

# 3<sup>rd</sup> Quarter

## September 9, 2014



# MACOG Staff

## Executive Director

- James Turnwald

## Office Administration

- Shirley Czerna
- Carla Kiernan

## Accounting

- Debbi Gardner
- Lori Ratliff

## GIS/Modeling & IT

- John-Paul Hopman
- Russ Ragimbekov

## Planners

- Zach Dripps
- Joe Mehl
- Jeremy Reiman
- Erin Roznik
- Caitlin Stevens

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# Financials

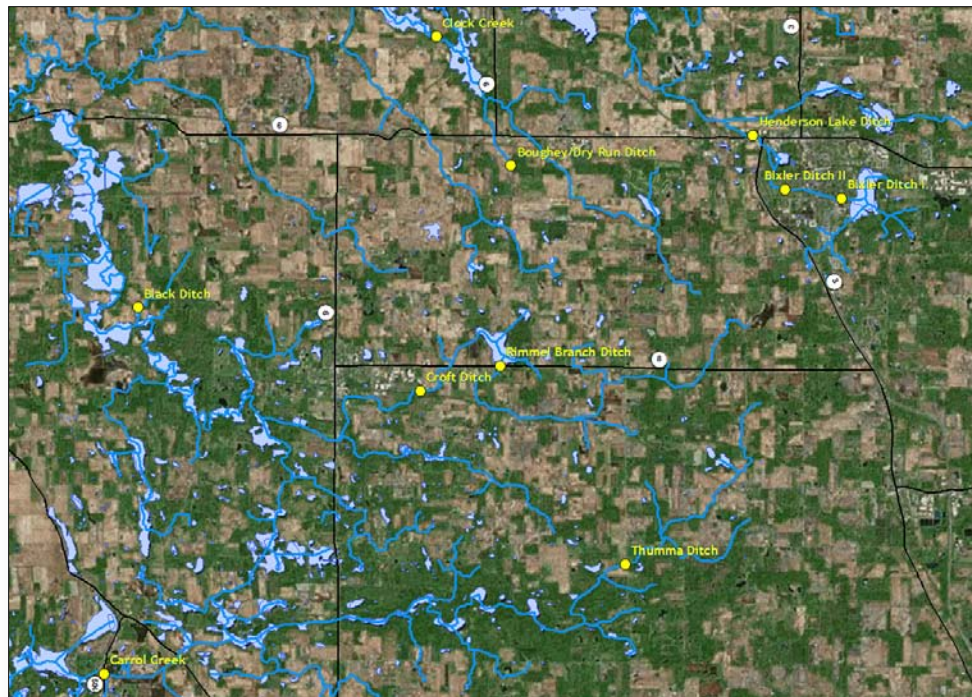
- **Budget Transfer: Over budget due to Basin Bites printing in June**
  - **Ask to move \$1,400 from contractual services budget to printing budget**
- **Total Current Assets: \$153,641.07**
- **4<sup>th</sup> Quarter Expenditures: \$28,421.29**
- **Claims Approval**

