RFG Opt-Out Request Including a Non-Interference Demonstration for the Kentucky Counties of Jefferson, Bullitt, and Oldham





Prepared jointly by:

Kentucky Energy and Environment Cabinet Division for Air Quality

&

Louisville Metro Air Pollution Control District

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¹ https://eec.ky.gov/Environmental-Protection/Air/Pages/Public-Notices.aspx.

² https://louisvilleky.gov/government/air-pollution-control-district/services/proposed-actions-apcd.

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I. Background & Introduction

This reformulated gas (RFG) Opt-Out Request was prepared by the Kentucky Division for Air Quality (DAQ) and the Louisville Metro Air Pollution Control District (LMAPCD), pursuant to 40 CFR 1090.290, in support of Governor Andy Beshear's petitions, dated February 11 and February 28, 2025, to opt-out of the (RFG) program for Jefferson County and the affected portions of Bullitt and Oldham counties (Appendix A and B). Kentucky DAQ has jurisdiction over Bullitt and Oldham Counties in the Area. LMAPCD has jurisdiction over Jefferson County pursuant to KRS Chapter 77.³ The federal RFG requirements are currently applicable in the Kentucky portion of the 1979 Louisville, KY-IN ozone maintenance area (Area).⁴ Kentucky chose to opt into the federal RFG program under 42 USC 7545(k)(6)(A) and, pursuant to 40 CFR 1090.290(b), may opt out of RFG using the opt-out procedure set-out therein. This opt-out request is supported by the non-interference demonstration below and evaluates the impact of the removal and replacement of the federal RFG program on National Ambient Air Quality Standards (NAAQS) pollutants, specifically ozone.

In sunlight, nitrogen oxides (NO_X) and volatile organic compounds (VOCs) chemically react to form ozone. The RFG program was designed to reduce vehicle emissions of toxics and ozone-forming compounds, specifically NO_X and VOCs. As part of the Clean Air Act (CAA) Amendments of 1990, Congress added subsection (k), reformulated gasoline for conventional vehicles, to Section 211 of the CAA.⁵ States with 1979 ozone nonattainment areas that were not required by the U.S. Environmental Protection Agency (EPA) to sell RFG were permitted to opt-in to the RFG program at the request of the Governor of the state in which the nonattainment area was located.

This submittal demonstrates non-interference by substituting quantifiable, permanent, surplus, enforceable, and contemporaneous emissions reductions, as described herein, to achieve equivalent emissions reductions to offset potential emissions increases due to the removal of RFG.

a. History

On November 6, 1991, the EPA designated Jefferson and portions of Bullitt and Oldham Counties in Kentucky as nonattainment for the 1979 1-hour ozone NAAQS.⁶ At the same time, the EPA also designated portions of Boone, Campbell, and Kenton Counties as nonattainment

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³ KRS Chapter 7. https://apps.legislature.ky.gov/law/statutes/chapter.aspx?id=37430

⁴ For additional description of the Area see, https://www.epa.gov/gasoline-standards/reformulated-gasoline.

⁵ See 42 U.S.C. §7545 (k) at https://www.govinfo.gov/content/pkg/USCODE-2013-title42/html/USC

⁶ 56 FR 56694.

for this standard. Subsequently, Kentucky Governor Brereton C. Jones sent an application dated September 19, 1993, to EPA Administrator Carol Browner requesting the restriction of conventional gasoline (CG) sales in all of Kentucky's nonattainment areas for the 1979 1-hour ozone NAAQS (Appendix C). Beginning January 1, 1995, retailers in Jefferson County and portions of Bullitt, Boone, Campbell, Oldham, and Kenton Counties were required to sell RFG during the summer months (June 1 -September 15). Since that time, all areas in Kentucky now attain the 1979 ozone NAAQS.⁷

On September 13, 2017, the Division submitted a non-interference demonstration to EPA, requesting to opt-out of the federal RFG program for Boone, Campbell, and Kenton Counties, which at the time were designated as attainment for the 1979, 1997, 2008, and 2015 ozone standards. This request was supported by a non-interference demonstration indicating that removing RFG would not hinder the area's ability to maintain the NAAQS. EPA approved this request on April 2, 2018.8 Following the removal of RFG, Boone, Campbell, and Kenton Counties have remained in attainment for the 1997 ozone NAAQS and all subsequent ozone NAAQS.

Building on the Division's demonstrated success of maintaining the 1979, 1997, 2008, and 2015 ozone NAAQS in Northern Kentucky without using RFG, the Division and District prepared this opt-out request and non-interference demonstration to remove RFG requirements for the Area, as displayed in Figure 1.

⁷ 67 FR 49600 (Cincinnati-Hamilton, OH-KY Area) and 66 FR 53665 (Louisville, KY-IN Area).

⁸ 83 FR 13872.

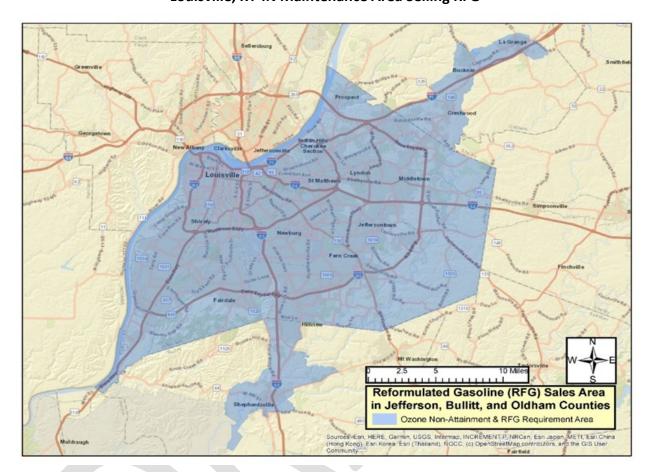


Figure 1: Map of the Kentucky Portion of the 1979 Ozone Louisville, KY-IN Maintenance Area Selling RFG

At the time Kentucky opted into the federal RFG program, RFG provided a significant reduction in emissions compared to the sale and use of CG. The federal RFG program was considered an effective control measure for ozone emission reductions at its inception in 1995 and was utilized to reduce both NO_X and VOC emissions in the Area. Since then, EPA has continued to adopt new standards for CG to further target emission reductions from passenger cars and trucks. Notably, EPA published a final rule on April 28, 2014, finalizing the Tier 3 Motor Vehicle Emission and Fuel Standards program, which included fuel sulfur standards that make emissions control systems more effective for both existing and new vehicles.⁹

Additionally, EPA has stated that "RFG and CG with respect to NO_X, toxics emissions performance and renewable fuel content are essentially the same," as shown in this non-interference demonstration. ¹⁰ Combined, the most recent standards and the Tier 3 Program have significantly reduced motor vehicle emissions, particularly NO_X, supporting Kentucky's

⁹ 79 FR 23414.

¹⁰ 79 FR 14410, 80 FR 52627.

decision to remove RFG in the Area. ¹¹ This non-interference demonstration is further supported by data from the National Emissions Inventory (NEI), which shows a decline in onroad emissions in the Area from 2011 to 2020 (see Figure 2). ¹²

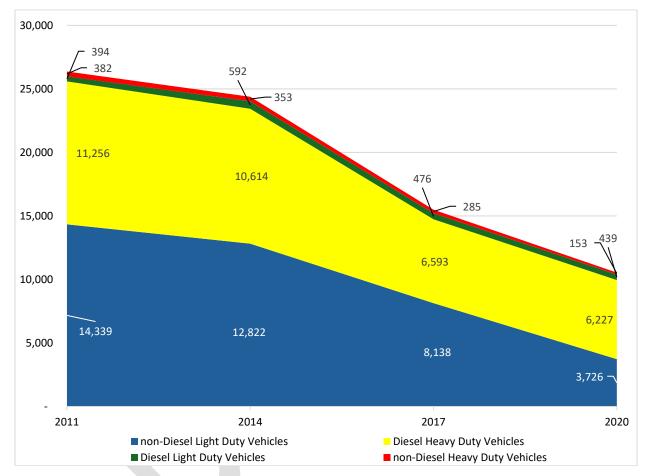


Figure 2: On-road NO_X Emissions in the Area from 2011-2020 (tons per year)

b. Requirements

EPA first issued a final rulemaking on procedures for states to opt-out of the RFG program on July 8, 1996.¹³ The current opt-out requirements for a state that opted in to the federal RFG program pursuant to 42 USC 7545(k)(6) are outlined in 40 CFR 1090.290(b) and (d). The Governor of a state, or his authorized representative, is required to send a petition to the EPA Administrator asking for the removal of any opt-in areas from the RFG program. This opt-out

¹³ 61 FR 35673.

¹¹ Office of Transportation and Air Quality. (March 2014). *EPA Sets Tier 3 Motor Vehicle Emission and Fuel Standards*. https://nepis.epa.gov/Exe/ZyPDF.cgi/P100HVZV.PDF?Dockey=P100HVZV.PDF.

