Questionnaire Around Public Realm Infrastructure - Verbatim Comments

What type of work does your organization undertake as a/or on behalf of developers?	What would be the impacts if shared pathways were the standard instead of sidewalks (on other roads such as Locals and Collectors in addition to Arterials)?	Please describe the impacts or opportunities associated with installing raised crosswalks running parallel to arterial/collector roads that intersect with local roads and at key locations in residential communities?	Please describe the impacts or opportunities associated with installing raised crosswalk crossings at all alley access points?	Please describe the impacts or opportunities associated with if there was a requirement for boulevards on all roads?	Please describe the impacts or opportunities associated with requiring Curb extensions at most intersections?	If you have any other comments or concerns you'd like to identify around this type of infrastructure:
Engineering Consultant	Additional road ROW may be required to fit these in which may increase house prices.	May require additional underground infrastructure (catch basins) and oversize the storm mains (to capture major drainage). Snow clearing damages may be at the cost of the City prior to FAC. Implementation should be at strategic high pedestrian volume areas, not everywhere.	Costly (initially and for the City for maintenance) to be implemented at all alley access points - placement should be at strategic high pedestrian volume areas, not everywhere.	Creates more snow storage and allows for boulevard landscaping but this comes at an additional cost (initially and in the long term for the City). Because of this these areas have more expensive homes. So if this was everywhere it will increase house costs.	May impact turning movements for larger vehicles like buses.	All impacts should be considered - underground infrastructure, power and telecom, long term costs for the City, interim costs (additional waste to achieve FAC), housing costs, etc.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Utilities, Engineering Consultant	Unnecessary. Would add significantly to the cost of development (increased ROW and construction costs) with very little benefit to the end user.	This could improve safety if applied at 'Key' and ''Infrequent intervals'.	I don't think this is necessary or beneficial; in fact it could present a hazard for drivers turning into the lanes.	Wider ROW which increase costs. Creates a strip of landscaping between the walk and the curb which would add a maintenance responsibility challenge. Does the driveway to the residence get poured before or after the walk construction?	Generally a safety improvement; but needs to be designed so that traffic flow/ movements are not impaired.	
Engineering Consultant	Assuming the standard width of the shared pathways are 3m then the clearances for the shallow utility street furniture would conflict. Having alignments under hard surfaces cause maintenance issues for the utilities as well as for civil maintenance.	No comment from a shallow utility perspective.	No comment from a shallow utility perspective.	Street furniture needs to be situated on boulevards or easements within property. If there are adequate boulevards within a community to fit the necessary infrastructure, then a requirement for boulevards on all roads should be considered.	Midblock crosswalks require additional lighting.	
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	Will impact the ability to have any power infrastructure, hydrants, trees with clearances for safe passing. As well if any of those items need to be replaced or repaired the path will be affected by the construction.	Raised crosswalks while good for pedestrians will cause the need for drainage accumulation (most likely catchbasins) in front of all crosswalks. As well ponding water in the area will be unavoidable. This ponding during the spring and fall could cause icy patches on the crosswalks. As well when snow clearing occurs possibility of damage to the raised crosswalk is greater than at level crossings.	With all alley drainage directed to the roads there will be ponding and ice build up at every location that has a raised crossing.	As long as the sidewalk is small enough to fit power and water then having landscaped areas between the walks and curbs should be fine.	Curb extensions on Collector/Collector intersections make sense to slow traffic in critical areas. The disruption to drainage, and possibility of becoming snow covered and hidden is too much of a detriment to have them in areas that do not have heavy traffic.	
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Developer	I like the idea of shared use path instead of sidewalks in principle, but I don't believe this is beneficial to the public in the long term. Impacts include: - wider rights-of-way and therefore promotes an inefficient use of land and decreasing density.	- Snow clearing will slow dramatically, which is a negative for overall safety in the City if we cannot get our roads cleared in a timely manner - maintenance cost and damages will increase due - presents grading issue for	- slows traffic which might be positive - will cause more wear and tear on peoples vehicles - will require special maintenance - impedes stormwater flow requiring more catchbasins...again increasing costs to homes and	- Beautifies the streetscape - provides space for snow clearing - expands right-of-way width which is not efficient use of land, thereby reducing density and promoting sprawl. - forces rear lanes for all homes...which are nice to have,	- slows traffic - more to maintain - reduces turning radius for transit	The impact of living in a winter climate is real, and needs to be a front and center consideration moving forward. Density is also important, unfortunately this initiatives have a negative impact on density, promote sprawl, and actually go against the concept of

	- Shorter life span meaning more frequent replacement and maintenance costs. Winter destroys asphalt and concrete is not good for active modes. - The shared use paths we have are highly underutilized, the network is sufficient. - Front drive homes will be discourages and likely outlawed in time...this means you need lanes which again is an inefficient land that decreases density. - Owners are currently required to maintain sidewalk (eg. shovel snow). Will this be the same expectation for SUP's? If so, then the initiative fails as active modes will not benefit and it will not be safe. If the City maintains it then it is extra cost to taxpayers and it will not be done in a timely manner so this does not make much sense from a snow/winter climate perspective.	stormwater drainage, you will need double the catch basins in an intersection to intercept water - more catchbasins means more cost to build and maintain, increasing the cost of homes and taxes.	taxes required to maintain.	but are not an efficient use of land, thereby reducing density and promoting sprawl. - snowclearing destroys boulevard trees and grasses, especially the chemicals and de-icing products. - burden for some owners if they are expected to maintain grass. - Inefficient construction methods to deal with franchise utilities - often have to be replaced several times during construction.		sustainability which is contrary to the intent. We should not measure density in units per net residential hectare, it should be on gross area to accurately reflect the impacts these proposals will have on the community. Affordability is also being eroded both at the time a new community is being developed, or though tax increases.
Developer	The minor social sustainability aspects would not make up for both the economic and environmental impacts. The cost increases include initial construction, operation and maintenance, and ultimate replacement. Environmental impacts include increased GHG emissions through construction, O&M and replacement, as well as landfill impacts when ultimately replaced. Reduced vegetated area and increase in urban stormwater runoff are additional environmental aspects to be considered. Social benefits are perceived as removing SUP users from the roadways, creating a better SUP experience, however this also puts them in direct conflict with pedestrians trying to use the path, detracting from that social aspect. Considering the movement towards net-zero and the role sustainable development plays in that, the City should absolutely not pursue shared pathways as a standard instead of sidewalks.	There are situations near schools and maybe other facilities (Care facilities, hospitals?) where this may be appropriate, but it appears to be fixing a problem that does not exist. With any perceived improvement, there are inherently some disadvantages, these include snow clearing, as well as a potential false sense of safety for pedestrians. I would recommend a review of case studies and a thorough literature review (University of Alberta can help) to determine where these may be appropriate, and to fully understand the implications as they relate to safety offset with sustainability goals promoted by the City.	This is not needed, is wasteful, and should not be considered.	This is referencing the elimination of monolithic walkways. This has been a requirement for some areas in Alberta in the past, however they have been moving towards incorporating monolithic walks as an option. One of the benefits of the monolithic walk is the reduction in grass kill from snow removal activities (both plow and chemical damage. There is a place for separate walks, particularly from an aesthetic point of view, however removing the monolithic walk as an option is a mistake that other communities have learned from. The choice between monolithic and separate walks should remain unchanged, although it should go further to allow the removal of walkways altogether in areas that do not use them (cul de sacs), and just single sided for crescents. This will align the city with its net zero goals without impacting the livability of neighbourhoods.	The use of curb extensions also has negative impacts including driver safety due to restricted turning movements, increased bicycle and vehicle conflicts, pedestrians in wheel path of oncoming vehicles, increased emergency response times, and traffic congestion. These factors are all magnified when considering winter conditions of reduced visibility due to darkness and snowfall, icy conditions and snowmounds from snow removal. Curb extensions are appropriate at some intersections, but the discretion must be left to the engineers of record completing the design on where they are appropriate. The city mandating that they are required will require that City Engineers sign off and take Professional Responsibility for these intersections, as per the APEGA Code of Conduct and Professional Act. This could also use a thorough review of case studies and a literature review, it appears that most information available around curb extensions falls in the realm of "Internet Literature" and may not be based on actual studies or academic scrutiny.	The city has proceeded with requiring many of these initiatives already, and it has not been done with proper consultation with industry or stakeholders. In general, the complete streets standards are not supported by industry and a full restart to the process should be implemented. The process should consider the three pillars of sustainable development including environmental, economic and social. City representatives currently have focused solely on changing the status quo, however the drive to do so has resulted in tunnel vision towards the "something new" and has not fully considered the ramifications of these ideologies. Continuing down this path will result in unforeseen circumstances that will cost the city capital, will detract from our neighbourhoods, and could potentially create unsafe road networks.
Area Structure Plans,	Residents would not like clearing	Certainly agree with the safety	I think in general these are good	Understand that the intent would	I like them for ascetics as well as	I think the intent behind the

Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Developer	snow from an asphalt path. tie in from garages will not turn out well. You will get better life out of concrete sidewalks.	aspect. Could create additional drainage infrastructure as you are creating a blocked pathway for the water to drain. Snow clearing operations in the winter will wipe these out within a few years and repair costs will be an ongoing nightmare. I see kids on bikes using them as jumps creating a hazard of them flying into traffic.	ideas but will certainly increase catch basin requirements (more infrastructure). Since alleys never get cleared (or rarely) I see a lot of stuck cars when the snow piles up at the raised crossing and or ice build up so people are "gunning it" to make it over in winter conditions. Differential settlement will create ponding at the raised area which will have large iced up areas in freeze thaw conditions.	be to get more trees on front drive product but with how narrow the lots are and builders maximizing building pockets (plus other infrastructure like transformers) you will add very little trees. Also up the likelihood of someone clipping the tree backing out of their garage. Without knowing the cross section, you likely reduce the planting area for trees on the private side as well.	safety. My major concern is bump outs get destroyed by snow clearing and large trucks. I think it will be an item the City needs to repair/replace every 5-10 years as opposed to a 40 year expected lifespan. Truckers will not be able to make the turn (or maybe they can but my experience is most large trucks have very little regard for curbs and don't care if they run over them and rut up landscaping).	suggestions make sense and generally don't disagree with them. My bigger concern is the initial additional costs to industry and subsequently the homeowner purchasing the house and lot. Secondly, the long term maintenance and repair costs to the City doesn't seem top of mind when considering these options. I keep reading articles about service levels dropping for basic government functions *snow clearing & park maintenance) and yet its being suggested to add infrastructure that will have even more burdensome costs to the City in the long run over current practices.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	To have a SUP on both sides of the local and collector road you would need larger rights of way, it would just not all fit. SUP can be accommodated in some location on one side of a local road if you know in advance though it would be better in select locations and not every location to fit in all the street furniture for the subdivision. The impacts are the SUP takes up most of the blvd., reduced road widths are required, reduced parking on one side of the road, reduction of locations where you can place shallow utility/power vaults and pedestals and Hydrants need to be on the other side that has a smaller walk. Collectors are larger but the impacts would be similar except you now have room for more street furniture. There is a concern though with the impact to power transformers and adequate soil volumes for trees. Its harder to say that this one standard would fit all locations as you may have locations where a road can't be reduced due to additional utilities within a road.	Raised crossing if they can't be installed its due to the drainage of the road. Either its impacting the major flow route, road ponding or there is an issue placing CB's. An impact if it can be accommodated could also be increasing the number of CB's.	The impact is fitting a separate walk in local roads at alley sections. This impacts a loss of space for some shallow and power street furniture and hydrants. locations where there is an alley that crosses on both sides would like harder to accommodate than if only one side of the road. Transitioning from mono to separate walk for short section may be possible.	Assuming you do not increase the size of the walks there could be some locations to place Blvd. landscaping on local roads small areas like along a commercial or multi family apartment site or park sites. Residential areas with front drives there is really no available space for blvd. landscaping after the services, driveways and street furniture are added in even the side yards get packed with street furniture.	I think this should be leaning towards key intersections not most intersection. Example collector to collector intersections, mid block crossings that connect amenities or along school sites. There could be large sections of street parking removed when accommodating most intersections and bus stops. Locations with front drives may be difficult or not possible to accommodate.	
Concept Plans for Arterials, Prelim/Detailed Design Drawings, Engineering Consultant, [8]	Loss if viable areas for trees. Severe impacts on root zones for existing trees which is currently demonstrated in renewal and rehabilitation projects. Trees are under severe stress and no adequate remedial action is being undertaken by Forestry and is not in budget. Inadequate budget for tree replacements as well. The nature of our existing communities are being severely impacted by poor construction practices, poor	Depends on where they are and traffic volumes. Chicanes can work too...one solution for a variety of conditions is short sighted. They will slow traffic which is good.drainage will be impacted.	One solution for a variety of conditions is absurd. Drainage will be impacted.	If the boulevards are large enough, more green space, adequate areas for viable tree growth, shade during hot seasons. More land required, more expensive development, higher maintenance costs for Forestry, assuming all boulevards have trees. The city should have considered these and more already and looked at overall costs, asset management, issues,	Why are these questions trying to do a sakes job on these elements? You gave described the benefits but what is your opinion of the impacts. More cueing at intersections which leads to drivers looking for other shortcuts through neighborhoods. More speeding between intersections to make better time.	One solution for each element is formulaic and will not achieve what you think you will achieve. Thoughtful design and and a full understanding of each site is required. Otherwise you will make a mess of the communities....just like the ongoing renewal and rehab projects

	understanding and budget for maintenance for ex trees impacted. Council has no understanding about this and shouldn't make uninformed decisions.			etc in a wholistic and comprehensive manner.		
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Utilities, Engineering Consultant	This could result in wider road right of ways (also then decreases density), increased paving and decrease in permeable surfaces, duplication in infrastructure (need to look at overall network connections and not provide SUP's on every street). This could have large impacts and not all positive.	Depends on location. Raised crosswalks could result in higher maintenance costs - winter and snow removal damages.	Would result in a large increase in costs for development as well as for maintenance in long run by City. Seems unnecessary.	If boulevards are required then should be offset with smaller front setbacks.	Should not be required at most intersections. Needs to make sense where requested otherwise run into challenges with snow removal, larger vehicles or buses being able to make turns without running over curbs or having to go into oncoming traffic. Seems to be less safe if for example buses are running over the curb extensions. For example on 111 Street on the south side of Jasper I have seen numerous trucks run over the curbs and have difficulties turning. It seems so narrow that I will stand back on the sidewalk and not at the edge of the curb extensions so I feel like I will be run over.	Would like to see the larger network considered and improvements not piece mealed into a Neighbourhood. Streets can't suddenly transition from sidewalk to SUP, roads can't suddenly be widened or cross sections changed. Creates unpredictability and increases opportunities for accidents. Also need to consider that we are a winter city and curb extensions in unnecessary locations will get run over by snow removal, become hidden through ice and snow in winter, etc. this also raises concerns of how much of tax dollars will be utilized to fix these items that are run over by buses, vehicles and snow removal.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	If the intention is to have two shared use paths on either side of roads, the road right-of-way will continue to widen reducing developable lands. The wider trail will push the road right-of-way wider due to design clearances unless changed. A wider walkway will force wider boulevards and therefore road right-of-way, again decreasing the amount of developable lands. Overall, the above yields less lands to develop which results in more expensive homes to the homebuyer. Consider shared use path on one side only to increase developable area and keep costs low. Consider reducing standard clearances or boulevards to reduce road ROW.	An opportunity to create more pedestrian friendly and modern walkways at key locations is good. However, this needs to be carefully reviewed and only required at agreed-upon key locations and should not become the standard everywhere. Concerns over lifetime of raised crosswalk and snow clearing operations and damage. Concerns over vehicle traffic flow and compounded delayed turning times to traverse raised crosswalk could be negative. I have doubts and concerns about how well these raised walkways will mitigate slush/icing in the roads - I would expect it to simply dam up and ice the roadways further until it eventually builds up over the crosswalk.	I do not understand the benefit or design. In most modern areas, a boulevard walkway or monowalk is installed at the same elevation as the alley and new requirements require increased visibility at the back of lots to increase safety. If i understand correctly, the walkway would be raised further, higher than the alley? I would argue the field of view visibility is more important than the raising the pedestrian higher. If speed is an issue, why not simply install speedbumps only prior to crossings to slow vehicles down?	Boulevards provide a opportunity to increase aesthetics and snow storage for neighbourhoods. When properly landscaped, it provides a balance of development with nature (just look at the Strathcona & Bonnie Doon neighbourhoods). However, this should be carefully vetted against other policy changes in regards to required walkways within road right-of-ways. If 3m paths are the new standard and boulevards are also required everywhere and there are no changes to standards offsets (power, gas, trees, water, transportation, etc.) I have concerns that the road ROW will expand even further. Again, this will reduce developable area which reduces new builds per area which will increase overall costs to the end user/homebuyer.	This could be a good opportunity to improve how pedestrians interact with an area and improve safety. However, these extensions would be most effectively utilized on local road and minor collector roadways where pedestrian usage is increased. These extensions would only make sense when applied to the main path of traffic and would be wasteful if applied at every crossing and intersection.	
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Engineering Consultant, TIA's, site plans	additional ROW would be required if these be separated SUP, but not if they were mono SUP's	not sure why we can't do this. saves time/cost from having to retrofit this later. Build in Traffic Calming on Day 1 and get the drainage right.	can we just for a semi mountable rolled curb rather than a driveway apron?	Yes please. I have this in my neighbourhood, had it in my last one too. Way more walkable.	I think this could be done more strategically on key routes/ collectors rather than all local streets. As before, if this is done initially the catch basins and drainage are all dealt with up front rather than having to retrofit this later. Saves costs/time and builds in traffic calming in day 1.	It is much easier to design our communities right the first time, rather than try to retrofit out bad driver behaviours later. Communities are for people, not for cars.

Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Utilities, Engineering Consultant	degrading of affordability, decreased density, bigger R/Ws, more conflicts with utilities, negative environmental impacts, more maintenance, conflicts with driveway/settlements.	more drainage infrastructure, challenged snow clearing, more vehicle conflicts	more damage landscape, limiting of turn manoeuvre	opportunity for more trees.	same issues created with raised cross walks	
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	The Road right-of-way would need to be widened and land would need to be taken away from private landowners.	Higher traffic volumes on the roads that have raised crosswalks as drivers would need to slow down significantly at all the raised intersections. These raised intersections cause driver frustration and damage to vehicles that go to the City. A raised crosswalk requires a vehicle to drive at 10km/h to 20km/h at best. With the amount of snowfall Edmonton receives, the positive aspects for citizens drops significantly during the fall, winter and spring seasons.	Depending on the amount of alleyas, this could significantly increase the amount of "speed bumps" on the road. Pedestrians should not cross at alley crossings. This is unnecessary.	People getting out of parked cars during rain or snow events would have to walk through snow, slush and water. The City could in theory plow snow onto the boulevards however that again would be problematic for parked cars and people getting in and out of them.	Please forward this question to Drainage Services and Epcor where standard offsets to the curb for storm, sanitary, catch basins and water infrastructure would be compromised.	
Developer	Costs to build and costs to maintain. From a cost/benefit perspective, I don't support this as it will be an overbuild. What we should do, is decide on a maximum distance that each Edmontonian is expected to travel (on a non Shared Use Path) to get to a Shared Use Path (and then same when they arrive at destination). This is a similar conversation to bus and public transit. I believe the number is ~400m? If we started with that number and mapped out all access to Share Use Paths. I am wondering how much work we would have to do?	I think the idea has some merit. I think it has to be tied into the previous conversation and only considered for Shared Use Paths (or said another way, main active transportation routes). In that instance, I like the idea for the reasons noted in the preamble to this question.	I don't think the cost is worth the benefit here (unless is is a Shared Use Path ie main active transportation route)	Personally, it is my preference but I am not suited to speak for industry on this one.	To balance the costs and the benefit, there has to be a minimum daily traffic count (and minimum daily active transportation count) to warrant bulbs-outs.	
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	Cost and great stormwater run off, however, Shared use paths generally follow main corridors so not sure if you mean they become the standard overall which does not make sense.	Slows down traffic and reduces conflict with pedestrians significantly - they can also improve the visual presence of a neighbourhood. The road is taken over by the municipality so it will result in a change to their maintenance and operating costs. Create a more inviting pedestrian community.	Slows down traffic to avoid conflicts with pedestrians and creates greater accessibility for different age and mobility challenged individuals - providing greater opportunity for more people to safely experience the public realm.	Reduces hardscaped areas helping to reduce costs, enables landscaping to soften the built form, provides storage for snow during winter periods, trees included helps slow down traffic speeds and provides shade to pedestrians reducing the impact on the heat island. Creates an opportunity to incorporate LID and creating a buffer between the road and pedestrian creating a more stress free environment in which people will actually use the sidewalks.	Slows down traffic reducing the potential conflict between the pedestrian and vehicles, including making the pedestrians more visible from parked vehicles. Enables the introduction of landscaping at intersections reducing the heat island, creating more attractive public spaces and reducing the had surface areas. Provides greater accessibility to all people with mobility challenges within a safer environment. Public right of ways should be designed for all and not just the vehicle - this requires balancing all the elements within an attractive, functional and inviting manner. Remember the medical cost of	Need to look at costs from the perspective of the burden on the health system and the need to create public right of ways and other public spaces with designs that encourages people to be active - the benefits significantly out way the potential up front costs. Recommend lobbying the public health system for support in funding - preventive care.

					obesity to the public health system and the need to create active environments that are attractive to all users.	
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	It would increase the cost of housing at a time when housing affordability is a national crisis. It would also further strain the City's finances / resources and ability to maintain all of this additional infrastructure when the City already struggles to maintain the current inventory of infrastructure.	Raised crossings provide an effective function at appropriate locations, but they should not be the reigning standard everywhere in the city. Reasons being: the same as question #1 - widespread application will increase the cost of housing at a time when housing affordability is a national crisis and the City will not be able to maintain an increased inventory properly without significant tax increases. In addition, Edmonton is a "winter city" and they will pose significant maintenance challenges and risks of damage from snow removal practices.	Additional costs and challenges regarding surface drainage. Increased costs of housing and maintenance cost for the City, as per previous answers. Current design standards for alleys are functioning effectively and efficiently. Raised crossings for most alleys would be a "solution in search of a problem."	Boulevards are very effective at creating safe and comfortable pedestrian environments, especially along busy, high-volume roadways. Boulevards would also provide space and opportunity to increase the urban tree canopy and support the City Plan's objective to plant an additional two million trees, especially when opportunities for planting within private properties is decreasing due to increasingly dense housing forms and smaller yard spaces. The challenge is appropriate maintenance; many, many existing public boulevards are not cut or maintained properly and are often overgrown and/or weed infested. Edmonton is also a winter city and snow removal practices such as plowing chemically treated windrows and storing snow on boulevards often results in turf kill and unsightly public spaces. Expanding this standard will commensurately expand the City's responsibility and obligation to increase maintenance.	Curb extensions provide a valuable and attractive function at unique / select locations but can be problematic if applied globally. They provide numerous challenges for larger vehicle movements and turning radius' (i.e. garbage trucks, busses, etc.) that will interfere with the delivery of these municipal services and can actually increase the risk of danger and injury to pedestrians. They also increase the complexity and cost of engineering design and function for issues like surface drainage. Again, similar to other answers, as a winter city the snow removal practices will increase the risk of damage from snow plows and increase maintenance and repair costs for the City.	All of these infrastructure elements can contribute to quality urban environments for special or unique places, but it would be a bad idea to make these augmented requirements the new standard across the board for all urban spaces. The City struggles to appropriately maintain the existing inventory of public infrastructure. Expanding the standards would increase development and housing costs and further reduce the City's ability maintain the urban environment and provide quality services to the citizens of Edmonton.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	Impact on the Alignment of power and gas. Quantity of Trees impacted as can't fit in blvd,	Good idea to traffic calming. Careful thought needed at design.	Should be considered only on rare cases depending on the environment surrounding. This is an extra cost and maintenance issue.	Should only be considered on the situation and environment surrounding. This does provide opportunity to revise alignments and provide more landscaping and trees. Also a buffer between pedestrians and vehicles.	in rare areas this may help calm traffic and prove safer for pedestrians. Mostly not necessary and a big maintenance issue for years to come.	
Subdivision Planning and Rezoning, Developer	On locals there is likely not enough space within current R/Ws. More space required to accommodate 3m asphalt vs 1.8m concrete walks (less efficient use of land, higher cost, potential for conflict especially with vehicles on front drive blocks). Shared use pathways should be focused on higher level multi-modal circulation routes, not on every local road, where the focus should be on pedestrian usage.	If located intentionally at higher volume intersections, raised crosswalks could help improve pedestrian safety. Though there would be trade-offs such as increased maintenance / operational costs (they tend to get chewed up by graders over the winter).	I don't see the value in this proposal. Are alley access points high conflict areas? Likely to be drainage and maintenance / operational challenges.	Additional cost, land and ongoing maintenance requirements.	Curb extensions should be located very intentionally at select intersections. While the benefits above are generally true, I'm not aware of issues related to pedestrian queuing volume in residential areas. I would also suggest that busses should not be stopping in the travel lane to board passengers, rather they should pull over to the 'parking lane' so as to not restrict traffic flow. In addition, incorporating curb extensions at every intersection	If the proposed infrastructure considerations are to be implemented, there should be criteria to identify specific conditions that would warrant these enhancements. To suggest that they be implemented on every street is likely not an appropriate way forward. What is the City's objective, and can it be achieved without implementing such significant enhancements?

