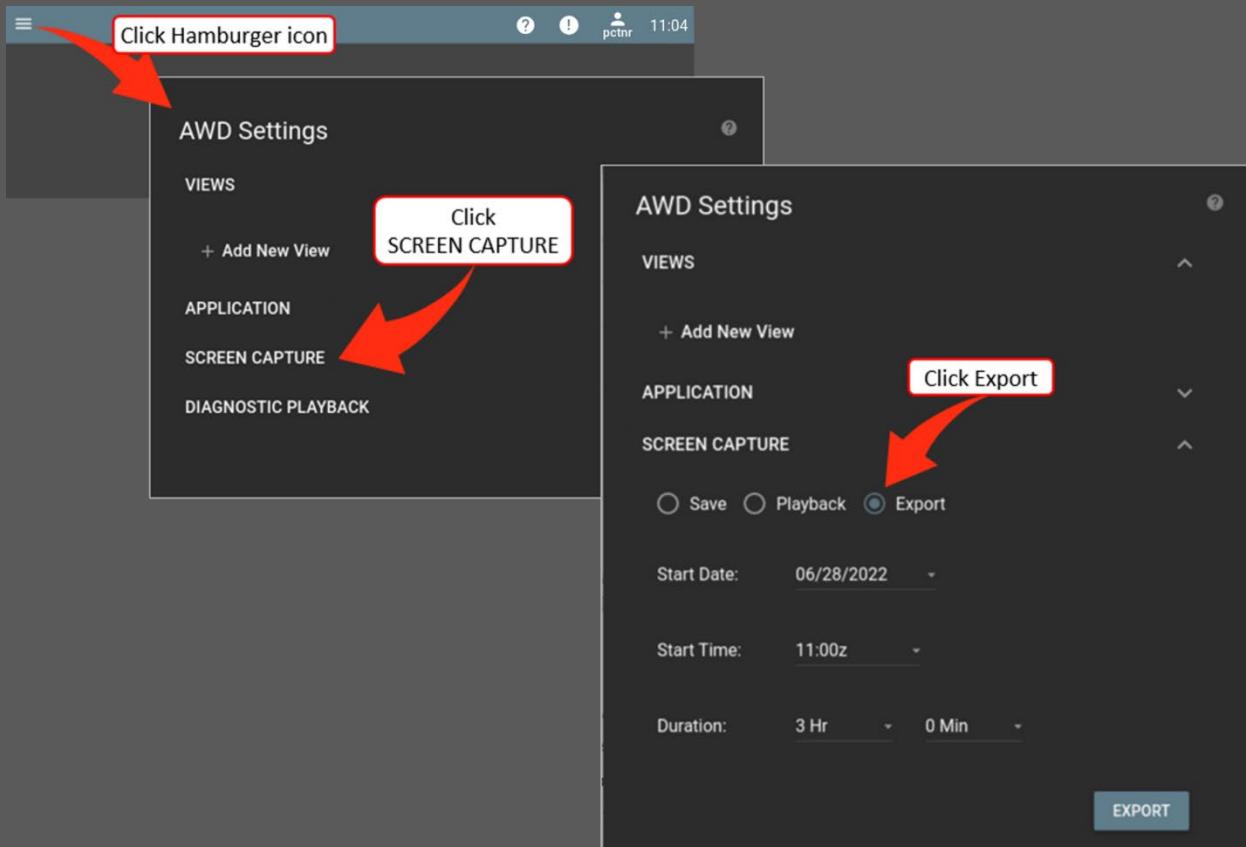


Figure 2-20. Screen Capture Export Options

Within the Screen Capture Export menu, select the start date, start time, and duration of the series of screenshots you want to export.

- To select the start date, click the chevron to the right of Start Date: then select the date from the dropdown list.
- To select the start time, click the chevron to the right of Start Time: then select the time from the dropdown list.
- To select the duration, click the first chevron to the right of Duration: and chose the number of hours you to export. Then click the second chevron to the far right of Duration: and select the number of minutes for your export.

Once you have selected the export start date, time, and duration, click EXPORT. In the following example, a batch of screenshots from your local machine that starts on 6/28/2022 at 11z and stops at 14z is ready for export (Figure 2-21. Complete Screen Capture Export).

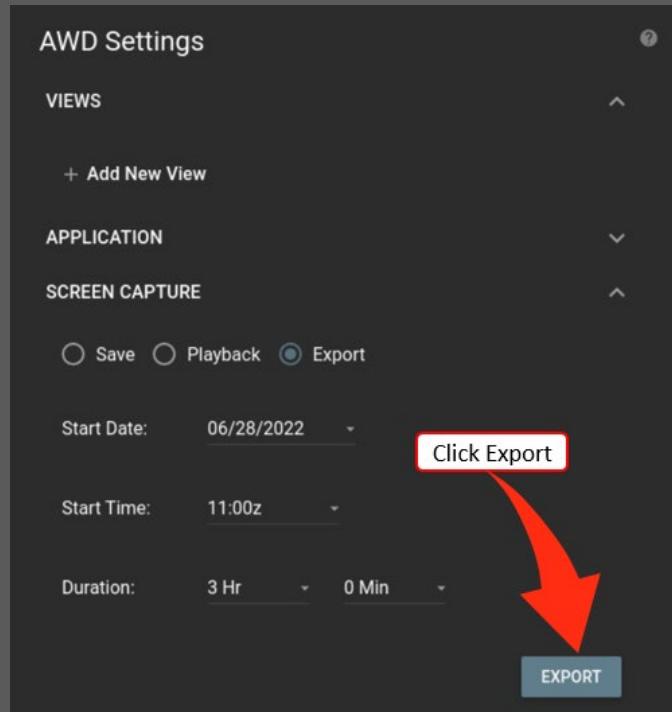


Figure 2-21. Complete Screen Capture Export

Click the illuminated EXPORT button to start the export. After clicking EXPORT, a confirmation dialog opens that displays the automatically generated filename of your export batch and prompts you to confirm the export.

To confirm the export, click OK (Figure 2-22. Confirm Screen Capture Export).

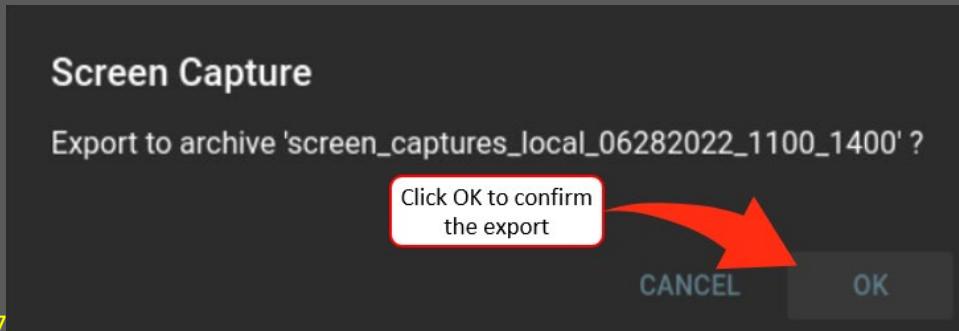


Figure 2-22. Confirm Screen Capture Export

Unlike Screen Capture Save, Screen Capture Export does not provide the option for you to change the file name or location of the export.

2.1.4 Diagnostic Playback

With Diagnostic Playback, you can view weather events up to fifteen days old as if the weather event was happening in real time. Unlike Screen Capture Playback that displays a series of static screenshots, Diagnostic Playback displays past weather while providing the capability for AWD users to view that weather with whichever AWD weather products they choose.

The AWD works the same way in Diagnostic Playback mode as it does in normal mode. The only difference is that while in Diagnostic Playback Mode, the AWD displays archived weather, not current weather. Diagnostic Playback is a useful tool for looking back and examining past weather events and how those events were managed.

For example, perhaps a particular weather event was mis-managed, and you want to replay the event. Diagnostic Playback can be used for incident review and/or training and lessons learned.

To open Diagnostic Playback, click the Hamburger icon, then in the AWD Settings menu, click DIAGNOSTIC PLAYBACK to expand the Diagnostic Playback menu (Figure 2-23. Open Diagnostic Playback).

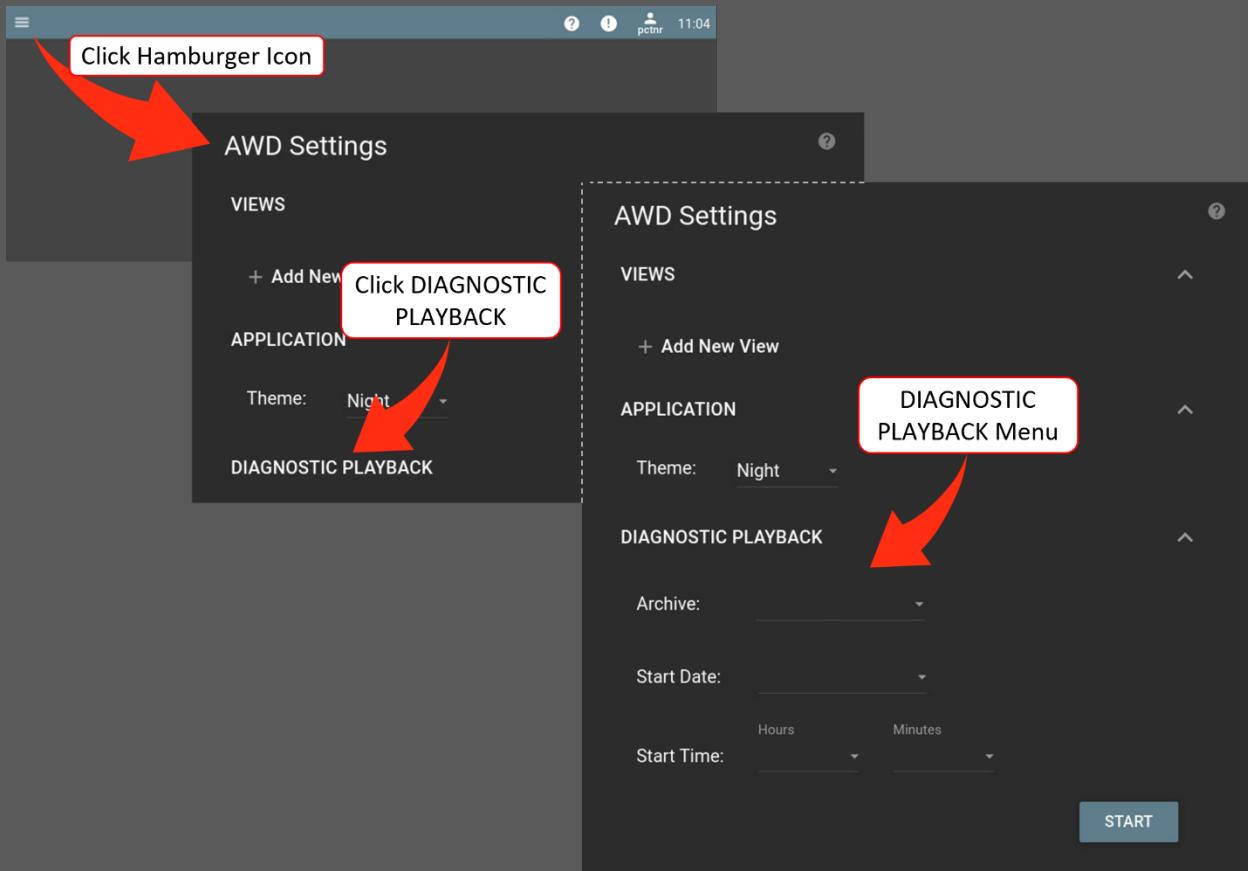


Figure 2-23. Open Diagnostic Playback

From the Diagnostic Playback menu, select the archive source for the weather you want to view, then select the start date and start time of the weather event you want to review. The following weather archive sources are available in Diagnostic Playback:

- NWP-A (AWD Webserver) – AWDs receive all weather from their respective NWP-A, therefore NWP-A is the best archive source for finding weather events no more than fifteen days old.
- TRAINING – AWDs used exclusively for training (at those facilities so equipped), can store weather scenarios developed for training. For example, certain scenarios may include winter weather events while other scenarios include convective weather events.
- MEDIA – In certain instances you may want to run a Diagnostic Playback on past weather events that are no longer archived (e.g., more than 15 days old), but that have been saved to removable media (e.g., thumb drive, DVD, etc.). To use removable media as your archive source, contact your facility AWD Site Administrator or an AWD user with administrative rights.

To select the archive source for your Diagnostic Playback, click Archive, then from the pop-up menu, click your archive source (Figure 2-24. Select Diagnostic Playback Archive Source).

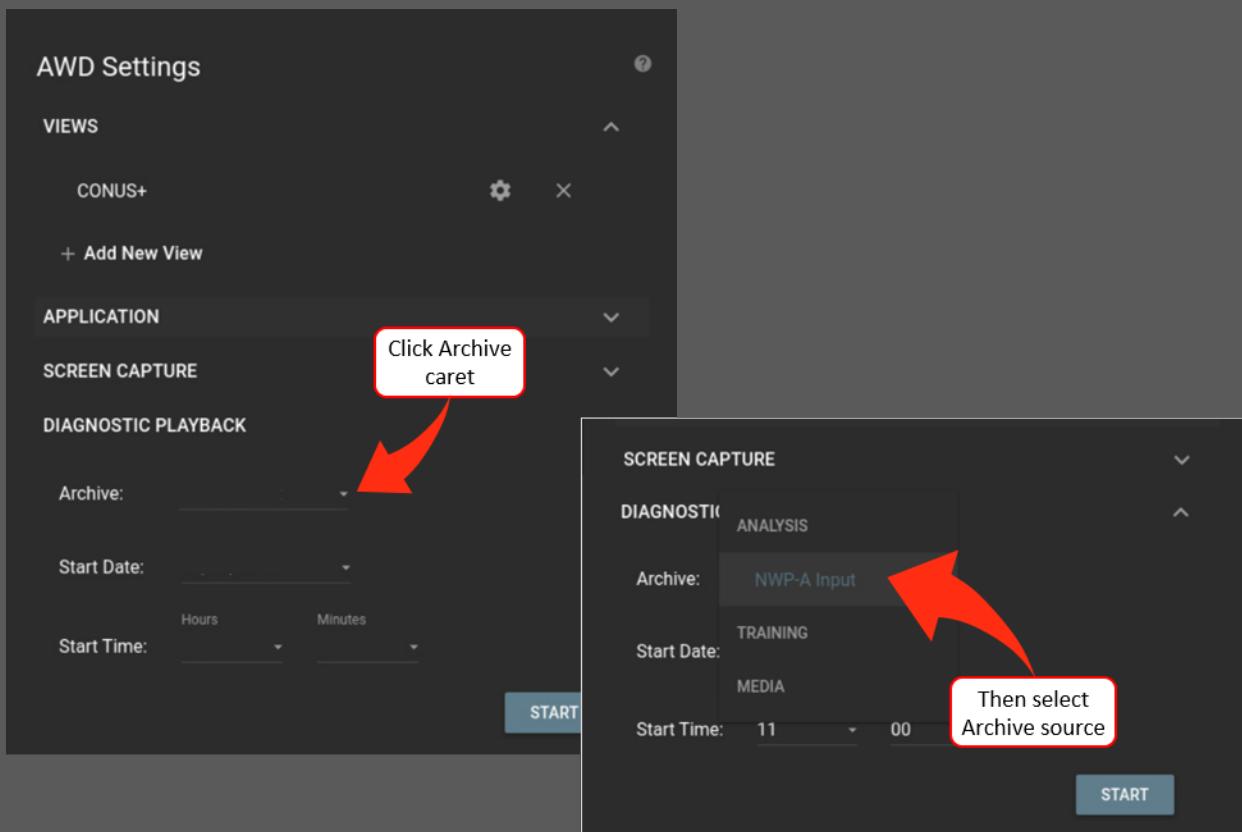


Figure 2-24. Select Diagnostic Playback Archive Source

After you select the archive source, click Start Date and select the start date of weather event you want to playback from the pop-up list (Figure 2-25. Select Diagnostic Playback Start Date).

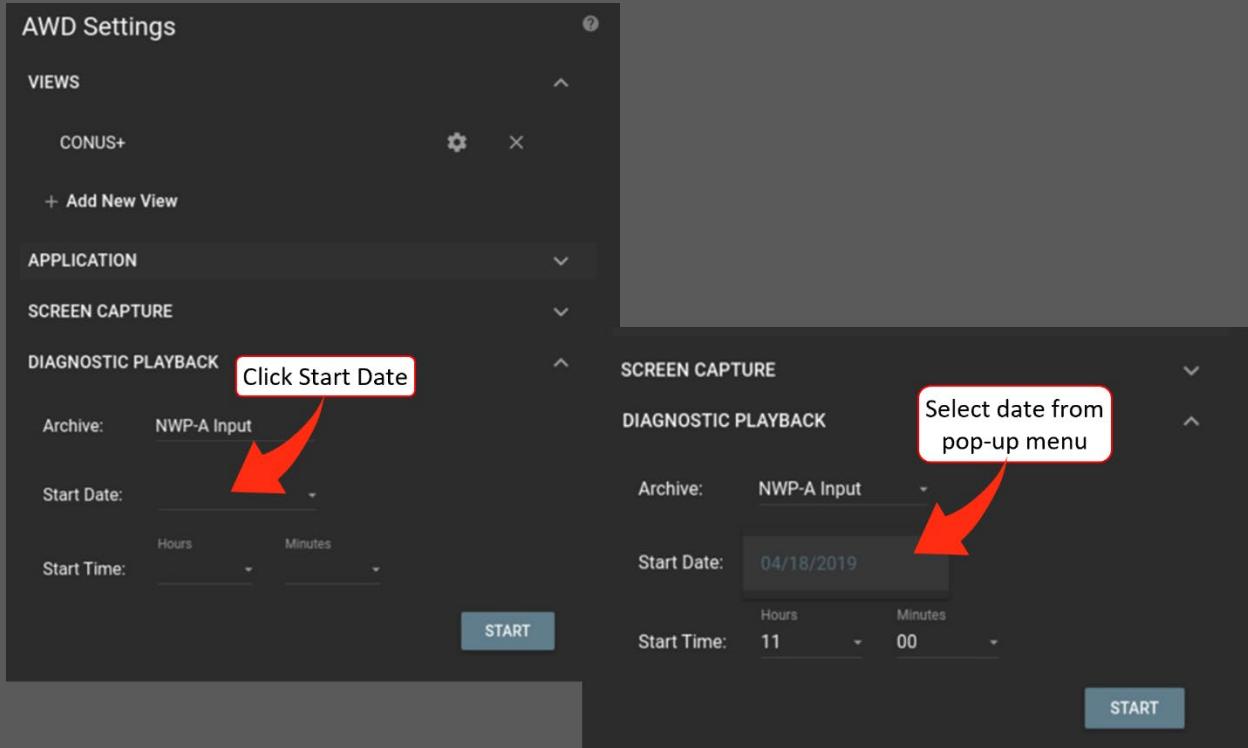


Figure 2-25. Select Diagnostic Playback Start Date

After selecting the archive source and date, select the start time for your Diagnostic Playback. To select the start time, click Start Time caret under Hours and select the starting hour for your playback, then click the Start Time caret under Minutes to select the starting minute for your playback (Figure 2-26. Select Diagnostic Playback Start Time).

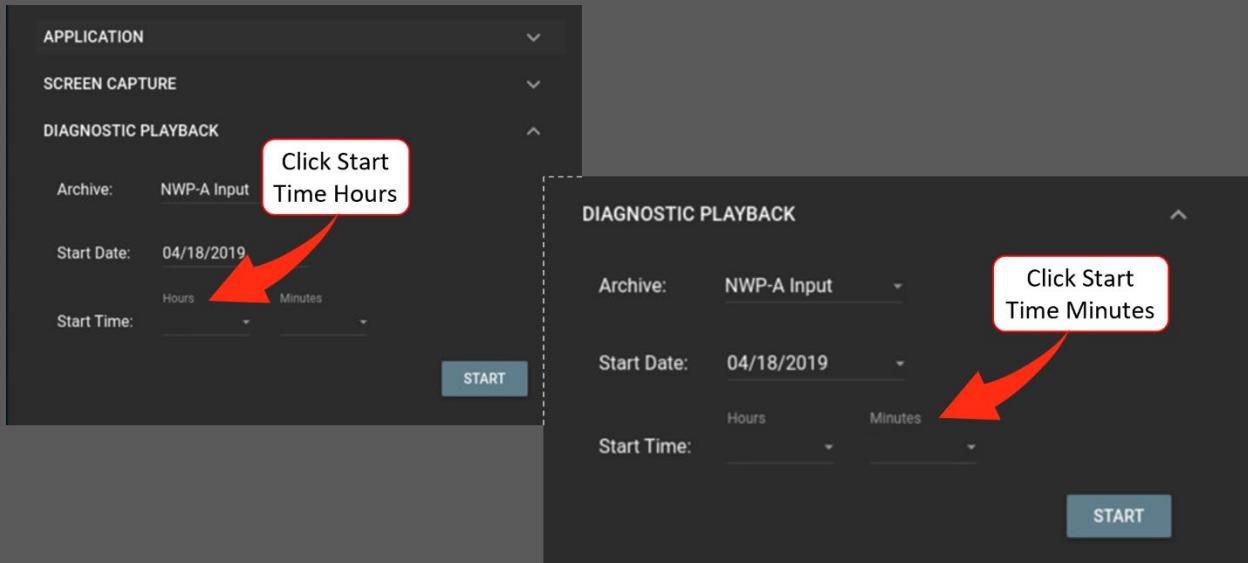


Figure 2-26. Select Diagnostic Playback Start Time

After you select the archive source, start date and time, click the blue **START** button to load the Diagnostic Playback session (Figure 2-27. Load Diagnostic Playback).

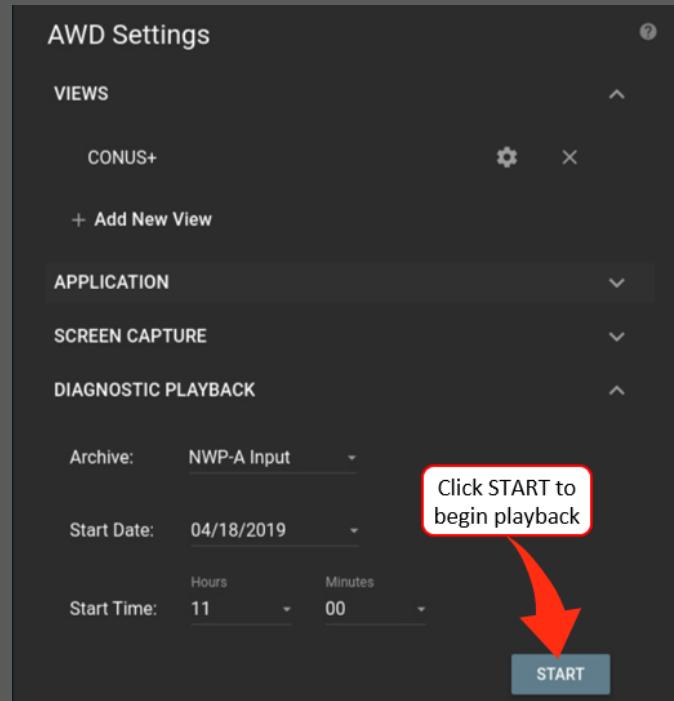
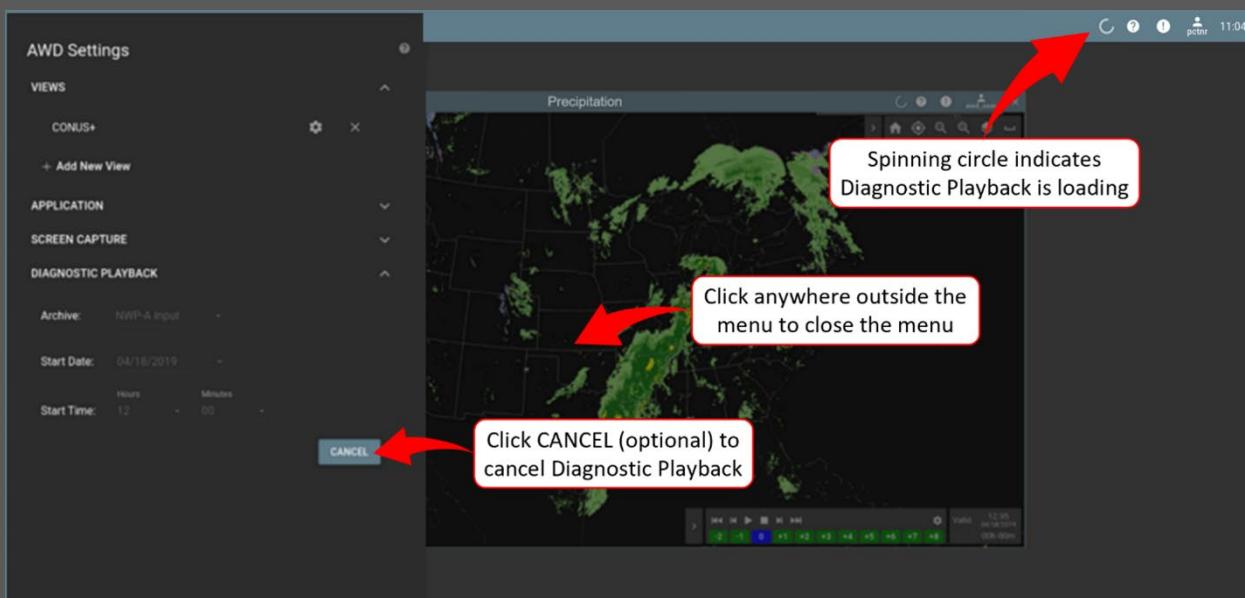


Figure 2-27. Load Diagnostic Playback

After you click start, the AWD stays in operational mode while a progress circle spins on the Desktop Titlebar to indicate Diagnostic Playback is loading. Click anywhere outside menu to continue using the AWD in live mode while Diagnostic Playback loads or click CANCEL to cancel Diagnostic Playback.

In the following example, the user clicked START to load Diagnostic Playback but has not yet clicked out of the AWD Settings menu to close the menu (Figure 2-28. AWD in Diagnostic Playback Mode).



When the Diagnostic Playback is loaded and ready, a dialog box opens prompting you to click either SWITCH or HIDE.

To immediately transition into Diagnostic Playback mode, click SWITCH. To delay Diagnostic Playback and continue using the AWD in live mode, click HIDE (Figure 2-29. Start or Delay Diagnostic Playback).

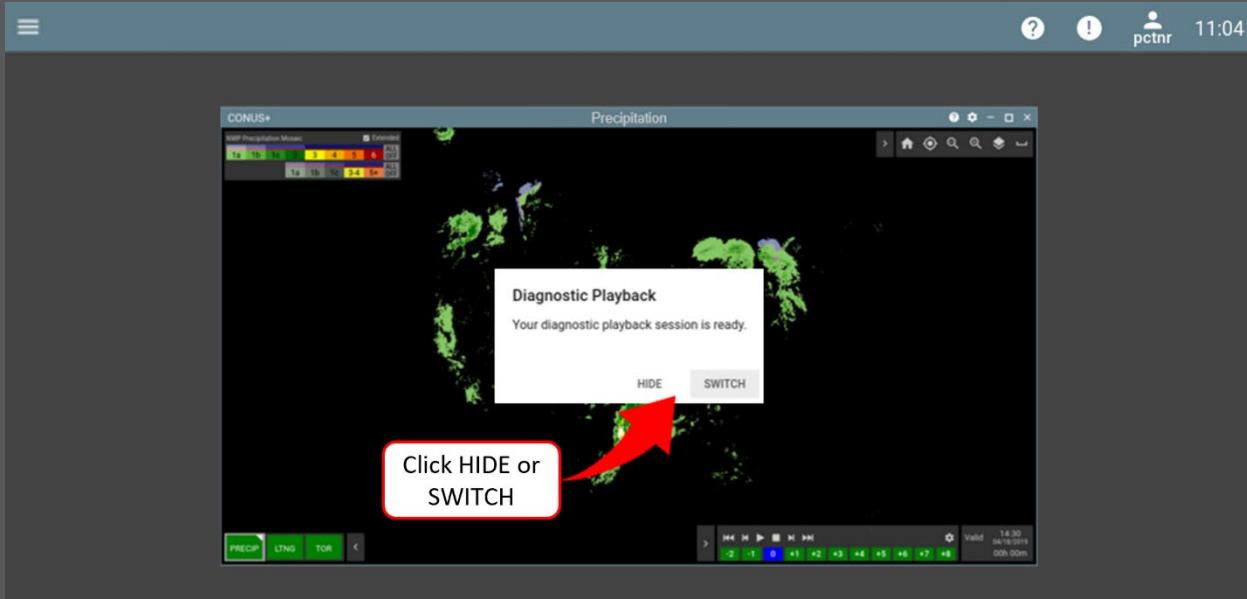


Figure 2-29. Start or Delay Diagnostic Playback

In this example, the user clicked SWITCH to begin Diagnostic Playback. The desktop and all View Titlebars turn orange and the AWD automatically reverts back to its default configuration. To start the playback, click the Play button on the lower right corner of the desktop (Figure 2-30. Start Diagnostic Playback).

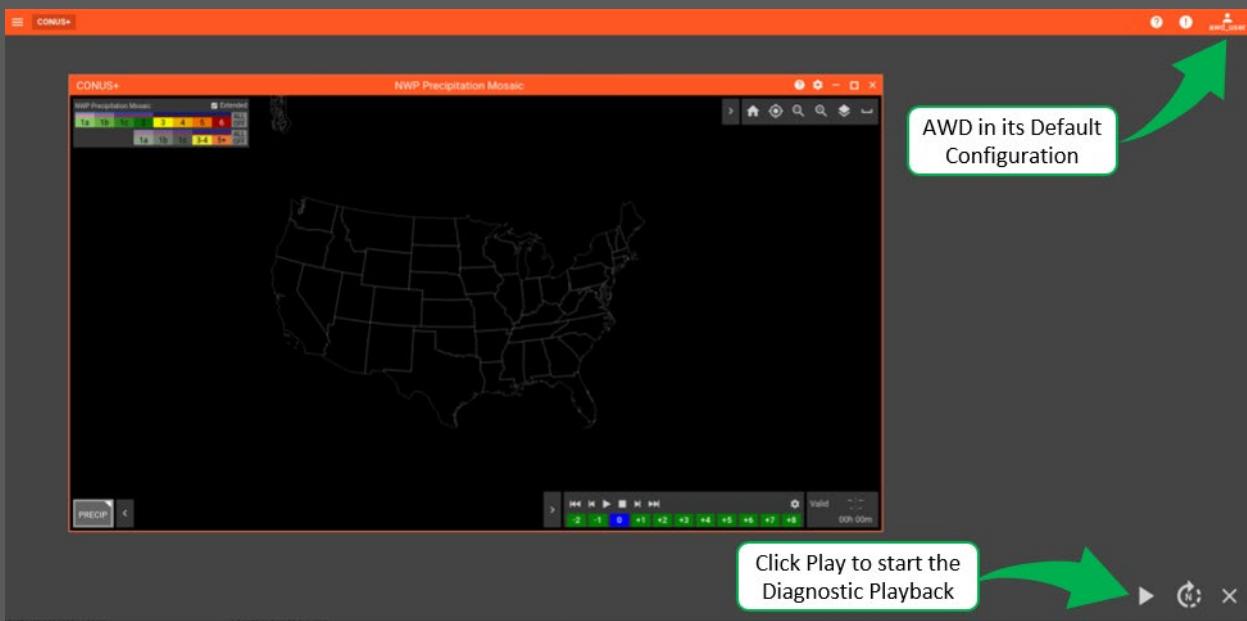


Figure 2-30. Start Diagnostic Playback

In Diagnostic Playback mode, you can leave the AWD in its default configuration or login to access your own pref-sets. The Play button works as a toggle; when you click Play, playback begins and the button changes to a Pause button. When you click Pause, the playback is paused (Figure 2-31. Playing/Pausing Diagnostic Playback).

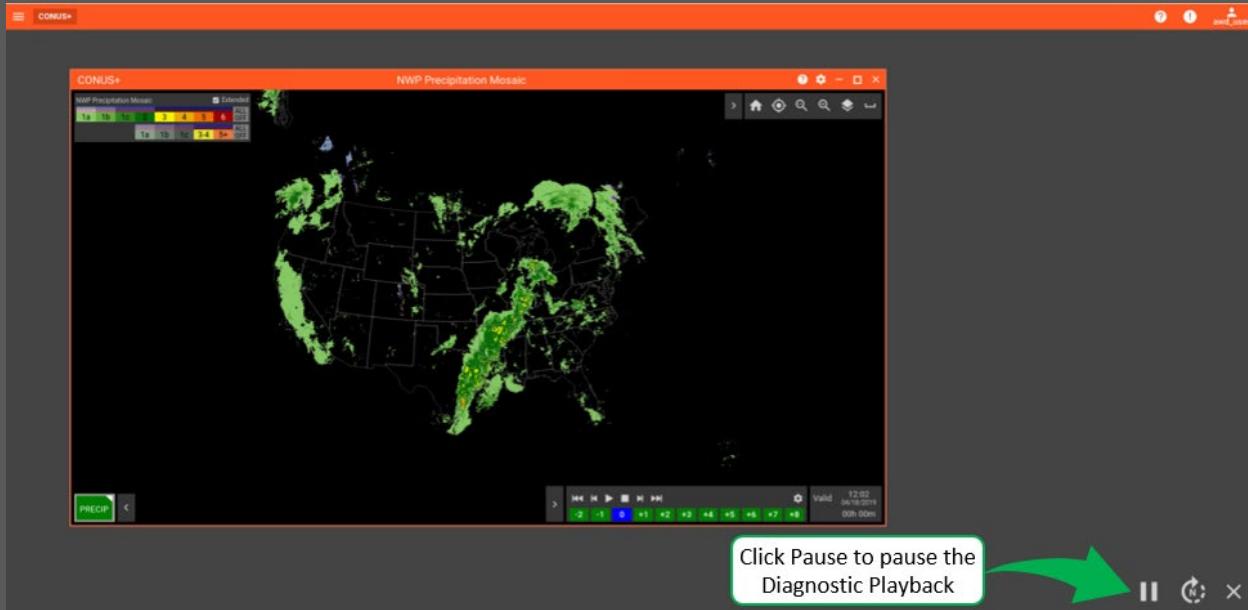
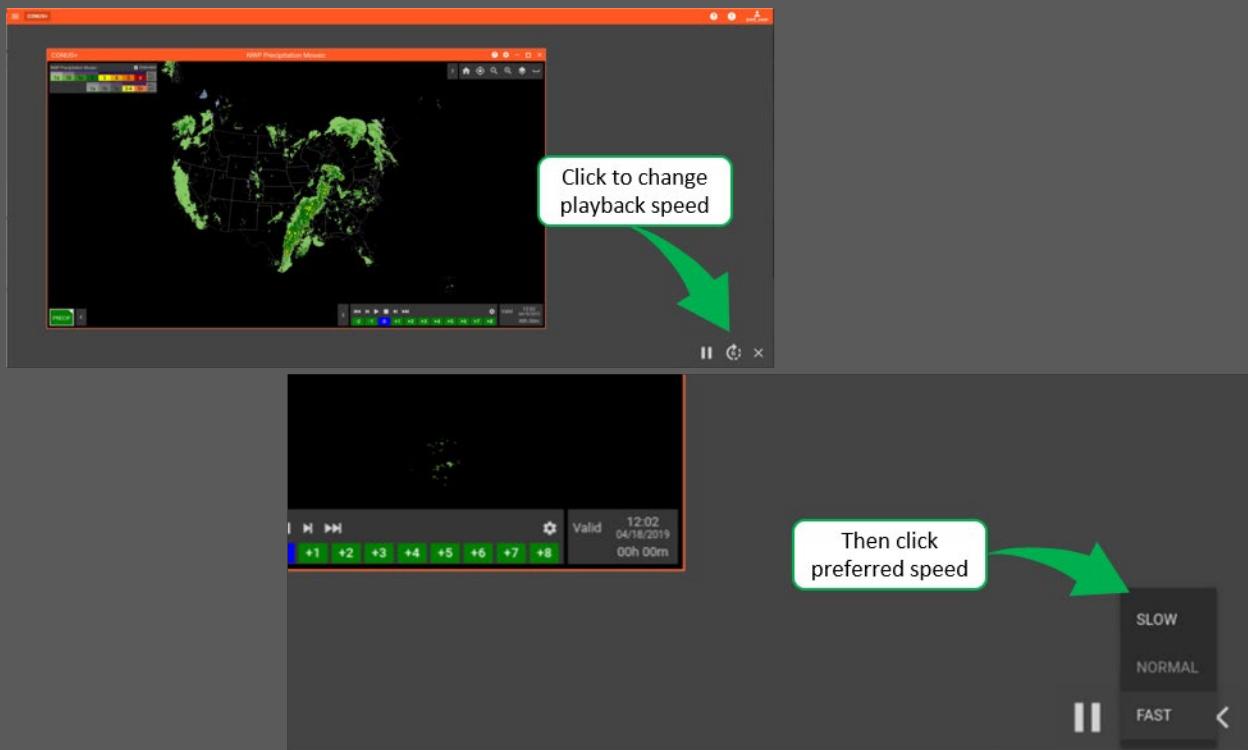


Figure 2-31. Playing/Pausing Diagnostic Playback

To change Diagnostic Playback speed, click the circled letter icon next to the Play/Pause button, then click SLOW, NORMAL, or FAST (Figure 2-32. Select Diagnostic Playback Speed).



To close Diagnostic Playback and return to normal AWD operating mode, click X in the lower right corner of the desktop (Figure 2-33. Close Diagnostic Playback).

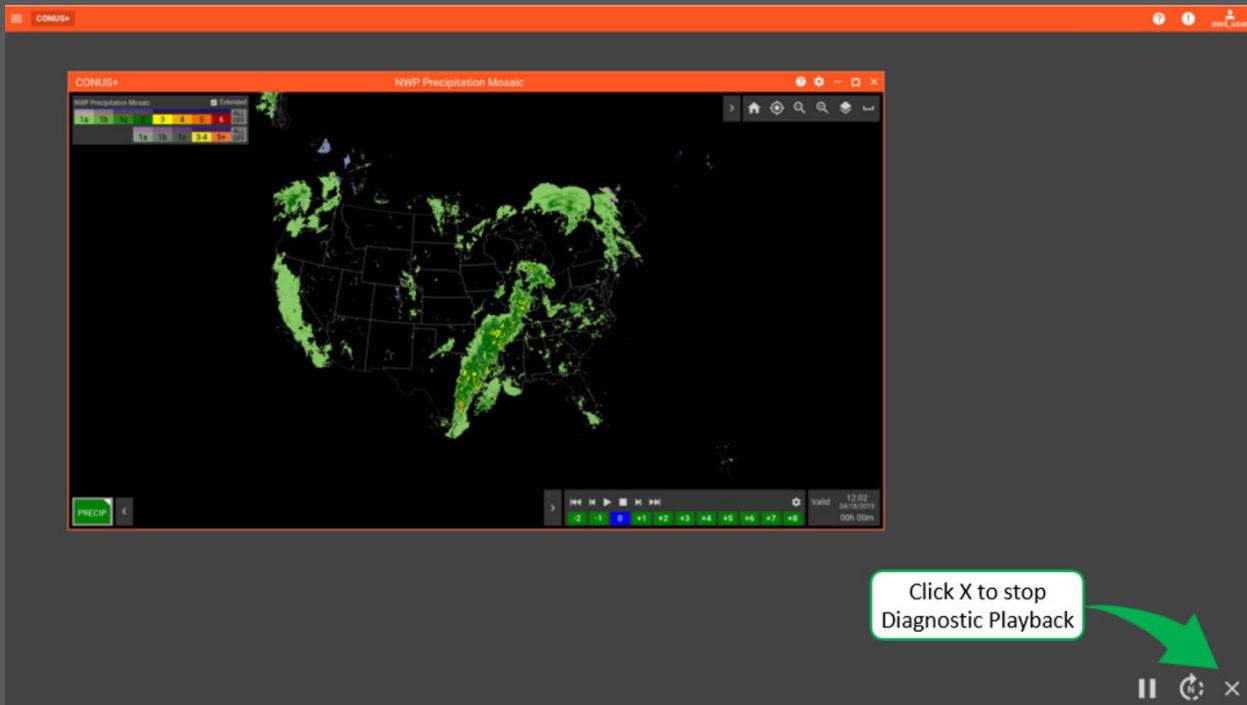


Figure 2-33. Close Diagnostic Playback

2.2 Desktop Help Icon

When you click an AWD Help icon, the AWD Help window opens to the hyperlinked ATOM Table of Contents (TOC). Since the AWD Desktop Titlebar is always visible, the Desktop Help icon is always available for immediate access to the ATOM TOC (Figure 2-34. Desktop Help Icon).

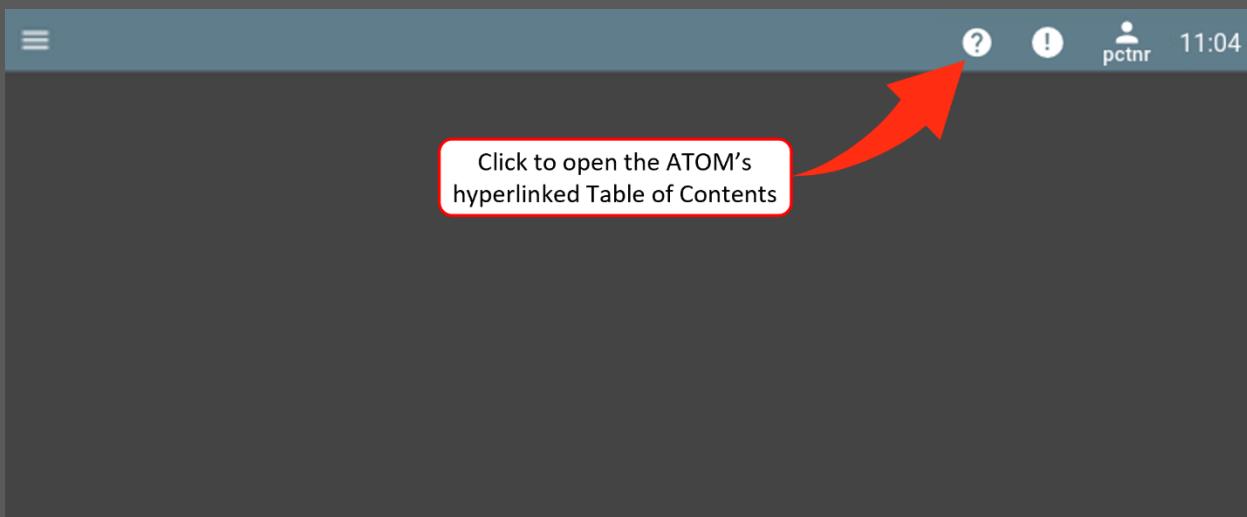


Figure 2-34. Desktop Help Icon

For information on how to use AWD Help, refer to Section 7, HELP.

2.3 NEXRAD Free Text Messages

NEXRAD Free Text Messages provide status on individual NEXRAD sites. To monitor NEXRAD sites, click the **NEXRAD Free Text Message icon**. In the NEXRAD Free Text Messages menu, click the **NEXRAD Site Identifier (SID)** for each **NEXRAD site you want to monitor**, or **enter SIDs manually**. You can monitor a maximum of ten SIDs simultaneously (Figure 2-35. Select NEXRAD Sites to Monitor).

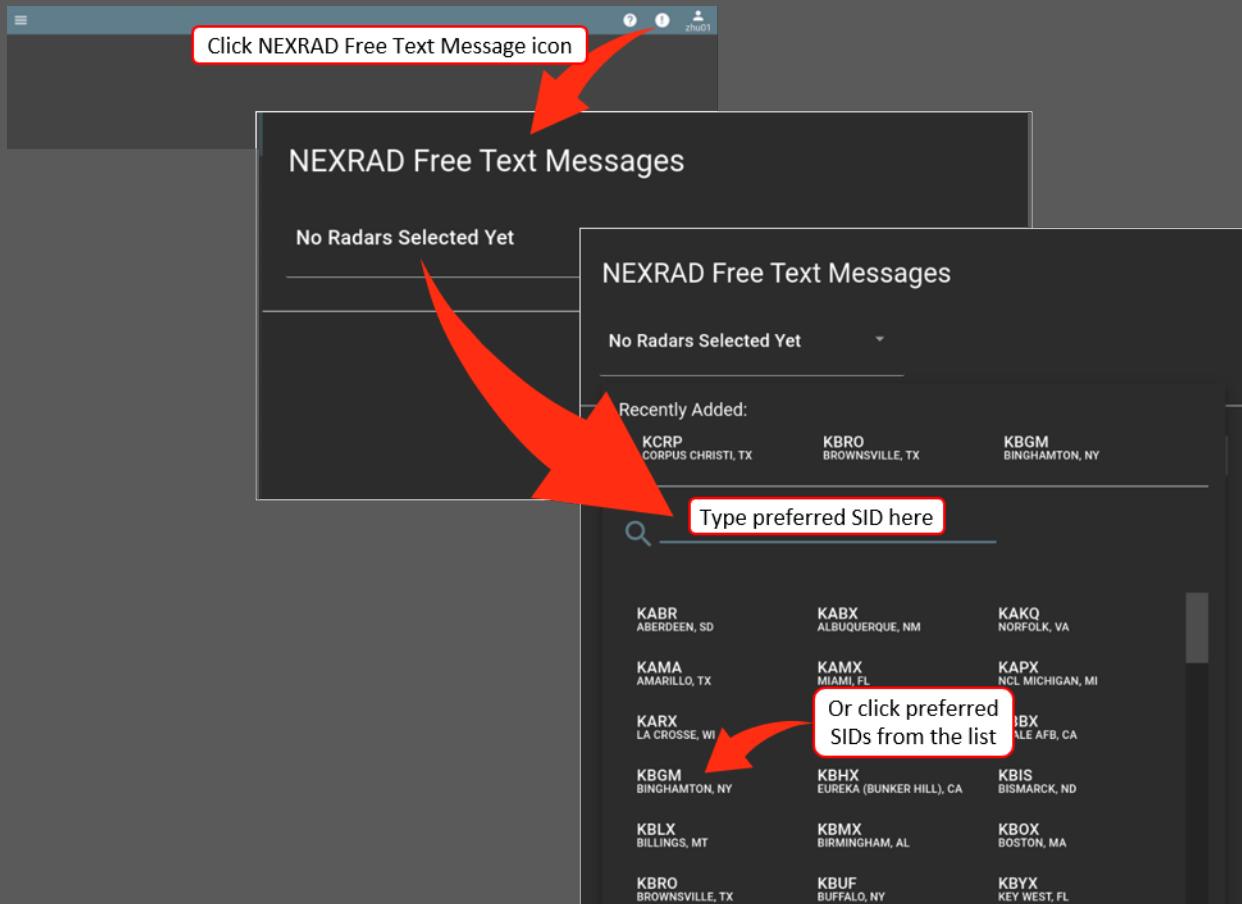
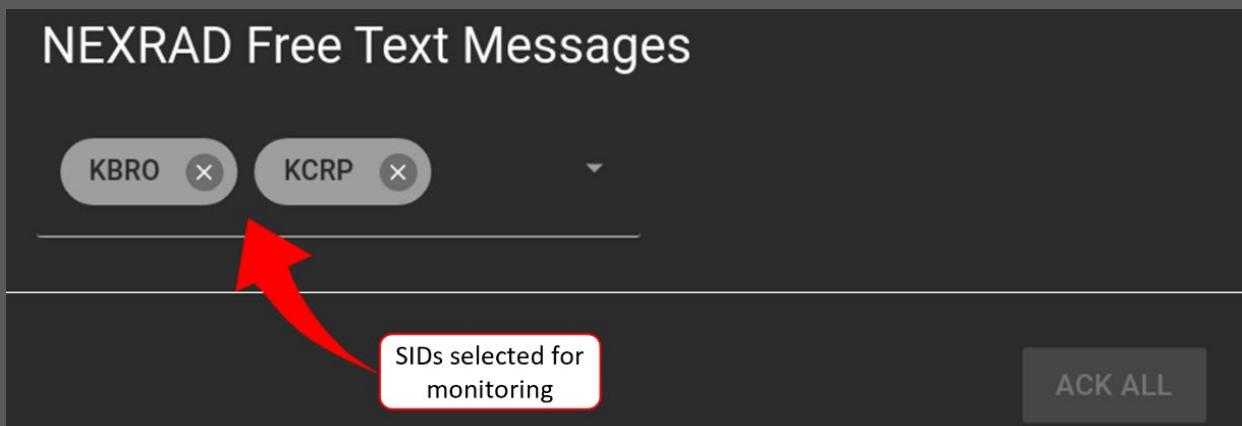


Figure 2-35. Select NEXRAD Sites to Monitor

The NEXRAD SIDs that you select for monitoring are listed at the top of the NEXRAD Free Text Messages menu (Figure 2-36. NEXRAD Sites Selected for Monitoring).



When the status of any NEXRAD selected for monitoring changes, the NEXRAD Free Text Messages icon turns red (Figure 2-37. Check NEXRAD Status).

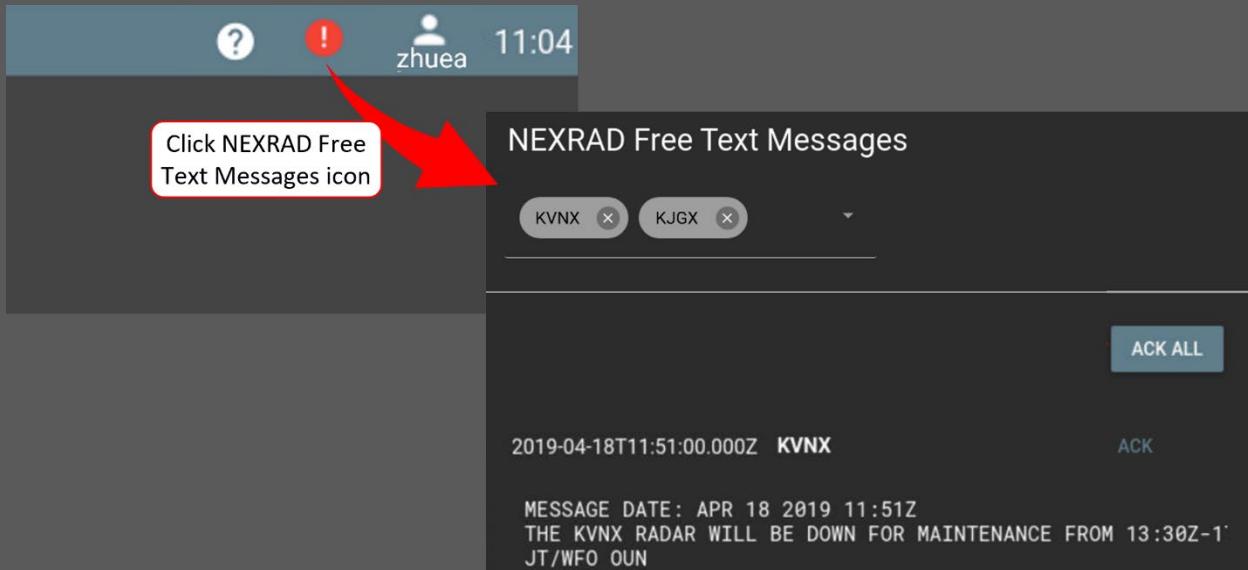


Figure 2-37. Check NEXRAD Status

In the NEXRAD Free Text Message dialog box, you can acknowledge all free text messages at once or acknowledge free text messages one at a time. To acknowledge and close all open free text messages, click the **ACK ALL**. To acknowledge a specific free text message, click **ACK** for the free text message you want to acknowledge (Figure 2-38. Acknowledge NEXRAD Free Text Messages).



Figure 2-38. Acknowledge NEXRAD Free Text Messages

2.4 Login/Switch User

While those accessing the AWD via the internet are always required to login, there is no requirement to login at an AWD workstation in an FAA facility. The only reason for logging into an AWD workstation is to access and use your own individual Pref-sets. Pref-sets are personal AWD configurations you create and save for future use, much like you can save personal settings on En Route Automation Modernization (ERAM) or Standard Terminal Automation Replacement System (STARS) displays. For specific instructions on how to use Pref-sets, refer to Section 6, Subsection 6.2 Pre-sets.

Like most ATC display systems, AWD workstations are on 24/7 unless shut down intentionally (e.g., for maintenance) or an unexpected power failure. When an AWD workstation is manually restarted or automatically reboots after a shutdown, it reboots into its “default” configuration. Default configurations are a combination of overlays and weather products most likely setup by facility AWD Site Administrator.

For example, the ZBW AWD Site Administrator will likely configure ZBW AWDs with overlays and weather products appropriate for ZBW’s airspace and areas of concern so that after a restart, ZBW AWDs are ready for immediate use. The default configuration is only a starting point and does not stop you from configuring an AWD the way you want it, then saving the configurations as a Pref-set.

The data-block below the User icon shows the username of the person logged on the AWD (e.g., zhuea), or if no particular person is logged on, the workstation ID (e.g., ZBW01). Facilities with more than one workstation identify workstations with the facility identifier followed by a unique workstation number (e.g., zhu01, zhu02, zhu03, etc.).

In the following example, no user is logged on the AWD workstation at ZHU, and the AWD’s Workstation ID (zhu01) is displayed under the User icon (Figure 2-39. AWD in its Default Configuration).

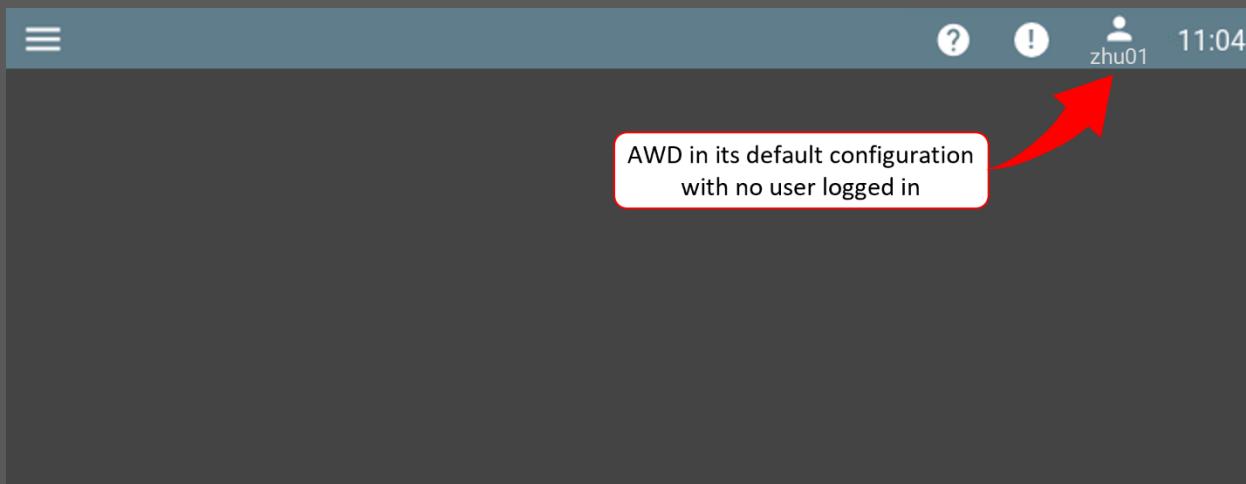


Figure 2-39. AWD in its Default Configuration

To access the AWD via the internet, you must login with your unique username and password. See your facility AWD site administrator to obtain a username and password.

2.4.1 Logging Into a Workstation

To login to an AWD workstation, click the User icon to open the AWD User Profile menu, then click SWITCH USER. When the AWD User Profile menu expands, enter your username and password, then click CONFIRM or press Enter on the keyboard (Figure 2-40. AWD Workstation Login).

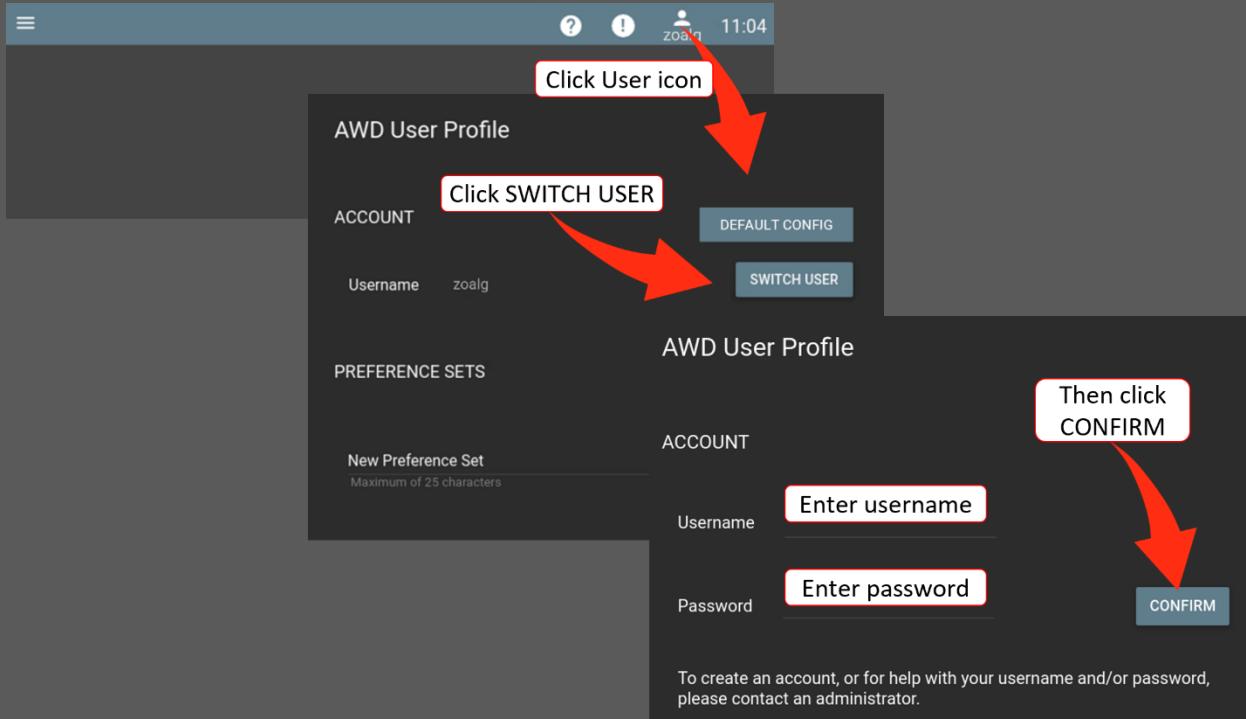


Figure 2-40. AWD Workstation Login

When you are logged into an AWD workstation, your username is displayed on the desktop below the User icon and in the AWD User Profile menu to the right of Username. In the following example, Eric Avila (EA) at Houston ARTCC (ZHU) is logged into the AWD workstation (Figure 2-41. AWD User Logged On).

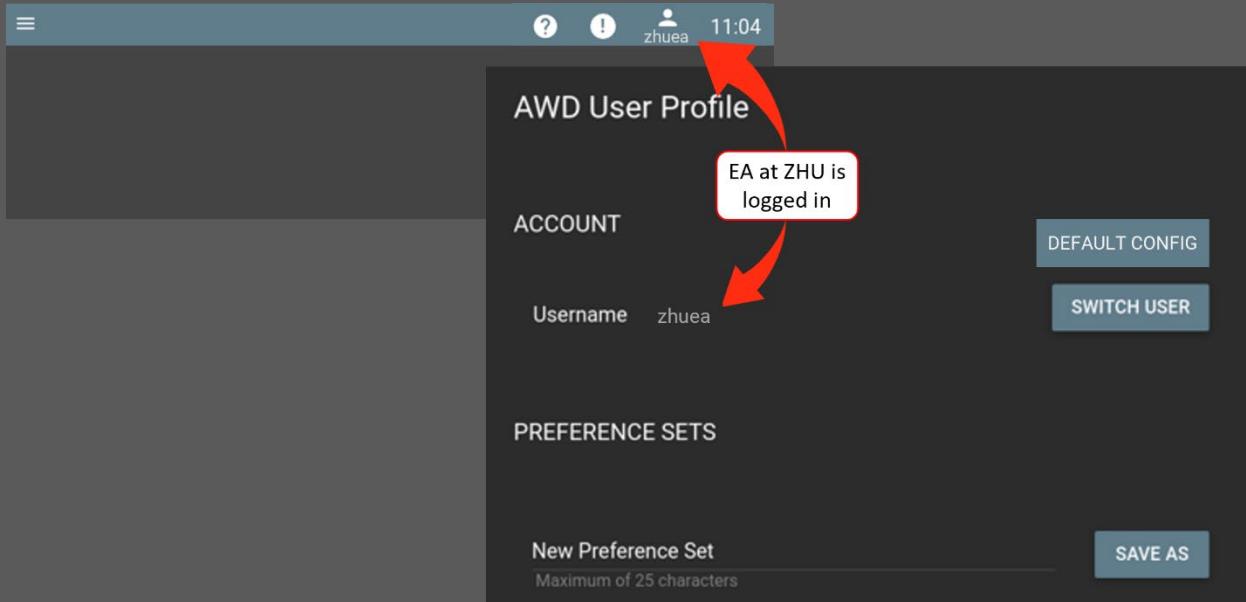


Figure 2-41. AWD User Logged On

3 VIEWS

All AWD weather products reside in views (windows) that can be maximized, resized, moved around the desktop, and minimized like windows on a PC. There are five type AWD views:

- Long Range Graphics View, also referred to as Long Range view, has the largest geographical coverage and can be zoomed out to approximately 10,500 nautical miles. Long Range views are oriented to true north and have four domains (home locations), CONUS+, Alaska, Guam, and Hawaii. All AWD graphic weather products are available in Long Range view.
- TRACON Graphics View, also referred to as TRACON view, is limited to a zoom range of approximately 650 nautical miles depending on the selected domain. By default, TRACON views are oriented to true north but can also be oriented to magnetic north.
- Static Image View – Static Image View is used for two weather products, Himawari Satellite images and the NavCanada Graphical Forecast Analysis (GFA).
- Text View – Text View is used exclusively to display Wind Profiles in text format for user-selected terminal airspace.
- Help Window – When any Help icon in the AWD GUI is clicked, the Help window opens and defaults to ATOM Table of Contents with hyperlinks to all ATOM sections.

3.1 Long Range and TRACON Graphics Views

Long Range and TRACON Graphics views have the same look and functionality with the following exceptions:

- Long Range views can be zoomed to as many as 10,500 nautical miles; TRACON view zoom range is limited to approximately 650 nautical miles.
- TRACON views can be oriented to true or magnetic north; Long Range views are always oriented to true north.
- All thirty AWD graphic weather products are available in Long Range View, while only nineteen graphic weather products are available in TRACON view.
- By default, new Long Range views open with no weather products added to the view, the zoom range indicator hidden, and both the Product and Loop Toolbars minimized. New TRACON views open with two weather products (Tornadic Signature and Lightning Detection) displayed, the zoom range indicator on, and both the Product and Loop Toolbars maximized.
- Both Long Range and TRACON views can display up to two hours of past weather, but forecasts in Long Range view can extend out to eight hours while forecasts in TRACON view are limited to two hours.

Loop toolbars in Long Range and TRACON views have the same functionality but Long Range view and TRACON view loop toolbar jump button time intervals are different to match available forecast times.

Note: If you are looping a view (see Section 6 for specifics on looping), you must first stop (not pause) looping before you can complete any other functions in the view (e.g., adding/filtering products, adding/changing overlays, toggling between products, changing product options, etc.). You can work on another view, but looping must be stopped in the view you want to work in before you can do anything in that view. When looping, all commands for that view are frozen until you stop the loop.

Long Range Graphics View – By default, no overlays or weather products are added to new Long Range views, and both the Product and Loop Toolbars are minimized. The following image is an example of a new Long Range view immediately after it is added to the desktop before overlays or weather products are added (Figure 3–1, Default Long Range Graphics View).

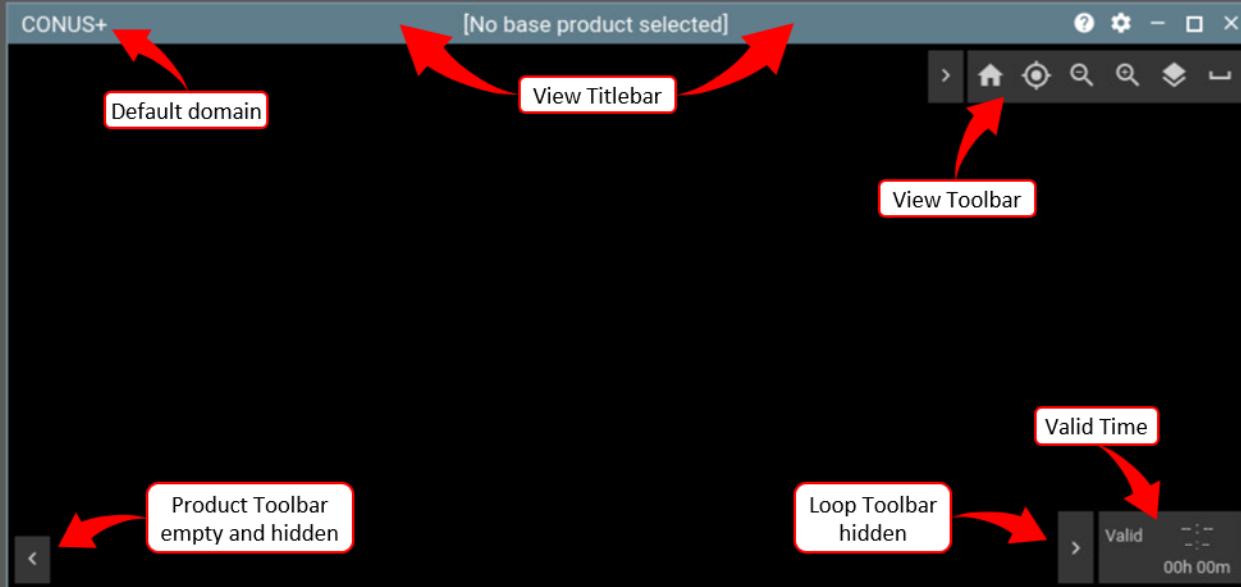


Figure 3-1. Default Long Range View

TRACON Graphics View – By default, no overlays are added to new TRACON views, but Tornadic Signature (TOR) and Lightning Detection LTNG) are on, and both the Product and Loop Toolbars are maximized. The following image is an example of a new TRACON Graphics view immediately after it is added to the desktop before overlays are added (Figure 3-2. Default TRACON View).

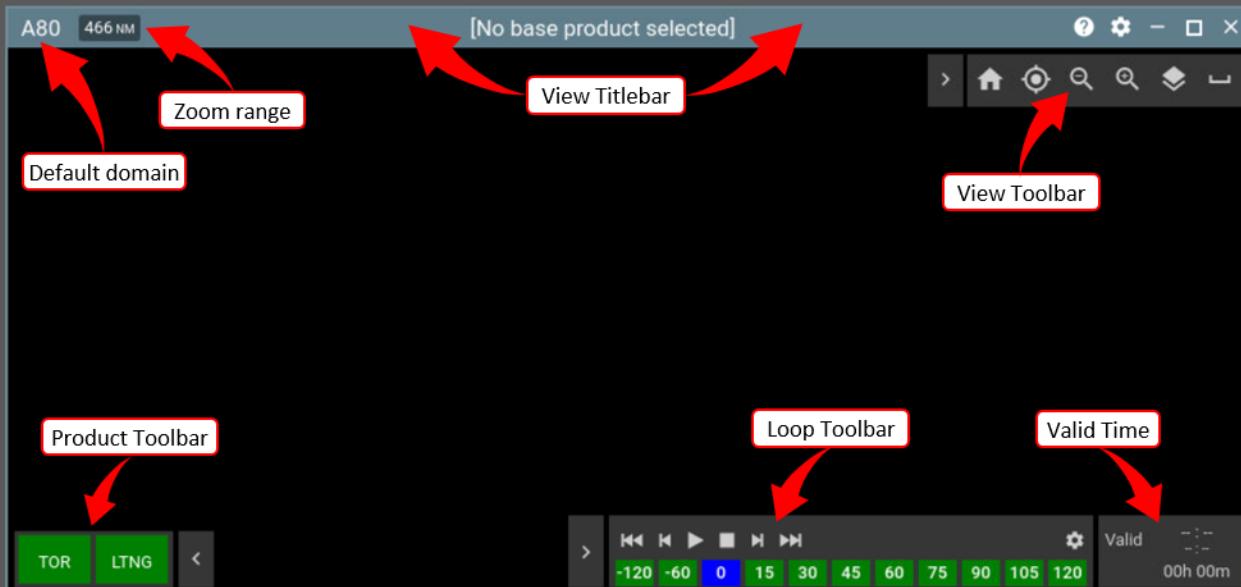


Figure 3-2. Default TRACON View

3.1.1 Graphics View Titlebar

The Graphics View Titlebar (blue banner at the top of the view) is the same for Long Range and TRACON views. The titlebar includes information specific to the view and provides access to numerous tools and options. View titlebar labels, alphanumerics, and icons are identified in the following image (Figure 3-3. Graphics View Titlebar).

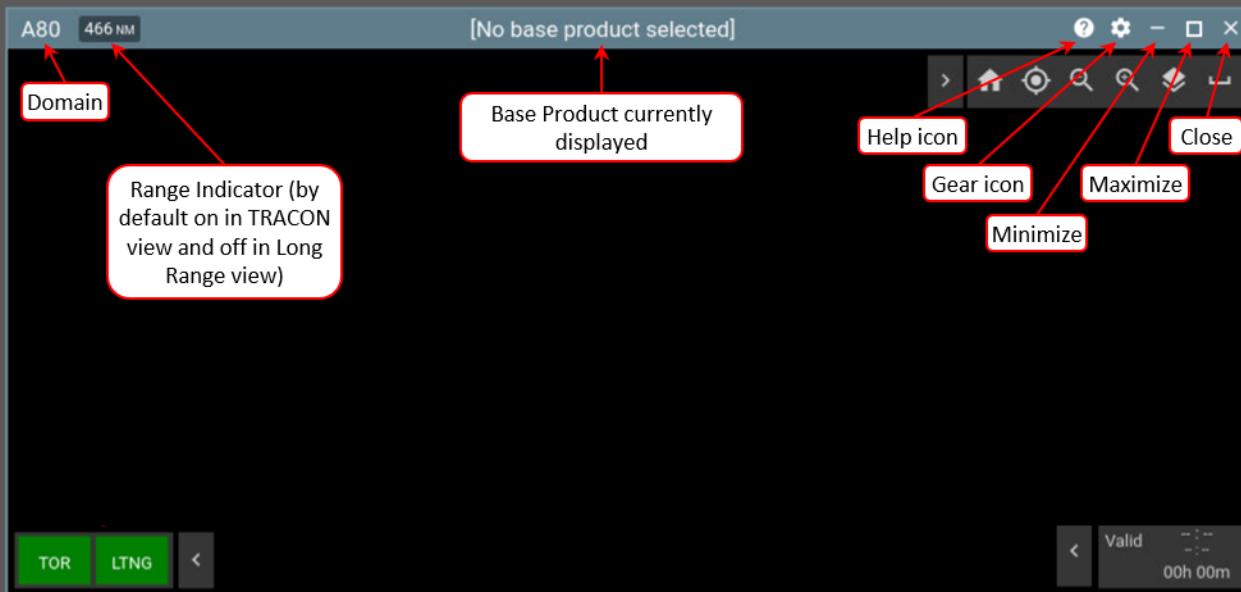


Figure 3-3. Graphics View Titlebar

- Domain – In Long Range view, CONUS+ is the default domain. In TRACON view, the default domain is configured by your facility's AWD Site Administrator and will likely be set as your TRACON. For example, all AWDs deployed at Potomac TRACON (PCT) will likely be configured with PCT as the default domain.
- Range Indicator – The Range Indicator displays the view's current zoom range in nautical miles. By default, the Range Indicator in Long Range view is hidden and in TRACON view displayed. The Range Indicator can be toggled on and off by checking and unchecking the Range Indicator box under the OPTIONS tab in Graphics View Settings menus.
- Primary Product – When a Primary Product is displayed, its full name is displayed in the center of the View Titlebar.
- Help icon – Click the Help icon to open a Help window that displays the AWD ATOMs hyperlinked Table of Contents. For specific information on Help, refer to Section 7, HELP.
- Gear icon – Click the Gear icon to open the Graphics View Settings menu where you can add weather products and overlays to the view, change the domain, and access other graphics view tools and options.
- Minimize – Click to minimize the view.
- Maximize – Click to maximize the view.
- Close – Click to completely close the view.

3.1.2 Graphics View Settings Menu

From the Graphics View Settings menu, you can add overlays and products to a view, change the domain, and access graphics view options. Other than the number of weather products available, Long Range Graphics View Settings and TRACON Graphics View Settings menus look and work the same way. To open a Graphics View Settings menu, click the Gear icon on the View Titlebar of the view you are working on.

In the following example, the Gear icon was clicked to open the Long Range Graphics View Settings menu (Figure 3-4. Open Long Range Graphics View Settings Menu).

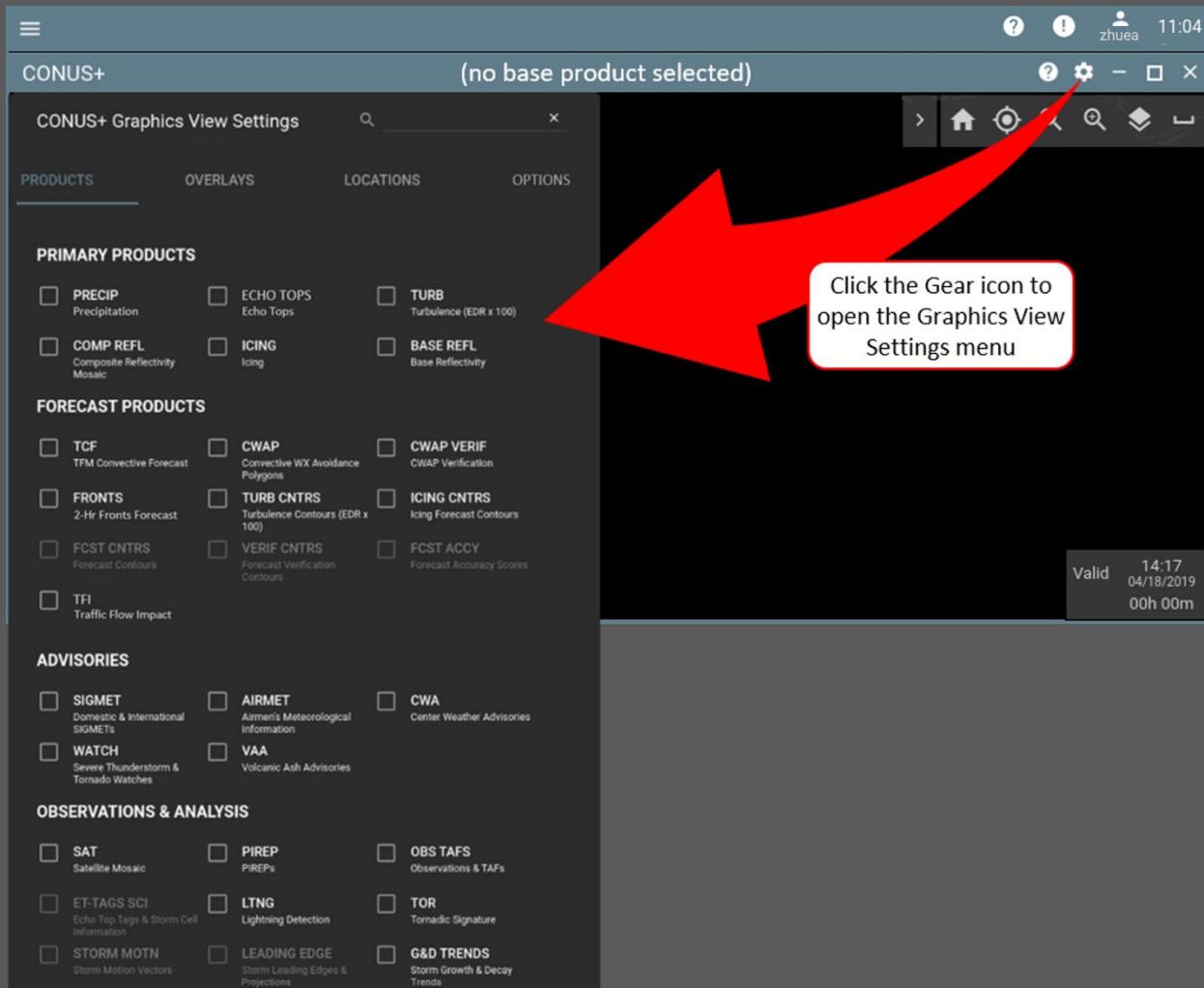


Figure 3-4. Open Long Range Graphics View Settings Menu

In this example, an AWD user at Atlanta TRACON (A80), clicked the Gear icon on the View Titlebar to open the TRACON Graphics View Settings menu (Figure 3-5. Open TRACON Graphics View Settings Menu).

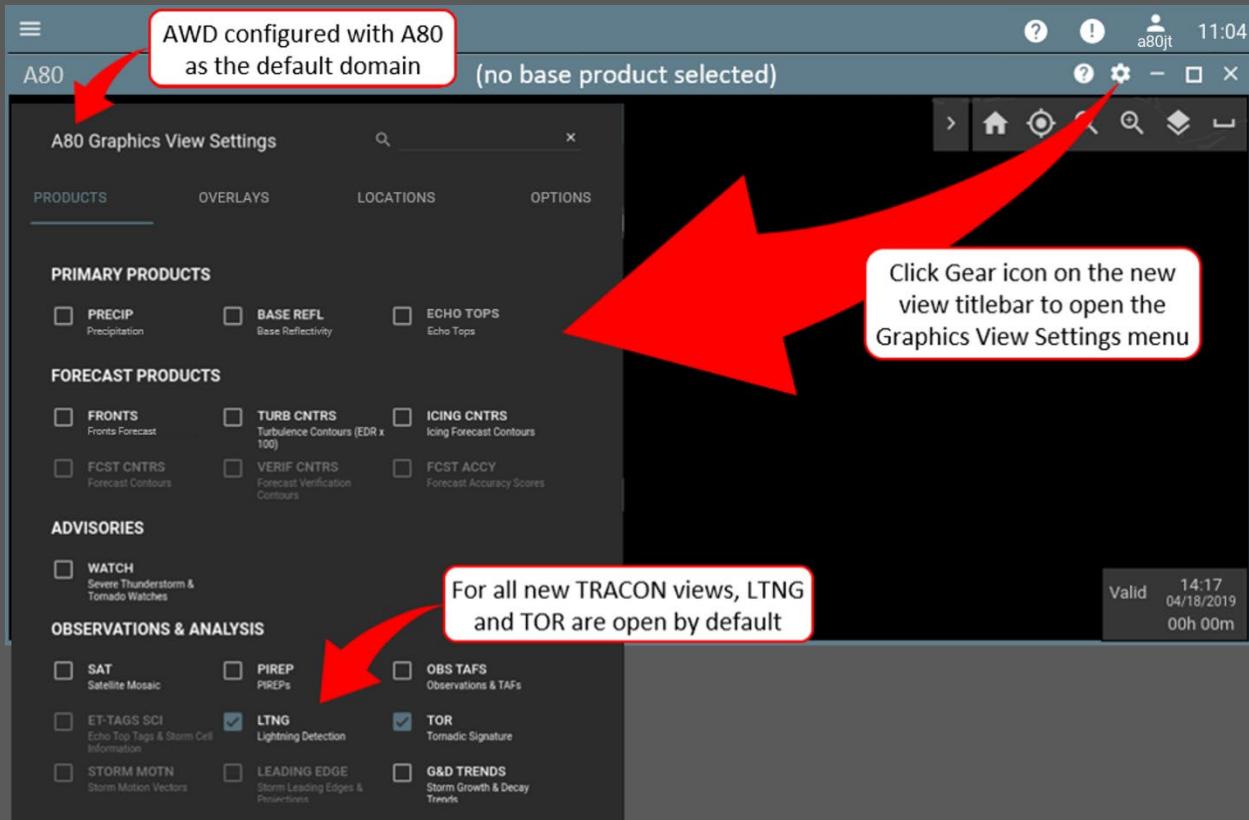


Figure 3-5. Open TRACON Graphics View Settings Menu

When a Long Range or TRACON Graphics View Settings menu is opened, the PRODUCTS tab is selected by default. The only difference between the PRODUCTS tab in Long Range View and TRACON View are the products that can be selected in each view. While thirty AWD graphic weather products are available in Long Range View, only nineteen graphics weather products are available in TRACON View.

As an alternative method, you can open the Long Range or TRACON Graphics View Settings menu from the desktop. To open a Graphic View Settings menu from the desktop, click the Hamburger icon, then from the AWD Settings menu, click the Gear icon associated with the specific view you want to work on.

Since all open views are listed in the AWD Settings menu, be careful to click the Gear icon associated with the specific view you want to work on.

In the following example, the user clicked the Hamburger icon to open the AWD Settings menu, then from the list of open views, clicked the Gear icon for the CONUS+ (2) View to open the Graphics View Settings menu for that view (Figure 3-6. Open Graphics View Settings Menu from Desktop).

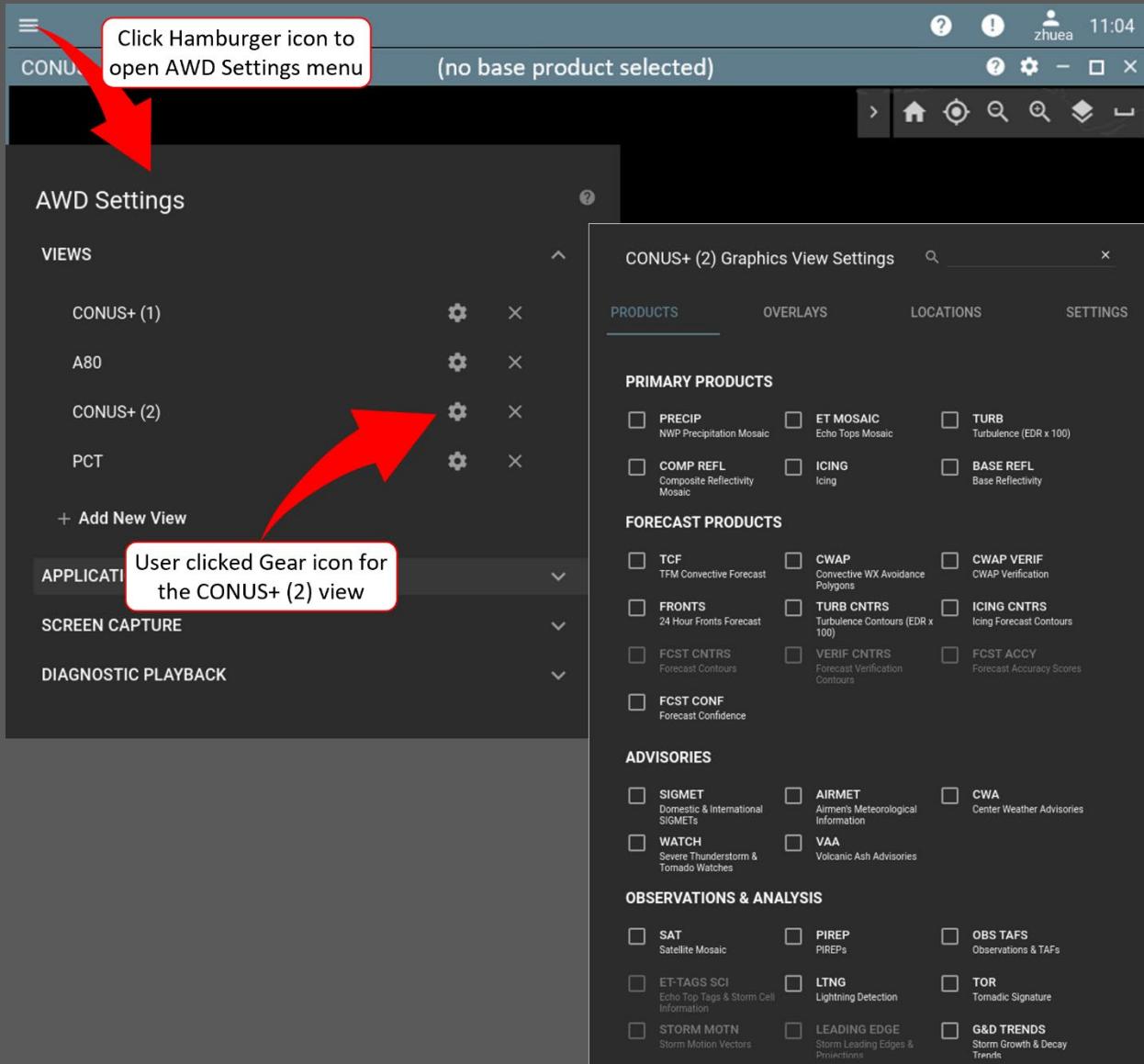


Figure 3-6. Open Graphics View Settings Menu from Desktop

3.1.2.1 Products

In the Long Range and TRACON Graphics View Settings menus under the PRODUCTS tab, weather products available for use are highlighted in bright white, while products currently not available are grayed out. In the following example of the Long Range Graphics View Settings menu in its default state, most products are white (available), some are gray (unavailable), and no products are selected (Figure 3-7. Long Range Graphics View Products).

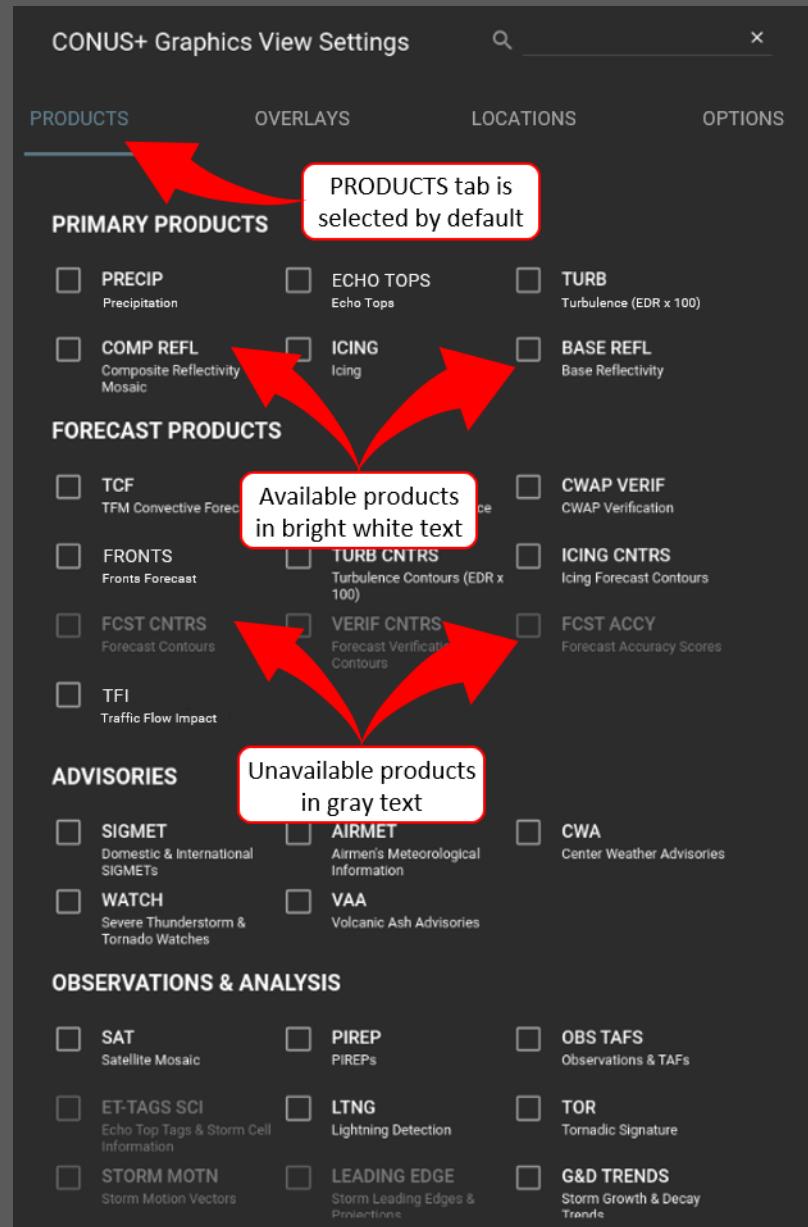


Figure 3-7. Long Range Graphics View Products

3.1.2.1.1 Add Products to a Graphics View

Certain weather products can always be added to the view while others are only available when their associated Primary Product(s) has been added to the view. For example, when PRECIP (a Primary Product) is open, all weather products associated with PRECIP are available. Therefore, selecting PRECIP will make some products available that had been unavailable before PRECIP was selected. To add a product to the view, check its associated checkbox.

Refer to Section 5 WEATHER PRODUCTS for detailed instructions on how to use all AWD weather products.

In TRACON Graphics View, the Lightning Detection (LTNG) and Tornadic Signature (TOR) products are added to the view by default. In the following example, the TRACON Graphics View Settings menu is open in its default state with the PRODUCTS tab selected (Figure 3-8. TRACON Graphics View Products).

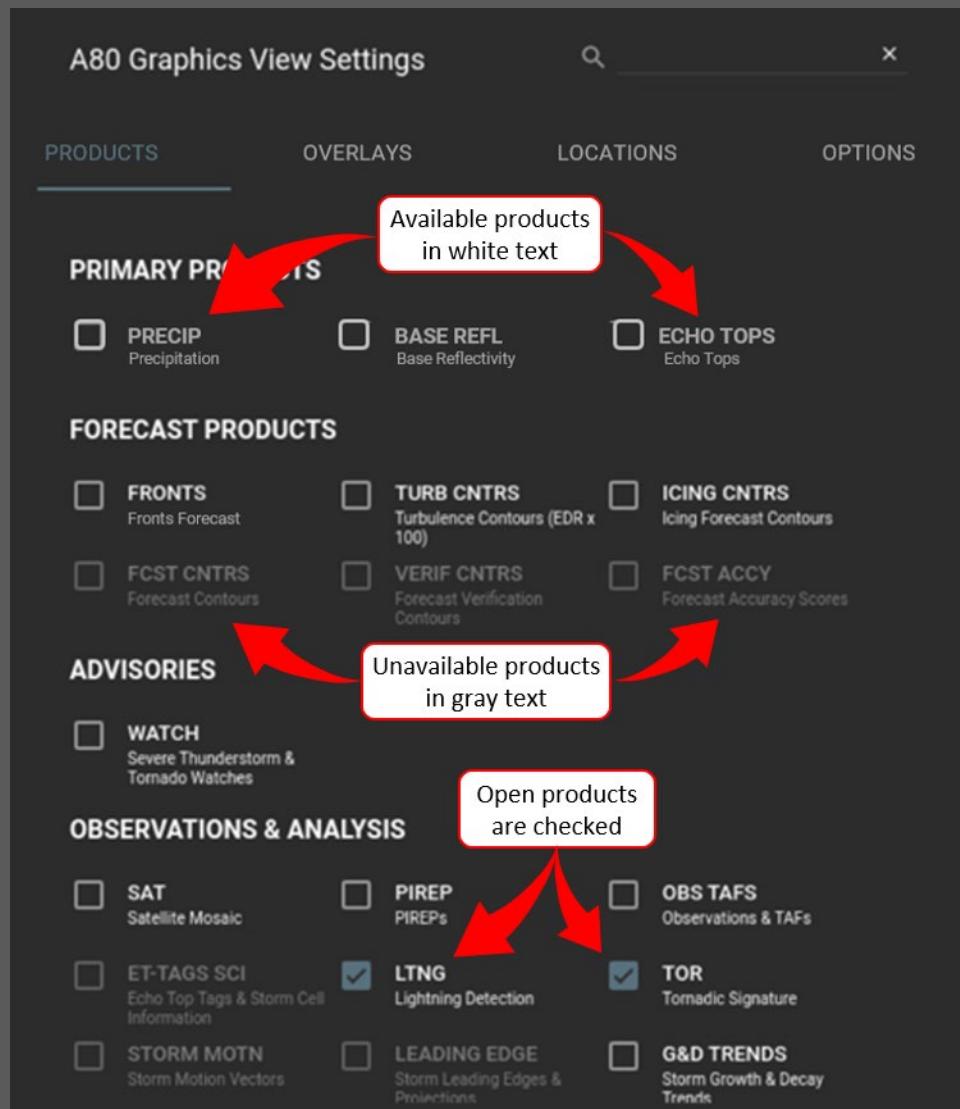


Figure 3-8. TRACON Graphics View Products

3.1.2.2 Overlays

The Overlays menu looks and functions the same in Long Range View as it does in TRACON View. From the Overlays menu, you can add maps, airways, facility boundaries, and numerous other geographical features to the view. To open the Overlays menu, open a Long Range or TRACON Graphics View Settings menu, then click the OVERLAYS tab (Figure 3-9. Graphics View Settings OVERLAYS).

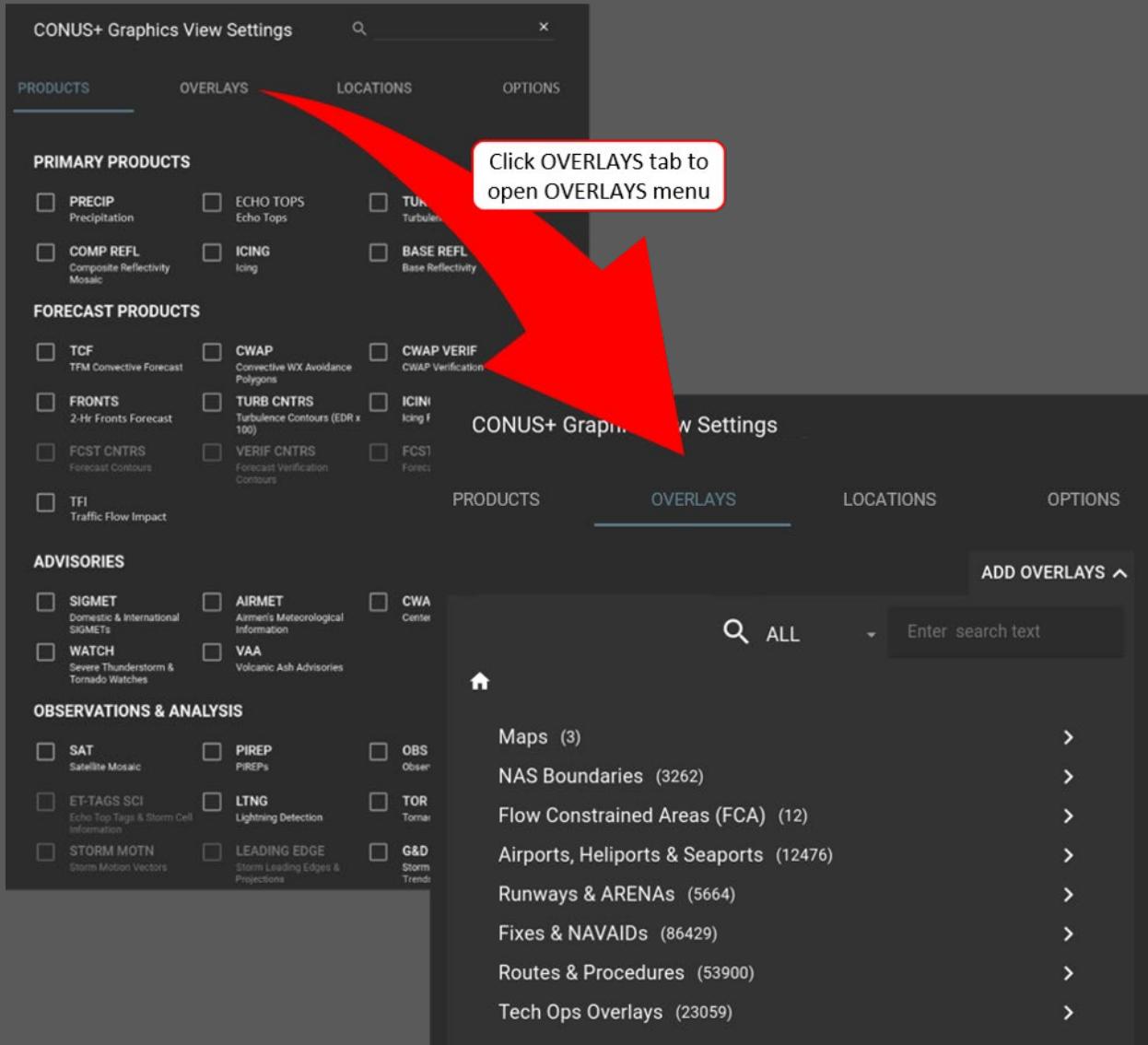


Figure 3-9. Graphics View Settings OVERLAYS

Refer to Section 4, OVERLAYS for detailed instructions on how to search for and add overlays to a Long Range or TRACON Graphics view.

3.1.2.3 Locations

CONUS+ is the default domain (location) for new Long Range Graphics Views, while the default domain for new TRACON Graphics Views is the specific TRACON configured by your facility's AWD Site Administrator.

To change domains, open the Graphics View Settings menu, then click the **LOCATIONS** tab. In Long Range view, CONUS+, Alaska, Guam, and Hawaii are the available domains. In TRACON view, all configured TRACON domains are available.

In the following example, the user opened the Long Range Graphics View Settings menu, then clicked the LOCATIONS tab for the list of available domains (Figure 3-10. Long Range View Domains).

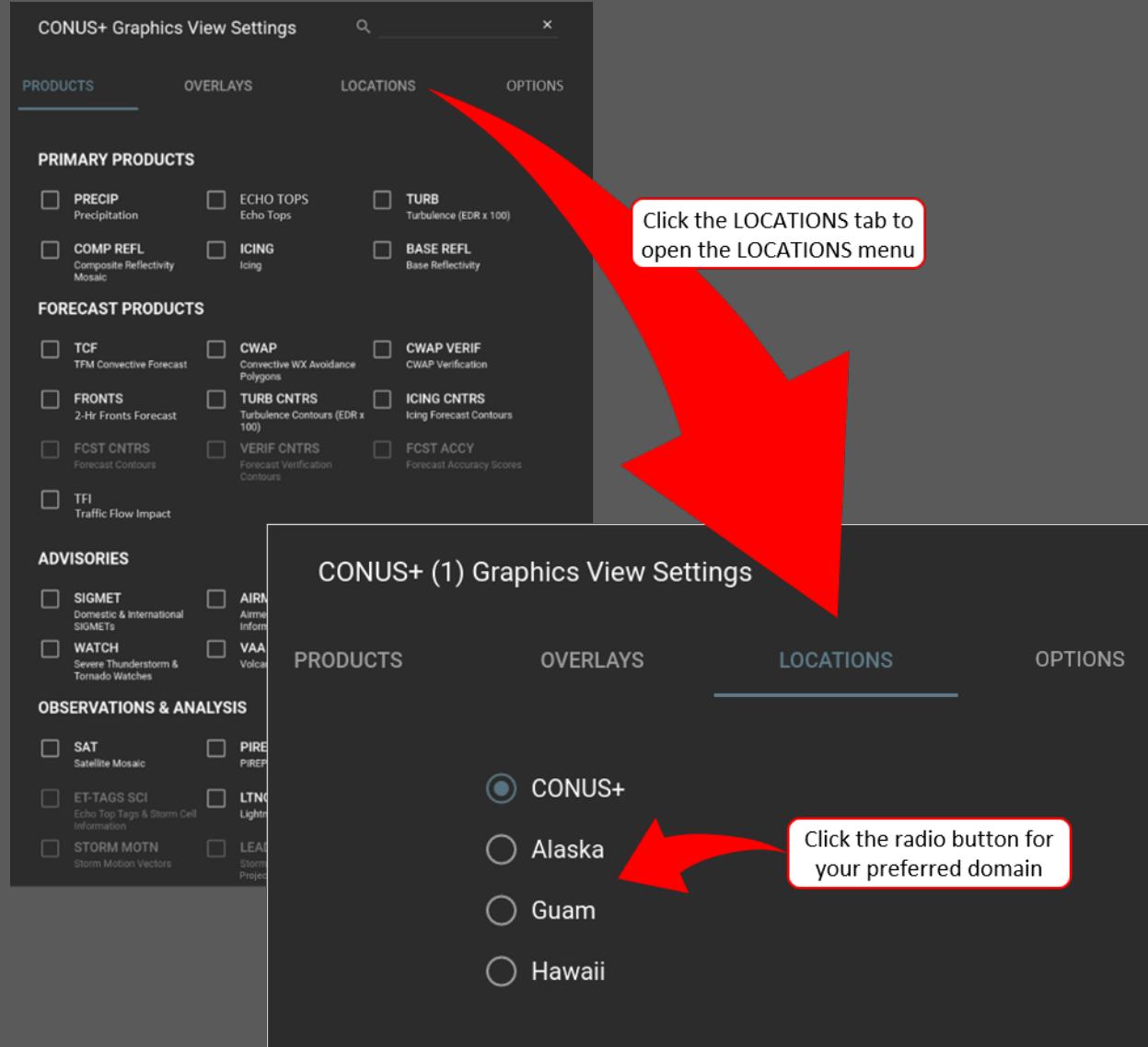


Figure 3-10. Long Range View Domains

In this example, the user opened the TRACON Graphics View Settings menu, then clicked the LOCATIONS tab for the list of available TRACON domains (Figure 3-11. TRACON View Domains).

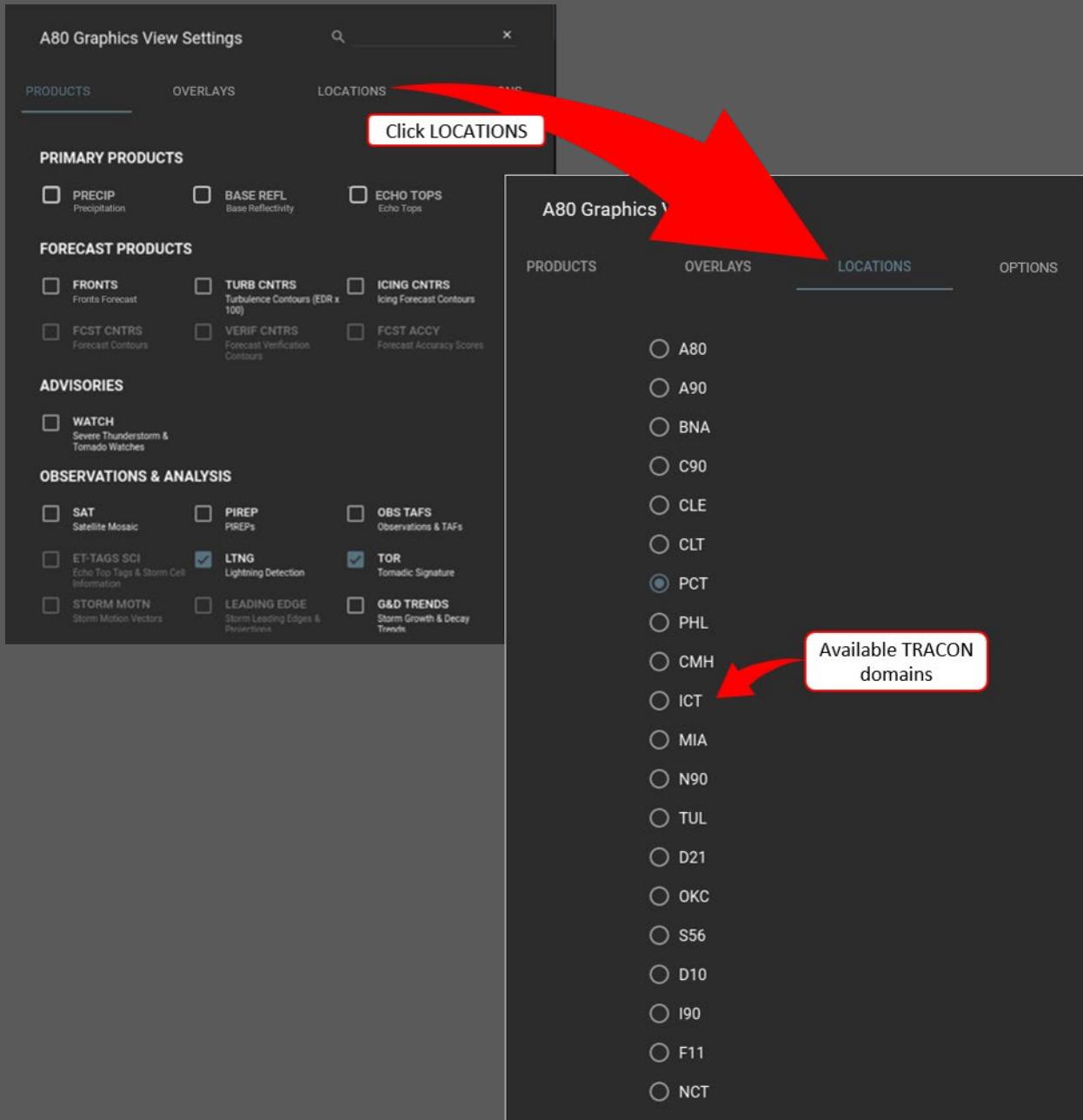


Figure 3-11. TRACON View Domains

3.1.2.4 Options

In the Long Range and TRACON Graphics View Settings menus, there are several tools and options available under the OPTIONS tab. Options available in Long Range View and TRACON View are the same with one exception; the Show North Indicator is only available in TRACON View.

To access graphics view options, open the Graphics View Settings menu, then click the OPTIONS tab (Figure 3-12. Graphics View Options).

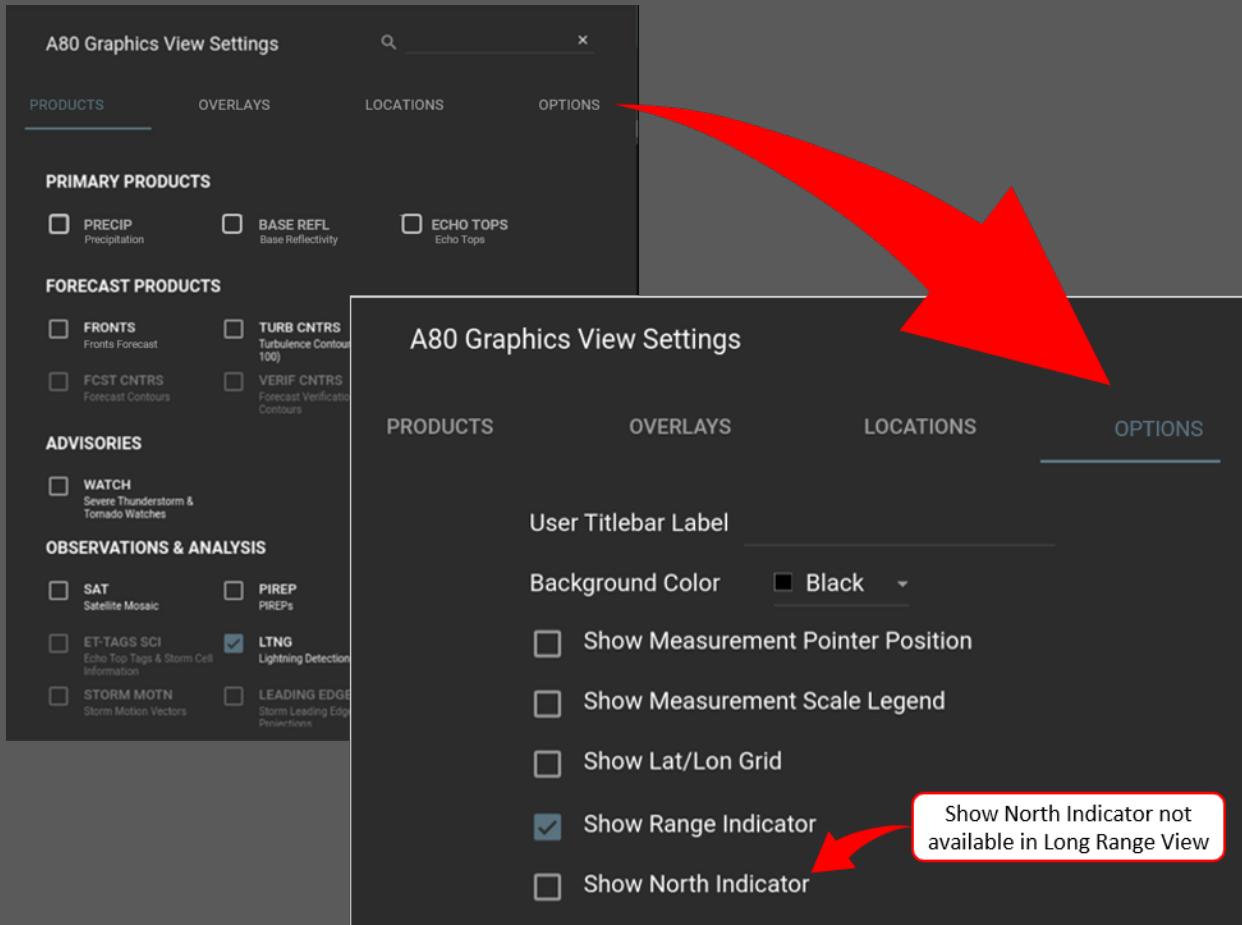


Figure 3-12. Graphics View Options

3.1.2.4.1 Custom View Label

To create a custom label for a Long Range or TRACON View, open the Graphic View Settings menu then click the OPTIONS tab. Enter your custom label to the immediate right of User Titlebar Label. Your custom view label is added to the Desktop Titlebar as you type (Figure 3-13. Custom View Label).

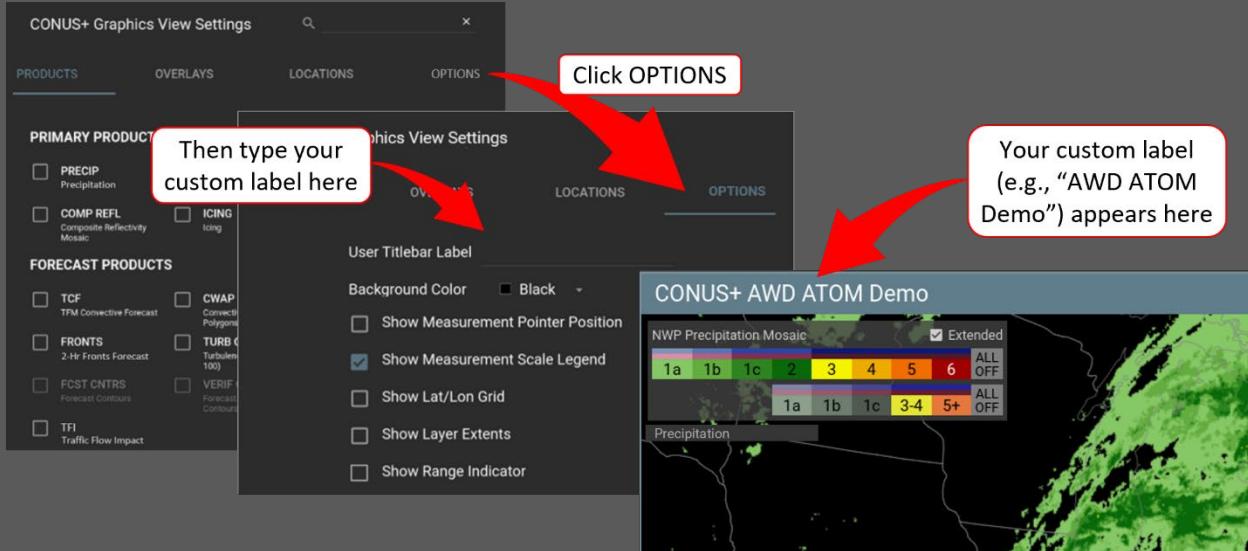
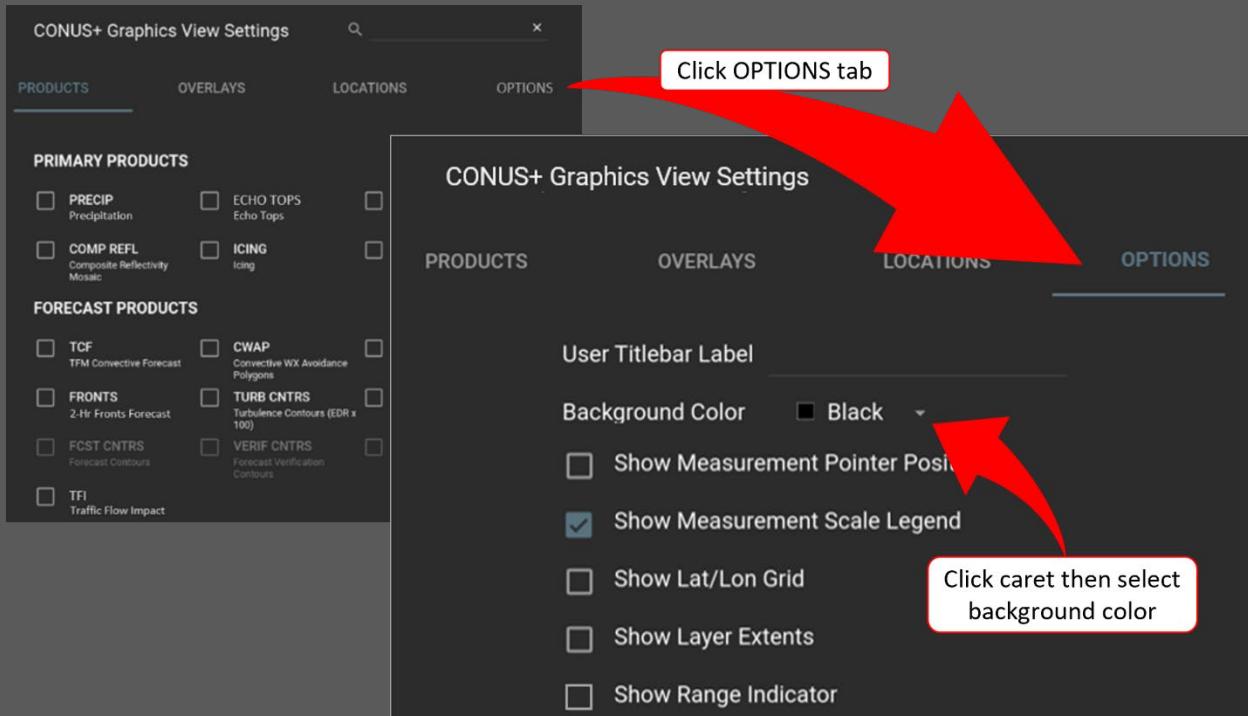


Figure 3-13. Custom View Label

3.1.2.4.2 Background Color

To change a view's background color, click the OPTIONS tab in the Graphics View Settings menu, then click the caret to the right of Background Color and select your preferred background color (Figure 3-14. Change Graphics View Background Color).



3.1.2.4.3 Show Measurement Pointer Position

Show Measurement Pointer Position is off by default and works the same way in Long Range and TRACON Graphics views. When selected, the Show Measurement Pointer Position option displays the mouse pointer's latitude/longitude and elevation (MSL) in a dialog box immediately below the View Toolbar.

The mouse pointer's position and elevation update as you move the mouse.

To activate the Show Measurement Pointer Position option, open the Graphics View Settings menu, then in the OPTIONS menu, check Show Measurement Pointer Position (Figure 3-15. Display Mouse Pointer LAT/LONG & Elevation).

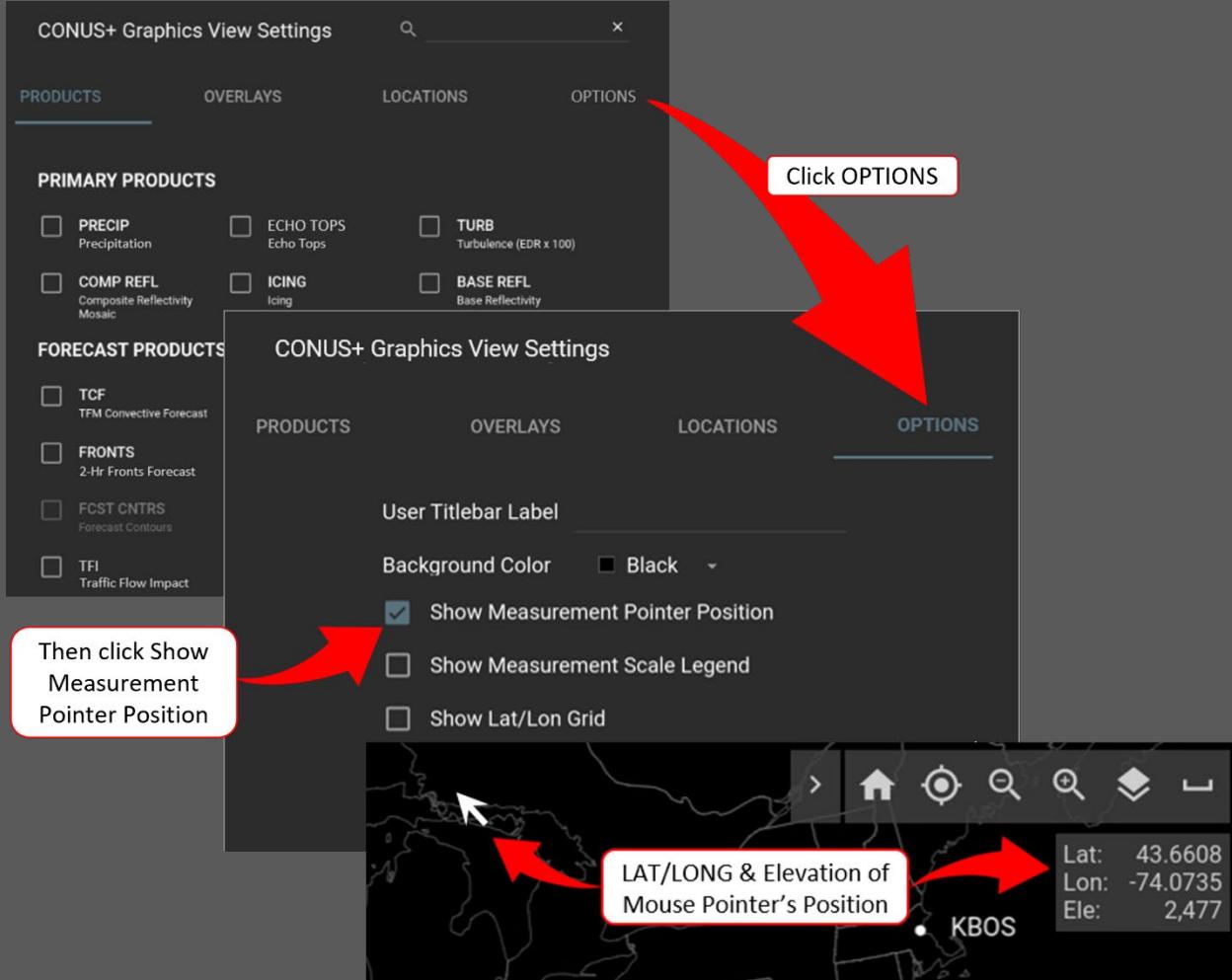


Figure 3-15. Display Mouse Pointer LAT/LONG & Elevation

3.1.2.4.4 Show Measurement Scale Legend

The Measurement Scale Legend is off by default. When activated, it opens below the View Toolbar and provides a visual scale in nautical miles that you can use to reference distance and zoom level. To display the Measurement Scale Legend, click the OPTIONS tab in the Graphics View Settings menu, then check Show Measurement Scale Legend (Figure 3-16. Show Measurement Scale Legend).

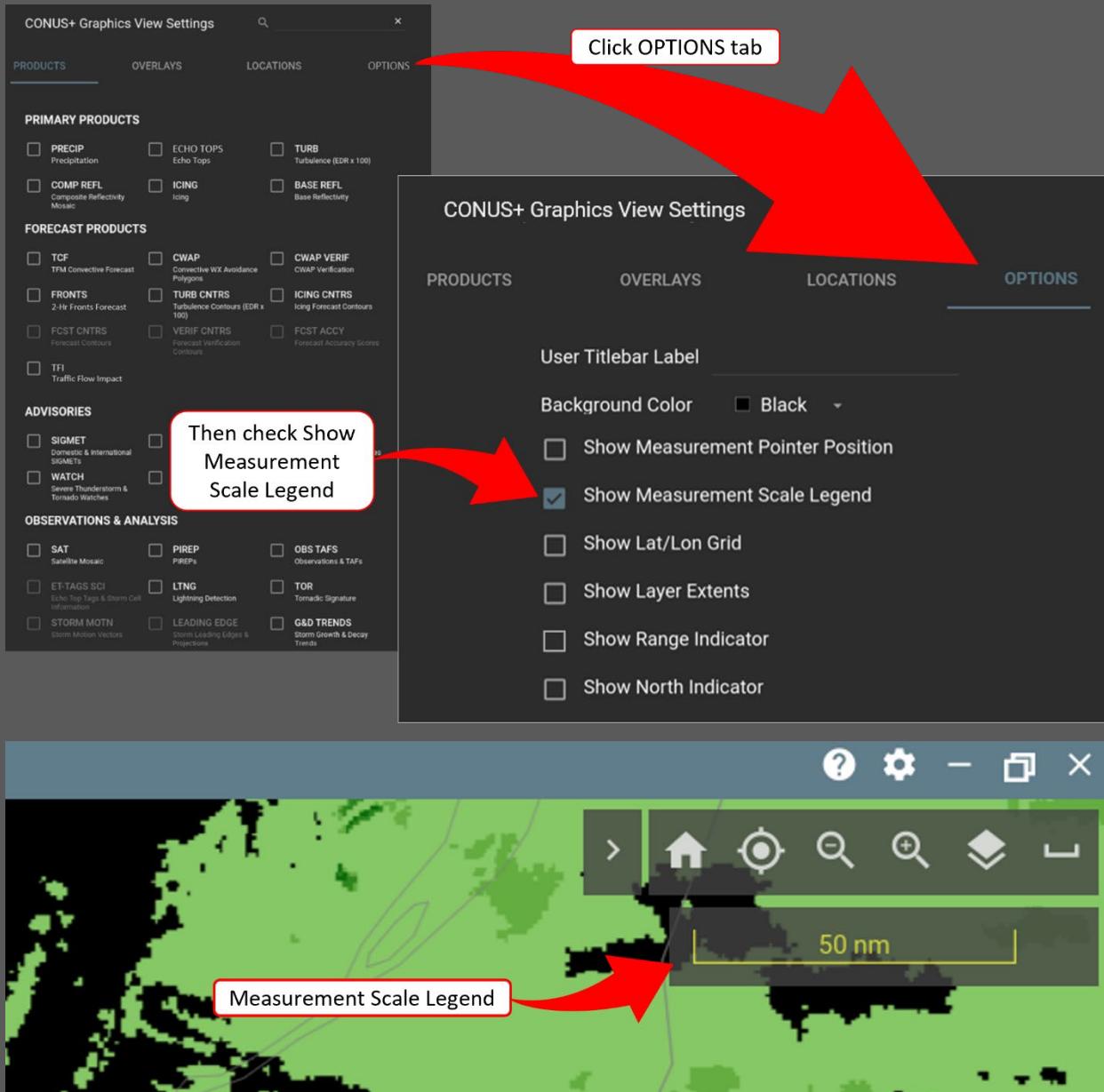


Figure 3-16. Show Measurement Scale Legend

3.1.2.4.5 Show Latitude/Longitude Grid

In Long Range and TRACON Graphics Views, the latitude/longitude grid is off by default. To overlay the view with a latitude/longitude grid, click the OPTIONS tab in the Graphics View Settings menu, then check Show Lat/Lon Grid (Figure 3-17. Show LAT/LONG Grid).

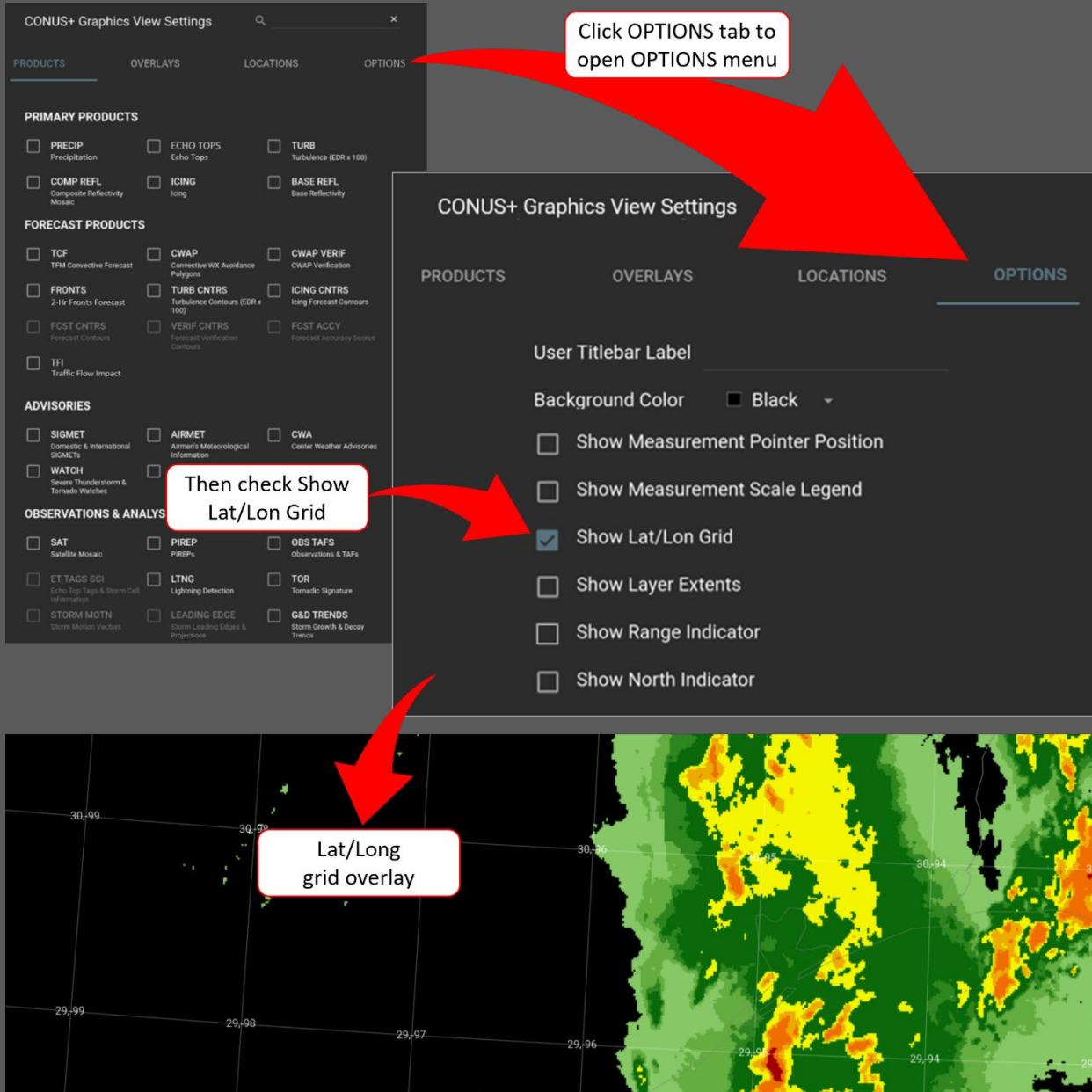


Figure 3-17. Show LAT/LONG Grid

3.1.2.4.6 Show Range Indicator

When displayed, the Range Indicator displays the view's current range in nautical miles and is located on the View Titlebar to the right of the domain. By default, the Range Indicator is hidden in Long Range view and displayed in TRACON view.

To view or hide the Range Indicator, open the **Graphics View Settings menu**, click the **OPTIONS tab**, then check or uncheck **Show Range Indicator** (Figure 3-18. Show Range Indicator).

