

ENVIRONMENTAL PRICING REFORM AND ITS POTENTIAL TO
ADDRESS HORIZONTAL GROWTH FOR THE CITY OF EDMONTON

By

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ABSTRACT

Urban sprawl (horizontal growth) is not socially, economically, environmentally sustainable. Environmental Pricing Reform (EPR) promises to affect and lessen horizontal growth and provide financial relief and sustainability for municipalities. This analysis determines the aspects of Environmental Pricing Reform that the City of Edmonton could adopt in efforts to address its own horizontal growth. This paper chooses to examine four pricing instruments: increasing development charges, progressive taxes, location efficient mortgages, and transportation reform. The City of Edmonton would find value and get the most immediate impact towards addressing the concerns of horizontal growth by increasing development costs and transit orientated development. Increasing the cost of development charges must be balanced against concerns of future housing affordability or leap-frogging development. For the City of Edmonton, adopting EPR can have complex implications beyond economic dimensions. EPR requires a humanist approach to be sensitive in application. Although there is merit in each of the four examined strategies there is a deeply concerning paradox at the root of EPR. This paradox and the limitations of EPR would potentially increase horizontal growth. This needs be addressed before the City of Edmonton can adopt EPR.

The words “urban sprawl” can negatively convey images of unplanned and rapid expanding land use development. In Canada, there is also a concern that urban sprawl may hollow out downtown core areas and convert arable farm land into single family homes making suburbs that are heavily auto-dependent (Bray, Vakil, Elliot, & Abelsohn, 2005, p. 7). In the City of Edmonton, the Growth Coordination Strategy Team aims to reduce unplanned growth and manage future public obligations (Omelchuk, 2014). Because of this strategy, Edmonton’s City Council rarely uses the term “urban sprawl” but prefers the kinder and less inflammatory term “horizontal growth.”

Adding to the urgency to address horizontal growth, a 2011 report from Edmonton’s City Council on the Costs and Revenues of Building in New Areas found the cost of building new communities is something that can “only partially” be recovered by the city (Finance And Treasury Department Report, 2011, p. 2). To date, the City of Edmonton is responsible for all the capital costs of police, fire stations, the maintenance, repair, renewal of infrastructure like pipes and roads. “This means that, across just 17 of more than 40 new planned developments, costs to the City are expected to exceed revenues by nearly \$4 billion over the next 60 years (Sustainable Prosperity, 2013a, p. III, 2013a; Voshart, 2014, p. 1).

David Gordon is the director of the School of Urban and Regional Planning at Waterloo University. His research confirms that from 2006-2011 Edmonton was second only to Calgary as the fastest growing region in Canada. “In Edmonton’s case, Gordon found that 93 per cent of that growth occurred in suburban neighbourhoods or in low-density rural areas where more than 50 per cent of residents commute into the city” (CBC Reporter, 2013, p. 1). Gordon, like Edmonton’s City Council argues that horizontal growth takes a toll on the financial,

environmental and social aspects of a city. Gordon also asserts that new development in the suburbs is socially unsustainable “because if you are too poor, too young, too old to own a car these neighbourhoods are very, very difficult (CBC Reporter, 2013).

These academic findings, city-funded reports, and contemporary news stories have influenced a policy perspective and attitude that horizontal growth is not financially, socially or environmentally sustainable in Edmonton (City of Edmonton, 2014b). Horizontal growth is a concern for the City of Edmonton. Environmental Pricing Reform (“EPR”) is a strategy that could be used to address the problem. EPR proposes pricing and informational strategies that can be implemented to guide residents towards positive environmental behaviour. EPR may also have the added benefit of diversifying source revenue and contributing financially to cities like Edmonton that face the financial pressures of rapid growth. The purpose of this research is to evaluate how EPR could affect horizontal growth and assist the City of Edmonton to advance sustainable land use practices. My research question is: what aspects of EPR could the City of Edmonton adopt in efforts to address its horizontal growth?

