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Portland's I-5 Expansion: Evaluating the Environmental and Cultural Impact of ODOT's Rose Quarter Improvement Plan

Mason Ashmore
Portland State University

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Portland's I-5 Expansion:
Evaluating the Environmental and Cultural Impact of ODOT's Rose Quarter Improvement Plan

by:

Mason Ashmore

An undergraduate honors thesis submitted in partial fulfillment of the
requirements for the degree of Bachelor of Science

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Thesis Advisor

Aaron Golub, Ph.D

Portland State University

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Contents

I.	Introduction	2
II.	ODOT I-5 Expansion Analysis	4
III.	Cultural Implications	7
IV.	The Fundamental Law of Congestion	10
V.	Lane Tolling	14
VI.	Public Reception	17
VII.	Conclusion	19
VIII.	Sources Cited	23

I. Introduction

Urban Planning as an academic discipline is a relatively new field of study, however, it only seems to be growing as the world is becoming more and more urbanized. In the midst of a climate crisis, we have only recently caught on to the fact that rapid urbanization is one of the potential solutions to combat climate change. There's a misconception that cities are "unclean" due to their density, but in actuality each urbanite has a significantly smaller carbon footprint than their suburban and rural counterparts. According to the UN Department of Economic & Social Affairs, the global urban population is rapidly approaching 60% of the total population. Despite this trend of global urbanization, legislation and planning surrounding these urban spaces frequently falls short of being environmentally sustainable in the long run. I would argue that the single most detrimental roadblock to existing within a sustainable urban society, particularly in the US, is our auto-centric cultural values. Despite the fact that US car ownership peaked in 2006 and has been on a slight decrease since (Sivak, 2017, pg. 8), our lives still revolve around automobile usage. The honest truth is that people love their cars; there is a sense of pride and freedom in owning a car that is very much fueled by "The American Dream" circa World War 2 and the triumph of industrial America. While there was a new found glory in car ownership, the unfortunate result is that this mindset clearly influenced the urban planning process in the initial construction and organic growth of early American cities. Rather than the dense, walkable spaces that would undoubtedly be more sustainable, what we see today is cities that are plagued with urban sprawl and completely reliant upon automobile access. In most US cities car ownership has been deemed a necessity to operate, however, our most acclaimed cities operate on very minimal car usage. Take, for example, New York City, often referred to as "the

capital of the world”. As of 2016, roughly 45% of New York’s households have access to a car compared to what is an almost 92% ownership rate on a national level (Maciag, 2017). This discrepancy isn’t because people can’t afford to own cars, it’s primarily because you don’t need to own a car to get around in the city. It’s becoming clear that as our urban populations grow at a rapid rate, smaller cities will have to start modeling themselves after successful megacities such as New York. The urgency of this shift is frequently overlooked in politics, as the current political landscape tends to push a short-sighted agenda that might be economically and even environmentally beneficial in the short term, but will continue to push us towards a more automobile reliant future.

In this research paper I will be conducting an analysis of one of these “short-sighted” agendas; the I-5 Expansion Project in Portland, Oregon. The primary methodology for this analysis will be to conduct a literature review on the existing pool of academic scholarship about highway expansion, then apply what was learned to the specific I-5 project that is currently approaching its final phase of planning. I will also be conducting a literature review that focuses on the “cultural” effects of the expansion. Ultimately, I will be answering a simple question: Is it really a good idea to proceed with the plan that the Oregon Department of Transportation (ODOT) has laid out?

II. ODOT I-5 Expansion Analysis

Oregon's I-5 expansion is a particularly interesting case to look at because of Portland's "environmentally friendly" identity in which biking, hiking, public transit, and green spaces are very much part of the culture. This identity has placed Portland on various "greenest city" lists, it would seem counterintuitive to many for the city to follow through with the plan. The Oregon Department of Transportation's I-5 Expansion/Rose Quarter Improvement Project is intended to address concerns surrounding the I-5 bottleneck near the Moda Center, up into the inner Northeast Eliot neighborhood. While the project has been in the works for almost a decade now, it has only recently been released to the public as a fully realised plan. ODOT's official published plan as of February 2019 states that "the purpose of this project is to improve the safety and operations on I-5 between I-405 and I-84, of the Broadway/Weidler interchange, and on adjacent surface streets in the vicinity of the Broadway/Weidler interchange and to enhance multimodal facilities in the Project Area" (ODOT, 2019, *I-5 Rose Quarter Improvement Project* and supporting documents). The primary methods that ODOT will utilize as a means to this end include constructing additional Auxiliary lanes, redeveloping the space surrounding the highway, and constructing additional infrastructure including but not limited to bike paths and pedestrian crossings.