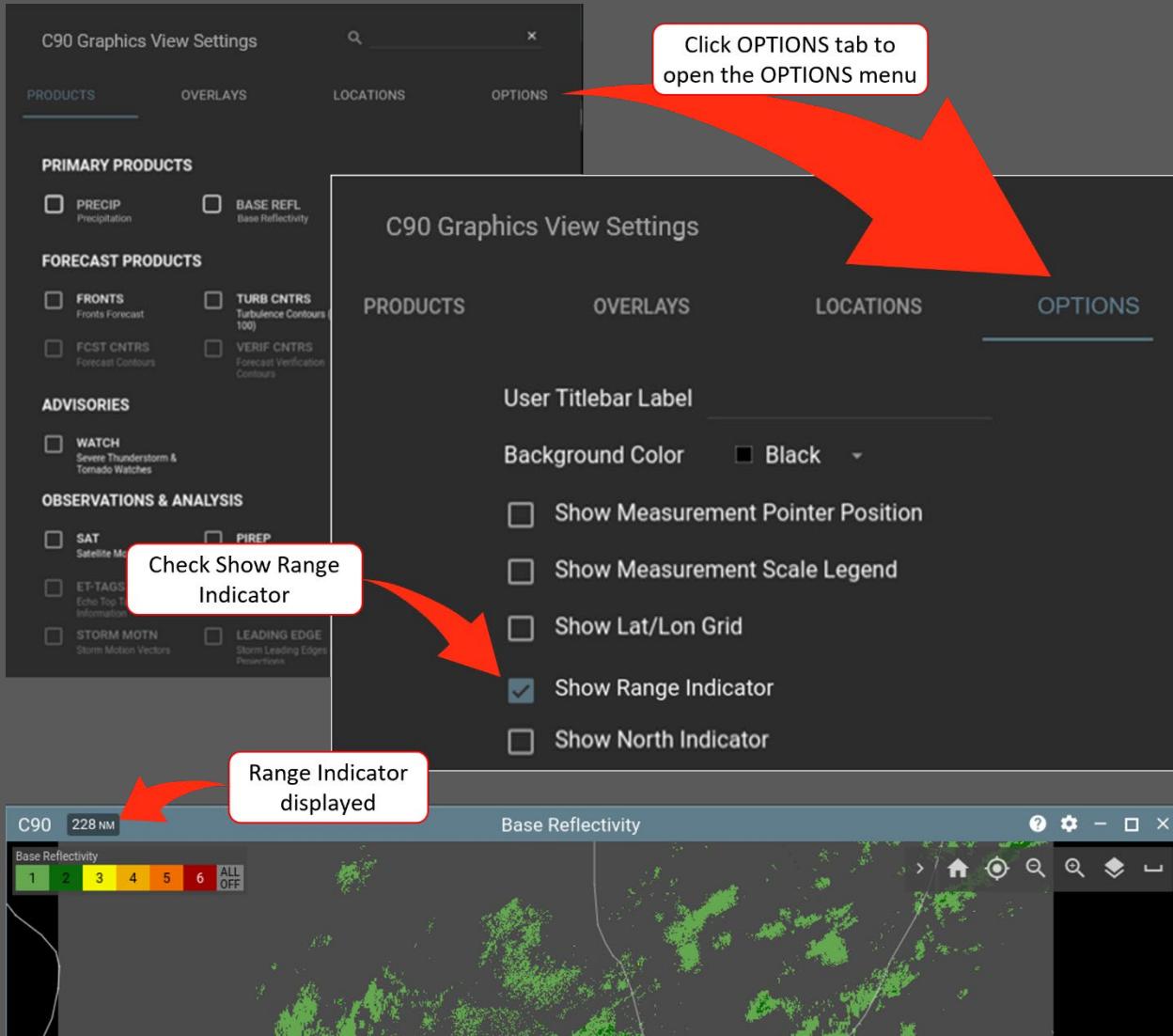


Figure 3-18. Show Range Indicator

3.1.2.4.7 Show North Indicator

TRACON views are oriented to true north by default but can also be oriented to magnetic north. The Show North Indicator interactive legend shows the current orientation and allows you to toggle back and forth between true and magnetic north with a mouse click. To open the Show North Indicator, click the OPTIONS tab from the TRACON Graphics View Settings menu, then click Show North Indicator. The Show North Indicator interactive legend opens below the View Toolbar (Figure 3-19. Activate Show North Indicator).

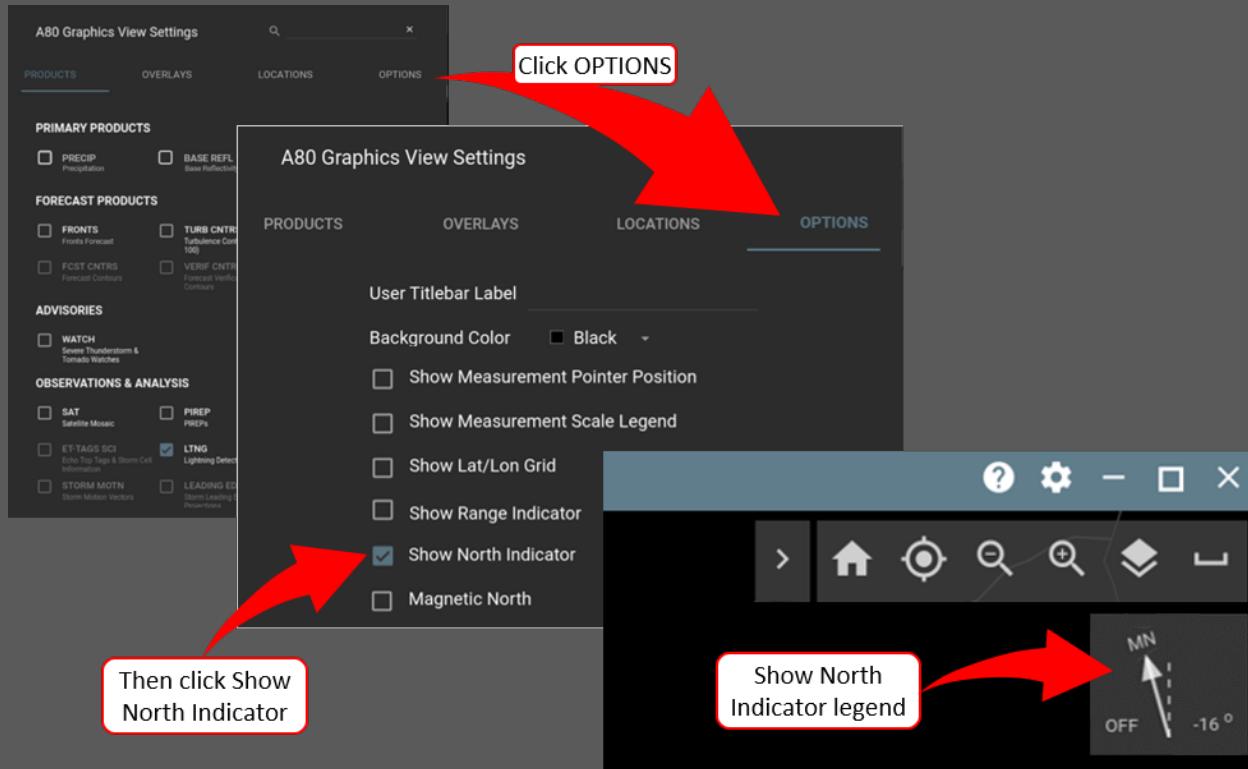


Figure 3-19. Activate Show North Indicator

In the interactive legend, the solid white arrow represents magnetic north, the dashed white line represents true north, and magnetic variation is displayed in the bottom right of the legend. When the indicator reads ON, the view is oriented to magnetic north. When the indicator reads OFF, the view is oriented to true north. Click anywhere inside the legend to toggle between true and magnetic north (Figure 3-20. Magnetic and True North Compared).

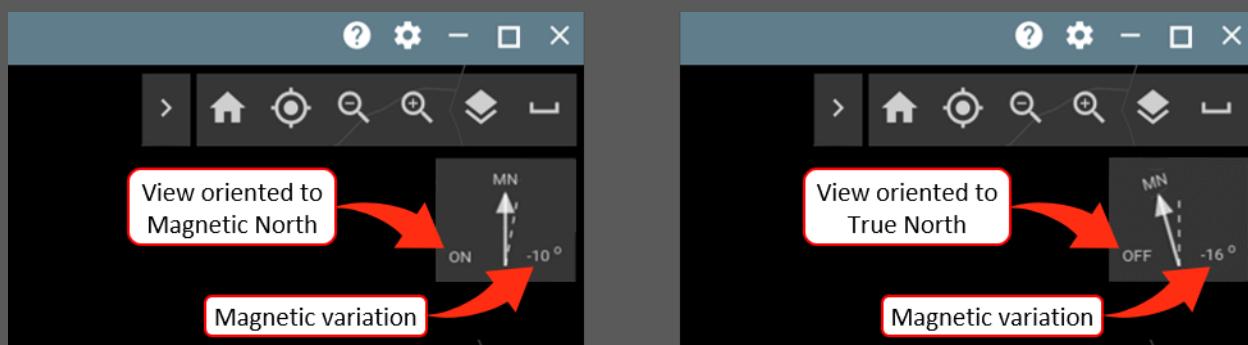


Figure 3-20. Magnetic and True North Compared

3.1.3 View Toolbar

Long Range and TRACON views use the same View Toolbar. When a new Graphics View is added to the desktop, the View Toolbar is displayed in the upper right corner of the view. View Toolbar icons are labeled and their respective functions described below (Figure 3-21. Graphics View Toolbar).

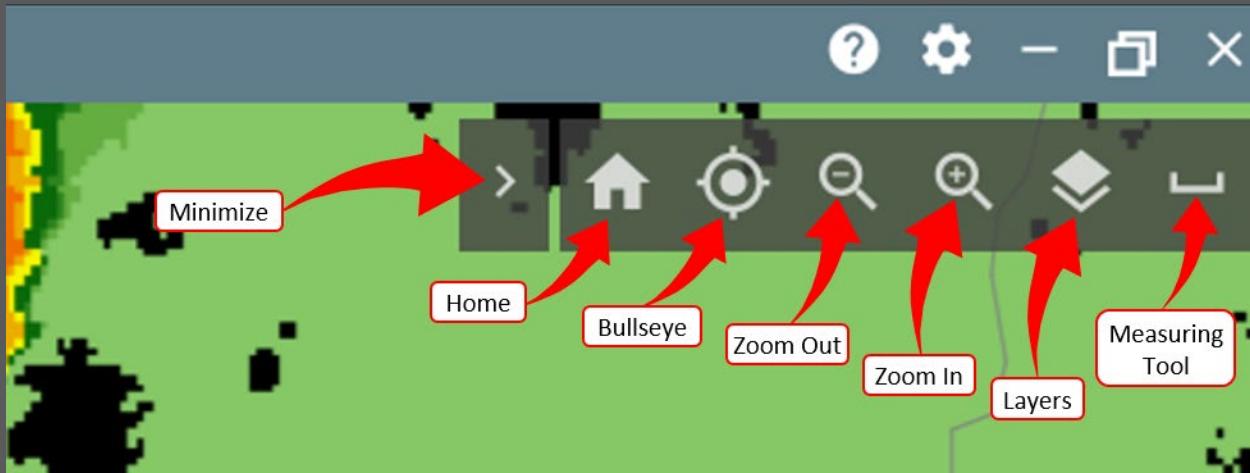


Figure 3-21. Graphics View Toolbar

- Minimize – Click the right-pointing caret to minimize (not close) the View Toolbar.
- Home – Click the Home icon to center the view on the domain's geographical center and reset the view to its default zoom level.
- Bullseye – Click the Bullseye, then click any point in the view to re-center the view on that point.
- Zoom out – Click zoom out to display more airspace with less detail.
- Zoom in – Click zoom in to display less airspace with more detail.
- Layers Icon – Click to open the Overlays menu or add custom overlays.
- Measuring Tool – Click to measure the distance between two points in nautical miles.

3.1.3.1 Minimize/Maximize the View Toolbar

The View Toolbar in Long Range and TRACON view is maximized by default. To minimize the View Toolbar, click the right-pointing caret on the far left of the toolbar. When the View Toolbar is minimized, the Home icon moves to the far right of the view (Figure 3-22. Minimize View Toolbar).

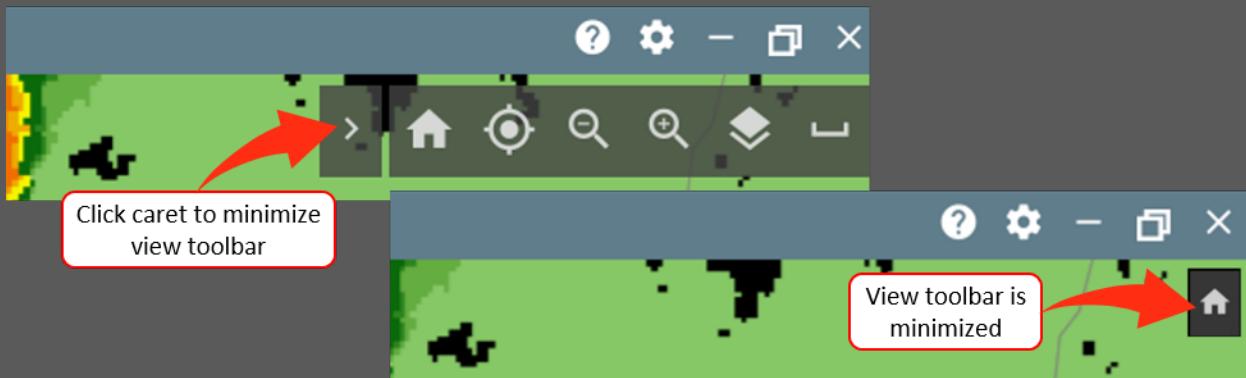


Figure 3-22. Minimize View Toolbar

To maximize the View Toolbar, click the **Home icon** (Figure 3-23. Maximize View Toolbar).

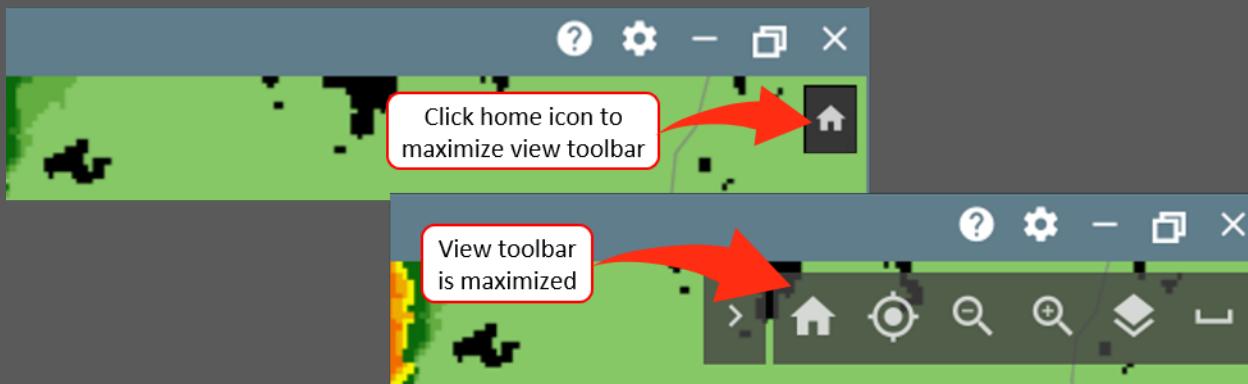


Figure 3-23. Maximize View Toolbar

3.1.3.2 Home Icon

To center a graphics view on its home location (domain center), and restore the view to its default zoom level, click the **Home icon**. Clicking the Home icon only works as expected when the View Toolbar is maximized. Clicking the Home icon while the View Toolbar is minimized will maximize the Toolbar. If you click the Home icon again, it works as expected to center the view and restore the zoom to the default zoom level (Figure 3-24. Click Home to Center View).

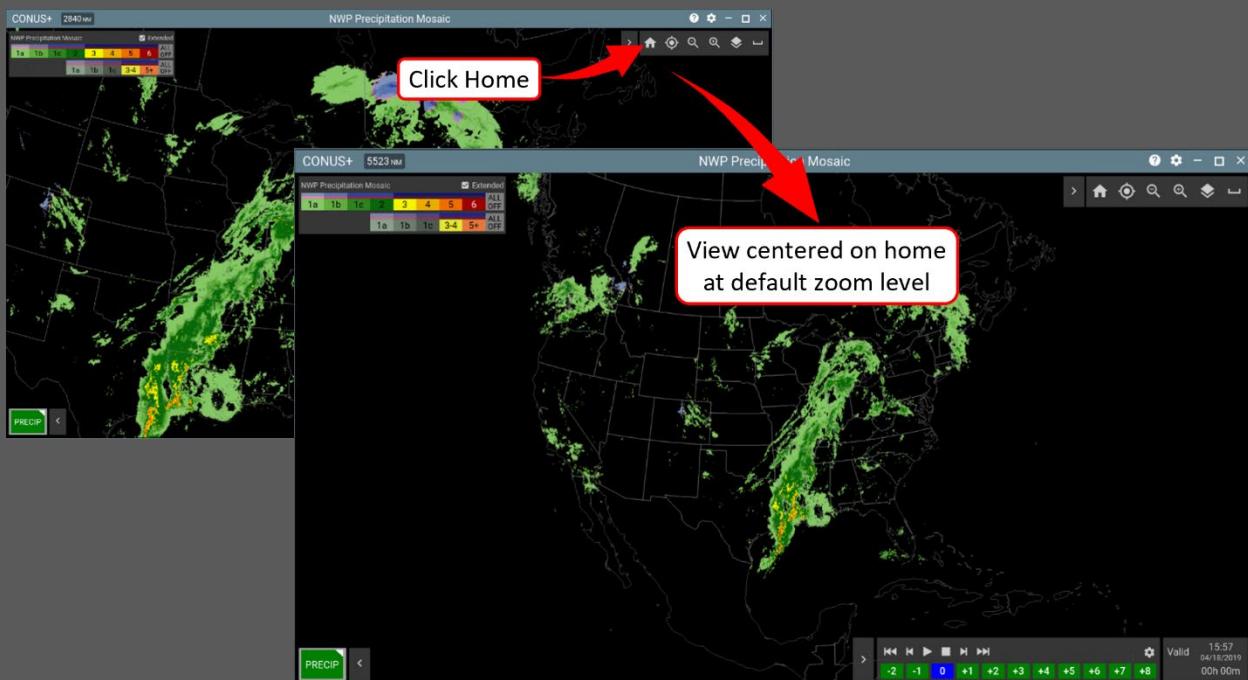


Figure 3-24. Click Home to Center View

3.1.3.3 Bullseye

To center the view on a location other than the domain center, click the Bullseye icon (Figure 3-25. View Bullseye).

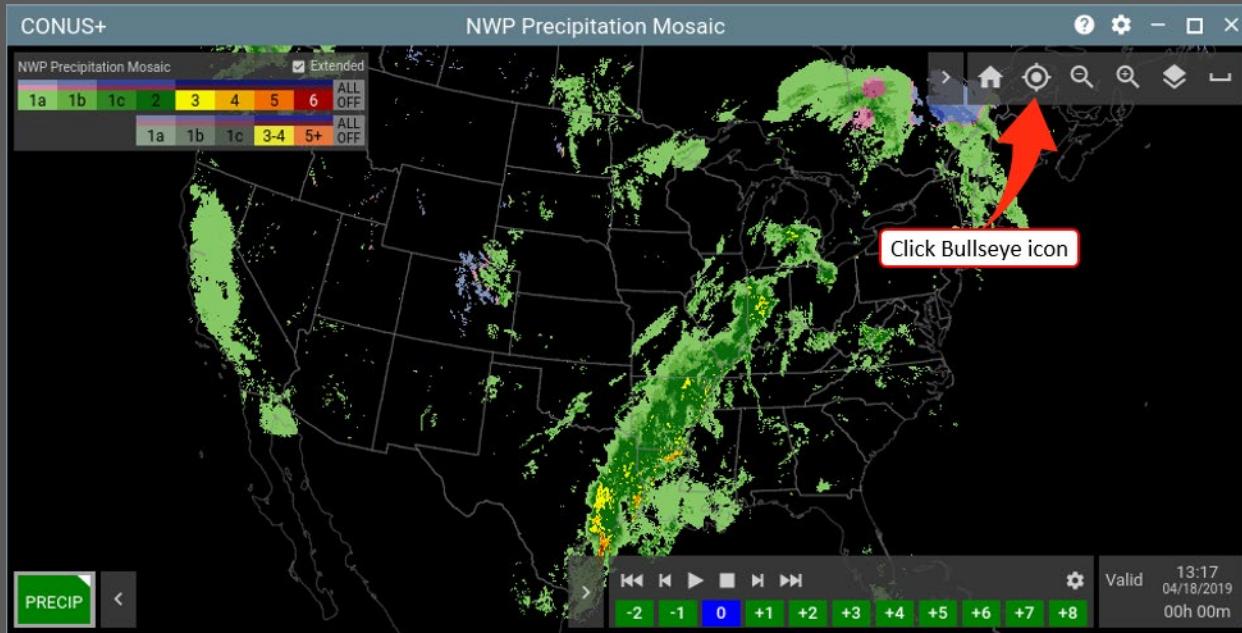


Figure 3-25. View Bullseye

Immediately after you click the Bullseye icon and before you click where you want to center the view, an orange box indicating the mouse pointer's LAT/LONG opens and continuously updates as you move the mouse in the view (Figure 3-26. Bullseye LAT/LONG Indicator).

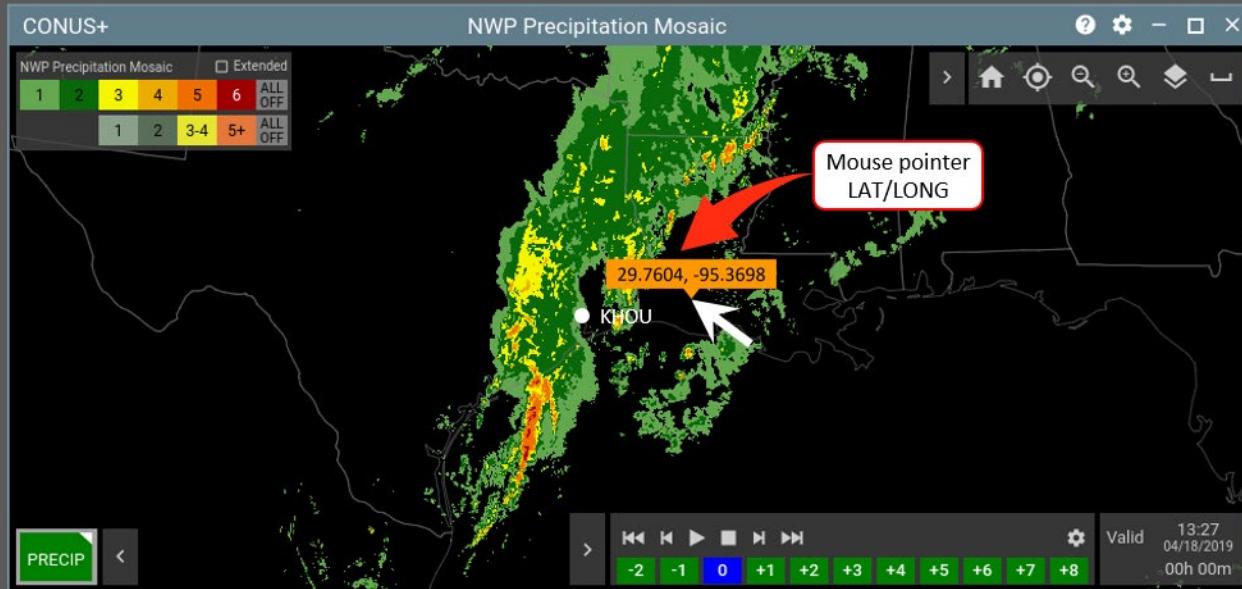


Figure 3-26. Bullseye LAT/LONG Indicator

When you reach the location where you want to center the view, click that location. The orange LAT/LONG box disappears and the view centers on the new location. In the following example, the user clicked KHOU to make it the new center of the view (Figure 3-27. View Re-centered with Bullseye).

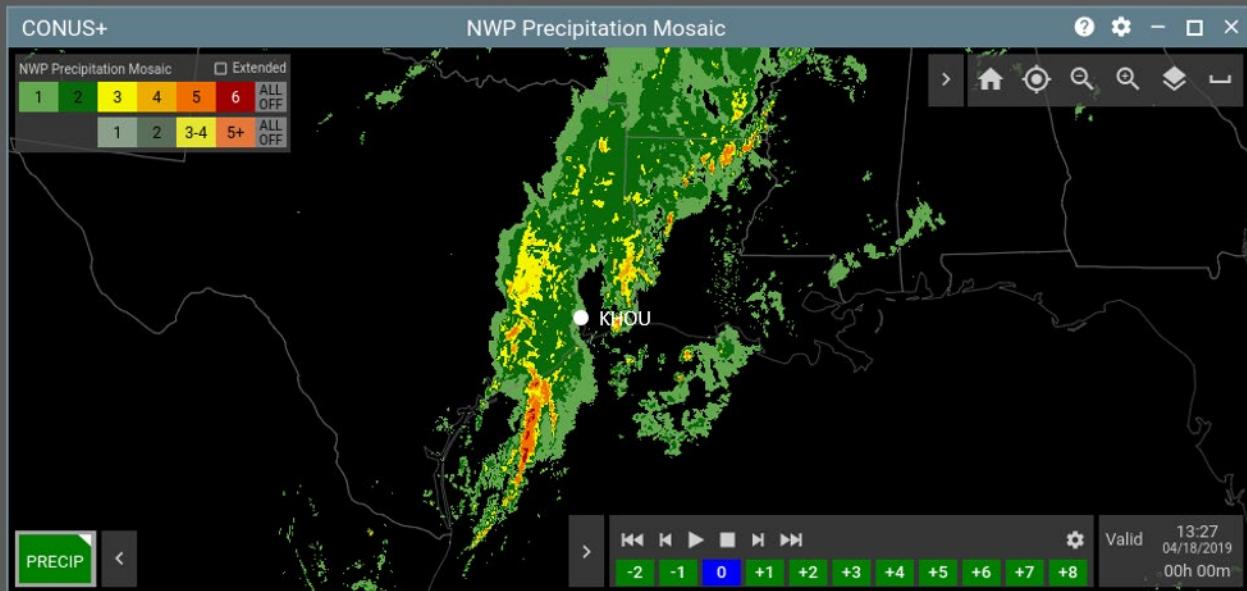


Figure 3-27. View Re-centered with Bullseye

3.1.3.4 Zoom Out

To zoom out to view more airspace, use the mouse wheel or click the View Toolbar's magnifying glass with the minus sign (Figure 3-28. Zoom Out).

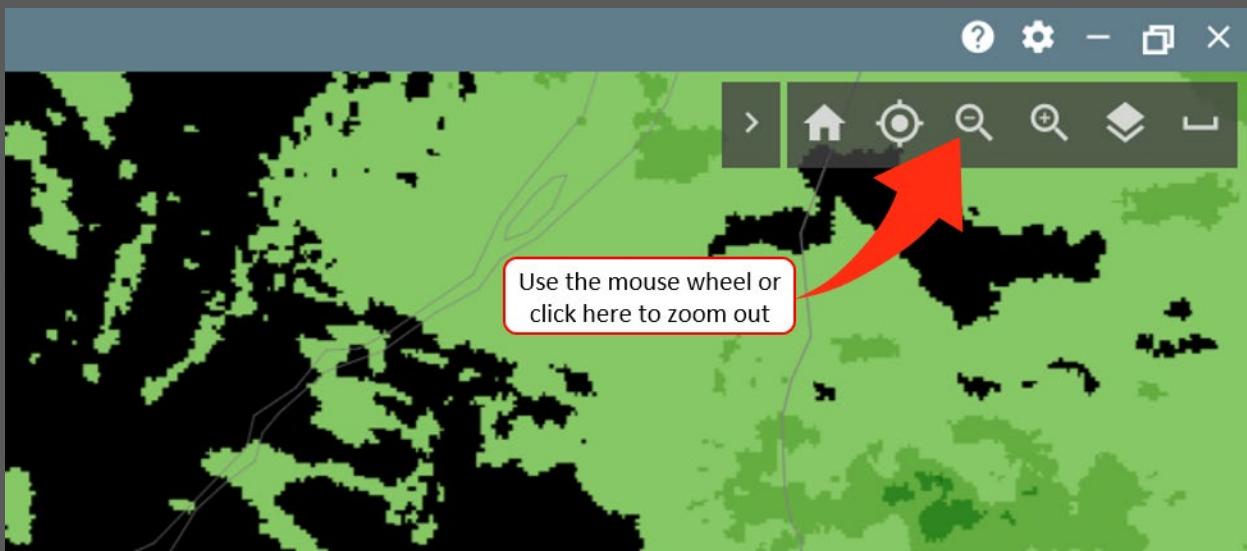


Figure 3-28. Zoom Out

3.1.3.5 Zoom In

To zoom in to see more detail, use the mouse wheel or click the View Toolbar's magnifying glass with the plus sign (Figure 3-29. Zoom In).

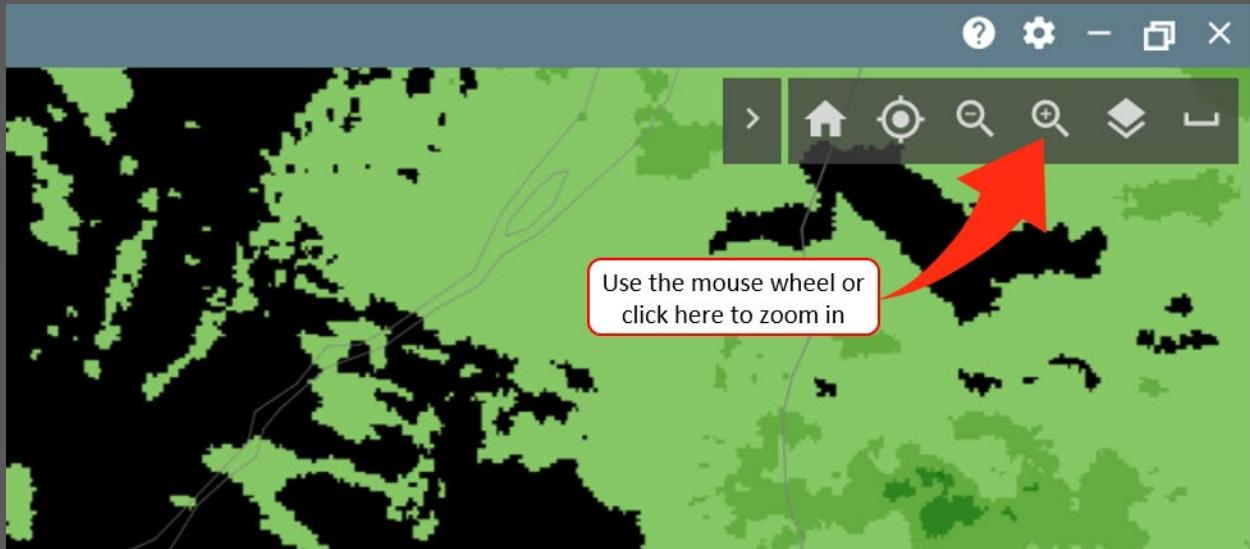


Figure 3-29. Zoom In

3.1.3.6 Manage or Create Custom Overlay

To add overlays (maps, airports, facility boundaries, etc.) to the view, or create custom overlays (e.g., range rings, labeled points, etc.). click the Layers icon (Figure 3-30. Manage Overlays).

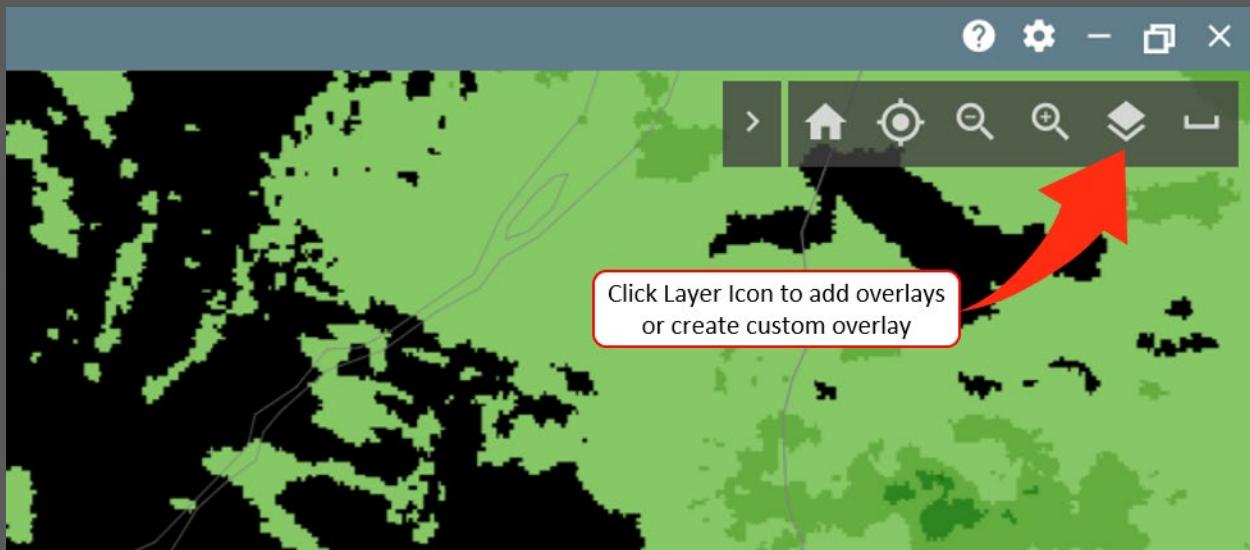


Figure 3-30. Manage Overlays

For detailed information on how to search for and add overlays, refer to **Section 4, OVERLAYS**.

3.1.3.7 Measuring Tool

To measure the distance between two points (e.g., airports, boundaries, etc.), click the Measuring Tool icon on the View Toolbar. When the Measuring Tool is opened, the Measuring Tool's associated dialog box opens in the top center of the view (Figure 3-31. Open Measuring Tool).

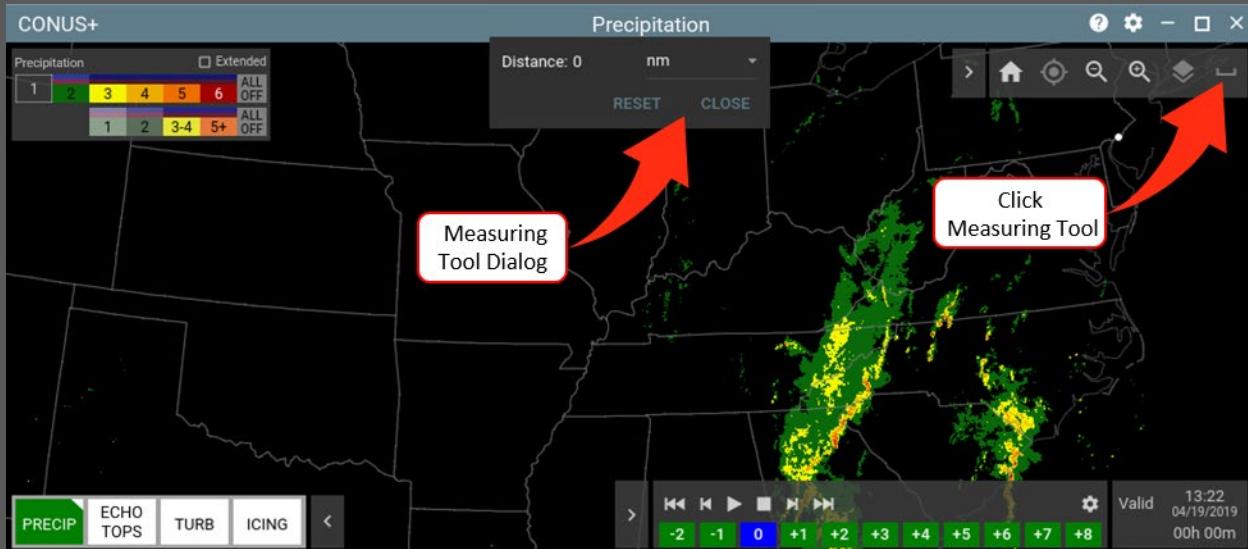


Figure 3-31. Open Measuring Tool

Click the start and end point of the distance you want to measure. After clicking the end point, the distance between the two points is displayed in nautical miles (Figure 3-32. Measuring Tool Options).

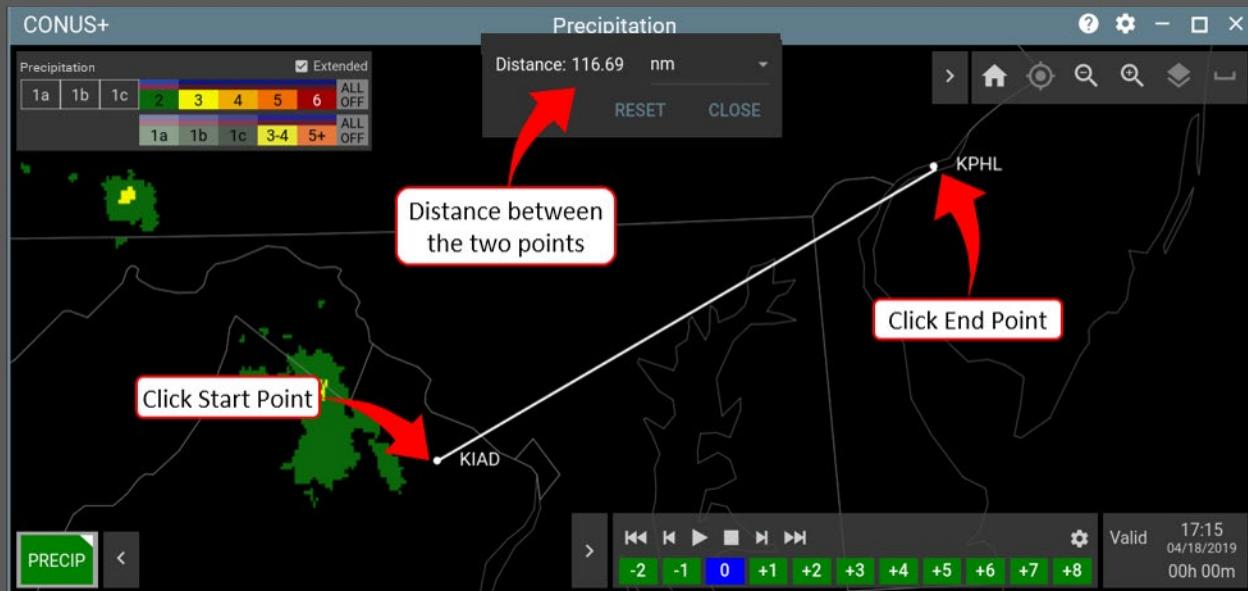


Figure 3-32. Measuring Tool Options

To see the distance in statute miles, click the down-pointing chevron in the upper right corner of the Measuring Tool dialog box, then click statute miles. To measure the distance between two other points, click RESET and repeat the process. To close the measuring tool, click CLOSE.

3.1.4 Product Status Buttons

When an AWD weather product is added to a Long Range or TRACON view, its associated Product Status button is added to the Product Toolbar in one of four colors that represent the “status” of their respective weather products as follows:

- Green – The weather product is added to the view, functioning normally, and is currently displayed in the view.
- White – The weather product is added to the view but its status is unknown. When clicked, the Product Status button turns green if its associated weather product is functioning normally, turns gray if the product is temporarily unavailable awaiting data, or red if the product has malfunctioned and is unavailable.
- Red – The weather product is added to the view, but due to data loss or product failure, is not available.
- Gray – The weather product is added to the view, but currently not available for one of the two following reasons:
 - ✓ Data for the weather product is temporarily unavailable.
 - ✓ The weather product cannot be used independently so its associated Primary Product must be added to the view before it is available.

See the example below of a Long Range Graphics View with a Product Toolbar and its associated Product Status buttons (Figure 3-33. Product Status Buttons on the Product Toolbar).

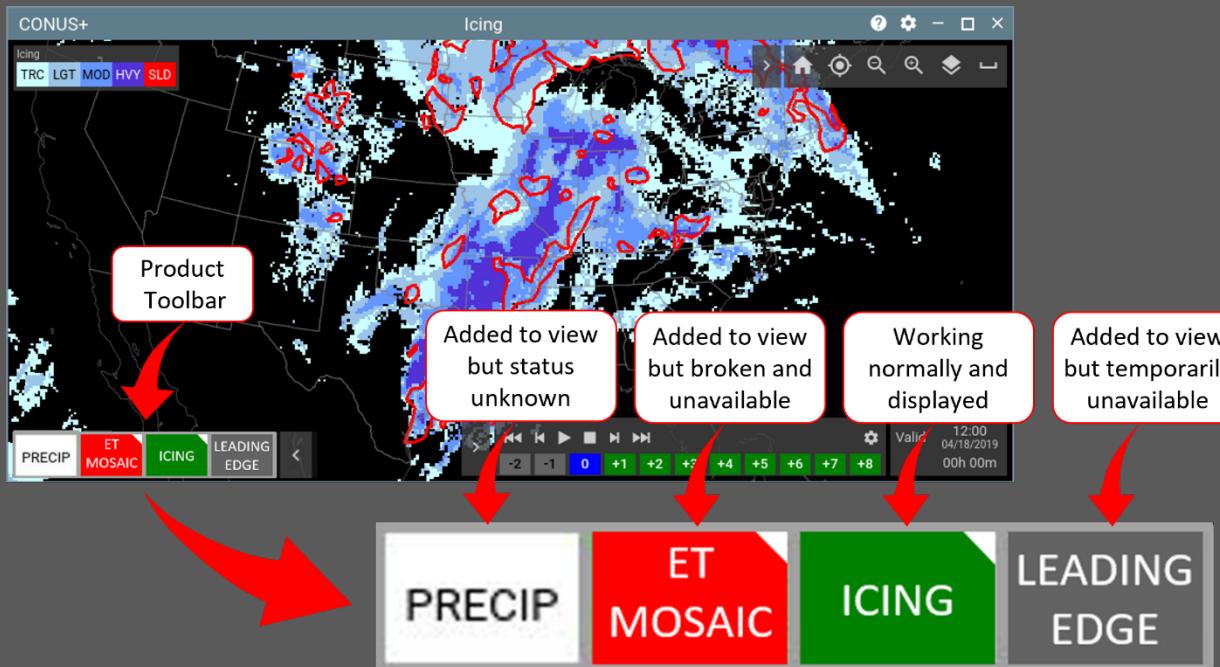


Figure 3-33. Product Status Buttons on the Product Toolbar

A white triangle in the upper right corner of a Product Status button indicates that there are additional options available for the product (e.g., altitude filtering, surface phase filtering, radar coverage, selectable legends, etc.). To access additional options for a product, right-click its **Product Status button** to open its Product Options menu.

3.1.4.1 Default Product Toolbar

The following example shows a maximized Product Toolbar. (Figure 3-34. Maximized Product Toolbar).



Figure 3-34. Maximized Product Toolbar

To minimize the Product Toolbar, click the left-pointing caret at the right of the toolbar. When the Product Toolbar is minimized, selected products are included on the toolbar regardless of their status. In the following example, VAA and CWA are included on the toolbar even though one product is out of service and the other is unavailable (Figure 3-35. Minimized Product Toolbar).

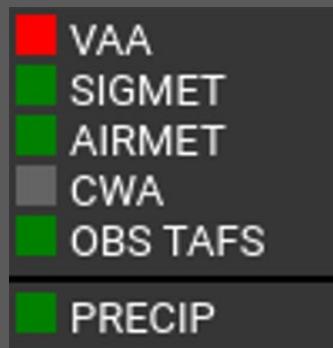


Figure 3-35. Minimized Product Toolbar

To maximize a minimized Product Toolbar, click anywhere on the toolbar.

3.1.5 Loop Toolbar

The Loop Toolbar resides in the lower right corner of all Graphics Views. By default, the Loop Toolbar in Long Range View is hidden until the first weather product is added to the view. In TRACON View, the Loop Toolbar is maximized by default because two weather products (LTNG and TOR), are open by default.

Other than the green numbered jump buttons that represent time intervals, the Loop Toolbar in Long Range and TRACON Graphics Views have the same look and functionality.

Loop Toolbar in Long Range View (Figure 3-36. Loop Toolbar in Long Range View).

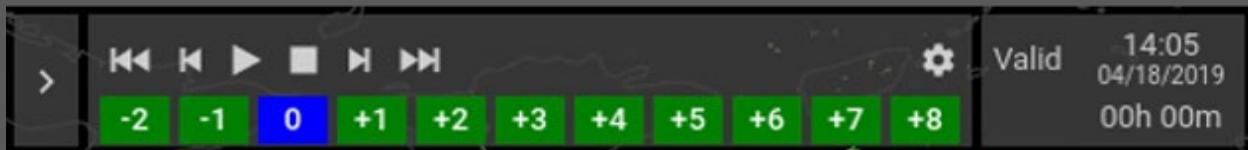


Figure 3-36. Loop Toolbar in Long Range View

Loop Toolbar in TRACON View (Figure 3-37. Loop Toolbar in TRACON View).

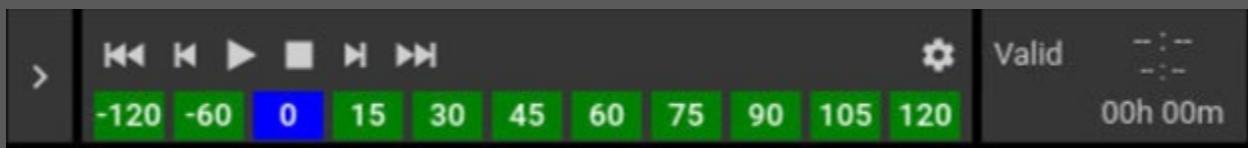


Figure 3-37. Loop Toolbar in TRACON View

For detailed information on the Loop Toolbar, refer to Section 6.1, Loop Toolbar.

3.2 STATIC Image View

Two products are available in Static Image View, Himawari Satellite images and the NavCanada Graphical Forecast Analysis (GFA). To access Static Image View products and Static Image View options, open the Static Image View Settings menu. To open the Static Image View Settings menu, click the **Gear icon** on the Titlebar of the Static Image View you are working in (Figure 3-38. Open Static Image View Settings Menu).

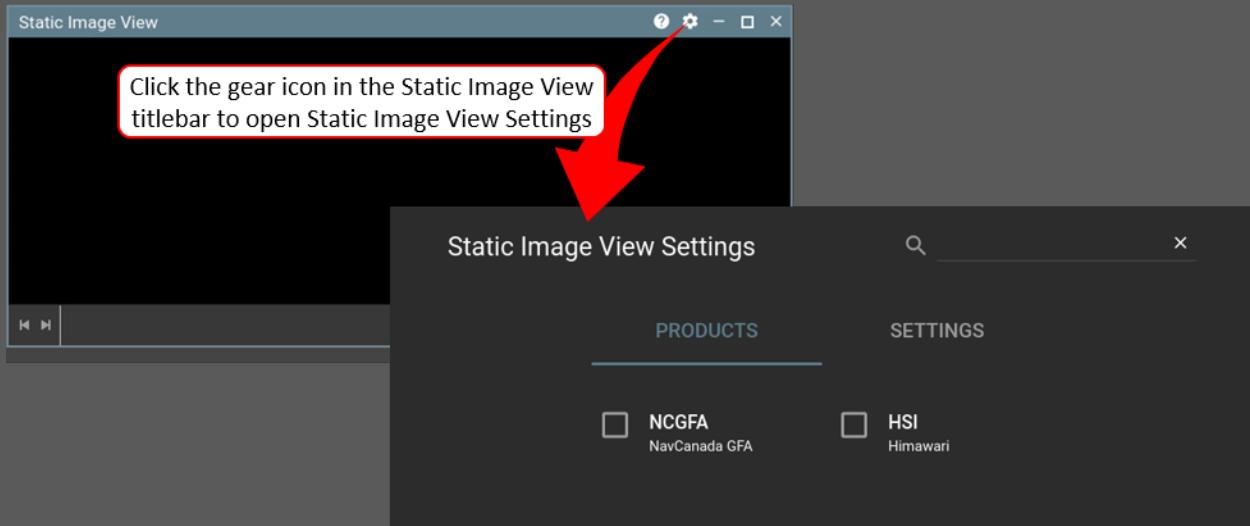


Figure 3-38. Open Static Image View Settings Menu

As an alternate method, you can open the Static Image View Settings menu from the desktop by clicking the Hamburger icon, then from the AWD Settings menu, click the Gear icon associated with the Static Image View you are working on (Figure 3-39. Open Static Image View Settings Menu from the Desktop).

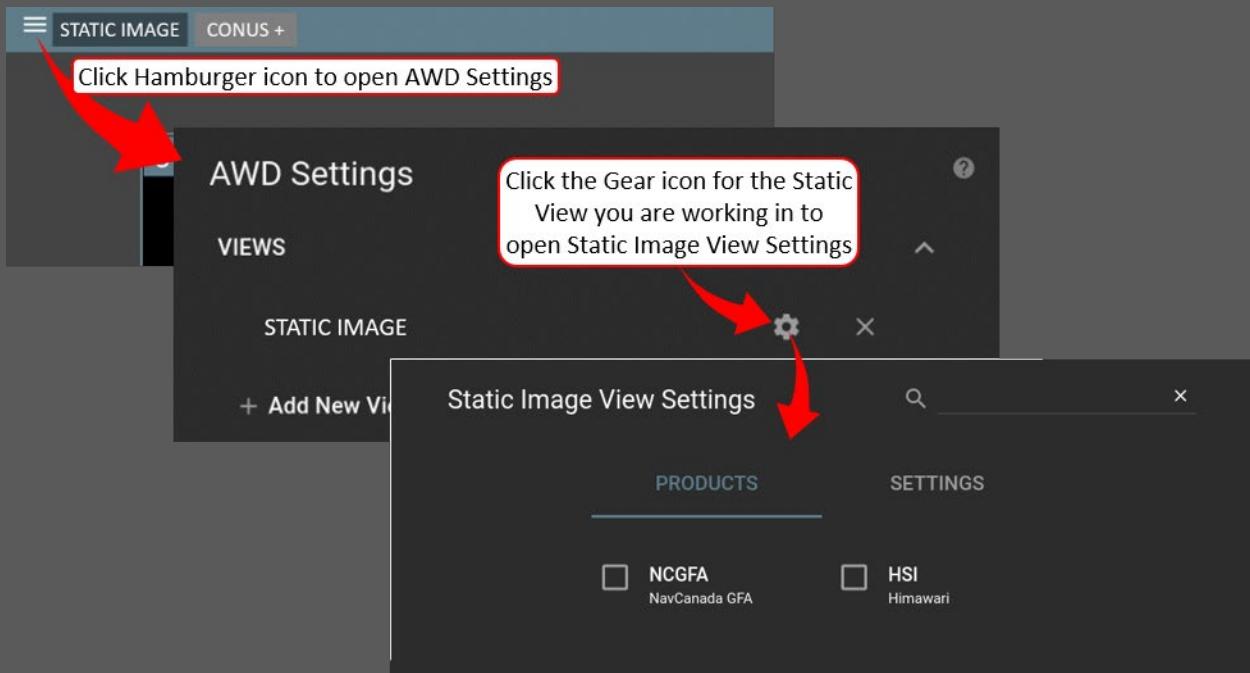


Figure 3-39. Open Static Image View Settings Menu from the Desktop

3.2.1 Static Image Products

In the Static Image View Settings menu, the PRODUCTS tab is selected by default and is underlined in blue text. Check NCGFA to open the NavCanada Graphic Forecast Analysis or HSI to open Himawari Satellite images (Figure 3-40. Select Static View Product).

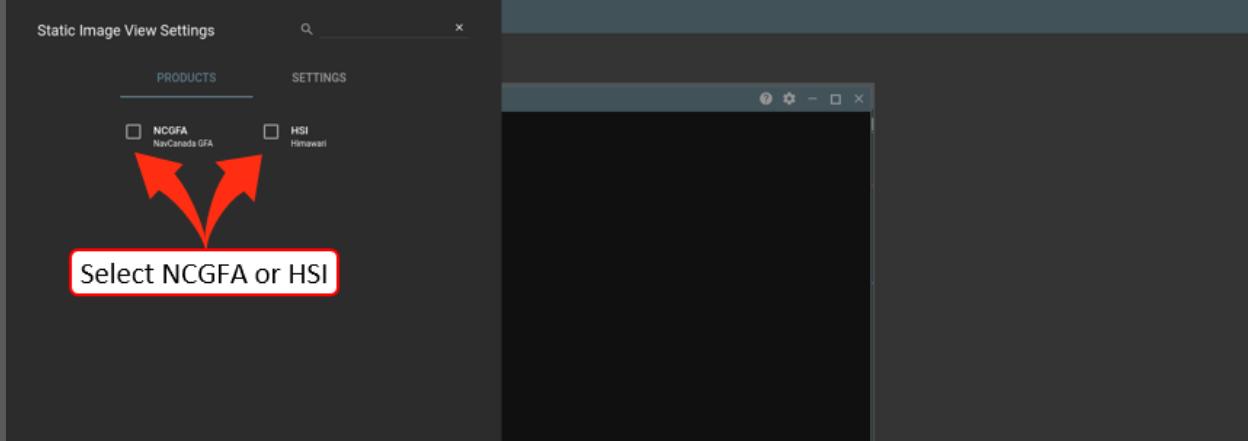


Figure 3-40. Select Static View Product

3.2.1.1 NavCanada Graphical Forecast Analysis (NCGFA)

NCGFAs are forecasts that depict weather impacts for specific regions in Canada. The following image shows a NavCanada GFA for the ARCTIC REGION generated on 4/18/2019 (Figure 3-41. NavCanada GFA).

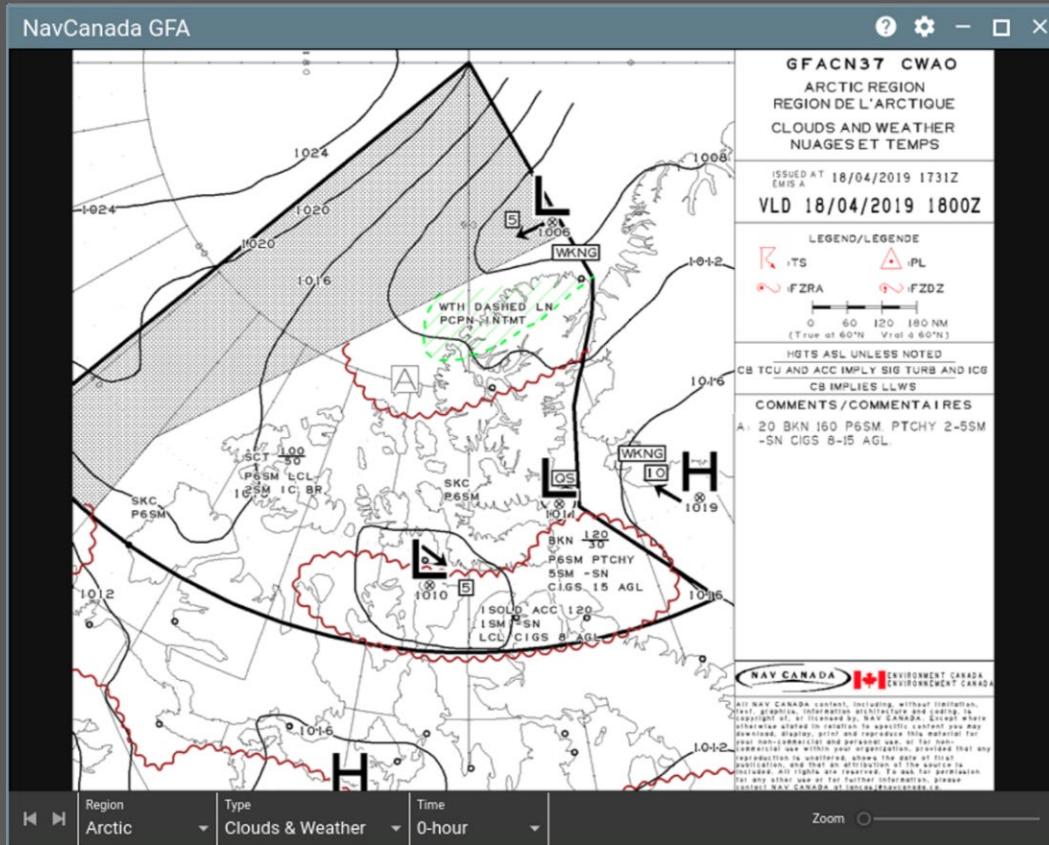


Figure 3-41. NavCanada GFA

3.2.1.1.1 Static Image Toolbar

Use the Static Image View Toolbar to access the following NavCanada GFA options:

- Scroll to view previous forecasts (when available)
- Select preferred forecast analysis from seven available regions.
- View a clouds & weather forecast or icing, turbulence, and freezing level forecast.
- View the current forecast, 6-hour forecast, or 12-hour forecast.
- Zoom out for more coverage or in for more detail.

The following image includes labels that describe Static View Toolbar functions/options for the NavCanada GFA (Figure 3-42. NavCanada GFA Toolbar).

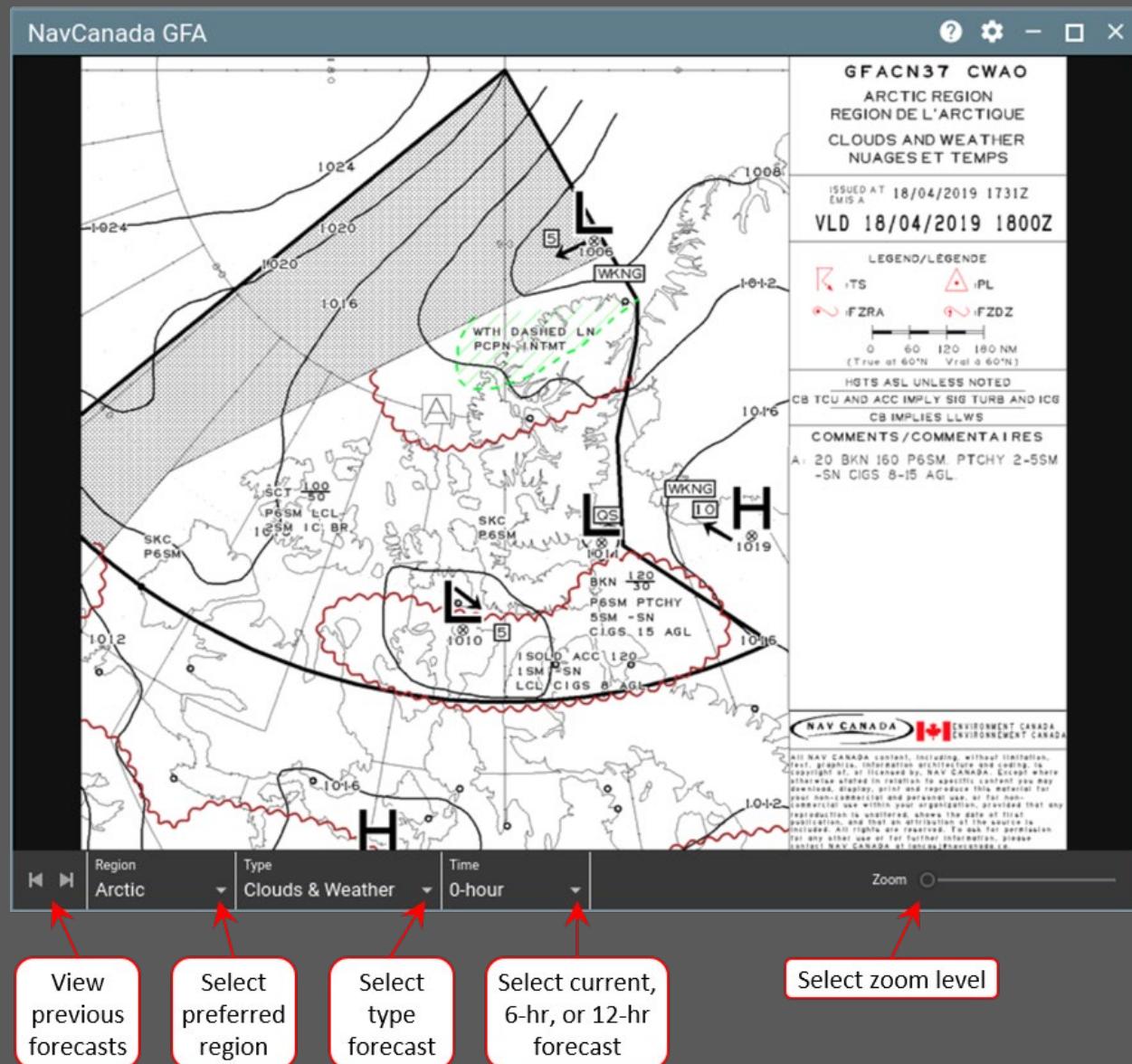


Figure 3-42. NavCanada GFA Toolbar

In the following example, the user clicked the caret for Artic Region to open the dropdown list with available GFA regions (Figure 3-43. Select NavCanada GFA Region).

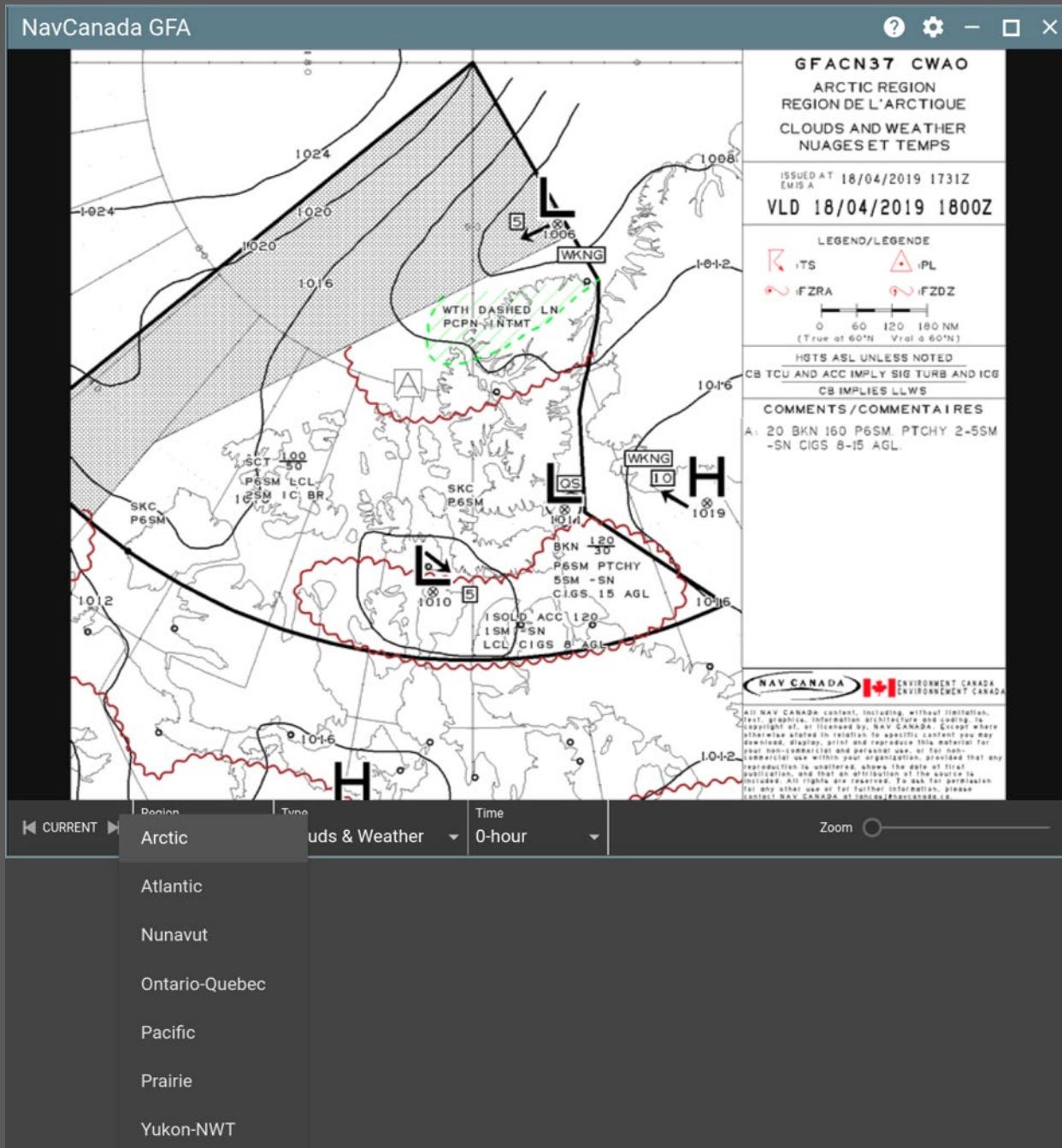


Figure 3-43. Select NavCanada GFA Region

3.2.1.2 Himawari Satellite Images (HSI)

The Himawari Satellite is positioned over the western Pacific Ocean in the vicinity of Guam. Himawari Satellite images (visible and infrared) include a magenta geopolitical boundary map.

Himawari Satellite images cover six sectors around Guam, Sectors B, C, D, E, F, & G. In addition to those six sectors that depending on the time of day can be viewed as visible or infrared (IR) images, a Color-enhanced IR image, IR image, visible/IR image, and water vapor image are also available.

The following image is a Visible/IR Himawari Satellite image that clearly shows the vertical line that separates visible and IR images as the earth rotates around its axis (Figure 3-44. Himawari Satellite Visible/IR Image).

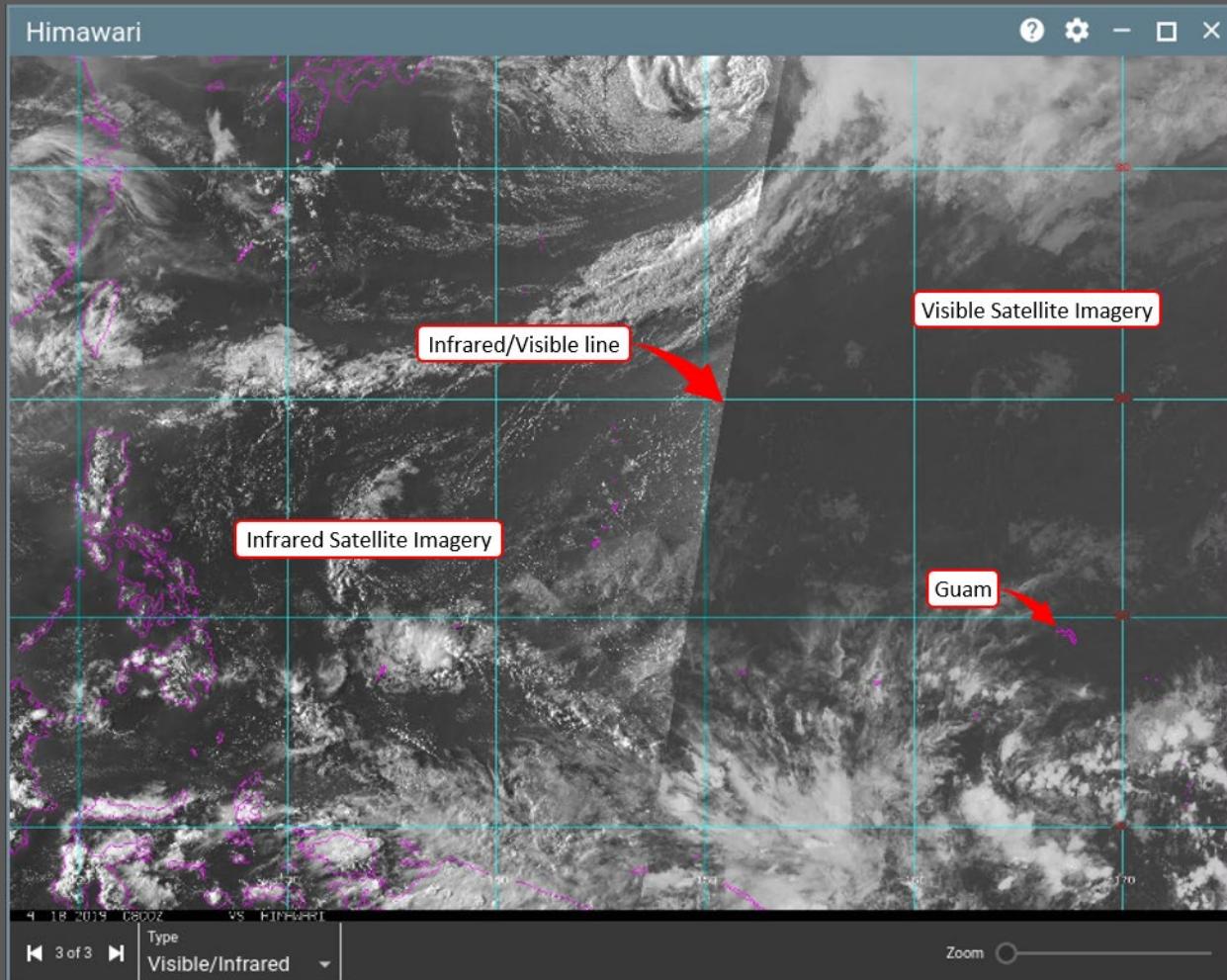


Figure 3-44. Himawari Satellite Visible/IR Image

3.3 TEXT View

Text View displays wind profiles for selected terminal airspace. You can select wind profiles for the terminal you choose from a pre-determined list of airports, then view wind profiles at specific fixes and altitudes within that airspace.

To open a Text View, click the Hamburger icon, then from the AWD Settings menu, click + Add New View. From the dropdown list, click Add Text View (Figure 3-45. Add a Text View).

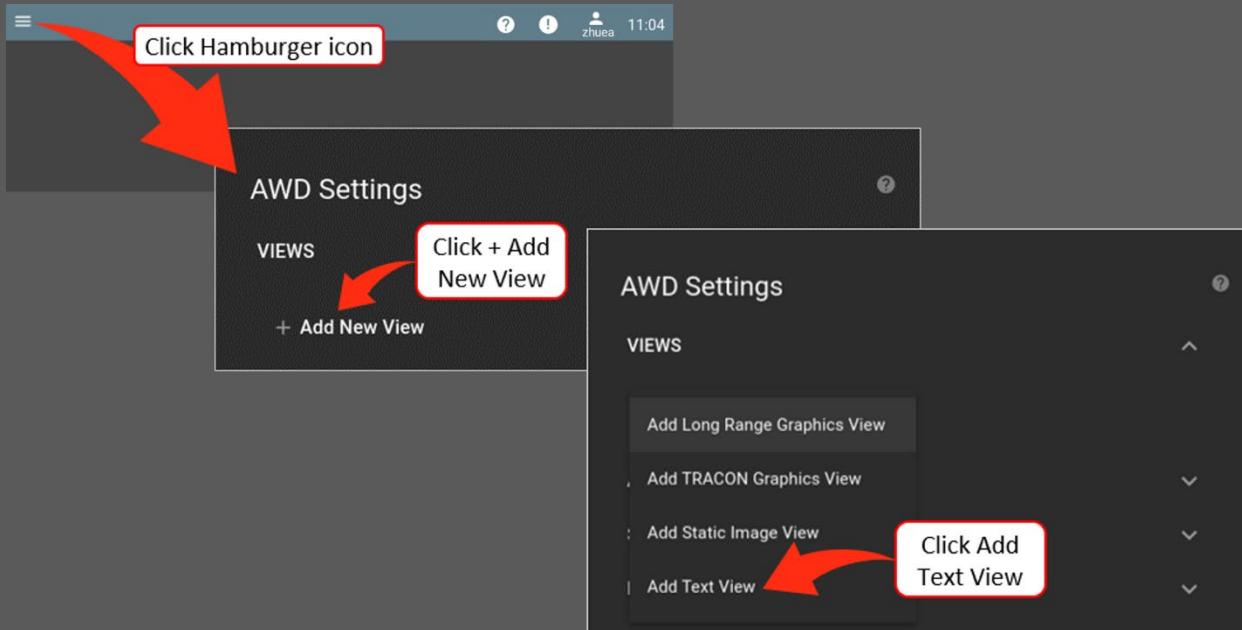


Figure 3-45. Add a Text View

After you open a new Text View, click the Gear icon on the Text View Titlebar to open the Text View Settings menu (Figure 3-46. Open Text View Settings Menu).

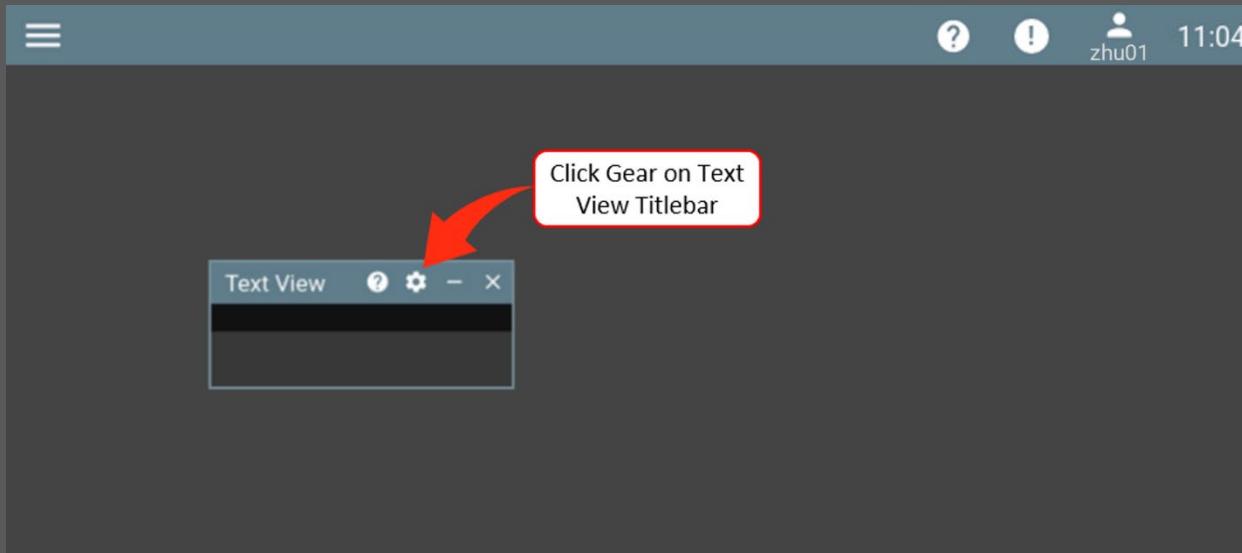


Figure 3-46. Open Text View Settings Menu

Another way to open the Text View Settings menu is to click the desktop Hamburger icon to open the AWD Settings menu. Then from the AWD Settings menu, click the Gear icon associated with the specific Text View you want to work on (Figure 3-47. Open Text View Settings Menu from Desktop).

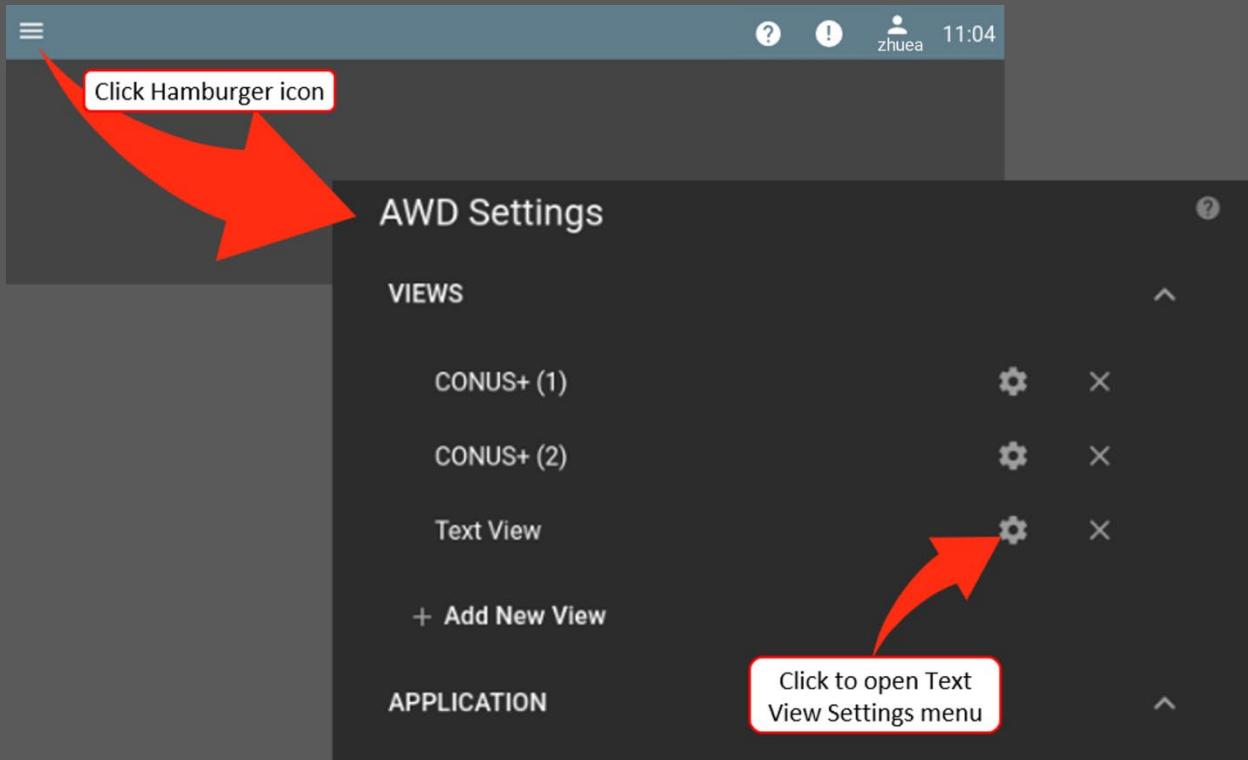


Figure 3-47. Open Text View Settings Menu from Desktop

3.3.1 Text View Settings Menu

In the Text View Settings menu, PRODUCTS and SETTINGS are available. The PRODUCTS tab is selected by default (Figure 3-48. Text View Settings Menu).

- PRODUCTS – Click WP under the PRODUCTS tab to open Wind Profiles.
- SETTINGS – Click SETTINGS to change the font size or toggle Wind Profiles on/off.

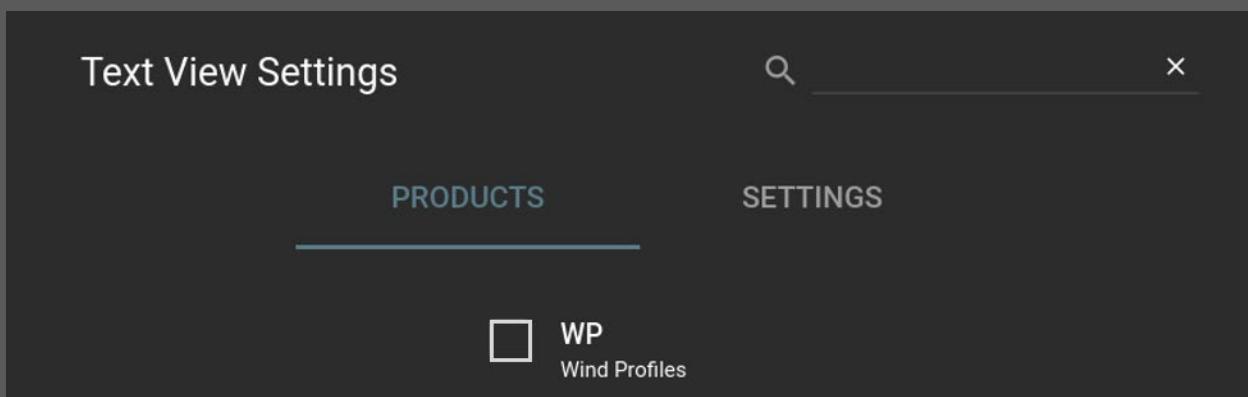


Figure 3-48. Text View Settings Menu

3.3.1.1 Wind Profiles

Wind Profiles provides access to pre-defined wind profiles at select terminals. To select Wind Profiles, click **WP**. Wind Profiles for ADW opens by default (Figure 3-49. Open Wind Profiles).

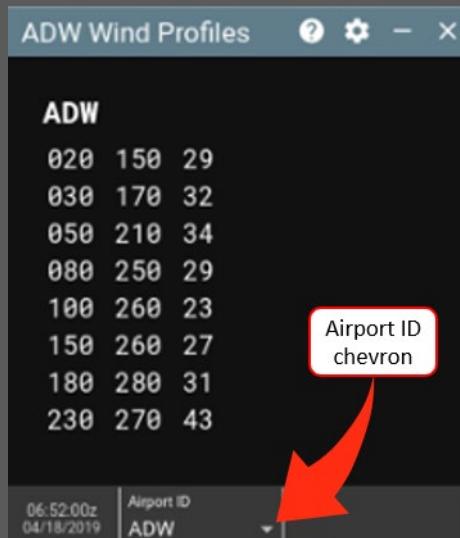


Figure 3-49. Open Wind Profiles

Click in the Airport ID chevron to open a dropdown list of available airports, then select the airport you want (Figure 3-50. Select Airport).

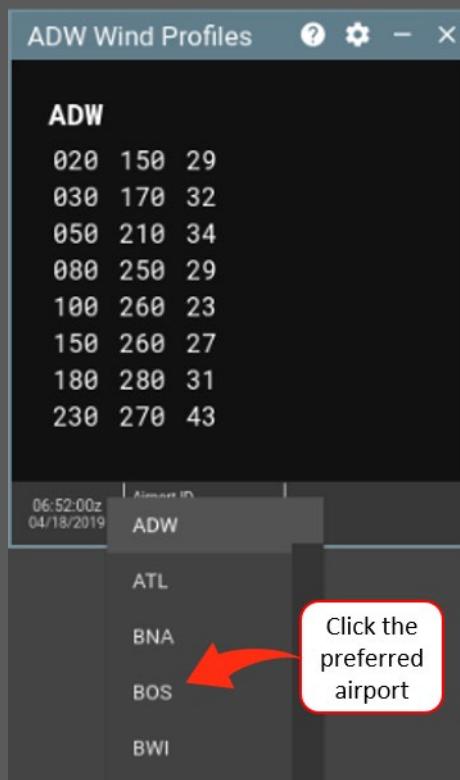


Figure 3-50. Select Airport

Wind information for specific airports/fixes in the terminal airspace you select are displayed. For each fix/airport, wind direction and speed are shown for pre-defined altitudes. The following example for Wind Profiles at IAH is explained with labels (Figure 3-51. Wind Profiles Defined).

The screenshot shows a window titled "IAH Wind Profiles". The main content area displays wind profiles for several locations:

GMANN	Selected terminal	TRANN	DOOBI	KNGWD	MKAYE
180 240 55		070 180 48	200 230 53	120 250 33	070 180 49
160 230 48		060 180 52	180 230 49	110 240 27	060 180 52
140 230 42		050 170 54	160 230 47	100 220 33	050 170 55
120 220 37		040 180 57	140 230 41	080 190 45	040 180 58
100 200 37		030 180 56	120 230 35	060 170 55	030 180 56

LINKK	HOWLN	Fix or airport	IMPORT	PRAYY	KABBY
180 230 43	120 240 29	070 170 45	160 210 50	120 240 22	070 170 45
160 230 43	110 240 26	Altitude 42	140 200 45	060 170 43	
140 220 44	100 210 33	050 160 43	120 200 26	100 220 22	050 160 42
120 210 42	080 180 46	040 160 42	100 190 42	080 190 41	040 160 41
100 200 40	060 170 41	030 180 46	080 190 40	060 170 46	030 180 45

KERNS	GRIEG	EELPO	JELLI
050 170 55	050 170 54	050 170 46	050 170 45
040 170 61	040 170 59	040 170 47	040 170 44
030 Wind Profiles valid time	030 170 56	030 180 52	030 180 50
020	020 170 48	020 170 44	020 180 39
010 170 32	010 170 33	010 180 24	010 190 20

At the bottom left, there is a timestamp "06:53:30z 04/18/2019" and an "Airport ID IAH" dropdown. On the right, a "Wind Profiles Toolbar" is shown.

Figure 3-51. Wind Profiles Defined

3.3.1.2 Text View Settings

Click the SETTINGS tab to change Wind Profiles font size or toggle the toolbar on or off (Figure 3-52. Text View Settings Menu Options).

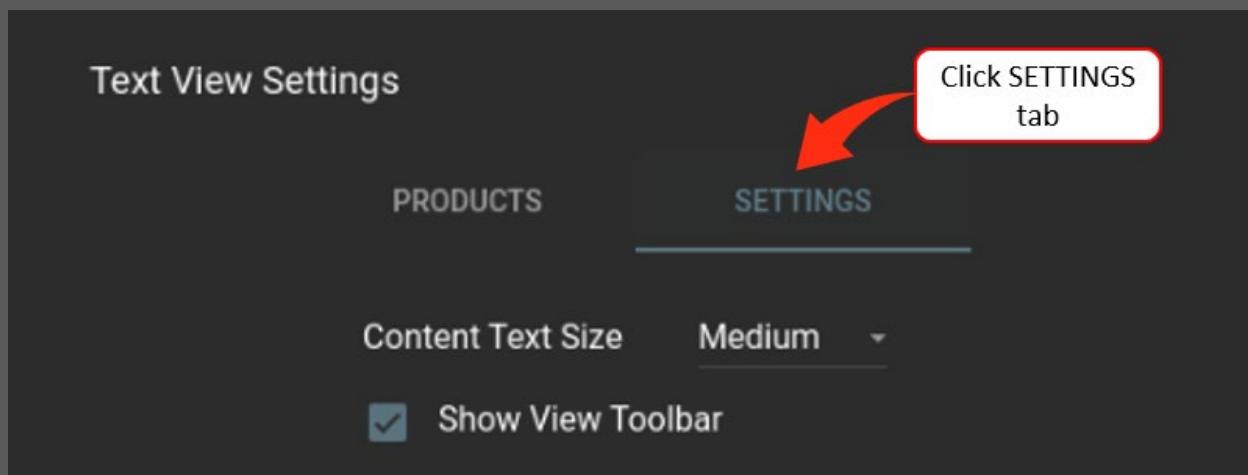


Figure 3-52. Text View Settings Menu Options

The Wind Profiles View Toolbar is on by default. To hide the View Toolbar, uncheck Show View Toolbar (Figure 3-53. Hide Wind Profiles View Toolbar).

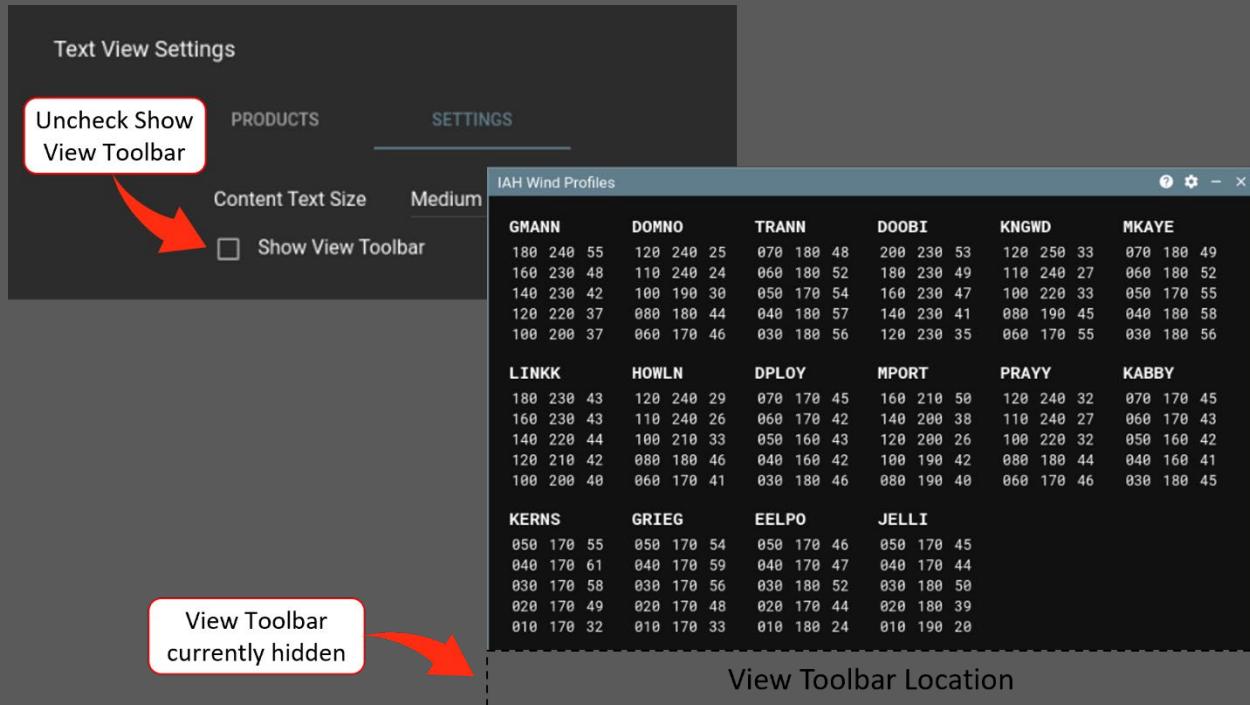


Figure 3-53. Hide Wind Profiles View Toolbar

Since Wind Profiles valid times are hidden whenever the Wind Profiles View Toolbar is hidden, hiding the Wind Profiles View Toolbar is **NOT RECOMMENDED**.

4 OVERLAYS

By default, when a new Long Range view is added to the desktop, only the View Toolbar and Valid Time box are included in the view. After adding a new graphics view to the desktop, it is highly recommended that you add a map to the view as soon as possible for geographical reference.

Overlays can be added to graphics views by using the Overlay hotkey or the Overlays menu. If you know the name and spelling of the overlay you want to add, the Overlay hotkey is generally faster and easier method.

4.1 Overlay Hotkey

To use the Overlay hotkey, press **V** (not case sensitive) on the keyboard. After you press **V**, the OVERLAY QUICK SEARCH dialog box opens in the view (Figure 4-1. Overlay Quick Search Dialog Box).



Figure 4-1. Overlay Quick Search Dialog Box

In the quick search dialog box, type the complete name of the overlay you want to add (e.g., KBWI, V268, N90, ZDC, etc.), then press **Enter** on the keyboard (Figure 4-2. Enter Overlay in OVERLAY QUICK SEARCH).

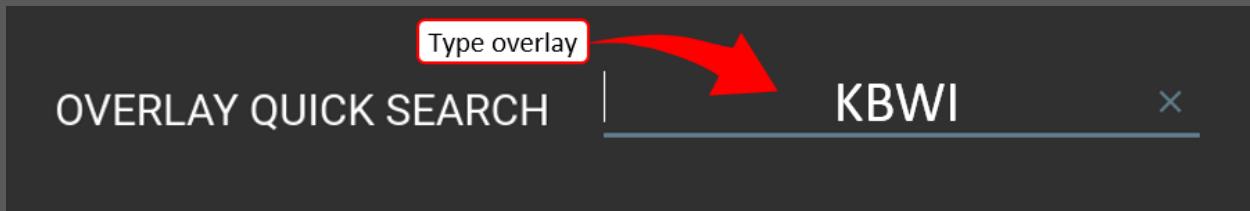


Figure 4-2. Enter Overlay in OVERLAY QUICK SEARCH

In the following example, the user typed **V** to open the Overlay Quick Search Dialog Box, typed **KBWI**, then pressed **Enter**. Since the only overlay named KBWI airport, a small dot representing KBWI's location and associated label are added to the view (Figure 4-3. Overlay Added Using Overlay Hotkey).



Figure 4-3. Overlay Added Using Overlay Hotkey

When entering an airport in the QUICK SEARCH DIALOG box, always use the ICAO 4-letter airport identifier. Using three letters may yield search results for other overlays that also use the letters you entered (e.g., BWI STARS, BWI SIDS, etc.).

4.2 Overlays Menu

As an alternate to adding overlays using the Overlays hotkey, you can find and add the overlays from the Overlays menu. To open the Overlays menu directly from the view, click the Layers icon on the View Toolbar, then click Manage Overlays from the drop down menu. In the Graphics View Settings menu, click OVERLAYS (Figure 4-4. Open Overlays Menu from a View).

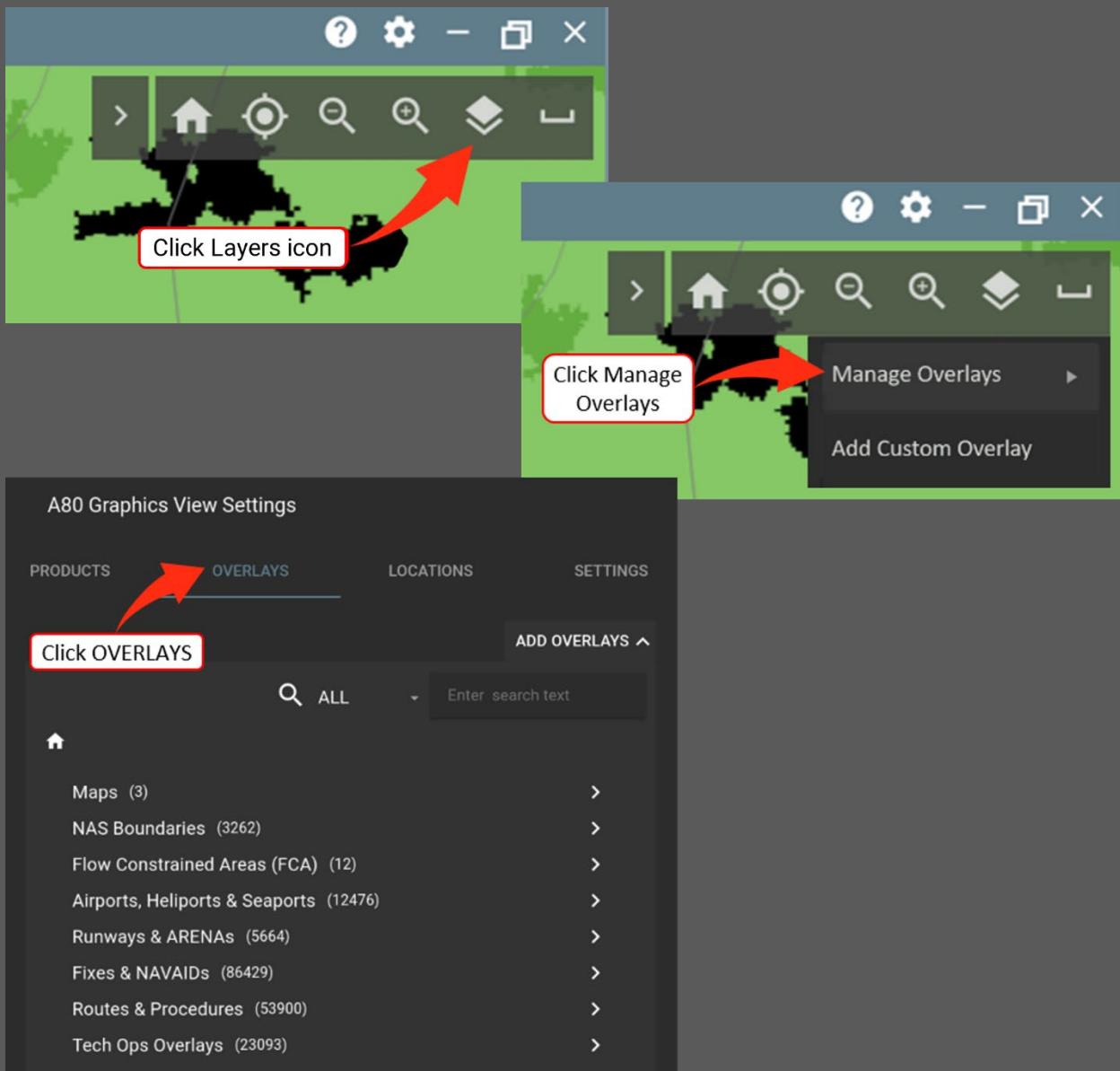


Figure 4-4. Open Overlays Menu from a View

To open the Overlays menu from the desktop, click the Hamburger icon, then in the AWD Settings menu, click the Gear icon for the view where you want to add the overlay (Figure 4-5. Open Overlays Menu from the Desktop).

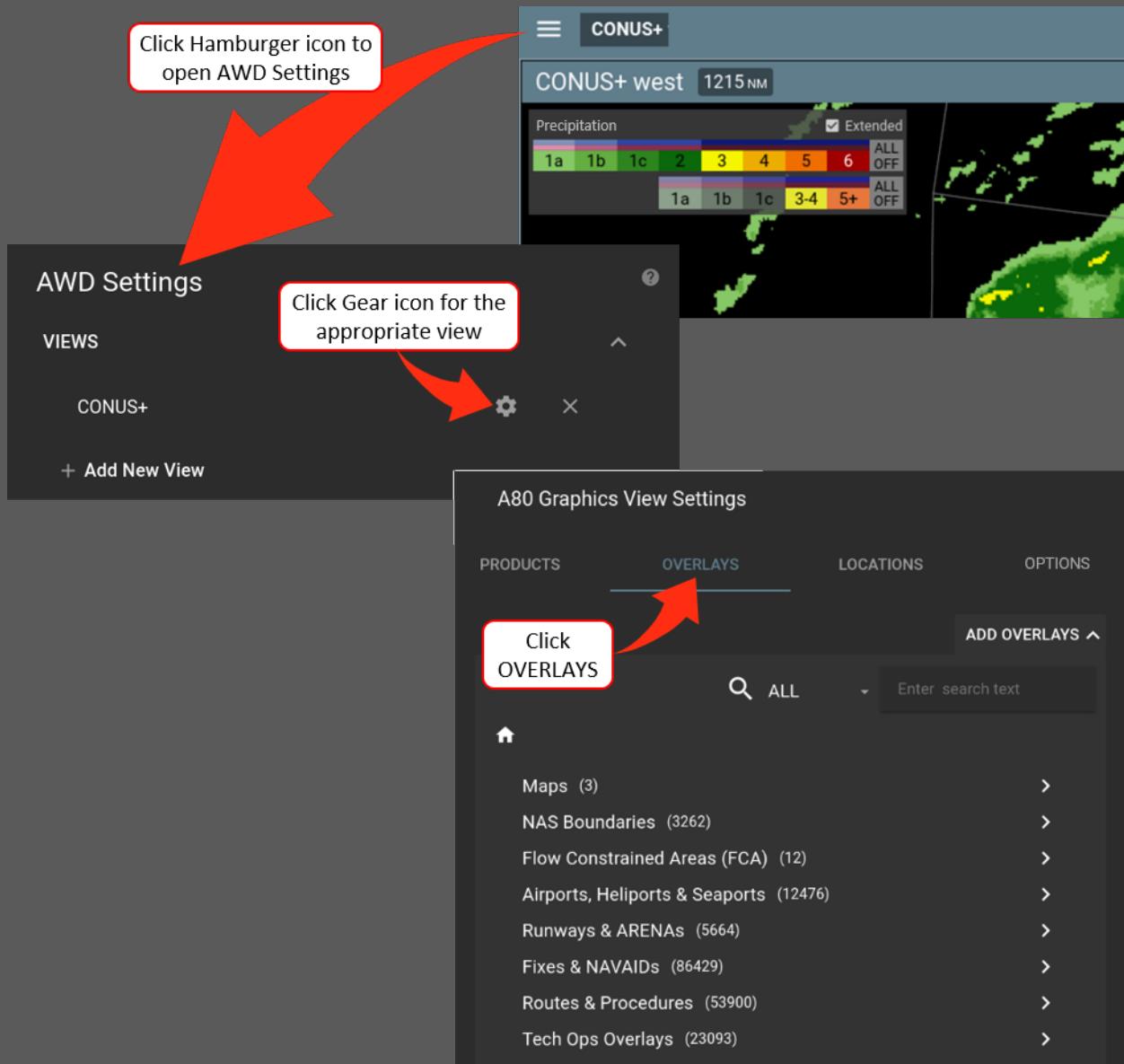


Figure 4-5. Open Overlays Menu from the Desktop

More than one view can be open simultaneously on the desktop, and there is a Gear icon in the AWD Settings menu for each open view. Make sure you click the Gear icon associated with the view where you want to add the overlay.

The OVERLAYS menu has a multi-level structure with eight main categories:

- Maps
- NAS Boundaries
- Flow Constrained Areas (FCA)
- Airports, Heliports & Seaports
- Runways and ARENAS (Areas Noted for Attention)
- Fixes and NAVAIDs
- Routes and Procedures
- Tech Ops Overlays

You can drill down through the multi-level list to find overlays or filter your search to make the search faster. The number in parenthesis to the right of each category indicates the number of overlays in that category. In the following example, there are 3,262 NAS Boundaries overlays (Figure 4-6. Default OVERLAYS Menu).

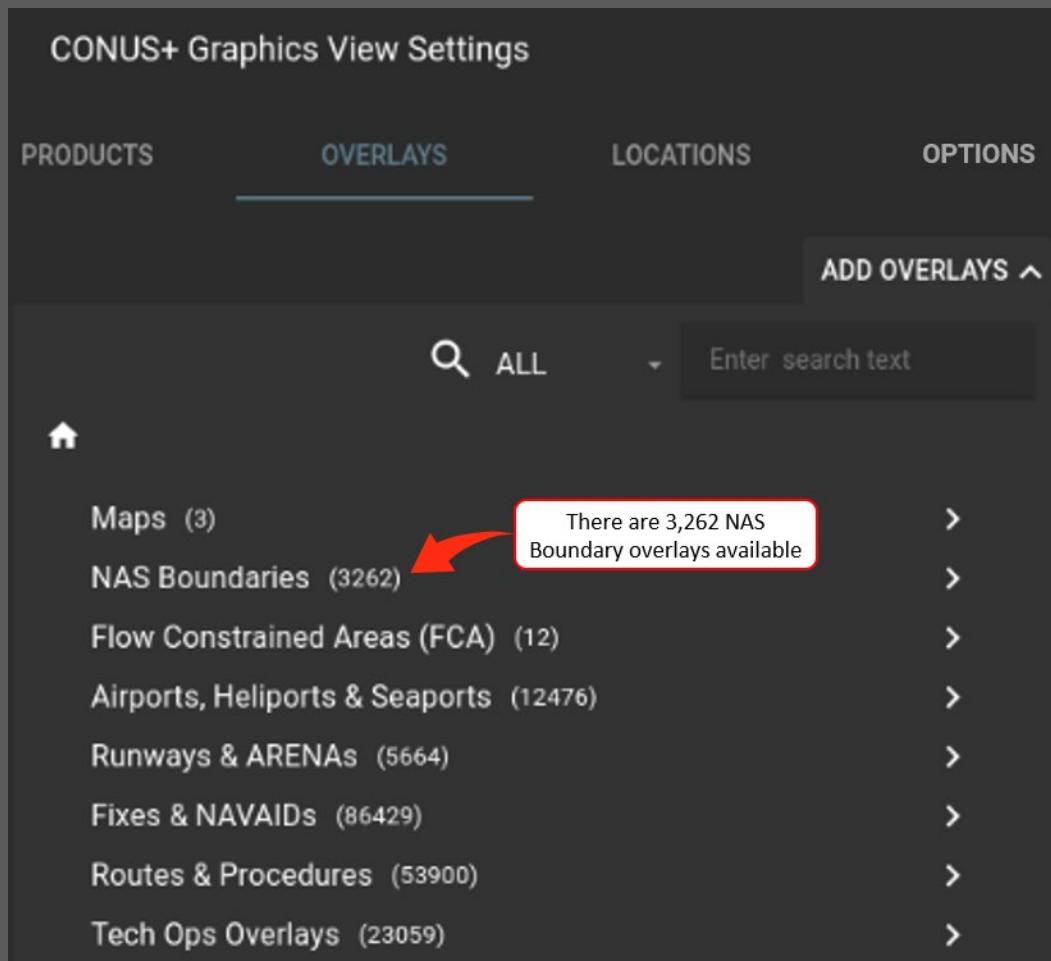


Figure 4-6. Default OVERLAYS Menu

When you click on a main category, every overlay that falls within that category is included in the search. To refine your search, click ALL next to the Magnifying Glass, then from the dropdown menu, click ARTCC, TRACON, or AIRPORT to refine your search (Figure 4-7. Filter OVERLAY Search).

The screenshot shows the 'CONUS+ Graphics View Settings' interface. At the top, there are tabs for 'PRODUCTS', 'OVERLAYS' (which is selected), 'LOCATIONS', and 'SETTINGS'. Below the tabs is a search bar with a magnifying glass icon and the word 'ALL' highlighted. A red callout box with an arrow points to the 'ALL' button, containing the text: 'Click ALL then select ARTCC, TRACON, or AIRPORT'. To the right of the search bar is a button labeled 'ADD OVERLAYS ^'. A dropdown menu is open, listing categories: 'ARTCC', 'TRACON', 'AIRPORT', 'Maps (3)', 'NAS Boundaries (3262)', 'Flow Constrained Areas (FC)', 'Airports, Heliports & Seaports (124/6)', 'Runways & ARENAS (5664)', 'Fixes & NAVAIDs (86429)', 'Routes & Procedures (53900)', and 'Tech Ops Overlays (23059)'. Each item in the list has a right-pointing arrow.

Figure 4-7. Filter OVERLAY Search

Filtering removes all overlays outside the criteria you select and helps you find the overlay you are looking for faster. In the following example, the search is filtered by ARTCC, then by ZHU, so that only overlays in ZHU airspace are included in search results (Figure 4-8. Filtered OVERLAY Search Results).

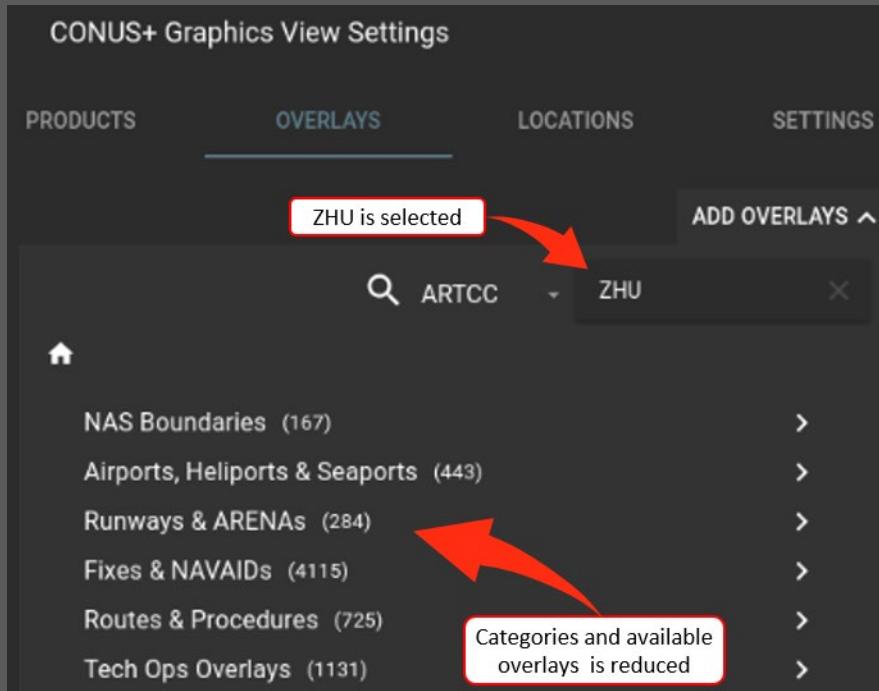
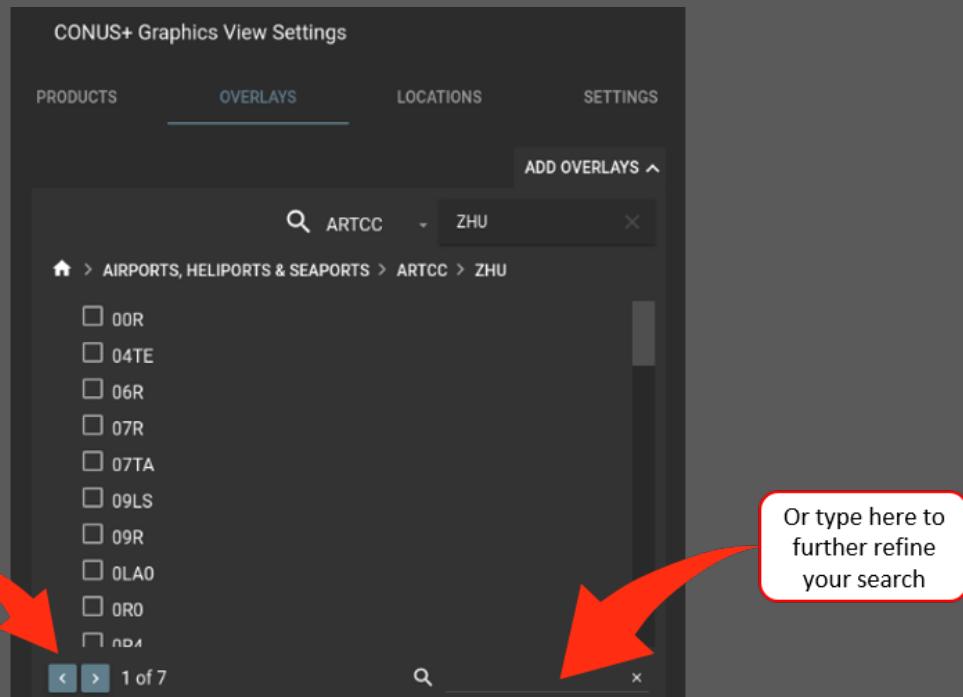


Figure 4-8. Filtered OVERLAY Search Results

If you drill down into a category with a high number of results, the results may not fit on one page. You can scroll through the pages by clicking the blue caret buttons at the bottom of the search results window, or type what you are looking for in the secondary search box (Figure 4-9. Overlays Secondary Search).



4.2.1 Maps

Map overlays can be accessed only through the Overlays menu, they cannot be accessed using the Overlay hotkey. The following three map overlays are available:

- United States
- North America
- Northern Hemisphere

4.2.2 NAS Boundaries

The NAS BOUNDARIES submenu includes boundary maps for ARTCCs, ARTCC sectors, TRACONs, and Special Use Airspace (SUA).

- ARTCC Boundaries
- ARTCC Internal Sector Boundaries
 - ✓ High Sectors
 - ✓ Low Sectors
 - ✓ Super High Sectors
 - ✓ Oceanic Sectors
 - ✓ TRACON Boundaries
 - ✓ Special Use Airspaces (SUAs)

4.2.3 Flow Constrained Areas (FCA)

To add one or more FCAs to the view, click FLOW CONSTRAINED AREAS (FCA) to expand the list, then click the preferred FCA(s).

4.2.4 Airports, Heliports, and Seaports

To add one or more airports, heliports, and/or seaports to the view, click Airports, Heliports & Seaports, then select the preferred overlays. Since Airports, Heliports & Seaports are listed in submenus, drill down to find the specific overlay you want.

- Core 30 Airports
- Secondary Airports
- Region
- ARTCC
- TRACON
- Military Airfields
- Heliports
- Seaplane Bases

4.2.5 Runways and ARENAS

To add one or more runways or ARENAS to the view, click Runways & ARENAS, then select the overlay(s) you want. Since Runways & ARENAS are split into submenus, drill down to find the overlay(s) you want.

- ARENAS
- Runways

4.2.6 Fixes and NAVAIDs

To add one or more fixes or NAVAID to the view, click Fixes & NAVAIDs, then select the preferred overlay(s). Since Fixes & NAVAIDs are split into submenus, drill down to find the overlay you want to add.

- Fixes
- NAVAIDs

4.2.7 Routes and Procedures

To add one or more Routes or Procedures to the view, click Routes & Procedures, then select the preferred overlay(s). Since Routes & Procedures are split into submenus, drill down to find the overlay you want.

- SIDs
- STARs
- Victor Airways
- Jet Routes
- T-Routes
- Q-Routes
- WATRS-Plus Routes
- Coded Departure Routes
- Playbook Routes
 - ✓ Airports
 - ✓ Airway Closures
 - ✓ East to West Transcon Routes
 - ✓ Regional Routes
 - ✓ West to East Transcon Routes
- Other Routes

4.2.8 Tech Ops Overlays

The following overlays are available in the Tech Ops Overlays category:

- Bodies of Water (Lakes & Rivers)
 - ✓ Lakes
 - ✓ Rivers
- County Boundaries
- Roads
- System and Sensor Locations
 - ✓ Surface Weather (Wx) Obs Stations
 - ❖ Maritime Stations
 - ❖ Mesonet Stations
 - ❖ Meteorological Aviation Report (METAR) Stations
 - ❖ Terminal Aerodrome Forecast (TAF) Locations
- TRACON Reference Points
- Upper Air Sounding Stations
- Weather Radars
 - ✓ NEXRAD
 - ✓ Terminal Doppler Weather Radar (TDWR)
 - ✓ Airport Surveillance Radar (ASR)
 - ✓ Canadian Radars
 - ✓ Radar Sites

4.3 Custom Overlays

You can add range rings, a straight line between two points, or a labeled point to the view.

4.3.1 Range Rings

To add range rings, click the Layers icon on the View Toolbar of the active view, then click Add Custom Overlay. From the dropdown menu, click Range Rings (Figure 4-10. Add Range Rings).

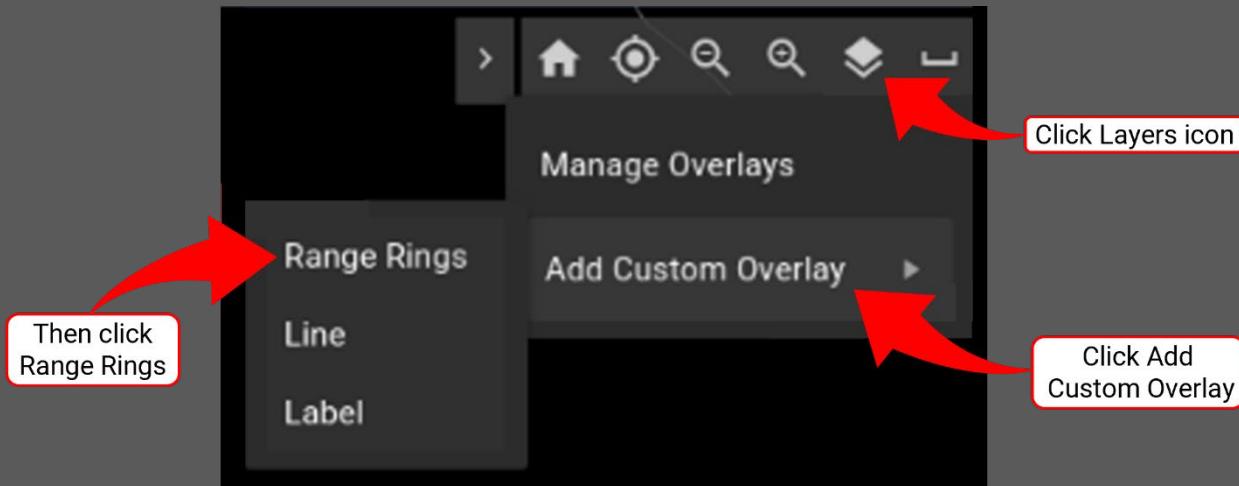


Figure 4-10. Add Range Rings

In the Create Range Rings dialog box, you can center range rings on the view's home location, specific latitude/longitude, radar site, or airport. After you select the center point for the range rings, diameter, spacing, and label (optional), click **SAVE** (Figure 4-11. Custom Range Ring Options).

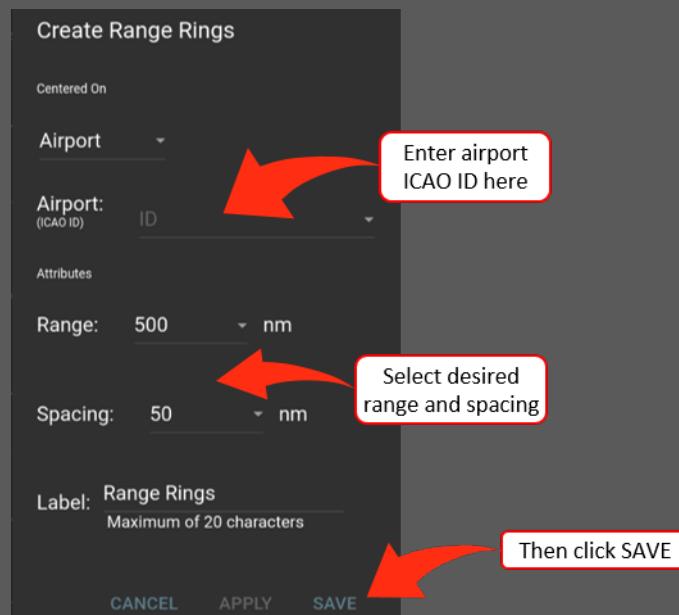


Figure 4-11. Custom Range Ring Options

Note: You can add only one set of range rings to a view

4.3.2 Create Line

You can add more than one custom line to a view but can only add one line at a time. To create a custom line, click the Layers icon on the View Toolbar of the active view, then click Add Custom Overlay. From the Add Custom Overlay dropdown menu, click Line (Figure 4-12. Add Custom Line).

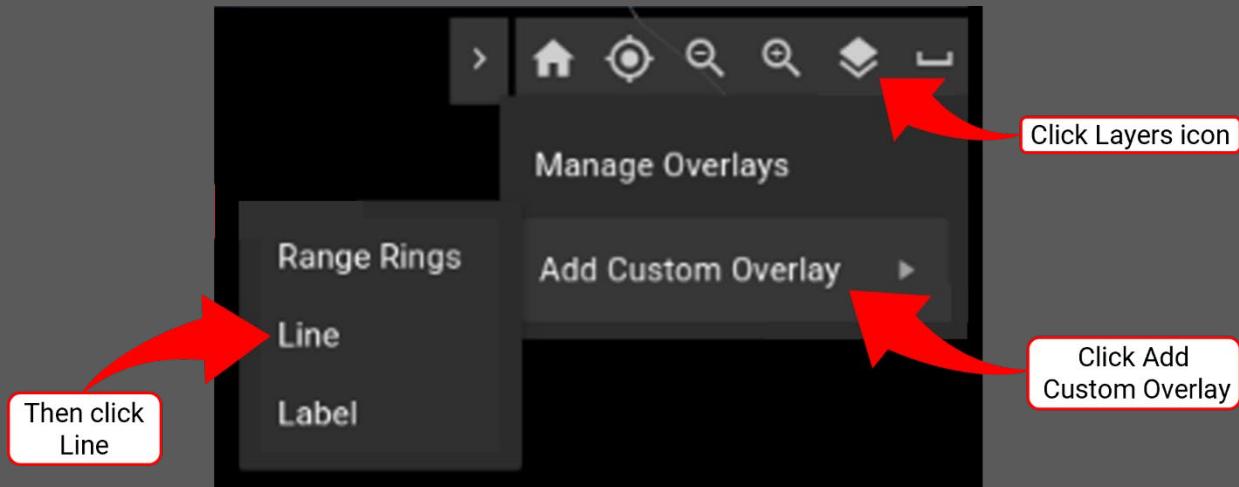


Figure 4-12. Add Custom Line

In the Create Line dialog box, label the new line you are going to create. After naming the new line (e.g., Eric's Line), click DRAW ON MAP then manually click the start and end points for the line.

As an alternate method, you can enter the Latitude/Longitude for the start and end points of the new line, but the DRAW ON MAP method is faster and easier. After selecting the line's start and end points (regardless of the method you used), click SAVE (Figure 4-13. Custom Line Options).

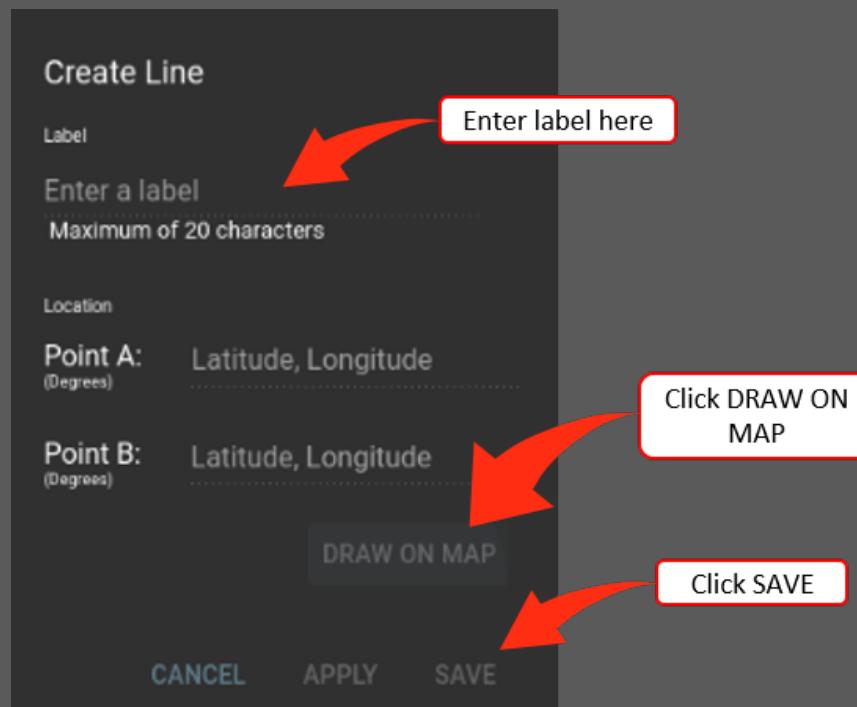


Figure 4-13. Custom Line Options

4.3.3 Create Labeled Point

As currently implemented, the term **Label** in the “Add Custom Overlay” dropdown list is misleading. You cannot create a “label” without first creating a point for that label, therefore with this option, you are actually creating a labeled point, not just a label.

You can add more than one labeled point to a view, but only one point at a time. To create a labeled point, click the Layers icon on the View Toolbar , then from the dropdown list, click Add Custom Overlay. From the Add Custom Overlay dropdown list, click Label (Figure 4-14. Add Labeled Point).

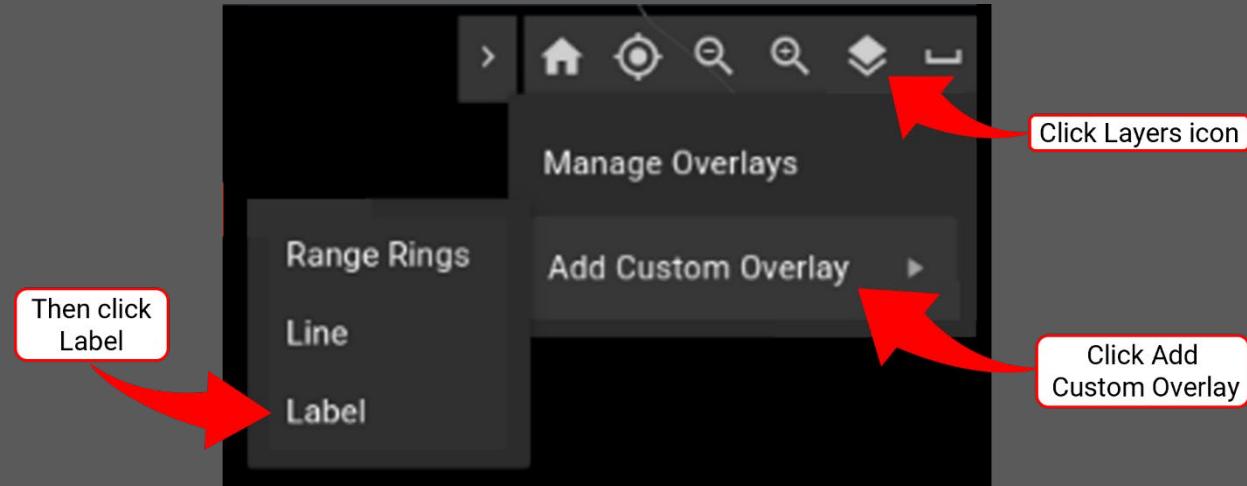


Figure 4-14. Add Labeled Point

In the Create Label menu, enter a label for your point (e.g., Test Point, Yankee, etc.), then click FIND ON MAP. After you click FIND ON MAP, click the location in the view where you want the new point. After you click to location of your new point, the latitude/longitude of your new point automatically entered in the menu. Click SAVE to add the point and close the menu.

As an alternative method, you can enter the point’s latitude/longitude in degrees (e.g., 45.3729) then click SAVE to add the new labeled point and close the menu (Figure 4-15. Labeled Point Options).

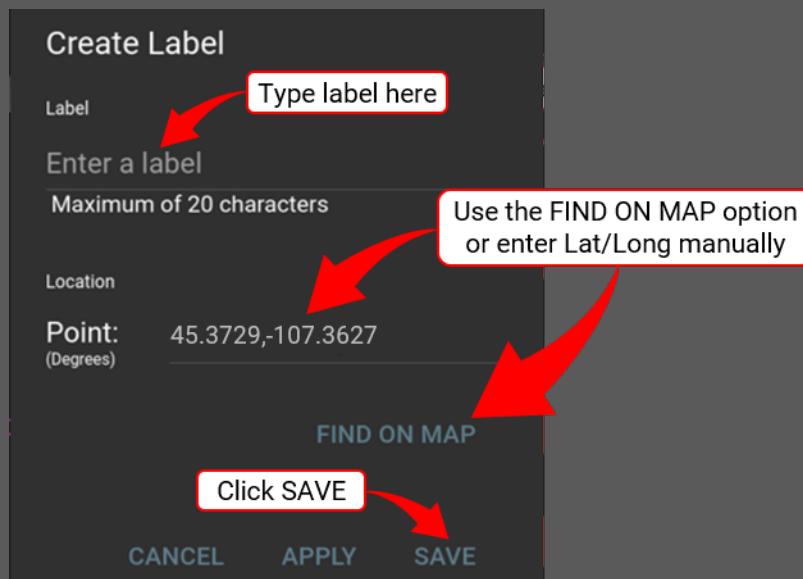


Figure 4-15. Labeled Point Options

4.4 Manage Overlays

The following overlay attributes are available, but not all attributes are available for every overlay:

- Color (change overlay symbol and label color)
- Line Type (available only for certain overlays)
- Line Width (available only for certain overlays)
- Label Font (select small, medium or large)
- Altitude (available only for certain overlays)
- Show Labels (the option to show or hide the label name)
- Show Symbols (even though the overlay is added to the view, you can hide it)
- Show Lines (even though the overlay is added to the view, you can hide it)
- Reset Defaults (reset an overlay to its default settings)

Note: The Show Symbols and Show Lines options are NOT recommended. When you use these options, the overlay is hidden and the only way one would know the overlay was added but is hidden is to search the Manage Overlays menu.

You can change overlay attributes by right-clicking anywhere on the overlay you want to change (overlay line, border, text, symbol, etc.), or via the Manage Overlays function, but the right-click provides immediate access to all available attributes and is the recommended method.

In the following example, the user right-clicked an overlay with lines (e.g., an airway, state boundary, jet route, ARTCC boundary, etc.), so the overlay color, line type, line width, label font size, option to show/hide labels, and option to reset the overlay to default settings are all available. Show Lines is on by default; unchecking Show Lines is NOT recommended (Figure 4-16. Overlay Attributes).

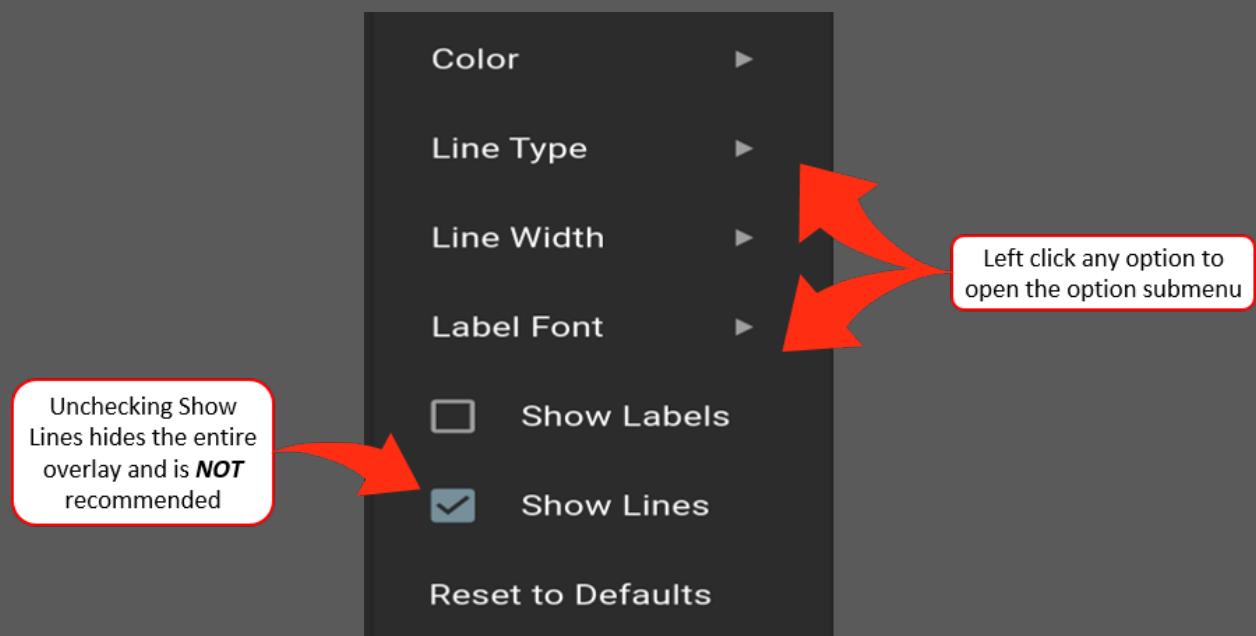


Figure 4-16. Overlay Attributes

4.4.1 OVERLAYS Menu

From the OVERLAYS menu you can add overlays to the view, remove overlays from the view, make changes to an entire category of overlays, or change attributes of a single overlay.

