

<p style="text-align: center;">YANKEE SPRINGS TOWNSHIP</p> <p style="text-align: center;">Yankee Springs Township Hall 284 North Briggs Road, Middleville, Michigan 49333</p> <p style="text-align: center;">Saturday, February 1, 2014 10:00 a.m.</p> <p style="text-align: center;"><u>Informational Meeting</u> <u>Regarding</u> <u>Cuddy Intercounty Drain</u></p> <p style="text-align: center;">Meeting Notes</p>	<p>MINUTES</p>
<p>Meeting called to order at 10:00 a.m. by Supervisor Mark Englerth.</p> <p>Special Presenter: Daniel J. Fredricks P.E., of Land & Resource Engineering and Survey.</p> <p>Also present: Russ Yarger, Barry County Drain Commissioner Deb Masselink, GLPA, and Friends of Cuddy Drain</p> <p>Staff Present: M. Englerth, Cathy Strickland</p> <p>Visitors: (15) not including staff present.</p>	<p>CALL TO ORDER</p>
<p>PURPOSE OF MEETING:</p> <p>Yankee Springs Township is hosting this meeting to inform the residents of the township regarding the Cuddy Intercounty Drain. Englerth gave an overview of the presentation. He mentioned that historically, people find out about a project – after it is done. This meeting is part of the continued effort to educate the public on the project.</p> <p>Englerth announced that there would be a time for questions after the presentation of Dan Fredricks. But any pressing questions can be taken along the way.</p> <p>Mr. Fredricks is from Land & Resource Engineering, Inc., Streamside Ecological Services. He is present at this informational meeting on behalf of: Wayland Township, Allegan County and Yankee Springs Township, Barry County.</p> <p>D. Fredricks began his power point presentation with:</p> <p><u>Watershed Overview:</u></p> <ul style="list-style-type: none"> • Area: 4,037 Acres. • 98.7% of the area is in Allegan County. • The length of the drain is 3.2 miles. It starts at Gun Lake. It flows from West to East. 	<p>PURPOSE OF MEETING</p> <p>Presentation of Cuddy Drain Information by D. Fredricks:</p> <p>Page 1 of 9 YST / Cuddy Drain Info. Mtg. 2-1-14</p>

Fredricks commented that the following are the steps of the Drainage Board so far:

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- 1) The Hearing of Practicability
- 2) Engineering Study
- 3) Hearing of Necessity to determine scope of work if going forward. The Hearing of Necessity is scheduled for Wednesday, February 5, 2014.

Fredricks noted that the **Project Goals** were:

- 1) Prevent flooding on developed property.
- 2) Limit debris delivery to navigable channel/Gun Lake.
- 3) Limit sediment delivery to navigable channel/Gun Lake.
- 4) Prevent or minimize E-coli contamination.
- 5) Estimated project is fair & equitable.

Drain History – Pre -1960:

Cuddy Drain was established in 1915. The outlet of Cuddy was relocated to current alignment in 1951. Shortly thereafter, in the 1950's, the Valley Park Shore subdivision was put in. The channel was dredged to about 80' wide and 4' deep. The easement was widened across the 80' channel plus 30' of frontage on either side of the drain.

1985 Dredge Project

12,000 cubic yards of sediment was dredged from navigable channel East of Patterson Road. A foot of sediment protruded above legal lake level. Channel was dredged to a depth of 4 feet below legal lake level.

Drain History – 1991 – Sediment Basin (now basically filled in)-
(2008 last clean out)

The basin was constructed between 1st Street and Patterson Avenue, to reduce sedimentary delivery to the navigable channel. The maximum capacity of the sediment sump is approximately 430 cubic yards. The on-site disposal area is exhausted.

1996 – Petition to add Island Drive Channel to Drainage District was found “not practicable” because it dealt with boat navigation.

June 20, 1997 – Storm caused washout of Patterson Road and flooding at 2814 Patterson Rd.

In 1997, emergency repairs were undertaken to repair the road.

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Recent Developments:

- Regular maintenance
- 2011-13 - commissioned a study for design of Patterson Road Culvert Replacement.
- April 2013 storm caused partial washout of 1st St.

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Existing Conditions – General/Head-cut

The channel is generally stable and capable of transporting supplied sediment load. The channel head-cut is between Patterson Road and Timber Creek Drive. The grading established in 1951 is much like what it is today.