¹² Data retrieved from Louisville Emissions Inventory Dashboard:
https://app.powerbi.com/view?r=eyJrljoiN2ZkYTdlYjEtNzk0OC00MmMzLTgzY2QtZmlwODQ1MGQ4MmYwliwidCl6l
jRmOTg2MTliLTlwMmQtNDEzZi04Y2NmLTM2MWQ1NzlxM2JjZClslmMiOjF9.

request includes a geographic description of the Area, a description of RFG reductions relied upon in any of Kentucky's State Implementation Plans (SIP) submittals, including those waiting approval from EPA, and an evaluation on why no SIP revisions are necessary. EPA is then required to follow 40 CFR 1090.290(d)(2) for the timely approval of an opt-out request. Any area that opted into RFG under 42 USC 7545(k)(6)(A) or (B), and not subsequently reclassified as a Severe ozone nonattainment area may opt-out pursuant to the requirements of 40 CFR 1090.290(d)(1). The requirements of subparagraph (d)(1) are as follows: ¹⁴

- (i) A geographic description of each RFG area (or portion of each RFG area) that is covered by the request.
- (ii) A description of all the means in which emissions reductions from RFG are relied upon in any approved SIP or any submitted SIP that has not yet been approved by EPA.
- (iii) For an RFG area covered by the request where emissions reductions from RFG are relied upon as specified in paragraph (d)(1)(ii) of this section, the request must include all the following information:
 - (A) Identify whether the state is withdrawing any submitted SIP that has not yet been approved.

(B)

- (1) Identify whether the state intends to submit a SIP revision to any approved SIP or any submitted SIP that has not yet been approved, which relies on emissions reductions from RFG, and describe any control measures that the state plans to submit to EPA for approval to replace the emissions reductions from RFG.
- (2) A description of the state's plans and schedule for adopting and submitting any revision to any approved SIP or any submitted SIP that has not yet been approved.
- (C) If the state is not withdrawing any submitted SIP that has not yet been approved and does not intend to submit a revision to any approved SIP or any submitted SIP that has not yet been approved, describe why no revision is necessary.
- (iv) The governor of a state, or the governor's authorized representative, must submit additional information upon request by EPA.

Upon approval of the state's opt-out petition, EPA notifies the state in writing and through a notice in the Federal Register when the request is approved. The effective date of the Area's removal from the RFG program is included in the Federal Register notice. The following non-interference demonstration is provided to support the Division and the District's request to remove the federal RFG requirements from the Area.

¹⁴ 40 CFR 1090.290.

II. RFG Opt-Out Requirements

This non-interference demonstration supports Kentucky Governor Andy Beshear's request to remove the federal RFG requirements from the Area. Each requirement is addressed in the order laid out above. As an opt-in Area under 42 USC 7545(k)(6), the Division and the District are not required to meet 40 CFR 1090.290(c)(1) or (2). Moreover, as fully explained below, no SIP revisions are necessary to remove RFG from the Area.

On February 11, 2025, Kentucky Governor Andy Beshear submitted a petition letter to EPA Region 4's Acting Regional Administrator Jeaneanne Gettle requesting to opt-out of the RFG program in the Area, attached in Appendix A. Governor Beshear also submitted the opt-out petition to EPA Administrator Lee Zeldin on February 28, 2025, attached in Appendix B.

i. Geographic Description

The petition letter outlined the Area's participation in the federal RFG program, provided the required description of the geographic area opting out of the RFG program, discussed the use of RFG as one of several possible control measures used in past maintenance plan SIPs, and outlined the various regulatory requirements for opting out of the federal RFG program as prescribed. For a more detailed description of the Area boundaries see 40 CFR 1090.285.¹⁵

ii. SIP Reliance on RFG

The redesignation request and maintenance plan SIP submitted by the Division for the Kentucky portion of the Louisville, KY-IN 1997 ozone area was approved by EPA on August 6, 2007, resulting in the area's redesignation to attainment for the 1997 ozone standard. The maintenance plan relied on RFG as one of several programs to maintain the 1997 ozone standard. This demonstration proves that removing RFG from the area will not undermine the goals of the approved maintenance plan. On June 3, 2024, the Division and the District submitted a second ten-year limited maintenance plan SIP revision for the Kentucky portion of the area for the 1997 ozone standard. This limited maintenance plan submittal accounts for RFG for the 2003 and 2019 years and does not project out into the years where RFG would be removed, as limited maintenance plans are not required to project future year emissions. The maintenance plan does not include the use of RFG as a control strategy for the area but provides a list of other contingency measures that could be implemented in the event the area exceeds the standard.

¹⁵ 40 CFR 1090.285.

¹⁶ 72 FR 36601; The Division's initial redesignation request and maintenance plan can be viewed at https://eec.ky.gov/Environmental-

Protection/Air/Documents/Louisville%20RR%201997%2003%20SIP%20Narrative.pdf.

¹⁷ U.S. EPA. (2018). Resource Document for 1997 Ozone NAAQS Areas: Supporting Information for States Developing Maintenance Plans. https://www.epa.gov/sites/default/files/2018-11/documents/ozone 1997 naags Imp resource document nov 20 2018.pdf.

On April 30, 2018, the Louisville, KY-IN Area was designated nonattainment for the 2015 NAAQS. On September 6, 2022, the Division and the District submitted a redesignation request and maintenance plan SIP for the 2015 ozone standards for the Louisville, KY-IN area. The redesignation request and maintenance plan SIP did not rely upon RFG as a control measure. The redesignation request and maintenance plan SIP is pending final approval by EPA Region 4.

While not specifically listed a control measure for the Area, RFG is used in the initial maintenance plan SIP submittals for both the 1997 and 2015 ozone standards. Additional analysis on Motor Vehicle Emissions Budgets (MVEBs) is provided in Part 4 of Section iii of this document.

iii. SIP Withdrawals or Revisions

The Division and the District have no proposed revisions to approved or pending SIPs. The Division and the District do not intend to submit revisions or withdrawals to approved or pending SIPs due to the removal of RFG.

As outlined in 40 CFR 1090.290(d)(1)(iii)(C), "if the state is not withdrawing any submitted SIP that has not yet been approved and does not intend to submit a revision to any approved SIP or any submitted SIP that has not yet been approved, describe why no revision is necessary."

The subsequent information presented in this demonstration shows that removing RFG in the Area will not interfere with attainment or maintenance of the NAAQS for any criteria pollutant.

1. Ozone Sensitivity in the Area

The rate of ozone formation can be limited by decreasing VOCs or NO_X , thus these two precursors to ozone are generally considered the most important components of an ozone control strategy. A study published in the Journal of Environmental Management concluded that the sensitivity of ozone to anthropogenic (human-caused) VOC emissions in the Southeastern United States is two (2) to three (3) orders of magnitude smaller than the sensitivity of ozone to NO_X emissions, primarily due to the abundance of biogenic VOC emissions in this region. ¹⁹ The study evaluated the change in ozone concentrations resulting from decreases in anthropogenic VOC emissions. A 30% decrease in anthropogenic VOC emissions results in an insignificant change in ozone concentrations in most cases. As a result, controlling anthropogenic VOC emissions in the Southeast is less effective than controlling NO_X emissions to reduce ozone levels.

¹⁸ The Division's initial redesignation request and maintenance plan can be viewed at https://eec.ky.gov/Environmental-Protection/Air/Documents/2022-09-02 Redesignation Request.pdf.

¹⁹ Odman, M Talat et al., *Quantifying the sources of ozone, fine particulate matter, and regional haze in the Southeastern United States*, Journal of Environmental Management 3155-3168 (2009).

A study of Jefferson County, commissioned by the District and conducted by Ramboll US Corporation in 2019, showed that the region is generally "NO_X-limited," meaning reductions in NO_X emissions are more effective at reducing ambient ozone concentrations.²⁰ This further affirms the conclusion that the VOC emissions changes occurring in the Area due to the removal of RFG will not interfere with the Area's ability to maintain the 1997, 2008, or 2015 8-hour ozone NAAQS.

In conclusion, there is an insignificant impact on ozone concentrations from decreases in anthropogenic VOC emissions in the Southeast and the region is considered NO_X limited. These studies support the Division and the District's finding that VOC emission changes in the Area resulting from removing RFG will have an insignificant impact on and will not interfere with the Area's ability to attain and maintain the NAAQS, and no SIP revision is necessary.

2. Offsets

According to EPA Guidance on SIP Credits for Emission Reductions from Electro-Sector Energy Efficiency and Renewable Energy Measures, when a state and/or local air agency non-interference demonstration indicates that VOC or NO_x emissions have increased due to the relaxation or removal of a rule or a program, emissions offsets may be considered as long as the offset is reproducible, enforceable, surplus, quantifiable, and permanent.²¹ Louisville Gas and Electric Company (LG&E) currently operates an electric generation power plant, the Mill Creek Generating Station (Mill Creek) in Jefferson County.

On November 6, 2023, the Kentucky Public Service Commission (PSC) issued its final order *In the Matter of: Electric Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of a Demand Side Management Plan and Approval of Fossil Fuel-Fired Generating Unit Retirements,* Case No. 2022-00402. ²² As a condition of constructing a new Natural Gas Combined Cycle (NGCC) unit, Mill Creek Unit 5, the PSC approved LG&E's request to retire Mill Creek Unit 1, a coal-fired boiler, in 2024 and conditioned the retirement of Mill Creek Unit 2, a second coal-fired boiler, by 2027 on the construction of Mill Creek Unit 5. The retirement of Mill Creek Units 1 and 2 required approval by the PSC in accordance with KRS

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²⁰ Ramboll US Corporation, Ozone Formation Study: Model Performance Evaluation and NOx/VOC Sensitivity Final (Nov. 2019), https://louisvilleky.gov/air-pollution-control-district/document/louisville-ozone-formation-study-emissions-inventory-report.