Interdisciplinary Perspective

For the purpose of interdisciplinary research, a case study with the City of Edmonton and aspects of EPR offers the opportunity to partially integrate environmental economics with civics and policy studies.¹ Since EPR as a strategy is not identified as interdisciplinary or even fully integrative of these sub-disciplines a more generalist interdisciplinary approach will be beneficial

¹ For clarity, environmental economics is a sub-discipline of the study of economics with an environmental focus. Civics is a sub-discipline of political science focusing on the citizen as well as the role of municipal government. Policy studies considers policy and its various effects, causes, and directions (“List of Academic Disciplines and Subdisciplines,” 2014).

for analysis.² Ultimately, a humanist approach can contribute to a nuanced practical and ethical knowledge of what aspects of EPR will benefit the City of Edmonton.

I use research from academic journals that focus on economics, civic policy, development studies, and consumer culture. I also use interdisciplinary journals. I refer to the City of Edmonton's website and supporting documents for quantitative and qualitative municipal government reports. My initial analysis focus began with Sustainable Prosperity's publications, but I also consult contemporary products like on-line newspapers to ensure a broader interdisciplinary and popular perspective. Sustainable Prosperity (SP) is made up of businesses, environment, policy and academic leaders. SP promotes itself as a "national green economy think tank/do tank". It works to "...advance innovation in policy and markets, in pursuit of a greener, more competitive Canadian economy"(Sustainable Prosperity, 2013a).

Environmental Pricing Reform

EPR reinforces positive environmental choices in "the way government collects money (through taxes, royalties and user fees) and spends money (...through programs, grants, tax credits, exemptions, refunds and rebates, and accelerated capital cost allowances)" (Sustainable Prosperity, 2013a). EPR is based on Rational Choice Theory. Rational Choice Theory relies on the premise that individuals will always select a choice that maximizes their personal welfare and benefit (Gaussett, 2013, p. 32). Within EPR there are also elements of a Pigovian Tax. Pigovian Tax is a corrective tax applied against products that are harmful to human health like a "sin tax" that is applied on alcohol and tobacco products. Pigovian Tax is applied to incent or coerce

² Generalist interdisciplinarians define interdisciplinarity to mean "any form of dialog or interaction between the two or more disciplines" (Repko, Szostak, & Newell, 2012, p. xix). My approach does not prioritize integration. It assumes that there is minimal integration; it diverges from some generalists who reject the possibility of integration in favor of integration being aspirational.

companies or individuals to reduce the negative consequences of environmental pollution like the carbon tax on gasoline sales in British Columbia (“Pigovian Tax,” 2014).

For EPR to be most effective it is believed that individuals must have an understanding of the economic and environmental consequences of their behaviour. Examples of “good” environmentally sustainable behaviour would be a focus on re-claiming brownfield sites, greyfield sites, and building in in-fill locations and responsible land development. Greyfield sites are dead malls, ghost boxes that can be re-positioned as usable, attractive residential or commercial space. In Edmonton, the re-development of Heritage Mall into Century Park (Onishenko, 2012, p. 88). Brownfield sites are usually sites where the soil may be contaminated by gas for example (Sustainable Development, 2014). Infill development is new development in established neighborhoods like Blatchford, Downtown, The Quarter, West Rosedale (City of Edmonton, 2014a). “Good” behaviour would be land development that encourages building multiple rather than single-family residences. Other “good” sustainable behaviour is the planning of communities that encourage walking, cycling, transit and little if any automobile use and dependency. “Bad” behaviour includes choices that creates more pollution or creates or contributes to horizontal growth.

