

SUMMARIZATION OF NEW APPENDICES (B, C, D, E, F, G, H, I)

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REVISION: C (supersedes Rev B, dated June 2, 2026)

DATE: June 15, 2026

TO: The City of Lebanon Wastewater Treatment Plant Site Selection Committee & Lebanon City Council

RE: Supplemental Public Comments and Risk Assessment regarding the Proposed 20 MGD Wastewater Treatment Facility

LOCATIONS UNDER CONSIDERATION: All candidate sites outside the city limits of Lebanon, TN — prior formal submissions focused on Sites 1 through 7 (Mann Road, Berea Church Road, and Coles Ferry Pike corridor)

SUBMITTED BY: Todd Roark, Tich Chaikumnerd, and Concerned Residents / Property Owners (See Appendix A of the Public Record Statement dated May 27, 2026, for the List of Endorsers, which is incorporated herein by this reference.)

CHANGES FROM REV B:

- Site count updated from 15 to 19 to reflect Sites 16, 17, 18, and 19 added to the candidate list at committee-member request on June 2, 2026.
- Septage analysis (Appendix D) reframed to emphasize regional-hub future-state operations in light of the city engineer's June 2 characterization of current Hartmann hauler traffic.
- Treatment technology disclosure (Appendix F) updated to reference the public comment by Teresa Rogers on June 2 regarding membrane bioreactor footprint, and to acknowledge that the technology disclosure question has now been raised in the public record by multiple parties.
- Columbia Gulf Transmission gas pipeline asymmetry documented (new Appendix H): the same pipeline class cited as a deprioritizing factor for Rockwood crosses the Mann Road / Berea Church Road / Coles Ferry Pike corridor.
- Shortlisting safeguards (Appendix G) acknowledged to reflect the procedural concern first raised in the public record by Anthony Murphy during the public comment portion of the June 2, 2026 committee meeting.
- Endorser count updated to reflect approximately 200 signatures collected by June 2, 2026.

Seven of the nineteen sites under consideration — Sites 1 through 7 — fall within the same rural residential corridor along Coles Ferry Pike, Mann Road, and Berea Church Road. Additional candidate sites outside the city limits or urban growth boundary — including Sites 8, 18, and others — share the same core concerns: placement of urban infrastructure in rural residential areas, proximity to private wells and agricultural land, and heavy truck traffic on roads not built for it. My comments address Sites 1 through 7 as the primary analytical basis

developed in prior submissions; the core arguments extend to any candidate site outside the city limits. Data is drawn from peer-reviewed literature, the TDEC public database, and the public record of the May 27 and June 2, 2026 Site Selection Committee meetings, and is mapped directly to your scoring matrix criteria.

First, Community Impact — property values. Last week I cited a 5 to 10 percent loss range. I want to give you sharper, peer-reviewed numbers. The strongest meta-analysis on facilities of this character — Ready, 2010, in the Journal of Real Estate Research — finds high-volume waste facilities decrease adjacent residential property values by 13.7 percent, declining at 5.9 percent per mile. For a \$2 million home directly bordering Site 5 on Mann Road or Berea Church Road within the impact zone, that is roughly \$274,000 in lost equity. These losses are permanent, with documented extended time-on-market, reduced buyer pools, and complications with mortgage financing and homeowner's insurance for years after construction. **For example**, even if sites in this corridor return acceptable existing-infrastructure and environmental-permitting scores, their Community Impact score must reflect the fact that they sit in a cluster of \$400,000 to \$2,000,000 residences. Appendix B documents the citations, the full distance-decay table, and applied dollar figures for the corridor.

Second, Service Efficiency and Community Impact — septage receiving operations. The existing Hartmann Drive plant currently accepts septic hauler dumps under the city's hauler permit program. Whether that operation stays at Hartmann, moves to the new site, or is split between the two has not been disclosed — and the answer materially affects Community Impact scoring for every candidate site. Wilson County's roughly 20,000 to 26,000 septic systems generate an estimated 5,000 to 6,500 truckloads per year. If those trucks shift to the new site, residents along Coles Ferry Pike, Mann Road, and Berea Church

Road absorb 30 to 70 sixty-thousand-pound heavy-vehicle trips per working day — traffic those roads do not currently see and were not engineered for. I

formally ask the committee to enter into the public record where septage receiving will operate after the new plant comes online, and to factor that answer into every site's Community Impact score. Appendix D documents the calculations and disclosure requests in full.

Third, Environmental Impact and Permitting. North Lebanon sits on karst limestone with no natural soil filtration. A single containment failure could contaminate every private well within a multi-mile radius. New data, filed today as Appendix C, Exhibit C-1: a query of the TDEC Water Well Locations public database identifies 38 documented private wells within 2 miles of the proposed sites — 6 within a half mile, the closest at 850 feet. Beyond those private wells, the LaGuardo Utility District serves over 12,000 residents from karst-fed groundwater. **The city has not, to our knowledge, entered any of these figures into the public record.**

Fourth, Existing Infrastructure — force main reclassification. The engineer's per-site cost model is built entirely on connection distances to the existing thirty-inch effluent force mains, F1 and F2. The only configuration consistent with that model is one in which F1 and F2 are repurposed upstream of the new plant to carry raw sewage — a function these pipes were not permitted to perform. NPDES permit TN0028754, issued by TDEC in June 2025, authorizes F1 and F2 to discharge treated municipal wastewater to Old Hickory Reservoir.

Repurposing them to carry raw sewage upstream is a regulatory reclassification that has not been initiated with TDEC on the public record. The existing pipe material has not been disclosed. The condition has not been documented.

Whether the pipes can sustain raw sewage pressure — including the consequences of a pump failure above the karst aquifer that serves thirty-eight

private wells and the LaGuardo Utility District — has not been analyzed. Appendix E documents the regulatory framework, the NPDES permit citations, and the formal disclosure requests.

Fifth, Existing Infrastructure — treatment technology and acreage threshold. The committee's sixty-acre minimum is calibrated to conventional activated sludge, the most land-intensive process in municipal use. Alternative technologies at the twenty-MGD scale require significantly less land — membrane bioreactors occupy forty to sixty percent of the footprint of CAS — and carry comparable or lower capital costs. At twenty MGD, MBBR and SBR cost the same as or less than CAS; MBR has been found to be six to eighteen percent lower in capital cost than CAS when nutrient removal is required, a condition Old Hickory Reservoir's water quality standards will almost certainly impose. The sixty-acre threshold therefore not only eliminates otherwise-viable city-located industrial sites; it may do so in favor of a more expensive technology. The treatment technology has not been disclosed. Appendix F documents the footprint data, the cost comparison, and the formal disclosure request.

Sixth, Shortlisting methodology — procedural safeguards. The committee has stated, on the record, that the scoring matrix is preliminary and that harder questions come later. The petitioners do not object to shortlisting. They do object to the absence of documented safeguards that make the matrix's outputs reproducible and defensible: anchored scoring levels for each criterion, comparable engineering-data depth across all sites, a documented basis for the importance-factor weights, a sensitivity analysis showing that single-step score changes do not alter which sites are eliminated, and a reservation of authority to revive eliminated sites if shortlisted candidates prove unworkable in deeper review. Without those safeguards, an elimination made on a framework the committee has already acknowledged is incomplete is effectively permanent.

Appendix G documents each required safeguard and includes more than twenty formal disclosure requests tied directly to the committee's five scoring criteria.

Seventh, Site scoring asymmetry — Columbia Gulf Transmission pipeline.

At the committee's March 19, 2026 working session, the city cited the Columbia Gulf Transmission interstate gas pipeline as a factor that deprioritized the Rockwood site. The same pipeline system — three high-pressure lines, thirty and thirty-six inches in diameter, operating at up to 1,007 psig — crosses the Mann Road, Berea Church Road, Maple Hill Road, and Coles Ferry Pike corridor in which Sites 1 through 7 are located. PHMSA failure investigation reports document two major ruptures of Columbia Gulf Mainline 200 within the past fifteen years, including a 2012 event in Kentucky that expelled pipe fragments and damaged a residence more than 800 feet from the rupture point. The petitioners formally request that the same pipeline risk analysis applied to Rockwood be applied to every candidate site within the Columbia Gulf alignment before any elimination vote. Appendix H documents the pipeline routing, the PHMSA failure record, and the formal request.

Eighth, Service Efficiency — biosolids disposal. The existing Hartmann Drive plant converts its biosolids to electricity on-site through a gasification system operational since 2016. A new greenfield facility will not inherit that infrastructure. Without on-site gasification — or anaerobic digestion, which the city has also not specified — a twenty-MGD plant would generate an estimated forty-five to eighty tons of dewatered biosolids per day, requiring two to four daily tractor-trailer loads on a continuous-haul schedule, or eight to fifteen truck trips on haul days if biosolids are stored and batched. Without digestion, those figures increase by approximately sixty percent. The disposal method, the disposal site, and the associated traffic volumes have not been disclosed or factored into any site's

scoring. Appendix I documents the current plant's biosolids management infrastructure, the volumetric estimates, and the formal disclosure request.