The construction of Auxiliary lanes refers to the addition of lanes that connect highway exits and entrances, with the intention of making it easier for cars to merge in and out of the highway and decreasing automobile accidents associated with this particular stretch of highway. The plan would also involve additional exit/entrance lanes for certain highway exits to ease the process of merging and exiting. According to ODOT's analysis, these additions should end up

widening the highway, which in turn would reduce stop and go traffic and decrease travel times as well as total carbon emissions.

The second aspect of the project involves redeveloping the area surrounding this stretch of highway in accordance with Portland's adopted Central City 2035 plan. The 2035 plan is essentially an ideological roadmap to a “prosperous, healthy, equitable, and resilient” (City of Portland, 2020, *2035 Comprehensive Plan* and supporting documents) Portland by the year 2035. The redevelopment of this area is intended to accommodate for a slightly larger highway, but also to encourage economic growth in an area that has historically suffered from archaic urban renewal practices of which I will expand on in the next section. ODOT cites “A diverse mix of commercial, cultural, entertainment, industrial, recreational, and residential uses, including affordable housing” as a part of the intended use for the space in question. Additionally, ODOT is planning to construct a bike/pedestrian bridge over I-5 on Clackamas street, as well as constructing a bike/pedestrian path on Williams Ave. between Weidler and Broadway.

ODOT's Plan was most certainly designed in good faith with intentions to solve issues regarding congestion. The scope of the project, however, has some less than favorable implications. While ODOT uses language like “auxiliary lanes” and “entrance/exit ramps”, what the project is essentially doing is widening the highway in the specific congested areas. While it makes sense on paper, professional economists and urbanists generally agree that highway expansion has not been proven to decrease auto congestion. This is an opinion that will be expanded upon in section IV titled “The Fundamental Law of Congestion”.

On top of congestion related issues, there are generally poor implications when it comes to redeveloping a neighborhood that has historically suffered the wrath of outdated urban

renewal practices. Urban renewal is a process that frequently has good intentions, but through the natural process of “free” market competition, the results end up harming the communities in question. Quintessential urbanist Jane Jacobs sums up this process nicely; “A diversified mixture of uses at some place in the city becomes outstandingly popular and successful as a whole. Because of the location’s success, which is invariably based on flourishing and magnetic diversity, ardent competition for space in this locality develops. It is taken up in what amounts to the economic equivalent of a fad. The winners in the competition for space will represent only a narrow segment of the many uses that together created success” (Jacobs, 1961, pg. 243). So while a “mixed use” space by itself sounds good on paper and even aligns itself with the ideal Jacobian neighborhood, what we see is the success of these spaces ultimately becomes their downfall. It’s a story that has been told time and time again; Jacobs describes this process as the “self-destruction” of diversity. Contemporary discussion of this process frequently revolves around the concept of Gentrification; a term that was coined by Ruth Glass to describe the process of the “gentry” pushing out the working class in up and coming neighborhoods in London (Glass, 1964). While defining gentrification can be a difficult task due to its contextual importance, it is generally agreed upon that the process revolves around an influx of capital investment leading to a “social, economic, cultural, and physical transformation” (Brown-Saracino, 2010, pg. 14). The Eliot neighborhood is already suffering the effects of gentrification, so this leaves us with a concerning question; what exactly qualifies ODOT to take on this process of gentrification?

III. Cultural Implications

The area that is being proposed for redevelopment is the southernmost part of the Albina District, a collection of Neighborhoods in Portland that houses a majority of its African-American communities. As a result of the process of redlining which was most prevalent in Portland throughout the mid to late 1900's, the Albina district has become a home for ostracized African-Americans. Due to the fact that they were deemed "undesirable" by other communities, private banks refused home loans for people of color who were looking to purchase houses outside of certain areas, the result was essentially an urban spatial dynamic that looks suspiciously like neo-segregation.