Environmental Pricing Reform and the City of Edmonton

A critical component of the City of Edmonton’s The Way We Grow Plan is the building of compact, urban and transit-oriented development (City of Edmonton, 2014b, pt. 1:19). EPR contributes many pricing ideas that municipalities can incorporate that assist in cost recovery and in shifting residents towards more environmental choices. It is argued that municipalities are more ideally suited to influence behavior and apply EPR compared to provincial and federal

government because of proximity to user (Kennedy, Krogman, & Krahn, 2013, p. 360; Thompson & Joseph, 2012, p. 5). The four most relevant to horizontal growth and the City of Edmonton are: accurate and increasing development charges, progressive property taxes, location-efficient mortgages and transportation reform (Thompson, 2013, p. Executive Summary, V). The next four sections will consider these ideas and what aspects may be of value for the City of Edmonton in relation to addressing horizontal growth.

Accurate and Increasing Development Charges

Edmonton's City Council is aware that development charges "only partially cover the cost of actual development (Finance And Treasury Department Report, 2011, p. 1).³ By comparison, the City of Kitchener's suburban residential development charges are seventy-four percent higher than their central neighbourhoods. "For non-residential buildings, suburban charges are 157% higher." City of Ottawa also "has higher charges for development outside of its greenbelt. [The City of] Hamilton provides a 90% exemption from development charges in the downtown area. [City of] Calgary and Peel Region recently doubled its development charges on new suburbs" (Thompson, 2013, p. 13).⁴ Clearly, other cities are actively and selectively increasing their development charges.

The rationale of increasing development charges has more at stake than re-capturing cost.

Theoretically, districts that already have infrastructure in place should have lesser development charges to encourage intensification and densification than those requiring input or development

³ The immediate impact of development charges (and other costs including application/ processing, and building permit fees, land dedication) falls on developers (Pinfold, 2012, p. 11).

⁴ It would be beneficial for Edmonton to evaluate how Calgary's increased pricing of their suburbs affects development before making similar changes. Until Calgary increased their development charges, Edmonton's development costs were higher at 8.7% ; Calgary's were 8.3% of median house price (Pinfold, 2012, p. V)

of infrastructure (Baumeister, 2012, p. 5). Instead of a uniform charge, it has been argued that area-specific development charges would cause “...more efficient land development and equitable distribution of costs related to development (Nicholas, Nelson, and Juergensmeyer 1991; Skaburskis 1991; Tomalty and Skaburskis 2003)” (Baumeister, 2012, 9). For the City of Edmonton, the application of area-specific development charges would potentially be more politically feasible than an overall increase in property tax.

Critics against a rate increase argue that development charges are forward shifting and burden the consumer. If market conditions allow, the developer will only be *temporarily* charged the increased development costs. The developer will try to reclaim these costs from the builder through lot prices. The builder will then try to reclaim this cost from the sale of real estate to the homebuyer (“The Effects of Development Charges on Urban Form Industry Survey.” 2000, p. 28). However, there may be tolerance for an increase in development fees in Alberta because Alberta developers do not pay a provincial sales tax or even face the same magnitude of charges as developers in British Columbia and Ontario (Baumeister, 2012, p. 24; Pinfeld, 2012).

Increasing development charges will likely not affect developers; but should the city be concerned that it could impact home affordability? It is true, that increasing home prices might be counter effective to Edmonton’s City Council priorities to encourage affordable housing. However, development costs are one factor to take into consideration. Housing affordability is a complex issue that must take other factors into consideration: market conditions, employment levels, housing demand, and rental vacancy rate.

The second concern shared by both critics and proponents of EPR, is the risk of leap-frogging (Thompson, 2013, p. II). This is the practice by developers and consumers to relocate and build

suburbs *outside* of the city's jurisdiction, thereby *increasing* horizontal growth and reducing the city's capacity to collect property taxes. If the City of Edmonton were to proceed on this type of re-alignment it would have to do so cautiously to mitigate the risk of leap-frogging.

