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BARR

Submitted via e-mail

July 27, 2023

Matt Allen
Project Manager, LEED Green Associate
ARCO/Murray
Carlson Environmental Chicago Division
113 N May St
Chicago, Illinois 60607

Re: Regulatory Applicability of City of Chicago Zoning Ordinance 17-9-0117-G.1 to the 424 N. Wood St. Re-Development Project

Dear Mr. Allen:

After reviewing your project, Barr has prepared an applicability determination for the 424 N Wood St. re-development project (Project) with respect to the City of Chicago's Air Quality Impact Evaluation. (17-9-0117-G.1 of the Municipal Code of Chicago). The Project will repurpose the interior of an existing building for art storage and include minimal increases in PM and NO_X emissions from passenger vehicle traffic. There are no stationary emission sources associated with the project. This type of updated use is required to be evaluated under 17-13-0800, Site Plan Review. As part of the site plan review, applicable "Use Standards" are included below:

> *17-9-0117-G* ***Waste-Related Uses, Recycling Facilities, Intensive Manufacturing, Production and Industrial Service Uses, Warehousing, Wholesaling and Freight Movement, Container Storage, Freight Terminal, Outdoor Storage of Raw Material as a Principal Use, Coke & Coal Bulk Material Uses, Windrow Composting and Manganese-bearing Material Operation Uses*** (emphasis added). *All such newly-established uses or existing uses that change or increase their area, bulk, or function are subject to the following site plan review criteria, in addition to the requirements of Section 17-13-0800:*
>
> > *17-9-0117-G.1 The site plan review application must include a traffic study and an air quality impact evaluation, and the Commissioner of the Chicago Department of Transportation must review each traffic study and the Commissioner of the Chicago Department of Public Health must review each air impact evaluation, and the Commissioners shall provide an opportunity for public review and comment on each traffic study and air impact evaluation, and forward their joint written recommendation on the proposal to the Zoning Administrator before a zoning certification may be issued* (emphasis added).

The ordinance is clear that all applications must include the traffic study and air quality impact evaluation. However, the Chicago Department of Public Health (CDPH) issued guidance for these studies -- Air

Quality Impact Evaluation Interim Guidance (September 2021). Section 2.3.1 of the guidance provides some discretion related to which project require an air quality impact study. The section in question is included below.

2.3.1 Traffic Studies

Section 17-9-0117-G of the Municipal Code of Chicago requires traffic studies to be prepared. Traffic studies must meet the Chicago Department of Transportation (CDOT) Policies and Guidelines for Traffic Impact Studies (TIS).

Air quality impact evaluations will be required of projects that meet the following criteria:

- **Proposed projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;**
- **Proposed new facilities that have a significant number of diesel vehicles congregating at a single location; and**
- **Proposed expansion of existing facilities that significantly increase the number of diesel vehicles congregating at a single location.**

The guidance specifically identifies intersections impacted by the project with level of service as D, E, and F along with any increases in potential emissions from diesel vehicles as required to complete an air quality impact evaluation. To that end, a project without additional diesel vehicles as part of its operation or not contributing to increased limited delay should be interpreted as not requiring an air quality impact evaluation. Based on the modeling guidance along with Section 17-9-0117-G.1's air quality impact evaluation requirement, it seems the focus was to ensure that large bulk warehousing development with a significant number of diesel-powered vehicles or increasing delays in already delayed intersections were not posing a potential risk to existing communities.

The Project traffic study estimates an increase of 8 passenger vehicles and no diesel vehicles associated with the operation of the development. Additionally, the level of service (LOS) for the intersections around the site have limited delays (i.e., LOS – A, B, or C).

Based on the applicable ordinance and the CDPH guidance, the 424 N Wood St. Project does not increase passenger vehicle traffic in congested intersections, does not include diesel vehicles, and is not required to complete an air quality analysis.

Notwithstanding the rationale in the guidance, the very limited amount of Project traffic and the very short traffic delays increase particulate matter (PM) and oxides of nitrogen (NO_X) emissions by a very small amount as shown in Table 1.

Table 1 Project Emission Estimates

Pollutant	Project Total (on-road + idling)		
	Emissions (gram/second)	Emissions (pound/hour)[1]	Emissions (ton/year)[2]
NO_X	8.56E-06	6.79E-05	1.77E-05
PM_{10}	4.60E-07	3.65E-06	9.50E-07
$PM_{2.5}$	4.07E-07	3.23E-06	8.40E-07

[1] Emissions occur from 7:45am - 8:45am and 4:30pm – 5:30pm
[2] Annual emissions conservatively assume 2 hour/day x 5 day/week x 52 week/year

The total Project emission calculations include the sum of idling and on-road passenger vehicle exhaust based on the peak hour vehicle trips within 0.5 miles of the project and maximum overall delay times from the project traffic study. Also, as noted above, there are no stationary source emissions from the project (i.e. no stationary combustion or fugitive sources).

As detailed above, the Project emissions are essentially zero (NO_X emissions are 0.035 pound/year). For comparison, a single 1,500 ft^2 home in Chicago with a gas-fired heater using an ultra-low NOx burner emits more than 1 pound NO_X/year. Based on our experience, any air quality impact with these project emissions using standard modeling methods would be much less than the Significant Impact Level (SIL) for the applicable pollutants.

Additionally, another Chicago zoning project with an approved traffic study and air quality impact evaluation had emission rates and air quality impacts as shown in Table 1 (along with emissions from this project and percentage of approved project emissions).

Table 2 Project Emission Compared to Previous Project Emission / Impacts

Pollutant	Other project emissions (gram/second)	Other project modeled impact (% SIL)	Project Emissions (gram/second)	424 N. Wood Project / Other Emissions (%)
NO_X	1.20E-01	58%	8.56E-06	0.007%
PM_{10}	3.35E-03	2.5%	4.60E-07	0.014%
$PM_{2.5}$	3.08E-03	14%	4.07E-07	0.013%

While every project is unique with different modeled circumstances, the previously approved project included many more on-road vehicle and idling emissions calculated in the same manner as this project; but is functionally representative of this modeled circumstance.

Based on these emission and modeled result comparisons along with the guidance provided by CPDH, we conclude that a detailed air quality impact evaluation should not be required for this project.

If you have questions or need additional information, please feel free to contact us.

Sincerely,

Jennifer Koenen
Senior Environmental Scientist

Jeffry D. Bennett, PE
Vice President

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