KCWATER

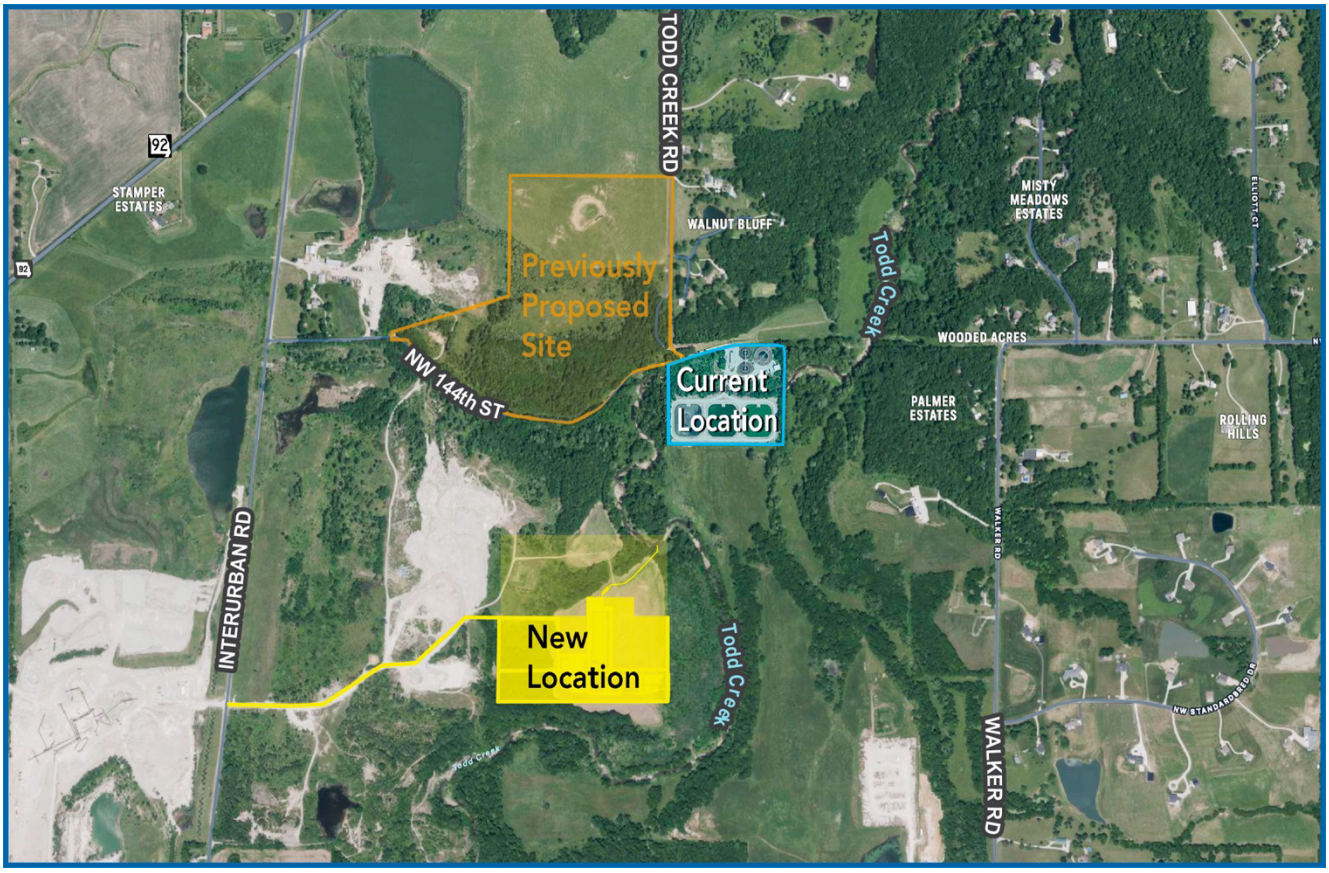
Todd Creek Wastewater Treatment Plant
Expansion and Upgrade

FAQs

Updated September 11, 2025

CURRENT AND PROPOSED LOCATION(S)

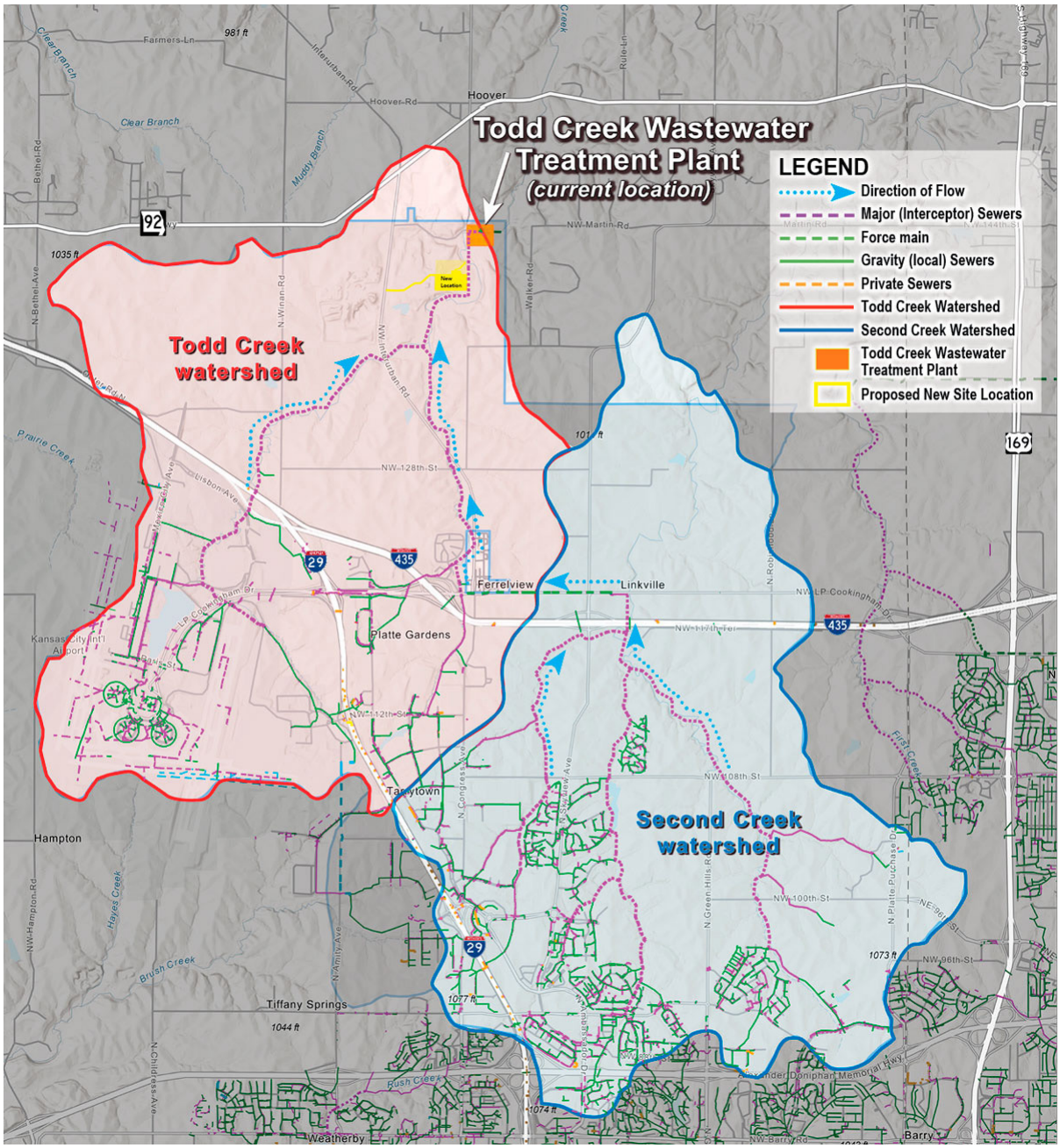
1. Where is the new location for the facility? How far is the proposed location from the current plant?



- The new location proposed is southwest of the current existing plant.
- The address for the new facility is: 14001 NW Interurban Road, Kansas City, MO 64163
- The previously proposed location was northwest of the current existing facility. The new location is out of the floodplain and approximately 1500 to 2000 feet from the current plant.