Some of the earliest urban redevelopment projects that hit these predominantly black communities date all the way back to 1956, in which the Portland Development Commission (PDC) began clearing the area to make way for the construction of the Memorial Coliseum. This process involved demolishing 476 homes, the majority of which housed people of color, as well as a handful of black owned businesses. Just a few years after the Coliseum was finished the city began the construction of I-5, a project that would demolish another 125 buildings in the heart of Albina (Burke & Jeffries, 2016, pg. 43). Arguably a more devastating blow to the community, however, takes the form of a study published by the Portland Development Commission infamously known as the Central Albina Study of 1962. This study led to an amendment that gave the PDC the power to forcibly acquire land as long as it was for the sake of promoting industrial expansion and it followed the zoning standards in the area. The document published by the PDC essentially serves as a justification for these urban renewal projects: "urban renewal, largely clearance, appears to be the only solution to, not only blight that presently exists in

central Albina, but also to avoid the spread of that blight to other surrounding areas” (History of Portland’s African American Community, pg. 110). Words with extremely racialized connotation such as “blight” were commonplace in urban renewal projects, and it came hand in hand with a general disconnect between the planners and those who would be affected by the renewal. This top-down approach is nothing new, however, government agencies in charge of urban renewal frequently think that they know best and dismiss the intricacies and complications that exist within these communities.

This drive to eliminate blight from the inner Northeast continued into the early 70’s in which we see the most damaging urban renewal project: the construction of the Emanuel Hospital. It was at this point that the PDC began to really receive some resistance from the African-American community, as the Emanuel Hospital urban renewal project became one of the primary points of contention for Portland’s Black Panther movement (Burke & Jeffries, 2016, pg. 149). The Black Panthers fought to protect their home, but it was to no avail as the PDC had already invested too much into the project. Tides would change however, as the Community Planning Board (CPB) involved themselves in the discourse to help overcome this impasse and find a compromise for the PDC’s project. The CPB was a governing body that was established to mediate between the City and the community residents, it was likely a direct result of issues surrounding the voices of people of color not being heard. For the first time, we see the emergence of bottom-up grassroots planning, and the overwhelming consensus amongst the community was anti-Emanuel Hospital. While the damage from the Emanuel Hospital expansion had already been done, this period of time showed important progress for the wellbeing of inner Northeast. The conflict between the Black Panthers and the PDC led to the CPB’s formation of

the Neighborhood Development Plan which would work hand in hand with the citizens to perform neighborhood improvement projects in the years to come.

Understanding the history of this neighborhood begs the question; is it really a good idea to initiate another redevelopment project in this area? Times have changed and the purpose of the I-5 expansion project isn't necessarily to purge the area of "blight", in fact, it has a lot more to do with relieving auto-congestion. The implications are the same, as investing in new construction will involve destroying the old, a process which is all too familiar to the residents of the Eliot neighborhood. This time around, ODOT is actually reaching out to the community and holding public hearings that anyone can sign up for. The purpose of these meetings is to address the complicated history of the area and encourage economic development in a way that benefits the historically disadvantaged members of the community, particularly African-Americans. This is progress in the sense that, unlike the PDC, ODOT is actually reaching out to the community. The main issue is that urban planners have been trying to figure out how to encourage economic development without damaging the history of a space for decades now. Because of the complications due to free market forces, there is not an easy solution to this. Is ODOT, a government agency in charge of transportation, really qualified to oversee such a construction process?

IV. The Fundamental Law of Congestion

There is a fair amount of literature surrounding the topic of highway expansion and congestion relief. It's an issue that has become more pressing as we move towards becoming an increasingly urbanized civilization. One of the primary arguments against highway expansion revolves around the concept of "induced demand", a term that was originally coined in reference to economics. Induced demand, as it applies to traffic patterns, is the theory that expanded highways have an increased capacity and lead to lower travel times. These lower travel times, however, will eventually attract more drivers and the result is that congestion levels return to normal or potentially even see an increase. Like most infrastructure in our capitalistic society, roads can be seen as a commodity of sorts and the result is that traffic patterns follow basic economic patterns. Economist Robert Krol sums it up nicely: "A key principle in economics is that people respond to incentives. For example, when gasoline prices rise, people change their behavior and reduce their gasoline consumption. Some people purchase vehicles that get more miles per gallon. Some increase carpooling or switch to mass transit, even though these transportation options are less convenient" (Krol, 2019, pg. 1). According to this model, not only does highway expansion fail in relieving congestion, it also ultimately discourages the use of alternative forms of transportation. This process is almost cyclic in nature; increased urban population leads to increased highway congestion, administrators' gut instinct is to expand the highway which sees temporary results. Eventually, congestion levels stabilize and the process starts all over again.

