



COMMITTEE WORK SESSION JUNE 6, 2016

Committee Members Present: Rick Rodgers-Excused
Dennis McGlone-Excused
Joe Kernan
Dennis Pierson
Paul Tousley
Scott Pelot-Excused
Charlotte Whipkey

Also Present: Mayor Mike Zita-Excused
Valerie Wax Carr
Ron Messner
Justin Markey-Excused
Karla Richards

The Committee Work Session convened on Monday, June 6, 2016 at 7:00 PM, in the Council Chambers of the Safety Administration Building. The meeting was called to order by Charlotte Whipkey, President of Council. Following a salute to the flag and the Pledge of Allegiance, there was a moment of silent prayer. Ms. Whipkey asked for prayers for Mr. Pelot and his family as his Father is gravely ill. Ms. Whipkey noted that Mayor Zita and Mr. Markey are also excused this evening.

General Topics of Discussion:

Silver Springs Road Repairs

Mr. Pierson stated that the Engineering group is here to discuss in detail. Mrs. Carr stated that Mr. Dave Martin, Engineer with GPD Group & Josh Slaga also of GPD have been working with us and the details of the public and private areas. Last discussed we talked about the public area and the private area. After our initial discussion we gathered additional information from the residents particularly in the watershed area which drains about thirty-five (35) acres and then goes into the Silver Springs area. Mrs. Carr stated that some of the videos the residents submitted were able to help us match up to some of the rain data. Mrs. Carr stated we asked GPD to come with every possibly scenario on how we can address the roadway and the drainage. Mrs. Carr stated that although the residents are not able to view the power point presentation she has asked Mr. Slaga to be seated at the end of the Council rail so that the public can see and hear his discussion. Mr. Pierson requested that the discussion be maintained to the engineering presentation only this evening. (See attached power point presentation slides). Mr. Slaga stated this is 2 part project; the road and how we provide access to the residents to their homes off of Silver Springs Drive and the water shed areas.

Mr. Slaga stated the preliminary evaluation, completed November 10, 2015, showed this area has 3 areas that need to be dealt with; high ground water, uncontrolled surface runoff, and presence of shale 6-10 feet below surface. Mr. Slaga stated this is the main area of concern which is brining the roadway down with it. Mr. Slaga gave a total of five (5) scenarios in detail to correct this area as follows: Option #1-Reconstructing the existing public road on the same alignment at an estimated cost of \$380,000.00 which includes installing an enclosed storm water system and a retaining wall on the public right of way that would require some acquisition of private property. Option #2-Reconstructing the existing public road with a turnaround at an estimated cost of \$398,000.00. It builds off of Option #1 and would require the City acquiring some of the Jones's property. Option #3-Extend road reconstruction beyond the City right of way to include a private drive accessing three properties at a cost of \$431,000.00. The necessity of increasing the culvert sizes would bring a question as to what would need done downstream. Option #4-Access from Reimer Road Extension for four properties at a cost of over \$450,000.00. We would no longer have a retainer wall, but would have to acquire over one half acre of property and move some septic system so would be an expensive project to do. Option #5-Access via Croghan Property at a cost of \$399,000.00. This option would require us to fill in the stream area and put in a new culvert. Mr. Slaga stated that we have through drainage evaluations and looked at the existing conditions and issues with overflow flooding during 2 year to 100 year storm events. A 2 year storm event has a 50% chance of happening in any given year and a 100 year storm event has a 1% probability of happening in any given year. The results from the model show overflowing at these drives starting in a 10 year storm event at the Carnifax drive, which is not at the area of interest (Silver Springs Drive) but downstream. Part of that is due to the two 18" culverts there and one being clogged. At the Kotsalieff drive we start to see flooding at a 25-50 year storm event. A 25-50 year event for a 24 hour duration that peaked as 100 year storm for about a 2 hour duration as shown by a resident's video from July 10, 2013. In order to upgrade the drainage there was discussion on upsizing the culverts to 36 inches and would be done with all three of the culverts with all the work done on private property at a cost of \$117,000.00 and brings the questions of how and who pays for it. Another option is to add retention basins to control water runoff and would reduce the flow through these culverts. Those would work nicely at the Ramirez and Kostalieff properties as an area is there, but is not being utilized. In doing so it would allow the current 18 inch culverts to stay in place. Ms. Whipkey asked about the retention basins cost of \$95,000.00 upstream at the Kostalieff drive to \$105,000.00 upstream at the Ramirez drive and if this is just for the private drives and Mr. Slaga concurred adding that this also includes the costs of acquiring the property and the maintenance. Mr. Pierson discussed the concern of the safety issues with the shale and questioned by draining the surface water does that address the problem or is this more of a temporary fix? Mr. Slaga stated that it's a combination and would solve the problem. Mr. Tousley clarified that the cost of the basins is \$95,000.00 AND \$105,000.00 for a total of about \$200,000.00 for building the basins. and Mr. Slaga concurred. Mrs. Carr stated that \$200,000.00 is the cost for creating the basins and the right of way and Mr. Slaga concurred. Mrs. Carr mentioned if the City were to take this option perhaps we could work out something with the residents as some of the residents have discussed their option of donating some of their land if the City is willing to do some of the right of way property work.