2. Why is the Todd Creek Wastewater Treatment plant being moved?

- The existing plant is reaching its processing capacity and needs to be enlarged to accommodate Northland growth (which is forecast to continue) that has happened since the plant was constructed in the 1960s.
- The existing plant is located in a floodplain so it cannot be expanded where it is currently located.
- The existing plant uses 70-year-old treatment technology.
- The decision to find a new location within workable range of existing pipelines and other underground infrastructure is not only reasonable but also necessary. (see watershed/existing sewer lines below)
- Current regulatory and financially responsible relocation decisions are driven by best management practices of the water industry nationwide.



3. When was the Todd Creek Wastewater Treatment plant built?

- The facility was built in the 1960s, the plant uses updated but nonetheless 70-year-old treatment technology. The new facility will be designed with newer proven technologies and meet stricter EPA standards for water quality.

4. What is the life span of this infrastructure?

- Technology and equipment have a 20-year life span. The Todd Creek Wastewater Treatment Plant technology and equipment have been maintained and updated over the years since they were installed in the 1960s but they are now needing to be upgraded or replaced.
- Wastewater treatment plant structures have a 50-year life span. The Todd Creek Wastewater Treatment Plant was constructed in the 1960s and so it is at the end of its usefulness and needs either a major rehabilitation or replacement. However, since the facility is located in the floodplain it will need to be replaced as it also must be relocated out of the floodplain.
- Interceptor sewer connections have a 100-year life span. The Todd Creek interceptor was constructed in the 1960s and has approximately another 50 years before needing to be upgraded or replaced.

5. Were other locations were considered?

- Yes. A wide variety of factors affect wastewater treatment plant locations, including the location of existing sewer pipes, costs of pumping sewage, terrain (hills, valleys, and floodplains), availability of property (i.e., a willing seller), and the need to anticipate future growth in the Northland.
- In 2023, the project team had several meetings with citizens in the area about the location of the new treatment facility and listened to their concerns. The alternate location was explored and the plan for the new facility at the new location is currently being developed.

6. Why was this location selected?

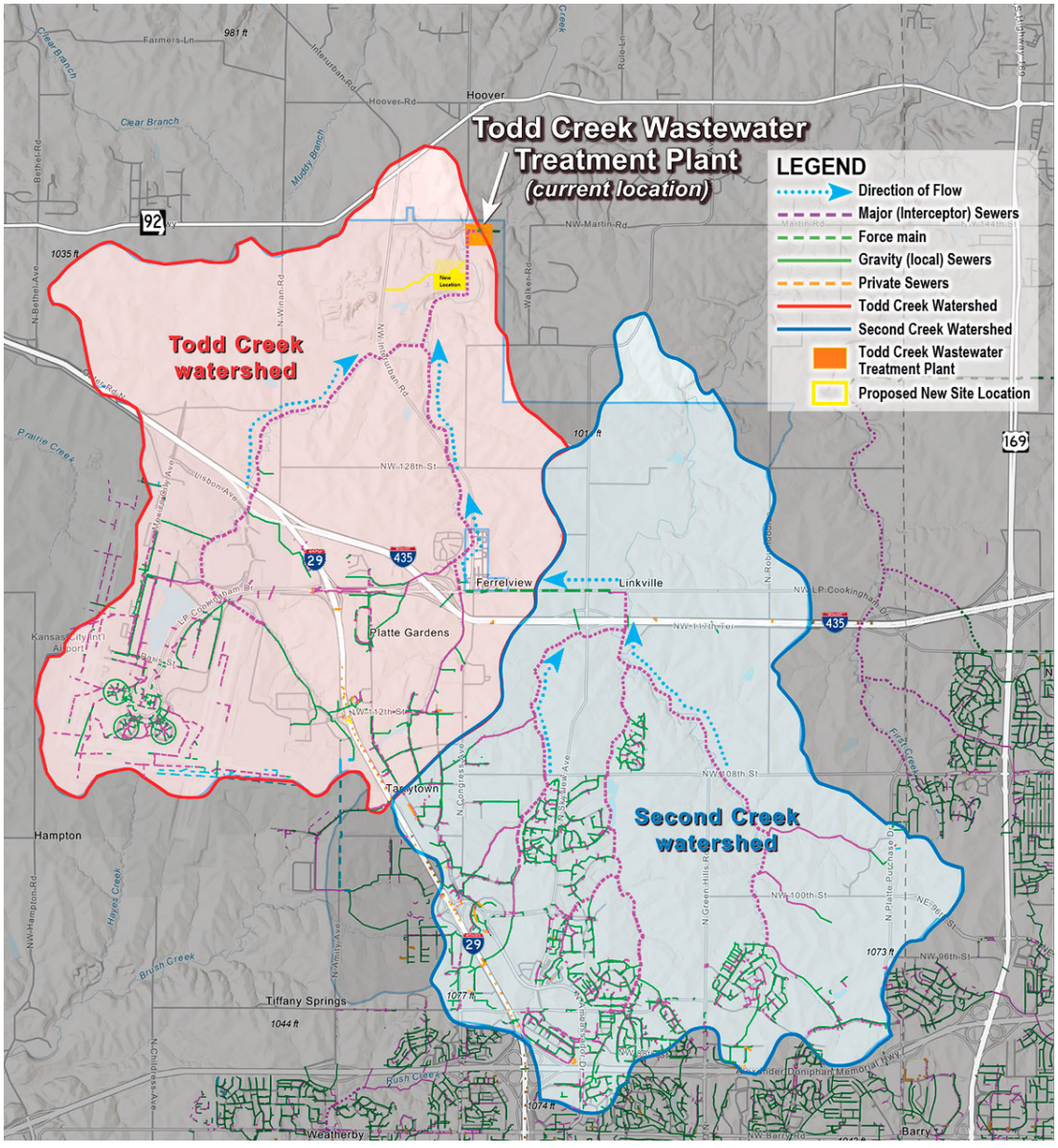
- The existing plant:
  - Is located in a floodplain.
  - Has reached or is reaching its processing capacity and
  - Needs to be enlarged to accommodate Northland growth that has happened since construction and is forecast to continue.
- The new site:
  - Needs to be at the downstream end of the existing sewer infrastructure.
  - Needs to be of adequate size to support the new plant infrastructure.

7. The sewer line maps show that the current Todd Creek Wastewater Plant is the most northern point of all the sewer lines. Wouldn't long term planning for growth make more sense to move this to a more centralized location away from people?

- Wastewater treatment plants typically are located at the downstream end of the watershed and near streams to which treated water can be safely returned to the environment. Adjoining land use is always a consideration, but efficiency, effectiveness and safety are primary considerations with water utilities.
- The location of the Todd Creek Wastewater Plant is at the northern end of the sewer lines. This location is key as:
  - these lines primarily flow from the power of gravity,
  - the gravity lines work with the natural watershed and here the watershed flows north to the location of the facility.

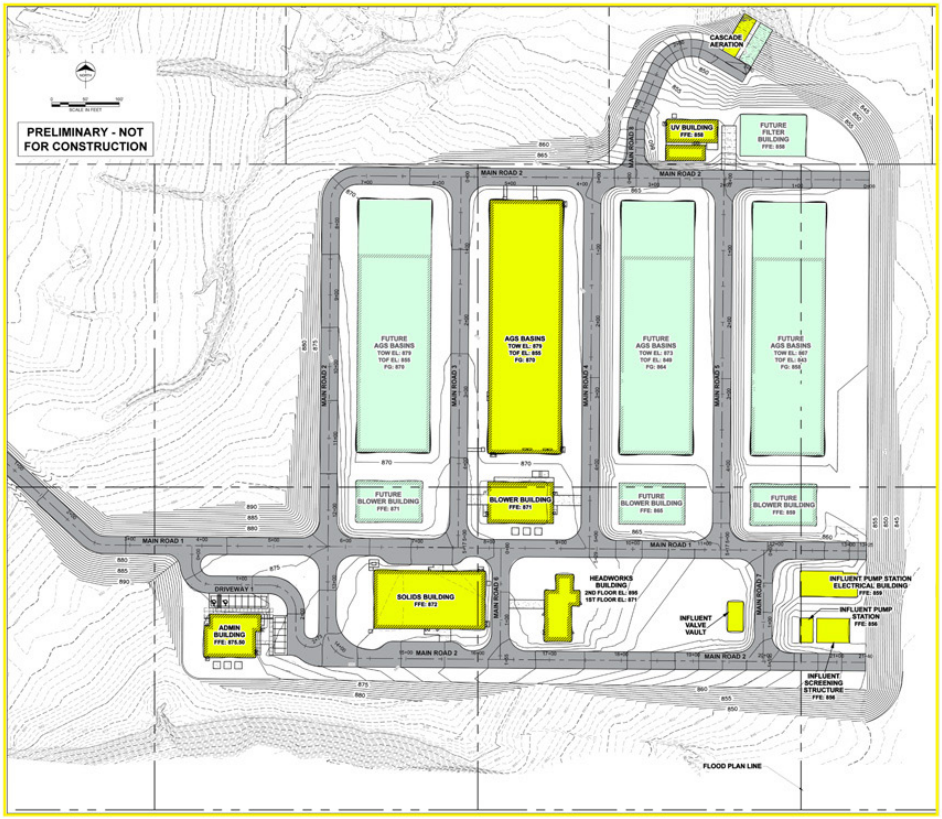
7a. Why was all the acreage at the airport not considered since the bulk of the sewage will be from the airport and the new logistics center?