4.4.1.1 Add Overlays from Manage Overlays

When you open the OVERLAYS menu after at least one overlay has been added to the view, the menu is partially collapsed. To add overlays, click ADD OVERLAYS (Figure 4-17. OVERLAYS Menu Partially Collapsed).

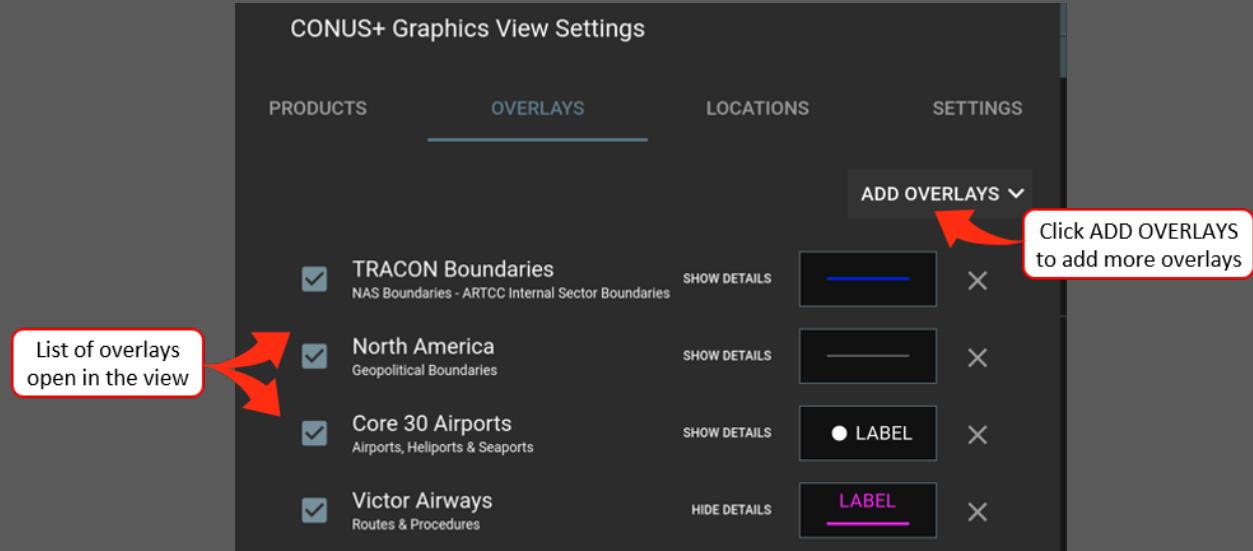
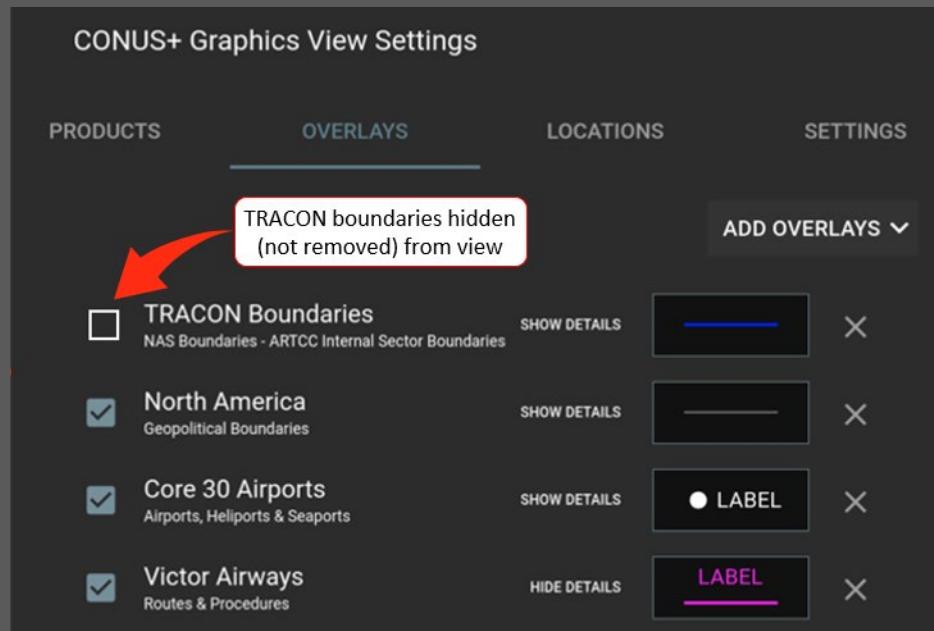


Figure 4-17. OVERLAYS Menu Partially Collapsed

4.4.1.1.1 Hide Overlay by Category

To hide (not remove) an entire group of overlays, uncheck the group you want to hide. In the following example, all TRACON boundaries are hidden from the view (Figure 4-18. Overlay Group Hidden).



4.4.1.1.2 Show Overlay Details

To see each individual overlay in a category of overlays in the view, and to either remove specific overlays or change attributes for a specific overlay, click **SHOW DETAILS** (Figure 4-19. Overlays Menu Show Details).

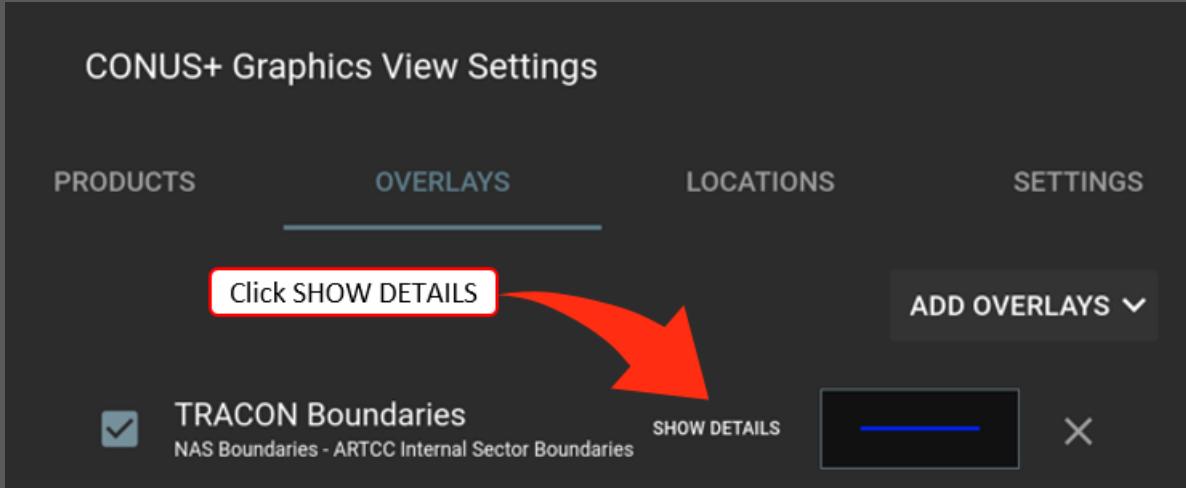


Figure 4-19. Overlays Menu Show Details

When details of the category you selected are displayed, **SHOW DETAILS** changes to **HIDE DETAILS** and the list of open overlays in the view in that category are listed (Figure 4-20. Overlays Menu Details Displayed).

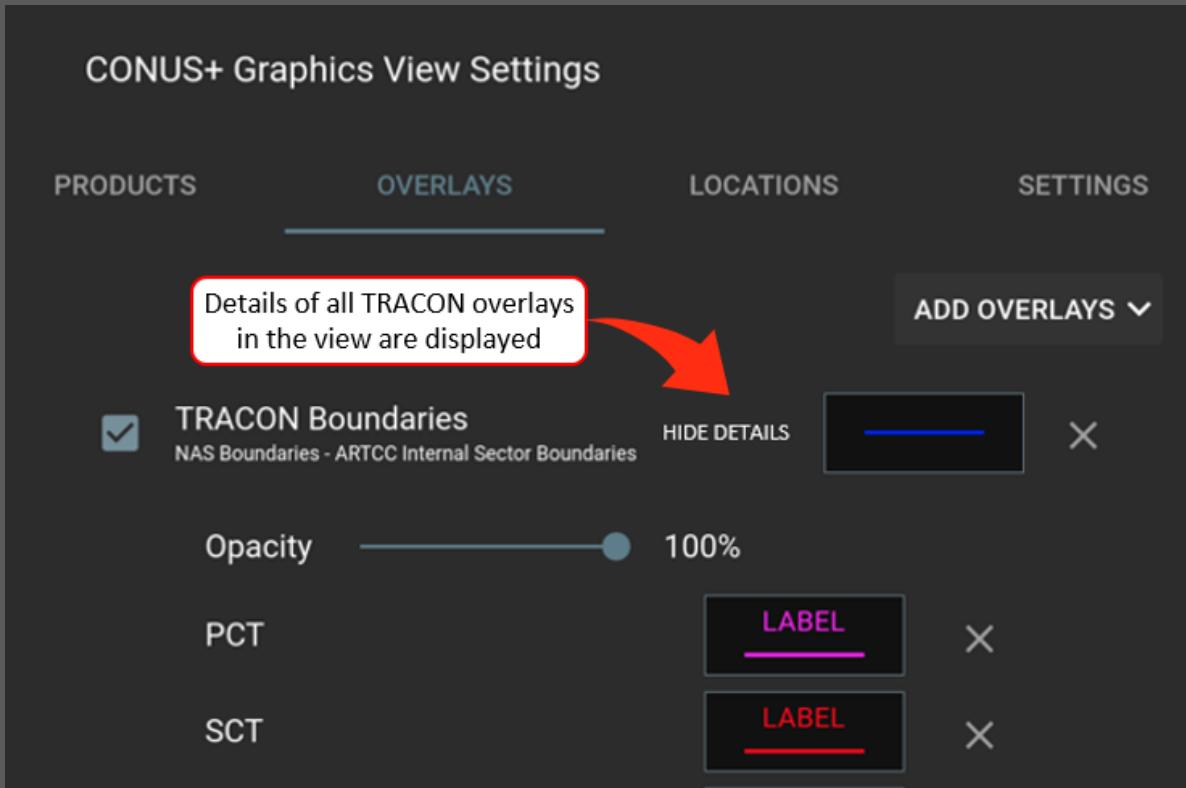


Figure 4-20. Overlays Menu Details Displayed

You can now change overlay attributes individually or change attributes for the entire category at one time.

4.4.1.1.3 Change Single Overlay Attributes from Menu

To change individual overlay attributes, click the rectangular box for the overlay you want to change (Figure 4-21. Change Single Overlay Attributes from Menu).

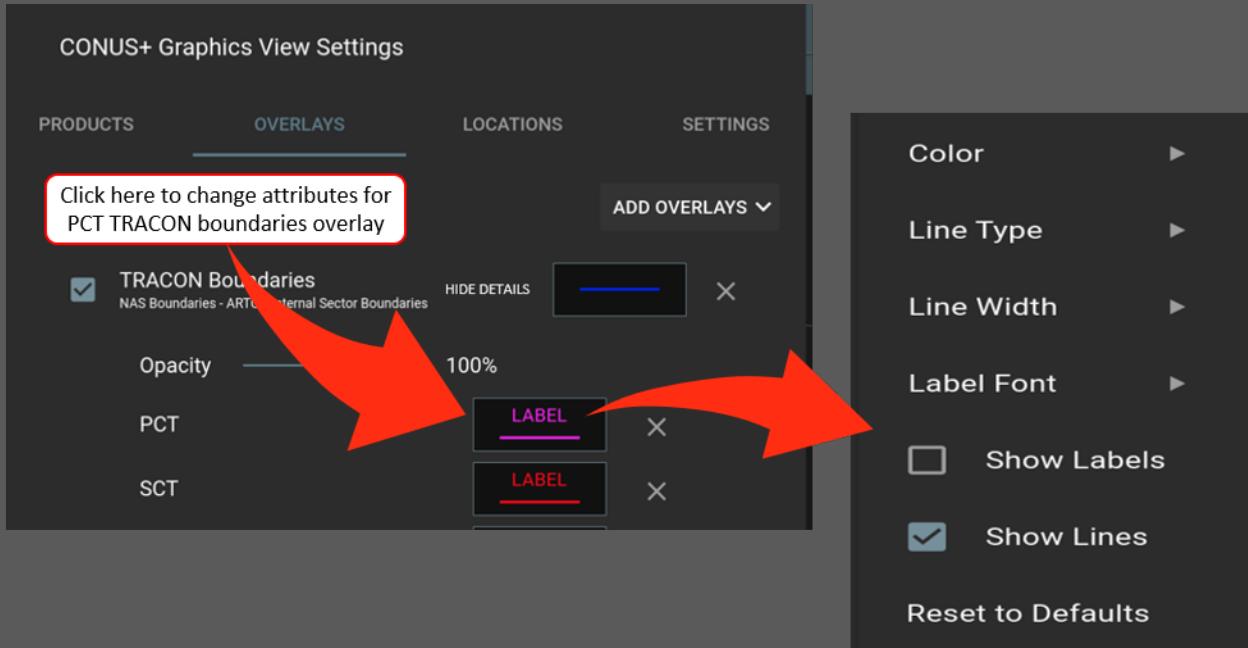
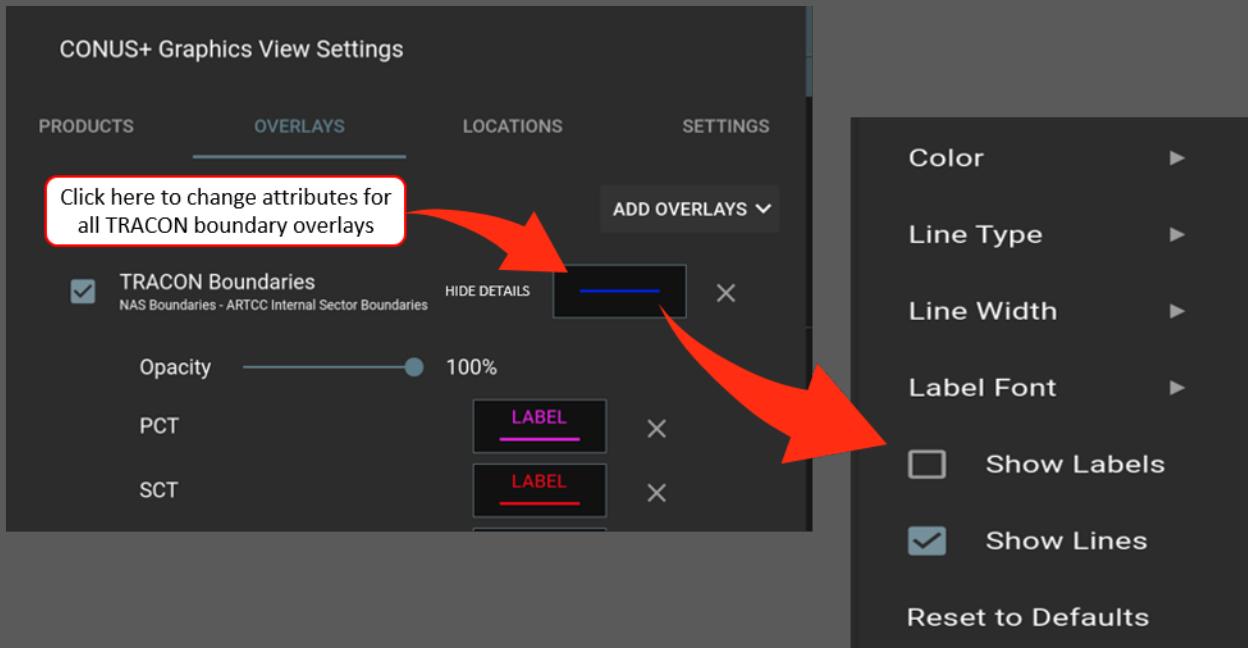


Figure 4-21. Change Single Overlay Attributes from Menu

4.4.1.1.4 Change Overlay Category Attributes

To change attributes of all overlays in the same category, click the rectangular box for the overlay category you want to change. The changes you make (e.g., overlay color) will affect all overlays in the category (Figure 4-22. Change Overlay Category Attributes).



4.4.1.1.5 Remove Overlay from View

To permanently remove (not hide) an overlay from the view, open the OVERLAY menu, then click the X to the right of the overlay you want to remove (Figure 4-23. Remove Overlay).

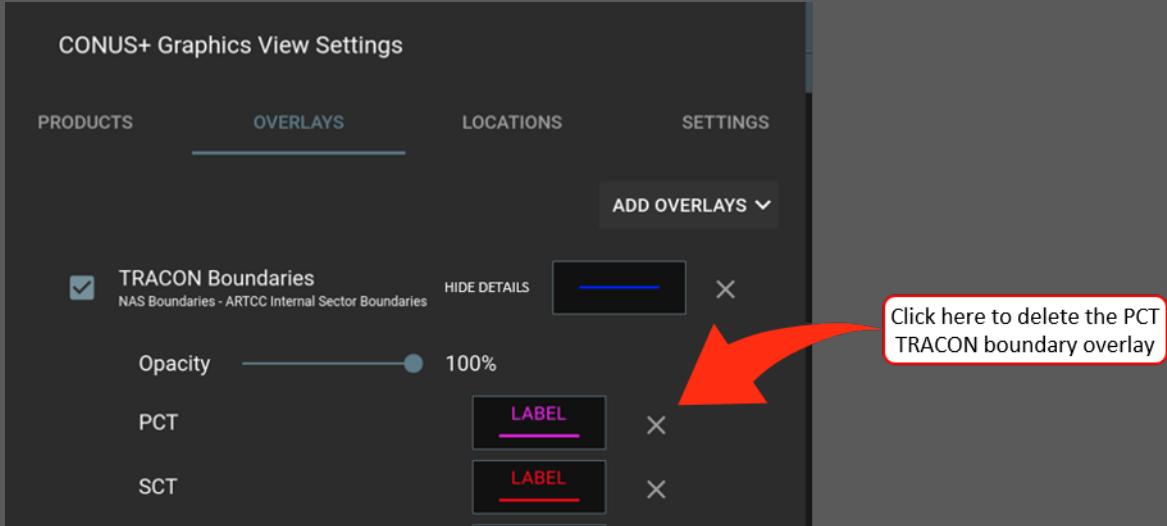


Figure 4-23. Remove Overlay

4.4.1.1.6 Remove Overlay Category from View

To remove an overlay category from the view, click the X adjacent to the category you want to delete (Figure 4-24. Delete Overlay Category).

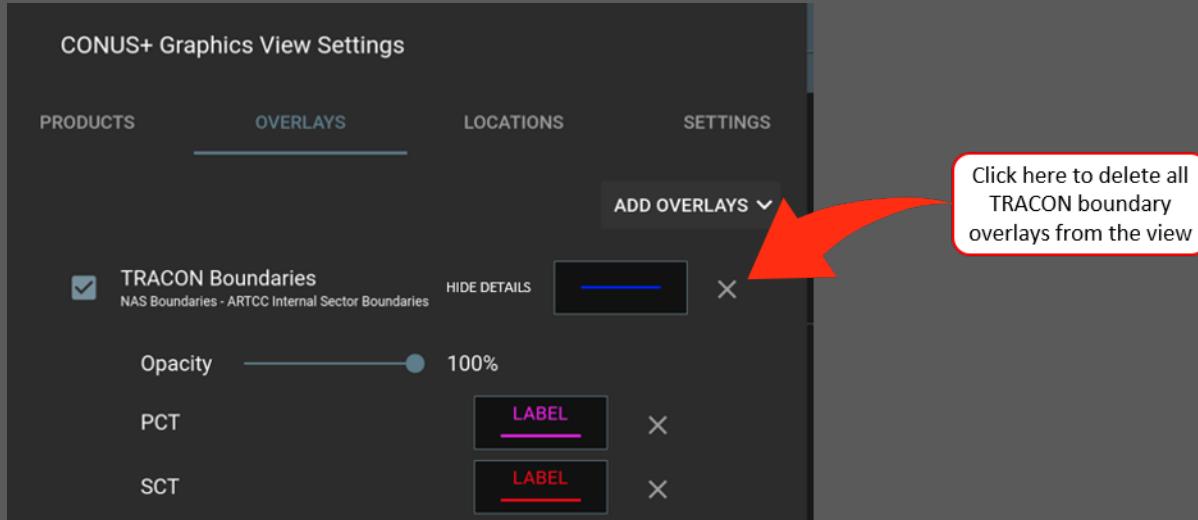


Figure 4-24. Delete Overlay Category

5 WEATHER PRODUCTS

AWD Graphic Weather Products are grouped into the following four categories:

- PRIMARY PRODUCTS
- FORECAST PRODUCTS
- ADVISORIES
- OBSERVATION & ANALYSIS

All thirty graphic weather products including the six Primary Products are available in Long Range Graphics View, while only nineteen graphic weather products and three Primary Products are available in TRACON Graphics View.

Primary Products - The six Primary Products are foundational weather products that are so prominent, it is likely that one will always be in use. Primary Products can be used independently or in conjunction with other products, but only ONE Primary Product can be displayed in a view at one time. The six Primary Products, their respective acronyms, and in which view they are available are listed below in Table 5-1.

Table 5-1. Primary Products

PRIMARY PRODUCTS	Long Range Graphics View	TRACON Graphics View
Precipitation (PRECIP)	✓	✓
Echo Tops (ECHO TOPS)	✓	✓
Turbulence (TURB)	✓	
Composite Reflectivity Mosaic (COMP REFL)	✓	
Base Reflectivity (Base Refl)	✓	✓
Icing (ICING)	✓	

Forecast Products - Forecast Products provide information on convection, frontal passages, turbulence, icing and forecast performance. Forecast Products, their respective acronyms, and in which view they are available are listed below in Table 5-2.

Table 5-2. Forecast Weather Products

FORECAST PRODUCTS	Long Range Graphics View	TRACON Graphics View
TFM Convective Forecast (TCF)	✓	
Convective WX Avoidance Polygons (CWAP)	✓	
CWAP Verification (CWAP VERIF)	✓	
Fronts Forecast (FRONTS)	✓	✓
Turbulence Forecast Contours (TURB CNTRS)	✓	✓
Icing Forecast Contours (ICING CNTRS)	✓	✓
Forecast Contours (FCST CNTRS)	✓	✓
Forecast Verification Contours (VERIF CNTRS)	✓	✓
Forecast Accuracy Scores (FCST ACCY)	✓	✓
Traffic Flow Impact (TFI)	✓	

Advisory Products - Issued by the National Weather Service (NWS), Advisory Products report forecast weather conditions that can potentially impact aviation. The five Advisory Products, their respective acronyms, and in which view they are available are listed below in Table 5-3.

Table 5-3. Advisory Products

Advisory Products	Long Range Graphics View	TRACON Graphics View
Domestic and International SIGMETs (SIGMET)	✓	
Airmen's Meteorological Information (AIRMET)	✓	
Center Weather Advisories (CWA)	✓	
Severe Thunderstorm & Tornado Watches (WATCH)	✓	✓
Volcanic Ash Advisories (VAA)	✓	

Observations & Analysis – Most Observations & Analysis Products can be used independently or in conjunction with other products, while certain Observations & Analysis Products can only be used in conjunction with their associated Primary Product. Observations & Analysis Products, their respective acronyms, and in which view they are available are listed below in Table 5-4.

Table 5-4. Observation & Analysis Products

Observation & Analysis Products	Long Range View	TRACON View	Static Image View	Text View
Satellite Mosaic (SAT)	✓	✓		
Pilot Reports (PIREP)	✓	✓		
Observations & TAFs (OBS TAFS)	✓	✓		
Echo Tops Tags/Storm Cell Information (ET-TAGS SCI)	✓	✓		
Lightning Detection (LTNG)	✓	✓		
Tornadic Signature (TOR)	✓	✓		
Storm Motion Vectors (STORM MOTN)	✓	✓		
Storm Leading Edges & Projections (LEADING EDGE)	✓	✓		
Storm Growth & Decay Trends (G&D TRENDS)	✓	✓		

5.1 Primary Products

5.1.1 Precipitation (PRECIP)

PRECIP is a Primary Product that graphically depicts past, current, and forecast precipitation in multiple colors that represent precipitation intensity and precipitation phase at the surface (liquid, frozen, & mixed). PRECIP is available in both Long Range and TRACON view.

Other than zoom range, forecast times, and loop intervals, PRECIP in Long Range and TRACON view look and work the same way. When PRECIP is open, the PRECIP Product Status button is added to the Product Toolbar and all detected precipitation is displayed in the view (Figure 5-1. PRECIP).

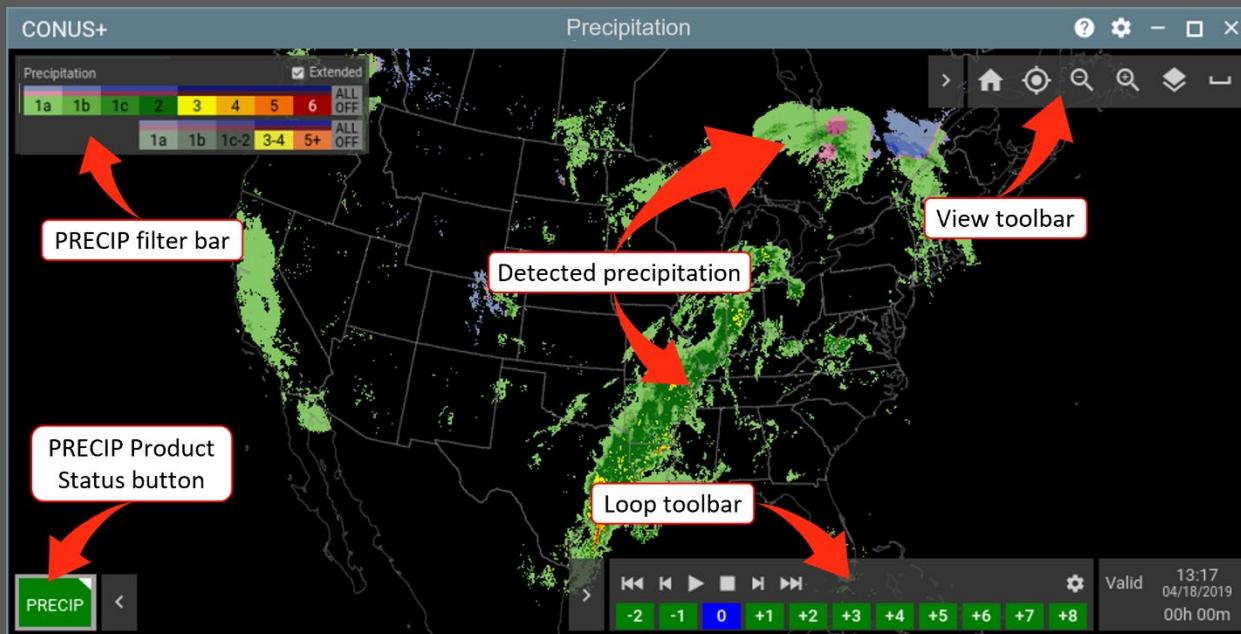
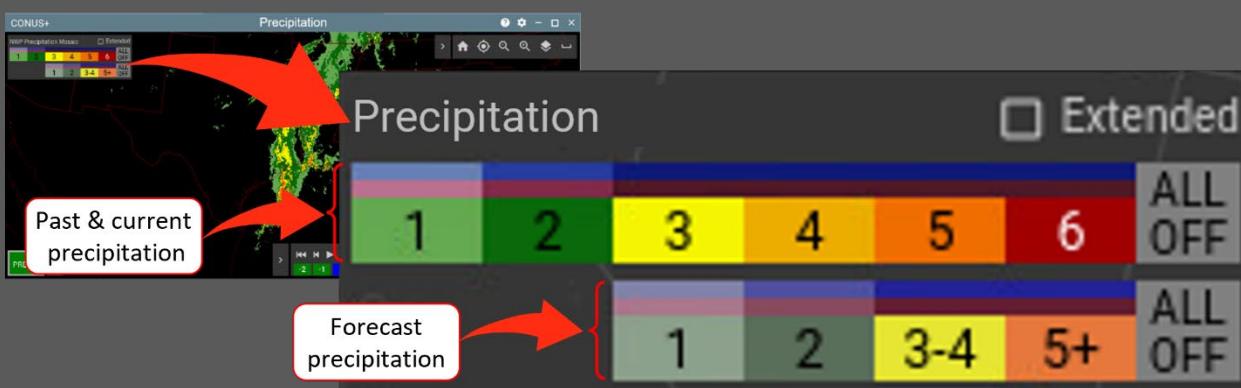


Figure 5-1. PRECIP

5.1.1.1 Filter PRECIP by Intensity

The PRECIP filter bar is used to filter precipitation by intensity. The filter bar has two rows with each row having three layers. Use the upper row to filter past and current precipitation, and the lower row to filter forecast precipitation. The top layer of each row (shades of blue) represents frozen precipitation (snow & ice), the magenta layer represents mixed precipitation (ice/rain mix), and the bottom layer (numbered buttons), represents liquid precipitation (Figure 5-2. Default PRECIP Filter Bar).



To filter precipitation by intensity, click the button representing the lowest precipitation level you want to display and all precipitation below that level is filtered. For example, to filter past and current precipitation below Level 3, click the yellow Number 3 button on the filter bar's upper row.

In the following example, past and current precipitation below Level 3, is filtered (Figure 5-3. Past & Current Precipitation Filtered).

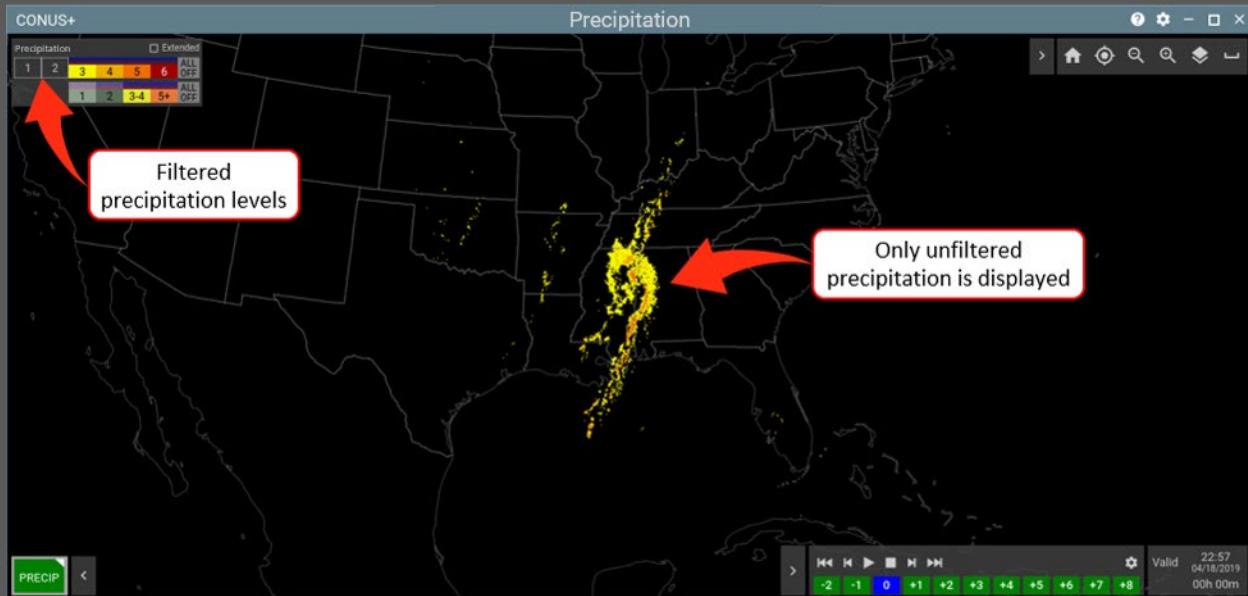


Figure 5-3. Past & Current Precipitation Filtered

In the following example, past and current precipitation below Level 3, and forecast precipitation below Level 2 are filtered (Figure 5-4. Past, Current, & Forecast Precipitation Filtered).

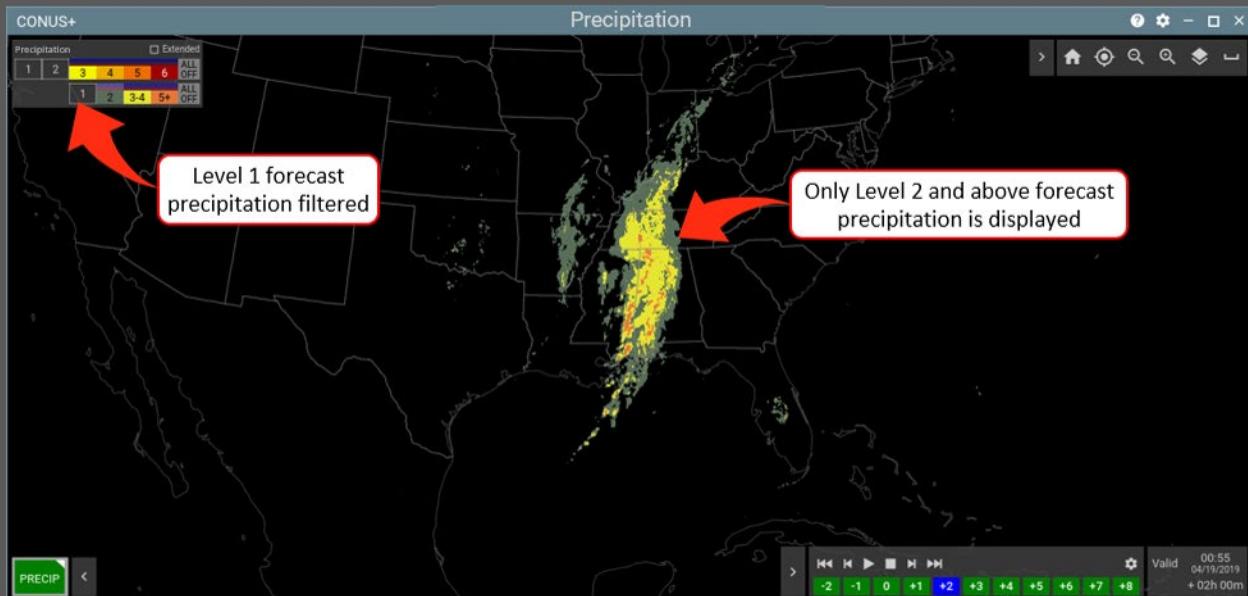


Figure 5-4. Past, Current, & Forecast Precipitation Filtered

You can also filter all past and current and/or all forecast precipitation while leaving the PRECIP product on. To filter all past and current and/or all forecast precipitation, click ALL OFF at the end of the appropriate row. ALL OFF buttons work as toggles that change to ALL ON when clicked. Toggle between ALL OFF and ALL ON to filter or display all past and current and/or all forecast precipitation (Figure 5-5. PRECIP ALL OFF Filter).

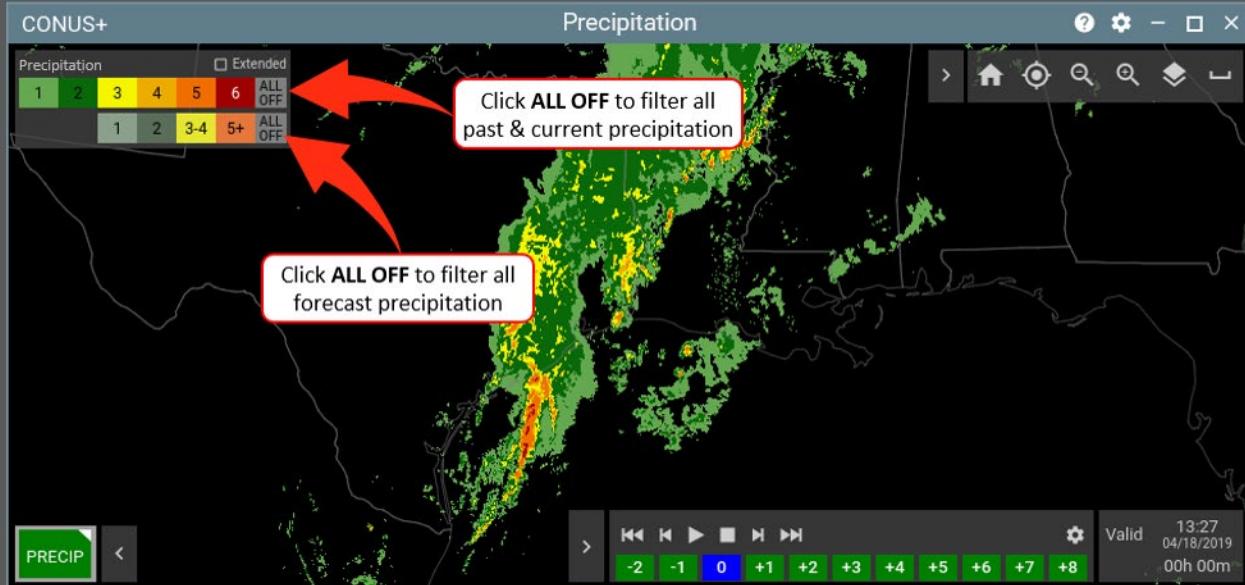


Figure 5-5. PRECIP ALL OFF Filter

In the following example, ALL OFF on the upper row was clicked to filter all past and current precipitation, but ALL OFF on the lower row was not clicked. All past and current precipitation is filtered while forecast precipitation is not filtered. ALL OFF buttons act as toggles that toggle all precipitation on or off when clicked while leaving the PRECIP product on (Figure 5-6. All Past & Current Precipitation Filtered).

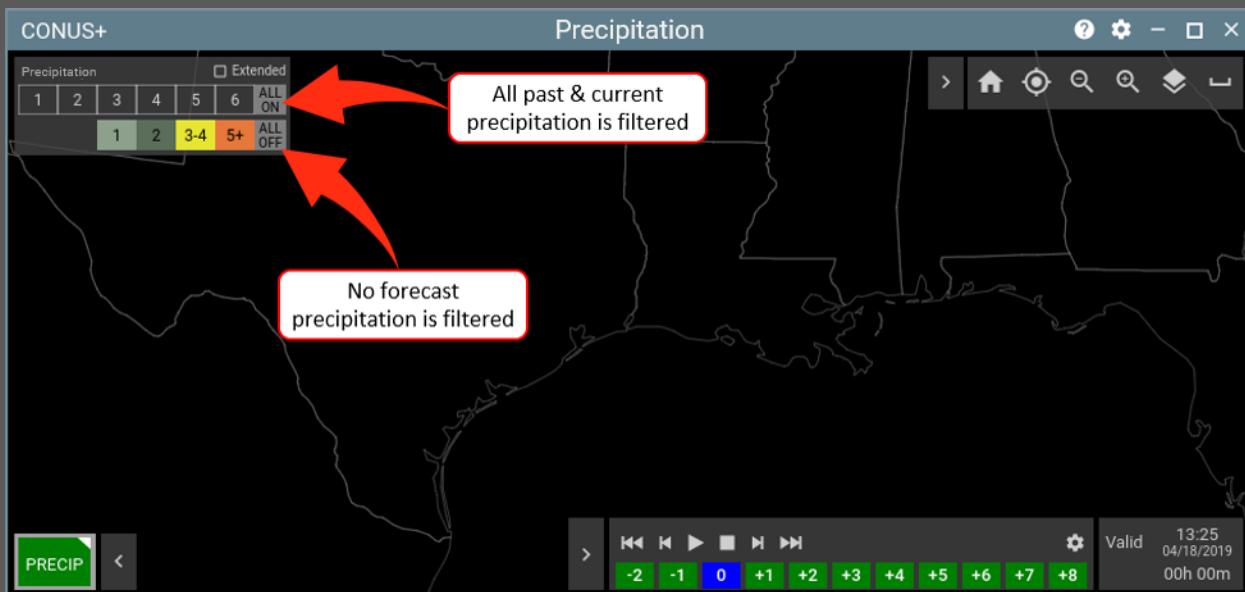


Figure 5-6. All Past & Current Precipitation Filtered

5.1.1.1.1 PRECIP Filter Bar Extended

Frozen and mixed precipitation are less intense than convective precipitation, and additional precipitation levels that provide more granularity at lower intensity levels are useful during periods of winter weather. To extend the filter bar to add additional precipitation intensity levels, check the Extended box on the upper right of the filter bar. When Extended is checked, the filterbar's upper row (past & current precipitation) expands from six to eight levels, and the lower row (forecast precipitation), expands from four to five levels (Figure 5-7Figure 5-7).

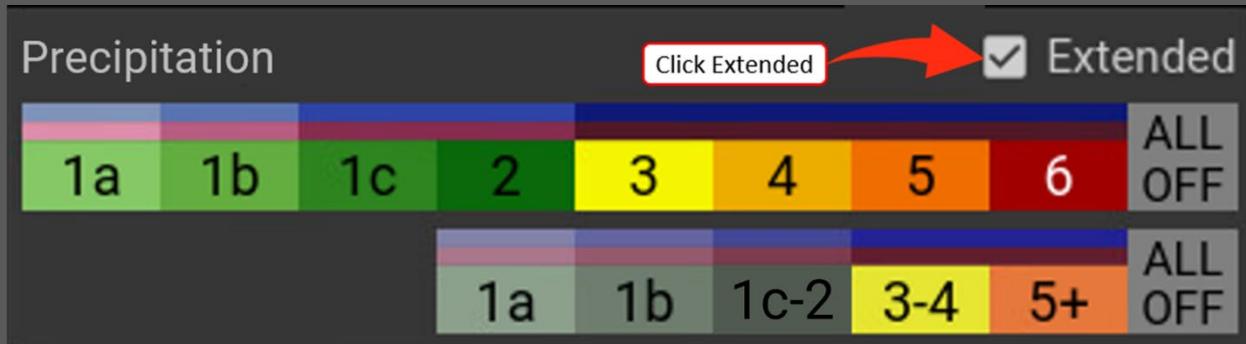


Figure 5-7. PRECIP Filter Bar Extended

5.1.1.2 PRECIP Product Options

From the PRECIP Product Options menu you can filter precipitation by altitude, display the PRECIP radar coverage map, toggle winter weather off & on, and adjust opacity. To open the PRECIP Product Options menu, right-click the PRECIP Product Status button (Figure 5-8. PRECIP Product Options Menu).

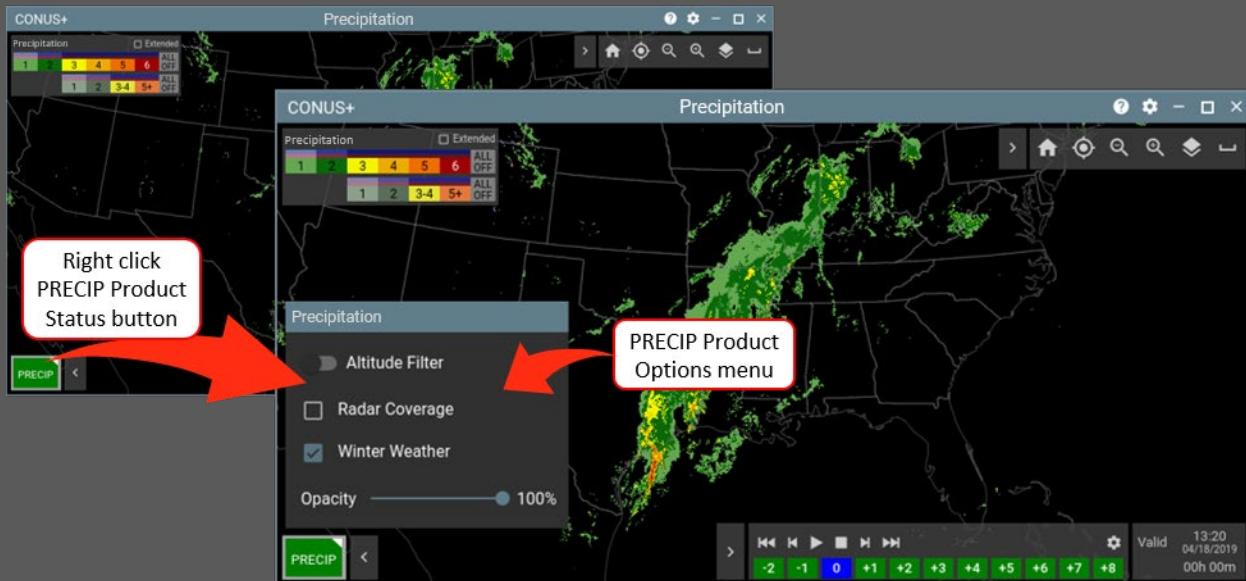


Figure 5-8. PRECIP Product Options Menu

To close the PRECIP Product Options menu, click anywhere **outside** the menu and **inside** the active view.

5.1.1.2.1 Filter PRECIP by Altitude

When on, the PRECIP product displays all detected precipitation from the surface to FL700 by default. To filter PRECIP by altitude, right-click the PRECIP Product Status button, then in the Product Options menu, click **Altitude Filter**. The default altitude filter (000-700) is highlighted in yellow and is displayed in the View Titlebar (Figure 5-9. Activate PRECIP Altitude Filter).

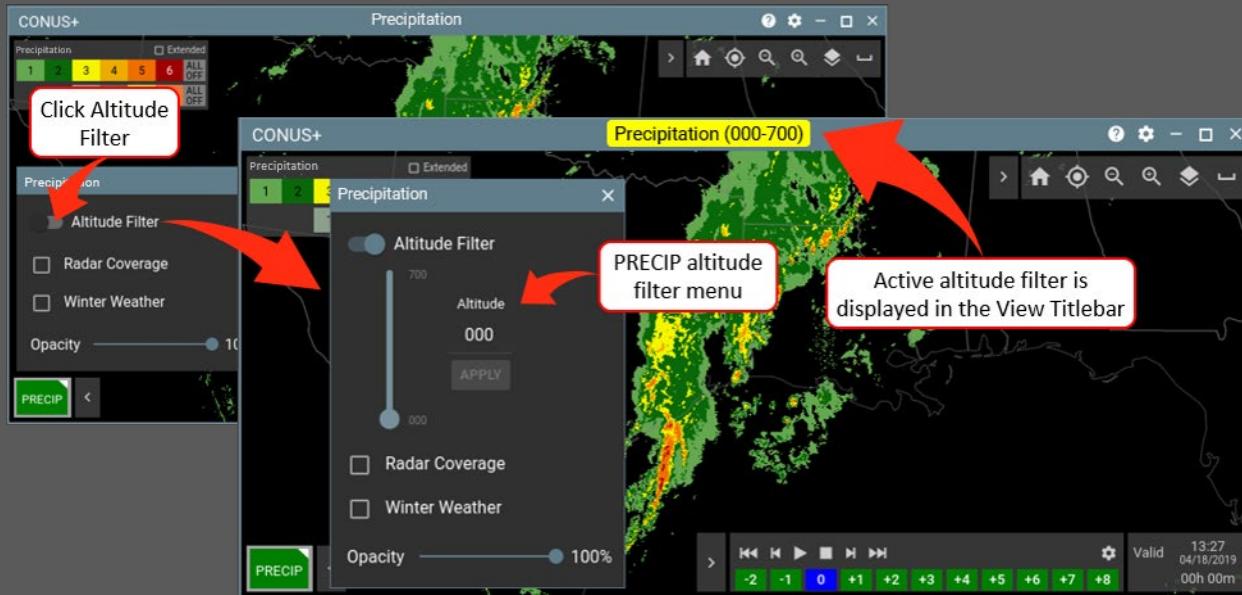
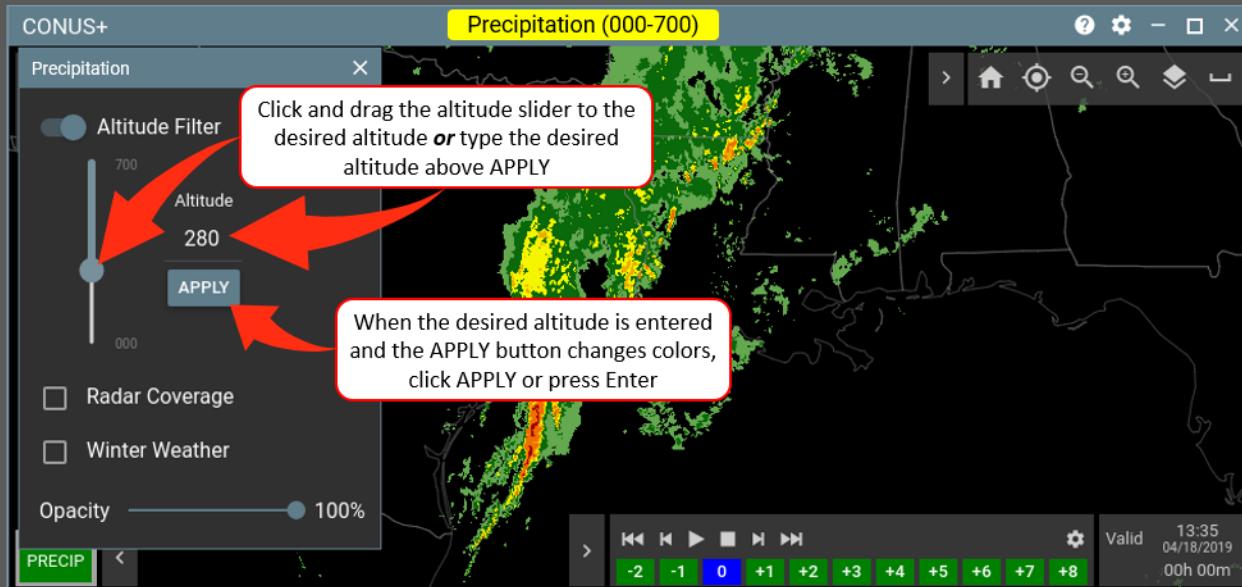


Figure 5-9. Activate PRECIP Altitude Filter

You can adjust the PRECIP altitude filter floor, but the ceiling is permanently set to 70,000'. To adjust the altitude filter floor, click and drag the altitude slider to the preferred altitude, unclick the mouse, then click the illuminated **APPLY** button or press **Enter**.

As an alternative method, click in the altitude box above **APPLY**, then use the keyboard to enter the preferred floor altitude, then click the illuminated **APPLY** button or press **Enter**. The new altitude filter is active and highlighted in yellow on the View Titlebar (Figure 5-10. Set PRECIP Altitude Filter).



5.1.1.2.2 PRECIP Radar Coverage

When the PRECIP Radar Coverage is selected, the radar coverage map depicts areas with reliable weather radar coverage in light gray, areas where radar coverage is impaired by mountain obscuration or radar range limitations in dark gray, and areas with no weather radar coverage in black (Figure 5-11).

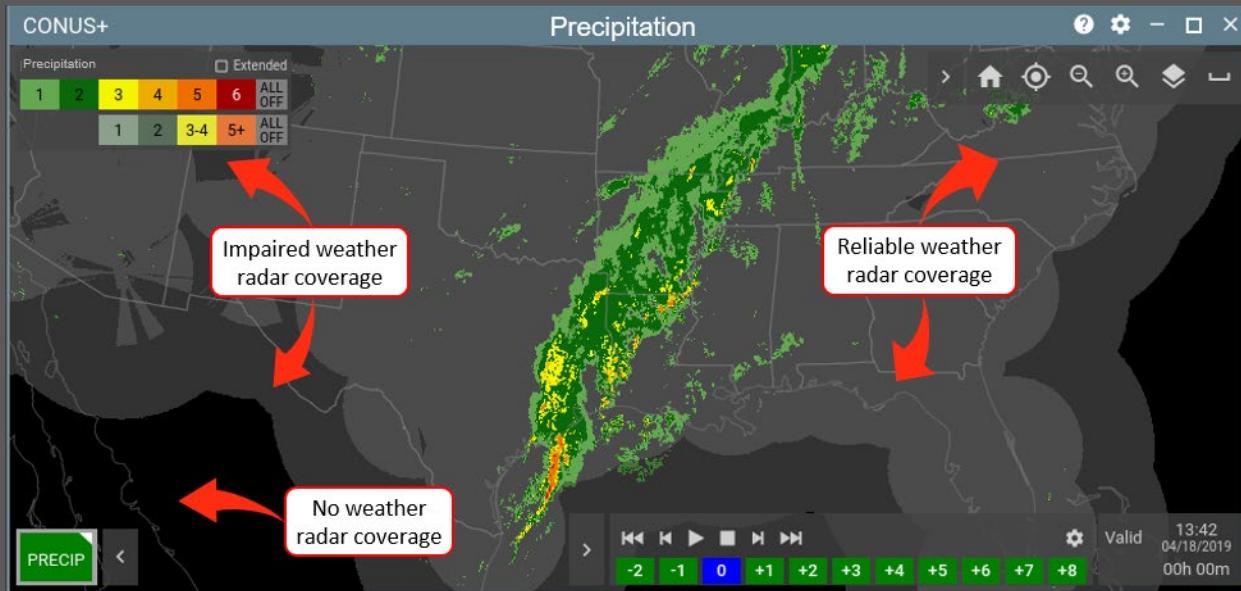


Figure 5-11. PRECIP Radar Coverage Map

To display the PRECIP radar coverage map, right-click the PRECIP Product Status button, then in the PRECIP Product Options menu, select Radar Coverage (Figure 5-12).

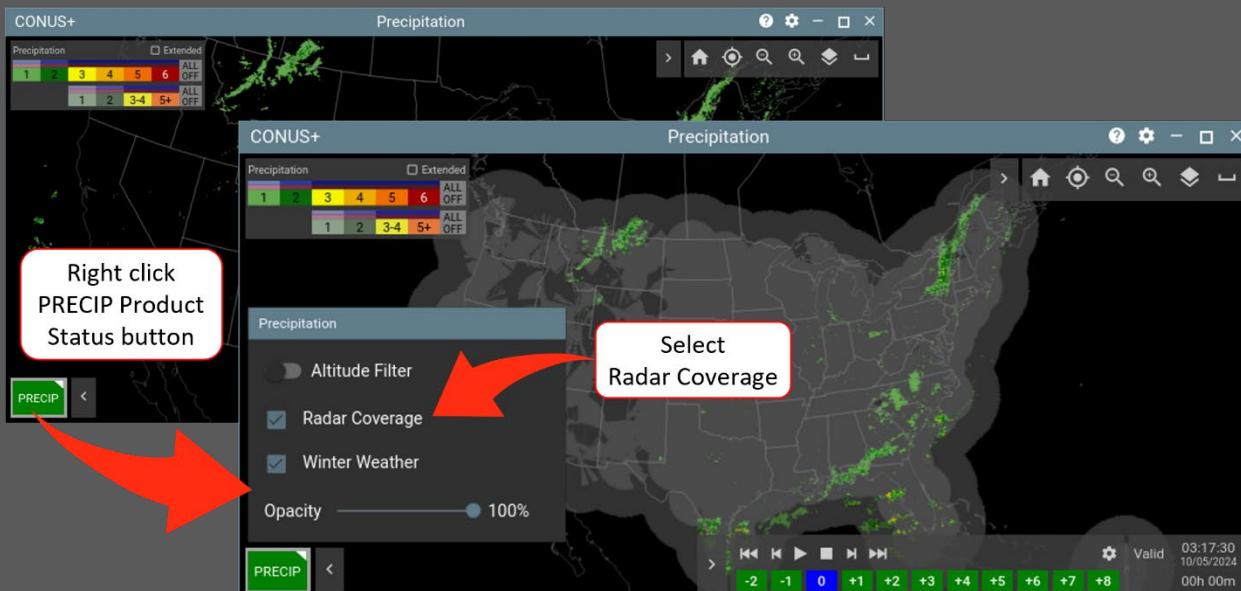


Figure 5-12. Display PRECIP Radar Coverage Map

If radar coverage map is displayed while PRECIP is filtered by altitude, filtered precipitation is depicted in brown. In the following example, the radar coverage map is displayed while the PRECIP altitude filter is active. All detected precipitation outside the 41,000' to 70,000' altitude layer is depicted in brown (Figure 5-13. PRECIP with Altitude Filter Active and Radar Coverage on.).

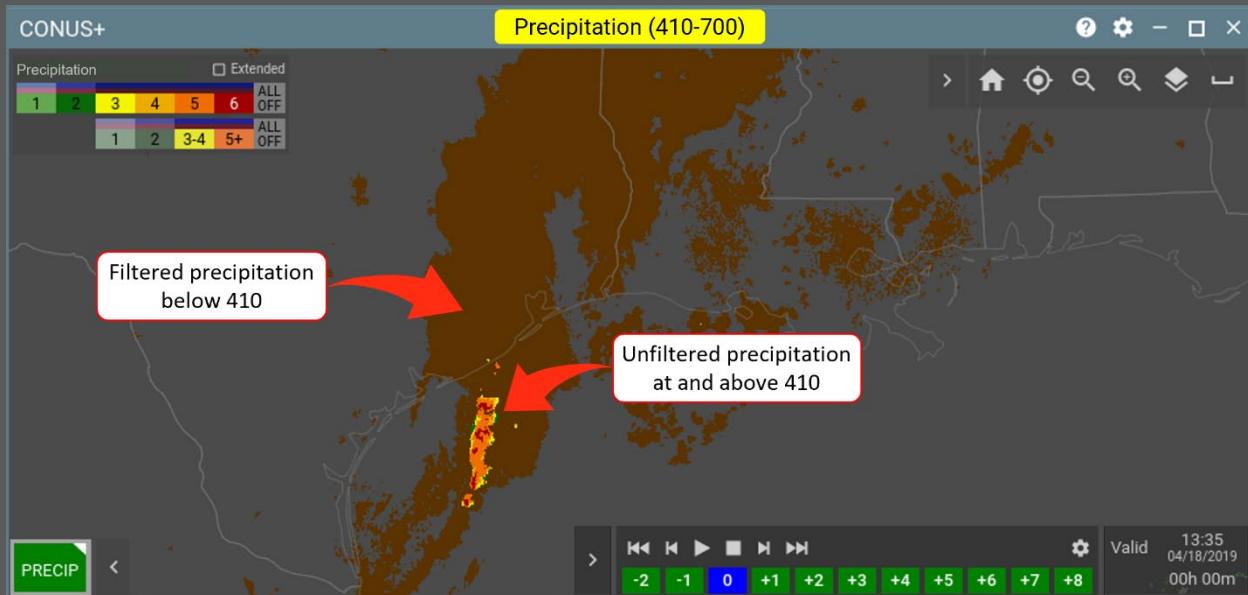


Figure 5-13. PRECIP with Altitude Filter Active and Radar Coverage on.

5.1.1.2.3 Winter Weather

When PRECIP is on, Winter Weather is on by default and all detected winter precipitation is displayed in the view. Blue layers that represent frozen precipitation and magenta layers that represent mixed precipitation are visible on the PRECIP filter bar (Figure 5-14. Winter Weather).

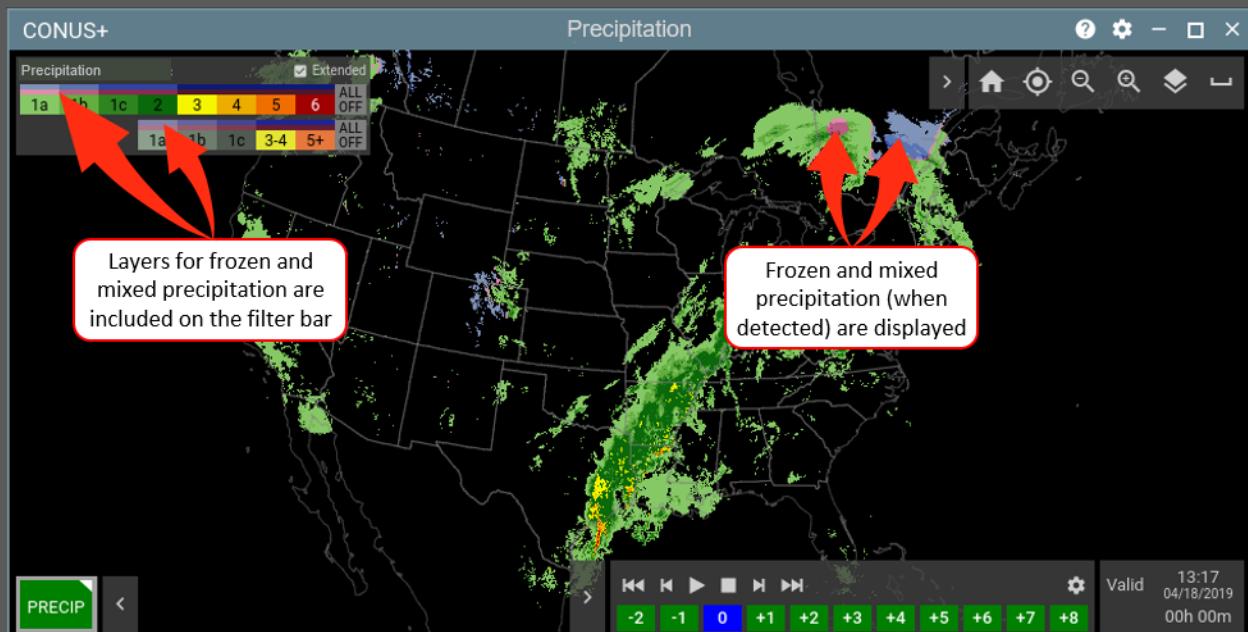


Figure 5-14. Winter Weather

To disable Winter Weather, right-click the PRECIP Product Status button, then in the PRECIP Product Options menu, uncheck Winter Weather. When Winter Weather is disabled, the blue and magenta layers on the PRECIP filter bar are hidden (Figure 5-15. Disable Winter Weather).

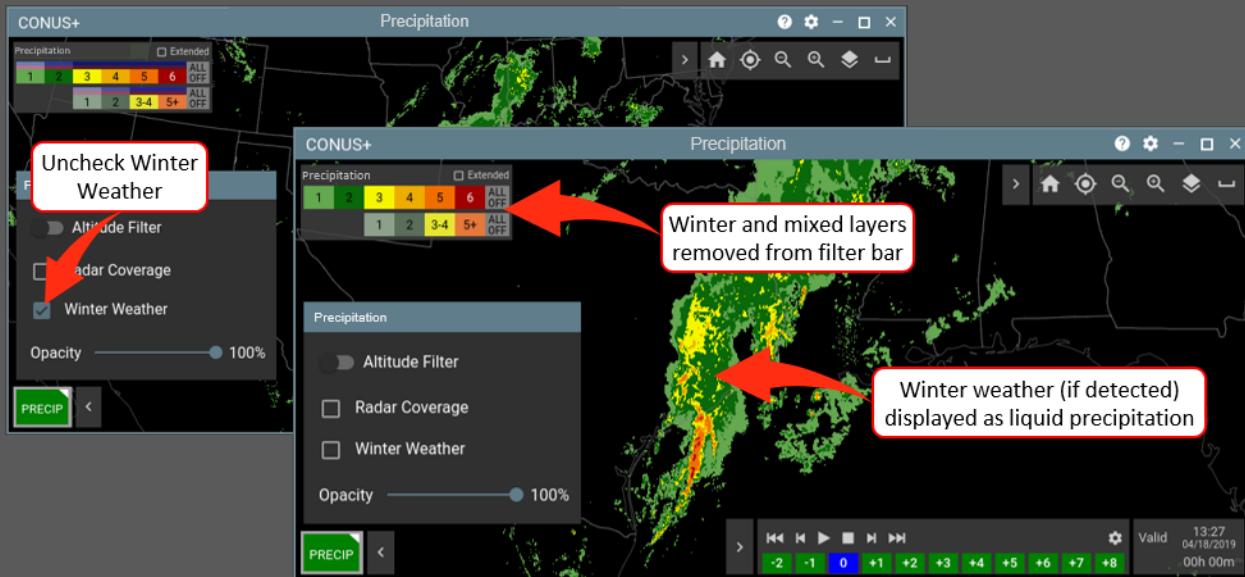


Figure 5-15. Disable Winter Weather

In the following example, Winter Weather is off, therefore all detected winter weather is depicted as liquid precipitation (Figure 5-16. Winter Weather Off).

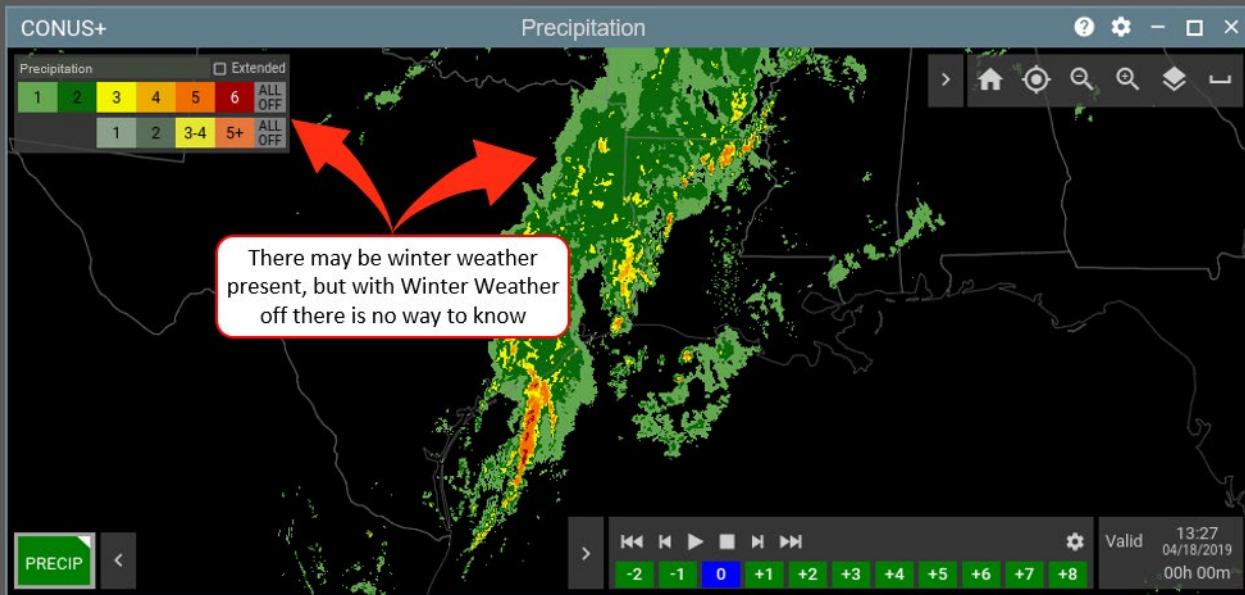


Figure 5-16. Winter Weather Off

There are times when winter weather is unavailable due to data loss. When Winter Weather is selected but surface phase information that would identify winter weather is unavailable, the Snowflake icon is displayed on the PRECIP filter bar to the left of the Extended box (Figure 5-17. Winter Weather Not Available).

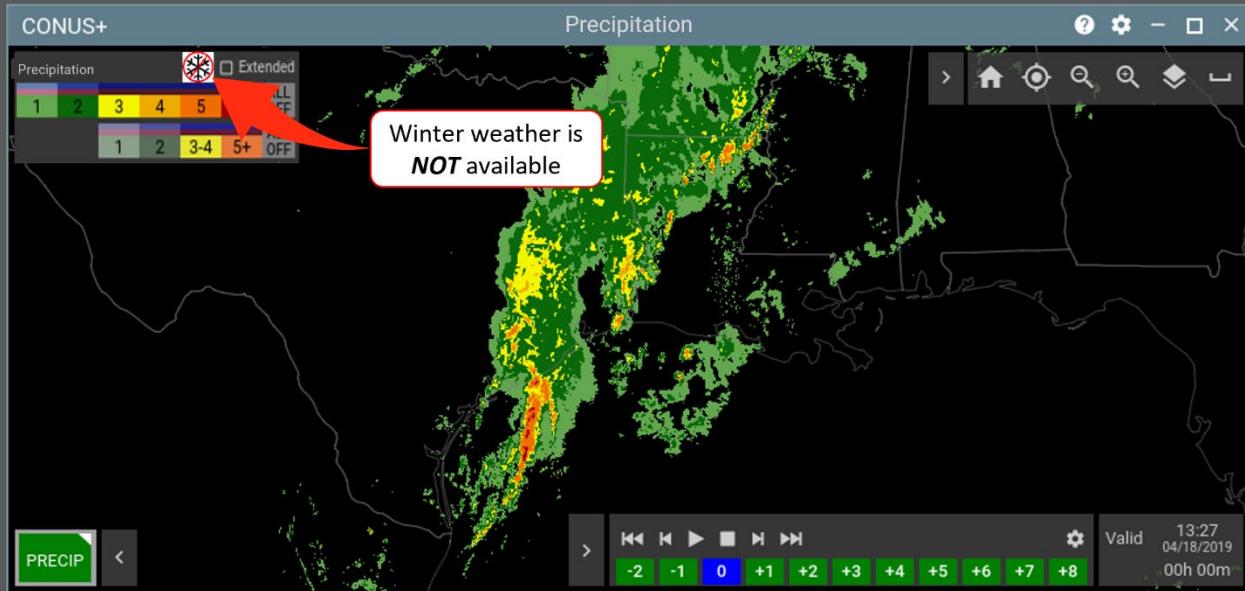


Figure 5-17. Winter Weather Not Available

5.1.1.2.4 PRECIP Opacity

Higher opacity makes displayed precipitation brighter and more prominent while lower opacity makes displayed precipitation less prominent. To adjust opacity, right-click the PRECIP Product Status button, then in the PRECIP Product Options menu, click and drag the Opacity slider to the preferred opacity level (Figure 5-18. PRECIP Opacity).



Figure 5-18. PRECIP Opacity

To close the PRECIP Product Options menu, click **outside** the Product Options menu and **inside** the active view.

The following AWD weather products are compatible and available for use in conjunction with PRECIP:

- TFM Convective Forecast (TCF) – See Section 5.2.1
- Convective Weather Avoidance Polygons (CWAP) – See Section 5.2.2
- CWAP Verification (CWAP VERIF) – See Section 5.2.3
- Fronts Forecast (FRONTS) – See Section 5.2.4
- Turbulence Contours (TURB CNTRS) – See Section 5.2.5
- Icing Contours (ICING CNTRS) – See Section 5.2.6
- Forecast Contours (FCST CNTRS) – See Section 5.2.7
- Verification Contours (VERIF CNTRS) – See Section 5.2.8
- Forecast Accuracy (FCST ACCY) – See Section 5.2.9
- Traffic Flow Impact (TFI) – See Section 5.2.10
- Satellite Mosaic (SAT) – See Section 5.4.1
- Pilot Reports (PIREP) – See Section 5.4.2
- Observations and Terminal Area Forecasts (OBS TAFS) – See Section 5.4.3
- Echo Top Tags & Storm Cell Information (ET-TAGS SCI) – See Section 5.4.4
- Lightning (LTNG) – See Section 5.4.5
- Tornadic Signature (TOR) – See Section 5.4.6
- Storm Motion Vectors (STORM MOTN) – See Section 5.4.7
- Storm Leading Edges and Projections (LEADING EDGE) – See Section 5.4.8
- Storm Growth & Decay Trends (G&D TRENDS) – See Section 5.4.9

5.1.2 Echo Tops (ECHO TOPS)

ECHO TOPS is a Primary Product available in both Long Range and TRACON view. Echo Tops displays precipitation/storm cell height in specific colors that represent cell tops. Echo Tops depicts 0 to 2 hours of past echo tops, current echo tops, and 0 to 8-hour echo tops forecasts.

Past and current echo tops are depicted in 5,000' increments that start at 5,000' (5) and continue to 50,000' and above (50+). Forecast echo tops are also depicted in 5,000' increments but start at 30,000' (30) and continue to 40,000' and above (40+).

When Echo Tops is added to a view, the ECHO TOPS Product Status button is added to the Product toolbar and detected echo tops are displayed in the view (Figure 5-19. ECHO TOPS).

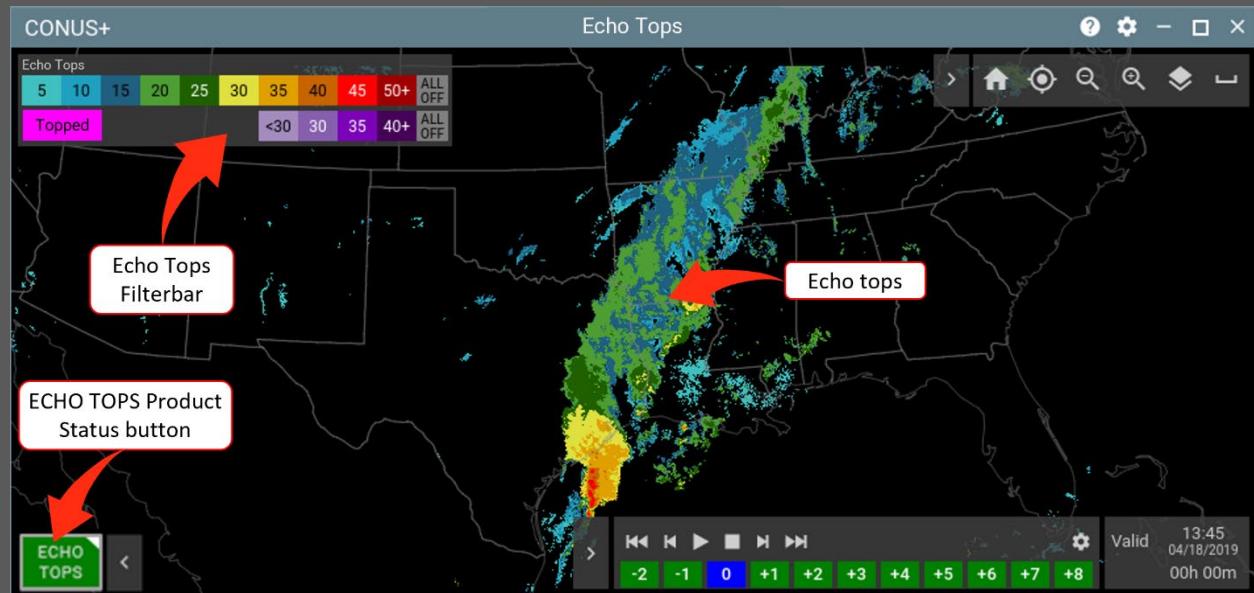


Figure 5-19. ECHO TOPS

Echo tops forecasts are not available in the Alaska, Hawaii, or Guam domains, and are limited to no more than two hours in Puerto Rico.

5.1.2.1 Filter ECHO TOPS by Altitude

Use the Echo Tops Filter bar to filter echo tops by altitude. The Filter bar has an upper and lower row with colored/numbered buttons that represent echo tops in thousands of feet MSL (e.g., the red button numbered 45 represents 45,000' tops). Use the upper row to filter past & current echo tops, and the lower row to filter forecast echo tops (Figure 5-20. ECHO TOPS Filter Bar).

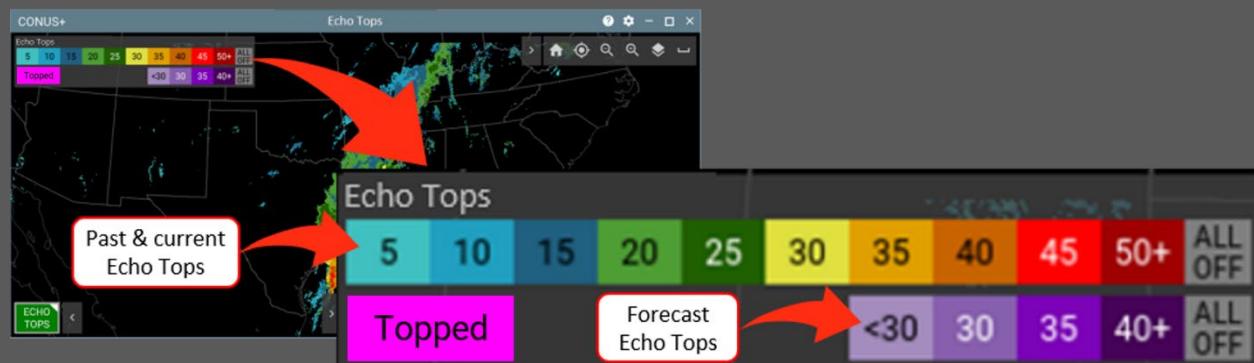


Figure 5-20. ECHO TOPS Filter Bar

To filter echo tops, click the button that represents the lowest tops you want displayed and all echo tops below that altitude are filtered. For example, click the green 25 button on the upper row to filter past & current echo tops below 25,000'.

In the following example, the yellow 30 button on the upper row was clicked to filter all past & current echo tops below 30,000' (Figure 5-21. Past & Current Echo Tops Filtered).



Figure 5-21. Past & Current Echo Tops Filtered

Filtering forecast echo tops works the same way. To filter forecast echo tops, click the button for the lowest forecast echo tops you want to display. All forecast echo tops below the selected altitude are filtered. In the following example, the orange 35 button on the lower row was clicked to filter all forecast echo tops below 35,000' (Figure 5-22. Forecast Echo Tops Filtered).

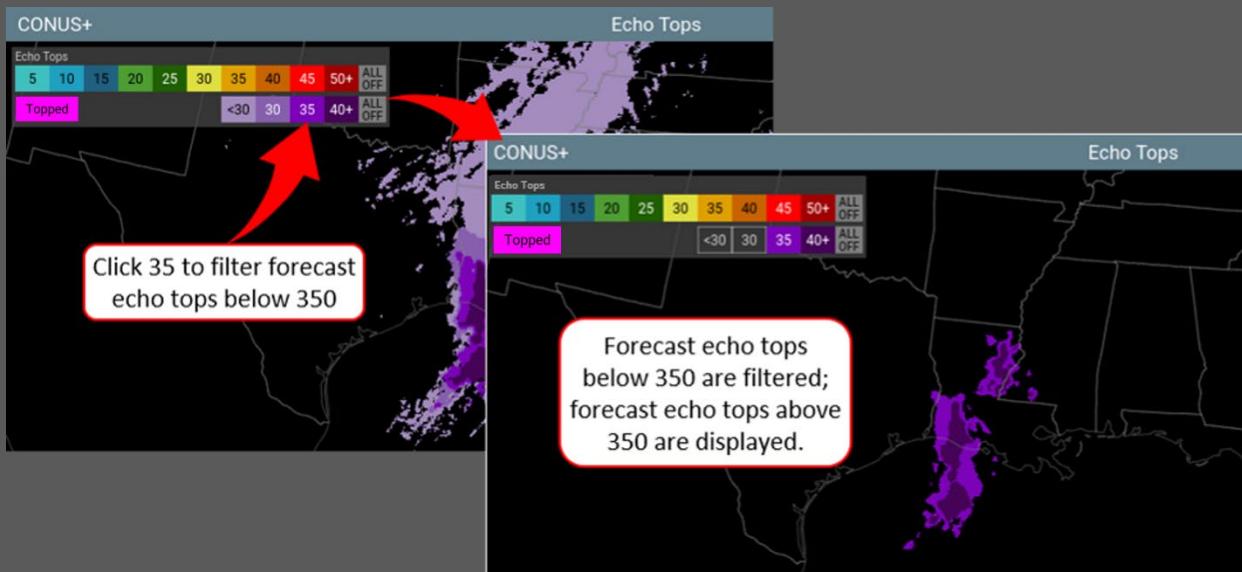


Figure 5-22. Forecast Echo Tops Filtered

You can also filter all past & current echo tops and/or all forecast echo tops while keeping the ECHO TOPS product on by clicking ALL OFF at the end of the row you want to filter.

Click **ALL OFF** on the upper row to filter all past & current echo tops and/or click **ALL OFF** on the bottom row to filter all forecast echo tops. ALL OFF buttons are toggles that change back and forth between ALL ON and ALL OFF when clicked (Figure 5-23. ECHO TOPS ALL OFF Filter).

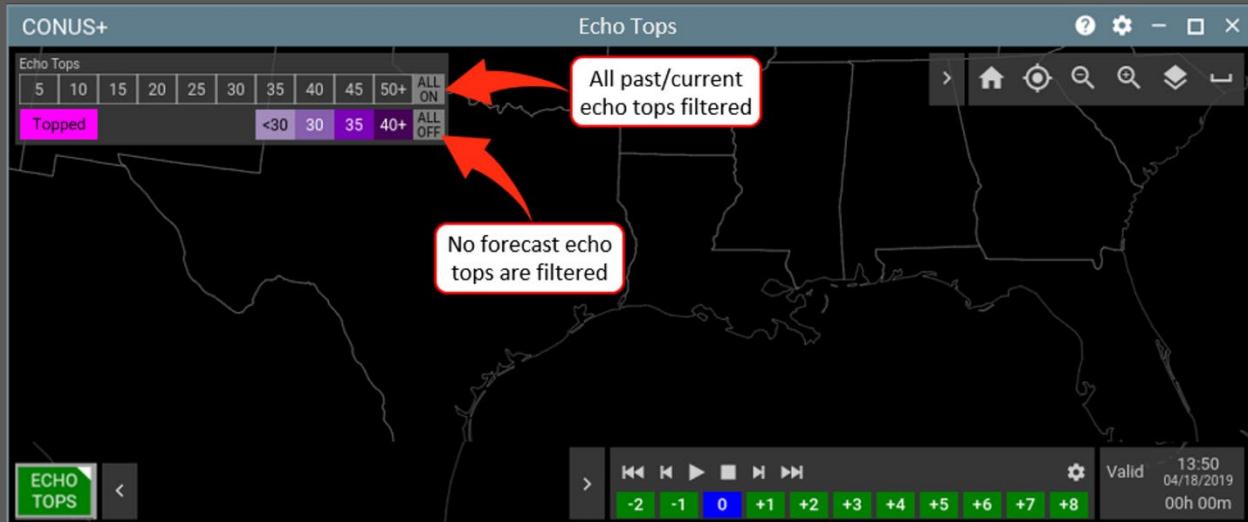


Figure 5-23. ECHO TOPS ALL OFF Filter

5.1.2.2 ECHO TOPS Product Options

From the ECHO TOPS Product Options menu, you can view/hide the radar coverage map, hide/view topped echo tops, and adjust echo tops opacity. To open the ECHO TOPS Product Options menu, right-click the ECHO TOPS Product Status button (Figure 5-24. ECHO TOPS Product Options Menu).

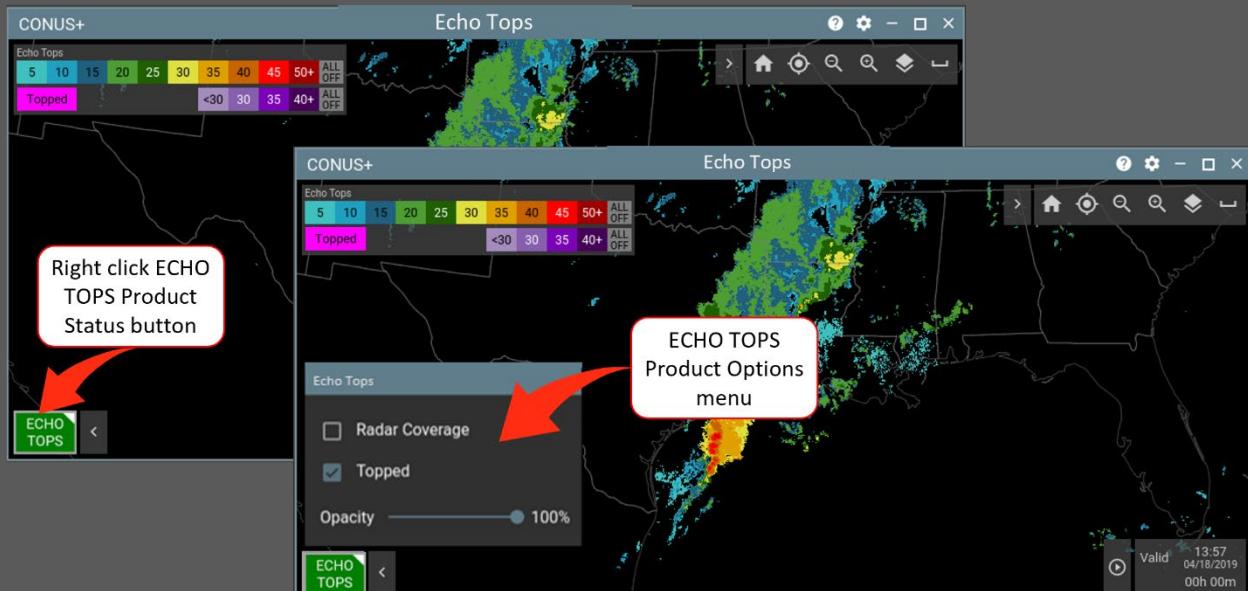


Figure 5-24. ECHO TOPS Product Options Menu

To close the ECHO TOPS Product Options menu, click anywhere **outside** the menu and **inside** the active view.

5.1.2.2.1 ECHO TOPS Radar Coverage

The ECHO TOPS Radar Coverage Map depicts areas with reliable weather radar coverage in light gray, areas with impaired radar coverage due to mountain obscuration and/or radar range limitations in dark gray, and areas with no radar coverage in black (Figure 5-25. ECHO TOPS Radar Coverage Map).

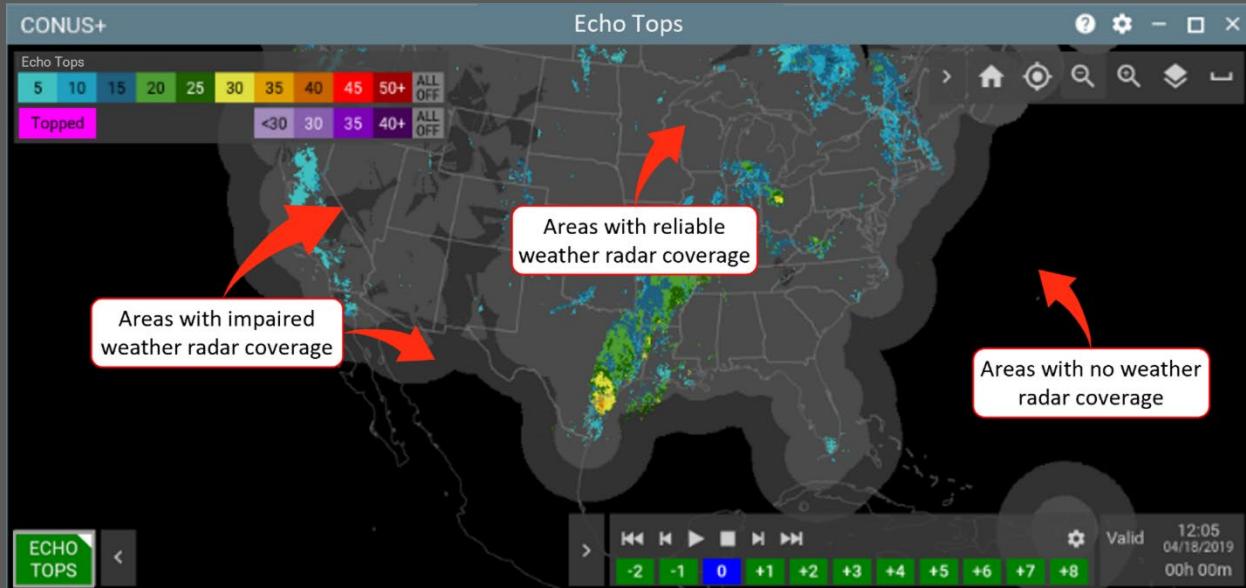


Figure 5-25. ECHO TOPS Radar Coverage Map

To display the ECHO TOPS radar coverage map, right-click the ECHO TOPS Product Status button, then in the ECHO TOPS Product Options menu, select Radar Coverage (Figure 5-26. Display ECHO TOPS Radar Coverage Map).

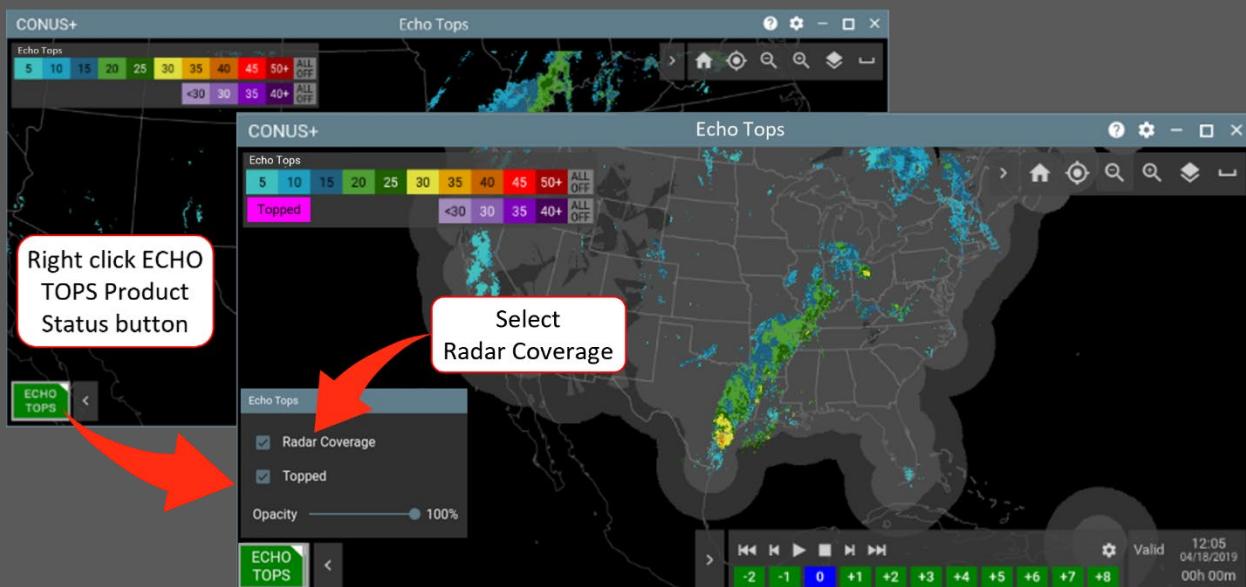


Figure 5-26. Display ECHO TOPS Radar Coverage Map

5.1.2.2.2 Topped Echo Tops

The Topped option (on by default) uses filled magenta polygons to depict geographic areas where echo tops are unknown because tops are higher than weather radar can scan.

To turn the Topped feature off (**NOT RECOMMENDED**), right-click the ECHO TOPS Product Status button, then uncheck Topped (Figure 5-27. Topped Echo Tops).

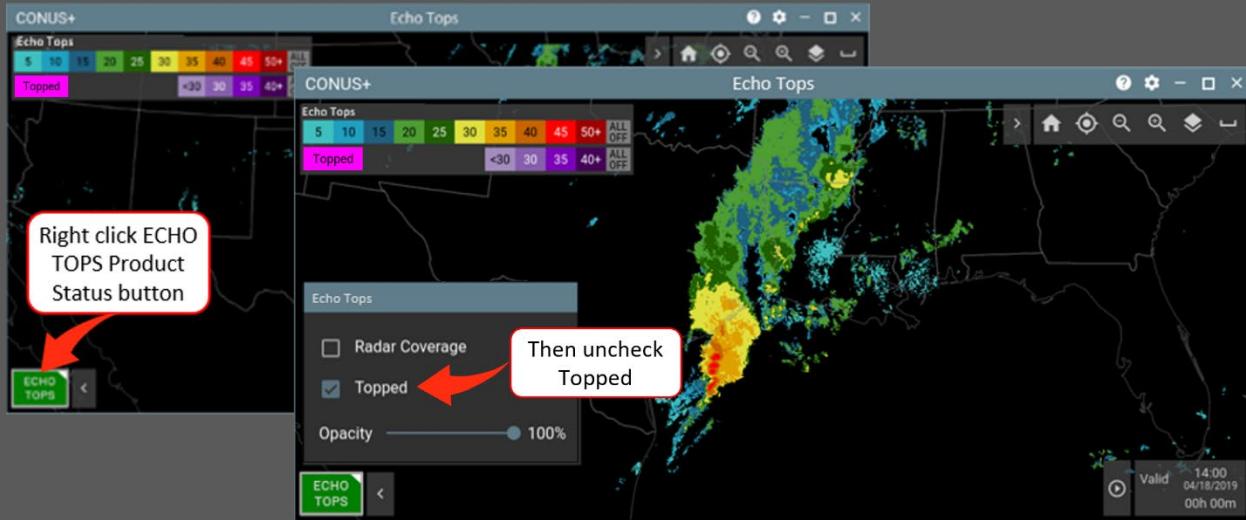


Figure 5-27. Topped Echo Tops

In the following example with the Topped option on, geographic areas where tops are higher than weather radar can scan are depicted with filled magenta polygons (Figure 5-28. Topped Echo Tops Displayed).

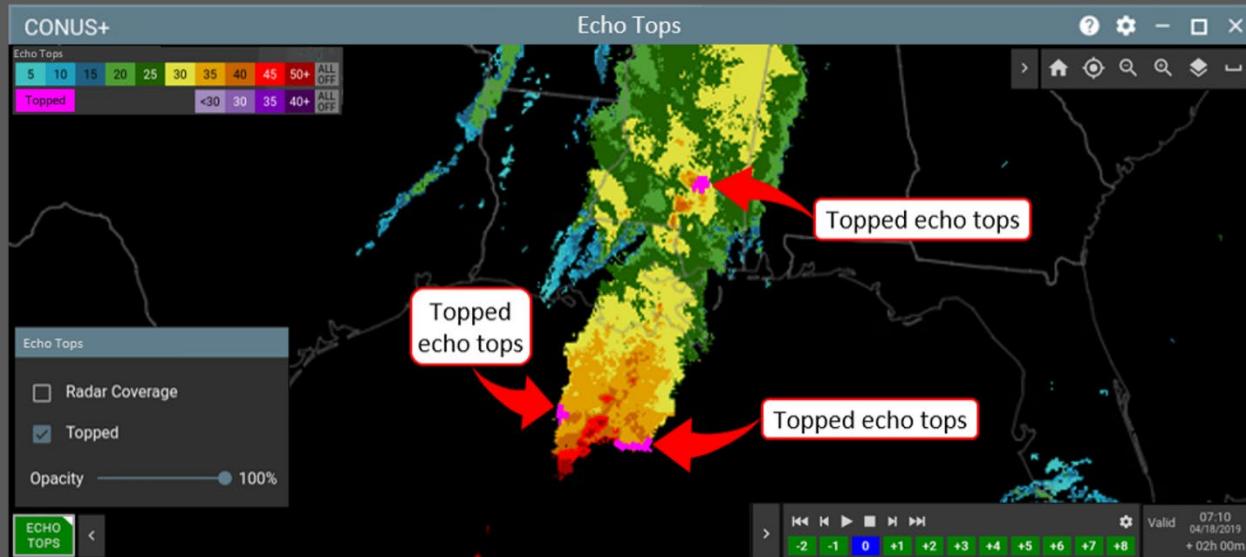


Figure 5-28. Topped Echo Tops Displayed

5.1.2.2.3 ECHO TOPS Opacity

At higher opacity, displayed echo tops are brighter and harder to see through; at lower opacity, displayed echo tops are dimmer and easier to see through. To adjust Echo Tops opacity, right-click the **ECHO TOPS** Product Status button, then in the Echo Tops Product Options menu, click and drag the Opacity slider to the preferred level (Figure 5-29. ECHO TOPS Opacity).

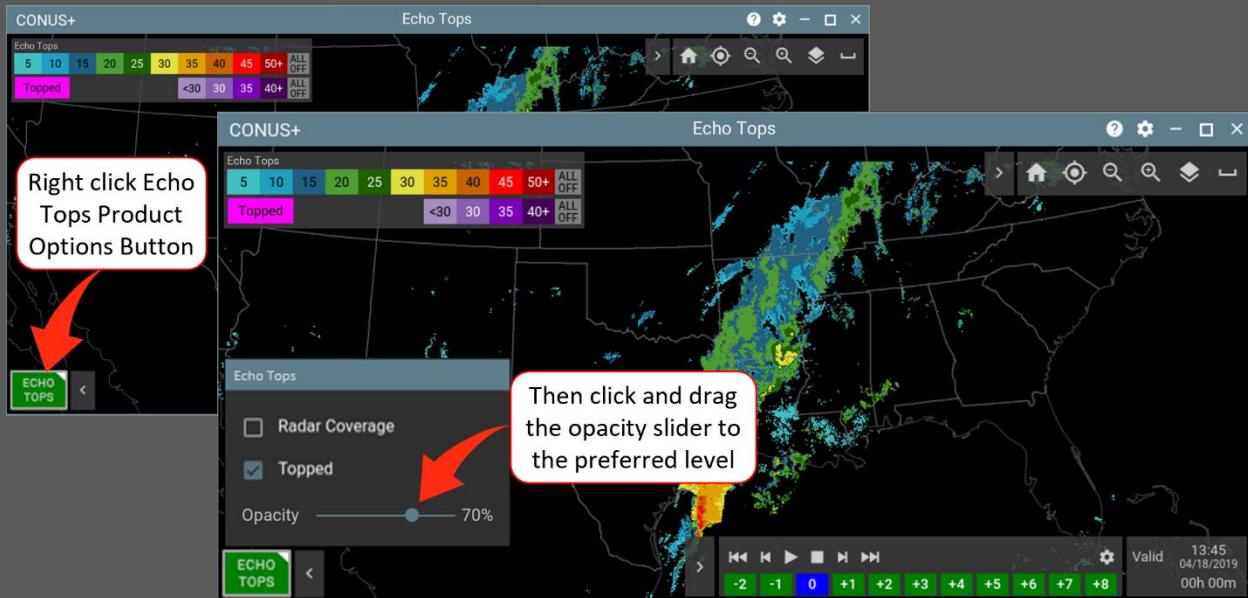


Figure 5-29. ECHO TOPS Opacity

To close the ECHO TOPS Product Options menu, click **outside** the menu and **inside** the view.

5.1.3 Turbulence (TURB)

TURB depicts current and forecast turbulence in six unique colors that represent Eddy Dissipation Rate (EDR). EDR is an aircraft independent objective measurement of disturbance in the air that does **NOT** factor in aircraft type or pilot opinion.

Actual EDR is measured in fractions of 1, with 0 representing the lowest EDR, and 1 representing the highest EDR. To simplify EDR reporting and to be consistent with how the NWS and major airlines report EDR, actual EDR values (e.g., .1, .2, etc.), are multiplied by 100 and reported as a whole number. For example, an EDR of .2 is multiplied by 100 and reported as 20. This is similar to how precipitation is grouped and reported as Light, Moderate, or Heavy instead of by dBZ level.

EDR values are grouped into the following six levels that have been vetted with the NWS and airline operators that use EDR for turbulence reporting:

- 10 - EDR range of .1 - .18
- 19 - EDR range of .19 - .25
- 26 - EDR range of .26 - .35
- 36 - EDR range of .36 - .45
- 46 - EDR range of .46 - .55
- 56+ - EDR at and above .56

EDR less than 10 is not displayed or reported and is considered no turbulence. TURB is only available in Long Range view in the CONUS+ domain excluding Puerto Rico. When TURB is added to the view, the TURB Product Status button is added to the Product Toolbar and forecast turbulence is displayed in the view (Figure 5-30. TURB).

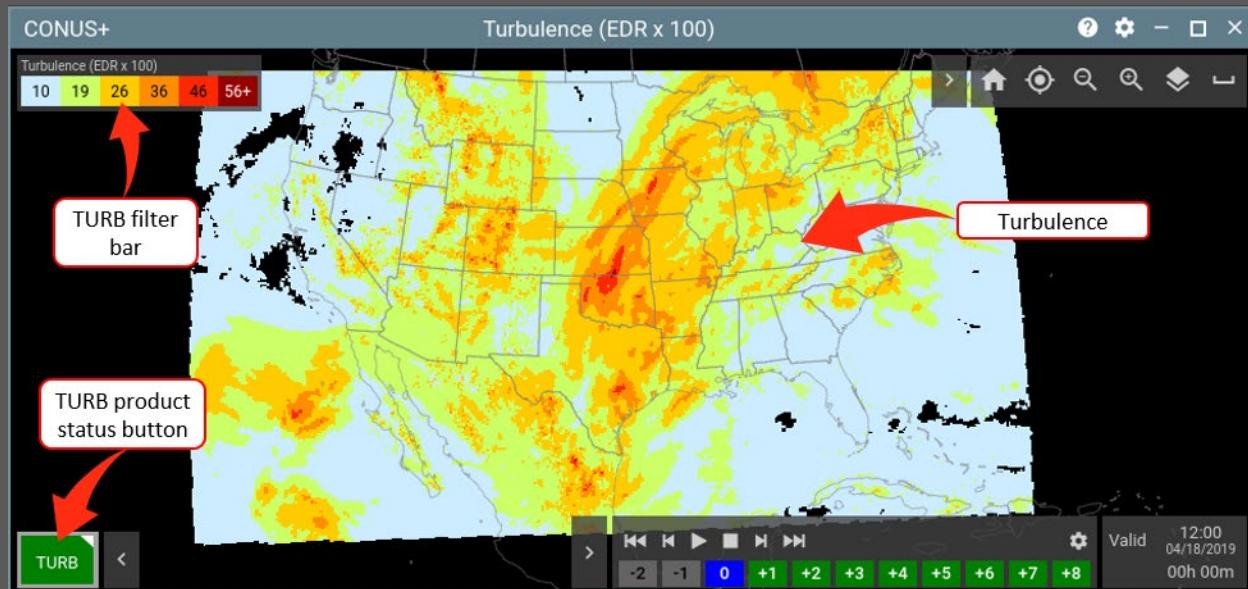


Figure 5-30. TURB

The table below was developed by the FAA in collaboration with the NWS and major airlines that have been using EDR for several years. Use this table as a quick reference guide for how EDR levels might impact air traffic and to assist you in identifying airspace that may be usable, unusable, or marginally usable from the turbulence perspective.

This table is a starting point that may change over time with feedback from airline operators, the NWS, and the FAA as EDR becomes more widely adopted.

Table 5-5. Turbulence Effect on Aircraft

EDR	Effect on Air Carrier Aircraft
10-18	Air carriers will likely not experience turbulence, while smaller aircraft (e.g., C172, PA32, etc.), would varying degrees feel the effects of turbulence.
19-25	Air carriers may experience turbulence, but not enough to necessitate termination of drink and food service or require that passengers remain in their seats.
26-35	The effects of turbulence are significant enough to warrant the cessation of food/drink service, and for passengers to remain in their seats with seatbelts fastened.
36-45	Turbulence will likely prompt pilots to advise flight attendants and passengers to remain seated with their seatbelts on. Pilots may request deviations or altitude changes to avoid the turbulence.
46-55	Turbulence can cause changes in altitude that may be hazardous to passengers and aircraft. Pilots will likely request deviations or altitude changes to avoid the turbulence.
56+	Turbulence can cause large and abrupt changes in altitude that are hazardous to passengers and aircraft. It is highly likely pilots will request deviations or altitude changes to avoid the turbulence.

5.1.3.1 Filtering TURB by EDR

To filter TURB by EDR, click the lowest EDR level you want displayed, and all turbulence below that level is filtered. In the following example, 26 was clicked so all turbulence below an EDR of 26 is filtered from the view (Figure 5-31. Filter TURB by EDR).

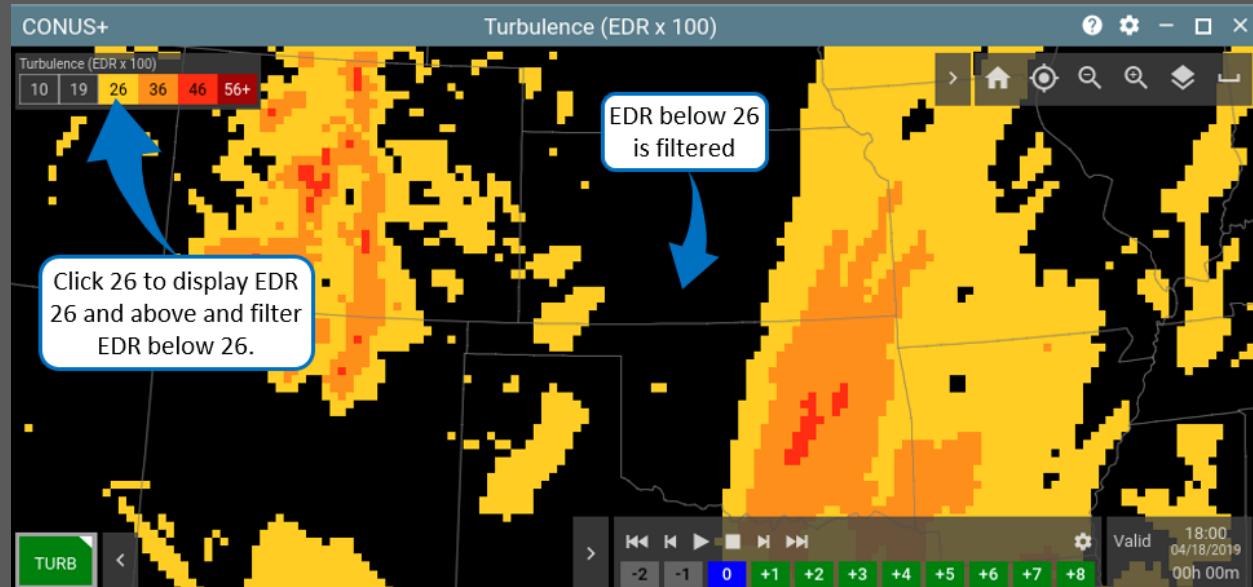


Figure 5-31. Filter TURB by EDR

5.1.3.2 Turbulence Product Options

From the Turbulence Product Options menu, you can filter turbulence by altitude layer, single altitude, and adjust opacity. To open the Turbulence Product Options menu, right-click the **TURB** Product Status button (Figure 5-32. Filter TURB by Altitude).

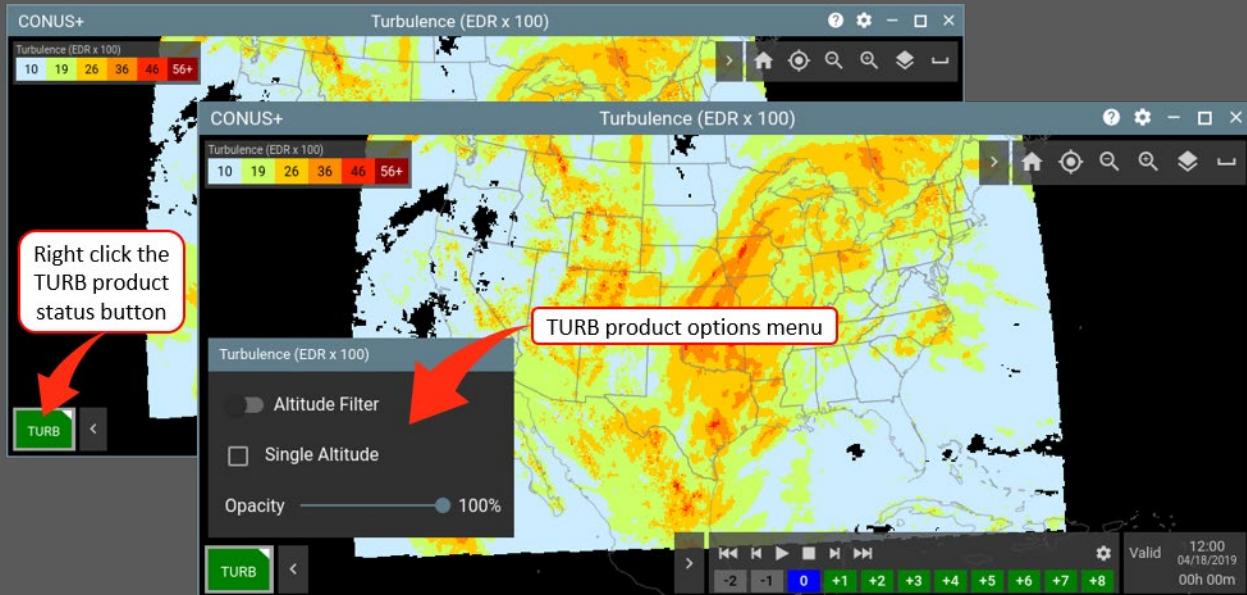


Figure 5-32. Turbulence Altitude Filter

5.1.3.2.1 Filtering Turbulence by Altitude Layer

To filter Turbulence by altitude layer, right-click the **TURB** Product Status button, then in the Turbulence Product Options menu, click the **Altitude Filter** toggle to turn the altitude filter on. As soon as you turn the altitude filter on, the altitude filter is activated and the active filter is highlighted in yellow in the View Titlebar. The default altitude layer is 000-450 (Figure 5-33. Filter Turbulence by Altitude Layer).

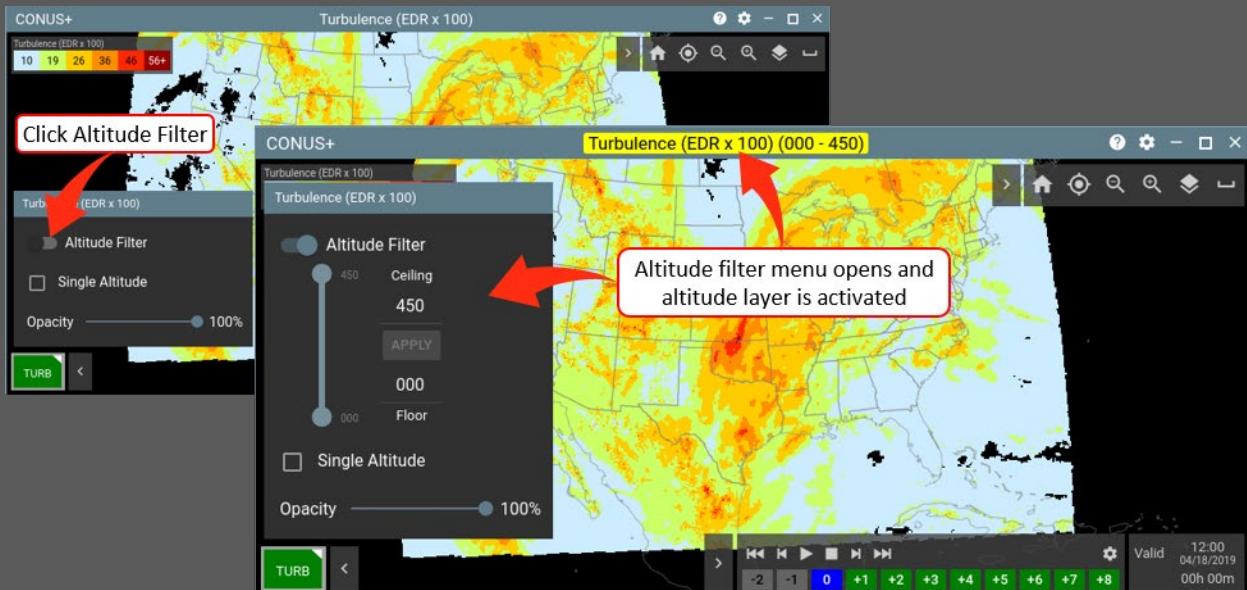


Figure 5-33. Filter Turbulence by Altitude Layer

To adjust the Turbulence altitude filter floor and ceiling altitudes, click and drag the floor and ceiling sliders to the preferred altitudes then click **APPLY** (Figure 5-34. Set TURB Altitude Layer Filter).

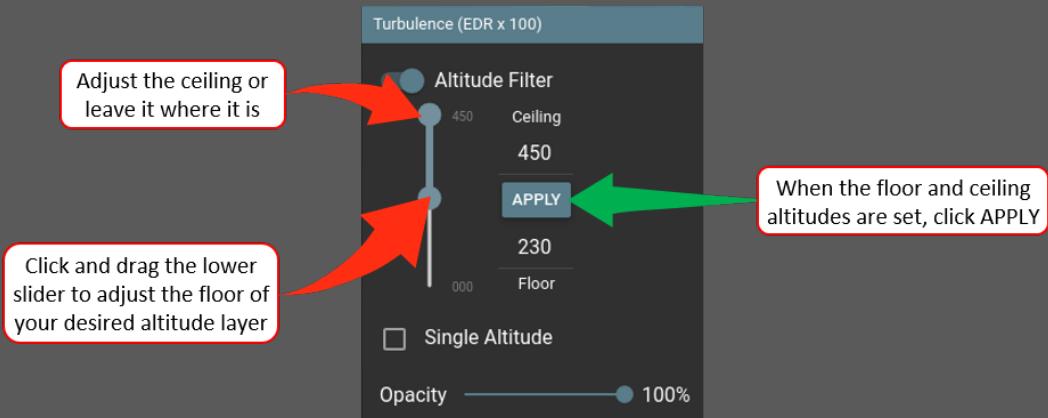


Figure 5-34. Select TURB Altitude Layer Filter

5.1.3.2.2 Filtering TURB by Single Altitude

You can also filter TURB by single altitude. The single altitude layer floor is 500' below and the ceiling is 500' above the selected altitude. For example, a single altitude layer set at 160 has a 15,500' floor and 16,500' ceiling.

To filter Turbulence by single altitude, right-click the TURB Product Status button, then in the Turbulence Product Options menu, click Single Altitude. The Single Altitude dialog box opens while the single altitude filter is activated and highlighted in the View Titlebar. By default, the single altitude filter is set to 0 so when first activated, all turbulence is filtered (Figure 5-35. TURB Single Altitude Filter).

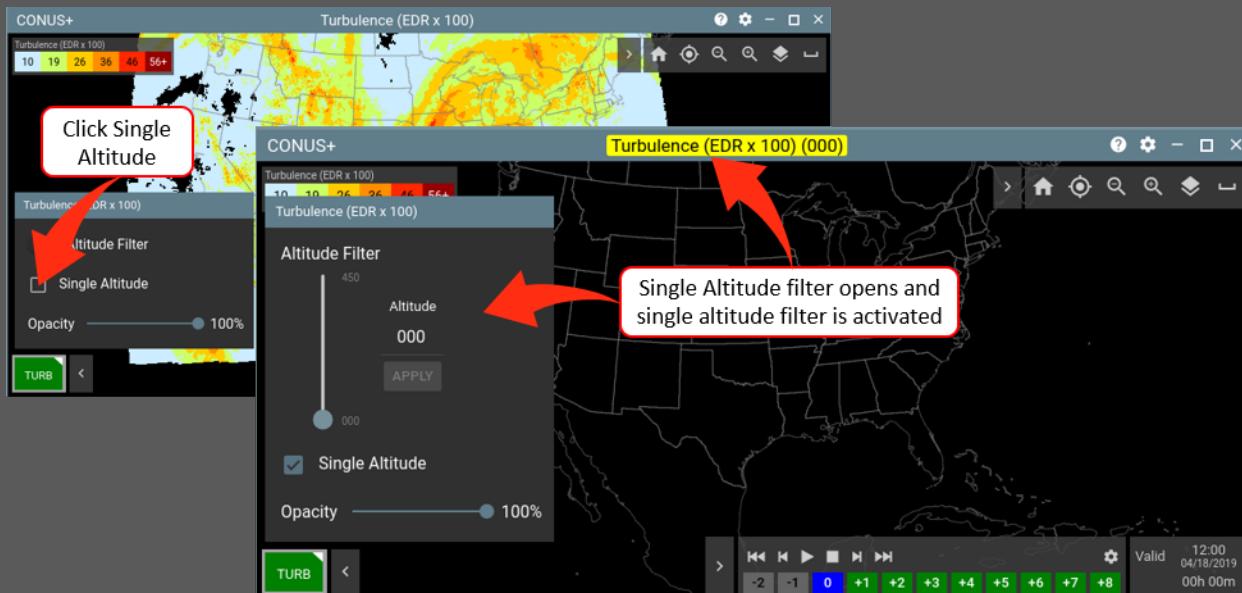


Figure 5-35. TURB Single Altitude Filter

To adjust the single altitude filter, click and drag the altitude slider to the preferred altitude then click **APPLY** (Figure 5-36. Set TURB Single Altitude Filter).

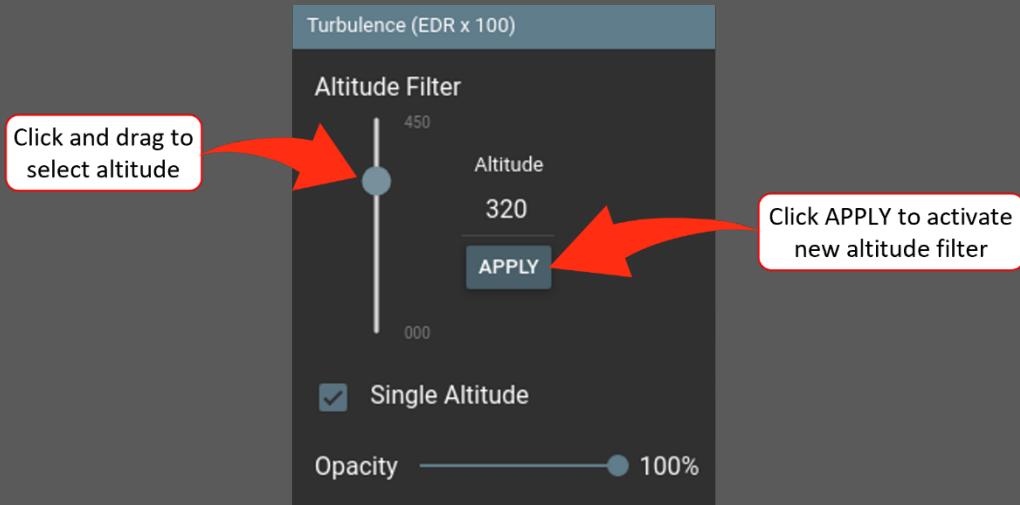


Figure 5-36. Set TURB Single Altitude Filter

5.1.3.2.3 TURB Opacity

At higher opacity, turbulence is brighter and harder to see through; at lower opacity turbulence is dimmer and easier to see through. To adjust Turbulence opacity, right-click the **TURB** Product Status button, then in the Turbulence Product Options menu, click and drag the Opacity slider to the preferred level (Figure 5-37. TURB Opacity).

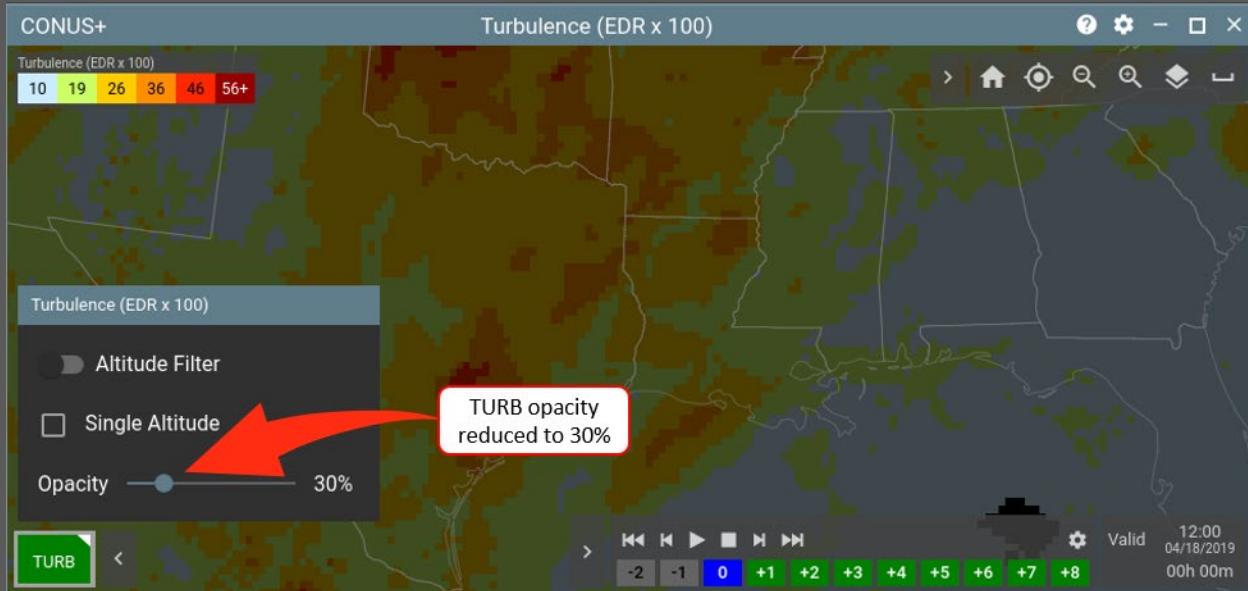


Figure 5-37. TURB Opacity

To close the TURB Product Options menu, click **outside** the menu and **inside** the active view.

5.1.4 Composite Reflectivity Mosaic (COMP REFL)

COMP REFL is a Primary Product that displays precipitation in the following six levels of intensity:

- Level 1 – Light
- Level 2 – Moderate
- Levels 3 & 4 – Heavy
- Levels 5 & 6 – Extreme

The Composite Reflectivity Mosaic is derived from NextGen Weather Radar (NEXRAD), Canadian Radar (CANRAD), and Terminal Doppler Weather Radar (TDWR) data. COMP REFL has no forecast or winter weather capability.

When the Composite Reflectivity Mosaic is opened, the COMP REFL Product Status button is added to the Product Toolbar and detected precipitation is added to the view (Figure 5-38. COMP REFL).

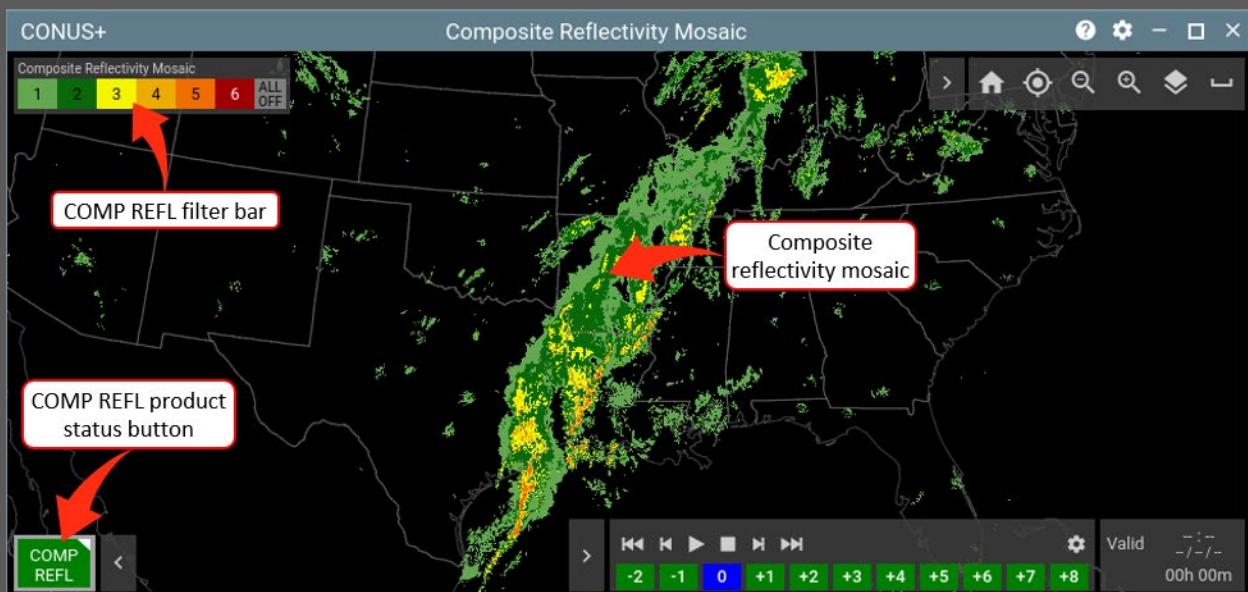


Figure 5-38. COMP REFL

5.1.4.1 Filtering COMP REFL by Intensity

To filter precipitation by intensity, use the Composite Reflectivity Mosaic filter bar (Figure 5-39. COMP REFL Filter Bar).

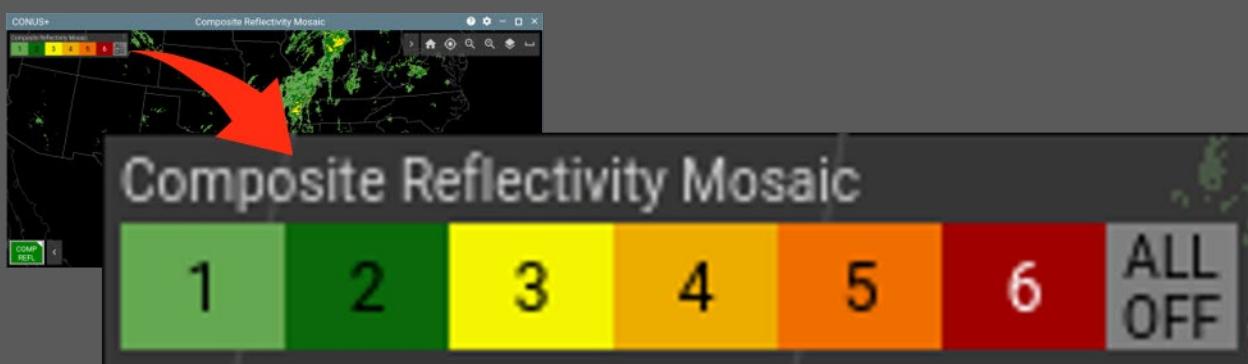


Figure 5-39. COMP REFL Filter Bar

When filtering COMP REFL by precipitation intensity, click the box for the lowest level of precipitation you want displayed. In the following example, the yellow Number 3 box was clicked to filter all precipitation below Level 3 (Figure 5-40. COMP REFL Filtered by Intensity).

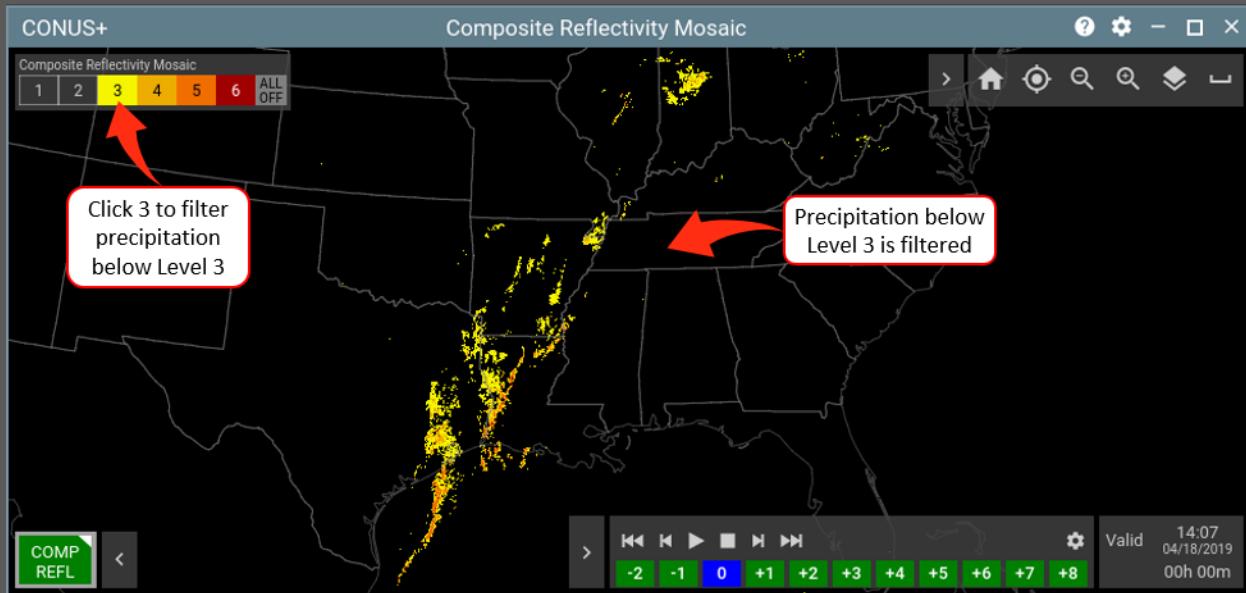


Figure 5-40. COMP REFL Filtered by Intensity

To filter all precipitation while leaving the COMP REFL product on, click the ALL OFF button at the end of the Filter bar (Figure 5-41. COMP REFL – Filter all Precipitation).