Our request: eliminate all candidate sites outside the city limits of Lebanon from the final ranking matrix. The analysis developed for Sites 1 through 7 applies in principle to any rural site outside the urban growth boundary. Prioritize the Rockwood and Alley-Cassetty footprints and the additional city-adjacent sites Mayor Hutto referenced — all have available acreage, existing infrastructure, and none of the rural residential exposure this statement documents. Appendices B, C, D, E, F, G, H, and I are filed with the clerk and incorporate the citations, the well-count map, the truck-volume calculations, the F1/F2 reclassification analysis, the technology-and-footprint disclosure request, the recommended shortlisting safeguards, the Columbia Gulf gas pipeline asymmetry analysis, and the biosolids disposal traffic impact analysis.

For these reasons, the petitioners respectfully request that the committee not solve a municipal problem by impacting residential neighborhoods of this scale.

SUPPLEMENTAL NOTE — APPENDIX B

Distance-Decay Property Value Impact — Quantified Estimates

The 5% to 10% structural decrease in property resale values cited in Section III of the principal statement reflects an *average* impact across the 1-to-2-mile radius surrounding a wastewater treatment facility. This figure should not be interpreted as uniformly distributed. Hedonic Price Model research consistently demonstrates a **distance-decay relationship**, in which the magnitude of property devaluation is inversely proportional to the linear distance between the residence and the facility fence line.

Primary Source — Ready (2010)

The most directly applicable peer-reviewed meta-analysis is **Ready, R. (2010), "Do Landfills Always Depress Nearby Property Values?" *Journal of Real Estate Research*, Vol. 32, No. 3, pp. 321–340.** Ready assembled all available hedonic-pricing estimates for landfills receiving high volumes of waste (500 tons per day or more) and found that adjacent residential property values decreased by an average of **13.7%, with a distance-decay gradient of 5.9% per mile.** A wastewater treatment plant operating a regional septage receiving station is the closest available analog to a high-volume waste facility in terms of daily heavy-truck traffic, odor profile, and public-health stigma.

Corroborating Sources

- **Davis, L. (2011), *Review of Economics and Statistics*, Vol. 93(4), pp. 1391–1402.** Restricted U.S. Census microdata study of neighborhoods within 2 miles of newly opened power plants found 3–7% decreases in housing values and rents, with larger decreases within 1 mile and for large-capacity plants.
- **Zhao, Simons & Fen (2016), *International Real Estate Review*, Vol. 19(4), pp. 515–546.** Hedonic pricing modeling of 2,200 residential transactions near three incineration plants in Hangzhou, China: properties showed up to 25% decrease in listing price for the nearest, with effects extending to approximately 3 kilometers, and the most consistent losses (≈10%) between 1–2 kilometers.
- **Mei, Gao & Zhang (2018), *Beijing WWTP study (Applied Economics*, Vol. 51(55)).** Difference-in-difference analysis of Beijing wastewater plants found total estate value deterioration of approximately 32.53 billion RMB across surrounding properties — roughly 7.4 times the construction cost of the facilities themselves (4.38 billion RMB).

Applied Estimates — Mann Road and Berea Church Road Properties

Applying Ready's 13.7% adjacent / 5.9%-per-mile gradient to representative properties in the affected neighborhood:

Distance from fence line	% Loss	Loss on \$440K home	Loss on \$2.0M home
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Adjacent (≤ 0.1 mi)	13.7%	\$60,300	\$274,000
0.25 mi	12.2%	\$53,700	\$244,000
0.5 mi	10.8%	\$47,500	\$216,000
1.0 mi	7.8%	\$34,300	\$156,000
1.5 mi	4.9%	\$21,500	\$98,000
2.0 mi	1.9%	\$8,400	\$38,000

The losses identified above are conservative, for three reasons:

- Ready's analysis is based on landfills, not septage-receiving wastewater plants; the literature suggests proximity to a continuously-operating sewage facility with truck traffic produces effects toward the higher end of comparable studies (cf. Zhao et al. 2016 up to 25% adjacent).
- Lakefront properties on Berea Church Road carry a disproportionate amenity premium tied to the natural setting; the loss of that setting compounds the percentage decrement.
- Time-on-market and financing effects are real but not included in the percentage above. Properties near wastewater facilities typically experience extended marketing periods, reduced buyer pools, and complications with mortgage approval and homeowner's insurance availability for years after construction.

Note on applicability: These estimates are developed from the Mann Road and Berea Church Road corridor as the primary subject of this filing. The same distance-decay methodology applies to any candidate site outside the city limits bordered by rural residential properties. Sites 8 and 18, and any other rural sites that remain under consideration, should be scored under the Community Impact criterion using the same Ready (2010) framework applied here.

Recommended Matrix Application

Under the committee's scoring matrix, **Community Impact** should reflect the per-property dollar impact above for each site, not a uniform site-wide percentage. Sites whose 0.5-mile rings contain residences in the \$400,000+ range carry materially greater Community Impact than sites in agricultural or low-residential-density areas. **The committee cannot meaningfully score Community Impact without entering this distance-weighted loss calculation into the public record for each candidate site.**

Applied example — Site 5: At 187 acres with zero percent floodplain and both force mains within 250 feet, Site 5 scores high on the matrix's Existing Infrastructure, Size, and Environmental Permitting criteria — and is therefore one of the most likely sites to advance to the short list. However, Site 5 sits within the same residential corridor as the Oakland Estates lakefront properties and the broader Mann Road / Berea Church Road / Coles Ferry Pike rural residential cluster. Applying Ready (2010) to representative properties within Site 5's distance-decay zone, total equity loss across the affected residences is reasonably estimated in the tens of millions of dollars. **Site 5 is therefore the most consequential site on the matrix from a Community Impact standpoint, and should be scored accordingly.**

Respectfully prepared for submission in supplement to the Public Record Statement.

— Todd Roark, Tich Chaikumnerd, and Concerned Residents / Property Owners

SUPPLEMENTAL NOTE — APPENDIX C

Expanded Hydrological Exposure: Public Utility and Documented Private Wells

The hydrological risks identified in Section VI of the principal statement extend beyond the private wells of the immediate Mann Road and Berea Church Road residents. The LaGuardo Utility District (LUD), headquartered at 7880 Coles Ferry Pike, supplies drinking water to approximately 12,277 residents across Wilson County. The following pathways warrant formal evaluation by the Site Selection Committee prior to any siting decision.

1. Karst Aquifer Pathway

LUD has transitioned a portion of its supply to groundwater wells. Per publicly available reporting, those wells draw from the same karst limestone formation that underlies the proposed facility site. Karst hydrology is characterized by rapid contaminant migration through open subterranean fissures and channels, with little to no natural soil filtration. While definitive characterization of aquifer connectivity between the proposed site and the LUD well field requires a formal hydrogeological study, **the burden of proof on this question must rest with the city, not the affected utility's customers.** The committee should not accept the proposed site absent a documented engineering finding that LUD's wells are hydraulically isolated from any potential contamination plume.

2. Infrastructure Proximity — Coles Ferry Pike

LUD's primary operations facility is located directly on Coles Ferry Pike, one of the construction-traffic corridors. Sustained heavy-vehicle traffic — including 30-ton chemical haulers and septage tankers — introduces incremental risk to the buried water mains, valves, and roadside infrastructure that LUD relies upon to deliver service.

3. Documented Private Wells Within the Contamination Radius

A query of the Tennessee Department of Environment and Conservation (TDEC) Water Well Locations public database identifies **a minimum of 38 permitted private wells within the 2-mile contamination radius** surrounding the proposed Mann Road and Berea Church Road footprint. Of these:

- **6 wells are located within 0.5 miles** of a proposed site, including a well at 1079 Berea Church Road (Coster) situated approximately 850 feet (0.16 mi) from the Mann Road site;
- **16 wells are located within 1.0 mile** of a proposed site;
- **38 wells are located within 2.0 miles** of a proposed site, the outer boundary of the karst contamination radius identified in Section VI.

The geographic distribution of these wells, with concentric 0.5-mile, 1.0-mile, and 2.0-mile rings, is depicted in Exhibit C-1 below. Recorded uses include residential drinking water (32 wells), agricultural and irrigation (9 wells), and geothermal heat pump (3 wells). The Site Selection Committee has not, to the petitioners' knowledge, entered these figures into the public record.

Important caveat: The figure of 38 wells is a minimum. The TDEC Water Well Locations database includes only those wells for which a licensed driller filed a report. Wells drilled prior to the

establishment of mandatory driller reporting, owner-drilled wells, and wells for which a driller's report was never filed are not represented. The actual number of households dependent on private well water within the contamination radius is reasonably expected to be materially higher.