Although the “net increase of fees is zero” the Urban Development Institute (UDI) contends that the development fees in the City of Edmonton have increased (Davis, 2014). What has changed is that fees are due at the beginning of the 4-5 year development process. UDI charges that this change alone will cause increased carrying costs (cash flow and project timing) that will in turn increase house prices, costs to develop industrial land and commercial real estate (Baumeister, 2012, p. 24; Davis, 2014, p. 1). From the city's perspective, the 2014 City of Edmonton Budget did not increase development charges. Instead, new fees are collected for the purpose of hiring more staff in Central Planning to improve processing time for applications (City of Edmonton, 2013).

I question if changing to upfront fee collection may indirectly impact horizontal growth by leading to less dense building. Single-family homes are faster to build and recoup investment than higher density buildings. As an initial strategy, this may facilitate the ability for the City of Edmonton to immediately recoup the cost of development, and fund any immediate short falls. It will likely reduce the number of applications in the short term. From a long term perspective, it is too early to evaluate if only developers with deep pockets will have the capacity to adapt to this change or if this change will contribute to leap frogging.

Progressive Property Taxes

Advocates of EPR strategies suggest that it is possible to curb horizontal growth by changing the definition of a municipality's property tax class. Currently, property tax assessors assess property

taxes into one of four classes: Class 1 is residential; Class 2 is non-residential; Class 3 is farmland; and Class 4 is machinery and equipment (Alberta Services, 2013, sec. 297; C19s6).

The City of Edmonton along with other municipalities could incentivize density by being more prescriptive. Amending Class 1 into more categories such as multi-density residential and single density categories would allow Alberta municipalities to vary the tax assessment on these sub-categories. City of Montreal apartment dwellings in some boroughs are not assessed or taxed as high as single-family dwellings (Thompson, 2013, p. V).

The City of Edmonton focuses on investment in energy efficiency and re-developing brownfield sites. The City of Edmonton provides grants of \$1000 to \$7000 towards improving home energy efficiency. Caernarvon Keep is the third townhouse site to use these grants, "...with another nearing completion in Tawa, and all units are selling quickly. and reducing Edmonton's overall carbon footprint" (City of Edmonton, 2014c). The Brownfield Redevelopment Grant promises up to \$200,000 or 80 percent of the remediation activity, whichever is less, per grant proposal (Sustainable Planning, 2014).

Location Efficient Mortgages

Horizontal growth results from the lack of clarity on the real sticker price of housing when the cost of transportation is not included (Thompson, 2013, p. 10). One of EPR's strategies to account for the housing plus transportation equation is Location Efficient Mortgages ("LEM"). It is believed that "[h]igh commuting costs can affect a home owner's ability to pay back the mortgage...if you pay \$10,000 a year to commute over the life of a 25 year mortgage, that's \$250,000. All of a sudden, living in the suburbs doesn't come cheap" (Derksen, 2011; Goldstein & Natural Resource Defence Council (NRDC), 2013).

There is an active example of an LEM instrument referred to as a Smart Commute Mortgage by lender Fannie Mae.⁵ A criticism of LEM mortgages is that home ownership is highly inelastic while transportation needs can be highly elastic. Merging of these two concepts, so that they are reliant on each other, is not flexible. LEM's need sensitivity for borrowers, such as for when a borrower transfers to a job, or has new social responsibilities like caring for aging parents that requires a longer commute (Birdsell, Dewar, Sommers, & Zeidman, 2012). I also question the desire or capacity of the lender to police the environmental behaviour of borrowers.

LEM could work to facilitate changing the current paradigm by rebalancing more expensive housing options towards the fringes, and ideally make the higher density urban core option comparatively less expensive. The City of Edmonton's current strategy is to be both environmentally *and* people friendly. They facilitate affordable housing. They offer grants to reclaim or remediate land. LEM could be combined with these existing grant strategies for even greater effect.

