

Public Comment
On
Proposed Bridge Industrial Development
April 27, 2023 – May 5, 2023

Dear Deerfield Planning Committee & Community Residents of Deerfield and Riverwoods,

My name is Mateo Benavides. I am a 5th grader at South Park Elementary School and I live on Wilmot Rd. in Deerfield, Illinois and here are some reasons why you & I should vote no for building the semi-truck holder facility in Deerfield and Riverwoods.

The first reason is it can affect global warming, our planet and our lives! According to Climate Nexus.org, “28% of global warming is caused by semi-truck diesel exhaust.” This can affect us and nearby towns because the more semi-trucks that come, the more exhaust there is in the air. We don’t want to walk or ride bikes to school and smell diesel exhaust! The proposed facility will also be by a club called Tennaqua where I go to camp, play tennis and swim. The kids do not want to inhale diesel exhaust while they exercise!

The second reason is it can cause traffic. The road the trucks will go in and out merges onto Deerfield Road and Sanders. The kids who live in the area do not want to be nervous about semi-trucks not seeing them. Traffic down Wilmot Road and surrounding streets will increase, creating more safety risks for kids crossing the street to go to school or the parks. For example, I am going to Caruso Middle School next year and I have to cross Deerfield Road. Also buses leaving Thorngate will have to wait for in and out coming semi-trucks, which will make some kids late for school.

And the final reason is we can lose population because of health reasons. Even though some may say that this facility will lower taxes, people can really get sick. For example, according to Healthline.com, “When you are breathing in large amounts of diesel exhaust, you can get lung and bladder cancer, chronic obstructive pulmonary disease and asthma!” In addition, according to NIH.gov, “Diesel has toxic potential and it can affect multiple organs. Exposure can occur after ingestion, inhalation, or through the dermal route.” So, if there is so much exhaust in the air, kids will be exposed to all the fumes on a regular basis. If we don’t have clean air, people will not want to move into Deerfield and Riverwoods and some may move out of Deerfield and Riverwoods. I would be very sad if I had to move out of Deerfield.

So in conclusion, if you vote **no** then you can save the community and the environment!

Sincerely,

Mateo Benavides

Daniel Nakahara, AICP

From: Jason Keith <jkeith324@gmail.com>
Sent: Thursday, April 27, 2023 5:53 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Baxter Plans - Concern

[EXTERNAL EMAIL]

To Whom It May Concern:

I am a Deerfield resident, and writing to express my concern about the potential plans for a Bridges warehouse in our village.

While I understand the financial benefits of activating this land with a new commercial tenant, this is not the right solution. The plan indicates such a high volume of daily trucks that causes pollution, high traffic, and noise to name a few.

I would be interested to understand how the benefits outweigh the seemingly numerous negative effects of bringing this warehouse to our town?

- How will this addition to our community support the residents and encourage population growth?
- How will this help differentiate Deerfield as a “destination town” over our neighbors in Northbrook, Highland Park.

From all I have read in the plan, the negatives seem far worse than benefits, which appear to only be financial. I strongly request that the commission prevent this plan from moving forward.

Thank you,
Jason Keith

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Jason Keith
847.772.8847
jkeith324@gmail.com

Daniel Nakahara, AICP

From: Steve Kim <Steve.kim@augustusglobal.com>
Sent: Thursday, April 27, 2023 7:03 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge Redevelopment

[EXTERNAL EMAIL]

To: Deerfield Planning Commission
From : Lincoln Kim 5th grader at South Park Elementary School and resident of the village of deerfield
Re: Planned Bridge Redevelopment

Should we vote yes or no for the industrial facility being built in our residential community? I think no. This idea could be very detrimental to our neighborhoods, the air we breathe, traffic, wildlife, and safety of the children.

Building this industrial facility can be detrimental to surrounding neighborhoods such as Thomgate, Deerfield Golf Club, and the Caruso area . According to [Ceds.Org](#), an environmental and community organization, said that "adverse diesel exhaust and health concerns are big concerns for nearby neighborhoods." Air pollution can affect anyone who is within 2.5 miles of the complex. Disturbing noises could cause sleep troubles in the neighborhoods nearby. And health concerns from the diesel exhaust could happen. For example, [Ok.Gov](#), a government and safety website, said that chronic coughs, decreased lung function, increased risk of lung cancer, and a higher risk of premature death to babies may all happen due to diesel exhaust. [Oregon.Com](#), another website found out that aggravated asthma can also happen especially among children. [Usadef.com](#), wrote a safety sheet and found out that diesel exhaust can affect eyes, skins, and especially the respiratory system. Finally, rhe large industrial semi truck warehouse which moves 600 trucks a day will cause traffic around the area. Because this is one of the only big semi truck companies in Deerfield, people may not be used to the traffic and according to [Fleetlogging.Com](#), a traffic website, said that the risk of road rage and a short temper may increase on the highways.

Being someone who lives in that vicinity-and knowing many people who live around the industrial warehouse I strongly believe that this industrial development should not happen due to air pollution, traffic, safety of children and health concerns.

Steve Kim
President and General Counsel
Augustus Global Ventures LLC
350 W. Hubbard
Suite 210
Chicago, IL 60654



Daniel Nakahara, AICP

From: John Lyons <jlyons@jlfmi.com>
Sent: Thursday, April 27, 2023 7:13 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Proposed Bridge Industrial/Baxter Labs project

[EXTERNAL EMAIL]

Deerfield Plan Commissioners:

Rather than repeat what has been reiterated in many of the letters to you opposing the potential redevelopment plan regarding the Baxter Labs property, I will simply make the following points:

- It appears that the estimates of potential truck traffic, egregious as they appear to our communities, reflect only what is projected to be the case initially and don't consider any growth which of course would only exacerbate the many negative effects of traffic, pollution, etc
- The comparison of the amount of current Baxter traffic with anticipated truck traffic resulting from the Bridge Industrial project appears misleading. I assume most of Baxter's traffic takes place during early morning and late afternoon. I would also assume that the projected truck traffic would take place throughout the day – and evenings – resulting in a noticeable and negative change to the character of local traffic
- In addition to the pollution, additional traffic and visual problems that would result from this development, a change in the permanent character to the ambience of Deerfield and Riverwoods would indeed be tragic.

I respectfully request that the Village look further for a more acceptable alternative for the subject area.

John Lyons
310 Forsythia Drive
Deerfield

Daniel Nakahara, AICP

From: Drew <drsuss245@gmail.com>
Sent: Thursday, April 27, 2023 4:46 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Baxter redevelopment

[EXTERNAL EMAIL]

Board members,

Please be advised him that I live within 2 1/2 miles of the proposed side of the logistics complex. The bridge international is planning for the Baxter international complex.

I am unalterably opposed and encourage you to reject this proposal and Baxter find other more family oriented ways of using this land.

Traffic is already heavy enough especially during rush hour. And the noise from the freeway ever present. More drugs are not more desirable.

Thank you for your time and attention.

Daniel Nakahara, AICP

From: kd@dixler.com
Sent: Friday, April 28, 2023 8:11 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Diesel Exhaust and Urinary Bladder Cancer
Attachments: Diesel Exhaust-BladderCancerStudy-1-s2.0-S016041201930282X-main.pdf

[EXTERNAL EMAIL]

Please confirm that this report is made a part of the comments.

This study's conclusions provide evidence that diesel fuel exhaust exposure increases the risk of urinary bladder cancer ["UBC"] in humans. The incorporation of quantitative historical information combined with pathologic characteristics of tumors and molecular epidemiology studies of exposed workers may provide evidence of biologic plausibility that this association is causal.

In addition, what follows is a reasonable concern.

The additional diesel fuel emissions and noise around this traffic corridor is likely to create a nuisance. This can impact other already zoned areas besides residential properties. The proposal uses vague terms like "in excess of 600 trucks per day."

The presence of such an extremely large distribution center has the potential of creating a nuisance for both the Discover and Horizon/AmGen Campuses. The emissions from a large distribution center can provide the basis, or an excuse, for those organizations to depart from the area. This will create more vacant land opening challenges to rezoning. Efforts ought to be made to work with Horizon/AmGen, rather than Bridge Industrial. AmGen is currently located in Thousand Oaks, California. AmGen may benefit from an exodus to the 107 acres of land directly adjacent to the Horizon Campus.

Such an exodus of both Discover and Horizon can have a devastating effect on the region. This can lead to more industrial organizations seeking rezoning and razing of those vacated properties.

Note that the potential nuisance posed by the nearby Pantone Facility, under construction in Northbrook, remains unclear.

Sincerely,

Kevin L. Dixler
320 Forsythia Dr.



Diesel exhaust and bladder cancer risk by pathologic stage and grade subtypes

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ABSTRACT

Background: The International Agency for Research on Cancer (IARC) classifies diesel engine exhaust as carcinogenic to humans based on sufficient evidence for lung cancer. IARC noted, however, an increased risk of bladder cancer (based on limited evidence).

Objective: To evaluate the association between quantitative, lifetime occupational diesel exhaust exposure and

Abbreviations: CI, confidence intervals; IHC, immunohistochemical; IARC, International Agency for Research on Cancer; NEBCS, New England Bladder Cancer Study; ORs, odds ratios; REC, respirable elemental carbon; SBCS, Spanish Bladder Cancer Study; UBC, urothelial cell carcinoma

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risk of urothelial cell carcinoma of the bladder (UBC) overall and according to pathological subtypes.

Methods: Data from personal interviews with 1944 UBC cases, as well as formalin-fixed paraffin-embedded tumor tissue blocks, and 2135 controls were pooled from two case-control studies conducted in the U.S. and Spain. Lifetime occupational histories combined with exposure-oriented questions were used to estimate cumulative exposure to respirable elemental carbon (REC), a primary surrogate for diesel exhaust. Unconditional logistic regression and two-stage polytomous logistic regression were used to calculate odds ratios (ORs) and 95% confidence intervals (CIs), adjusting for smoking and other risk factors.

Results: Exposure to cumulative REC was associated with an increased risk of UBC; workers with cumulative REC > 396 $\mu\text{g}/\text{m}^3\text{-years}$ had an OR of 1.61 (95% CI, 1.08–2.40). At this level of cumulative exposure, similar results were observed in the U.S. and Spain, OR = 1.75 (95% CI, 0.97–3.15) and OR = 1.54 (95% CI, 0.89–2.68), respectively. In lagged analysis, we also observed a consistent increased risk among workers with cumulative REC > 396 $\mu\text{g}/\text{m}^3\text{-years}$ (range of ORs = 1.52–1.93) for all lag intervals evaluated (5–40 years). When we accounted for tumor subtypes defined by stage and grade, a significant association between diesel exhaust exposure and UBC was apparent (global test for association $p = 0.0019$).

Conclusions: Combining data from two large epidemiologic studies, our results provide further evidence that diesel exhaust exposure increases the risk of UBC.

1. Introduction

In 2012, the International Agency for Research on Cancer (IARC) classified diesel engine exhaust as carcinogenic to humans (Group 1) based on sufficient positive evidence for lung cancer. The working group also noted a positive association between diesel exhaust and risk of bladder cancer based on limited evidence in humans (Benbrahim-Tallaa et al., 2012; IARC, 2014). The link between diesel exhaust and bladder cancer risk has largely come from studies of specific occupations where diesel exhaust exposure was inferred (including truck drivers, mechanics, railroad workers, and operators of heavy equipment). Boffetta & Silverman conducted a meta-analysis of diesel exhaust exposure among occupations with high exposure and found that the summary relative risks for bladder cancer were 1.23 (95% CI, 1.12–1.36) for any exposure and 1.44 (95% CI, 1.18–1.76) for high exposure to diesel exhaust (Boffetta and Silverman, 2001). Few studies have been able to go beyond job title to assess lifetime individual diesel exhaust exposure (IARC, 2014), and none have incorporated quantitative estimates for respirable elemental carbon (REC), the primary surrogate for diesel exhaust exposure (Birch and Cary, 1996). Further, little is known about the mechanisms by which diesel exhaust might lead to bladder cancer. Although new molecular subtypes of bladder cancer are being uncovered, alterations in TP53 and FGFR3 still delineate the two major subtypes, where FGFR3 alterations are commonly found in non-muscle invasive bladder cancer and TP53 alterations are common in the more aggressive subtype, muscle-invasive bladder cancer (stage T2+) (Knowles and Hurst, 2015).

Here we examined the association between quantitative, lifetime occupational diesel exhaust exposure and risk of urothelial cell carcinoma (UBC) in two large case-control studies in the United States (U.S.) and Spain. In addition, we evaluated heterogeneity in the diesel exhaust-UBC relationship by tumor subtypes including stage, grade, as well as expression and mutation of TP53 and FGFR3.

