

**MEETING MINUTES
CARROLL COUNTY PUBLIC SERVICE AUTHORITY
APRIL 9, 2018
CARROLL COUNTY GOVERNMENTAL CENTER
BOARD MEETING ROOM
HILLSVILLE, VA**

CALL TO ORDER

The Carroll County Public Service Authority held their regularly scheduled meeting on Monday, April 9, 2018 at 3:00 p.m. in the Carroll County Governmental Center Board Meeting Room. Members present included: Dr. Thomas Littrell, Chairman, Keith Meredith, Vice-Chairman, Jeanette Dalton, Doug Winesett and Phillip McCraw. Also present were Executive Director/PSA Engineer, Jessica Montgomery and Dana Phillips, Assistant Director, Secretary/Treasurer of the Authority.

The authority only has five members; Laurel Fork Supervisor has not appointed a member to the authority.

Dr. Littrell- Welcome everyone to the meeting today.

CITIZENS TIME

No speaker.

(ORDER)

APPROVAL OF CONSENT AGENDA

Upon a motion by Mr. Meredith, seconded by Mr. Winesett and duly carried the Authority does hereby approve the consent agenda, section A, B and C. The March 19, 2018 minutes were also approved, they are on file in the PSA office. The claims are also on file in the PSA office. They are as follows:

Claims

Check# 22558 March 15, 2018 \$3,000.00

Check# 22559- 22580 March 20, 2018 \$49,179.10

Check# 22581- 22606 April 9, 2018 \$143,236.33

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Transfer for Claims

CCPSA to Operating for March 20, 2018 Claims \$49,179.10
CCPSA to Operating for April 9, 2018 Claims \$143,236.33

Transfer for Reserves

CCPSA to Debt Reserve \$8,918.62

New Business

Sewer Rates- Dana stated we have looked at the sewer rates. The PSA is behind on the sewer rates on the east side of town. The PSA pays the Town of Hillsville to treat the sewer on this side of town. Currently we are paying more than we are billing. A copy of the advertisement is attached to these minutes.

(ORDER)

APPROVAL TO ADVERTISE FOR PUBLIC HEARING

Upon a motion by Mr. Meredith, seconded by Mrs. Dalton and duly carried the Authority does hereby approve to advertise for Public Hearing for Sewer Rates to be held on June 11, 2018.

Project Up-Date

Cana/Meadowbrook – Kevin Heath

Mr. Heath what we were asked to do last meeting was to come and give an update on the project. I will fall back a little bit. A couple years ago we were hired by the PSA to prepare a PER for water improvements to serve the Meadowbrook Road area. Citizens there had come to the board with a petition for service. We had looked at that and prepared a PER. We will look at that and I will talk about where we are at now. As a background in that part of the county, the PSA has two water systems. Cana system was developed by the PSA and went on-line back in 1999 so that system has been up and going for approximately 20 years. The system is well based, it utilizes ground water wells. Currently that system serves about 440 customers. Exit 1 area the PSA developed a system to serve that area in a couple of different phases. In 2010 the beginning of the system was to serve Loves Travel Center. That system was developed with a couple of wells and utilized pressure raised storage just to serve that. In

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2015 that system was expanded to add storage and fire protection. As well as a connection to the City of Mount Airy water storage tank that serves the Welcome Center that is just across the state line in Carroll County. The PSA is connected to Mount Airy there. That system has 60 customers. Exit 1 has 60 customers and Cana system has 440 customers. The Meadowbrook Road is located over on the east side of route 52. In that area there were approximately 75 potential customers that had requested service from the PSA. We looked at alternatives to be able to do that.

Dr. Littrell asked what are the red dots on the Cana side.

Mr. Heath- The red is the 10-inch water line.

At the time we prepared the PER we had data from 2014 and 2015. As far as the usage and bills in the two different systems. Cana system during that time was a daily average of 53,685 gallons. Peak months it was 63,526 gallons daily average. Exit 1 the data was not a long track record, because at the time we prepared this the second phase had just came on line. Just under 12,000 gallons a day water demand on that system. The two systems together between 60 and 70 thousand gallons a day of water demand. In terms of where is our water coming from, again two different systems. On the Cana side, when that system was developed between 1997 and 1999 there were a total of eight different wells drilled, tested and permitted to be placed in service. They are listed ranging in size, these are not partially large wells compared to other systems. The range in size of wells are from 10 to 48 gallons per minute per well. Initially there were eight wells developed and permitted. Between then and now, I don't remember what year but wells number five and six had to be abandoned. Those wells became contaminated due to a petroleum leak. They were the furthest south wells. But currently based on the initial operating permit for system there is a permitted source capacity of 179 gallons a minute on the Cana system that would equate to allowable usage of 143,000 gallons a day. The way that is determined a well can only be pumped 800 minutes per day. That is what the Health Department regulations are for a public water supply. Once you get to 80% of your permitted capacity, you have to be able to address a means to reduce your demand or increase your source capacity. Going over the Exit 1 system initially for Loves project there were two wells that were developed. One had a capacity of 8 gallons a minute, the other a capacity of 1.3 gallons a minute. Those were extremely deep wells, they both were approaching 1000 feet deep. Extremely deep and not a lot of water. PSA will recall that there were a couple of instances when those wells basically ran out of water. The PSA utilized a water truck to truck water in until the wells recovered. With the second phase project there was one additional well that was developed 15 gallons a minute well as well as a connection to the City of Mount Airy. That connection if you will recall, the city is currently limited until November 2018 that they can

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sell no individual customer no more than 10,000 gallons per day off that system. Because that system was initially paid for by NCDOT and VDOT in a cost sharing agreement. As a provision for that agreement once it went on line the customer on that system that utilized more than 10,000 gallons a day, they would have to pay back those grants that had been emulated by the two Dots'. That expires in November of this year so the 10,000-gallons limitation will go away. The PSA has a current agreement with the City of Mount Airy that allow purchase of water and that agreement has recently renegotiated. With a more favorable rate to the PSA. The two systems currently have six active wells over on the Cana system, you have one active well, two emergency wells and connection to the City of Mount Airy in terms of supply.

Maps show what would be involved to serve the Meadowbrook Road. Maps are attached to these minutes.

Mr. Heath explains the different routes to serve Meadowbrook and the cost of each line. These costs are part of these minutes. We do not feel that there is capacity to take on 75 more customers with the wells we currently have. We looked at what our alternatives are to get water to that area. To increase our source capacity to that system.

We looked at one alternative which would be from the Exit 1 system over to Cana system. This route follows Brushy Fork Road from the Exit 1 interchange over to the existing Cana system. That route has about 30,000 linear feet of eight and six-inch water lines. On the side roads where there are fair density of homes we did show being able to serve those folks. Along that route there are about 100 potential customers. Construction cost \$1,280,100 dollars. Our source for this would be bulk water purchase from the City of Mount Airy. The Exit 1 tank is set at the same elevation as the Cana tank so the two systems would flow.

Alternative two which would be from the Exit 1 over to the Cana system was to take a different route. This route we show going up Flower Gap Road and tie in near the school. We did show a larger loop off the side up Sandy Ridge where there are a little denser level of homes. Within this routing what is show there is about 36,000 linear feet 8 and 6-inch water line. Again, about 100 potential customers, construction cost of about 1.4 million dollars. That is the point we had gotten to on our initial PER was these two alternatives. It was about the same number of customers between the two. The PSA went out and had community meeting to see what the level of interest would be from folks between the two areas. Between Brushy Fork and Flower Gap routing I believe the customer response that had been received to date was less than 50% of potential customers. The PSA had established sometime back any project or any attempt to get a project started they would have to have 50% volunteer sign ups. Since we did not have the 50% sign ups then we said what else can we do. We cannot get from point A to B with 50% customers are they any other alternatives.