Transportation Reform

City of Edmonton residents have a high dependency on automobiles.⁶ EPR has several ways to change this dynamic. First, introducing parking fees that redefine the relationship between downtown parking requires payment and suburban parking that is free. EPR suggests changing this dynamic by setting up parking as a fee payment structure in urban shopping malls, as one example. In Toronto a \$0.25 fee per parking space has been proposed that owners of large

⁵ Fannie Mae offered LEM's in Chicago, Seattle; Los Angeles County; and the nine-county San Francisco Bay Area. Fannie Mae found the application process too cumbersome and created a simplified version of LEM called Smart Commute Mortgages (SCM).

⁶ Edmonton's 2005 Household Travel Survey reports that Edmonton has the highest car dependence rates in Canada. Of the 2.5 million trips made each day, Edmontonians traveled by car (77%), walking (11%), public transportation (9%), and bicycle (1%) (City of Edmonton, 2009, p. 8).

parking lots would need to pay, this includes malls and movie theatres, which typically offer free parking. For pay-for-use lots, the added cost would likely be passed on to drivers. In terms of legislation these fee concepts have stalled. What was once free can create political difficulties and divisiveness between multiple stakeholders such as business associations, and consumers and developers (O'Toole, 2013; Perkins, 2013; Thompson, 2013, p. 1).

To complicate matters, the effectiveness of parking fees might be negligible. In January 2012 Chicago put in place a “congestive tax” or a parking tax on commercial lots and garages. The new parking taxes raised only half of the projected \$28 million. Based on an early evaluation, this tax had a minimal effect on congestive traffic within the city. It was also difficult to determine if the 6% increase in transit ridership was natural growth or could be attributed to the parking tax (Newmark & Lai, 2012, p. 12).

Second, auto commuter pricing structures can be used to reduce congestion, greenhouse gases, road wear and tear and singular vehicle traffic. It has also been argued that road tolling, congestion pricing, and High Occupancy Tolls (HOT lanes) can be more influential in affecting decision making about land use compared to sales taxes, income taxes, motor fuels tax (Petersen & MacCleery, 2013, p. 3). Can EPR strategies like Congestion Pricing or High Occupancy Toll (HOT) lanes impact Edmonton’s horizontal growth?⁷ Congestion pricing adds premium charges for using specific roads at peak times. The need to build more roads is reduced because drivers try to minimize their costs by planning ahead. Studies indicate that willingness to pay (suggested amount \$0.20 per kilometer) is influenced by freeway trip distance, traffic speed, trip urgency,

⁷ Road Tolls are user fees for usage of a specific road (Holder, 2014). Road tolls can be temporary, in BC, the Coquihalla Road Toll was set up to pay the capital cost of building the road; the toll was cancelled when it achieved that goal (Samuel, 2008). I do not suggest overall road tolls because of the social complications. For example, inaccessibility of services for poor; or the business that requires access multiple times but cannot afford to pay.

and necessity for on time arrival time (Finkleman, Casello, & Fu, 2011; Finkleman, 2010). When congestive pricing was put into place in City of London, England “in the first year of implementation, vehicle traffic coming into central London dropped 27 percent” and “commute times became shorter and significantly more predictable” (Wood, 2012, p. 1). High Occupancy Tolls charge additional fees to vehicles with single occupants to use the more desirable less congested lane. These types of charges directly reflect road usage. They can also be adjusted to give discounts to vehicles that carry more passengers. Current toll collection technology has removed the inconvenience of stopping and can implement variable pricing making it possible to charge users based on value (Petersen & MacCleery, 2013, p. 3, 5).

EPR transportation reforms can be successful at raising funds, but despite making allowance for variable pricing or offering discounts, can also create inequity. Bloggers have asked “[i]s it acceptable to have a road pricing scheme that prices the poor off the roads to create more room for the rich” (Walker, 2014). I think there are better EPR transportation strategies to tackle horizontal growth. EPR recommends funding transit orientated growth. The City of Edmonton is developing a Transit Orientated Density (TOD) approach to transportation reform. The City of Edmonton also encourages more active transportation like cycling and plans to expand the Light Rail Transit (LRT) system. In March 2014, the City of Edmonton entered into a funding partnership deal with the Province of Alberta to obtain funds to augment current LRT hubs and significantly build density and take commuters off the road (Government of Alberta, 2014). Increased transit service and development of more LRT capacity may be an effective means to reshape the municipality’s housing footprint. LRT development projects add density by increasing the use of transit and encouraging residents to build closer to station access points.