2. Methods

2.1. Study populations

Data from two UBC case-control studies were included in the current analysis. The New England Bladder Cancer Study (NEBCS), a large population-based case-control study, included 1213 cases and 1418 controls from three New England states. Cases in the NEBCS were all patients with histologically confirmed UBC newly diagnosed between 2001 and 2004 among residents of Maine, New Hampshire, and Vermont, ages 30 to 79 years. A total of 1213 UBC patients were ascertained through hospital pathology departments and hospital and state cancer registries and interviewed (65% of eligible cases were interviewed). Control subjects were selected randomly from state

Department of Motor Vehicle records (age 30–64 years) and Centers for Medicare and Medicaid Services beneficiary records (age 65–79 years), frequency matched to case patients on state, sex, and five-year age group at diagnosis/interview. A total of 1418 (594 Department of Motor Vehicle, 824 Centers for Medicare and Medicaid Services) control subjects (65% of eligible Department of Motor Vehicle and 65% of eligible Centers for Medicare and Medicaid Services control subjects) were interviewed.

The Spanish Bladder Cancer Study (SBCS), a large hospital-based case-control study of 1219 cases and 1271 controls, was conducted in 18 hospitals from 5 areas in Spain. Cases in the SBCS were patients newly diagnosed with histologically confirmed UBC in 1998–2001, aged 21–80 years. A total of 1219 cases were interviewed (84% of eligible cases). For each case, one control was selected and individually matched on age (within 5 years) at diagnosis/interview, gender, race/ethnicity and hospital. Controls were selected from patients admitted to the same hospital around the same time as the cases for diseases/conditions unrelated to the exposures under study. A total of 1271 controls were interviewed (88% of eligible controls).

A standardized histopathology review to assign stage and grade was carried out for each study by a study pathologist (A.S. for NEBCS and J.L. and Y.A. for SBCS). Tumors were staged according to TNM criteria of the American Joint Commission on Cancer (Sobin, 2009; Sobin, 2002) and for grade according to both the 1973 WHO and 2004 WHO/ISUP criteria (Eble et al., 2004; Mostfi, 1973). For both studies, participants were interviewed by trained interviewers using the same instrument, a computer-assisted personal interview. We obtained detailed information on demographics, use of tobacco products, lifetime occupational histories, family history of cancer, dietary factors, and residential histories.

The current analysis includes 1944 newly diagnosed UBC cases and 2135 controls among eligible males with occupational histories. Women were excluded due to few diesel-exposed jobs. Representative high diesel-exposed jobs among men were heavy and tractor-trailer truck drivers, bus, truck and heavy equipment engine mechanics and repairers, and material moving equipment operators (e.g., grader, dozer, and scraper and industrial truck and tractor). Analytic exclusions for each study were as follows: in the NEBCS, of the 1213 interviewed cases, we excluded 20 patients who were found not to have UBC based on a pathologist's review, 23 patients with non-urothelial carcinomas and 273 female patients, leaving 897 cases for analysis. Among the 1418 interviewed controls, we excluded 9 participants based on incomplete work histories, and 372 females, leaving 1037 controls for analysis. In the SBCS, among 1219 interviewed cases, we excluded 16 patients with non-urothelial carcinomas, 36 with incomplete work histories and 120 female patients, leaving 1047 cases for analysis. Among the 1271 interviewed controls, we excluded 50 participants based on incomplete work histories and 123 females, leaving 1098

controls for analysis.

All participants provided written consent. The study protocol was approved by all appropriate institutional review boards.

2.1.1. Tumor markers

Formalin-fixed paraffin-embedded tumor tissue blocks assembled as tissue microarrays (TMAs) from UBC cases enrolled in the Maine and Vermont components of the NEBCS and individual slides in the SBCS were used to examine protein expression of TP53 and FGFR3. Details of the immunohistochemical (IHC) methods for each marker have been published elsewhere (for NEBCS: p53 (Lenz et al., 2012) and FGFR3 (Figueroa et al., 2015); for SBCS: p53 (Balbas-Martinez et al., 2013) and FGFR3 (Amaral et al., 2012)). Antibodies used for P53 and FGFR3 expression were the same in both studies. Immunohistochemical scoring for P53 and FGFR3 expression in both the NEBCS and SBCS have been previously described (Lenz et al., 2012; Figueroa et al., 2015; Balbas-Martinez et al., 2013; Amaral et al., 2012). Briefly, for TP53, quantitative scoring models were used to compute the percentage of positive cells. In addition, immunoreactivity was scored according to levels of intensity and a histoscore was calculated as the product of intensity and percentage of positive cells. FGFR3 expression was found to be both cytoplasmic and membranous. Cells were scored according to staining intensity and location (NEBCS) as well as the proportion of reactive cells (SBCS).

Serial sections from tumor blocks (5- μ m in NEBCS and 10- μ m in SBCS) were cut to extract nucleic acids for characterization of TP53 and FGFR3 somatic mutations. In the NEBCS, tumor regions as annotated on digital images were hand macrodissected from three 5 μ m sections and placed into 1.5 ml microcentrifuge tubes. DNA was isolated using the phenol-based AutoGenprep 245 T Animal Tissue DNA Extraction Kit (Autogen) according to the manufacturer's method. Yield and purity were determined by NanoDrop 1000 spectrophotometer (Thermo Fisher Scientific, Waltham, MA). In the SBCS, areas containing > 50% tumor cells were manually macrodissected from three to five consecutive 10- μ m sections and DNA was extracted using the DNeasy tissue kit (Qiagen GmbH, Hilden, Germany). Exons 7, 10, and 15 of FGFR3 and Exons 5 to 8 of TP53, which harbor the majority of mutations observed in bladder tumors, were amplified and sequenced using the SnapSHOT assay (for 11 known FGFR3 mutations) or double stranded Sanger Sequencing using Big Dye v.3.1 (Thermo Fisher Scientific) in both studies (described elsewhere) (Balbas-Martinez et al., 2013; Hernandez et al., 2005; Hafner et al., 2006).

In the current analysis, immunophenotype was dichotomized as follows: "P53 IHC" ($\leq 5\%$ of positive cells and $> 5\%$ positive cells), "P53 Histoscore" (greater and less than the median histoscore), "FGFR3 IHC" (high expression/strong staining vs. intermediate/weak). Mutation status ("TP53 Mut" and "FGFR3 Mut") was dichotomized as the presence or absence of any observed mutation.

Tumor characteristics were available on a subset of all analytic cases (58.8% of cases for P53 immunohistochemistry, 21.7% of cases for TP53 mutation, 44.4% of cases for FGFR3 mutation, and 46.4% of cases for FGFR3 immunohistochemistry).

2.2. Lifetime occupational histories and diesel exhaust exposure assessment

The main metric of analysis in the current study was cumulative respirable elemental carbon (REC) exposure. The cumulative exposure calculation was limited to jobs with a probability of exposure $\geq 50\%$ (jobs where the estimated proportion of workers exposed to diesel exhaust was $\geq 50\%$). This metric was calculated by summing the product of intensity of exposure, frequency of exposure and duration of exposure over all jobs. Exposure intensity was assessed on a continuous scale as the estimated average REC exposure level ($\mu\text{g}/\text{m}^3$) for a given job based on an extensive review of the diesel exhaust occupational health literature that identified diesel-exposed tasks, jobs, industries, and secular changes in the prevalence of diesel engine use (Pronk et al.,

2009). Frequency (hours/week) and duration (years) of exposure were collected in both studies using lifetime occupational histories (all jobs a subject held for at least 6 months since age 16) (Colt et al., 2011; Samanic et al., 2008). In the occupational histories, participants were queried about location (indoor/outdoor), job dates, activities performed, products/services made/provided, and equipment/chemicals handled. For each job, two additional questions were asked about working near engines or about smelling engine exhaust, including diesel. Additional exposure-oriented questions were asked to obtain detailed information on diesel exposure for subjects responding "yes" to the engine questions and for those in jobs or industries with potential for diesel exhaust.

In the NEBCS, an industrial hygienist blindly assigned probability and intensity of diesel exposure for each job (while frequency and duration came from direct participant response). Based on the NEBCS, decision rules were extracted from the industrial hygienists estimates and questionnaire response patterns using a classification tree model (CART) in order to obtain estimates of probability ($< 5\%$, 5–49%, 50–79%, $\geq 80\%$), intensity (< 0.25 , 0.25 to < 5 , 5 to < 20 , and $\geq 20 \mu\text{g}/\text{m}^3$ REC), and frequency (< 0.25 , 0.25– < 8 , 8– < 20 , ≥ 20 h/week) of diesel exhaust exposure. The decision rules from the NEBCS were then applied to questionnaire response patterns in the SBCS in order to obtain estimates of probability, intensity, and frequency of exposure to diesel exhaust (Friesen et al., 2016). An additional focused expert review of a subset of jobs was employed in the SBCS when we were less confident in the classification tree models' estimates or the classification tree estimates of different metrics were discordant.

A list of the main job titles contributing to diesel exposure in the two study populations is provided in Appendix A.1.

2.3. Statistical analysis

Unconditional logistic regression was used to calculate odds ratios (ORs) and 95% confidence intervals (CIs) for the relationship between diesel exhaust and UBC. Models were adjusted for age, race, study, smoking, and non-diesel exposed high-risk occupations for UBC (Silverman et al., 2018). Exposure categories were defined in quartiles with the top quartile further divided at the > 75 –90th percentile, > 90 –95th percentile, > 95 th percentile based on the distribution of exposure in the controls. We also evaluated the risk of bladder cancer for cumulative REC exposure by decade of first diesel exposed job, as well as by various lag periods (5–40 years). We calculated tests for linear trend using the Wald test, treating the median value for each category (including unexposed) among control subjects as continuous. P-values for interaction were computed by comparing nested models with and without the cross-product terms based on a likelihood ratio test.

We used a novel two-stage polytomous logistic regression model (Zhang et al., 2018) as modified from Chatterjee (Chatterjee, 2004) to evaluate the relationship between diesel exhaust and UBC risk while assessing heterogeneity by tumor subtypes as defined by stage (Ta, T1, T2+), grade (G1, G2, G3), p53 and FGFR3 immunohistochemical (IHC) phenotype (positive vs. negative expression, see supplementary methods for dichotomization) and TP53 and FGFR3 somatic mutations (dichotomized as the presence/absence of mutation). This method allows for efficient testing of exposure-disease associations in the presence of tumor subtype heterogeneity defined by multiple disease characteristics, while accounting for multiple comparisons and missing data on tumor markers/features. The model provides a global test for association (diesel exhaust-UBC) in the presence of heterogeneity by tumor features, as well as individual tests for heterogeneity of each tumor marker, adjusting for the other markers in the model. In the current analysis, we fitted separate models for each tumor marker (TP53 and FGFR3) with stage and grade. The final model included only the significant tumor markers, stage and grade.

3. Results

Table 1 shows the characteristics of male cases of UBC and controls in both studies. Cases who were exposed to diesel exhaust had a median of 26 years of exposure while controls had a median of 27 years of exposure; cumulative REC exposure among controls was more than twice as high in the SBCS compared to the NEBCS. Compared with cases from the NEBCS, incident tumors of cases in the SBCS were more likely to be muscle-invasive (23.0% vs. 13.2%) and have a higher grade.

No significant associations between ever exposure, duration (alone), or intensity of exposure (alone) and risk of bladder cancer were observed (data not shown). Table 2 shows the ORs and 95% CIs for cumulative REC exposure, by study and stratified by smoking status. Cumulative REC was associated with an increased risk of UBC, with the highest level of cumulative REC > 396 $\mu\text{g}/\text{m}^3\text{-years}$ having an OR of 1.61 (95% CI, 1.08–2.40) compared to unexposed subjects ($p\text{-trend} = 0.08$). At this level of cumulative exposure, nonsignificant, elevated risks were observed in both the NEBCS (OR = 1.75; 95% CI, 0.97–3.15) and SBCS (OR = 1.54; 95% CI, 0.89–2.68). Among never smokers, we observed a trend in risk with increasing cumulative REC ($p\text{-trend} = 0.05$); subjects with levels of cumulative REC > 254 $\mu\text{g}/\text{m}^3\text{-years}$ had an OR of 1.94 (95% CI, 0.91–4.12), while little or no excess risks were seen among former and current smokers (Table 2). The p -value for interaction between diesel exhaust and smoking among all participants was not statistically significant ($p = 0.49$), although evidence of an interaction was more pronounced in New England than in Spain (p -value for interaction in NEBCS = 0.14 and SBCS = 0.79).