The theory of induced demand makes sense on paper, but it is a null argument without concrete empirical evidence to support it. Thankfully, various studies have been conducted and

published that look at how highway expansion has affected specific corridors. One of the studies I will be looking at takes place in Norway, and while it is not focused on highways specifically, it does look at urban road capacity. In their study *Effects of urban road capacity expansion – Experiences from two Norwegian cases*, Tennøy et. al. have looked into the topic of urban road capacity expansion as it relates to induced traffic in the cities of Ålesund and Norwegian capital Oslo. The results were as follows: “In both cases, we found a strong growth in population and jobs in the areas getting improved accessibility due to the road capacity expansions, and the relative growth was stronger in the outer parts of the areas investigated. Much of the new housing has been built as low-density detached housing, and in Follo, the share of new housing built this way and on new land increased with the distance to the main city” (Tennøy et. al., pg. 101). While not relating to congestion, this study has shown a clear relationship between road capacity expansions and urban sprawl, a process that is harmful for the density of an urban space. The study also concludes that “the road capacity expansion was a contributing cause for a more sprawled and car-dependent land-use development than what would otherwise have occurred, as well as longer commutes, in both the smaller and the larger city. This contributed to stronger traffic growth in the road corridors than would otherwise have occurred, and no or only short-term reductions in congestion levels in rush hours” (Tennøy et. al., 2019, pg. 102). Not only did the road expansion projects fail to reduce congestion in these corridors, on a larger scale they also contribute to greater issues of urban sprawl.

Additional evidence against highway expansion can be found in a study that was conducted in Japan using census data collected by Japan’s Ministry of Land. Hsu and Zhang’s *The fundamental law of highway congestion revisited: Evidence from national expressways in*

Japan posits that “The fundamental law of highway congestion states that when congested, the travel speed on an expanded expressway reverts to its previous level before the capacity expansion” (Hsu & Zhang, 2014, pg. 1). The study looks at the relationship between road capacity and traffic levels, which is measured in Vehicle Kilometers Traveled or VKT. This relationship is known as the “elasticity” of the road. Krol describes the quantification of this relationship: “They estimate the percentage increase in vehicle miles traveled that results from a 1 percent increase in the lane miles on a particular highway or a defined geographic area, such as a city or state” (Krol, pg. 1-2). If the elasticity is 1 or greater, that means that the coefficient between the VKT and the road capacity is 1 or greater, meaning that if the road capacity increases so does the VKT at an equal or greater rate. In conclusion, if the elasticity of a specific road or area is equal to or greater than 1, then the fundamental law of highway congestion is true and the expanded highway will “revert” back to its normal level of congestion. Using the census data, Hsu and Zhang found that on average, the elasticity was above 1 and thus, in the context of Japan, the fundamental law of highway congestion is found to be true. It’s important to acknowledge, however, that this does not necessarily mean that the fundamental law of congestion is true in every context. This study uses a model that assumes that all the roads in question are congested, an assumption that really only applies in areas in and surrounding urban spaces. Frequently highway expansion projects are targeted to relieve areas that suffer from bottlenecks and extreme cases of congestion, so in this sense this study is still extremely applicable.

Hsu and Zhang’s study in Japan was conducted as part of a scholarly conversation with American Economists Duranton and Turner who conducted a similar study that takes data from

US cities. This study is integral to the “fundamental law of highway congestion”, according to Krol, due to the length of the study, the utilization of a strictly urban context, and the accommodations made to account for variables that might have affected previous studies. The study was conducted using data collected from 228 urban interstates by the US Highway Performance Monitoring System in the years 1983, 1993, and 2003. This time frame is important because one of the major critiques of the methodology behind these highway congestion studies is that they only look at the relatively immediate results of road expansion, and they don’t accommodate for the complexity of the dynamics at play (Cervero, 2003, pg. 159). By looking at a 20 year time span Duranton and Turner have at least partially overcome this obstacle, lending their results to the bigger picture. The results of this study were similar to that of Hsu and Zhang, however they found that the average elasticity was around 1, and any deviation was not significant enough to jeopardize the results. This means that in the 228 interstates in question, the coefficient between VKT and road capacity was roughly 1, implying that over time any relief that an expansion provided would ultimately result in a relapse and congestion would continue as normal. Additionally, this study finds that the fundamental law of congestion doesn’t exclusively apply to expressways, a similar elasticity was found for other non-expressway major roads in the Metropolitan Statistical Areas that were observed in the study (Duranton & Turner, 2011, pg. 2645).