# Old Business

- Basin Updates

# Old Business

- Basin Updates
- **Water Quality Testing Program**



Site Number	Date	Did it rain within 48 hrs. of sampling?	Baseflow or Wet Weather Flow (BF or WW)	pH	Temp C	Dissolved oxygen mg/l	BOD mg/l & %	Chlorides mg/l	Conductivity µS/CM	Total Dissolved Solids mg/l	<i>Escherichia coli</i>	Nitrate-Nitrite mg/l	Total Phosphorus mg/l	Turbidity ntu	Total Suspended Solids-mg/l	Flow cfs
1	4/23/2014	Y	WW	7.60	8.9	9.14	0.79/8.60	16.7	564	288	0	4.8	0.35	3	31	1.755
2	4/23/2014	Y	WW	7.74	10.6	9.53	2.3/24.13	18.2	592	302	100	5.3	0.29	2	18	18.365
3	4/23/2014	Y	WW	8.04	10.9	10.19	2.4/24.04	23.8	567	289	0	1.9	0.27	2	10	10.800
4	4/23/2014	Y	WW	8.20	10.6	9.40	3.8/40.85	21.3	466	238	100	2.1	0.29	17	28	5.481
5	4/23/2014	Y	WW	7.94	11.1	9.81	2.2/22.43	20.7	815	416	0	2.0	0.33	0	9	2.869
6	4/23/2014	Y	WW	7.96	9.9	9.78	1.0/10.22	14.6	570	291	0	2.4	0.26	7	7	1.928
7	4/23/2014	Y	WW	7.56	10.5	9.19	1.02/11.1	13.3	582	297	0	3.2	0.68	0	4	4.095
8	4/23/2014	Y	WW	7.97	8.9	7.17	0.9/13.25	12.1	659	336	0	3.0	0.16	3	6	0.496
9	4/23/2014	Y	WW	7.95	10.1	8.91	1.2/13.13	12.2	677	345	0	4.1	0.14	0	8	6.851
10	4/23/2014	Y	WW	7.88	12.2	7.89	2.2/28.26	12.1	554	283	0	1.5	0.32	10	34	70.389
1	5/29/2014	Y	WW	7.30	16.2	7.74	1.5/18.73	14.9	610	311	2400	10.1	0.62	70	99	4.577
2	5/29/2014	Y	WW	7.89	21.2	7.98	3.1/38.85	11.0	553	282	8100	4.6	0.39	33	43	39.62
3	5/29/2014	Y	WW	7.86	18.7	7.66	0.8/10.31	25.9	650	391	100	5.6	0.12	6	12	1.697
4	5/29/2014	Y	WW	8.18	18.5	7.18	1.7/24.32	25.5	622	317	0	2.6	0.24	7	14	3.84
5	5/29/2014	Y	WW	7.91	19.7	6.74	2.4/35.31	26.5	831	424	500	6.2	0.26	9	13	4.536
6	5/29/2014	Y	WW	8.04	18.6	7.79	0.9/11.81	12.7	583	297	300	5.8	0.29	11	15	1.706
7	5/29/2014	Y	WW	7.56	19.0	6.20	2.1/33.39	26.3	432	220	8400	5.4	0.86	45	46	32.076
8	5/29/2014	Y	WW	7.32	17.1	4.94	2.4/49.39	26.5	448	228	3900	5.3	0.83	65	62	5.427
9	5/29/2014	Y	WW	7.83	19.5	6.20	2.8/45.16	10.0	648	330	200	4.9	0.31	10	17	4.455
10	5/29/2014	Y	WW	7.81	23.4	5.67	2.9/51.50	12.2	544	277	300	2.9	0.19	3	6	29.059
1	6/27/2014	Y	WW	7.67	18.3	7.48	0.0/00.00	17.9	715	365	600	3.2	0.46	51	58	2.585
2	6/27/2014	Y	WW	7.92	22.2	7.31	2.0/27.91	6.5	538	274	4300	1.9	0.32	36	44	15.017