²¹ U.S. EPA. (2004). https://archive.epa.gov/epa/sites/production/files/2016-02/documents/ereseerem_gd.pdf
²² In the Matter of: Elec. Joint Application of Ky. Utils. Co. and Louisville Gas and Elec. Co. for Certificates of Pub. Convenience and Necessity and Site Compatibility Certificates and Approval of A Demand Side Mgmt. Plan and Approval of Fossil Fuel-Fired Generating Unit Retirements, 2022-00402, Pg. 178, 2023 WL 7488085 (Nov. 6, 2023). https://psc.ky.gov/pscscf/2022%20Cases/2022-00402//20231106 PSC ORDER.pdf.

278.264.²³ Approval by the PSC is necessary prior to the District issuing the Title V Construction Permit.

In May 2024, the District issued Title V Construction Permit C-0127-22-0046-V that authorizes LG&E's construction of a new Natural Gas Combined Cycle (NGCC) unit, Mill Creek Unit 5, and the shutdown of two coal-fired boilers, Mill Creek Unit 1 and 2, respectively. ²⁴ The new NGCC unit, Mill Creek Unit 5, will use dry-low NO_X combustors in the gas turbine and low-NO_X duct burners in the heat recovery steam generator (HRSG). Based on the District's review of the construction authorized in Title V Construction Permit C-0127-22-0046-V, the following emission reductions are expected upon completion:

- Nitrogen Oxides (NO_x) by 4,036 tons per year,
- Carbon Monoxide (CO) by 174 tons per year,
- Sulfur Dioxide (SO₂) by 1,118 tons per year,
- Fine Particulate Matter (PM_{2.5}) by 223 tons per year, and
- Carbon Dioxide (CO₂) by 836,373 tons per year.²⁵

Emissions reductions were calculated using baseline actual emissions as measured by Continuous Emissions Monitoring System (CEMS). Mill Creek Unit 1 was retired at the end of 2024 and accounts for 2,251 tons, while Unit 2 is expected to be retired in 2027, which accounts for the remainder of the above total. ²⁶ As described in a letter from LG&E dated July 17, 2024, construction has begun on the new NGCC unit (Appendix D).

The installation of the new NGCC unit may lead to an increase in VOC of 11 tons per year. As described above, the region is NO_X limited and this minor increase in VOC will not affect ozone concentrations within the Area. Emission reductions from Unit 1 and 2 closures, along with the construction of Unit 5, will preserve maintenance and attainment of the 1997, 2008, and 2015 ozone NAAQS.

²³ KRS 278.264. https://apps.legislature.ky.gov/law/statutes//statute.aspx?id=54591.

²⁴ Mill Creek Title V Construction Permit C-0127-22-0046-V. https://louisvilleky.gov/government/air-pollution-control-district/recent-actions

²⁵ Emission reduction calculations were made based on LG&E's December 15, 2022, Application using an annual average of past actual emissions from 2019 – 2021.

²⁶ LG&E. (2024). *LG&E* and *KU* officially break ground on Mill Creek 5 [Press release]. https://lge-ku.com/newsroom/press-releases/2024/11/13/lge-and-ku-officially-break-ground-mill-creek-5; See also: U.S. Energy Information Administration. (2024). *Preliminary Monthly Electric Generator Inventory (based on Form EIA-860M as a supplement to Form EIA-860) - December 2024*. https://www.eia.gov/electricity/data/eia860m/.

3. Emissions Inventory

The emissions inventories in this section are comprised of point, nonpoint, on-road, and nonroad emissions. The point, nonpoint, and nonroad projected emissions inventories were developed using EPA's 2022v1 Emissions Modeling Platform and account for projected growth rates in population, traffic, economic activity, and other parameters.²⁷ Naturally occurring, or biogenic, emissions are not included in the inventories, as these emissions are outside the state's control.

On-road analysis was conducted using EPA's Motor Vehicle Emissions Simulator Version 5 (MOVES5) to analyze the effect of removing RFG in the Area (Appendix E). 28 On-road emissions were projected for 2025, 2026, 2030, and 2035. Tables 1 and 2 provide a county-by-county and area total comparison for on-road emissions between RFG and CG. Only one value is provided for 2025, because RFG will be used during this year. The difference between RFG and CG decreases over time, with 2035 showing only a 0.03 and 0.14 tons per summer day (tpsd) increase, for NO_X and VOC, respectively. This incremental change in emissions is unlikely to translate into measurable changes in ground-level ozone concentrations in the Area.

Table 1: 2025-2035 RFG vs. CG On-road NO_X Emissions for the Area (tpsd)

County	2025	2026 RFG	2026 CG	2030 RFG	2030 CG	2035 RFG	2035 CG
Jefferson	11.53	10.72	10.77	7.51	7.54	4.82	4.83
Bullitt	2.28	2.14	2.14	1.52	1.52	1.05	1.05
Oldham	1.05	0.98	0.99	0.71	0.71	0.49	0.49
Entire Area	14.86	13.84	13.9	9.74	9.77	6.36	6.37

²⁷EPA's 2022v1 Emissions Modeling Platform. https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling/2022v1-emissions-modeling/2022v1-emissions-modeling-platform.

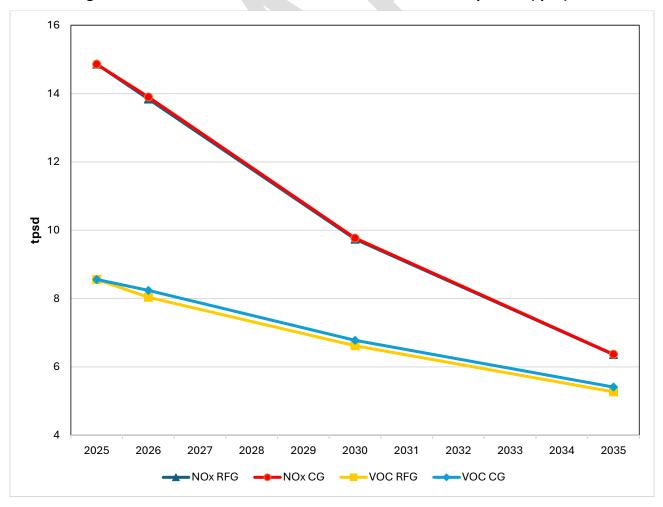
²⁸ Per EPA "MOVES reflects all fuel economy and emissions standards that were final as of the model release date." Improvements to fuel efficiency and any increase in electric vehicle use made after MOVES5's release would not be reflected. https://www.epa.gov/moves/what-does-moves-assume-future-year-fleet-fuel-efficiency-and-emissions.

Table 2: 2025-2035 RFG vs. CG On-road VOC Emissions for the Area (tpsd)

County	2025	2026 RFG	2026 CG	2030 RFG	2030 CG	2035 RFG	2035 CG
Jefferson	7.05	6.63	6.78	5.44	5.57	4.29	4.4
Bullitt	0.91	0.85	0.88	0.71	0.73	0.59	0.61
Oldham	0.6	0.56	0.58	0.47	0.48	0.39	0.4
Entire Area	8.56	8.04	8.24	6.62	6.78	5.27	5.41

As seen in Figure 3, the trendline for RFG compared to CG regarding NOx and VOC on-road emissions from 2025 to 2035 collectively shows that emissions levels will decrease at a similar rate for both fuel types.

Figure 3: 2025-2035 Area On-road Emissions RFG vs. CG Comparison (tpsd)



Tables 3 and 4 provide the projected NO_X data for all emissions types by county when implementing RFG or CG, respectively. Total Area emissions for NO_X decrease over time in either scenario; however, in 2035, the RFG scenario offers a 0.01 tpsd reduction. Tables 5 and 6 provide the projected VOC data by emissions type and county when implementing RFG or CG, respectively. Similarly, total Area emissions for VOC decrease over time in either scenario; however, in 2035, the RFG scenario offers a 0.14 tpsd reduction. Nonpoint sources in the Area contribute to VOC emissions increases of 0.60 tpsd for Bullitt, 0.46 tpsd for Jefferson, and 0.24 tpsd for Oldham County.