- The airport location is not feasible as it is located high in the watershed, not at the bottom where the majority of the flow (by gravity lines) is directed. (see the watershed/sewer lines graphic)



PROPOSED SITE PLAN

8. What is the plan for the proposed site? How does it work?



CURRENT STRUCTURES

- Influent Screening
- Influent Pump Station
- Influent Pump Station Electrical Building
- Influent Valve Vault
- Headworks Building
- Solids Handling Building
- Administration Building
- Blower Building
- AGS Basin
- UV Building
- Cascade Aeration

FUTURE STRUCTURES

- (3) AGS Basins
- (3) Blower Buildings
- Filter Building
- Cascade Aeration

The facility will have the following elements:

Flow enters the plant through the

- INFLUENT PUMP STATION - from existing buried pipeline to the new site

Flow is then directed to the

- HEADWORKS - Grit removal and fine screening

Then the flow is sent to

- AEROBIC GRANULAR SLUDGE (AGS)/BIOLOGICAL TREATMENT –
  - Small footprint, low energy, high quality water
  - Removes organics and nutrients

After nutrients and organics removed, the flow then is sent to the

- DISINFECTION BUILDING
  - UV Disinfection – chemical free deactivation of pathogens
  - Discharge to Todd Creek

With Solids going to the

- SOLIDS BUILDING
  - Aerated storage of residuals
  - Thickening and haul off-site for treatment and disposal

The other building on site is the

- ADMINISTRATION BUILDING
  - Laboratory and Controls

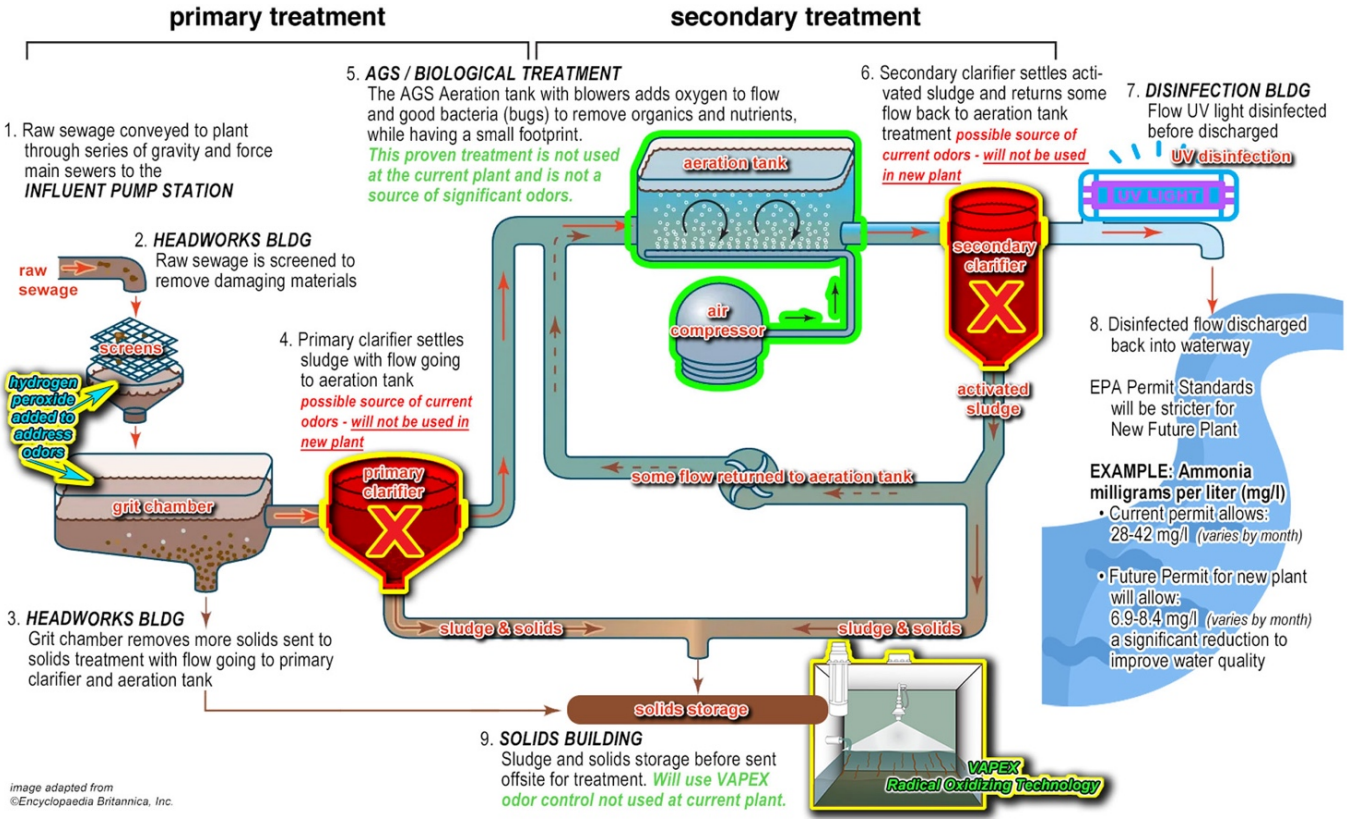
PRELIMINARY SITE RENDERING

9. What will the site look like?

HOW DOES WASTEWATER WORK

10. How does a wastewater system work?

- The wastewater flow is conveyed primarily through gravity lines and force mains from residents and commercial uses to the wastewater treatment plant. Due to the depth of the existing sewer lines in the area the flow must be pumped into the Plant using an Influent Pump Station. The flow is pumped into the HEADWORKS building where it is screened, and grit is removed. The HEADWORKS building can be a source of odors so hydrogen peroxide (like you may have at home in your medicine cabinet) will be added to the flow to minimize any odors.
- Next, is the Aerobic Granular Sludge (AGS)/Biological Treatment Basin.
    - Clarifiers which can be a source of odors are used at the current Todd Creek Wastewater Treatment Plant but will not be used at the new facility.
    - Instead, the flow will be directed to the AGS/Biological Treatment Basin which is a newer proven technology (not used at the current plant) and not a major source of odors.
- From the AGS/Biological Treatment Basin,
    - solids will be sent to the SOLIDS BUILDING,
    - some of the flow will return to the basin to keep water levels balanced,
    - the rest of the flow is directed to the DISINFECTION BLDG to be disinfected with UV light before being released back into Todd Creek.
- Sludge and solids will be collected in the SOLIDS BUILDING before being hauled off-site for treatment.



Want to learn more about how wastewater works? Here are some interesting videos on YouTube with good information you may find interesting.