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One alternative would be to connect to Mount Airy, a new connection, over directly to the Cana System. This is route 52 coming up from Green Hill Road. That is the furthest north Mount Airy has water. Route 52 coming up to state line. We did look at a couple of different routings for that. I know we have talked about it in previous meetings. For those that may not be familiar with this. The shortest route would be from Green Hill Road directly up 52 to the state line. The problem with that, this section of your Cana system is fed through a pressure reducing valve. You have the tank up here, come down 52 a pressure reducing valve that reduces the pressure to this end of the Cana system. If we tied in here we have to have one pump station from Mount Airy, a tank just for this area. Then a second pump station just to get it up to your main tank on Cana system. If we come up from Mount Airy take a left, up passed the golf course to the state line that way. A little bit longer but it ties in to the same pressure zone that is supplied by your Cana tank. We would get by with one fewer pump station and tank. That would be the most cost effective routing from Mount Airy to the Cana system. There is about 13,400 line that would be required, pump station to Mount Airy. With all that construction being in the state of North Carolina. So, a drawback to that system is, if you were to pay for that to be built that, the potential customers along that line would not be available to the PSA. They would be available to Mount Airy or Surry County whoever owned that line in Carolina but not to the PSA. Along that routing there's 90 give or take homes. At this point Mount Airy or Surry County have not stepped forward to build that line. That would have to be paid by the PSA for you overall development cost and would have to be accounted for accordingly. That construction cost is about \$875,000.

Another alternative looking at the Cana system only, not connecting to Exit 1 would be serve Meadowbrook just like we talked about previously, but to develop an additional well for additional well capacity. We do not have a site picked out that x marks the spot. For discussion sake we show a well site on county owned property. Down below the lake there near the convenient center. This would be about 5,500 linear feet of line to connect back to the Cana system. On Epworth Road only about 5 additional customers over and above Meadowbrook. This would be another potential means of establishing source capacity for the Cana system. For cost estimating services we included one well, that is not to say we drill and it takes more, drill and have a dry hole. We will not know until it is drilled and tested. For cost estimating purposes we based it on similar construction cost on other projects we had done, we are showing a construction cost of \$466,000 for that alternative.

Final in alternatives we are looking at, we're sitting there looking at the lake. The question was asked can we use that water and what would we have to do to utilize that. We feel like that could potentially

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happen if you were to install a membrane filtration system. Intake the lake, membrane filtration system tie back in to the Cana system and utilize that as source supply. For cost estimate purposes we based that on 150,000 gallons a day capacity membrane system. They can be expanded, one good thing about the membrane system is it does not have to be manned every hour of operation. They are largely automated, but they are expensive. For that alternative construction cost for the membrane system and connection to system \$1,681,300.

Mr. Heath shows a picture of a similar system that was built in Smith County, that utilized springs source, same capacity as the one we were talking about here.

In summary we looked at five differing alternatives. How could we serve the Meadowbrook area, as well as develop a different water source? Maps and cost estimates for the alternatives are attached to these minutes.

Mr. Heath asked if anyone had any questions.

Dr. Littrell stated to me one of the most important things that you had pointed out is, potential sustainable of that system and that we are depending on those wells that may or may not continue with current capacity. The best sustainable would be bringing water in from Mount Airy. That way you do not have to worry about the wells. You said that was about \$875,000.

Mr. Heath- Instead of connecting at Exit 1, we would connect directly to the Cana system.

Dr. Littrell- Are grants available for just a connection line or would you have to have customers?

Mr. Heath- The entire project would be potential grant eligible. It becomes more difficult if we go to a Virginia funding agency and asks to spend funds across the state line. Our likelihood of getting as favorable loan grant split as a Virginia only project. But it is eligible for funding.

Dr. Littrell- I was just doing some figuring worst case scenario if you got a 40-year loan \$875,000 with reserve and interest. You could get that for about \$25,000 a year does that sound reasonable.

Mr. Heath- Amortization factor is .03 something so, yes.

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Dr. Littrell- These are numbers that don't mean anything I am just throwing them out. If we were to vote on this project today, we are not going to dig ground for how many years.

Mr. Health- Realistically from the moment you say go till secure funding, design, permitted and build you are at a two and three-year time period.

Dr. Littrell- What I am getting at is 2021 the county debt is going down about 3 quarters of million dollars. Which is really going to help everything. We already have availability for county water. I was just wondering how to convince the Board of Supervisors to do this. You look at 3 or 4 years in the future, the money is going to loosen up at that time. That perhaps that is something we could look at the money and consider the availability fee just to get that line in. Twenty-five thousand for a water source is not that much.

Mr. McCraw- I have a concern with the two wells we lost. Contamination got them, we did not try to find out what contaminated them. Nobody is responsible for them. I am not saying we should hang them but we should have found the contamination problem, dealt with them and got us two more wells back in production. If we put it up the White Pines area, could we not demand them to tap onto it, to pay cost back that way. I am the one that would like us to stand still and get our feet on the ground. See this thing get self-supporting. We are putting a million dollars a year of county money, supervisors are into it. I would like to see feet on ground running on its own. Forty-seven customers, all of us on Brushy Fork did not sign up when it came in. Rates were cheaper and we are not telling them the truth what it is going to cost them to make this thing self-supporting or come close to it. When we tell them what it is going to cost them they are not going to want it like they think they do. You know. We won't be tagging a lot with non-user fees I am totally against that. Cannot see you paying for something you do not buy or use or need.

Dr. Littrell- That million dollars is a little misleading, Phillip. A quarter of a million dollars is something the county has been responsible for that is the New River Regional Water Plant. The county board signed up for that. The rest is IDA availability funds that were approved by the board of supervisors. All of that is not PSA debt that we had anything to do with. So, it is a little misleading.

Mr. Meredith- I guess my concern Kevin, this thing has floundered around the last few years. We don't know at this point how many folks are still interested in this project. I am like Phillip, I would love to see us self-supportive. Or at least at a neutral playing field, we pay our own way. But unfortunately, with the cost of these projects, with no more users than we have on board, there is no way the PSA can

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be cost neutral. I guess that is the majority of the debt the PSA has or county is funding is a result of those projects. Fancy Gap, Exit 1 but I think we have to look long and hard at what we are doing. We have to be responsible at this too. Dr. Littrell mention the sustainability of the system. Because if we lose one or two wells whether it is by contamination or just a dry well, then we are faced with a situation in Cana, that the whole system. Exit 1 would ok but we might lose the whole Cana system. That is not a situation any of us want. Taking on Meadowbrook without adding a well or taking a chance on a well is iffy to me. I am all for doing our own due diligence and doing some more leg work. I will say this I do appreciate the City of Mount Airy for being willing and forthcoming to work with the county. I feel like the rates we received were very fair. I know some folks down there and they will be as fair as they can be making their side of the system work. I don't know how cost sharing would work. We could have discussion with those folks if that is the direction we go. If they could receive grants on their side that would help as well.

Mr. Heath – There would have to be an agreement between the PSA and City or county however that worked out. What happens when the line is built, how it is turn over and operated, if there are provision for repayment.

Mr. Meredith- That is like the agreement you mention between NCDOT and VDOT. That line was in place they built it and paid for it so, they were limited to how much water they could sell without having to go back to the city or someone else to pay those funds. So, I am sure those type of things are what we need to investigate and have those discussions. Which would get the cost down or help offset the cost.

Dr. Littrell- I know we cannot do it today but seems like this is dragging on for a very long time. We need to focus on one direction or another or give up completely. Just seems like we are not going anywhere with it. Kevin and Jessica have worked hard on this. I feel like we need to bring up for discussion and focus in on some item here. That is my opinion.

Mr. Meredith- I agree.

Mr. Winesett- I do too. To me Kevin you have got this inexpensive water at Mount Airy but it is a matter getting it over to us. First digging wells, we do not know how reliable wells are because we have had a well to fail. When it gets summer time the aqua fiber goes down. Plus, the local residents don't want to participate for whatever reason. So, we have a lot of part moving around. There is a lot going on here. I don't know exactly what solution to it is. It is a puzzling situation. If we could get the water up there without the cost of the line, but the line is what costs so much.

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Mr. Meredith- We are in a quandary.

Mr. Winesett- Yes, we are. It is quandary within a quandary.

Mr. Meredith- I feel for the folks. I know William, previous board member from there worked really hard to try to help these folks. You know if you don't have good water it is a bad situation. So, I feel for those folks as well.

Mr. Winesett- Mr. McCraw you live there what do the people want?

Mr. McCraw- Brushy Fork does not want it. We had the chance to sign up for it when it first went in ,we don't sign up for it. No one is in favor of it now.

Mr. Winesett- That particular community?

Mr. Meredith- If we go by our previous guide lines 50 percent participation that would kill the project itself unfortunately.