Table 3: 2025-2035 NO_X Emissions by County and Category for the Area with RFG (tpsd)

Category	2025	2026	2030	2035
Bullitt Nonpoint	0.81	0.81	0.81	0.81
Bullitt Nonroad	0.17	0.16	0.16	0.16
Bullitt On-road	2.28	2.14	1.52	1.05
Bullitt Point	1.29	1.25	1.33	1.37
Bullitt Total	4.55	4.36	3.82	3.39
Jefferson Nonpoint	4.38	4.41	4.30	4.22
Jefferson Nonroad	2.48	2.35	2.42	2.36
Jefferson On-road	11.53	10.72	7.51	4.82
Jefferson Point	24.15	23.18	21.66	19.18
Jefferson Total	42.55	40.66	35.90	30.57
Oldham Nonpoint	0.38	0.38	0.38	0.38
Oldham Nonroad	0.21	0.20	0.20	0.19
Oldham On-road	1.05	0.98	0.71	0.49
Oldham Point	0.14	0.08	0.09	0.05
Oldham Total	1.78	1.65	1.39	1.11
Area Total	48.88	46.67	41.11	35.06

Table 4: 2025-2035 NO_X Emissions by County and Category for the Area with CG (tpsd)

Category	2025	2026	2030	2035
Bullitt Nonpoint	0.81	0.81	0.81	0.81
Bullitt Nonroad	0.17	0.16	0.16	0.16
Bullitt On-road	2.28	2.14	1.52	1.05
Bullitt Point	1.29	1.25	1.33	1.37
Bullitt Total	4.55	4.37	3.83	3.39
Jefferson Nonpoint	4.38	4.41	4.30	4.22
Jefferson Nonroad	2.48	2.35	2.42	2.36
Jefferson On-road	11.53	10.77	7.54	4.83
Jefferson Point	24.15	23.18	21.66	19.18
Jefferson Total	42.55	40.71	35.92	30.58
Oldham Nonpoint	0.38	0.38	0.38	0.38
Oldham Nonroad	0.21	0.20	0.20	0.19
Oldham On-road	1.05	0.99	0.71	0.49
Oldham Point	0.14	0.08	0.09	0.05
Oldham Total	1.78	1.65	1.39	1.11
Area Total	48.88	46.73	41.14	35.07

Table 5: 2025-2035 VOC Emissions by County and Category for the Area with RFG (tpsd)

Category	2025	2026	2030	2035
Bullitt Nonpoint	5.61	5.66	5.91	6.21
Bullitt Nonroad	0.36	0.35	0.36	0.35
Bullitt On-road	0.91	0.85	0.71	0.59
Bullitt Point	13.42	13.03	12.83	12.23
Bullitt Total	20.29	19.90	19.80	19.38
Jefferson Nonpoint	23.33	23.42	23.56	23.79
Jefferson Nonroad	2.85	2.83	2.90	2.94
Jefferson On-road	7.05	6.63	5.44	4.29
Jefferson Point	17.69	17.24	17.27	16.85
Jefferson Total	50.92	50.11	49.17	47.87
Oldham Nonpoint	2.25	2.28	2.37	2.49
Oldham Nonroad	0.35	0.34	0.34	0.33
Oldham On-road	0.60	0.56	0.47	0.39
Oldham Point	0.11	0.11	0.11	0.12
Oldham Total	3.31	3.28	3.30	3.33
Area Total	74.52	73.30	72.27	70.58

Table 6: 2025-2035 VOC Emissions by County and Category for the Area with CG (tpsd)

Category	2025	2026	2030	2035
Bullitt Nonpoint	5.61	5.66	5.91	6.21
Bullitt Nonroad	0.36	0.35	0.36	0.35
Bullitt On-road	0.91	0.88	0.73	0.61
Bullitt Point	13.42	13.03	12.83	12.23
Bullitt Total	20.29	19.92	19.82	19.40
Jefferson Nonpoint	23.33	23.42	23.56	23.79
Jefferson Nonroad	2.85	2.83	2.90	2.94
Jefferson On-road	7.05	6.78	5.57	4.40
Jefferson Point	17.69	17.24	17.27	16.85
Jefferson Total	50.92	50.27	49.30	47.98
Oldham Nonpoint	2.25	2.28	2.37	2.49
Oldham Nonroad	0.35	0.34	0.34	0.33
Oldham On-road	0.60	0.58	0.48	0.40
Oldham Point	0.11	0.11	0.11	0.12
Oldham Total	3.31	3.30	3.31	3.34
Area Total	74.52	73.49	72.43	70.72

Figures 4 and 5 show the NO_X and VOC total emissions trends from 2025 through 2035 and the makeup of the Area's total emissions by source. With CG, the Area's NO_X and VOC emissions continue to decrease over time. In addition, the on-road portion of the Area's total emissions decreases in all subsequently modeled years.

Figure 4: 2025-2035 Area Total NOx Emissions with On-Road CG by Source (tpsd)

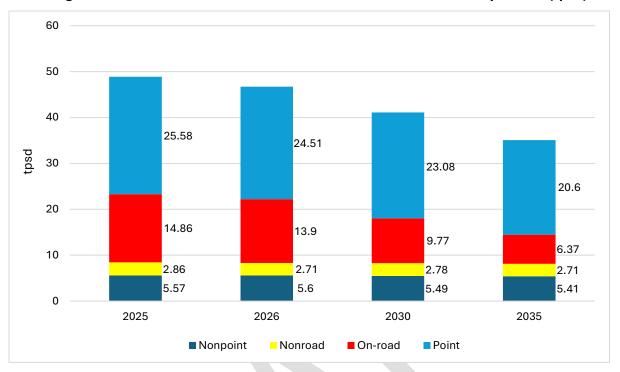
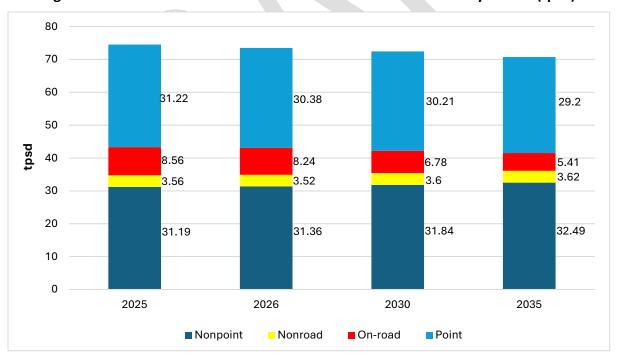


Figure 5: 2025-2035 Area Total VOC Emissions with On-Road CG by Source (tpsd)



4. Motor Vehicle Emissions Budgets

Under the CAA, transportation conformity ensures that federally funded transportation projects do not interfere with a state's plan to attain and maintain a NAAQS. This is enforced through MVEBs established in SIPs for individual pollutants, such as NO_X, under a specific NAAQS.

Furthermore, MVEBs set limitations for on-road mobile emissions so future emissions from mobile sources will not interfere with an area's ability to attain or maintain the NAAQS. Additionally, transportation conformity rules require that maintenance plan SIPs establish MVEBs that ensure estimated emissions levels are not exceeded.²⁹

The Division and the District's initial redesignation request and maintenance plan for the Area for the 1997 ozone NAAQS established regional MVEBs, generated using EPA MOBILE6 Model for 2003 and 2020 (Table 7).³⁰

The Division and the District submitted a redesignation request and maintenance plan SIP, containing MVEBs generated using MOVES3.0.3 for the Kentucky portion of the Louisville, KY-IN 2015 ozone area, on September 6, 2022, and EPA has yet to approve this SIP submittal.³¹ However, on July 5, 2022, EPA approved MVEBs, generated using MOVES3.0.2 for the Indiana portion of the Louisville, KY-IN 8-hour Ozone Area for 2019 and 2035 (Table 8).³² By approving Indiana's MVEBs, the Division and the District consider that EPA took action to approve the 2019 and 2035 MVEBs for Kentucky as well since they were included in Indiana's SIP.

The MVEBs from the Area's 1997 ozone NAAQS initial maintenance plan are used to compare the NO_X and VOC budgets for the Area to the more recent budgets established for the 2015 ozone NAAQS, see Tables 7 and 8 below.

Table 7 – Prior MVEBs for the Louisville, KY-IN 1997 Ozone Area (tpsd)

Pollutant	2003	2020
VOC	40.97	22.92
NO _X	95.51	29.46

²⁹ 40 CFR 93.118.

³⁰ Supra note 16.

³¹ Supra note 18.

³² 87 FR 39750.

Table 8: Approved MVEBs for the Louisville, KY-IN 2015 Ozone Area (tpsd)

Pollutant	2019 Projected Emissions*	2035 Projected Emissions	2035 Safety Margin Allocation	2035 Total Budgets
voc	13.65	4.79	0.72	5.51
NO _X	33.03	14.94	2.24	17.18

^{*}The 2019 year had a safety margin allocation of zero and the total budget equals the projected emissions

In reviewing the MVEBs for the 1997 and 2015 8-hour ozone NAAQS, and after using MOVES5 to adjust for the most current MVEBs, there is an anticipated increase in on-road emissions, causing an estimated overage of 1.48 tpsd of VOCs over the 2035 budget of 5.51 tpsd. The 2035 VOC MVEB is significantly lower than previous VOC budgets, and though estimated VOCs for 2035 are expected to be slightly above that budget for that same year, the emissions inventory still demonstrates a downward trend in the Area's total emissions between 2025 and 2035. This downward trend supports the Division and the District's assertion that the projected VOC increase will not interfere with the Area's ability to attain or maintain any NAAQS, including the 2015 ozone standard.

As mentioned previously, NO_X is the primary driver of ozone formation in the Area. Further, the maintenance plan submitted by the Division and the District for the 2015 ozone NAAQS does not rely on RFG as a control strategy to attain or maintain the standard. Given that NO_X is the primary precursor to ozone and that the Division and District are not relying on RFG as a control strategy for the 2015 ozone NAAQS, the downward trend in VOC emissions more than accounts for any potential that the Area exceeds the 2035 MVEB for VOCs under the 2015 ozone NAAQS. Replacing emissions reductions generated from RFG with emission reductions from the closures of Mill Creek Unit 1 and continued further continued emissions reductions from stationary sources will compensate for any on-road emissions increase in 2035. The emissions inventory and the rest of the non-interference demonstration below show that emissions will decrease in the Area.