SEWERS

- https://www.youtube.com/watch?v=UpHOkHxpTvQ

BASICS OF WASTEWATER PLANTS

- https://www.youtube.com/watch?v=-jmyGxb2JCc
- https://www.youtube.com/watch?v=4Tv6EKHWxd0
- https://www.youtube.com/watch?v=FvPakzqM3h8

PUMP STATIONS

- https://www.youtube.com/watch?v=eHAsuPVBwYM

AERATION BASINS

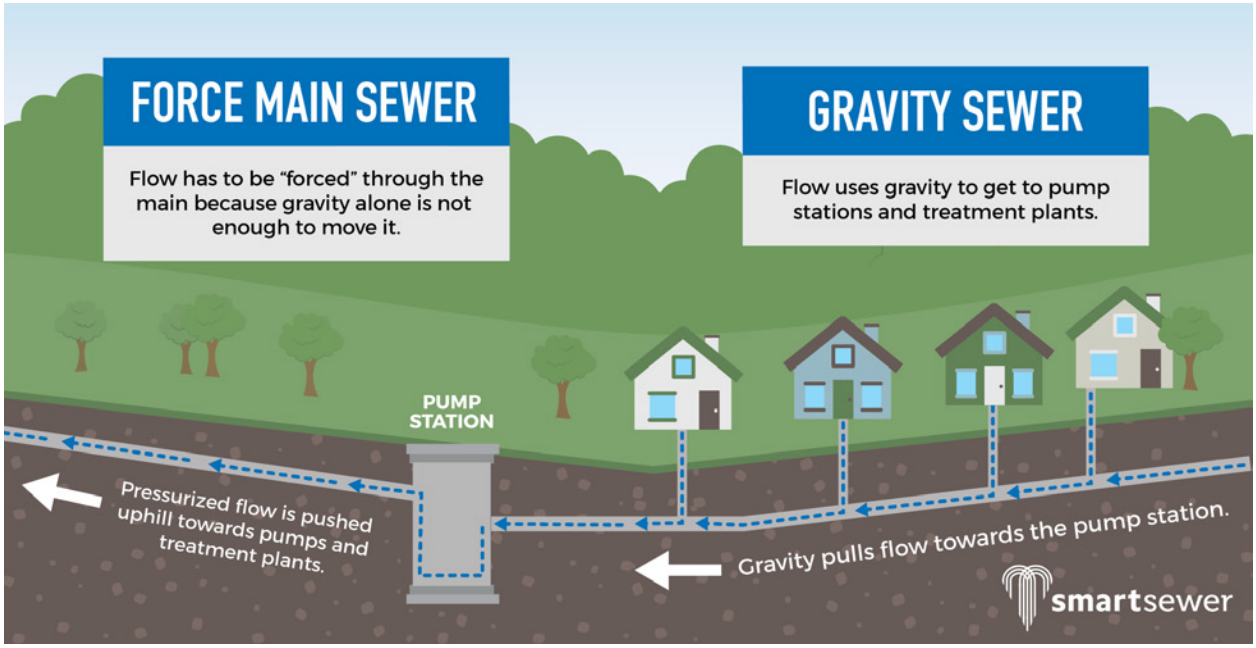
- https://www.youtube.com/watch?v=sUoO_U_GWFo

11. What is UV Disinfection – How does it work?

- An Ultraviolet (UV) disinfection system transfers electromagnetic energy from a mercury arc lamp to an organism's genetic material (DNA and RNA). When UV radiation penetrates the cell wall of an organism, it destroys the cell's ability to reproduce.
- Link to EPA Wastewater Technology Fact Sheet: https://www3.epa.gov/npdes/pubs/uv.pdf

12. What is the difference between a gravity sewer and a force main?

- The gravity sewer makes up the majority of sewer lines. Gravity sewers use a valuable and economic method of conveyance, gravity, to get the flow from the users to the plant for treatment. Sometimes when the flow must be directed uphill or across an area which does not allow for gravity flow, a force main sewer allows for pumped flow. This flow is assisted by pumps through the pipes to where it can be treated or join in a gravity sewer line.
- Pump stations are used to push the flow. Pump stations generally have pumps very deep underground and underwater to tie in with the gravity sewers.



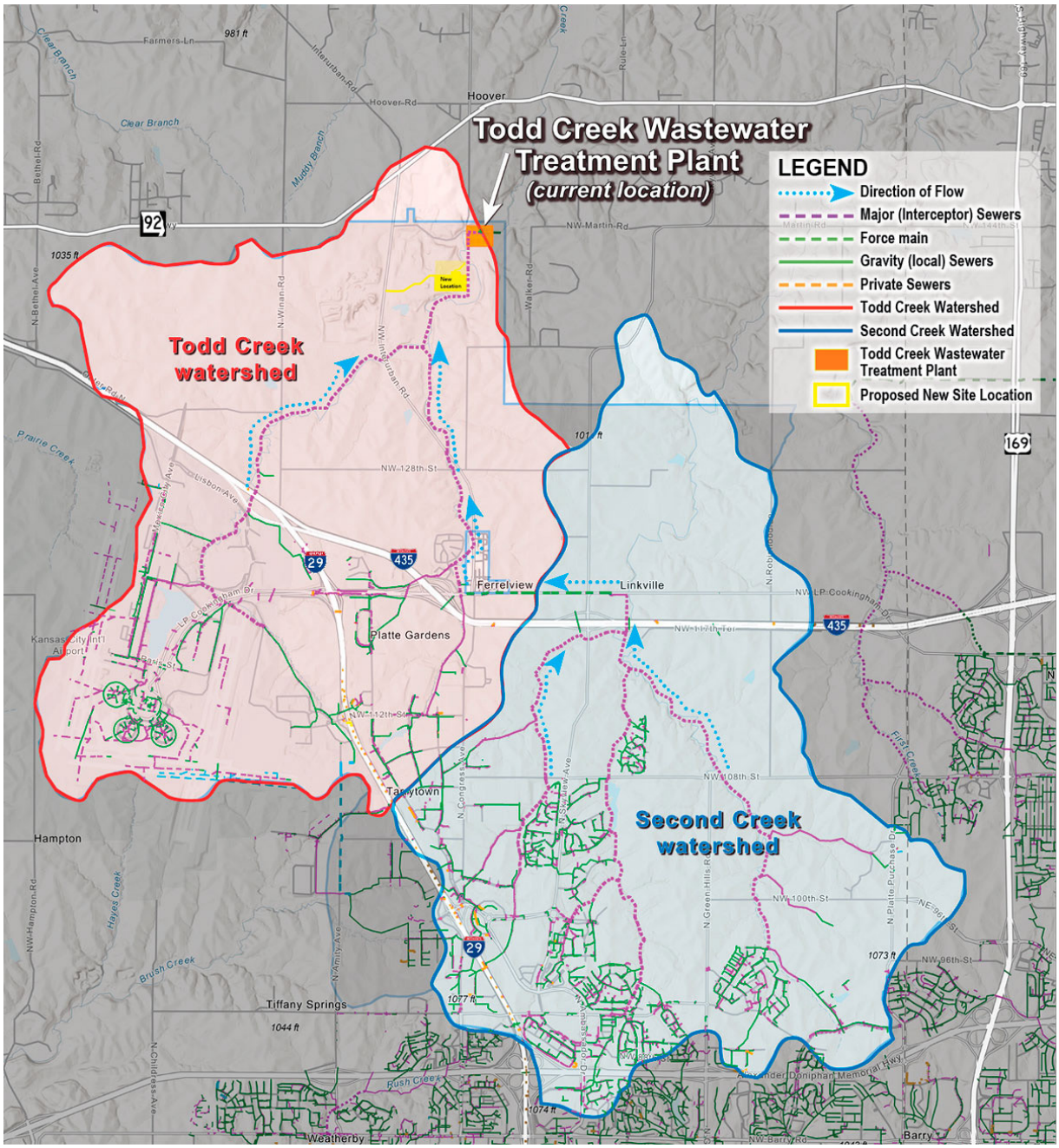
13. What is a pump station and why is one being constructed here?

- A pump station is used to lift sewage to a higher elevation to allow for continued gravity flow. The Todd Creek Sewer is more than 30 feet below grade at existing plant. To gravity flow through the wastewater plant, the sewage in the Todd Creek interreceptor sewer needs to pump to a structure tall enough to allow gravity flow through the proposed Todd Creek WWTP, so an in-plant pump station will not be necessary.