Dr. Littrell – Looks like everything you have mentioned except drilling a well or the membrane system or just a supply line with no customer, because we do not have the customers on Flower Gap or Brushy Fork. Basically, three out of the five we are building a supply line and taken on the cost our self.

Mr. Heath- That is correct.

Mr. Meredith- Which is not very cost effective.

Dr. Littrell- You never know about this but by having it there, you might pick up some customers here and there. You cannot count on it.

Mr. McCraw- The cost of tapping in and putting the membrane system in, I am in favor of being self-supporting. Doing something for our self. Instead of buying water, lets produce the water. We got the city manager of Mount Airy has ties to Cana. We got a good bunch of commissioners now. But you

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know faces change, people come people go and we get dependent on them we might have some harder to deal with. I would like for us to get self-supporting on this thing.

Mr. Winesett- What was the total cost of the membrane system? That was our most expensive option.

Mr. Heath- Yes, sir. Total cost is projected at just under 4 million 3.95 million

Mr. Winesett- We are not even sure that the Lovell's Creek reservoir, now the membrane filtration system, you correct me if I am wrong but it will require a low turbidity or you may have to add on. Which would be more expense. We are at 4 million dollars now.

Dr. Littrell- It would be difficult to recover any of that cost.

Mr. Heath- Yes, it is a fixed cost that you are not really gaining potential customers. The advance of having a supply line you would have customers along that line.

Dr. Littrell- Does anyone else have any question of Kevin. I think it was a very productive presentation and appreciate you taking the time to do that. I hope everyone will take this to heart and mind and we can come up with a solution of some kind in the near future.

Mr. Heath- Thank you.

Mrs. Montgomery- I do appreciate Kevin's presentation. If you think of questions just give me a call and we will try to get your questions answered. I think we all want a self-supporting project we just have to make the best decision possible but you really do not know until you put your application in the process. The first step is updating the PER and ER. So, when we all decide as a group which alternative we like or which one we want to go with we need to get that in the loop. So that way we can see what the funding will be and we will know what those real numbers will be.

Dr. Littrell- That does not necessarily force us to take that option.

Mr. Montgomery- No, you do not have to take whatever they offer. It would let us see what is out there.

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Coulson Church Road/Ridge Road – Design Phase

The Environmental Review document for the project has been submitted to the funding agency (VDH) and is under review. Upon authorization from VDH, the next step with the Environmental Clearance process would be to advertise for the Public Notice and initiate the public comment period, then continue with the Environmental Review process.

Design work has begun on the project plans. Preliminary plans will be presented to the PSA in April for staff review prior to submission for regulatory review and permits.

FUNDING APPLICATIONS

No active funding applications at this time.

Mr. McCraw- He did a lot of good research and a good presentation.

Mrs. Montgomery- Yes, he did.

(ORDER)

AUTHORITY MEMBERS TIME

Mr. McCraw- Like I said I appreciate the presentation the work he has done getting it together. I am not opposed to anyone having water. We have to have water and air or we do not survive but I have to look at the cost of it, you know. The ones it affects that do not need it paying a bill. I just cannot stick them with a bill if they don't use it. Thank you all.

Mr. Winesett- I understand somewhat what Phillip is saying but when we were down at the meeting I would like for those people to think about their neighbor. Try to help their neighbor a little bit. You may have water today and your neighbor not but next year you may not. We all need to think about that. It is not going to get better unless we do something it is just going to get worst.

Mrs. Dalton- I don't have anything. I have been quiet over here but the wheels have been turning. I do think Kevin did a great job.

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Mr. Meredith- I appreciate what both Phillip and Doug have both said. I know Jeanette is thoughtful and she is processing all of this. It is a task that we practically volunteered for. I would rather see us be proactive than reactive if possible. I know it is hard to do that and pay your bills as you go and be self-sufficient. I know the county is tasked with the budget and we appreciate their hard work too. But I think it is a joint effort and we need to move forward and if the other projects are going to be this type project we need to work together. I know the folks down there that need water need water. I know also with availability of water and some cases sewer as well the infrastructure in place for economic development and folks that can build a house on property that they may not could without public utilities. There are a lot of things to think about it is very complexed. Not just this project but everything we touch. I do appreciate Kevin. I know this has been out there for a while. I also appreciate all William has done in the past for his folks down there. I appreciate this board because I know this is not easy and the staff.

Dr. Littrell- I hope you will let what you have heard from Kevin settle in your head and maybe next month we can discuss and settle on one of the possibilities and go ahead and let Jessica submit some paper work to see what will happen. I mean unless we do that we want know what the cost will be or if it is even feasible. We do need to pick one of the five I think. Otherwise we will keep talking about this until the end of time. I would like to make sure you understand on your agenda that you have the preliminary budget. We will be voting on budget next month or the next month. If you have any question about the budget in the preliminary form ask Jessica or Dana. We will discuss that further.

(ORDER)

ADJOURNMENT


Upon a motion by Mr. McCraw, seconded by Mr. Winesett and the duly carried the Authority does hereby adjourn at 4:02 p.m. until the next regularly scheduled meeting on May 14, 2018 at 3:00 p.m. in the Carroll County Governmental Center Board of Supervisors Meeting Room.



Dr. Thomas Littrell, Chairman



Jessica Montgomery, Executive Director



Dana Phillips, Sec./Treasurer

NOTICE OF PUBLIC HEARING
PROPOSED SEWER RATES

The Carroll County Public Service Authority will conduct a Public Hearing on June 11, 2018 at 3:00 p.m. or as soon thereafter as the matter maybe heard in the Board Meeting Room, Carroll County Governmental Center, 605 Pine Street, Hillsville, Virginia 24343. The purpose of this Public Hearing is to receive comments from interested citizens about proposed sewer rates. Proposed changes are as follows.

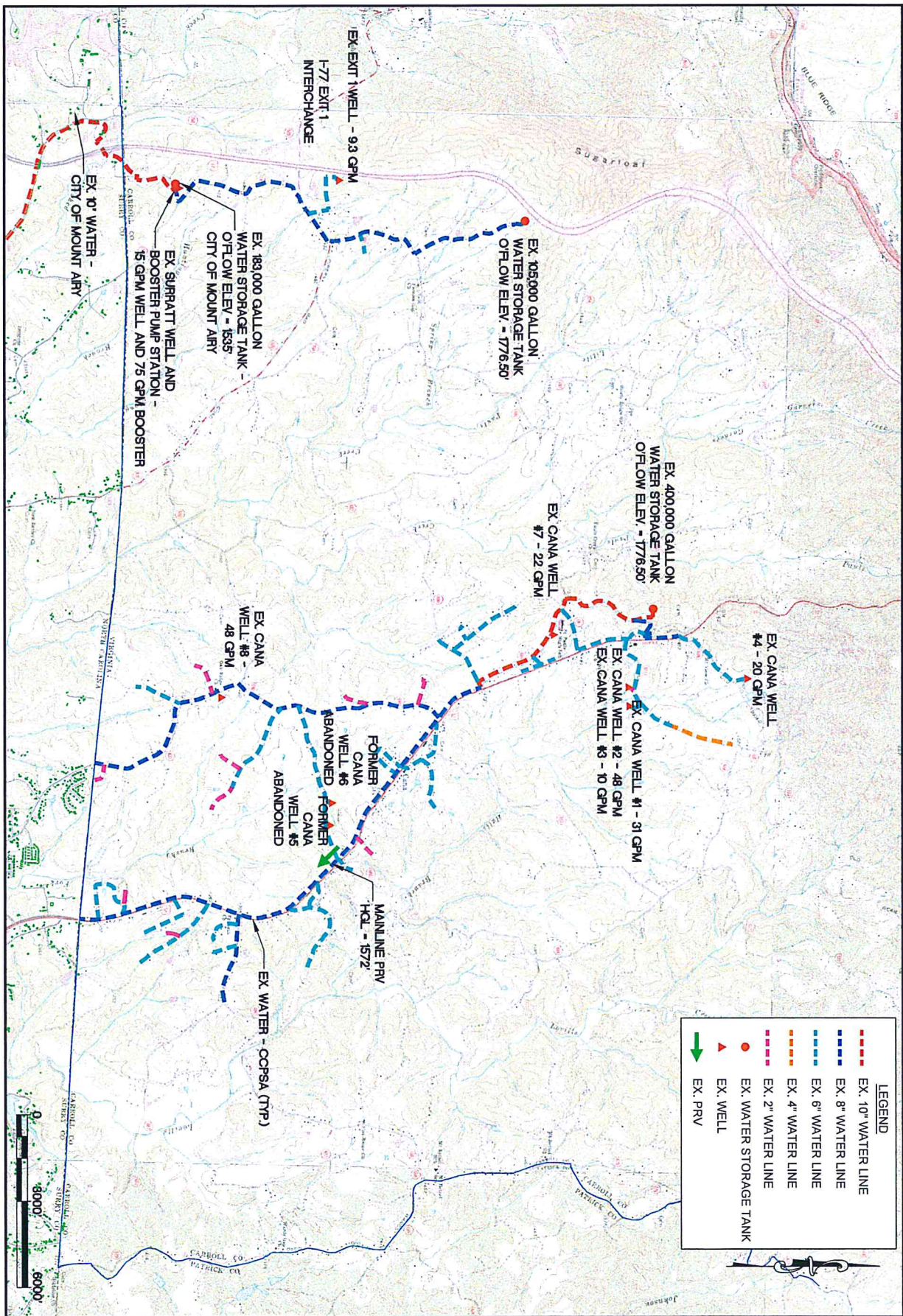
If approved effective date June 11, 2018