V. Lane Tolling

One of the main alternatives to highway expansion that scholarship frequently references is that of lane tolling. Rather than managing congestion by expanding highways and increasing their capacity, cities can find ways to incentivise people to use alternative forms of transportation, or maybe not use transportation at all. Toll managing or “congestion pricing” is becoming more popular as a technique employed to ease highway congestion. The philosophy is quite simple, it would involve replacing the current High Occupancy Vehicle (HOV) lanes that many states employ with High Occupancy Toll (HOT) lanes (Schwimmer et. al., 2019, pg. 1). HOT lanes would operate similarly in the sense that they can only be used by High Occupancy Vehicles, however, these vehicles would receive a toll discount or exemption. Unfortunately, previous ventures have utilized these tolls to fund additional high expansion projects, a concept that seems counter-intuitive knowing the results from previous studies. The results are still promising and the money raised by congestion pricing has potential to go towards other projects such as alternative transportation. In their study *Toll-managed lane pioneers: Lessons from five US states*, Schwimmer et. al. look at case studies from 5 different states: Texas, Florida, Minnesota, Colorado, and California. In 1998, the Texas Department of Transportation introduced the QuickRide program which was a simple \$2 charge for single occupancy vehicles to use the HOT lanes. This point onward HOT lanes started to become common use in Texas, and they were even used to address congestion issues relating to their massive 10 lane freeway. Minnesota began adopting HOT lanes shortly after Texas, with their first HOT lane opening on I-394 in 2005. Florida caught on to congestion tolling a little bit later, with the Florida Department of Transportation introducing its first tolled lane on I-95 in 2008. Colorado ended up

adopting congestion tolling out of necessity, as their highway funding was being exhausted and local legislation was generally against increasing gas taxes, the primary form of transportation funding. California has the most HOT lane coverage out of all these states, with a cumulative 200 miles in metropolitan areas alone. All these states are similar in the sense that they all experienced a sharp increase in population in the years that these projects were happening, and were generally under budgeted to accommodate for that many people.

These “pioneers” of lane tolling have been generally received as a success, yet the technique of congestion pricing has yet to be implemented to solve Portland’s congestion crisis on the stretch of I-5 in question. ODOT has already been encouraged to utilize lane tolling as a means to reduce congestion in other areas. Oregon passed a bill in 2017 called “Keep Oregon Moving” which funneled hundreds of millions of dollars into congestion relief, particularly through Portland. Lane tolling was actually one of the objectives of this bill; “The Legislature also directed the Oregon Transportation Commission (OTC) to pursue and implement tolls on I-5 and I-205 in the Portland Metro region to help manage traffic congestion” (Oregon.gov, 2017). It’s clear that ODOT and its parent agency OTC are aware of the positive effects lane tolling can have on relieving automobile congestion. Ironically, the Oregon.gov website actually describes the benefits of congestion pricing quite succinctly: “Fees to use a road or bridge can vary based on time of day and can be a strategy to shift demand to less congested times of day. A higher fee is charged during peak periods, such as morning or evening ‘rush’ hour and a lower or no fee when there is little traffic. The idea is to provide an incentive for those with flexibility to avoid the busiest time of day” (Oregon.gov, 2017). ODOT even acknowledges that lane tolling is a legitimate tactic to reduce congestion during peak hours, after all, a 2018 Feasibility Analysis

concludes that tolls could help reduce congestion. Despite this documentation, there is yet to be a fully realized tolling system implemented in Oregon short of various tolling booths on certain bridges. ODOT claims that the planning process for this tolling system is to begin in 2020, however here we are nearly halfway into the year with no news relating to it. ODOT appears to be prioritizing highway expansion, a technique that has been all but debunked by experts, instead of its more cost effective alternative of congestion pricing. Granted, there are some hoops to jump through to achieve a comprehensive lane tolling program in the Portland Metro Area, but these hoops should take priority over any sort of highway expansion project.