Time-period analyses by decade of first diesel exhaust-exposed job showed a statistically significant increased risk among heavily exposed men who were first exposed in the 1950s in both studies (overall cumulative REC > 396 $\mu\text{g}/\text{m}^3\text{-years}$: OR = 1.97, 95% CI, 1.05–3.72)

(Table 3). To accommodate this secular effect, we estimated the exposure-response by various lag intervals (Table 4). We observed a consistent positive association between cumulative REC > 396 $\mu\text{g}/\text{m}^3\text{-years}$ (vs. unexposed) and bladder cancer risk for all lag intervals evaluated: lagged 5-years, OR = 1.52, 95% CI, 1.01–2.29; lagged 10-years, OR = 1.65, 95% CI, 1.07–2.55; lagged 15-years, OR = 1.73, 95% CI, 1.10–2.71; lagged 20-years, OR = 1.93, 95% CI, 1.19–3.15; lagged 25-years, OR = 1.83, 95% CI, 1.06–3.18; lagged 30-years, OR = 1.79, 95% CI, 0.93–3.45; lagged 35-years, OR = 1.92, 95% CI, 0.85–4.31; lagged 40-years, OR = 1.66, 95% CI, 0.68–4.05. In contrast, a gradient in risk with increasing cumulative REC was only apparent when exposure was lagged 40 years.

After controlling for stage and grade using the two-stage regression model, we observed no heterogeneity in the relationship between diesel exhaust exposure and UBC when considering tumor subtypes characterized by expression or mutation of *TP53* and *FGFR3* (see Appendix A.2 for all *TP53* and *FGFR3* case-case parameters $p > 0.05$). When we account for heterogeneity in tumor subtypes as defined by stage and grade alone, we observed a significant association between diesel exhaust exposure and UBC (global test for association for diesel exhaust exposure and UBC in the presence of heterogeneity by stage and grade: $p = 0.0019$; global test for heterogeneity: $p = 0.0196$). When we explored the increased risk associated with cumulative REC by stage (Ta, T1, T2+) and grade (G1, G2, G3/G4), we observed a consistent association between cumulative REC across stage and grade categories (Fig. 1). The increased risk associated with cumulative REC by pathologic stage was stronger among those with muscle-invasive bladder cancer: (T2 + OR = 2.03 (95%CI, 1.11–3.74), $p = \text{trend} = 0.014$ as well as for those with low grade tumors (G1, OR = 2.08 (95%CI, 1.28, 3.38), $p\text{-trend} = 0.002$ (Appendix A.3 and Fig. 1).

Table 1

Descriptive characteristics of male UBC cases and controls in the New England and Spanish Bladder Cancer Studies.

| Characteristic | Total | | New England | | Spain | |
|---|----------------------------|------------------------------|--------------------------|-------------------------------|----------------------------|-------------------------------|
| | Cases n (%) N = 1944 | Controls n (%)N = 2135 | Cases n (%)N = 897 | Controls n (%) N = 1037 | Cases n (%) N = 1047 | Controls n (%) N = 1098 |
| Age | | | | | | |
| < 65 | 762 (39.2) | 894 (41.9) | 377 (42.0) | 421 (40.6) | 385 (36.8) | 473 (43.1) |
| 65–74 | 796 (40.9) | 870 (40.7) | 340 (37.9) | 409 (39.4) | 456 (43.5) | 461 (41.9) |
| 75+ | 386 (19.9) | 371 (17.4) | 180 (20.0) | 207 (20.0) | 206 (19.7) | 164 (14.9) |
| Smoking Status | | | | | | |
| Never | 170 (8.7) | 534 (25.0) | 114 (12.7) | 307 (29.6) | 56 (5.3) | 227 (20.7) |
| Occasional | 54 (2.7) | 107 (5.0) | 19 (2.1) | 24 (2.3) | 35 (3.3) | 83 (7.6) |
| Regular | | | | | | |
| Former | 968 (49.8) | 1058 (49.6) | 484 (54.0) | 556 (53.6) | 484 (46.2) | 502 (45.7) |
| Current | 745 (38.3) | 429 (20.1) | 279 (31.1) | 149 (14.4) | 466 (44.5) | 280 (25.5) |
| Missing | 7 (< 1) | 7 (< 1) | 1 (< 1) | 1 (< 1) | 6 (< 1) | 6 (< 1) |
| Stage | | | | | | |
| Carcinoma in situ | 50 (2.6) | – | 50 (5.6) | – | 0 | – |
| Ta | 1215 (62.5) | – | 568 (63.3) | – | 647 (61.8) | – |
| T1 | 281 (14.5) | – | 159 (17.7) | – | 122 (11.7) | – |
| T2+ | 359 (18.5) | – | 118 (13.2) | – | 241 (23.0) | – |
| Grade | | | | | | |
| G1 | 712 (37.6) | – | 397 (44.3) | – | 315 (30.1) | – |
| G2 | 473 (25.0) | – | 176 (20.8) | – | 297 (28.4) | – |
| G3 | 664 (35.1) | – | 266 (31.4) | – | 398 (38.0) | – |
| Probability of diesel exposure | | | | | | |
| Unexposed | 760 (39) | 857 (40) | 240 (27) | 319 (31) | 520 (50) | 538 (50) |
| < 50% exposure probability | 258 (13) | 245 (12) | 154 (17) | 153 (15) | 104 (10) | 92 (8) |
| ≥ 50% exposure probability | 926 (48) | 1033 (48) | 503 (56) | 565 (55) | 423 (40) | 468 (43) |
| Duration of diesel-exposed jobs (median years, IQR) | 26 (9–45) | 27 (9–46) | 23 (8–48) | 24 (8–47) | 28 (11–43) | 29 (11–45) |
| Cumulative Diesel Exposure ($\mu\text{g}/\text{m}^3$ REC-years) (median, IQR) | 26 (6–96) | 26 (5–98) | 16 (3–85) | 15 (3–69) | 38 (10–112) | 39 (10–116) |

Percentages may not sum to 100 due to rounding.

Table 2
Odds ratios (ORs) and 95% confidence intervals (CIs) for cumulative REC exposure overall, by study and smoking status.

| Exposure Metric | Ca | | | Co | | | NEBCS | | | SBCS | | |
|--|------|-----|--------------------|------|-----|--------------------|-------|-----|--------------------|------|----|--------------------|
| | Ca | Co | Overall OR* 95% CI | Ca | Co | Overall OR* 95% CI | Ca | Co | Overall OR* 95% CI | Ca | Co | Overall OR* 95% CI |
| Cumulative REC ($\mu\text{g}/\text{m}^3\text{-years}$)[¶] | | | | | | | | | | | | |
| Overall | | | | | | | | | | | | |
| Unexposed | 760 | 857 | 1.0 | 240 | 319 | 1.0 | 520 | 538 | 1.0 | | | |
| > 0–5 | 225 | 258 | 1.01 (0.81, 1.27) | 161 | 186 | 1.08 (0.81, 1.45) | 64 | 72 | 0.86 (0.59, 1.26) | | | |
| > 5–25 | 232 | 258 | 0.96 (0.78, 1.20) | 128 | 140 | 0.95 (0.69, 1.3) | 104 | 118 | 1.00 (0.73, 1.36) | | | |
| > 25–98 | 241 | 258 | 1.09 (0.88, 1.35) | 101 | 124 | 0.90 (0.64, 1.25) | 140 | 134 | 1.28 (0.96, 1.71) | | | |
| > 98–254 | 126 | 154 | 0.95 (0.72, 1.24) | 62 | 69 | 1.00 (0.67, 1.50) | 64 | 85 | 0.91 (0.63, 1.33) | | | |
| > 254–396 | 36 | 53 | 0.81 (0.51, 1.29) | 19 | 22 | 1.04 (0.53, 2.05) | 17 | 31 | 0.69 (0.36, 1.30) | | | |
| > 396 | 66 | 52 | 1.61 (1.08, 2.40) | 32 | 24 | 1.75 (0.97, 3.15) | 34 | 28 | 1.54 (0.89, 2.68) | | | |
| p-trend | | | 0.08 | | | 0.09 | | | 0.33 | | | |
| Among Never Smokers | | | | | | | | | | | | |
| Unexposed | 71 | 226 | 1.0 | 42 | 117 | 1.0 | 29 | 109 | 1.0 | | | |
| > 0–25 | 42 | 142 | 0.81 (0.51, 1.29) | 34 | 104 | 0.83 (0.48, 1.44) | 8 | 38 | 0.84 (0.33, 2.14) | | | |
| > 25–254 | 25 | 93 | 1.03 (0.59, 1.78) | 13 | 41 | 0.96 (0.45, 2.07) | 12 | 52 | 1.11 (0.49, 2.49) | | | |
| > 254 | 14 | 27 | 1.94 (0.91, 4.12) | 8 | 11 | 2.47 (0.85, 7.17) | 6 | 16 | 1.66 (0.55, 5.04) | | | |
| p-trend | | | 0.05 | | | 0.07 | | | 0.31 | | | |
| Among Former Smokers | | | | | | | | | | | | |
| Unexposed | 364 | 410 | 1.0 | 126 | 153 | 1.0 | 238 | 257 | 1.0 | | | |
| > 0–25 | 216 | 258 | 0.96 (0.75, 1.23) | 151 | 179 | 0.95 (0.68, 1.33) | 65 | 79 | 0.95 (0.64, 1.40) | | | |
| > 25–254 | 179 | 186 | 1.22 (0.94, 1.58) | 85 | 106 | 1.02 (0.70, 1.50) | 94 | 80 | 1.44 (1.00, 2.08) | | | |
| > 254 | 50 | 50 | 1.25 (0.81, 1.91) | 26 | 23 | 1.53 (0.82, 2.86) | 24 | 27 | 1.05 (0.58, 1.91) | | | |
| p-trend | | | 0.19 | | | 0.14 | | | 0.61 | | | |
| Among Current Smokers | | | | | | | | | | | | |
| Unexposed | 295 | 171 | 1.0 | 65 | 44 | 1.0 | 230 | 127 | 1.0 | | | |
| > 0–25 | 185 | 97 | 1.12 (0.81, 1.55) | 99 | 32 | 1.79 (1.01, 3.17) | 86 | 65 | 0.81 (0.54, 1.22) | | | |
| > 25–254 | 155 | 102 | 0.91 (0.66, 1.26) | 62 | 42 | 0.87 (0.49, 1.53) | 93 | 60 | 0.93 (0.62, 1.40) | | | |
| > 254 | 37 | 23 | 1.00 (0.57, 1.78) | 17 | 11 | 1.04 (0.43, 2.50) | 20 | 12 | 1.03 (0.48, 2.21) | | | |
| p-trend | | | 0.77 | | | 0.46 | | | 0.82 | | | |
| p _{smoking} -interaction | 0.49 | | | 0.14 | | | 0.79 | | | | | |

Abbreviations: Odds ratio (OR), confidence interval (CI), Cases (Ca), Controls (Co), respirable elemental carbon (REC).

*Adjusted for age, race, study, smoking status, and non-diesel exposed high-risk occupations.

[¶]Cumulative REC categories defined by 25th (5 $\mu\text{g}/\text{m}^3\text{-years}$), 50th (25 $\mu\text{g}/\text{m}^3\text{-years}$), 75th (98 $\mu\text{g}/\text{m}^3\text{-years}$) with the top quartile further divided at the 90th (254 $\mu\text{g}/\text{m}^3\text{-years}$) and 95th percentile (396 $\mu\text{g}/\text{m}^3\text{-years}$) among exposed controls.

Table 3
Odds ratios and 95% confidence intervals for cumulative REC exposure by decade of first diesel exposed job.

| Cumulative REC ($\mu\text{g}/\text{m}^3\text{-years}$) [*] | Decade of 1st diesel exposed job [¶] | | | | | | | | | | | |
|---|---|-----|-------------------|-------|-----|-------------------|-------|-----|-------------------|-------|-----|-------------------|
| | < 1950 | | | 1950s | | | 1960s | | | 1970s | | |
| | Ca | Co | OR** 95% CI | Ca | Co | OR** 95% CI | Ca | Co | OR** 95% CI | Ca | Co | OR** 95% CI |
| Unexposed | 760 | 857 | 1.0 | 760 | 857 | 1.0 | 760 | 857 | 1.0 | 760 | 857 | 1.0 |
| > 0–25 | 35 | 34 | 1.11 (0.66, 1.86) | 150 | 155 | 1.08 (0.83, 1.42) | 115 | 132 | 0.88 (0.66, 1.18) | 83 | 109 | 0.84 (0.60, 1.17) |
| > 25–254 | 52 | 41 | 1.39 (0.89, 2.18) | 120 | 144 | 0.96 (0.72, 1.27) | 116 | 137 | 0.97 (0.73, 1.30) | 60 | 75 | 0.96 (0.66, 1.41) |
| > 254–396 | 8 | 15 | 0.63 (0.25, 1.55) | 12 | 16 | 0.93 (0.42, 2.03) | 6 | 11 | 0.67 (0.23, 1.97) | 8 | 9 | 0.84 (0.30, 2.39) |
| > 396 | 17 | 14 | 1.50 (0.71, 3.18) | 25 | 20 | 1.97 (1.05, 3.72) | 19 | 14 | 1.40 (0.67, 2.90) | 5 | 4 | 1.21 (0.29, 5.06) |
| p-trend | | | 0.44 | | | 0.08 | | | 0.51 | | | 0.96 |

*Exposure categories as unexposed, > 0–50th percentile, > 50–90th percentile, > 90–95th percentile, and > 95th percentile.