Figure 5-41. COMP REFL – Filter all Precipitation

The ALL OFF button works as a toggle; when you click ALL OFF, all precipitation is filtered and the ALL OFF button changes to an ALL ON button. When you click ALL ON, all precipitation is displayed and the ALL ON button changes back to an ALL OFF button (Figure 5-42. COMP REFL – Hide/Display all Precipitation.).

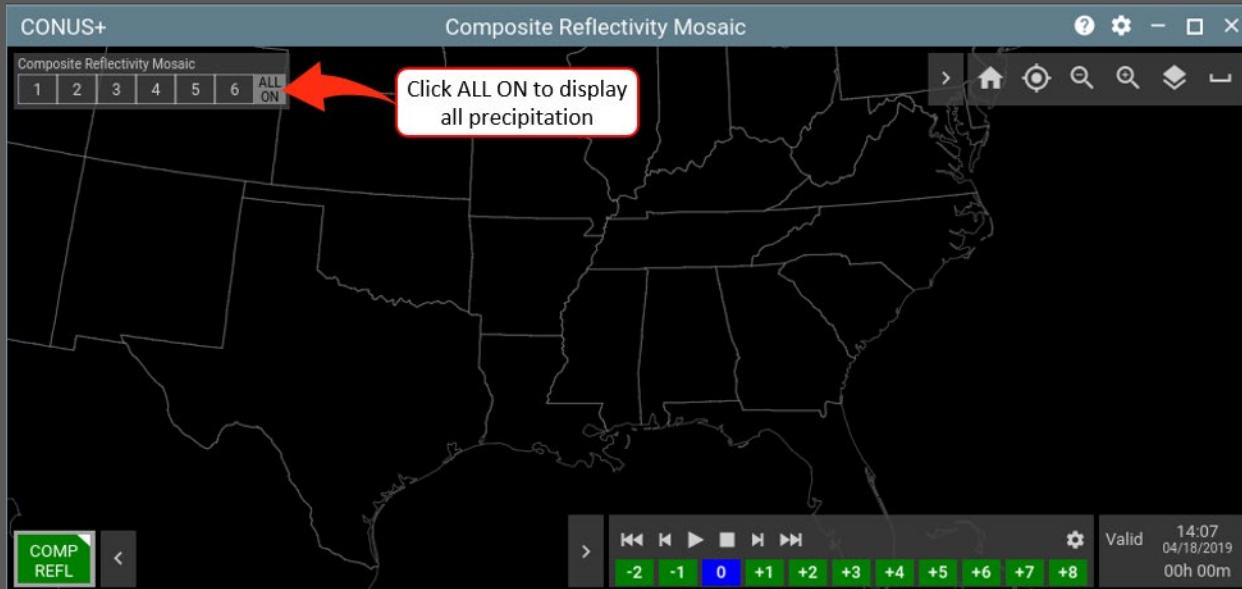


Figure 5-42. COMP REFL – Hide/Display all Precipitation.

5.1.4.2 COMP REFL Product Options

From the COMP REFL Product Options menu, you can filter COMP REFL by altitude, display COMP REFL radar coverage maps, and adjust mosaic opacity. To open the COMP REFL Product Options menu, right-click the COMP REFL Product Status button (Figure 5-43. COMP REFL Product Options Menu).

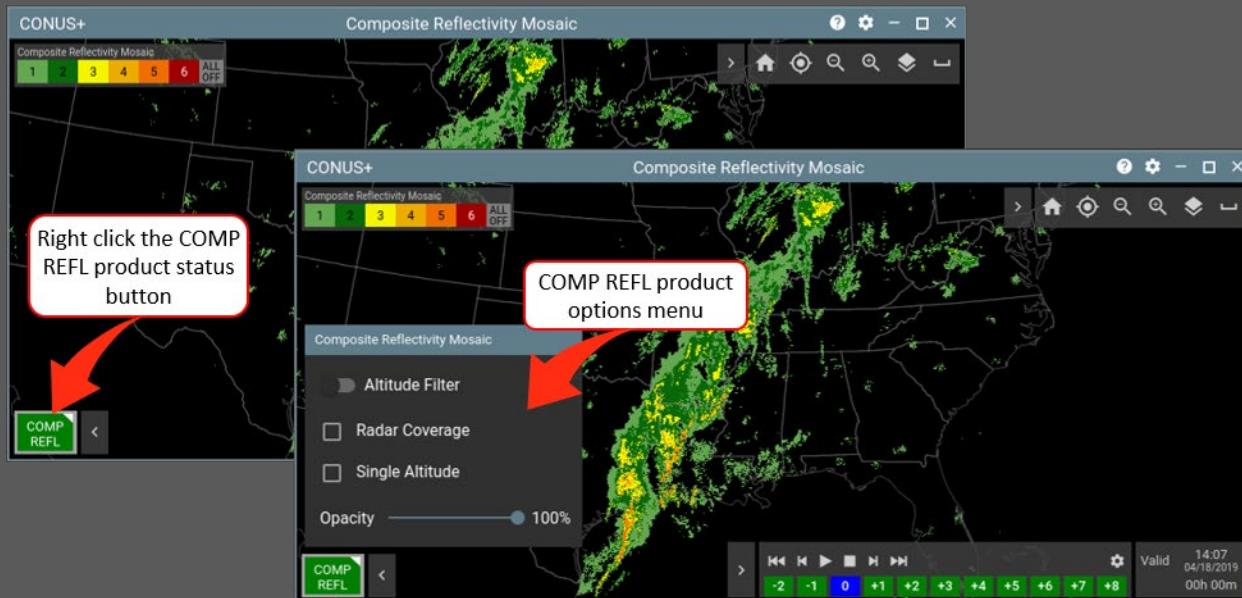


Figure 5-43. COMP REFL Product Options Menu

To close the COMP REFL Product Options menu, click **outside** the menu and **inside** the active view.

5.1.4.2.1 Filter COMP REFL by Altitude Layer

To filter COMP REFL by altitude layer, right-click the **COMP REFL Product Status button**, then in the COMP REFL Product Options menu, click **Altitude Filter**. The menu expands to show altitude filtering options, and the active altitude layer is highlighted in yellow in the View Titlebar. When the altitude filter is activated, 000-700 is the default altitude layer (Figure 5-44. COMP REFL Altitude Filter).

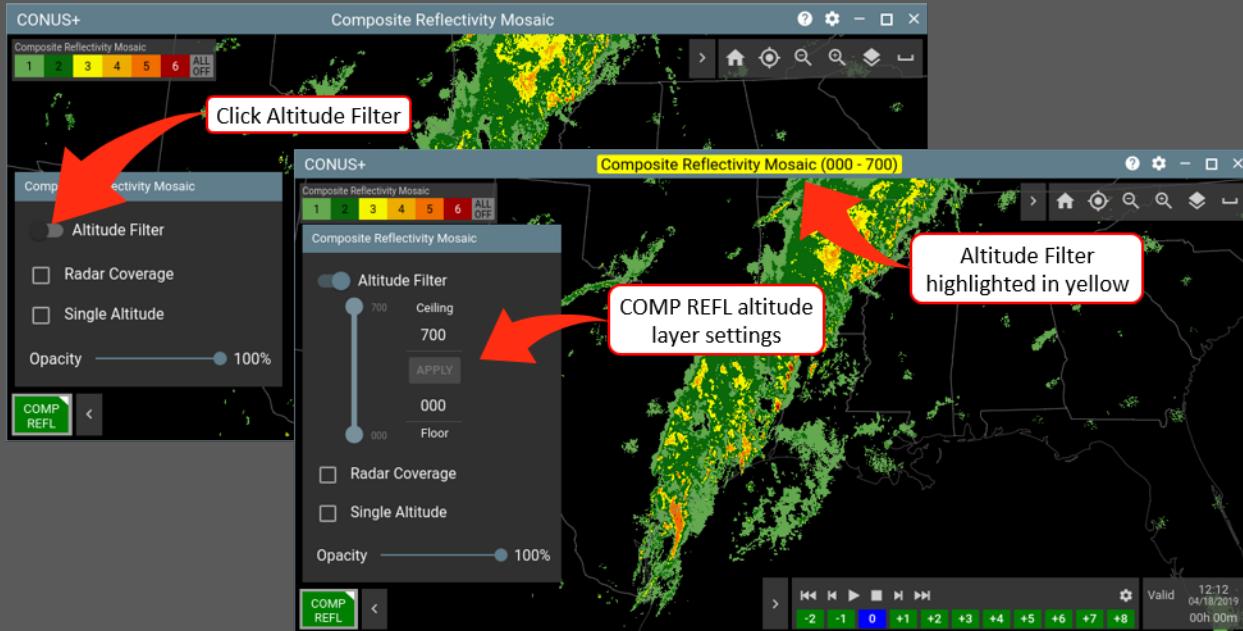


Figure 5-44. COMP REFL Altitude Filter

While the default COMP REFL altitude layer floor and ceiling are 000 and 700 respectively, they can both be adjusted. To adjust floor and/or ceiling altitudes, click and drag the altitude sliders to the preferred altitudes then click **APPLY** (Figure 5-45. Set COMP REFL Altitude Layer Filter).

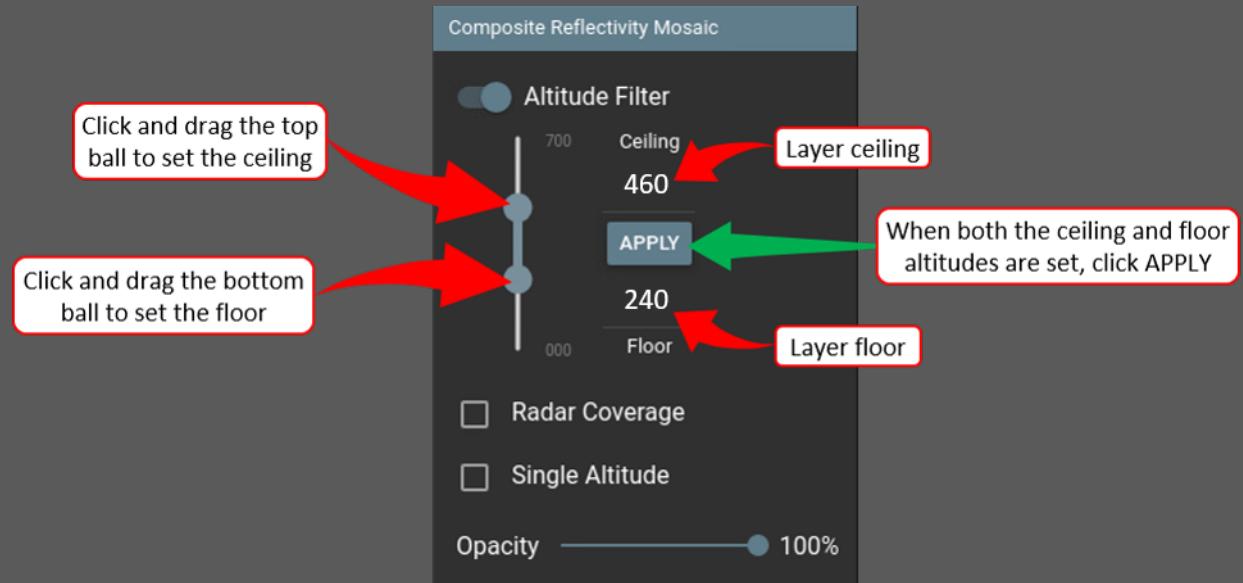


Figure 5-45. Set COMP REFL Altitude Layer Filter

After you click APPLY, the new altitude filter layer is active and highlighted in yellow in the View Titlebar (Figure 5-46. COMP REFL Altitude Layer Filter Active).

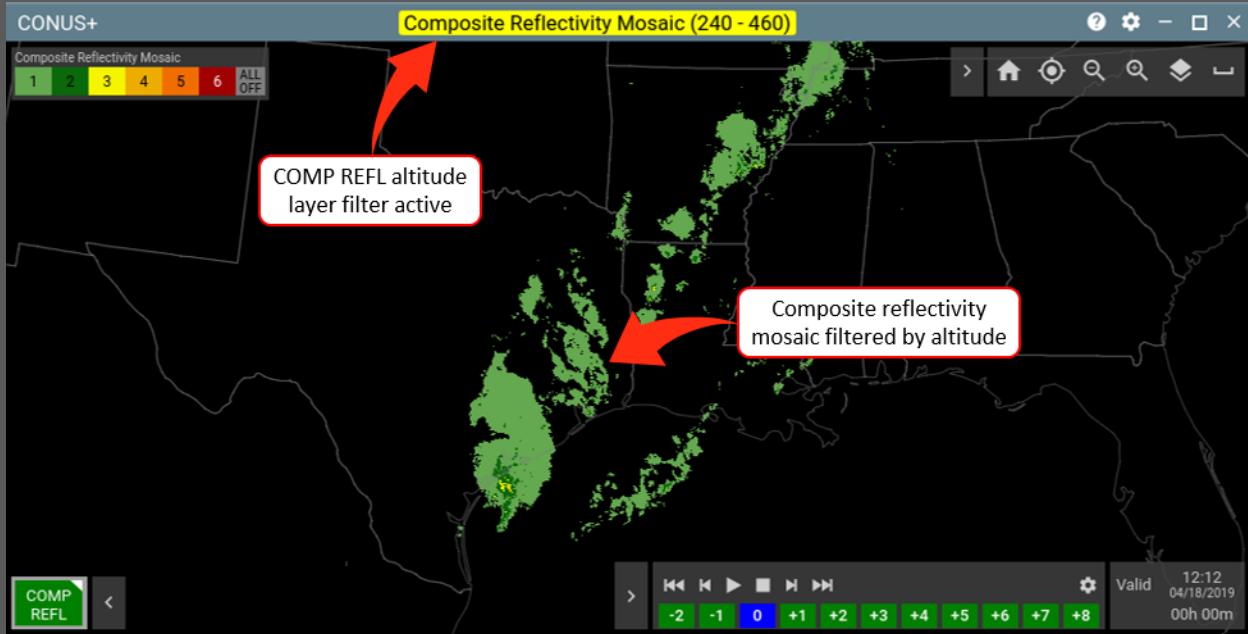


Figure 5-46. COMP REFL Altitude Layer Filter Active

5.1.4.2.2 Filter COMP REFL by Single Altitude

A single altitude layer is a 1,000' layer with the floor 500' below and ceiling 500' above the selected altitude. For example, a single altitude layer set at 160 has a 15,500' floor and 16,500' ceiling. To open the COMP REFL single altitude filter, right-click the COMP REFL Product Status button, then in the COMP REFL Product Options menu, click Single Altitude (Figure 5-47. COMP REFL Single Altitude Filter).

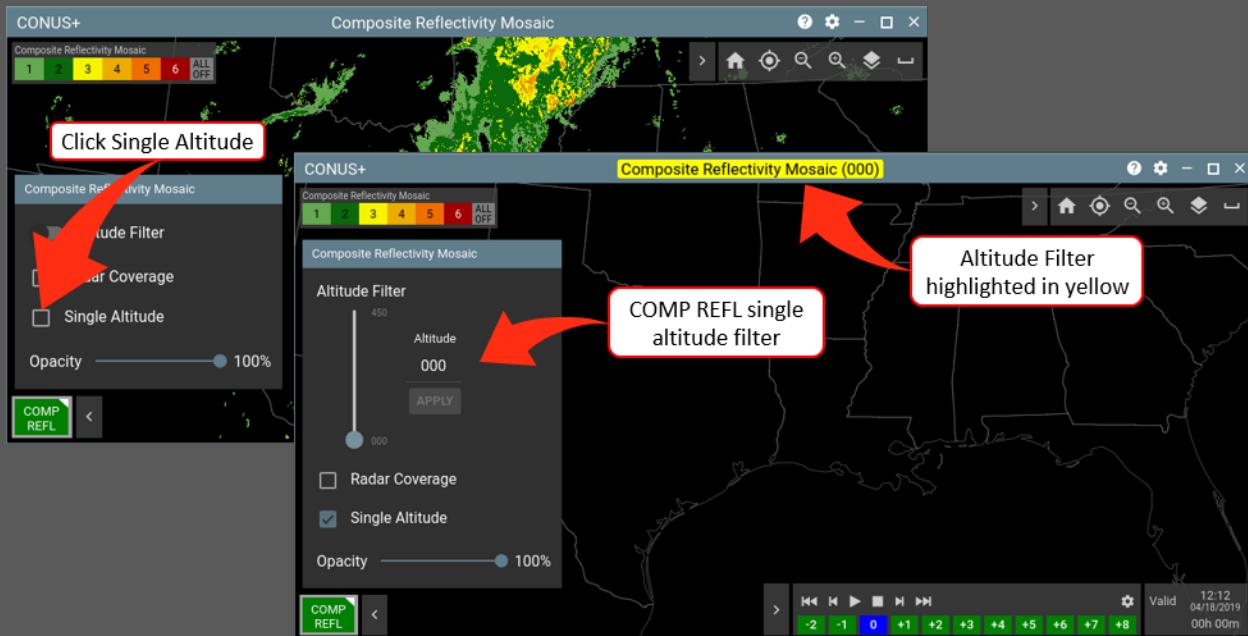


Figure 5-47. COMP REFL Single Altitude Filter

By default, the single altitude filter is set to 000. When Single Altitude is clicked, the single altitude filter is active and all precipitation is filtered. To adjust the single altitude filter to the altitude you want, click and drag the altitude slider to the preferred altitude then click APPLY (Figure 5-48. Set COMP REFL Single Altitude Filter).

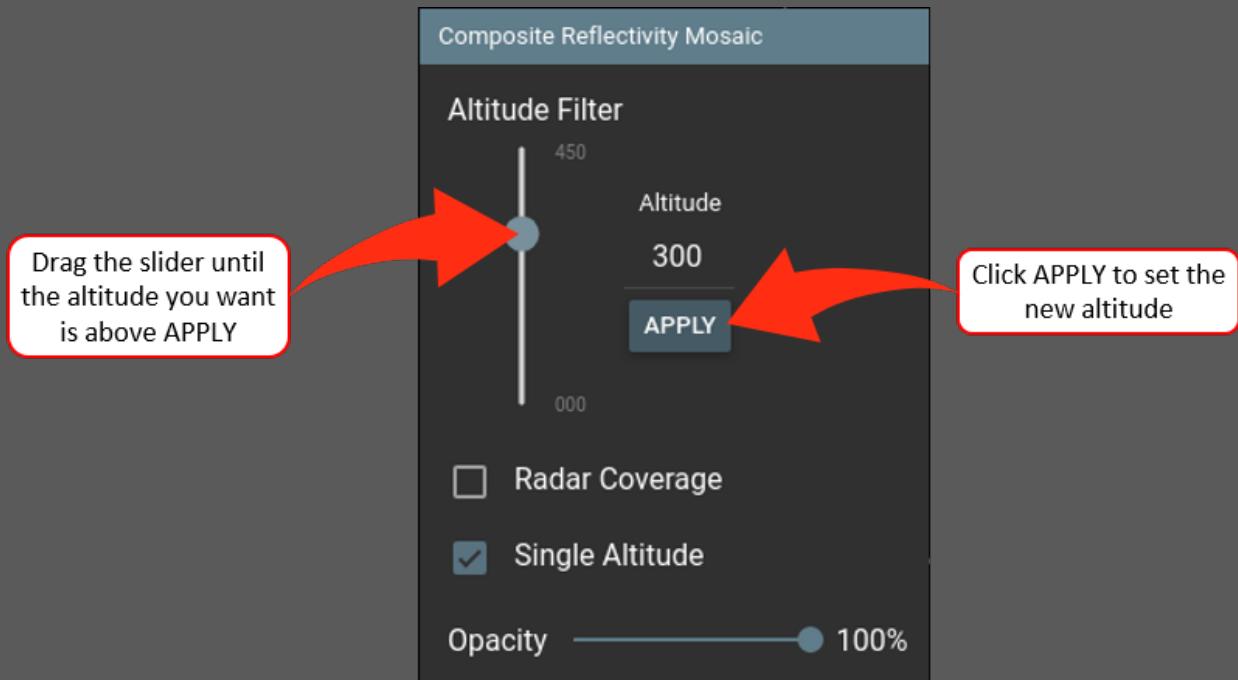


Figure 5-48. Set COMP REFL Single Altitude Filter

After you click APPLY, the single altitude filter is set to the selected altitude and highlighted in the View Titlebar. In the following example, the single altitude filter is set to 300, so all precipitation outside the 29,500' - 30,500' layer is filtered (Figure 5-49. COMP REFL Single Altitude Filter Active).

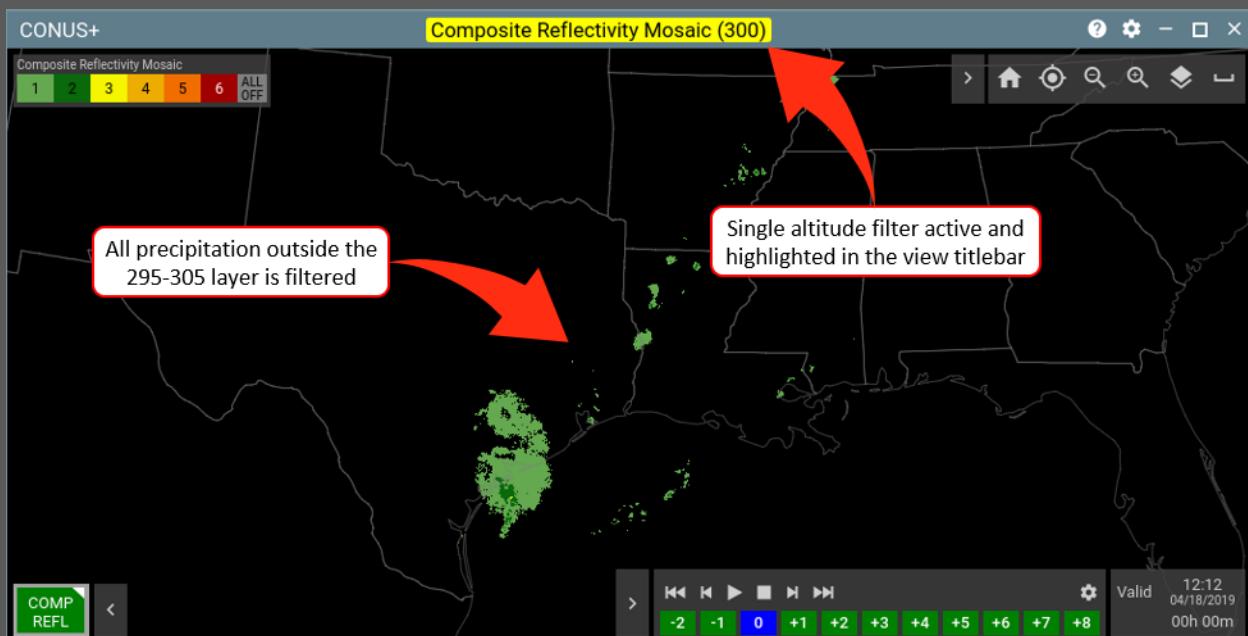


Figure 5-49. COMP REFL Single Altitude Filter Active

5.1.4.2.3 COMP REFL Radar Coverage

COMP REFL has two radar coverage maps, Radar Coverage with Impairment and Radar Coverage without Impairment.

Radar Coverage with Impairment (the default radar coverage map) depicts areas with reliable weather radar coverage in light gray, areas with impaired radar coverage in a dark gray, and areas with no weather radar coverage in black (Figure 5-50. COMP REFL Radar Coverage with Impairment).

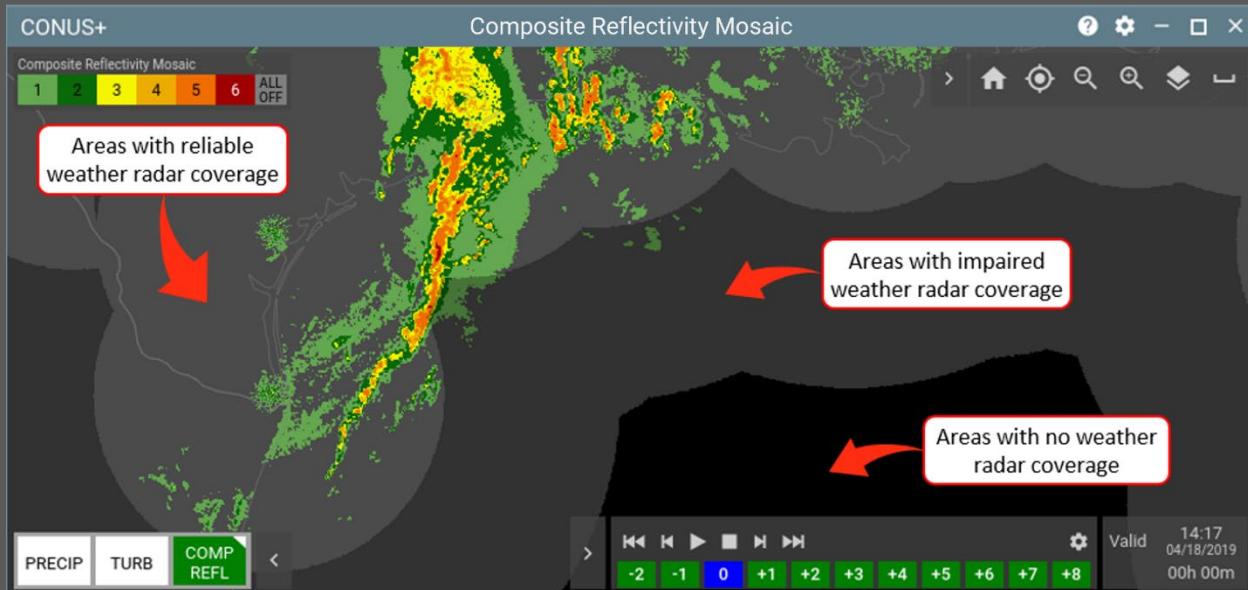


Figure 5-50. COMP REFL Radar Coverage with Impairment

Radar Coverage without Impairment depicts areas with weather radar coverage in light gray and areas with no radar coverage with black but does not depict areas of impaired weather radar coverage and can be misleading. Therefore, Radar Coverage with Impairment is **NOT RECOMMENDED** (Figure 5-51. COMP REFL Radar Coverage without Impairment).

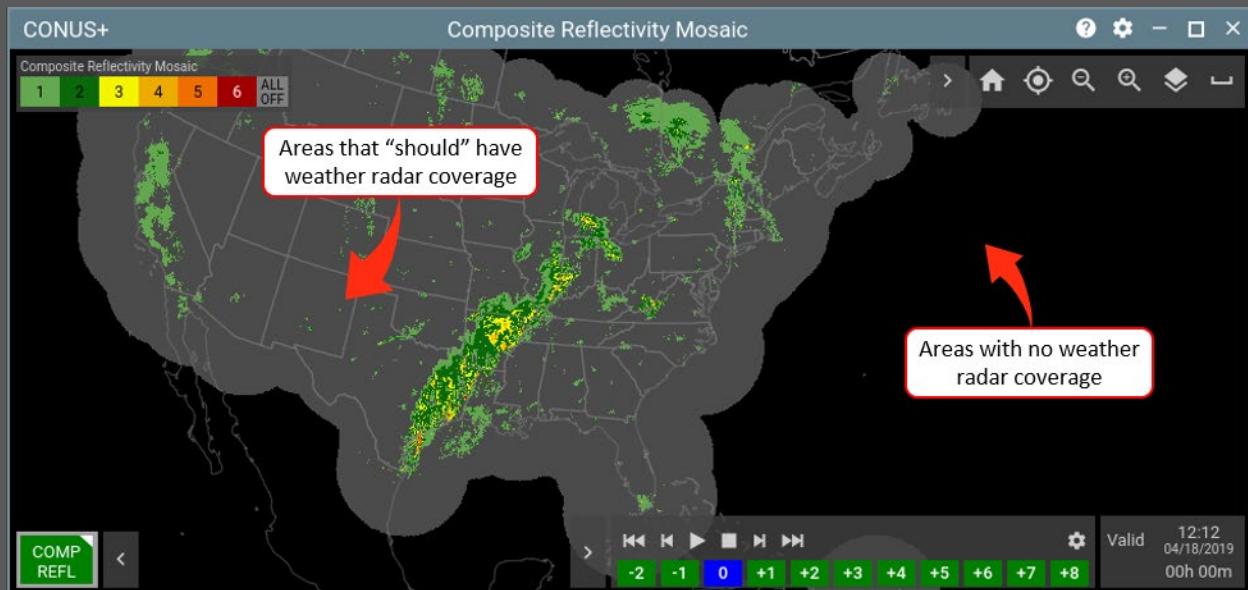


Figure 5-51. COMP REFL Radar Coverage without Impairment

Filtering COMP REFL by altitude affects the Radar Coverage with Impairment map. As you filter precipitation by altitude filter, areas of radar coverage and areas of impaired coverage change.

In the following example, COMP REFL is filtered by altitude and the Radar Coverage with Impairment map has changed. Compare Figure 5-52 on the previous page where COMP REFL is not filtered by altitude, with Figure 5-52 where COMP REFL is filtered by altitude (Figure 5-52. COMP REFL Radar Coverage With Impairment Filtered by Altitude).

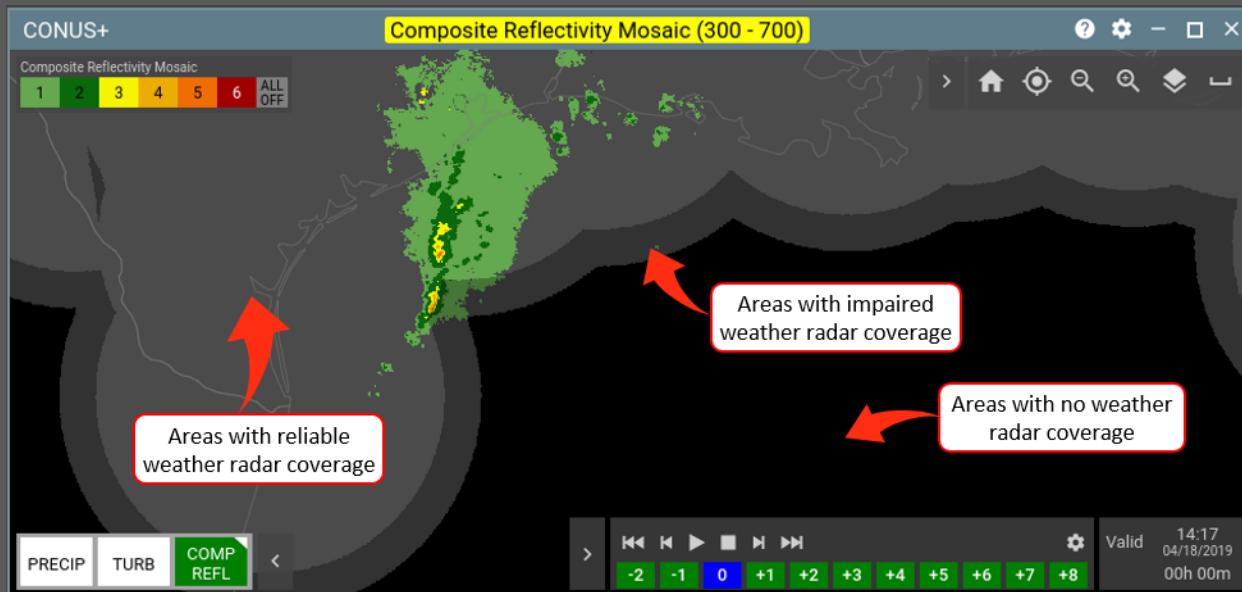


Figure 5-52. COMP REFL Radar Coverage With Impairment Filtered by Altitude

To display COMP REFL radar coverage, right-click the **COMP REFL** Product Status button, then in the COMP REFL Product Options menu, click **Radar Coverage**. Radar Coverage with Impairment is the default radar coverage map (Figure 5-53. Select COMP REFL Radar Coverage).

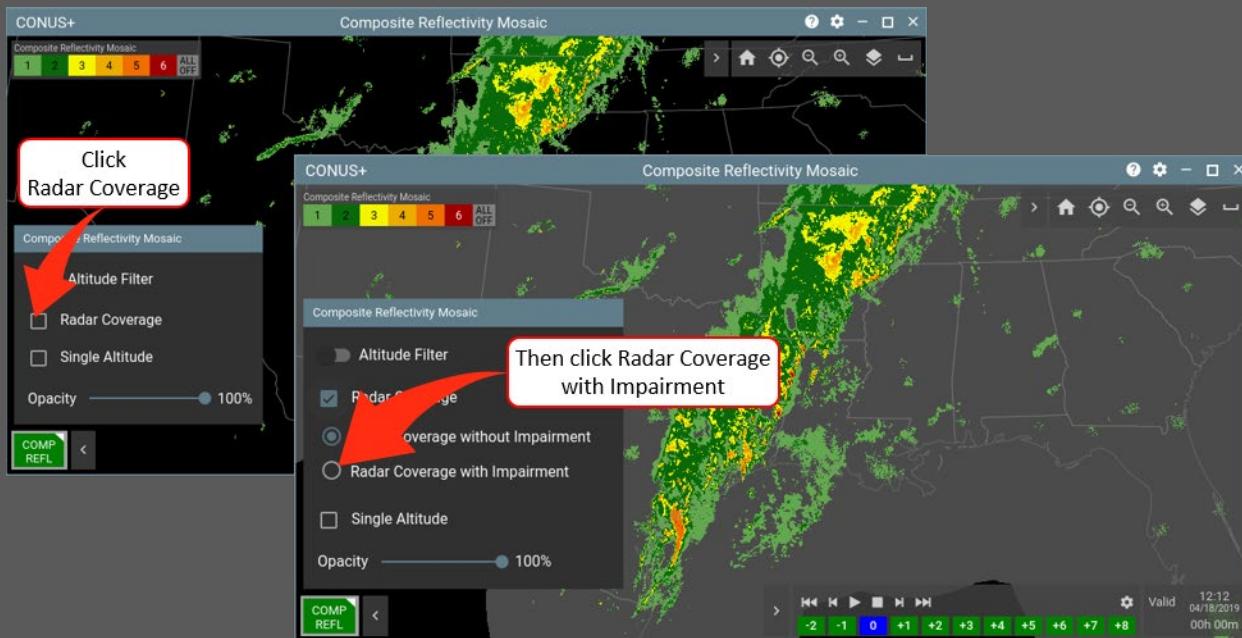


Figure 5-53. Select COMP REFL Radar Coverage

5.1.4.2.4 COMP REFL Opacity

Higher opacity makes the Composite Reflectivity Mosaic brighter and more prominent while lower opacity makes the mosaic dimmer and easier to see through. To adjust opacity, right-click the COMP REFL Product Status button, then in the Product Options menu, click and drag the Opacity slider to the preferred level (Figure 5-54. COMP REFL Opacity).

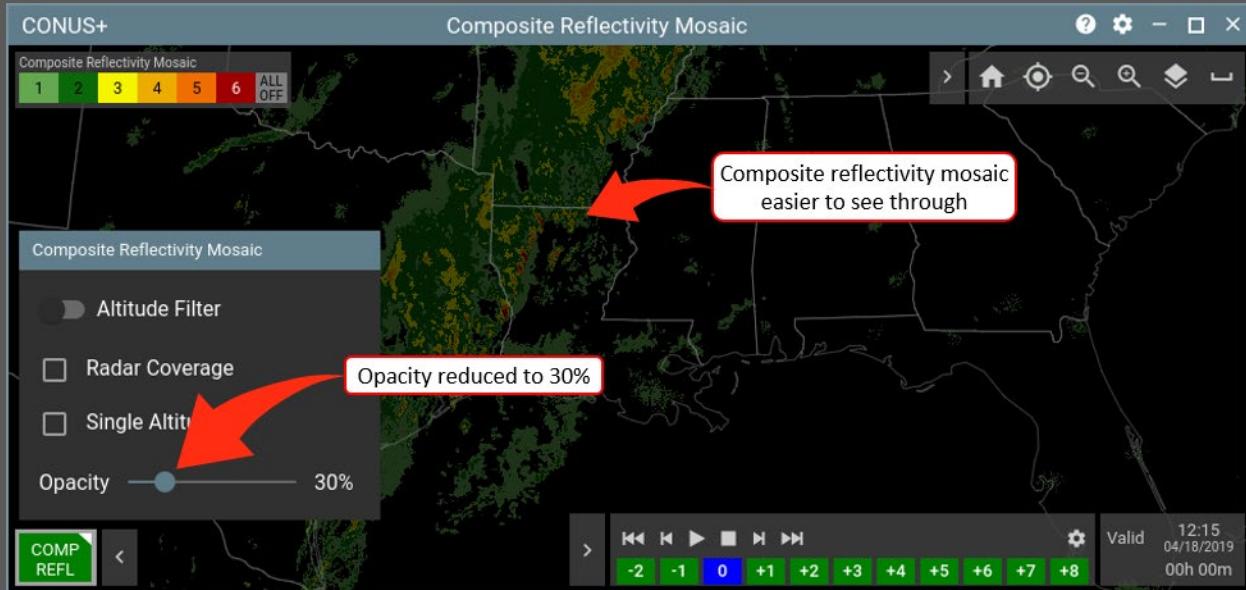


Figure 5-54. COMP REFL Opacity

To close the Product Options menu, click anywhere **outside** the menu and **inside** the active view.

5.1.5 Icing (ICING)

ICING is a Primary Product that displays forecast icing in five levels of severity but is only available in Long Range View in the CONUS+ domain. Trace (TRC), Light (LGT), Moderate (MOD), and Heavy (HVY) icing is depicted with filled polygons, while Super-cooled Liquid Droplets (SLD) is depicted with hollow red contours.

When ICING is added to a view, the ICING Product Status button is added to the Product Toolbar and forecast icing is displayed in the view (Figure 5-55. ICING).

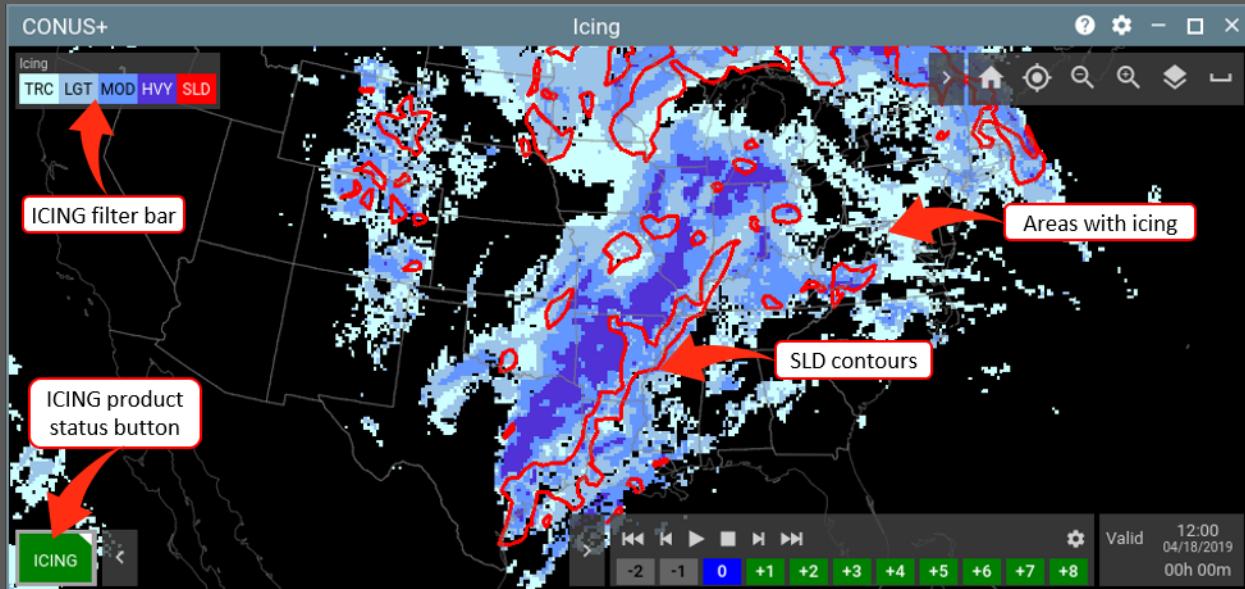


Figure 5-55. ICING

Super-cooled liquid droplets (SLD) are liquid water droplets that freeze immediately when they contact an airframe and is considered a particularly dangerous form of icing. In the ICING product, all icing levels other than SLD and Heavy icing can be filtered. To filter ICING, click the lowest severity you want displayed. In the following example, all icing below MOD is filtered (Figure 5-56. ICING Filtered by Severity).

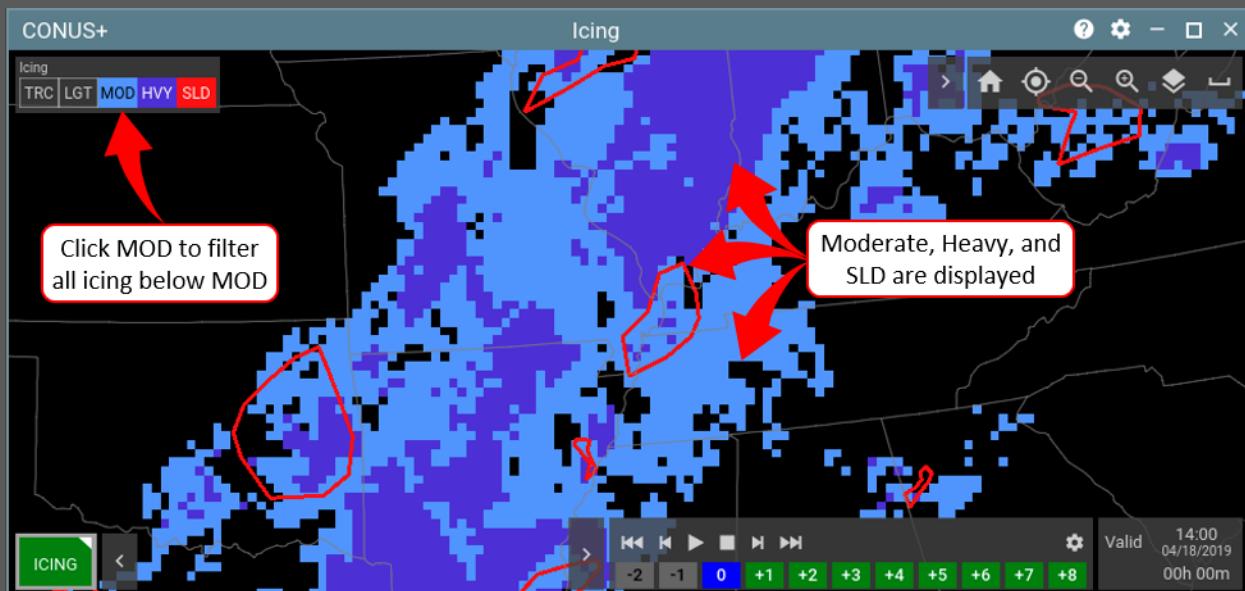


Figure 5-56. ICING Filtered by Severity

5.1.5.1 ICING Product Options

From the ICING Product Options menu, you can filter ICING by altitude layer or single altitude and adjust opacity. To open the ICING Product Options menu, right-click the ICING Product Status button (Figure 5-57. ICING Product Options Menu).

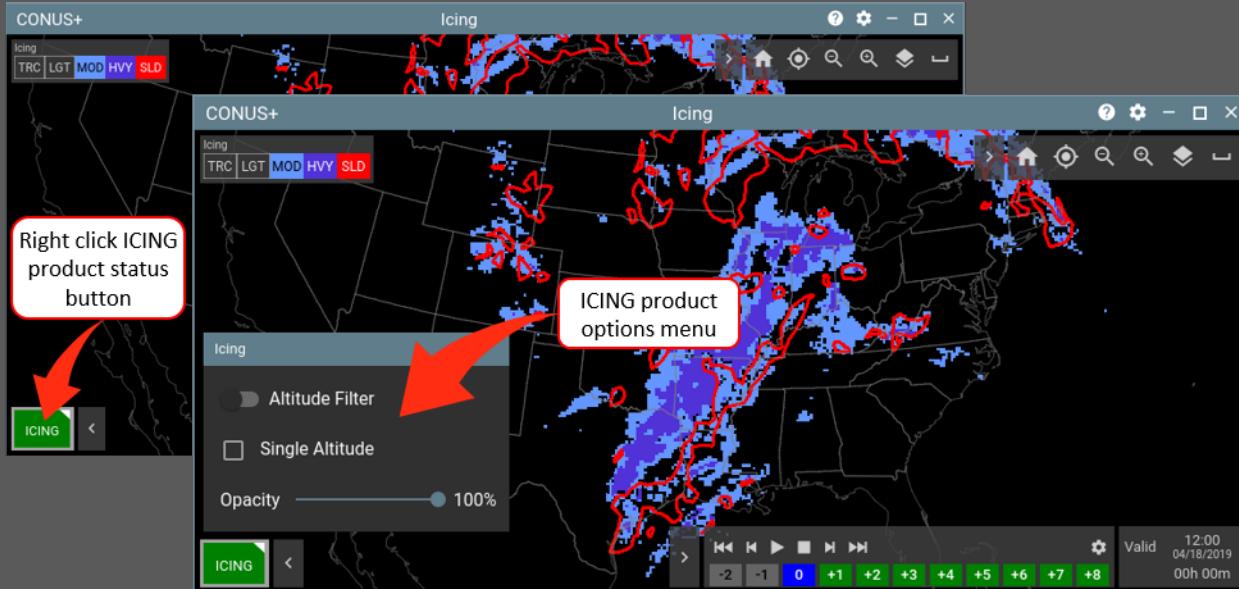


Figure 5-57. ICING Product Options Menu

5.1.5.1.1 Filter ICING by Altitude Layer

To filter ICING by altitude layer, right-click the **ICING** Product Status button, then in the ICING Product Options menu, click **Altitude Filter**. The default altitude filter (010-300) is activated, the menu expands to show all filtering options, and the active layer is highlighted in yellow on the View Titlebar (Figure 5-58. ICING Altitude Filter Menu).

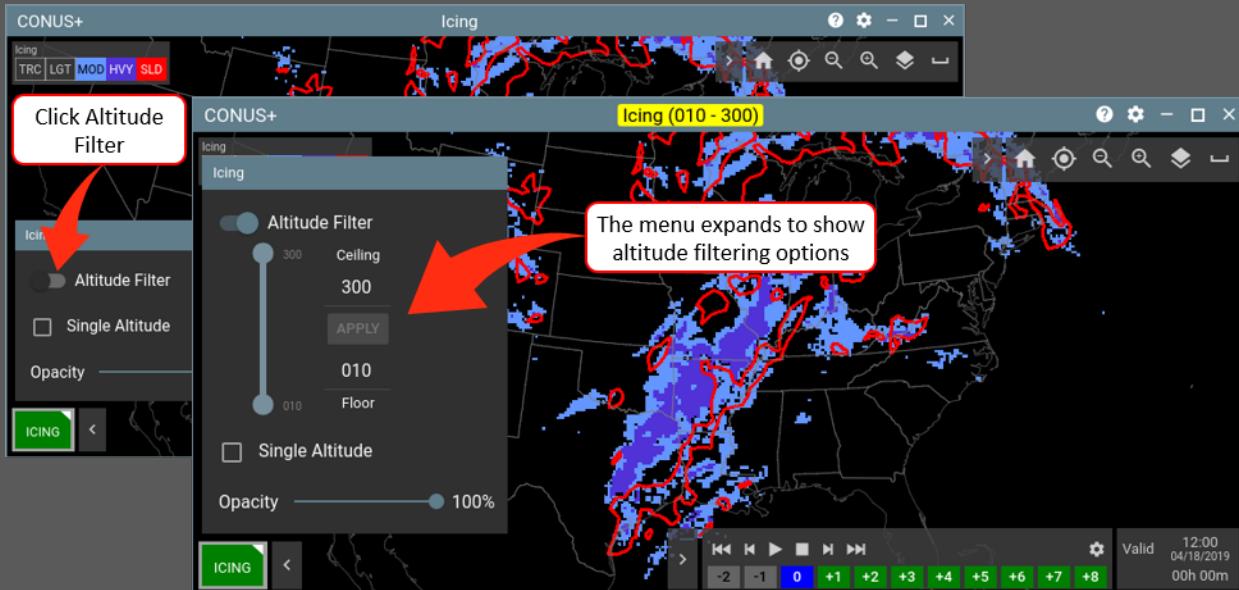


Figure 5-58. ICING Altitude Filter Menu

To change the layer floor and ceiling altitudes, click and drag the respective altitude sliders to the preferred altitudes then click APPLY (Figure 5-59. Adjust ICING Altitude Filter Floor & Ceiling).

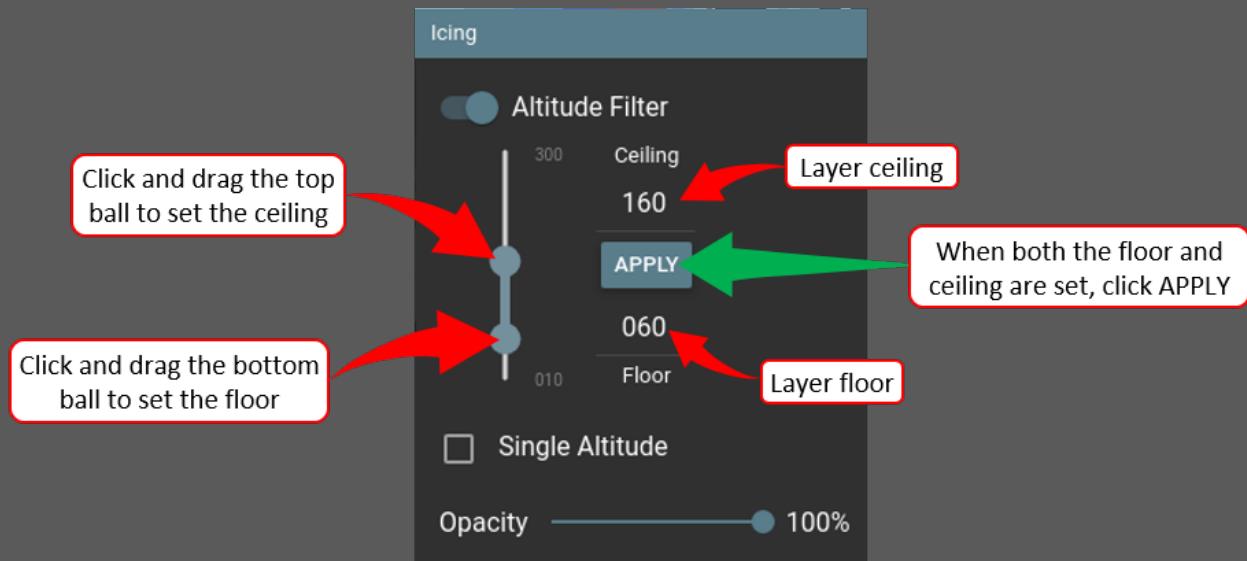


Figure 5-59. Adjust ICING Altitude Filter Floor & Ceiling

After you click APPLY, the new altitude layer filter is active and is highlighted in yellow on the View Titlebar (Figure 5-60. ICING Altitude Layer Filter Active).

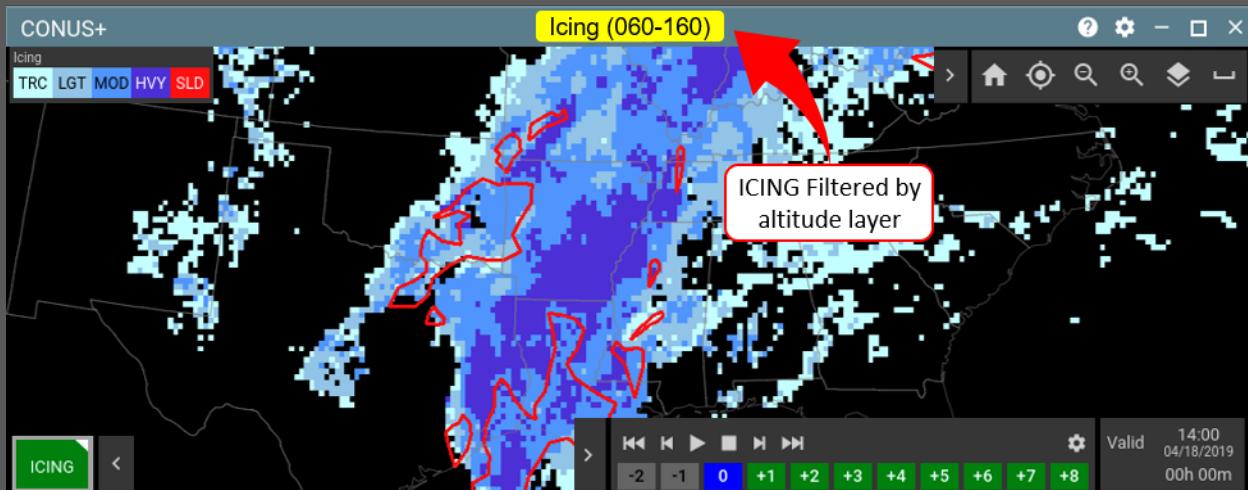


Figure 5-60. ICING Altitude Layer Filter Active

5.1.5.1.2 Filter ICING by Single Altitude

You can also filter ICING by single altitude. A single altitude filter is a 1,000' layer with the floor 500' below and ceiling 500' above the selected altitude. For example, a single altitude layer of 160 has a 15,500' floor and 16,500' ceiling.

To filter ICING by single altitude, right-click the **ICING** Product Status button, then click Single Altitude. When you click Single Altitude, the default single altitude filter (1,000") is activated and highlighted in yellow in the View titlebar (Figure 5-61. Open ICING Single Altitude Filter).

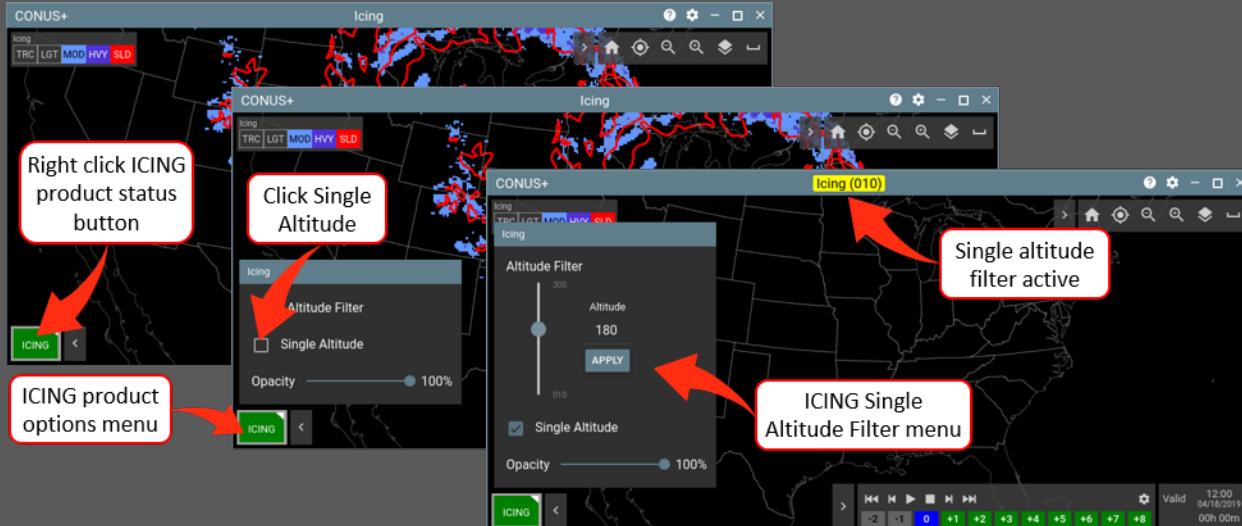


Figure 5-61. Open ICING Single Altitude Filter

To change the single altitude filter, click and drag the altitude slider to the preferred altitude then click **APPLY** (Figure 5-62. Adjust ICING Single Altitude Filter).

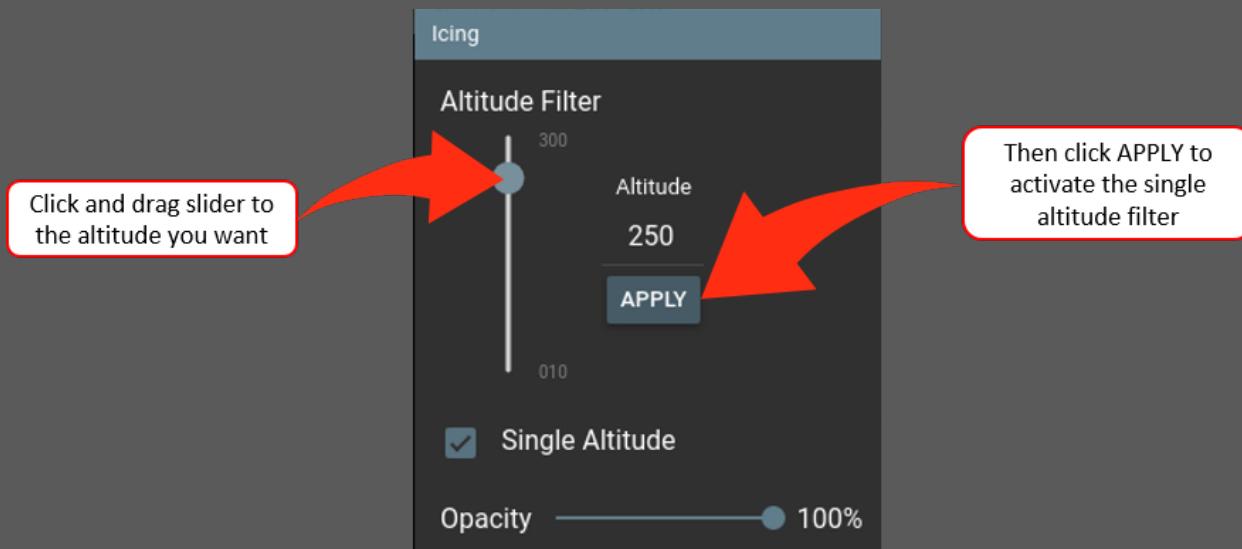


Figure 5-62. Adjust ICING Single Altitude Filter

After you click APPLY, the new single altitude filter is activated and highlighted in yellow on the View titlebar (Figure 5-63. ICING Single Altitude Filter Active).

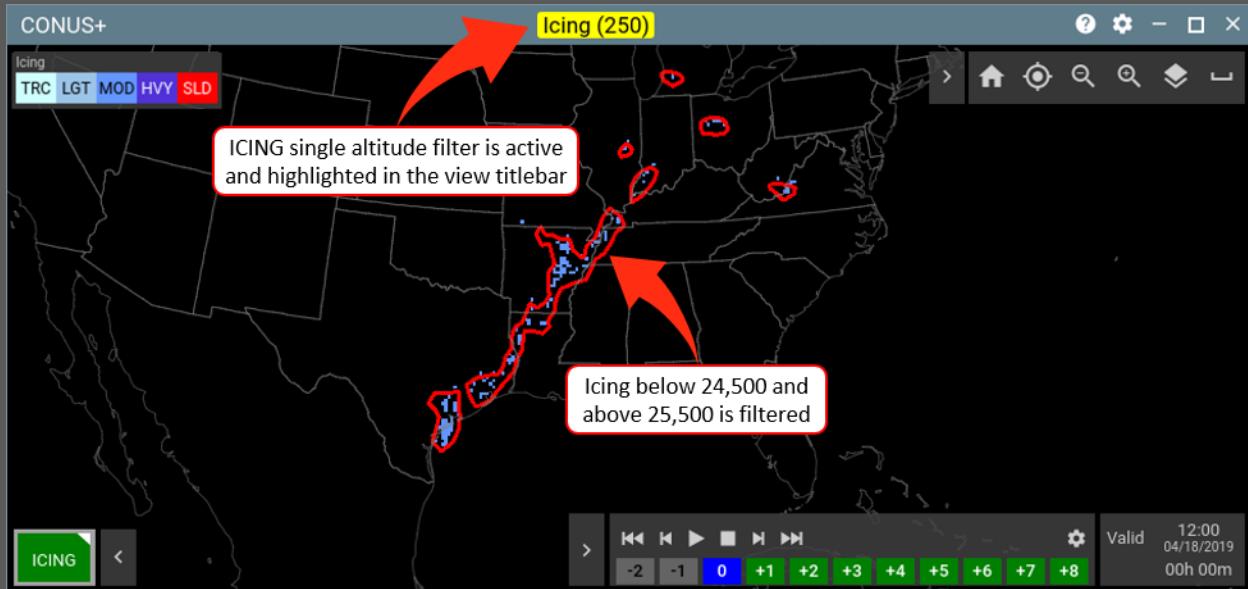


Figure 5-63. ICING Single Altitude Filter Active

5.1.5.1.3 ICING Opacity

At higher opacity icing is brighter and harder to see through; at lower opacity icing is dimmer and easier to see through. To adjust opacity, right-click the ICING Product Status button, then in the ICING Product Options menu, click and drag the Opacity slider the preferred level (Figure 5-64. ICING Opacity).

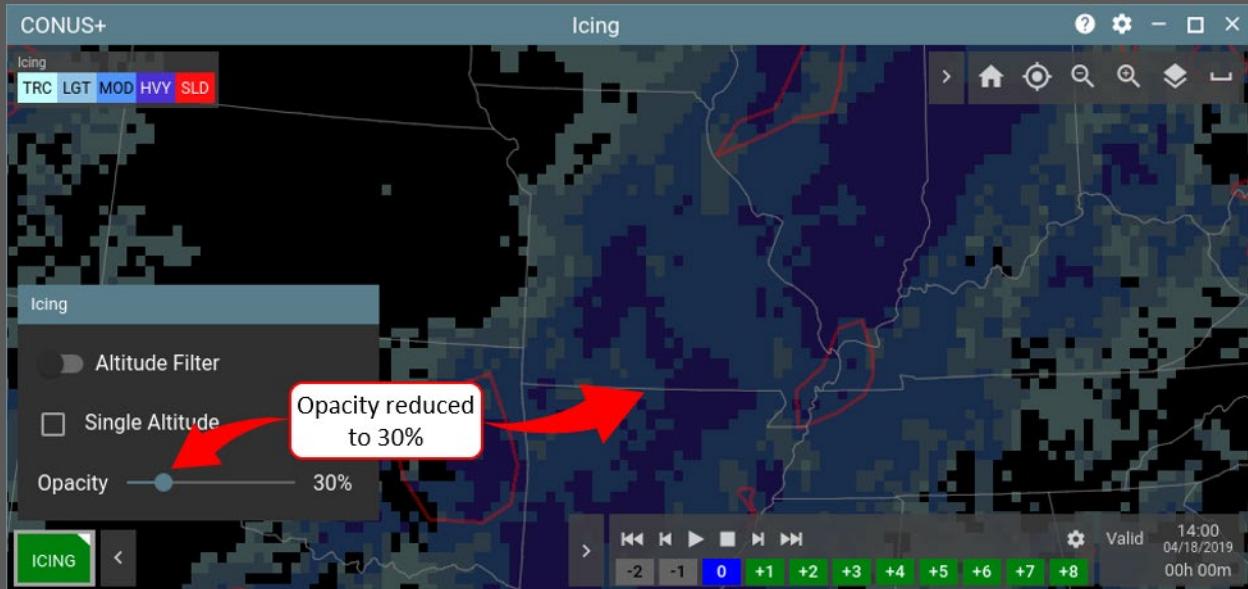


Figure 5-64. ICING Opacity

To close the ICING Product Options menu, click **outside** the menu and **inside** the active view.

5.1.6 Base Reflectivity Mosaic (BASE REFL)

BASE REFL is a Primary Product derived from raw NEXRAD, TDWR, and Canadian radar data that displays precipitation in the following six levels of intensity:

- Level 1 (Light)
- Level 2 (Moderate)
- Levels 3 & 4 (Heavy)
- Levels 5 & 6 (Extreme)

BASE REFL is available in all TRACON domains but is limited to the Alaska, Hawaii, and Guam domains in Long Range View. While BASE REFL's high-resolution mosaics are accurate near the contributing radar source, they depict only liquid precipitation and have no forecast capability.

When Base Reflectivity is opened, the BASE REFL Product Status button is added to the Product Toolbar and precipitation is added to the view (Figure 5-65. BASE REFL).

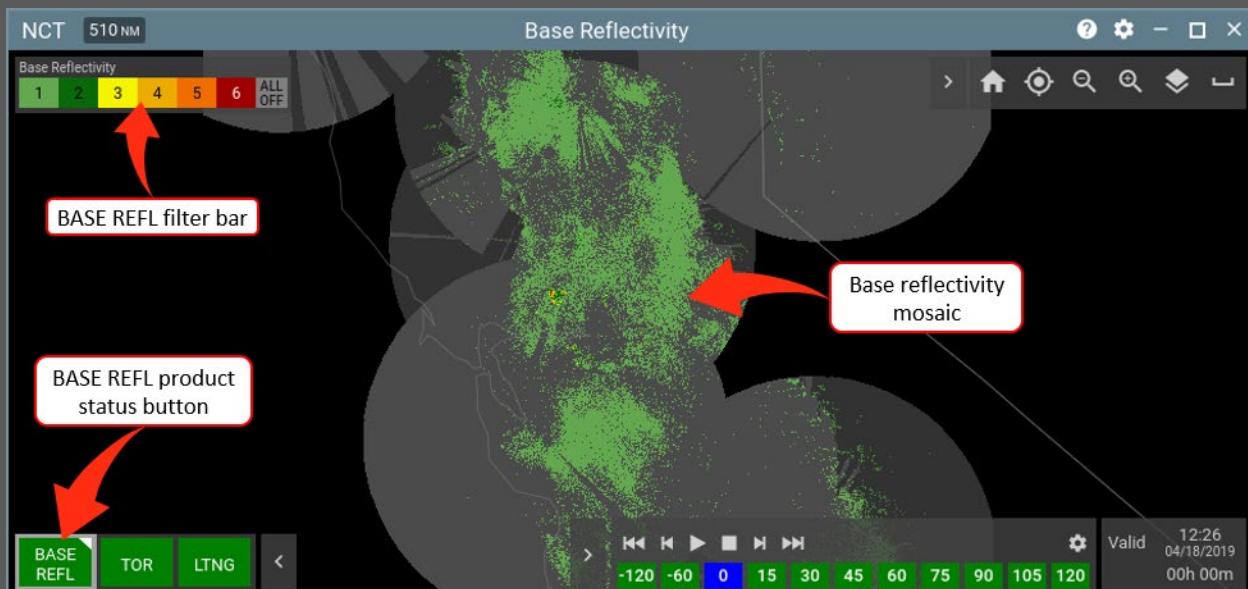


Figure 5-65. BASE REFL

5.1.6.1 Filtering BASE REFL by Intensity

To filter BASE REFL by precipitation intensity, use the BASE REFL Filter bar located in the upper left corner of the view (Figure 5-66. BASE REFL Filter Bar).

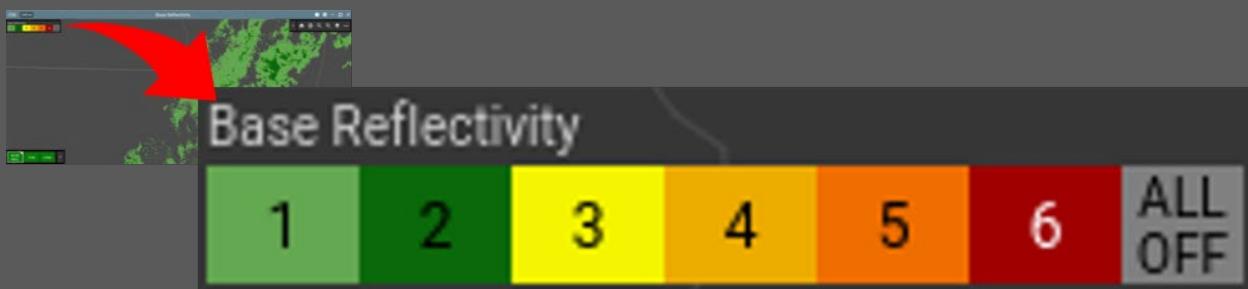


Figure 5-66. BASE REFL Filter Bar

Six numbered/colored buttons on the Filter bar represent six levels of precipitation intensity. The least intense precipitation is on the far left (green Number 1 button), and the most intense precipitation is on the far right (red Number 6 button). Clicking a button will filter all precipitation below the selected level. For example, click the orange Number 5 button to filter Level 1 through 4 precipitation and display only Level 5 and 6 precipitations.

In the following example, the Number 3 button was clicked so all precipitation below Level 3 is filtered (Figure 5-67. BASE REFL Filtered by Intensity).

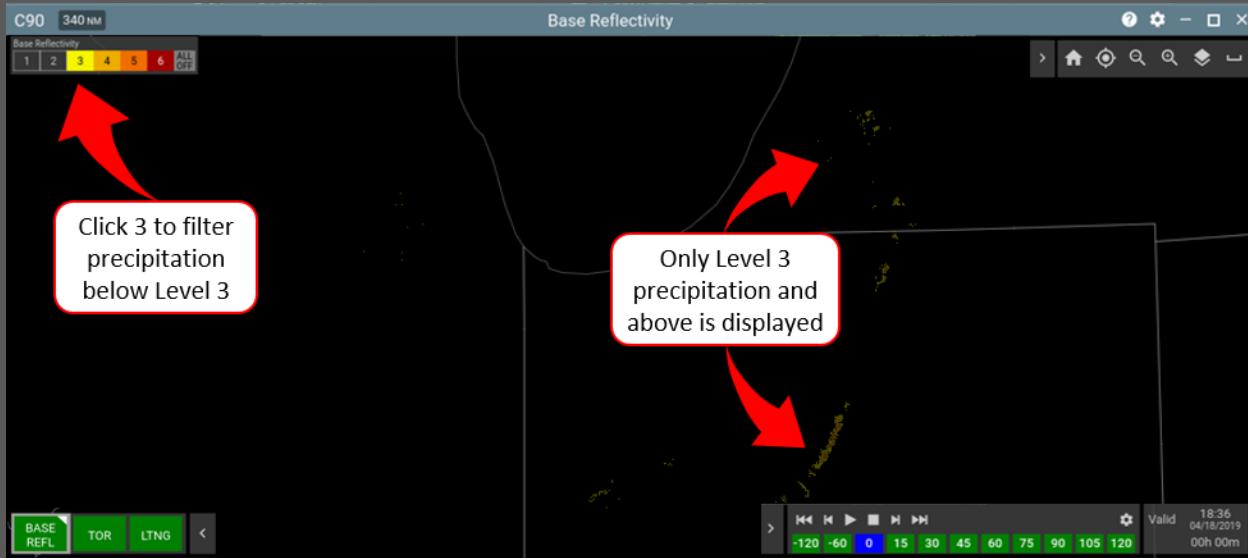


Figure 5-67. BASE REFL Filtered by Intensity

The ALL OFF button at the end of the Filter bar works as a toggle. To filter all precipitation, click ALL OFF. After clicking ALL OFF, all precipitation is filtered and the ALL OFF button changes to an ALL ON button. To display all precipitation, click ALL ON (Figure 5-68. Filter BASE REFL ON/OFF).

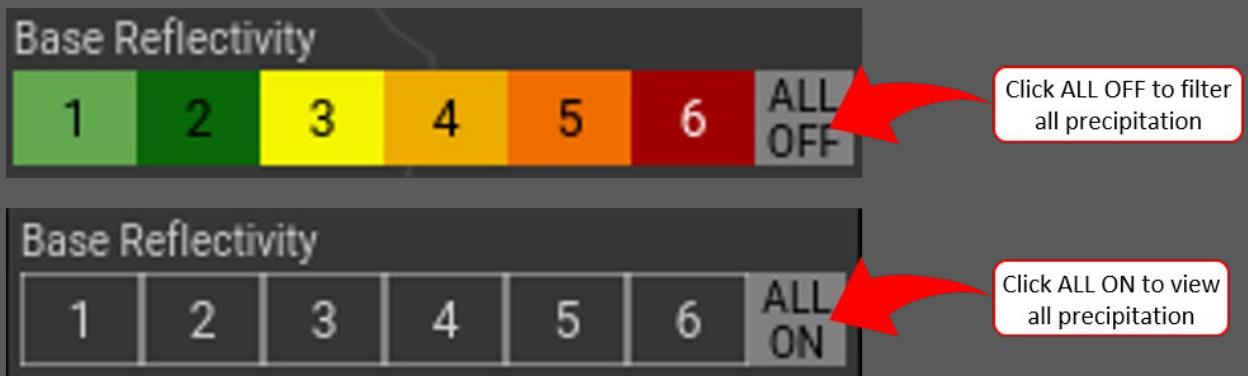


Figure 5-68. Filter BASE REFL ON/OFF

5.1.6.2 BASE REFL Product Options

From the BASE REFL Product menu you can turn radar coverage on or off, select radar coverage with or without impairment, and adjust BASE REFL opacity. To open the BASE REFL Product Options menu, right-click the BASE REFL Product Status button (Figure 5-69. BASE REFL Product Options Menu).

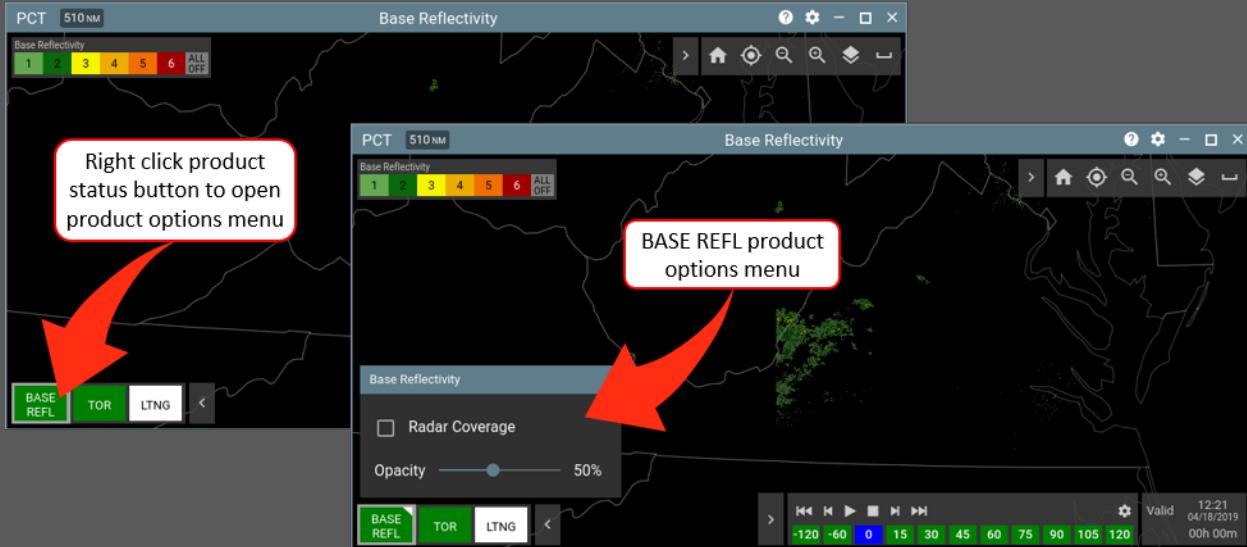


Figure 5-69. BASE REFL Product Options Menu

5.1.6.2.1 BASE REFL Radar Coverage

BASE REFL provides two radar coverage maps:

Radar Coverage without Impairment – depicts areas with weather radar coverage in light gray and areas with no radar coverage in black. The BASE REFL Radar Coverage Without Impairment map does not depict areas where weather radar coverage is impaired which can be misleading and is therefore **NOT RECOMMENDED** (Figure 5-70. BASE REFL Radar Coverage Without Impairment).

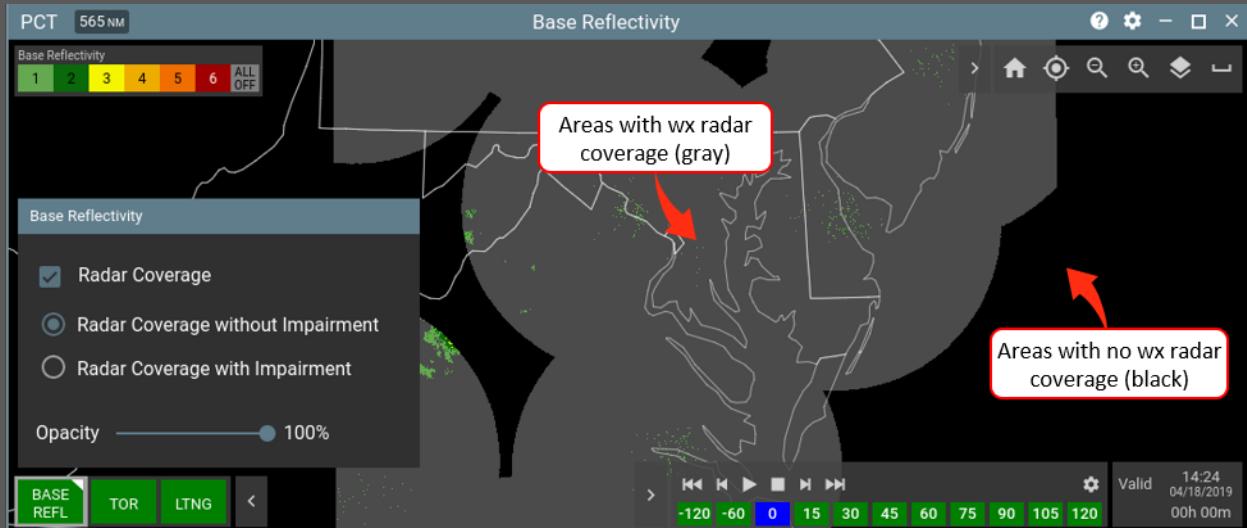


Figure 5-70. BASE REFL Radar Coverage Without Impairment

Radar Coverage with Impairment – Depicts areas with weather radar coverage in light gray, areas where weather radar coverage is impaired in dark gray, and areas with no weather radar coverage in black (Figure 5-71. BASE REFL Radar Coverage With Impairment).

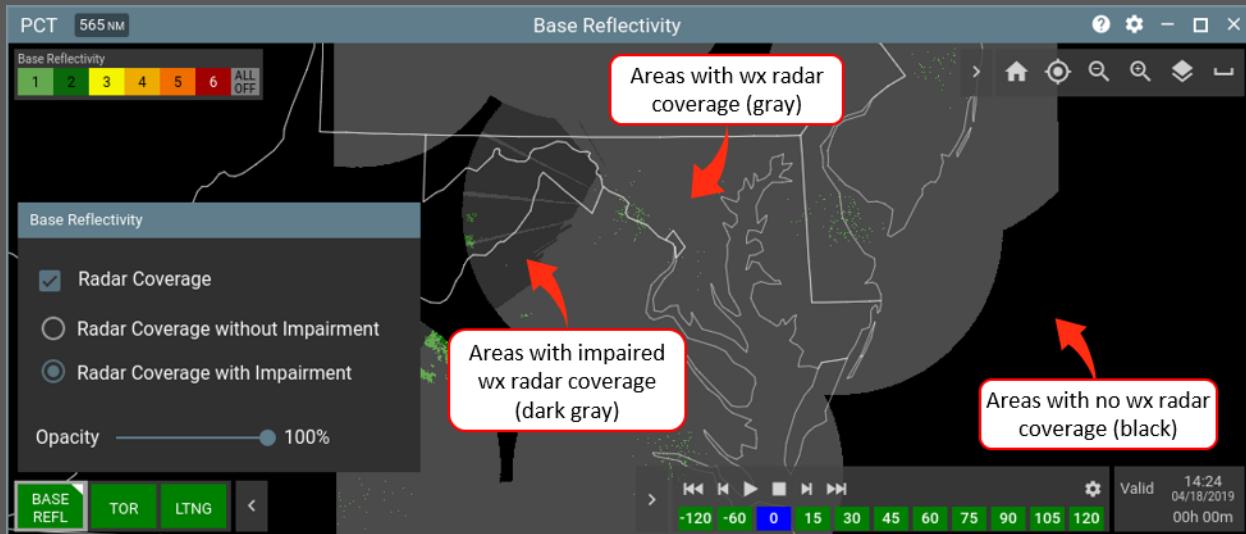


Figure 5-71. BASE REFL Radar Coverage With Impairment

When Radar Coverage is selected, the Radar Coverage with Impairment map is on by default. To turn Radar Coverage off or switch to the Radar Coverage without Impairment map (switching maps is not recommended), right-click the BASE REFL Product Status button, then either uncheck Radar Coverage or select Radar Coverage without Impairment (Figure 5-72. BASE REFL Radar Coverage Map Options).

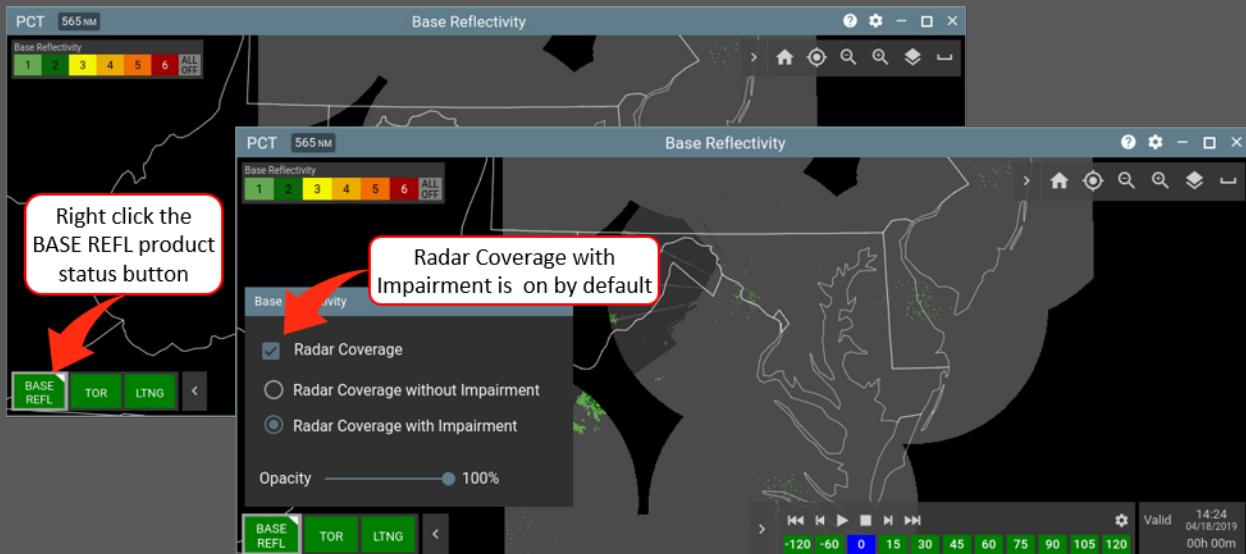


Figure 5-72. BASE REFL Radar Coverage Map Options

5.1.6.2.2 BASE REFL Opacity

Higher opacity makes the BASE REFL Mosaic brighter and harder to see through; lower opacity makes the mosaic dimmer and easier to see through. To adjust opacity, right-click the BASE REFL Product Status button, then in the BASE REFL Product Options menu, click and drag the Opacity slider to the preferred level (Figure 5-73. BASE REFL Opacity).

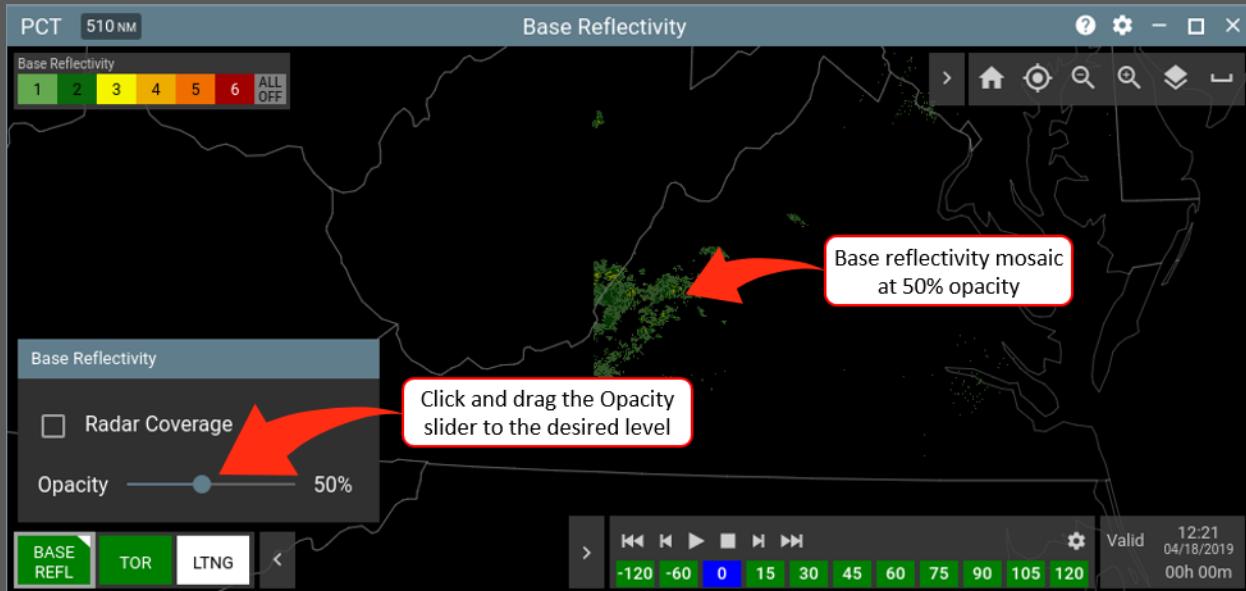


Figure 5-73. BASE REFL Opacity

To close the BASE REFL Product Options menu, click **outside** the menu and **inside** the active view.

5.2 Forecast Products

Forecast Weather Products provide information on convection, frontal passages, turbulence, and icing. Most Forecast Products can be used independently or in conjunction with other products, but Forecast Contours (FCST CNTRS), Verification Contours (VERIF CNTRS), and Traffic Flow Impact (TFI) can only be used in conjunction with their associated Primary Product.

5.2.1 Traffic Flow Management Convective Forecast (TCF)

The TCF is a convective forecast generated during the convective weather season by collaborating meteorologists from Center Weather Service Units (CWSU), the Aviation Weather Center (AWC), and weather units from major airlines. The TCF is available only in Long Range View and is limited to the CONUS+ domain excluding Puerto Rico.

The TCF is a high-confidence convective forecast that is updated every two hours and depicts geographic areas where convective activity is forecast four, six, and eight hours into the future. Areas where convective weather is forecast are depicted with pattern-filled contours or a solid purple line that represents forecast confidence.

The TCF product on the AWD is the same product currently available on Traffic Situation Displays (TSD), that TFM specialists use to support weather mitigation planning. When the TCF product is opened, the TCF Product Status button is added to the Product Toolbar and the TCF graphic is added to the view (Figure 5-74. TFM Convective Forecast).

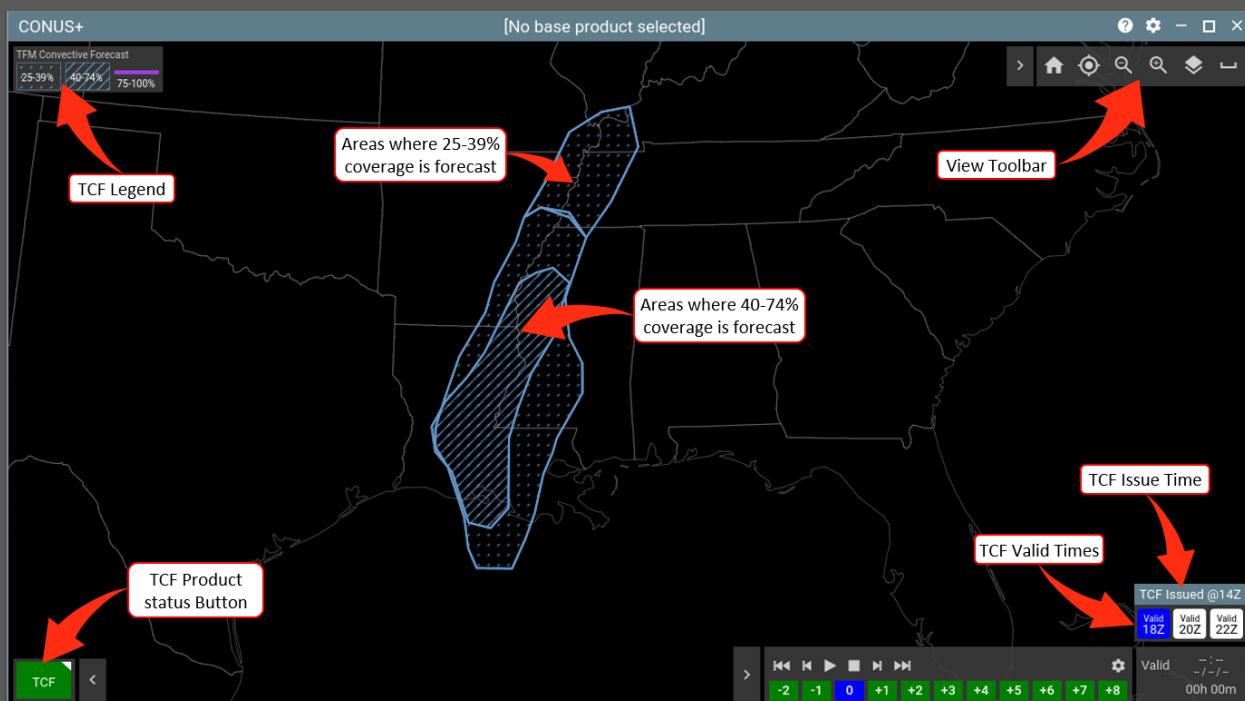


Figure 5-74. TFM Convective Forecast

For more information on the TCF, refer to the AWC website (aviationweather.gov/tcf/help).

The following example shows the TCF used in conjunction with PRECIP (Figure 5-75. TCF with PRECIP).

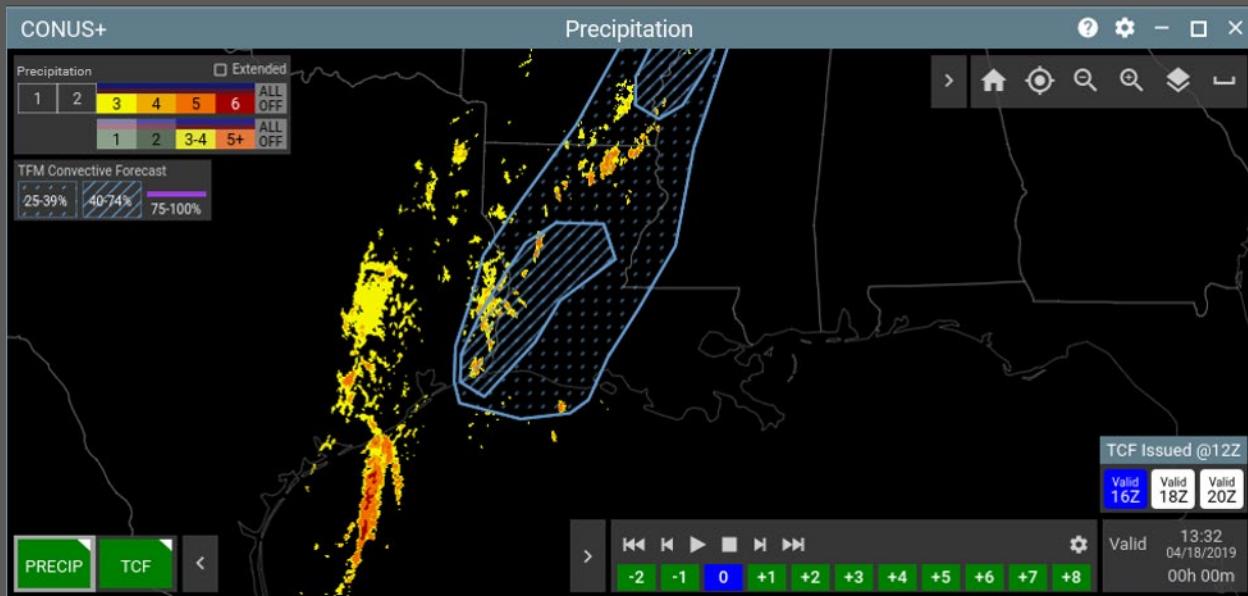


Figure 5-75. TCF with PRECIP

5.2.1.1 TCF Interactive Toolbar

The TCF's interactive toolbar displays the TCF's issue time and includes three buttons, each button representing one of the three TCF forecasts (4-hour, 6-hour, or 8-hour). Click the button for the forecast you want displayed. The selected forecast is displayed in the view and the button for the selected forecast is highlighted in blue on the TCF toolbar (Figure 5-76. TCF Toolbar).

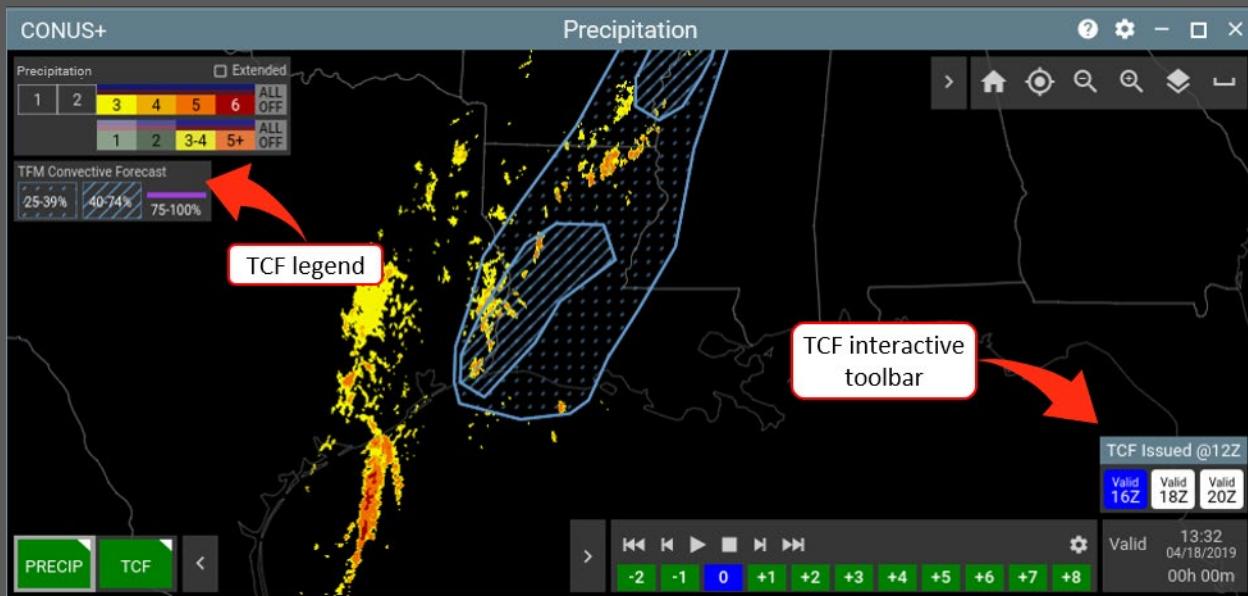


Figure 5-76. TCF Toolbar

The TCF toolbar is interactive **only** at Time Zero. For example, to view the 20z TCF, click the **Time Zero** jump button, then click **Valid 20Z** on the TCF toolbar and the 20z TCF is displayed. If you are looping or manually jump ahead, the TCF will disappear until the loop time passes a valid TCF time. As in the previous example, the Valid 16z button will turn blue and the 16z TCF will be displayed from 16z to 17:59z. The 18z TCF will be displayed from 18z to 19:59z.

5.2.1.2 TCF Product Options

From the TCF Product Options menu, you can show or hide forecast tops (Tops Intervals), show/hide the TCF legend, and adjust TCF opacity. To open the TCF Product Options menu, right-click the **TCF Product Status button** (Figure 5-77. TCF Product Options Menu).

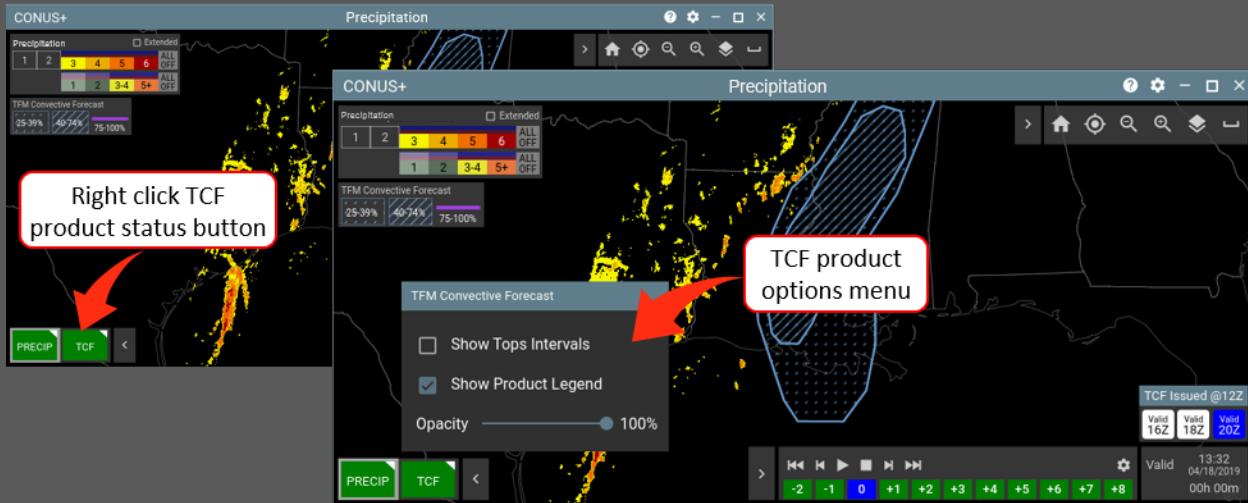


Figure 5-77. TCF Product Options Menu

5.2.1.2.1 TCF Show Tops Intervals

Show Tops Intervals displays TCF tops but is off by default. To display TCF tops, open the TCF Product Options menu, then check **Show Tops Intervals** (Figure 5-78. Display TCF Tops).

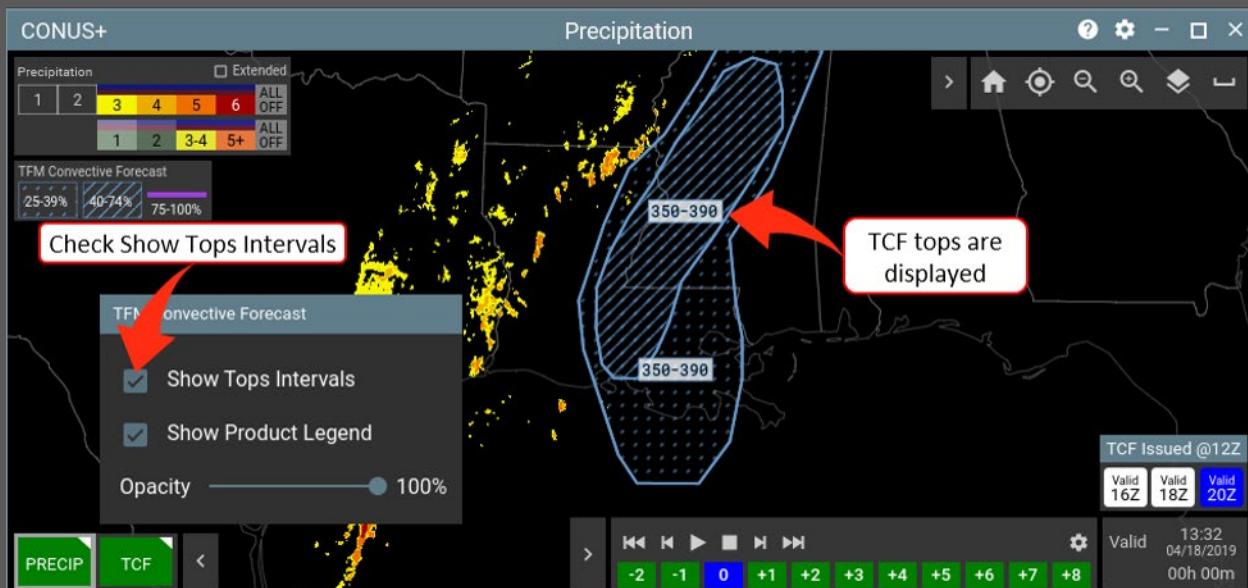


Figure 5-78. Display TCF Tops

5.2.1.2.2 Hide TCF Legend

When TCF is on, the TCF legend is displayed by default. To hide the TCF legend, right-click the TCF Product Status button, then in the TCF Product Options menu, uncheck Show Product Legend (Figure 5-79. Hide TCF Legend).

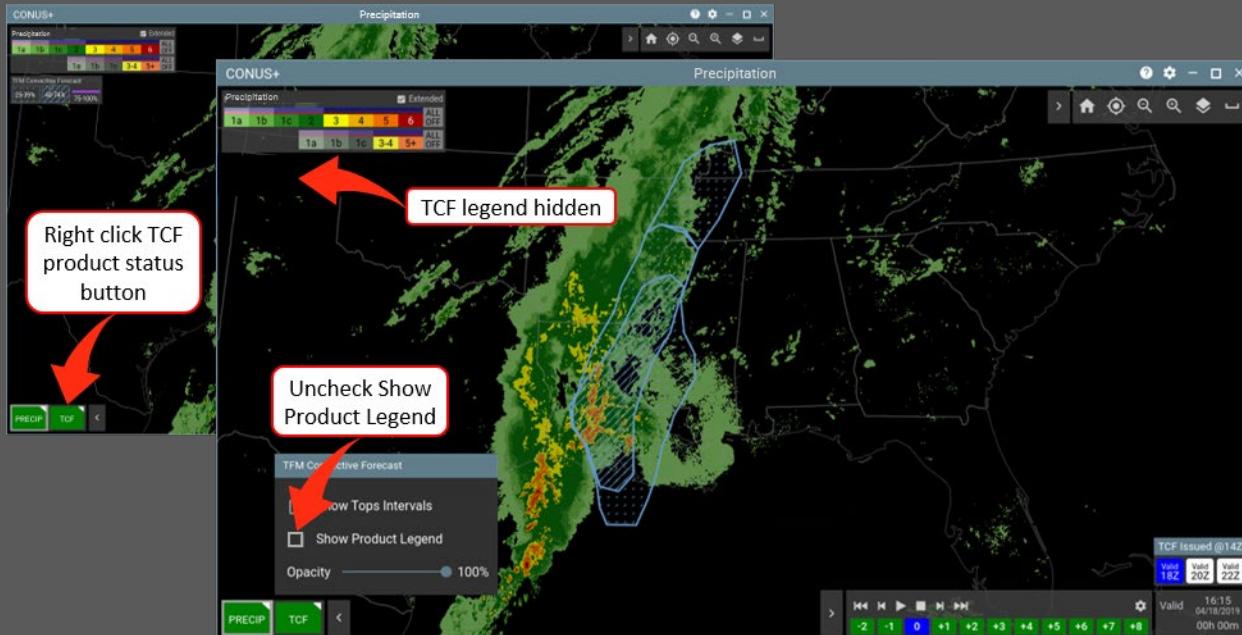


Figure 5-79. Hide TCF Legend

5.2.1.2.3 TCF Opacity

Higher opacity makes TCF polygons brighter and harder to see through; lower opacity makes the polygons dimmer and easier to see through. To adjust TCF opacity, right-click the TCF Product Status button, then click and drag the Opacity slider to the preferred level (Figure 5-80. TCF Opacity).

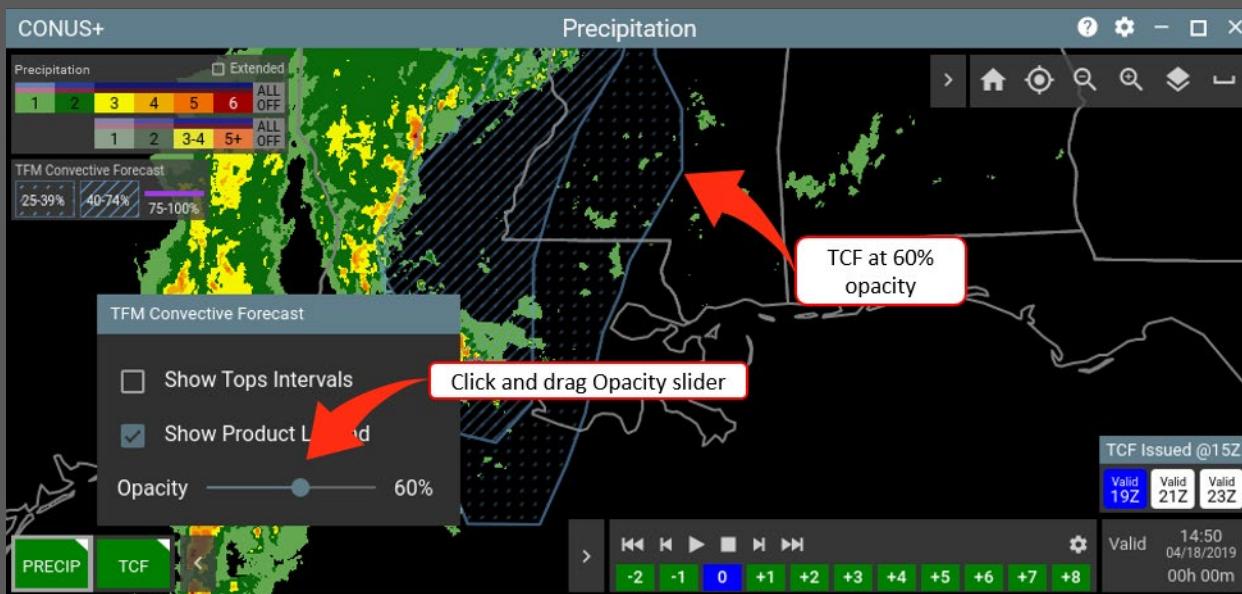


Figure 5-80. TCF Opacity

5.2.2 Convective Weather Avoidance Polygons (CWAP)

CWAP is available only in Long Range View and depicts airspace pilots may seek to avoid based on weather forecasts in colors that represent three Probability of Pilot Avoidance (PPA) categories:

- White contours – Forecast weather is less than ideal but PPA is low.
- Blue contours – Forecast weather is significant enough that PPA is moderate.
- Red contours – Forecast weather is impactful enough to justify a high PPA.

In the following example, CWAP is selected in conjunction with PRECIP (Figure 5-81. CWAP with PRECIP).

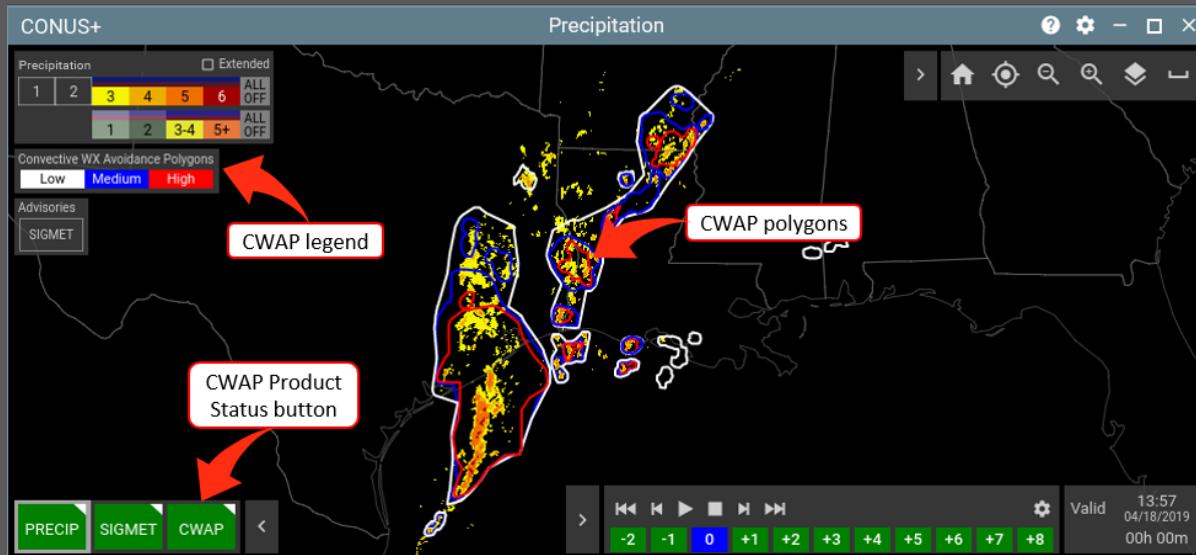
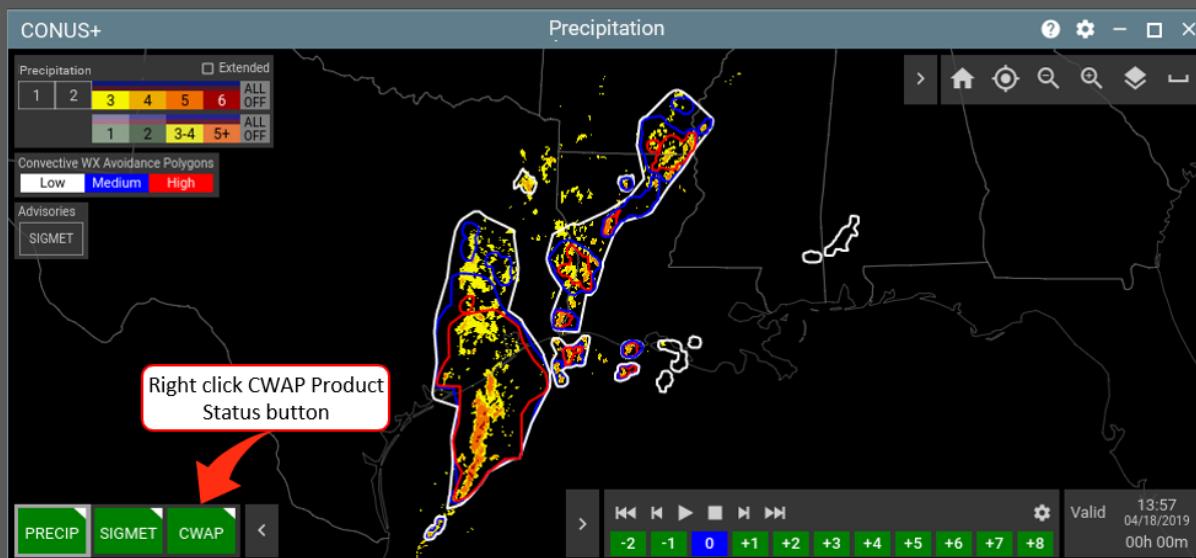


Figure 5-81. CWAP with PRECIP

5.2.2.1 CWAP Product Options

From the CWAP Product Options menu, you can filter CWAP by altitude, select forecast time, hide/view the legend, and adjust opacity. To open the CWAP Product Options menu, right-click the CWAP Product Status button (Figure 5-82. CWAP Product Options Menu).



When the CWAP Product Options menu is opened, the FL240 and 0-minute forecast is selected, and the CWAP legend is displayed in the view (Figure 5-83. CWAP Default Settings).

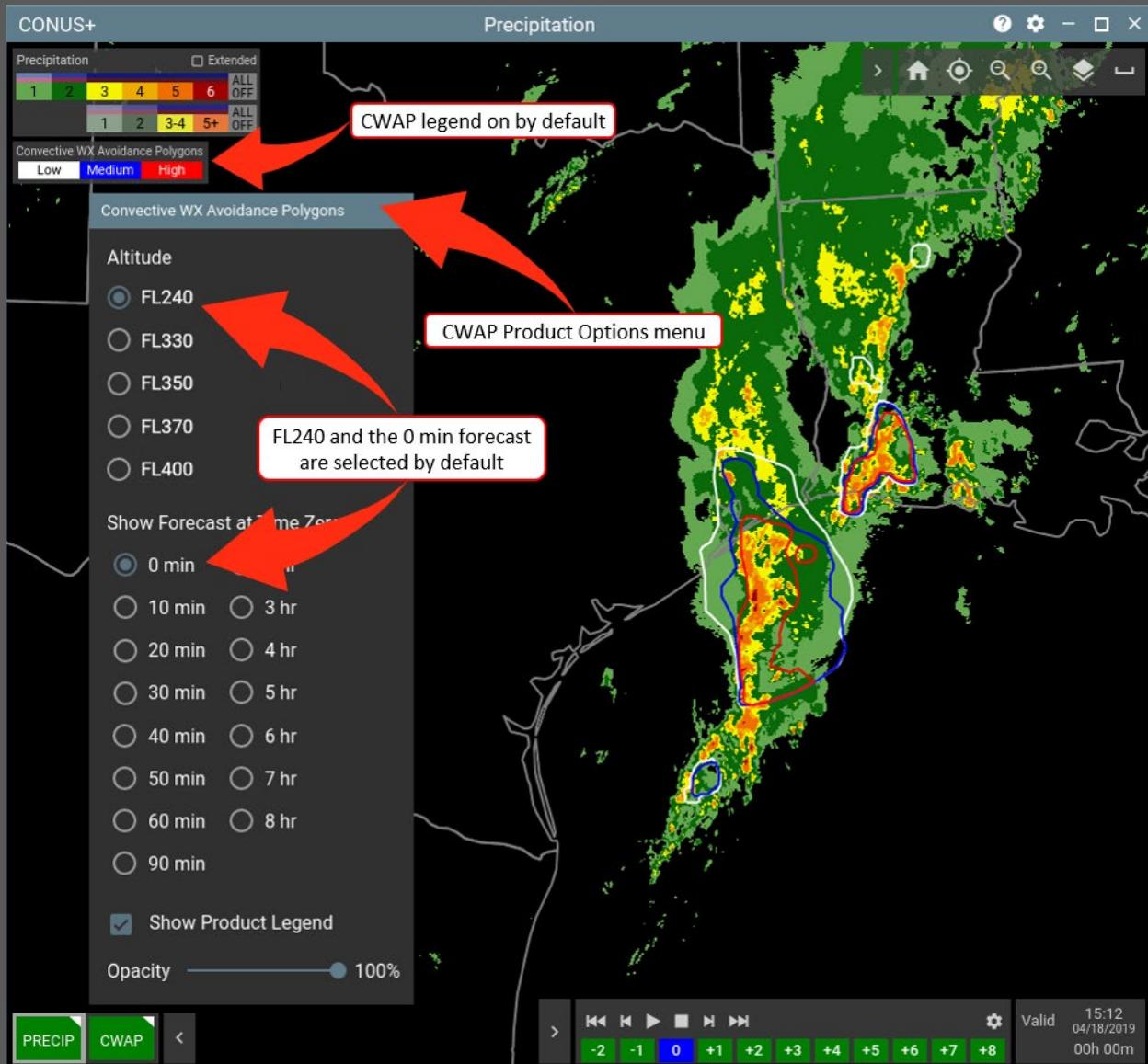


Figure 5-83. CWAP Default Settings

Note: CWAP is not available in Alaska, Hawaii, and Guam, and is limited to no more than a 2-hour forecast in Puerto Rico.

5.2.2.1.1 Filter CWAP by Altitude

CWAP forecasts are available for the following five altitudes:

- FL240
- FL330
- FL350
- FL370
- FL400

In the following example, FL370 is selected, therefore CWAP polygons are **only** applicable to FL370 (Figure 5-84. CWAP Altitude Selected).

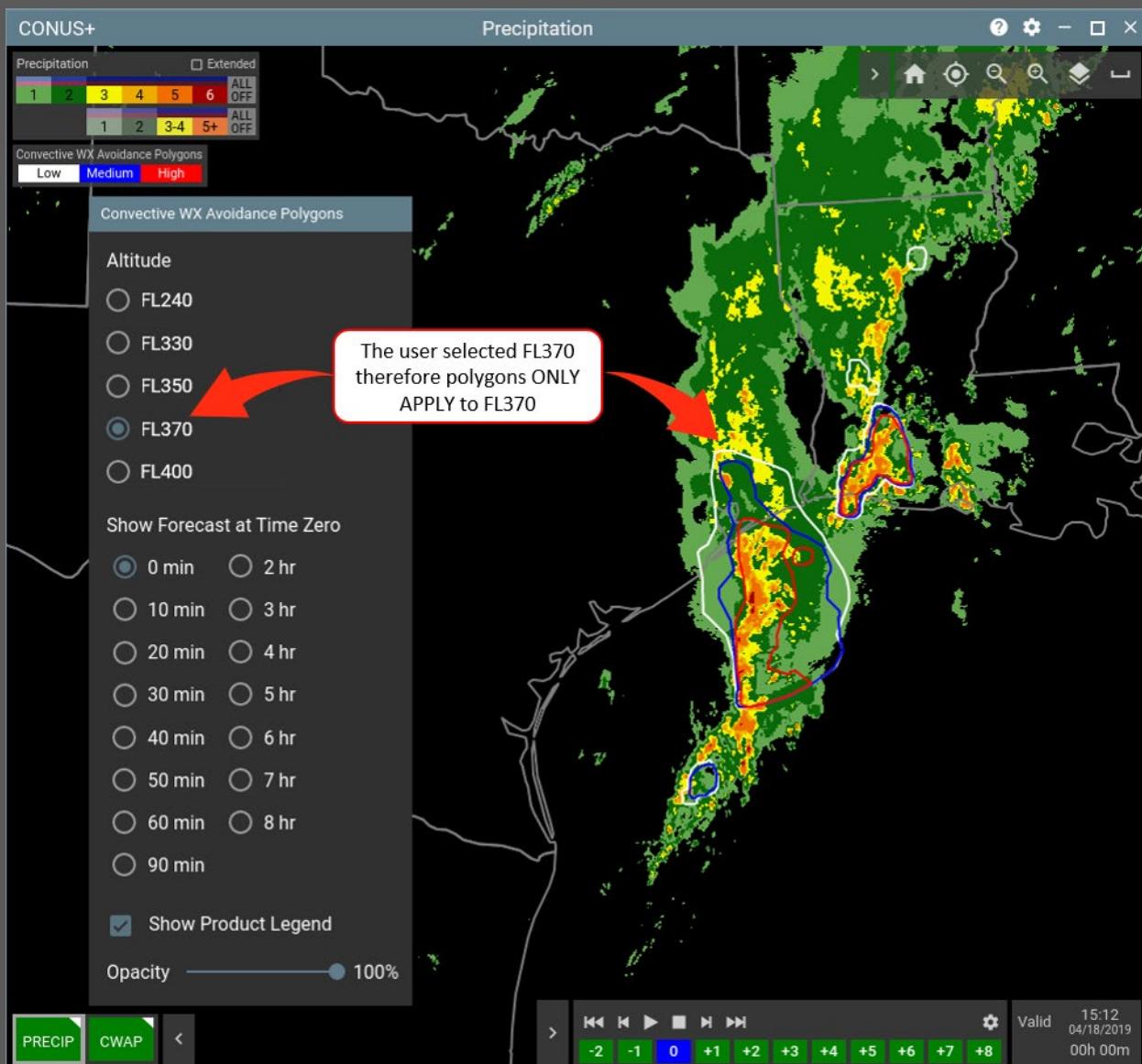


Figure 5-84. CWAP Altitude Selected

5.2.2.1.2 CWAP Forecasts

You can select one of fourteen CWAP forecast times (e.g., 10 min, 20 min, 2 hr, 3 hr, etc.). If you are looping or stop on a specific time period (by clicking that time period's jump button), CWAP polygons will correspond with the weather displayed in the view.

For example, if you click the 6-hr forecast, CWAP polygons will display forecast PPAs in six hours. Once the loop passes time zero, CWAP polygons match the loop time.

In this example, the 20-minute forecast is selected and the loop is stopped at time zero. Therefore, CWAP polygons represent where PPAs are forecast in 20 minutes (Figure 5-85. CWAP Forecast Time Selected).

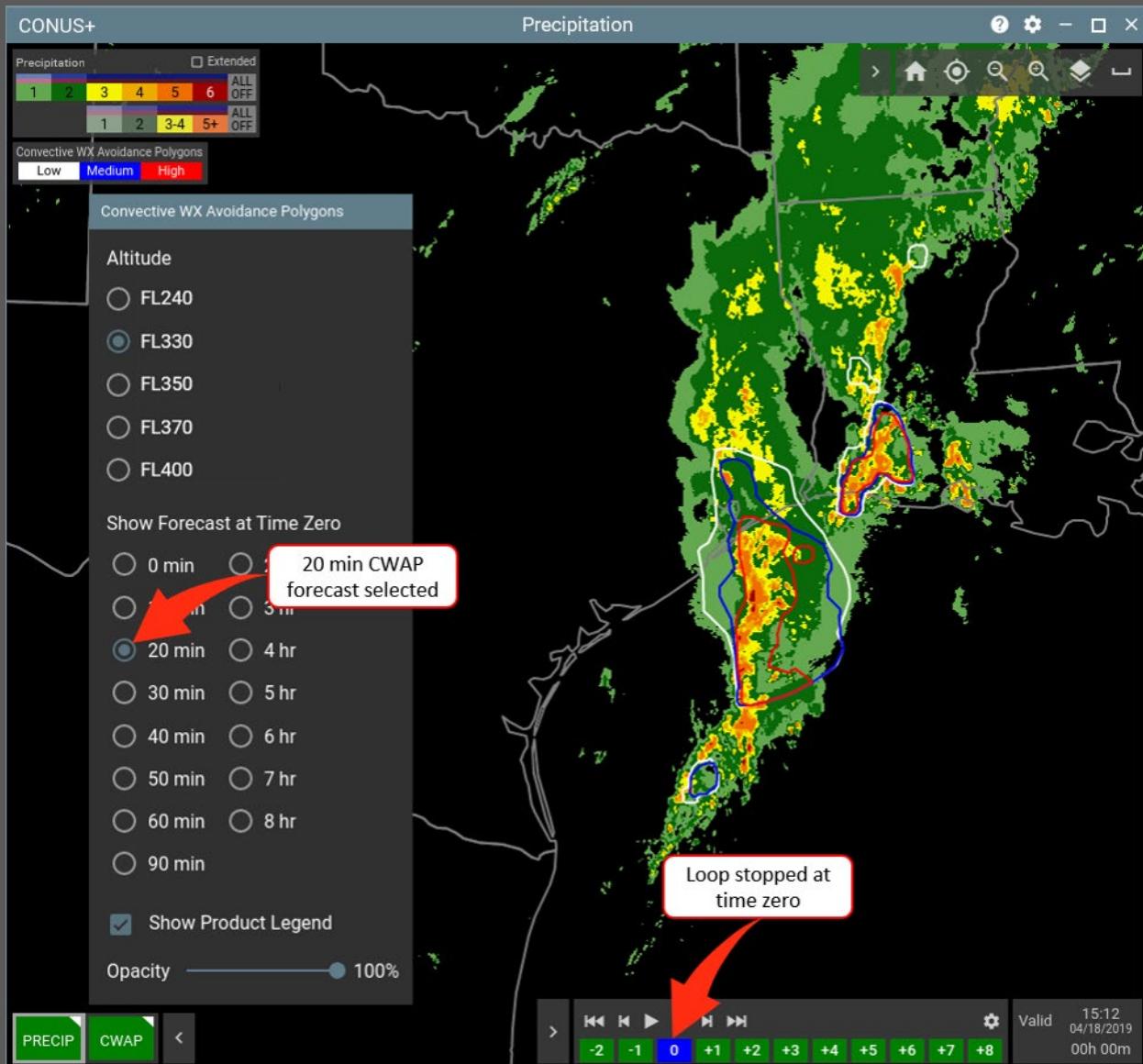


Figure 5-85. CWAP Forecast Time Selected

5.2.2.1.3 CWAP Product Legend

The CWAP product legend (on by default) is not interactive but serves as a key that identifies what CWAP polygon colors represent. To hide the CWAP legend, right-click the CWAP Product Status button, then in the CWAP Product Options menu, uncheck Show Product Legend (Figure 5-86. Hide CWAP Legend).

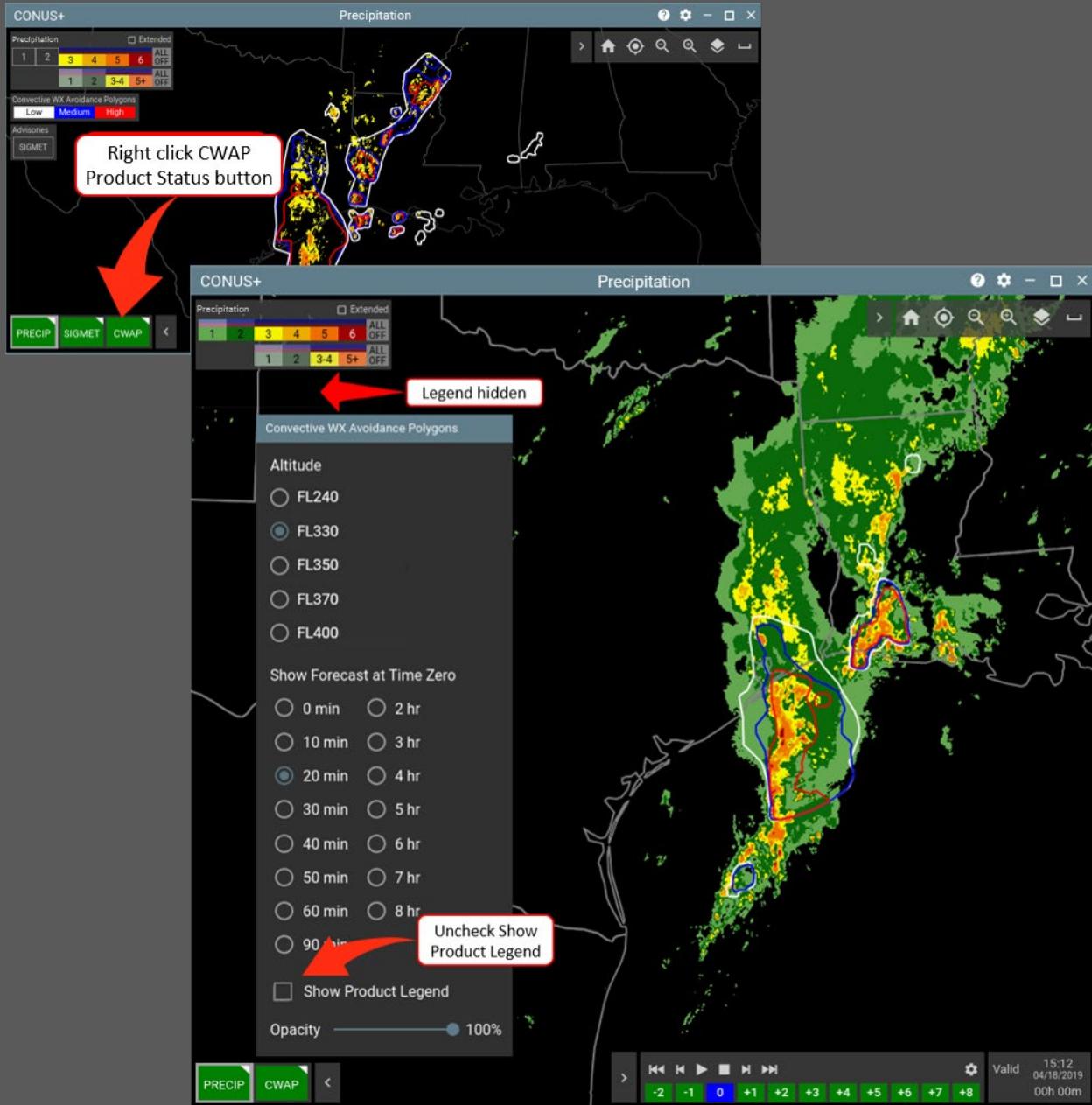


Figure 5-86. Hide CWAP Legend

5.2.2.1.4 CWAP Opacity

Higher opacity makes CWAP contours brighter and harder to see through; lower opacity makes contours dimmer and easier to see through. To adjust CWAP contour opacity, right-click the CWAP Product Status button, then in the CWAP Product Options menu, click and drag the Opacity slider to the preferred level (Figure 5-87. CWAP Opacity).