Mrs. Carr stated we do not intend to have answers tonight but we need to look at the engineering aspects because at this point the construction is being delayed until these decisions are made. Mr. Pierson stated that with the five options, we are basically talking a difference of \$35,000.00 to \$40,000.00 between the options and Mr. Slaga concurred. Mr. Pierson asked Mr. Slaga what his opinion is with Option #3? Mr. Slaga stated that Option #3 is the most comprehensive approach by extending work into the private area, but that upsizing of the culverts to 36 inches will cause more downstream issues elsewhere later on and up to a 25 year event you will see that flooding. Mr. Pierson asked if we used smaller diameter of culverts what would this mean? Mr. Slaga stated if keep them at 18 inches as it is today there would be more frequent flooding and by upsizing it will send water up there more quickly which would cause more erosion so the banks downstream would need dealt with. Mr. Tousley discussed Option #3 including the over sized culverts and asked if this would reduce the costs for other culverts? Mr. Slaga replied yes and those costs included with this is the material, the pipe, reconstruction of the driveways, etc. Mr. Tousley asked to have a detailed summary of this presentation and Mr. Slaga replied yes we can provide this. Ms. Whipkey asked where else would the flooding reach out to with the larger culverts and Mr. Slaga stated this would eventually get to Wolf Creek, but would not cause a big difference there. The culverts downstream would need upsized and erosion control would need to be placed along the stream between the driveways. Ms. Whipkey asked what other residents would be impacted by sending more water faster to them before it gets to Wolf Creek? Mr. Slaga stated that it would affect the Ramirez property, the Carnifax property and the Barberton Reservoir, which is what's already in the proposals. Mr. Pierson asked what kind of a warranty does this study guarantee? Mr. Martin stated that we do have professional liability insurance. The best storm water models in the world have a plus or minus 33% of accuracy, just based on rainfall patterns can be and ground water runoff. Drainage is as much of artwork as it is a science. We would certainly stand by our work here and if there are rainfall events that cause a difference from expected results we would need to have discussions on that. Mr. Pierson asked if going with the smaller diameter and putting more impact getting the water flow off the streets and directed to the Wolf Creek Reservoir. Mr. Pierson asked if we do this Option #3 would the 30% ratio still apply? Mr. Martin stated that the road options are tied to the drainage options that were presented. If Council chose to do Option #3 is including the extension that is private property and keep the existing pipes the same would certainly be an option. We can provide more clarification in response to your questions and submit this back to Mrs. Carr, and Mr. White. We are willing to come back to either a Council or Committee meeting again to discuss this in detail. Mr. Pierson stated he does not want to see the City spending the funds twice, as we have limited resources and if the difference is about \$35,000.00 to \$45,000.00 in the first 5 options; it would alleviate the problem and increase the longevity of the entire project. Mr. Kernan stated he understands we have 2 drainage options; one is upsizing so you're opening up the arteries and water moves faster downstream. You take care of the embankment to stop the erosion. The other option is to reconstruct the retention ponds so the water now is still draining at the same rate, your just holding it until it can drain. Mr. Slaga stated with the retention pond we are reducing the flow of the water by holding it back for a short time period of 24-48 hours and after this the pond would become dry. Mr. Kernan stated that basically you're just holding the water at a predetermined location and Mr. Slaga concurred.

Mr. Pierson stated that the shale is the real root of the problem and Mr. Slaga concurred along with the ground water runoff and the soil saturation which creates a slip point at the shale. Mr. White added the soil conditions of the shale is really a critical part of the whole situation. Mr. White indicated that the multiple interaction and addressing what is happening with the deep under drains is the most important factor no matter what option you end up with and Mr. Slaga agreed. Mr. Jack Gainer discussed where these retention ponds would be placed and they would be dry within 24 hours. Mr. Gainer asked if these ponds are designed to hold back a 25- 35 year flood and if so for how long? Mr. Slaga stated that they are designed to hold up to a 100 year storm event for a 24 hour period. If there are multiple days of a 100 year storm event, these ponds would not be able to maintain that, if this were to occur you would see widespread flooding throughout the entire area. Mr. Gainer asked if this would require more changes in the diameter of the pipes in addition to the retention ponds. Mr. Slaga explained for the 100 year/24 hour event no these pipes would not have to be changed, but if you are talking about the greater event then yes. Mr. Gainer asked are these three culverts the only 36 inch culverts between these driveways and Wolf Creek? Mr. Slaga stated Silver Springs would be the first culvert; and there are three more culverts going downstream before you get to Wolf Creek. Mrs. Carr thanked GPD for all of their efforts and when they were hired they were hired to fix or stabilize the public road way. We have since needed to move into the next phase which requires the Council to provide their direction for the private section and how it would be paid for.

Ord. #47-2016 Cleve-Mass. Road Sewer Contract

Mr. Tousley stated that he had asked for more discussion on this and turned this over to Mrs. Carr for the details. Mrs. Carr stated that GPD is also working on this project and Mr. Dave Frank is present for the discussion however there is no power point presentation. Mrs. Carr noted there is a map of the detailed area (see attached) and she would have these sent to Karle to distribute as a PDF to all of you. We started looking at the road area for sewer as they are involved with the road work. We are looking for only doing sewers for Phase 1 and have estimated the costs of \$750,000.00. The bids did come in at \$784,000.00, and although it's above our estimate we do not have to rebid due it being less than 10% of the engineering estimate. We were actually over it by only 4.5%. The reason for the difference is due to the cost for the pipe. Mrs. Carr stated that the bidders were all over the board with the pipe prices. The bottom line is that Karvo was the lowest. This is of immediate nature to get started as soon as possible due to the construction season. Mr. Frank explained that this runs from Oser Road at 224 to Shellhart east and along Shellhart; it is just filling in the gaps where there are existing sewers now. Mrs. Carr stated that in reality this entire area should become a commercial district along Cleve-Mass. Road although there are currently some residential areas. We have had some residents that realize this and have come forward to discuss their properties. Mr. Tousley asked about the solid lines versus the dashed lines shown on the mapping and Mr. White explained there is a change in the elevation levels there. Mr. Pierson asked about the schools and their connections and Mrs. Carr stated the schools are already connected. Mr. Tousley asked if this is being paid thru the tax credit roll back fund and Mrs. Carr Concurred. Mrs. Carr stated this is correct and there would be a contractor reimbursement like that was done with the Strickland Ice Cream building and we would follow this pattern for future tap-ins which would require future legislation.