**Adjusted for age, race, study, smoking status, and non-diesel exposed high-risk occupations.

[¶]Estimates for 1980s and 1990s not shown due to few exposed cases.

4. Discussion

Findings from these two large, case-control studies show a significant positive association between heavy exposure to diesel exhaust and UBC risk, providing further evidence that diesel exhaust causes bladder cancer. These studies were designed, in part, to improve upon prior limitations in exposure assessment for diesel exhaust and fill in critical gaps in the literature linking this exposure to UBC by incorporating quantitative levels of REC based on expert assessment and lifetime occupational histories.

The link between diesel exhaust exposure and UBC risk was first suggested in diesel exhaust-exposed truck drivers in Detroit in 1983 (Silverman et al., 1983). Since then, several case-control studies

reported increased risk associated with employment in diesel-exposed occupations such as truck drivers, bus drivers, railroad workers and mechanics (IARC, 2014; Silverman et al., 1986). More convincing evidence comes from studies that have estimated risk for workers with known exposure to diesel exhaust, rather than inferring subjects were exposed because they held possible diesel-exposed jobs. In these studies, exposure to diesel exhaust is consistently related to increased risk of UBC in the range of 1.2–1.7 (Latifovic et al., 2015; Pesch et al., 2000; Richardson et al., 2007; Risch et al., 1988; Siemiatycki et al., 1994). This finding is in line with our finding of a 61% increase in risk for UBC at the high end of exposure. Results were consistent in the two studies, with slightly higher cumulative REC observed in Spain compared to New England due to differences in reported work patterns (median

Table 4
Odds ratios and 95% confidence intervals for cumulative REC exposure lagged by various intervals.

| Cumulative REC ($\mu\text{g}/\text{m}^3\text{-years}$)* | Ca | Co | OR** 95% CI |
|---|------|------|--------------------|
| Lag-5 years | | | |
| Unexposed | 773 | 869 | 1.0 |
| > 0–5 | 222 | 256 | 0.99 (0.79, 1.24) |
| > 5–25 | 233 | 263 | 0.95 (0.77, 1.18) |
| > 25–98 | 239 | 261 | 1.06 (0.85, 1.31) |
| > 98–254 | 123 | 138 | 1.03 (0.78, 1.36) |
| > 254–396 | 35 | 53 | 0.78 (0.49, 1.24) |
| > 396 | 61 | 50 | 1.52 (1.01, 2.29) |
| p-trend | | | 0.12 |
| Lag-10 years | | | |
| Unexposed | 785 | 884 | |
| > 0–5 | 225 | 256 | 1.01 (0.81, 1.27) |
| > 5–25 | 237 | 270 | 0.93 (0.75, 1.16) |
| > 25–98 | 233 | 264 | 1.03 (0.83, 1.27) |
| > 98–254 | 115 | 121 | 1.11 (0.83, 1.48) |
| > 254–396 | 36 | 52 | 0.81 (0.51, 1.29) |
| > 396 | 55 | 43 | 1.65 (1.07, 2.55) |
| p-trend | | | 0.053 |
| Lag-15 years | | | |
| Unexposed | 805 | 901 | 1.0 |
| > 0–5 | 231 | 269 | 0.97 (0.78, 1.21) |
| > 5–25 | 242 | 259 | 0.98 (0.79, 1.21) |
| > 25–98 | 221 | 266 | 0.96 (0.77, 1.19) |
| > 98–254 | 107 | 109 | 1.12 (0.83, 1.51) |
| > 254–396 | 29 | 47 | 0.73 (0.44, 1.2=0) |
| > 396 | 51 | 39 | 1.73 (1.10, 2.71) |
| p-trend | | | 0.057 |
| Lag-20 years | | | |
| Unexposed | 835 | 941 | 1.0 |
| > 0–5 | 231 | 281 | 0.92 (0.74, 1.15) |
| > 5–25 | 234 | 250 | 0.98 (0.79, 1.22) |
| > 25–98 | 227 | 244 | 1.10 (0.88, 1.36) |
| > 98–254 | 94 | 103 | 1.03 (0.75, 1.41) |
| > 254–396 | 19 | 40 | 0.58 (0.33, 1.05) |
| > 396 | 46 | 31 | 1.93 (1.19, 3.15) |
| p-trend | | | 0.050 |
| Lag-25 years | | | |
| Unexposed | 898 | 1003 | 1.0 |
| > 0–5 | 243 | 281 | 0.95 (0.77, 1.17) |
| > 5–25 | 219 | 235 | 1.03 (0.83, 1.28) |
| > 25–98 | 188 | 233 | 0.91 (0.73, 1.14) |
| > 98–254 | 82 | 86 | 1.14 (0.81, 1.59) |
| > 254–396 | 21 | 27 | 0.99 (0.54, 1.82) |
| > 396 | 35 | 25 | 1.83 (1.06, 3.18) |
| p-trend | | | 0.039 |
| Lag-30 years | | | |
| Unexposed | 965 | 1093 | 1.0 |
| > 0–5 | 244 | 278 | 0.95 (0.77, 1.17) |
| > 5–25 | 210 | 220 | 1.09 (0.88, 1.37) |
| > 25–98 | 164 | 191 | 0.99 (0.78, 1.26) |
| > 98–254 | 59 | 70 | 1.02 (0.70, 1.49) |
| > 254–396 | 20 | 20 | 1.18 (0.61, 2.29) |
| > 396 | 24 | 18 | 1.79 (0.93, 3.45) |
| p-trend | | | 0.09 |
| Lag-35 years | | | |
| Unexposed | 1082 | 1225 | 1.0 |
| > 0–5 | 235 | 247 | 1.05 (0.85, 1.30) |
| > 5–25 | 158 | 205 | 0.92 (0.72, 1.16) |
| > 25–98 | 135 | 134 | 1.13 (0.86, 1.47) |
| > 98–254 | 46 | 50 | 1.14 (0.74, 1.76) |
| > 254–396 | 12 | 19 | 0.95 (0.44, 2.06) |
| > 396 | 18 | 10 | 1.92 (0.85, 4.31) |
| p-trend | | | 0.12 |
| Lag-40 years | | | |
| Unexposed | 1207 | 1386 | 1.0 |
| > 0–5 | 198 | 207 | 1.06 (0.84, 1.33) |
| > 5–25 | 149 | 154 | 1.15 (0.89, 1.48) |
| > 25–98 | 79 | 91 | 1.00 (0.72, 1.40) |
| > 98–254 | 32 | 38 | 1.23 (0.74, 2.03) |
| > 254–396 | 8 | 5 | 1.60 (0.50, 5.16) |

Table 4 (continued)

| Cumulative REC ($\mu\text{g}/\text{m}^3\text{-years}$)* | Ca | Co | OR** 95% CI |
|---|----|----|-------------------|
| > 396 | 13 | 9 | 1.66 (0.68, 4.05) |
| p-trend | | | 0.16 |

*Exposure categories as unexposed, > 0–50th percentile, > 50–90th percentile, > 90–95th percentile, and > 95th percentile.

**Adjusted for age, race, study, smoking status, and non-diesel exposed high-risk occupations.

reported work week in Spain was 48 hr/wk vs. 40 hr/wk in New England and longer duration worked in diesel-exposed jobs in Spain). Our data are consistent with a previous study in Montreal showing a similar prevalence of occupational diesel exposure in the general population as well as an increased risk for bladder cancer (Latifovic et al., 2015).

Analyses exploring the exposure-response relationship by lagging from 5 to 40 years showed a consistent increased risk at the top end of exposure, cumulative REC > 396.1 $\mu\text{g}/\text{m}^3\text{-years}$, for all lag intervals. Our results also suggested a monotonic gradient in risk with cumulative REC lagged 40 years, but the numbers become limited, precluding us from drawing any firm conclusion regarding the shape of the exposure-response curve. A long latent period (up to 50 years) for bladder cancer has been previously observed in truck drivers (a major diesel-exposed occupation) in the National Bladder Cancer Study (Silverman et al., 1986). More studies are needed to better estimate the exposure-response relationship and the latent period for diesel-induced bladder cancer.

Our findings suggest that diesel is consistently associated with both low-grade tumors and in the development of muscle-invasive bladder cancer. Unfortunately, we do not have follow-up data to evaluate whether the group of low-grade tumors would have progressed to tumors with a worse prognosis. Similarly, we also do not have information on time to death among those initially diagnosed with muscle-invasive bladder cancer among patients with higher cumulative REC. Recently, we reported that a history of occupational diesel exhaust exposure was also associated with shorter time to recurrence among patients with muscle-invasive bladder cancer (Wilcox et al., 2016). Population-based estimates of incident bladder cancer indicate that 20–30% of bladder cancer is muscle-invasive and about 70–80% is non-muscle invasive. Further characterization of the tumors in these two case-control studies is underway to evaluate if diesel exhaust exposure is related to specific molecular subtypes or other tumor features (Choi et al., 2017).

Mechanistic evidence suggests that diesel exhaust may induce cancer in humans (IARC, 2014). Chromosomal damage, altered gene expression patterns, and inflammation have been found among people exposed to diesel exhaust (IARC, 2014). Urinary biomonitoring studies have demonstrated the presence of excreted polycyclic aromatic hydrocarbons and nitroarene metabolites, many of which are known to be genotoxic, after exposure to diesel exhaust (IARC, 2014; Seidel et al., 2002). Thus, direct contact with the bladder urothelium may be one pathway by which diesel exhaust initiates bladder carcinogenesis. Evidence from experimental studies also suggests that some components of diesel exhaust influence expression of genes related to critical cancer signaling pathways (IARC, 2014; Landvik et al., 2007; Yun et al., 2009).

Our study is one of the first to estimate UBC risk by quantitative estimates of lifetime occupational diesel exposure. The assessment of exposure was based on detailed subject-reported information on diesel-related work activities and intensity estimates derived from the published literature, reflecting an important advance in the characterization of diesel exhaust exposure compared with most previous case-control studies of UBC. This approach was also used in a study of occupational exposure to metalworking fluids in the NEBCS, revealing