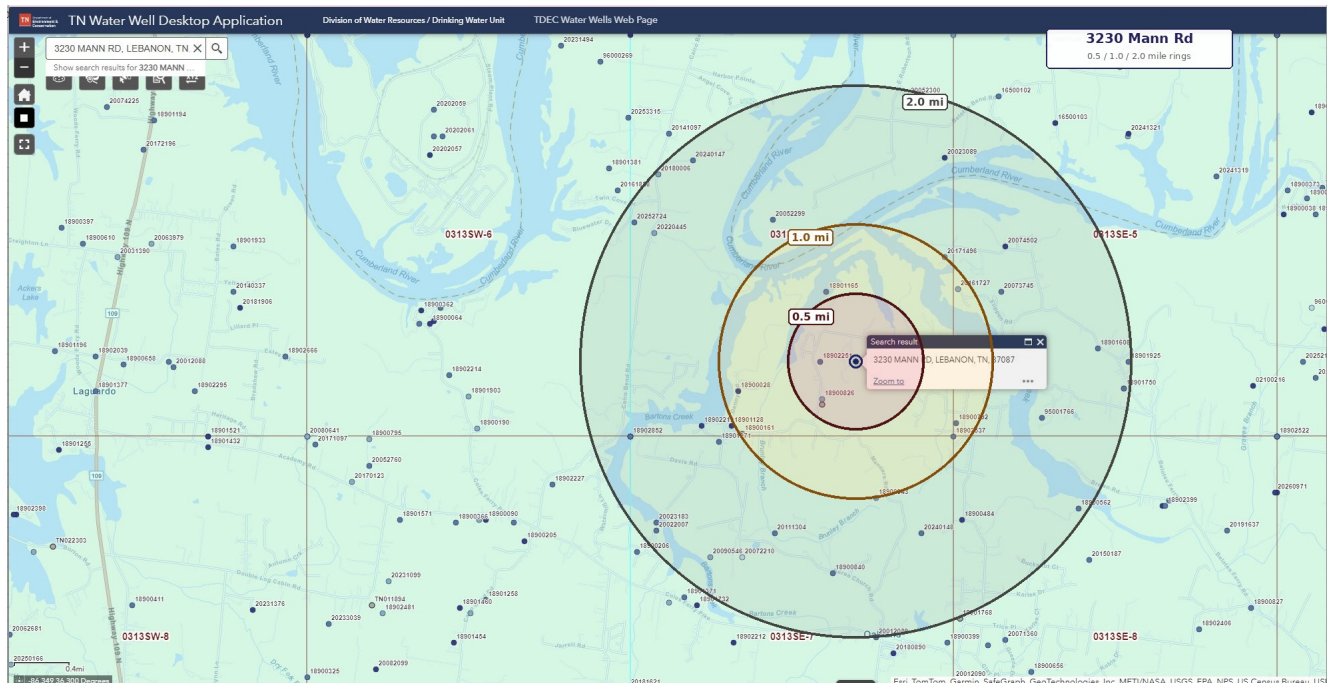


Exhibit C-1: 0.5-mile, 1.0-mile, and 2.0-mile rings centered on 3230 Mann Road, plotted on the TDEC Water Wells Desktop Application map. Each dark dot represents a permitted private water well in the TDEC database.

Scale of Affected Population and Formal Requests

The combined effect of these pathways is that the public health and water security of approximately 12,000+ Wilson County residents — a population substantially exceeding the immediate Mann Road and Berea Church Road neighborhood — is materially affected by the siting decision before this committee. This factor has not, to our knowledge, been adequately reflected in the site evaluation criteria to date.

We respectfully request that the committee:

- Formally request a hydrogeological study from a qualified third party documenting (or refuting) hydraulic connectivity between the proposed site footprint and the LUD well field;
- Require coordination with the LaGuardo Utility District Board of Commissioners as a prerequisite to any further consideration of the Mann Road and Berea Church Road addresses;
- Enter the well-count data and accompanying ring map (Exhibit C-1) into the official public record of the site selection proceedings, and supplement it with an independent staff verification against the most current TDEC Water Well Locations database;
- Provide written notification to each identified well owner, and to all LUD ratepayers, of the proposed siting and the karst-aquifer contamination pathway described in Section VI of the principal statement.

The committee cannot reasonably weigh the risk to residents whose number has not been entered into the public record.

Note on applicability: The karst geology and groundwater contamination pathway described in this appendix is not limited to the Mann Road and Berea Church Road corridor. Any candidate site outside the city limits that overlies the same karst formation — including Sites 8, 18, and others in the rural north Lebanon area — is subject to the same contamination risk to private wells and LaGuardo Utility District infrastructure. The committee should conduct a comparable well-count and karst-exposure analysis for any rural site that advances beyond preliminary screening.

Respectfully prepared for submission in supplement to the Public Record Statement.

— Todd Roark, Tich Chaikumnerd, and Concerned Residents / Property Owners

SUPPLEMENTAL NOTE — APPENDIX D

Septage Receiving Operations: Scale Projections and Matrix Impact

This appendix documents the quantitative basis for the heavy-vehicle traffic projections cited in the spoken remarks of June 2, 2026, and recommends specific scoring matrix adjustments. The petitioners formally request that the Site Selection Committee require disclosure of the items in Section 5 prior to any vote eliminating or ranking sites.

1. Existing Septage Operation at the Hartmann Drive Facility

Septic haulers currently transport septage to the City of Lebanon's existing Wastewater Treatment Plant at 321 Hartmann Drive under the city's hauler permit program. Per the City of Lebanon Wastewater Treatment Plant page, *"City of Lebanon requires septic haulers to fill out the Hauler Application and pay a non-refundable application fee in order to request access to the City of Lebanon Wastewater Treatment Plant."* The Hartmann Drive facility therefore already serves, in some capacity, as a septage receiving point for Wilson County and surrounding service areas.

On June 2, 2026, the city engineer addressed current septage hauler operations at Hartmann Drive directly (transcript minute 32:37), characterizing existing daily traffic as *"small septage haulers... the largest septic hauler tank I've ever seen come into a facility is about 5,000 gallons. Uh normally they're around 3,000 gallons."* The petitioners accept this characterization of **current operations** at Hartmann. The petitioners' concern is not with current operations but with the **future operational scope** of the new 20 MGD facility, particularly under the regional-hub configuration referenced in the engineer's own matrix interpretation (transcript minute 14:32): *"the potential to serve other areas... north of or out in the county or wherever this is... uh, county residents with failing septic systems and things like that could also be a consideration."*

During the May 27, 2026 Site Selection Committee meeting, the city engineer also stated that *"the current plan is to put a pump station at the existing sewer treatment facility"* (transcript minute 1:05:08). This indicates a functional transition of the Hartmann Drive site from a treatment plant to a conveyance pump station. A pump station does not provide the screening, equalization, and process capacity required to accept and process septage truck dumps. As a result, the operational configurations available for septage receiving under the new plan are materially constrained.

The committee must determine and disclose how septage receiving operations will be allocated when the new plant comes online. There are three possible configurations, listed below in order of decreasing plausibility given the engineer's pump-station statement and his June 2 references to expanded service-area scope:

- **Relocated to the new plant, with regional-hub expansion (most likely).** Existing Wilson County septage traffic shifts from Hartmann Drive to the selected new site, which will be designed and built with septage receiving capacity from inception. The engineer's reference to serving *"other areas... north of or out in the county"* indicates intent to expand the service area beyond current Hartmann scope. Roads previously not exposed to septage traffic absorb both the relocated existing load and the expanded regional-hub load.

- **Split between locations (intermediate).** A portion of septage continues to be accepted at Hartmann under a retrofitted or retained partial-treatment configuration; overflow and any regional-hub expansion is directed to the new plant. This requires Hartmann to retain treatment capability beyond a pure pump-station function, which is not consistent with the engineer's stated plan.
- **Retained entirely at Hartmann Drive (least likely).** Septage trucks continue to arrive exclusively at the existing facility; the new plant accepts no direct hauler dumps. This requires Hartmann to retain the full set of septage-handling capabilities (screening, equalization, treatment) despite being repurposed as a pump station, and is the least consistent with the operational plan referenced on May 27.

Under either of the two more plausible scenarios above, the new site receives material new heavy-vehicle traffic that the surrounding road network was not engineered to absorb — at a volume scaled to the regional service area, not to the current Hartmann hauler count. Absent a clear, formal, on-the-record commitment from the city as to which configuration will apply and what the projected daily truck volume will be at the selected site, **the committee must score every candidate site under the assumption that septage receiving will relocate or expand to the new facility under the regional-hub service model the engineer has already referenced.** This is a foreseeable operational decision that materially affects Community Impact for residential corridor sites; it cannot be left to a post-siting administrative determination.

2. Truck Volume Calculations

The following figures represent the estimated annual septage volume generated by Wilson County alone. These trucks are not hypothetical — they are existing loads that currently arrive at Hartmann Drive or are hauled elsewhere. The question before the committee is **which roads absorb that traffic under each siting and operational configuration.** Sources: U.S. Census Bureau 2025 estimates, Wilson County Environmental Health, TDEC guidance.

- Wilson County population (2025): 175,033, growing at approximately 3.2% per year.
- Estimated total households: approximately 65,000.
- Estimated households dependent on on-site septic systems: 30% to 40%, or approximately 20,000 to 26,000 septic systems within Wilson County alone.
- TDEC recommended pumping interval: every 3 to 5 years (4-year average).
- Resulting annual pumping load from Wilson County alone: 5,000 to 6,500 truckloads per year.