FLOODPLAIN / WATERSHED

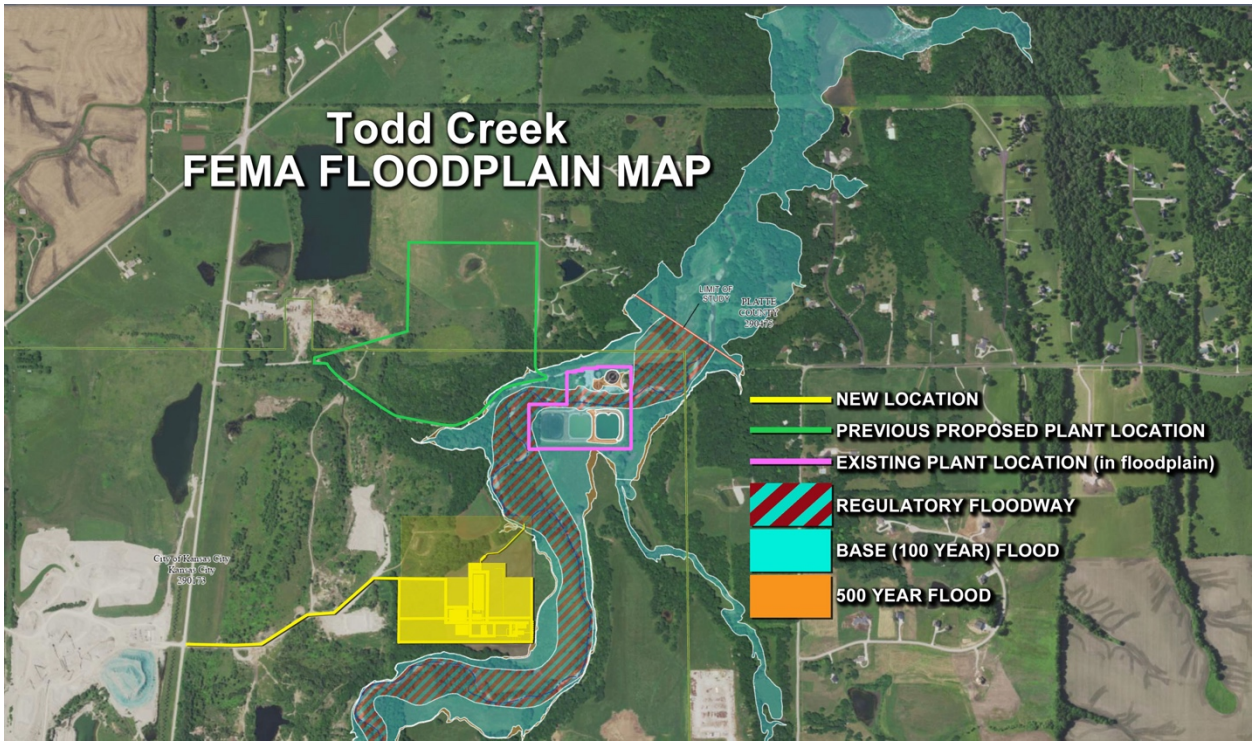
14. What is a watershed? Why is this important?

- A watershed is an area of land that channels rainfall, snowmelt, and runoff into a common body of water. The term "watershed" is often used interchangeably with "drainage basin," which may make the concept easier to visualize. The easiest way to envision a watershed is to think of a bowl. Any water at the high points of the bowl will flow to the lowest point, no matter how big the bowl is.
- Sewer systems use these watersheds/drainage basins to move flow from the highpoint of the basin to the lower point of the basin where the treatment plants are frequently located – using gravity as the power source. This lower location is generally where a creek or stream (Todd Creek in this case) is located to release the treated flow.



15. Where is the floodplain?

- A floodplain or flood plain or bottomlands is an area of land adjacent to a river. Floodplains stretch from the banks of a river channel to the base of the enclosing valley, and experience flooding during periods of high discharge.
- The map below shows the Todd Creek floodplain which covers the current Todd Creek Wastewater Treatment plant existing location. The new plant location must be out of the floodplain, but close enough to allow the treated water from the plant to be discharged into the creek.



FEMA map link:

https://msc.fema.gov/portal/search?AddressQuery=7600%20NW%20144th%20St%2C%20Platte%20City%2C%20MO%2064079

16. Why did the City Construct the existing Todd Creek Wastewater Treatment Plant in the Floodplain?

The existing Todd Creek Plant was constructed in 1968. The plant site was not in the floodplain at that time. Development in the watershed as well as updated modeling has caused substantial increases in flood elevation at the Plant site.

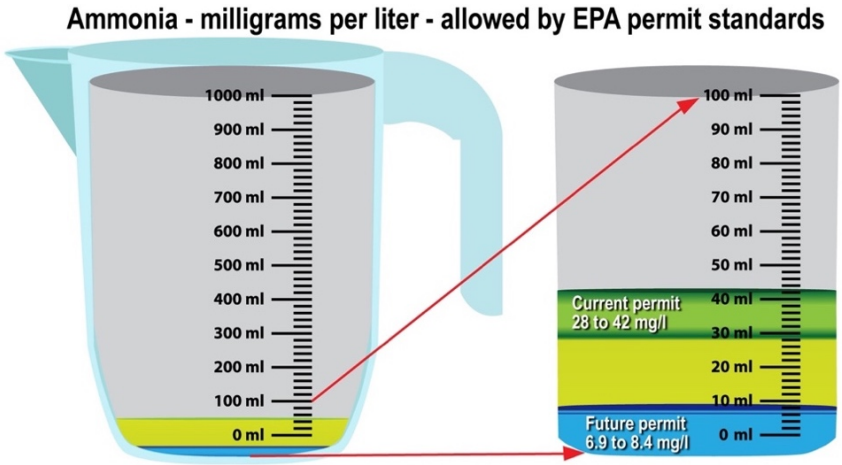
ENVIRONMENTAL AND HEALTH IMPACTS

17. What are the Environmental impacts?

- **ENVIRONMENTAL IMPACTS – Land**
  - Minor increase in impermeable area
  - Loss of usable grazing land
  - Wetlands/endangered species – none identified
  - Cultural resources – none identified
  - Improvement in floodplain
  - Area had already been disturbed from historic mining activities
- **ENVIRONMENTAL IMPACTS – Air**
  - No significant emissions
  - No onsite power and associated emissions
  - Odor control to minimize nuisance odors
- **ENVIRONMENTAL IMPACTS – Water**
  - Improvement of water quality in Todd Creek

18. How is water quality improved?

- Since the plant was first built, there have been several changes in technology, the assessment of the floodplain, and the Environmental Protection Agency (EPA) standards. With the new plant new technologies will be implemented, it will be removed from the floodplain thereby removing that potential threat to the environment during a flood event and it will meet new higher EPA standards.
- Take ammonia for example:
  - Ammonia is part of the wastewater cycle. It is excreted by animals including humans and produced during decomposition of plants and animals, thus returning nitrogen to the aquatic system. And ammonia is also one of the most important pollutants because it is relatively common but can be toxic.
  - The new Todd Creek Wastewater Treatment Plant will implement new standards under the Future Permit which will decrease the amount of Ammonia released into Todd Creek and increase the water quality of the creek. (see figure below)
- The new plant will also increase the amount of water in the stream, thereby keeping a steadier flow to the creek decreasing fish kills due to stagnant and heated water.



	Daily Maximum Values Allowed by Current Permit (varies by month)	Daily Maximum Values to be Allowed by Future Permit (varies by month)
Ammonia – milligrams per liter (mg/l)	**28-42 mg/l**	**6.9-8.4 mg/l**

19. Was quality of life considered in selecting the proposed site?

Design of any structure or facility considers impact on adjoining land uses and will strive to minimize adverse effects. The proposed site is adjacent to the existing wastewater treatment plant.

- In addition, the current plant was built in the 1960s and is using updated but still 70-year-old treatment technology and does not meet new EPA permit standards for water quality. The new facility will meet future EPA standards and will have better water quality which is a prime quality of life consideration.

20. What are the health impacts?

- For the health impacts of odors, National Institute of occupational Safety and Healthy (NOISH) has a limit of 10 parts per million (ppm) over a standard 8-hour period (TWA) as of 2023 https://www.cdc.gov/niosh/npg/nengapdxg.html
- The current Plant meets older regulation standards which may account for reported smells by some neighbors downstream. However, the new Plant will be built to meet or exceed the proposed new environmental regulation standards which will improve water quality in the creek. (see question 17. How is water quality improved?)
- The current Plant has no odor control systems in place. However, the future plant will have odor control systems added. Although unpleasant, there are no health impacts to these odors, but reducing or eliminating them is part of working to be a good neighbor and steward of the environment.
- The odor that people smell from wastewater treatment plants is hydrogen sulfide. What is hydrogen sulfide?
    - Hydrogen sulfide is a flammable, colorless gas that smells like rotten eggs. People usually can smell hydrogen sulfide at low concentrations in air ranging from 0.0005 to 0.3 parts per million (ppm).
    - Hydrogen sulfide occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. It can also result from bacterial breakdown of organic matter (such as sewage).
    - The Occupational Safety and Health Administration (OSHA) set an acceptable ceiling limit of 20 ppm for hydrogen sulfide in workplace (enclosed) air. (https://www.epa.gov/sites/default/files/2017-12/documents/appendix_e-atsdr_h2s_factsheet.pdf)
    - The new facility will monitor for hydrogen sulfide in areas where the opportunity exists for it to be generated. Sensitive detectors will be programmed to alert operations staff when this gas is detected so that mitigation steps can be taken.