The other project was the newer Dollar General Store. Mr. White stated this was a tie in fee as part of this and is not an assessment process. Mr. Tousley stated that in a certain amount of years and a business comes in and connects then the City would get all of its money back and Mr. White concurred. Mrs. Carr stated Phase 1 is different as there is no sewer at this end. In the next Phase 2 there is sewer but it's in gaps so we need to fill in those gaps while this is extending the line in conjunction with the road project. There was discussion about the Shellhart Road area and Mr. White stated that all of this will go into the Norton Acres package plant. Ms. Whipkey clarified that all of this sewage will be running to the Norton Acres package plant and eventually when those plants are abandoned it will be addressed. Mrs. Carr noted that Barberton is actively working to do away with all of the package plants and Mr. White stated this one will be one of the first they deal with and the one near Newpark. Mr. Pierson asked since we are going to run a Norton line into the Norton acres package plant, which Barberton controls, if this falls into the JEDD agreement. Mrs. Carr stated this area is not in the JEDD area. Mr. Pierson asked since we increased their capacity does this not affect the JEDD. Mrs. Carr stated that she would rather have Mr. Markey address this since we are working with Barberton in discussions. Mr. Tousley asked how many residents on Shellhart are affected by this and Mr. White stated there may be one and keep in mind there is already sewer to some of these homes. Mr. Kernan asked if Council should suspend the third reading next week and Mrs. Carr replied yes and that Karvo has already called and they are ready to go as soon as Council takes their action.

Settlement of Legal Claim

Ms. Whipkey stated this issue was discussed in Exe. Session at our last meeting. Ms. Whipkey moved to add Ord. #48-2016 and Ord. #49-2016 to the Council agenda for next week, seconded by Mr. Pierson.

Roll Call: Yes: Whipkey, Pierson
 No: None

Motion passed 2-0.

EPA New Findings & Orders

Mr. Tousley stated that we recently received the word back from the EPA relating to Nash Heights. In short they have agreed to our time line. Mrs. Carr stated this was received on May 12, 2016 and it was addressed in Executive Session. As long as we stay on this new time line we will not face any penalties. If we fall off our timeline there will be daily penalties of not to exceed \$20,000.00. The bottom line is to stay on track and right now we are doing just that. Mr. Tousley stated he got the impression if we have a worse winter this year they are willing to work with us on this. Mrs. Carr concurred and as long as we are not purposely falling behind they will work with us. Mrs. Carr stated as long as we stay on point as stated in pages #2 and #3 of their letter, then we would be fine. The bottom line is the final completion is May 30, 2017. Mr. Tousley moved to add Ordinance #50 to next week's Council agenda, seconded by Mr. Kernan.

Roll Call: Yes: Tousley, Kernan
 No: None

Motion passed 2-0.

Unfinished Business:

Mrs. Carr noted all of Council should have received the Republic brochures if not please let her know. Mrs. Carr stated if you have any questioned to please contact her, Mr. Kernan stated these are very good and the information contained was also well done. Mr. Pierson stated he is still getting some questions relating to the back door service. Mrs. Carr stated we did a direct mailing to those that are currently on our list that they need to re-certify. If a resident has never been on this list she has the form with her if anyone needs this or we can send the forms to them to get added. Mr. Tousley stated he was slightly frustrated with the brochure and he did not think these were very clear especially with the underlined statement of “if no choice is made your home service will default to the unlimited service”. Mrs. Carr stated if residents feel they don't want the service at all, they need to call us to get a form to be exempt if they meet the criteria. Mrs. Carr stated since most of the customers are on the unlimited service, our though was that's the choice we would be making. Mr. Tousley stated he feels it states if you don't make a choice, we will charge you the most expensive option. Mrs. Carr stated that may only happen for a day or two until they realize the needed to make a choice, and that choice can be changed. We have to pick a default and that was to go with the unlimited. Ms. Whipkey noted that the new unlimited rate is still lower than what we have been paying in the past and their choice is not written in stone. Mrs. Carr stated if they are struggling with a choice and need to do so or they can call us. You can always make a change in your service at any time.

New Business:

Mr. Tousley noted before we go to Special Council Meeting next, to give anyone the opportunity to sign up and speak now.

Topics for the next Work Session:

#1-Mr. Pierson stated that he wants Mr. Markey to look into the legality of any contractor doing work within the City to post bond. In addition, any vendor doing work must also check in with the City.

He has received numerous calls relating to the tree trimming service. Mrs. Carr stated she would discuss this with Mr. Markey. Mr. Pierson stated he wants them to see if a bond is posted and they do sloppy work this is not refunded. Mrs. Carr noted that Nelson Tree Service had contacted the City and they are trimming within the right of way. They have the right to trim over the wires. Mr. Pierson stated he had contacted their corporate office about them encroaching beyond the 15 feet right of way. Someone did come out and this was corrected. #2-Proposed Charter Amendments (Committee of the Whole)

Public Comments:

Ms. Ann Dye, 3142 Hemphill Road, Norton, Ohio, stated that she is opposed to the cell phone tower as proposed specifically related to health issues. Ms. Dye read a statement (see attached), and she provided research she has from the American Cancer Society, the Wall Street Journal (also attached).

After the five (5) minutes were up Ms. Richards noted to Ms. Dye her time was up. Mr. Tousley moved to all for more time to speak, seconded by Mr. Pierson.

Roll Call: Yes: Tousley, Pierson, Kernan, Whipkey

Motion passed 4-0.

Ms. Dye continued on with her comments.

Mr. Jim Lino 5058 Grove Avenue, Barberton, Ohio, stated he had a question about the presenters statement that “you wont even know it’s there” Last time someone told him that there were 7 machine shops in his neighborhood and it’s already zoned for it. Make sure when they say this hopefully you won’t know it’s really there. Mr. Lino stated that he recently saw a gentleman from Verizon in his neighborhood and when asked he was told Verizon is installing a pole in this area. Mrs. Carr noted this is a separate issue and the cell tower company that we are working with is called TowerCo and Verizon is working with several carriers. The issue Mr. Lino is discussing is that Verizon is replacing poles which are within the right of way and we are limited in our control. Ms. Whipkey noted the new tower will be located behind our Service Garage.