Non-Interference with Ozone NAAQS

At the time Kentucky opted into the federal RFG program in 1995, this control measure contributed to lowering VOC and NOx emissions in the Area. Over the years, the implementation of additional federal programs and vehicle fleet turnover have further reduced NOx and VOC emissions in the Area. As a result, the RFG program has yielded fewer emissions reductions over time.

LG&E has applied to the District for Emission Reduction Credits for Mill Creek Unit 1 of 2,251 tons of emission reductions. Of these reductions, 100 tons of NO_X are subject to an Enforceable Board Agreement with the Louisville Metro Air Pollution Control Board pursuant to KRS 77.180 to be used as replacement emission reductions for RFG (a draft copy is included in Appendix F for informational purposes only). As previously discussed, reductions in NO_X emissions are more effective at reducing ambient ozone concentrations in the Area given the sensitivity of ozone to NO_X emissions in the region.

Non-Interference with Other NAAQS

RFG was originally proposed as a control measure to address ozone formation by reducing NO_X and VOC emissions for the 1979 1-hour ozone standard. The Area is currently designated as attainment for the more stringent 1997 and 2008 ozone NAAQS, and all other criteria pollutant standards. As previously detailed, the retirement of Mill Creek Units 1 and 2 will decrease NO_X , CO, SO_2 , and PM emissions.

Additionally, effective March 4, 1996, EPA banned the sale of leaded fuel for use in on-road vehicles.³³ Since lead is not found in fuels for on-road vehicles, the removal of the RFG program would not increase lead emissions. The removal of RFG from the Area will have little to no impact on emissions of any criteria pollutants or their related precursors. There is no expectation that removing RFG will interfere with compliance with any NAAQS in the Area.

iv. Additional Information

Pursuant to 40 CFR 1090.290(d)(1)(iv), the Division and the District will submit additional relevant information to EPA in response to any comment received by EPA during the public comment period, or any written request for further information thereafter. Any written information request made by EPA outside the comment period should be directed to both agencies within 120 days from the date of submission of this opt-out request to EPA.

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³³ <u>61 FR 3832</u>.

III. Public Hearing

The Division and the District are making this demonstration available for public review and comment.

This non-interference demonstration was made available on the Division's website during the 37-day public comment period from May 30 to July 6, 2025. A virtual public hearing was scheduled by the Division to be held on July 2, 2025, at 10:00 a.m. (EDT). A copy of the public notice is available in Appendix G.

This non-interference demonstration was made available on the District's website during the 30-day public comment period from June 1 to July 1, 2025. A public hearing was scheduled by the District to be held at the LMAPCD Edison Room, 701 W Ormsby Avenue, Louisville, Kentucky 40203 on July 2, 2025, at 6:00 p.m. (EDT). A copy of the public notice is included in Appendix H.

The Division and the District received public comments from X. The public comments received, and joint responses from the Division and the District can be found in Appendix I.

IV. Conclusion

Since Kentucky adopted the federal RFG program in 1995 pursuant to 42 USC 7545(k)(6), there have been significant emissions reductions which have led to air quality improvements in the Area. Furthermore, biogenic sources are the primary contributor of VOC emissions in the Southeast, so controlling ozone in Jefferson, Bullitt, and Oldham Counties is most effectively done through the reduction of NO_X emissions. The continued emissions reductions from all emission types will compensate for the slight emissions increase from use of CG when analyzing impacts on VOC and NO_X MVEBs for the 2015 ozone NAAQS. As a result, the removal of RFG will not interfere with the Area's ability to maintain the 1979, 1997, 2008, or 2015 ozone NAAQS.

The Division and the District have demonstrated that no SIP revisions are necessary, and there are no impacts to any criteria pollutants due to the removal of RFG by substituting quantifiable, permanent, surplus, enforceable, and contemporaneous measures described in this demonstration to achieve equivalent emissions reductions to offset potential emissions increases related to RFG removal. Though this demonstration focuses primarily on ozone, removing RFG will not negatively impact emissions of any other criteria air pollutants. For these reasons, the removal of RFG from the Area meets the requirements of 40 CFR 1090.290(d), and the Division and the District request EPA's timely approval of this non-interference demonstration to opt-out of RFG for the Area.

Appendix A – Petition Letter from Governor Andy Beshear to EPA Region 4's Acting Regional Administrator Jeaneanne Gettle Dated February 11, 2025, Requesting to Opt-Out from the RFG Program



Andy Beshear GOVERNOR

Capitol Building, Suite 100 700 Capitol Avenue Frankfort, KY 40601 (502) 564-2611 Fax: (502) 564-2517

February 11, 2025

Jeaneanne Gettle
Acting Regional Administrator
U.S. EPA, Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Dear Ms. Gettle:

The Commonwealth of Kentucky respectfully submits this petition, pursuant to 40 CFR 1090.290, requesting the removal of the Louisville, Kentucky area (including Bullitt, Jefferson, and Oldham counties) from the opt-in areas of the federal reformulated gasoline (RFG) program. Kentucky originally opted into this program on January 1, 1995, in accordance with Section 211(k)(6)(A) of the Clean Air Act. Kentucky implemented the RFG program in the Louisville, Kentucky, area as an air quality control measure to address violations of the 1997 8-hour ozone National Ambient Air Quality Standard (NAAQS). The Environmental Protection Agency (EPA) redesignated the Louisville area as attainment for the 1997 ozone standards on July 5, 2007. In the 18 years since meeting the 1997 ozone standard, the Louisville, Kentucky area emissions of ozone precursors, volatile organic compounds (VOC), and nitrogen oxides (NO_X) have continued to decline.

As the Governor of Kentucky, I previously submitted a request for a waiver from RFG requirements for this area on June 9, 2022, because of an unusual and extreme fuel supply issue that prevented the distribution of an adequate supply of gasoline to the Commonwealth's consumers in the RFG-covered areas. The prior request was denied.

After Kentucky opted into the RFG program for the Louisville area, the EPA implemented several federal programs that have resulted in improved combustion technologies for engines and cleaner fuels. The implementation of these programs effectively reduced emissions nationwide, including in the Louisville area. When the EPA determined on March 14, 2014 that the Atlanta Metro area was no longer required to use RFG, it detailed the changes to gasoline and concluded: "The result of all these actions is that now the requirements for federal RFG and conventional gasoline (CG) with respect to NO_X, toxics emissions performance and renewable fuel content are essentially the same."²

¹⁷² FR 36601

² Regulation of Fuel and Fuel Additives: Reformulated Gasoline Requirements for the Atlanta Covered Area, 79 FR 14410 at 14413-14 (March 14, 2014).

Kentucky requests approval to opt out of the RFG program for the Louisville area and, under federal regulation, provides the following information in support of this request:

- (i) Geographic Description of the RFG Area: This request includes all of Jefferson County, Kentucky, and portions of Bullitt and Oldham Counties in Kentucky. A detailed description of the involved geographic area is attached to this request as **Appendix A** (enclosed herein). Additionally, a map of the included area is attached as **Appendix B** (enclosed herein).
- (ii) Description of the Means in Which Emissions Reductions from RFG are Relied Upon: Emissions reductions from RFG were previously relied upon in the now-expired Request to Redesignate Bullitt, Oldham, and Jefferson Counties, Kentucky Located Within the Louisville, KY-IN, MSA 8-Hour Ozone Nonattainment Area for the 1997 standard.
- (iii) The following information is provided concerning reliance upon RFG as a control measure in the Louisville, Kentucky opt-in area:
 - a. Kentucky is not withdrawing any pending State Implementation Plan (SIP) revisions because the RFG program is not relied upon as an emissions control measure in any not yet approved SIP.
 - b. Kentucky does not plan to submit additional amendments to any previously approved SIP revisions relating to the Louisville area.
 - c. Kentucky will not revise any of the approved SIP revisions that utilized RFG as a control measure. RFG was beneficial at the time the program was introduced to assist Kentucky in attaining the 1997 ozone NAAQS. However, now that there have been substantial improvements in engine technology and conventional gasoline formulation, RFG's assistance in reducing emissions is not as significant. As mentioned herein, monitoring data show that emissions in the Louisville area continue to decrease and Kentucky will maintain these emissions reductions without relying on RFG.
 - d. Kentucky has not relied upon RFG in any pending SIP revisions; therefore, no revisions to those submissions will be required and there is no risk of the removal of RFG affecting a completeness determination.
- (iv) Kentucky agrees to submit any additional information requested by EPA.

I appreciate your consideration of Kentucky's request to remove the Louisville, Kentucky, area from the opt-in areas of the federal RFG program. If you have any questions or comments concerning this matter, please contact Mr. Michael Kennedy, Director, Kentucky Division for Air Quality at (502) 782-6997 or Michael.Kennedy@ky.gov.