Service area scenario	Annual truckloads	Trucks per workday	Vehicle movements/day (in + out)
Wilson County only	5,000 – 6,500	20 – 26	40 – 52
Wilson + adjacent rural counties	8,000 – 11,000	32 – 44	64 – 88

Regional septage hub	12,000 – 18,000	48 – 72	96 – 144
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These figures assume 250 working days per year and exclude inbound construction traffic (an additional, time-limited burden). The regional septage hub scenario reflects the typical operating model for new facilities of this scale in regions lacking competing septage capacity.

3. Vehicle Specifications and Road Loading

Vehicle gross weight for typical large-capacity septage / vacuum tankers (4,000-gallon class):

- Payload: 4,000 gallons × 8.6 pounds per gallon ≈ 34,400 pounds
- Empty tractor and tank: approximately 25,000 to 30,000 pounds
- Loaded gross vehicle weight: approximately 60,000 to 65,000 pounds (30 to 33 tons)

The petitioners note that this corrects an earlier estimate of 40-ton vehicles cited in prior public comments; the accurate figure for fully loaded large septage tankers is approximately 30 tons. The corrected weight remains **well above the design loading for the existing pavement section on Mann Road and Berea Church Road**, which were not engineered for repeated heavy multi-axle commercial transit.

3A. Road Width

The vehicle weight analysis in Section 3 addresses load-bearing capacity. A second physical constraint — road width — is independently relevant to whether the approach roads can accommodate the traffic volumes projected in Section 2.

At the June 2, 2026 committee meeting, the city engineer characterized Mann Road as "about 24 ft wide" and acknowledged it "was probably not designed for large dump trucks," with roadway improvements anticipated. Field measurements taken on June 4, 2026 document actual widths at four locations along Mann Road that are materially narrower than the engineer's estimate:

Exhibit D-1: Mann Road Field Measurements (June 4, 2026)

Location	Measured pavement width
675 Mann Rd	18 ft
945 Mann Rd	17 ft
1181 Mann Rd	17 ft
1323 Mann Rd	18 ft

These four locations span approximately 0.7 miles of Mann Road. Nothing in the road's topography or construction suggests the measured width is atypical of the corridor as a whole. The measured widths of 17–18 feet are approximately 25–30 percent narrower than the engineer's stated figure.

A fully loaded large septage tanker (Section 3) is approximately 8.5 feet wide, exclusive of mirrors. At 17–18 feet of pavement, two such vehicles cannot pass without one pulling aside. At the projected frequency of 40–52 vehicle movements per day under the Wilson County scenario (Section 2), this

would occur multiple times per hour during peak periods — a safety condition and a practical conversion of a rural residential road into a commercial haul route.

Road widening sufficient to permit safe two-way commercial traffic — to at least 24 feet of actual pavement with adequate shoulders — is an infrastructure cost that should be included in the site cost analysis for Sites 1 through 7. To the petitioners' knowledge, it currently is not.

4. Application to the Scoring Matrix

Septage operations bear directly on three of the five adopted scoring matrix criteria:

- **Community Impact (business / property / residential):** Continuous daily truck traffic past residential property frontages, agricultural operations, and a school transit corridor (the school route serving the broader rural area) constitutes a direct, daily-felt community impact. Sites with rural residential frontage on the approach roads — Sites 1 through 7 primarily, but also Sites 8, 18, and any other rural candidate sites outside the city limits — score materially worse under this criterion than industrial-adjacent sites. The road-width and load-bearing analysis in this appendix should be applied to the approach roads of every rural site remaining under consideration, not only the Mann Road corridor.
- **Environmental Impact and Permitting:** A septage receiving station introduces additional permitted point-source emissions (odor, aerosolized pathogens at receiving manifold) and additional regulatory oversight requirements that differ from a non-receiving WWTP.
- **Existing Infrastructure:** The road sub-base on Mann Road, Berea Church Road, and Coles Ferry Pike was not designed for sustained 60,000-pound multi-axle commercial traffic at the volumes projected in Section 2. Road upgrade costs (widening, sub-base reconstruction, and any required eminent domain along the corridor) are infrastructure costs that should be entered into the site cost analysis but, to the petitioners' knowledge, currently are not.
- **Service Efficiency:** If the facility is intended to operate as a regional septage hub serving counties beyond Wilson, that is a material expansion of the "service area" beyond the City of Lebanon's incorporated boundary and should be reflected in the criterion as defined.

5. Formal Requests for Disclosure

We respectfully request that the Site Selection Committee, prior to any final ranking vote, enter the following into the public record:

- **Where septage receiving operations will be located after the new plant comes online** — whether at the existing Hartmann Drive facility, at the new plant, or split between the two — and the basis for that determination;
- Written confirmation of whether the design RFP and the consultant's preliminary engineering report specify, contemplate, or design for septage receiving capability at the new facility;
- If septage receiving is specified at the new facility, the projected daily truck volume on which the design is based, and the source of that projection;

- The planned hours of operation of the septage receiving station at whichever facility receives the trucks, including weekend and after-hours access;
- A road sub-base condition assessment for the approach roads to whichever site receives septage trucks, and the estimated cost of road improvements required to accommodate the projected traffic; and
- A noise and air-quality impact analysis for sites within one-quarter mile of existing residences, prepared by a qualified third party.

Failure to enter these items into the public record before scoring constitutes scoring without data. The committee should not advance any site to the short list while these material inputs remain undisclosed.

Respectfully prepared for submission in supplement to the Public Record Statement.

— Todd Roark, Tich Chaikumnerd, and Concerned Residents / Property Owners (Appendix D)

SUPPLEMENTAL NOTE — APPENDIX E

Effluent Force Main Reclassification: Engineering Risks of Repurposing F1 and F2 to Carry Raw Sewage

This appendix addresses the engineering and regulatory consequences of the proposed change in function of the existing 30-inch effluent force mains (designated here as F1 and F2) that run from the Hartmann Drive Wastewater Treatment Plant to a convergence point near the top of Berea Church Road and continue as a single line to the Cumberland River outfall near Bartons Creek.

1. Basis for This Appendix

During the Wastewater Treatment Plant Site Selection Committee meeting of May 27, 2026, the city engineer described a per-site infrastructure cost methodology based exclusively on the linear distance from each candidate site to the nearest point of the existing F1/F2 force main corridor. At minute 18:39 of the recorded proceedings:

"...the estimated price right now talking to contractors on a 36 inch pipe is \$1,000 a foot. You got to run it there and you got to run it back and you got to do it for two different pipes. So it's \$4,000 a foot every time you get a foot away from these existing force mains."

This cost model includes:

- A new pipe "over" — from the existing force main corridor to the new plant;
- A new pipe "back" — from the new plant to the existing force main corridor;
- A doubling factor when the candidate site is upstream of the F1/F2 convergence (requiring connections to both lines).

The cost model does not include any pipe segment from the existing Hartmann Drive plant to the new plant site. This omission is dispositive. If a new long-distance raw-sewage force main were being constructed alongside F1/F2 to convey raw sewage from Hartmann to the new plant, that pipe would dominate the cost analysis. It does not appear anywhere in the cost framework presented to the committee.

The only configuration consistent with the engineer's cost model is one in which the existing F1 and F2 lines — currently carrying treated effluent — are **repurposed upstream of the new plant's tangent point to carry raw sewage** from Hartmann Drive to that tangent point. The "over" pipe diverts that raw sewage from F1/F2 into the new plant; the "back" pipe returns treated effluent from the new plant into F1/F2; and F1/F2 downstream of the tangent point continues its existing function carrying treated effluent to the Cumberland River outfall.

While the operational concept of converting the existing Hartmann Drive plant to a pump station was referenced during the May 27, 2026 committee meeting, **the functional reclassification this implies — of the existing F1/F2 force mains from treated-effluent outfall lines to raw-sewage conveyance lines upstream of each candidate site's tangent point — has not, to the petitioners' knowledge, been formally documented in the public record with the engineering and regulatory**

detail required for committee scoring. The engineering, public health, and regulatory consequences of this reclassification are addressed below.

2. Engineering Risk Categories

The chemical, physical, and operational profile of raw sewage differs materially from that of treated effluent. The existing F1 and F2 force mains were specified, sized, and permitted for treated effluent service. Reuse of these mains for raw sewage upstream of the new plant introduces the following well-documented failure modes:

- **Hydrogen sulfide crown corrosion.** Raw sewage in conveyance pipes generates hydrogen sulfide gas, which oxidizes on the upper interior pipe surface into sulfuric acid. This phenomenon is the single most common failure mode of sanitary force mains and is generally absent in treated effluent lines. Without intervening engineering analysis, there is no basis to conclude that the existing pipe's material composition and remaining wall thickness will tolerate this exposure over the intended 50-year service life of the new facility.
- **Solids deposition and blockage.** Treated effluent is functionally water. Raw sewage transports grease, fibers, plastics, and grit, all of which deposit in low-velocity zones, accumulate over time, and create both flow restriction and anaerobic micro-environments that further accelerate hydrogen sulfide generation.
- **Pressure regime mismatch.** Outfall pipes typically operate under gravity flow or low pressure. Raw-sewage force mains operate at materially higher pressures and experience cyclic surge events (water hammer) when lift pumps cycle. The pressure rating, joint integrity, and bedding of the existing F1/F2 lines were specified for treated-effluent service, not for the proposed sanitary force main service.
- **Pump dependency and failure mode.** A gravity-fed effluent outfall continues to flow during an electrical outage. A pressurized raw-sewage force main does not — and the consequences of a failed pumping event are backup, manhole overflow, and surface discharge along the pipe route. This is a fundamental change in failure consequence, not merely failure probability.