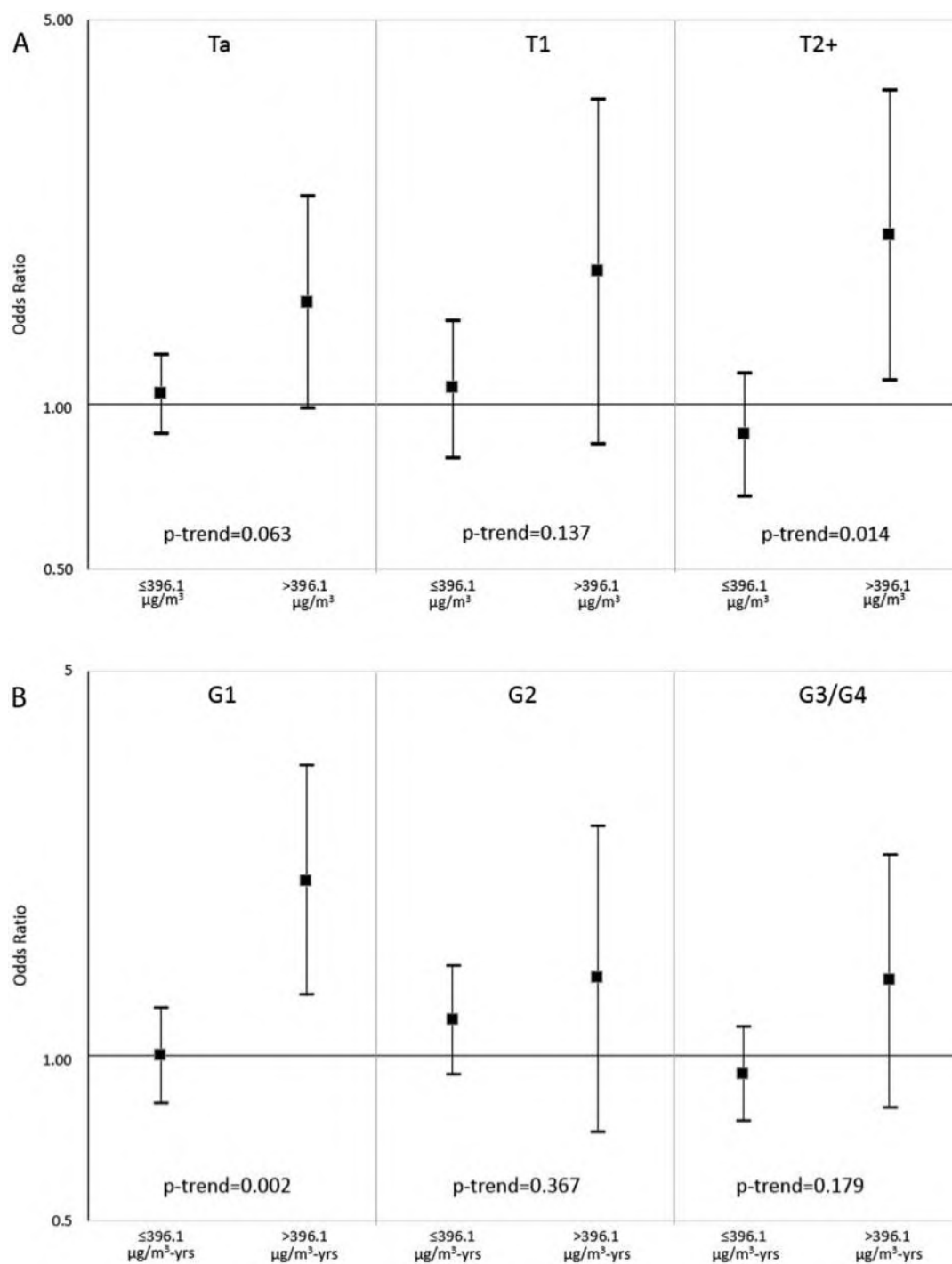


Fig. 1. Odds ratios from polytomous logistic regression for categories of cumulative REC ($\mu\text{g}/\text{m}^3\text{-years}$), $\leq 396 \mu\text{g}/\text{m}^3\text{-years}$ and $> 396 \mu\text{g}/\text{m}^3\text{-years}$ compared to the unexposed, and risk of UBC by pathologic stage (Panel A) and grade (Panel B). Models are adjusted for age, race, study, smoking status, and non-diesel exposed high-risk occupations. See also Supplemental Table A.3 for point estimates.

increased cancer risks similar to those observed in cohort studies (Silverman et al., 2018). Other strengths of our study include its large size (and consistency of observed associations in studies conducted in two different populations in different countries), as well as the ability to control for confounding from smoking and employment in other high-risk occupations. Further, the incorporation of pathology data provided the insight that the diesel exhaust-UBC relationship may be more pronounced in patients with later-stage tumors. This observation will help

guide future mechanistic work to better understand diesel-induced bladder carcinogenesis.

Some limitations, however, must be noted. Non-differential exposure misclassification likely occurred, probably leading to an attenuation of the observed associations and may have obscured effect at low levels of diesel-exposure (i.e., $\text{REC} < 396 \mu\text{g}/\text{m}^3$). In addition, the published literature was insufficient to extract time trends in exposure intensity. Time trends in the probability of exposure were, however,

incorporated to take into account slight differences by country and regulations/technology that impacted the prevalence of diesel exposure. Interestingly, analyses by decade of first diesel-exposed job showed a statistically significant increased risk among men first exposed in the 1950s, when diesel equipment started becoming widespread. The observed greater risk for those first exposed in the 1950s may reflect secular differences in exposure by type or age of diesel engine, or alternatively, a long latent period for UBC. Despite the large size of these two case-control studies, the analysis was underpowered to detect a significant exposure-response; further exploration in other studies is warranted.

5. Conclusion

Our results provide further evidence that diesel exhaust exposure increases the risk of UBC in humans. The incorporation of quantitative historical information combined with pathologic characteristics of tumors and molecular epidemiology studies of exposed workers may provide evidence of biologic plausibility that this association is causal.

CRedit authorship contribution statement

Stella Koutros: Project administration, Formal analysis, Writing - original draft, Writing - review & editing, Data curation, Visualization. **Manolis Kogevinas:** Conceptualization, Investigation, Writing - review & editing. **Melissa C. Friesen:** Methodology, Writing - review & editing. **Patricia A. Stewart:** Methodology, Writing - review & editing. **Dalsu Baris:** Investigation, Writing - review & editing. **Margaret R. Karagas:** Investigation, Writing - review & editing. **Molly Schwenn:** Writing - review & editing, Investigation. **Alison Johnson:** Writing - review & editing, Investigation. **G.M. Monawar Hosain:** Writing - review & editing. **Consol Serra:** Writing - review & editing. **Adonina**

Tardon: Writing - review & editing. **Alfredo Carrato:** Writing - review & editing. **Reina Garcia-Closas:** Writing - review & editing. **Lee E. Moore:** Investigation, Writing - review & editing, Resources. **Michael L. Nickerson:** Investigation, Writing - review & editing. **Stephen M. Hewitt:** Investigation, Writing - review & editing. **Petra Lenz:** Investigation, Writing - review & editing. **Alan R. Schned:** Investigation, Writing - review & editing. **Josep Lloreta:** Writing - review & editing. **Yves Allory:** Writing - review & editing. **Haoyu Zhang:** Methodology, Writing - review & editing. **Nilanjan Chatterjee:** Methodology, Writing - review & editing. **Montserrat Garcia-Closas:** Writing - review & editing. **Nathaniel Rothman:** Writing - review & editing. **Núria Malats:** Supervision, Project administration, Writing - review & editing, Investigation, Resources. **Debra T. Silverman:** Conceptualization, Supervision, Writing - original draft, Project administration, Writing - review & editing, Investigation, Resources.

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Declaration of Competing Interest

The authors declare no competing financial interests.

Appendix

(See Tables A1–A3).

Table A1

Job titles (in rank order) for most frequently reported occupations with diesel exhaust exposure.

| Job titles |
|---|
| Truck drivers, tractor-trailer |
| Truck drivers, heavy |
| Grader, dozer, and scraper operators |
| Motor vehicle operators |
| Military occupations |
| Bus and truck engine, and diesel engine mechanics |
| Automobile mechanics |
| Timber cutting and related occupations |
| Garage and service station related occupations |
| Industrial truck and tractor equipment operators |
| Truck drivers, light |

Table A2

Specific UBC tumor marker test for heterogeneity in cumulative REC exposure (linear trend) using a two-stage model.

| Tumor Characteristic | Cumulative REC ($\mu\text{g}/\text{m}^3\text{-years}$) | |
|------------------------------|--|---------|
| | Case-case OR* (95% CI) | p-value |
| P53 expression \pm (+/-) | 1.07 (0.97, 1.19) | 0.15 |
| P53 Histoscore \pm (+/-) | 1.04 (0.94, 1.15) | 0.42 |
| TP53 Mutation \pm (+/-) | 0.96 (0.82, 1.13) | 0.62 |
| FGFR3 expression \pm (+/-) | 1.00 (0.90, 1.12) | 0.94 |
| FGFR3 Mutation \pm (+/-) | 1.08 (0.95, 1.23) | 0.22 |

*Adjusted for age, race, study, smoking status, and non-diesel exposed high-risk occupations. \pm Model includes noted tumor marker as well as stage and grade.

Table A3
Odds ratios for cumulative REC by tumor subtype from polytomous logistic regression presented in Fig. 1.

| Stage | N Cases | N Controls | OR* (95% CI) |
|---|---------|------------|-------------------|
| Ta | | | |
| Unexposed | 464 | 857 | 1.0 |
| ≤ 396 µg/m ³ -years | 543 | 981 | 1.04 (0.89, 1.23) |
| > 396 µg/m ³ -years | 39 | 52 | 1.54 (0.98, 2.40) |
| p-trend | | | 0.063 |
| T1 | | | |
| Unexposed | 100 | 857 | 1.0 |
| ≤ 396 µg/m ³ -years | 132 | 981 | 1.07 (0.80, 1.43) |
| > 396 µg/m ³ -years | 10 | 52 | 1.75 (0.85, 3.61) |
| p-trend | | | 0.137 |
| (T2 +) Muscle-invasive bladder cancer | | | |
| Unexposed | 161 | 857 | 1.0 |
| ≤ 396 µg/m ³ -years | 143 | 981 | 0.88 (0.68, 1.14) |
| > 396 µg/m ³ -years | 16 | 52 | 2.03 (1.11, 3.74) |
| p-trend | | | 0.014 |
| Grade | | | |
| G1 | | | |
| Unexposed | 253 | 857 | 1.0 |
| ≤ 396 µg/m ³ -yrs | 316 | 981 | 1.00 (0.81, 1.22) |
| > 396 µg/m ³ -yrs | 31 | 52 | 2.08 (1.28, 3.38) |
| p-trend | | | 0.002 |
| G2 | | | |
| Unexposed | 186 | 857 | 1.0 |
| ≤ 396 µg/m ³ -years | 218 | 981 | 1.16 (0.92, 1.46) |
| > 396 µg/m ³ -years | 13 | 52 | 1.37 (0.72, 2.62) |
| p-trend | | | 0.367 |
| G3/G4 | | | |
| Unexposed | 283 | 857 | 1.0 |
| ≤ 396 µg/m ³ -years | 281 | 981 | 0.93 (0.76, 1.13) |
| > 396 µg/m ³ -years | 21 | 52 | 1.37 (0.80, 2.33) |
| p-trend | | | 0.179 |

OR_{trend} for CIS = 0.97 (0.71, 1.34).

*Adjusted for age, race, study, smoking status, and non-diesel exposed high-risk occupations.

Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.envint.2019.105346>.

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Daniel Nakahara, AICP

From: Marian R. Robertson <cucharmo@aol.com>
Sent: Friday, April 28, 2023 5:09 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Baxter Property

[EXTERNAL EMAIL]

Poor Choice!!

Daniel Nakahara, AICP

From: SHIRLEY KATZ <shirl4hand@aol.com>
Sent: Sunday, April 30, 2023 11:28 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Opposed

[EXTERNAL EMAIL]

I am strongly OPPOSED to the plan for industrial use at the Baxter site.
Deerfield.. we can do better than this.
NOT ONE RESIDENT THAT I HAVE SPOKEN TO IS FOR THIS IDEA.

PLEASE RECONSIDER

Shirley Katz

Sent from Shirley's iPhone. This may be dictated so please disregard spelling errors

Daniel Nakahara, AICP

From: Ilana Aviv <ilana.vaknin@gmail.com>
Sent: Monday, May 1, 2023 8:41 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge/Baxter plan

[EXTERNAL EMAIL]

Dear members,

I am writing to let you know that I am against the Bridge plan. I have a son with Asthma who is on a steroid inhaler daily, I am worried about him and the many other residents who have asthma or allergies. Before you vote please think of all these people and what the trucks pollution can do to their health. Our community's health and well-being is in your hands.

Deerfield made a commitment to reduce transportation pollution by 50% by 2030, if the committee votes in favor of the bridge project they are going against the village's promise.

Please open your hearts, and do the responsible right thing for the community-vote against the Bridge plan.

Sincerely,
Ilana Aviv-Vaknin

Ilana Aviv Skin-Care
847-525-5159

<https://m.facebook.com/Ilana-Aviv-Skin-Care-219321105801/>

<https://instagram.com/ilanaavivskincare?r=nametag>

Daniel Nakahara, AICP

From: andrew balbierer <andy.balbierer@gmail.com>
Sent: Monday, May 1, 2023 12:29 PM
To: Daniel Nakahara, AICP; Deerfield Village Board
Subject: Baxter/Bridge

[EXTERNAL EMAIL]

My name is Andy Balbierer and I live in Thorngate. While my wife and I are not technically residents of Deerfield, we also consider it our town as much of our everyday spending happens with local retailers.

Having spent 45 years in business - most at an executive level - I've done many deals. Some were good, others not so much. The ones that worked were fairly obvious. The others seemed obvious at the time but ultimately we missed something - either failing to properly execute and/or missing some critical extraneous factor.

Regarding the Baxter/Bridge situation, I have no idea what the economics look like. However, on paper I have to assume they are favorable for Baxter, Deerfield and Bridge or we wouldn't be at this stage. This is obvious. That said, I assume the Board and Planning Commission are also considering some of the "character changing" impacts on the Village as well as surrounding communities including Riverwoods and Northbrook. Traffic, air quality, safety and operational risks at this "industrial facility", are obvious problems. Diminished property values are another (which won't be offset by an indoor soccer facility). In any case, I'm sure you will hear more about that from others who are much more knowledgeable on those issues than me.

I would like to leave you with a couple of thoughts as you consider Bridge's proposal.