3	6/27/2014	Y	WW	7.76	23.3	5.78	0.8/13.67	25.0	630	321	200	0.9	0.27	23	27	0.802
4	6/27/2014	Y	WW	7.96	22.6	7.34	0.0/00.00	17.6	680	340	150	1.1	0.17	5	6	1.620
5	6/27/2014	Y	WW	6.79	23.2	7.95	1.8/22.39	25.0	981	500	200	0.2	0.37	11	19	1.607
6	6/27/2014	Y	WW	7.90	20.4	7.72	0.0/00.00	13.9	510	260	450	3.6	0.66	28	28	4.165
7	6/27/2014	Y	WW	8.09	19.5	7.41	0.0/00.00	8.8	645	329	350	7.2	0.26	11	15	2.835
8	6/27/2014	Y	WW	7.73	17.9	5.98	0.0/00.00	14.0	731	373	400	0.5	0.25	4	7	0.576
9	6/27/2014	Y	WW	7.71	21.1	5.89	0.0/00.00	5.9	664	339	100	0.1	0.24	9	11	5.054
10	6/27/2014	Y	WW	7.72	24.2	4.07	2.0/47.91	17.0	576	294	100	0.1	0.76	3	4	13.986
1	7/29/2014	N	BF	8.08	16.9	11.48	6.4/56.10	8.2	692	353	200	1.0	0.72	73	92	0.406
2	7/29/2014	N	BF	8.03	15.3	7.65	1.3/17.39	3.6	763	389	850	0.9	0.59	2	11	0.932
3	7/29/2014	N	BF	7.83	16.7	3.94	2.7/69.04	12.5	651	332	400	0.1	0.48	13	15	0.864
4	7/29/2014	N	BF	7.93	16.1	8.87	1.5/16.80	8.6	855	436	0	0.1	0.21	2	1	0.292
5	7/29/2014	N	BF	7.96	18.1	9.45	7.3/77/46	11.9	1157	590	0	1.1	0.43	6	16	1.559
6	7/29/2014	N	BF	8.16	15.6	8.05	1.2/4.91	6.7	660	337	0	1.3	0.20	5	4	0.395
7	7/29/2014	N	BF	7.78	16.6	12.25	6.3/51.16	5.8	641	326	200	1.2	0.41	2	3	0.068
8	7/29/2014	N	BF	7.77	14.7	3.74	1.3/35.29	3.1	719	367	0	1.7	0.75	4	5	0.189
9	7/29/2014	N	BF	7.77	15.4	9.52	4.1/42.86	6.4	716	365	200	1.5	0.29	6	5	3.402
10	7/29/2014	N	BF	7.74	19.0	3.72	1.6/42.47	6.4	565	288	50	1.3	0.48	3	2	25.378
1	8/27/2014	Y	BF	8.02	21.2	4.78	1.4/28.87	19.7	711	363	0	0.8	0.42	68	72	0.117
2	8/27/2014	Y	BF	7.83	19.4	6.03	0.0/00.00	16.5	768	392	0	1.2	0.30	15	12	0.792
3	8/27/2014	Y	BF				No Flow									
4	8/27/2014	Y	BF	7.71	22.0	7.53	0.0/00.00	3.2	723	368	0	1.0	0.20	3	5	0.011
5	8/27/2014	Y	BF	7.73	23.5	6.82	4.2/61.73	23.0	1356	692	0	2.1	0.34	13	8	0.557
6	8/27/2014	Y	BF	8.13	20.7	6.25	0.0/00.00	8.5	658	336	0	0.7	0.51	4	4	0.024
7	8/27/2014	Y	BF	7.95	19.6	6.28	0.0/00.00	6.3	635	324	200	2.0	0.28	11	8	0.216
8	8/27/2014	Y	BF	7.79	15.3	6.03	1.3/35.29	4.5	755	385	0	1.1	0.29	5	5	0.128
9	8/27/2014	Y	BF	7.71	19.7	6.02	0.0/00.00	21.4	755	385	0	2.0	0.30	16	10	2.426
10	8/27/2014	Y	BF	7.84	22.3	3.29	0.4/12.77	7.0	587	299	0	1.0	0.49	1	2	19.391