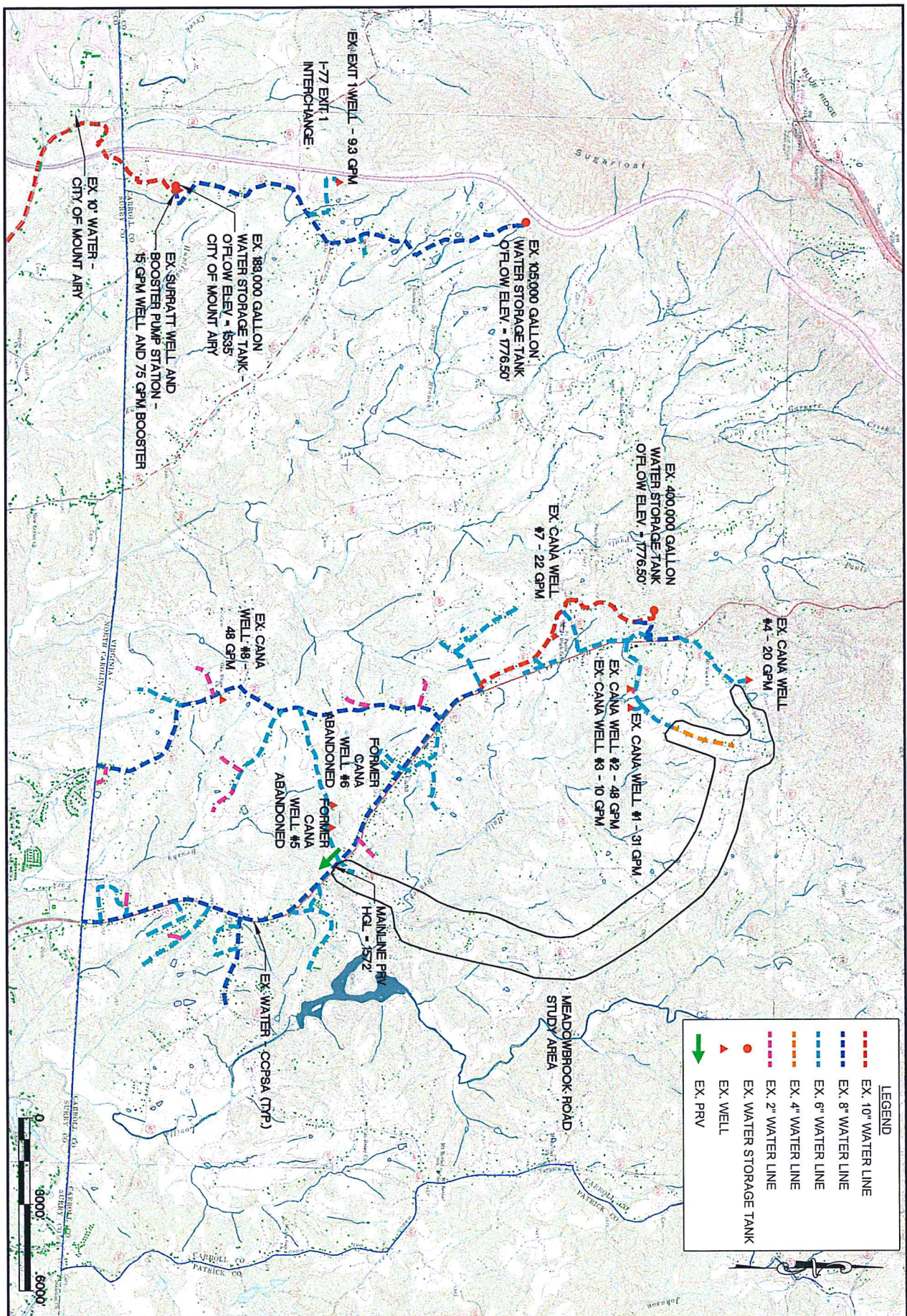
SEWER RATES	CURRENT	PROPOSED
Residential 10	\$25.00 min. 0-2000 gallons All-over 2000 gallons \$8.00 per 1000 gallons	\$28.00 min. 0-2000 gallons All-over 2000 gallons \$8.00 per 1000 gallons
Commercial 12	\$35.00 min. 0-2000 gallons All-over 2000 gallons \$8.50 per 1000 gallons	\$38.00 min. 0-2000 gallons All over 2000 gallons \$8.50 per 1000 gallons
Industrial 11	\$101.01 min. 0-2000 gallons All-over 2000 gallons \$7.12 per 1000 gallons	\$118.00 min. 0-2000 gallons All-over 2000 gallons \$8.25 per 1000 gallons
Sewer Flat	\$31.00 monthly	\$34.00 monthly

If approved effective date June 1, 2019

Commercial 11	\$35.00 min. 0-2000 gallons All-over 2000 gallons \$8.50 per 1000 gallons	\$50.00 min. 0-2000 gallons All over 2000 gallons \$8.50 per 1000 gallons
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700005695





ANNUAL WATER PRODUCTION & BILLING RECORDS

Cana System

	Gallons	Gallons
<u>Month</u>	<u>Produced</u>	<u>Billed</u>
June '14	1,762,400	1,296,345
Jul	1,591,700	1,542,210
Aug	1,936,100	1,248,211
Sept	1,354,300	1,274,713
Oct	1,447,200	1,356,212
Nov	1,535,900	1,222,311
Dec	1,470,700	1,299,115
Jan '15	1,664,300	1,147,116
Feb	1,779,090	1,221,514
Mar	1,969,300	1,381,541
Apr	1,500,700	1,245,321
May	1,583,300	1,497,319

I-77 Exit 1 System

Gallons	Gallons
<u>Produced</u>	<u>Billed</u>
251,100	280,200
255,100	274,400
294,200	317,000
297,300	302,400
217,580	290,000
239,100	224,800
238,100	272,000
208,400	259,000
185,000	254,100
352,900	213,900
303,950	193,800
366,450	260,800

Combined

Gallons	Gallons
<u>Produced</u>	<u>Billed</u>
2,013,500	1,576,545
1,846,800	1,816,610
2,230,300	1,565,211
1,651,600	1,577,113
1,664,780	1,646,212
1,775,000	1,447,111
1,708,800	1,571,115
1,872,700	1,406,116
1,964,090	1,475,614
2,322,200	1,595,441
1,804,650	1,439,121
1,949,750	1,758,119