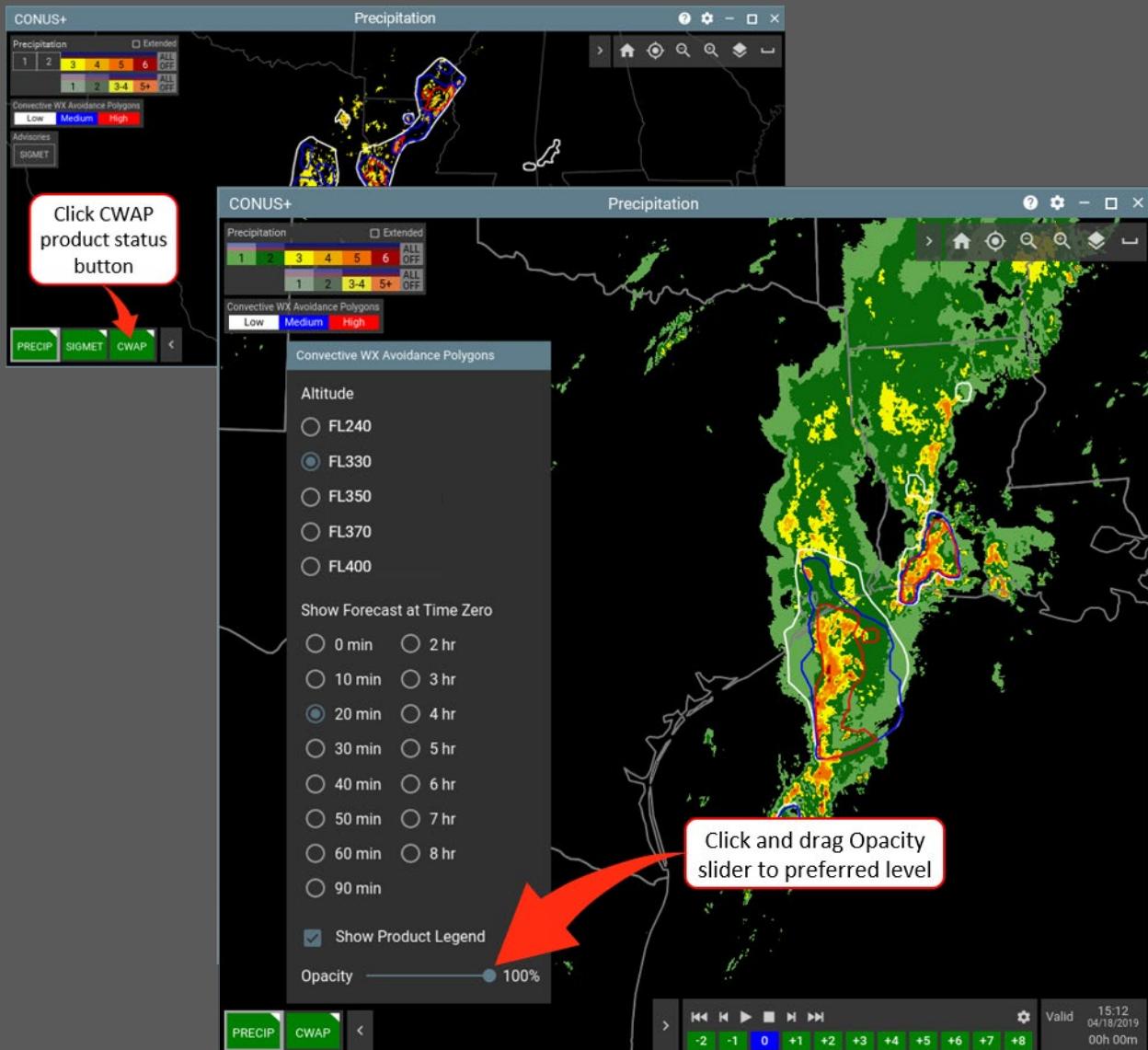


Figure 5-87. CWAP Opacity

To close the CWAP Product Options menu, click **outside** the menu and **inside** the active view.

5.2.3 CWAP Verification (CWAP VERIF)

CWAP VERIF is used to verify the accuracy of prior CWAP forecasts, therefore you should become familiar with CWAP (Section 5.2.2), before using CWAP VERIF.

CWAP VERIF verifies forecasts that are no more than eight hours old. CWAP VERIF is available only in Long Range View, must be used in conjunction with either PRECIP or ECHO TOPS, and is only usable when the Loop Toolbar's blue jump button is at Time Zero (Figure 5-88. CWAP VERIF with PRECIP).

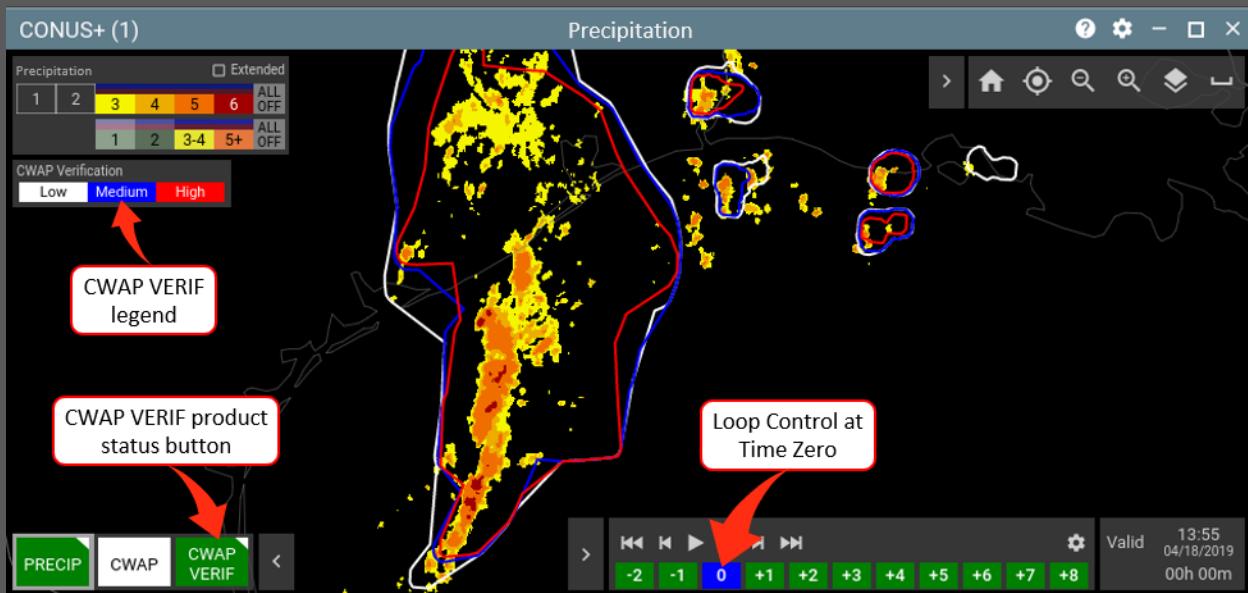


Figure 5-88. CWAP VERIF with PRECIP

5.2.3.1 CWAP VERIF Product Options

From the CWAP VERIF Product Options menu you can select the altitude and time of the forecast you want to verify, hide/show the product legend, and adjust contour opacity. To open the CWAP VERIF Product Options menu, right-click the CWAP VERIF Product Status button (Figure 5-89. CWAP VERIF Product Options Menu).

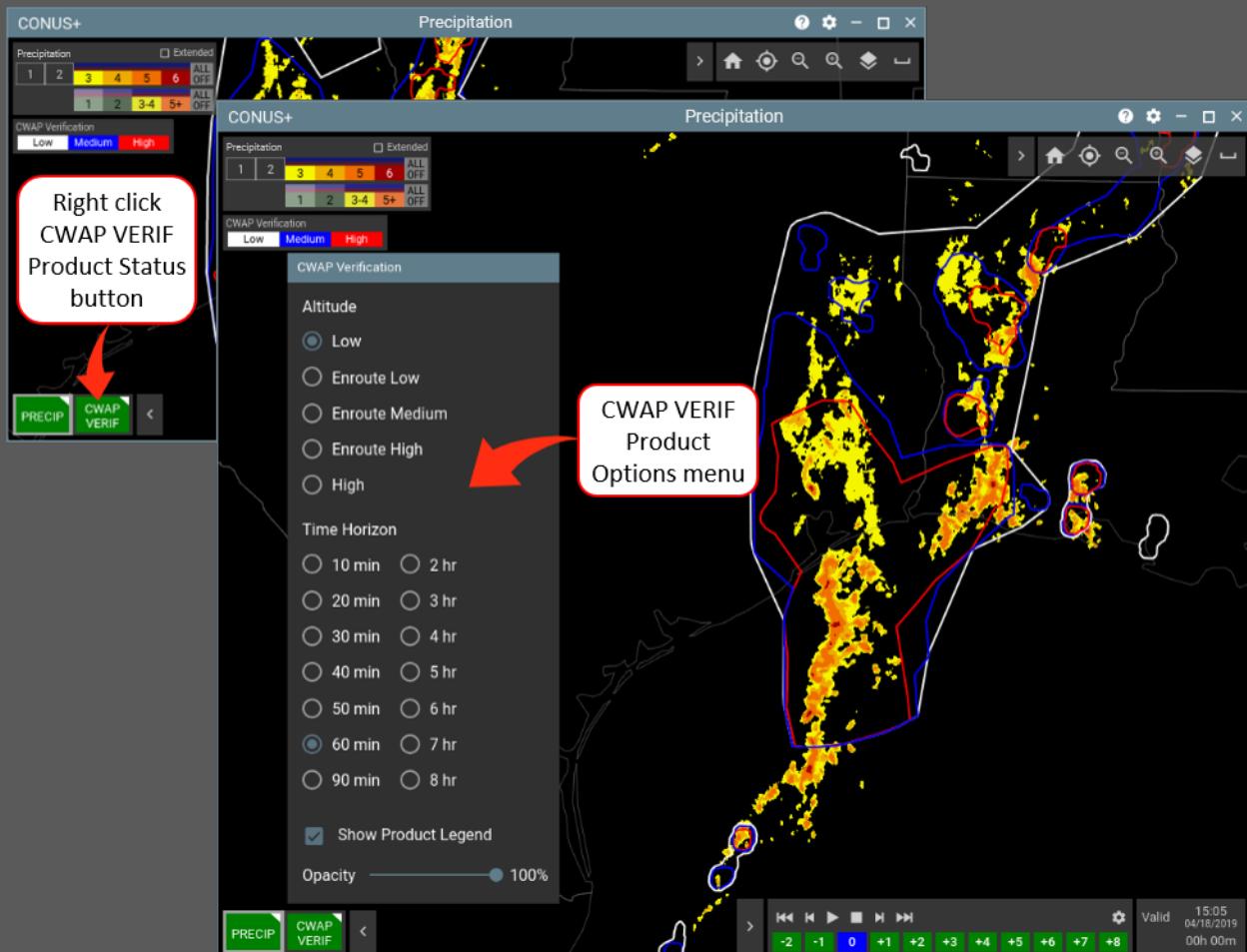


Figure 5-89. CWAP VERIF Product Options Menu

5.2.3.1.1 Select CWAP VERIF Time and Altitude

CWAP forecasts are altitude and time specific, therefore you need to select the specific altitude and time of the CWAP forecast you want to verify. To select the CWAP altitude and forecast time you want to verify, right-click the CWAP VERIF Product Status button, then select the preferred Altitude and Time Horizon.

To verify a previous CWAP forecast, select the altitude and forecast time of the CWAP forecast you want to verify from the CWAP VERIF Product Options menu. In the following example, the user is verifying the CWAP forecast made 60 minutes ago for FL370 (Figure 5-90. CWAP Forecast Selected for Verification).

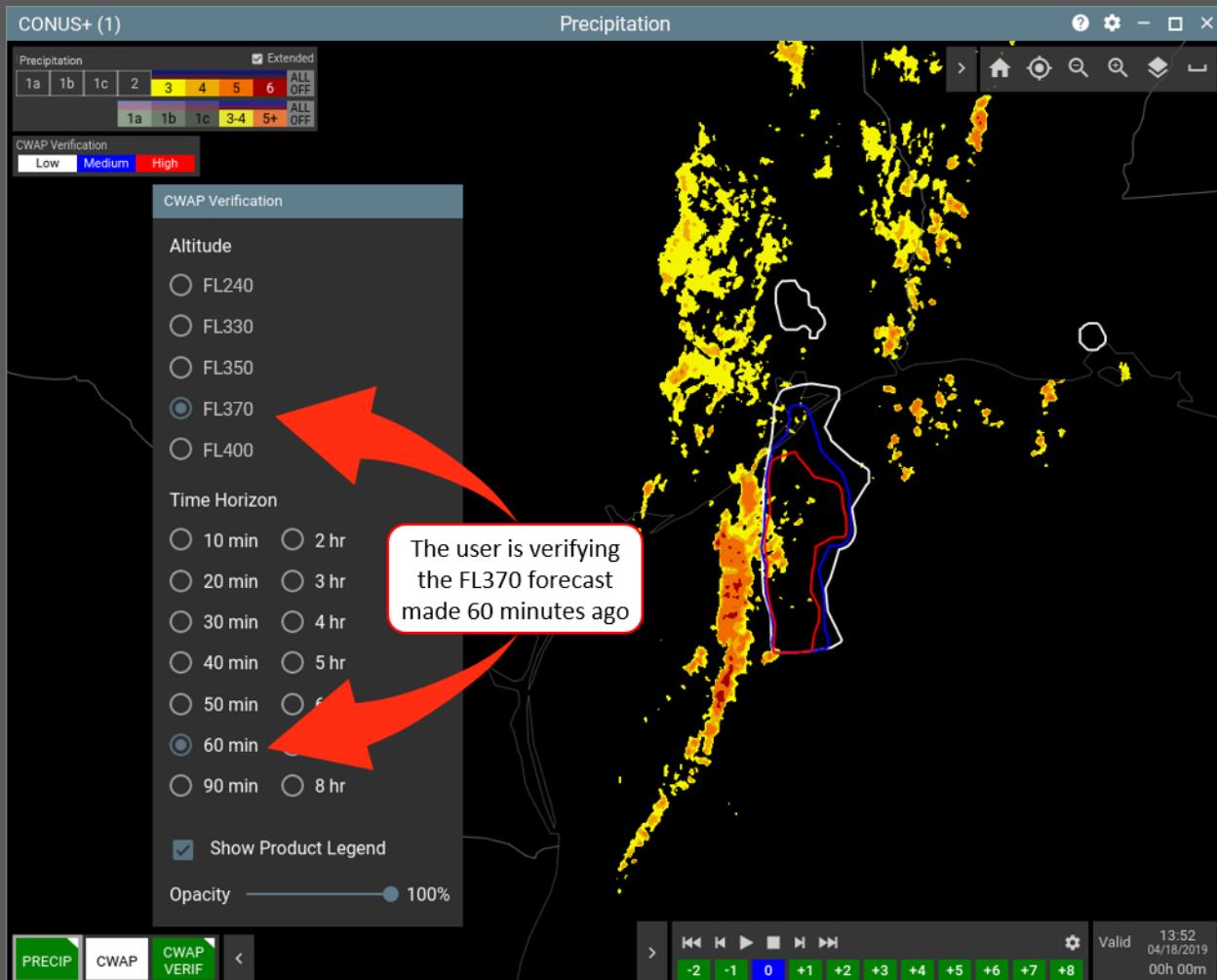


Figure 5-90. CWAP Forecast Selected for Verification

To close the CWAP VERIF Product Options menu, click **outside** the menu and **inside** the active view.

To verify how well the CWAP forecast performed, compare the location and intensity of current precipitation with the red, white, and blue contours that represent the CWAP forecast. The closer the contours are to the actual weather, the more accurate the forecast (Figure 5-91. Verify CWAP Forecast).

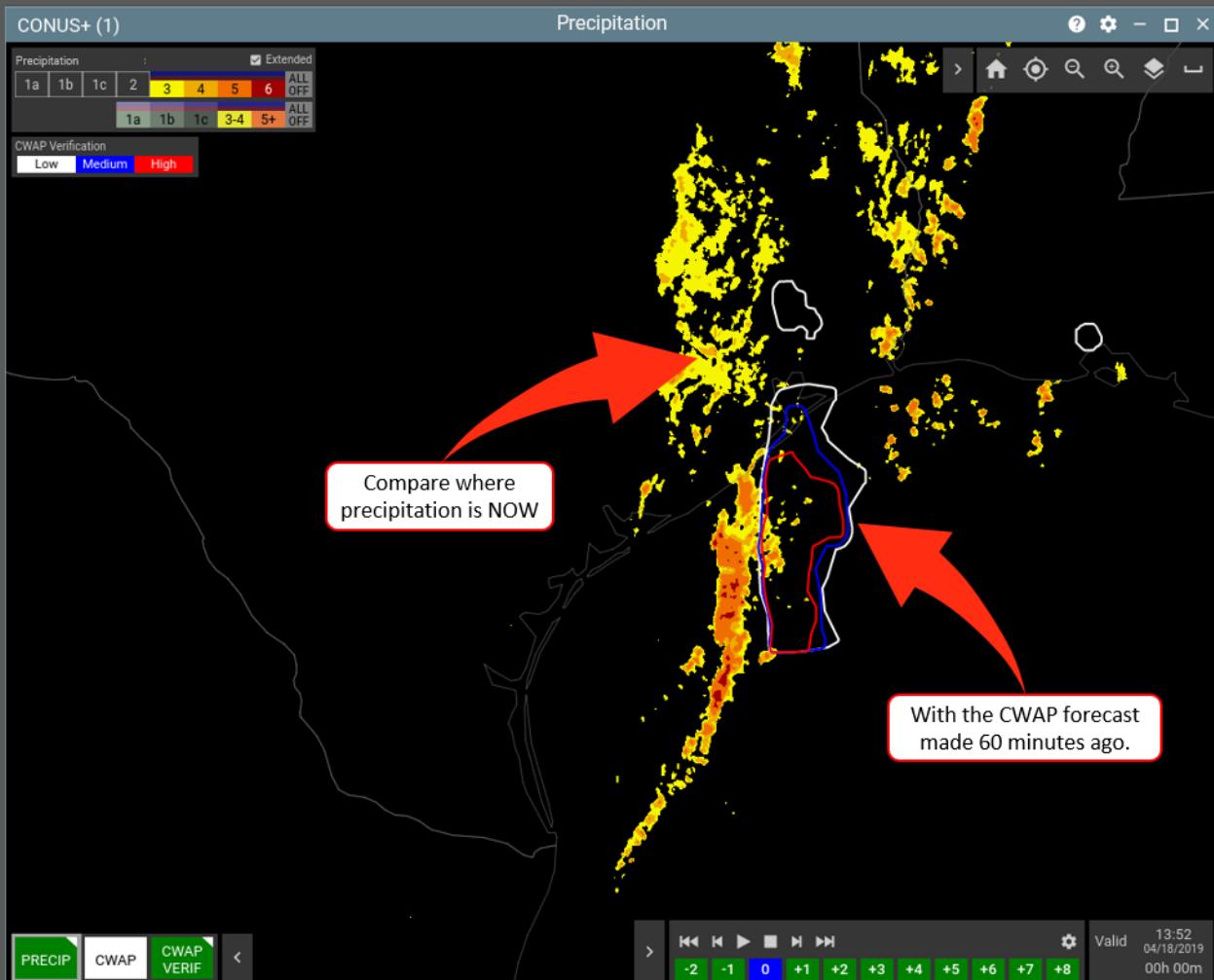


Figure 5-91. Verify CWAP Forecast

5.2.3.1.2 CWAP VERIF Product Legend

The CWAP VERIF legend is not interactive but serves as a key that identifies what CWAP VERIF contour colors represent. When the CWAP VERIF product is selected, the legend is on by default.

To hide the CWAP VERIF legend, right-click the CWAP VERIF Product Status button, then in the CWAP VERIF Product Options menu, uncheck **Show Product Legend** (Figure 5-92. Hide CWAP VERIF Legend).

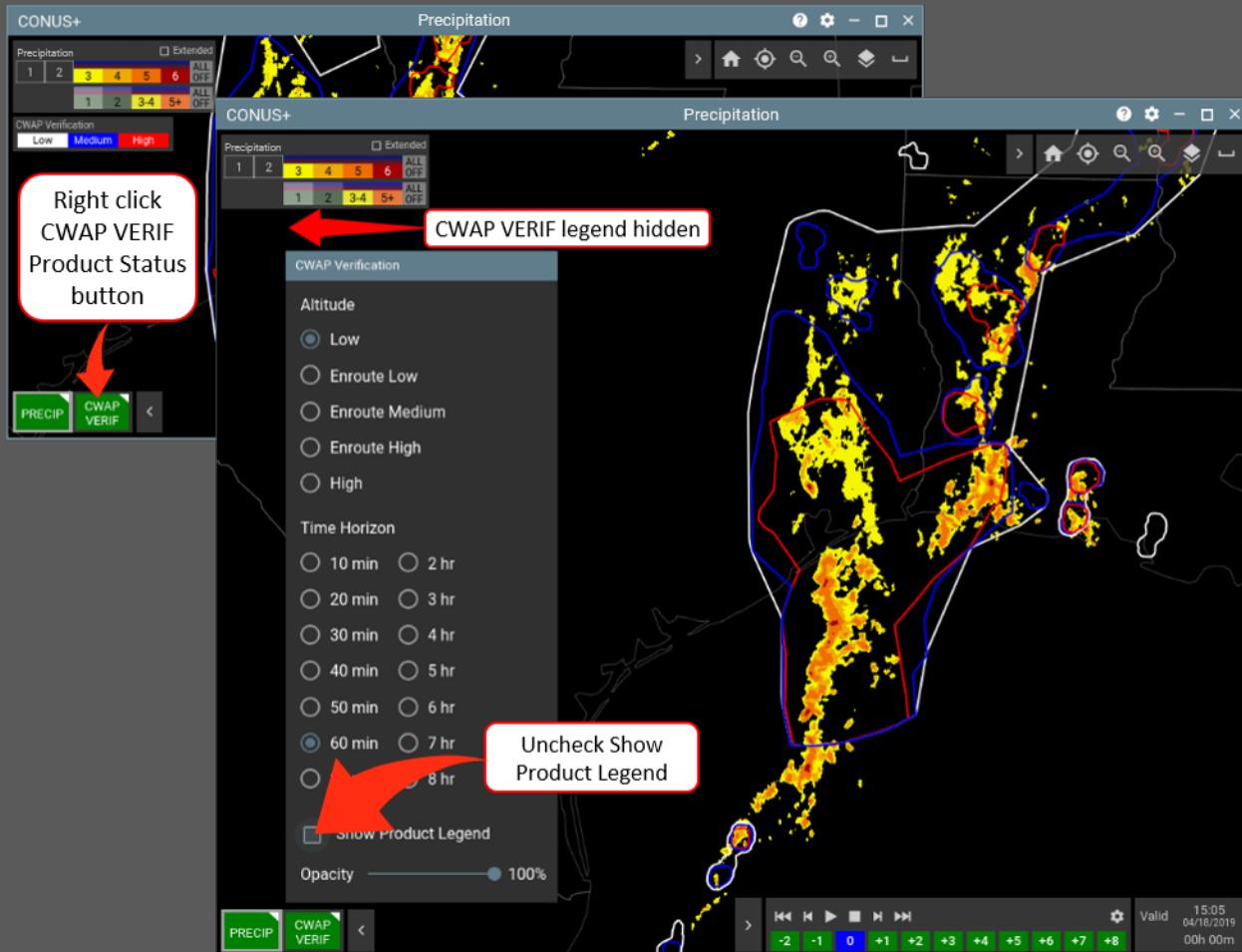


Figure 5-92. Hide CWAP VERIF Legend

5.2.3.1.3 CWAP VERIF Opacity

Higher opacity makes CWAP VERIF contours brighter and harder to see through; lower opacity makes the contours dimmer and easier to see through. To adjust CWAP VERIF opacity, right-click the CWAP VERIF Product Status button, then in the CWAP VERIF Product Options menu, click and drag the Opacity slider to the preferred level.

In the following example, CWAP VERIF contour opacity is reduced to 30% (Figure 5-93. CWAP VERIF Opacity).

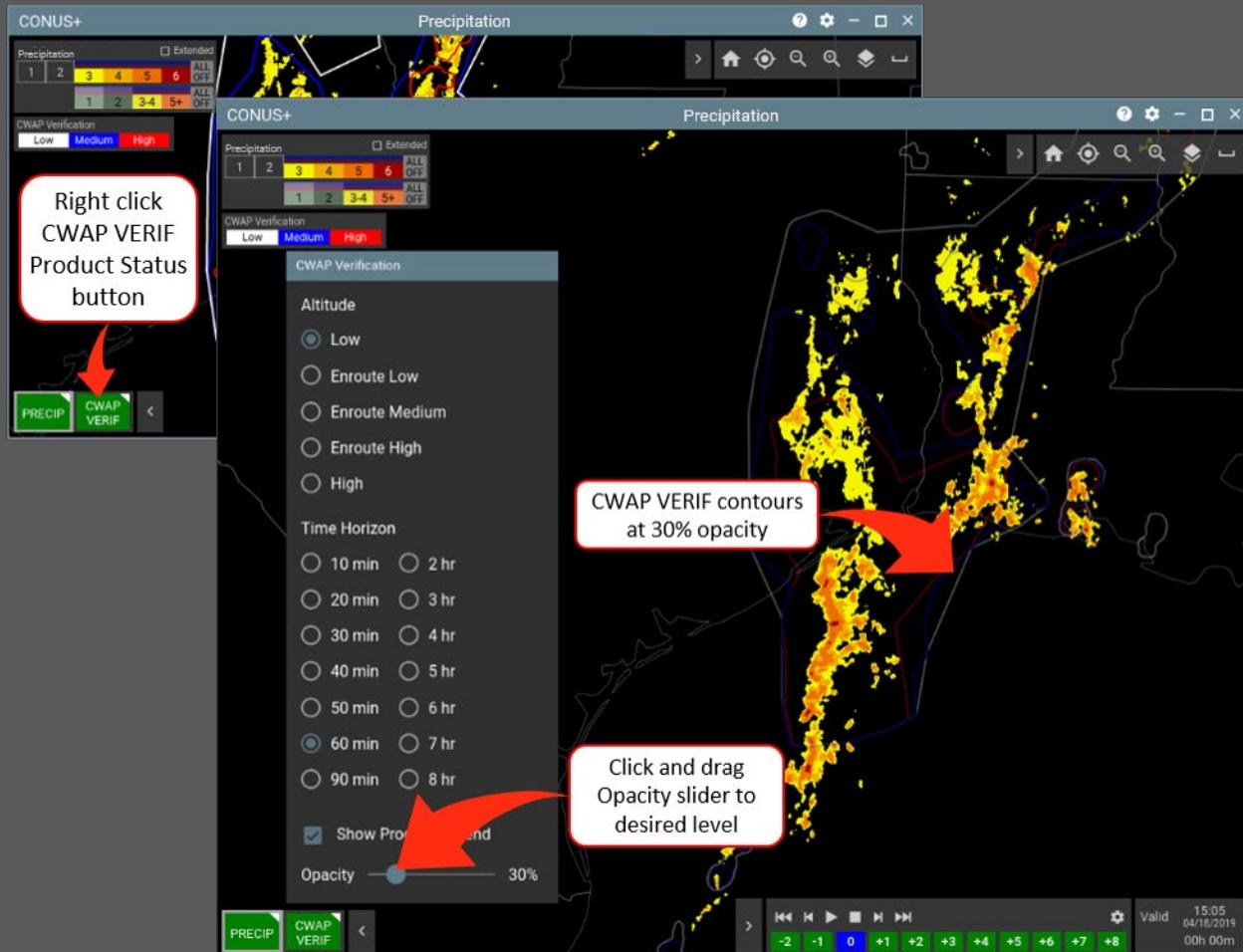


Figure 5-93. CWAP VERIF Opacity

To close the CWAP VERIF Product Options menu, click **outside** the menu and **inside** the active view.

5.2.4 Fronts Forecast (FRONTS)

FRONTS is available in all TRACON domains and only the CONUS+ domain in Long Range View. FRONTS uses meteorological symbols and colors (see Appendix E) to display fronts and weather analyses. FRONTS is primarily a meteorologist tool but can help ATC users anticipate wind shifts, convection, and other impactful weather (Figure 5-94. FRONTS with PRECIP).

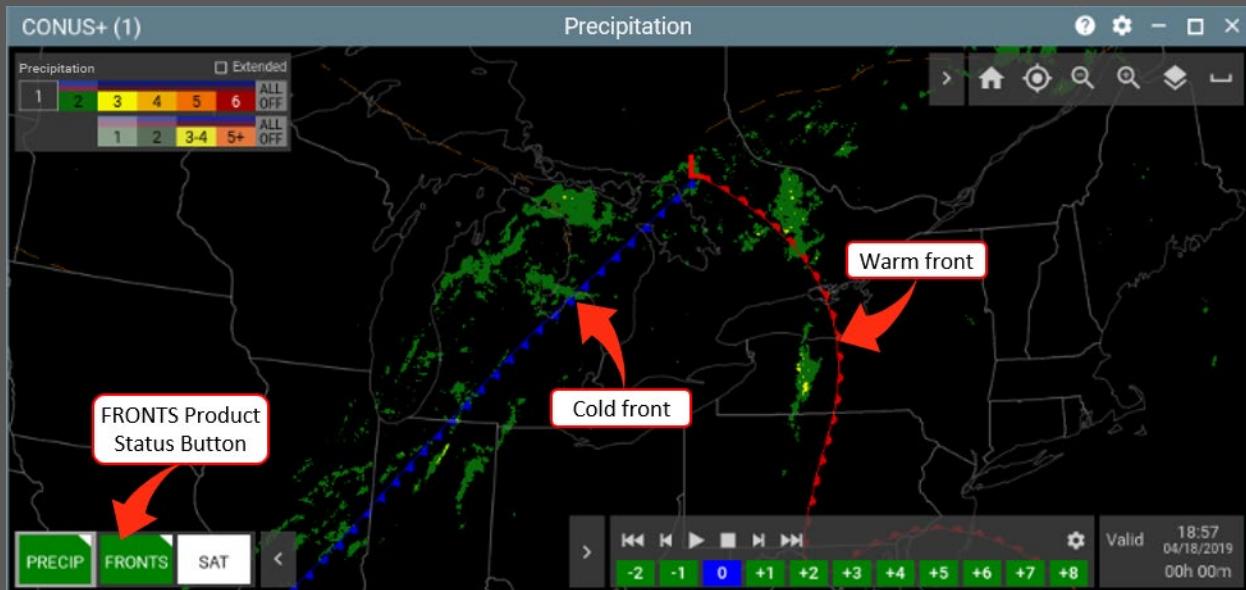


Figure 5-94. FRONTS with PRECIP

5.2.4.1 FRONTS Product Options

From the FRONTS Product Options menu, you can filter FRONTS by pressure center type and/or front type and adjust opacity. To open the FRONTS Product Options menu, right-click the FRONTS Product Status button (Figure 5-95. FRONTS Product Options Menu).

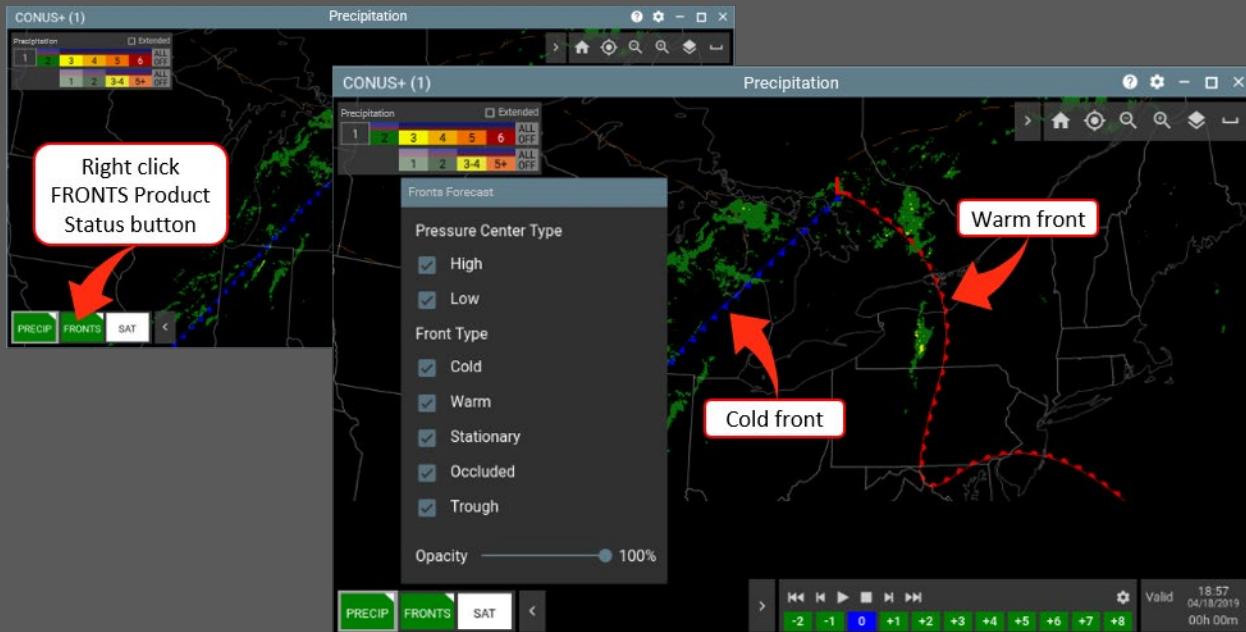


Figure 5-95. FRONTS Product Options Menu

5.2.4.1.1 Hide Fronts by Type

When FRONTS is selected, all pressure center and front types are displayed by default. To hide specific pressure center and/or front types, right-click the **FRONTS** Product Status button, then in the Product Options menu, uncheck the Pressure Centers and/or Front Types you want to hide. In the following example, all cold fronts are hidden from the view (Figure 5-96. Front Type Hidden).



Figure 5-96. Front Type Hidden

5.2.4.1.2 FRONTS Opacity

Higher opacity makes fronts and weather symbols brighter and harder to see through; lower opacity makes fronts and weather symbols dimmer and easier to see through. To adjust opacity, right-click the **FRONTS** Product Status button, then in the **FRONTS** Product Options menu, click and drag the Opacity slider to the preferred level (Figure 5-97. FRONTS Opacity).

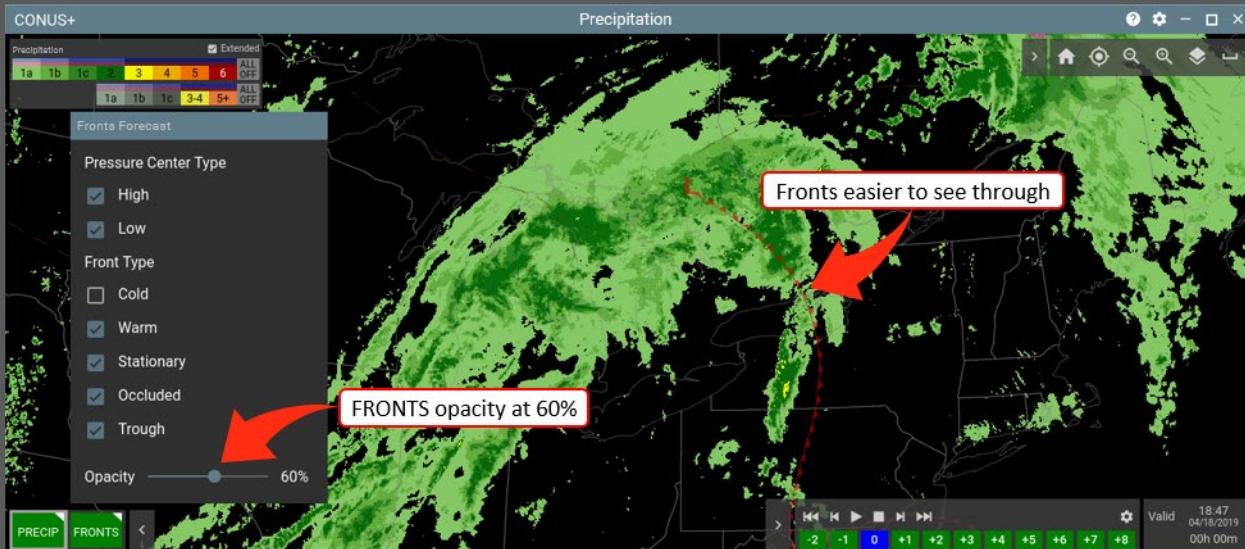


Figure 5-97. FRONTS Opacity

To close the FRONTS Product Options menu, click **outside** the menu and **inside** the active view.

5.2.5 Turbulence Contours (TURB CNTRS)

Since TURB CNTRS and TURB are basically the same product that display turbulence differently, it is highly recommended that you read Section 5.1.3 Turbulence (TURB), before reading this section.

TURB CNTRS uses colored hollow contours to represent turbulence levels in Eddy Dissipation Rate (EDR). EDR is an aircraft independent objective measurement of disturbance in the air (turbulence), that does **NOT** factor in aircraft type or pilot opinion.

Actual EDR is measured in fractions of 1, with 0 representing the lowest EDR, and 1 representing the highest EDR. To simplify EDR reporting and to be consistent with how the NWS and major airlines report EDR, actual EDR values (e.g., .1, .2, etc.), are multiplied by 100 and reported as a whole number. For example, an EDR of .2 is multiplied by 100 and reported as 20. This is similar to how precipitation is grouped and reported as Light, Moderate, or Heavy instead of by dBZ level.

EDR values are grouped into the following six levels that have been vetted with the NWS and airline operators that use EDR for turbulence reporting:

- 10 - EDR range of .1 - .18
- 19 - EDR range of .19 - .25
- 26 - EDR range of .26 - .35
- 36 - EDR range of .36 - .45
- 46 - EDR range of .46 - .55
- 56+ - EDR at and above .56

On the AWD, EDR less than 10 is not displayed and is considered no turbulence. TURB CNTRS is available in all TRACON domains, but in Long Range view only in the CONUS+ domain excluding Puerto Rico. When TURB CNTRS is added to the view, the TURB CNTRS Product Status button is added to the Product Toolbar and forecast turbulence is displayed in the view (Figure 5-98. TURB CNTRS with PRECIP).

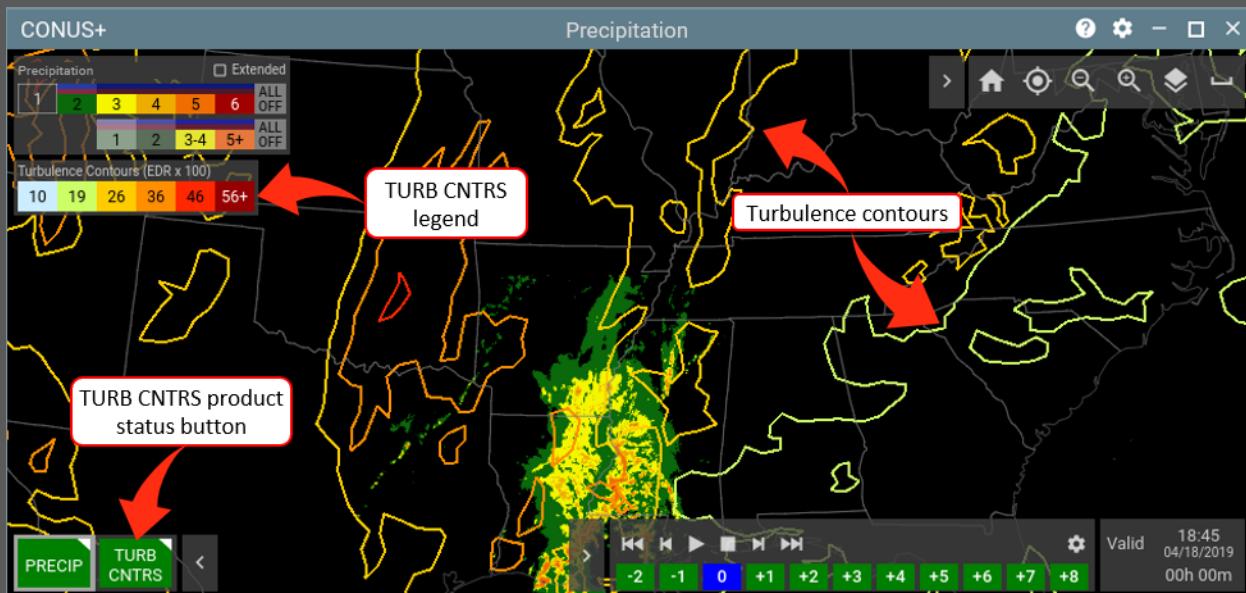


Figure 5-98. TURB CNTRS with PRECIP

5.2.5.1 Filtering TURB CNTRS by EDR

To filter TURB CNTRS, click the lowest EDR you want displayed and all EDR below that level is filtered. In the following example, EDR below 36 is filtered (Figure 5-99. TURB CNTRS Filtered by EDR).

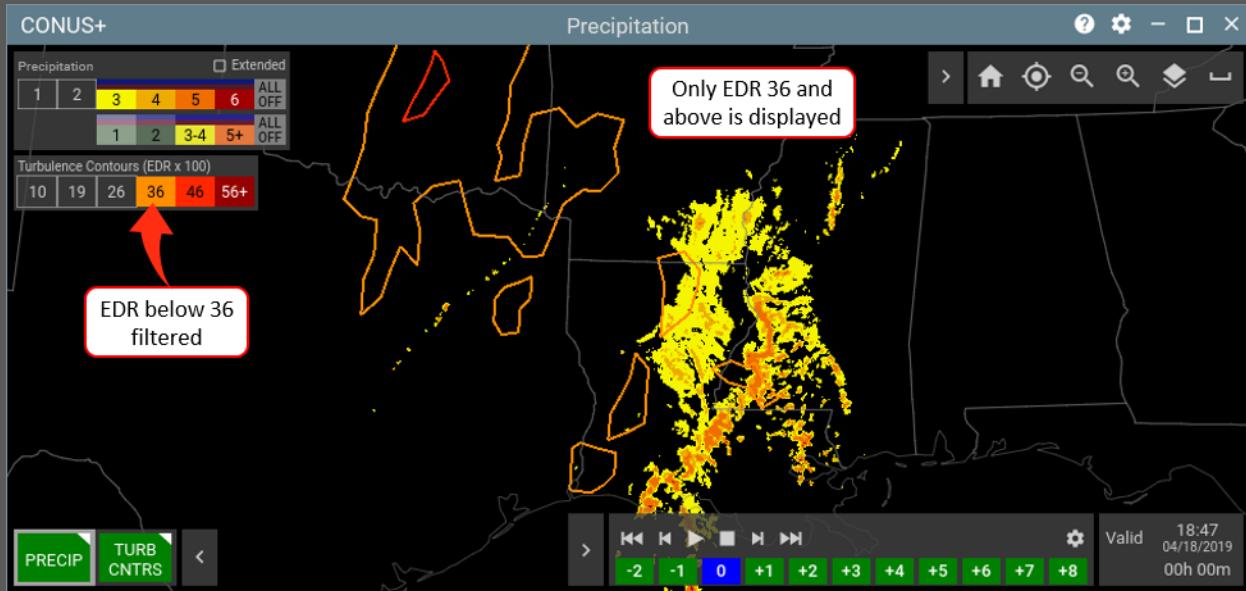


Figure 5-99. TURB CNTRS Filtered by EDR

5.2.5.2 TURB CNTRS Product Options

From the TURB CNTRS Product Options menu, you can filter TURB CNTRS by altitude layer or single altitude, hide/show the TURB CNTRS legend, and adjust TURB CNTRS opacity. To open the TURB CNTRS Product Options menu, right-click the TURB CNTRS Product Status button (Figure 5-100. TURB CNTRS Product Options Menu).

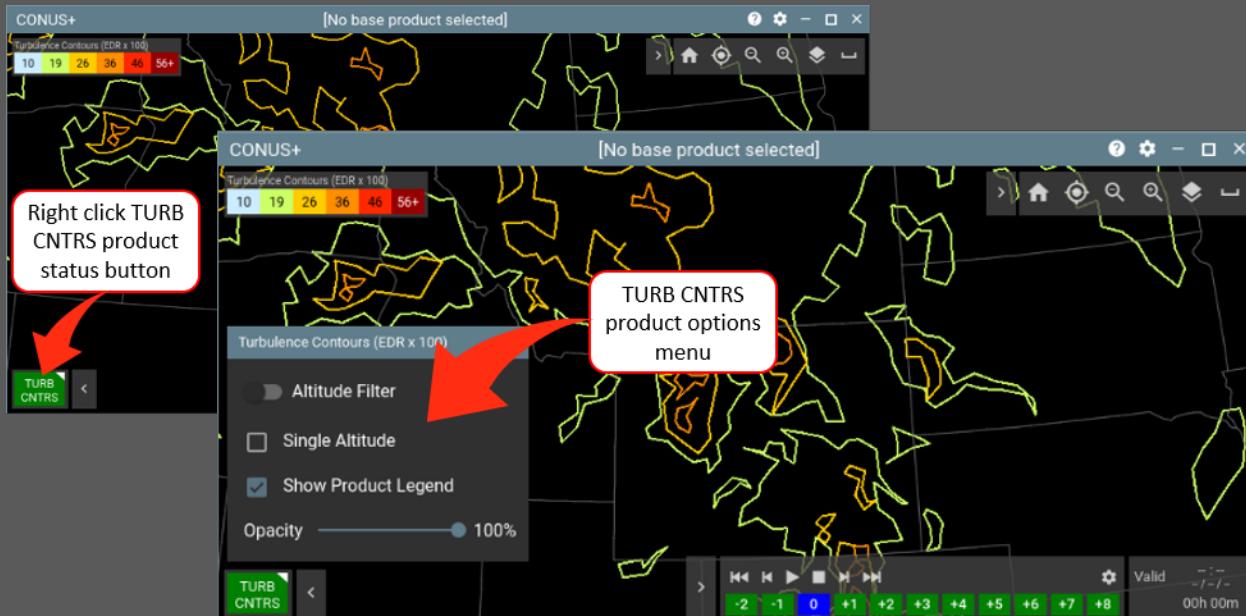


Figure 5-100. TURB CNTRS Product Options Menu

5.2.5.2.1 Filter TURB CNTRS by Altitude Layer

To filter TURB CNTRS by altitude layer, open the TURB CNTRS Product Options menu, then click **Altitude Filter**. The altitude filter activates and is displayed in the TURB CNTRS legend. The default altitude layer is 000 to 450 (Figure 5-101. Filter TURB CNTRS by Altitude Layer).

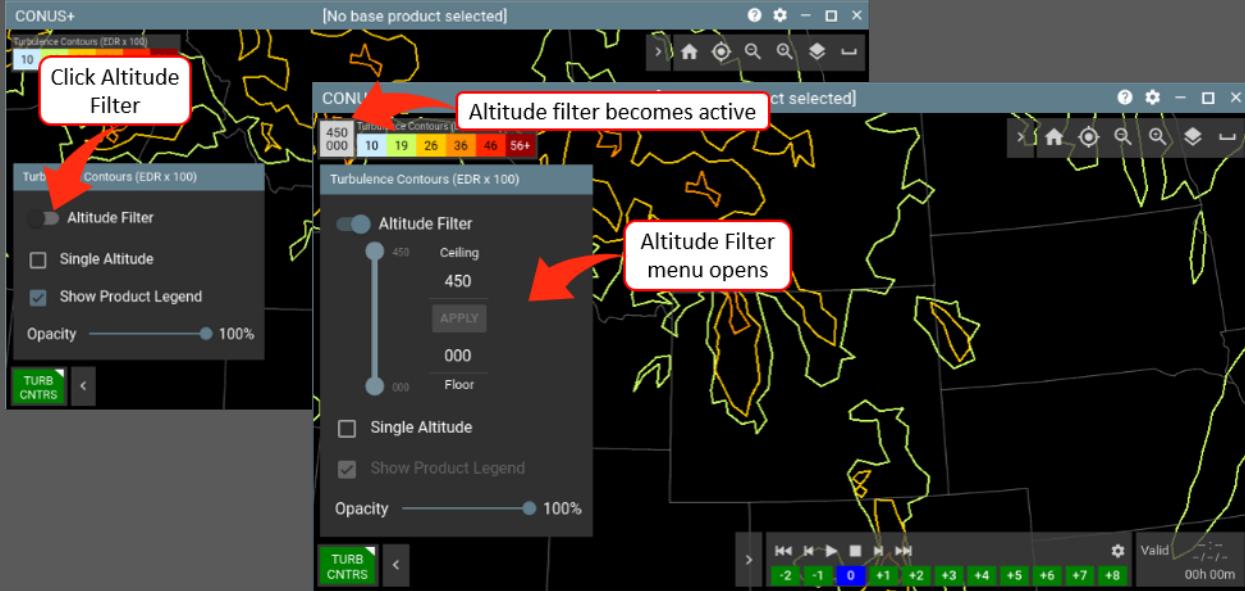


Figure 5-101. Filter TURB CNTRS by Altitude Layer

To adjust the altitude filter floor and ceiling, click and drag the floor and ceiling sliders to the preferred altitude then click **APPLY** (Figure 5-102. Adjust TURB CNTRS Altitude Layer Filter).

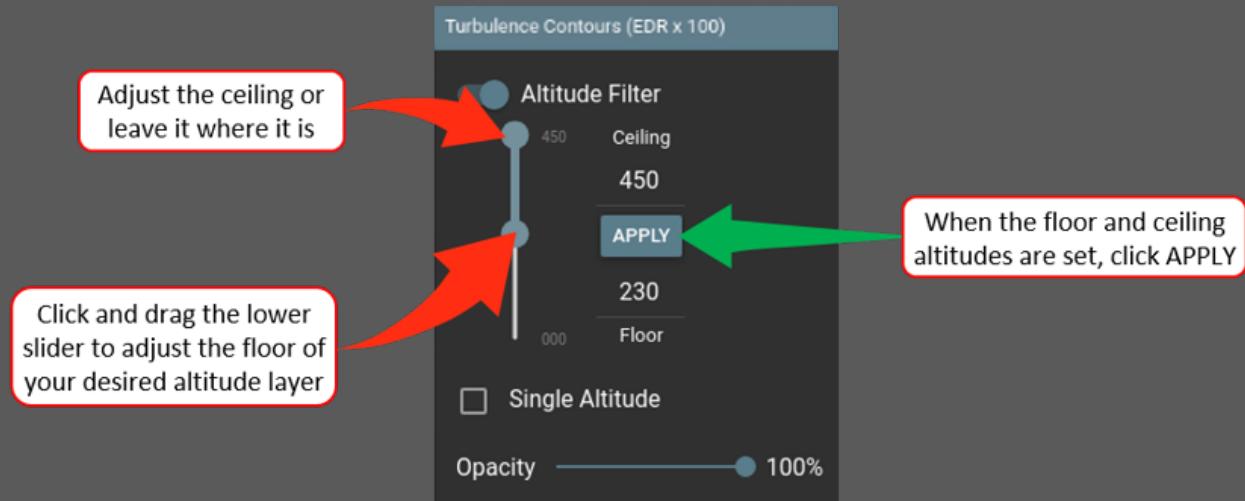


Figure 5-102. Adjust TURB CNTRS Altitude Layer Filter

5.2.5.2.2 Filtering TURB CNTRS by Single Altitude

You can also filter TURB CNTRS by single altitude. The single altitude layer floor is 500' below and the ceiling is 500' above the selected altitude. For example, a single altitude layer set at 160 has a 155' floor and 165' ceiling.

To filter TURB CNTRS by single altitude, right-click the TURB CNTRS Product Status button to open the TURB CNTRS Product Options menu, then from the Product Options menu, click Single Altitude (Figure 5-103. TURB CNTRS Single Altitude Filter).

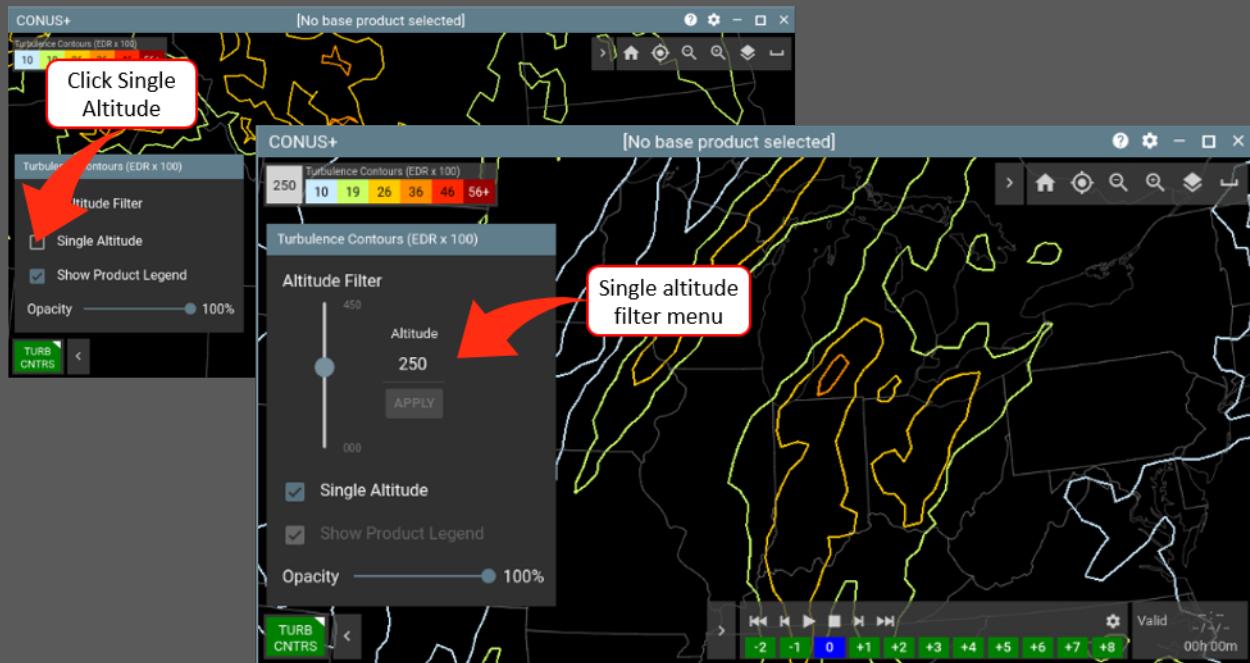


Figure 5-103. TURB CNTRS Single Altitude Filter

To set the single altitude filter, click and drag the altitude slider to the preferred altitude then click **APPLY** (Figure 5-104. Set TURB CNTRS Single Altitude Filter).

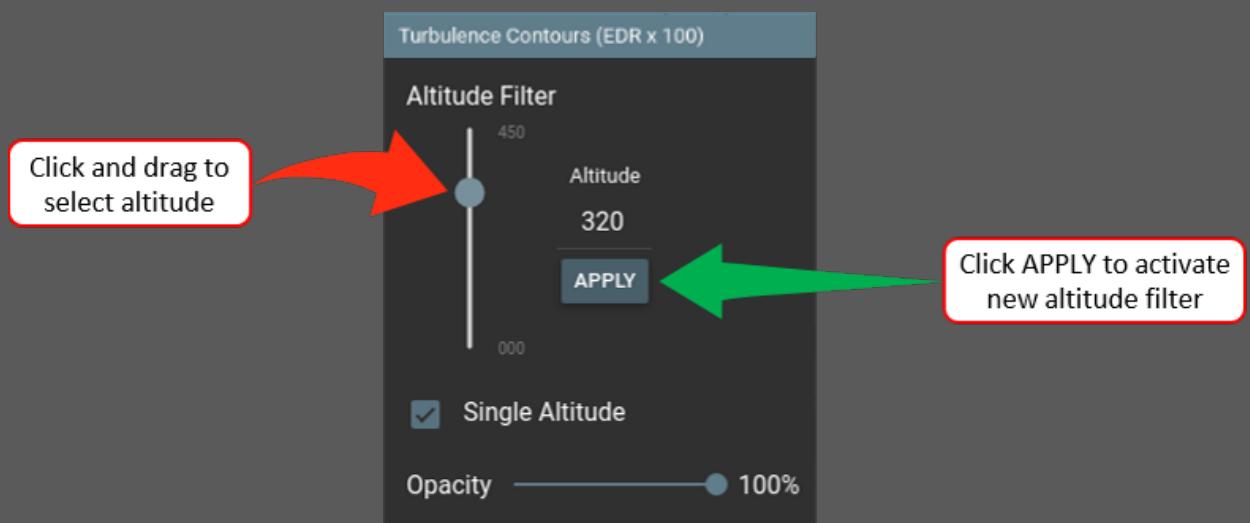


Figure 5-104. Set TURB CNTRS Single Altitude Filter

When set and active, the single altitude filter is displayed in the TURB CNTRS legend on the left side of the view (Figure 5-105. TURB CNTRS Single Altitude Filter Displayed).

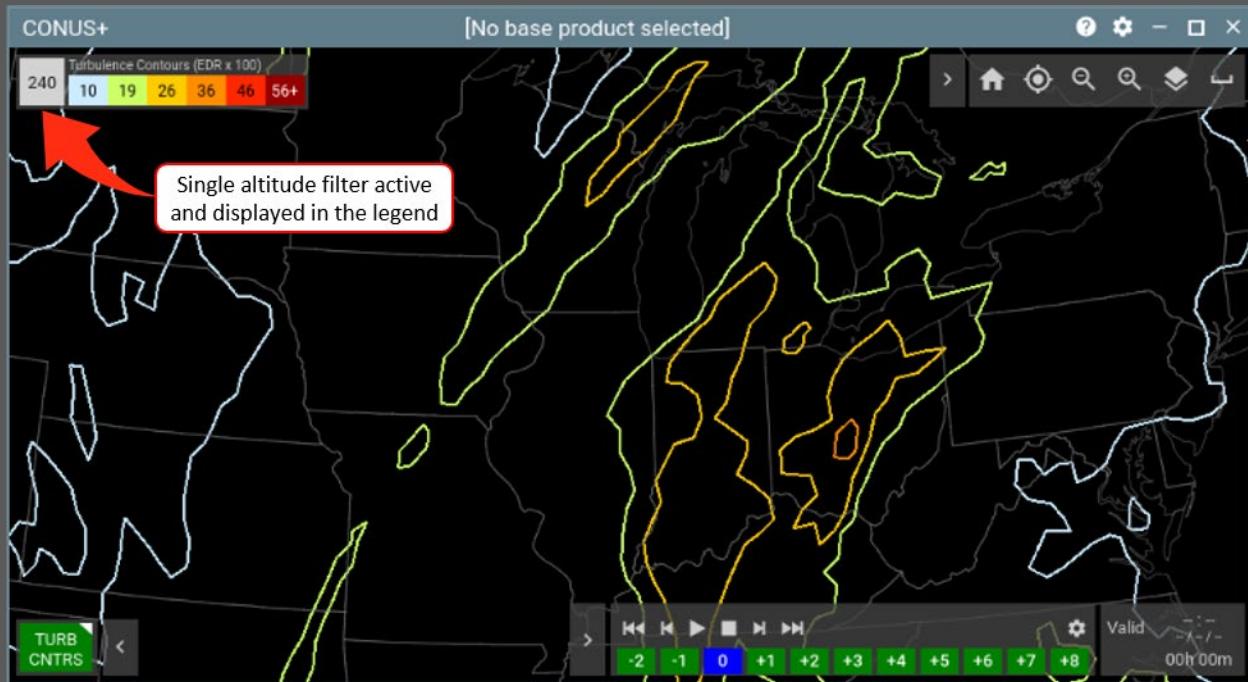


Figure 5-105. TURB CNTRS Single Altitude Filter Displayed

5.2.5.2.3 Hide/Show TURB CNTRS Legend

To hide/show the TURB CNTRS legend, right-click the **TURB CNTRS Product Status** button, then in the Product Options menu, uncheck/check **Show Product Legend**. The TURB CNTRS legend CANNOT be hidden while the altitude filter is active (Figure 5-106. Hide TURB CNTRS Legend).

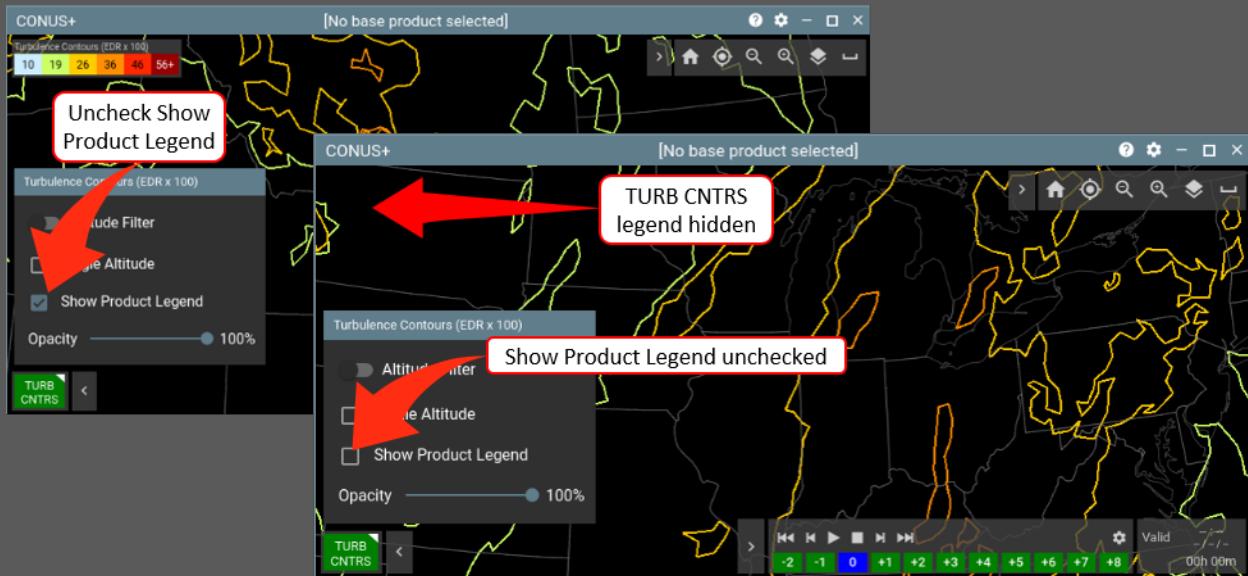


Figure 5-106. Hide TURB CNTRS Legend

5.2.5.2.4 TURB CNTRS Opacity

At higher opacity, turbulence contours are brighter and harder to see through; at lower opacity, turbulence contours are dimmer and easier to see through. To adjust opacity, right-click the **TURB CNTRS** Product Status button, then in the TURB CNTRS Product Options menu, click and drag the Opacity slider to the preferred level (Figure 5-107. TURB CNTRS Opacity).

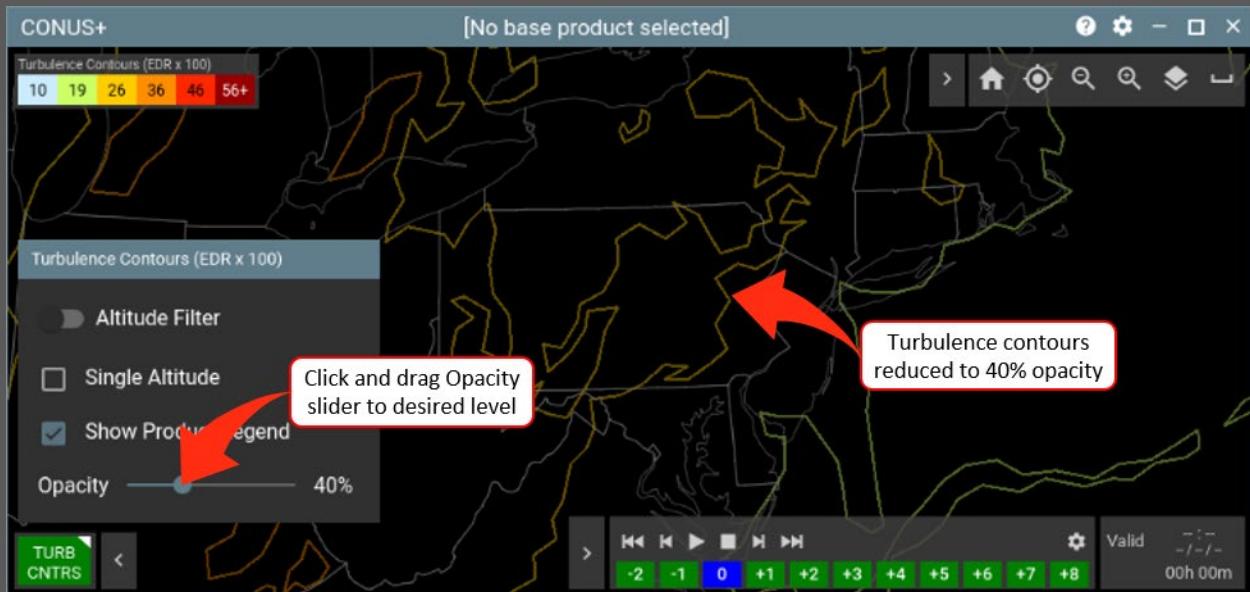


Figure 5-107. TURB CNTRS Opacity

5.2.6 Icing Contours (ICING CNTRS)

ICING CNTRS depicts icing with colored contours that represent Trace (TRC) icing, Light (LGT) icing, Moderate (MOD) icing, Heavy (HVY) icing, and Super-cooled Liquid Droplets (SLD). ICING CNTRS can be used independently or in conjunction with other products.

ICING CNTRS is available in both Long Range and TRACON view. In TRACON view, ICING CNTRS is available in all domains, but in Long Range view, only in the CONUS+ domain excluding Puerto Rico (Figure 5-108. ICING CNTRS).

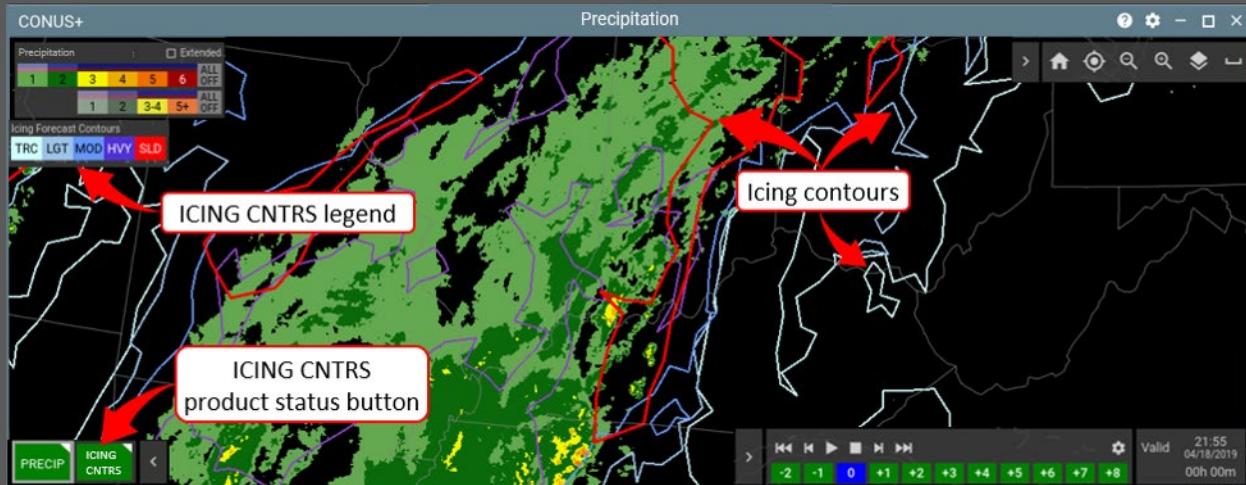


Figure 5-108. ICING CNTRS

5.2.6.1 Filtering ICING CNTRS by Severity

All icing except SLD can be filtered, so when ICING CNTRS is on, SLD contours (when detected) are displayed. To filter ICING CNTRS, click the lowest severity you want displayed. In the following example, MOD was clicked to filter all icing below Moderate (Figure 5-109. ICING CNTRS Filtered).

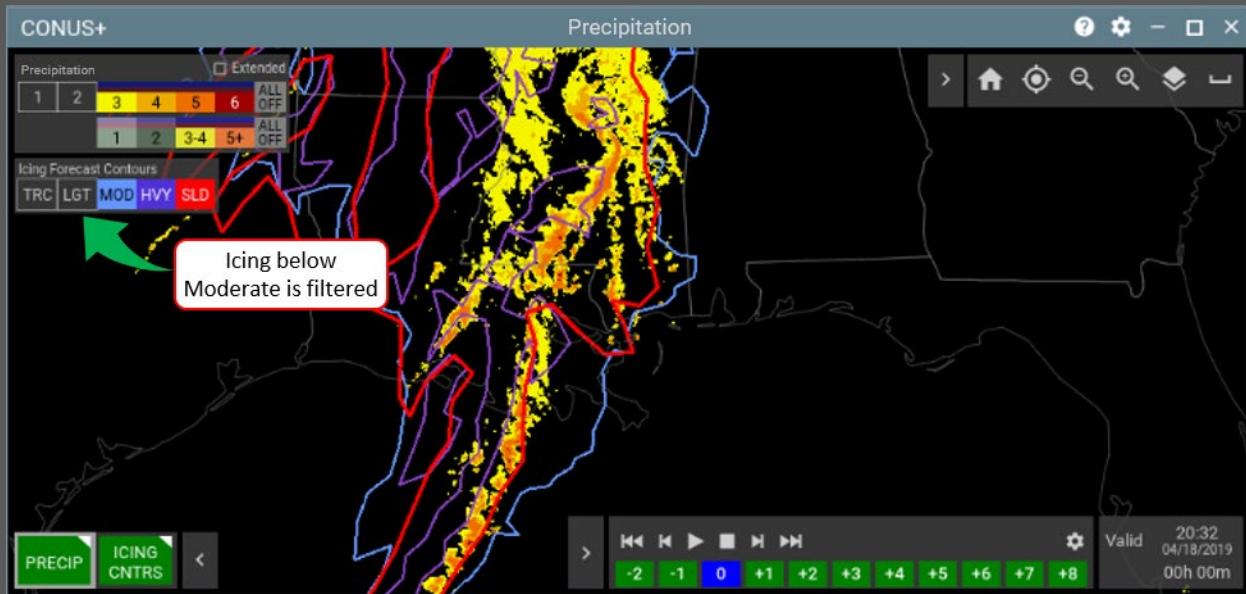


Figure 5-109. ICING CNTRS Filtered

5.2.6.2 ICING CNTRS Product Options Menu

From the ICING CNTRS Product Options menu you can filter ICING CNTRS by altitude layer, single altitude, hide/display the ICING CNTRS legend, and adjust ICING CNTRS opacity. To open the ICING CNTRS Product Options menu, right-click the ICING CNTRS Product Status button (Figure 5-110. ICING CNTRS Product Options Menu).

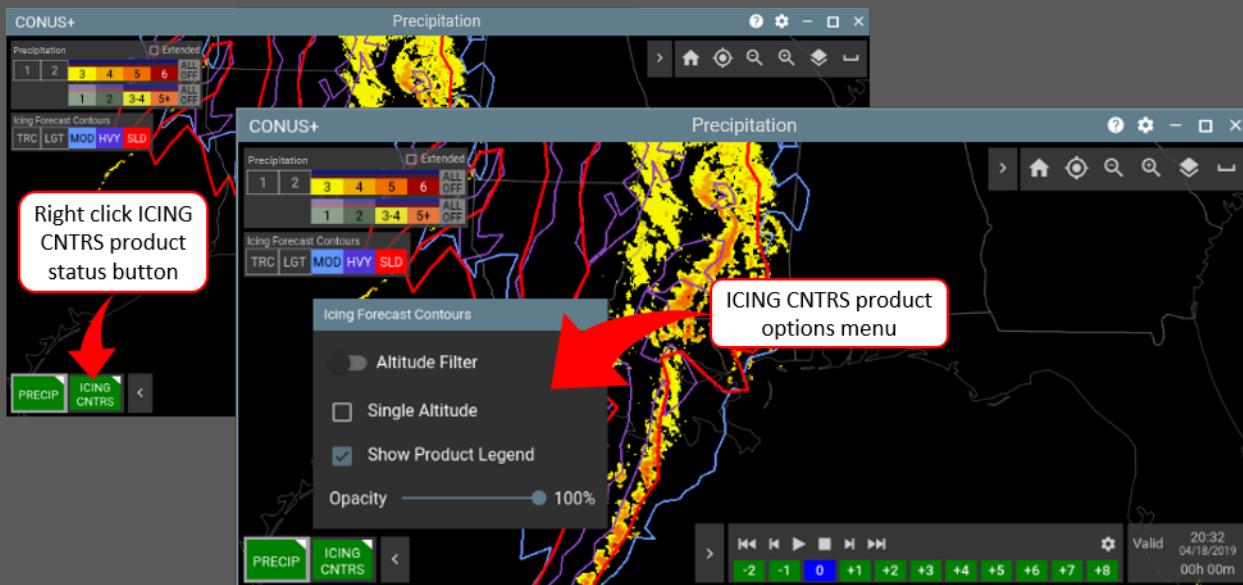
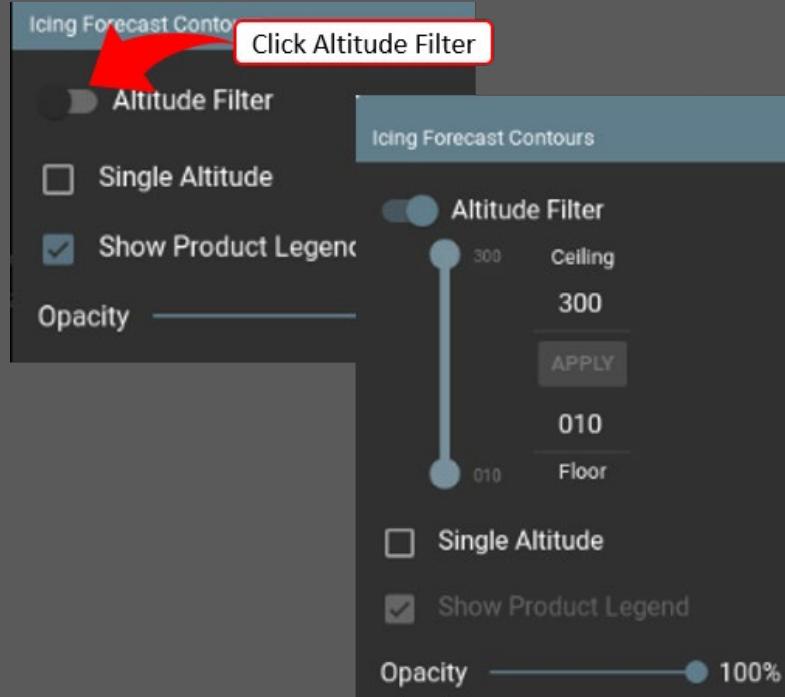


Figure 5-110. ICING CNTRS Product Options Menu

5.2.6.2.1 Filtering ICING CNTRS by Altitude Layer

To filter ICING CNTRS by altitude layer, open the ICING CNTRS Product Options menu, then click **Altitude Filter** (Figure 5-111. Filter ICING CNTRS by Altitude Layer).



To adjust the filter layer floor and ceiling altitudes, click and drag the floor and ceiling altitude sliders to the preferred altitudes, then click APPLY (Figure 5-112. Set ICING CNTRS Altitude Layer).

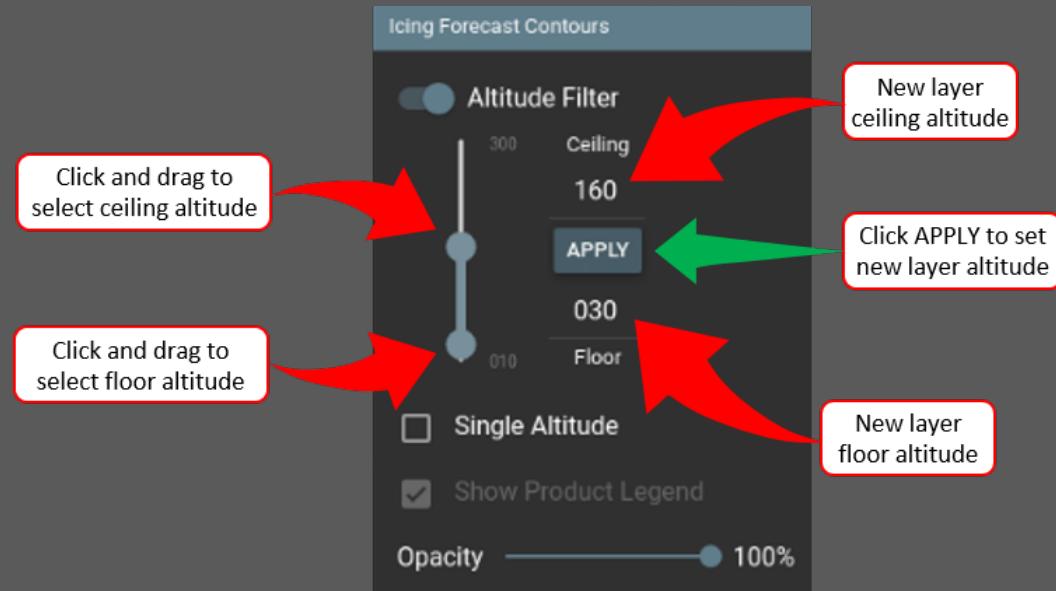


Figure 5-112. Set ICING CNTRS Altitude Layer

After you click APPLY, the new altitude filter layer is active and displayed in the ICING CNTRS legend (Figure 5-113. ICING CNTRS Altitude Filter Layer Activated).

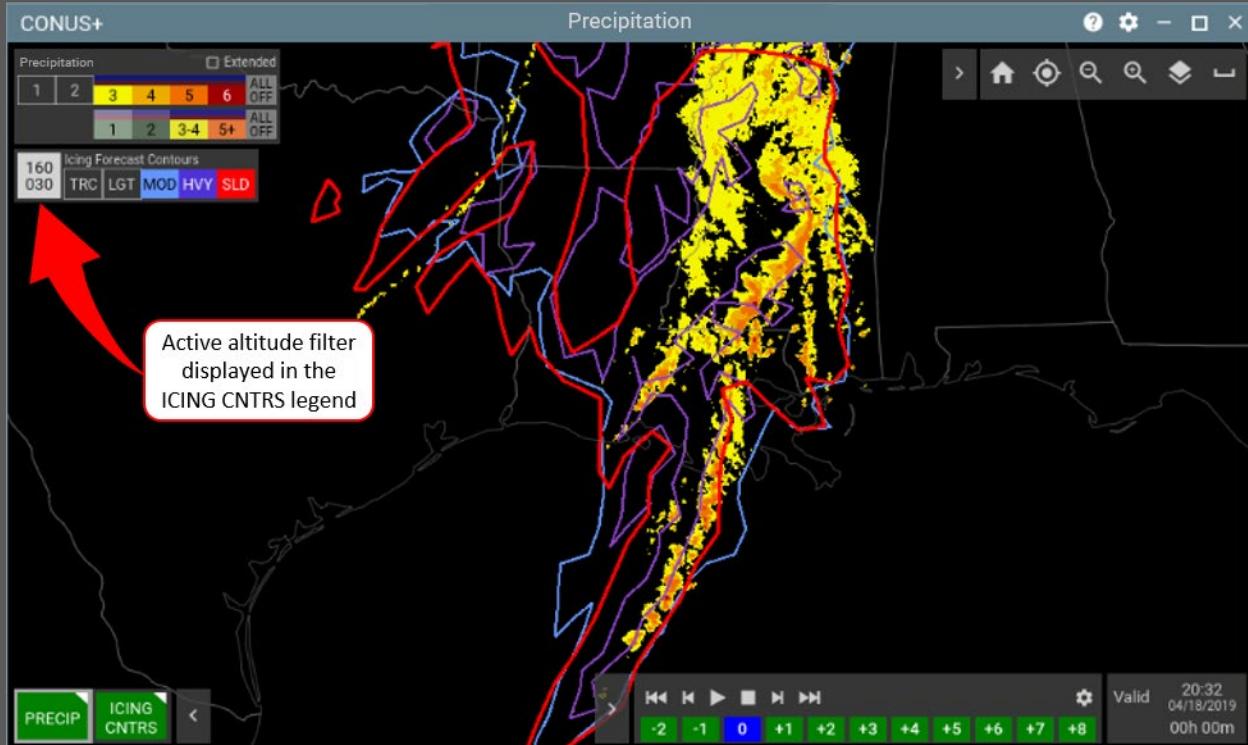


Figure 5-113. ICING CNTRS Altitude Filter Layer Activated

5.2.6.2.2 Filtering ICING CNTRS by Single Altitude

You can also filter ICING CNTRS by single altitude which is a 1,000' layer with a floor 500' below and ceiling 500' above the selected altitude. For example, a single altitude layer set at 150 would be a 1,000' layer with a 14,500' floor and 15,500' ceiling.

To filter ICING CNTRS by single altitude, right-click the ICING CNTRS Product Status button, then in the Product Options menu, click **Single Altitude** (Figure 5-114. Open ICING CNTRS Single Altitude Filter).

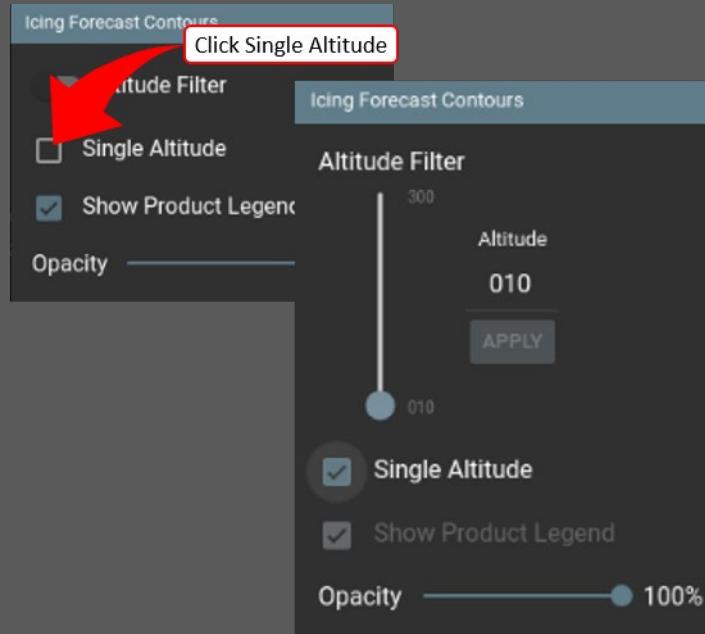


Figure 5-114. Open ICING CNTRS Single Altitude Filter

In the single altitude filter dialog box, click and drag the altitude slider to the preferred altitude then click **APPLY** (Figure 5-115. Set ICING CNTRS Single Altitude Filter).

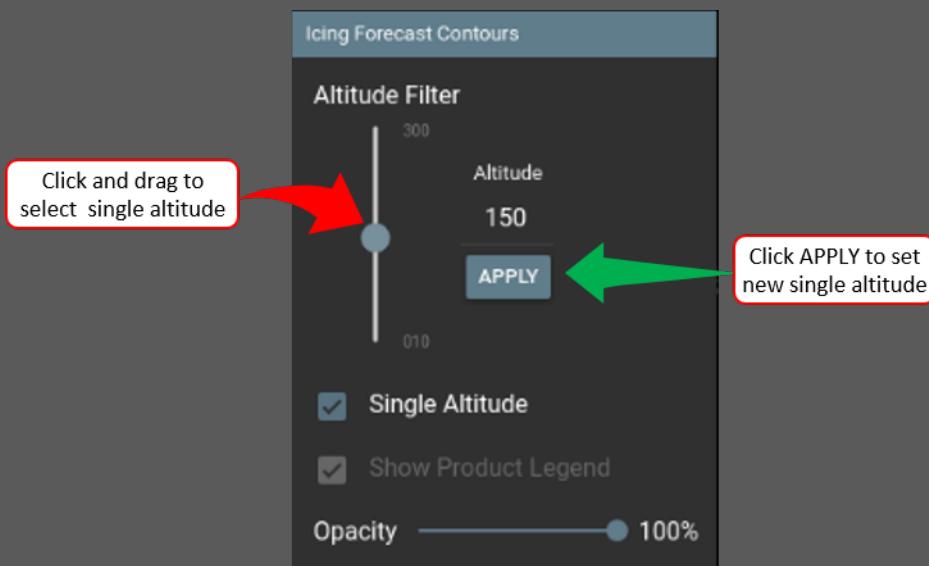


Figure 5-115. Set ICING CNTRS Single Altitude Filter

After you click APPLY, the single altitude layer is active and displayed in the ICING CNTRS Legend (Figure 5-116. ICING CNTRS Single Altitude Filter Active).

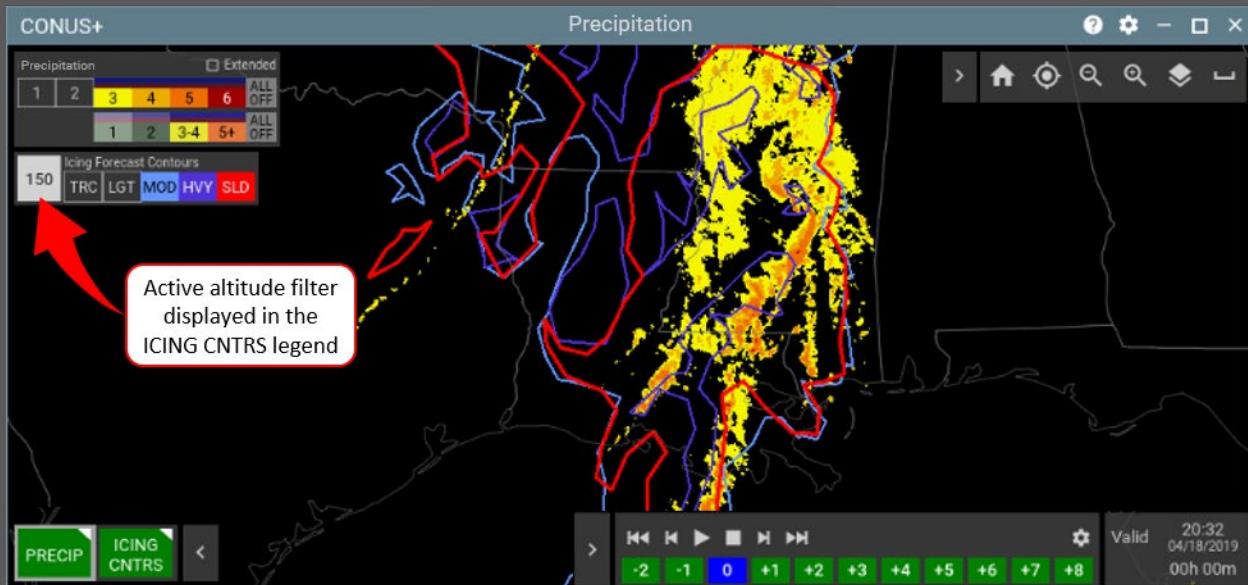


Figure 5-116. ICING CNTRS Single Altitude Filter Active

5.2.6.2.3 Hide ICING CNTRS Legend

The ICING CNTRS legend *cannot* be hidden when the ICING CNTRS altitude filter is active. To hide the ICING CNTRS legend when the altitude filter is not active, right-click the ICING CNTRS Product Status button, then in the ICING CNTRS Product Options menu, uncheck Show Product Legend (Figure 5-117. Hide/Show ICING CNTRS Legend).

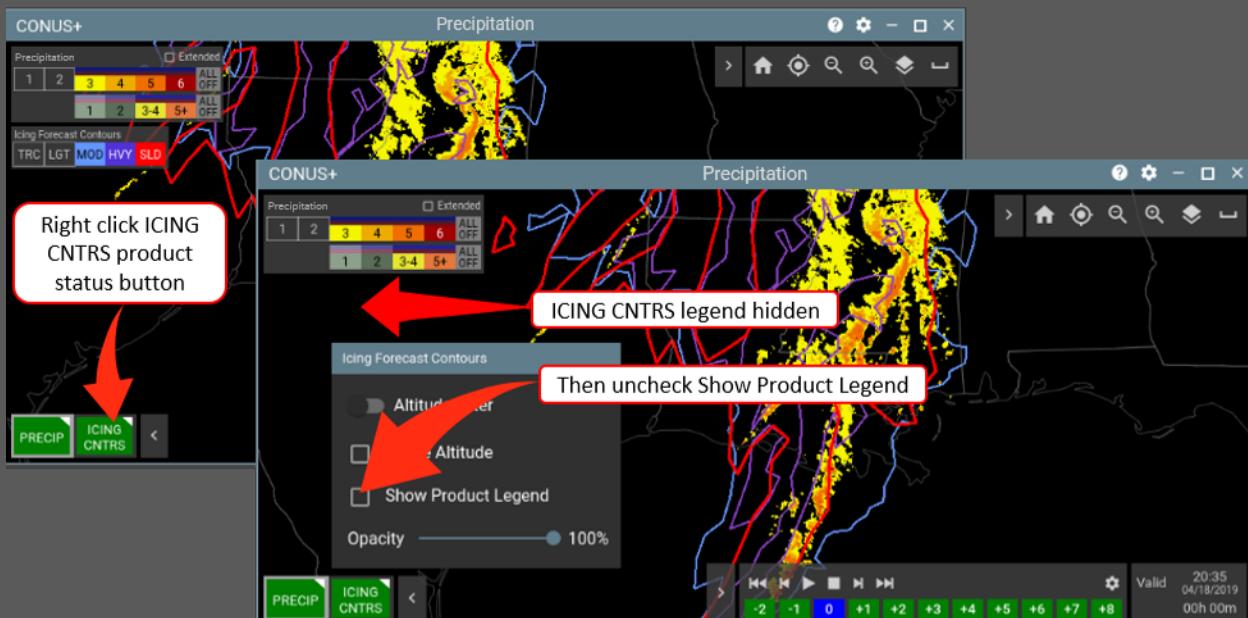


Figure 5-117. Hide/Show ICING CNTRS Legend

5.2.6.2.4 ICING CNTRS Opacity

At higher opacity, icing contours are prominent while at lower opacity, contours are dimmer and less prominent. To adjust opacity, right-click the ICING CNTRS Product Status button, then in the ICING CNTRS Product Options menu, drag the Opacity slider to the preferred level (Figure 5-118. ICING CNTRS Opacity).

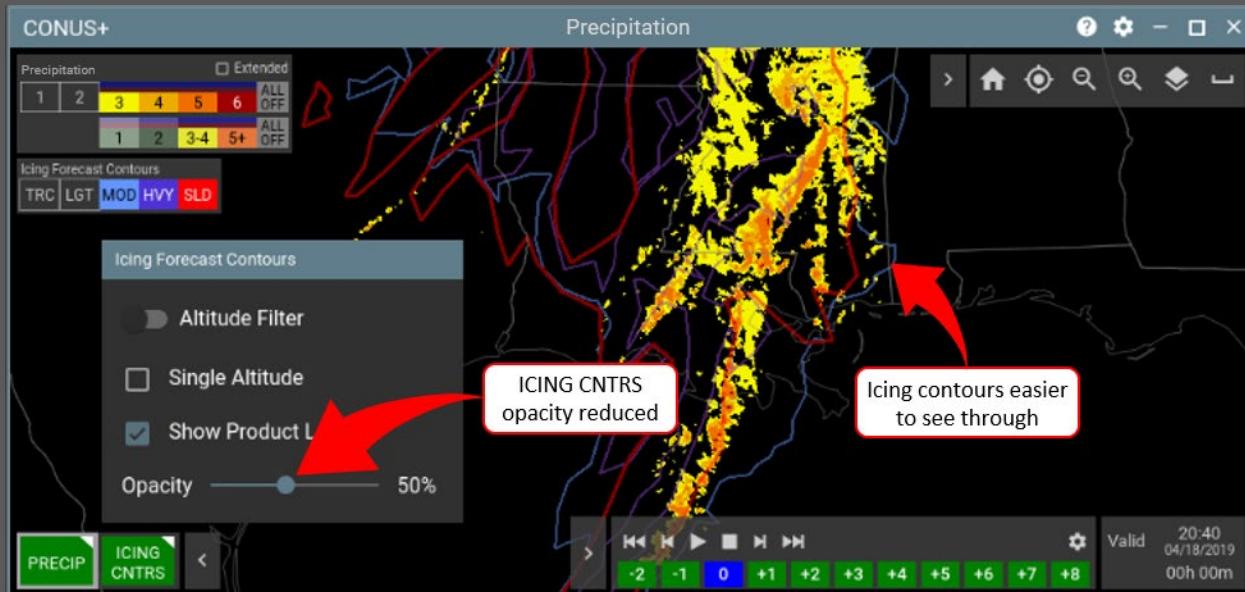


Figure 5-118. ICING CNTRS Opacity

To close the ICING CNTRS Product Options menu, click outside the menu and inside the active view.

5.2.7 Forecast Contours (FCST CNTRS)

FCST CNTRS is available in Long Range and TRACON View in conjunction with PRECIP or ECHO TOPS. RECIP, FCST CNTRS depicts forecasts for Level 3 and above precipitation or echo tops 30,000' and above. The 14 forecast times are represented with 14 unique contour colors. In the following example, the 2, 4, and 6-hour forecasts are selected with PRECIP (Figure 5-119. FCST CNTRS with PRECIP).

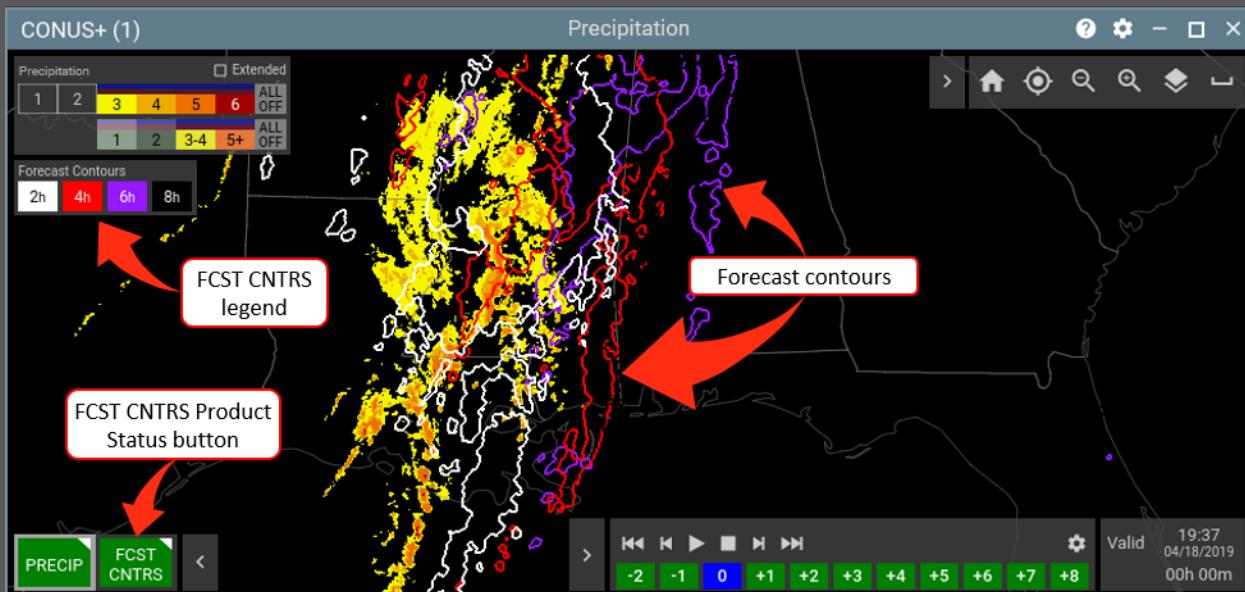


Figure 5-119. FCST CNTRS with PRECIP

From the FCST CNTRS Product Options menu, you can select forecast times, show/hide the FCST CNTRS legend, and adjust opacity. To open the FCST CNTRS Product Options menu, right-click the **FCST CNTRS** Product Status button (Figure 5-120. FCST CNTRS Product Options Menu).

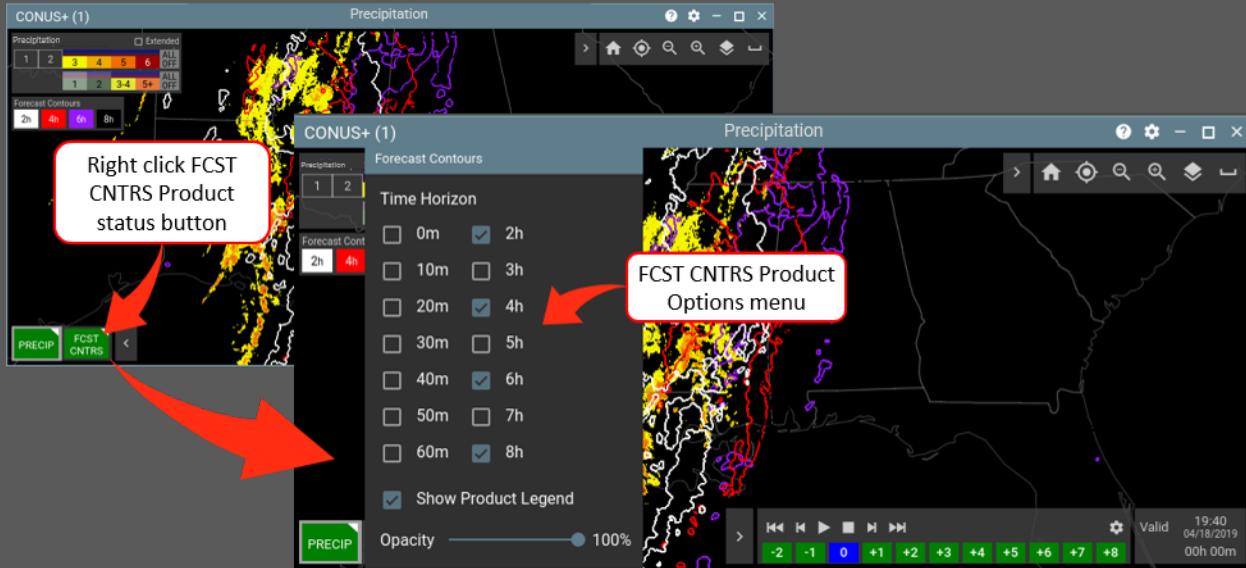


Figure 5-120. FCST CNTRS Product Options Menu

5.2.7.1.1 FCST CNTRS Time Horizons

FCST CNTRS provides 13 forecasts that are separated by ten minutes for the first hour and by one hour between two and eight hours. Forecasts can be viewed simultaneously, but doing so clutters the display and is **NOT RECOMMENDED**. In the following example, the 60-minute forecast (magenta contours), and 4-hour forecast (red contours) are selected (Figure 5-121. FCST CNTRS with Two Forecast Horizons).

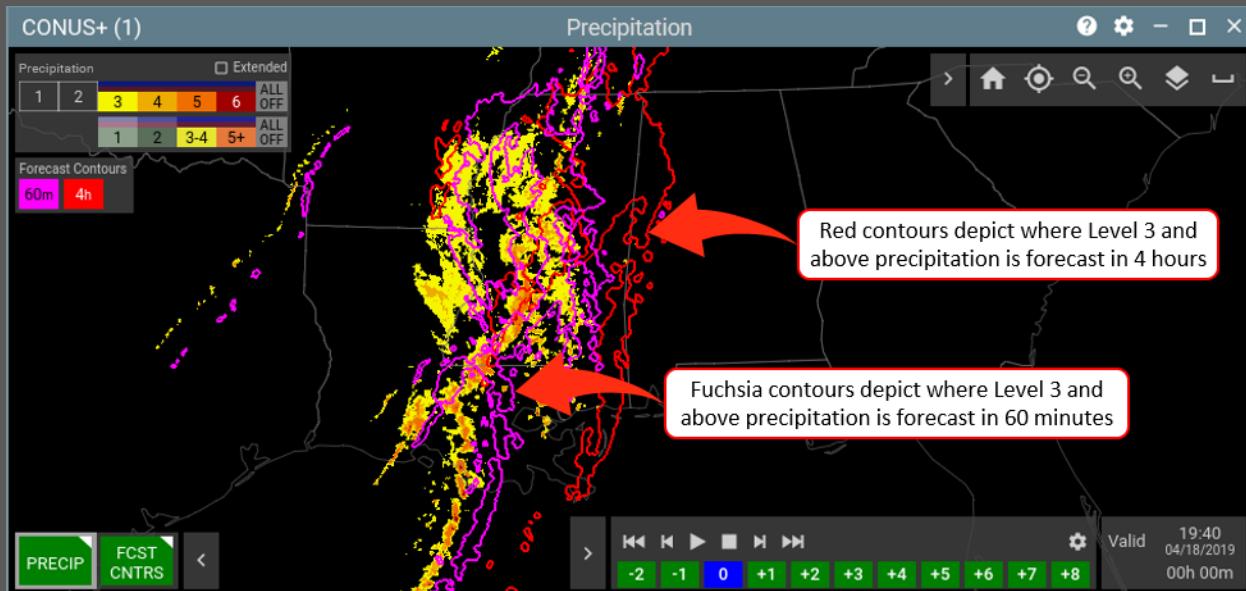


Figure 5-121. FCST CNTRS with Two Forecast Horizons

5.2.7.1.2 Hide FCST CNTRS Legend

To hide the FCST CNTRS legend, right-click the FCST CNTRS Product Status button, then in the FCST CNTRS Product Options menu, uncheck **Show Product Legend** (Figure 5-122. Hide FCST CNTRS Legend).

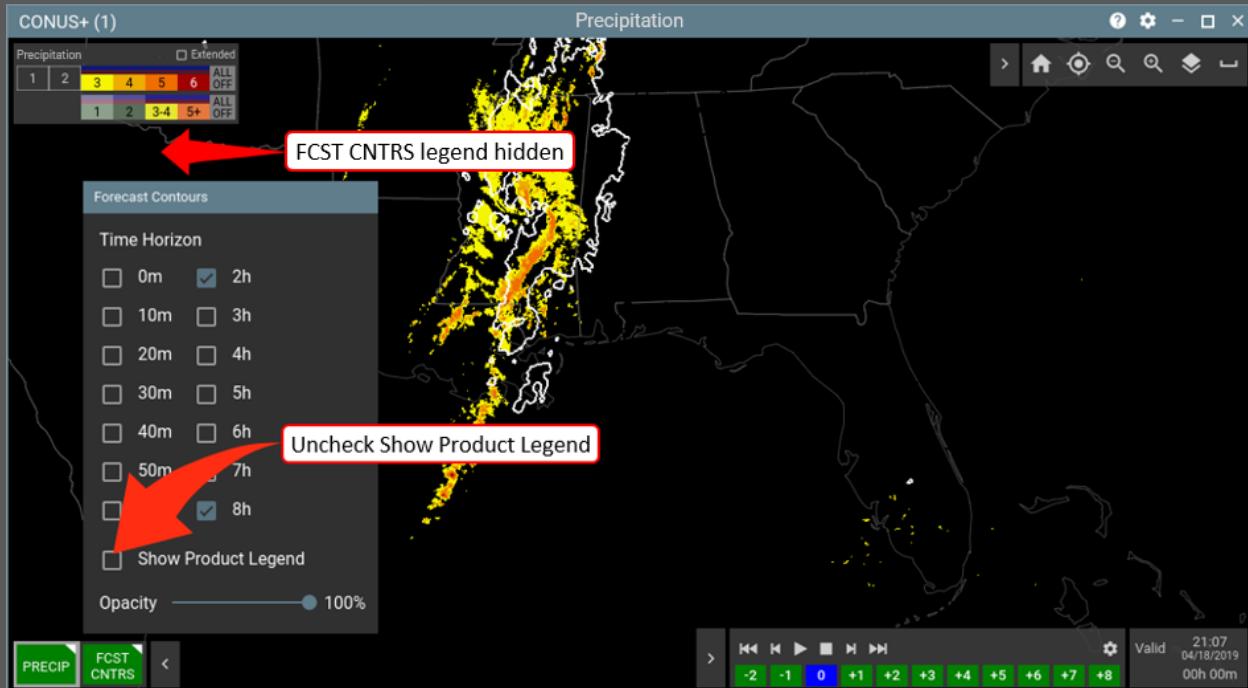


Figure 5-122. Hide FCST CNTRS Legend

5.2.7.1.3 FCST CNTRS Opacity

At higher opacity, forecast contours are brighter and more prominent; at lower opacity, contours are dimmer and less prominent. To adjust FCST CNTRS opacity, right-click the FCST CNTRS Product Status button, then in the FCST CNTRS Product Options menu, click and drag the **Opacity** slider the preferred level (Figure 5-123. FCST CNTRS Opacity).

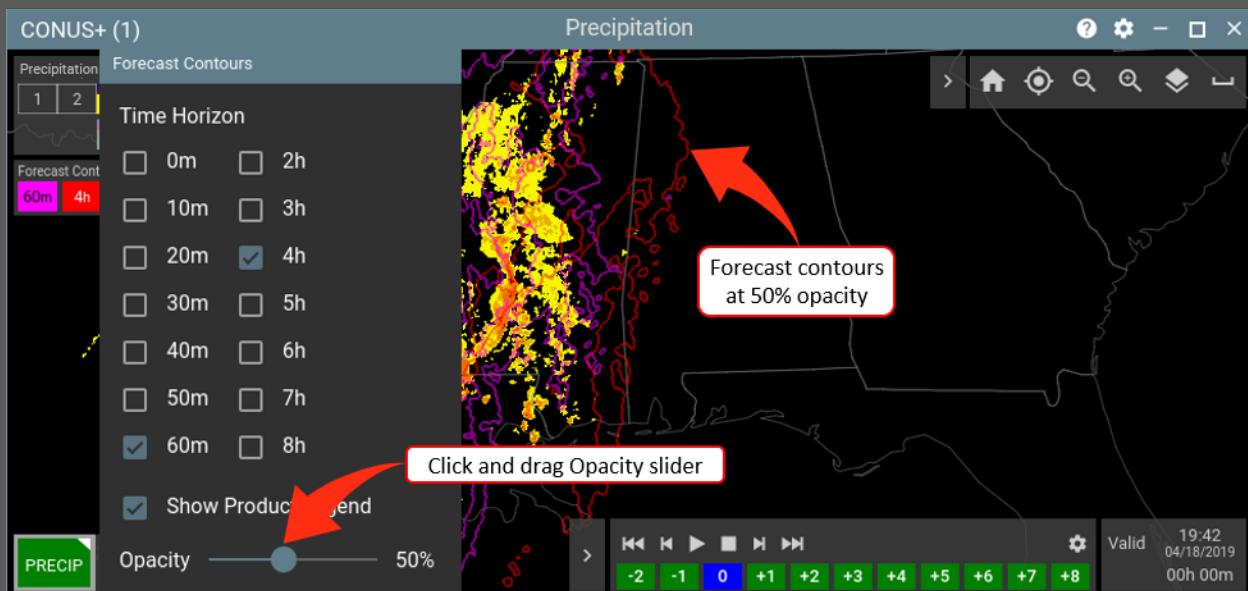


Figure 5-123. FCST CNTRS Opacity

5.2.8 Forecast Verification Contours (VERIF CNTRS)

VERIF CNTRS is used to verify the accuracy of prior forecasts no more than eight hours old, can only be used in conjunction with PRECIP or ECHO TOPS, and is available in both Long Range and TRACON view. Since VERIF CNTRS is used to verify Forecast Contours (FCST CNTRS), you should familiarize yourself with Section 5.2.7, Forecast Contours, before reading this section (Figure 5-124. VERIF CNTRS with PRECIP).

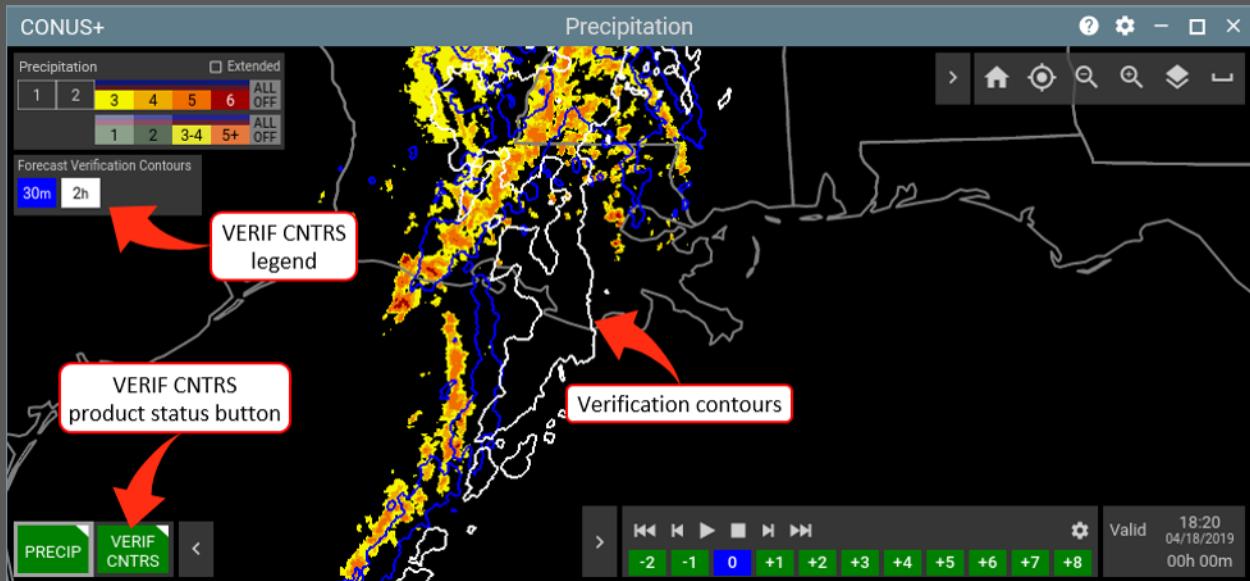


Figure 5-124. VERIF CNTRS with PRECIP

5.2.8.1 VERIF CNTRS Product Options

From the VERIF CNTRS Product Options menu, you can select up to thirteen forecasts to verify, hide/show the VERIF CNTRS legend, and adjust verification contour opacity. To open the VERIF CNTRS Product Options menu, right-click the **VERIF CNTRS Product Status button** (Figure 5-125. VERIF CNTRS Product Options Menu).

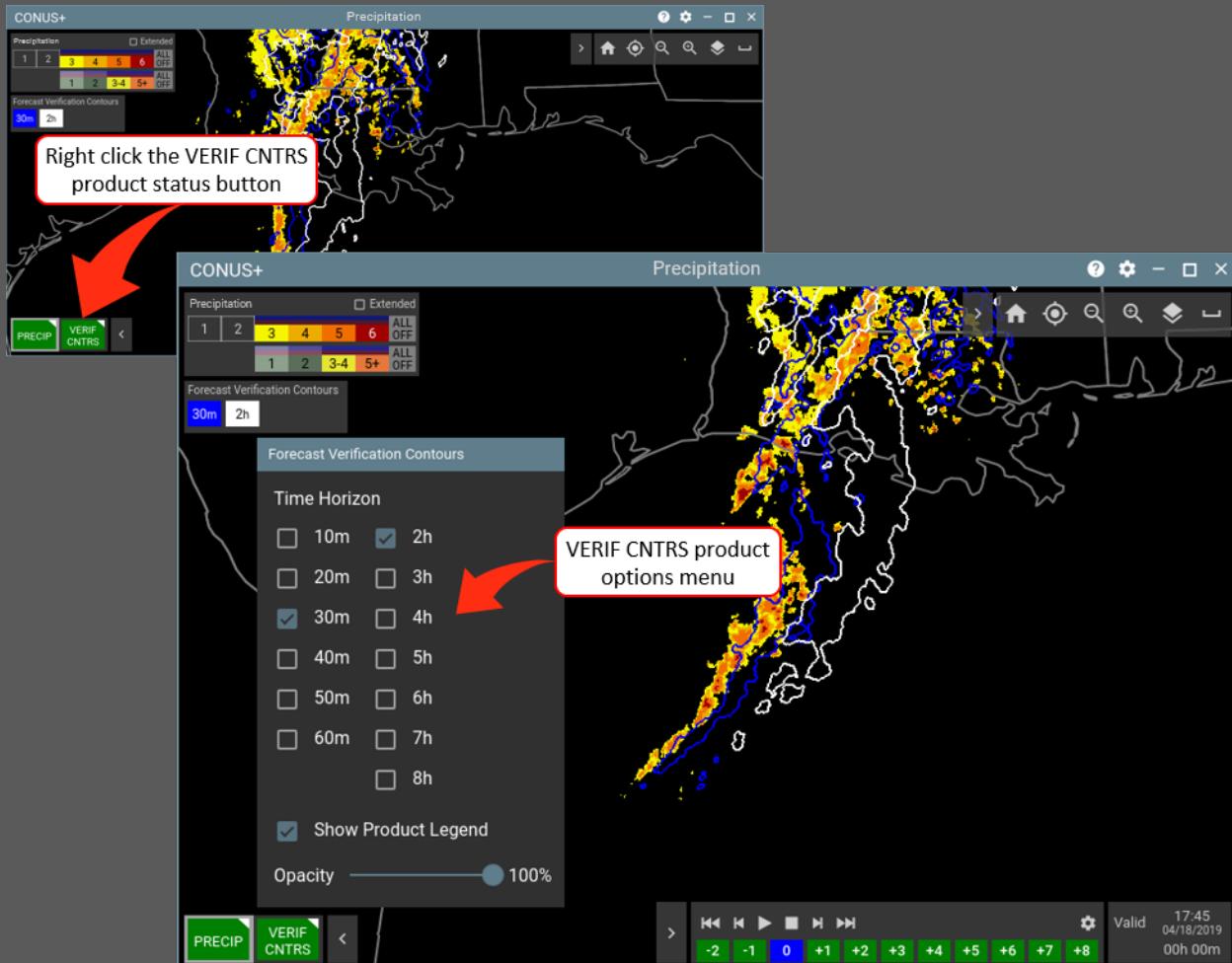


Figure 5-125. VERIF CNTRS Product Options Menu

5.2.8.1.1 VERIF CNTRS Forecasts

While you could verify thirteen forecasts at one time, doing so would clutter the display and is **NOT RECOMMENDED**.

In the following example, the 30-minute forecast and 2-hour forecast are selected, displayed, and can be verified (Figure 5-126. VERIF CNTRS Explained).

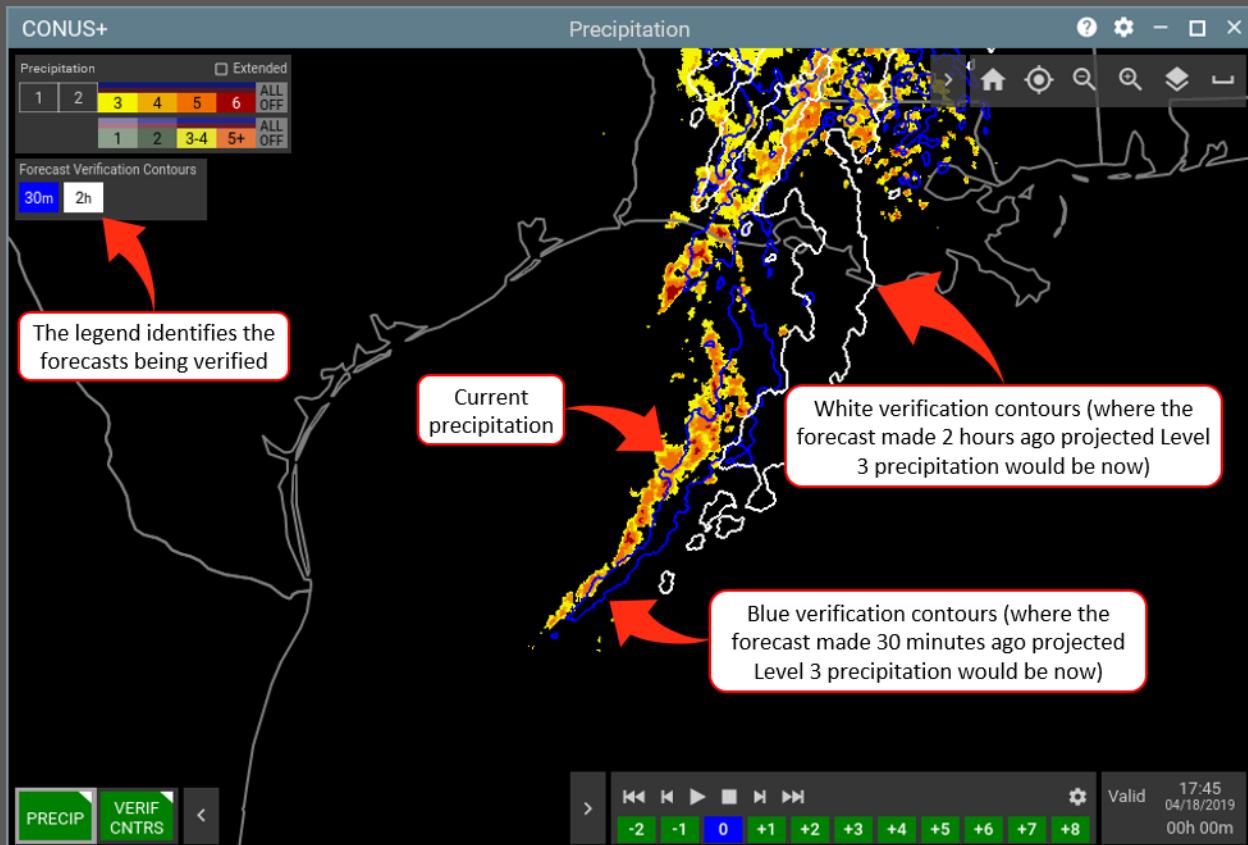


Figure 5-126. VERIF CNTRS Explained

5.2.8.1.2 Hide VERIF CNTRS Legend

To hide the VERIF CNTRS Legend, right-click the VERIF CNTRS Product Status button, then in the Product Options menu, uncheck **Show Product Legend** (Figure 5-127. Hide VERIF CNTRS Legend).

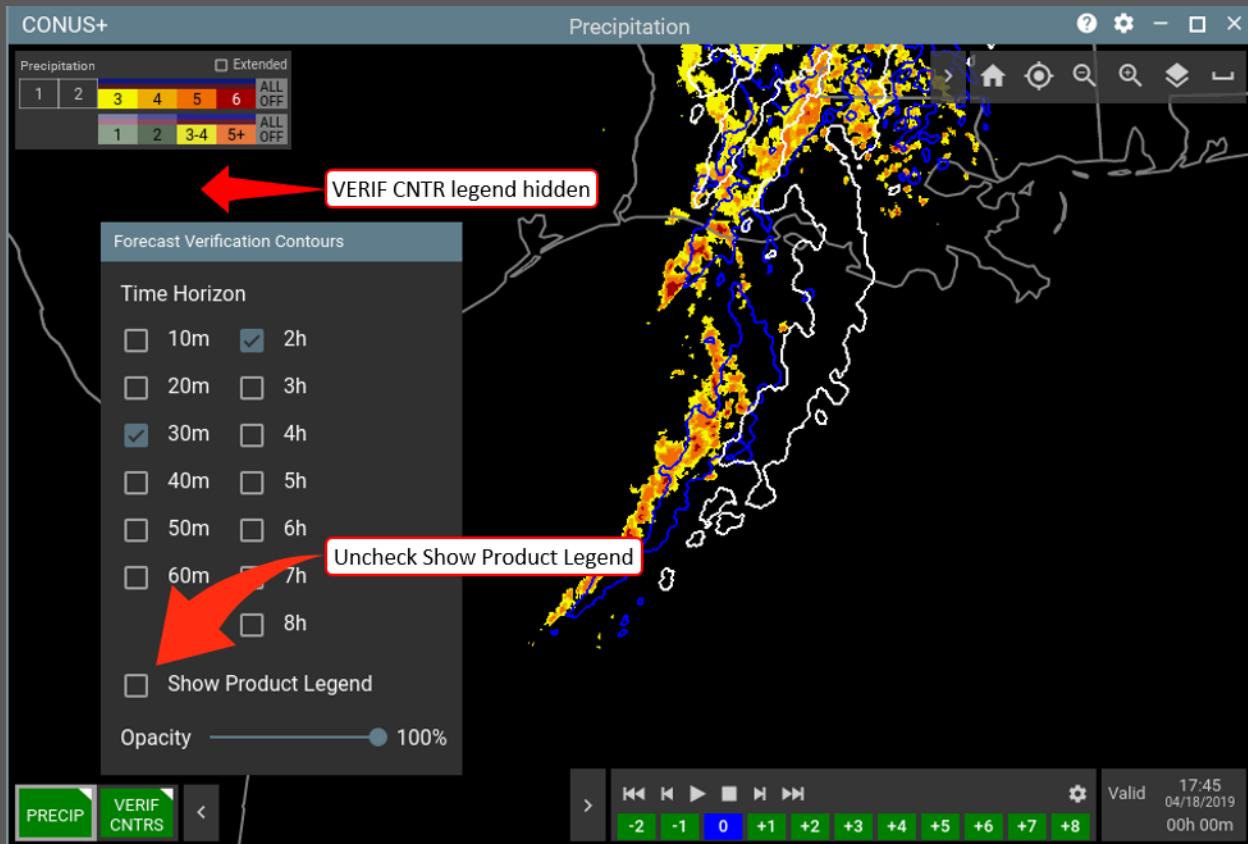


Figure 5-127. Hide VERIF CNTRS Legend

5.2.8.1.3 VERIF CNTRS Opacity

Higher opacity makes contours brighter and more prominent; lower opacity makes contours dimmer and less prominent. To adjust VERIF CNTR opacity, right-click the VERIF CNTR Product Status button, then in the VERIF CNTRS Product Options menu, click and drag the **Opacity slider** to the preferred level (Figure 5-128. VERIF CNTRS Opacity).

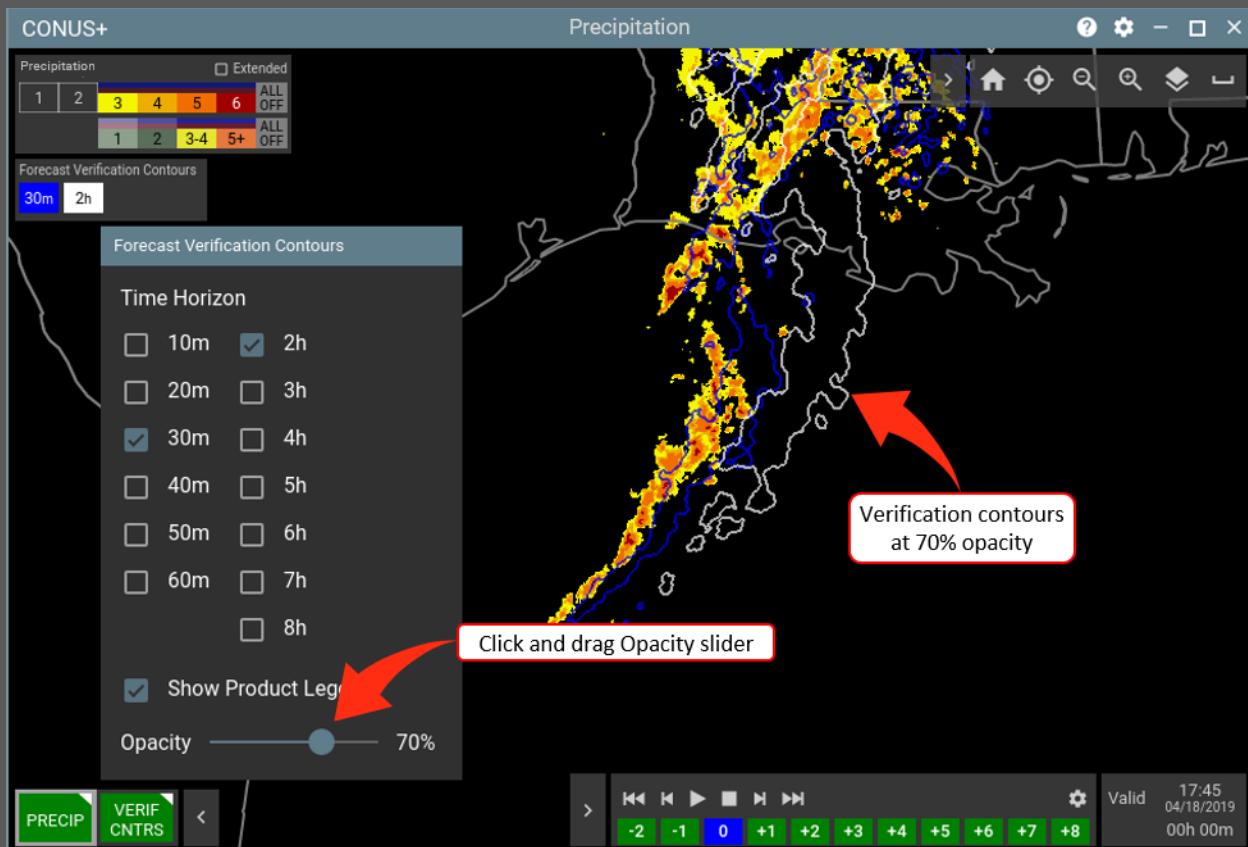


Figure 5-128. VERIF CNTRS Opacity

To close the VERIF CNTRS Product Options menu, click **outside** the menu and **inside** the active view.

5.2.9 Forecast Accuracy Scores (FCST ACCY)

FCST ACCY displays accuracy scores for the 30, 60, and 120-minute forecasts for selected airport regions, and is available in both Long Range and TRACON View. FCST ACCY can only be used in conjunction with PRECIP or ECHO TOPS.

When FCST ACCY is opened, the FCST ACCY Product Status button is added to the Product Toolbar but until selected, no scoring regions are added to the view (Figure 5-129. FCST ACCY with PRECIP).



Figure 5-129. FCST ACCY with PRECIP

Scoring regions are pre-defined regions centered on selected airports. In Long Range View, scoring regions are 300 x 300nm; in TRACON View, scoring regions are 120 x 120nm. FCST ACCY scores are displayed in white, magenta, and blue to represent 30, 60, and 120-minute forecast accuracy scores. The higher the score (percentage), the better the forecast. In the following example, one scoring region (MSY) is selected in a Long Range View (Figure 5-130. FCST ACCY Scoring Regions).

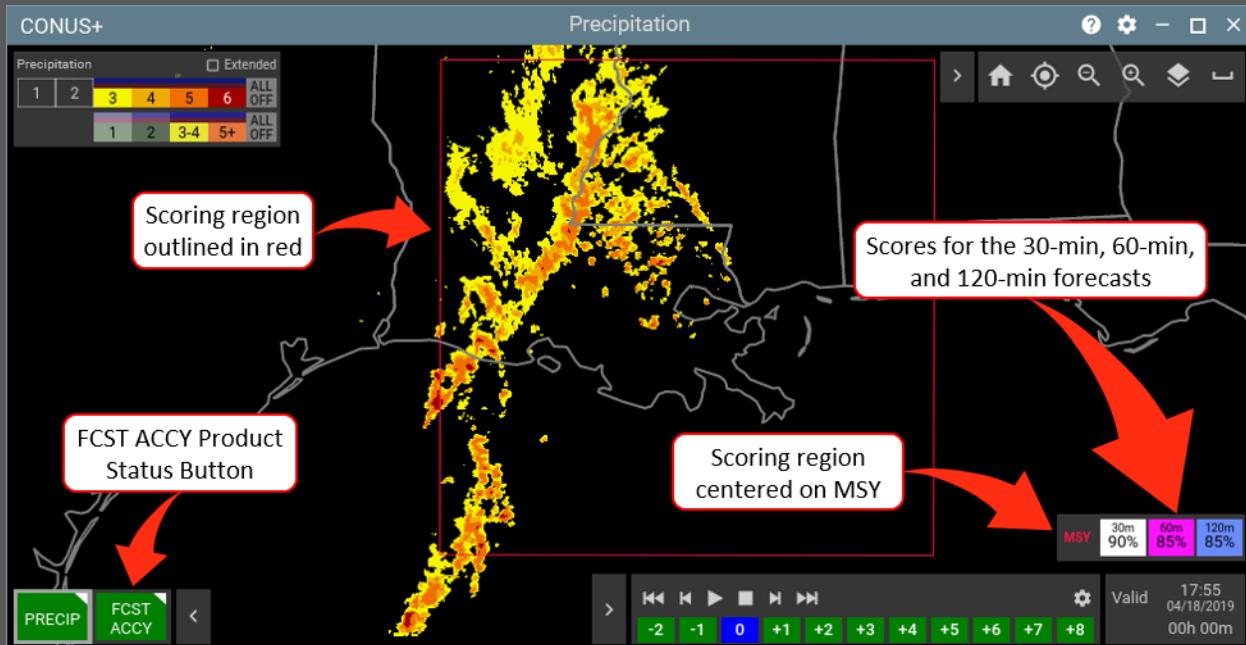


Figure 5-130. FCST ACCY Scoring Regions

5.2.9.1 FCST ACCY Product Options

From the FCST ACCY Product menu, you can select airport scoring regions and adjust scoring region opacity. To open the FCST ACCY Product Options menu, right-click the **FCST ACCY Product Status button** (Figure 5-131. FCST ACCY Product Options Menu).