Public Updates:

Ms. Whipkey noted that Safety Town started today. Mrs. Carr noted we have 100 people participating this year and we have two (2) sessions each day for this entire week. The traffic will be a bit crazy at City Hall this week. The Norton Women’s Club is in charge of this with the City’s assistance. Ms. Carr noted that Flag Day June 14, 2016 at 10:00 at the Biery House. The original flag pole from our old Fire Station will be re-erected. We will be a kicking off a special brick buying event for our upcoming Bicentennial celebration.

Adjourn

There being no other business to come before the Committee Work Session, the meeting was adjourned at 8:23 PM.

Charlotte Whipkey, President of Council

NOTE: THESE MINUTES ARE NOT VERBATIM

****ORIGINAL SIGNED AND APPROVED MINUTES ARE ON FILE WITH THE CLERK OF COUNCIL.****

All Committee Meetings will be held at the Norton Safety Administration Building, unless otherwise noted.



SILVER SPRINGS DRIVE
ROADWAY AND WATERSHED EVALUATION
PRESENTED TO:
NORTON CITY COUNCIL COMMITTEE OF THE WHOLE
JUNE 6, 2016



PURPOSE AND NEED

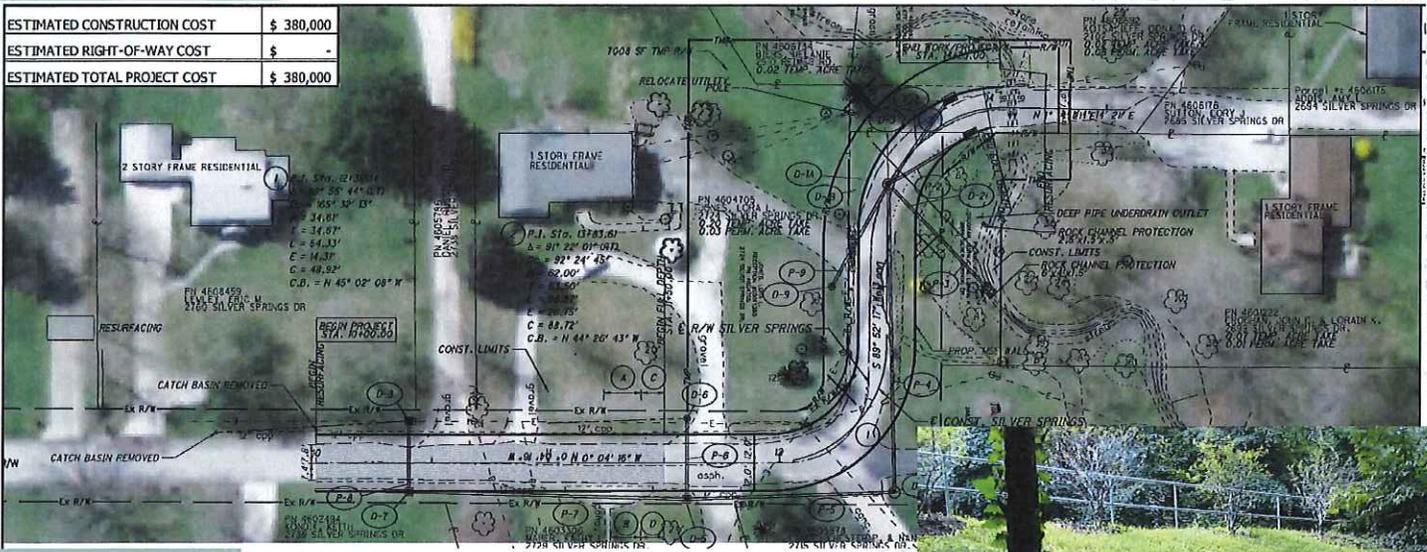
- Failure of the northern slope of Silver Springs Drive adjacent to an unnamed tributary of the Wolf Creek, resulting in pavement failure.
- GPD hired for a preliminary evaluation, completed on November 10, 2015
- Slope failure attributed to high ground water, presence of shale 6' to 10' below surface, and uncontrolled surface runoff.