3. Consequence-of-Failure Asymmetry

The most consequential change is not the probability of pipe failure but the nature of what is released when failure occurs. Under the existing configuration, a rupture of F1 or F2 discharges treated effluent — an environmental nuisance subject to remediation. Under the proposed configuration, the same physical pipe rupture, anywhere upstream of the new plant's tangent point, discharges pathogenic raw sewage containing *E. coli*, hepatitis viruses, cryptosporidium, norovirus, and the full chemical and microbiological load of the upstream collection system. The location of any such rupture is consequential:

- **A rupture within the karst limestone formation** releases pathogenic discharge directly into the aquifer system with no intervening soil filtration. The 38 documented private wells mapped in Appendix C, Exhibit C-1, and the LaGuardo Utility District karst-well intake described in Appendix C, become direct exposure pathways.

- **A rupture proximate to Bartons Creek or any Cumberland tributary** discharges directly into the surface water system. NPDES Permit No. TN0028754 — the City's current discharge permit, issued June 24, 2024 — designates the permitted receiving water as the Cumberland River (Old Hickory Reservoir) at river mile 252.2, a public water supply reservoir. The permit's water quality framework was calculated for treated effluent against Cumberland River dilution flows of 782 MGD (1Q10). A raw sewage discharge into any tributary feeding Old Hickory Reservoir operates entirely outside that framework and introduces pathogens to a public water supply under conditions the permit neither contemplated nor covers.
- **A rupture along any residential corridor** through which F1 and F2 pass exposes residents who, at the time of original outfall permitting, accepted only the risk of treated-effluent leakage in their proximity.

4. Regulatory Reclassification Requirement

F1 and F2 are currently permitted under the City of Lebanon's NPDES discharge permit as components of a treated-effluent outfall (Outfall 001). Operation of these lines, in part, as a sanitary sewer force main is a distinct regulatory category under TDEC. Reclassification of an existing structure between these categories is not a clerical adjustment. It requires, at minimum:

- A new or substantially modified permit application reflecting the changed use of the upstream segment;
- An engineering certification that the existing pipe, in its current condition, meets the design and safety requirements applicable to a sanitary sewer force main;
- Public notice and comment period appropriate to the reclassified use; and
- TDEC review and approval prior to operational changeover.

To the petitioners' knowledge, none of this regulatory process has been initiated, disclosed, or scheduled. **The committee should not authorize a site selection that presupposes a regulatory action that has not occurred.**

NPDES Permit No. TN0028754, issued June 24, 2024, effective July 1, 2024, and expiring May 31, 2029, authorizes the City of Lebanon to discharge “treated municipal wastewater from Outfall 001” to the Cumberland River. The authorization is specific: treated municipal wastewater. It does not authorize discharge of raw or partially treated sewage from any point on the F1/F2 alignment. The permit was issued in June 2024 — after the City had begun preliminary planning for the new facility. If the City intended at that time to reclassify F1 and F2 as raw-sewage conveyance lines, that intent should have been disclosed in the permit application. The absence of any such disclosure, and the issuance of a standard treated-effluent permit in 2024, suggests either that the reclassification was not contemplated at the time of permitting or that it was not disclosed to TDEC. Either circumstance confirms that reclassification requires formal regulatory action before it can proceed.

The permit also establishes a comprehensive monitoring framework calibrated to treated effluent: water quality-based effluent limits for metals and toxics, and annual biomonitoring requirements using

Ceriodaphnia dubia (water fleas) and Pimephales promelas (fathead minnows) tested against “samples of final effluent from Outfall 001” with an LC50 acute toxicity endpoint. This monitoring framework has no applicability to raw sewage and provides no regulatory oversight for the failure modes that reclassification introduces. A rupture of F1 or F2 while carrying raw sewage upstream of the new plant's tangent point would be an unmonitored, unpermitted discharge — outside the scope of every condition in NPDES Permit No. TN0028754.

5. Information the City Has Not Disclosed

A responsible siting decision cannot proceed without the following items being entered into the public record:

- The original installation date, material composition (e.g., concrete, ductile iron, PVC, asbestos cement), and design pressure rating of F1 and F2;
- The current condition of F1 and F2, including the most recent inspection date and any documented defects, repairs, or remaining service life estimates;
- Whether the proposed operating pressure for raw-sewage service exceeds the original pipe specifications;
- The geographic route of F1 and F2 between Hartmann Drive and the convergence point near the top of Berea Church Road, including all residential parcels, surface waters, and karst-feature crossings traversed;
- Whether the city intends to reuse F1 and F2 in their current condition, line them, parallel them with new force main(s), or replace them; and
- If lining or replacement is contemplated, the cost, schedule, and permitting timeline for that work, separately identified from the per-site "over and back" pipe cost estimates.
- Whether the proposed reclassification of F1 and F2 was disclosed to TDEC at the time of NPDES Permit No. TN0028754's application (permit issued June 24, 2024), and whether TDEC's approval of a standard treated-effluent outfall permit reflects an assumption of continued treated-effluent use of F1 and F2 through the permit's expiration on May 31, 2029.

6. Formal Requests

We respectfully request that the committee:

- Confirm or refute on the public record whether the proposed plan repurposes F1 and F2 to carry raw sewage upstream of each candidate site's tangent point;
- If confirmed, require that city staff produce and enter into the public record the documentation enumerated in Section 5 above;
- Require an engineering certification, signed by a licensed professional engineer not in the employ of the City of Lebanon, that F1 and F2 in their current condition are fit for purpose as sanitary sewer force mains under the proposed operating conditions;

- Coordinate with the Tennessee Department of Environment and Conservation to confirm in writing the regulatory pathway required for reclassification of F1 and F2 between treated-effluent outfall service and sanitary force main service, and the schedule for that process; and
- Notify all property owners along the F1 and F2 alignment of the proposed change in pipe contents and any associated risks.

A repurposed pipe is not a free pipe. F1 and F2 have an undisclosed maintenance history, an undisclosed remaining service life, and a fundamentally altered failure consequence under the proposed reclassification — sitting above the same karst aquifer and adjacent to the same surface water supply identified in Appendix C.

Respectfully prepared for submission in supplement to the Public Record Statement.

— Todd Roark, Tich Chaikumnerd, and Concerned Residents / Property Owners (Appendix E)

SUPPLEMENTAL NOTE — APPENDIX F

Treatment Technology and Site Footprint: Disclosure and Matrix Implications

This appendix examines how the treatment technology selected for the new plant materially affects the site footprint required and, in turn, the committee's scoring of the "Size of Property" matrix criterion. The petitioners formally request that the committee disclose the planned treatment technology prior to any vote eliminating sites on the basis of acreage.

1. Industry-Standard Footprint by Technology

Modern wastewater treatment technologies vary substantially in their land requirements per unit of treatment capacity. Three principal options are in widespread municipal use at the 20–50 MGD scale:

- **Conventional Activated Sludge (CAS).** The traditional process, in continuous municipal use since the early 1900s. Requires primary settling tanks, large secondary aeration basins, and secondary clarifiers. Industry-standard footprint: approximately 2 to 5 acres per million gallons per day (MGD) treated.
- **Membrane Bioreactor (MBR).** Combines biological treatment with microfiltration or ultrafiltration membranes, eliminating the secondary clarifier and operating at higher mixed-liquor suspended-solids concentrations. Published industry literature reports footprint reductions of approximately 30% to 50% relative to CAS, with comparable or superior effluent quality. Practical footprint at municipal scale: approximately 1 to 2.5 acres per MGD.
- **Moving Bed Biofilm Reactor (MBBR).** Uses suspended biofilm media to increase biological surface area per unit reactor volume, reducing tank size relative to CAS. Particularly suited to capacity expansion and retrofit applications where land is constrained.

Sources include the Journal of Real Estate Research literature on wastewater facility siting, the National Center for Biotechnology Information life-cycle assessment of MBR vs. CAS systems, and contemporary municipal engineering guidance from industry providers (Alfa Laval, DuPont MemCor, Newterra, and others). All sources are publicly accessible.

2. Application to the Lebanon Project Scale

The proposed plant is described as 20 MGD initial design capacity with ultimate buildout to 40–50 MGD (transcript minute 16:21: *"current plants 10. We're going to 20 first phase. We want to get to 40 50 or build out."*). Applying the industry-standard footprint ranges:

- **CAS technology:** approximately 40–100 acres at 20 MGD initial, 80–250 acres at 40–50 MGD ultimate.
- **MBR technology:** approximately 20–50 acres at 20 MGD initial, 40–125 acres at 40–50 MGD ultimate.
- **MBBR technology:** approximately 25–60 acres at 20 MGD initial, 50–150 acres at 40–50 MGD ultimate.