					would result in turning movement challenges for larger vehicles (busses, waste management, emergency services). And similar to raised crosswalks, they are more likely to be damaged with winter grading.	
Area Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	In general, the simple answer is the difference in width of 1.2 to 1.5m would have to be accommodated within the local road cross section (I'm not sure if the statement above applies to the sidewalks on one or both sides of the road). There are many ways to go about achieving those ends, but in our experience with changes like this, the various means are often at cross competing purposes. For example, the boulevard separation can be shrunk to gain width for the SUP, but that would come with a decrease of pedestrian separation from the roadway, which is a safety decrease. It would also provide less snow storage area which could be a concern for the operations department. Another issue with converting concrete sidewalks to an asphalt trail would be the interface with the driveways on front driveway housing products.	I expect a change like this would be a positive for the pedestrian traffic if looked at in isolation using that lens. The development impacts I can think of are an increase in drainage infrastructure (additional catch basins would undoubtedly be required as these crossings would create barriers to surface flow) and obviously the increased cost of the raised crossing itself. Another probable impact is a longer term increase in repair and maintenance costs for the City as snow removal operations will likely struggle around this type of structure and cause damage.	Same as above answer in general.	If I understand correctly this is suggesting monolithic walks would not be allowed? A change like this would eliminate some potential narrower right-of-way cross-sections depending on the minimum width of the required boulevard. It would increase pedestrian safety as there would be more separation from the roadway surface. A current benefit of monowalks is the schedule certainty for the development - walks exist when the road is completed while with separate walks or trails, the construction almost always is delayed until the following year after the shallow utilities are completed as they are often under the walks.	Similar but to a lesser extent than with raised crosswalks, curb extensions often require additional drainage infrastructure, especially in minimum curb and gutter slope situations. One positive impact is traffic typically slows at these locations due to the constricted roadway width and the narrowed crossing distance is of course a positive pedestrian safety impact. There would be an expected slight increase in construction costs (additional curbs/concrete offset by the reduction in roadway structure area).	A general comment as a resident and not an engineer...I'm not sure the general public would support the proposed changes. Most people despise the various traffic calming intrusions we introduce into our neighbourhoods (based on complaints alone) and I really don't think I would personally like a 3.0m wide strip of asphalt trail running through my driveway instead of the 1.5m concrete separate walk. There would inevitably be differential settlement and a bump/ponding and icing issues created. A further general comment about the direction as a purely libertarian member of society...this feels like a further "nanny state" type of intrusion where the government thinks it needs to dictate how we should live and keep us safe. I personally would prefer to have all options available for developers so I can choose whether I want to live in a neighbourhood with either type of sidewalk or trail, or if I want to live in a neighbourhood with curb extensions or not.
Area Structure Plans, Neighbourhood Structure Plans, Subdivision Planning and Rezoning, Developer, Development Management Consultant	I believe that would have a negative affect as it may require additional road right of way. It would also severely impact the snow clearing responsibility of the adjacent home owner.	I believe there may be a significant impact to drivability when transitioning from an arterial road onto a local road (i.e. especially during the winter with icy conditions where not all 4 wheels will cross the raised crosswalk diagonally. Vehicles could be deflected away from a uniform transition. Additional catch basins may be required to accommodate restricted surface drainage patterns due the raised portion of the walkway.		Depending on the size of the sidewalk/shared pathway, additional road right of way may be required. Lot owners would need to be educated on their responsibilities of maintenance of boulevards and trees.	I'm not quite sure of what is meant by "curb extensions" however in my day crossings outside of intersections were referred to J Walking and were prohibited and strictly enforced.	It would have been very helpful if there were graphics available to represent the descriptions which may have avoided any misunderstanding of the intended purposes.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision	Increased land required for Right of way would mean increase home prices. A sidewalk in front of my home is child safe, and SUP would be less so.	Raised crosswalks present huge drainage implications especially at they're at a low point. twice the infrastructure and maintenance.	Alley crossings are already flush for the sidewalk are they not?	Boulevards with front driveway's don't make a lot of sense. Essentially the driveways take up most of the frontage and so you would have small separate	Again this can have drainage implications as well as impact turning movements for busses and garbage trucks and emergency vehicles.	for local streets, speed limits are now 40kph (pretty much cycle speed) and traffic volume is low, cyclist prefer to be on the street rather than on a separate SUP. At

Planning and Rezoning, Utilities, Engineering Consultant				squares and rectangles of grass than would need to be mowed.		every intersection the separate SUP become a dangerous awkward situation where cyclists and drivers don't know what to do or who is supposed to have right of way. Oliver being a prime example.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Utilities, Engineering Consultant	what is the basis/need for SUPs on local roads as standard? Has the need been proven? Aside from this question, SUP are not appropriate in front of front driveways - there would be a detrimental impact to pedestrian safety. Likewise, increased use of 3m SUPs vs 1.8m concrete walkways will result in higher development costs (hence higher home prices), and higher snow clearing costs (either for City and/or homeowners depending on who will ultimately be responsible for snow clearing SUPs on locals).	While safety aspects would improve, there are a number of new issues that raised cross walks will create. These issues could be: (1) increasing complexity of roadway drainage design and requiring additional drainage infrastructure to manage drainage routes that are blocked by raise crosswalks i.e. additional catch basins (2) increase cost of development (higher home prices), (3) roadway construction complexity and construction timelines will increase, which is problematic in the shot construction season that we have here in Edmonton.	The standard walkway crossings are already "raised" at alleys. The real issue that needs to be addressed is poor sightlines at alley crossings. Currently, fences are allowed to be built at full height on both sides of an alley crossing (residential setting), thus bocking sightlines. This issue needs attention, and if corrected would yield better safety outcomes than raised crossings at alleys.	Doing so will improve safety and overall comfort for sidewalk users as there would be fewer points of conflict with vehicle (i.e. vehicles entering driveways, opening vehicle doors onto the sidewalk, parking on sidewalk). Landscaping opportunities will be very limited with today's typical zero lot line front driveway homes - and the resulting street scape will appear "barren". Overall, the development costs will increase (higher home prices).	This is a great initiative. We are already using curb extensions on a number of our projects and are not finding too many issues with them. A few issues are: they appear to be susceptible to damage by snowplows (training required?), and they reduce available parking slightly. They are cost-neutral.	
Engineering Consultant	Road right of ways would get larger. Increased stormwater runoff, more hard surface and less vegetation. Increased flow to SWMF's and storm pipes and catchbasins, can mean larger or more infrastructure. Water travels faster, going against the EPCOR direction to slow water. Increased initial construction, maintenance, replacement and landfill costs. All these additional costs are trickled down to the home owner. Edmonton's goal is to have sustainable and attainable home ownership. Socially, having cyclists in the same zone as kids playing in front of their house is a safety issue. Home owners would have to shovel snow on twice as much surface. Having SUP's on locals and collectors as a standard is not supported and should not be pursued.	Raised crosswalks can be a traffic calming measure for vehicles and a benefit for pedestrian's and cyclists in the appropriate locations. But cannot be applied to every intersection and cannot be applied to most situations. When pedestrian's and cyclists come to an intersection or change in surface, it makes them aware of what is going on around them. Having a continuous level surface reduces the awareness of their surroundings. The minor storm system (pipes in the ground) contain the 5 year storm events. Anything over that runs by surface to SWMF's. Raised crosswalks can block that surface drainage from it's flow path to the SWMF. This would either have to be picked up in the storm pipe, increasing the size tremendously. Or could cause more ponding that could encroach into private yards and entire intersections for vehicles. Maintenance costs could increase with more time required to remove snow as well as more damage cause by snow plows. Sometimes having more distractions for the driver causes less awareness of their surroundings if they are focused	Raised crosswalks at alleys is not supported. False sense of safety for pedestrians is a high safety risk. Drainage from the boulevards needs to have a free flowing path to the road.	Monowalks provide many benefits. Reduced damage from snow clearing – sand, gravel, chemicals – less maintenance costs. Easy access/accessibility for homeowners/guests from their homes to their vehicles parked in the street. In the winter, with snow piled up between the sidewalk and the curb, passengers can have a difficult time getting in or out of the vehicles. Vehicles then park farther away from the curb and provide less room for driving in the street. I do not support removing monowalks.	Bump outs can provide some benefits but have to be planned in the correct locations. Garbage trucks, buses, emergency vehicles movements have to be taken into consideration. Those vehicles as well as passenger vehicles have to be able to move safely together. Having a reduced roadway, can cause issues if there are accidents and no space for vehicles to move around. If there are front driveways, there are reduced space for vehicles to enter/exit those driveways and having other vehicles go around. No on street parking for those residents, decreasing the accessibility to their homes. Greater risk of snow plow damage around curb extensions increasing the maintenance costs.	Complete streets intention is to design the street to the particular users for that street. Although pavement and walks are the most noticeable items in a roadway, there are lots of other things to consider in the design. Drainage, water, power, street lighting, telus, shaw, landscaping. All these departments have their own standards and all need to work together for the perfect fit. Roads and walks cannot be adjusted without approval from all the other items in a roadway. Larger infrastructure and more infrastructure means more upfront costs and maintenance costs and renewal costs and negative environmental impacts. The initial increase in cost passes down to the home buyer and then further more thru taxes. We need to be smart with the design and infrastructure and have a balance of function ability and cost and safety.