21. Why wasn't the KC office of Environmental Quality part of this project?

- KC Water must comply with state and federal laws and Missouri Department of Natural Resources and U.S. Environmental Protection Agency regulations. The City's Office of Environmental Quality focuses on sustainability, assistance on environmental compliance of existing City facilities on issues such as asbestos and lead paint inspections, and energy and water consumption benchmarking. More information at https://www.kcmo.gov/city-hall/departments/city-manager-s-office/office-of-environmental-quality.

22. What was the basis of the Environmental portion of the public meeting?

- The environmental impact report follows U.S. EPA and Missouri Department of Natural Resources specifications and guidelines. Comments and questions made at the Aug. 31, 2023, public meeting, and any public comments submitted thereafter until the report is filed, are considered part of the record and will be included in the final report.

24. What is being done for odor control? Is there another facility that is using the same technology for odor control?

- See question #33

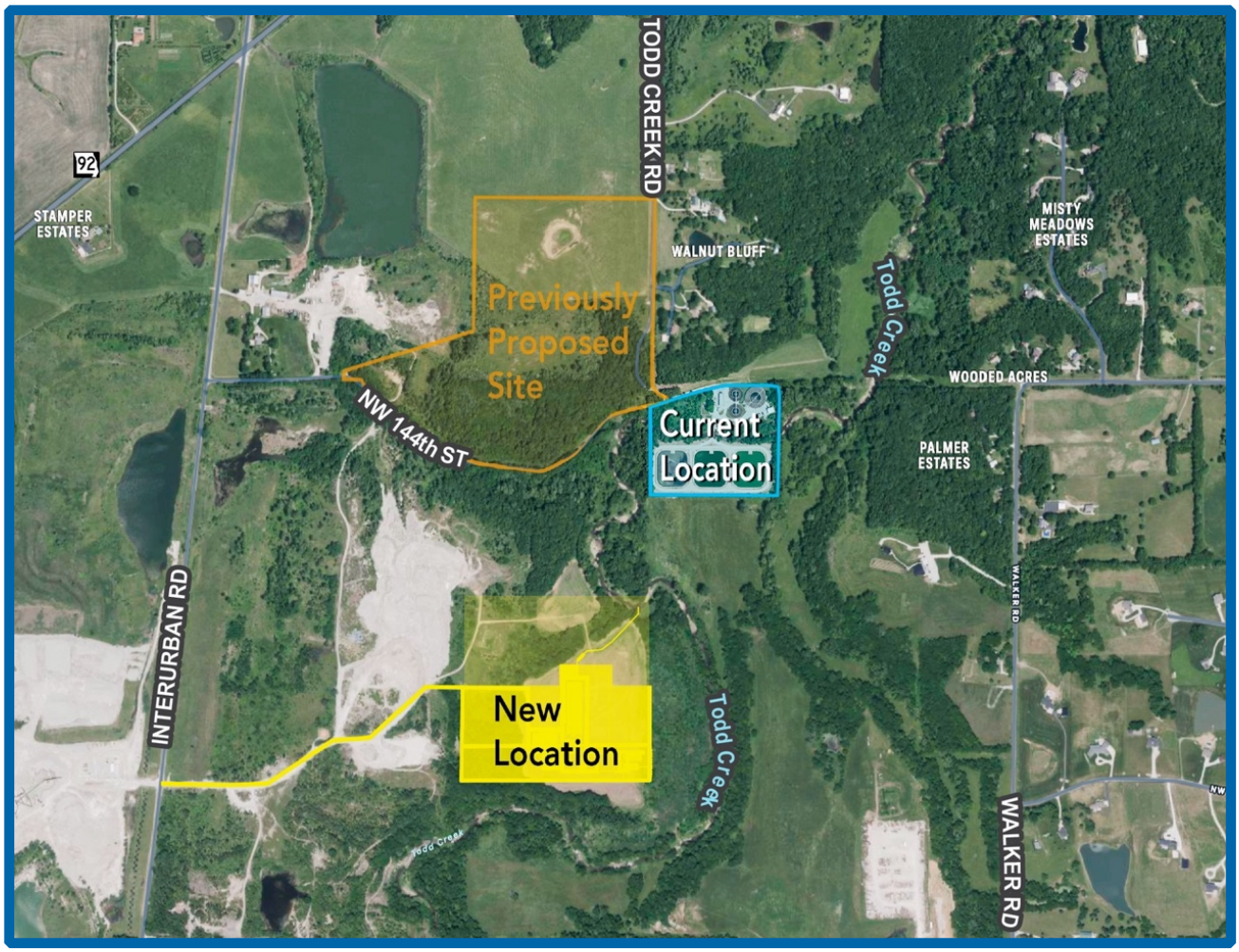
25. What is the staffing or maintenance plan for the facility?

- Wastewater treatment plants universally are moving to automated control by qualified staff as well as routine scheduled plant staff visits for certain operational activities and maintenance. The proposed plant will be monitored at our 24/7 staffed wastewater operations center. KC Water strives to operate all treatment facilities efficiently and effectively within regulations and in accordance with best management practices. The proposed plant will be maintained for safe and efficient operations. The existing plant has equipment near the end of its useful like requiring more frequent and costly maintenance.

26. What is the access plan onto Todd Creek Road?

- Main access and traffic to the proposed new location for the Todd Creek Wastewater Treatment facility will be off of Interurban Road (see map). The new site will not be accessed from Todd Creek Road.

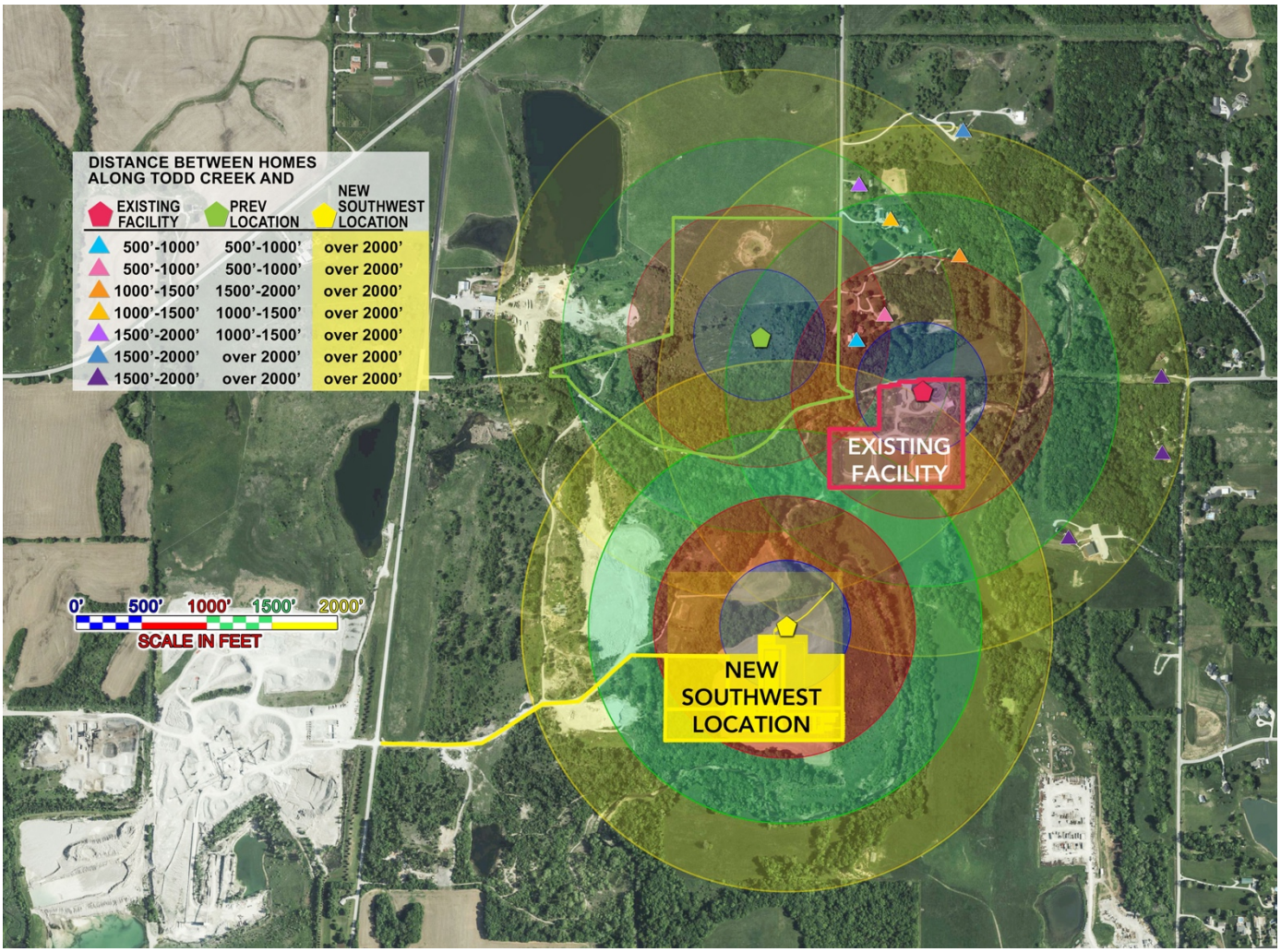
- Access to treatment plants is important for security and safety of the environment and the public. Any new plant will have appropriate control and access. Please call 816-513-7243 to report vehicle issues at the current plant.