Increasing surface transit, such as bus and streetcar/light rail can be used an incentive to help density issues and reduce greenhouse gases (Sustainable Prosperity, 2013b).

Barriers or Limits to EPR

EPR proponents have begun to question if other factors have interfered with the process of EPR adoption by municipalities. At a recent forum, speakers addressed some of the reasons that people choose to live in the suburbs. They agreed that price in terms of immediate affordability is probably the greatest factor in choosing to live in the suburbs. What this means is that the principle of “drive till you qualify” determines how far a homeowner will live from an urban centre. Another reason is the “suburban mindset” which is belief that living the in the suburbs is better because of space, security, privacy or quiet (Thompson, Harris, McMullin, Beasley, & Price, 2014).⁸

EPR does attempt to mitigate inequitable application of pricing instruments by recommending regulation. “It must be kept in mind that while prices allow for ‘choice,’ equity, economic mobility, and social stability are also important, and spending choices are more restricted for those with lower incomes. Therefore, pricing policies need to ensure fairness” (Sustainable Prosperity, 2013, p. 3). This quote underscores potential difficulty in equitable application of EPR. The City of Edmonton encourages citizen engagement into their green movement, and offers grants and incentives towards better land use (Sustainable Planning, 2013) and transit orientated development. However, there is some indication that barriers to EPR could be overcome. In the 2013 Municipal Election, the idea of user fees was positioned as a means to address some of the revenue challenges. Prior to being elected, Mayor Iveson vowed to “focus

⁸ Shanks’ work demonstrates that the suburban mindset is less definitive. The concept of suburban mindset can be questioned due to the inability of her interview respondents to draw or locate particular suburbs on a map (Shanks, 2013).

on finding “innovative” efficiencies within city services and consider hikes to certain user fees” (Cummings, 2013, p. 1).

Not Part of EPR, My Own Misgivings

It seems paradoxical that environmental solutions might come from market forces; that the very consumption that created or exacerbated horizontal growth might be a solution to reduce environmental footprints. Metaphorically, this is like having a fox on a thin leash in charge of the chicken coop. It does not change the circumstances; it just restrains the approach we have towards solving horizontal growth.

In my examination of EPR, I have come to believe that it has potential as a short term fiscal strategy rather than an integrated environmental solution; a Band-Aid over the deeply concerning problem of horizontal growth in Edmonton. My overriding concern with EPR strategies are at EPR’s root. EPR reinforces consumer identity. This is not to imply that the consumer is seen as a whole or complete identity; but rather to emphasize that the individual’s connection with the environment is managed in relation to consumption or purchase choices. Implicitly, the role of government is relegated to spheres of the market: managing demand, then rationing and constraining supply (Trentmann, 2007, p. 152).

Pricing gives the illusion of choice. Focusing on price misses on building altruism or instilling ecological responsibility. EPR is limited to being a fiscal policy. It does not explicitly acknowledge how “each being is defined by its relationships as an integral part of Mother Earth” Or, that even *well intentioned* consumerist practices impact or contribute to horizontal growth (World People’s Conference, 2010). Addressing horizontal growth in Edmonton may require a

deeper shift in thinking where public policy needs to align with “living in harmony with nature rather than on the consumerist practices followed” (Thomas & Bhardwaj, 2013, p. 45).

