| GLENN COUNTY SPRING BMO'S STAGE ALERTS | | | | | | | | | | | |
|--|--|--------------|------------|--------------|-----------|----------|----------|-------------|---------------|------------|------------|
| | | | | | | | | | | | |
| | | a | 0 (00 | | | | | | | Difference | Difference |
| State Wall Number | Subaraa | Current Year | Current RP | GS Elevation | 2014 W/SE | 2012 WSE | 2012 WSE | Stage 1 & 2 | Stage 2 Alert | to 2013 | trom 2012 |
| | 10: BOS Dist 3 | 68.47 | 176 /5 | 176 /5 | 107.98 | 108.09 | 120 90 | 131 | 110 5 | _0 1 | -12.8 |
| 21N03W33A04M | 10: BOS Dist 3 | 45.2 | 164 53 | 163.43 | 119.33 | 123.03 | 120.00 | 131.2 | 173.8 | -4.6 | -6.0 |
| 20N03W/12C01M | 10: BOS Dist 3 | 45.5 | 162.43 | 161 /3 | 116.00 | 120.00 | 127.52 | 124.6 | 125.0 | -7.5 | -0.0 |
| 20N03W/23G02M | 10: BOS Dist 3 | 32.04 | 1/0 /3 | 1/18/13 | 117.39 | 124.40 | 127.00 | 124.0 | 117 | -1.5 | -0.1 |
| 20N03W23C02M | 10: BOS Dist 3 | 16.72 | 130 7/ | 138 // | 123.02 | 121.30 | 128.10 | 113.6 | 104.7 | -5.0 | -0.3 |
| CALWater 002-01 | 10: BOS Dist 3 | 10.72 | 13.74 | 130.44 | 120.02 | 110 33 | 11/ | 116.0 | 104.7 | -0.0 | -0.5 |
| | | 13 | 104 | 104 | 110 | 113.55 | | 110.1 | 111.4 | -4.0 | 0.0 |
| 21N02W02B02M | 9' BOS Dist 5 | 37.83 | 163.01 | 162 56 | 125 18 | 136 57 | 137.01 | 136.1 | 130.23 | -11 4 | -0.4 |
| 21N02W02D02M | 9: BOS Dist 5 | 50.5 | 181 92 | 181 42 | 131 42 | 140.82 | 143 52 | 142 | 132.8 | -9.4 | -27 |
| 21N02W23G01M | 9: BOS Dist 5 | 37.8 | 154.9 | 154.4 | 117 1 | NM | 128.5 | 125.1 | 118.7 | ΝΔ | |
| 2111021120001111 | | 07.0 | 104.0 | 104.4 | | | 120.0 | 120.1 | 110.7 | 11/1 | |
| 21N01W04N01M | 8: East Corning Basin | 23.08 | 137.68 | 137.38 | 114.6 | 117.38 | NM | 115.6 | 112.2 | -2.8 | NA |
| 22N02W11001M | 8: East Corning Basin | 31 11 | 166.8 | 166.4 | 135.69 | 137.00 | 140.9 | 139.6 | 133.8 | _1 7 | -3.5 |
| 22N01W29K01M | 8: East Corning Basin | 20.59 | 144 88 | 144 38 | 124 29 | 126 52 | 126.88 | 119.0 | 112.7 | -2.2 | -0.4 |
| 221101112010111 | | 20.00 | 144.00 | 144.00 | 124.20 | 120.02 | 120.00 | 110.0 | 112.7 | 2.2 | 0.4 |
| 21N03W31H01M | 5: Orland/Artois | 88 94 | 189 94 | 189 46 | 101 | 107 64 | 115 54 | 123.8 | 106.3 | -6.6 | -79 |
| 20N03W07K03M | 5: Orland/Artois | 48 73 | 168.46 | 168.46 | 119 73 | 124.06 | 128 160 | 118.5 | 99.9 | -4.3 | -4.1 |
| 20N03W17P01M | 5: Orland/Artois | 24.3 | 156.95 | 155 45 | 132 65 | 123.95 | 136 15 | 125 | 110.2 | 8.7 | -12.2 |
| 20N04W12F02M | 5: Orland/Artois | 63.27 | 189.97 | 189 47 | 126 7 | 132 69 | 137.84 | 136.3 | 115.2 | -6.0 | -5.2 |
| 21N03W18B02M | 5: Orland/Artois | 141.26 | 224 48 | 224.08 | 83.22 | NM | 103 960 | 132 7 | 113.2 | NA | NA 0.2 |
| 21N04W24A02M | 5: Orland/Artois | NM | 230.5 | 230 | NM | NM | NM | 125.1 | 107.4 | NA | NA |
| 21N04W24A03M | 5: Orland/Artois | 144.8 | 231.5 | 230 | 86.7 | 95.62 | 105.350 | 125.1 | 107.4 | -8.9 | -9.7 |