REGULATORY and PLANNING

27. Other states have regulations for site planning for sewage treatment plants that include statements like "the treatment plant building shall be located as far as possible from built-up areas to prevent nuisance odors and noise." Is this something that we should consider?

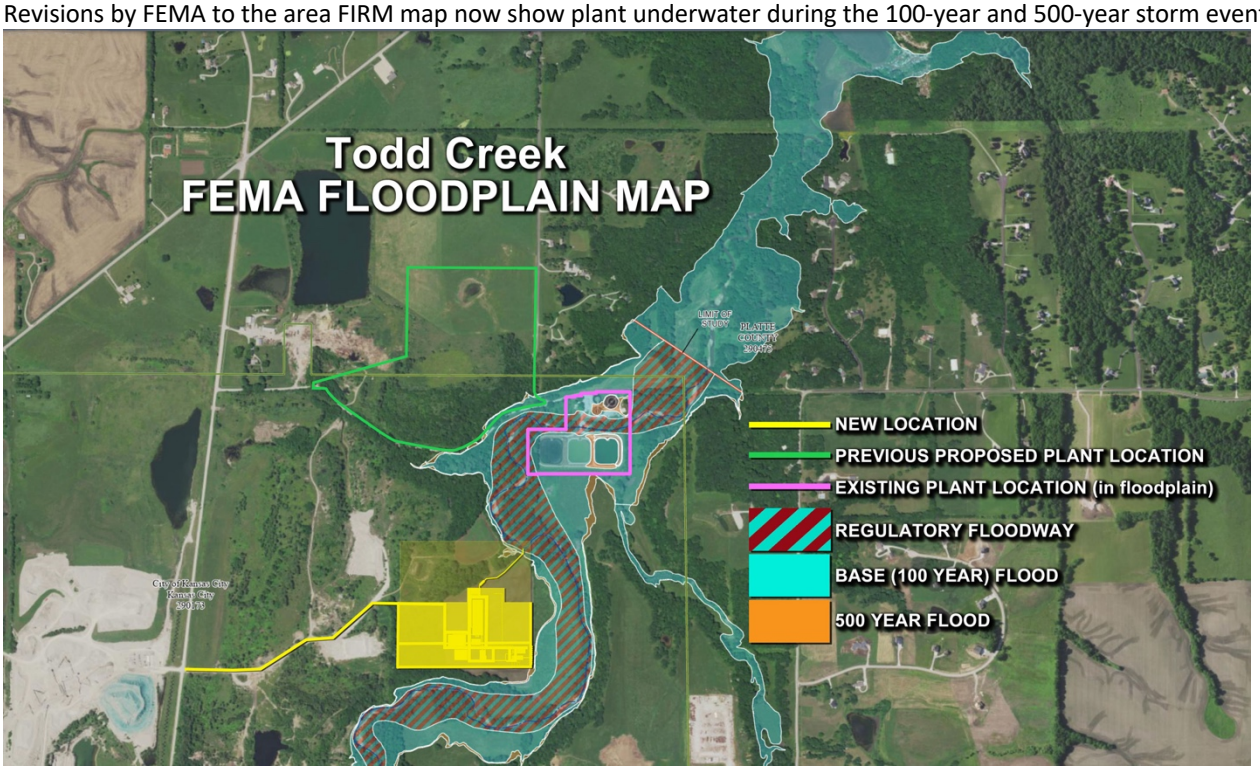
- KC Water complies with Missouri Department of Natural Resources (MDNR) guidelines regarding location of infrastructure facilities. The proposed plant site is set back 500 feet from the east property line, and plans include trees and landscaping. The plant also will replace 70-year-old odor treatment methods with state-of-the-art odor control technology.
- City Property near the airport was not considered for site planning purposes. The Airport is built at the top of the watershed. To build a treatment plant at the top of a watershed, a pump station would have to be built at the end of the Todd Creek gravity then flow would have to pumped up hill along the existing gravity sewer for miles to reach the area. Pumping flow this far is not recommended due to cost and energy consumption. Typically pumping uphill to a treatment facility is only utilized when the facility needs to be kept outside of a flood risk area.
- The proposed new facility location is close to the current plant, just removed from the floodplain. The figure below shows the distances between the current facility location and the new southwest location as well as approximate distances from other structures in the area.



29. What happens if the current plant is not relocated and installed with improvements to meet EPA and MDNR (Missouri Department of Natural Resources)?

- Water Quality
  - Inability to remove nutrients (nitrogen/phosphorus) and meet permit as watershed grows
- Facility Reliability
  - Failure of critical assets beyond service life, resulted in untreated wastewater
- Insufficient capacity to support development in the watershed.
- Floodplain impacts and possible flooding of facility resulting in untreated wastewater

Revisions by FEMA to the area FIRM map now show plant underwater during the 100-year and 500-year storm event.



FEMA map link:
https://msc.fema.gov/portal/search?AddressQuery=7600%20NW%20144th%20St%2C%20Platte%20City%2C%20MO%2064079

30. Who are the engineers for the project, what are their credentials?

- The City selected a team of local engineers and architects led by Burns and McDonnell via a competitive qualification-based selection. The team members are all experienced in the design of wastewater facilities.
- Design and project engineers are fully licensed, highly qualified, and experienced professionals.

31. How is cost prioritized?

- KC Water follows City of Kansas City procurement ordinances, policies and protocols, including accepting the lowest qualified and responsive bid (per Missouri law) for construction contracts. Projects are advertised publicly, and adequate time is allows to submit bids.

32. What intergovernmental agencies reviewed this location and plans.

- Army Corps of Engineers
- Department of Conservation
- Department of Natural Resources Division of Geological Survey
- Department of Natural Resources Division of State Parks
- Department of Natural Resources Financial Assistance Center
- Department of Natural Resources Historic Preservation Office
- Federal Assistance Clearing House
- Osage Nation
- Pawnee Nation
- United States Fish and Wildlife

COMMUNITY CONCERNS AND BENEFITS

33. What are the benefits to the community?

- Improved water quality
  - Nitrogen and Phosphorus removal
- Environmentally Responsible
  - Process does not rely on chemicals for nutrient removal.
  - Lower energy consumption
- Small footprint
  - Selected process does not need primary or final clarification
- Supports growth in the watershed
  - More jobs and homes in the area

34. What is being done for odor control?

The current Todd Creek Wastewater Treatment Plant, built in 1968 prior to the federal Clean Water Act of 1970, uses older methods to control odors. KC Water is specifying current technology to control odors for the replacement plant serving the Todd Creek watershed. Below is information about the system.