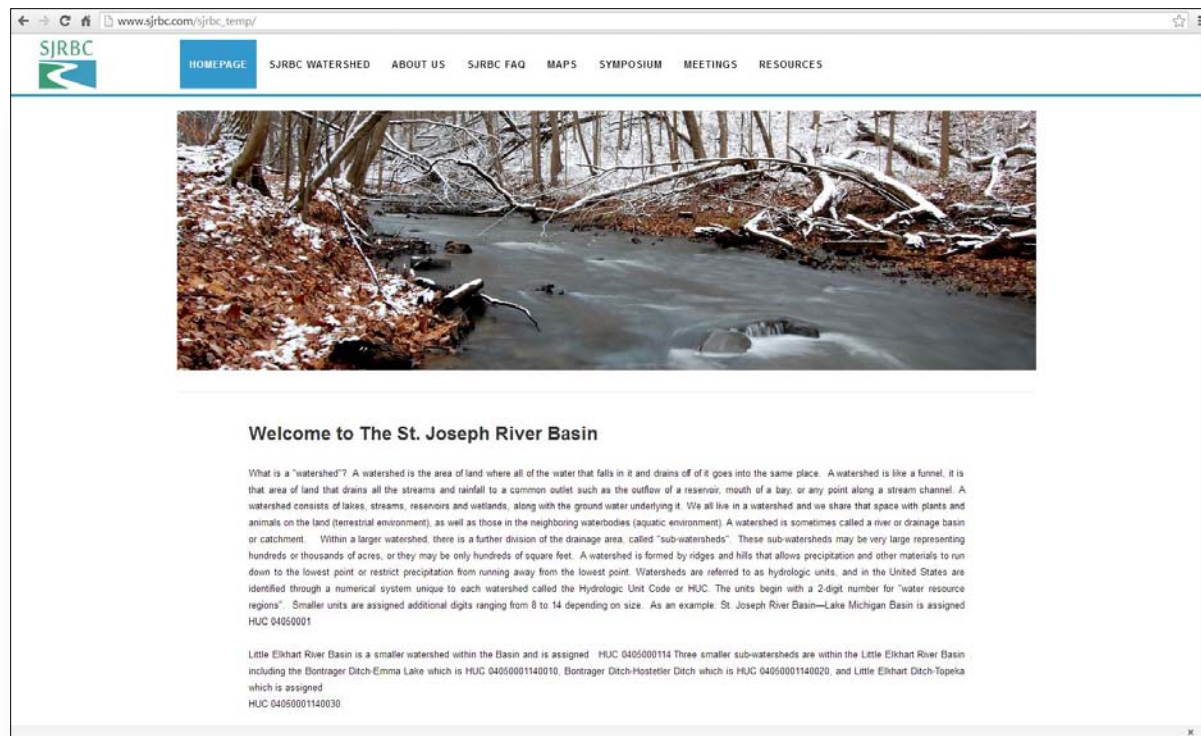
# Old Business

- Basin Updates
- Water Quality Testing Program
- **Ontwa Township Wastewater Treatment Facility**
  - <http://www.deq.state.mi.us/owis/Page/main/Home.aspx>




# New Business

- New SJRBC website



# New Business

- New SJRBC website
- Sub-Watershed Fact Sheets




St. Joseph River Subwatershed Fact Sheet  
September 2014

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## Baugo Creek Watershed

HUC #040500012300

Baugo Creek Watershed is located in the southern portions of St. Joseph and Elkhart counties Indiana. The watershed is composed of four sub-watersheds: Wisler Ditch, Grimes Ditch, Olive Township Ditch, and Rogers Ditch, totaling a drainage basin of 49,581 acres. This watershed has had a history of water quality issues, primarily *E. Coli* and fecal coliform, resulting in the main tributary, Baugo Creek, being listed on Indiana's 303b list of impaired waters. Dominant agriculture land-use paired with poorly regulated discharges to tributaries within the watershed is believed to be the main contributors to water quality issues in this watershed.



**Size:** 49,581 ac.

**Subwatersheds:** 4


**Cities/Towns/Villages:**  
Elkhart County - Wakarusa  
St. Joseph County - Osceola

**Landuse:**  
Agriculture (82%)  
Residential (12%)  
Industrial (2%)

**Tributaries:** 106 mi of open stream  
Grimes Ditch  
Rogers Ditch  
Werntz Ditch

**Unique Resources**  
Ferretti-Baugo County Park  
Conrail Superfund Site

Baugo Creek Watershed Management Plan: <http://www.macoq.com/PDFs/SJRBC/d10plnfnl.pdf>



St. Joseph River Basin Commission

# New Business

- New SJRBC website
- Subwatershed Fact Sheets
- **EPA National Rivers and Streams Assessment 2013-2014**
  - **St. Joseph River and Elkhart River**
  - **[www.epa.gov/aquaticsurveys](http://www.epa.gov/aquaticsurveys)**



# Stewardship Efforts at Elcona CC

Ryan Cummings

Golf Course Superintendent







# About Elcona CC

- Located three miles east of Elkhart, IN
- Opened in 1956
- Designed by William Diddle
- About 400 members





# Acreage Breakdown

- Total property acreage is 339 acres
  - 132 acres mowed turf
  - 4 pond/stream areas, totaling 2.75 acres in size
  - 47 acres natural grassland
  - 116 acres of mixed forest and various other habitats
  - 41 acres of farmland, rented out