Mo. Avg.	1,632,916	1,310,994
Avg. Day	53,685	43,101
Peak Mo.	63,526	

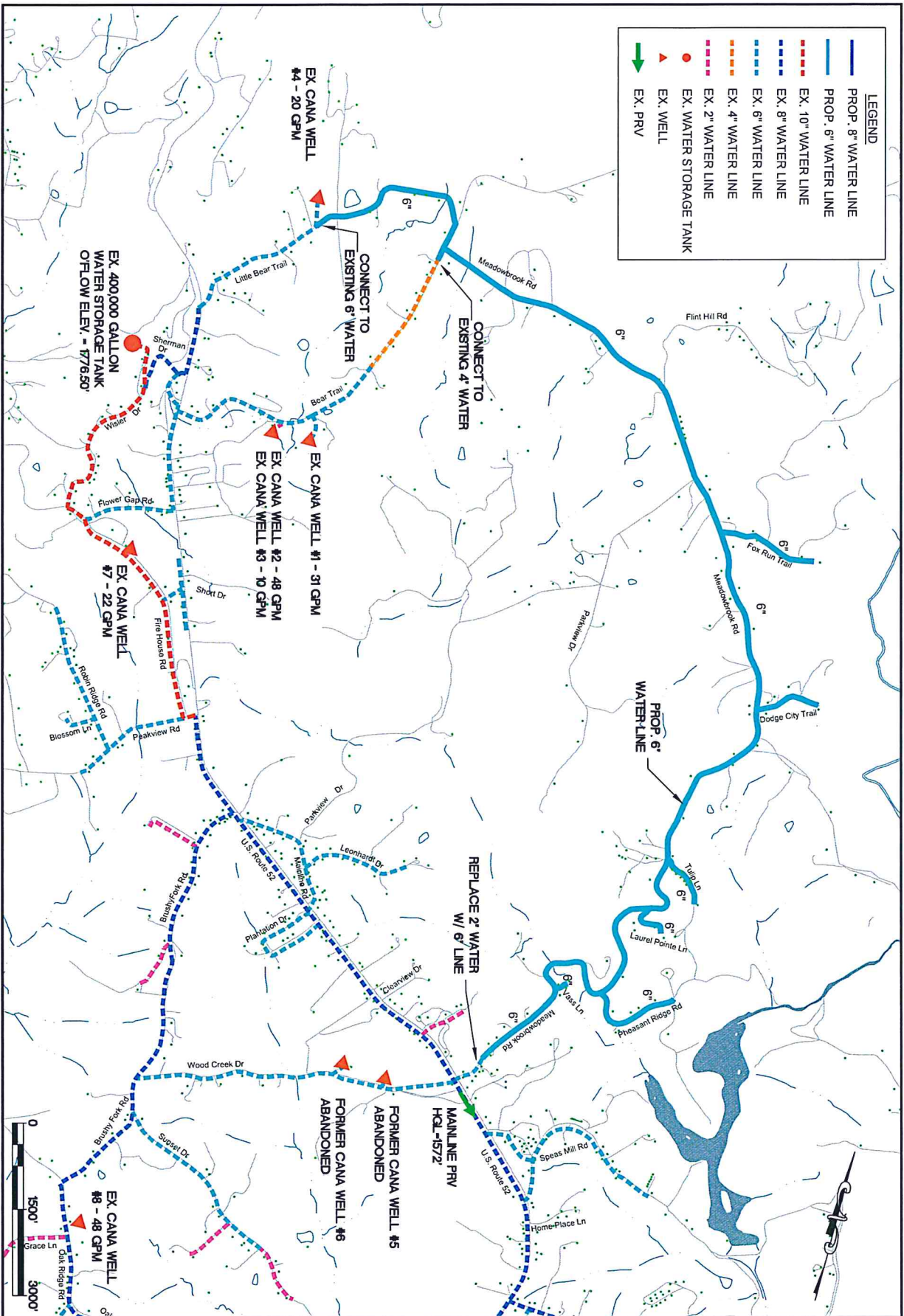
267,432	261,867
8,792	8,609
11,384	

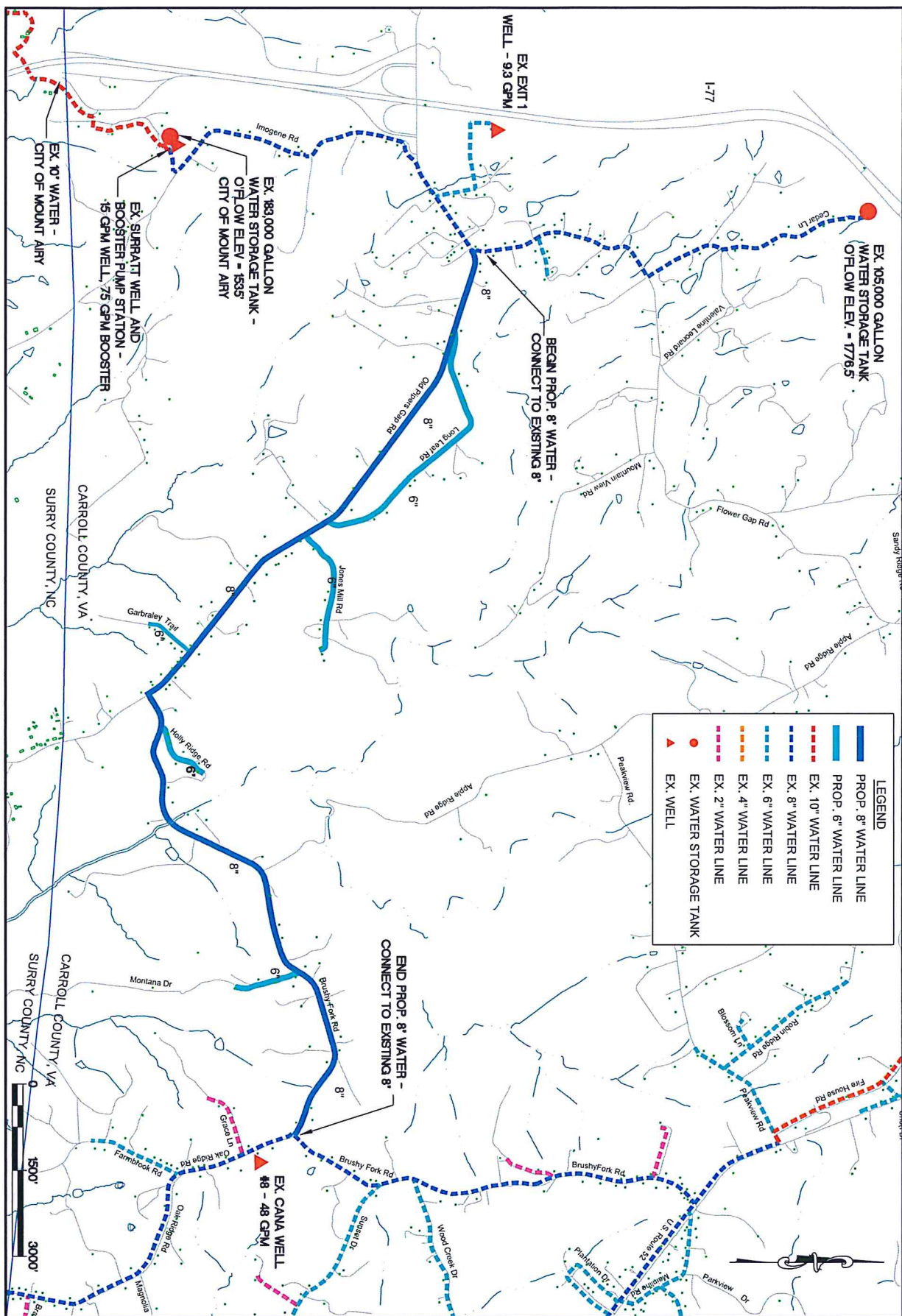
1,900,348	1,572,861
62,477	51,710

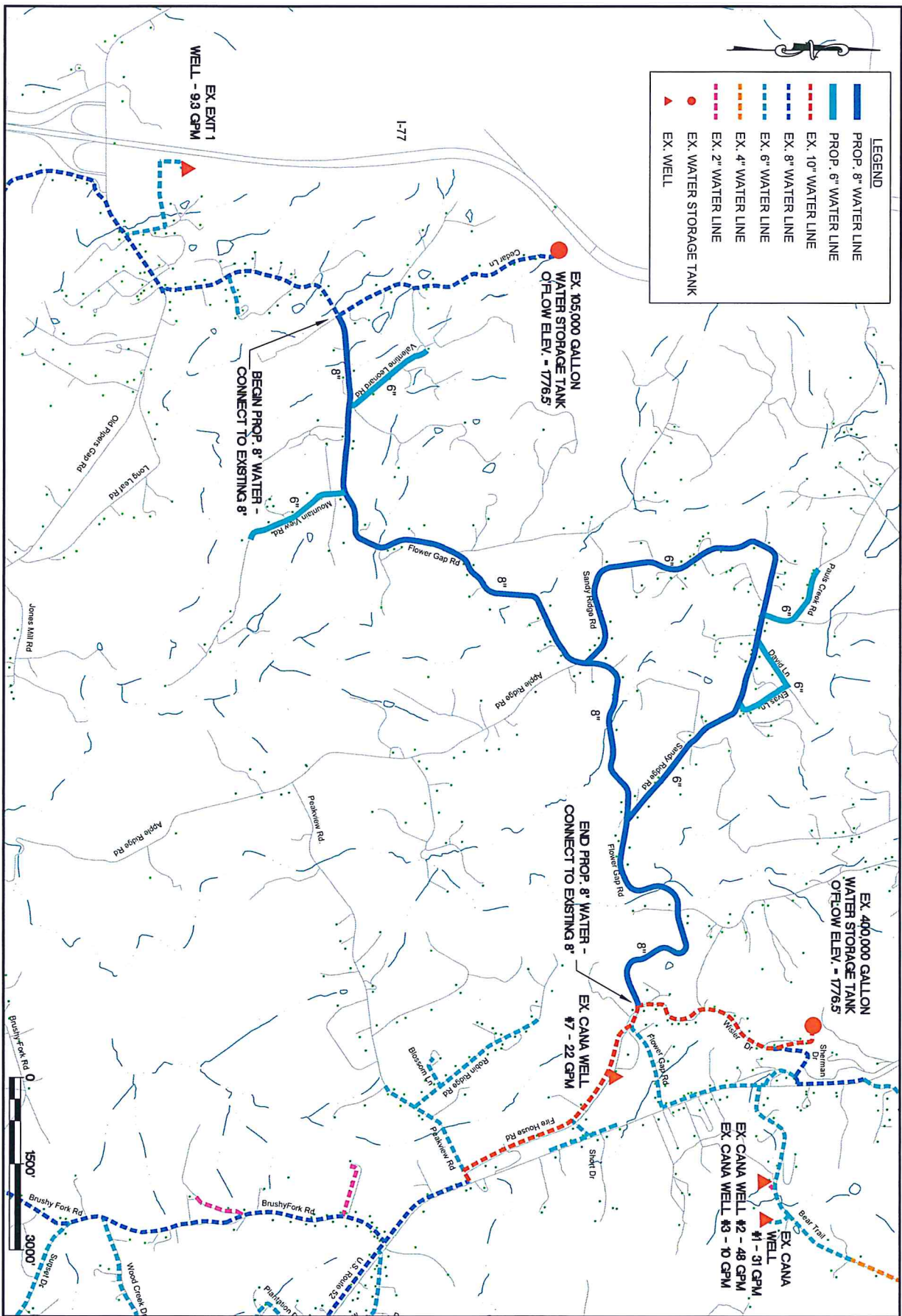
PERMITTED SOURCE CAPACITIES

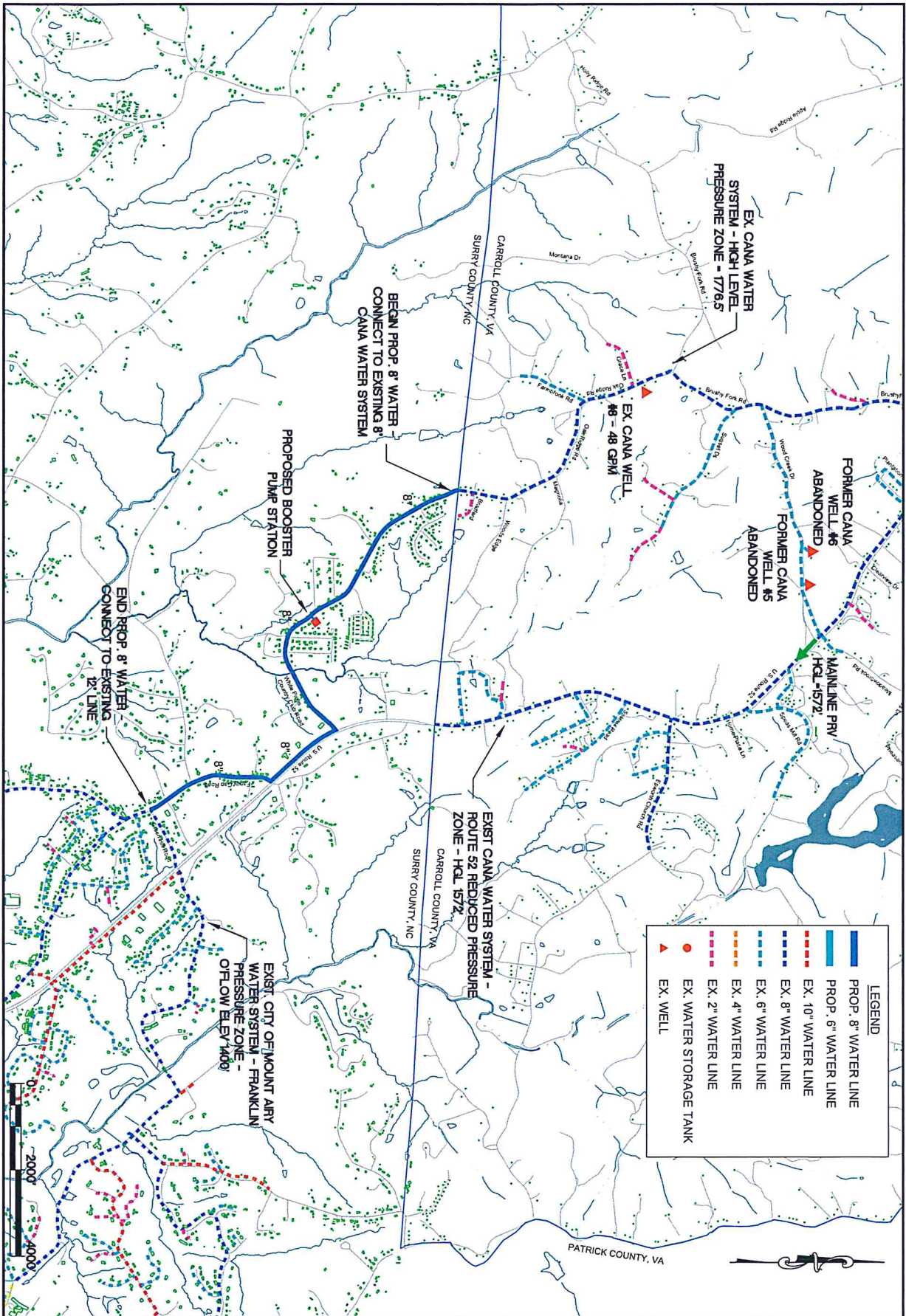
<u>Cana System</u>		
<u>Source</u>	<u>Permitted Capacity, GPM</u>	<u>Permitted Usage, GPD</u>
Well 1	31	24,800
Well 2	48	38,400
Well 3	10	8,000
Well 4	20	16,000
Well 5	Abandoned	0
Well 6	Abandoned	0
Well 7	22	17,600
Well 8	<u>48</u>	<u>38,400</u>
Total	179	143,200
80% Threshold Value		114,560