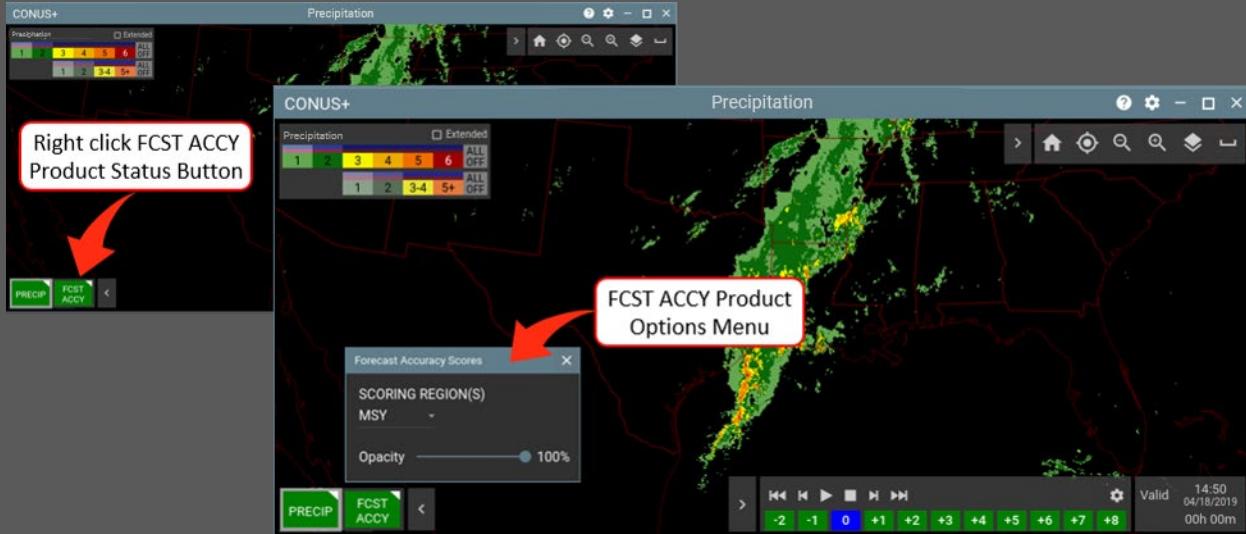


Figure 5-131. FCST ACCY Product Options Menu

5.2.9.1.1 Select FCST ACCY Scoring Regions

To select scoring regions, open the Product Options menu then click the down-pointing **SCORING REGION(S)** chevron. Enter the preferred scoring region (airport) manually in the white **ENTER REGION** dialog box and press Enter or select up to three scoring regions from the dropdown list (Figure 5-132. Select FCST ACCY Scoring Regions).

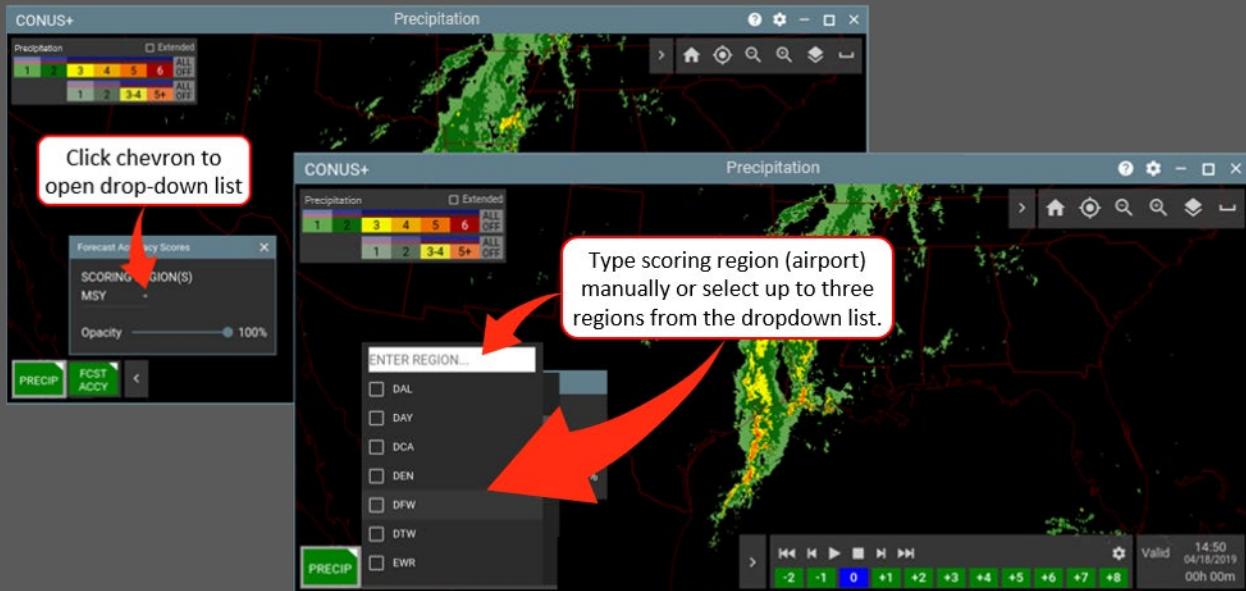


Figure 5-132. Select FCST ACCY Scoring Regions

The first scoring region selected is outlined in red, the second in green, and the third in blue. Each region's accuracy scores are displayed in the FCST ACCY Legend above the Loop Toolbar. In the following example, scoring regions for IAH, MEM, and OKC are selected (Figure 5-133. FCST ACCY Scoring Regions Displayed).



Figure 5-133. FCST ACCY Scoring Regions Displayed

5.2.9.1.2 FCST ACCY Opacity

Higher opacity makes scoring region boundaries brighter while lower opacity makes scoring region boundaries dimmer. To adjust scoring region opacity, open the FCST ACCY Product Options menu then click and drag the **Opacity slider** to the preferred level (Figure 5-134. FCST ACCY Opacity).

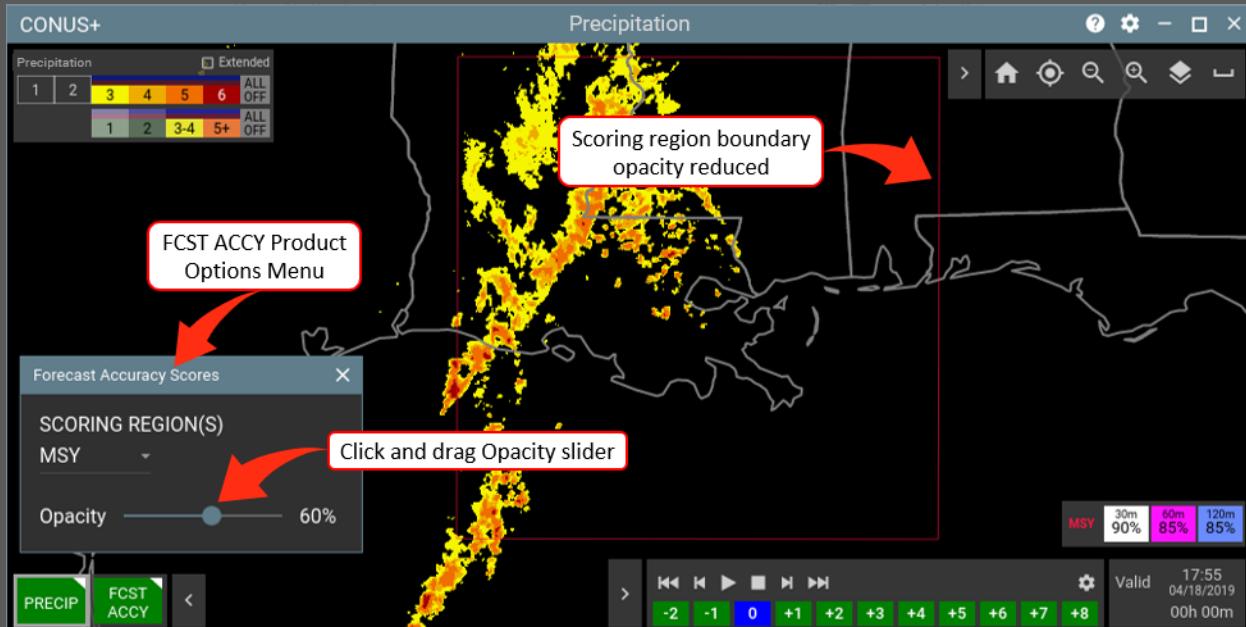


Figure 5-134. FCST ACCY Opacity

5.2.10 Traffic Flow Impact (TFI)

TFI displays impact to throughput for Traffic Flow Regions and their underlying Flow Constrained Areas (FCA). TFI forecasts are based on Level 3 precipitation and above or echo tops 30,000' and above. TFI can be used independently or in conjunction with other products but is only available in Long Range View. When TFI is opened, the TFI Product Status button is added to the Product Toolbar and the TFI Status Table is added to the view (Figure 5-135. Traffic Flow Impact Default View).

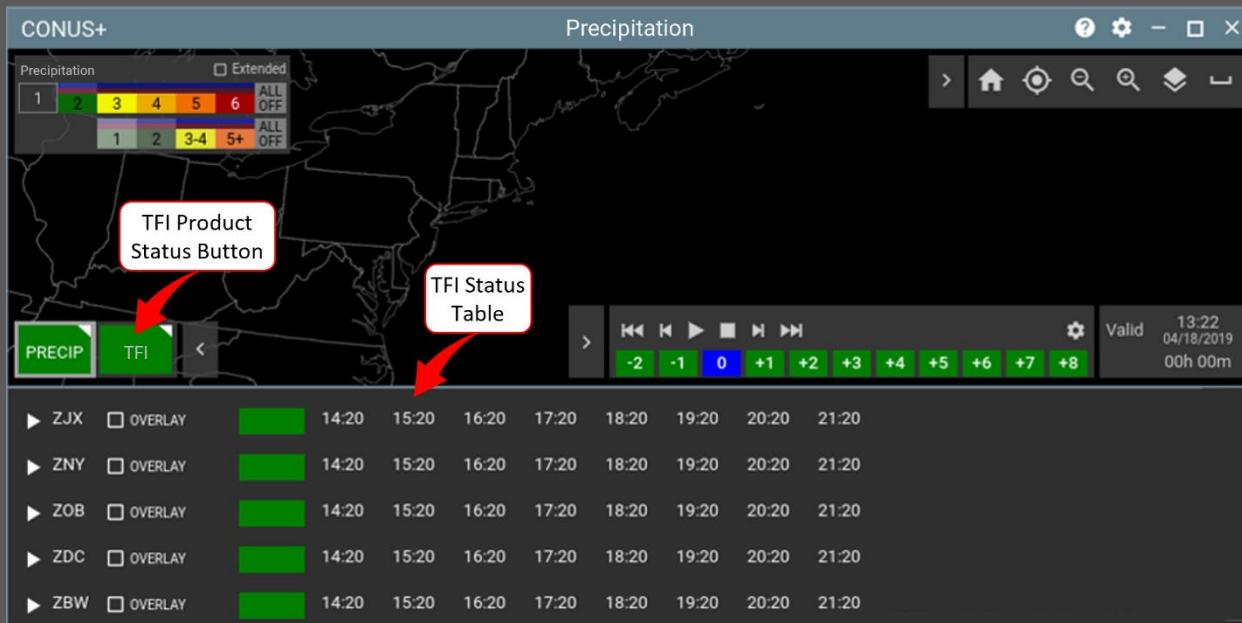


Figure 5-135. Traffic Flow Impact Default View

Traffic Flow Regions are specific regions of concern that have been established by the Air Traffic Control System Command Center (ATCSCC). Traffic Flow Regions that encompass ARTCC airspace are named after their respective ARTCC. Those that encompass airspace not aligned with ARTCC boundaries have unique names (e.g., OB1, A05, A06, etc.). All Traffic Flow Regions are listed and selectable in the TFI Traffic Flow Region list.

Flow Constrained Areas (FCA) are smaller regions/choke points within Traffic Flow Regions that can be analyzed individually. FCAs are depicted with cyan boxes you can display or hide using TFI options that are explained later in this section.

5.2.10.1 TFI Product Options

From the TFI Product Options menu, you can select Traffic Flow Regions, hide/display the Status Table, hide/display FCAs, and adjust FCA opacity (Figure 5-136. TFI Product Options Menu).

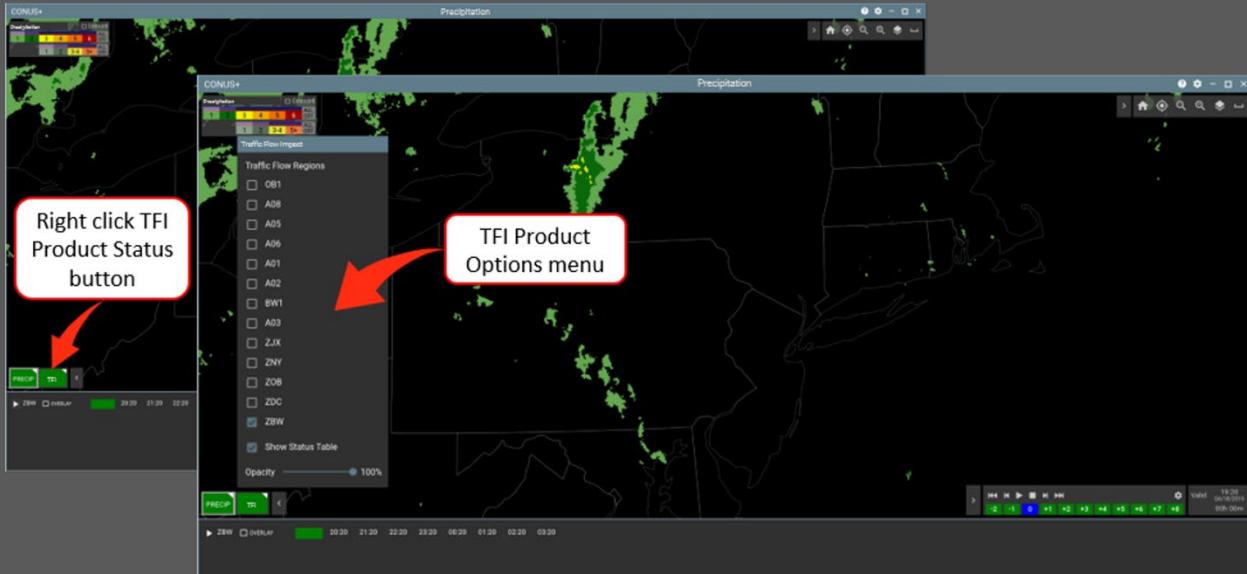


Figure 5-136. TFI Product Options Menu

5.2.10.2 Examine Traffic Flow Regions for TFI

TFI uses the following three colors to represent forecast impact to throughput:

- Green - Low impact
- Yellow - Medium impact
- Red - High impact

In the following example, TFI for the ZJX Traffic Flow Region is displayed but the ZJX Traffic Flow Region is not expanded to show all ZJX FCAs (Figure 5-137. Traffic Flow Region Selected for TFI).

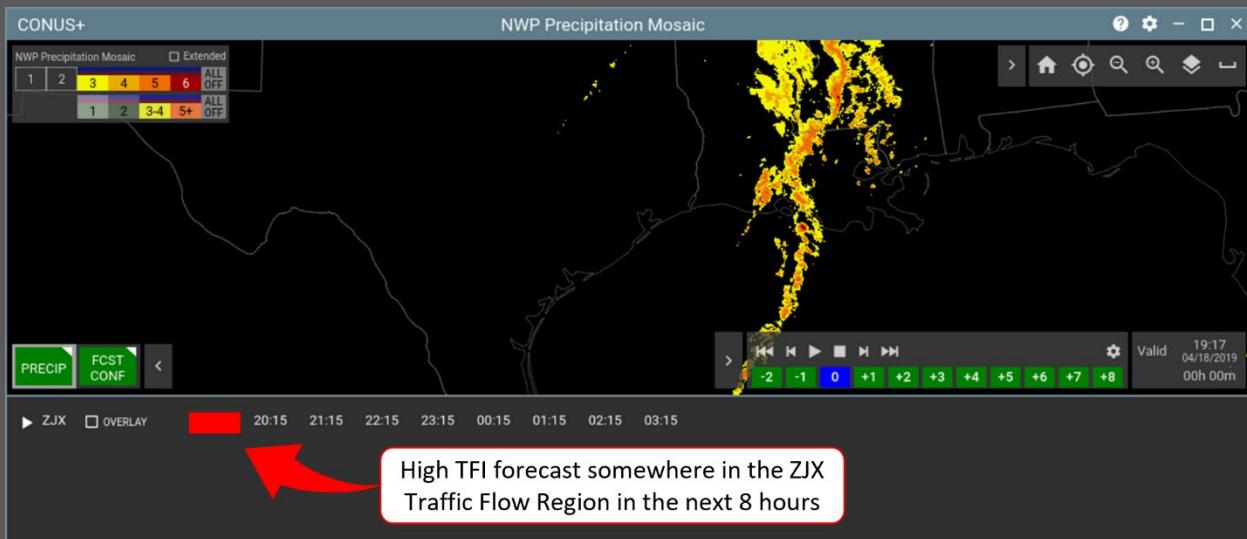


Figure 5-137. Traffic Flow Region Selected for TFI

To examine all FCAs in a specific Traffic Flow Region, select the preferred Traffic Flow Region from the Product Options menu, then click the right-pointing chevron to the left of the Traffic Flow Region (Figure 5-138. View FCAs).

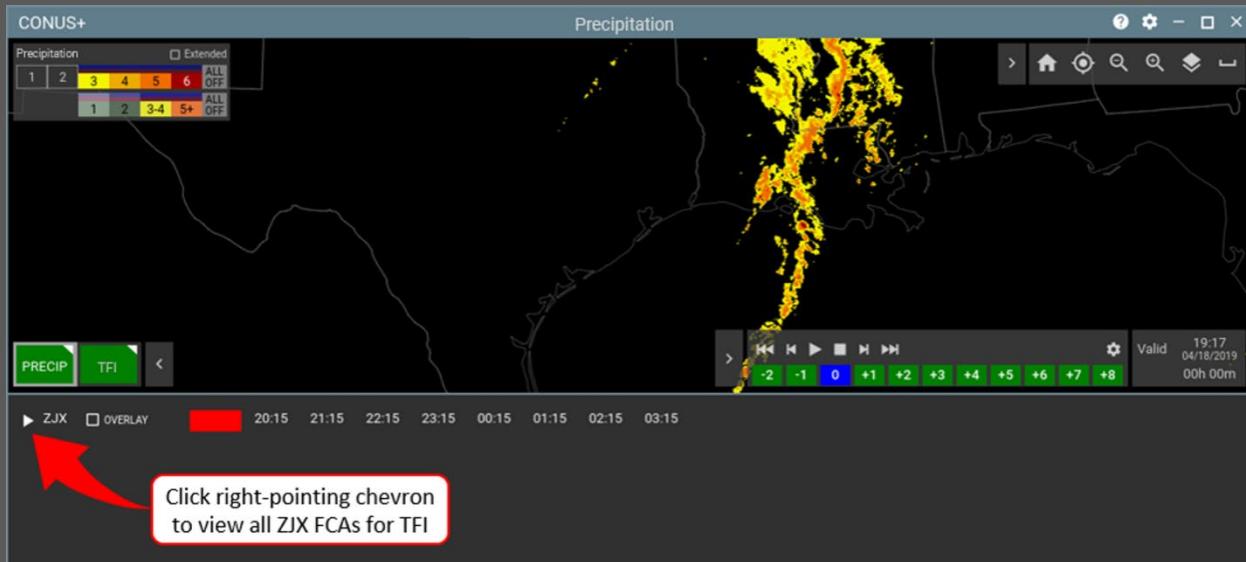


Figure 5-138. View FCAs

When you click the right-pointing chevron, the chevron turns and points down and TFI for all FCAs in the selected Traffic Flow Region is displayed. In the following example, TFI for all three FCAs in the ZJX Traffic Flow Region is displayed (Figure 5-139. TFI for ZJX FCAs Displayed).

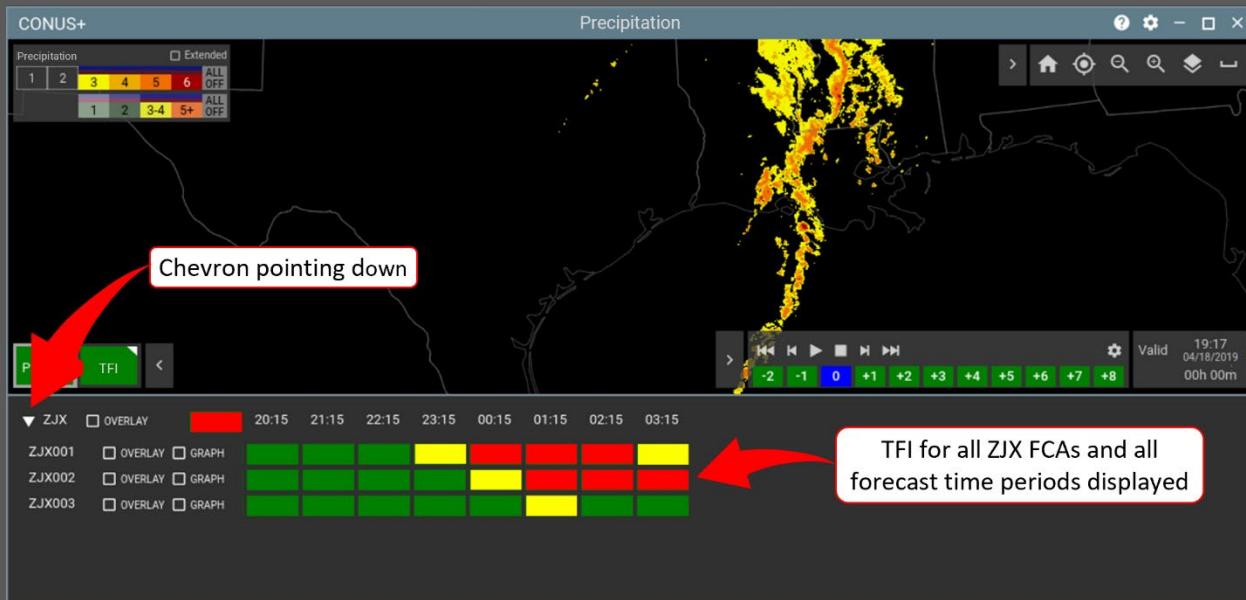


Figure 5-139. TFI for ZJX FCAs Displayed

In the example above, only one FCA (ZJX003) within the ZJX Traffic Flow Region has no periods with high impact to throughput forecast in the 8-hour forecast period.

5.2.10.3 View FCA Boundaries

You can view boundaries for all FCAs in a Traffic Flow Region, or view boundaries for only the specific FCAs you want. To view boundaries for all FCAs in a Traffic Flow Region, select the Traffic Flow Region from the Product Options menu, then in the Status Table for the selected Traffic Flow Region, click **OVERLAY**. Boundaries for all FCAs in the Traffic Flow Region are displayed (Figure 5-140. ARTCC FCA Boundaries Displayed).

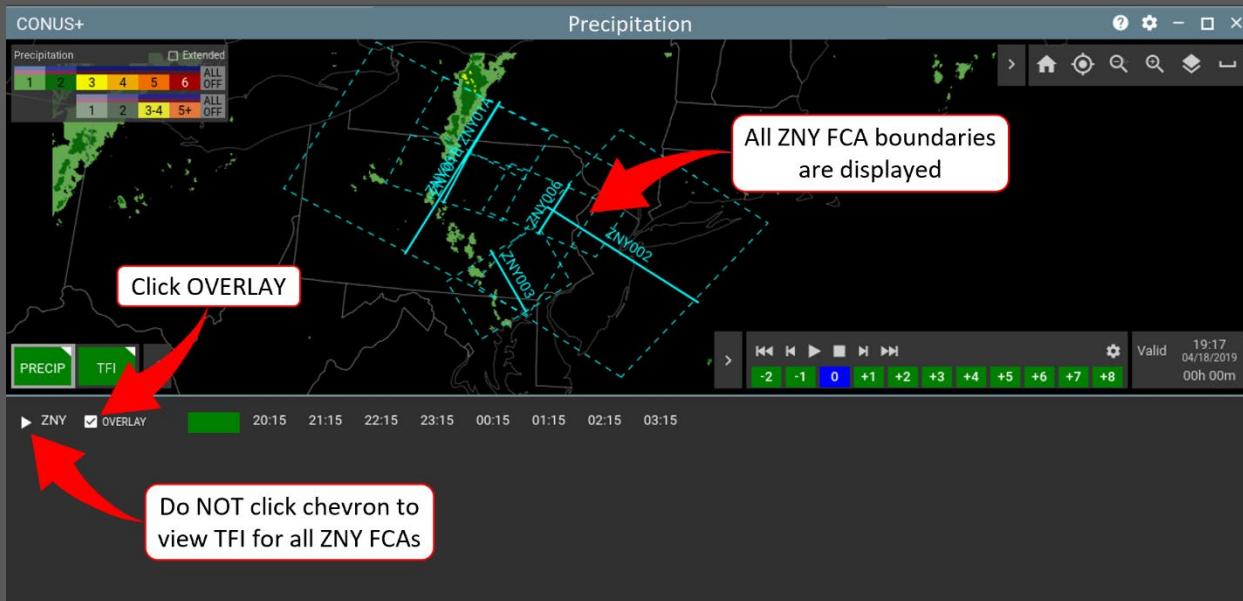


Figure 5-140. ARTCC FCA Boundaries Displayed

To view specific FCA boundaries, open the Product Options menu, then select the Traffic Flow Region or regions you want to view. Then in the Status Table, expand the Traffic Flow Region(s), then click **OVERLAY** for each FCA boundary you want to display. In the following example, only the ZNY001 FCA boundary was selected (Figure 5-141. One FCA displayed).



5.2.10.4 TFI Graph

When you expand Traffic Flow Regions to view specific FCAs and specific forecast time periods, TFI displays an 8-hour forecast in 1-hour increments. Forecast time periods are displayed in green, yellow, or red, to represent forecast Traffic Flow Impact.

To view a graph that shows TFI for specific FCAs in greater detail than the table provides, check the GRAPH checkbox for the specific FCA you want to analyze (Figure 5-142. Select FCA Graph).

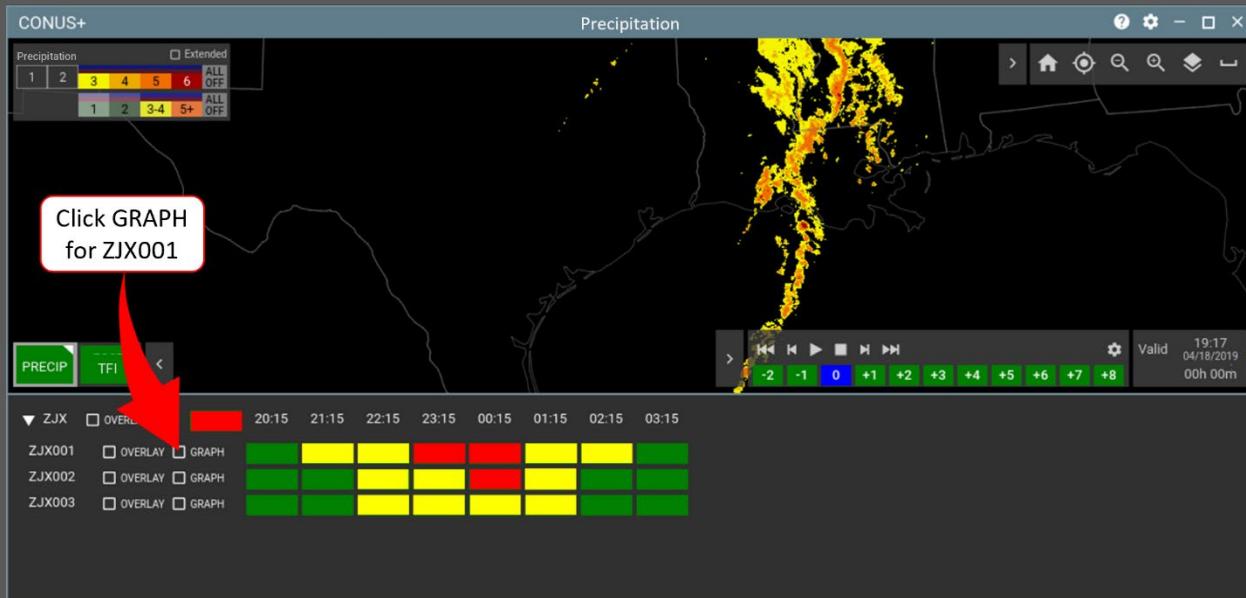


Figure 5-142. Select FCA Graph

When you click GRAPH, a popup window with a graph containing detailed information on forecast TFI for the FCA you selected is added to the view. In the following example, a TFI graph for the ZJX001 FCA was selected (Figure 5-143. Open TFI Graph).

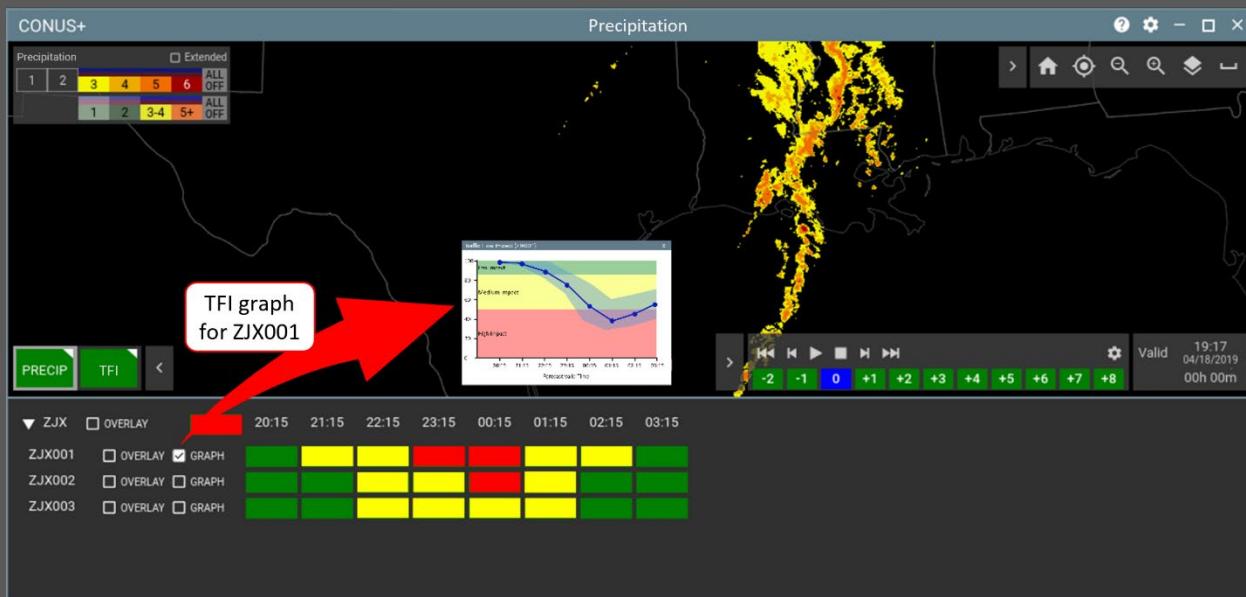


Figure 5-143. Open TFI Graph

In the TFI Graph below, the dark blue line represents forecast TFI based on the average of all forecasts. The shaded area above the solid blue line represents projected throughput based on forecasts more optimistic than the average of all forecasts. Conversely, the shaded area below the solid blue line represents projected throughput based on forecasts less optimistic than the average of all forecasts (Figure 5-144. TFI Graph Explained).

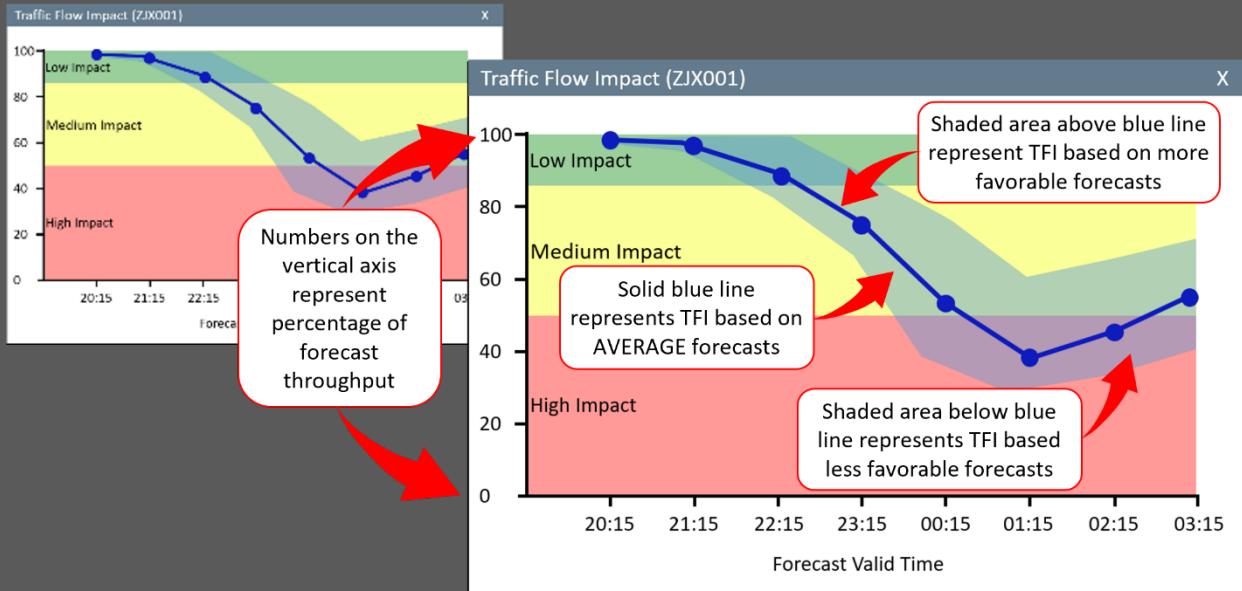


Figure 5-144. TFI Graph Explained

5.2.10.4.1 Traffic Flow Impact Opacity

Higher opacity makes cyan FCA boundaries brighter and more prominent; lower opacity makes the boundaries dimmer and less prominent. To adjust FCA boundary opacity, open the TFI Product Options menu, then click and drag the **Opacity slider** to the preferred level (Figure 5-145. Traffic Flow Impact Opacity).

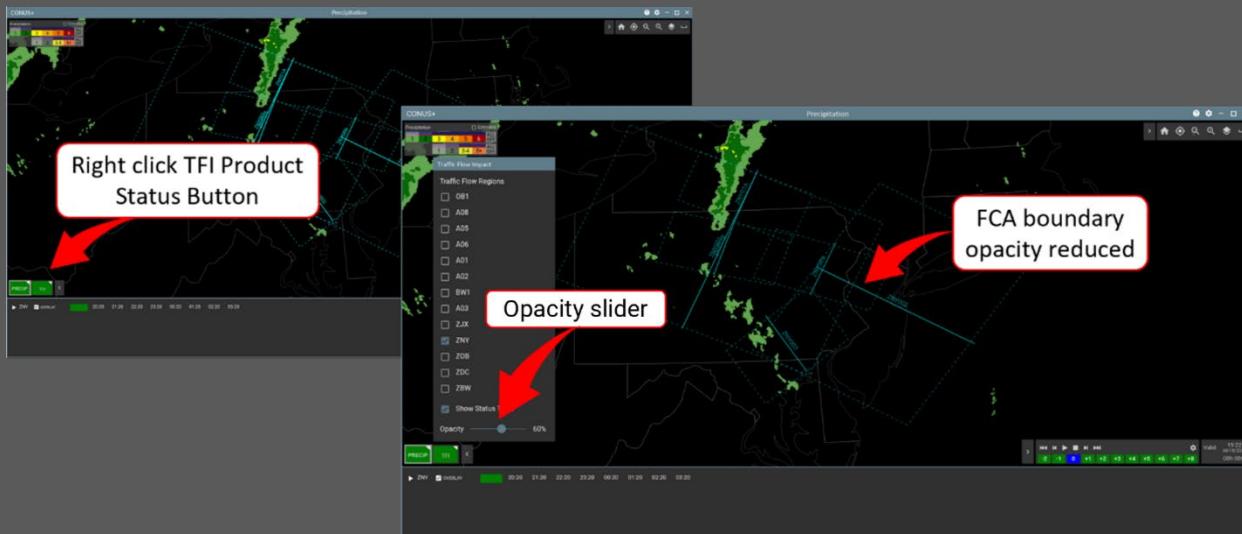


Figure 5-145. Traffic Flow Impact Opacity

Note: To close the TFI Product Options menu, click **outside** the menu and **inside** the active view.

5.3 Advisories

There are five AWD Advisory Products, all of which can be used independently or in conjunction with other AWD products. The five Advisory Products are described in high-level below:

- SIGMET - Identifies airspace covered by domestic and international SIGMETs with filled yellow polygons. The SIGMET product is only available in Long Range View.
- AIRMET - Identifies airspace covered by AIRMETs with filled polygons. Different colored polygons represent flight categories (weather that triggered the AIRMET).
- CWA - Identifies areas covered by Center Weather Advisories (CWA) with filled pink polygons.
- WATCH - Identifies areas covered by Severe Thunderstorm Watches with filled blue polygons and areas covered by Tornado Watches with filled red polygons.
- VAA - Volcanic Ash Advisory (VAA) depicts areas where volcanic activity is detected, observed, or forecast in five colors that identify volcano alert status.

Detail on each Advisory Product and instructions on how to use those products are included later in this section.

5.3.1 SIGMET

The SIGMET product is only available in Long Range view, and identifies geographic areas covered by domestic or international SIGMETs. When the SIGMET product is opened, the yellow SIGMET button is added to the interactive Advisories Legend and the SIGMET Product Status button is added to the Product Toolbar.

By default, SIGMET polygons are labeled with acronyms (e.g., CONV, TURB, etc.) that identify the weather phenomena that triggered the SIGMET (Figure 5-146. SIGMET).

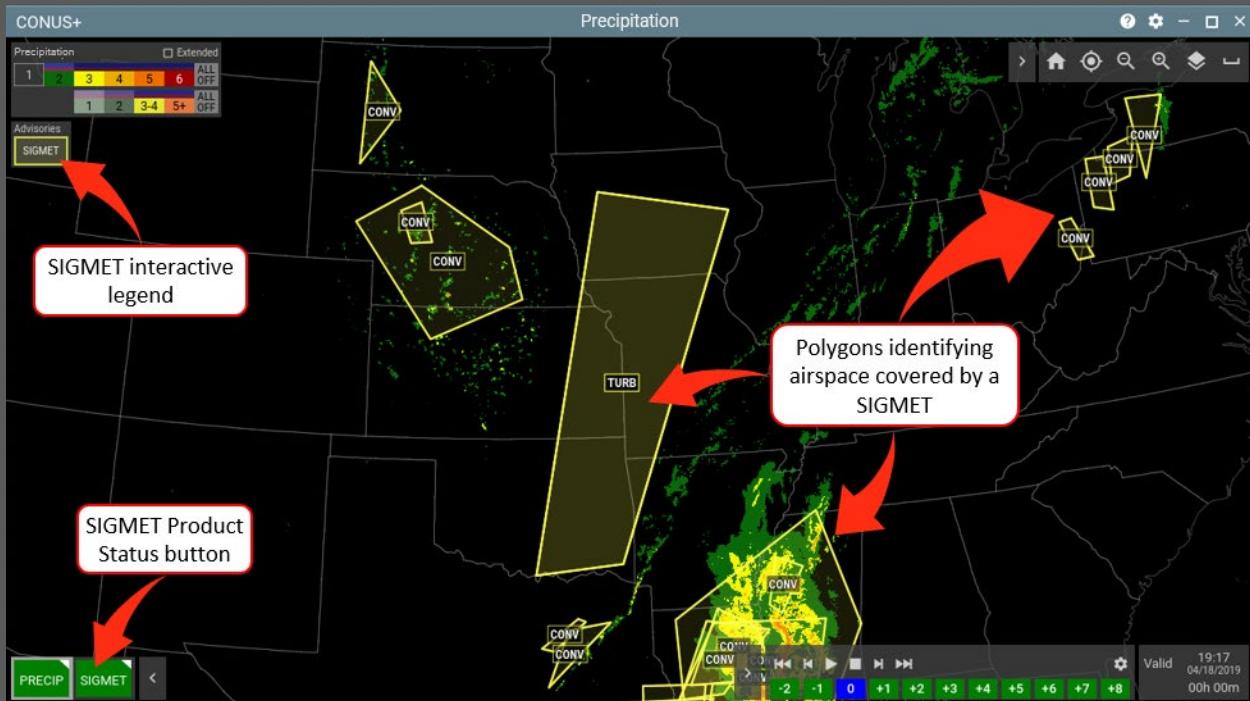


Figure 5-146. SIGMET

5.3.1.1 Hide/Display SIGMETs

To hide SIGMET polygons from the view without closing the SIGMET product, click the yellow SIGMET button on the Advisories Legend (Figure 5-147. Hide SIGMETs).



Figure 5-147. Hide SIGMETs

The SIGMET button on the Advisories Legend works as a toggle that when clicked, hides/displays SIGMETs while keeping the SIGMET product open. When the SIGMET button on the Advisories legend is yellow, active SIGMETs are displayed. When the SIGMET button on is grayed out, SIGMETs are hidden from the view (Figure 5-148. SIGMETs Hidden).



Figure 5-148. SIGMETs Hidden

You can also deactivate the SIGMET product by clicking the **SIGMET** Product Status button. When you click a green SIGMET Product Status button, the button turns white indicating that the SIGMET product is deactivated but still available for use. When the SIGMET product is deactivated, SIGMET polygons are hidden and the yellow SIGMET button is removed from the **Advisories Legend** (Figure 5-149. SIGMET Deactivated).

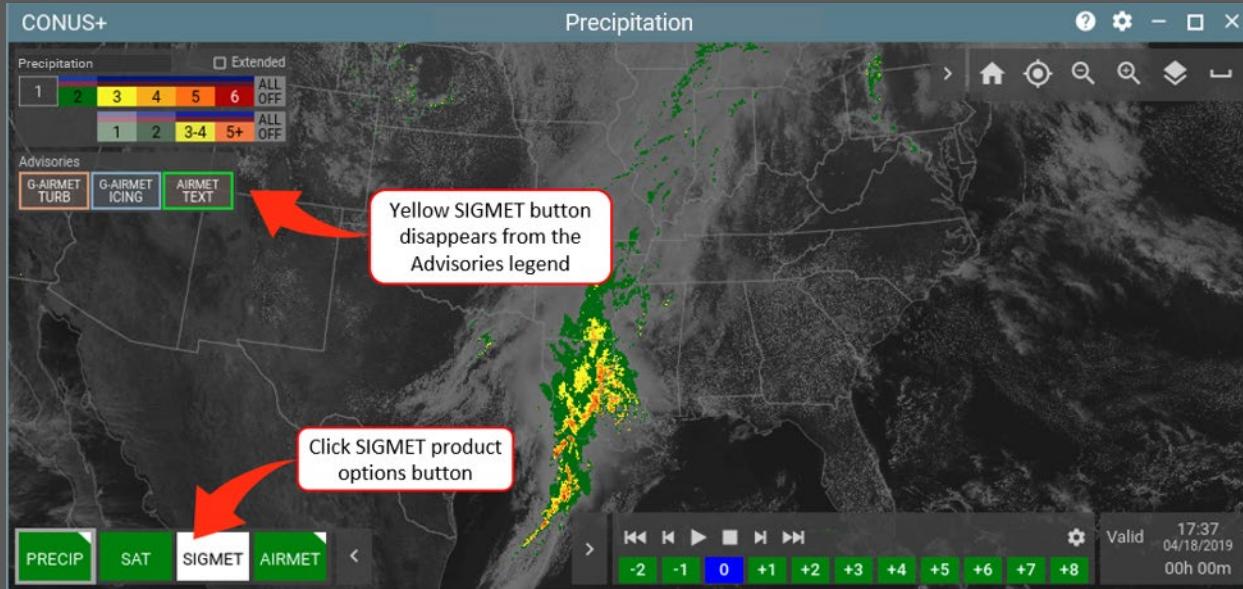


Figure 5-149. SIGMET Deactivated

5.3.1.2 SIGMET Callout Boxes

SIGMET callout boxes include the identifier of the organization that initiated the SIGMET, the SIGMET name (e.g., OSCAR 3), the SIGMET's valid time, and a description of the weather that triggered the SIGMET. To open a SIGMET callout box, click anywhere on the SIGMET polygon's border (Figure 5-150. SIGMET Callout Box).

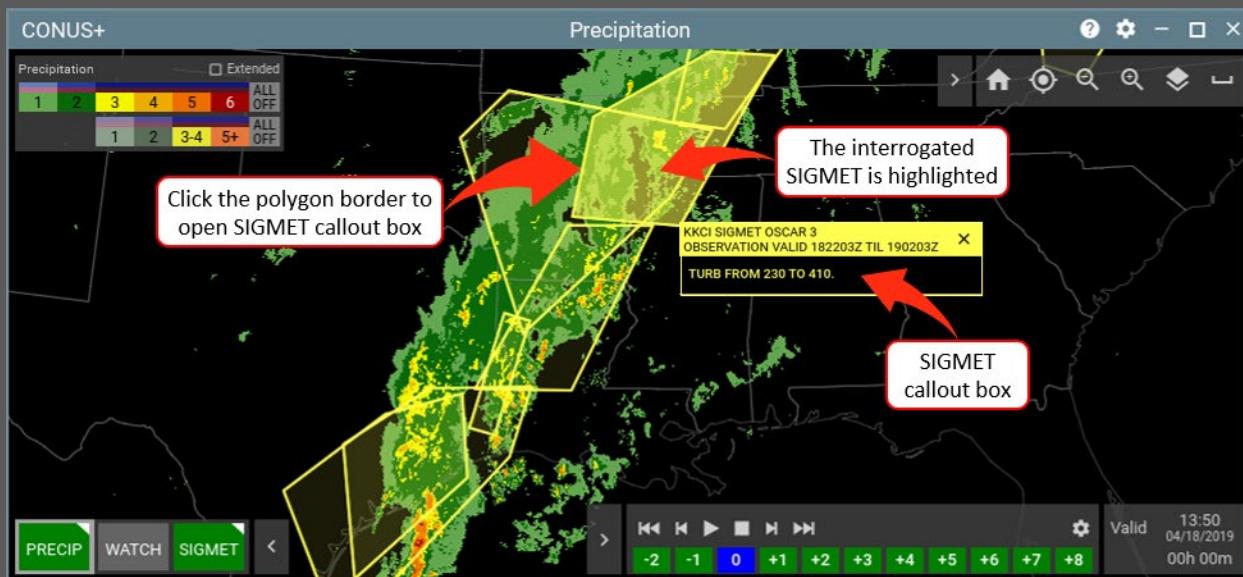


Figure 5-150. SIGMET Callout Box

To move the callout box from its original position, click and drag the callout box anywhere you like in the view. SIGMET callout boxes close approximately one minute after they are opened, but SIGMET polygons associated with an open callout box remain highlighted until their callout box is closed.

To manually close a SIGMET callout box before it closes automatically, click X in the upper right corner of the callout box (Figure 5-151. Close SIGMET Callout Box).

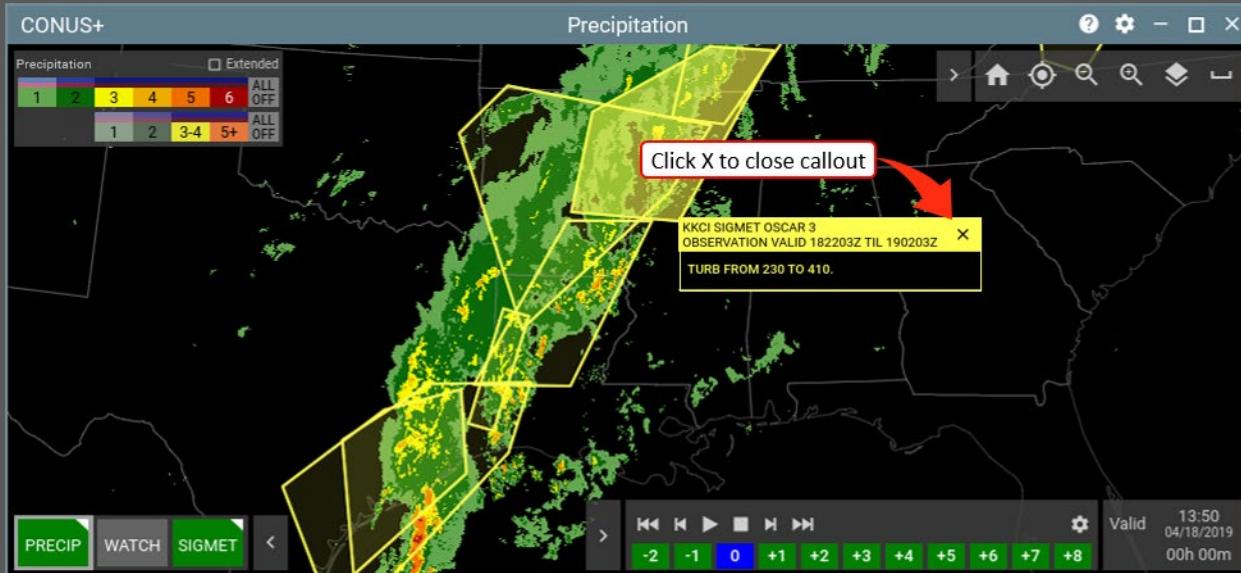


Figure 5-151. Close SIGMET Callout Box

5.3.1.3 SIGMET Product Options

From the SIGMET Product Options menu you can hide/display SIGMET labels, hide/display the Advisories Legend, and adjust SIGMET polygon opacity. To open the SIGMET Product Options menu, right-click the **SIGMET Product Status button** (Figure 5-152. SIGMET Product Options Menu).

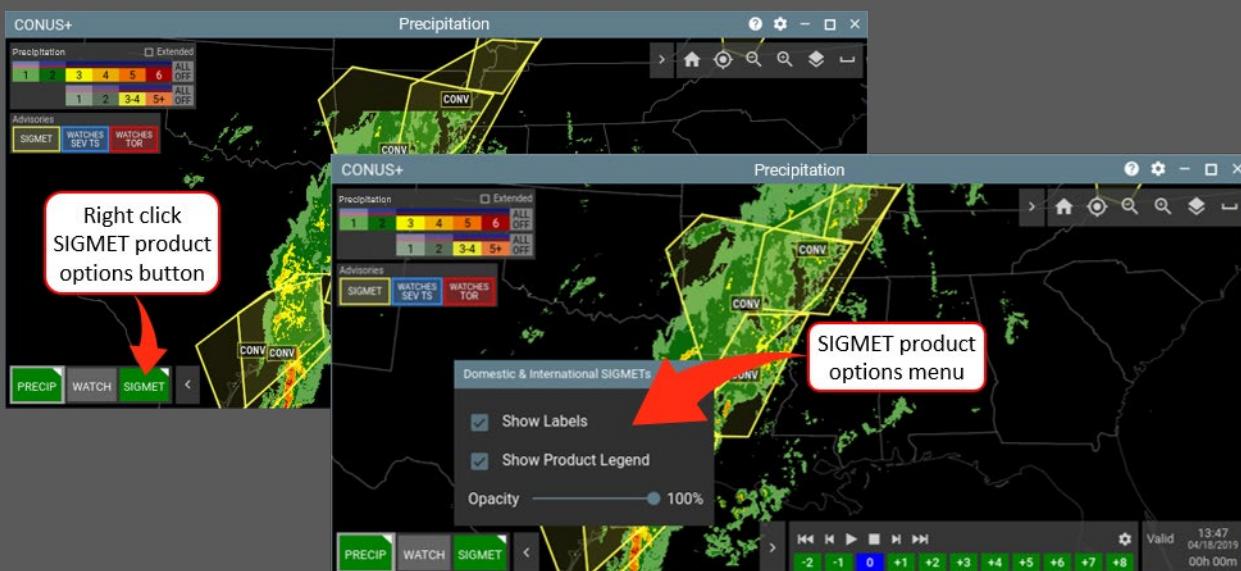


Figure 5-152. SIGMET Product Options Menu

5.3.1.3.1 SIGMET Labels

When the SIGMET product is on, SIGMET labels are displayed by default. To hide SIGMET labels, open the SIGMET Product Options menu and uncheck **Show Labels** (Figure 5-153. Hide SIGMET Labels).

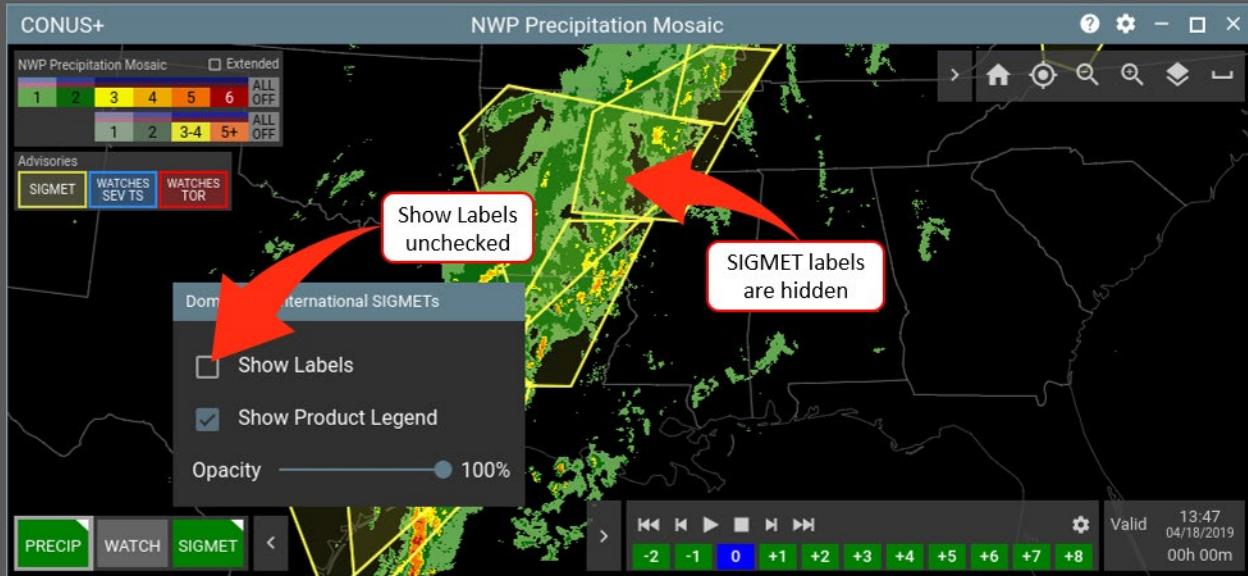


Figure 5-153. Hide SIGMET Labels

5.3.1.3.2 SIGMET Show Product Legend

Show Product Legend in the SIGMET Product Options menu is by its name alone misleading. Unchecking the Show Product Legend button not only removes the interactive SIGMET button from the Advisories Legend, it hides the entire Advisories Legend. Buttons for other Advisory Products you may wish to continue using (e.g., AIRMETs, CWAs, etc.) are also hidden.

To hide the entire Advisories Legend (not just the SIGMET button), open the SIGMET Product Options menu and uncheck **Show Product Legend** (Figure 5-154. Hide Advisories Legend).

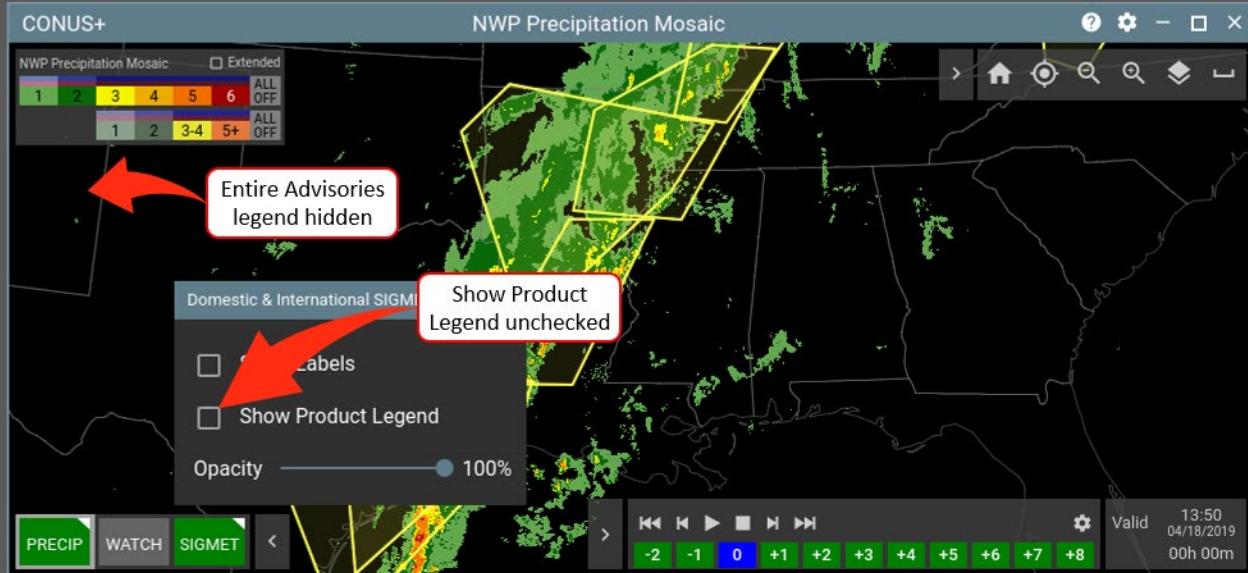


Figure 5-154. Hide Advisories Legend

5.3.1.3.3 SIGMET Opacity

At higher opacity, SIGMET boundaries, fill, and text are brighter and harder to see through; at lower opacity, boundaries, fill, and text are easier to see through. To adjust SIGMET opacity, right-click the SIGMET Product Status button, then from the SIGMET Product Options menu, click and drag the **Opacity slider** to the preferred level (Figure 5-155. SIGMET Opacity).

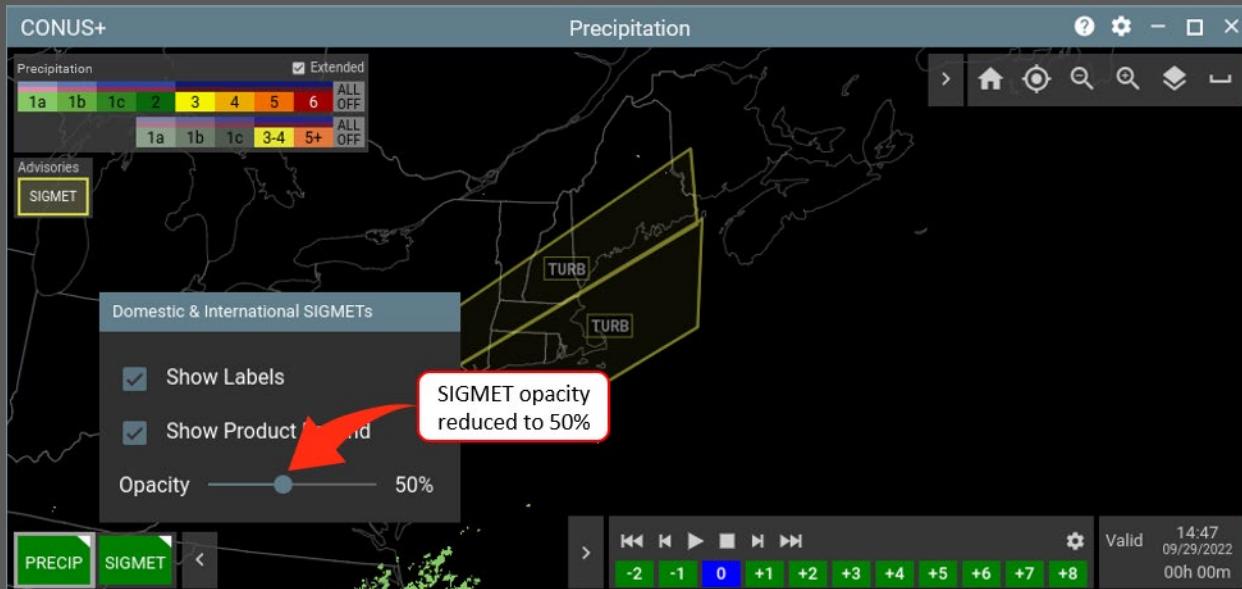


Figure 5-155. SIGMET Opacity

5.3.2 AIRMET

The AIRMET product depicts AIRMETs (Text and G-AIRMETs) with filled colored polygons that represent the weather phenomena that triggered the AIRMET. Only G-AIRMETs are used in the CONUS and only Text AIRMETs are used in Alaska and Hawaii. The following colors are used to identify different AIRMET weather categories:

- Purple polygons and text (IFR Wx/Mountain Obscuration)
 - ✓ Instrument Flight Rules (IFR)
 - ✓ Mountain Obscuration (MTNOB)
- Orange polygons and text (Turbulence/LLWS)
 - ✓ High-level turbulence
 - ✓ Low-level turbulence
 - ✓ Surface winds
 - ✓ Low Level Wind Shear (LLWS)
- Blue polygons and text (Icing/Freezing Levels)
 - ✓ Icing
 - ✓ Freezing Level Contours
- Green polygons and text (Text AIRMETs for all types of weather)
 - ✓ Text AIRMETs are only used in Alaska and Hawaii

While Text AIRMETs are not labeled, G-AIRMETs are labeled by default with acronyms that identify the weather phenomena that triggered the AIRMET (Figure 5-156. AIRMET).

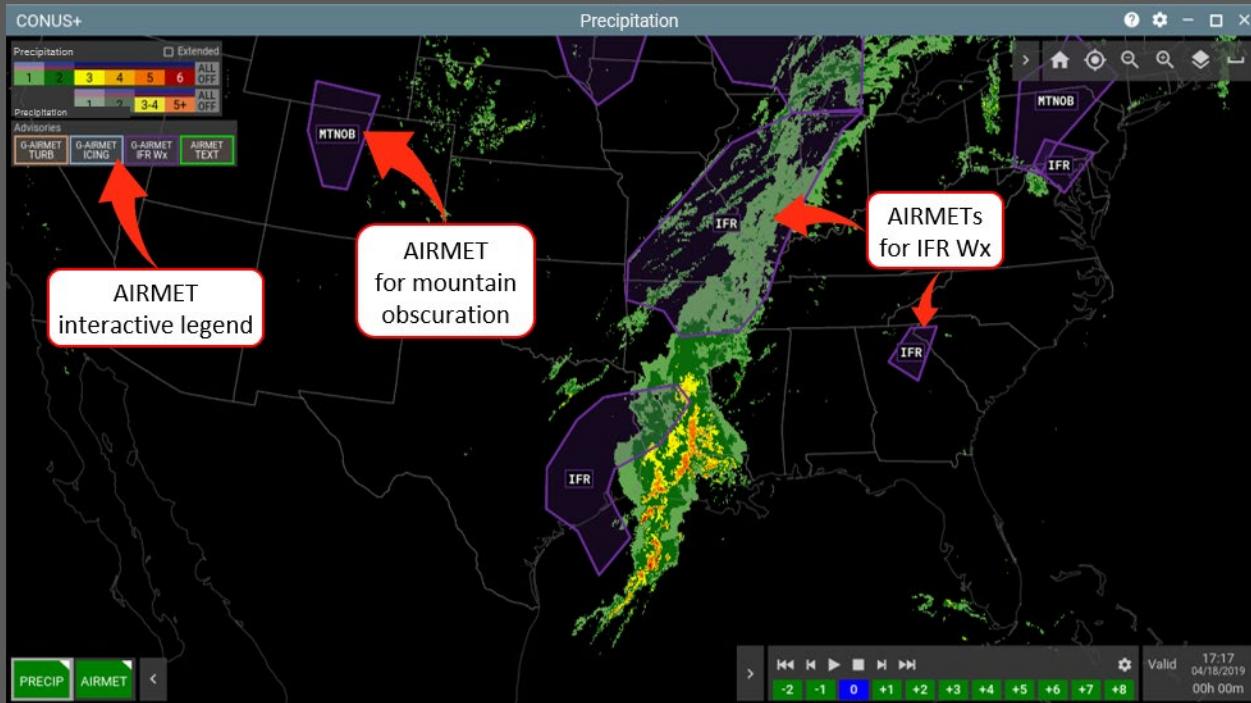


Figure 5-156. AIRMET

5.3.2.1 AIRMET Callout Boxes

G-AIRMET and Text AIRMET callout box titlebars identify the AIRMET weather category and valid time, while the body of the callout box includes a description of the weather that triggered the AIRMET. To open an AIRMET callout box, click anywhere on the polygon border of the AIRMET you want to investigate (Figure 5-157. AIRMET Callout Box).

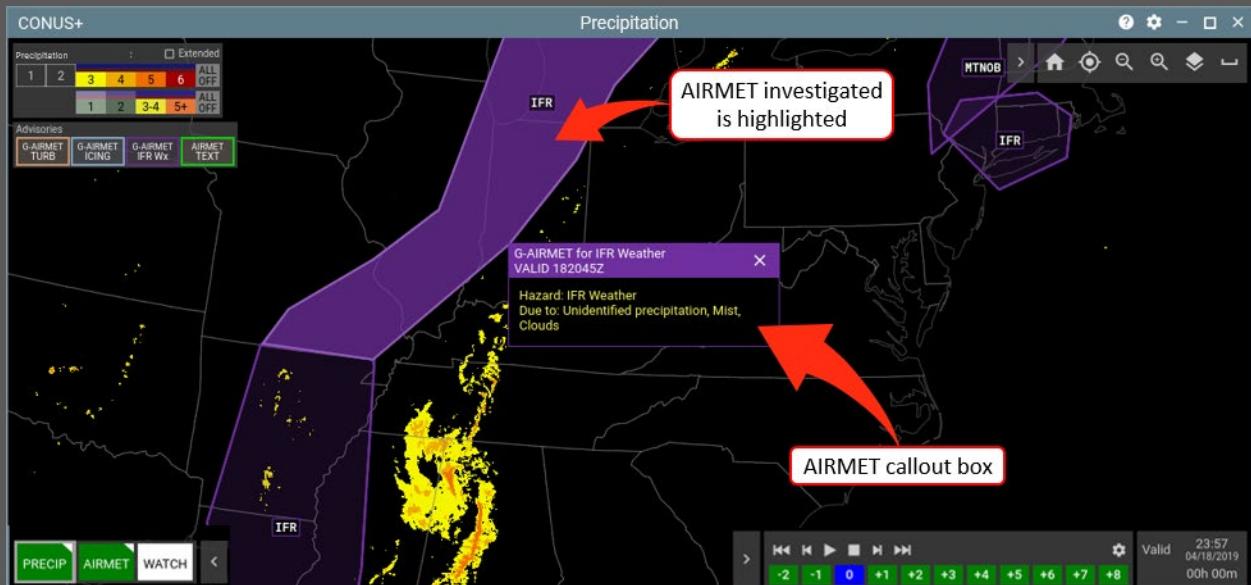


Figure 5-157. AIRMET Callout Box

To move a callout box, click and drag it to the desired location. The AIRMET remains highlighted until it is manually closed or closes automatically. To manually close a callout box before it closes automatically, click the X in the upper right corner of the callout box (Figure 5-158. Close AIRMET Callout Box).

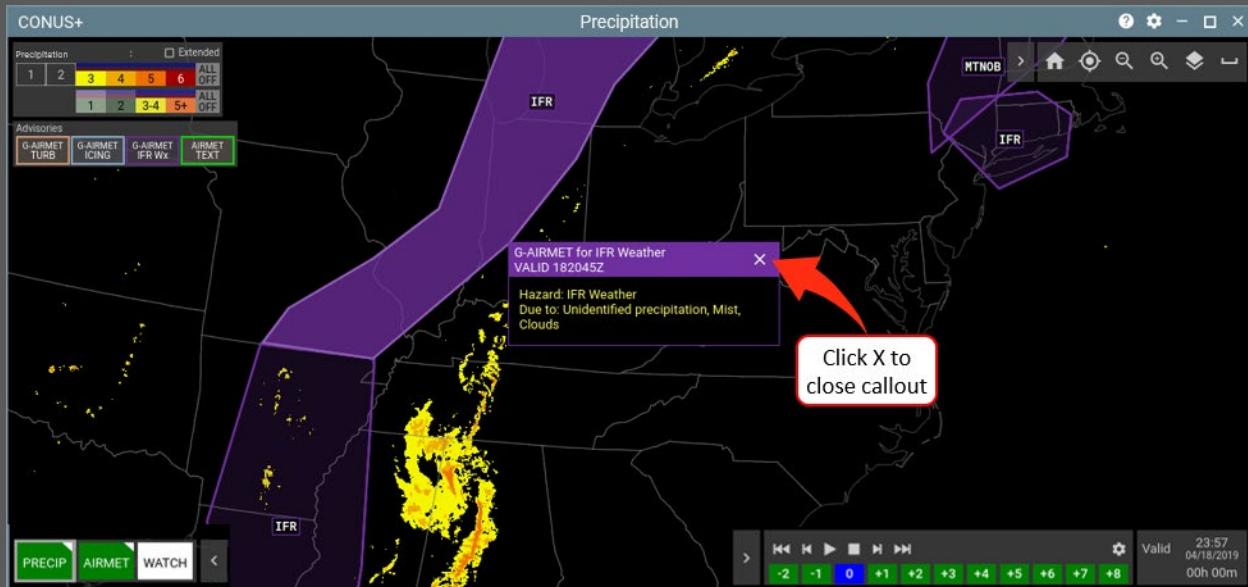


Figure 5-158. Close AIRMET Callout Box

5.3.2.2 Filter AIRMETs by Weather Category

When AIRMET is opened, buttons that represent the four AIRMET weather categories are added to the **Advisories Legend**. AIRMET buttons work as toggles that when clicked, hide/display the selected AIRMET category. Colored AIRMET buttons represent displayed AIRMETs while grayed-out buttons represent hidden AIRMETs. In the following example, G-AIRMETs for Icing and Text AIRMETs are displayed while others are filtered/hidden (Figure 5-159. Filter AIRMETs by Weather Category).



Figure 5-159. Filter AIRMETs by Weather Category

*Note: By default, the **AIRMET TEXT** button (Text AIRMETs) is displayed on the **Advisories legend**, even though Text AIRMETs are only used in Alaska and Hawaii.*

5.3.2.3 AIRMET Product Options

In the AIRMET Product Options menu, you can filter AIRMETs category, hide/display labels, hide/display the Advisories Legend, and adjust polygon and text opacity. To open the AIRMET Product Options menu, right-click the **AIRMET Product Status button** (Figure 5-160. AIRMET Product Options Menu).

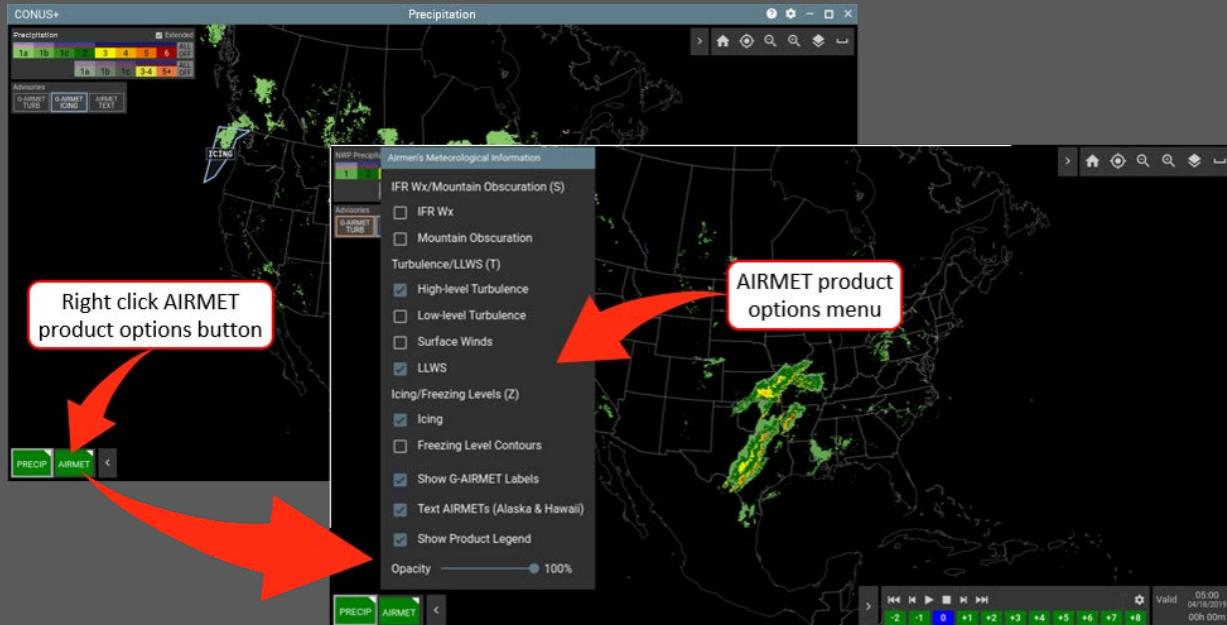
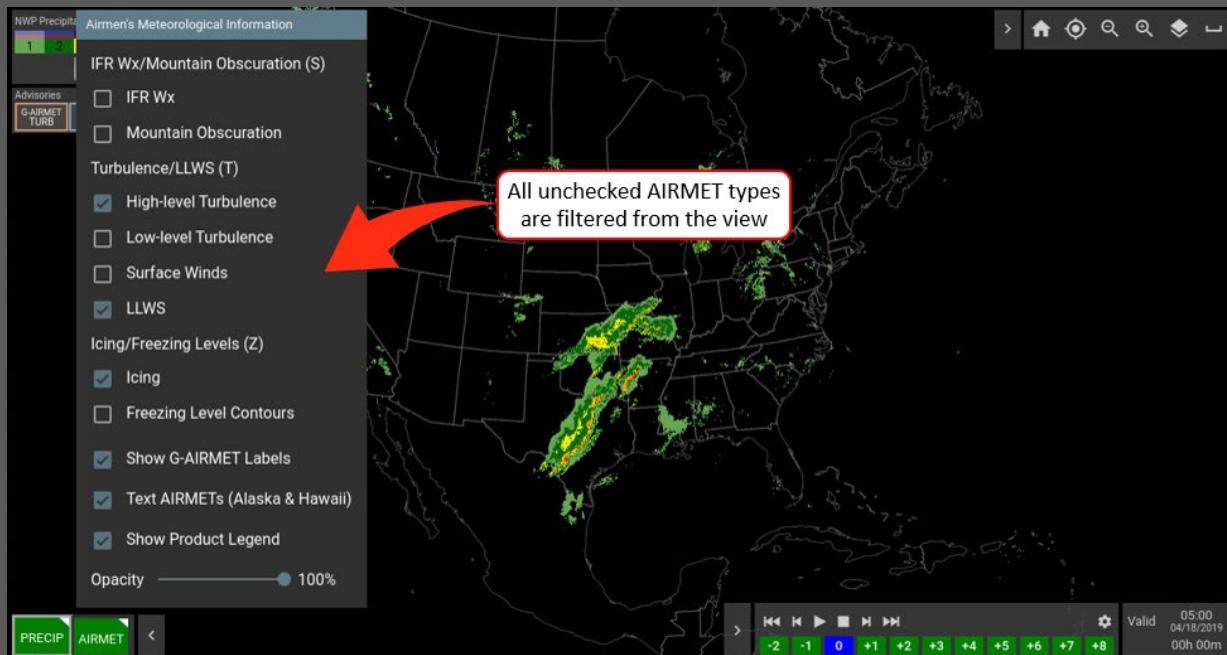


Figure 5-160. AIRMET Product Options Menu

5.3.2.3.1 Filter AIRMETs by Type

In the AIRMET Product Options menu, unchecked AIRMET types are filtered/hidden. In the following example, AIRMETs for IFR Wx, Mountain Obscuration, Low-level Turbulence, Surface Winds, and Freezing Level Contours are filtered and not displayed (Figure 5-161. AIRMETs Filtered by Type).



In the following example, all AIRMET types are selected and displayed (Figure 5-162. All AIRMET Types Displayed).

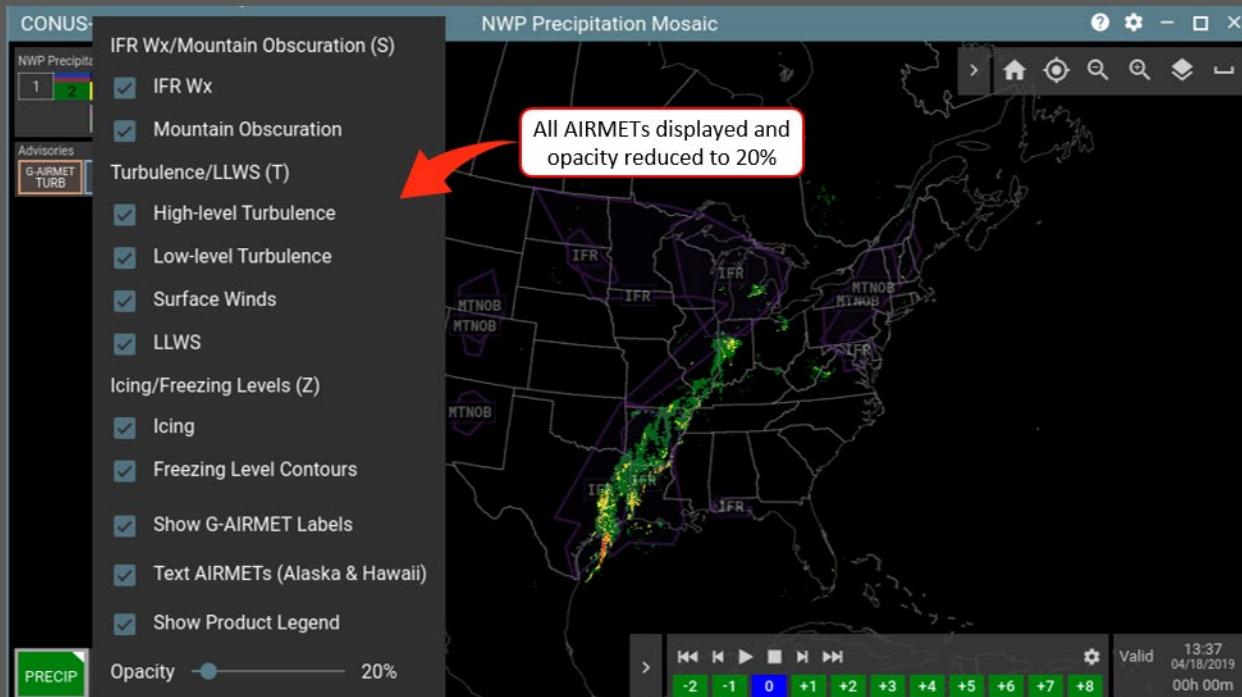


Figure 5-162. All AIRMET Types Displayed

5.3.2.4 AIRMET Labels

G-AIRMETs are labeled with acronyms that identify the weather phenomena associated with the AIRMET. To view AIRMET polygons but hide their respective labels, right-click the **AIRMET Product Status** button then uncheck Show G-AIRMET Labels (Figure 5-163. AIRMET Labels Hidden).

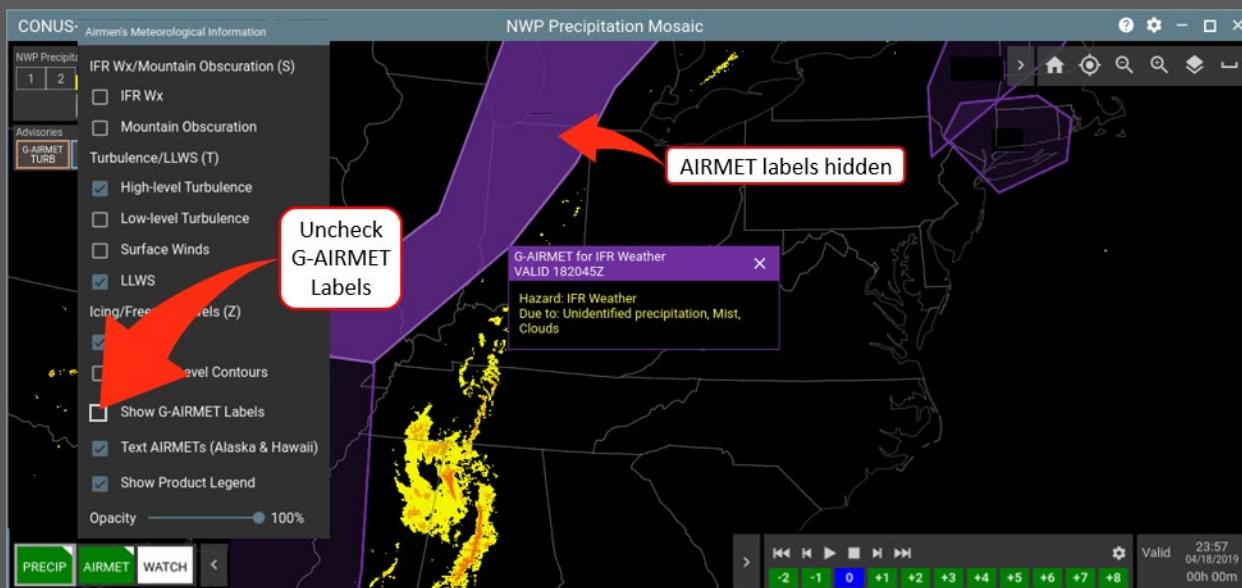


Figure 5-163. AIRMET Labels Hidden

5.3.2.4.1 AIRMET Show Product Legend

The Show Product Legend option is misleading. Unchecking Show Product Legend not only hides AIRMET buttons, it hides the *entire* Advisories Legend including buttons for other Advisory Products you may not wish to hide (e.g., SIGMETs, CWAAs, etc.). If you are sure you want to hide the *entire* Advisories Legend, uncheck **Show Product Legend** (Figure 5-164. Hide Advisories Legend).

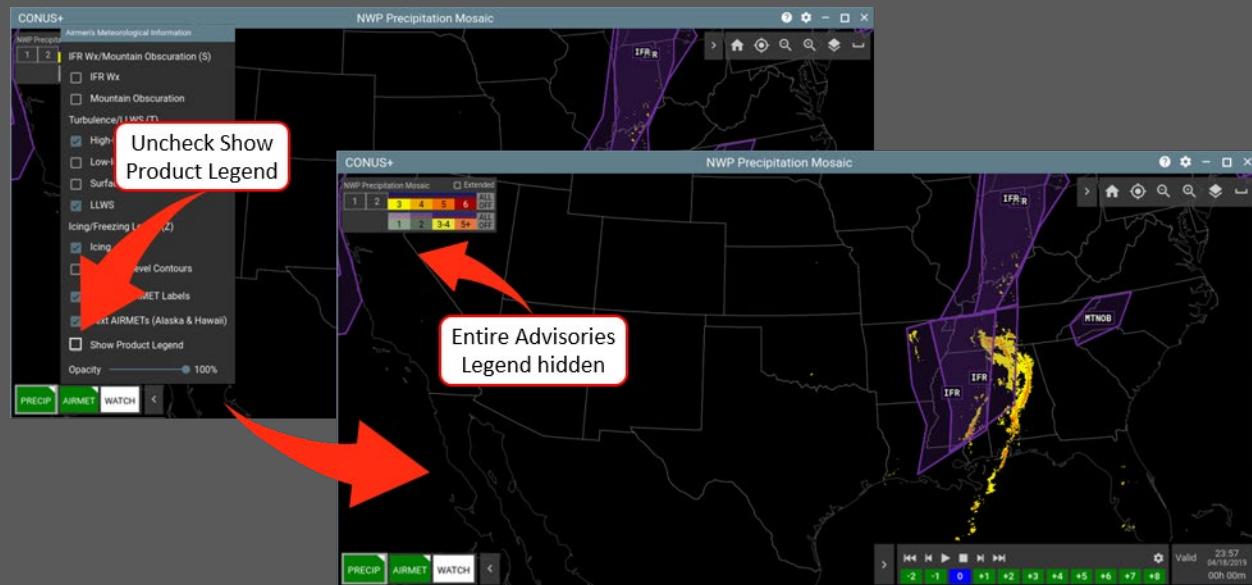
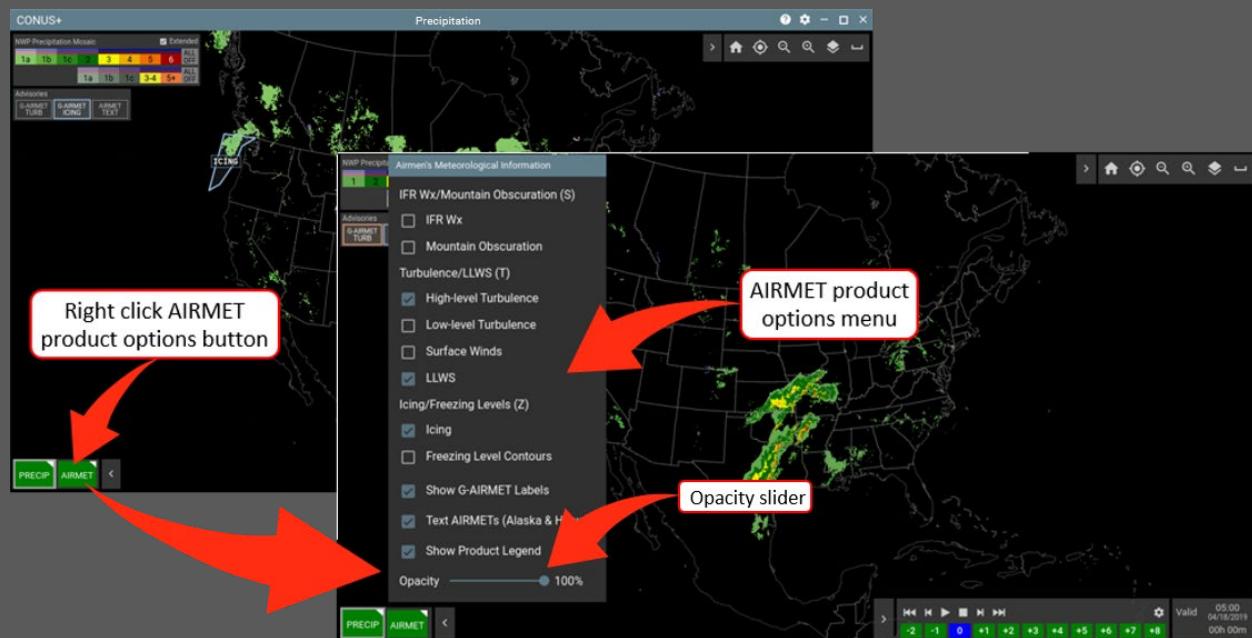


Figure 5-164. Hide Advisories Legend

5.3.2.4.2 AIRMET Opacity

Higher opacity makes AIRMET polygons and text brighter and harder to see through, while lower opacity makes AIRMET polygons and text easier to see through. To adjust AIRMET opacity, right-click the AIRMET Product Status button, then click and drag the **Opacity** slider to the preferred level (Figure 5-165. AIRMET Opacity).



5.3.3 Center Weather Advisories (CWA)

The CWA product depicts areas covered by CWAs with pink polygons. When the CWA product is opened, the CWA Product Status button is added to the Product Toolbar, the pink CWA button is added to the Advisories Legend, and active CWAs are added to the view (Figure 5-166. CWA with PRECIP).

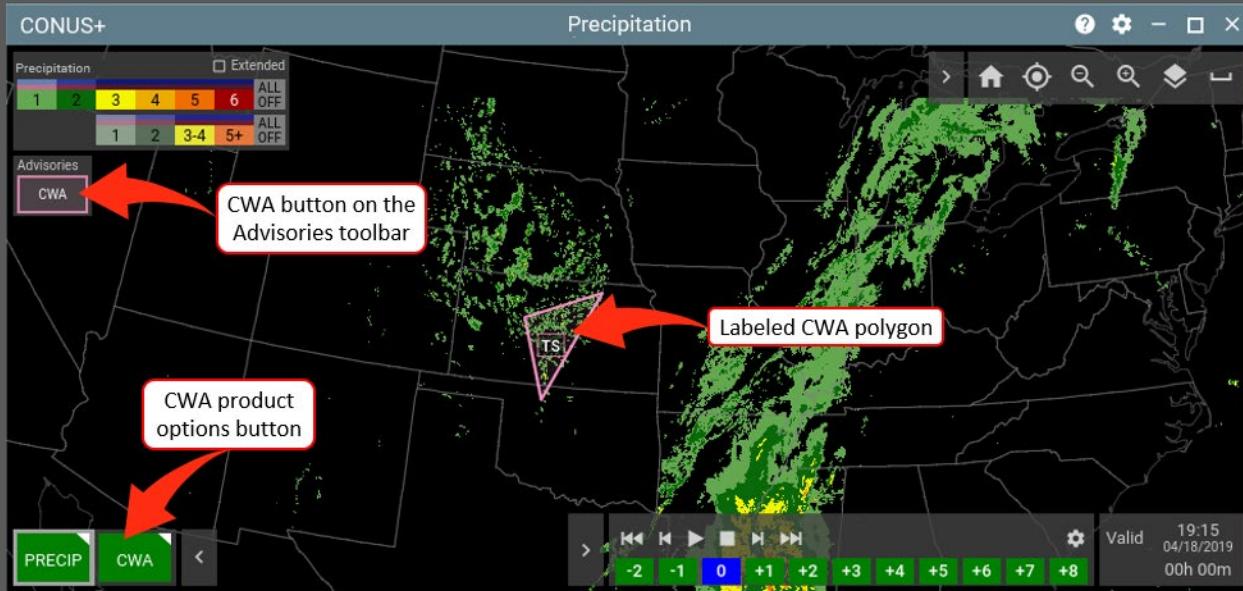


Figure 5-166. CWA with PRECIP

CWA callout boxes include the identifier of the ARTCC that issued the CWA, the CWA number, valid time, and details on the weather that triggered the CWA.

To open a CWA callout box, click the border of the CWA polygon. When the callout box opens, the CWA polygon is filled with a pink background (Figure 5-167. CWA Callout Box).

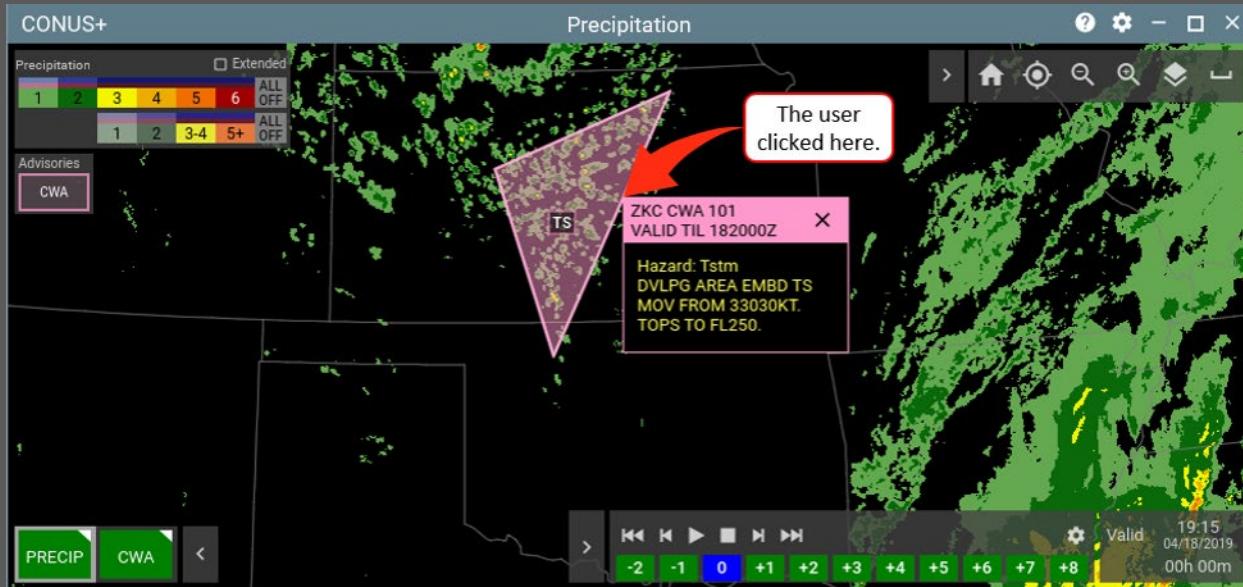


Figure 5-167. CWA Callout Box

5.3.3.1 CWA Product Options

From the CWA Product Options menu, you can hide/display the Advisories Legend, hide/display CWA labels, and adjust CWA opacity. To open the CWA Product Options menu, right-click the **CWA Product Status button** (Figure 5-168. CWA Product Options Menu).

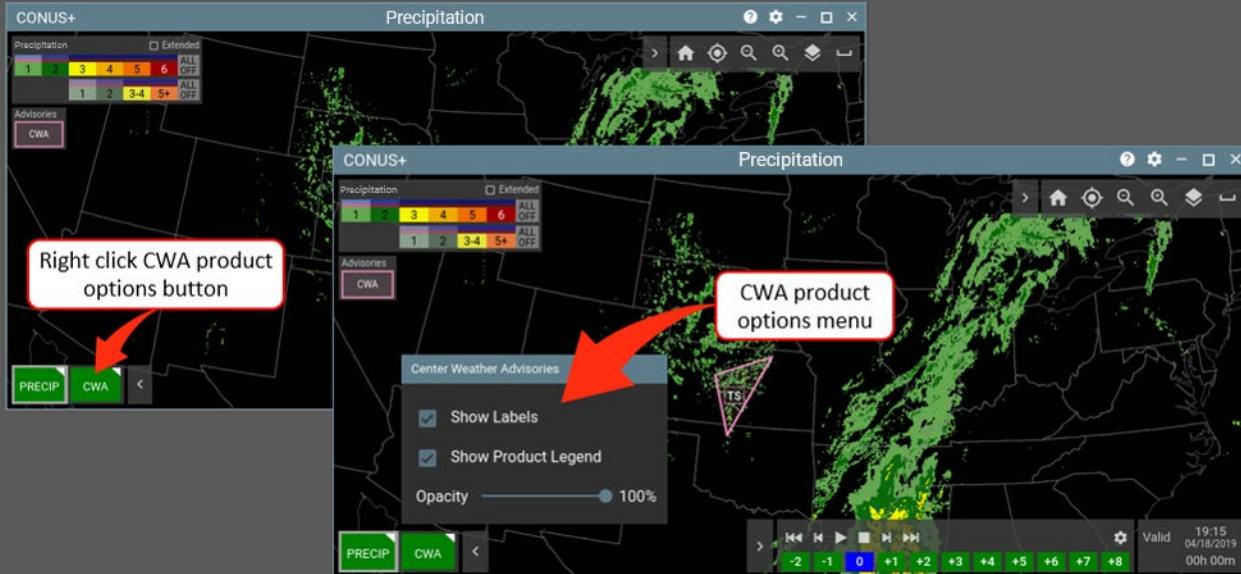


Figure 5-168. CWA Product Options Menu

5.3.3.1.1 CWA Labels

By default, CWAs are labeled with acronyms that identify the weather that triggered the CWA. To toggle CWA labels off, uncheck **Show Labels** in the CWA Product Options menu (Figure 5-169. CWA Labels Hidden).

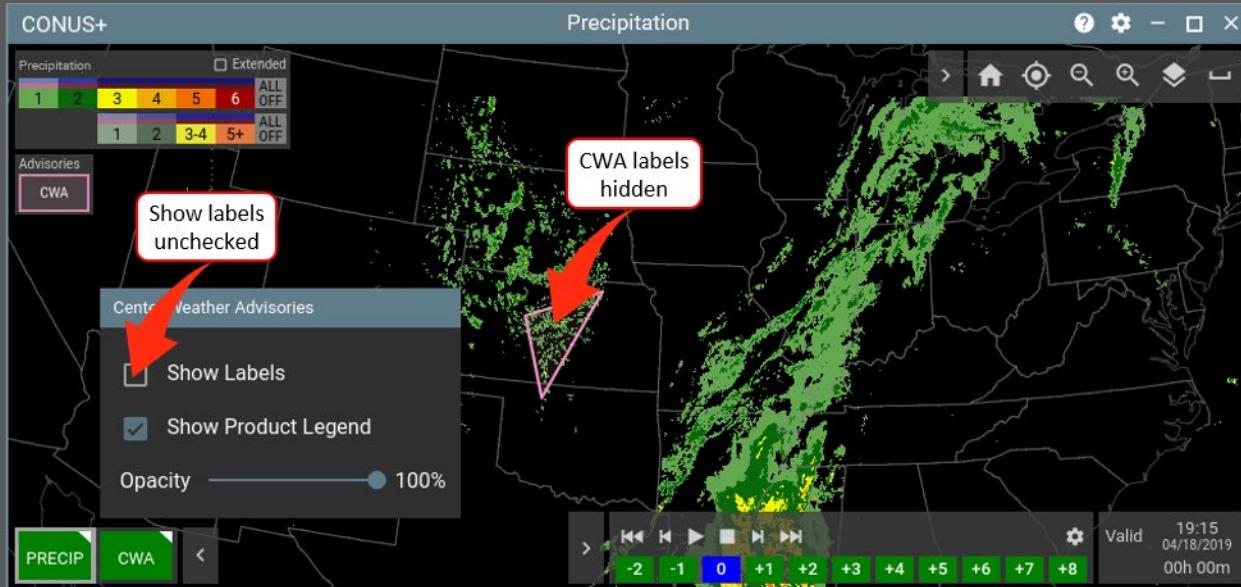


Figure 5-169. CWA Labels Hidden

5.3.3.1.2 CWA – Show Product Legend

Show Product Legend in the CWA Product Options menu is by its name alone misleading. Unchecking Show Product Legend not only hides the CWA button from the Advisories Legend, it hides the entire Advisories Legend including buttons for other Advisory Products you may not want to hide (e.g., AIRMETs, SIGMETs, etc.). If you are sure you want to hide/display the entire Advisories Legend, not just the CWA button, uncheck/check **Show Product Legend** to toggle the entire Advisories Legend off/on (Figure 5-170. CWA Hide Advisories Legend).

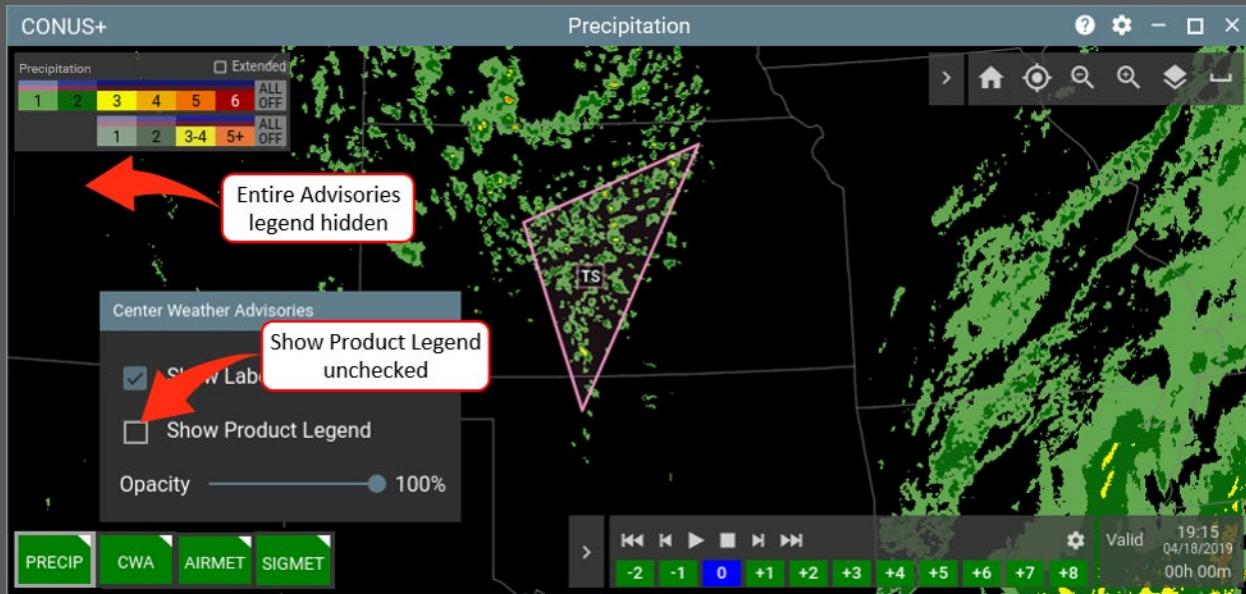
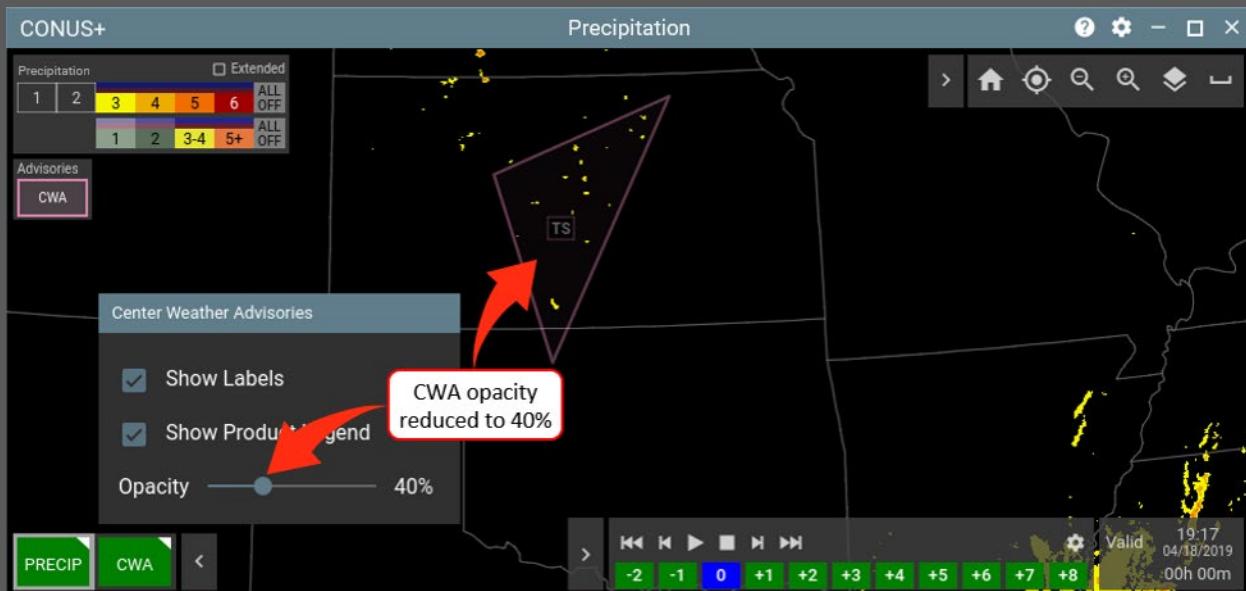


Figure 5-170. CWA Hide Advisories Legend

5.3.3.1.3 CWA Opacity

Higher opacity makes CWAs harder to see through; lower opacity makes CWAs easier to see through. To adjust CWA opacity, right-click the CWA Product Status button, then click and drag the **Opacity slider** to the preferred level (Figure 5-171. CWA Opacity).



5.3.4 Severe Thunderstorm & Tornado Watches (WATCH)

The WATCH product displays areas covered by Severe Thunderstorm Watches in blue polygons and areas covered by Tornado Watches in red polygons. WATCH is available in both Long Range and TRACON View. When WATCH is opened, both the **WATCHES SEV TS** and **WATCHES TOR** buttons are added to the interactive Advisories Legend, and the WATCH Product Status button is added to the Product Toolbar (Figure 5-172. WATCH with PRECIP).

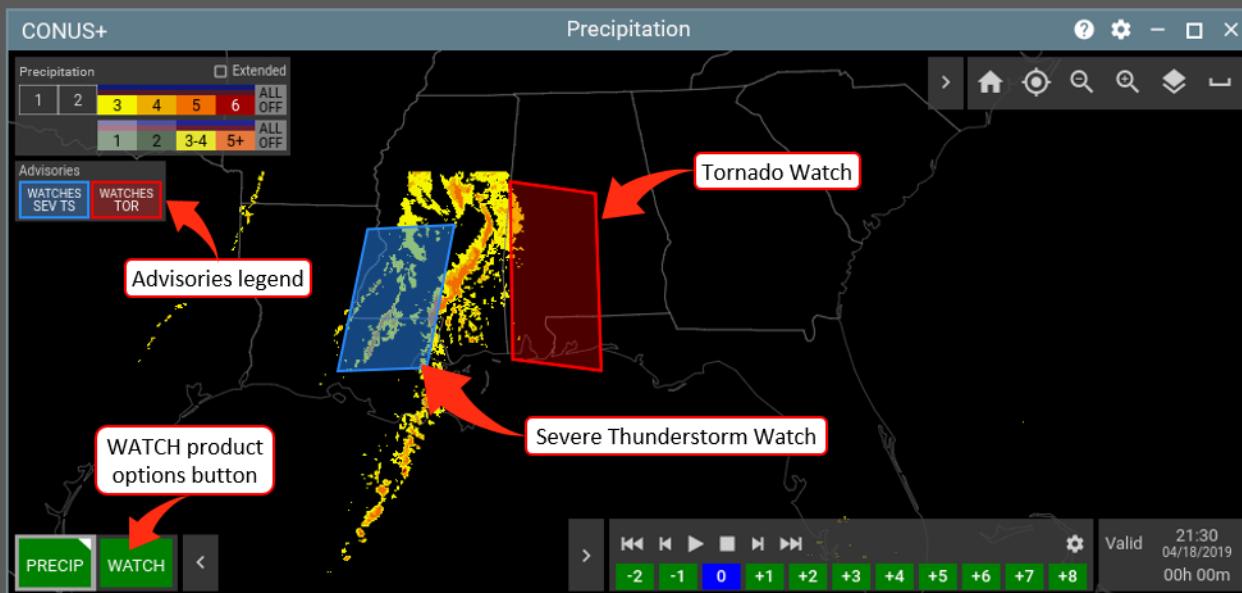


Figure 5-172. WATCH with PRECIP

5.3.4.1 WATCH Callout Box

To view the Watch number, issue time, start time, and end time, click anywhere on the polygon border of the Watch you want to examine. For information regarding hazards including tornadoes, hail size, and surface wind gust potential, click the MORE button (Figure 5-173. WATCH Callout Box).

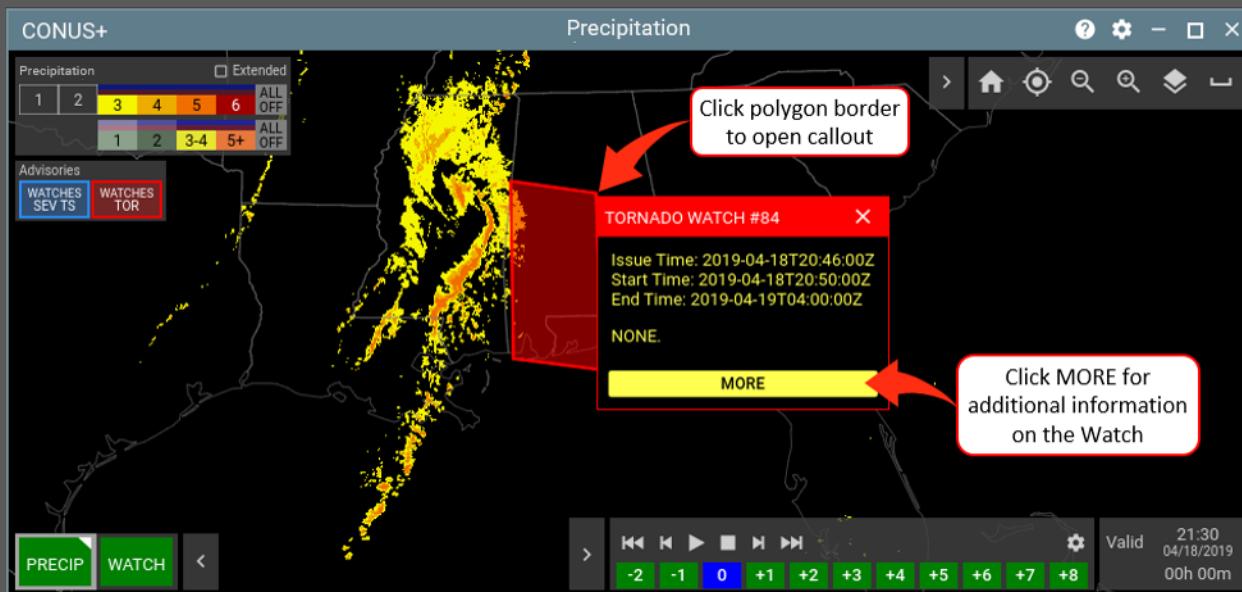


Figure 5-173. WATCH Callout Box

5.3.4.2 WATCH Product Options

From the WATCH Product Options menu, you can hide/display the Advisories Legend and/or adjust WATCH opacity. To open the WATCH Product Options menu, right-click the WATCH Product Status button (Figure 5-174. WATCH Product Options Menu).

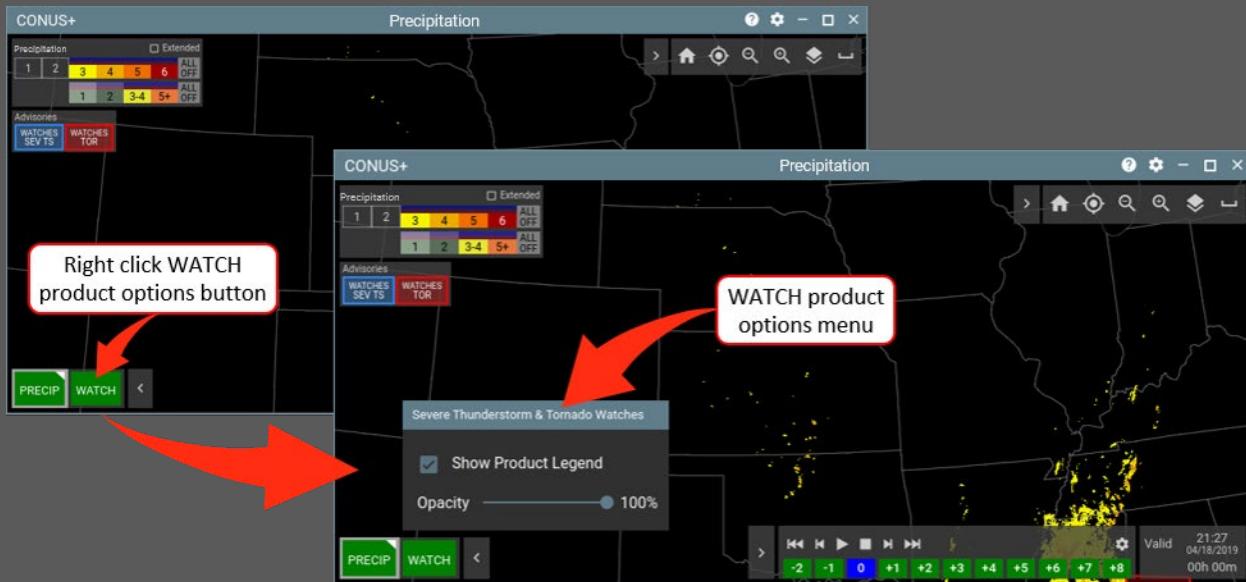


Figure 5-174. WATCH Product Options Menu

5.3.4.2.1 WATCH Advisories Legend

By default, when the Advisories Legend is displayed, **WATCH SEV TS** and **WATCH TOR** buttons are on. The WATCH buttons are interactive and work as toggles, so you can click the buttons to toggle SEV TS and/or TOR watches on/off. When a watch is toggled off, its associated button is gray. In the following example, TOR Watches are on and displayed while SEV TS Watches are toggled off (Figure 5-175. WATCH Toggled Off).



Figure 5-175. WATCH Toggled Off

5.3.4.2.2 WATCH - Hide/Display Advisories Legend

The Show Product Legend option in the WATCH product is misleading. Unchecking Show Product Legend not only hides the interactive WATCH buttons on the Advisories Legend, it hides the entire Advisories Legend that may include buttons for other Advisory products you want to display (e.g., SIGMETs, AIRMETs, CWAAs, etc.). If you are sure you want to hide the entire Advisories Legend, uncheck Show Product Legend (Figure 5-176. WATCH with Advisories Legend Hidden).

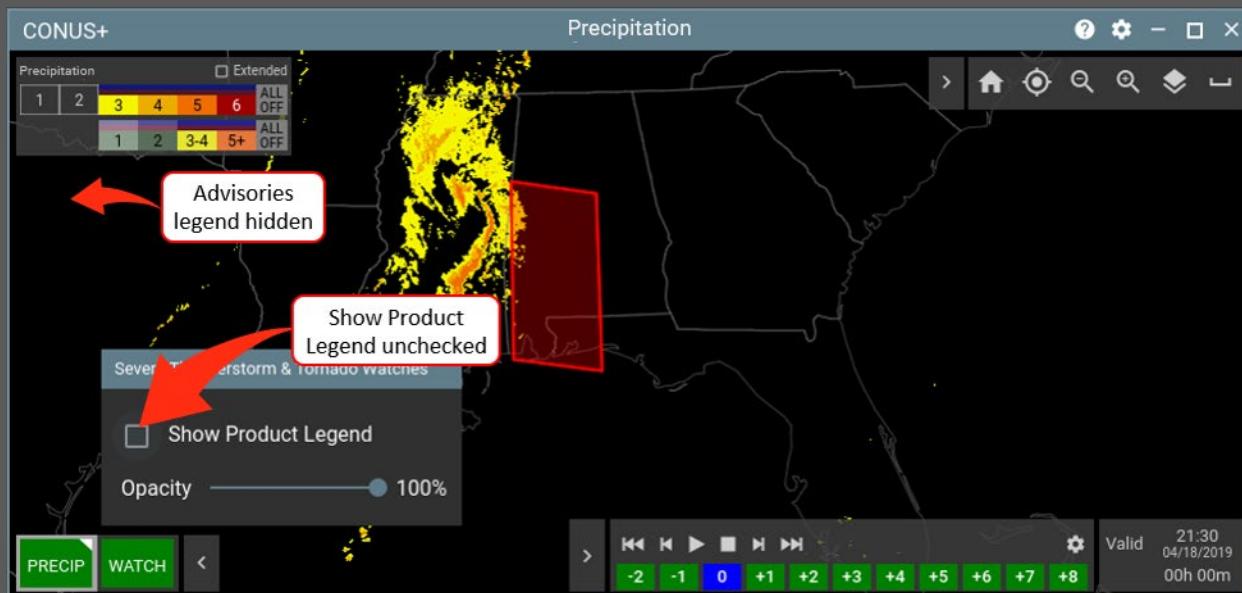


Figure 5-176. WATCH with Advisories Legend Hidden

5.3.4.2.3 WATCH Opacity

Higher opacity makes WATCH polygons and text brighter and harder to see through; lower opacity makes the polygons and text easier to see through. To adjust WATCH opacity, click and drag the **Opacity slider** to the preferred level (Figure 5-177. WATCH Opacity).

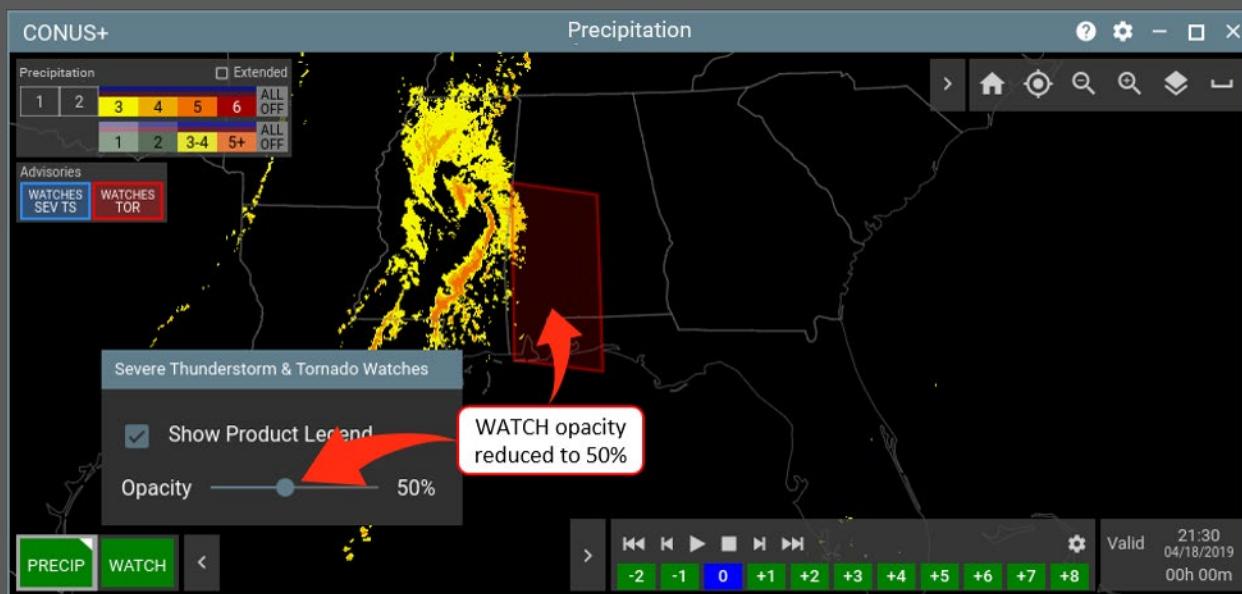


Figure 5-177. WATCH Opacity

5.3.5 Volcanic Ash Advisories (VAA)

The VAA product identifies locations where volcanic activity is observed, detected, or forecast with colored triangles that represent volcano status. VAA can be used independently or in conjunction with other products but is only available in Long Range View. When VAA is opened, the VAA Product Status button is added to the Product Toolbar and triangles that represent volcanos (if observed, detected, or forecast) are added to the view.

In the following example, the VAA product is opened, the VAA Product Status button is added to the Product Toolbar, but no volcanos are detected or displayed (Figure 5-178. Volcanic Ash Advisories).

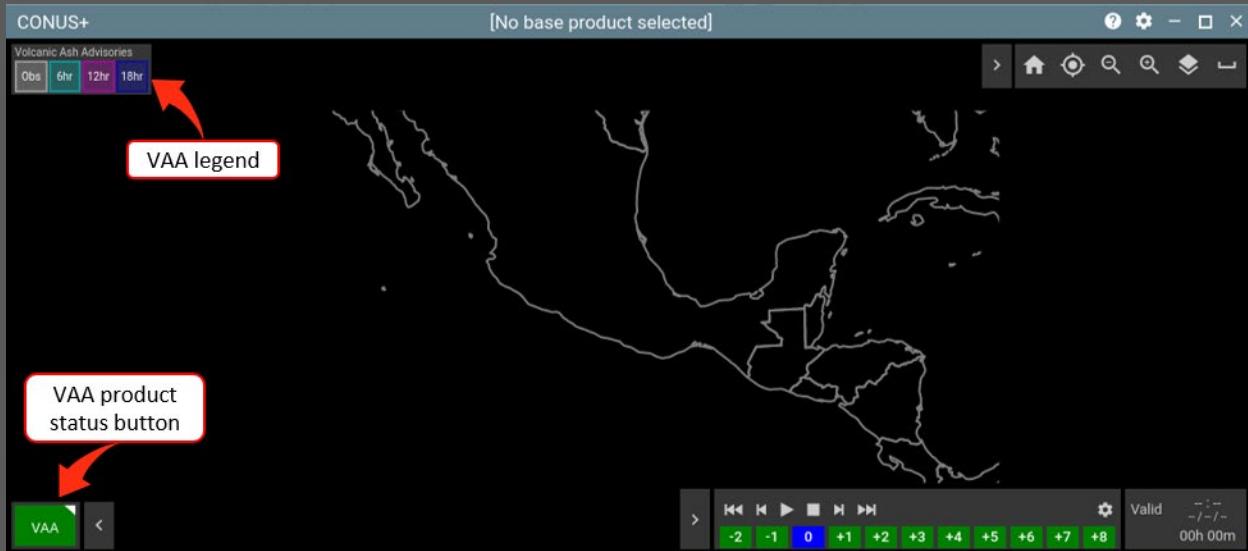


Figure 5-178. Volcanic Ash Advisories

VAA depicts detected/observed volcanos with colored triangles with each color representing one of the following five volcano status levels:

- Green – Non-erupting volcano with normal background activity, or the volcano has returned to a normal state.
- Yellow – Volcano is showing signs of elevated activity beyond what is considered normal, or volcanic activity has decreased from a higher alert level and requires closer monitoring.
- Orange – Volcano is erupting or showing signs of eruption but is expected to pose little or no hazards to aviation due to minor volcanic ash emissions.
- Red – Volcanic eruption is imminent, underway, or suspected with ash clouds in the atmosphere that could potentially impact aviation.
- White – Ground-based instrumentation cannot verify the volcano is in Green status. When volcanic activity increases to the point where detection by remote sensing, seismic networks, or eyewitness reports justifies a new alert level, a new alert level is assigned.

By default, VAA displays observed volcanoes, but volcano forecasts are available via the Product Options menu which is discussed later in this section. In the following example, a volcano in Orange status is detected in Central America. A triangle showing the volcano's location and status level is added to the view (Figure 5-179. Volcano Detected).

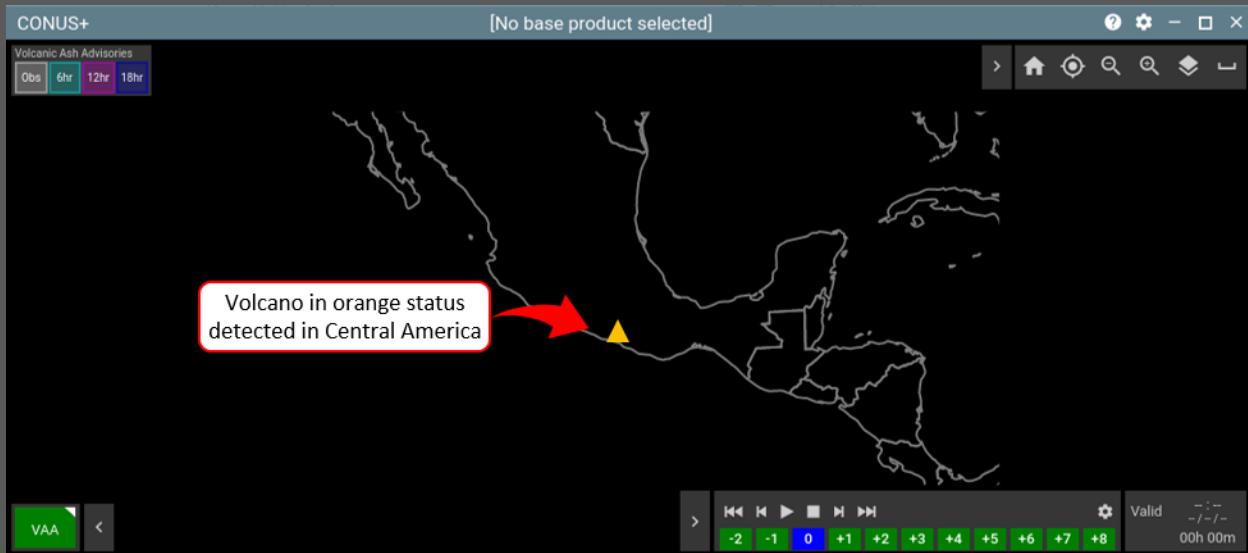


Figure 5-179. Volcano Detected

Some but not all volcanoes have associated plumes (ash clouds). The AWD displays plumes with translucent polygons that indicate the plume's location and movement relative to the volcano. By default, a text box in the middle of the plume indicates the plume's tops in three digits.

In the following example, a volcano detected in Central America in Red status has a plume with 16,000' tops moving northwest from the volcano (Figure 5-180. Volcano Plume & Tops).

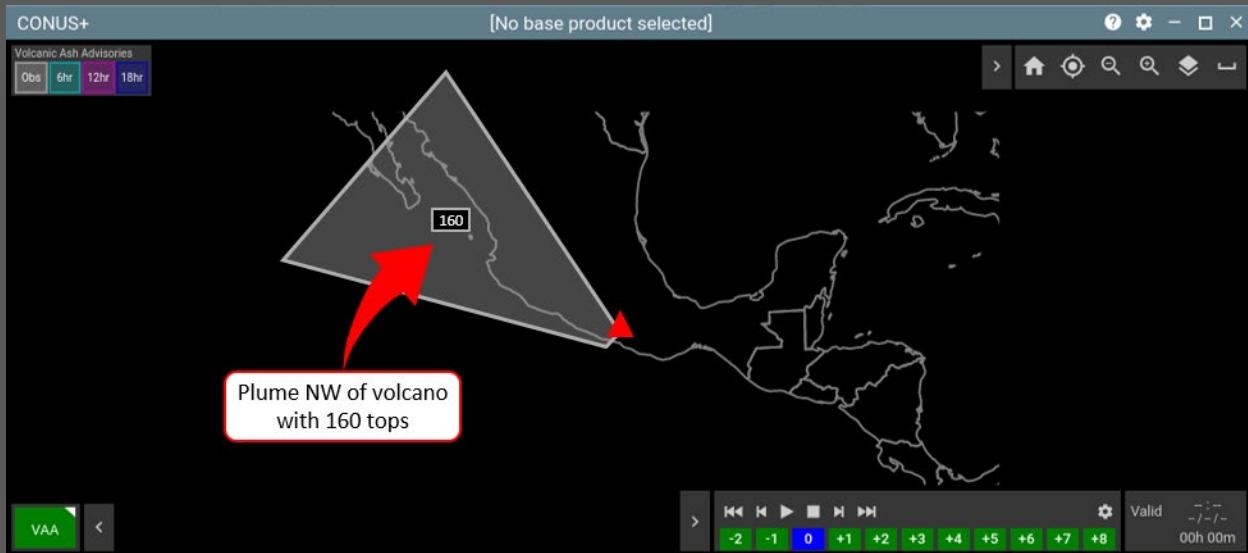


Figure 5-180. Volcano Plume & Tops

5.3.5.1 Volcano Callout Boxes

For specific information on a volcano (volcano name, observation/forecast issue time, plume bases, plume tops, & plume movement), click the volcano's symbol or plume to open the volcano's callout box (Figure 5-181. VAA Callout Box).

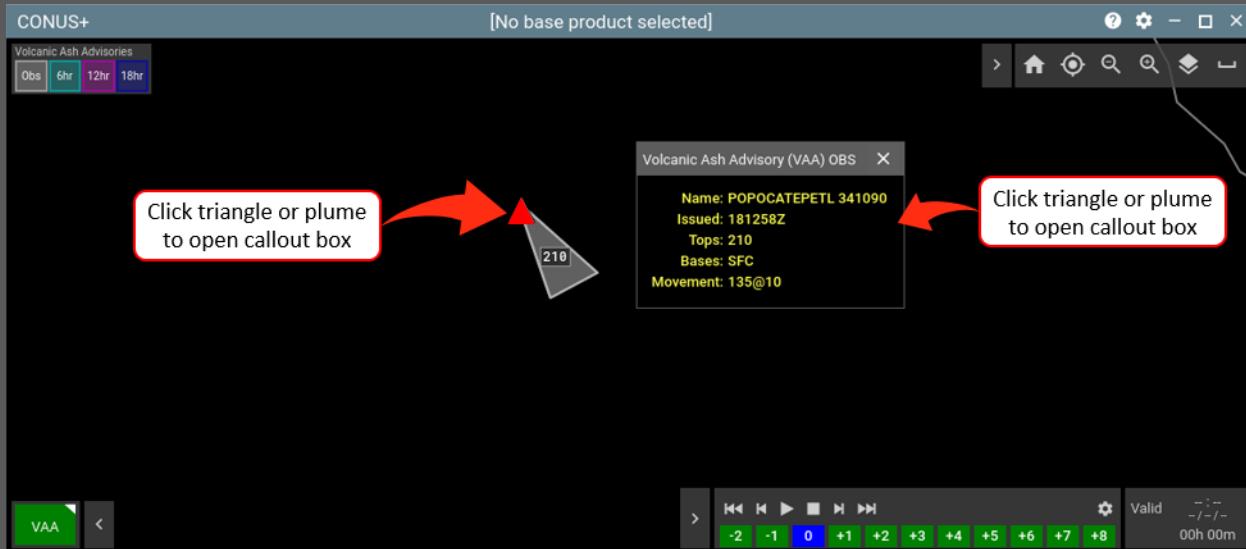


Figure 5-181. VAA Callout Box

5.3.5.2 VAA Product Options Menu

From the VAA Product Options menu, you can view volcano forecasts (6-hr, 12-hr, or 18-hr), hide/show plume tops, hide/show the VAA legend, and adjust opacity. To open the VAA Product Options menu, right-click the VAA Product Status button (Figure 5-182. VAA Product Options Menu).