OPTION 1: RECONSTRUCT EXISTING PUBLIC ROAD

ESTIMATED CONSTRUCTION COST	\$ 380,000
ESTIMATED RIGHT-OF-WAY COST	\$ -
ESTIMATED TOTAL PROJECT COST	\$ 380,000

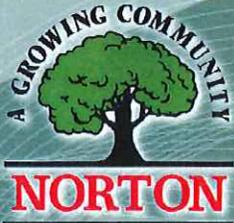




OPTION 2: RECONSTRUCT EXISTING PUBLIC ROAD W/ TURNAROUND

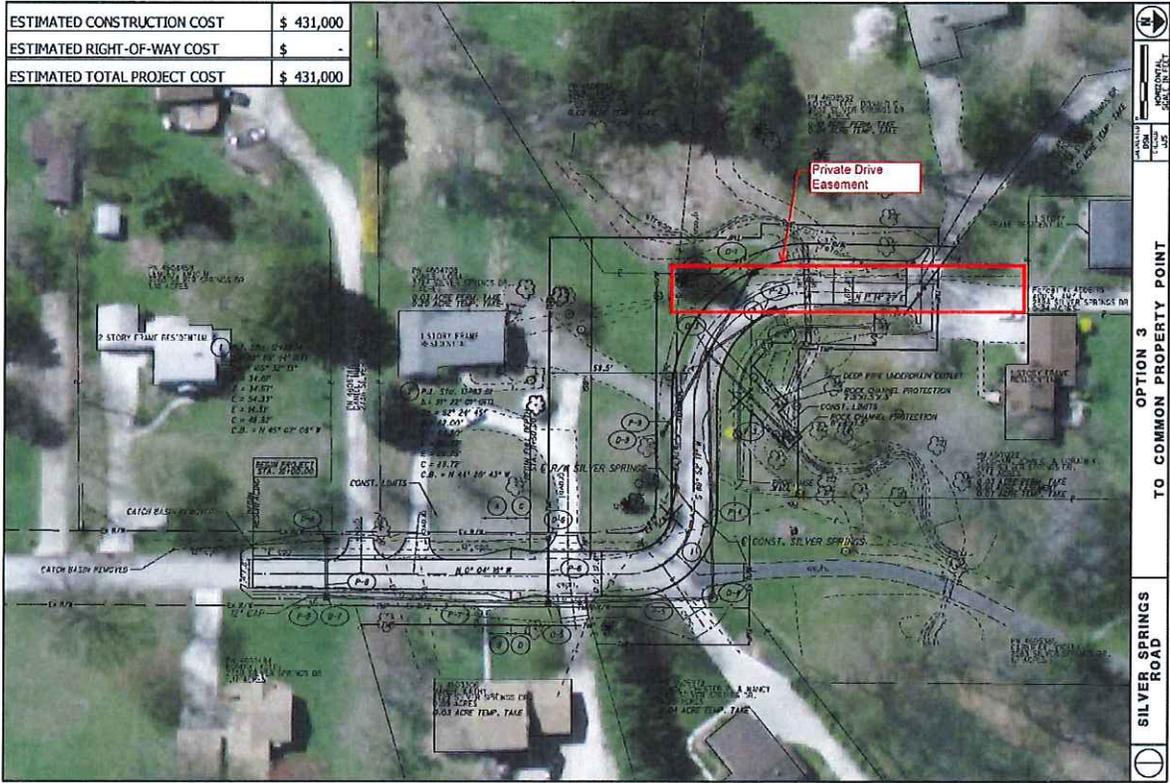
ESTIMATED CONSTRUCTION COST	\$ 389,000
ESTIMATED RIGHT-OF-WAY COST	\$ 9,000
ESTIMATED TOTAL PROJECT COST	\$ 398,000





OPTION 3: EXTEND ROAD RECONSTRUCTION

ESTIMATED CONSTRUCTION COST	\$ 431,000
ESTIMATED RIGHT-OF-WAY COST	\$ -
ESTIMATED TOTAL PROJECT COST	\$ 431,000



OPTION 3
TO COMMON PROPERTY POINT
SILVER SPRINGS ROAD





OPTION 4: ACCESS FROM REIMER RD EXT

ESTIMATED CONSTRUCTION COST	\$ 334,000
ESTIMATED RIGHT-OF-WAY COST	\$ 121,000
ESTIMATED TOTAL PROJECT COST	\$ 455,000





OPTION 5: ACCESS VIA CROGHAN PROPERTY

ESTIMATED CONSTRUCTION COST	\$ 366,000
ESTIMATED RIGHT-OF-WAY COST	\$ 33,000
ESTIMATED TOTAL PROJECT COST	\$ 399,000



OPTION 5
 SILVER SPRINGS REALIGNMENT
 SILVER SPRINGS ROAD





DRAINAGE EVALUATION

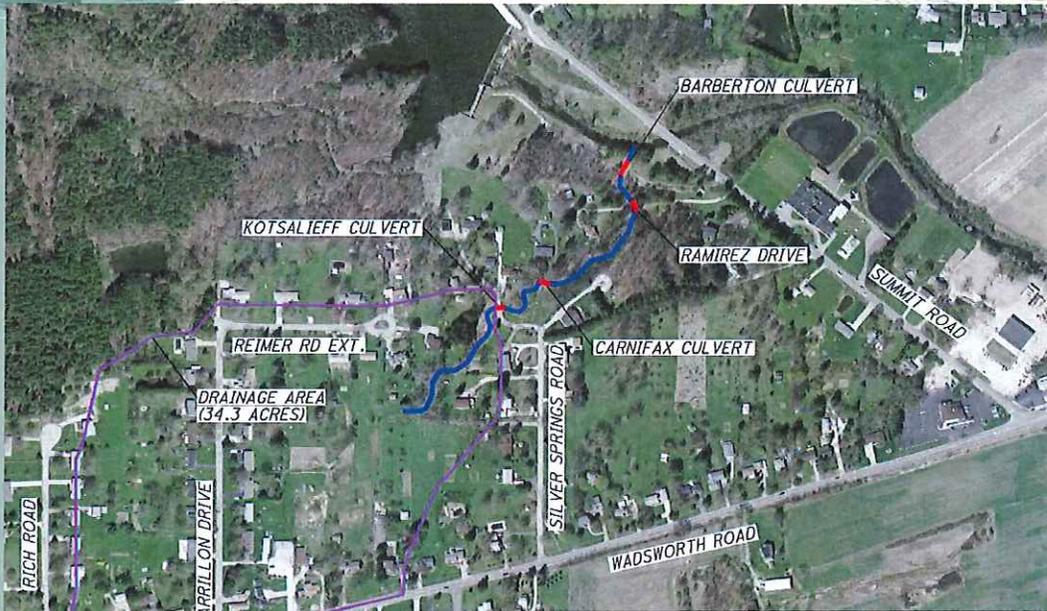
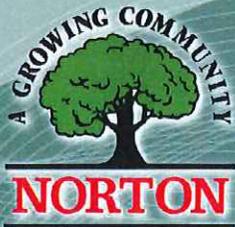


Table 1. Predicted overflow at drives in existing condition.

Description	Frequency Storm Event				
	2	10	25	50	100
Kotsalief Drive Overflow	No	No	Yes	Yes	Yes
Carnifax Drive Overflow	No	Yes	Yes	Yes	Yes
Ramirez Drive Overflow	No	No	No	No	No
Barberton Reservoir Drive Overflow	No	No	No	Yes	Yes





DRAINAGE EVALUATION – UPSIZE CULVERTS

- Up-size all culverts to 36"
- Conveys up to the 100-year storm event
- Estimated construction cost \$117,500
- All work on private property; by whom and how paid?

Table 2. Modeled freeboard at drives with upsized culverts.