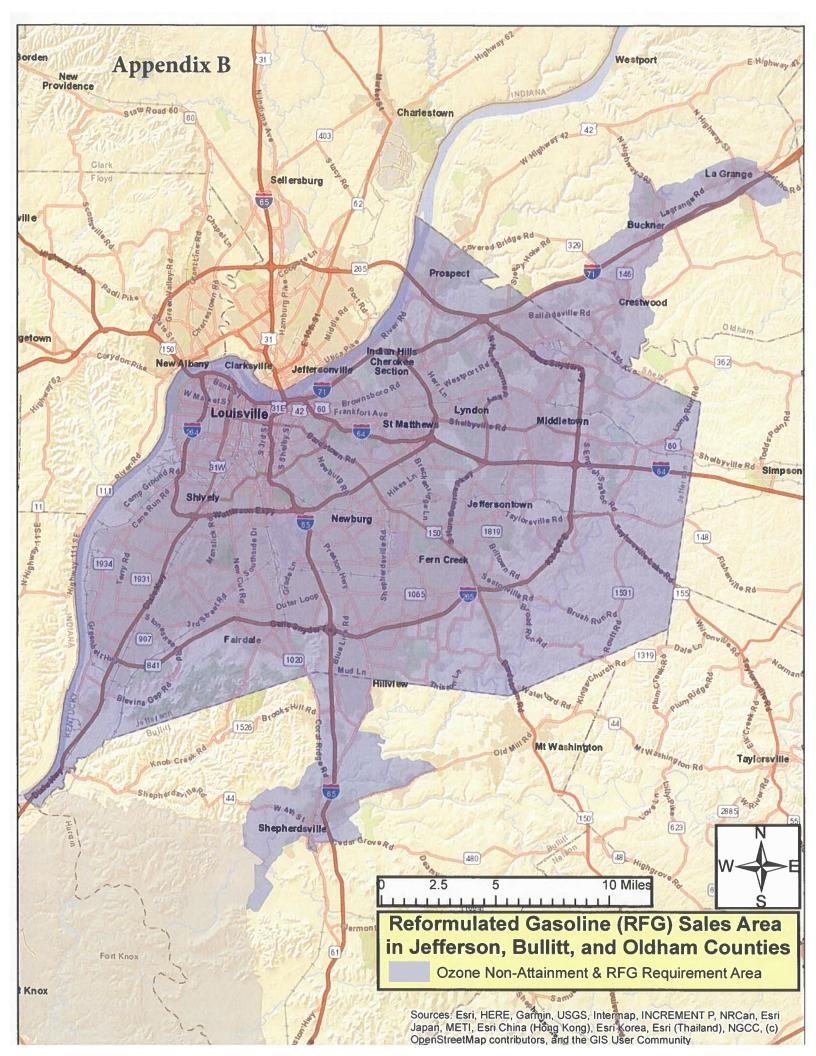
Sincerely,

Andy Beshear

APPENDIX A

Description of Geographic Area Covered by this Request

The Reformulated Gas (RFG) area covered by this request includes all of Jefferson County, KY; and in Bullitt County, KY, beginning at the intersection of Ky 1020 and the Jefferson-Bullitt County Line proceeding to the east along the county line to the intersection of county road 567 and the Jefferson-Bullitt County Line; proceeding south on county road 567 to the junction with Ky 1116 (also known as Zoneton Road); proceeding to the south on Ky 1116 to the junction with Hebron Lane; proceeding to the south on Hebron Lane to Cedar Creek; proceeding south on Cedar Creek to the confluence of Floyds Fork turning southeast along a creek that meets Ky 44 at Stallings Cemetery; proceeding west along Ky 44 to the eastern most point in the Shepherdsville city limits; proceeding south along the Shepherdsville city limits to the Salt River and west to a point across the river from Mooney Lane; proceeding south along Mooney Lane to the junction of Ky 480; proceeding west on Ky 480 to the junction with Ky 2237; proceeding south on Ky 2237 to the junction with Ky 61 and proceeding north on Ky 61 to the junction with Ky 1494; proceeding south on Ky 1494 to the junction with the perimeter of the Fort Knox Military Reservation; proceeding north along the military reservation perimeter to Castleman Branch Road; proceeding north on Castleman Branch Road to Ky 44; proceeding a very short distance west on Ky 44 to a junction with Ky 1020 and proceeding north on Ky 1020 to the beginning; and in Oldham County, KY, beginning at the intersection of the Oldham-Jefferson County Line with the southbound lane of Interstate 71; proceeding to the northeast along the southbound lane of Interstate 71 to the intersection of Ky 329 and the southbound lane of Interstate 71; proceeding to the northwest on Ky 329 to the intersection of Zaring Road on Ky 329; proceeding to the east-northeast on Zaring Road to the junction of Cedar Point Road and Zaring Road; proceeding to the north-northeast on Cedar Point Road to the junction of Ky 393 and Cedar Point Road; proceeding to the south-southeast on Ky 393 to the junction of county road 746 (the road on the north side of Reformatory Lake and the Reformatory); proceeding to the east-northeast on county road 746 to the junction with Dawkins Lane (also known as Saddlers Mill Road) and county road 746; Proceeding to follow an electric power line east-northeast across from the junction of county road 746 and Dawkins Lane to the eastnortheast across Ky 53 on to the La Grange Water Filtration Plant; proceeding on to the eastsoutheast along the power line then south across Fort Pickens Road to a power substation on Ky 146; proceeding along the power line south across Ky 146 and the Seaboard System Railroad track to adjoin the incorporated city limits of La Grange; then proceeding east then south along the La Grange city limits to a point abutting the north side of Ky 712; proceeding east-southeast on Ky 712 to the junction of Massie School Road and Ky 712; proceeding to the south-southwest and then north-northwest on Massie School Road to the junction of Ky 53 and Massie School Road; proceeding on Ky 53 to the north-northwest to the junction of Moody Lane and Ky 53; proceeding on Moody Lane to the south-southwest until meeting the city limits of La Grange; then briefly proceeding north following the La Grange city limits to the intersection of the northbound lane of Interstate 71 and the La Grange city limits; proceeding southwest on the northbound lane of Interstate 71 until intersecting with the North Fork of Currys Fork; proceeding south-southwest beyond the confluence of Currys Fork to the south-southwest beyond the confluence of Floyds Fork continuing on to the Oldham-Jefferson County Line and proceeding northwest along the Oldham-Jefferson County Line to the beginning.



Appendix B – Petition Letter from Governor Andy Beshear to EPA Administrator Lee Zeldin Dated February 28, 2025, Requesting to Opt-Out from the RFG Program



Andy Beshear GOVERNOR

Capitol Building, Suite 100 700 Capitol Avenue Frankfort, KY 40601 (502) 564-2611 Fax: (502) 564-2517

February 28, 2025

Hon. Lee M. Zeldin Administrator Environmental Protection Agency Zeldin.Lee@epa.gov

Dear Administrator Zeldin:

The Commonwealth of Kentucky respectfully submits this petition, pursuant to 40 CFR 1090.290, requesting the removal of the Louisville, Kentucky area (including Bullitt, Jefferson, and Oldham counties) from the opt-in areas of the federal reformulated gasoline (RFG) program. Kentucky originally opted into this program on January 1, 1995, in accordance with Section 211(k)(6)(A) of the Clean Air Act. This petition letter was originally provided to the Region 4 Acting Regional Administrator on February 11, 2025, and that prior letter is enclosed. My administration has now been advised to send the petition letter to your attention, copying Region 4 Administrator, Kevin McOmber.

Kentucky implemented the RFG program in the Louisville, Kentucky, area as an air quality control measure to address violations of the 1997 8-hour ozone National Ambient Air Quality Standard (NAAQS). The Environmental Protection Agency (EPA) redesignated the Louisville area as attainment for the 1997 ozone standards on July 5, 2007. In the 18 years since meeting the 1997 ozone standard, the Louisville, Kentucky area emissions of ozone precursors, volatile organic compounds (VOC), and nitrogen oxides (NO_X) have continued to decline.

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¹⁷² FR 36601

² Regulation of Fuel and Fuel Additives: Reformulated Gasoline Requirements for the Atlanta Covered Area, 79 FR 14410 at 14413-14 (Mar. 14, 2014).

Kentucky requests approval to opt out of the RFG program for the Louisville area and, under federal regulation, provides the following information in support of this request:

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- (iii) The following information is provided concerning reliance upon RFG as a control measure in the Louisville, Kentucky opt-in area:
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 - b. Kentucky does not plan to submit additional amendments to any previously approved SIP revisions relating to the Louisville area.
 - c. Kentucky will not revise any of the approved SIP revisions that utilized RFG as a control measure. RFG was beneficial at the time the program was introduced to assist Kentucky in attaining the 1997 ozone NAAQS. However, now that there have been substantial improvements in engine technology and conventional gasoline formulation, RFG's assistance in reducing emissions is not as significant. As mentioned herein, monitoring data show that emissions in the Louisville area continue to decrease and Kentucky will maintain these emissions reductions without relying on RFG.
 - d. Kentucky has not relied upon RFG in any pending SIP revisions; therefore, no revisions to those submissions will be required and there is no risk of the removal of RFG affecting a completeness determination.
- (iv) Kentucky agrees to submit any additional information requested by EPA.

I appreciate your consideration of Kentucky's request to remove the Louisville, Kentucky, area from the opt-in areas of the federal RFG program. If you have any questions or comments concerning this matter, please contact Mr. Michael Kennedy, Director, Kentucky Division for Air Quality at (502) 782-6997 or Michael.Kennedy@ky.gov.