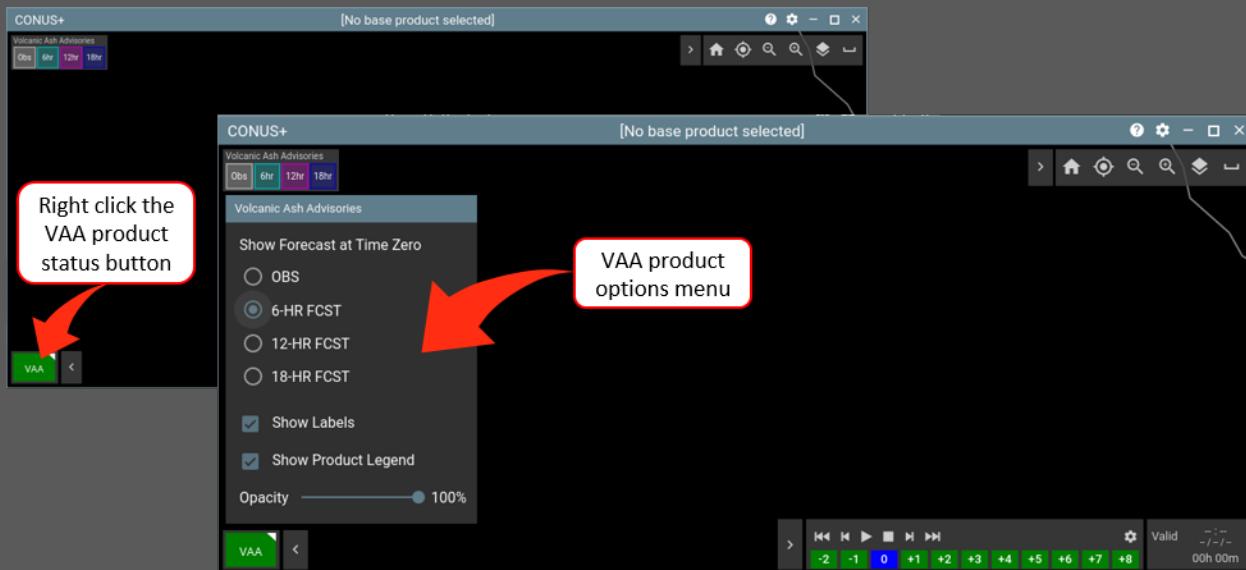


Figure 5-182. VAA Product Options Menu

5.3.5.2.1 VAA Observations & Forecast

Volcanos and their associated plumes (when detected or observed), are displayed by default. To view VAA forecasts, click the forecast you want (6, 12, or 18-hour) in the Product Options menu. Volcano plumes and callout boxes are color-coded as follows to identify observed/forecast times:

- Gray – An observation of volcanic activity (detected and/or observed).
- Teal – A 6-hour volcanic activity forecast (with or without plumes).
- Violet – A 12-hour volcanic activity forecast (with or without plumes).
- Dark Blue – An 18-hour volcanic activity forecast (with or without plumes).

In the following example, the 6-hour forecast indicates volcanic activity and an ash plume with 16,000' tops moving northwest from the volcano (Figure 5-183. VAA 6-Hour Forecast).

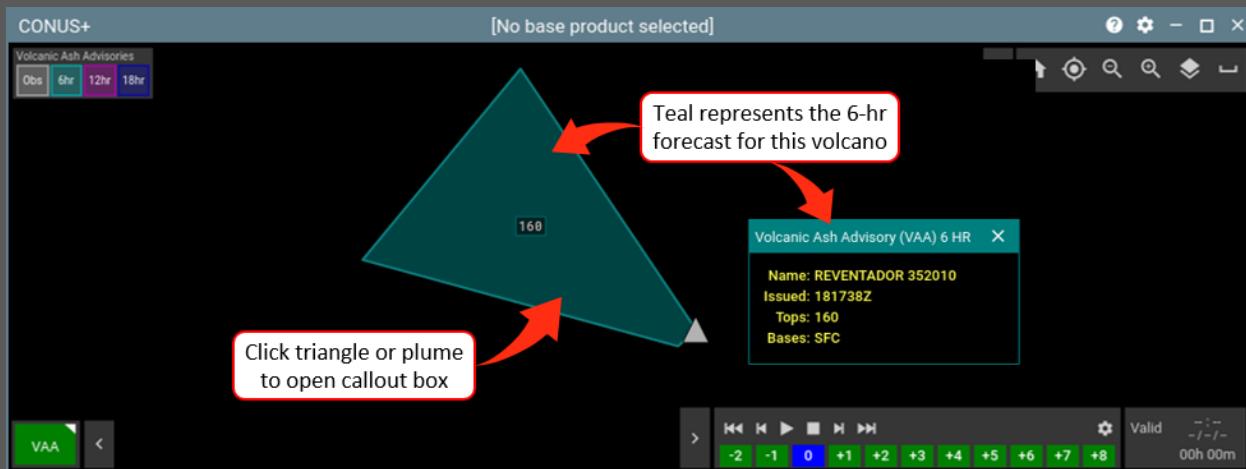


Figure 5-183. VAA 6-Hour Forecast

5.3.5.2.2 VAA Show Labels

When VAA product is on, volcanic ash plumes are displayed by default. To toggle plumes off and on, uncheck or check Show Labels (Figure 5-184. VAA Hide/Show Plume Tops).

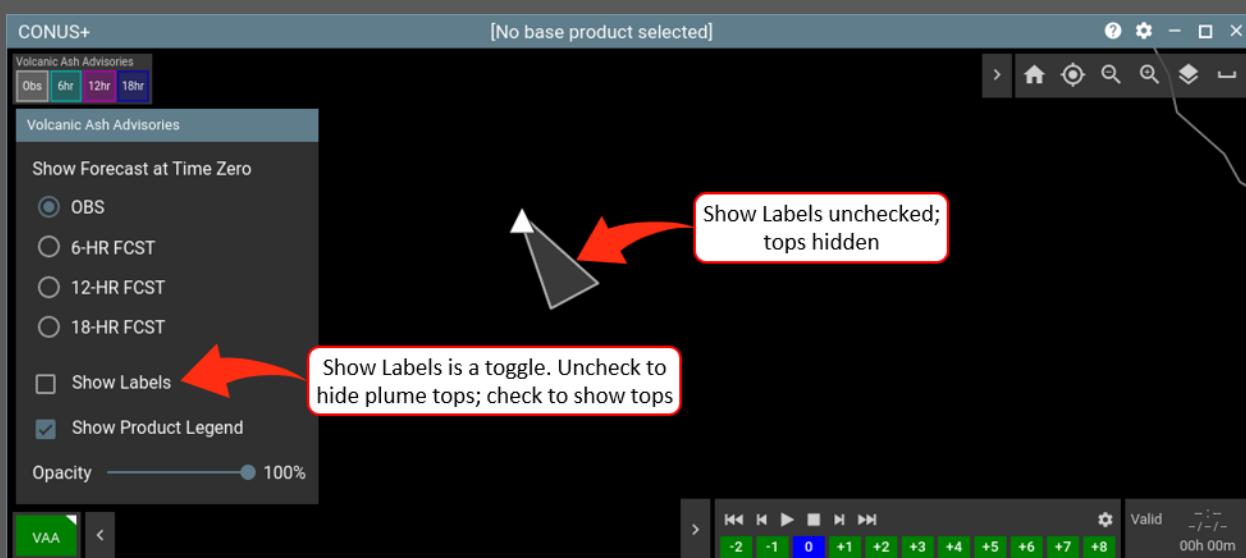


Figure 5-184. VAA Hide/Show Plume Tops

5.3.5.2.3 VAA Show Product Legend

When VAA is open, the VAA Legend is displayed by default. To hide the VAA Legend, open the VAA Product Options menu and **uncheck Show Product Legend**. To display a hidden VAA Legend, **check Show Product Legend** (Figure 5-185. VAA Hide/Show Legend).

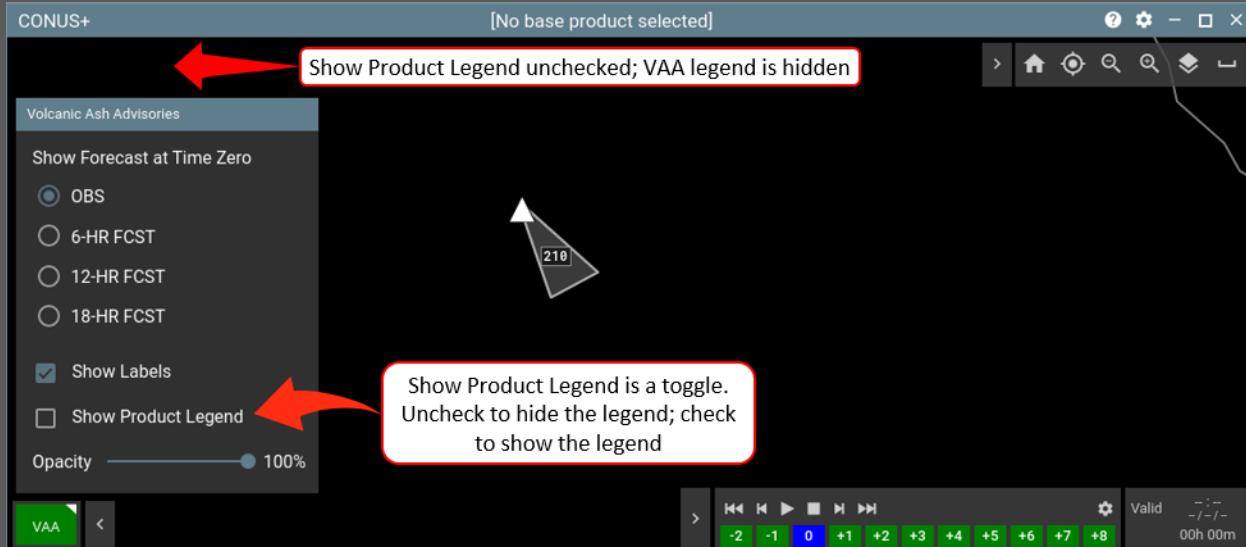


Figure 5-185. VAA Hide/Show Legend

5.3.5.2.4 VAA Opacity

Higher opacity makes the VAA triangles and plumes harder to see through; lower opacity makes triangles and plumes easier to see through. To adjust VAA opacity, click and drag the **Opacity slider** to the preferred level (Figure 5-186. VAA Opacity).

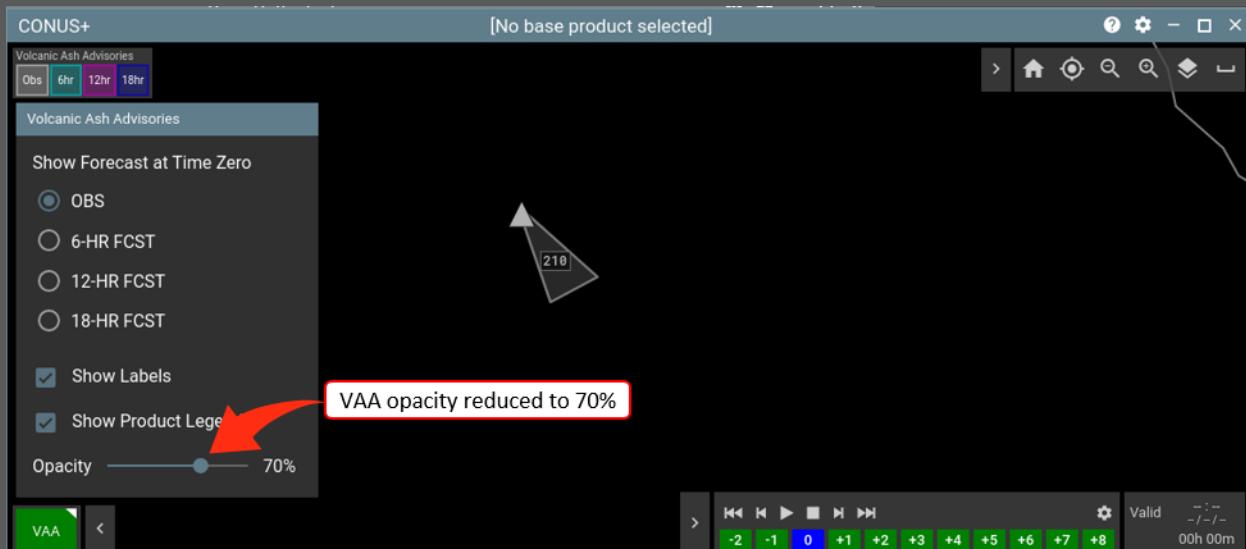


Figure 5-186. VAA Opacity

5.4 Observation and Analysis

5.4.1 Satellite Mosaic (SAT)

The SAT product covers the CONUS+, Alaska, and Hawaii domains with images from two Geostationary Operational Environmental Satellites (GOES) that update every ten minutes. Visible satellite images are displayed during daylight hours while infrared images are displayed during periods of darkness. When SAT is opened, the SAT Product Status button is added to the Product Toolbar and satellite images are displayed in the view (Figure 5-187. SAT with PRECIP).

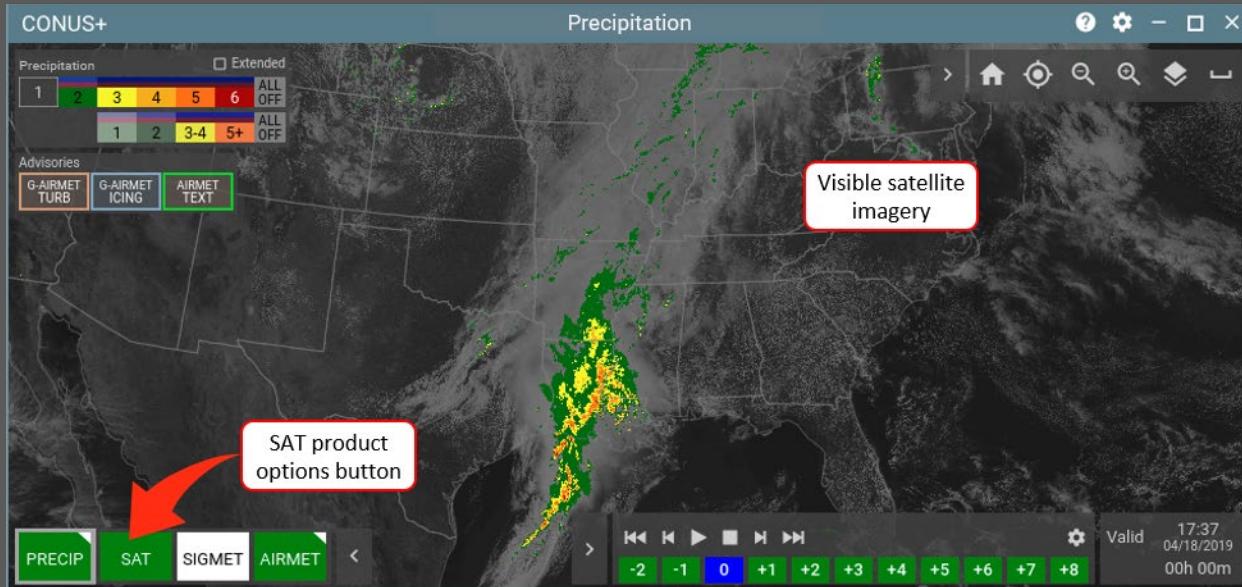
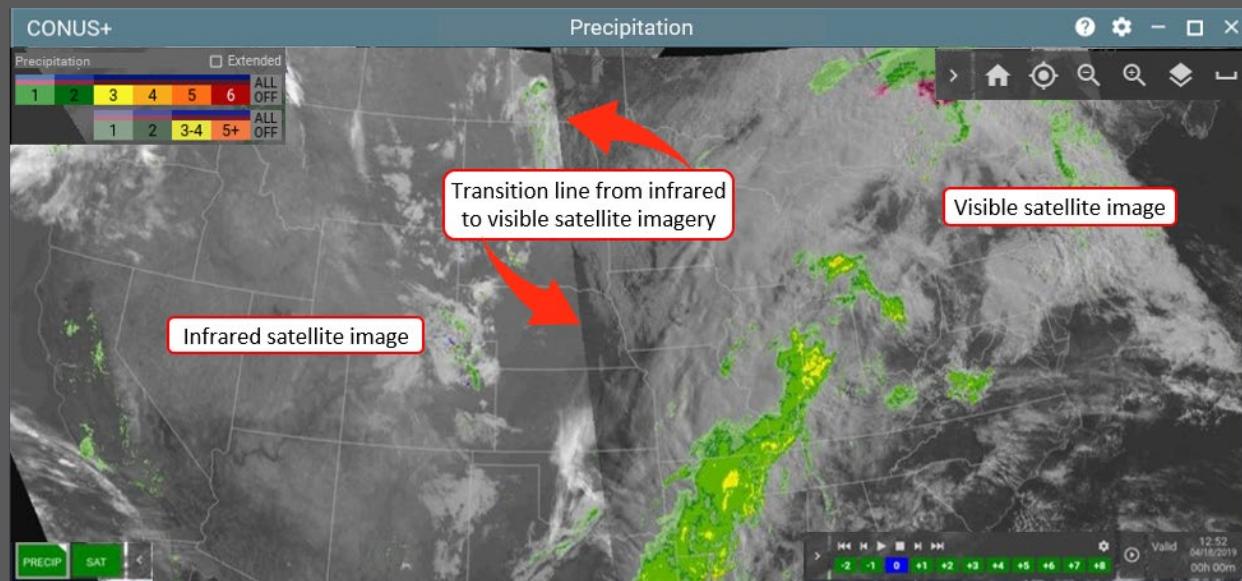


Figure 5-187. SAT with PRECIP

At dawn and dusk, SAT displays a transition line that separates visible and infrared images. The transition line moves east to west as the earth rotates clockwise around its axis. In the following example, the transition line is passing through the central United States (Figure 5-188. SAT Infrared to Visible Transition).



The following image shows normal SAT coverage areas which extend beyond the CONUS+ domain (Figure 5-189. SAT Coverage).

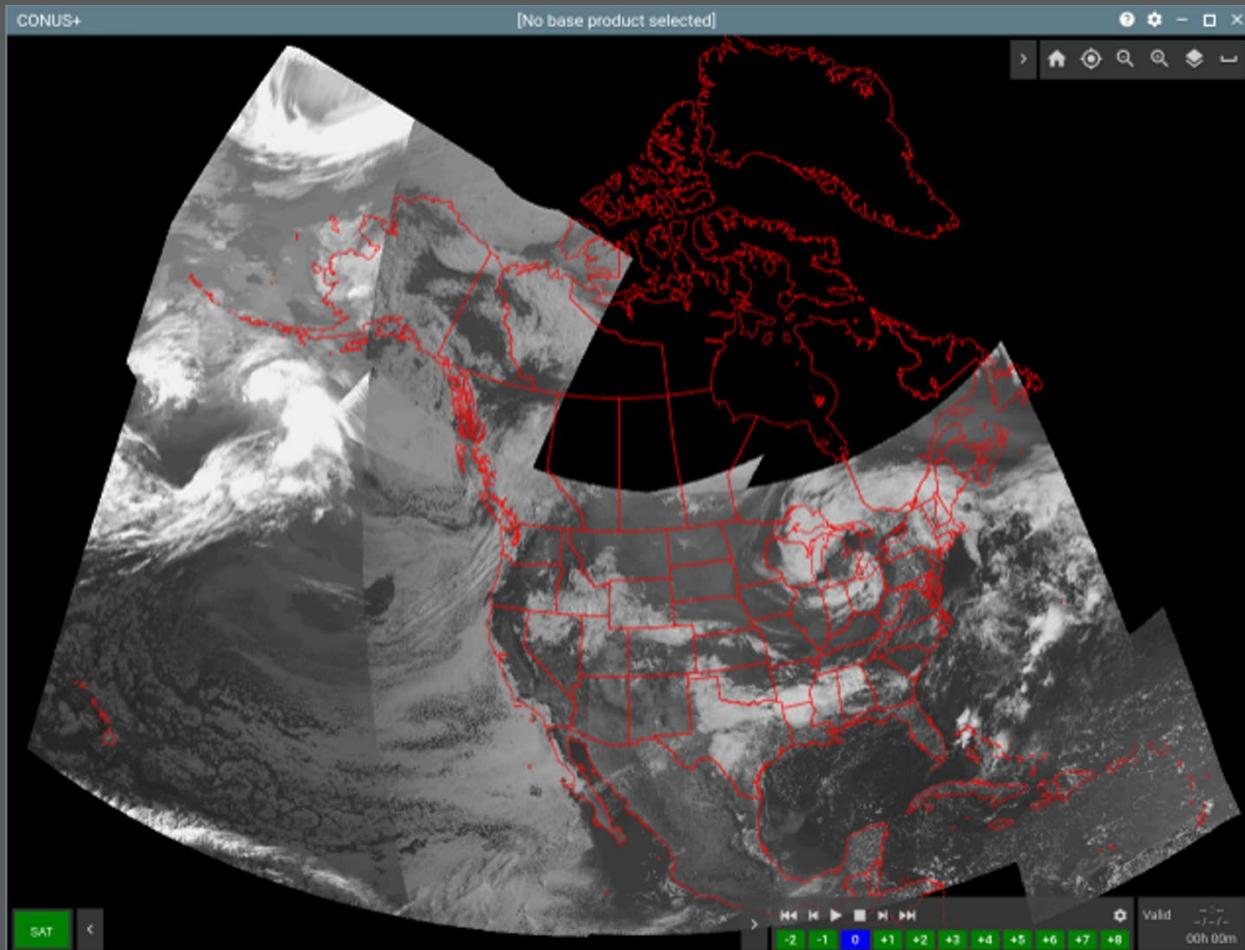


Figure 5-189. SAT Coverage

5.4.1.1 SAT Product Options

The only option available in the SAT Product Options menu is the opacity adjustment. To open the SAT Product Options menu, right-click the SAT Product Status button (Figure 5-190. SAT Product Options Menu).

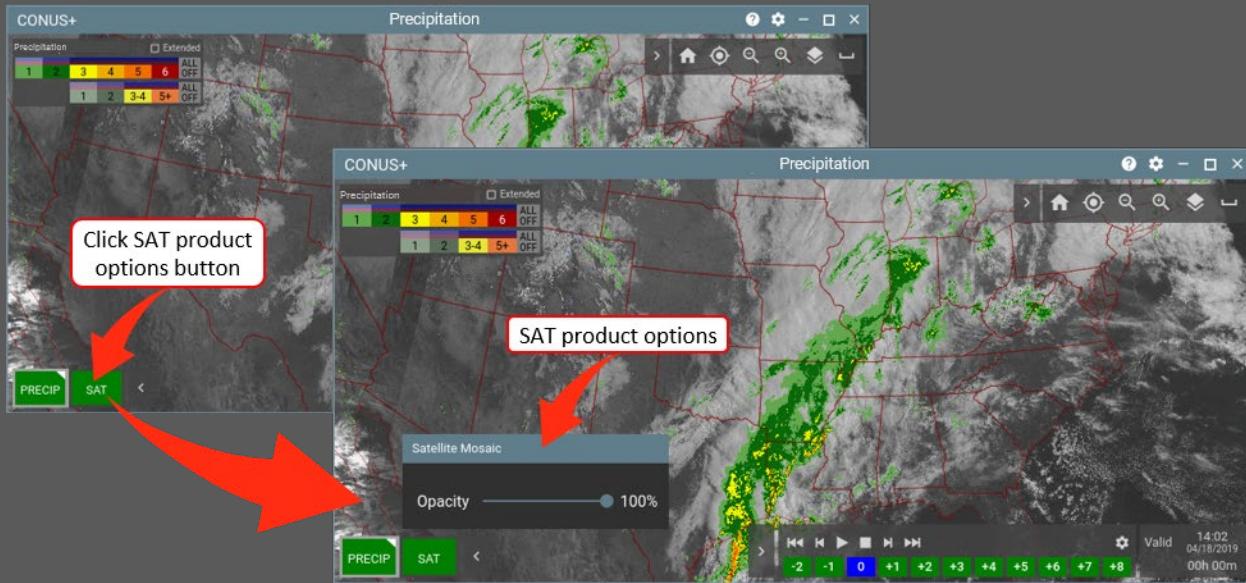


Figure 5-190. SAT Product Options Menu

5.4.1.1.1 SAT Opacity

Higher opacity makes satellite images brighter and harder to see through; lower opacity makes images dimmer and easier to see through. To adjust SAT opacity, right-click the SAT Product Status button, then in the SAT Product Options menu, **click and drag the Opacity slider** the preferred level (Figure 5-191. SAT Opacity).

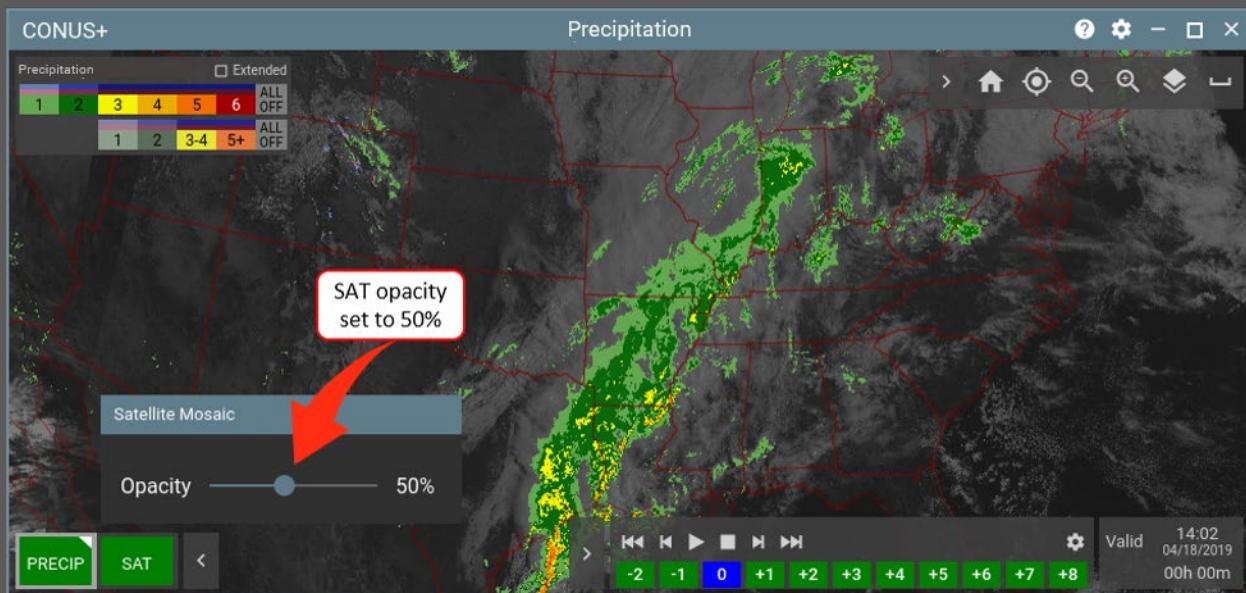


Figure 5-191. SAT Opacity

5.4.2 PIREP

The PIREP product uses diamond shaped symbols to depict locations where PIREPs have been reported within the previous hour and is available in Long Range and TRACON View. Cyan colored diamonds represent Routine PIREPs and red diamonds represent Urgent PIREPs.

When the PIREP product is added to the view, the PIREP Product Status button is added to the Product Toolbar, and the PIREP Legend and active PIREPs are added to the view (Figure 5-192. PIREP with PRECIP).

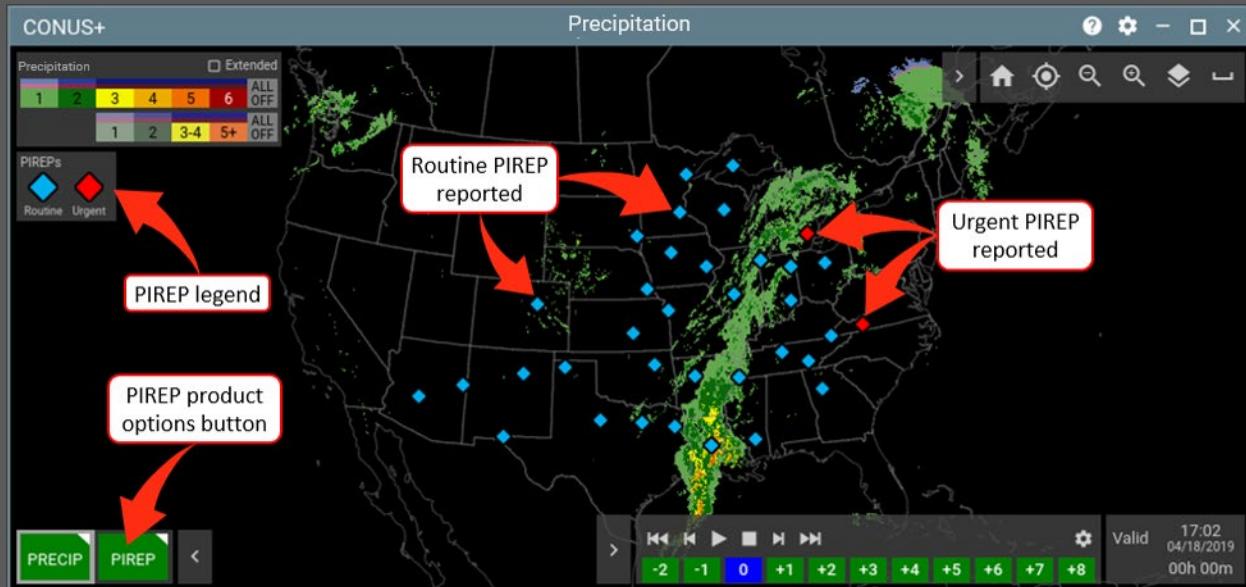
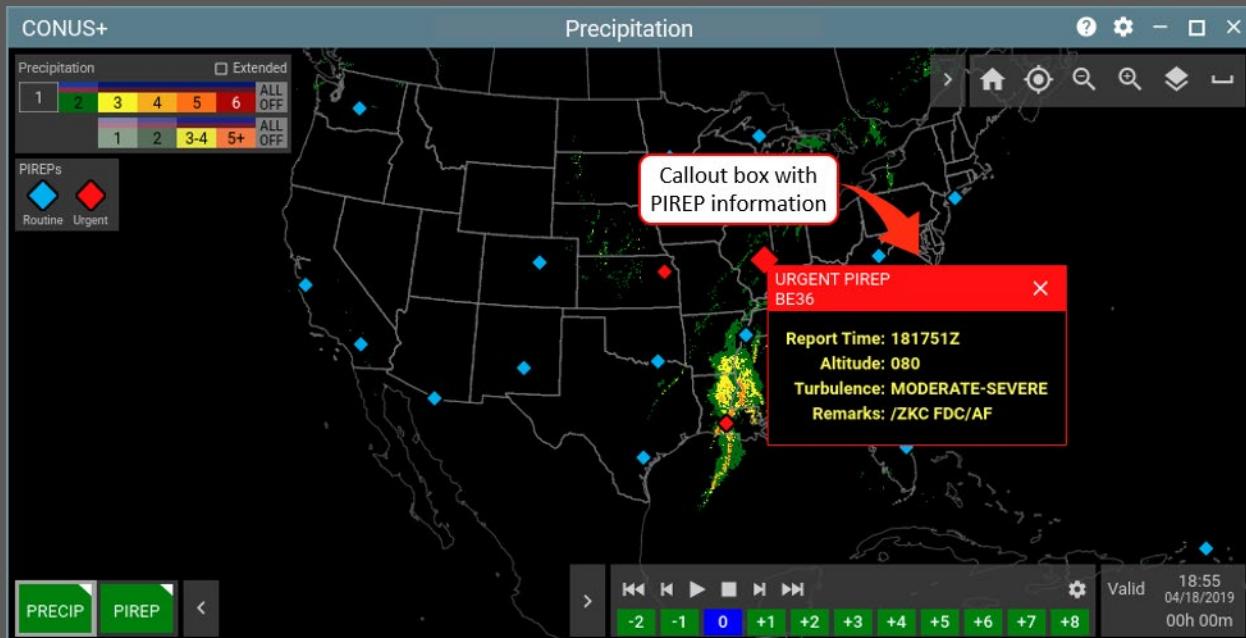


Figure 5-192. PIREP with PRECIP

5.4.2.1 PIREP Callout Boxes

Click a PIREP symbol to open a callout box with information that includes the PIREP issue time, aircraft type, weather phenomena, and additional information when available (Figure 5-193. PIREP Callout Box).



5.4.2.2 PIREP Product Options

From the PIREPs Product Options menu you can filter PIREPs by altitude, hide/show the Product Legend, and adjust PIREP opacity. Right-click the PIREP Product Status button to open the PIREPs Product Options menu (Figure 5-194. PIREP Product Options Menu).

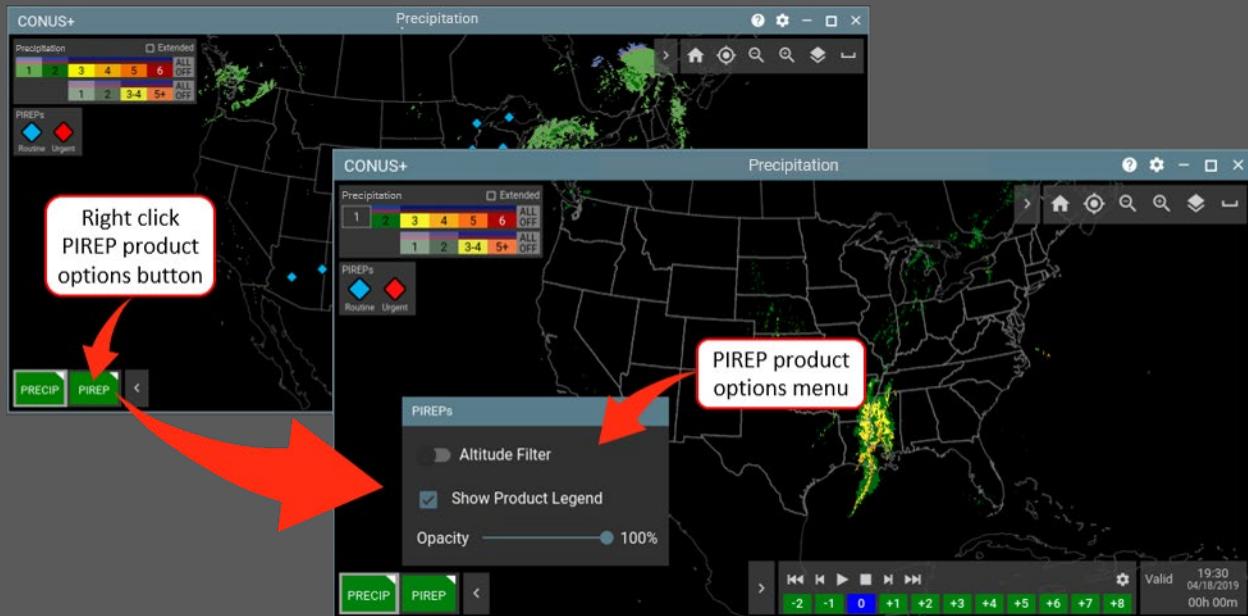
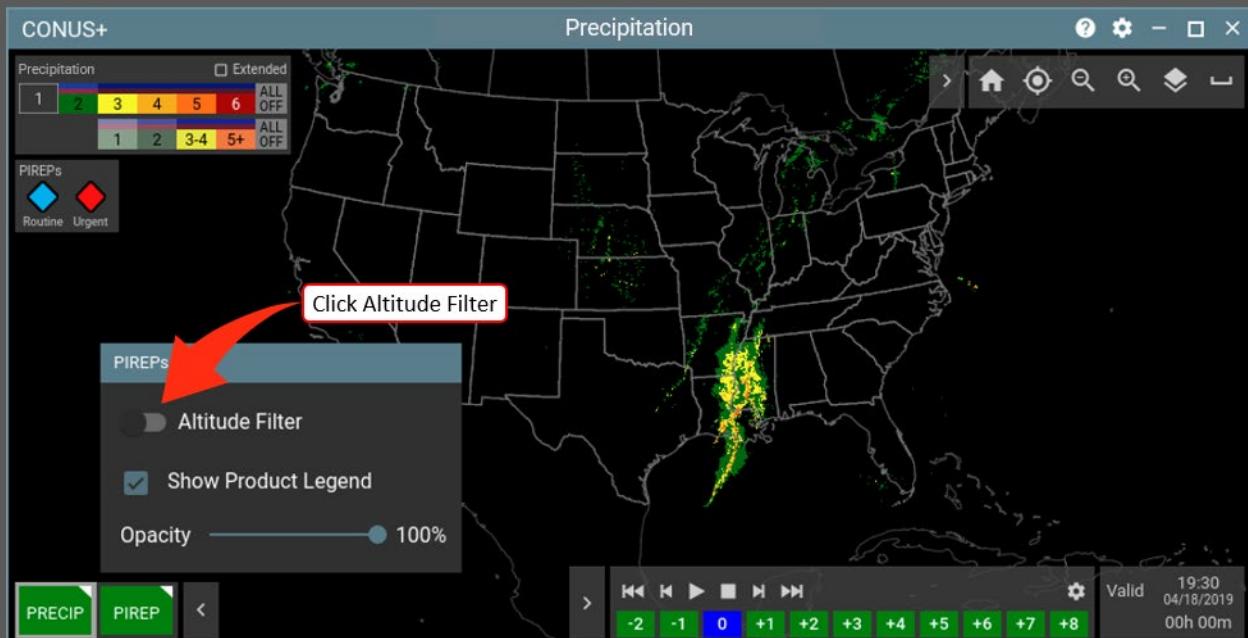


Figure 5-194. PIREP Product Options Menu

5.4.2.2.1 Filter PIREPs by Altitude

While Routine PIREPs can be filtered by altitude, Urgent PIREPs cannot be filtered and will always be displayed when the PIREPs product is on. To filter Routine PIREPs by altitude, right-click the PIREP Product Status button, then from the Product Options menu, click Altitude Filter (Figure 5-195. PIREP Altitude Filter).



In the PIREP Altitude Filter dialog box, click and drag the floor and ceiling sliders to the preferred altitudes, then click APPLY to activate the filter (Figure 5-196. Activate PIREP Altitude Filter).

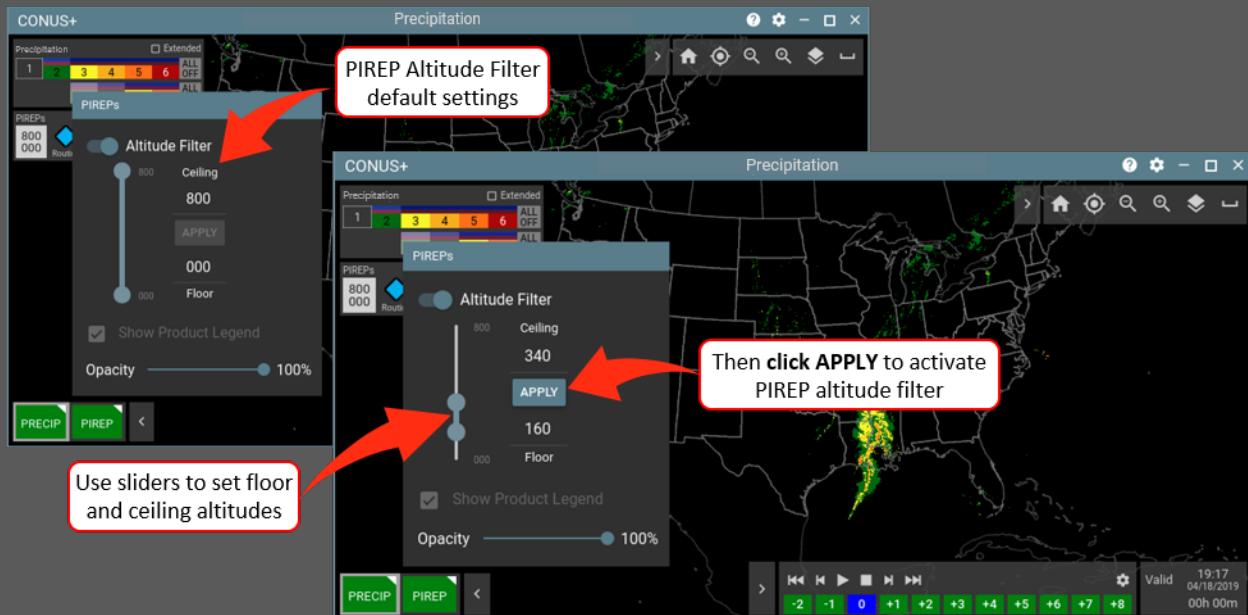


Figure 5-196. Activate PIREP Altitude Filter

When the PIREP Altitude Filter is active, the filtered altitudes are displayed in the PIREP Legend. When the filter is active, all Routine PIREPs outside the filter are hidden from the view (Figure 5-197. PIREPs Filtered by Altitude).

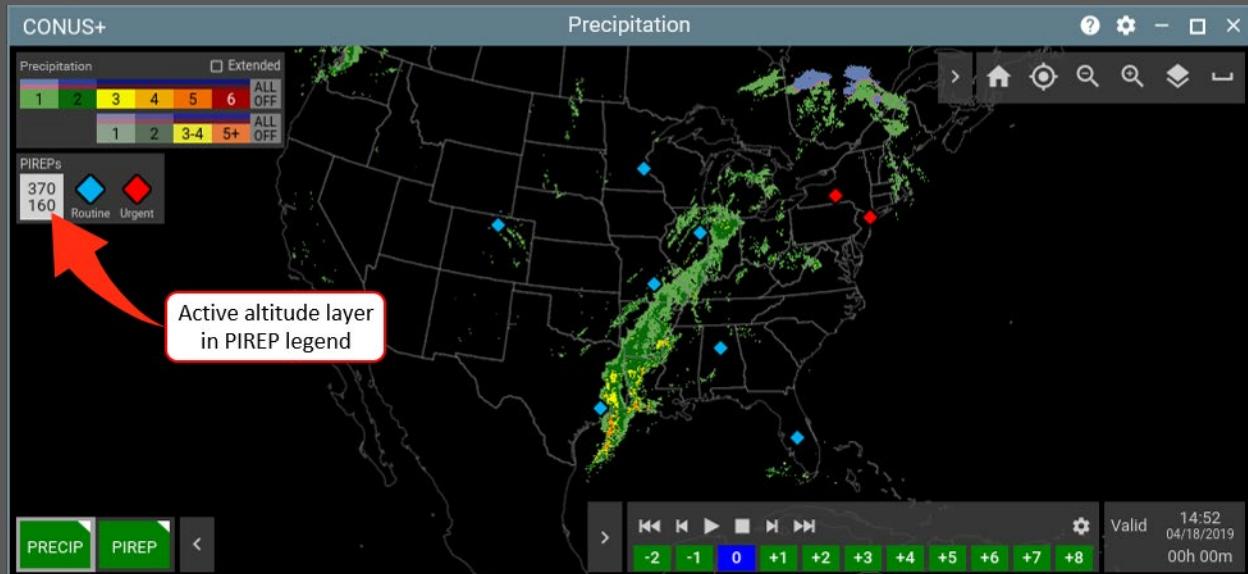


Figure 5-197. PIREPs Filtered by Altitude

5.4.2.2.2 PIREP Legend

The PIREP Legend is displayed by default. To hide the PIREP Legend, open the PIREP Product Options menu, then uncheck Show Product Legend (Figure 5-198. Hide PIREP Legend).

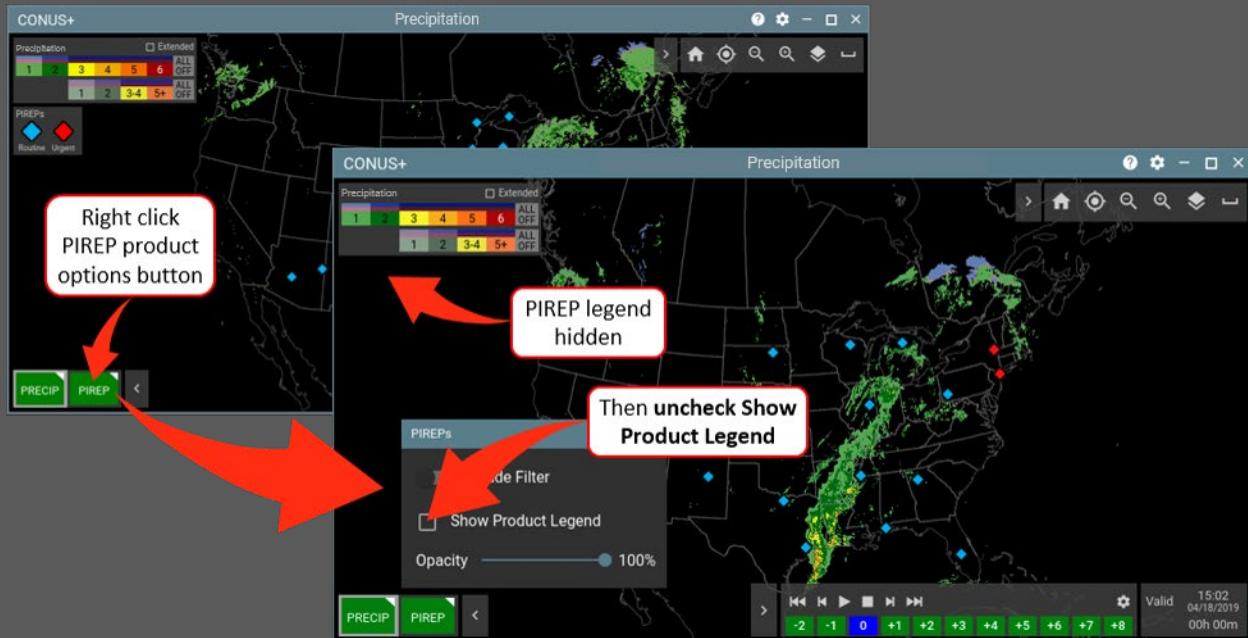


Figure 5-198. Hide PIREP Legend

Note: The PIREP legend **CANNOT** be hidden when the PIREP altitude filter is active.

5.4.2.2.3 PIREP Opacity

Higher opacity makes PIREPs symbols and text brighter and more prominent; lower opacity makes symbols and text dimmer and less prominent. To adjust PIREP opacity, click and drag the Opacity slider to the preferred level (Figure 5-199. PIREP Opacity).

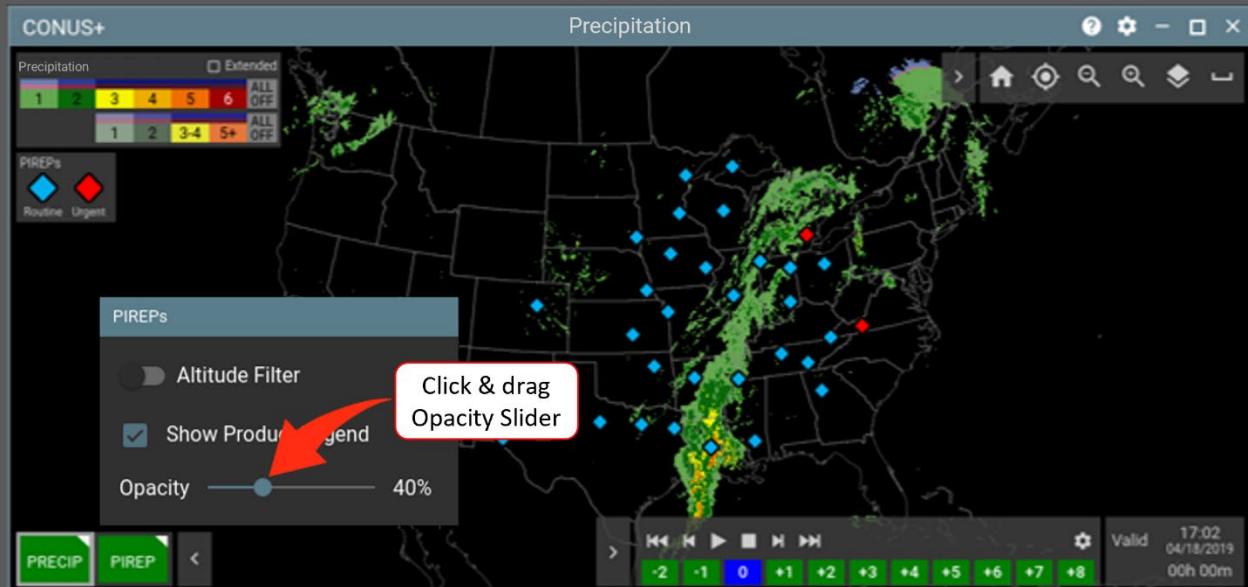


Figure 5-199. PIREP Opacity

5.4.3 Observations and Terminal Area Forecasts (OBS TAFS)

The OBS TAFS product displays weather observations with square color-coded icons that identify the observation location, type, location, and flight category. Observation types include Aviation Routine Weather Reports (METAR), Aviation Selected Special Weather Reports (SPECI), One-minute Observations (OMO), or Maritime Observations (MRTM).

Color-coded icons identify the following flight categories:

- Green icons – Visual Flight Rules (VFR) observation where the ceiling is greater than 3,000' AGL and visibility is greater than 5 statute miles.
- Blue icons – Marginal VFR (MFVR) observation where the ceiling is 1,000' to 3,000' AGL, and/or visibility is 3 to 5 statute miles.
- Dark red icons – Instrument Flight Rules (IFR) observation where the ceiling is 500' to 1,000' AGL, and/or the visibility is 1 to 3 statute miles.
- Magenta icons – Low IFR (LIFR) observation where the ceiling is less than 500' AGL and/or the visibility is less than 1 statute mile.
- Cyan icons – Maritime observations. Maritime observations have no specific weather criteria.

When OBS TAFS is opened, the OBS TAFS Product Status button is added to the Product toolbar, and observations only for airports displayed as overlays are displayed. If no airports are displayed as overlays, observations regardless of flight category are displayed. By default, Maritime Observations are filtered and not displayed.

OBS TAFS uses zoom filtering, therefore as you zoom in, more observations are displayed. As you zoom out, fewer observations are displayed.

In the following example, OBS TAFS is open in conjunction with PRECIP but no airport overlays (e.g., KBWI, KIAH, etc.) are displayed. All observations (except Maritime) are displayed (Figure 5-200. OBS TAFS).

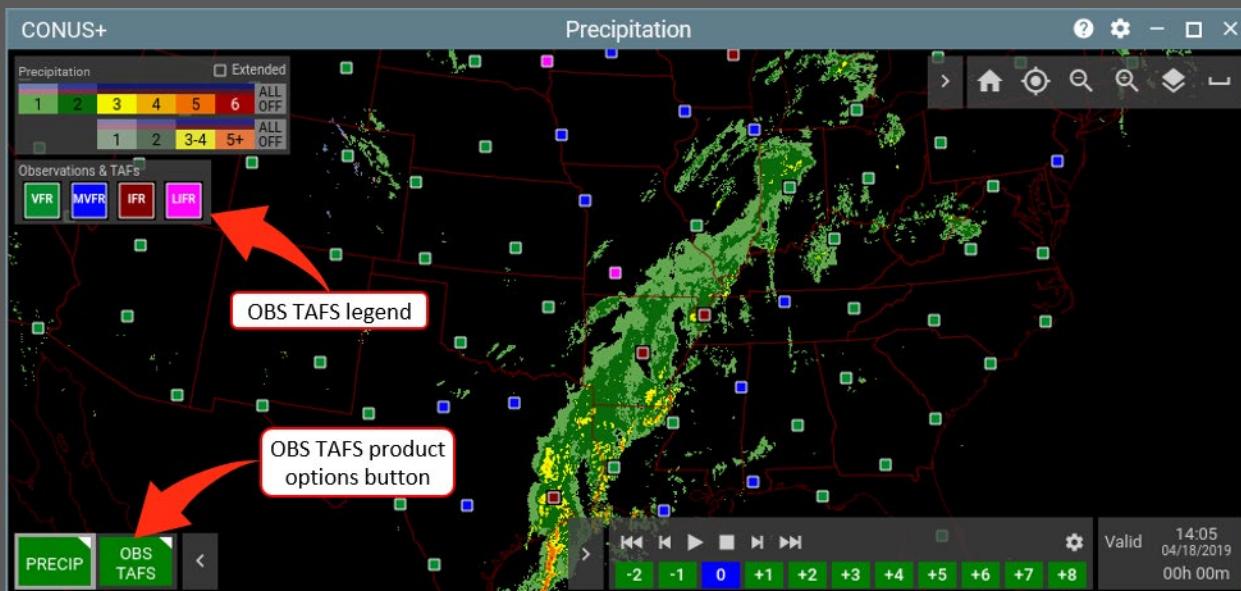


Figure 5-200. OBS TAFS

To open an observation callout box that includes location, type, flight category, and observation text, click the observation's square icon. In the following example, the callout box identifies the observation location as Denver (KDEN), the observation type as a one-minute observation (OMO), and the observation flight category as VFR (Figure 5-201. OBS TAFS Callout Box).

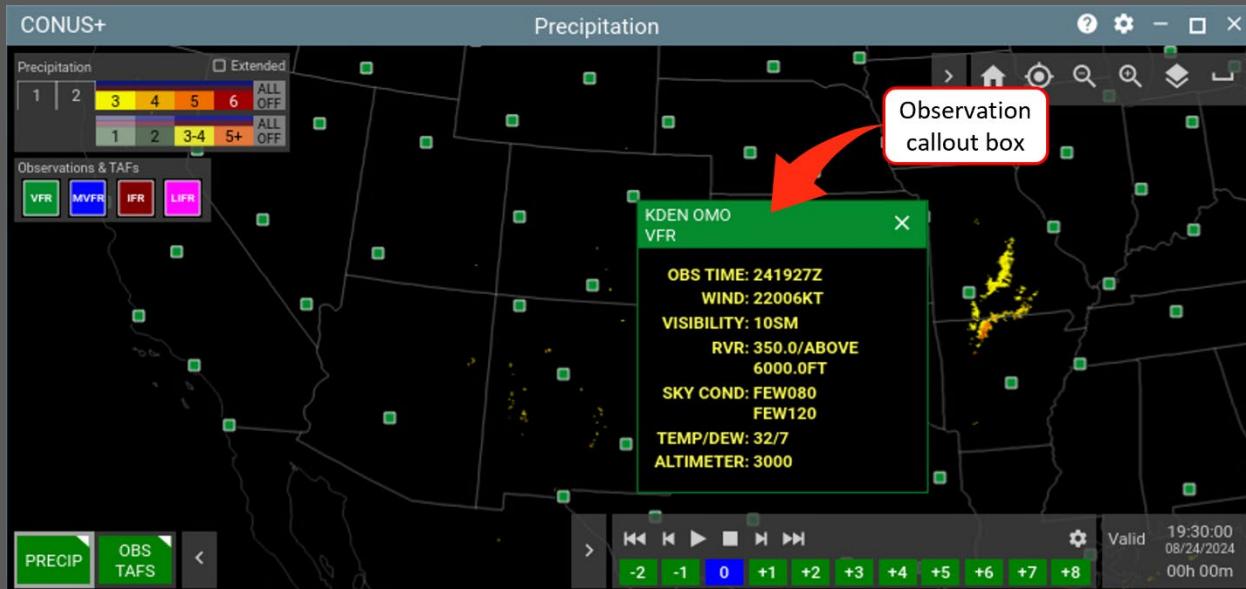
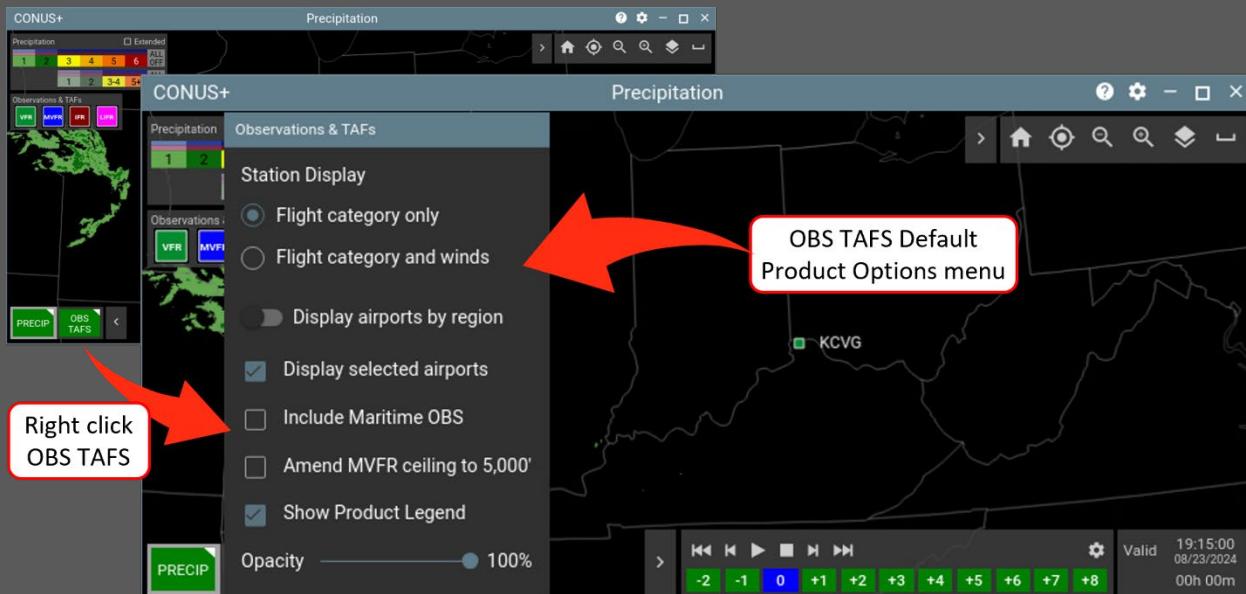


Figure 5-201. OBS TAFS Callout Box

5.4.3.1 OBS TAFS Product Options

From the OBS TAFS Product Options menu, you can display winds with observations, display observations by region, display observations for specific airports, hide/display the OBS TAFS legend, change the MVFR ceiling from 3,000 to 5,000', display/hide Maritime Observations, and adjust opacity.

To open the OBS TAFS Product Options menu, right-click the OBS TAFS Product Status button. In the following example, the OBS TAFS Product Options menu is open with default settings (Figure 5-202. OBS TAFS Product Options Menu).



5.4.3.1.1 OBS TAFS Flight Category Only

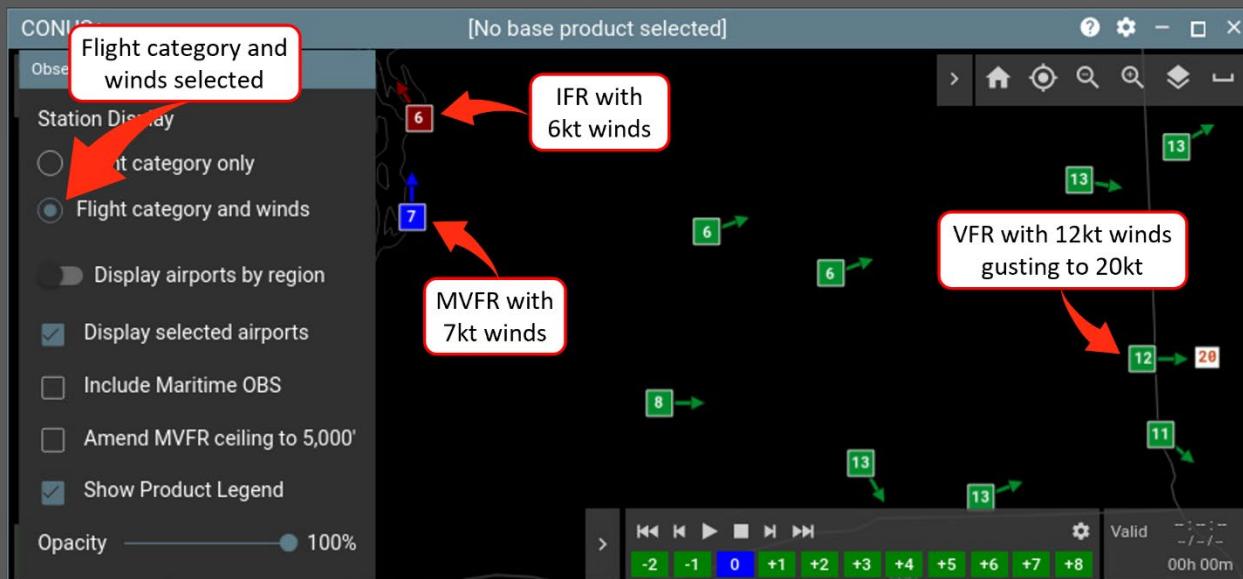
By default, when the OBS TAFS Product Options menu is opened, the **Flight category only** is selected. When Flight category only is selected, observations are displayed without wind information. In the following example, the OBS TAFS Product Options menu is open with default settings and Flight category only selected. (Figure 5-203. OBS TAFS without Winds).



Figure 5-203. OBS TAFS without Winds

5.4.3.1.2 OBS TAFS Flight Category and Winds

To display winds with observations, click the Flight category and winds radio button. When winds are displayed, wind velocity is shown inside the observation icon, wind direction is indicated by the arrow pointing away from the observation icon, and wind gusts (when applicable), are shown in small white box at the end of the wind direction arrow. In the following example, Flight category and winds is selected and winds are displayed with observations in the view (Figure 5-204. OBS TAFS Flight Category and Winds Selected).



5.4.3.1.3 Display OBS TAFS by Region

To display observations by region, right-click the OBS TAFS Product Status button, then click **Display airports by region**. From the pop-up menu, select the region(s) you want to display. Only observations in selected regions are displayed.

In the following example, **Display airports by region** is selected, then the **Northeast** region is selected. Observations for airports in the northeast region are displayed while all others are filtered from the view (Figure 5-205. Display Observations by Region).

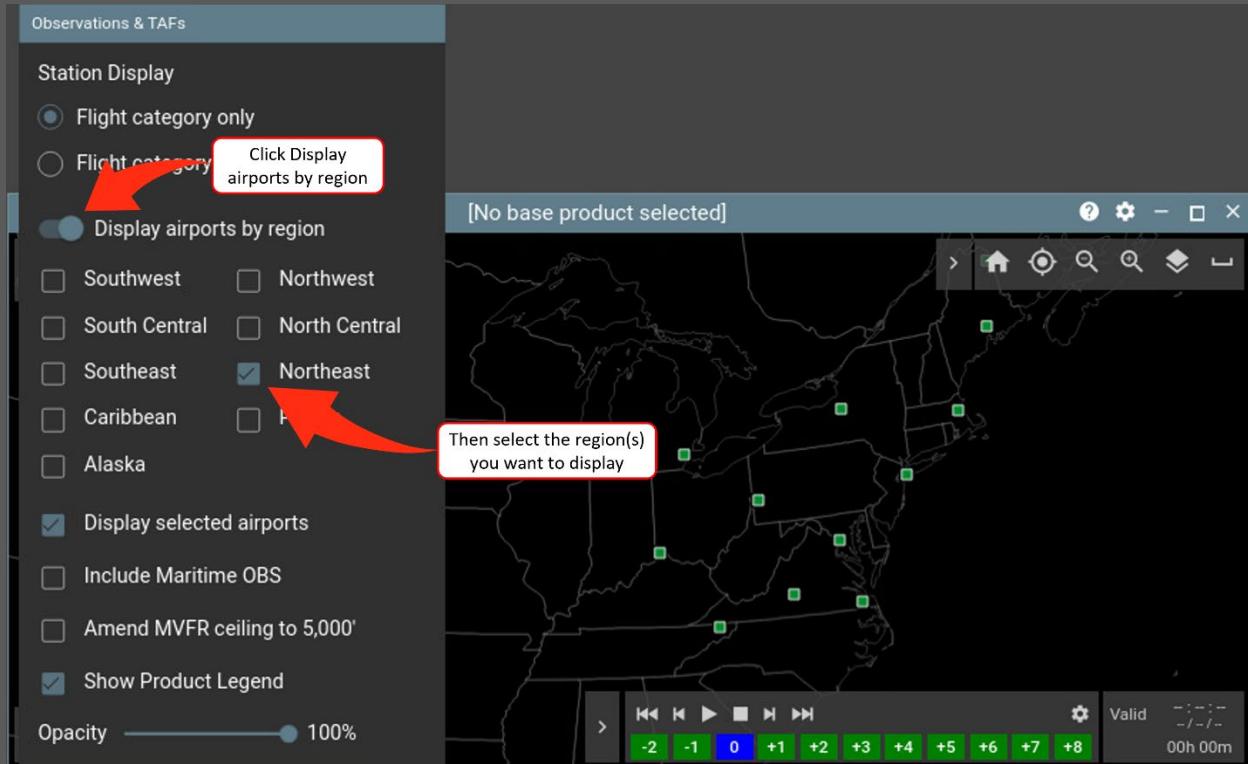


Figure 5-205. Display Observations by Region

5.4.3.1.4 OBS TAFS Display Selected Airports

Display selected airports is selected by default. When **Display selected airports** is selected, only observations for airports displayed in the view as overlays are displayed. For example, if KBWI and KDCA are the only airports displayed in the view, only observations for those two airports are displayed when OBS TAFs is opened.

In the following example, OBS TAFS is opened while KBWI and KDCA are the only two airport overlays displayed in the view. Observation icons for KBWI and KDCA are displayed while all other observations are filtered (Figure 5-206. Observations for Displayed Airports).

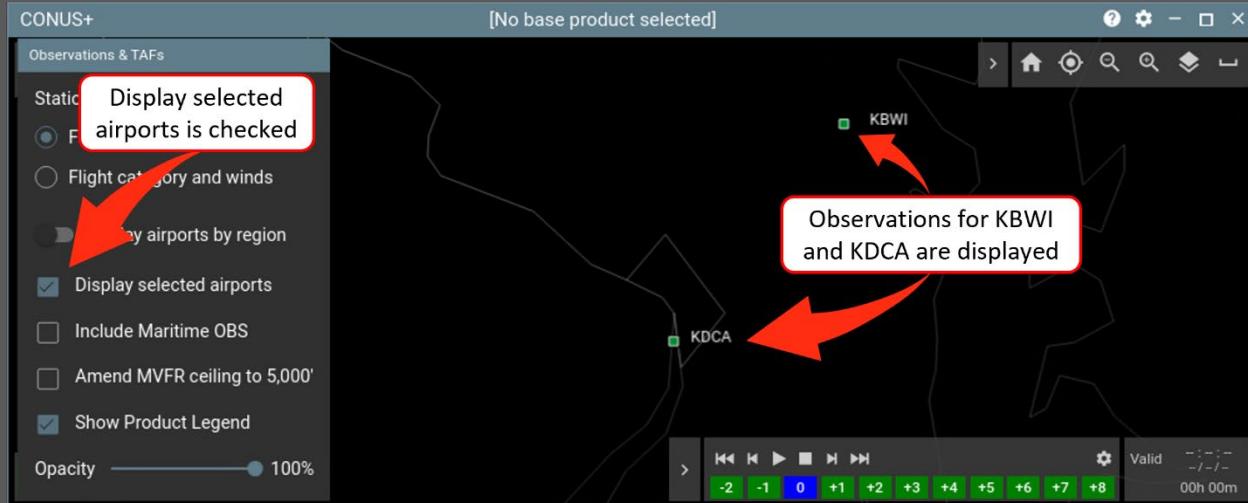


Figure 5-206. Observations for Displayed Airports

5.4.3.1.5 OBS TAFS Display Maritime Observations

When OBS TAFS is opened, Maritime Observations (MRTM) are hidden by default. To view Maritime Observations, right-click the OBS TAFS Product Status button, then click **Include Maritime OBS**. In the following example, **Include Maritime OBS** is selected and all Maritime Observations are displayed (Figure 5-207. Maritime Observations Displayed).

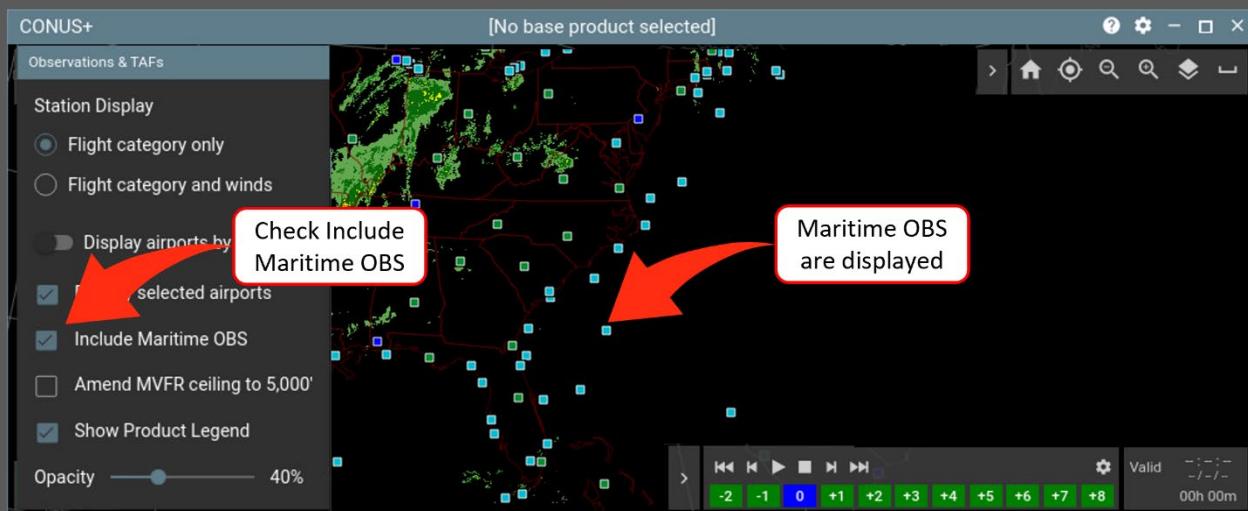


Figure 5-207. Maritime Observations Displayed

5.4.3.1.6 Amend OBS TAFS MVFR Ceiling to 5000'

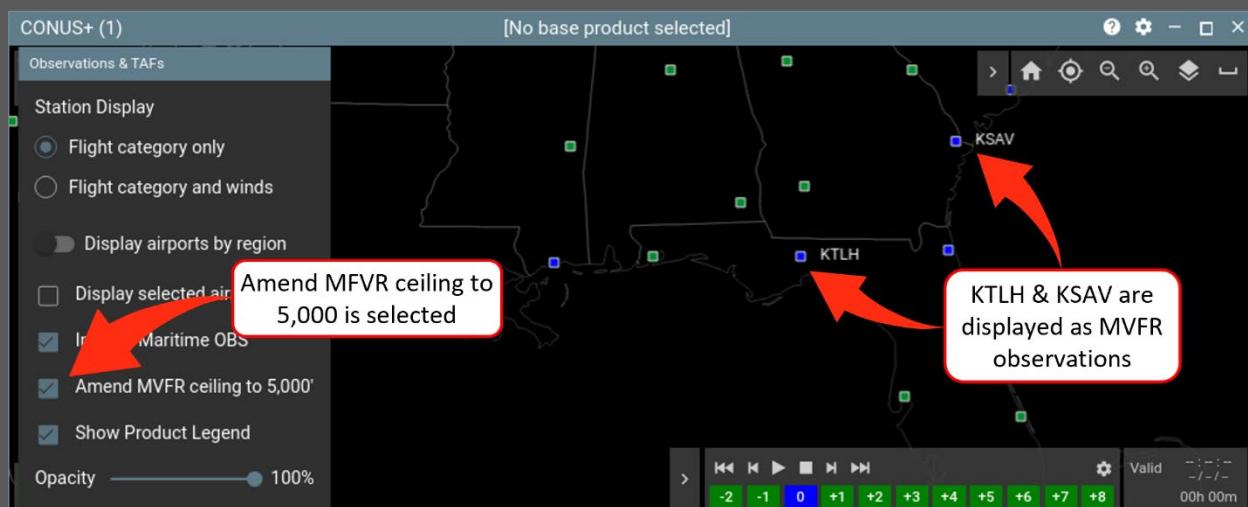
To identify airports with weather that exceeds MFVR criteria but ceilings are less than 5,000', check **Amend the MVFR ceiling to 5000'**. When Amend MVFR ceiling to 5,000' is checked, observation icons for airports with ceilings below 5,000' are depicted in blue instead of green.

In the following example, the Amend MFVR ceiling to 5,000' is not selected. Observation icons for KTLH and KSAV are green and indicate that observations for both airports fall in the VFR flight category. However, in this example, ceilings for KTLH and KSAV are BKN040 and BKN043 respectively, so PIREPs for those two airports must be solicited. In the following example, ATC should solicit PIREPs for KTLH and KSAV, but with Amend MFVR ceiling to 5,000' not selected, the OBS TAFS product provides no notification that PIREPs should be solicited for KTLH and KSAV (Figure 5-208. OBS TAFS MFVR Ceiling 3,000').



Figure 5-208. OBS TAFS MFVR Ceiling 3,000'

For the OBS TAFS product to provide visual notification that PIREPs should be solicited for airports with ceilings less than 5,000', check Amend MVFR ceiling to 5,000'. When Amend MVFR ceiling to 5,000' is selected, observations for airports that meet or exceed VFR criteria but with ceilings less than 5,000' are displayed in blue. In the following example, Amend MFVR ceiling to 5,000' is selected. Icons for KTLH and KSAV are blue indicating that PIREPs for those airports should be solicited (Figure 5-209. OBS TAFS MVFR Ceiling 5,000').



5.4.3.1.7 OBS TAFS Show Product Legend

When OBS TAFS is opened, the OBS TAFS legend is displayed by default. To hide the legend, open the OBS TAFS Product Options menu and uncheck Show Product Legend. Uncheck/check Show Product Legend to hide/display the legend (Figure 5-210., Hide/Display OBS TAFS Legend).



Figure 5-210., Hide/Display OBS TAFS Legend

In the following example, OBS TAFS is open and the OBS TAFS legend is hidden (Figure 5-211. OBS TAFS Legend Hidden).



Figure 5-211. OBS TAFS Legend Hidden

In the following example, the Show Product Legend was checked (the default setting), and the legend is displayed in the view (Figure 5-212. OBS TAFS Legend Displayed).

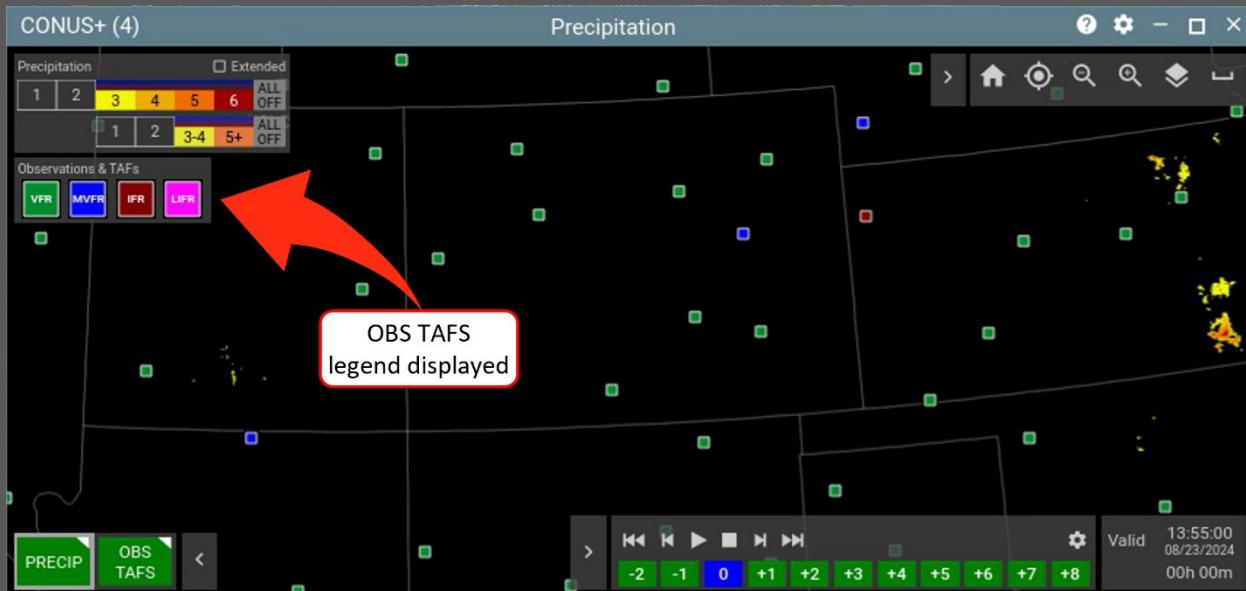


Figure 5-212. OBS TAFS Legend Displayed

5.4.3.1.8 OBS TAFS Opacity

Opacity controls observation icon opacity, not callout box opacity. To adjust observation icon opacity, right-click the OBS TAFS Product Status button, then click and drag the Opacity slider to the preferred level (Figure 5-213. OBS TAFS Opacity).

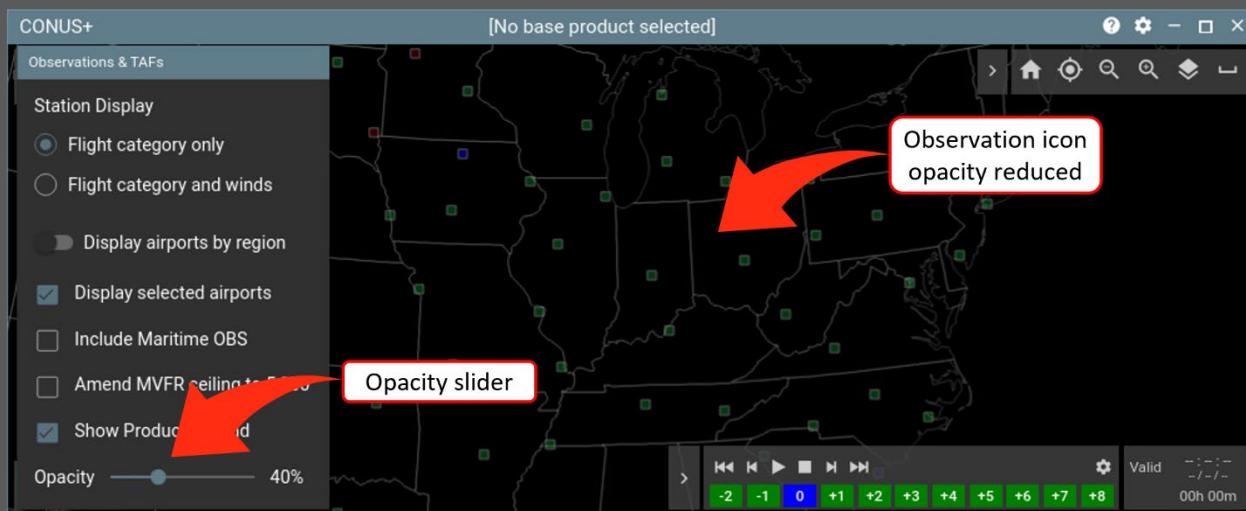


Figure 5-213. OBS TAFS Opacity

To close the OBS TAFS Product Options menu, click **outside** the menu and **inside** the active view.

5.4.4 Echo Tops Tags & Storm Cell Information (ET-TAGS SCI)

ET-TAGS SCI is available in both Long Range and TRACON View but is only available when used in conjunction with PRECIP or ECHO TOPS. When ET-TAGS SCI is added to the view, the ET-TAGS SCI Product Status button is added to the Product Toolbar and echo tops tags (boxes that display echo tops in three-digit altitudes) are added to the view (Figure 5-214. ET-TAGS SCI with PRECIP).

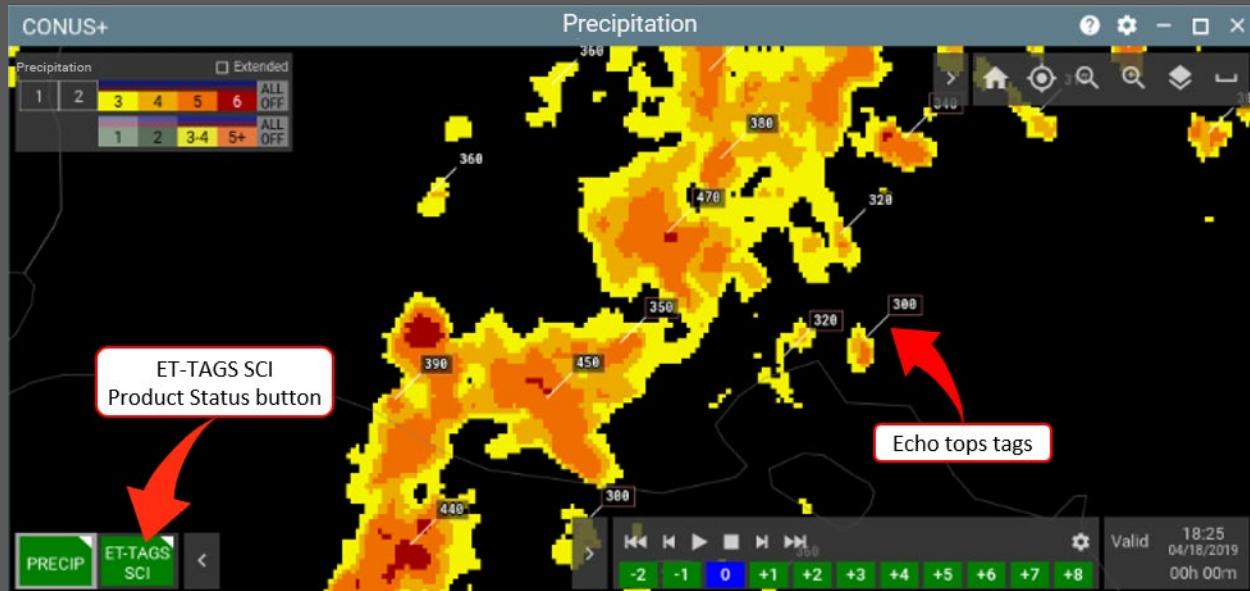


Figure 5-214. ET-TAGS SCI with PRECIP

Storm Cell Information (SCI) is additional information for storm cells (e.g., storm circulation, hail, and lightning) but SCI is not available for all cells. Echo tops tags for storm cells with SCI are outlined in coral borders while echo tops tags for cells with no SCI have no border (Figure 5-215. ET-TAGS).

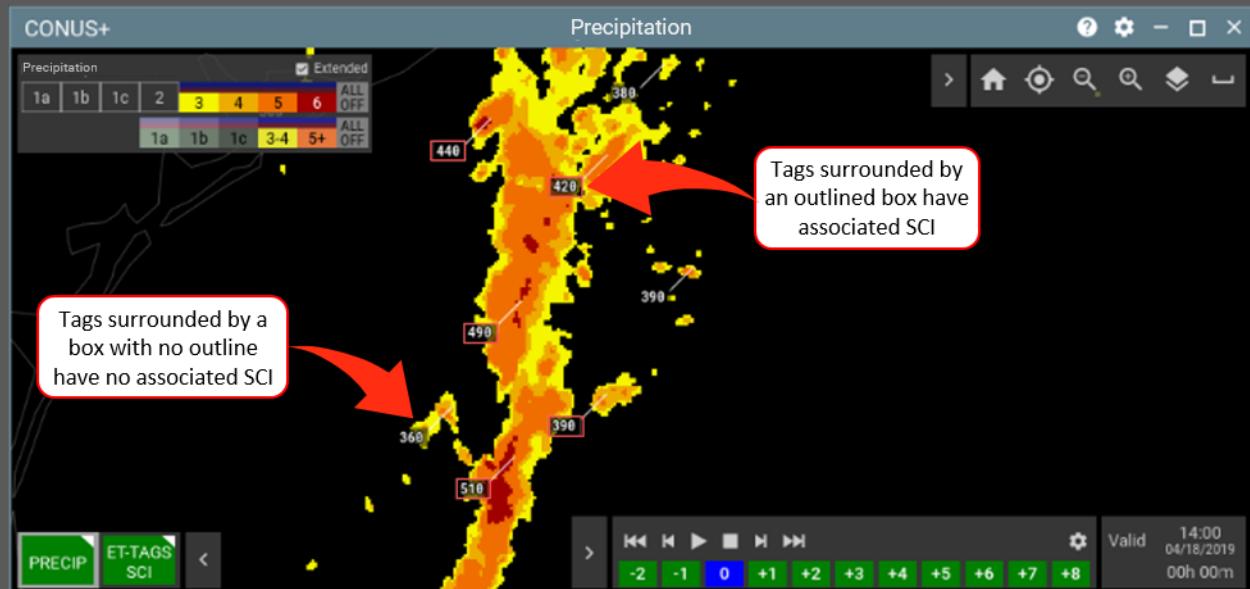


Figure 5-215. ET-TAGS

5.4.4.1 ET-TAGS SCI Product Options

From the ET-TAGS SCI Product Options menu, you can filter ET-TAGS SCI by altitude, change leader line orientation, hide echo tops tags while leaving the ET-TAGS SCI product on, display all available SCI at the same time, and adjust opacity. To open the ET-TAGS SCI Product Options menu, right-click the **ET-TAGS SCI Product Status button** (Figure 5-216. ET-TAGS SCI Product Options Menu).

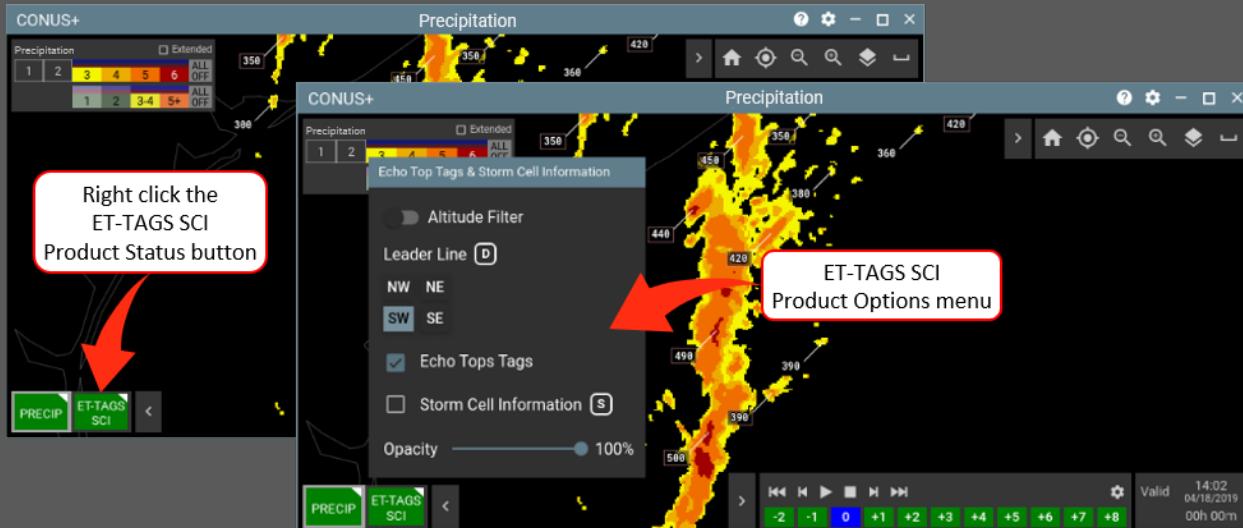


Figure 5-216. ET-TAGS SCI Product Options Menu

5.4.4.1.1 Filter ET-TAGS SCI by Altitude

To filter ET-TAGS SCI by altitude, open the ET-TAGS SCI Product Options menu, then click Altitude Filter. When the Altitude Filter is on, the Altitude Filter menu expands to show available altitude filtering options (Figure 5-217. ET-TAGS SCI Altitude Filter Menu).

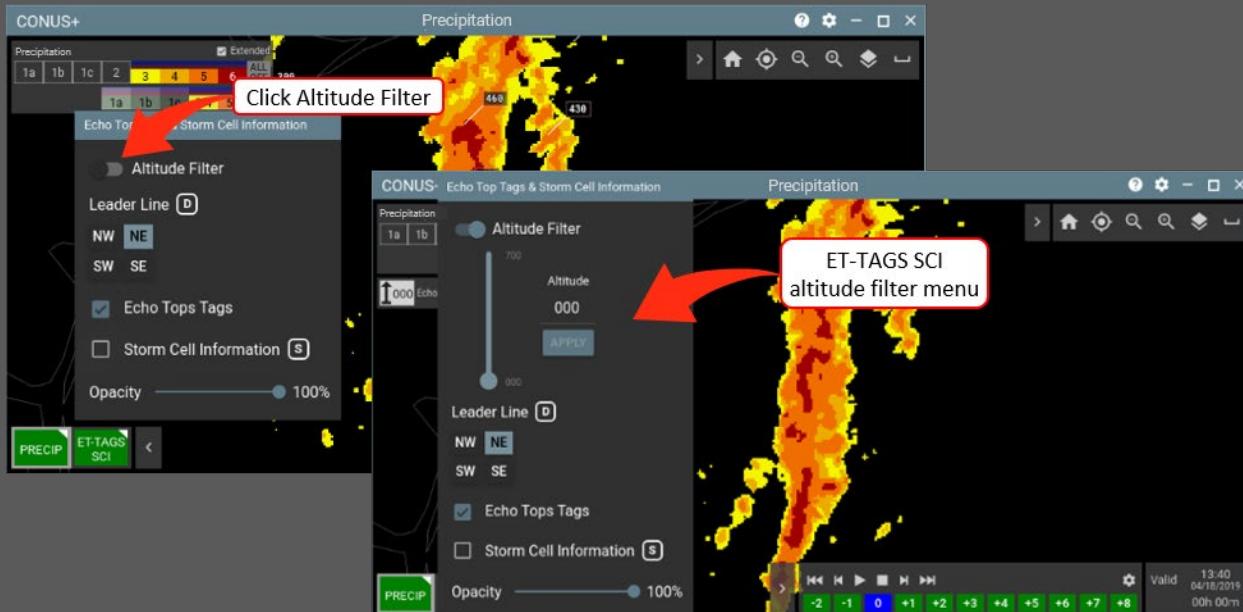


Figure 5-217. ET-TAGS SCI Altitude Filter Menu

Note: The Altitude Filter does not work while Storm Cell Information is selected (checked)

By default, the ET-TAGS SCI altitude layer is set from the surface to 700. The altitude layer ceiling cannot be adjusted, but you can adjust the layer floor. To adjust the altitude layer floor, click and drag the **altitude slider** to the preferred altitude then click **APPLY** (Figure 5-218. Adjust ET-TAGS Altitude Filter Floor).

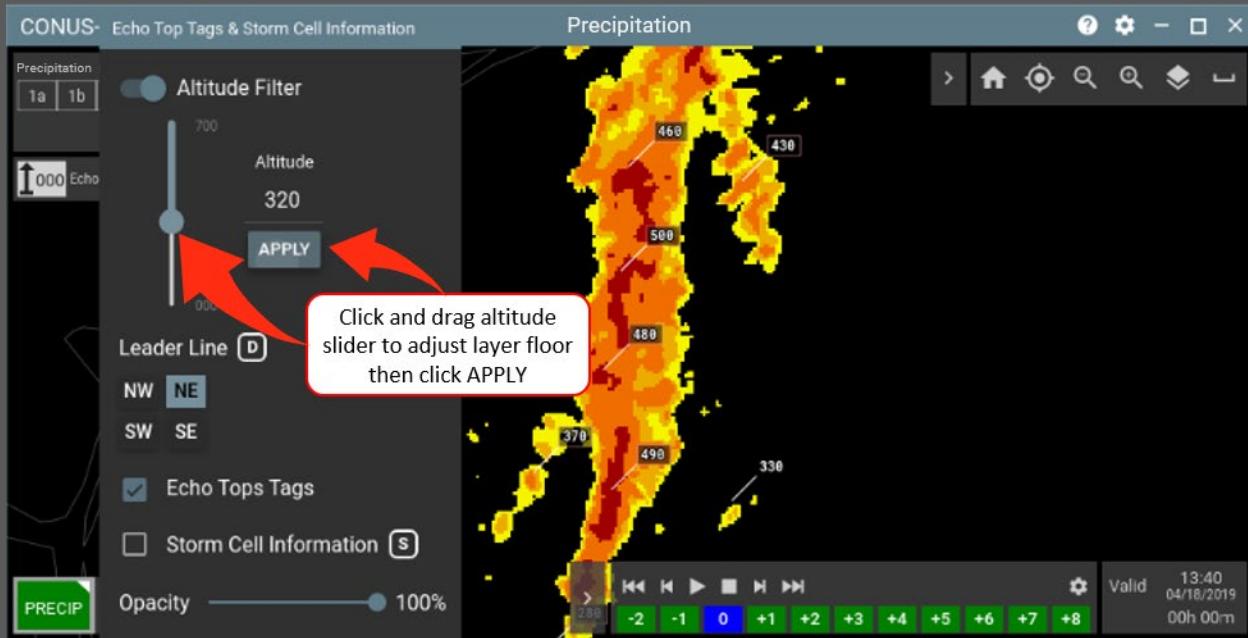


Figure 5-218. Adjust ET-TAGS Altitude Filter Floor

After you click **APPLY**, the altitude filter becomes active and is displayed in the ET-TAGS SCI legend. Echo tops tags outside the filter are no longer displayed (Figure 5-219. ET TAGS Filter Active).

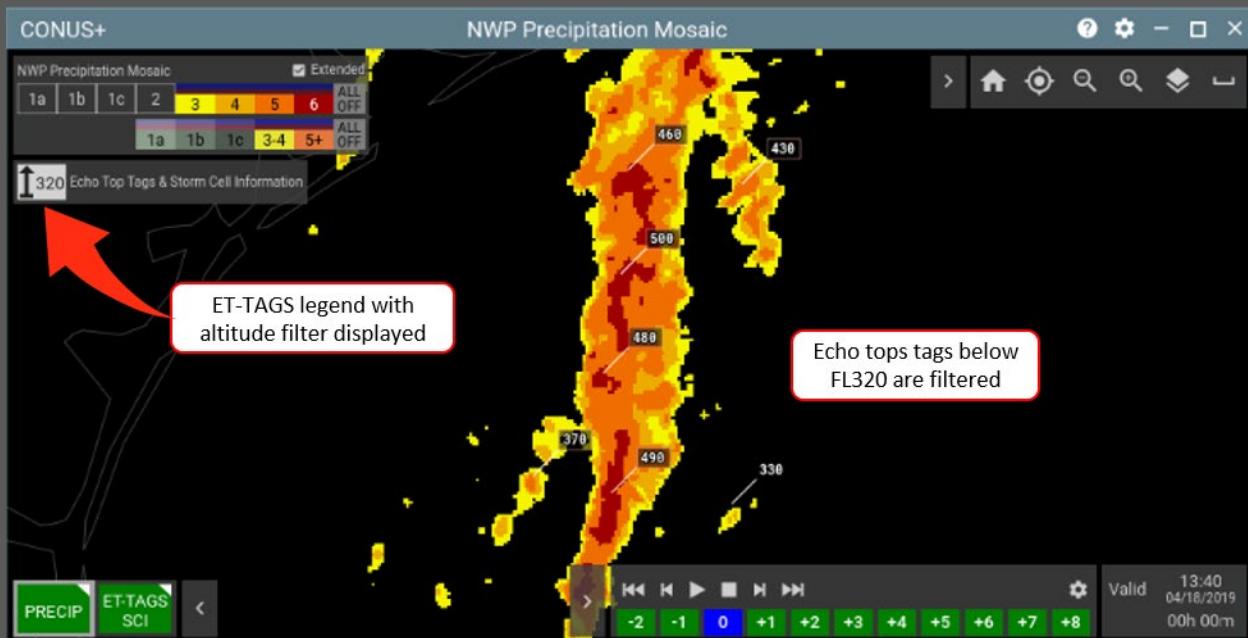


Figure 5-219. ET TAGS Filter Active

5.4.4.1.2 ET-TAGS SCI Leader Line Direction

Use the “D” hotkey (not case sensitive) on your keyboard to orient leader lines clockwise through the four cardinal positions (NE, SE, SW, NW). To change leader line orientation from the Product Options menu, click the preferred orientation (Figure 5-220. Change ET-TAGS SCI Leader Line Direction).

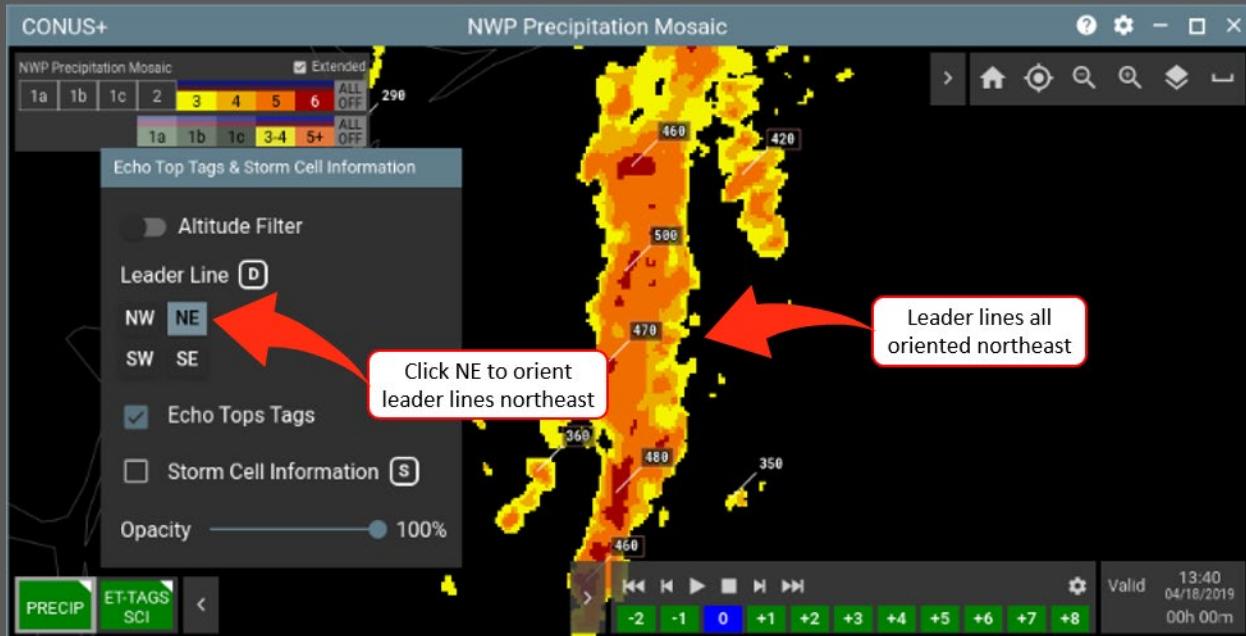
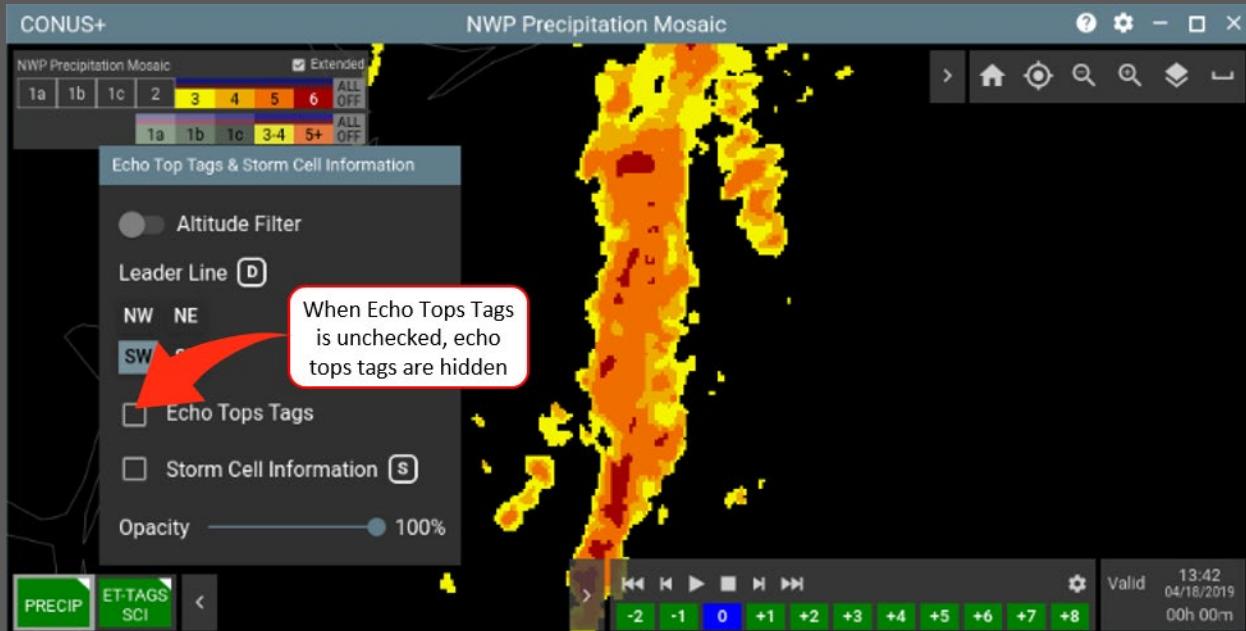


Figure 5-220. Change ET-TAGS SCI Leader Line Direction

5.4.4.1.3 Hide Echo Tops Tags

When ET-TAGS SCI is selected, echo tops tags are on by default, but you can hide echo tops tags while leaving the ET-TAGS SCI product on. To hide echo tops tags but leave the ET-TAGS SCI product on, uncheck Echo Tops Tags (Figure 5-221. Echo Tops Tags Hidden).



5.4.4.1.4 Interrogate Individual Cells for SCI

When the ET-TAGS SCI product is on, but echo tops tags are hidden (the Echo Tops Tags box in the Product Options menu is unchecked), you can still interrogate certain individual storm cells for SCI.

To interrogate an individual storm cell for SCI, click the center of the cell. If no SCI is available for that cell, only the cell's echo tops are displayed in a tag connected to that cell by a white leader line. If SCI for that cell is available, all pertinent SCI (e.g., echo tops, storm circulation, lightning), is displayed in a data block connected to the cell by a white leader line pointing to the center of the selected cell.

In the following example, ET-TAGS SCI is on, but the Echo Tops Tags option if off. The user clicked a storm cell in northern Georgia to interrogate it for SCI. Since SCI for that cell is available, the data block for the cell displays 400, LTNG, and CIRC, indicating that the cell's tops are FL400, lightning is detected in the cell, and that storm circulation is also detected (Figure 5-222. Interrogate Individual Storm Cells for SCI).

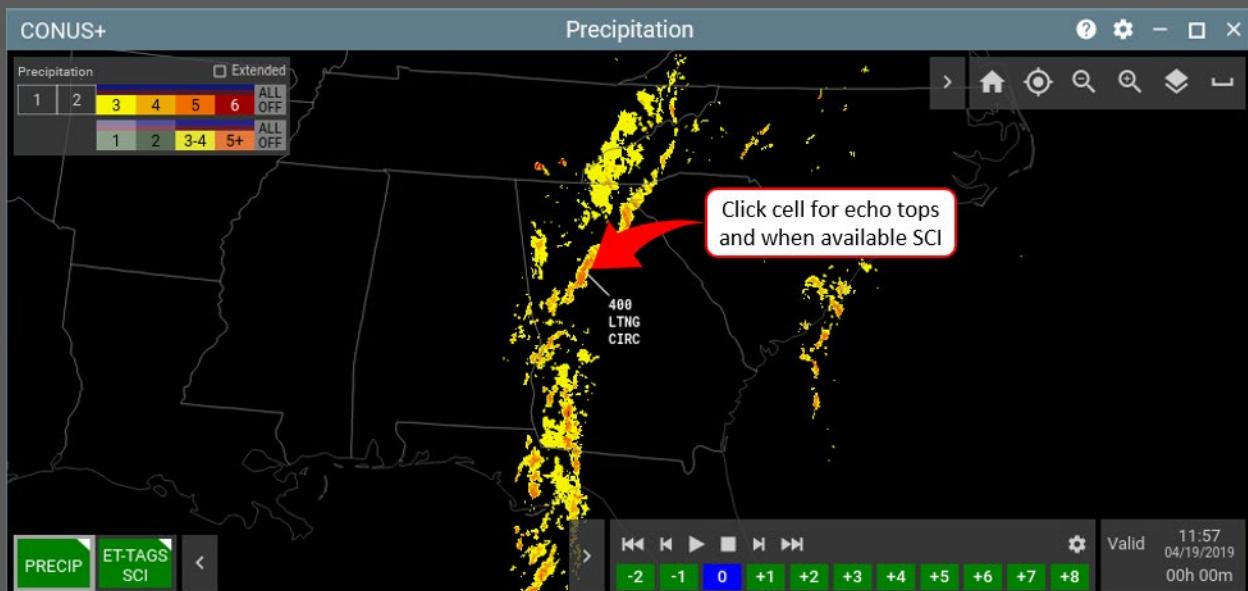


Figure 5-222. Interrogate Individual Storm Cells for SCI

5.4.4.1.5 Global SCI

With the **S** hotkey, you can display SCI for all cells that have SCI (global SCI). To use global SCI, make sure ET-TAG SCI is on, then press **S** (not case sensitive) on the keyboard. SCI for all cells with SCI is displayed. The **S** hotkey is a toggle that turns global SCI on/off when pressed. As an alternate method, check/uncheck **Storm Cell Information** in the ET-TAGS SCI Product Options menu (Figure 5-223. All Available SCI Displayed).

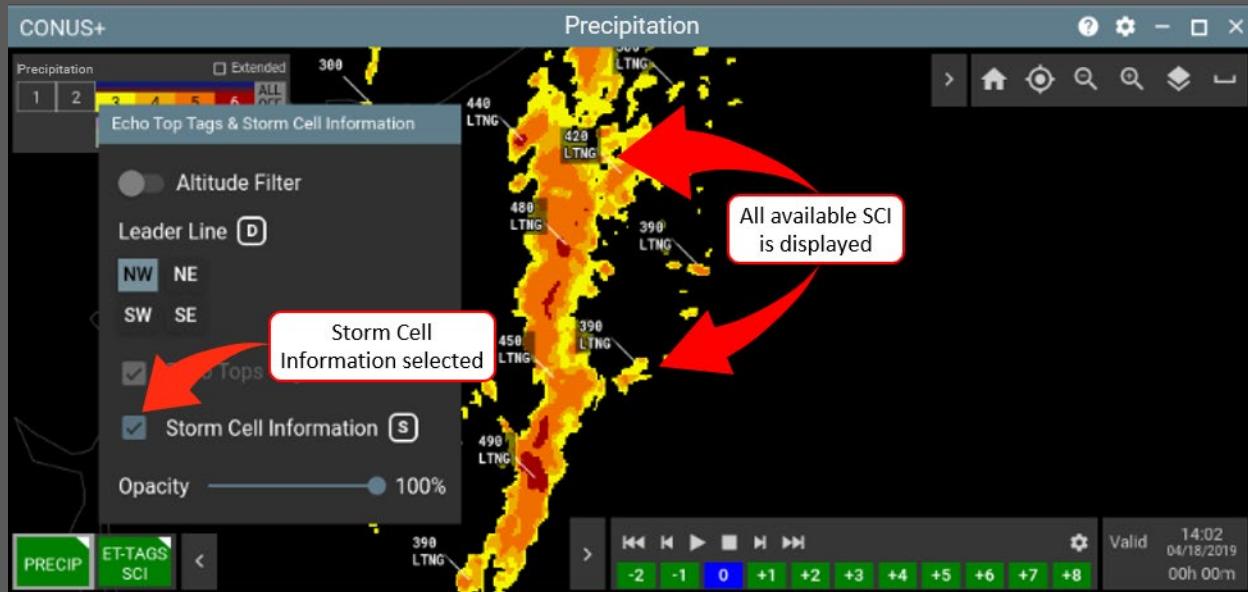
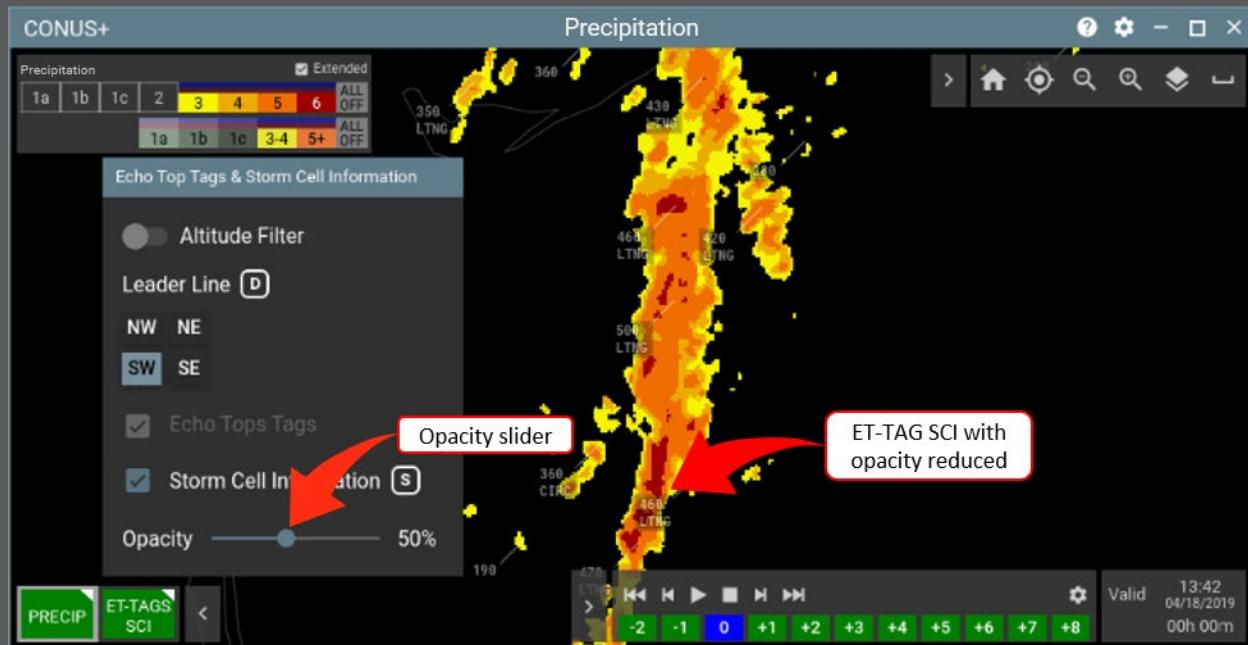


Figure 5-223. All Available SCI Displayed

5.4.4.1.6 ET-TAGS SCI Opacity

To adjust ET-TAGS SCI opacity, right-click the ET-TAGS SCI Product Status button, then from the Product Options menu, click and drag the **Opacity** slider to the preferred level (Figure 5-224. ET-TAGS SCI Opacity).



5.4.5 Lightning Detection (LTNG)

The LTNG product uses white plus (+) symbols to depict areas where lightning has been detected within the last six minutes. LTNG is available in Long Range and TRACON View and can be used independently or in conjunction with other products.

When LTNG is opened, the LTNG Product Status button is added to the Product Toolbar and plus symbols for detected lightning are added to the view (Figure 5-225. LTNG with PRECIP).

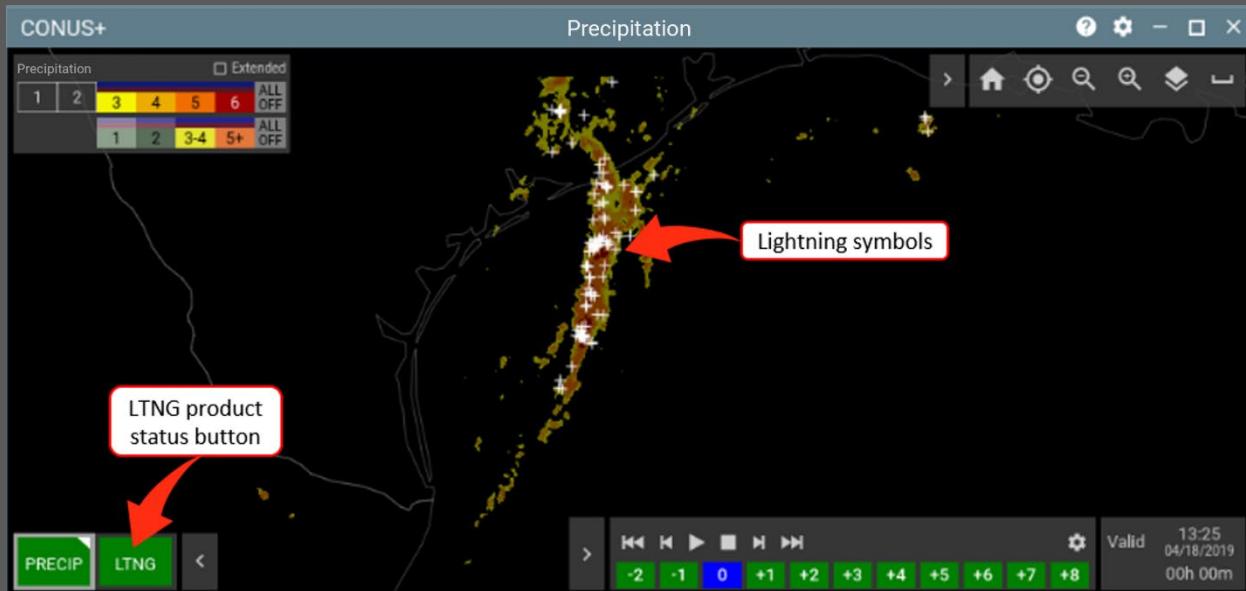


Figure 5-225. LTNG with PRECIP

5.4.5.1 LTNG Opacity

At higher opacity, lightning symbols are brighter and more prominent; at lower opacity, the symbols are dimmer and less prominent. To adjust LTNG opacity, right-click the LTNG Product Status button, then in the Product Options menu, click and drag the **Opacity slider** to the preferred level (Figure 5-226. LTNG Opacity).

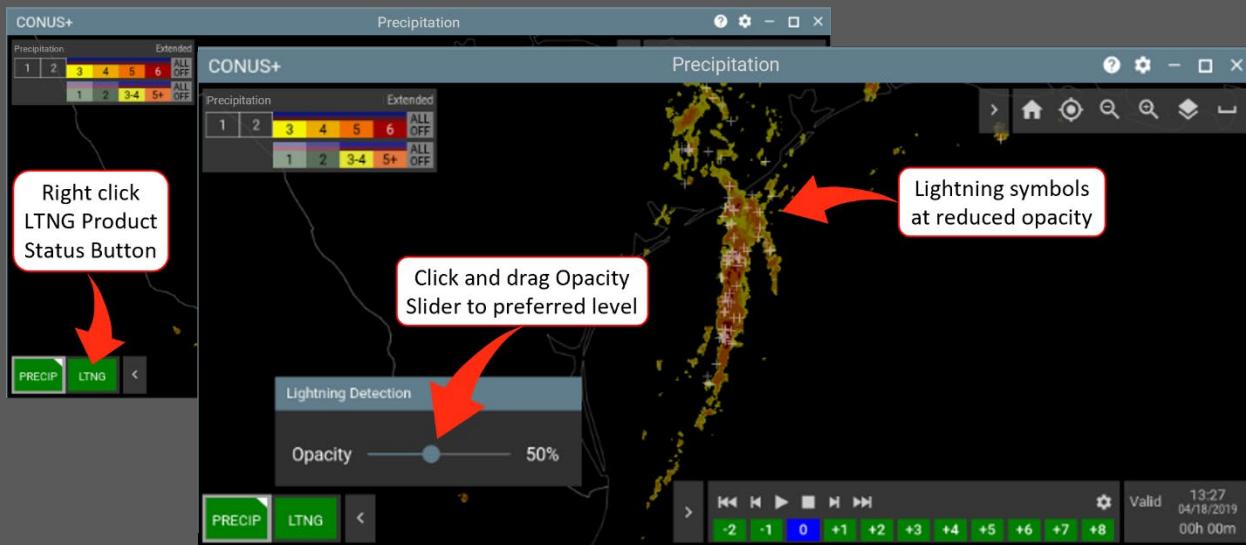


Figure 5-226. LTNG Opacity

5.4.6 Tornadic Signature (TOR)

The TOR product uses circled black triangles to depict areas where radar detects conditions favorable for tornados (not necessarily a tornado). TOR is available in Long Range and TRACON View and can be used independently or in conjunction with other products.

When TOR is opened, the TOR Product Status button is added to the Product Toolbar and tornado symbols (when tornadic signatures are detected) are added to the view (Figure 5-227. TOR with PRECIP).

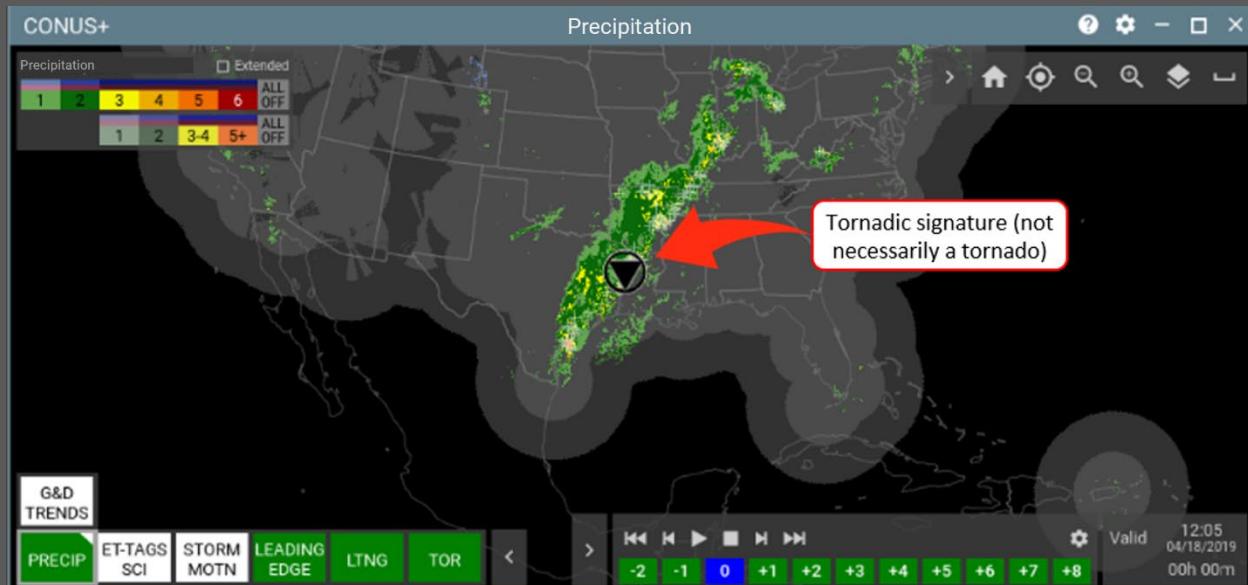


Figure 5-227. TOR with PRECIP

5.4.6.1 TOR Product Options

The only option available in the TOR Product Options menu is the opacity adjustment. To adjust TOR opacity, right-click the TOR Product Status button, then from the TOR Product Options menu, [click and drag the Opacity Slider to the preferred level](#) (Figure 5-228. TOR Opacity).



Figure 5-228. TOR Opacity

5.4.7 Storm Motion Vectors (STORM MOTN)

STORM MOTN identifies the direction and speed of individual storm cells Level 3 and higher with blue arrows outlined in black. The arrows represent storm cell direction while the numbers at the tip of the arrows represent cell speed across the ground in knots.

STORM MOTN is available in Long Range and TRACON View but can only be used in conjunction with a Primary Product. When STORM MOTN is opened, the STORM MOTN Product Status button is added to the Product Toolbar and vector arrows (when applicable) are added to the view (Figure 5-229. STORM MOTN with PRECIP).

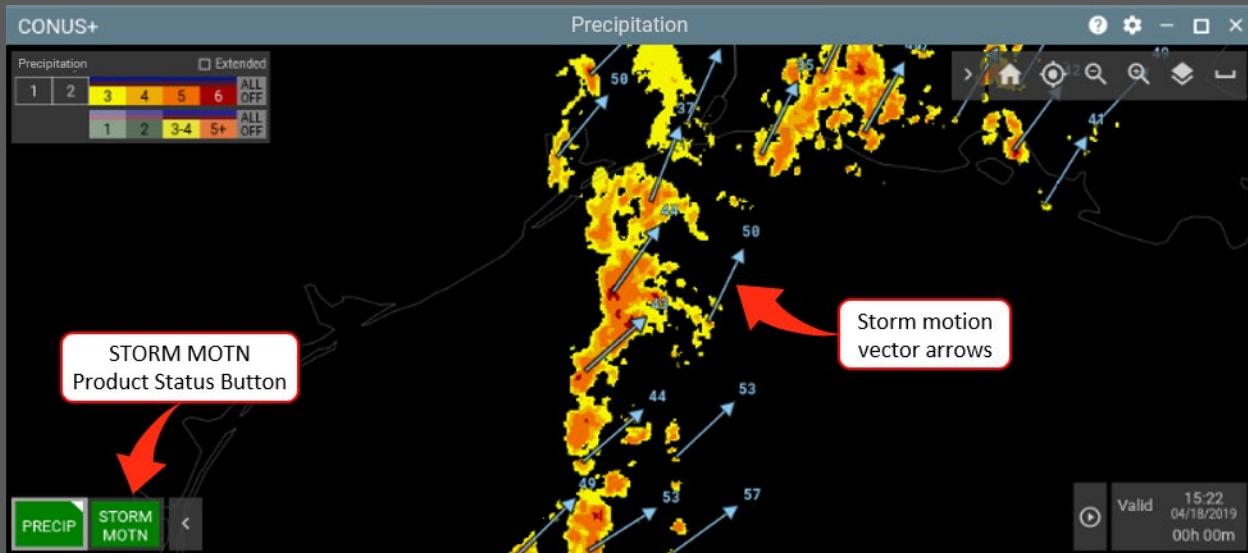
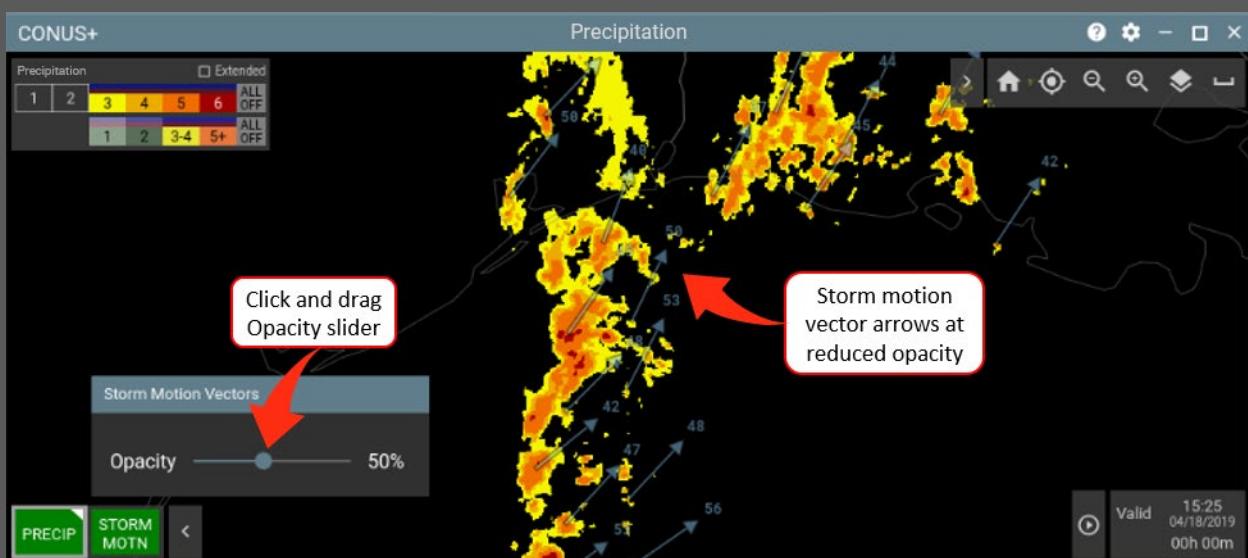


Figure 5-229. STORM MOTN with PRECIP

5.4.7.1 STORM MOTN Opacity

At higher opacity, arrows and numbers are brighter and more prominent; at lower opacity, arrows and numbers are less prominent. To adjust opacity, right-click the STORM MOTN Product Status button, then from the Product Options menu, **click and drag the opacity slider to the preferred level** (Figure 5-230. STORM MOTN Opacity),



5.4.8 Storm Leading Edge & Projections (LEADING EDGE)

LEADING EDGE depicts the leading edges of Level 3 and higher storm cells with solid cyan lines, and projections of where storm leading edges are forecast to be in 10, 20, and 30 minutes with dashed cyan lines. LEADING EDGE is available in Long Range and TRACON View, but is only available in conjunction with PRECIP, COMP REFL, or BASE REFL.

When LEADING EDGE is opened, the LEADING EDGE Product Status button is added to the Product Toolbar. Solid contours for Level 3 and higher precipitation and dashed contours for leading edge projections are also added to the view (Figure 5-231. LEADING EDGE).

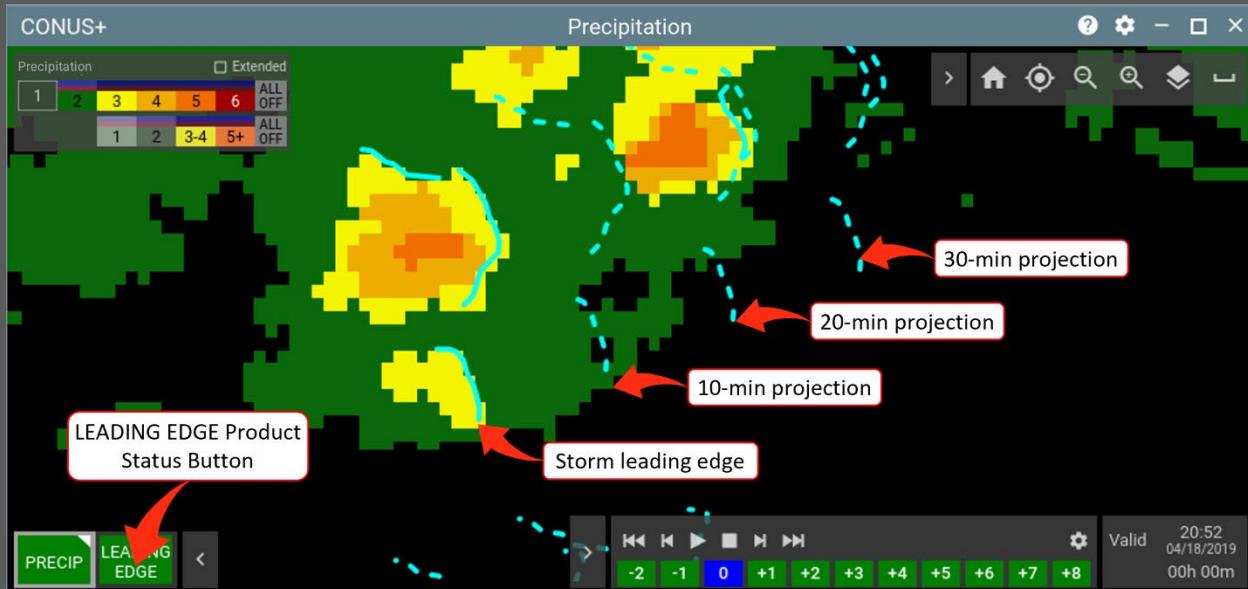


Figure 5-231. LEADING EDGE

5.4.8.1 LEADING EDGE Opacity

At higher opacity, contours are brighter and more prominent; at lower opacity, contours are dimmer and less prominent. To adjust opacity, right-click the LEADING EDGE Product Status button, then from the Product Options menu, click and drag the Opacity slider to the preferred level (Figure 5-232. LEADING EDGE Opacity).