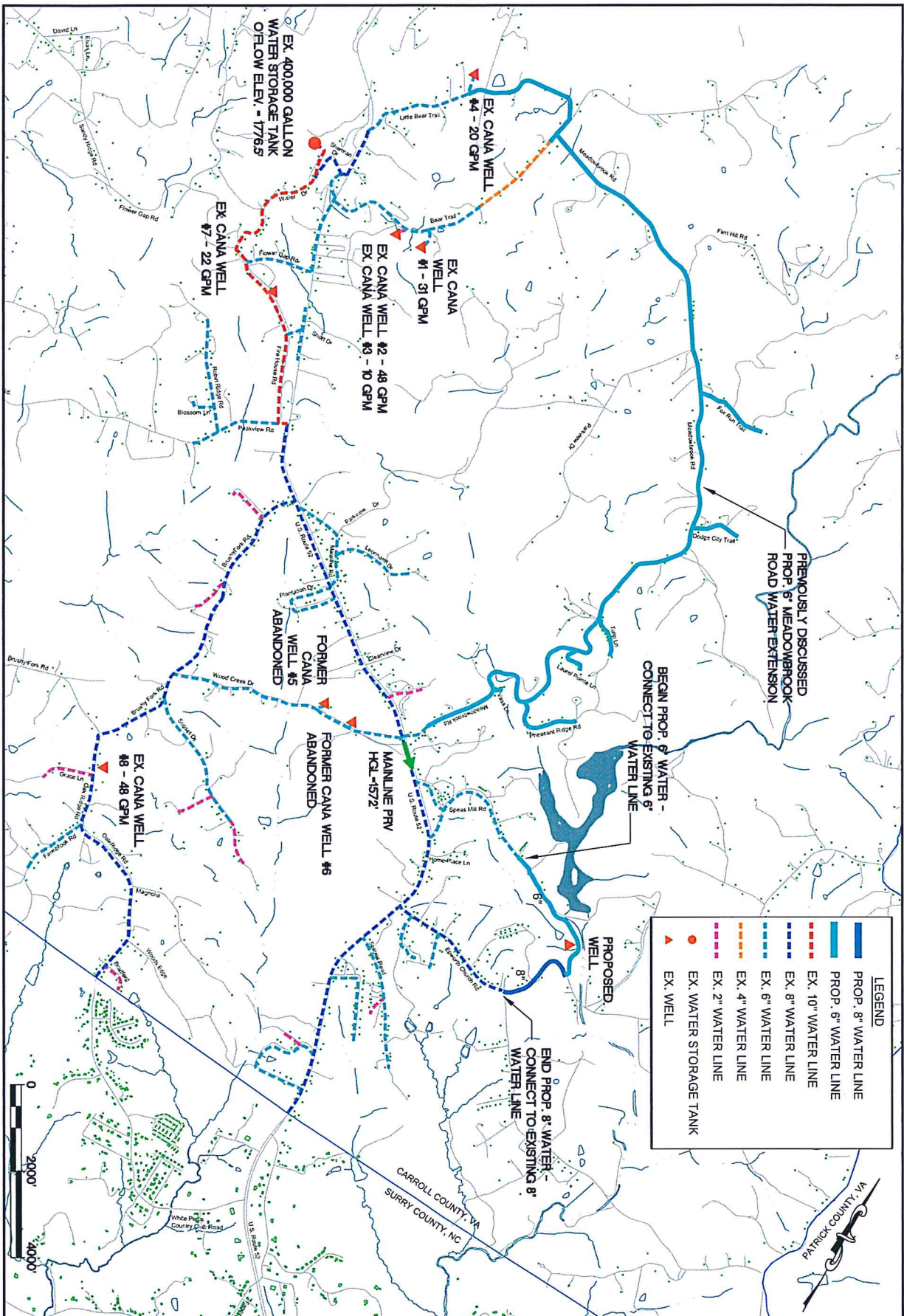
<u>I-77 Exit 1 System</u>		
<u>Source</u>	<u>Permitted Capacity, GPM</u>	<u>Permitted Usage, GPD</u>
Well 1	8, Emergency	0
Well 2	1.3, Emergency	0
Well 3	15	12,000
Booster PS	<u>75</u>	<u>108,000</u>
Total	90	120,000
80% Threshold Value		96,000