Description	Freeboard Depth (ft) per Frequency Storm Event			
	10	25	50	100
Kotsalief Drive	3.1	2.5	1.9	1.1
Carnifax Drive	3.3	2.9	2.5	2.0
Ramirez Drive	2.5	2.4	2.3	2.2
Barberton Reservoir Drive	4.4	4.3	4.1	3.9





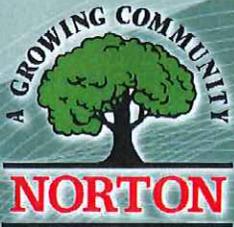
DRAINAGE EVALUATION – DETENTION BASIN

- Detention basins upstream of the Kotsalieff and Ramirez drives, in the area of previous ponds
- Estimated cost, including construction and right-of-way is \$95,000 and \$105,000.
 - » Additional clarification from meeting: Kotsalieff basin construction cost estimated at \$74,000 and right-of-way estimated at \$0 to \$21,000. Ramirez basin construction cost estimated at \$69,000 and right-of-way estimated at \$36,000.
- City to acquire property?
- Long term maintenance?

Table 3. Modeled freeboard at drives with proposed detention basin.

Description	Freeboard Depth (ft) per Frequency Storm Event			
	10	25	50	100
Kotsalieff Basin	3.2	2.7	2.2	1.7
Carnifax Drive	1.7	0.8	0.0	0.0
Ramirez Basin	4.0	4.0	3.9	3.9
Barberton Reservoir Drive	4.5	4.4	4.3	4.2





QUESTIONS?





PROPOSED
SANITARY SEWER

SHELLHART

LURAY DR.

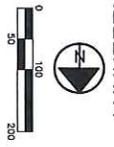
GREENRIDGE

CLEVELAND-MASSILLON RD.

PROPOSED SANITARY SEWER

SHELLHART

CLEVELAND-MASSILLON RD.
SANITARY SEWER
PHASE 1: FLOW EAST ALONG
SHELLHART



Oct 2, 2014 WSJ cellphone Boom Spurs Antenna-Safety Worries

1 site in 10 violates rules & exposes unsuspecting residents, school children to dangerous levels of microwave radiation.

At high levels, ^{the FCC said,} microwave-frequency radiation can cook human tissue, potentially causing cataracts and temporary sterility and other health issues.

In 2011 the W.H.O. categorized RF radiation as a possible carcinogen & N.I.H. Health is exploring lower-level RF exposure.

An FCC guideline says relatively low levels of RF radiation can cause certain changes in the immune system, neurological effects, behavioral effects & other health issues including cancer.

Concerns are becoming concerned & have flagged RF radiation as an emerging risk in a 2013 report.

also the spirit of doing no harm & preserving Norton how would you vote?

Growing movement for
city councils across this country
to examine the extent of ~~that~~
~~change~~ any decision would bring
to the nature of a community that
the residents brought in to. ~~There~~
are councils turning away huge
corporations like Monsanto & the
promise of 150+ jobs because the
resulting change in the nature of
the ^{existing} community would be too
extreme. ~~What would the~~ Consider
too the environmental impact of any
change brought to this community. ~~There~~
We must resist the relentless poaching
~~on~~ our little city in the country
that profit seeking companies ~~will~~ bring & will continue
to bring to our little city in the country.
Let's preserve what is here. How
will you vote?



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Source:
www.cancer.org
"cellular phone towers -
American Cancer Society"

Text Size

Cellular Phone Towers

Cellular (cell) phones first became widely available in the United States in the 1990s, but since then their use has increased dramatically. The widespread use of cell phones has led to cell phone towers being placed in many communities. These towers, also called *base stations*, have electronic equipment and antennas that receive and transmit radiofrequency (RF) signals.

How do cellular phone towers work?

Cell phone base stations may be free-standing towers or mounted on existing structures, such as trees, water tanks, or tall buildings. The antennas need to be high enough to adequately cover the area. Base stations are usually from 50-200 feet high.

Cell phones communicate with nearby cell towers mainly through radiofrequency (RF) waves, a form of energy in the electromagnetic spectrum between FM radio waves and microwaves. Like FM radio waves, microwaves, visible light, and heat, they are forms of **non-ionizing radiation**. This means they do not directly damage the DNA inside cells, which is how stronger (**ionizing**) types of radiation such as x-rays, gamma rays, and ultraviolet (UV) light are thought to be able to cause cancer.

At very high levels, RF waves can heat up body tissues. (This is the basis for how microwave ovens work.) But the levels of energy used by cell phones and towers are much lower.

When a person makes a cell phone call, a signal is sent from the phone's antenna to the nearest base station antenna. The base station responds to this signal by assigning it an available radiofrequency channel. RF waves transfer the voice information to the base station. The voice signals are then sent to a switching center, which transfers the call to its destination. Voice signals are then relayed back and forth during the call.

How are people exposed to the energy from cellular phone towers?

As people use cell phones to make calls, signals are transmitted back and forth to the base station. The RF waves produced at the base station are given off into the environment, where people can be exposed to them.

The energy from a cellular phone tower antenna, like that of other telecommunication antennas, is directed toward the horizon (parallel to the ground), with some downward scatter. Base station antennas use higher power levels than other types of land-mobile antennas, but much lower levels than those from radio and television broadcast stations. The amount of energy decreases rapidly as the distance from the antenna increases. As a result, the level of exposure to radio waves at ground level is very low compared to the level close to the antenna.

Public exposure to radio waves from cell phone tower antennas is slight for several reasons. The power levels are relatively low, the antennas are mounted high above ground level, and the signals are transmitted intermittently, rather than constantly.

At ground level near typical cellular base stations, the amount of RF energy is thousands of times less than the limits for safe exposure set by the US Federal Communication Commission (FCC) and other regulatory authorities. It is very unlikely that a person could be exposed to RF levels in excess of these limits just by being near a cell phone tower.

When a cellular antenna is mounted on a roof, it is possible that a person on the roof could be exposed to RF levels greater than those typically encountered on the ground. But even then, exposure levels approaching or exceeding the FCC safety guidelines are only likely to be found very close to and directly in front of the antennas. If this is the case, access to these areas should be limited.