1. While having more money sometimes helps the quality of life, in this case there are also significant negative tradeoffs that can't be ignored. Are these being given sufficient weight? Make sure you consider unintended consequences (which generally cost money) because once this genie is out of the bottle you won't be able to put it back.
2. If favorable economics are the driving force here, will that set precedent for every future zoning decision regardless of consequences? We all know where that can lead.
3. What is your planning horizon? Is it 3, 4 or 5 years or is it 10 or 20 years? The answer to that question is profound. Short-term focus is mostly driven by money. Long-term focus is vision driven. Is it your vision to turn this broader area into an industrial complex? What do Deerfield residents want? What would adjacent communities want?
4. Yes, the real estate market has turned, limiting immediate/easy options for the Baxter property. That may or may not be a temporary condition. Is this being presented as the "only choice"? The other choice is to find something better. If the village wants to annex this piece of land, is it working with Baxter to find an occupant more suitable for the character of the surrounding community?
5. Speaking for the residents of Thorngate (your neighbors), ask yourselves, would you and your children like this development outside your home? This is not a great way to treat neighbors, especially when many work and spend money in Deerfield.

These days it's tough to get anyone to agree on anything. However, this issue has brought together and mobilized hundreds of households. Please know should the village continue to proceed, it will likely be a long and loud path.

Thanks for the opportunity to comment.

Andy Balbirer

Daniel Nakahara, AICP

From: Mark Blumenthal <mjblumenthal@comcast.net>
Sent: Monday, May 1, 2023 8:43 PM
To: Plan Commission Comment
Cc: Jeffery Ryckaert, AICP; Daniel Nakahara, AICP
Subject: Public Comment-Baxter Proposal

[EXTERNAL EMAIL]

Dear Deerfield Village Planning Commission,

I am writing to you to express my opposition to the proposed 24/7 Freight Terminal on the existing Baxter Campus and offer my prospective as someone who has lived in the Deerfield community for close to 40 years.

My wife and I lived and worked in the city when we were first married. We bought our first home in Deerfield near Shepard Junior High. We had no family or friends in Deerfield at the time, but knew of Deerfield's reputation as a great place to raise a family. As our family grew, we needed more space, but did not want to leave our Deerfield community, our dear friends, the schools, the parks, the clean and quiet streets. Our solution was to move to Thorngate where we still live today.

We now have grandchildren, are both retired, and have been trying to convince our daughter to move from the city back to Deerfield to raise her family. Many of the young people we know well from watching them grow up with our children are now moving back to Deerfield with their own children.

I am very concerned of what will become of Deerfield and its reputation if it is home to one of the largest 24/7 Freight Terminals in the world. Who would want to live in a community that would subject their residents and neighbors to the inevitable air, water, and noise pollution from 600 semi-trucks a day driving through the streets of Deerfield 24 hours a day 365 days a year? Should we be concerned about the safety of the parents and the children of Deerfield, Riverwoods, Northbrook, or anyone driving through Deerfield forced to compete with massive semi-trailer trucks trying to make difficult turns or change lanes?

Deerfield is a community of volunteers who have always served the best interests of the community. Deerfield is a ***we care community***—we care about our families, our neighbors, our environment, and each other. I know that you are all volunteers and hope that you will consider that this type of 24/7 Freight Terminal was never part of the Deerfield vision or zoning laws for our family focused community.

I hope that you will reject the proposed 24/7 Freight Terminal at the Baxter campus.

Respectively,

Mark Blumenthal

Riverwoods

Daniel Nakahara, AICP

From: Nina Aliprandi Bolley <ninaaliprandibolley@gmail.com>
Sent: Monday, May 1, 2023 9:19 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Opposition to zoning request changes

[EXTERNAL EMAIL]

I am writing to voice my concern an opposition to the zoning request that has been made by the bridge. I feel this would greatly impact community safety, And make traffic patterns extremely difficult. I'm concerned about our property values. Please do not approve this request for reclassification of zoning variance. I am outraged this is even been considered in our community.

Sincerely,

Nina Aliprandi
604 Pine Street

Daniel Nakahara, AICP

From: Brian Cloch <bcloch@clochmgmt.com>
Sent: Monday, May 1, 2023 9:21 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge opposition

[EXTERNAL EMAIL]

I'm very much against this project. There is an incredible opportunity to redevelop this property in a way that adds value and encourages more people to come live in Deerfield, attend our amazing schools and support local businesses. Let's not become famous for having a logistics center. Please be thoughtful and consider future generations.

Brian Cloch
847-309-6000

Daniel Nakahara, AICP

From: Miguel Deschamps <miguel@enviropius-inc.com>
Sent: Monday, May 1, 2023 8:49 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Baxter/Bridge Plan

[EXTERNAL EMAIL]

To Whom it May Concern:

I am writing to express my concern regarding the proposed industrial complex that is being planned for our 60015 community . I believe that this development would have significant negative impacts on our community. Firstly, an industrial complex would bring with it significant environmental risks. It is likely to generate pollution and emissions, which could harm the air, water, and soil quality in our village. This could have severe health implications for our families and could also have negative effects on the natural environment that we rely on. Secondly, the industrial complex is likely to result in increased traffic in our community . This could lead to congestion on our roads and could pose safety risks for pedestrians, cyclists, and our children. Additionally, the development may result in the loss of green spaces and could lead to the degradation of our local environment.

Finally, I am concerned that the industrial complex could have negative impacts on the character and identity of our 60015 community . We have a proud history and heritage, and I fear that the introduction of a large industrial complex could detract from the peaceful, rural atmosphere that we all value. For these reasons, I urge you to join me in opposing the construction of the industrial complex in our community.

Thank you.
Miguel Deschamps
2378 Pebble Beach Lane

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Daniel Nakahara, AICP

From: mwfox@tutanota.com
Sent: Monday, May 1, 2023 8:51 AM
To: Daniel Nakahara, AICP
Subject: Public Comment on Baxter/Bridge proposal

[EXTERNAL EMAIL]

Hello Deerfield Plan Commission,

I am writing to document my objection to the proposed Baxter/Bridge development project. This project would result in an increased volume of truck activity that would threaten the health, safety, and property values of our community and our neighbors in Riverwoods. A massive warehousing/logistics development simply does not belong inside a residential community.

I urge you in the strongest terms to reject this proposal.

--

Mark Fox
Cell: (847) 309-8495 | mwfox@tutanota.com

Daniel Nakahara, AICP

From: Harold Katz <katzpc@gmail.com>
Sent: Monday, May 1, 2023 8:46 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Baxter Development

[EXTERNAL EMAIL]

I'm writing to express my strong opposition to the Bridge Development proposal. I was a Deerfield resident for 30+ years and moved to Riverwoods a few months ago. My wife and I wanted to stay local when we moved. As we looked at houses, we considered Deerfield/Riverwoods to be the same, one community with shared values and interests. We are all 60015.

The proposed development with 600 trucks a day, coming in and out 24/7 in a cross dock gigantic warehouse with a freight terminal, does not belong directly adjacent to our neighborhoods. It does not fit 60015's bucolic landscape and community feel. The resultant traffic and pollution will harm residents across the 60015 area as well as neighbors in Northbrook.

This warehouse should be in an industrial park with entrances on truck designated routes. It does not belong here.

Thanks for your consideration.

Harold Katz

Daniel Nakahara, AICP

From: Grace Kotvis <gkotvis@gmail.com>
Sent: Monday, May 1, 2023 10:27 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Opposition of Baxter/Bridge Plan

[EXTERNAL EMAIL]

Hi Planning Commission,

My family and I are residents of Deerfield living in the Colony Point neighborhood. We moved from the City (Chicago) to this community for the safety, security and amazing community that is Deerfield.

I'm completely disheartened to hear about the proposal for the Bridge purchase of the Baxter facility and as a Deerfield resident I am **completely opposed to this purchase (by Bridge or any similar style company) and proposal of the change of zoning to high volume industrial park (for this or any future proposed rezoning to something similar) .**

This proposal has immense negative community impacts across the entire Deerfield (and neighboring) communities including safety, significant noise/air/water pollution and high volume traffic our roads and exits are not built for. This would completely change the landscape of our community for the worse, put the health and safety of our families and children at risk and ultimately devalue the village and our properties.

Please listen to our community and our neighbors when we say, we don't want this. Let's work together to find a better solution that benefits the community as a whole.

Thank you,
Grace

--

Grace (Kotvis) Distel
gkotvis@gmail.com
847.651.1454

Daniel Nakahara, AICP

From: Bonnie Marcus <bfmarcus13@gmail.com>
Sent: Monday, May 1, 2023 9:41 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Proposed Industrial Development of Baxter Property

[EXTERNAL EMAIL]

My name is Bonnie Marcus, and while I currently live in Riverwoods in the Thorngate subdivision, I lived in Deerfield for 13 years before I moved there. Deerfield was, and still is a wonderful place to live. It is known to be a warm, collaborative community with really good schools, really friendly people and strong housing values.

I believe that if you grant Bridge Development the zoning they are asking for, you are seriously putting your entire community at risk. Deerfield will no longer be known for all of its wonderful characteristics, it will be "the North Shore suburb with the motor freight terminal."

It is not a compatible use of the property, and does not belong in such close proximity to hundreds, if not thousands of single family homes and multiple schools. Deerfield doesn't have existing zoning for a massive development of this type because it was never part of the comprehensive plan. That plan has always been something the residents could count on. Why are you changing the face of the Village now?

Their application indicates there will be over 600 semi-trailers in and out 24/7. Hundreds of semi-trailers in and out will clog many roads in Deerfield, not just Saunders. The fumes from the trucks will pollute the air that all of us breathe, and the potential medical problems that could occur from this are numerous and scientifically documented. When there is no more stacking room at the stoplights, the trucks will wander down any street they can find.

These trucks will impact the school bus, and car traffic to and from Wilmot, South Park and Caruso. The kids in the surrounding area that bike/walk to and from school will no longer be safe.

In addition, have you considered the additional requirements that will be placed on the Deerfield Police Dept. and the Fire Protection District? Do you prefer to serve the residents of your community in these challenging times, or the truck drivers that drive through it?

Please re-evaluate this project. While there might be some incentives for the Village in their Development Plan, the potential damage to the community could be huge and irreversible.

Thank you.

Bonnie Marcus

Daniel Nakahara, AICP

From: Gabriel Sep <gabby@septools.com>
Sent: Monday, May 1, 2023 10:09 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge Plan

[EXTERNAL EMAIL]

I very much appose the Bridge plan on the Baxter property. It's a terrible idea for our community.

- it's too close to residential and schools.
- traffic is going to be jammed.
- pollution is going to increase to an unhealthy levels.

Please vote against the plan!

Concerned resident,

Gabriel Sepiashvili

--

Sincerely,

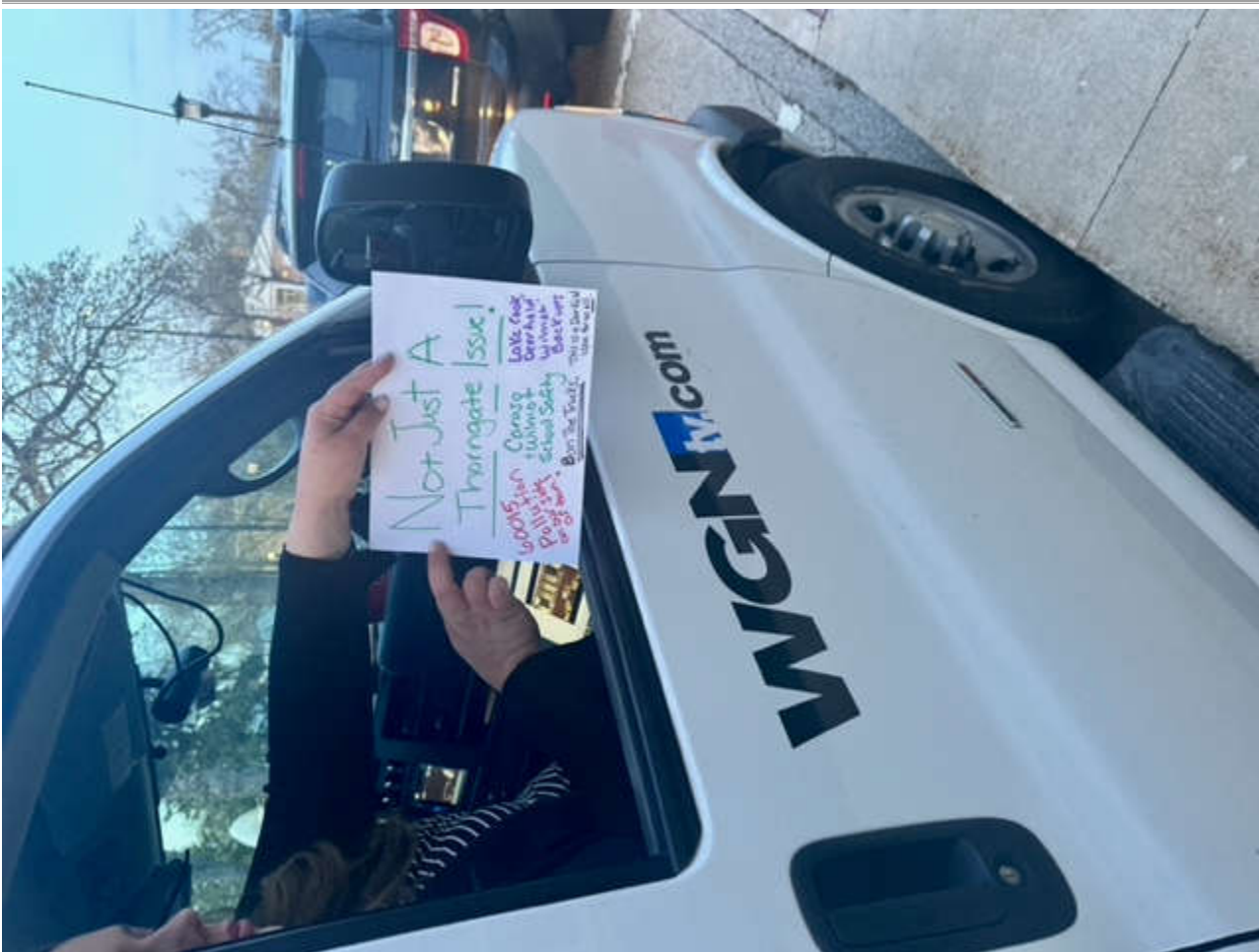
Gabriel Sep
Product and Sales Director

Ph 312-541-4554 Ext-1855
Fx 312-541-1944
www.septools.com

Daniel Nakahara, AICP

From: bonnie block <bonnie.block2104@gmail.com>
Sent: Tuesday, May 2, 2023 10:06 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Please hear what this community does NOT want in our small town!