Existing Conditions – Erosion

Major areas of channel instability and bank erosion is downstream of Timber Creek Drive. Fallen trees exacerbate the problem. The major area of excess sediment input and erosion is between 1st St. and Timber Creek Drive.

Crossings-

County road crossings have 10 year to 100 year hydraulic capacity of existing culverts (flood protection). Private crossings have 5 year to 10 year hydraulic capacity. Road crossings at Patterson Road, 1st Street, and private crossings at or near Timber Creek Drive are in poor condition.

Existing Conditions East of Patterson

There is an approximately 300 foot-long sediment bar (sand) downstream of Patterson Road. The water depth is as low as one foot near Patterson Road. Approximately 1,700 cubic yards of sediment was removed three years ago.

Existing Conditions – Gardner Drain

Gardner Drain is generally stable and in good condition upstream of Timber Creek Drive. A major area of channel instability is downstream of Timber Creek Drive. There is a perched culvert at Timber Creek Drive that will need to be replaced.

Water Quality Concerns – Sediment

Sediment transport is a natural process. The annual sediment load is approximately 400 cubic years. Dredging of navigable channel is required every 25 -30 years. An area of channel instability and excess

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sedimentary supply is located near Timber Creek Drive.

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Water Quality Concerns- Debris

Woody debris is a natural and critical part of healthy stream systems. Cuddy and Gardner is generally free of obstructions. The highest concentration of woody debris is between Timber Creek Drive and 1st Street.

Water Quality Concerns – E-Coli

There is potential for elevated E-coli concentrations. There is no evidence to support that the Cuddy is the source, it is only the conduit of E-coli contamination. Potential sources include illicit connections (human waste), agricultural practices, and wildlife. Additional study is required, such as source tracking.

Recommendations:

- **Putting in a larger culvert to “reduce” velocity-** Fredricks commented that there is a lot of concern that if a larger culvert is put in, the speed will increase and more debris would be able to flow thru. He explained that when you have a small area, it backs up water to create head pressure and it basically forces the water thru the smaller culverts at a high rate of speed which causes a tremendous amount of erosion. So by putting the larger culvert, they will basically be able to convey that same amount of flow over a larger area which will actually reduce the velocity. Right now the culvert can collect debris behind it, plug up the culvert, and Patterson Rd. acts as a dam and essentially floods everyone upstream.
- **Aggressive woody debris management/Open upstream corridor**
- **Re-establish sediment basin and move it down closer to Patterson Rd.**
- **Replace culverts at 1st Street – (the Rd. Commission may do that work and pick up the entire tab).**
- **Stabilize the stream channel from 1st St. to Timber Creek Dr. and work with the natural channel processes and create more of a stabilized dimension thru there that will reduce the amount of erosion.**
- **Replace both culverts that are failing and perched at Timber Creek.**
- **Two undersized deteriorated crossings that need to be replaced (upstream).**
- **Investigate pipes as potential sources of illicit discharges.**

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Summary of Goals:

- 1) **Prevent flooding** –have hydraulically adequate culverts in place.
- 2) **Limit debris**- stabilize banks between Timber Creek Drive and 1st St., do woody debris management along the banks of the entire drain, and install a debris catcher in the upstream area in conjunction with where the sedimentary basin is.
- 3) **Reduce sediment load**- 2 phase approach: 1) Stabilize the stream system. 2) Relocate or maintain the sediment basin.
- 4) **Prevent or minimize E-coli**- usually outside the normal duties of the drainage board. Recommending that the drain board work with local partnering agencies to pursue additional study and implementation of BMPs (Best Management Practices) to reduce E-coli levels.
- 5) **Fiscal Responsibility**: Recommendations were to work with the Road Commissions to reduce culvert replacement costs, and investigate grant possibilities to help offset project costs. History was given of previous break-downs of cost ratios in other projects. Further financial breakdowns follow:

Preliminary Project Cost Estimate:

- Gardner Drain – (Allegan County) \$50,000
- Drain Improvements – West of Patterson \$125,000
- Dredging within 400 feet –East of Patterson \$175,000
- Dredging navigable channel East of Patterson \$250,000 (100% Barry County cost)
- Sediment Basin \$70,000 (Major problem: Securing an area for sediment disposal)
- 1st St. culvert replacement \$250,000 (Allegan Cty. Rd. Commission)
- Patterson Road Culvert Replacement \$330,000 (1/2 Allegan County Road Commission)

*Preliminary estimate of project cost \$800K – \$1.25 M

Note: does not include legal, administrative, permitting, mitigation, remediation or financing costs.