		on the bumps on the road. Raised crosswalks cannot be dictated where to be.				
Utilities	Need to have more flexibility to allow for utility assets and low impact development type assets to be located underneath the shared pathways with the understanding that this may also require occassional need to excavate to repair these assets and restore surface after. Understand the desire to have wider paths - but this has to be balanced with the subsurface asset requirements to make best use of the same.	The biggest risk right now with these assets is the number of additional catchbasins that the current approach is adding when these are added to the street network. This increases the runoff into the storm and combined sewer networks and leads to increased risk of downstream flooding. We need to develop a standard raised cross walk design that incorporates low impact development into the raise crosswalk to help reduce peak storm flows into the piped network (additional storage of stormwater under the raised crosswalk to reduce peak flows is necessary)	Same answer as above - challenge with these are the impacts to the major drainage system where extreme storm flow impacts on the pipe network is mitigated by holding water for a period in the curb space. The additional catchbasins being added for the ones installed to date are increasing the flooding risks in the community in particular in areas where we still have combined sewer networks. If a design can be developed that incorporates some storm storage (via LID components - soil cells is one approach) this will result in these being a great way to get a co-benefit of improved access for public while enhancing climate resiliency at the local level	It depends on whether this is resulting in wider road - or does the road narrow and utilities that were previously under the road now in the boulevard. If a wider road this will increase the cost of servicing for every lot due to the longer service pipes to each property. If a narrower road then the impacts in particular related to curb conflicts and restoration when utility repairs are required needs to be considered in the design standards. Boulevards would also provide a great opportunity to install low impact development at the neighbourhood scale (using combination of absorbent turf and soil cell type features) under the boulevard space to reduce the storm flows during extreme events reaching the pipe network	This is a great opportunity for additional low impact development to be installed at the end of each block to capture peak storm flows and reduce impacts on the piped network. Will need to assess impact on utilities for where they would now cross the extension and in particular and curb structures that could be impacted during a utility repair	I think this is a good direction as long as it is not just a widening of the overall road right of way. The alignment of the subsurface utilities considering not just initial install but ability to rehab and maintain needs to be considered along with the opportunities to incorporate low impact development options to reduce climate impacts (this is similar to what Cities such as New York and Philadelphia are doing)
Developer	A larger road ROW would be needed which would have a direct affect on affordability. The cost of a 3m SUP is more then a 1.5m sidewalk so there would be increased costs which would again affect affordability. From a social perspective it is already a big ask for residents to clear the sidewalk of snow in front of their property in the winter. You would be asking them to clear double the area which I can't imagine many people would be interested in (especially the elderly). I also believe there is a strong argument to be made that concrete is better at withstanding snow removal and freeze thaw cycles. From a life span perspective I think the concrete sidewalks we are currently building are a better option for this climate and ultimately to keep property taxes down as the lifespan would be longer.	These raised crosswalks are extremely expensive to construct. They typically require epoxy coated rebar cages. They also affect drainage patterns which most often results in additional CB's to be required. This will have a direct affect on affordability. I can understand the use of these crosswalks at KEY locations such as school and playground zones but otherwise I don't believe the cost/benefit makes sense. With the installation of these crosswalks you are introducing two seams the width of the road. This will allow for water to easily penetrate into the road structure. This could increase maintenance costs at these locations due to the affects of freeze/thaw.	Similar to my previous response this would result in increased costs which would have an affect on affordability. I would be interested to see how these would affect the alley drainage patterns. I imagine all alleys would require CB's if these were installed which would be an increased cost and additional infrastructure as most alleys drain out onto the road. I believe vehicles slow down enough when making a 90 degree turning movement that a raised crosswalk wouldn't have the vehicles slowing down any more then they already are. I don't think the cost/benefit makes sense.	This would result in increased costs which would have a direct impact on affordability. A curb/sidewalk is more expensive then monowalk and on top of that you have additional landscaping to construct and maintain. I would have concerns in regards to the tree supply available. We are already struggling to get trees approved at CCC and FAC by the COE. I would fear tree supply chain issues. I would also be concerned of the maintenance of the boulevard landscaping. The COE expects residents to take care of the boulevard landscaping in front of their property. In many instances the residents do not want to do this and some are unable to do this. What happens then? If it isn't maintained is it adding anything? Will the COE take on the maintenance? What does this do to property taxes?	I could be in support of these in strategic locations. In instances where these are installed at or near intersections it can create situations where the turning movements for buses/garbage trucks/emergency vehicles cannot safely make the movement without going into oncoming traffic. For me these would make sense, for example, where a SWMF SUP is crossing a road. There is also the concern of additional road ROW being needed in order to make turning movements work that would affect affordability.	
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Developer, Utilities	Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards PRIOR to adoption or implementation into any statutory plan.	Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards prior to adoption or implementation into any statutory plan.	Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards prior to adoption or implementation into any statutory plan.	Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards prior to adoption or implementation into any statutory plan.	Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards prior to adoption or implementation into any statutory plan.	It appears only the benefits have been reviewed and provided within this survey, the data showing the logical implementation in other winter cities and a copy of the proposed design standards is required to