The level of RF energy inside buildings where a base station is mounted is typically much lower than the level outside, depending on the construction materials of the building. Wood or cement block reduces the exposure level of RF radiation by a factor of about 10. The energy level *behind* an antenna is hundreds to thousands of times lower than in front. Therefore, if an antenna is mounted on the side of a building, the exposure level in the room directly behind the wall is typically well below the recommended exposure limits.

Do cellular phone towers cause cancer?

Some people have expressed concern that living, working, or going to school near a cell phone tower might increase the risk of cancer or other health problems. At this time, there is very little evidence to support this idea. In theory, there are some important points that would argue against cellular phone towers being able to cause cancer.

First, the energy level of radiofrequency (RF) waves is relatively low, especially when compared with the types of radiation that are known to increase cancer risk, such as gamma rays, x-rays, and ultraviolet (UV) light. The energy of RF waves given off by cell phone towers is not enough to break chemical bonds in DNA molecules, which is how these stronger forms of radiation may lead to cancer.

A second issue has to do with wavelength. RF waves have long wavelengths, which can only be concentrated to about an inch or two in size. This makes it unlikely that the energy from RF waves could be concentrated enough to affect individual cells in the body.

Third, even if RF waves were somehow able to affect cells in the body at higher doses, the level of RF waves present at ground level is very low – well below the recommended limits. Levels of energy from RF waves near cell phone towers are not significantly different from the background levels of RF radiation in urban areas from other sources, such as radio and television broadcast stations.

Studies in people

Very few human studies have focused specifically on cellular phone towers and cancer risk.

In one large study, British researchers compared a group of more than 1,000 families of young children with cancer against a similar group of families of children without cancer. They found no link between a mother's exposure to the towers during pregnancy (based on the distance from the home to the nearest tower and on the amount of energy given off by nearby towers) and the risk of early childhood cancer.

In another study, researchers compared a group of more than 2,600 children with cancer to a group of similar children without cancer. They found that those who lived in a town that could have exposed them to higher than average RF radiation from cellular phone towers in the previous 5 years had a slightly higher risk of cancer, although not of any certain type of cancer (like leukemia or brain tumors). This study estimated the children's possible exposure based on the number of towers in their town and how strong the signals were from the towers. It did not look at actual exposure of any individual child based on how far their home or school was from a tower. This limitation reduces confidence in the results of the study.

One study looked for signs of DNA and cell damage in blood cells as a possible indicator of cancer-causing potential. They found that the damage was no worse in people who lived near a cell phone tower as compared with those didn't.

The amount of exposure from living near a cell phone tower is typically many times lower than the exposure from using a cell phone. About 30 studies have looked at possible links between cell phone use and tumors in people. Most studies to date have not found a link between cell phone use and the development of tumors, although these studies have had some important limitations. This is an area of active research. For more information, see [Cellular Phones](#).

Studies done in the lab

Laboratory studies have looked at whether the types of RF waves used in cell phone communication can cause DNA damage. Most of these studies have supported the idea that the RF waves given off by cell phones and towers don't have enough energy to damage DNA directly. Because of this, it's not clear how cell phones and towers might be able to cause cancer, but research in this area continues.

Some scientists have reported that RF waves may produce other effects in human cells (in lab dishes) that might possibly help tumors grow. However, these studies have not been verified, and these effects weren't seen in a study that looked at the blood cells from people living near a cellular phone tower.

Several studies in rats and mice have looked at whether RF energy might promote the development of tumors caused by other known carcinogens (cancer-causing agents). These studies did not find evidence of tumor promotion, but this is still an area of research.

A large study by the US National Toxicology Program (NTP) exposed groups of lab rats and mice to RF energy over their entire bodies for about 9 hours a day, starting before birth and continuing for up to 2 years. The NTP recently released partial findings from this study, which found increased (although still low) risks of brain and heart tumors in male rats exposed to RF radiation, although there was no increased risk among female rats. Some aspects this study, such as the high doses of RF radiation and the long amount of time the rats were exposed to it, make it hard to know just how well these results might be applied to people. Still, the results add evidence to the idea that the signals used in cell phone communication might potentially impact human health.

What expert agencies say

About cell phone towers

The 3 expert agencies that usually classify cancer-causing exposures (carcinogens) – the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), and the US Environmental Protection Agency (EPA) – have not classified cell phone towers specifically as to their cancer-causing potential.

The US Federal Communications Commission (FCC) has said this about cell phone towers near homes or schools:

"Radiofrequency emissions from antennas used for cellular and PCS [personal communications service] transmissions result in exposure levels on the ground that are typically thousands of times below safety limits. These safety limits were adopted by the FCC based on the recommendations of expert organizations and endorsed by agencies of the Federal Government responsible for health and safety. Therefore, there is no reason to believe that such towers could constitute a potential health hazard to nearby residents or students."

About RF radiation

Some of the agencies that classify cancer-causing exposures have, however, made statements about radiofrequency radiation.

The International Agency for Research on Cancer (IARC) has classified RF fields as "possibly carcinogenic to humans," based on limited evidence of a possible increase in risk for brain tumors among cell phone users, and inadequate evidence for other types of cancer. (For more information on the IARC classification system, see [Known and Probable Human Carcinogens](#).) IARC also noted that exposure to the brain from RF fields from cell phone base

stations (mounted on roofs or towers) is less than 1/100th the exposure to the brain from mobile devices such as cell phones.

The Environmental Protection Agency (EPA) states:

"At very high levels, RF energy is dangerous. It can heat the body's tissues rapidly. However, such high levels are found only near certain equipment, such as powerful long-distance transmitters. Cellphones and wireless networks produce RF, but not at levels that cause significant heating. In addition, RF energy decreases quickly over distance. At ground level, exposure to RF from sources like cellphone towers is usually very low.

Some people are concerned about potential health effects, especially on the developing brains and bodies of children. Some studies suggest that heavy long-term use of cellphones could have health effects. Other studies don't find any health effects from cellphone use. Long-term studies on animals exposed to the RF found in wireless networks (Wi-Fi) have, so far, found no health effects. Scientists continue to study the effects of long-term exposure to low levels of RF."