| 22N02W31C01M | 5: Orland/Artois | 30.72 | 206 43 | 205 43 | 175 71 | 183 42 | 181 73 | 180.1 | 171 7 | -7 7 | 17 |
| 21N03W12C02M | 5: Orland/Artois | 42.8 | 206.44 | 204 44 | 163.64 | 170.84 | 170.04 | 171 | 163 | -7.2 | 0.8 |
| 21N03W11G01M | 5: Orland/Artois | NM | 202 74 | 202 44 | NM | 166 62 | 166 64 | 170 1 | 161.5 | NA | 0.0 |
| 22N03W34A01M | 5: Orland/Artois | 22.95 | 235.95 | 235.45 | 213 | 220.84 | 217.74 | 217.8 | 213.5 | -7.8 | 3.1 |
| 21N03W22H01M | 5: Orland/Artois | NM | 204.45 | 204.45 | NM | 145.55 | 149.55 | 149.9 | 139.1 | NA | -4.0 |
| 21N02W09M02M | 5: Orland/Artois | 50.5 | 181.92 | 181.42 | 131.42 | 140.82 | 143.52 | 142 | 132.8 | -9.4 | -2.7 |
| 21N03W24P01M | 5: Orland/Artois | 59 | 181.08 | 180.43 | 122.08 | 129.58 | 134.28 | 135.8 | 123.7 | -7.5 | -4.7 |
| | | | | | | 0.00 | | | | | |
| 22N03W03D01M | 4: Orland Unit Water Users Association | NM | 270.97 | 270.47 | NM | 190.78 | 193.37 | 188.7 | 182.5 | NA | -2.6 |
| 22N03W17E01M | 4: Orland Unit Water Users Association | 19.7 | 284.99 | 285.49 | 265.29 | 270.19 | 265.39 | 267.2 | 263.7 | -4.9 | 4.8 |
| 22N03W12Q03M | 4: Orland Unit Water Users Association | 43.2 | 232.94 | 232.44 | 189.74 | 196.35 | 197.29 | 195.1 | 188.3 | -6.6 | -0.9 |
| 22N03W21F02M | 4: Orland Unit Water Users Association | 30.06 | 265.47 | 264.47 | 235.41 | 243.32 | 238.37 | 238.7 | 234.5 | -7.9 | 4.9 |
| 22N03W30C01M | 4: Orland Unit Water Users Association | 118.65 | 287.99 | 287.49 | 169.34 | 174.79 | 178.19 | 186.6 | 176.8 | -5.4 | -3.4 |
| 22N02W20Q01M | 4: Orland Unit Water Users Association | 26.91 | 201.93 | 201.43 | 175.02 | 186.28 | 184.71 | 183.8 | 179.2 | -11.3 | 1.6 |
| 22N02W21D01M | 4: Orland Unit Water Users Association | 42 | 200.92 | 200.42 | 158.92 | 174.46 | 174.63 | 170.8 | 164.9 | -15.5 | -0.2 |
| 22N03W34A01M | 4: Orland Unit Water Users Association | 22.95 | 235.95 | 235.45 | 213 | 220.84 | 217.74 | 217.8 | 213.5 | -7.8 | 3.1 |
| | , | | | | | | | | | | |
| 19N02W29Q01M | 11; Glenn-Colusa | 2.81 | 92.42 | 92.42 | 89.61 | 88.27 | 89.67 | 85.1 | 75.1 | 1.3 | -1.4 |
| 19N03W26P01M | 11; Glenn-Colusa | 4.6 | 103.43 | 100.43 | 98.83 | 100.43 | 100.47 | 94.7 | 89.2 | -1.6 | 0.0 |
| 20N02W02J01M | 11; Glenn-Colusa | 12.01 | 127.9 | 127.4 | 115.89 | 117.48 | 120.78 | 115.9 | 112.4 | -1.6 | -3.3 |
| 20N02W11A01M | 11; Glenn-Colusa | 9.75 | 125.9 | 125.4 | 116.15 | 115.88 | 116.64 | 114.6 | 108 | 0.3 | -0.8 |
| 20N02W11A02M | 11; Glenn-Colusa | 14.97 | 125.4 | 125.4 | 110.43 | 111.57 | 113.48 | 108.7 | 88.8 | -1.1 | -1.9 |
| 20N02W11A03M | 11; Glenn-Colusa | 20.42 | 125.9 | 125.4 | 105.48 | 104.39 | 107.31 | 96.5 | 72.7 | 1.1 | -2.9 |
| 20N02W13G01M | 11; Glenn-Colusa | 5.08 | 115.8 | 115.4 | 110.72 | 110.06 | 112.82 | 107.5 | 105.6 | 0.7 | -2.8 |