Tolling can more or less be seen as a carbon tax that charges people for using specific stretches of the highway during peak hours. One of the primary criticisms of lane tolling is that, much like any tax, it's possible it could adversely affect low-income commuters who have no other option than to use that stretch of highway during those hours. This shouldn't be an issue because, theoretically, lane tolling should reduce traffic enough that commutes become shorter, and by extension, cheaper. As ODOT's own official I-5 Improvement document supports this notion, stating that reduced stop-and-go traffic means less gas and time spent for commuters. Hypothetically, even if lane tolling does disproportionately impact low-income commuters, there are plenty of easily implemented techniques that could make up for the taxed individuals. One such technique has been implemented by Vancouver B.C.'s government to make sure low-income residents aren't adversely affected by their "across the board" carbon tax passed in 2008 (Pembina Institute, 2014). The technique employed was a simple tax credit system in which some of the money raised by the tax was allocated to low income residents in the form of credit. By providing low income commuters with credits raised by the tolling fees, the city of Portland

could effectively make sure that those who can't afford to pay the tolls don't have to, or at least receive some sort of reimbursement.

VI. Public Reception

Unsurprisingly, public reception of ODOT's I-5 Expansion plan has been overwhelmingly negative. ODOT has received flack from mainstream media outlets such as the Willamette Week and Oregonian, as well as receiving a lot of criticism from environmental activists and local politicians. Headlines sounded promising early in 2019, with The Oregonian publishing an article titled "Rose Quarter freeway project would reduce travel times and greenhouse gases, report says, reflecting the official environmental impact that ODOT planners predicted" (Theen, 2019). Later in the year, however, The Oregonian turned it around and published an article titled Rose Quarter project is one of the nation's biggest highway boondoggles, environmental watchdogs say. This article is more accurate in the sense that it reflects the popular opinion at this point in time, with ODOT receiving more pushback in commission meetings for being woefully shortsighted and ignorant of previous highway expansion projects.

Despite public outcry from experts, activists, and nonprofits, the plan is moving forward and receiving mixed support from local politicians. Commissioner Chloe Eudaly, for one, is hesitant but not completely against the expansion project; in March of 2019, at the monthly Oregon Transportation Commission (OTC) Eudaly stated "I don't necessarily think fixing this poorly designed exchange on I-5 is a terrible idea. We're not adding capacity at either end of it

we're trying to clear up a bottleneck" (Theen, 2019). She follows this up with a settlement, arguing that "we can come up with something better" as a community.

Public hearings haven't been for naught, while the project hasn't been halted, it has been delayed significantly in order to reassess its potential environmental impact. Mayor Ted Wheeler, Metro Council President Lynn Peterson, and Multnomah County Commissioner Jessica Vega Pederson all signed a letter sent to the OTC members that called for a more in depth environmental impact assessment (Stenvick, 2019). More recently, Oregon Governor Kate Brown has also expressed her concerns regarding the tentative highway plans and has sent a plea to the OTC to delay the project. Since the OTC's public deliberation in spring, the projected cost of the expansion has skyrocketed from an initial \$450 million to an estimated \$795 million (Monahan, 2019), and even that number only seems to be increasing.

ODOT's I-5 expansion plan is not only receiving criticism from local experts; transportation planner Buff Brown of reputable Streetsblog USA has contributed his two cents in his article Portland's Costly Highway Mistake. Brown takes an unfaltering stance that "The city should reverse course and cancel the expansion of Interstate 5" (Brown, 2019), citing increased VKT and greenhouse gasses, social inequity, and less biking/walking as his rationale. It is disheartening, states Brown, because Portland is supposed to be a beacon of "environmentalism, urban planning, public transportation, public involvement, and progressive politicians" (Brown, 2019), however ODOT continues down these trends that completely disregard these ideologies.