# Audubon Certified Golf Course Sanctuary Program



- Aids golf courses in protecting the environment while preserving the natural heritage of the game of golf
- 6 categories of focus
  - Environmental Planning
  - Wildlife and Habitat Management
  - Chemical Use Reduction and Safety
  - Water Quality Management
  - Water Conservation
  - Community Outreach and Education







# Elcona's Audubon History

- In 1991, Superintendent Tom Zimmerman enrolled Elcona in Audubon's Golf Course Sanctuary Program
- After much effort, documenting, and auditing, Elcona was designated a Certified Golf Course Sanctuary in 2012
  - Recertified in August 2014
- One of 8 Certified Golf Course Sanctuaries in Indiana
- One of 1,050 CGCS in the world





# Habitats on Property

- Many diverse habitats property wide
  - Prairie, Mixed hardwood/prairie, aquatic
- “Native Areas”
  - Areas on golf course minimally maintained that help shape hole and provide additional wildlife habitat
- Landscape beds
  - Provide aesthetic beauty
  - Serves a vital role with pollinators on property













# Wildlife Habitat Preservation

- Naturalized areas on the golf course have increased 15% over the last 5 years
- Observable increases in deer and wild turkey populations
- Duck population grows by a couple pair per year for spring nesting















# Wildlife Habitat Preservation

- Nesting boxes throughout property for differing aviary and bats
  - 25 Bluebird Houses
  - 4 Purple Martin Houses
  - 15 Bat Houses
- Bluebird Houses were made and are monitored with the help of a local Eagle Scout







# Operation Pollinator

- Program sponsored by Syngenta that aids and encourages properties to plant wildflowers
- These additional acres of wildflowers will help stimulate and promote the native pollinator population
- Elcona is committed to provide 15 acres of wildflower areas within the next 5 years





# Water Body Management

- 50% of shoreline spacing is maintained naturally with minimal cultural maintenance
- Each water body has a “buffer strip” defined a minimum of 4-6 feet from water edge
  - Defines a “no spray” zone
  - Protects wildlife and water from potential chemical run off and nutrient loading
  - Deters erosion
- Each pond has either an aeration device or fountain to further oxygenate and prevent growth of undesirable species







# Water Body Management

- Ponds are tested 4 times/year to monitor pH, dissolved oxygen, nitrate and phosphorus levels
- Natural dyes are used to limit muck and algal growth on the pond floor
- Weeds and other undesirable growth is removed by hand



# Rain Garden

- In 2012, Elcona worked with the Elkhart Soil and Water Conservation District in construction of a rain garden
  - Filters equipment wash water of 90% turf clippings and other sediment
  - Plants absorb any oils or solvents that would be in the washwater, making them inert and safe for the groundwater sources

















# Water Conservation

- In 2009, Elcona installed a weather station as part of its irrigation renovation
  - Monitors evapotranspiration, a measure of the plant's water usage in a given time
  - The irrigation program is tied to the station and any irrigation needs are calculated using data
  - Helps prevent over applying irrigation





# Fine Turf Management

- Cultural practices always are the first choice in management
- Core aerification of greens, tees, and fairways
  - Relieves soil compaction
  - Increases oxygen and vents toxic gases from root zone
- Greens are topdressed regularly to keep firm, meet membership demands for a smooth, fast roll and aid in water percolation
- Tees and Fairways are regularly vertical mowed to achieve a high quality of cut.
- During times of stress, mowing heights are raised to promote maximum chlorophyll area



# Chemical Use Reduction and Safety

- Integrated Pest Management (IPM)
  - Turf areas are scouted for pest outbreaks and observations are documented
  - Only when thresholds are exceeded, a curative application is applied
- 85% of total nutrients are applied by foliar means
  - Gives the plant the nutrient it needs, dramatically decreases excess nutrient load from potentially reaching groundwater basin
- In 2013 Elcona began using a microbial compost tea product
  - Has helped us reduce synthetic inputs to keep healthy turf



# Chemical Safety

- The chemical building is separated and locked for all other buildings on property
- The storage closet is locked and access is restricted to 4 licensed personnel on staff.
- The building is totally self-contained
  - An potential spill is captured in a pit, pumped into a sprayer, and sprayed responsibly on property
  - Prevents spill from reaching storm drains and causing contamination