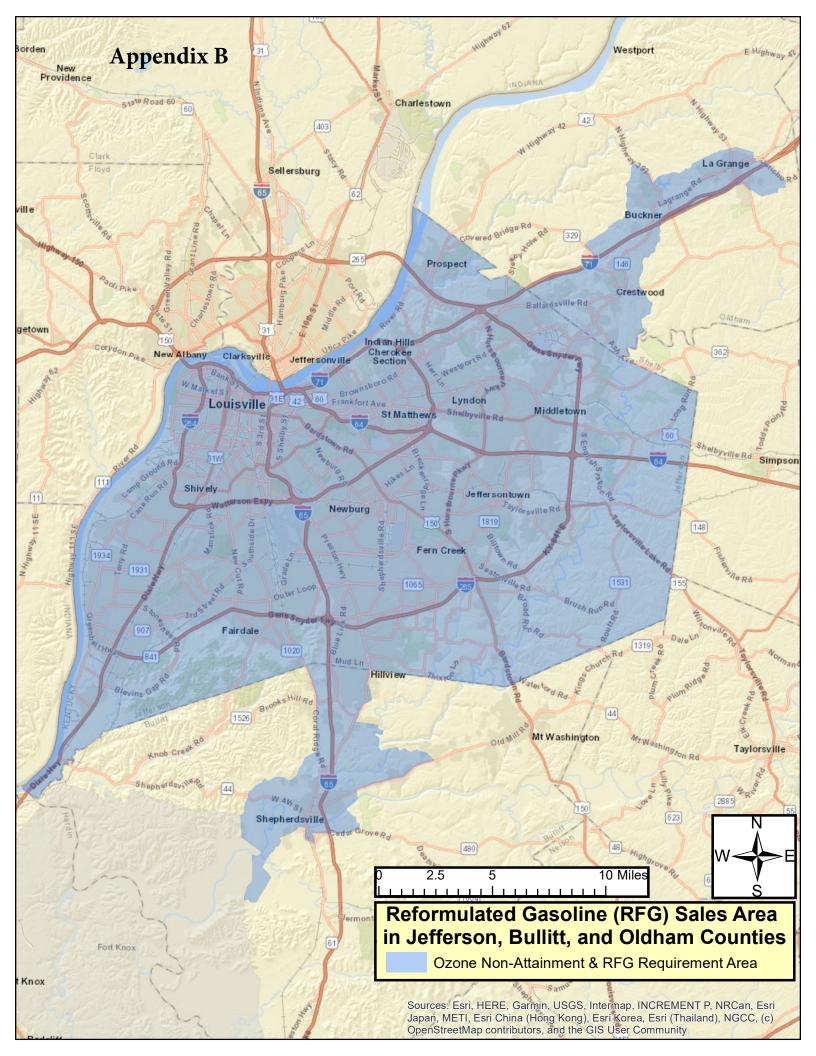
Sincerely,

Anti Beshear

APPENDIX A

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Appendix C – Application from Governor Jones to EPA Administrator Carol Browner Requesting Restrictions on Conventional Gasoline Sales in the Louisville, KY-IN 1997 Ozone Area



COMMONWEALTH OF KENTUCKY OFFICE OF THE GOVERNOR

BRERETON C. JONES GOVERNOR

THE CAPITOL 700 CAPITAL AVENUE FRANKFORT 40601 502) 564-2611

September 29, 1993

Ms. Carol Browner
Administrator
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Dear Ms. Browner:

In accordance with Section 211(k), (6)(A) of the Federal Clean Air Act, I request that beginning January 1, 1995, the prohibition applying to the sale of conventional gasoline be extended to the Kentucky portion of the Louisville ozone nonattainment area and the Kentucky portion of the Cincinnati-Hamilton ozone nonattainment area. The Kentucky portion of the Louisville nonattainment area consists of Jefferson County and a portion of Bullitt and Oldham Counties. The Kentucky portion of the Cincinnati nonattainment area consists of Boone, Campbell, and Kenton Counties.

The Kentucky Natural Resources and Environmental Protection Cabinet recommended that I apply to you to require the use of reformulated gasoline in these counties in order to help achieve the reduction of volatile organic compounds mandated in Section 182 (b) (1) of the Clean Air Act. The revision to Kentucky's State Implementation Plan for achieving a 15% reduction of volatile organic compounds due by November 15, 1993 will include emission reductions gained by the use of reformulated gasoline.

Sincerely,

Brereton C. Jones

Appendix D – Letter from Jason
Wilkerson to Rachael Hamilton (July 17,
2024), Re: LG&E's Mill Creek Generating
Station Title V Construction Permit (C0127-22-0046-V) Start of Construction
of Mill Creek NGCC (MC5)

Jason Wilkerson

Principal Engineer Environmental Compliance O: 502-627-4043 jason.wilkerson@lge-ku.com



Sent via airpermits@louisvilleky.gov

Rachel Hamilton Director Louisville Metro Air Pollution Control District 701 W. Ormsby Ave., Suite 303 Louisville, KY 40203

July 17, 2024

Re: LG&E's Mill Creek Generating Station

Title V Construction Permit (C-0127-22-0046-V)
Start of Construction of Mill Creek NGCC (MC5)

Dear Ms. Hamilton:

Per Title V Construction Permit No. C-0127-22-0046-V, Emission Unit U23, Specific Conditions S3., Item c.i.(1)(a), Louisville Gas & Electric Company (LG&E) is notifying the Louisville Metro Air Pollution Control District (LMAPCD) of the date of commencement of construction for Mill Creek Station natural gas-fired combined cycle unit (MC5) and associated equipment within the construction permit. Construction of MC5 commenced on July 15, 2024.

If you have any questions regarding this information, please contact Jason Wilkerson (jason.wilkerson@lge-ku.com or 502-627-4043).

Respectfully,

Jason Wilkerson

Environmental Compliance

LG&E and KU

CC: Matt King, Industrial Permitting Manager, LMAPCD

Yiqiu Lin, Engineer, LMAPCD

Appendix E – Motor Vehicle Emissions Simulator Version 5 Modeling Summary

Summary of Emissions Modeling Decisions

The Division performed air quality analyses using the U.S. EPA MOVES5 mobile emissions simulator to demonstrate the difference in emissions resulting from the use of reformulated gasoline (RFG) and conventional gasoline (CG) in Kentucky (Jefferson, Bullitt and Oldham counties).

The pollutants primarily under consideration were oxides of nitrogen (NOx) and volatile organic compounds (VOC). Other pollutants considered in the air quality analyses were Non-Methane Hydrocarbons (NMHC), Total Gaseous Hydrocarbon (TotalHC), and carbon monoxide (CO).

The years selected to model were 2025, 2026, 2030 and 2035. The results were presented in tons per summer day (TSD).

Inventory

Kentuckiana Regional Planning & Development Agency (KIPDA) provided the Average Speed Distribution, Vehicle Type VMT, Road Type Distribution and Source Type Population inventory.

Technical Parameters

The parameter selections for the MOVES run specifications and the inputs for the County Data Manager are represented in Tables 1 and 2. Run specifications were performed individually by county, year and fuel scenario, which resulted in 24 unique iterations of MOVES files for this demonstration.

Table 1. Run Specification Parameters

MOVES Version	MOVES5
Scale	Model: Onroad
	Domain/Scale: County
	Calculation Type: Inventory
Time Span	Time Aggregation Level: Hour
	Years: 2025, 2026, 2030, 2035
	Month: July
	Day: Weekdays
	Hours: All Hours
Geographic Bounds	Region: County
	State: Kentucky
	County: (Jefferson, Bullitt, Oldham)
Vehicles/Equipment	All fuels, source use types and combinations
Road Type	All available road types
Pollutants and Processes	CO, NMHC, NOx, TotalHC, VOC
General Output	Mass Units: Grams
	Energy Units: Joules
	Distance Units: Miles
	Activity: Distance Traveled, Population
Output Emissions Detail	Time: Hour
	Location: County
	Vehicle/Equipment: Fuel Type, Emission Process, SCC
	Onroad: Road Type, Source Use Type

Table 2. County Data Manager Inputs

Age Distribution	Default
Average Speed Distribution	Data developed and received from KIPDA
Fuel	RFG Scenarios: Default
	CG Scenarios: Default Shelby County, KY
Meteorology Data	Default
Road Type Distribution	Data developed and received from KIPDA
Source Type Population	Data developed and received from KIPDA
Vehicle Type VMT	Data developed and received from KIPDA
I/M Programs	No I/M Program

Fuels

The reformulated gasoline (RFG) fuel files selected for the MOVES demonstration were MOVES default values for Jefferson, Bullitt, Oldham counties (KY). The default fuel files, from Shelby County, Kentucky, were utilized as a surrogate for the conventional gasoline (CG) scenarios and were applied to Jefferson, Bullitt, Oldham Kentucky counties.

Appendix F – Louisville Gas & Electric and LMAPCD Enforceable Board Agreement (DRAFT)

ENFORCEABLE BOARD AGREEMENT

This Enforceable Board Agreement is entered into by and among Louisville Gas and Electric Company (LG&E), the Louisville Metro Air Pollution Control Board (Board), and the Louisville Metro Air Pollution Control District (District) (collectively "the Parties").

WHEREAS, LG&E owns and operates the Mill Creek Electric Generating Station (Mill Creek), a coal-fired power station currently consisting of three electric generating units, located at 14660 Dixie Highway, Louisville, Kentucky 40272, and is the largest single source of NOx emissions in the Louisville, Kentucky area; and

WHEREAS, LG&E is in the process of constructing a 645 MW natural gas-fired combined cycle electric generating unit (Mill Creek Unit 5) at the Mill Creek Electric Generating Station as authorized by the District in a Title V Construction Permit C-0127-22-0046-V on May 2, 2024; and

WHEREAS, LG&E retired Mill Creek Unit 1 at the end of 2024; and

WHEREAS, on January 27, 2025, LG&E filed an application requesting the creation of emission reduction credits for pollutants associated with the retirement of Mill Creek Unit 1, and, specifically, sought an emission reduction credit (ERC) of 2,251 tons per year of NOx-related emissions to be banked pursuant to District Regulation 2.12 as a result of the Mill Creek Unit 1 shutdown, which occurred on December 31, 2024; and

WHEREAS, LG&E and the District desire to reach a final determination on the ERC to which LG&E is entitled due to the shutdown of Mill Creek Unit 1.