VII. Conclusion

The importance of this issue of archaic transportation planning should not be overlooked. It may seem like this is just one case example, but the truth is that this style of congestion control is ubiquitous here in the US as well as in other countries. ODOT's ideologies surrounding highway expansion perfectly highlight the shortsighted nature of transportation policies and why they can be potentially harmful for our goal of attaining a more sustainable urban environment. As we can see from the various peer reviewed academic studies conducted examining the concept of "induced demand", stretches of highway that are expanded return to similar levels of congestion shortly after the initial relief. Even if ODOT hits all of its projected results and the project successfully lowers carbon emissions and reduces congestion, the hundreds of millions of state dollars that are being pumped into the project could be better used elsewhere. This line of thinking only fuels our auto-centric values and instills the necessity of car ownership for years to come, a concept that we may have to abandon in order to progress as a civilization. Climate change can primarily be attributed to our current "petropolis" model, that is, a "city that emerged from the Industrial Revolution, with all its key functions enabled by daily injections of coal, oil and gas"(Girardet, 2014, pg. 26). It's becoming increasingly apparent that this is a model we have to move away from to address climate change, however, it is easier said than done when the very geography of our city is rooted in automobile usage. General awareness surrounding climate change is at an all time high; we are finally at a point where it is being discussed on a federal and global level through bills such as the Green New Deal. "Regenerative Development" expert Herbert Girardet would probably argue that it is not enough; "In an urbanising world, the planning of new cities, as well as the retrofit of existing ones, needs to undergo a profound

paradigm shift” (Girardet, 2014, pg. 8). This paradigm shift might have to be something as “profound” as moving away from cars all together, as crazy as it may seem now.

To play devil's advocate, the problems that ODOT's plan is attempting to solve are real issues. It's true that the mile stretch of I-5 has congestion issues, particularly during rush hour. It's also true that commuting through this area has even become messy for pedestrians, public transit users, and bicyclists. The fact of the matter is, however, that this \$800 million could be put towards a myriad of other projects that could potentially address the issues. Investing some of this money into public transportation, for example, might give those who commute via I-5 an alternative to get to work. Alternatively, this money could be going towards fixing the potholes in the roads we already have built to encourage more use on those, or perhaps, fixing the road quality of the Portland Greenway roads to encourage more bicycle commuters. Ideally, this money could go towards implimenting an extensive tolling program whose successful results has already been hypothesized by none other than ODOT's own experts. The sheer volume of money that the city would be pumping into this project is absurd when we have so many other pressing issues. Is the bottleneck in this stretch of I-5 really more pressing of an issue than the homeless crisis? What about funding for schools? Expanding the sewage overflow so that it doesn't overflow every time it storms? It's especially concerning given the history of displacement in the Eliot neighborhood and the increasing problems regarding gentrification in the area. This money could be used to have a positive influence on a neighborhood that has been ravaged by urban renewal, providing reparations for the families that were displaced back as far as the 50's would be a great start. Previous urban renewal projects like the Moda Center, Memorial Colesseum, and Emanuel Hospital serve as a constant reminder to Eliot neighborhood residents and are symbolic

of the injustices that the neighborhood has faced. Despite backlash from the community members and politicians, ODOT's redevelopment plan is seemingly proceeding as planned, albeit a bit delayed. ODOT not listening to members of the community who oppose the plan is painfully reminiscent of how the PDC willfully turned a blind eye to those who opposed urban renewal. The last thing the Eliot Neighborhood needs is another symbol to remind them that when it comes to urban development, their voices will never be heard.

While halting the progress of the I-5 expansion would be a promising start, what ultimately needs to be done is the retroactive removal of these harmful urban highways. The honest truth is that having an international highway system that runs through the hearts of cities is not conducive to attaining a sustainable urban society. This is by no means a new ideological stance, many individuals and organizations share a similar view on the state of urban America. In fact, a national advocacy conglomerate known as the Congress for New Urbanism recently published a project called *Freeways Without Futures*. The project analyzes the theoretical effects of removing certain stretches of highway in 10 case example cities, one of which happens to be the exact stretch of I-5 that is in the process of being expanded in Portland. The write up states that "The 43 acres gained through highway removal would increase business and housing opportunities, which in turn would help accommodate the area's growth. Removing the freeway would enable the Central Eastside neighborhood to take better advantage of its existing transportation options" (Freeways Without Futures, 2019, pg. 18).

Actually achieving enough political influence to begin destroying existing freeways may be a bit of a stretch, but we can at least hope to halt the construction of new highways and the expansion of existing ones. As a city that has an environmentally progressive political

environment, Portland has the potential to be at the forefront of the fight against climate change. We can't let the pride in our identity be nothing more than a facade; Portland must follow through this environmentally friendly identity with environmentally friendly policies. At the end of the day, consummating the I-5 expansion project would be an insult to Portland and those who are proud to call the city their home.

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