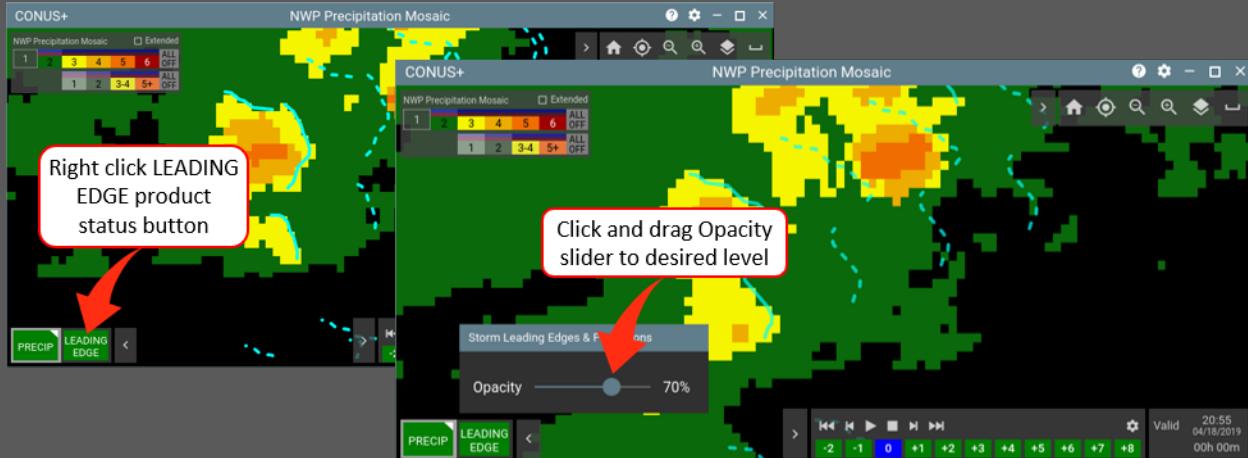


Figure 5-232. LEADING EDGE Opacity

5.4.9 Storm Growth & Decay Trends (G&D TRENDS)

G&D TRENDS depicts areas where storm growth and storm decay have been detected within the previous fifteen minutes and is available in both Long Range and TRACON View. Areas of storm growth are depicted with translucent magenta crosshatched polygons, while areas of storm decay are depicted with translucent blue crosshatched polygons.

When G&D TRENDS is opened, the G&D TRENDS Product Status button, G&D Trends Legend, and crosshatched polygons (where applicable) are added to the view (Figure 5-233. G&D TRENDS).

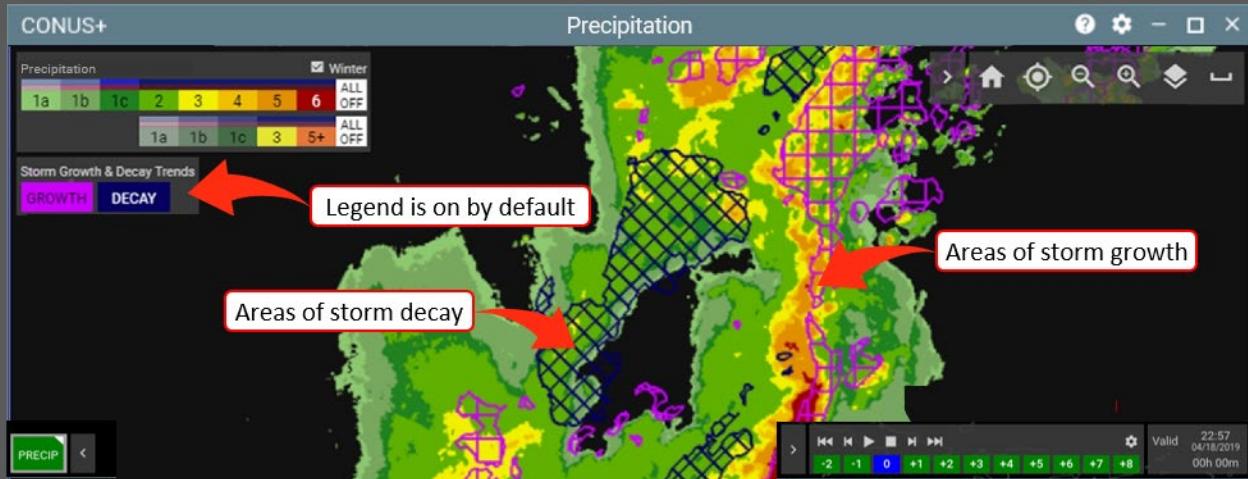


Figure 5-233. G&D TRENDS

5.4.9.1 G&D TRENDS Product Options

From the G&D TRENDS Product Options menu, you can hide/display the G&D TRENDS Legend and adjust G&D TRENDS opacity. To open the G&D TRENDS Product Options menu, right-click the G&D TRENDS Product Status button (Figure 5-234. G&D TRENDS Product Options Menu).

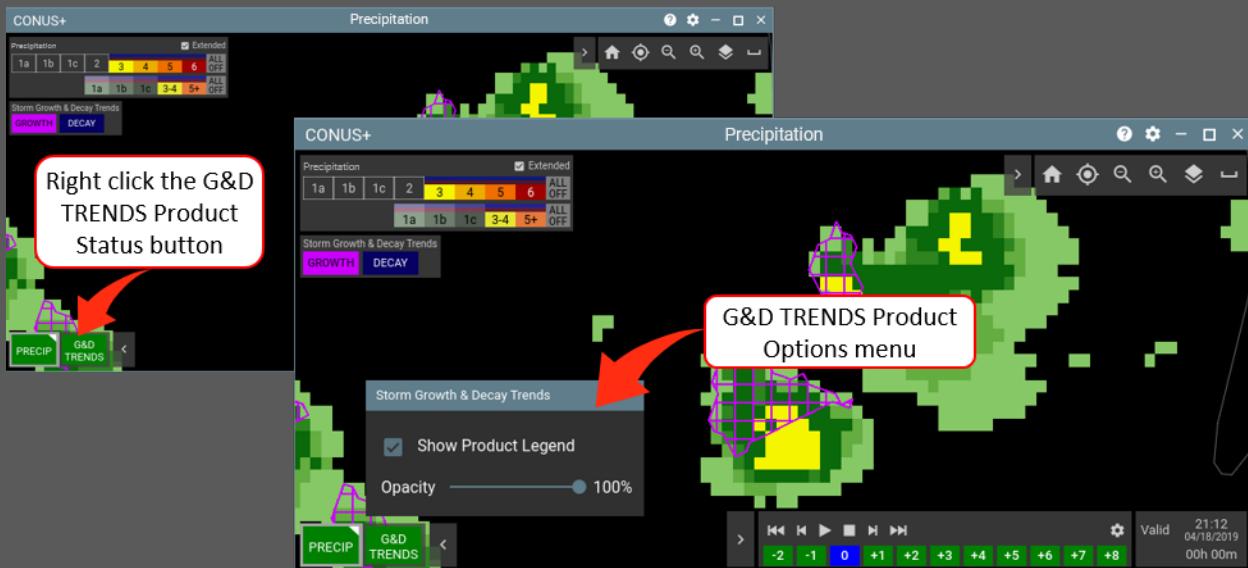


Figure 5-234. G&D TRENDS Product Options Menu

5.4.9.1.1 Hide/Show G&D TRENDS Legend

The G&D TRENDS Legend is on by default. The Show Product Legend checkbox works as a toggle; uncheck/check the checkbox to hide/show the G&D TRENDS Legend.

In the following example, the Show Product Legend box is unchecked and the G&D TRENDS Legend is hidden (Figure 5-235. Hide G&D TRENDS Legend).

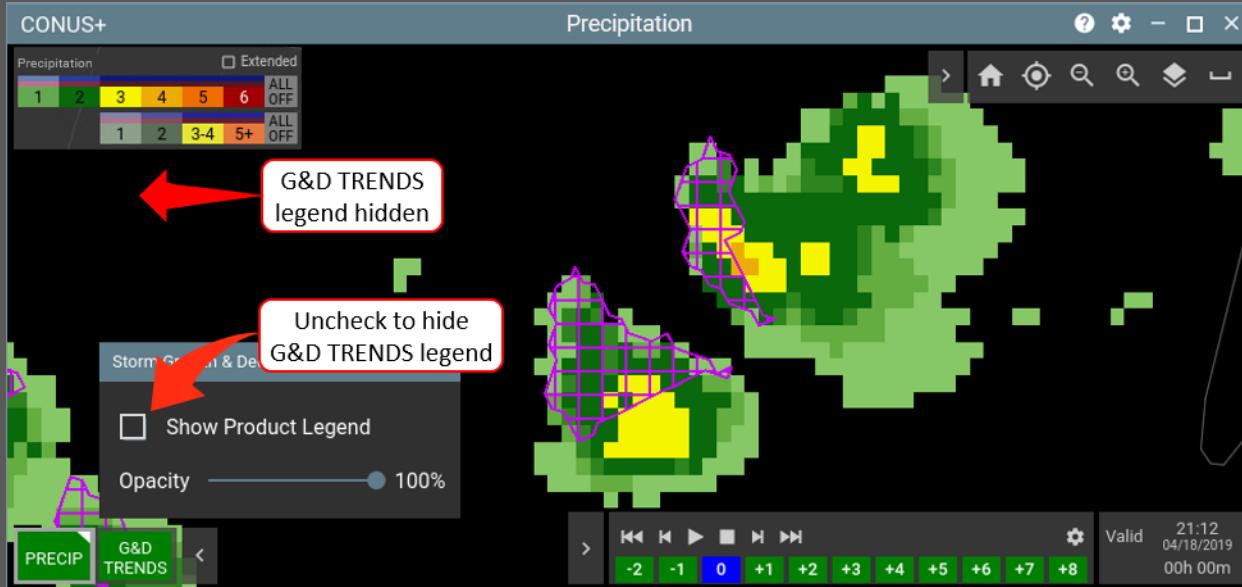


Figure 5-235. Hide G&D TRENDS Legend

5.4.9.1.2 G&D TRENDS Opacity

Higher opacity makes G&D TRENDS patterns brighter and more prominent; lower opacity makes the patterns dimmer and less prominent. To adjust G&D TRENDS opacity, right-click the G&D TRENDS Product Status button, then from the Product Options menu, click and drag the Opacity Slider to the preferred level (Figure 5-236. G&D TRENDS Opacity).

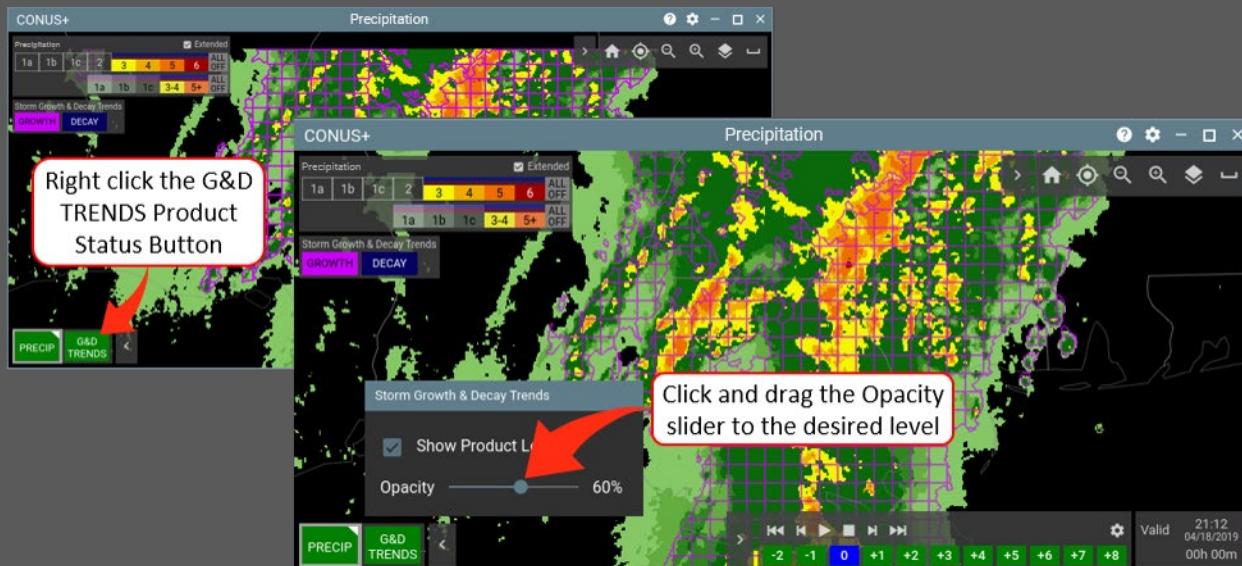


Figure 5-236. G&D TRENDS Opacity

6 TOOLS & FUNCTIONS

In addition to its large suite of aviation-specific weather products, the AWD provides numerous tools and functions that augment AWD products and help users be more efficient. AWD tools and functions include but are not limited to the following:

- Loop Toolbar
- Valid Time Box
- Pref-sets
- Hotkeys

6.1 Loop Toolbar

In both Long Range and TRACON View, the Loop Toolbar resides in the lower right corner of the view. By default, the Loop Toolbar in Long Range View is hidden until the first weather product is added to the view. In TRACON View, the Loop Toolbar is open by default.

Other than Jump buttons (colored/numbered buttons) that represent time intervals, the Loop Toolbar in Long Range View and TRACON View look and work the same way.

The Loop Toolbar in Long Range Graphics View and TRACON Graphics View are shown in Figure 6-1. Loop Toolbar in Long Range View and Figure 6-2. Loop Toolbar in TRACON View below.



Figure 6-1. Loop Toolbar in Long Range View

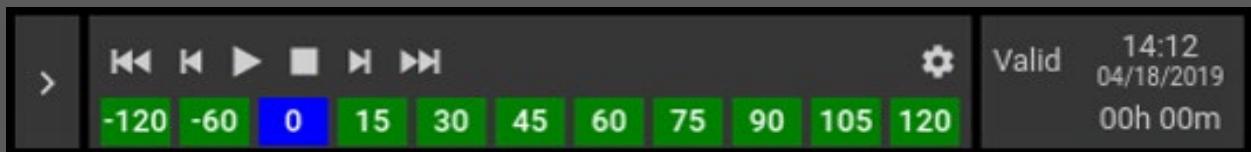


Figure 6-2. Loop Toolbar in TRACON View

With the Loop Toolbar, you can view past, current, and forecast weather as a static image or in a loop (animated movie). In Long Range View, loops can display up to ten hours of weather (from 2 hours in the past out to an 8-hour forecast). In TRACON View, loops can display up to four hours of weather (from 120 minutes in the past out to a 120-minute forecast).

You cannot add weather products, change filters, change product options, pan, or zoom the view while looping. You must first STOP (not pause) looping before any actions can be performed in the view. For example, if you are displaying PRECIP while looping and decide to view ECHO TOPS or change the PRECIP filter, you must first stop looping, then make your desired changes.

6.1.1 Jump Buttons

In Long Range View, jump buttons represent 1-hour time intervals. In TRACON View, jump buttons represent 1-hour time intervals for past weather, and 15-minute time intervals for the 0 to 2-hour forecast.

Jump buttons numbers represent time periods while jump button colors represent status. Jump button numbers never change, but jump button colors do change depending on status and are color-coded as follows:

Blue – The blue jump button identifies the time period (rounded up to the nearest hour) of the weather currently displayed in the view. There is never more than one blue jump button because only one time period can be displayed at a time in a view. For example, if the +2 jump button is blue, the 2-hour forecast is currently displayed in the view. If the -2 jump button is blue, weather from two hours ago is currently displayed in the view. During an animated loop, the blue button moves from left to right as the AWD automatically progresses (loops) through weather images.

Green – Green jump buttons represent time periods that will be included in the animated loop. In the following example, all time periods will be included in the loop (Figure 6-3. Default Long Range Loop Toolbar).

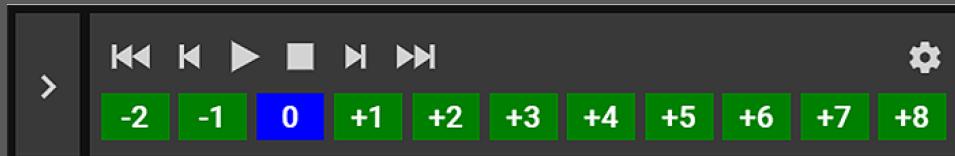


Figure 6-3. Default Long Range Loop Toolbar

Yellow - Yellow jump buttons represent time periods that have been manually filtered from the loop. Manually filtered time periods are not included in the loop but can be selected manually by clicking the button. In the following example, the user filtered weather from two hours in the past (-2) and the 6, 7, and 8-hour forecasts (+6, +7, +8). When started, the loop will begin at -1 and continue to +5 before starting over again at -1 (Figure 6-4. Loop Toolbar with Filtered Time Periods).

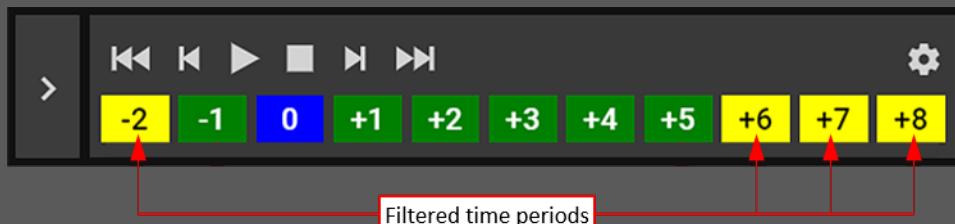


Figure 6-4. Loop Toolbar with Filtered Time Periods

Gray – Gray jump buttons represent time periods not available due to data loss. Grayed out time periods are not included in the loop and cannot be selected manually (Figure 6-5. Loop Toolbar with Unavailable Time Periods).

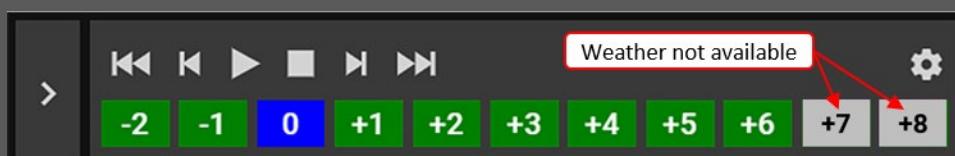


Figure 6-5. Loop Toolbar with Unavailable Time Periods

6.1.2 Loop Toolbar Functions

The following image shows the Loop Toolbar with each Loop Toolbar icon labeled (Figure 6-6. Loop Toolbar Functions).

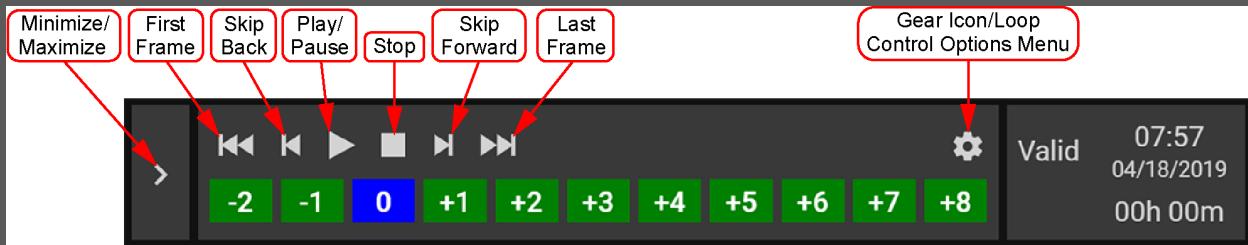


Figure 6-6. Loop Toolbar Functions

Loop Toolbar functions explained:

- Minimize – Click the right-pointing caret at the far left of the Loop Toolbar to minimize the toolbar. When the Loop Toolbar is minimized, it is replaced with a circled play button.
- Maximize – This command may be counter-intuitive, but to maximize a minimized Loop Toolbar, click the circled play button that resides at the bottom right corner of the view.
- First Frame – Click to stop looping and skip back to the first available time period in the loop.
- Skip Back – Click to stop looping and skip back one timeframe.
- Play/Pause – Play/Pause is a toggle. Click the Play icon to start looping; the loop will start and the Play button will become a Pause button. Click Pause to stop looping; the loop will stop and the Pause button will become a Play button.
- Stop – Click to stop the loop and return to 0 (Time Zero). If looping, the loop must be stopped before any other actions can be taken in the view.
- Skip forward – Click to stop looping and skip forward to the next available time period.
- Last Frame – Click to stop looping and skip to the last available time period.
- Gear Icon – Click to open the Loop Control menu to access numerous loop options (e.g., loop length, time intervals, loop speed, etc.). The loop must be stopped before clicking the Gear icon will work.

6.1.2.1 Minimize/Maximize Loop Toolbar

Click the right-pointing caret to minimize the Loop Toolbar (Figure 6-7. Minimize Loop Toolbar).

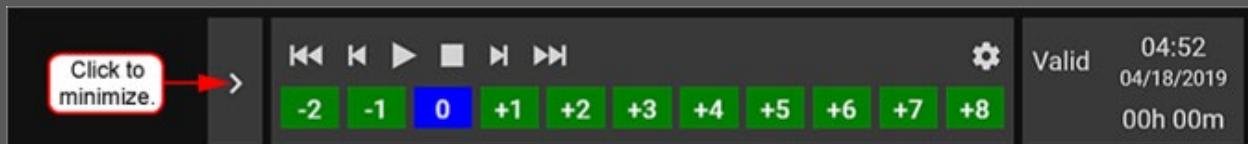


Figure 6-7. Minimize Loop Toolbar

Click the Play button to maximize a minimized Loop Toolbar (Figure 6-8. Maximize Loop Toolbar).



Figure 6-8. Maximize Loop Toolbar

6.1.3 Loop Control Menu

From the Loop Control menu, you can adjust loop intervals, dwell times, loop speed, loop start time, and loop end time.

To open the Loop Control menu, first click either the pause or stop button to stop the looping. When the loop is paused or stopped, click the Loop Toolbar's Gear icon. The Gear icon will not respond unless the loop is paused or stopped (Figure 6-9. Open Loop Control Menu).

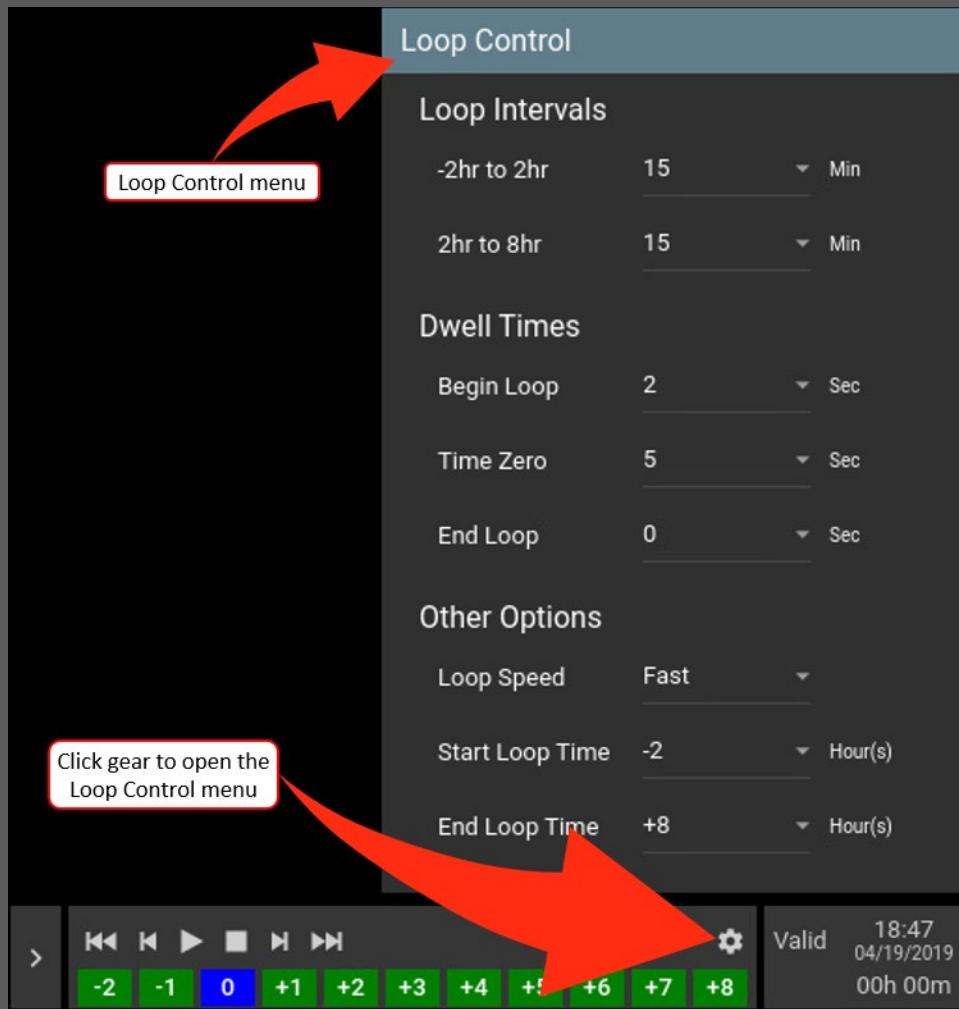


Figure 6-9. Open Loop Control Menu

6.1.3.1 Loop Intervals

Loop Intervals are time periods between weather images when looping.

In Long Range View, loop intervals for two hours in the past to the 2-hour forecast (-2 to +2) can be set to 5, 10, 15, 30, and 60 minutes. Time intervals for the 2-hour through 8-hour forecast (+2 to +8) can be set to 15, 30, and 60 minutes.

In TRACON View, all loop intervals (-120 to 120) can be set to 5, 10, 15, 30, or 60 minutes.

To adjust loop intervals, make sure the loop is paused or stopped, then click the Gear icon to open the Loop Control menu. Under Loop Intervals, click the caret for the timeframe (-2hr to 2hr or 2hr to 8hr) you want to adjust. From the dropdown menu select the preferred loop interval (Figure 6-10. Select Loop Intervals).

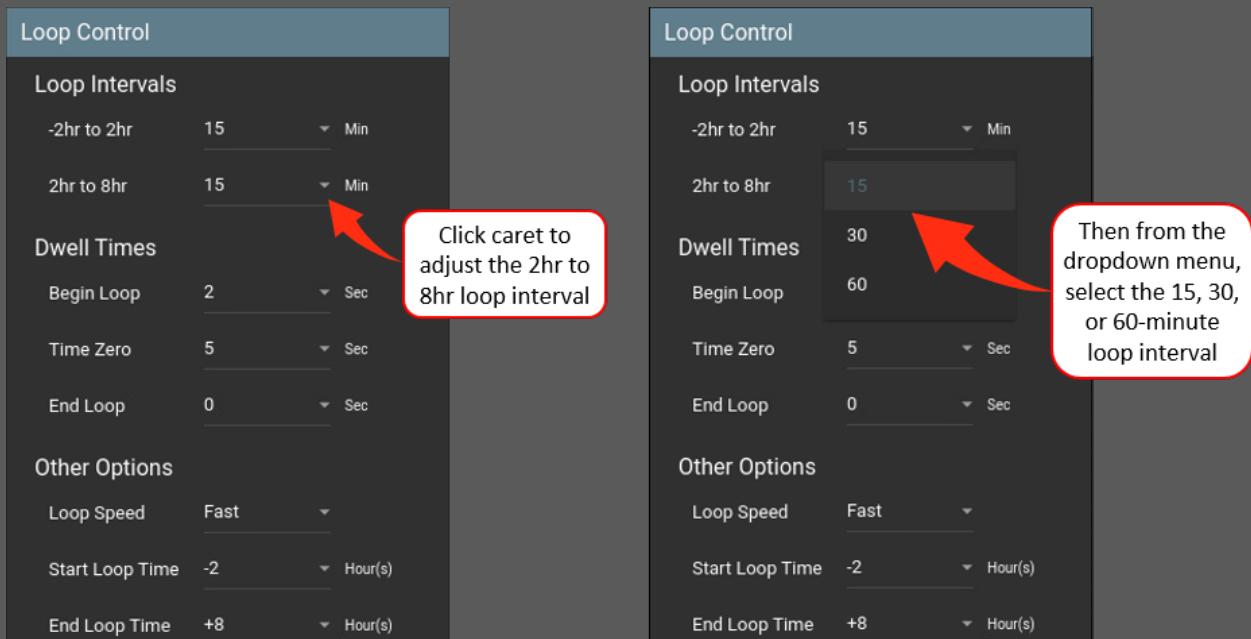


Figure 6-10. Select Loop Intervals

6.1.3.2 Dwell Times

Dwell Times apply only when looping and control the number of seconds the loop pauses before resuming (dwelling) at the beginning of the loop, Time Zero, and end of the loop. You can adjust Begin Loop, Time Zero, and End Loop dwell times individually to 1, 2, or 5 seconds.

To adjust dwell times, pause or stop the loop, then click the Gear icon on the Loop Toolbar. From the Loop Control menu, click the caret for the specific dwell time you want to adjust, then from the dropdown menu, select the preferred dwell time (Figure 6-11. Set Loop Dwell Times).

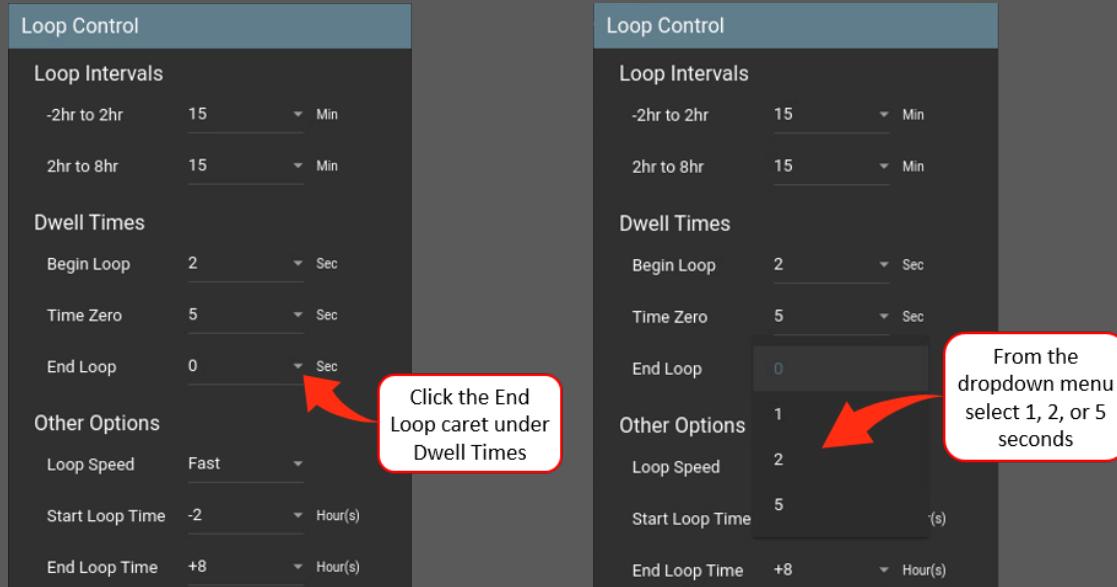
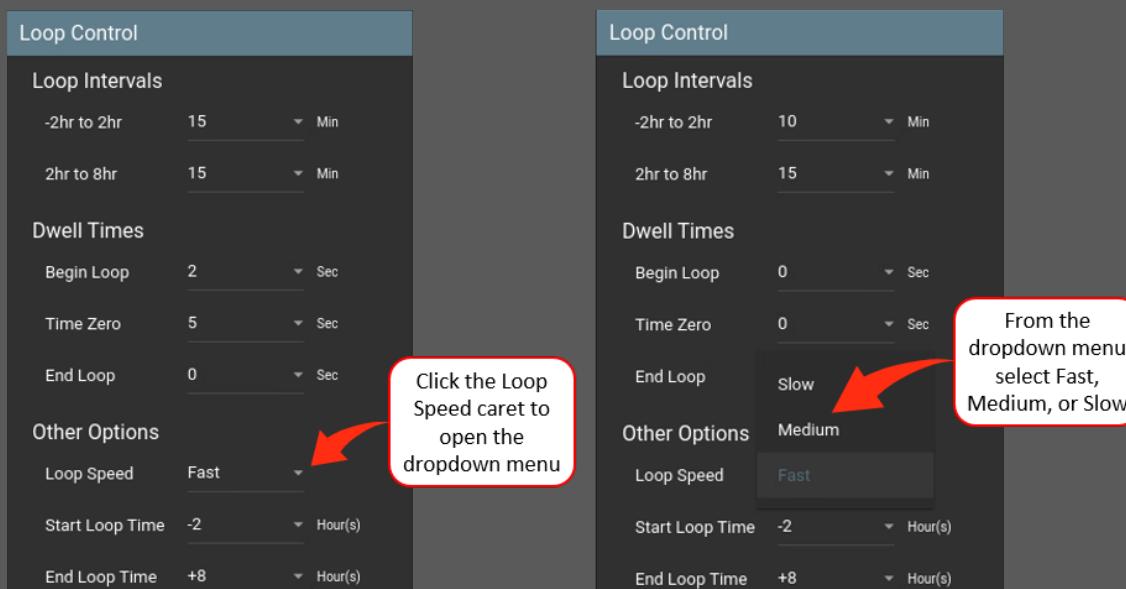


Figure 6-11. Set Loop Dwell Times

6.1.3.3 Loop Speed

Loop speed (fast by default) controls how fast the AWD moves through images while looping. To adjust loop speed, pause or stop looping then click the Loop Toolbar's Gear icon. In the Loop Control menu under Other Options, click Loop Speed then select the preferred speed (Figure 6-12. Set Loop Speed).



6.1.3.4 Start Loop Time

Start Loop Time controls when the loop starts. You can start the loop as far back as two hours in the past (-2) but no later than time zero. To select the Start Loop Time, click the Gear icon on the Loop Toolbar, then in the Loop Control menu, click Start Loop Time. From the dropdown menu, select -2, -1, or 0 (Figure 6-13. Set Start Loop Time).

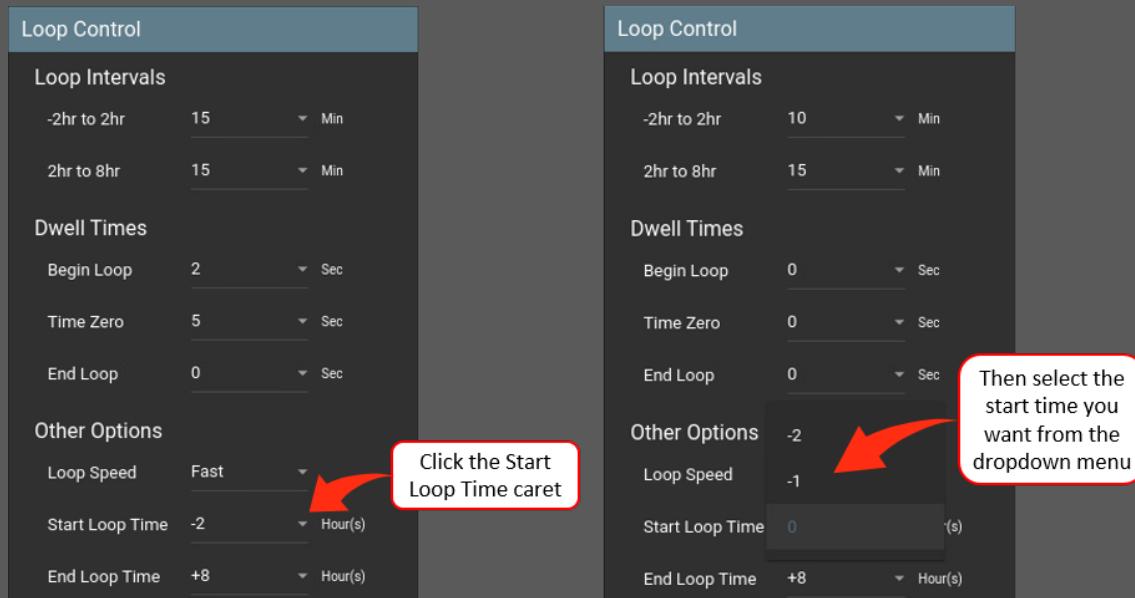
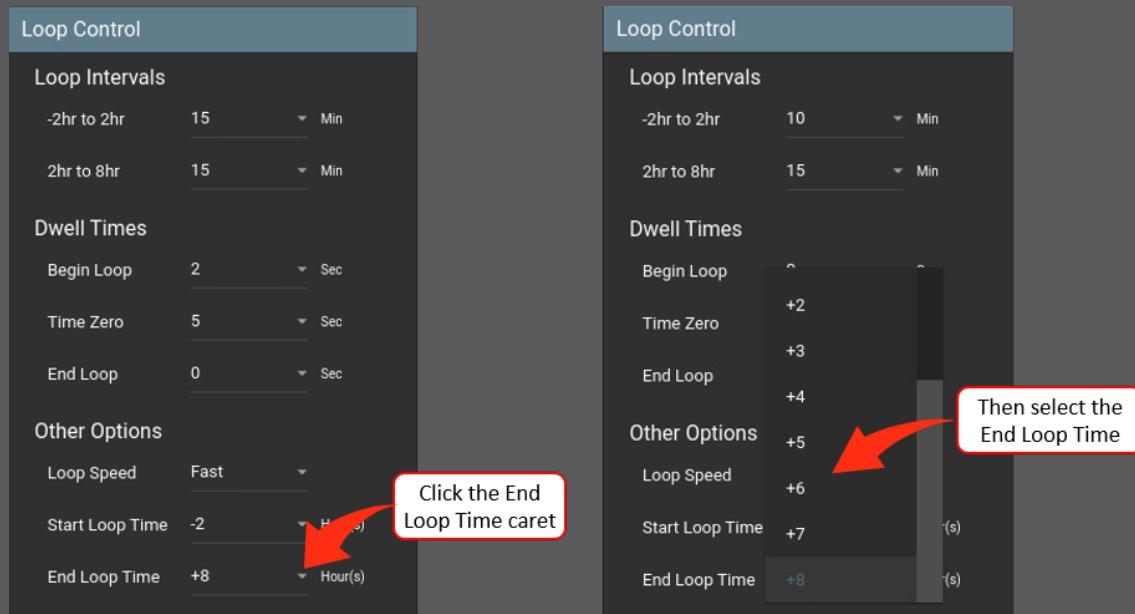


Figure 6-13. Set Start Loop Time

6.1.3.5 End Loop Time

End Loop Time controls when the loop ends and can be set to as many as eight hours in the future for Long Range View, or 120 minutes in the future for TRACON View. To select the end loop time, pause or stop looping, then click the Gear icon on the Loop Toolbar. In the Loop Control menu, click End Loop Time then select the preferred end loop time from the dropdown menu (Figure 6-14. Set End Loop Time).



In the following example, yellow jump buttons on the Long Range Loop Toolbar indicate that weather from 2-hours in the past and the 6, 7, and 8-hour forecasts are filtered from the loop (Figure 6-15. Loop Toolbar with Filtered Time Periods).

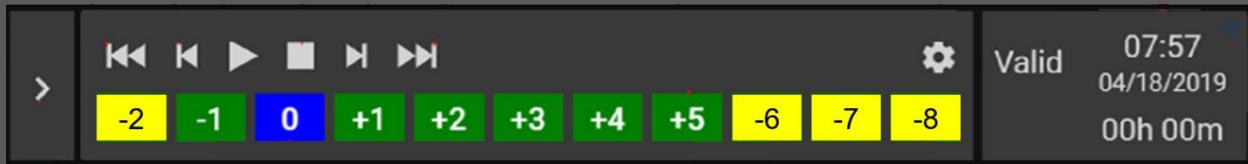


Figure 6-15. Loop Toolbar with Filtered Time Periods

6.1.4 Valid Time Box

The Valid Time box resides in the lower right corner of Long Range and TRACON Graphics views to the right of the Loop Toolbar. The upper two rows in the Valid Time box display the valid time of the Primary Product currently displayed in the view. The bottom row in the Valid Time box displays relative time, which is the difference between the current time (GMT), and the valid time of the Primary Product displayed.

In the following example, the 2-hour forecast is displayed, and the valid time for the displayed image is 10:50, which is two hours beyond Time Zero (Figure 6-16. Valid and Relative Time).

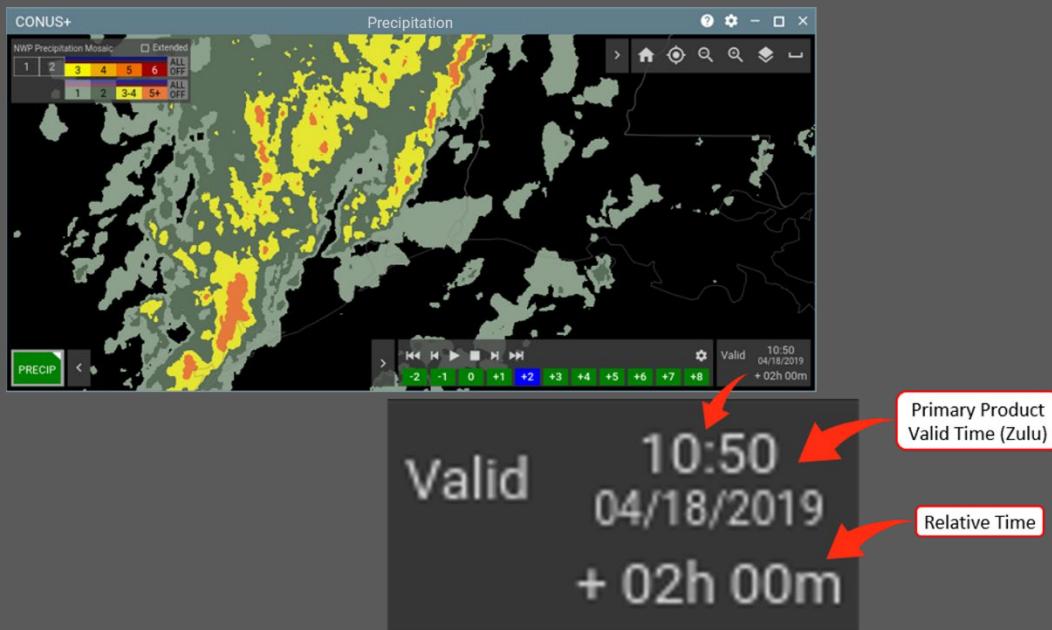


Figure 6-16. Valid and Relative Time

While the Valid Time Box displays valid times for the displayed Primary Product, the Supplemental Valid Time Box displays valid times for all displayed Forecast, Advisory, and Observation & Analysis Products.

The Supplemental Valid Time Box is hidden by default. To display the Supplemental Valid Time Box, **click inside the Valid Time Box** (Figure 6-17. Open Supplemental Time Box).

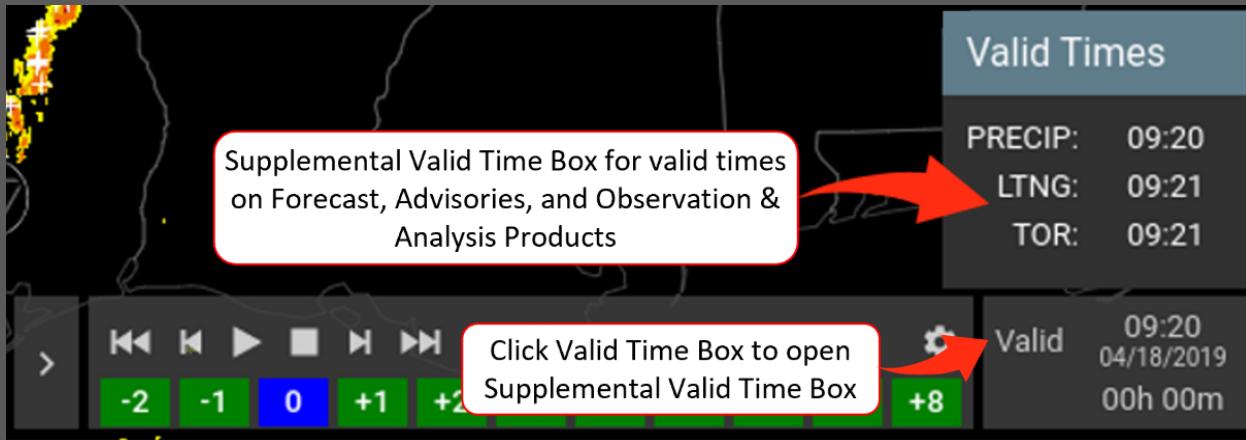


Figure 6-17. Open Supplemental Time Box

If no Primary Product is open, no times are displayed in the Valid Time Box, but valid times for products other than Primary Products can still be displayed in the Supplemental Valid Time Box.

In the following example, no Primary Products are displayed, but the Supplemental Valid Time Box is expanded and displays the valid times for the two weather products (LTNG and CWAP) that are displayed in the view (Figure 6-18. Valid Time & Supplemental Time Boxes).

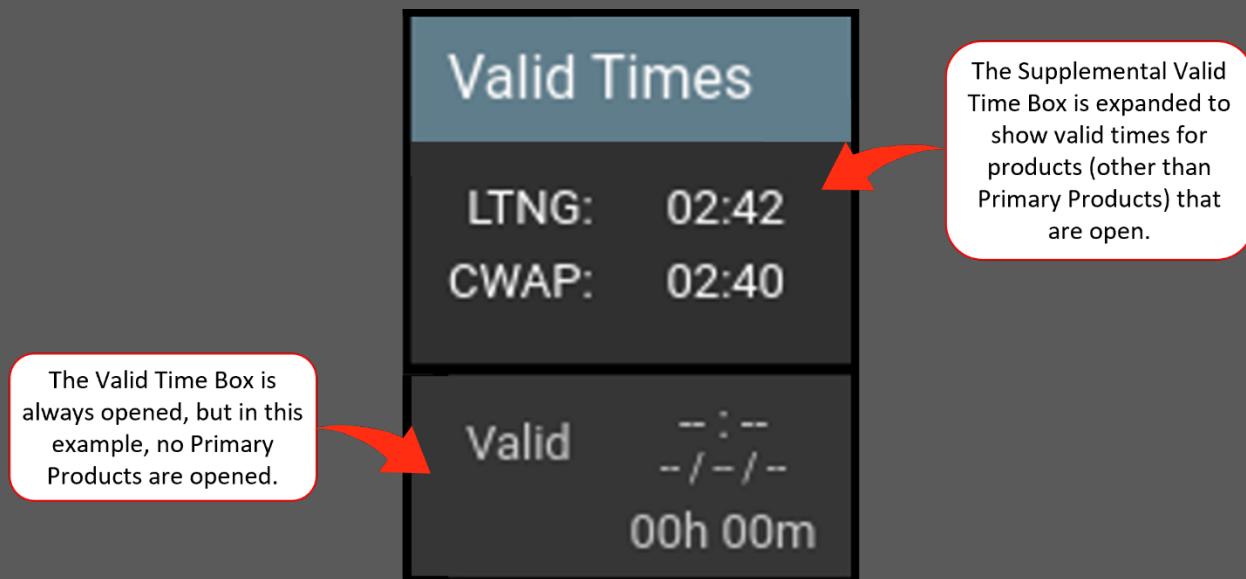


Figure 6-18. Valid Time & Supplemental Time Boxes

6.2 Preference Sets

Preference Sets (Pref-sets) are AWD configurations you can create and save for later use. For example, you can have one or more views open on the desktop, each view with specific weather products and overlays that you routinely use, and each view sized to your personal preference. Once you have the AWD configured the way you want it, you can save that configuration as a Pref-set for future use.

Saving and using Pref-sets eliminates the need for you to set up an AWD just the way you like it every time you use it. Your saved Pref-sets are accessible from any AWD in your facility, not just the AWD where you created the Pref-set.

As an AWD user, you can save your own Pref-sets with unique names that have no more than 25 characters (e.g., ZBW South, ZBW Arrivals, Darlene East Flow, etc.).

When using Pref-sets, the Pref-set in use is highlighted in the PREFERENCE SETS list in the AWD User Profile menu and is also identified on the SAVE AS line at the bottom of the menu.

In the following example, the AWD user (zhuea), has three Pref-sets (in the PREFERENCE SETS list), and is currently using the **East Arrivals** Pref-set (Figure 6-19. Current Pref-set).

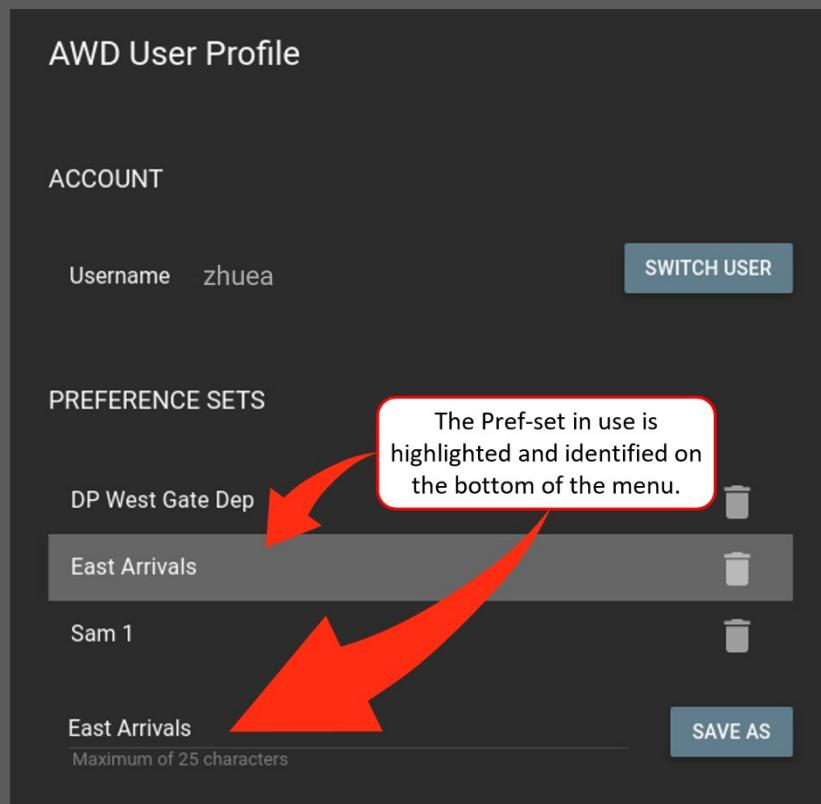


Figure 6-19. Current Pref-set

6.2.1 Create a Preference Set

When the AWD is in a configuration you want to save (e.g., the desktop has the views and products you want to save for future recall), click the **User icon** to open the AWD User Profile menu.

If you are already using a Pref-set, the name of the Pref-set you are using is highlighted in the **PREFERENCE SETS** list and is also identified on the bottom line of the AWD User Profile menu. If you are not using a Pref-set, the bottom line of the AWD User Profile menu is blank.

In the following example, the Pref-set **Sam 1** is in use and highlighted in the PREFERENCE SETS list. To create a new Pref-Set, enter the name of your new Pref-set by overwriting the Pref-set name on the bottom line or filling in a blank line (as appropriate), then click **SAVE AS** or press **Enter** (Figure 6-20. Create Pref-set).

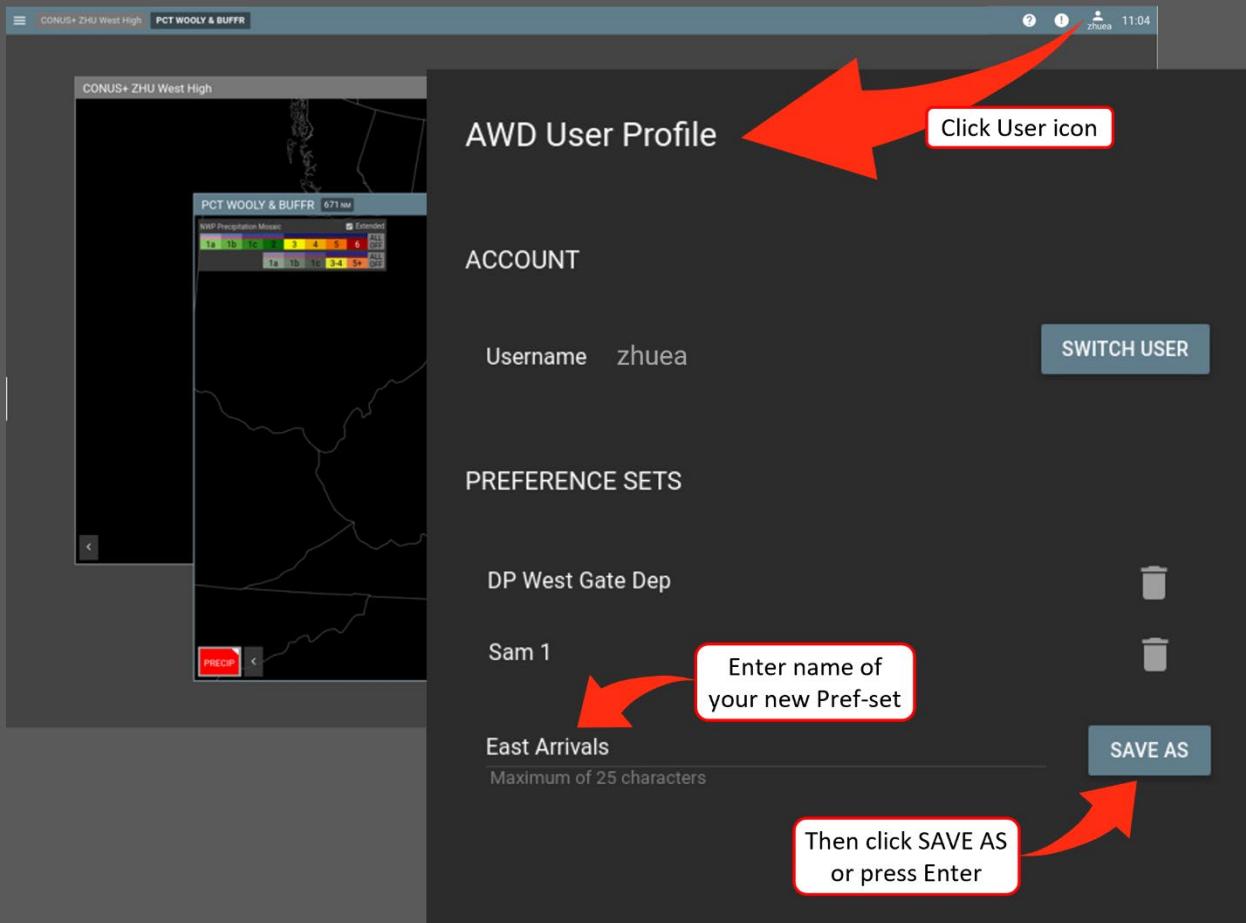


Figure 6-20. Create Pref-set

When the ***Are you sure you want to save*** ‘the new Preference Set name?’ dialog box opens, enter your unique AWD password and click OK or press Enter (Figure 6-21. Confirm and Save New Pref-set).

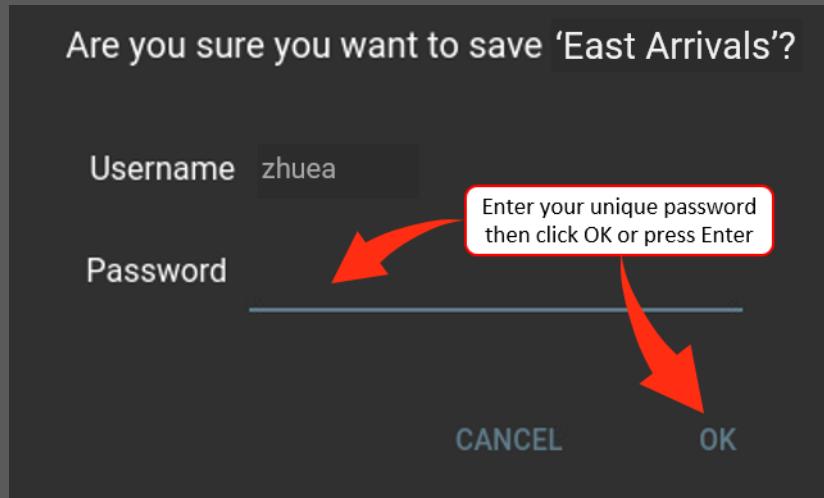


Figure 6-21. Confirm and Save New Pref-set

Your new Pref-set (in this example East Arrivals), is created, added to the PREFERENCE SETS list, and becomes the Pref-set in use (Figure 6-22. New Pref-set Created).

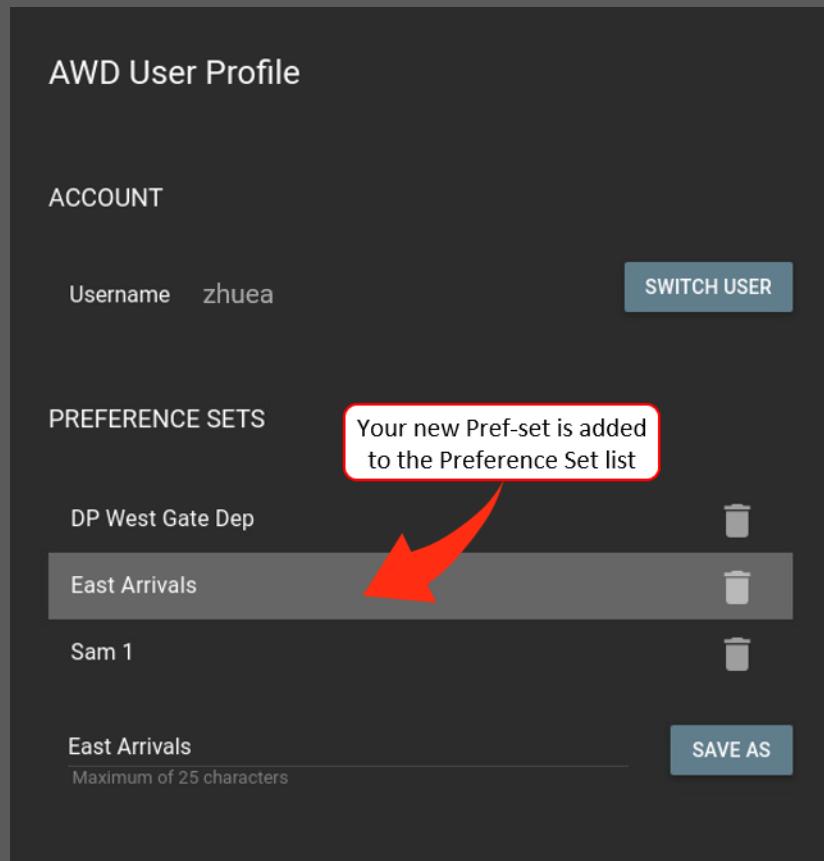


Figure 6-22. New Pref-set Created

6.2.2 Load a Pref-set

To load a Pref-set, click the **User icon**, then in the AWD User Profile menu under PREFERENCE SETS, click the **Pref-set you want to use (load)**. The Pref-set you selected loads, is highlighted in the PREFERENCE SETS list, and is identified on the bottom line of the AWD User Profile menu (Figure 6-23. Load a Pref-set).

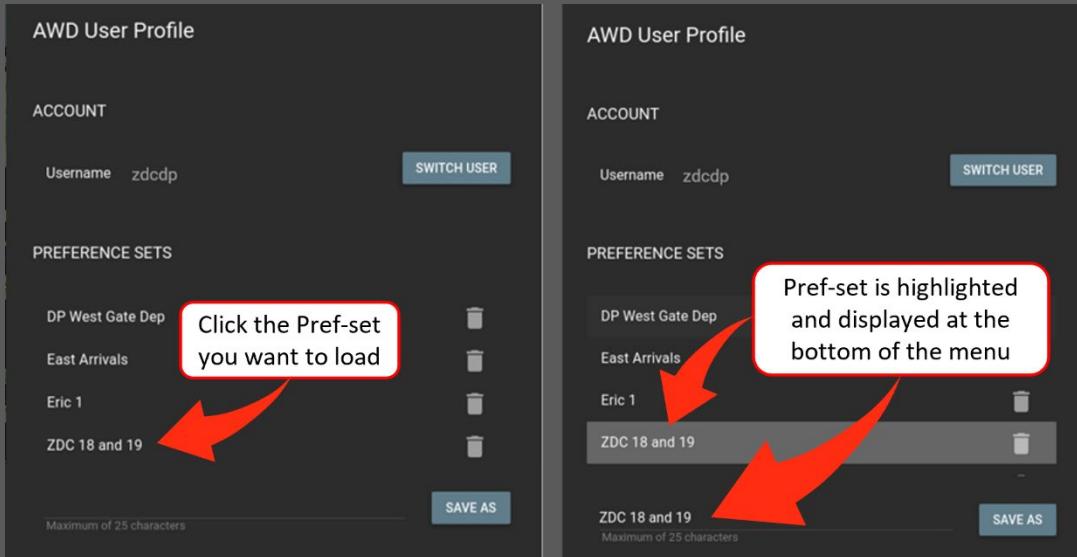


Figure 6-23. Load a Pref-set

6.2.3 Modify Pref-set

To modify a Pref-set, make sure the Pref-set you want to modify is loaded, then change the display as you wish (e.g., add views, resize views, add products to a view, etc.). When finished with your changes, click the **User icon** to open the AWD User Profile menu. Your Pref-set is highlighted under PREFERENCE SETS and is displayed on the bottom line of the AWD User Profile menu. Click **SAVE AS** or press **Enter** (Figure 6-24. Modify Pref-set).

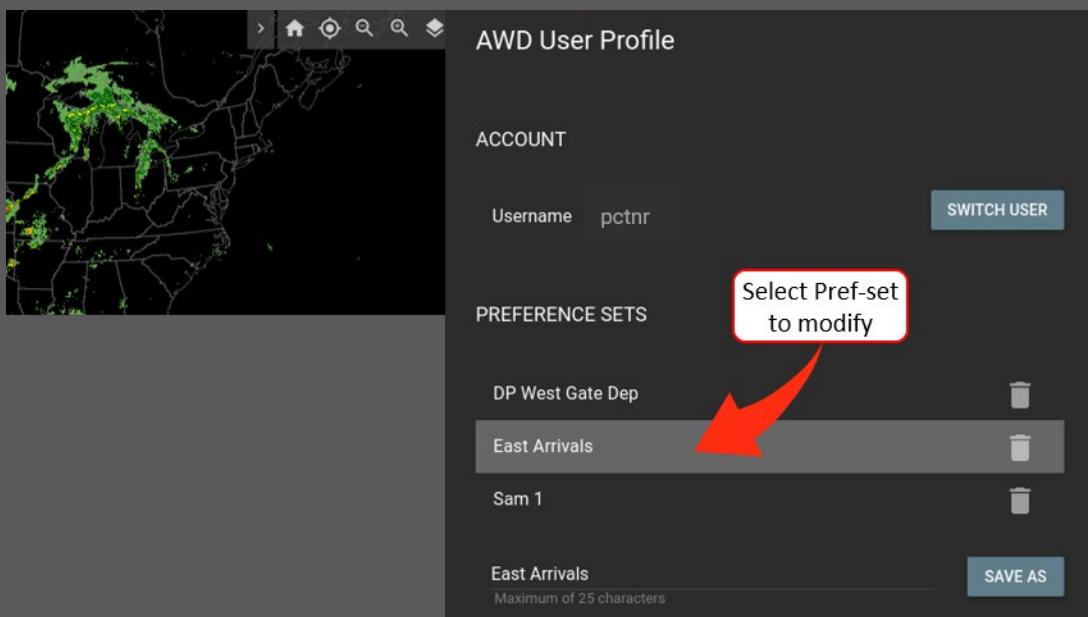


Figure 6-24. Modify Pref-set

A dialog box opens with text that reads:

'The name of the Pref-set you are modifying' already exists. Do you want to update it?

Enter your AWD password then click **OK** or press **Enter** on the keyboard (Figure 6-25. Confirm Pref-set Modification).

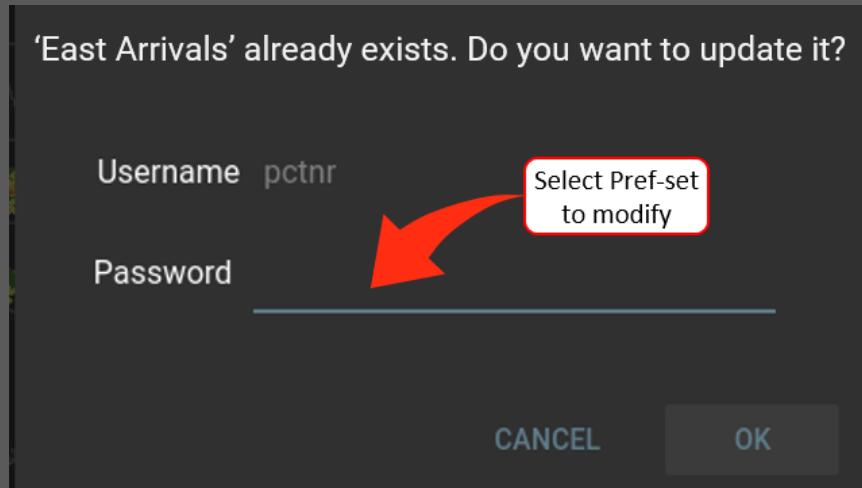
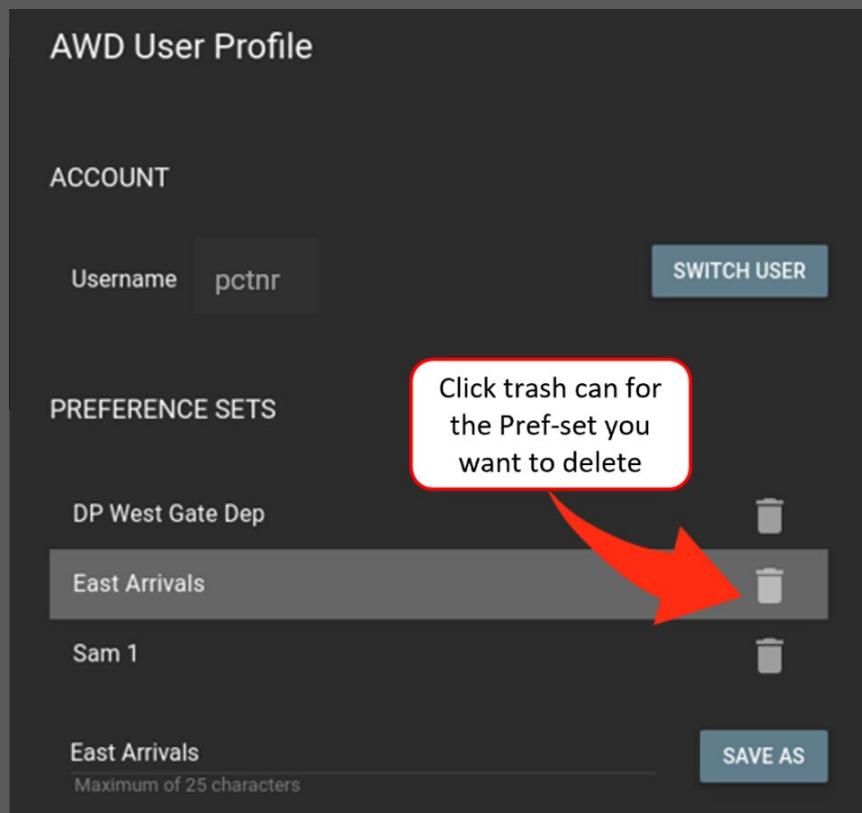


Figure 6-25. Confirm Pref-set Modification

6.2.4 Delete Pref-set

To delete a Pref-set, click the **User icon** to open the AWD User Profile menu, then click the Trach Can icon for the Pref-set you want to delete (Figure 6-26. Delete Pref-set).



When the **Are you sure you want to delete (Preference Set name)?** dialog box opens, enter your AWD password and click **OK** or press **Enter**. The Pref-set is deleted and removed from the PREFERENCE SETS list (Figure 6-27. Pref-set Deleted).

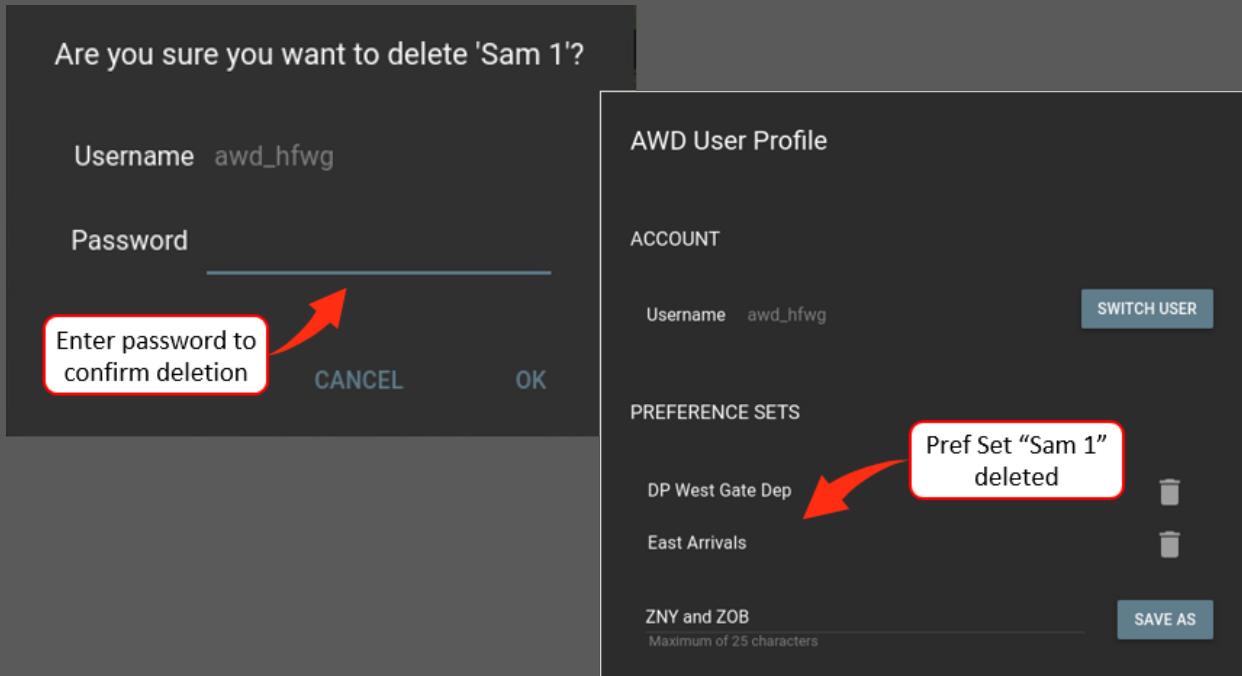


Figure 6-27. Pref-set Deleted

6.3 Hotkeys

Hotkeys are time savers that provide quick access to specific AWD functions and are only available in Long Range and TRACON views. Pressing a specific character on the keyboard (a hotkey) eliminates the need for you to use menus to perform certain AWD functions.

The AWD's three hotkeys are not case sensitive and provide immediate access to the following functions:

- V - Opens the Overlay Quick Search dialog box.
- S - Toggles global Storm Cell Information (SCI) on and off.
- D - Toggles ET-Tags leader lines through the four cardinal positions (NE, SE, SW, & NW)

6.3.1 Overlay Hotkey (V)

The Overlay hotkey is a real time-saver if you know the name and complete spelling of the overlay you want to add to the view. Press **V** on the keyboard to open the OVERLAY QUICK SEARCH dialog box (Figure 6-28. Overlay Hotkey Opens Overlay Quick Search).

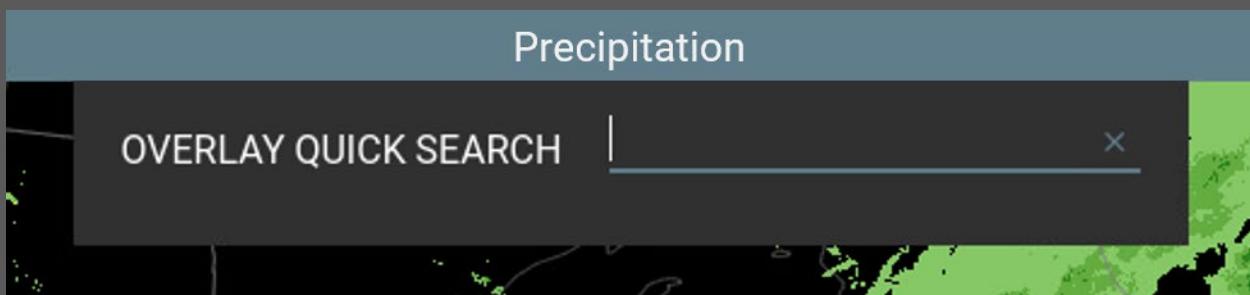


Figure 6-28. Overlay Hotkey Opens Overlay Quick Search

For detailed information on how to use the OVERLAYS QUICK SEARCH to find and add overlays to graphics views, see Section 4, OVERLAYS.

6.3.2 Storm Cell Information Hotkey (S)

To use the Storm Cell Information (SCI) hotkey, the ET-TAGS SCI product must be on. When the ET-TAGS SCI product is on, global SCI is off by default. SCI is not available for all storm cells, but when global SCI is turned on, SCI for all cells with SCI is displayed.

The S hotkey works as a toggle that turns global SCI off and on when pressed. In the following example, ET-TAGS SCI is on, but global SCI is off (Figure 6-29. SCI Hotkey Toggles Global SCI Off).

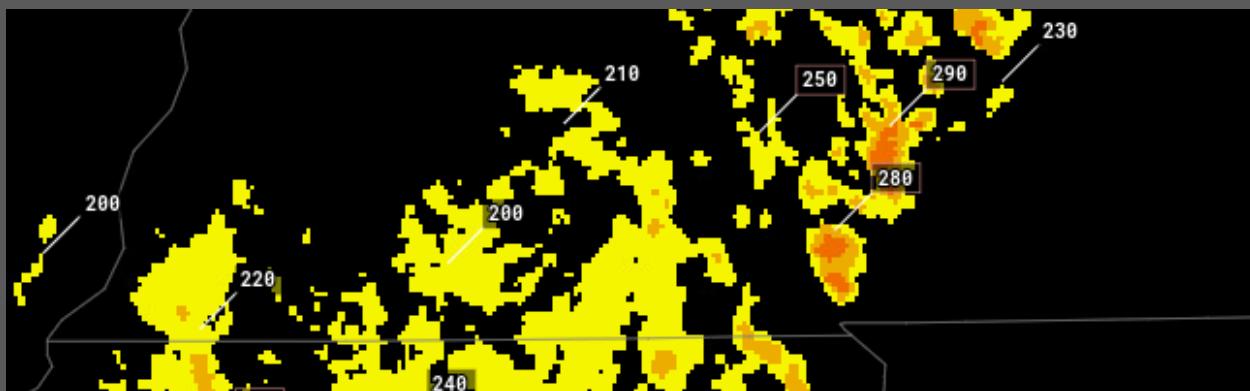


Figure 6-29. SCI Hotkey Toggles Global SCI Off

In this example, ET-TAGS SCI is on and the user pressed S on the keyboard to toggle global SCI on (Figure 6-30. SCI Hotkey Toggles Global SCI On).

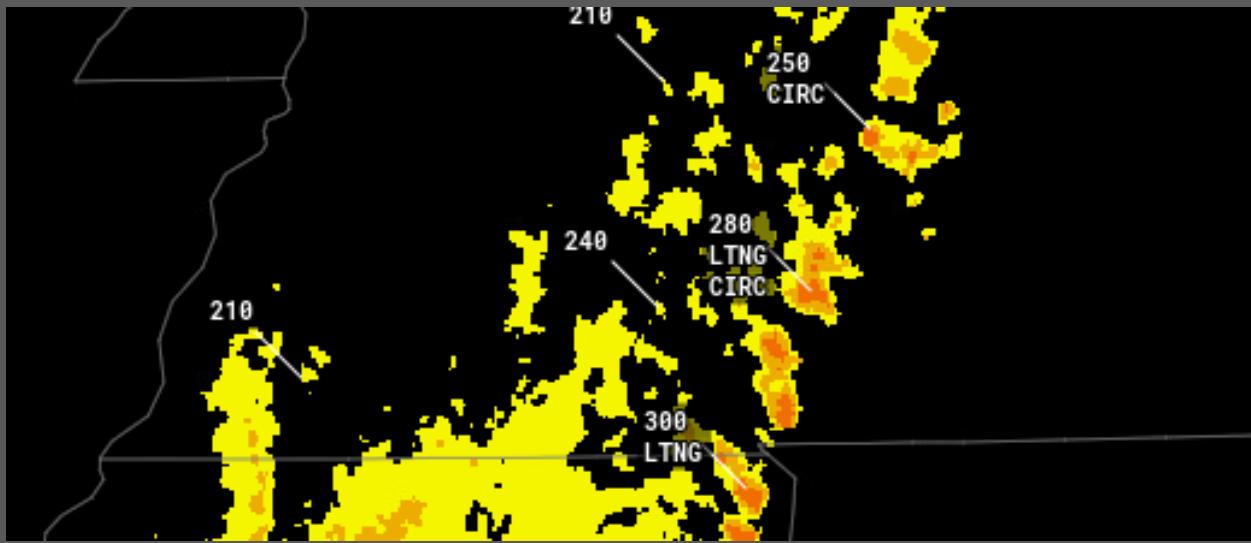


Figure 6-30. SCI Hotkey Toggles Global SCI On

6.3.3 ET-TAGS SCI Leader Line Hotkey (D)

To toggle ET-TAGS SCI leader lines through the four cardinal directions (NE, SE, SW, & NW), press D on the keyboard. Pressing D once orients leader lines from their current position clockwise to the next cardinal position. Every time you press D, leader lines move clockwise one cardinal position.

In the following example, leader lines were previously oriented to the NW until the user pressed the D hotkey once to reorient leader lines to the NE (Figure 6-31. ET-TAGS Leader Line Hotkey).

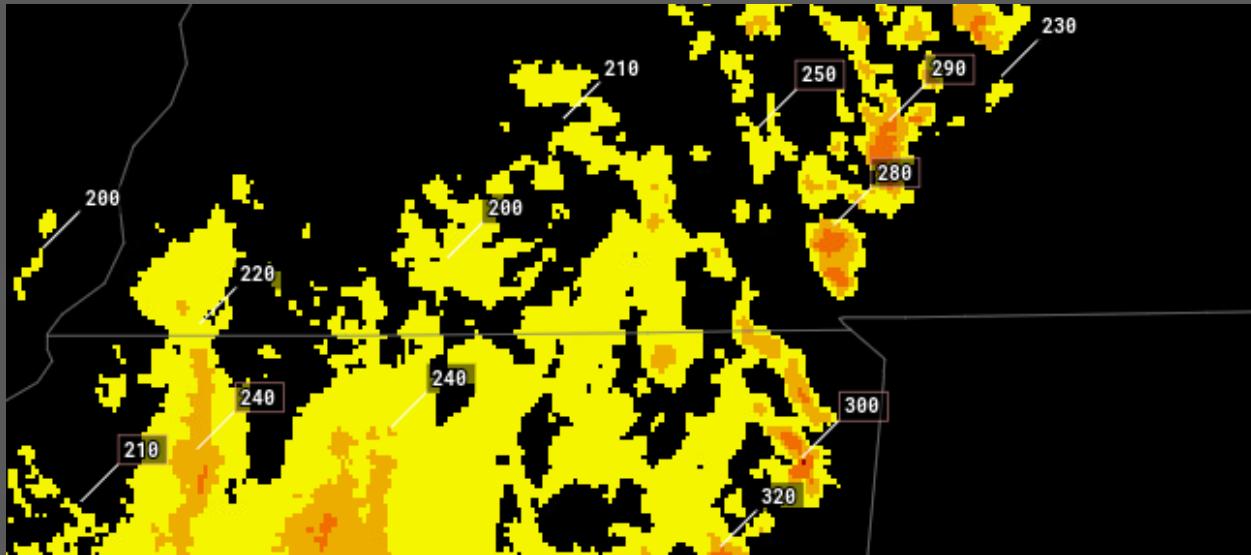


Figure 6-31. ET-TAGS Leader Line Hotkey

7 HELP

Clicking a Help icon anywhere in the AWD GUI opens the AWD Help window that defaults to the ATOM's hyperlinked Table of Contents (TOC). From the TOC you can scroll to find the information you need, word search the TOC, use Help's dropdown menu to find and open any ATOM section, or word search the entire ATOM (Figure 7-1. AWD Default Help Window).

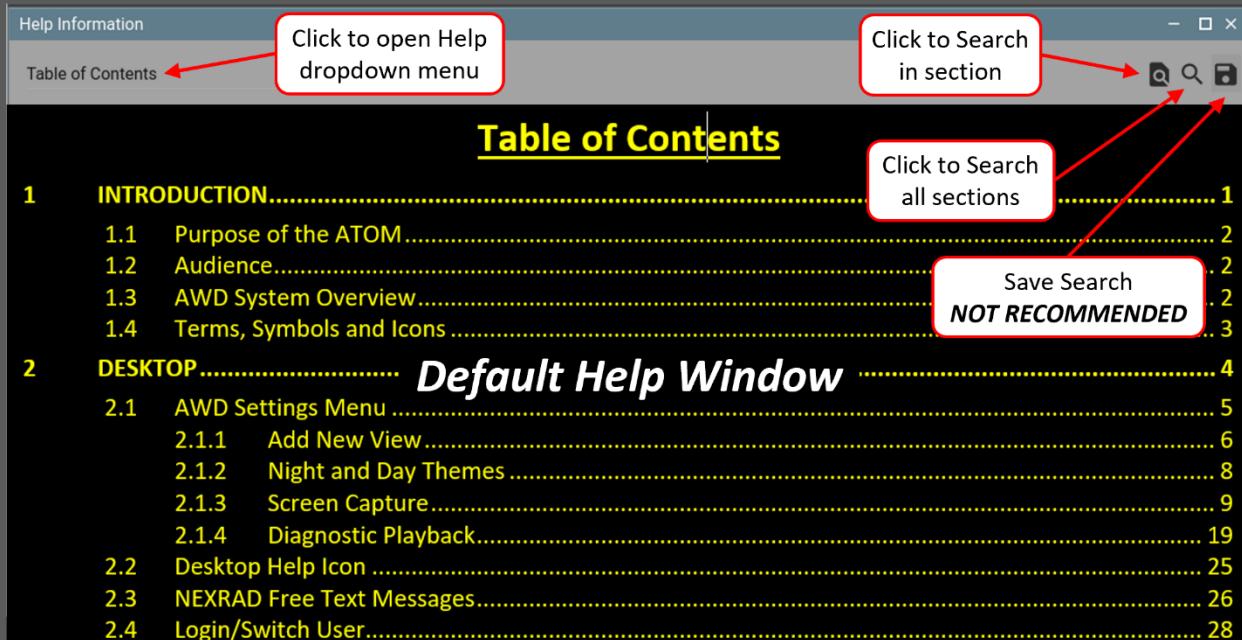


Figure 7-1. AWD Default Help Window

Only one Help window can be open at a time on the AWD desktop. If a Help window is already open and you click a Help icon from anywhere in the AWD GUI, the Help window will return to its default setting and display the hyperlinked ATOM TOC.

7.1 Help Dropdown Menu

If you know the ATOM section you want to display, the Help window's dropdown menu provides quick access to any of the following ATOM sections:

- Title Page
- Revision History
- Table of Contents
- Table of Figures
- Table of Tables
- Section 1, Introduction
- Section 2, Desktop
- Section 3, Views
- Section 4, Overlays
- Section 5, Weather Products
- Section 6, Tools & Functions
- Section 7, Help
- Appendix A, Acronyms
- Appendix B, Glossary
- Appendix C, Icons & Symbols
- Appendix D, Available Overlays
- Appendix E, Weather Symbols

You can easily open the AWD Help dropdown menu to access any ATOM section, no matter which ATOM section is currently displayed. To open the Help dropdown menu, click the text below “Help Information” in the upper left of the Help window. The text will read “Table of Contents” or the section currently displayed in the Table of Contents (Figure 7-2. Open Help Dropdown Menu).

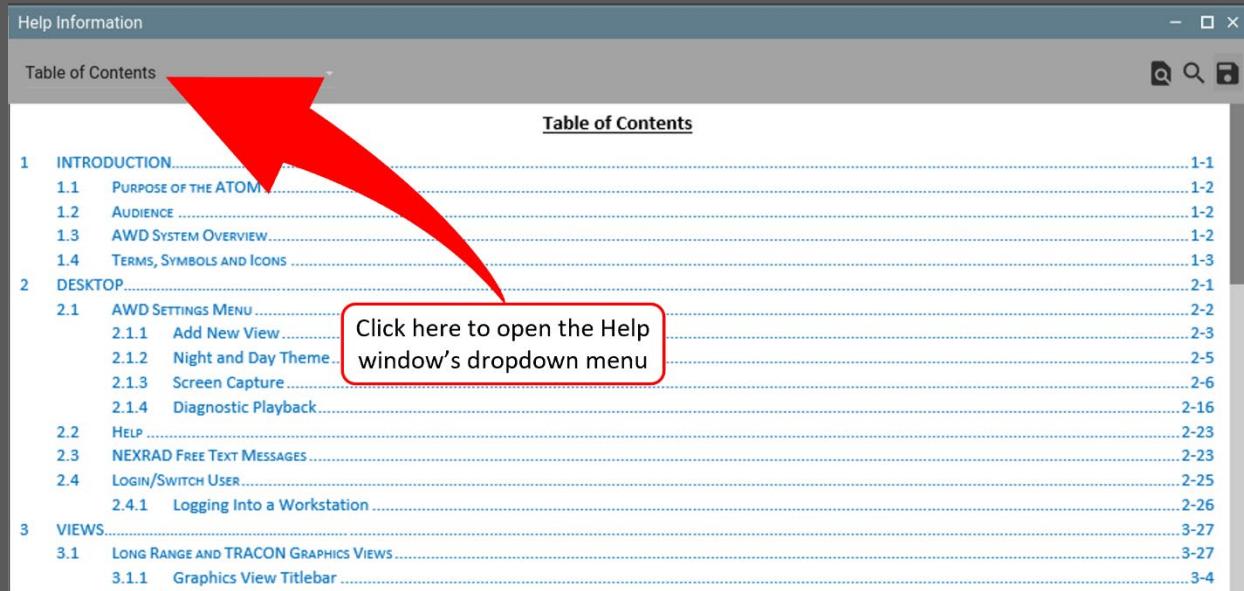


Figure 7-2. Open Help Dropdown Menu

From the Help dropdown menu, scroll to find the section you want to display, then click that section (Figure 7-3. Select Section from Help Dropdown Menu).

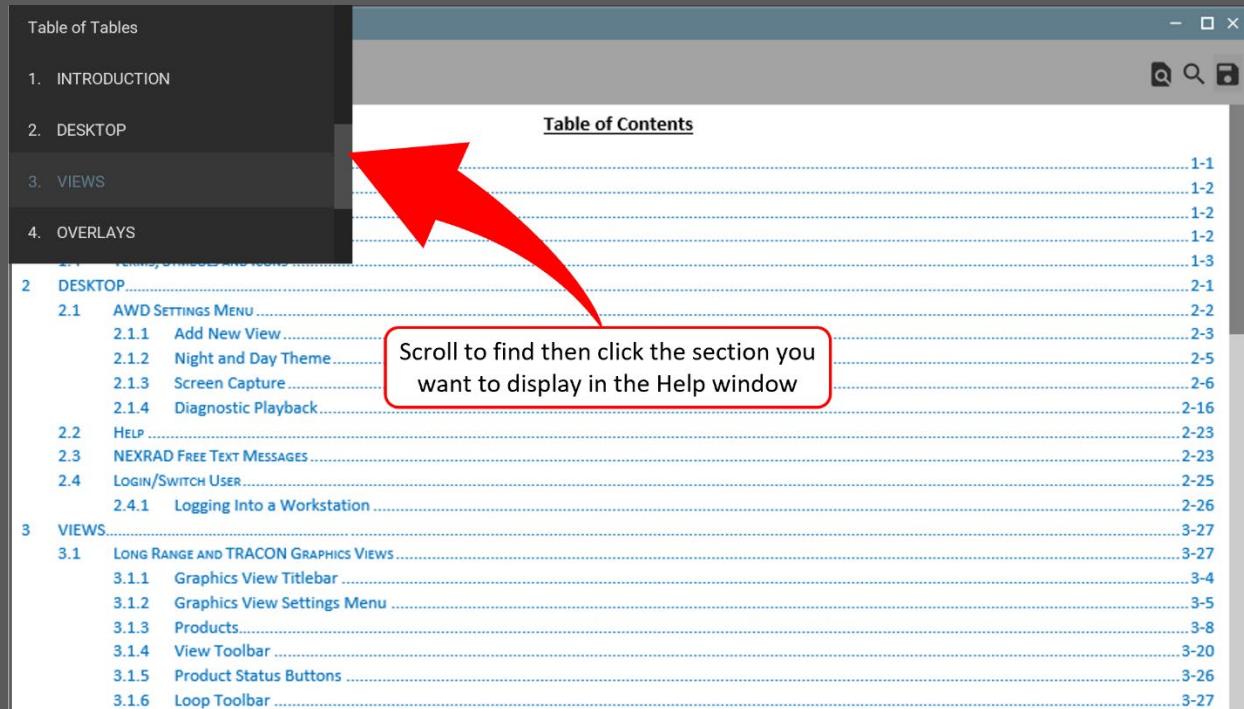


Figure 7-3. Select Section from Help Dropdown Menu

In this example, Section 3, VIEWS, was selected from the Help dropdown menu and immediately displayed in the Help window (Figure 7-4. Section Selected from Help Dropdown Menu Displayed).

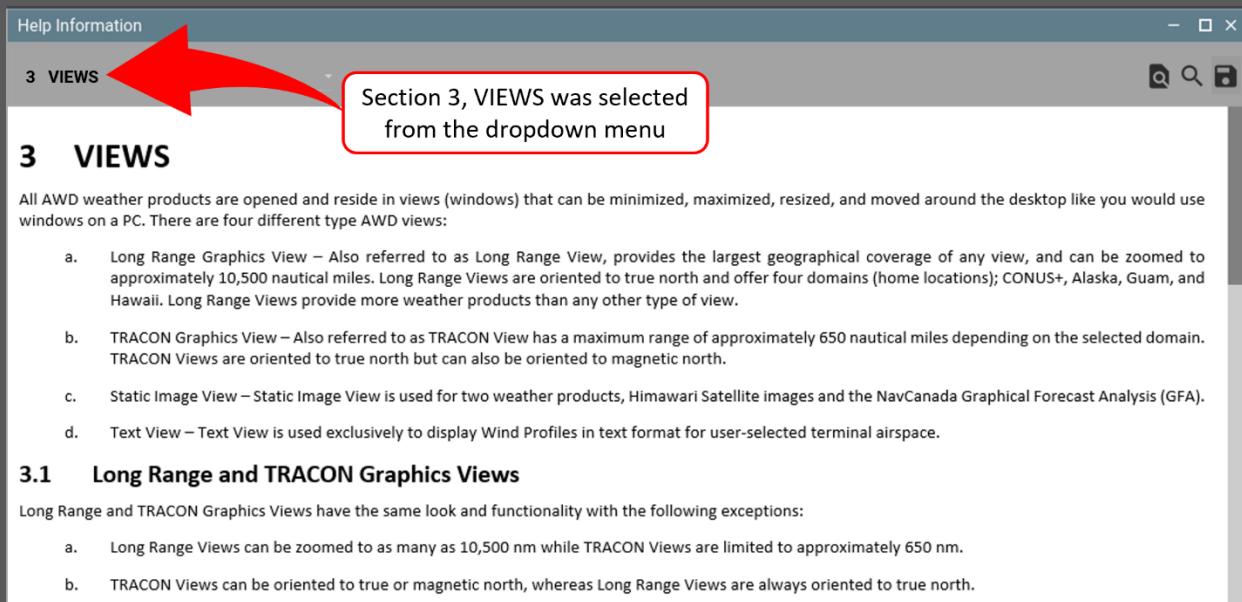


Figure 7-4. Section Selected from Help Dropdown Menu Displayed

From within the displayed section, you can scroll the entire section, or use **Search in section** to search the section by keyword.

7.2 Scroll ATOM Section

To scroll a section, use the mouse wheel or scrollbar on the right of the Help window to find the information you need. When scrolling a section, you can only scroll the displayed section, you cannot scroll back to the previous section or forward to the next section (Figure 7-5. Scroll Within Section).

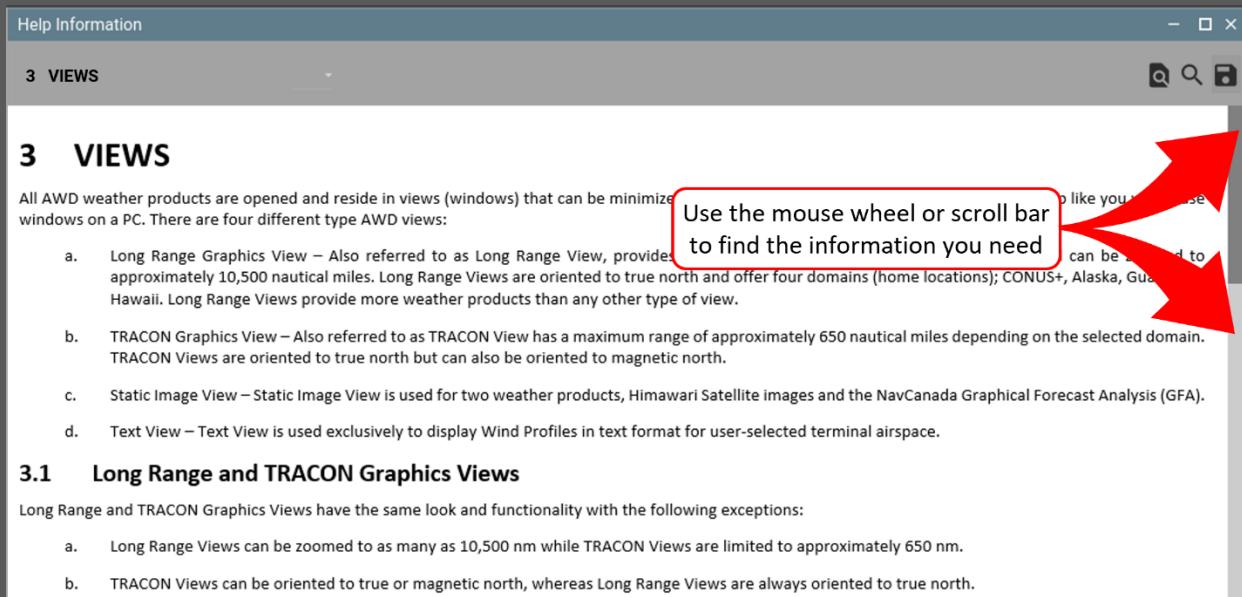


Figure 7-5. Scroll Within Section

7.3 Search in Section

As an alternative to scrolling, you can use Search in section to search the current section by keyword (e.g., precip, echo, filter, etc.). To open Search in section, click the magnifying glass with the black background on the upper right of the Help window in the gray banner (Figure 7-6. Open Search in Section).

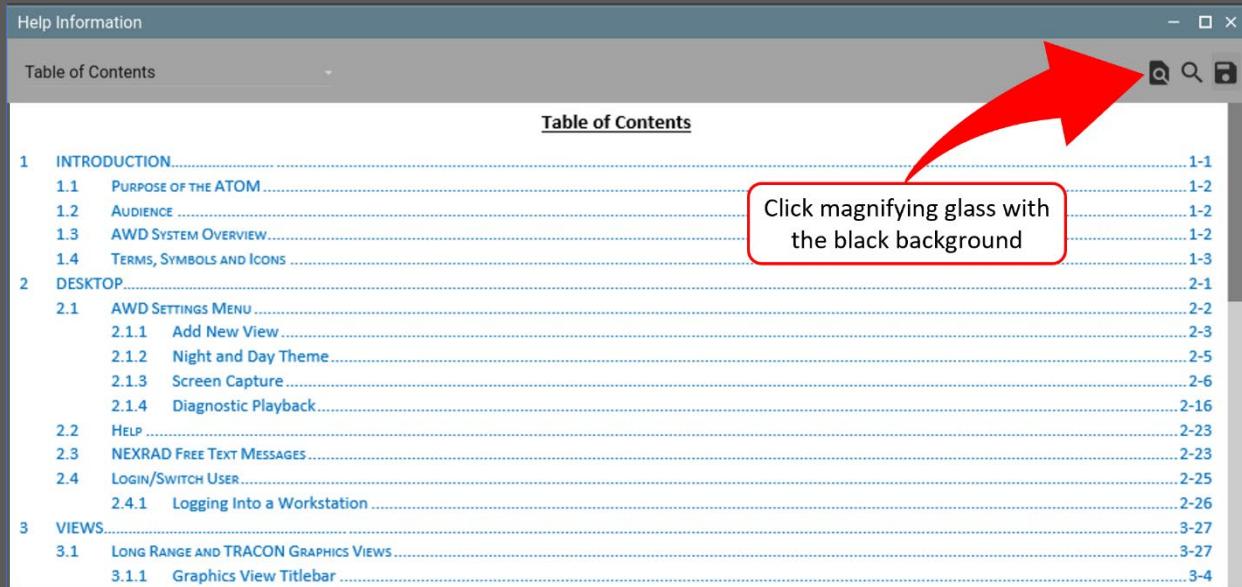


Figure 7-6. Open Search in Section

When Search in section is open, the Search in section dialog box and blue FIND button are displayed at the top of the Help window in the gray banner (Figure 7-7. Search in Section Dialog Box).

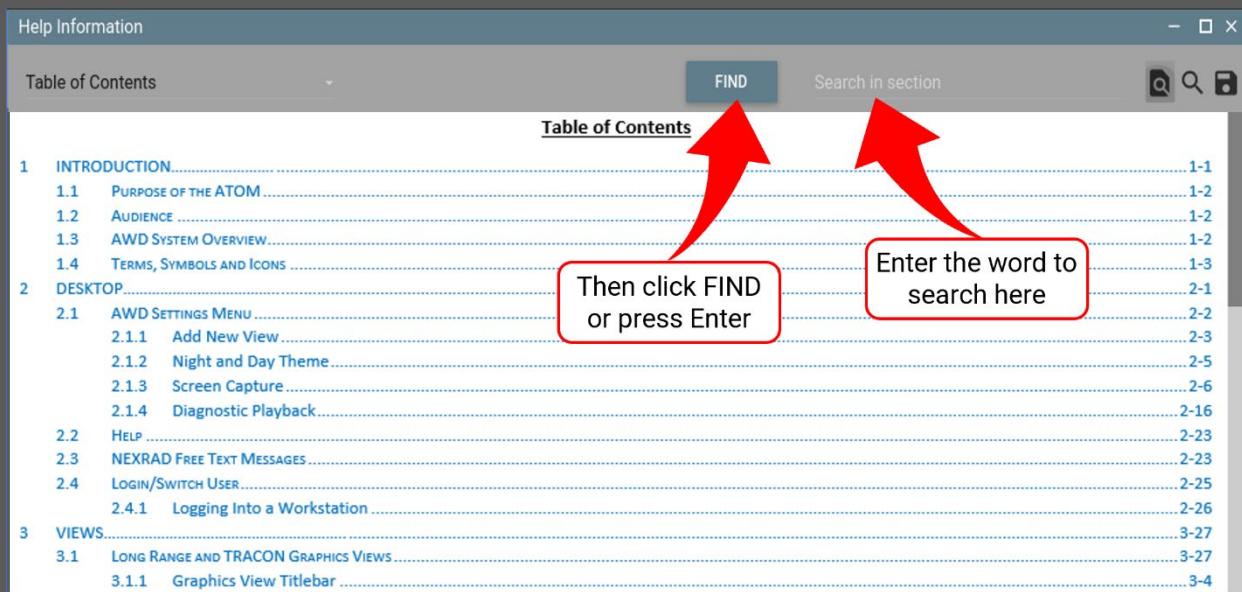


Figure 7-7. Search in Section Dialog Box

Enter the word you are looking for in the **Search in section** dialog box, then click the blue **FIND** button or press **Enter** on the keyboard. In the following example, a Search in section was initiated from the TOC for the word **overlay** (Figure 7-8. Enter Search in Section Keyword).

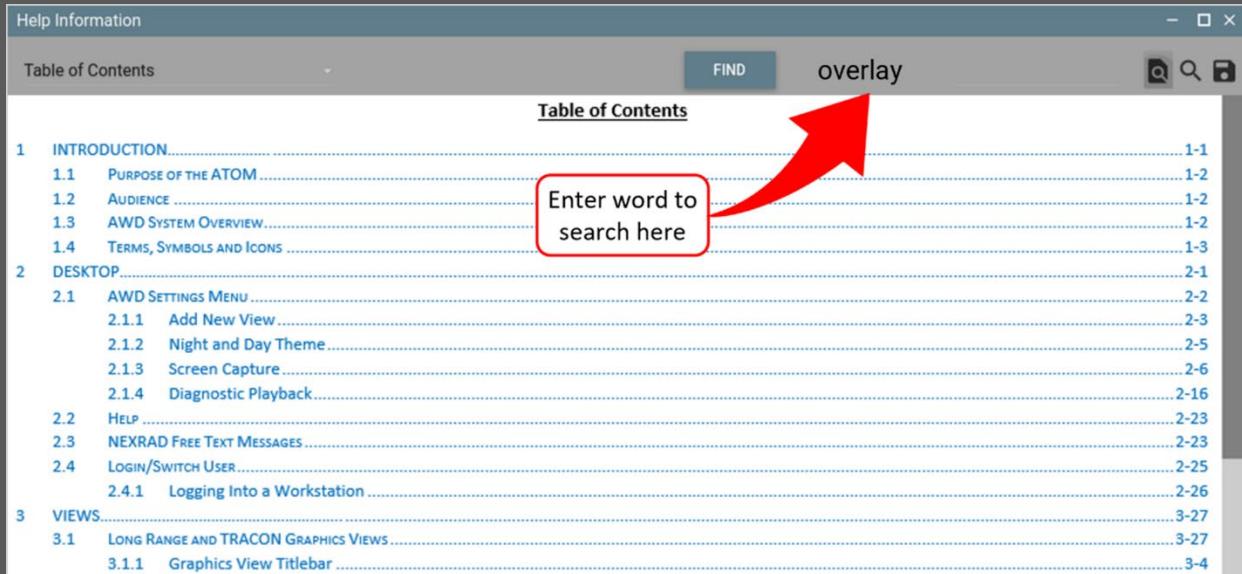


Figure 7-8. Enter Search in Section Keyword

Since the TOC is one of many ATOM sections, a Search in section initiated from the TOC works the same as a Search in section initiated from any other section.

Search in section results are displayed at the top of the Help window in the gray banner. You can click X to close the search or click the up-pointing and down-pointing carets to step through search matches. In this example, **overlay** was found seven times in the TOC (Figure 7-9. Search in Section from TOC Results).

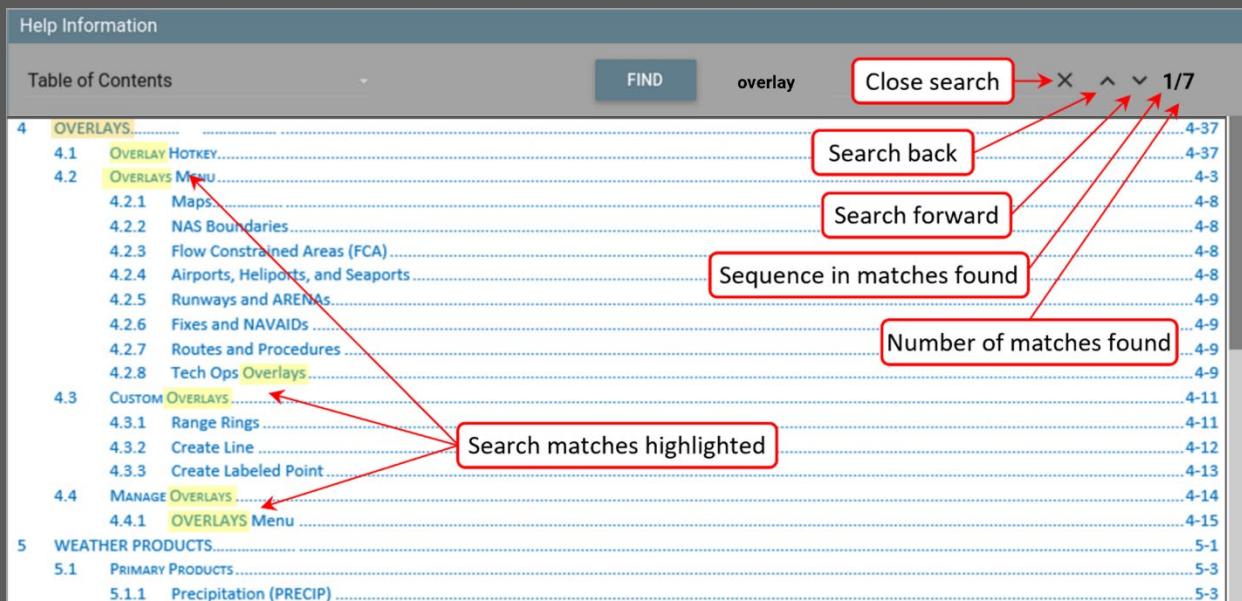


Figure 7-9. Search in Section from TOC Results

In this example, a Search in section for the word **overlay** was initiated from within Section 4, OVERLAYS, and 130 matches were found (Figure 7-10. Search in Section from Section Results).

Help Information

4 OVERLAYS

FIND overlay × ^ v 1/130

4. OVERLAYS
When a new Long Range Graphics View is opened, only the View Toolbar (upper right corner of the view) and Valid Time (lower right corner of the view) are added to the view by default. For geographical reference, it is recommended that you add a map as soon as possible. There are two ways to add overlays, by using the Overlay Hotkey or using the Overlay Quick Search dialog box. The Overlay Hotkey is the faster and more efficient method for adding overlays.

4.1 Overlay Hotkey
To use the Overlay hotkey, press V (not case sensitive) on the keyboard. After you press V, the OVERLAY QUICK SEARCH dialog box opens in the view (Figure 4-1).

OVERLAY QUICK SEARCH

Figure 4-1. Overlay Quick Search Dialog Box

In the quick search dialog box, type the **overlay** you want (e.g., KBWI, J121, V143, J75, etc.), then press Enter on the keyboard (Figure 4-2).

OVERLAY QUICK SEARCH

Type overlay KBWI

Figure 4-2. Select Overlay in OVERLAY QUICK SEARCH

In the following example, the user typed V to open the Overlay Quick Search Dialog Box, typed KBWI, then pressed Enter. Since the letters KBWI are exclusive to KBWI

Figure 7-10. Search in Section from Section Results

7.4 Search All Sections

Search All Sections searches all sections by keyword, not just the section from where you initiate the search. However, Search All Sections does not identify every match, it only identifies those sections where the word you are searching can be found. For example, if you did a Search All Sections for PRECIP, search results would list the sections where PRECIP can be found, not incidence of PRECIP. You would then need to search sections individually to find each incidence of PRECIP.

To open Search All Sections, click the magnifying glass with no background at the top of the Help window in the gray banner (Figure 7-11. Open Search All Sections).

Help Information

Table of Contents

Table of Contents

Section	Topic	Page Number
1	INTRODUCTION	1-1
1.1	PURPOSE OF THE ATOM	1-2
1.2	AUDIENCE	1-2
1.3	AWD SYSTEM OVERVIEW	1-2
1.4	TERMS, SYMBOLS AND ICONS	1-3
2	DESKTOP	2-1
2.1	AWD SETTINGS MENU	2-2
2.1.1	Add New View	2-3
2.1.2	Night and Day Theme	2-5
2.1.3	Screen Capture	2-6
2.1.4	Diagnostic Playback	2-16
2.2	HELP	2-23
2.3	NEXRAD FREE TEXT MESSAGES	2-23
2.4	LOGIN/SWITCH USER	2-25
2.4.1	Logging Into a Workstation	2-26

Click to Search all sections

Figure 7-11. Open Search All Sections

When Search All Sections is open, the Search All Sections dialog box is displayed at the top of the Help window in the gray banner (Figure 7-12. Search All Sections Dialog Box).

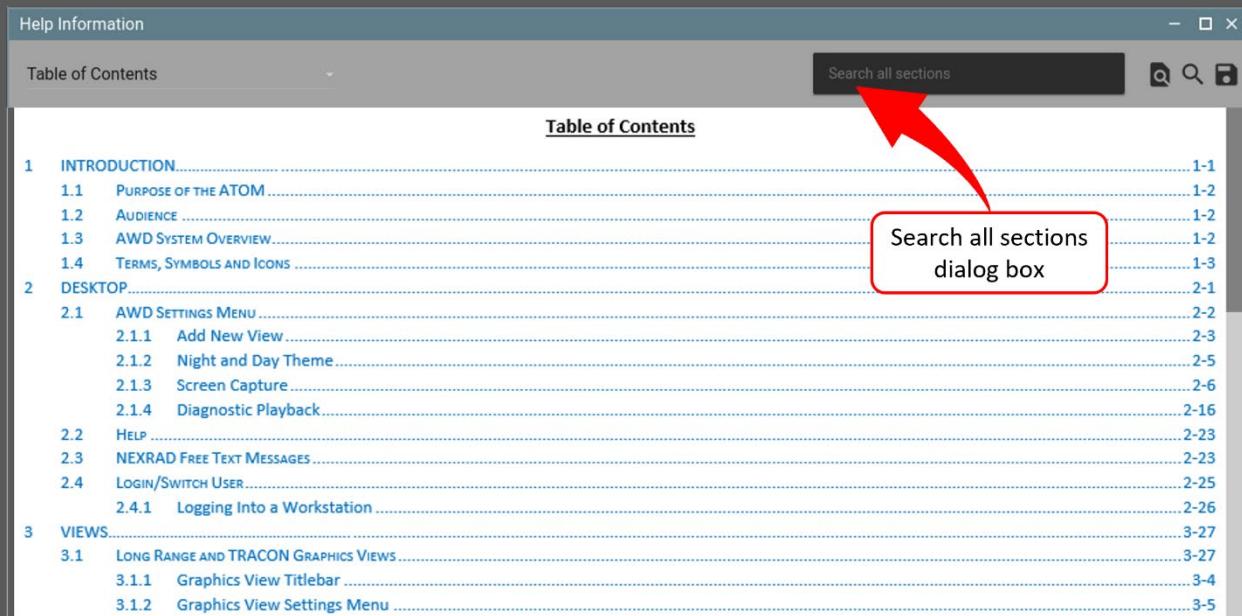


Figure 7-12. Search All Sections Dialog Box

To search all sections, place the mouse cursor in the dialog box, then type the word you are searching for. As you type letters in the dialog box, ATOM sections with words that match the letters you type are listed in the Search All Sections dropdown menu (Figure 7-13. Search All Sections Results).

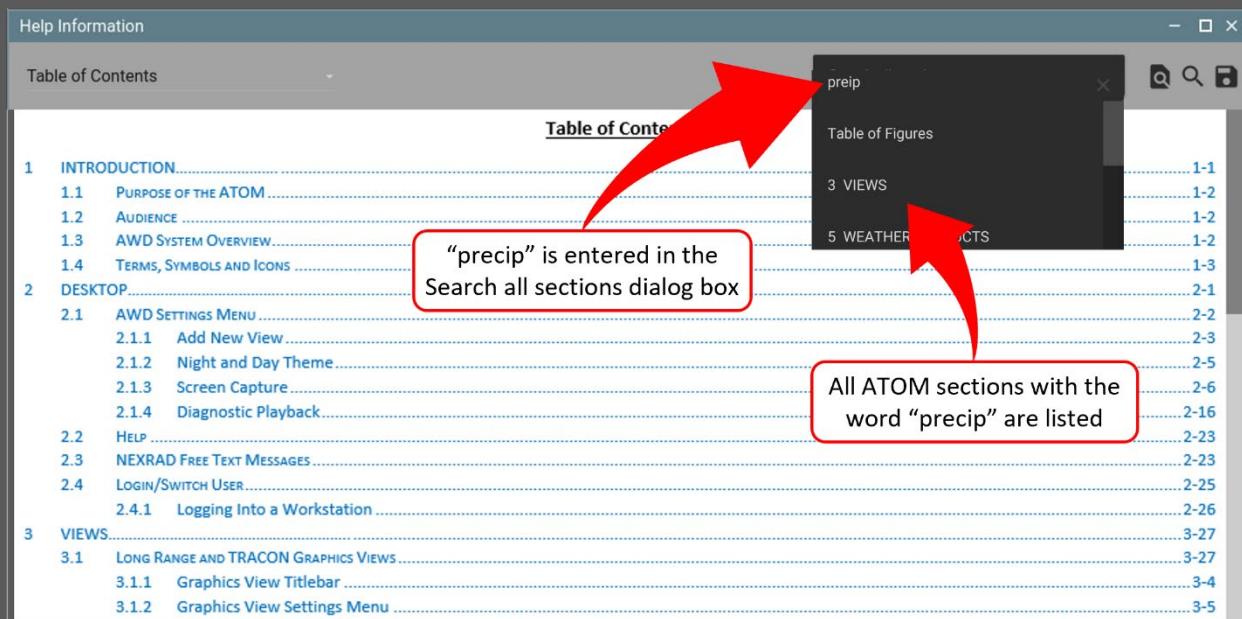


Figure 7-13. Search All Sections Results

Use the mouse wheel or scroll bar to search the Search All Sections dropdown menu, then click the section where you want to continue your search.

In this example, a Search All Sections was initiated for the word ***precip***. All sections where *precip* was found are listed in the Search All Sections dropdown menu. The AWD user clicked **5 WEATHER PRODUCTS** to continue the search for *precip* in Section 5 (Figure 7-14. Select Section from Search All Sections Results).

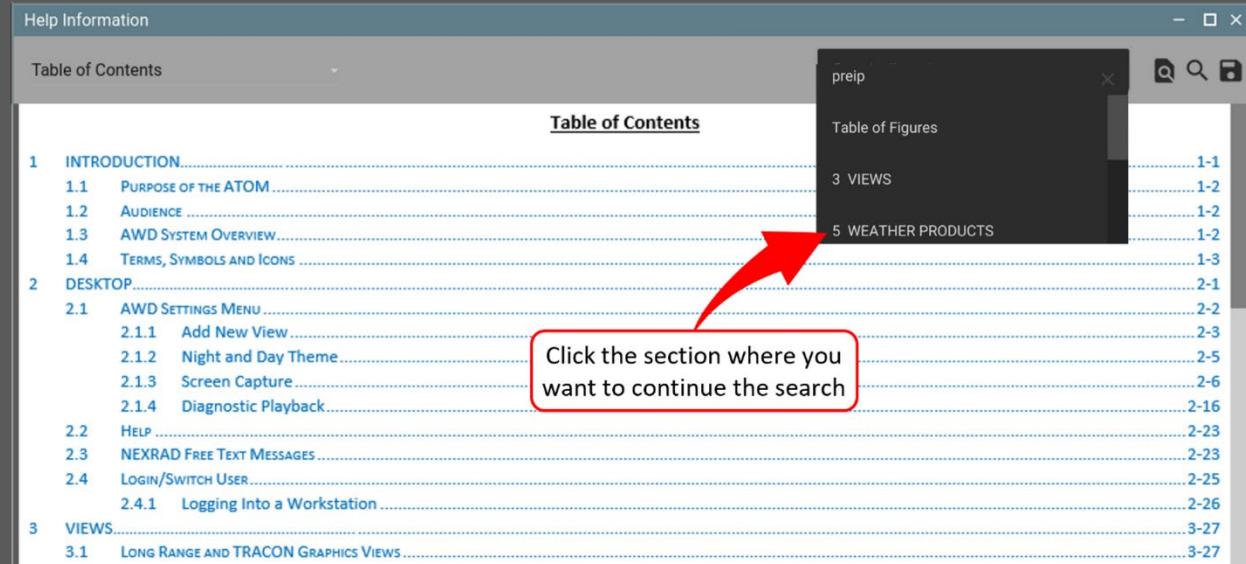


Figure 7-14. Select Section from Search All Sections Results

In this example, the first instance of ***precip*** in Section 5 is highlighted in orange and displayed in the Help window while the other 157 ***precip*** matches are highlighted in yellow (Figure 7-15. Section from Search All Section Results Displayed).

5 WEATHER PRODUCTS			FIND	precip	X	^	v	1/158	Q	S	F
Precipitation (PRECIP)	*	*									
Echo Tops (ECHO TOPS)	*	*									
Turbulence (TURB)	*										
Composite Reflectivity Mosaic (COMP REFL)	*										
Base Reflectivity (Base Refl)	*	*									
Icing (ICING)	*	*									

Forecast Products - Forecast Products provide information on convection, frontal passages, turbulence, icing and forecast performance. Forecast Products, their respective acronyms, and in which view they are available are listed below in Table 5.2.

Table 5.2. Forecast Weather Products

FORECAST PRODUCTS	Long Range Graphics View	TRACON Graphics View
TFM Convective Forecast (TCF)	*	
Convective WX Avoidance Polygons (CWAP)	*	
CWAP Verification (CWAP VERIF)	*	
Fronts Forecast (FRONTS)	*	*
Turbulence Forecast Contours (TURB CNTRS)	*	*
Icing Forecast Contours (ICING CNTRS)	*	*
Forecast Contours (FCST CNTRS)	*	*
Forecast Verification Contours (VERIF CNTRS)	*	*

Figure 7-15. Section from Search All Section Results Displayed

After you select a section from the Search all sections dropdown menu, your search automatically becomes a Search in section, where you can close the search, use the down-pointing and up-pointing carets to step forward or backward in the search, scroll the entire section, or initiate a completely new search.

Appendix A. Acronyms

Acronym	Definition
AIRMET	Airmen's Meteorological Information
ARENA	Areas Noted for Attention
ARTCC	Air Route Traffic Control Center
ASR	Airport Surveillance Radar
ATC	Air Traffic Control
ATCSCC	Air Traffic Control System Command Center
ATCT	Airport Traffic Control Tower
ATOM	Air Traffic Operator's Manual
AWC	Aviation Weather Center
AWD	Aviation Weather Display
BT	Briefing Terminal
CANRAD	Canadian Radar
CDR	Coded Departure Route
CERAP	Center Radar Approach Control
CIC	Controller-in-Charge
CIWS	Corridor Integrated Weather System
CONUS+	Continental United States Plus
CoSPA	Consolidated Storm Prediction for Aviation
CPU	Central Processing Unit
CSS-Wx	Common Support Services - Weather
CWA	Center Weather Advisory
CWAP	Convective Weather Avoidance Polygon
CWSU	Center Weather Service Unit
dBZ	decibel relative to Z
EDR	Eddy Dissipation Rate
ERAM	En Route Automation Modernization
FAA	Federal Aviation Administration
FCA	Flow Constrained Area
G-AIRMET	Graphical AIRMET
GFA	Graphical Forecast Analysis
GMT	Greenwich Mean Time
GOES	Geostationary Operational Environmental Satellite
GUI	Graphical User Interface

Acronym	Definition
IFR	Instrument Flight Rules
IR	Infrared Radiation
LAT/LONG	Latitude/longitude
LLWS	Low Level Wind Shear
METAR	Meteorological Aerodrome Report
MSL	Mean Sea Level
MVFR	Marginal Visual Flight Rules
NAS	National Airspace System
NAVAID	Navigational Aid
NEXRAD	Next Generation Weather Radar
NextGen	Next Generation Air Transportation System
NM	Nautical Mile
NOM	National Operations Manager
NTMO	National Traffic Management Officer
NTMS	National Traffic Management Specialist
NWP	NextGen Weather Processor
NWS	National Weather Service
OS	Operational Supervisor
PC	Personal Computer
PIREP	Pilot Report
PPA	Probability of Pilot Avoidance
SCI	Storm Cell Information
SD	Situation Display
SID	Site Identifier
SIGMET	Significant Meteorological Information
SLD	Super-cooled Large Droplets
STARS	Standard Terminal Automation Replacement System
STMC	Supervisory Traffic Management Coordinator
SUA	Special Use Airspace
TAF	Terminal Aerodrome Forecast
TCF	Traffic Flow Management Convective Forecast
TDWR	Terminal Doppler Weather Radar
TFI	Traffic Flow Impact
TFM	Traffic Flow Management

Acronym	Definition
TMC	Traffic Management Coordinator
TRACON	Terminal Radar Approach Control
TSD	Traffic Situation Display
VAA	Volcanic Ash Advisory
VFR	Visual Flight Rules
WARP	Weather and Radar Processor
WATRS-Plus	West Atlantic Route System-Plus
WP	Wind Profiles
Wx	Weather

Appendix B. Glossary

Term	Definition
Accuracy	For observations, the acceptable variation from the true value or standard. For forecasts, the acceptable variation from the true value.
Active View	The view (window) currently in use that the AWD user can interact with. While more than one view can be opened at one time, only the active can be manipulated (e.g., products added, zoomed, etc.)
Air Mass	A large body of air with uniform temperature and moisture.
Archive	Stored information (e.g., weather images, settings, filters, etc.). NWP archives screen captures, weather products, analysis products, and diagnostic products.
Aviation Weather Display	Any display providing an NWP user interface, including operational user interfaces, adaptation maintainer user interfaces, monitoring and control user interfaces, and security control interfaces.
Caret	Icon that points left, right, up, or down used throughout the AWD GUI that is used in numerous AWD functions.
Click	The action of clicking the left mouse button one time. The ATOM will specify instances when a right-click is required.
CONUS	The Continental United States or CONUS is the 48 connected states and District of Columbia.
CONUS+	The CONUS expanded to extend north, south, east, and west to include areas with Canadian radar coverage, portions of Mexico, Puerto Rico, and further off the east and west coasts.
Desktop	The entire viewable area of an AWD.
Dwell Time	The length of time the loop pauses (dwells) at the beginning of a loop, Time Zero, and the end of a loop. Dwell times for the beginning of a loop, Time Zero, and end loop time can be set independently.
Enter	The act of pressing the Enter key on the keyboard one time.
Filter Bar	Certain AWD products have associated Filter bars that provide capability to filter weather products by altitude, intensity, and other criteria. Filter bars are product specific and have different functions depending on their associated product.
Forecast	A statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace.
Front	The boundary between an advancing cold or warm air mass and the air it is replacing.
Gear Icon	An icon resembling a gear that when clicked, provides access to AWD tools and settings. Gear icons are located on view titlebars, the loop toolbar, and in the AWD Settings menu.

Term	Definition
Graphics View	A window where graphic weather products can be opened and used. Graphics Views can display overlays (e.g., maps, facility boundaries, airports, aeronautical information, etc.), graphical weather products, and can be customized to satisfy user preferences.
Gust	An increase in wind speed where peak wind is at least 10 knots higher than the lowest wind speed.
Hamburger Icon	Three stacked horizontal lines resembling a hamburger that resides in the upper left corner of the Desktop Titlebar.
Help icon	Question mark icons that when clicked, provide direct access to online help. AWD Help icons can be found on the Desktop Titlebar, view titlebars, and other locations where online help is available.
Home	The geographical center of the selected domain.
Icing	The accumulation of ice on an airframe.
Icon	A graphic software element that acts as a selection button that initiates actions within the GUI.
Long Range View	A long-range graphical view that can display any one of the following four domains; CONUS+, Alaska, Hawaii, and Guam.
Loop	The process of displaying AWD products in time sequence using user-selected time intervals, time periods between images, and start, end, and dwell times.
Mosaic	Data from multiple systems or sensors combined into one product that provides a broader view (e.g., regional, national) than one system can provide.
Radar Coverage	Depiction of where airspace is covered by weather radar. Radar coverage with impairment depicts areas of reliable radar coverage and areas where radar coverage is impaired due to range limitations and/or mountain obscuration.
Relative Time	The difference a product's valid time and current time (Time Zero) when other than current weather is being displayed. Valid times in the past are shown as negative numbers while valid in the future are shown as positive numbers.
Static Image View	A view used to display static weather products.
Terminal Area	Airspace around an airport usually controlled by a Terminal Radar Approach Control (TRACON) facility. Terminal areas are generally within a 50nm radius of an airport but can be larger.
Titlebar	A uniquely colored banner at the top of the AWD desktop and all views that includes icons and alphanumeric characters.
Toolbar	Certain AWD views include toolbars where AWD features, tools, and functions can be accessed. Since toolbars view specific, not product specific.
View	Like windows on a personal computer (PC), views can be opened, moved, resized, maximized, minimized, and closed. In the ATOM, the view and window are synonymous.

Appendix C. Icons & Symbols

Name	Icon	Function
Bullseye		Provides capability for user to select any point in the view as the temporary home location.
Caret		Depending on direction, carets represent expanded/collapsed menus or maximized/minimized toolbars.
Close		Click to permanently close a callout box or view (window).
Final Frame		Advances to the last frame of the loop.
First Frame		Moves back to the first frame of the loop.
Free Text Messages		Opens the NEXRAD Free Text Messages menu.
Gear		The Gear icon on the View Toolbar opens the Graphics View Settings menu. The Gear icon on the Loop Toolbar opens the Loop Toolbar Options menu.
Hamburger		Opens the AWD Settings menu and is located exclusively on the Desktop Titlebar
Help		Opens AWD help. Help icons are located on the desktop and in different locations throughout the AWD where online help is available.
Home		Centers graphics views on the domain center (home location) and resets the view to the default zoom level. * Works only when the View Toolbar is maximized
Layers		Opens a menu to manage overlays or create custom overlays.
Maximize		Maximize a view
Minimize		Minimize a view

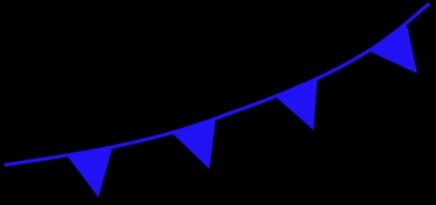
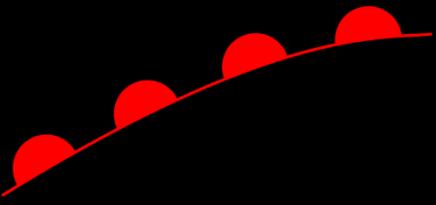
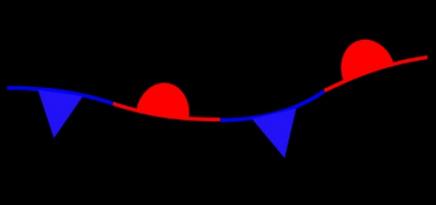
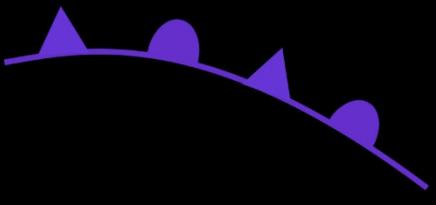
Name	Icon	Function
Play		Play button on the Loop Toolbar starts the animated loop.
Restore		Restore view to its previous size
Ruler		Use to measure the distance between two points in nautical miles.
Save		Save section to .pdf
Search all sections		Use to search the entire ATOM
Search in section		Use to search within one a specific section
Skip back		Skips back to the previous loop interval.
Skip forward		Moves forward to the next loop time interval.
Stop		Stop button on the Loop Toolbar stops the animated loop.
Surface Phase N/A		When this icon is displayed, precipitation phase at the surface (winter weather) is not available.
User		When clicked, opens the AWD User Profile menu where users can login and gain access to their Pref-sets.
Zoom In		Zoom in to view greater detail.
Zoom Out		Zoom out to view a larger geographic area.

Appendix D. Available Overlays

The following overlays are available on the AWD:

- Airports, Heliports & Seaports
- ARTCC Boundaries
- ARTCC Internal Sector Boundaries
- Bodies of Water (Lakes & Rivers)
- Coded Departure Routes
- Core 30 Airports
- County Boundaries and Roads
- Fixes & NAVAIDS
- Flow Constrained Areas (FCAs)
- Heliports
- Jet Routes
- Military Airfields
- NAS Boundaries
- Other Routes
- Playbook Routes
- Q-Routes
- Radar Sites
- Routes & Procedures
- Seaplane Bases
- Secondary Airports
- Special Use Airspace (SUA)
- Standard Instrument Departures (SIDs)
- Standard Terminal Arrival Routes (STARS)
- System and Sensor Locations
- Tech Ops Overlays
- Terminal Routes (T-Routes)
- Victor Airways
- WATRS-Plus Routes

Appendix E. Weather Symbols

	Cold Front - A boundary separating two air masses where colder air is advancing and replacing warmer air. Cold fronts are often accompanied with precipitation and/or thunderstorms.
	Warm Front – A boundary separating two air masses where warmer air is advancing and replacing colder air.
	Stationary Front – A boundary between a cold and warm air mass that is moving very slowly or not at all.
	Occluded Front – A boundary that is formed as a cold front overtakes a warm front.
	Trough – An elongated area of relatively low atmospheric pressure.
H	High Pressure – An area of higher atmospheric pressure compared to the surrounding environment. High pressure areas are typically associated with clear skies and low winds.
L	Low Pressure – An area of lower atmospheric pressure compared to the surrounding environment. Low pressure areas are typically associated with clouds and often precipitation.