Apportionment between Counties:

- **Gardner Drain** 100% Allegan
- **Drain Improvements West** 100% Allegan
- **Dredging within 400 feet East of Patterson** TBD
- **Dredging, navigable channel East of Patterson** 100% Barry County
- **Sediment Basin** - 50% Allegan/50% Barry
- **1st Street Culvert Replacement** – 100% Allegan (ACRC)

- **Patterson Road Culvert** - Half of the cost will go to the Road Commission and the rest will be split 50/50 between Allegan and Barry. This was part of the agreement made in 2010.

Project Schedule

Season/Yr.	Spring 2014	Summer 2014	Fall '14	Winter '15	Spring '15
Topographic Survey	XXXX				
Engineering Design	XXXX	XXXX			
Easement Acquisition		XXXX			
Permitting		XXXX			
Bidding			XXXX		
Construction			XXXX	XXXX	XXXX

“XXXX” = Shaded area = Best case scenario

Add/Remove Lands: (To Project Area)/Drainage District

- | |
|---|
| <ul style="list-style-type: none"> • Add: 759.1 Acres • Remove: 133 Acres |
|---|

PUBLIC COMMENTS

PUBLIC COMMENTS AND QUESTIONS:

Maxine Beukema, of 12985 Valley Drive, commented about seeing the City of Wyoming releasing waste on fields near the drain. Beukema was curious as to how much the soil could contain without run-off.

Jim Bidol, of 12759 Valley Drive, commented that he hadn't heard any information regarding the major sand mining operations and sand piles that are somewhat close to the drain. Fredricks commented that it would be something to investigate. Bidol mentioned that we've had years of heavy rains, and at 1st St. sediment was washed out. D. Fredricks commented that it is not too late to look at this issue. Fredricks also commented that the benefits become more debatable as one goes downstream.

Mark Englerth, YS Supervisor, commented that the life expectancy on a channel is about 20 years. At the end of 20 years, a channel will usually need to be re-dredged. M. Englerth also commented on the apportionment of the cost of the drain project. He noted that it has to

be "fair and equitable". "Yankee Springs Township can't take its whole fund balance and dump it on one bridge," commented Englerth.

Jim Bidol asked if the preliminary engineering study was available as a PDF copy. Fredricks commented that he would make it available for the YS Twp. website along with the power point presentation that he's made today.

Deb Masselink, of GLPA, and Friends of the Cuddy Drain, commented that the Friends of the Cuddy Drain is interested in forming a third party oversight group to check on debris in the sand trap. If debris is found, then Russ Yarger of the Barry County Drain Commission needs to be notified.

Mark Englerth mentioned that there are 248 miles of drain in Barry County (per R. Yarger). Also R. Yarger had told Englerth that when he (R. Yarger) was a kid, farmers took care of their section of the drain. Englerth noted that with time, we've moved away from this. Englerth pointed out the need for a kind of "Adopt-a-Highway" type program, in which a group (like the Friends of the Cuddy Drain) watches the drain and cuts brush, etc. This kind of group activity could save thousands of dollars. "The more ownership you take in this, the "better" this is going to happen," commented Englerth.

M. Barber, of 12967 Valley Drive, asked how many were involved in the drain district. It was mentioned 130. Barber also asked R. Yarger about an assessment that he has received regarding the original engineering work for the culvert and why his neighbor's assessment was less. All of Barber's parcel (and those to the east) drains toward the lake was the reason according to R. Yarger. Not all of the neighbor's parcel drains into the lake. That was why the neighbor's assessment was less. The issue depends on impervious surface.

Pat Gillespie, 12871 Valley Drive, commented about a drain near her property that shoots out a sandbar. Gillespie wondered if those people were being assessed as well. Gillespie also asked what the best time to dredge a channel would be. Bidol commented that a former Drain Commissioner thought late fall was the best time to dredge or early to mid-spring, not during prime boating season. Gillespie also asked if E-coli dies off in the channel or does it affect the lake as well.