	Many cross sections are already challenged with fitting a 1.8m sidewalk, which implies a variance to the width of the SUP is required to maintain existing ROW widths. SUP's create a direct conflict and safety concern for all front attached driveways which are predominant on local roadways and permitted on collectors. As history will show, all design standard changes require a thorough vetting with all agencies to eliminate landscaping and utility conflicts - This hasn't been successfully implemented to date under the current complete street standards and many projects are still hindered by these conflicts even today. Lessons learned - Before additional changes are explored, it is strongly recommended to get the exiting standards working without requiring additional ROW and ensure extensive review by all agencies prior to rushing into any new policy or standard changes.	Existing city operations and maintenance damages are a very common concern for roadway infrastructure. Snow removal damages are expected to be extensive on raised crosswalks which will increase lifecycle costs and potentially hinder the developer's ability to ever hand-over the infrastructure. Repairs and replacement costs are a direct impact to housing affordability. Increase the cost to develop = decrease in affordability. It would be expected that the city has researched and has data comparatives to how raised cross walks function in a winter city to ensure a proper financial analysis has been contemplated prior to rushing into any changes. A copy of this thorough comparable analysis should be included in any report back to council and will be of great interest to the development industry. It appears only the benefits have been reviewed and provided within this survey, the data showing the logical implementation in other winter cities and a copy of the proposed design standards is required to properly assess the value add of this change. To further highlight the importance of the above, proposed design standards are required to properly assess all additional costs.	It would be expected that the city has researched and has data comparatives to how raised cross walks function in a winter city to ensure a proper financial analysis has been contemplated prior to rushing into any changes. A copy of this thorough comparable analysis should be included in any report back to council and will be of great interest to the development industry. It appears only the benefits have been reviewed and provided within this survey, the data showing the logical implementation in other winter cities and a copy of the proposed design standards is required to properly assess the value add of this change. It would be imperative that all Drainage Standards are reviewed concurrently to ensure functionality and conformance with other design standards. To further highlight the importance of the above, proposed design standards are required to properly assess all additional costs.	Existing city operations and maintenance damages are a very common concern for roadway infrastructure. Snow removal damages are proven to date, which will increase lifecycle costs and potentially hinder the developer's ability to ever hand-over the infrastructure. Repairs and replacement costs are a direct impact to housing affordability. Increase the cost to develop = decrease in affordability. There is a HUGE associated cost to boulevards on any roadway - The development industry would be more than happy to outline these costs to ensure a properly informed review of this idea. Builder activity on local roadways makes it nearly impossible to achieve CCC/FAC. An offset to additional boulevard improvement certificates and cost needs to be properly explored prior to rushing into any changes. To further highlight the importance of the above, proposed design standards are required to properly assess all additional costs.	Existing city operations and maintenance damages are a very common concern for roadway infrastructure. Snow removal damages are expected to be extensive on curb extensions which will increase lifecycle costs and potentially hinder the developer's ability to ever hand-over the infrastructure. Repairs and replacement costs are a direct impact to housing affordability. Increase the cost to develop = decrease in affordability. It would be expected that the city has researched and has data comparatives to how a the curb extensions function in a winter city to ensure a proper financial analysis has been contemplated prior to rushing into any changes. A copy of this thorough comparable analysis should be included in any report back to council and will be of great interest to the development industry. It appears only the benefits have been reviewed and provided within this survey, the data showing the logical implementation in other winter cities and a copy of the proposed design standards is required to properly assess the value add of this change. To further highlight the importance of the above, proposed design standards are required to properly assess all additional costs.	properly assess the value add of this change. Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards prior to adoption or implementation into any statutory plan. To further highlight the importance of the above, proposed design standards are required to properly assess all additional costs. Increase the cost to develop = decrease in affordability.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Utilities, Engineering Consultant	• Having a specific shared use path network (opposed to having them everywhere) provides (or should provide) a route or a network that is most efficient and safe with the least amount of break points. On local roads you would have driveway connections and regular front yard activity causing congestion or obstacles. • There would also be a need for increased signage, maintenance, and road right-of-way • Wider x-sections required to accommodate paths vs walks and power furniture. This will negatively	• These are great for pedestrian safety and accessibility, but they do cause design and drainage complications (width, frequency, locations) and can be a situation where transportation and EPCOR drainage requirements are in conflict (including considering during construction as they can increase ponding and ESC issues) • Additional maintenance from snowplow damage/general wear and tear • Collector roads typically are bus routes and some buses have fairly low clearance, might be difficult	• Additional CBs and MHs to accommodate drainage (more difficult drainage design) ...likely will accumulate ice and snow in the winter • False sense of security for pedestrians at these conflicts points (ie pedestrians wont look both ways to see if there is a vehicle approaching) • Additional maintenance from snowplow damage/general wear and tear • Impacts major overland drainage system resulting in much deeper ponding depths and more	• Allows for more landscaping and trees which is a positive. • Cost, maintenance, dedication of row are negatives • can lead to accessibility issues, if the boulevard ends up just needing to be hard surface for street parking accessibility to the sidewalk it defeats the purpose of the boulevard • Additional R/W width required to accommodate street furniture, leading to less developable land. • Doesn't necessarily mean a more trees as there still are shallow and deep utilities and driveways to	• are great for pedestrians, they impact street parking and increase amount of infrastructure • EPCOR Water doesn't like having fittings under bumpouts, tough to fit in MHs, narrows the roadway and might cause issues to fit infrastructure (ie 2.5m from CMHs to water, etc) • Need alley for driveways so you can accommodate driveways • Additional maintenance from snowplow damage/general wear and tear • Additional CBs and MHs to accommodate drainage (more	Overall the requirement of share use paths on new development has a major impact on the developable front footage, and will lead to higher costs to home buyers. It also creates a massive increase the amount of hard surface infrastructure being put into the City maintenance and operations inventory, increasing costs to the City. Not to mention the fact that this is not a very sustainable option. The requirement of raise crosswalks needs to be very carefully discussed with City and

	impact developmental area. • More maintenance for the City, as the City clears shared pathways but the public are required to clear sidewalks. Would this change? • Would having shared use paths create narrower boulevards, thus creating less snow storage areas? • More maintenance on asphalt paths as asphalt don't hold up as well as concrete walks • Normally we cannot have driveways onto paths, would this require more detached product development with alleys, therefore creating more infrastructure and less developable area. • Positively, this would be "safer" for cyclists as they are separated from vehicles and create More space for pedestrians to pass	for them to cross (other low rise vehicles) • Additional CBs and MHs to accommodate drainage (more difficult to do the drainage design) ...likely will accumulate ice and snow in the winter • Push crossing back from intersection (I don't think you can do a raised walkway at the curb return so either the crossing is pushed back or you would need to raise the whole intersection) • False sense of security for pedestrians at these conflicts points (ie pedestrians wont look both ways to see if there is a vehicle approaching) • Impacts major overland drainage system resulting in much deeper ponding depths and more frequent ponding locations.	frequent ponding locations.	account for • Residents don't necessarily maintain the boulevards, which can lead to long grass/weeds and a rundown look to the neighbourhood • Snow storage vs windrows on road (additional parking) • Increased feel of "safety" pedestrian will additional separation from vehicles and pedestrians • As shallow utilities tend to fall under the separate sidewalks, and shallow utilities typically get installed over the winter, sidewalks would not get installed until the following year's construction and could delay CCC. • Separate sidewalks more prone to damage from builders. • Tend to have more issues with drainage across separate walks over time.	difficult drainage design)...likely will accumulate ice and snow in the winter • Could result in more damage to vehicles hitting curbs during slippery winter conditions.	EPCOR drainage, these will have a significant impact to roadway drainage and additional infrastructure.
Utilities	There could be moves of infrastructure and utilities required including pedestals and other structures. This could cause large costs to the utility as well as long timelines to move such facilities. Long notification times such as at least one construction season prior are required for such work, where as sidewalk replacement can usually be done in place.	Shaw Doesn't anticipate any real impacts for us with this work as there is generally space for us in the entrance to a subdivision.	It's not clear how this would be done as most alley access points just have a standard sidewalk across the entrance that is already level. however if some larger construction was created it could limit the space for utilities.	Boulevards could impact Shaw if it were to limit the ability to place structures or other utilities or if additional roadway space is not dedicated to accommodate a boulevard.	Shaw doesn't anticipate any impact from curb extensions.	
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Utilities, Engineering Consultant	Significant increased cost of construction. Additional land requirements. Both these costs will negatively impact housing affordability Significant additional maintenance costs for the City, which will have increased property tax implications. Increased risk for the City when they aren't properly maintained	SIGNIFICANT additional costs of construction not only for the road but also for the storm sewer infrastructure. Significant additional maintenance costs for roads and also for drainage. Already there is a problem with plugged catch basins, that the City can't properly maintain, and will result in increased flooding on roadways. The City is creating a problem where generally there is not an existing problem. These structures should be retrofits when we identify a problem at a particular location and should not be generally applied. In fact, the City will be creating a safety problem by inducing cyclists (who are not pedestrians) to ignore the legislated rules of the road	Same response as above. I do not see any issues at existing lane crossings - why would you want to create a problem where none exists	As a pedestrian, I really like boulevards and associated separate walks. Boulevards are also a good place to windrow snow on the rare occasions that the City plows local roads, without blocking the sidewalk. I am concerned about additional construction cost. Long term maintenance is a huge issue for the City - when those small boulevard trees become large trees the sidewalks are displaced and become a huge liability. I am not in favour of shared pathways in place of dedicated sidewalks on local roads - there is no need for a cyclist to use a path when there is an adjacent local road	Significant additional construction cost for road and storm drainage. Significant additional cost for City maintenance. The benefits appear to be imaginary as I am not aware of a problem existing generally, particularly on local roads. These treatments should be reserved for very specific locations where there are identified problems. Increased liability for the City by inducing drivers to cross centre lines to navigate around these bulb outs.	Bulb outs and raised crossings are a bad idea for general application and should be reserved for locations where there are tangible benefits. Transportation Dept needs to engage with other departments and utilities to determine a global impact on the City and then decide if they are a good idea. There would probably be a greater benefit if the City stopped installing traffic signs on steel plates that are bolted to sidewalks - these probably create a greater hazard to users than those supposedly solved by the proposed bulbs and raised crossings.
Area Structure Plans, Neighbourhood Structure	There is not enough room in the current local road ROW standards to	raised crosswalks are pleasant for end users however require either	the sidewalk and alley intersection is already at grade. I don't	Cost implications. Separate walk is more expensive than mono walk.	can sometimes create design challenges and additional CB, CB	

Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Utilities, Engineering Consultant	introduce a 3.0m SUP. The cross section would need to get wider, which will in turn decrease Gross Developable Land and increase the price per lot thus driving prices higher and Edmonton would lose the market to bedroom communities as new home buyers would seek more cost effective lots. In addition, one of my clients constructed a 3.0 SUP on a collector. Homeowners did not shovel this walk as they assumed COE maintains snow removal of all SUP. I believe (?) the City is actually putting forces on this during winter given the backlash from homeowners. To be honest the current complete streets sidewalk with (1.8m) on a local road with a blvd of 4.0m cannot physically be constructed as there are issues with ground rods and street furniture.	1. Much more CB's, MH and leads or 2. Extreme grading design constraints. Additional infrastructure will increase lot prices. CB's, MH and raised cross walks are expensive. In additional they create challenges for snow clearing crews whom tend to hit these during the winter causing damages. The city will need to increase equipment, skilled operators and will have long term Maintenance issues based on THEIR current raised cross walk standards.	understand this question.		leads etc.	
Developer	extra space required, constructability, maintenance; potential of increased conflict with users, space, space, space, maintenance of boulevard, design with curbing, many impacts if SUP's were added to locals and collectors. No need for this on a local road.	This is a confusing question - the intersection is raised or the cross walk only. Cyclists should not be riding on the sidewalk on a collector roadway and therefore would not benefit (if there was a benefit) to a raised continuous crossing. Misleading as current bylaw contradicts this type of use at a crossing. Where would the excess water, slush, snow accumulate if these were raised, how would the CB placement be incorporated, owuld there be increased CB's required, how is maintenance completed, would snow removal constantly damage these crossings. More discussion required outside of a survey. Only opportunity if all costs are removed with construction is that the ramps would not flood out from frozen CB's in the spring. This can be currently resolved with proper maintenance of the same.	Lots of impacts and this potentially leads to several other issues with users in the alley, it wouldn't create any safer access into and out of alley's. It would cause more noise plus some of the issues mentioned in the description above.	Space required to include a boulevard; less and less owners are maintaining current boulevards and this would cause the City and owners to increase maintenance requirements and/or enforcement of the same. Boulevards are good idea on collector roads but not on a local, separate walks and driveways on locals have more conflict points and locals are a different use than a collector road. Opportunity is for more trees, but maintenance of the same would need to also be increased and potential more conflict with utility.	First point is increased comfort? How is this calculated? Reduces crossing distance at a certain location - standard width on a collector to collector intersection is reduced from a collector to arterial - comfort is related to signal timing, not distance. Passing drivers should be stopped if individual is crossing, i feel it would be more uncomfortable to be standing into the lane when cars are coming perpendicular. Impacts are with design, constructibility, excess concrete and/or plastic materials, messy, wasteful, maintenance, winter, use of other modes of transportation, bus turning, truck turning, garbage truck turning, individuals turning into traffic and jumping curbs where individuals could be waiting to cross. I don't see opportunity for a bump out to be a good solution.	Better road way design, not band aid approaches to uses. Design along with drainage for proper. Road Diet, narrower roads, better enforcement if issues arise.
Area Structure Plans, Neighbourhood Structure Plans, Subdivision Planning and Rezoning, Developer, Utilities	Shared use paths should never be considered, or utilized, with local roads. Local roads, properly designed, are, in fact, shared use. Currently, our local roads are too wide and provide too much parking. Local roads should be narrowed,	There has not been sufficient consideration of the unintended consequences with raised crossings. The interpretation is that this is not being done in the interest of improving multi modal opportunities, but is, instead, an		While the idea of a boulevard planted with trees, appears beneficial, the challenge is nobody (City or residents) is maintaining them. Having additional unmaintained landscape areas is not attractive or beneficial.	Curb extensions should not be considered in isolation of overall roadway design. Roadways in Edmonton are too wide. The entire roadway design should be looked at in the context of reducing the width of roads to encourage slower travel speeds	The entire survey suggests an ad hoc approach to roadway design. The net result is neither satisfactory, or efficient.

	parking significantly reduced, or eliminated, and utilized as shared use. Shared use paths do not need to, and should not, be 3 m Excessive width and excessive use of shared use paths is detrimental to the City's stated goals of climate action and intensification. Excessive use of shared paths, requires larger rights-of-way and increases the impermeable area with significant implications for drainage. Right-of-way widths can simply not accommodate all of the requests.	attempt to further discourage and inconvenience car driving. As to raised crossings being utilized for cyclists, we believe that cyclists should not be using sidewalks. Our comments with regard to shared paths were in the previous section. The unintended consequence of crossings is a significant impact on drainage, snow, removal, and, potentially, safety.		The other challenge with creating boulevards for tree planting is that tree planting is significantly impacted by utilities, resulting in fewer trees than one might desire.	and achieving the comfort and safety desired.	
Area Structure Plans, Neighbourhood Structure Plans, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Developer, Landscape Architecture	They are less resilient and long lasting over time. If the City goes in that direction, suggest the standard width should be widened to 4.2m - more in line with other jurisdictions in terms of width for bi-directional, multimodal travel	This is a good idea and will promote traffic calming and safer crossings for pedestrians. Materiality and finish should be strongly considered in the updated details.		This would allow for the integration of LID features like bioswales, soil cells, and infiltration gardens, as well as supporting an increase in the urban canopy and green space in the city. this is a great idea. It also allows for storage of snow during winter months.	Curb extensions can also be quite successful. Suggest the detail include direction on where to locate catch basin or other drainage infrastructure, to avoid pooling water, snow, and ice build up at the exact spot the pedestrians want to step down / roll down onto.	City of Edmonton should take a strong leadership role in advocating for infrastructure that improves the pedestrian experience over the vehicular one. Universal accessibility and equity of the public realm are important considerations that require strong and specific direction to encourage developers to make positive change and do the right thing.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Developer, Utilities, Engineering Consultant, Detailed Design	1. Increase in impermeable hard surfaces and reduction in vegetated areas would increase storm water runoff. EPCOR is trying to implement the opposite. 2. Having cyclists in the same zone as kids playing in front of their homes or commuting to and from school is a major safety concern. 3. Wider road cross-sections will reduce developable land and thereby reduce densities. Our understanding is that Edmonton is meant to be increasing densities, not decreasing. 4. This increase in construction, material, and maintenance costs will all directly impact the cost of housing. Edmonton is meant to be working towards sustainable and attainable home ownership, not looking for ways to make housing more expensive. 5. Industry wide, SUPs on locals and collectors as a standard is not supported and should most definitely not be pursued.	Raised crosswalks can be a traffic calming measure for vehicles and a benefit for pedestrian's and cyclists in appropriate locations, but should not be applied to every intersection and cannot be applied to most situations. When pedestrian's and cyclists come to an intersection or change in surface, it makes them aware of what is going on around them. Having a continuous level surface reduces the awareness of their surroundings. The minor storm system (pipes in the ground) contain the 5 year storm events. Anything over that runs by surface to SWMF's. Raised crosswalks can block that surface drainage from it's flow path to the SWMF. This would either have to be picked up in the storm pipe, increasing the size tremendously. Or could cause more ponding that could encroach into private yards and entire intersections for vehicles. Maintenance costs could increase with more time required to remove snow as well as more	Raised crosswalks at alleys is not supported. False sense of safety for pedestrians is a high safety risk. Drainage from the boulevards needs to have a free flowing path to the road.	Monowalks provide many benefits. Reduced damage from snow clearing – sand, gravel, chemicals – less maintenance costs. Easy access/accessibility for homeowners/guests from their homes to their vehicles parked in the street. In the winter, with snow piled up between the sidewalk and the curb, passengers can have a difficult time getting in or out of the vehicles. Vehicles then park farther away from the curb and provide less room for driving in the street. The industry does not support removing monowalks.	Bump outs can provide some benefits but have to be planned in the correct locations. Garbage trucks, buses, emergency vehicles movements have to be taken into consideration. Those vehicles as well as passenger vehicles have to be able to move safely together. Having a reduced roadway, can cause issues if there are accidents and no space for vehicles to move around. If there are front driveways, there are reduced space for vehicles to enter/exit those driveways and having other vehicles go around. No on street parking for those residents, decreasing the accessibility to their homes. Greater risk of snow plow damage around curb extensions increasing the maintenance costs and cost of home ownership.	Complete streets intention is to design the street to the particular users for that street. Although pavement and walks are the most noticeable items in a roadway, there are lots of other things to consider in the design. Drainage, water, power, street lighting, telus, shaw, landscaping. All these departments have their own standards and all need to work together for the perfect fit. Roads and walks cannot be adjusted without approval from all the other items in a roadway. Larger infrastructure and more infrastructure means more upfront costs and maintenance costs and renewal costs and negative environmental impacts. The initial increase in cost passes down to the home buyer and then further more thru taxes. We need to be smart with the design and infrastructure and have a balance of function ability and cost and safety.