- **Lee's Summit, Mo.**

  Four examples of the system planned for Todd Creek are in place at lift stations in Lee's Summit, Mo. Read about the first two Lee's Summit installations here:
  Lift Station Odor Control: Odor control units installed at lift stations eliminate customer complaints
  www.wwdmag.com/collection-systems/article/10939973/lift-station-odor-control

- **Thibodaux, La.**

  Lift Station Odor Control with Vapex Environmental Technologies: QSM Solves Odor Control at Lift Station with Vapex Technology.
  www.vapex.com/case-studies/qsm-solves-odor-control

- **Springfield, Mo.**

  One example of the system planned for Todd Creek is in place here:
  Springfield (Mo.) Southwest Wastewater Treatment Plant (Hydrogen Peroxide Facility), 3301 W. Byp, Springfield, MO 65807.
  www.springfieldmo.gov/405/Southwest-Treatment-Plant

- **Scientific Study**

  Here is a summary of a scientific study of the technology that that will be used at Todd Creek.
  "Waste Water and Lift Station Odor Control: Indirect Determination of Hydroxyl Radicals in Fine Particle Mist Generated from an Odor Control Technology via HPLC"
  www.vapex.com/case-studies/case-study-indirect-determination-of-hydroxyl-radicals

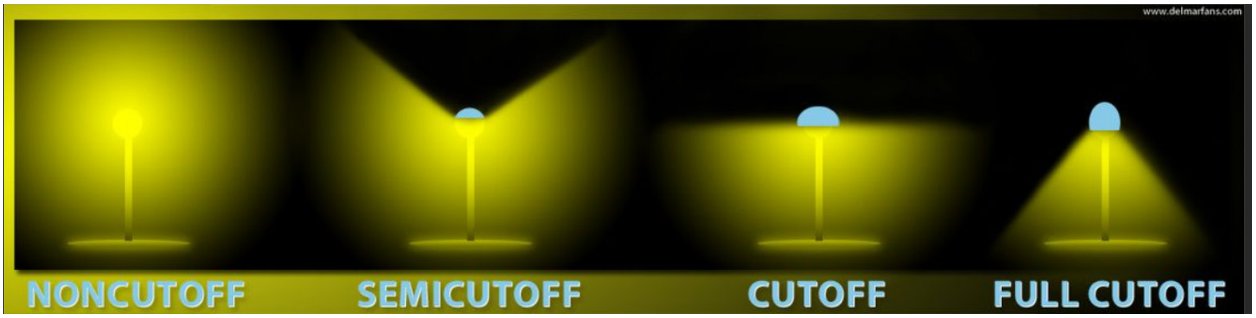
35. Will there be noise?

We are working to minimize unwanted noise.

- Equipment in buildings + noise reducing enclosures
- Additional silencing methods
- Complying with OSHA limits for noise plus 500 ft setback from road
- Year-round vegetative screening
- Protections during construction
  - Limited hours of construction
  - White noise backup alarms on tractor vehicles

36. Will there be light pollution at night?

We are working to minimize excessive light while making sure there is light for security and maintenance. noise.

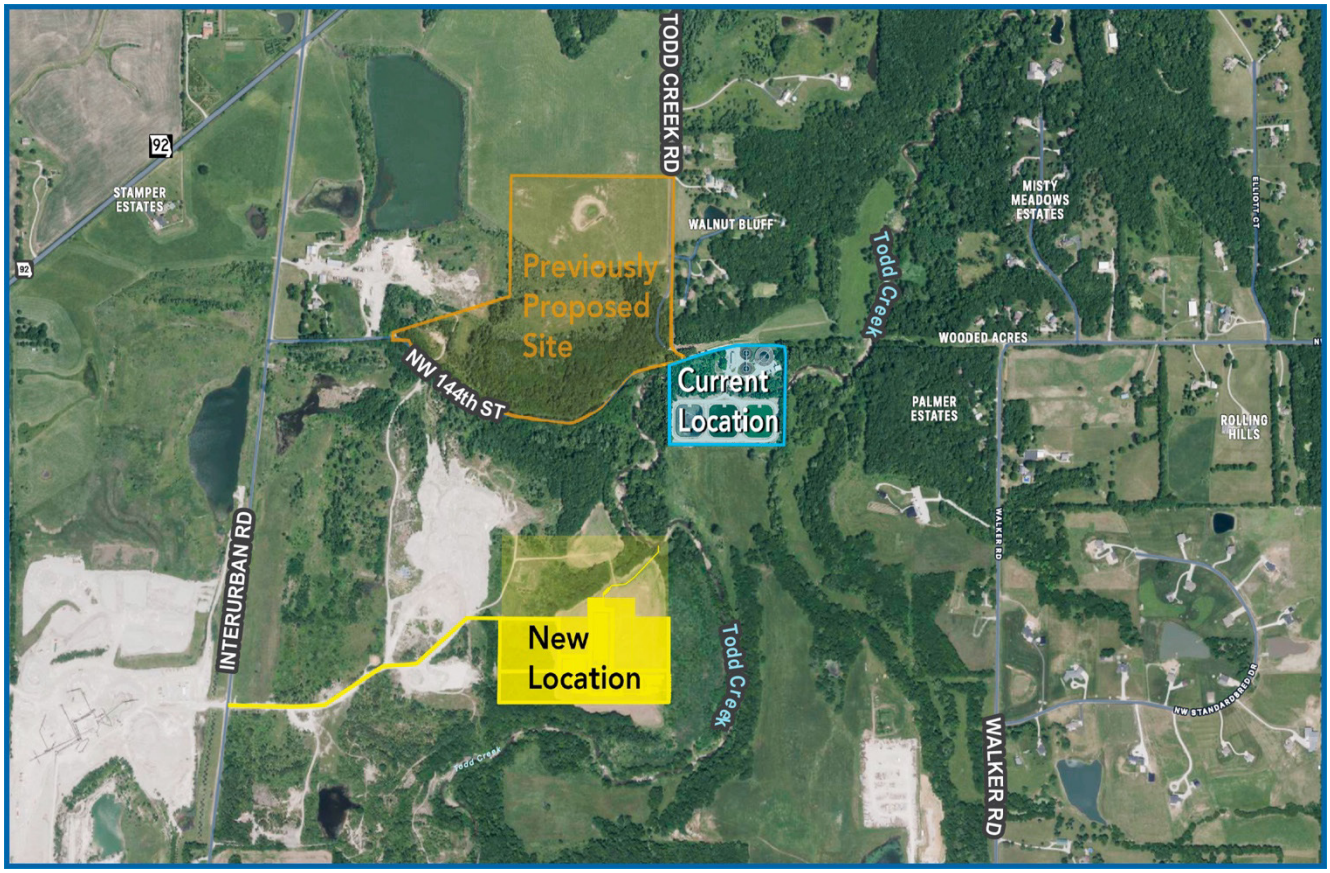


- "Dark Sky" design technology – using the FULL CUTOFF style in image
- Lighting as-needed at night for security purposes
- Year-round vegetative screening

37. Will there be traffic?

We are working to minimize traffic.

- All regular traffic will be routed to and from site on Interurban Road
- Todd Creek Road is not an access point
- Locked gate, unpaved road



COMMUNICATIONS AND OUTREACH

38. How will the community be notified about what is happening?

- KC Water uses multiple means to engage the community (website, email, U.S. Postal Service mail, social media, and more. We likely will hold another in-person opportunity for the community to meet the project team.
- Sign-up to receive email notifications on the project website: https://www.kcwater.us/todd-creek

39. Were residents in the community a consideration?

- Current land use is always a consideration in infrastructure design, be that water treatment plants, roads, power lines or other public needs.

40. Has the mayor or city manager expressed any concern about the impact on neighboring communities?

- As a department of the City, KC Water is in communication with City management and officials in matters related to water services. KC Water complies with all ordinances, administrative regulations, policies and protocols of the City of Kansas City, Mo.

41. What is city policy on project planning? (cost/location/environment)

- KC Water follows City of Kansas City procurement ordinances, policies and protocols, including accepting the lowest qualified and responsive bid (per Missouri law). Projects are advertised publicly, and adequate time is allowed to submit bids.
- In addition, KC Water uses a quadruple bottom line analysis when evaluating project alternatives. The four bottom lines are:
    1. total ownership cost (construction and maintenance for expected infrastructure lifespan);
    2. community impact;
    3. environmental impact; and
    4. Operating staff impact.

Please email water.projects@kcwater.us with any additional questions.