The City of Edmonton is not just a marketplace of housing and transportation networks; through governance, it is a steward for its citizens’ input. If EPR is implemented from a top down perspective citizens are potentially viewed as *disruptive* to the process of accepting or implementing EPR. Or, EPR strategies minimize the identity of the citizen in favour of a consumer who is evaluated as having both a willingness to accept (WTA) and a willingness to pay (WTP)...” (Finkleman et al., 2011; Finkleman, 2010; Shogren, Jason, 2012, pp. 8–9).⁹

When the citizen has no input or desire of the available options; the citizen has little empowerment within the EPR framework. EPR is supported by a citizen’s act of faith in both the intentions and efficacy of their municipal government to collect and apply revenues towards the environmental good (Burton & Newman, 2009). Community engagement and participation will always be at the forefront of the city planning process. EPR and its market dynamics are one important set of strategies, but it is limited because it does not fully balance this with the role of the citizen.

In summary, this paper asked the question what aspects of EPR the City of Edmonton could adopt in its efforts to address its own horizontal growth. It was believed EPR could offer pricing instruments that when applied with sensitivity can assist the City of Edmonton to position or move its citizens towards positive environmental behaviour in order to limit horizontal growth.

⁹ The capacity for an individual to accept pricing instruments or comply may seem formula driven. Shogren does not elaborate except to say there is a gap between the willingness to accept vs. the willingness to pay (Shogren, Jason, 2012, pp. 8–9). Many policy makers mistakenly believe it the overriding obstacle to EPR is resistance to paying more for goods. This has not prevented other successful economic policy measures that shifted costs to consumption, such as the GST and the Ontario Health Premiums. Such measures succeed when they are deemed acceptable in relation to their purpose by a sufficiently critical mass of relevant constituents (Burton & Newman, 2009)

There is the added bonus that EPR may diversify revenue sources for the City of Edmonton. To me, EPR seems truly integrative because environmental solutions are supported by an economic framework. At the same time, it is paradoxical that consumption that created horizontal growth in the first place might be a solution to reduce environmental footprints. My overall argument is that the City of Edmonton can adopt selective pricing strategies that could influence residents in their role as both consumers *and* citizens to make choices that could increase density and affect horizontal growth.

The City of Edmonton could adopt a careful increase in development charges after evaluating the City of Calgary's progress. Alberta land developers are not charged specific Provincial Taxes targeting development. I argue that increasing charges is reasonable. Coordinating these increases with regional municipalities will help avoid leap-frogging and contributing to making housing unaffordable.

For the City of Edmonton, EPR's transportation reforms may be appealing because they promise to generate and diversify revenue sources beyond property taxes. Most useful is continued and increased investment in transit orientated development and LRT. On the other hand, other parts of transportation reform can be controversial. The example of parking reform in Chicago, where the intended benefits have yet to be realized. Also, the other two types of auto-commuter user fees, HOT and congestion lanes have the potential to encourage "good" environmental commuting behaviour yet may raise questions of fairness for citizens with lower incomes.

Other EPR strategies, while useful, require cooperation at the provincial government level.

Pursuing legislation that is more prescriptive to favour residential density requires amendments to the Municipal Government Act, RSA 2000. This would also require the input of other

municipalities in order to be implemented. If this legislation is amended; progressive property taxes could be reframed to support and encourage density. LEMs would require help from the financial services industry. Although thought provoking, it is difficult to align the interests of a lender with the environmental goals.

EPR is primarily an economic framework to making fiscal policy greener, rather than an environmental movement. The initial appeal of EPR for the City of Edmonton is the capacity to generate income to ensure that it can meet service commitments to citizens. There is value in the City of Edmonton for EPR to drive *consumer* behaviour towards making good choices to curb horizontal growth. It should be remembered that the relationship between a city and its residents is complex; therefore adoption of EPR strategies would depend on reasonable engagement of all citizens, regardless of willingness or capacity to pay. Where the points of integration make their mark in this case study are in the moments of determination of what aspects of EPR can be useful or inadequate for the City of Edmonton. In future research, addressing horizontal growth will require imagination and thoughtfulness about financial costs and environmental consequences balanced with the integrated interests of citizens rather than just in their role as consumers/commuters.

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