[EXTERNAL EMAIL]



I like to submit this to the planning board to read - thank you:

The Village of Deerfield elected the Planning Board to bring in businesses that serve what is best for our community while protecting our health and safety.

The impact of 600 truck trips a day, 3000+ truck trips a WEEK and 12,000+ additional truck trips a MONTH throughout our small community is NOT what's best for this town no matter how much tax revenue they promise to bring in.

How can the village turn its back on all the pollution, noise and backup roadways especially on Lake Cook and Deerfield roads??? How can the village recommend this monster of a complex to be built impacting our families who love to bike,

play and live in the outdoors knowingly they increased amount of pollution that WILL impact our air and what we breathe.

The Board members need to remember the oath they took to serve and represent us all in the best interest of our community. This is NOT what we want in this town nor is this our best interest.

There IS a reason why SO many of us are terrified to the impacts of this community if this plan moves forward.

Please listen to your community!! We voted for you to represent us all. The overwhelmingly majority do NOT want this in our community!!

Do we want this to be Deerfield's new reputation? The truck pit stop of the North Shore?????

This should NOT be about the dollars. No amount of money can replace all of our well justified concerns and fears if this project moves through.

The village board must do what is right for our families, health, environment and safety in this town -PLEASE listen to the thousands of us who are begging you to NOT allow this industrial trucking complex to come to our community!

There is a reason why you don't see large trucking complexes set up shop in a middle of a small community for this very reason.

PLEASE listen to your community as you make your decision. PLEASE.

Thank you,
Bonnie Block
Resident of Deerfield

Daniel Nakahara, AICP

From: Andy Bokor <andy@mossbokor.com>
Sent: Tuesday, May 2, 2023 7:47 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge Development

[EXTERNAL EMAIL]

To Whom it May Concern,

I strongly oppose changing the zoning of the current Baxter Campus from office/residential to a high volume industrial park.

The proposed high volume industrial park and the potential for 600+ trucks all day, 24/7, in and out of the Baxter Parkway is too heavy a burden for this area.

The proximity to residential areas and lack of multiple entry and exits is a massive safety concern.

Rezoning to this heavy industry does not capture the words and spirit of the Deerfield Village comprehensive plan, nor is it in the best interest of 60015.

The impact of the noise, air and water pollution, as well as the traffic congestion with an increase in truck traffic in the area is not aligned with the values of this community.

Andy Bokor
60015 resident

Andy Bokor
andy@mossbokor.com

Daniel Nakahara, AICP

From: Marla Dobrin <marlabeth1@yahoo.com>
Sent: Tuesday, May 2, 2023 8:39 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Baxter/Bridge

[EXTERNAL EMAIL]

Dear Mayor Shapiro,

As a resident of Riverwoods (Thorngate) for over 20 years, I am highly opposed to the proposed Bridge project for many reasons.

My husband and I moved to Thorngate to raise our family in a quiet, peaceful, safe, environmentally friendly area. The Baxter/Bridge project threatens all of the reasons for which we moved to this area. With over 600 trucks moving in and out of the area daily, there will be significant traffic congestion, pollution, and a threat to children's safety (not to mention the safety to the wildlife who have been in the area forever).

When my daughters were young, they frequently rode their bikes from Thorngate to friends' houses in Deerfield via Saunders and Deerfield Road. I feel very fortunate that they were able to have that experience. However, children growing up in Thorngate will never be able to safely travel that road on their bikes (let alone walk those roads), for fear of being run over by a 16-wheeler.

I am extremely upset that this proposal is even being considered, and I hope you will look into other (more community friendly) options for this space for all the residents living in 60015. If this proposal is allowed to pass, it will be extremely detrimental for everyone in this area.

Sincerely,

Marla Dobrin
2385 Spyglass Hill Court
Riverwoods, IL 60015

Daniel Nakahara, AICP

From: Marcy Fancher <fancher.marcy@gmail.com>
Sent: Tuesday, May 2, 2023 9:53 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Ban the Trucks

[EXTERNAL EMAIL]

Hi There,

I am writing to you to stop the Baxter/Bridge Development Proposal. My family just moved from the city to Deerfield for a better quality of life for our young daughter and we feel that the Baxter/Bridge Development with all the trucks will have a negative effect on her upbringing. From pollution, to traffic, to the safety risk of trucks in our small community, I am adamant we vote no. My daughter is already prone to asthma and allergies so please help reduce the risk by banning these trucks.

Sincerely,
Marcy Fancher
Concerned resident of Deerfield

Daniel Nakahara, AICP

From: Jodi Kahn <jodiakahn@gmail.com>
Sent: Tuesday, May 2, 2023 10:54 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge Development

[EXTERNAL EMAIL]

> To Whom it May Concern,

>

> I strongly oppose changing the zoning of the current Baxter Campus from office/residential to a high volume industrial park.

>

> The proposed high volume industrial park and the potential for 600+ trucks all day, 24/7, in and out of the Baxter Parkway is too heavy a burden for this area.

>

> The proximity to residential areas and lack of multiple entry and exits is a massive safety concern.

>

> Rezoning to this heavy industry does not capture the words and spirit of the Deerfield Village comprehensive plan, nor is it in the best interest of 60015.

>

> The impact of the noise, air and water pollution, as well as the traffic congestion with an increase in truck traffic in the area is not aligned with the values of this community.

>

> Jodi Kahn

> 60015 resident

Sent from my iPhone

Daniel Nakahara, AICP

From: Stacy Kaufman <smags3@gmail.com>
Sent: Tuesday, May 2, 2023 8:14 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge Development

[EXTERNAL EMAIL]

To Whom it May Concern,

I strongly oppose changing the zoning of the current Baxter Campus from office/residential to a high volume industrial park.

The proposed high volume industrial park and the potential for 600+ trucks all day, 24/7, in and out of the Baxter Parkway is too heavy a burden for this area.

The proximity to residential areas and lack of multiple entry and exits is a massive safety concern.

Rezoning to this heavy industry does not capture the words and spirit of the Deerfield Village comprehensive plan, nor is it in the best interest of 60015.

The impact of the noise, air and water pollution, as well as the traffic congestion with an increase in truck traffic in the area is not aligned with the values of this community.

Stacy Kaufman
60015 Resident

Daniel Nakahara, AICP

From: Lisa Moss <lisa@mossbokor.com>
Sent: Tuesday, May 2, 2023 7:33 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge Development

[EXTERNAL EMAIL]

To Whom it May Concern,

I strongly oppose changing the zoning of the current Baxter Campus from office/residential to a high volume industrial park.

The proposed high volume industrial park and the potential for 600+ trucks all day, 24/7, in and out of the Baxter Parkway is too heavy a burden for this area.

The proximity to residential areas and lack of multiple entry and exits is a massive safety concern.

Rezoning to this heavy industry does not capture the words and spirit of the Deerfield Village comprehensive plan, nor is it in the best interest of 60015.

The impact of the noise, air and water pollution, as well as the traffic congestion with an increase in truck traffic in the area is not aligned with the values of this community.

Lisa Moss
60015 resident

Sent from my iPhone

Daniel Nakahara, AICP

From: Karen Nochimowski <karennochimowski@comcast.net>
Sent: Tuesday, May 2, 2023 2:23 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Opposing the Deerfield bridge plan

[EXTERNAL EMAIL]

I am voicing my opinion that I oppose the Deerfield bridge plan .
Thank you- Karen Nochimowski, Deerfield, IL

Daniel Nakahara, AICP

From: Holly Rothbardt <hrothbardt@d124.org>
Sent: Tuesday, May 2, 2023 9:21 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Thorngate resident

[EXTERNAL EMAIL]

Hello,

I am a resident of the Thorngate community and I am concerned about my work day if the Baxter Property is turned into an industrial area. I chose Thorngate because it is very close to the 294S expressway. I need to hop on to reach my teaching job in Evergreen Park, which is an hour commute. My concern is if there are trucks lined up, it will take me longer to reach Lake Cook road to the 294S exit. Adding to my already long commute will be very stressful for me. I don't wish to look for another job because I have been with this school district for 22 years. Thank you for your time.

Holly Rothbardt
Interventionist
Southeast School
(708) 422-1021 X 2657

Daniel Nakahara, AICP

From: Mark A. Yaffe <markyaffe@gmail.com>
Sent: Tuesday, May 2, 2023 9:58 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge redevelopment is an embarrassment to Deerfield's own Environmental policies

[EXTERNAL EMAIL]

Deerfield has pride in portraying itself as a progressive and environmentally green and responsible community.

The Village has a beautiful and informative website. Listed are the Boards and Commissions deemed most important to the community.

The *Deerfield Sustainability Commission* is a combined resident and corporate citizen panel that acts in an advisory capacity to the Mayor, Board of Trustees, Village Administration, and Deerfield Community with a mission statement “to optimize Deerfield’s potential in environmentally sound practices, thereby improving the quality of our local environment for the benefit of our citizens, businesses and neighbors.”

Furthermore, The Sustainability Commission has forged a partnership with District 109 and Deerfield High School, and this Partnership, with our students and parents as participants, has chosen to selectively highlight the harmful effects of vehicle emissions from idling as one of the foremost public health concerns for this community.

What is the Sustainability Commission’s position on adding 220,000 NEW idling semi trucks, over a 1 year period, that’s in just 1 year and based on Bridge’s own stated estimates, to Deerfield’s streets within 1 mile of multiple schools, bike routes, and parks?

Deerfield has created a formal Environment-focused Commission that has partnered with our students and learning institutions for written policy goals to protect the environment and community from the exact same hazards that this industrial complex promises to bring by the truckload.

Has the Deerfield Sustainability Commission been consulted on the Baxter redevelopment or is this major redevelopment being considered without their consideration?

Further exemplifying Deerfield's commitment to Environmental Sustainability, the Deerfield Village Board approved a Climate Action Report on June 6, 2022, not even 1 year ago, with a declared written objective to "reduce overall greenhouse gas emissions by 45% and reduce transportation emissions by 55% by 2030."

Quoting directly from the Deerfield Climate Action Report:

"In recognition that local governments and municipalities play a lead role in the global effort to fight climate change, the Village of Deerfield adopted a Proclamation to achieve greenhouse gas reduction goals and urged all community stakeholders, local governments and municipalities, to join in this effort."

Citizens of 60015 are here now and voicing their opposition by the thousands, which is exactly the effort that Deerfield's own Proclamation has requested of its citizens

Welcoming one of America's largest truck facilities as a permanent fixture of this community is an embarrassment and affront to Deerfield's newly-adopted climate action goals. **Village leaders risk making Deerfield's own written environmental policies and goals worthless, laughable, and hypocritical.**

As the cynical expression goes, "do as I say, not as I do."

Is this Deerfield's newest Proclamation on Environmental Responsibility?

Let's work together as a community to fight for beautiful neighborhoods- interwoven with nature - and for the health and happiness of our kids.

Let's find a way together on this, and get our indoor rec center if we want one, but not in a manner that sells out the beauty of Deerfield, makes Deerfield's own Green environmental initiatives and goals worthless and hypocritical, and permanently damages Deerfield's special bond to its sister communities and neighbors.