The city engineer stated at the May 27, 2026 meeting (transcript minute 17:57) that the **minimum buildable acreage is 60 acres** including buffer. This 60-acre figure is mathematically consistent with **conventional activated sludge technology sized for the 40–50 MGD ultimate buildout**. It is materially larger than what would be required for the same capacity under MBR or MBBR design.

The Lebanon WWTP at Hartmann Drive was constructed in approximately 1962 and designed solely for biochemical oxygen demand (BOD) removal — standard practice at that time. A new facility at 20 MGD will not replicate that design. Discharge to Old Hickory Reservoir will almost certainly require biological nutrient removal (BNR) — the controlled removal of nitrogen and phosphorus — which was not part of original CAS design practice and has been required by regulators with increasing frequency since the 1970s. Conventional BNR-CAS requires somewhat larger reactor volumes than BOD-only CAS, and this is likely the basis for the 60-acre threshold. However, the technologies that achieve BNR in the smallest footprint — MBR, MBBR, and aerobic granular sludge — are also the most current and are in widespread municipal use today. The 60-acre threshold, if calibrated to BNR-capable CAS, represents the most land-intensive pathway to regulatory compliance. Compact BNR alternatives have not been disclosed or considered in the committee's acreage threshold.

3. Disclosure Gap

Neither the May 27 nor the June 2, 2026 committee meeting transcripts disclose, and to the petitioners' knowledge no public document has disclosed, **which treatment technology has been selected for the new Lebanon facility**. The 60-acre minimum acreage criterion is therefore being applied without an articulated technology basis. This creates two methodological problems for the committee:

- Sites are being eliminated, or scored as marginal, on a criterion (acreage) whose threshold is set by undisclosed technology assumptions. Candidate sites at or near the threshold may be viable under modern compact-process design with substantial unused buffer.
- Sites at the upper end of the existing candidate list (such as those in the Mann Road / Berea Church Road / Coles Ferry Pike corridor) are not specifically more attractive simply because they are large; if a 30–40 acre footprint is sufficient with modern technology, the universe of viable alternative sites — including industrial-adjacent properties — expands materially.

Site 13 (Rockwood) illustrates this concretely. At 99.8 percent in the flood plain, it scores poorly on Size of Property under the current sixty-acre threshold. However, approximately 55 percent of its acreage — roughly thirty-two acres — is flood fringe rather than regulatory floodway. Flood fringe is potentially fillable under FEMA regulations through a Conditional Letter of Map Revision (CLOMR). At the earthwork rate cited by the engineer at the May 27, 2026 meeting (\$30 per cubic yard), bringing a portion of that flood fringe to buildable elevation is a quantifiable cost, not a categorical barrier. Thirty-two buildable acres, post-fill, falls within the MBR footprint range identified in Section 2 above for a 20 MGD initial-phase facility. Whether Site 13 is viable is therefore not answerable from the public record as currently constituted — the answer depends on a technology choice that has not been disclosed. The sixty-acre threshold undermines this site's otherwise favorable characteristics; a technology-informed threshold may not.

Absent a disclosed and reasoned technology selection, the 60-acre minimum should be treated as a working assumption subject to revision, not a fixed siting constraint.

The technology disclosure question has now been raised in the public record by multiple parties. During the public comment portion of the June 2, 2026 committee meeting (transcript minute 1:33:38), Wilson County resident Teresa Rogers stated: *"Steve said today he is looking at a 1960 conventional activated sludge technology that takes up 60 acres. It is 2026, not 1966. There are membrane bioreactor plants operating today in Nashville, Denver, Singapore, across Tennessee that require only 15 to 25 acres."* The petitioners note that Ms. Rogers' footprint figures reflect a treatment-process-only envelope and may exclude the buffer accommodation in the city's stated 60-acre minimum. The variance between the petitioners' figures (Section 2 above) and Ms. Rogers' figures is consistent with each citing a different scope of "footprint" (process-only versus process-plus-buffer). The underlying disclosure question — what treatment technology has been selected, and on what engineering basis — is identical in both submissions, and remains unanswered.

The cost relationship reinforces this point. Published comparative analysis of 20 MGD municipal facilities shows that technologies requiring significantly less land carry capital costs at or below that of conventional activated sludge: MBBR and SBR are cost-comparable to CAS, while MBR — though typically carrying a 30–50 percent capital premium — has been found to be 6–18 percent lower in capital cost than CAS when nutrient removal is required. A 20 MGD facility discharging to Old Hickory Reservoir will almost certainly face nutrient limits under its NPDES permit. The sixty-acre minimum therefore not only disadvantages city-located sites; it does so while potentially favoring a more expensive technology on a compliance-cost basis.

4. Matrix Application

Treatment technology selection affects multiple criteria within the committee's adopted scoring matrix:

- **Size of Property:** The most direct impact. Sites currently rated low, or eliminated entirely, on acreage grounds may be viable under MBR or MBBR design. The matrix should not score sites against a fixed threshold whose technology basis is undisclosed.
- **Existing Infrastructure:** A smaller plant footprint reduces internal piping runs, concrete volume, excavation, and visual impact, and shortens construction schedule. These reductions affect cost and constructability scoring.
- **Environmental Impact and Permitting:** MBR effluent quality is materially superior to CAS effluent, with substantially lower suspended solids, biochemical oxygen demand, and pathogen concentrations. For discharge to the Cumberland River system, this may simplify permitting and reduce downstream ecological impact.
- **Service Efficiency:** Compact, modular technology may be more readily phased and expanded as growth requires, reducing the need to over-build the initial site footprint.

5. Formal Requests

We respectfully request that the committee, prior to any vote eliminating or downranking sites on the basis of acreage:

- Disclose, in writing and on the public record, the treatment technology (CAS, MBR, MBBR, or other) planned for the new facility, and the engineering basis for that selection;
- Confirm whether the stated 60-acre minimum is technology-dependent, and if so, identify which technology assumption it embeds;
- Require a brief recalculation, included in the public record, showing whether sites currently scored as marginal or eliminated for size would be viable under MBR or MBBR design;
- Consider, where appropriate, expanding the candidate site list to include industrial-adjacent or smaller parcels (such as those Mayor Bell has publicly referenced in connection with the Rockwood / brickyard area) that may meet a recalibrated, technology-informed acreage requirement.

The petitioners do not advocate for any particular treatment technology. Technology selection is appropriately within the city's engineering discretion. The petitioners do, however, formally request that this discretion be exercised transparently, and that the matrix criteria reflect technology-specific footprint requirements rather than a single undisclosed worst-case threshold that excludes viable candidate sites.

Respectfully prepared for submission in supplement to the Public Record Statement.

— Todd Roark, Tich Chaikumnerd, and Concerned Residents / Property Owners (Appendix F)

SUPPLEMENTAL NOTE — APPENDIX G

Shortlisting Methodology and Procedural Safeguards

This appendix addresses the committee's stated plan to apply a five-criterion scoring matrix to eliminate candidate sites from a list of fifteen prior to deeper engineering evaluation. The petitioners support the use of shortlisting as a tool for managing time, effort, and cost. The petitioners do not support shortlisting in the absence of documented methodological safeguards that ensure eliminations are reproducible, defensible, and reversible if needed.

The concern at the core of this appendix — the absence of anchored scoring rubrics and documented elimination criteria in the committee's matrix — was first raised in the public record by Anthony Murphy during the public comment portion of the June 2, 2026 committee meeting. This appendix develops that concern into the full procedural safeguard framework the petitioners are requesting.

1. Shortlisting Is an Accepted Practice

Multi-stage screening of candidate sites is standard practice in public-works procurement and engineering design. It is appropriate where the universe of candidates is large, deeper due-diligence is expensive, and clear differentiators can be applied early. The committee's adoption of an initial scoring matrix to narrow fifteen sites to five or six for deeper review is, in principle, methodologically sound. The petitioners' concerns are not with shortlisting per se, but with the safeguards that should accompany it.

2. The Tool Adopted Is a Pugh Matrix; Its Use Requires Specific Safeguards

As noted by a speaker with formal Six Sigma training during the public comment portion of the May 27, 2026 meeting (transcript minute 1:15:02), the committee's adopted matrix is a **Pugh matrix** — a multi-criteria decision analysis tool developed by Stuart Pugh for engineering design selection. Pugh-style scoring is rigorous when applied correctly. Its defensibility depends on five practices commonly observed in industry and engineering practice:

- **Anchored scoring levels.** Each score (1 through 5) must be defined in writing for each criterion. What characteristics make a site a "5" for Community Impact versus a "4"? Without anchoring, scoring drifts toward individual scorer intuition and produces an unreproducible result.
- **Comparable information depth across alternatives.** All sites must be characterized to a similar level of engineering detail before scoring. If some sites have detailed acreage, floodplain percentage, and force main distance data while others are described qualitatively, the scores are not commensurable across the candidate list.
- **Criteria weights set independently of preferred outcomes.** The 1-3 importance factors should be defensible on engineering and policy grounds independent of which sites would win or lose under any given weighting. The basis for the current weighting has not been documented in the public record.
- **Sensitivity analysis.** Before eliminating any site, the committee should test whether small changes in scores or weights would change the outcome. If a one-point change in a single

score, or a one-step change in a single weight, would change which sites survive, the result is unstable and the elimination is unreliable.