Deb Masselink, GLPA, has done E-coli testing, and will be doing more testing soon. Masselink commented that there is a definite need for a sand trap. D. Masselink also commented that E-coli drops as it goes under the bridge.

Tim Gehrke of 12780 Park Drive, inquired, "How much do the farms to the west contribute?" Masselink commented that it has to be

**PUBLIC COMMENTS
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looked into, and it so huge it is considered a CAFO – “Confined Animal Feeding Operation”. Masselink added that they have stringent rules that they have to adhere to.

Bill Baughman, of S. Patterson, asked if the side channels would be dredged or the main channel. Fredricks commented that the Island Lake channel is not an established county drain, so it is beyond the scope of the drain study. Baughman commented that the last time it was dredged the side channels were charged just as much as lots on the main channel.

M. Barber, of Valley Drive, asked “Five days from now, this will all be etched in stone?” Barber was referring to the Meeting of Necessity, to be held February 5th. Fredricks commented that it would not be etched in stone. Fredricks said the “necessity” of the project is etched in stone, but the final scope of the project, apportionment, and individual assessments would not be determined at the Meeting of Necessity. Fredricks said individual assessments would be established after the project engineering design is complete and goes out for bid. There becomes a computation of cost, then the Drain Commissioners go out and get a bond, or loan. Then there will be a day of review, assessments will be made to individual property owners, notifications will be made. Then individuals will have the ability to go in and appeal. Barber asked for a ballpark figure of what it would cost the average homeowner in Barry County. Fredricks commented that he would have to research this for Wednesday’s meeting. The amount of time of the assessment period is a factor too.

Englerth commented that it was premature to give an estimate at this time. It was too risky to give an estimate at this stage of the project. The project scope is still to be determined. There are too many variables out there yet.

Discussion took place about farm property for sale, and it was noted that Mrs. Mlynarchek (owned property near drain) recently passed away.

Jim Bidol, Valley Drive, asked who, in particular, makes proposed assessments and if resource people are pulled in (to be within the confines of the law).

Russ Yarger, Barry County Drain Commissioner, explained the process that would take place. He commented that each township would do their own (assessments). Yarger commented that he’d send his portion of the drain district down to “mapping”. Then he will obtain a spreadsheet on all the properties with impervious surfaces noted on all the lots. With this information, Yarger usually works closer with the engineers, whom have better computer programs than what the Drain Commission has.

**PUBLIC COMMENTS
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Pat Gillespie, of Valley Drive, commented that before the meeting ended, she would like to know how to stay close to the situation and how to get the information to do so. It was commented that information would be on the Drain Commission's website. Gillespie mentioned the possibility of getting links off the YS Township website. D. Fredricks commented that the Intercounty Drain Board would continue to meet. D. Masselink hoped to have a link on her "Friends of the Cuddy Drain" blog.

Jim Bidol asked if the Drain Board would pick and choose what it wanted to do for the project. D. Masselink added that she feels the drain board has been listening to the "Friends of the Cuddy Drain" all the way. The five issues that Greg Purcell brought up have been addressed by the Board and the engineering company.

M. Barber asked R. Yarger what he (R. Yarger) would take away from this meeting today. (R. Yarger is one of three members of the Drain Board). Yarger commented that a Day of Review is needed (by law). He still has lots of questions that need to be answered. Also, side channels need to be looked into. Fairness on assessments is another issue to be investigated. Barber asked Yarger what Yarger would do as far as the project is concerned. Yarger commented that he'd fix the road, and fix the sand trap. Also, culverts need replacement in Allegan County. Yarger said he'd vote yes on the project, but there are things that Yarger needs to have more input on it.

Jim Bidol commended the Drain Board for getting engineering work done which addresses what we have asked to be addressed. Bidol mentioned that it was a bit weak in the area of the sediment basin and E-coli, but it really covered the main points. He asked if the Necessity Meeting would determine not only necessity, but will it decide which of the main things will be done? The final scope will most likely not be decided at that time according to Fredricks.

R. Yarger mentioned that when individuals read things on the website, they should email him (Yarger), or the other two board members. Taxpayers can tell the Drain Board what they think they should do.

Joy Manning, of Island Drive, commented that possibly annual upkeep costs should be added and noted for the township to budget for. Frontloading of the cost was mentioned as well.

The meeting concluded at approximately 12:15 p.m.

Respectfully submitted:

D. Mousseau

Approved