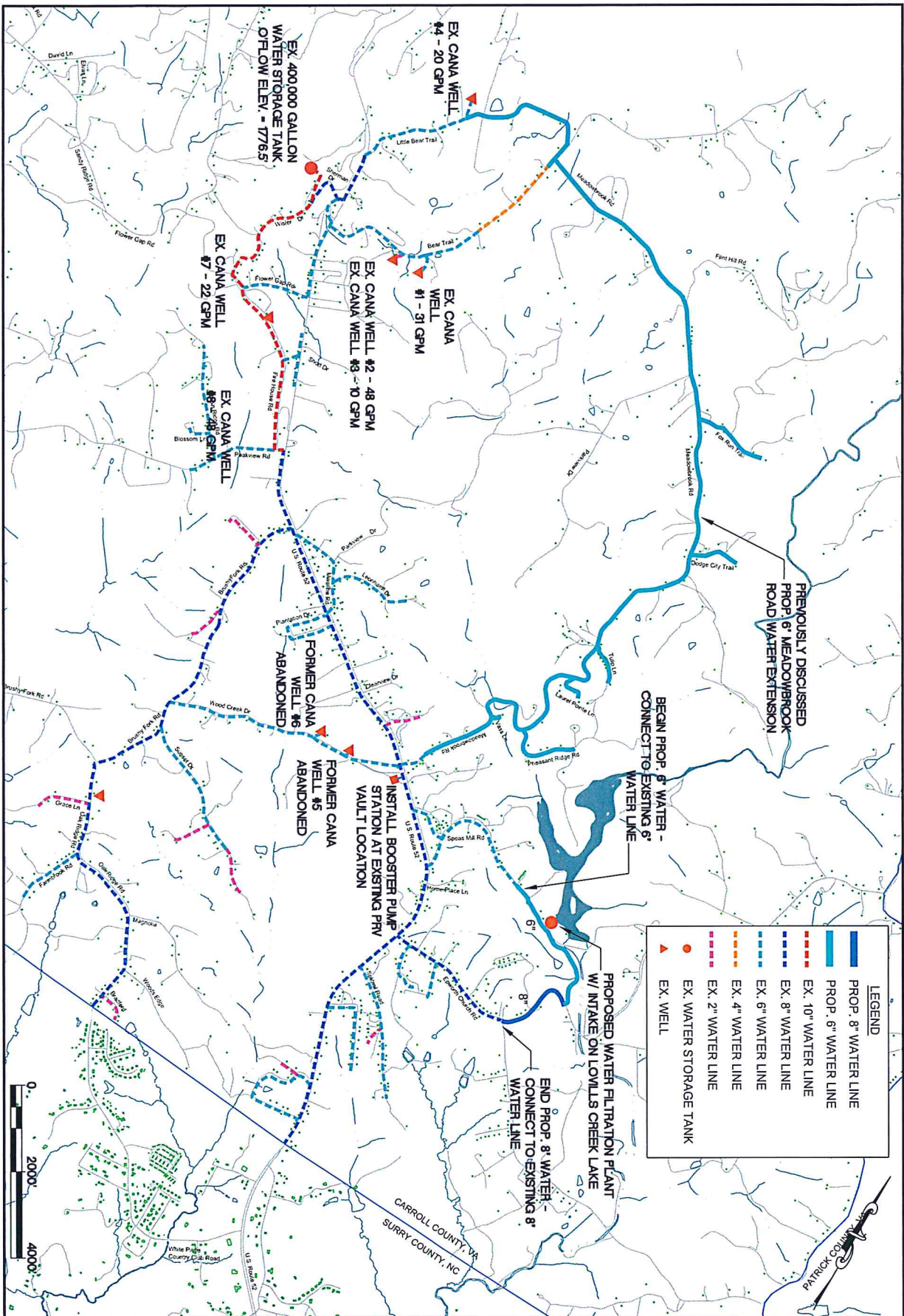


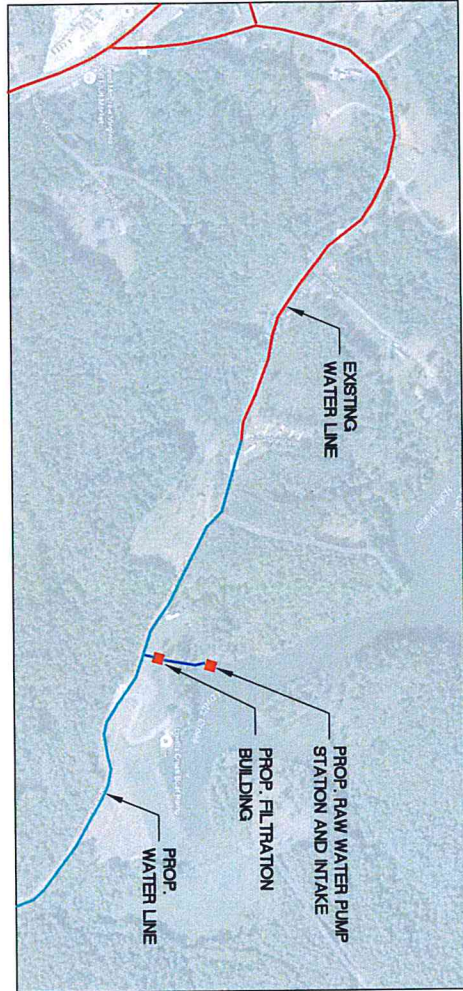




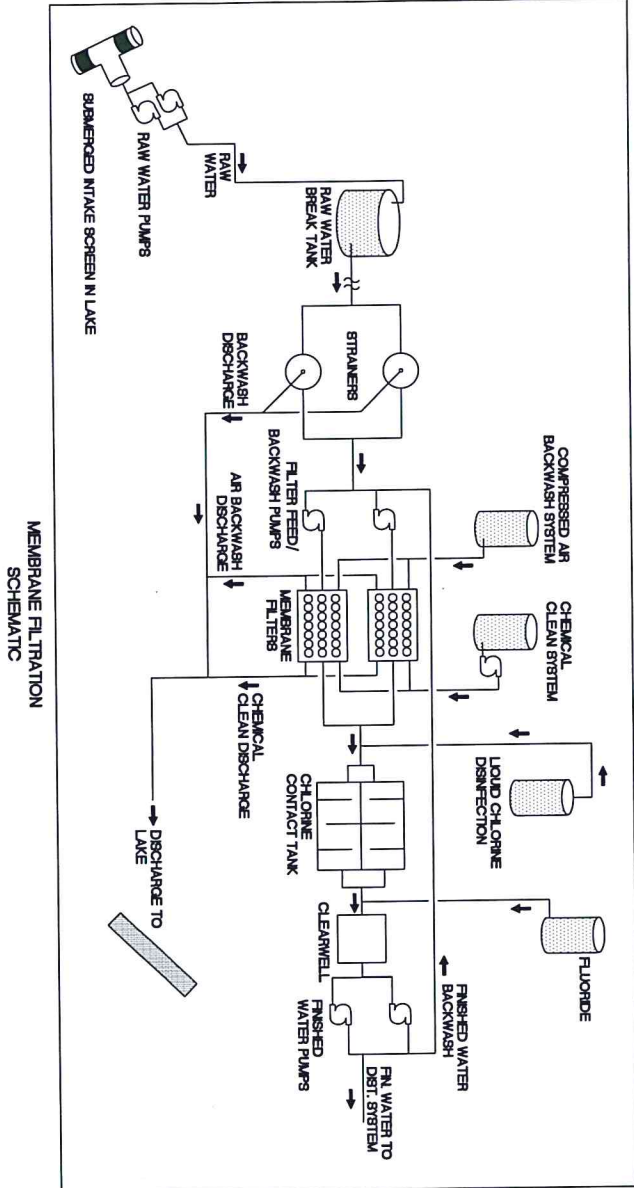








AERIAL VIEW -
PROPOSED IMPROVEMENTS



MEMBRANE FILTRATION
SCHEMATIC



SIMILAR MEMBRANE
FILTRATION FACILITY



SIMILAR MEMBRANE
FILTRATION FACILITY

Cana / Exit 1 Water Improvements - Summary of Water Supply Alternatives - 2016

<u>Supply Alternative / Description</u>	<u>Construction</u>			<u>Related Costs & Contingency</u>	<u>Total Estimated Project Costs</u>	<u># Potential Users</u>
	<u>Meadowbrook Road Area</u>	<u>Supply Source</u>	<u>Total Construction</u>			
1. Meadowbrook Plus Brushy Fork Road Connector	\$ 1,356,200	\$ 1,280,100	\$ 2,636,300	\$ 791,000	\$ 3,427,300	175
2. Meadowbrook Plus Flower Gap Road Connector	1,356,200	1,419,350	2,775,550	833,000	3,608,550	175
3. Meadowbrook Plus Mount Airy Connector	1,356,200	875,100	2,231,300	669,000	2,900,300	75
4. Meadowbrook Plus Lovills Creek Area Well	1,356,200	466,300	1,822,500	547,000	2,369,500	80
5. Meadowbrook Plus Lovills Creek Lake WTP	1,356,200	1,681,300	3,037,500	911,000	3,948,500	80

Cana / Exit 1 Water Improvements - Summary of Water Supply Alternatives - 2016

<u>Supply Alternative / Description</u>	<u>Construction</u>			<u>Related Costs & Contingency</u>	<u>Total Estimated Project Costs</u>	<u># Potential Users</u>
	<u>Meadowbrook Road Area</u>	<u>Supply Source</u>	<u>Total Construction</u>			
1. Meadowbrook Plus Brushy Fork Road Connector	\$ 1,356,200	\$ 1,280,100	\$ 2,636,300	\$ 791,000	\$ 3,427,300	175
2. Meadowbrook Plus Flower Gap Road Connector	1,356,200	1,419,350	2,775,550	833,000	3,608,550	175
3. Meadowbrook Plus Mount Airy Connector	1,356,200	875,100	2,231,300	669,000	2,900,300	75
4. Meadowbrook Plus Lovills Creek Area Well	1,356,200	466,300	1,822,500	547,000	2,369,500	80
5. Meadowbrook Plus Lovills Creek Lake WTP	1,356,200	1,681,300	3,037,500	911,000	3,948,500	80

ANNUAL BUDGET CONSIDERATIONS

<u>Supply Alternative / Description</u>	<u>SCENARIO 1 - WORST CASE</u>			<u>SCENARIO 2</u>		
	50% Customer Participation, 100% Loan / 0% Grant			67% Customer Participation, 75% Loan / 25% Grant		
	<u>Billing Revenue</u>	<u>Debt Service & Reserve</u>	<u>Balance Available</u>	<u>Billing Revenue</u>	<u>Debt Service & Reserve</u>	<u>Balance Available</u>
1. Meadowbrook Plus Brushy Fork Road Connector	\$ 34,598	\$ 145,523	\$ (110,926)	\$ 46,361	\$ 109,142	\$ (62,782)
2. Meadowbrook Plus Flower Gap Road Connector	\$ 34,598	\$ 153,219	\$ (118,622)	\$ 46,361	\$ 114,914	\$ (68,554)
3. Meadowbrook Plus Mount Airy Connector	\$ 14,828	\$ 123,147	\$ (108,319)	\$ 19,869	\$ 92,360	\$ (72,491)
4. Meadowbrook Plus Lovills Creek Area Well	\$ 15,816	\$ 100,609	\$ (84,793)	\$ 21,193	\$ 75,457	\$ (54,263)
5. Meadowbrook Plus Lovills Creek Lake WTP	\$ 15,816	\$ 167,653	\$ (151,837)	\$ 21,193	\$ 125,740	\$ (104,547)

<u>Supply Alternative / Description</u>	<u>SCENARIO 3</u>			<u>SCENARIO 4 - BEST CASE</u>		
	75% Customer Participation, 50% Loan / 50% Grant			90% Customer Participation, 25% Loan / 75% Grant		
	<u>Billing Revenue</u>	<u>Debt Service & Reserve</u>	<u>Balance Available</u>	<u>Billing Revenue</u>	<u>Debt Service & Reserve</u>	<u>Balance Available</u>
1. Meadowbrook Plus Brushy Fork Road Connector	\$ 51,896	\$ 72,762	\$ (20,865)	\$ 62,276	\$ 36,381	\$ 25,895
2. Meadowbrook Plus Flower Gap Road Connector	\$ 51,896	\$ 76,610	\$ (24,713)	\$ 62,276	\$ 38,305	\$ 23,971
3. Meadowbrook Plus Mount Airy Connector	\$ 22,241	\$ 61,573	\$ (39,332)	\$ 26,690	\$ 30,787	\$ (4,097)
4. Meadowbrook Plus Lovills Creek Area Well	\$ 23,724	\$ 50,304	\$ (26,580)	\$ 28,469	\$ 25,152	\$ 3,317
5. Meadowbrook Plus Lovills Creek Lake WTP	\$ 23,724	\$ 83,827	\$ (60,103)	\$ 28,469	\$ 41,913	\$ (13,445)