- **Reversibility.** Sites eliminated administratively are politically and procedurally costly to revive. A defensible shortlisting process reserves authority to revive a site if shortlisted sites prove problematic in deeper review.

3. Specific Gaps in the Current Lebanon Process

The petitioners identify the following specific gaps between the committee's stated process and the safeguards listed in Section 2:

- **Anchored scoring levels: not documented.** The transcript shows the engineer described scoring in general terms ("one is poor, major concerns; five is excellent fit") but did not provide criterion-specific anchors. What makes a site a "5" on Community Impact for one committee member may be a "3" for another. The committee should adopt a written rubric for each criterion before scoring.
- **Information asymmetry: acknowledged but unmitigated.** The engineer's site-by-site walkthrough on May 27 showed substantial variation in available data — some sites had detailed engineering measurements; others were described qualitatively. Scoring incompletely characterized sites against fully characterized sites produces non-commensurable results.

A concrete and measurable instance of this asymmetry is the treatment of electrical infrastructure costs under the Existing Infrastructure criterion. The committee has been provided explicit per-foot cost estimates for force main pipe connections — \$1,000/ft for a single connection, rising to \$4,000/ft for an over-and-back dual connection — and those figures have been applied site by site throughout the scoring presentations. No equivalent cost estimate has been provided for three-phase electrical service extension, despite the city engineer's acknowledgment at the June 2, 2026 meeting that Sites 1, 2, and 8 lack three-phase service and that extensions would be required for each — and potentially other rural sites outside the city limits face the same infrastructure gap.

Industry benchmarks for rural overhead three-phase distribution extension in comparable utility territories range from approximately \$10 to \$20 per foot. Over the distances involved for Mann Road sites — where the nearest confirmed three-phase infrastructure is several miles away along Coles Ferry Pike — the line extension alone would cost an estimated \$250,000 to \$750,000 or more. A 20 MGD wastewater facility's peak electrical demand (on the order of 300–1,000 kW) is a substantial industrial load that may additionally require a dedicated distribution transformer or substation infrastructure upgrade beyond the per-foot extension cost, adding a further estimated \$500,000 to \$2,000,000 depending on the local grid's capacity. These are not hypothetical future costs; they are infrastructure prerequisites that must be in place before the facility can operate.

The resulting asymmetry is direct: force main distance costs are quantified and factored into the committee's infrastructure scoring; electrical infrastructure costs for the same sites are not. A committee member scoring Site 1 against Site 13 on Existing Infrastructure is comparing one site's quantified pipe cost against another site's quantified pipe cost plus an unquantified electrical

infrastructure cost that has not appeared in any public presentation. That is not a commensurable comparison.

A third instance concerns the interaction between treatment technology and flood-plain acreage scoring. The sixty-acre minimum currently penalizing several sites is, as documented in Appendix F, explicitly technology-dependent. Applied without a disclosed technology basis, it functions as an acreage threshold calibrated to the most land-intensive available process — conventional activated sludge — and scores every candidate site against that undisclosed assumption. This asymmetrically disadvantages city-located, industrially-zoned sites, which tend to be smaller and more flood-constrained but may be fully viable under a compact-process design, while it favors large rural tracts that carry significant infrastructure, road, environmental, and community-impact costs of their own. The scoring criterion as currently applied is not neutral: it embeds a technology preference that has not been disclosed, justified, or entered into the public record.

- **Deferred criteria: openly acknowledged.** At transcript minute 14:33, the engineer stated: *"There's additional criteria that aren't in there because it's going to take a lot of work to get back up on that full list of criteria. So, we're trying to do as short list as we can off of these five."* This is an explicit, on-the-record acknowledgment that material criteria have been deferred. The petitioners do not object to deferral as a time-management decision, but request that deferred criteria be documented and that the committee commit, in writing, to revisiting them before final ranking.
- **Sensitivity analysis: not contemplated.** The current plan calls for scoring, eliminating, then proceeding. There is no documented intermediate step in which the stability of the scoring outcome is tested.
- **Reversibility: not addressed.** The current plan does not reserve authority to revive eliminated sites if shortlisted sites prove unsuitable in deeper engineering review. Without that reservation, an elimination is effectively permanent at the time it is made.

4. Recommended Procedural Safeguards

The petitioners do not request that the committee abandon shortlisting. The petitioners request that the committee adopt the following safeguards before any elimination vote:

- Document anchored scoring levels for each of the five criteria in writing, entered into the public record before scoring begins.
- Identify, in writing, which sites have engineering-grade information depth and which do not. Either supplement the underdocumented sites with additional engineering review, or expressly note the data limitation against each affected score.
- Document, in writing, the basis for the 1-3 importance factor weights assigned to each criterion.
- Conduct and publish a sensitivity analysis demonstrating that small variations (one point in a single score, or one step in a single weight) do not change which sites are eliminated.

- Document, in writing, the list of deferred criteria and the meeting at which each will be reviewed before final ranking.
- Adopt, by motion, a reservation of authority to revive any eliminated site if shortlisted sites prove unsuitable in deeper engineering review.

5. Formal Requests

We respectfully request that the committee:

- Adopt the safeguards listed in Section 4 as a documented amendment to its scoring procedure before any vote eliminating sites from the candidate list;
- Enter the documented methodology into the public record so that interested parties — including property owners whose sites are at risk of elimination — can review it for completeness and consistency; and
- Defer any elimination vote until the procedural safeguards above have been adopted and made public.
- Require that the city engineer provide, for each site confirmed to lack three-phase electrical service, an estimated cost for the electrical infrastructure extension required to serve a 20 MGD facility — including per-foot line extension, transformer requirements, and any utility infrastructure upgrades — and enter those estimates into the public record before the Existing Infrastructure criterion is scored.

Procedural rigor and procurement defensibility are aligned. A documented, reproducible, sensitivity-tested shortlisting process protects both the committee and the city against the risk of a challenged elimination later in the procurement cycle. The petitioners' procedural concerns are not adversarial; they are intended to support a defensible siting decision that will withstand subsequent technical and public review.

Respectfully prepared for submission in supplement to the Public Record Statement.

— Todd Roark, Tich Chaikumnerd, and Concerned Residents / Property Owners (Appendix G)

SUPPLEMENTAL NOTE — APPENDIX H

Columbia Gulf Transmission Gas Pipeline: Asymmetric Application of Site Scoring

This appendix documents an asymmetry in the city's site evaluation: the same Columbia Gulf Transmission natural gas pipeline that the city cited as a deprioritizing factor for the Rockwood site at its March 19, 2026 working session crosses through the Mann Road, Berea Church Road, Maple Hill Road, and Coles Ferry Pike corridor in which Sites 1 through 7 are located. The petitioners formally request that the same risk analysis the city applied to Rockwood be applied to every candidate site within the Columbia Gulf alignment, and that the results be entered into the public record before any elimination vote.

1. The Pipeline System

Columbia Gulf Transmission, LLC operates a 3,367-mile interstate natural gas pipeline system regulated by the U.S. Federal Energy Regulatory Commission (FERC) and the Pipeline and Hazardous Materials Safety Administration (PHMSA). In Williamson, Wilson, and Davidson Counties, Tennessee, the system consists of three high-pressure transmission lines documented in PHMSA Special Permit PHMSA-2008-0066:

- **Mainline 100:** 30-inch diameter, maximum allowable operating pressure (MAOP) 935 psig.
- **Mainline 200:** 30-inch diameter, MAOP 1,007 psig. The same line implicated in two major Kentucky rupture events documented in Section 2 below.
- **Mainline 300:** 36-inch diameter, MAOP 1,007 psig.

These lines pass through portions of Wilson County including the rural residential corridor along Mann Road, Berea Church Road, Maple Hill Road, and Coles Ferry Pike. The PHMSA special permit governing this pipeline class explicitly addresses the conversion of multiple segments from Class 1 (low population density) to Class 3 (higher population density) location classifications — a regulatory acknowledgment that residential development has grown around the pipelines since their original construction.

2. Documented Failure History on Mainline 200

PHMSA failure investigation reports document two significant ruptures of Columbia Gulf Mainline 200 within the past fifteen years, both attributed to causes that are not necessarily limited to a single geographic area:

- **January 2, 2012 — Estill County, Kentucky (Hargett).** Mainline 200 ruptured, expelling pipe pieces and creating a crater approximately 86 feet long, 22 feet wide. An ensuing fire deformed vinyl siding on a residence located more than 800 feet from the rupture. Total damage cost approximately \$1.7 million. PHMSA attributed the failure to pipeline overstress from land movement.
- **February 13, 2014 — Adair County, Kentucky (Knifley).** Mainline 200 ruptured at Milepost 79.9, creating a crater approximately 105 feet long, 44 feet wide, and 25 feet deep. The rupture

and ensuing fire destroyed two houses, damaged another residence, and injured two people. Total damage cost approximately \$1.8 million. PHMSA attributed the failure to a hydrogen-assisted girth weld crack failing under external axial loading, with the most likely cause of axial loading being land movement.