Mark A. Yaffe, MD
Citizen of 60015

Daniel Nakahara, AICP

From: Bonnie Zemel <hyperbz@att.net>
Sent: Tuesday, May 2, 2023 9:40 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Baxter

[EXTERNAL EMAIL]

Please do not allow the new proposal. I am 72 years old and am right off lake cook and do not want to deal with so much more noise and pollution from all the trucks. Thanx Bonnie Zemel

Sent from my iPhone

Daniel Nakahara, AICP

From: igal44@gmail.com
Sent: Wednesday, May 3, 2023 10:12 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge plan.

[EXTERNAL EMAIL]

I oppose the bridge plane.

This is a very quiet family oriented town, generation after generation lives here grateful to clean air, low crime rate, no traffic, quiet evenings , kids play out on the streets, ride their bicycles to schools and after school curriculum and friends. We strongly oppose the Bridge plan that will bring here non stop traffic, noise, crime, lower our quality of life that we enjoyed many years. Not to mention the pollution and heavy traffic.

I hope you come to your senses and make your decisions as if you live here yourself.

Sincerely

Igal Benezra.
Deerfield IL

Sent from my iPhone

Daniel Nakahara, AICP

From: Amy Berger <berger.home@yahoo.com>
Sent: Wednesday, May 3, 2023 9:30 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Baxter Property Proposal

[EXTERNAL EMAIL]

I strongly oppose changing the zoning of the current Baxter Campus from office/residential to a high volume industrial park. The proposed high volume industrial park with the expected 600 plus trucks, all day, 24 hours a day, in and out of Baxter Parkway, is too heavy for the community. And that's just the build, an industrial park on the western edge of Deerfield would completely change the nature and value of our community. There is a reason large trucking complexes do not set up shop in the middle of a small community.

Its proximity to residential areas and its lack of multiple entry's and exits is a massive safety concern.

Rezoning to a high volume industrial park violates the words and spirit of the Deerfield Village Comprehensive Plan and makes a mockery of the June 6, 2022 Deerfield Climate Action Report with its written objective to "reduce overall greenhouse gas emissions by 45% and reduce transportation emissions by 55% by 2030."

The impact of the noise, air and water pollution, as well as the traffic congestion with an increase in truck and car traffic in the area does not align with the values of our Deerfield community.

Finally, inviting into our community the morally bankrupt trucking industry rife with corruption, terrible labor law violations and major safety issues will devastate Deerfield.

I grew up in Deerfield and returned to raise my family. The fact that this proposal is even being considered is simply devastating to every Deerfield resident I know. We do not want this and no amount of tax revenue is worth the destruction of the character and values of our community.

Yours in grave disappointment and worry,

Amy Berger
45 Shenandoah Rd
Deerfield, IL 60015

Sent from my iPad

Daniel Nakahara, AICP

From: Laura Elan <elanvtal@gmail.com>
Sent: Wednesday, May 3, 2023 1:40 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Opposed to zoning change for Bridge Industrial Plan

[EXTERNAL EMAIL]

Dear Plan Commission,

I am writing to express my vehement opposition to the proposed zoning change for the current Baxter Campus from office/residential to high volume industrial park requested by Bridge Industrial.

I am a longtime resident of Deerfield -- 14+ years -- as well as a former employee of Baxter. The property at 1 Baxter Parkway is a beautiful corporate campus. I enjoyed my lunchtime walks around its perimeter during my tenure at Baxter. Why would we trade that for a loud, dirty, industrial environment?

It is my hope that you hear my voice and the voices of our community and move to **deny the request for zoning change**. Deerfield can do much better in renewing, improving, or otherwise developing the Baxter Corporate space.

Sincerely,

Laura Elan
Greenwood Ave.
Deerfield, IL 60015

Daniel Nakahara, AICP

From: Yulia Gurman <yulia.gurman@gmail.com>
Sent: Wednesday, May 3, 2023 8:50 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Baxter/Bridge Development Proposal Comment

[EXTERNAL EMAIL]

To Whom it May Concern,

I strongly oppose changing the zoning of the current Baxter Campus from office/residential to a high volume industrial park.

The proposed high volume industrial park and the potential for 600+ trucks all day, 24/7, in and out of the Baxter Parkway is too heavy a burden for this area.

The proximity to residential areas and lack of multiple entry and exits is a massive safety concern.

Rezoning to this heavy industry does not capture the words and spirit of the Deerfield Village comprehensive plan, nor is it in the best interest of 60015.

The impact of the noise, air and water pollution, as well as the traffic congestion with an increase in truck traffic in the area is not aligned with the values of this community.

Regards,
Yulia Gurman

Daniel Nakahara, AICP

From: janinegray615@gmail.com
Sent: Wednesday, May 3, 2023 5:45 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Rezoning Baxter Campus

[EXTERNAL EMAIL]

> To Whom it May Concern,
>
> I strongly oppose changing the zoning of the current Baxter Campus from office/residential to a high volume industrial park.
>
> The proposed high volume industrial park and the potential for 600+ trucks all day, 24/7, in and out of the Baxter Parkway is too heavy a burden for this area.
>
> The proximity to residential areas and lack of multiple entry and exits is a massive safety concern.
>
> Rezoning to this heavy industry does not capture the words and spirit of the Deerfield Village comprehensive plan, nor is it in the best interest of 60015.
>
> The impact of the noise, air and water pollution, as well as the traffic congestion with an increase in truck traffic in the area is not aligned with the values of this community.
>
> Janine Gray
> 60015 resident
>
Sent from my iPhone

Daniel Nakahara, AICP

From: kal1992@aol.com
Sent: Wednesday, May 3, 2023 9:11 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] No to Baxter development

[EXTERNAL EMAIL]

Dear Commission members—

As a lifelong resident on the border of HP (going to all 109/113 schools and working in Deerfield too) I strongly oppose allowing Bridge to develop on Baxter property.

We already have traffic and noise issues. Deerfield road and Waukegan have so many crashes. Think of the amount of trucks stuck weekly under the bridge. Please don't turn our area more industrial than it already is. Safety and quality should come first.

Sincerely,

Kimberly Loughlin

Mobile: 847-204-5563
Email: kal1992@aol.com

Daniel Nakahara, AICP

From: Drew Masur <drmasur@gmail.com>
Sent: Wednesday, May 3, 2023 9:09 AM
To: Plan Commission Comment
Cc: Colie Masur; Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge industrial plan

[EXTERNAL EMAIL]

Drew Masur
1005 Forest Ave.
Deerfield, IL 60015

May 3, 2023

Planning Commission
Village of Deerfield
850 Waukegan Rd.
Deerfield, IL, 60015

To whom it may concern:

My name is Drew Masur and I am a homeowner and resident of Deerfield. I am writing to voice my adamant opposition to the rezoning plan for the Baxter campus. The proposed high volume industrial park and the potential for 600+ trucks all day, 24/7 in and out of the Baxter Parkway is too heavy of a burden for this area. The proximity to residential areas and lack of multiple entry and exits is a massive safety concern. My wife and I have two small children and we moved to this community because it is safe, and quiet, and because we did not want to raise our children in an industrial area. The outlined plan is contrary to all those things and could quite possibly drive us and many others out of the area. We absolutely love it here and do not want to leave. I am sure there are plenty of other opportunities for that space that would be more in line with the community and the environment. The impact of the noise, air and water pollution, as well as the traffic congestion with an increase in truck traffic in the area is not aligned with the values of this community.

Please reconsider this plan and do not let this proceed.

Sincerely,

Drew Masur

Daniel Nakahara, AICP

From: Gabby Sep <gabbysep@gmail.com>
Sent: Wednesday, May 3, 2023 10:15 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Re: Bridge Plan

[EXTERNAL EMAIL]

I very much appose the Bridge plan on the Baxter property. It's a terrible idea for our community.

- it's too close to residential and schools.
- traffic is going to be jammed.
- pollution is going to increase to an unhealthy levels.

Please vote against the plan!

Concerned resident,

Gabriel Sepiashvi

Daniel Nakahara, AICP

From: Jean Strye <stryej@comcast.net>
Sent: Thursday, May 4, 2023 8:17 AM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge rezoning

[EXTERNAL EMAIL]

I am contacting you to state my opposition to the rezoning plan at 1 Baxter Parkway. My house backs up the expressway and I am concerned about the increased amount of traffic and noise. I also have good friends who live in Thorngate and share in their concerns, as they do not want an industrial park across the street from their lovely homes.

I kindly ask you to consider the daily lives of people who will be adversely affected by this rezoning plan.

Thank you,
Jean Strye
340 Forsythia Drive
Deerfield

Daniel Nakahara, AICP

From: Robyn Whiteman <thelorax213@gmail.com>
Sent: Wednesday, May 3, 2023 12:01 PM
To: Plan Commission Comment
Cc: Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] Bridge developemtn

[EXTERNAL EMAIL]

To Whom it May Concern,

I strongly oppose changing the zoning of the current Baxter Campus from office/residential to a high volume industrial park.

The proposed high volume industrial park and the potential for 600+ trucks all day, 24/7, in and out of the Baxter Parkway is too heavy a burden for this area.

The proximity to residential areas and lack of multiple entry and exits is a massive safety concern.

Rezoning to this heavy industry does not capture the words and spirit of the Deerfield Village comprehensive plan, nor is it in the best interest of 60015.

The impact of the noise, air and water pollution, as well as the traffic congestion with an increase in truck traffic in the area is not aligned with the values of this community.

Robyn Whiteman
Resident of Deerfield 1976 - 2020

--

"You can blow out a candle but you can't blow out a fire"

Biko

~Peter Gabriel

Daniel Nakahara, AICP

From: Kendra Parzen <kparzen@landmarks.org>
Sent: Friday, May 5, 2023 10:16 AM
To: Plan Commission Comment
Cc: Frank Butterfield; Daniel Nakahara, AICP
Subject: [PUBLIC COMMENT] 1 Baxter Parkway Comments
Attachments: LI_Letter to Plan Commission re Baxter_5.5.2023.pdf

[EXTERNAL EMAIL]

To Deerfield Plan Commissioners,

Attached please find comments from Landmarks Illinois regarding the application by Bridge Industrial to annex and rezone 1 Baxter Parkway. Thank you for considering our comments.

Sincerely,

Kendra Parzen
Advocacy Manager
[Landmarks Illinois](#)

30 N. Michigan Avenue, Suite 2020, Chicago, IL 60602
O: 312-922-1742 / C: (312) 995-2347 [Landmarks.org](#) [Facebook](#) [Twitter](#) [Instagram](#)
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Richard A. Miller

30 N. Michigan Ave.
Suite 2020
Chicago, IL 60602
www.Landmarks.org

May 5, 2023

(VIA EMAIL)

Deerfield Plan Commission
850 Waukegan Road
Deerfield, IL 60015

To Deerfield Plan Commissioners:

Landmarks Illinois opposes Bridge Industrial's application to annex and rezone the former campus of Baxter International located at 1 Baxter Parkway. While not against the annexation of the property, which we recognize is a goal of Deerfield's comprehensive plan, we oppose the plans for rezoning that would result in the demolition of the existing buildings.

Since 1971, our nonprofit organization has advocated for the preservation of architectural and historic treasures across Illinois. On May 4, 2023, we announced that the Baxter International campus was included on our 2023 list of the Most Endangered Historic Places in Illinois, an annual list that we have released since 1995. The purpose of the list is to draw attention to historic resources in peril and to encourage and assist with their rehabilitation, maintenance, and continued use. We chose to include the Baxter International campus in response to Bridge Industrial's application.

Page 35 of the Deerfield Comprehensive Plan establishes an objective to "encourage the highest standards of architectural and landscape design." At the Baxter Industrial campus, the highest standards are already evidenced. The Baxter International Headquarters Campus is an important work of Midcentury Modern design by the renowned architectural firm Skidmore, Owings & Merrill (SOM). Especially fine is the central facilities building supported by stayed-cable suspension. The campus was awarded the American Institute of Steel Construction Architectural Award of Excellence in 1975 and the AIA Chicago Chapter Distinguished Building Award in 1976, the same year that SOM also won the same award for the design of the Sears Tower.

Instead of demolition, the vacancy of the Baxter International campus presents an opportunity to creatively reuse the existing buildings. The large, uninterrupted interior of the central facilities building would be especially adaptable. A mixed-use rehabilitation could reinvigorate this historic campus, and could also allow Deerfield to achieve the objective identified in the Comprehensive Plan to limit the establishment of new industrial uses. A mixed-use rehabilitation could also incorporate a new recreational facility for the Deerfield Park District, as Bridge Industrial's application proposes.

In summary, we believe that there are other possibilities for this campus that both preserve this significant architecture and are more in line with Deerfield's stated planning goals, and encourage the commission not to approve this application. Thank you for considering our comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Kendra Parzen", with a long, sweeping horizontal line extending to the right.

Kendra Parzen
Advocacy Manager