WHEREAS, based on a review of LG&E's application for the creation of an ERC due to the shutdown of Mill Creek Unit 1, the District shall approve, pursuant to District Regulation 2.12, the application and authorize, among other things, the creation of an ERC of 1,990 tons per year for NOx emissions; and

WHEREAS, in addition to the ERC referenced above, LG&E is agreeable to surrendering 100 tons per year of the 2,251 tons per year ERC requested in its application for use by the District as it sees fit and reserving 161 tons per year of the amount requested in its application to be used as an offset for future emissions associated with Mill Creek Unit 5.

NOW THEREFORE, this Agreement reflects the agreement of LG&E and the approval of the Board and the District, to implement the following:

- 1. A 100 ton per year portion of NOx reduction from the retirement of Mill Creek Unit 1 shall be transferred to the District to be utilized at the District's discretion.
- 2. The District shall approve, pursuant to District Regulation 2.12, LG&E's application for an ERC providing for NOx emissions credits from the shutdown of Mill Creek 1 of 1,990

tons per year, with an additional credit of 161 tons per year of NOx reductions to be reserved to offset the future emissions increase associated with Mill Creek Unit 5.

- 3. LG&E and the District agree to implement the provisions set forth in Paragraph 1 above. Nothing in this Agreement shall constitute evidence of any admission of liability, law or fact, a waiver of any right or defense, or estoppel against the parties to this Agreement.
- 4. Nothing in this Agreement affects, limits, or waives the District's legal rights, remedies, or causes of action based on statutes, regulations, or permit conditions within the jurisdiction of the District, and LG&E reserves its rights and defenses thereto. The District expressly reserves its right to seek enforcement of this Agreement or to take further action through administrative orders or other means at any time and to take any other action it deems necessary, including the right to order all necessary remedial measures and assess penalties for proven violations of applicable laws or regulations, and LG&E reserves its defenses thereto.

Nothing in this Agreement affects, limits, or waives LG&E's legal rights, including LG&E's right to administrative or judicial review of any action by the District.

5. No modification or amendment to the terms or conditions of this Agreement shall be effective until reduced to writing and executed by LG&E and the Board.

Louisville Metro Air Pollution Control Board

Louisville Gas and Electric Company

By: Steve Sullivan Chairman	By:
Date:	Date:
Louisville Metro Air Pollution Control District	
By: Rachael Hamilton Executive Director	
Date:	

Appendix G – The Division's Public Notice

PUBLIC NOTICE



KY DAQ Requests Comments on Proposed "RFG Opt-Out Request Including a Non-Interference Demonstration for the Kentucky Counties of Jefferson, Bullitt, and Oldham"

HOW TO PROVIDE PUBLIC COMMENT

Public hearing: July 2, 2025, at 10 a.m. EDT (must be requested by June 25, 2025)

Send written comments to: Claire Oyler, Environmental Scientist III

By mail: Claire Oyler, Division for Air Quality, 300 Sower Blvd., Frankfort, KY 40601

By email: claire.oyler@ky.gov

Comments due by: Sunday, July 6, 2025, at 5 p.m. EDT

The Kentucky Division for Air Quality (Division) invites the public to provide comments on the draft "RFG Opt-Out Request Including a Non-Interference Demonstration for the Kentucky Counties of Jefferson, Bullitt, and Oldham."

Summary

The Division and the Louisville Metro Air Pollution Control District (District) are requesting to opt out of the Reformulated Gasoline (RFG) requirements for Jefferson, Bullitt, and Oldham counties under 40 CFR 1090.290 (d) due to non-interference on local air quality. This opt-out request allows the three identified Kentucky counties to use conventional gasoline rather than RFG, while maintaining compliance with the National Ambient Air Quality Standards (NAAQS). This proposed action by the Division and the District is consistent with EPA provisions allowing opt-outs for qualifying areas.

The proposed RFG opt-out request and non-interference demonstration shows:

- a) that no SIP revisions are necessary.
- b) the removal of RFG will not interfere with the Louisville, KY-IN area's ability to maintain the 1979, 1997, 2008, or 2015 ozone NAAQS.
- c) there are no impacts to attaining or maintaining any criteria pollutant standards due to the removal of RFG by substituting quantifiable, permanent, surplus, enforceable, and contemporaneous measures described in the demonstration to achieve equivalent emissions reductions to offset potential emissions increases related to RFG removal.

Availability of Proposed Demonstration and Comment Opportunity

The Division is making this proposed RFG opt-out request and non-interference demonstration available for public inspection. The proposed request can be found at https://eec.ky.gov/Environmental-Protection/Air/Pages/Public-Notices.aspx. The public comment period will be open from May 30, 2025, through July 6, 2025. Comments should be sent to the contact person, via email or written mail, and must be received by July 6, 2025, to be considered part of the public record.

Registration for Public Hearing

The Division will conduct a virtual public hearing on July 2, 2025, at 10:00 a.m. (Eastern Daylight Time). This hearing will be held to receive comments on the proposed RFG opt-out request and non-interference demonstration. This hearing is open to the public and all interested persons will be given the opportunity to present testimony. To assure that all comments are accurately recorded, the Division requests that oral comments presented at the hearing are also provided in written form, if possible. It is not necessary that the hearing be held or attended in order for persons to comment on the proposed RFG opt-out request and non-interference demonstration. If no request for a public hearing is received by June 25, 2025, the hearing will be cancelled, and notice of the cancellation will be posted at https://eec.ky.gov/Environmental-Protection/Air/Pages/Public-Notices.aspx.

Please note that registration is required to participate in this hearing. You must either email your name and mailing address to claire.oyler@ky.gov or send this information by mail to Claire Oyler, Division for Air Quality, 300 Sower Blvd., Frankfort, KY 40601. Please put "Registration for the Louisville Area RFG Opt-Out Public Hearing" as the subject line, and state in the body of the message if you plan to speak during the hearing.

The Kentucky Division for Air Quality does not discriminate on the basis of race, color, national origin, sex, age, religion or disability and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford an individual with a disability an equal opportunity to participate in all services, programs and activities.



Appendix H – The District's Public Notice



AIR POLLUTION CONTROL DISTRICT LOUISVILLE, KENTUCKY

CRAIG GREENBERG

RACHAEL A. HAMILTON

Louisville Metro Air Pollution Control District Notice of Public Comment Period and Hearing

What action is the District taking?

The Louisville Metro Air Pollution Control District is opening a public comment period June 1, 2025, regarding an RFG Opt-Out Request Including a Non-Interference Demonstration for the Kentucky Counties of Jefferson, Bullitt, and Oldham.

Summary of proposal

The Governor of Kentucky has petitioned the U.S. Environmental Protection Agency (EPA) requesting to opt-out of the reformulated gasoline (RFG) program in the Louisville RFG Area, which includes Jefferson County, as well as parts of Bullitt and Oldham Counties. If approved, Jefferson, Bullitt, and Oldham Counties would no longer be required to use reformulated gasoline, a type of fuel originally developed to burn cleaner than conventional gasoline. Kentucky opted into the RFG program in the 1990s in an effort to improve air quality and meet the National Ambient Air Quality Standards (NAAQS). However, conventional gasoline has significantly improved and the difference between RFG and conventional gas has narrowed. The District is requesting EPA's approval of its proposed Non-Interference Demonstration showing that the removal of RFG will not impact the area's ability to meet air quality standards, as the area will be replacing the emission reduction benefit from RFG with permanent, enforceable emission reductions due to the closure of LG&E Mill Creek Unit 1.

How can I comment on this action?

You can comment in writing using the online public comment form, or by mail to Regulatory Coordinator, Lauren Robbins, Louisville Metro Air Pollution Control District, 701 W. Ormsby Ave., Suite 303, Louisville, Kentucky 40203, until 5:00 p.m., July 2, 2025. Verbal statements will be accepted at a public hearing, if one is requested, via Video Teleconference, with an option to attend in the Edison Room of the Edison Center at 701 West Ormsby Avenue, Louisville, Kentucky 40203, on Wednesday, July 2, 2025, at 6:00 PM. The District invites the public to attend. Instructions for attending the meeting via video teleconference will be posted on the District's events web page before the hearing and emailed to subscribers of APCD Public Notices.

Where can I get a copy of the proposed action?

A paper copy of the proposal may be requested from the District by contacting us at (502) 574-6000. Please specify that you are calling about the *RFG Opt-Out Request Including a Non-Interference Demonstration for the Kentucky Counties of Jefferson, Bullitt, and Oldham,* provide your name and mailing address, and allow time for processing and delivery via USPS. An electronic copy of the proposal may be downloaded from the District's website.

What is the timeline for this action? The comment period begins June 1, 2025, and runs through July 2, 2025. Verbal comments will be accepted at a public hearing, if requested, at 6:00 PM, July 2, 2025.