Both ruptures occurred on the same 30-inch Mainline 200 pipe that traverses Williamson, Wilson, and Davidson Counties in Tennessee. The reported causes — land movement, hydrogen embrittlement of legacy girth welds — are properties of the pipeline material and the geologic setting, not of any one milepost. The same modes of failure are credible anywhere along the same line.

3. The Asymmetry

During the public comment portion of the June 2, 2026 Site Selection Committee meeting (transcript minute 1:34:09), Wilson County resident Teresa Rogers stated: *"At the March 19th working session, this city reported that the Rockwood site has a gas pipeline easement limiting its usability. That is the Columbia Gulf transmission pipeline. It runs through Man Road, Berea Church, Maple Hill, Kohl's Ferry. Where is the analysis report for each of these parcels that you did for Rockwood? The same pipeline series exploded in Kentucky in 2012 and 2014."* To the petitioners' knowledge, the committee has not responded on the record to Ms. Rogers' observation.

If the Columbia Gulf pipeline easement is, as the city has reportedly determined, a sufficient deprioritizing factor to mark the Rockwood site as having *"limited usability,"* then the same factor — the same pipeline class, the same operating pressures, the same documented failure modes — must be applied consistently to every other candidate site that lies within the Columbia Gulf alignment. To do otherwise is to apply a non-uniform scoring standard, which is inconsistent with both the committee's adopted scoring matrix and the procedural safeguards documented in Appendix G.

Sites 1 through 7, located along Mann Road, Berea Church Road, and Coles Ferry Pike, fall within the same Columbia Gulf pipeline corridor invoked to deprioritize Rockwood. The committee should confirm the Columbia Gulf alignment against every candidate site outside the city limits before any elimination vote — the pipeline corridor is not confined to the Sites 1 through 7 cluster. Unless the committee can document — on the public record, with supporting parcel-specific analysis — that these sites are materially less exposed to pipeline-related risk than Rockwood, the committee's scoring methodology cannot be defended as uniformly applied.

4. Compounding Risk: Pipe Routing Through Karst

The geologic setting that creates the karst-aquifer risk documented in Appendix C is the same setting that has been associated, in PHMSA failure analysis, with land movement as a contributing cause of Mainline 200 rupture events. Karst terrain is characterized by subsurface dissolution features, sinkhole development, and differential settlement — all of which exert variable axial loading on buried steel pipe. The pipeline corridor and the karst aquifer corridor are not independent risks; they overlap geographically, and the failure modes of one (sinkhole formation) may directly induce the failure modes of the other (pipe rupture from land movement).

5. Formal Requests

We respectfully request that the committee, prior to any vote eliminating or ranking sites:

- Produce and enter into the public record the parcel-specific Columbia Gulf pipeline risk analysis prepared for the Rockwood site, including the analytical basis on which Rockwood's "limited usability" determination was made;
- Apply that same analytical framework to every candidate site within the Columbia Gulf alignment, including Sites 1 through 7 and any other Mann Road / Berea Church Road / Maple Hill / Coles Ferry Pike sites currently under consideration;
- Document, in writing, why any candidate site within the Columbia Gulf alignment should not be subject to the same deprioritization that was applied to Rockwood;
- Coordinate with Columbia Gulf Transmission, LLC and PHMSA to obtain the route alignment, easement width, depth-of-cover, last inspection date, and class location status for the Mainline 100, 200, and 300 segments crossing each candidate site; and
- Coordinate with the City of Lebanon Fire Department and Wilson County Emergency Management to assess emergency response capability in the event of a Mainline 200-class rupture along the corridor adjacent to each candidate site.

A risk factor that disqualifies one site cannot be ignored at another. The petitioners do not request that pipeline proximity disqualify any specific site; the petitioners request that pipeline proximity be evaluated uniformly across all candidate sites, that the analytical results be made public, and that any deviation in treatment between sites be explained on the record.

Respectfully prepared for submission in supplement to the Public Record Statement.

— Todd Roark, Tich Chaikumnerd, and Concerned Residents / Property Owners (Appendix H)

SUPPLEMENTAL NOTE — APPENDIX I

Biosolids Disposal: Traffic Impact and Infrastructure Disclosure Gap

Prepared by Todd Roark and Tich Chaikumnerd in support of the Public Record Statement filed with the City of Lebanon Wastewater Treatment Plant Site Selection Committee.

I.1 Background: Current Plant Biosolids Management

The existing Lebanon WWTP at 321 Hartmann Drive operates with a 10 MGD design capacity and includes two features relevant to biosolids management:

1. High-rate anaerobic digestion — two 1.9 million-gallon mesophilic digesters with a minimum 30-day retention time, which reduces the volatile solids content of raw sludge by approximately 50–60 percent before dewatering.

2. On-site gasification — operational since October 2016, converting dewatered biosolids and wood waste to electricity, substantially reducing or eliminating the volume of biosolids requiring off-site disposal.

As a result, outbound heavy-truck traffic attributable to biosolids disposal at the existing Hartmann Drive facility is currently minimal. This is relevant because it means the existing site's traffic profile is not a meaningful baseline for projecting traffic at a new site that would not include equivalent infrastructure.

I.2 The New Facility Would Not Inherit This Infrastructure

The proposed new facility would be built on a greenfield site. The gasification system at the existing plant represents a significant capital investment and a specialized permitting footprint. There is no indication in the public record that the city intends to replicate it at the new location. Without on-site gasification — and potentially without anaerobic digestion, which the city has also not specified — a new 20 MGD facility would generate substantially greater outbound biosolids traffic than the existing plant currently produces.

I.3 Estimated Biosolids Volume at 20 MGD

A conventional municipal treatment plant with biological treatment generates approximately 1,500–2,500 lbs of dry solids per million gallons treated. With anaerobic digestion, net dry solids are reduced by roughly 35 percent:

Dry solids at 20 MGD (with digestion): approximately 19,000–32,000 lbs/day

Dewatered to approximately 20 percent total solids: approximately 45–80 tons/day

At 22 tons per tractor-trailer load: approximately 2–4 truck trips per day on a continuous-haul schedule, or 8–15 trucks on haul days if biosolids are stored and hauled 2–3 times per week.

Without anaerobic digestion, these figures increase by approximately 60 percent.

I.4 Disposal Options and Traffic Consequences

The city has not disclosed its intended biosolids management method for the new facility. Three technically feasible options exist, each with traffic consequences:

Option A — On-site digestion and gasification. Replicating the existing system would minimize outbound truck traffic but requires capital, permitting, and facility footprint that have not been disclosed and have not been factored into the site size or cost analyses presented to the committee.

Option B — Haul biosolids to the existing Hartmann Drive plant. This allows continued use of existing gasification infrastructure but generates permanent round-trip heavy-truck traffic between the new site and 321 Hartmann Drive as an ongoing operational cost of the location choice.

Option C — Land application or landfill disposal. Class B biosolids may be land-applied to permitted agricultural sites under 40 CFR Part 503. This requires a permitted disposal site and generates regular heavy-truck movements from the new facility on an indefinite basis.

I.5 Road-Width Constraint

The road-width constraint documented in Appendix D, Exhibit D-1 applies with equal force to outbound biosolids traffic. Field measurements at four locations along Mann Road document actual pavement widths of 17–18 feet. Nothing in the road's topography or construction suggests the measured width is

atypical of the corridor as a whole — and the measurements are approximately 25–30 percent narrower than the city engineer's characterization of "about 24 feet" at the June 2 meeting.

A loaded biosolids tractor-trailer is approximately 8.5 feet wide. At 17–18 feet of pavement, two such vehicles cannot pass without one pulling aside. At an estimated 2–4 truck trips per day on a continuous-haul schedule, or 8–15 trucks on haul days, this is a permanent operational characteristic of the site — not a construction-phase condition.

Combined with the inbound septage traffic documented in Appendix D, the same road carries both inbound tankers and outbound haulers. The two traffic streams are independent in origin but compound on the same physical constraint. Their aggregate impact on the corridor has not been addressed in the public record.

I.6 Disclosure Request

The biosolids management method for the new facility has not been identified in the public record. This is a material omission: the method determines outbound truck volume, which in turn determines road adequacy and the nature of the ongoing impact on the surrounding community. The petitioners request that the city engineer identify, on the public record, the intended biosolids management approach for the new facility before any site is eliminated from consideration.

Sources: Lebanon Authority Biosolids Treatment Process Description (published); City of Lebanon WWTP documentation; Waste Advantage Magazine, October 2016 (gasification initiative); June 2, 2026 Site Selection Committee meeting transcript; field measurements, June 4, 2026 (Mann Road street widths). Biosolids generation figures are standard engineering ranges per conventional activated sludge design practice; site-specific figures should be confirmed against the plant's current NPDES permit and discharge monitoring reports.

— Todd Roark, Tich Chaikumnerd, and Concerned Residents / Property Owners (Appendix I)