# Community Outreach and Education

- Many community members have helped Elcona with varying projects on property
  - Eagle Scout birdhouse construction
  - Establishing food plots with Pheasants Forever
  - Rain Garden Construction with help from Elkhart Co. Soil and Water Conservation District
  - Donated research acres for Purdue University's Turf Science Program







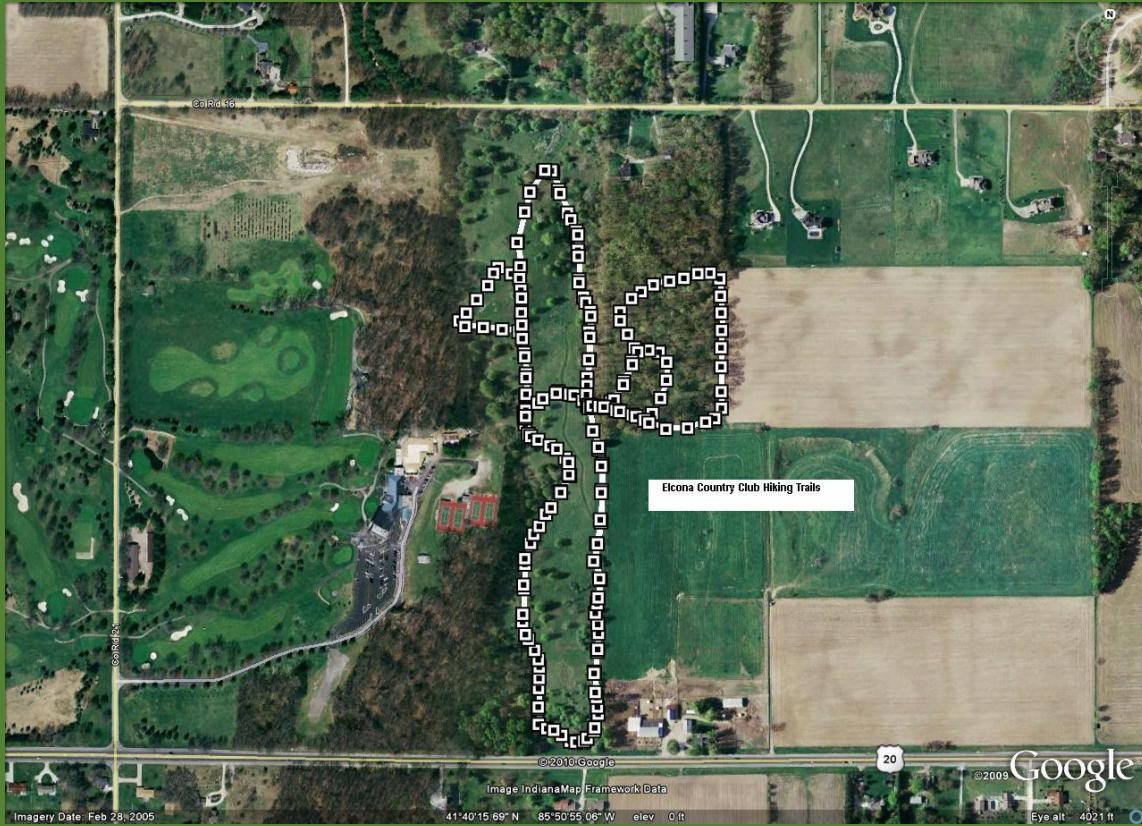


# Member Engagement

- Hiking, Biking, Cross Country Skiing Trails
  - 10 km loop in around our mixed prairie area
- Nature Walks
  - Led by myself and Greg Stump, Staff Horticulturalist









# Audubon Plans for 2015 and Beyond

- Nesting boxes for wood and Mallard duck populations
- Investigating areas for a garden
  - In conjunction with the Seed to Feed Program
  - All food grown will be donated to local food bank
- Beginning a prairie restoration on our east property
  - Incorporating wildflower plantings into restoration
- Continue to hold different member events that engage in our efforts
  - Art/photography offerings
  - Early morning bird/nature walks
  - Frog Watch for kids





# Any Questions?

- Thank you for the opportunity to speak!

- Ryan Cummings
- [ryan@elconacc.com](mailto:ryan@elconacc.com)





# Next Meeting December 2, 2014