Can I limit my exposure?

Cell phone towers are not known to cause any health effects. But if you are concerned about possible exposure from a cell phone tower near your home or office, you can ask a government agency or private firm to measure the RF field strength near the tower (where a person could be exposed) to ensure that it is within the acceptable range.

What should I do if I've been exposed to cellular phone towers?

There is no test to measure whether you have been exposed to RF radiation from cellular phone towers. But as noted above, most researchers and regulatory authorities do not believe that cell phone towers pose health risks under ordinary conditions. If you have additional health concerns, you might want to talk with your doctor.

Additional resources

More information from your American Cancer Society

The following related information may also be helpful to you. These materials may be viewed on our website or ordered from our toll-free number, at 1-800-227-2345.

[Cellular Phones](#)

[Does This Cause Cancer?](#)

[Known and Probable Human Carcinogens](#)

[Microwaves, Radio Waves, and Other Types of Radiofrequency Radiation](#)

Other organizations and websites*

Along with the American Cancer Society, other sources of information and support include:

Environmental Protection Agency

Home page: www.epa.gov

Understanding radiation: www.epa.gov/radiation/understanding-radiation-overview.html

Federal Communications Commission

RF Safety Program, Office of Engineering and Technology

Website: www.fcc.gov/oet/rfsafety

Food and Drug Administration

Home page: www.fda.gov

Radiation-emitting products: Cell phones: www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/default.htm

National Cancer Institute

Toll-free number: 1-800-422-6237 (1-800-4-CANCER)

Home page: www.cancer.gov

Cellular telephone use and cancer risk: www.cancer.gov/cancertopics/factsheet/Risk/cellphones

Source www.eastcountymagazine.org

"Dangers of living near cell phone towers raised"



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La Mesa Council holds hearing Nov. 5 on proposal to erect cell phone tower in Lake Murray area

By Miriam Raftery



When Mom asked me to look into possible health hazards posed by cell phone panel antennas that a church in her neighborhood wants to put up, I expected to find reassuring facts to allay Mom's concerns. Instead, I found deeply disturbing data that makes me wonder why the public is not being informed about health risks—and why our government seems intent on covering up troubling truths.

Cell phone companies and the U.S. Food and Drug Administration assert that cell phone towers don't pose health risks to the public. Some studies support this assertion, but other studies suggest just the opposite.

Harvard-trained Dr. Andrew Weil at the University of Arizona's medical center recently observed, "In January 2008, the National Research Council (NRC), an arm of the National Academy of Sciences and the National Academy of Engineering, issued a report saying that we simply don't know enough about the potential health risks of long-term exposure to RF energy from cell phones themselves, cell towers, television towers, and other components of our communications system. The scientists who prepared the report emphasized, in particular, the **unknown risks to the health of children, pregnant women, and fetuses as well as of workers whose jobs entail high exposure to RF (radiofrequency) energy...** Because so much of cell phone technology is new and evolving, we don't have data on the consequences of 10, 20 or 30 years worth of exposure to the RF energy they emit," Weil concluded. The report called for long-term safety studies on all wireless devices including cell phones, computers, and cell phone towers.

A 2006 report issued by the World Health Organization (WHO) offered some reassurance and found no scientific evidence that radiofrequency signals from cell towers cause adverse health effects. The report noted that up to five times more of the RF signals from FM radio and television (than from cell towers) are absorbed by the body with no known adverse effects on health in the more than 50 years that radio and TV broadcast stations have been operating.

But an Australian study found that children living near TV and FM broadcast towers, which emit similar radiation to cell towers, developed leukemia at three times the rate of children living over seven miles away.

If you live within a quarter mile of a cell phone antenna or tower, you may be at risk of serious harm to your health, according to a German study cited at www.EMF-Health.com, a site devoted to exposing hazards associated with electromagnetic frequencies from cell phone towers and other sources.

Cancer rates more than tripled among people living within 400 meters of cell phone towers or antennas, a German study found. Those within 100 meters were exposed to radiation at 100 times normal levels. An Israeli study found risk of cancer quadrupled among people living within 350 meters (1,148 feet) of a cell phone transmitter—and seven out of eight cancer victims were women. Both studies focused only on people who had lived at the same address for many years.

Other studies have found that levels of radiation emitted from cell phone towers can damage cell tissues and DNA, causing miscarriage, suppressing immune function, and causing other health problems.

Astoundingly, the federal government does not allow rejection of a cell phone tower based on health risks, according to a 2005 article. A Google search found no evidence that this situation has changed.

Yet over 1.9 million cell phone towers and antennae have been approved nationwide without federal studies to assure safety of those living nearby.

How many cell phone towers and antennas are in your neighborhood? Find out at www.antennasearch.com. I plugged in my address on Mt. Helix, hardly an urban stronghold, and was astounded to discover that there are 96 cell phone towers, 286 antennas and 2 proposals for new towers within four miles of my home!

→ Verizon within 1/2 mile of me

So how about Mom's neighborhood, where an Evangelical church insists a new tower is needed? Mom gets perfectly fine cell phone reception, and so do the neighbors she's spoken with—not surprising since there are already 113 towers and 335 antennas within a four-mile radius.

Churches, schools, fire stations, and other buildings are increasingly erecting cell phone towers or antennas because cell phone companies are willing to pay rental fees of hundreds or even thousands of dollars a month—welcome infusions for cash-strapped budgets. But at what cost to the public's health? There are young children in Mom's neighborhood, less than one block from the proposed cell phone antenna site.

In Sweden, the government requires interventions to protect the public from electromagnetic frequencies. Why isn't the U.S. government paying attention to this potential risk to public safety?

If you wish to share your views on the T-Mobile proposed cell phone tower at 5777 Lake Murray Blvd. (near Marengo Avenue), the La Mesa City Council will hold a public meeting on Wednesday, November 5th at 7 p.m. in Council Chambers at the La Mesa City Hall, 8130 Allison Ave., La Mesa.