| GLENN COUNTY SPRING BMO'S STAGE ALERTS | | | | | | | | | | | |
|--|-------------------------------|--------------------------|-------------------------|--------------|----------|----------|----------|----------------------|---------------|------------------------------------|------------------------------------|
| State Well Number | Subarea | Current Year RP to WS | Current RP Elevation | GS Elevation | 2014 WSE | 2013 WSE | 2012 WSE | Stage 1 & 2 Alert | Stage 3 Alert | Difference from 2013 to 2014 | Difference from 2012 to 2013 |
| 20N02W29G01M | 11; Glenn-Colusa | 7.83 | 119.92 | 119.42 | 112.09 | 113.12 | 113.3 | 109.2 | 107.5 | -1.0 | -0.2 |
| | | | | | | | | | | | |
| 19N02W13J01M | 12; Provident ID | 12.19 | 88.99 | 88.39 | 76.8 | 75.85 | 75.83 | 78 | 72 | 1.0 | 0.0 |
| 18N02W36B01M | 12; Provident ID | 14.1 | 76 | 75.4 | 61.9 | 63.3 | 69.89 | 65 | 60 | -1.4 | -6.6 |
| 19N02W34F01M | 12; Provident ID | 4.58 | 86.9 | 85.4 | 82.32 | 80.69 | 81.99 | 79 | 76 | 1.6 | -1.3 |
| 19N02W36H01M | 12; Provident ID | 10.64 | 84.79 | 83.79 | 74.15 | 73.4 | 73.25 | 75 | 70 | 0.8 | 0.2 |
| | | | | | | | | | | | |
| 19N02W13J01M | 14; Princeton-Codora-Glenn ID | 12.19 | 88.99 | 88.39 | 76.8 | 75.85 | 75.83 | 78 | 72 | 1.0 | 0.0 |
| 18N02W36B01M | 14; Princeton-Codora-Glenn ID | 14.1 | 76 | 75.4 | 61.9 | 63.3 | 69.89 | 65 | 60 | -1.4 | -6.6 |
| 19N02W34F01M | 14; Princeton-Codora-Glenn ID | 4.58 | 86.9 | 85.4 | 82.32 | 80.69 | 81.99 | 79 | 76 | 1.6 | -1.3 |
| 19N02W36H01M | 14; Princeton-Codora-Glenn ID | 10.64 | 84.79 | 83.79 | 74.15 | 73.4 | 73.25 | 75 | 70 | 0.8 | 0.2 |
| | | | | | | | | | | | |
| KWD-1 | 7; Kanawha Water District | 17 | 154.3 | 154 | 137.3 | 141.3 | 144.3 | None | None | -4.0 | -3.0 |
| KWD-2 | 7; Kanawha Water District | 16 | 161.35 | 160 | 145.35 | 149.35 | 151.35 | None | None | -4.0 | -2.0 |
| KWD-3 | 7; Kanawha Water District | 25 | 140.4 | 139 | 115.4 | 123.4 | 130.4 | None | None | -8.0 | -7.0 |
| | | | | | | | | | | | |
| GWD-1 | 6; Glide Water District | 31 | 156.75 | 156 | 125.75 | 128.75 | 128.75 | None | None | -3.0 | 0.0 |
| GWD-2 | 6; Glide Water District | 26 | 158.2 | 158 | 132.2 | 138.2 | 140.2 | None | None | -6.0 | -2.0 |
| GWD-3 | 6; Glide Water District | 23 | 174.75 | 174 | 151.75 | 154.75 | 146.75 | None | None | -3.0 | 8.0 |
| | | | | | | | | | | | |
| 19N01W15D01M | 15 & 16; RD 2106 & 1004 | NM | 95.73 | 93.38 | NM | NM | 82.03 | 78 | 75 | NA | NA |
| 19N01W27R01M | 15 & 16; RD 2106 & 1004 | 11.7 | 83.88 | 83.38 | 72.18 | 71.78 | 70.58 | 67 | 63 | 0.4 | 1.2 |
| 18N01W17G01M | 15 & 16; RD 2106 & 1004 | 19.1 | 81.39 | 81.39 | 62.29 | 63.65 | 63.04 | 61 | 55 | -1.4 | 0.6 |
| 18N01W22L01M | 15 & 16; RD 2106 & 1004 | 6.5 | 72.89 | 72.39 | 66.39 | NM | 66.09 | 63 | 61 | NA | NA |
| | | | | | | | | | | | |
| 18N01E05D01M | 17; Western Canal | 4.05 | 77.66 | 77.36 | 73.61 | 73.44 | NM | 64 | 62 | 0.2 | NA |
| 19N01W13Q01M | 17; Western Canal | 3 | 85.9 | 85.9 | 82.9 | 80.9 | 81.9 | 65 | 60 | 2.0 | -1.0 |
| | | | | | | | | | | | |
| 18N02W18K01M | 13; Willow Creek Mutual | 6.9 | 83.22 | 83.42 | 76.32 | 75.42 | 76.02 | 72.2 | 70.7 | 0.9 | -0.6 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |



Spring 2014 Groundwater Levels



Hwy 48



52

Roa

Road

33J01 Road 45

29G01

F

Road

Road 43

Road 44

Road 45

Road 46

Road 41

GWD-2

GADD-1

Ξ

DRAFT

Preliminary Concept: Voluntary Local Groundwater Users Cooperative

With greater cooperation and scheduling, a cooperative groundwater users program could limit the interference from one well to a neighboring well, also limiting the regional combined cone of depression created while many users are pumping at the same time.

The project would include baseline monitoring and data collection, outreach, education, and cooperation from local landowners, a web-based mapping interface and pumping scheduling components. It could potentially open discussions regarding Time of Use with the utility companies. Potential areas could include the western portion of Glenn and Colusa Counties, or the north-eastern portion (Capay region) of Glenn County.

Outreach/Education/Cooperation components would likely include:

- Public meetings
- Individual meetings
- Potential agreements (for well data)
- Program training and testing, registering
- Monitoring groundwater levels (data loggers and manual measurements)
- Feedback mechanism (for interference data, website issues, etc)
- Follow-up
- Time of Use (TOU) issues

The web-based GIS map would include at a minimum:

- Base map (aerial photography?)
- Roads
- scale
- well locations and depths/screening (perhaps by color range: Example-Purple=0-199 ft, Yellow=200-399, Orange=400-699, Red=700+)
- Interactive scheduling components
- Groundwater contours (dynamic or updated weekly or monthly from monitoring data?)

The scheduling component would be incorporated in the map by showing which wells are pumping currently, scheduled, and not scheduled (color coded rings or some other way to visually show). It should also include lengths of time for schedule (dates/time on/time off)

When you hover over the well, the mapping interface could pop up the start date and time/stop date and time (or scheduled start/stop). It could also be listed in tabular form (by id number) on the page for easy reference.

The schedule component should also include a notification to grower (app or phone call notification) when currently pumping wells are scheduled to shut off and next scheduled pumps are ready to turn on.

In addition, it would be helpful for the grower to be able to add additional data to his wells such as pumping depth, flow, energy usage or fuel consumption, etc.

Groundwater contours can be developed prior to implementation, and throughout the implementation phase. These contours can be used for comparison to effectively manage the pumping in the region.

Phase 2 could incorporate a cost study analysis if participants are willing to share additional information. Portions of this study could strengthen the TOU conversations with utility agencies.



| Currently | / Pum | ning |
|-----------|--------|-------|
| Currenti | y runn | pilig |

| Well Number | Start | Stop |
|-------------|-----------------|-----------------|
| 1 | 7:00 pm, 7/5/14 | 7:00 pm, 7/6/14 |
| 2 | 5:00 pm, 7/5/14 | 8:00 pm, 7/7/14 |
| 3 | 6:00 pm, 7/5/14 | 6:00 am, 7/6/14 |
| 4 | 4:00 pm, 7/6/14 | 7:00 pm, 7/7/14 |
| 5 | 3:00 pm, 7/6/14 | 6:00 am, 7/7/14 |
| 6 | 5:00 pm, 7/6/14 | 7:00 am, 7/7/14 |
| 7 | 3:00 pm, 7/7/14 | 7:00 am, 7/8/14 |

| Well Number | Start | Stop |
|-------------|------------------|------------------|
| 1 | 7:00 pm, 7/8/14 | 7:00 pm, 7/9/14 |
| 2 | 5:00 pm, 7/8/14 | 8:00 pm, 7/9/14 |
| 3 | 6:00 pm, 7/8/14 | 6:00 am, 7/9/14 |
| 4 | 4:00 pm, 7/9/14 | 7:00 pm, 7/10/14 |
| 5 | 3:00 pm, 7/9/14 | 6:00 am, 7/10/14 |
| 6 | 5:00 pm, 7/9/14 | 7:00 am, 7/10/14 |
| 7 | 3:00 pm, 7/10/14 | 7:00 am, 7/11/14 |
| 8 | 5:00 pm, 7/11/14 | 5:00 pm, 7/12/14 |
| 9 | 6:00 pm, 7/12/14 | 7:00 am, 7/13/14 |