		damage cause by snow plows. Sometimes having more distractions for the driver causes less awareness of their surroundings if they are focused on the bumps on the road as opposed to the child on the sidewalk. The ponding created at edges of raised crosswalks can be observed in the Blatchford neighbourhood. This ponding leads to ice and slippery conditions located at every area where the pedestrian should be able to cross without the risk of injury. These raised crosswalks would yet again raise the cost of development, thereby increasing the cost of homes.				
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	There will be a knock-on effect of clearance conflicts between that SUP and other infrastructure elements of the road R/W. The current Road R/W cross sections are highly optimized to fit in all of the necessary surface and underground infrastructure required within the given space, with how clearance requirements from the various stakeholder groups (ie. Park, EPCOR, ATCO, etc.) have increased over the years. To fit an additional 1.2m of active transportation infrastructure in the form of a 3.0m SUP instead of a 1.8m concrete walk, would require either an increasing of the Road R/W width (not considered in council's motion, and not advisable given the already eroding financial viability of development within Edmonton) or a relaxation in clearance requirements from some or all of the infrastructure stakeholder groups in the cross section., or a removal of some other infrastructure component from the cross-section to free up that required space for the SUP.	Additional initial construction costs, additional FAC repair costs due to damage from snow clearing activities. Potential issues with overland drainage design due to the barrier created for overland flow at intersections with arterial roads - this could lead to additional costs on underground storm design to compensate for the issues created by the raised crosswalks.	Additional initial construction costs, additional FAC repair costs due to damage from snow clearing activities. Potential issues with overland drainage design due to the barrier created for overland flow at the alley access points, leading to additional costs for drainage infrastructure to pick-up flows that could otherwise have been addressed with overland flow.	See response to question 1 regarding 3.0m SUPs on locals/collectors. Space within the roadway cross section is already at a premium, and additional horizontal space requirements for a boulevard will be difficult to impossible to accommodate within the existing standard cross section widths without relaxation of clearance requirements by the infrastructure stakeholders. This proposal would create additional costs for development in Edmonton, which will ultimately be passed to the end-user homebuyer, and will erode the Edmonton markets affordability advantage.		Any changes made to infrastructure requirements need to be made with input from all stakeholders, but also properly coordinated between the different groups at the City and EPCOR/other utilities before the changes are finalized and implemented. At times in the past changes have been made to requirements (ie. clearances) only for it to later become clear that an important group was not consulted on the change, creating conflicts in the development design process, which ultimately causes delays and increases costs.
Area Structure Plans, Neighbourhood Structure Plans, Utilities, Engineering Consultant	Shared pathways are typically asphaltic concrete(AC) surfaced and this pavement type is weaker than concrete, especially under static loading. House construction causes many heavy vehicle loads and static loads such as concrete trucks and lifting equipment. Increased pavement failure will likely result if sidewalks in local and collectors become AC surfaced. AC structures	Installing raised crosswalks will increase the impedance to drainage water flow, more than ramps. So bullet four in the above reasoning is suspect.	The crosswalk will impede the drainage flow from the alley into the road gutter. Ponded water and icing may occur causing a new hazard.	Boulevards decrease the housing density which increases urban sprawl and environmental impact. Trees placed close to roads become a long term issue due to root growth which can uplift surface utilities and make road rehab difficult with the roots in the way. Boulevards result in separate sidewalks which have their gravel base isolated from the	May result in poor drainage of gutter flow which may include increased ponding and icing. Also the wic drain below the gutter may need to make turns to reach the catch basin. Water flows much better in a straight line. As I said before, good drainage is essential to road performance. May make snow removal more difficult as the grader blade has to	

	are also more prone to edge failures, versus concrete. A 3.0 meter SUP is wider than a 1.5 meter concrete sidewalk so more land is used up which results in lower housing density. I thought the goal was to increase housing density to decrease urban sprawl and protect the environment.			road base and curb wic drain. This makes the sidewalk base drainage less effective resulting in potential increased sidewalk problems. Monolithic sidewalks and curbs have the sidewalk gravel base right adjacent to the road gravel base and wic drain, making for better drainage than separate walks. Good drainage is imperative for satisfactory long term road and sidewalk performance.	swing out. Straight lines are easier to clear snow. There is a significant increase in cost and construction effort which should be considered versus the benefits. Paving and concrete forming is much easier in straight lines resulting in better quality.	
Engineering Consultant	Additional ROW will be required to provide shared pathways in addition to existing typical infrastructure along collectors (e.g. 2 parking lanes and 2 travel lanes). While on-street parking could offset the additional ROW requirements, the availability of on-street parking is still a consideration for some homeowners/renters. Front drive product is typical along local roadways. The provision of a shared pathway along locals with front drives increases conflict points between cyclists and vehicles, and provides a false sense of safety to cyclists. Designing to eliminate front drives requires the implementation of alleys, increasing the ROW required to provide transportation infrastructure. Constructing shared pathways instead of sidewalks also changes the responsibility for snow clearing from adjacent residents to the City of Edmonton based on current policies.	The inclusion of vertical traffic calming elements has a significant impact on the design of drainage infrastructure and a substantial design update for intersection drainage would be required. Winter maintenance procedures would also need to be updated to ensure the raised crossing is cleared to bare pavement by the City as compared to blading snowpack along local roadways.	The overall change to the design would be minimal; however, it will still impact drainage. Current design guidelines for alleys crossing boulevard walks and aprons (Drawing 5300) specifies the back of walk can be lowered 50mm at the centre of the alley to facilitate drainage. Removing or reducing the potential to accommodate elevation adjustments at the sidewalk/alley interface will have significant impacts on sidewalk and roadway design. The change in design will also not improve winter conditions at alley access points. Snow/Ice is easily packed down at these locations. It is currently the City's responsibility to clear these locations, which doesn't occur frequently based on the City's clearing priorities.	Opportunities for landscaping within Boulevards where there is front drive product is limited. Eliminating opportunities for front drive access to achieve an uninterrupted boulevard results in increased ROW for the provision of rear alleys. Increased ROW to provide rear access decreases the efficiency of developable land.	The ability to effectively implement curb bulbs at intersections is a function of the types of intersecting roadways and the design/control vehicles required to traverse the intersection. For example, while the installation of curb bulbs is desirable at schools, the design of the curb bulbs also needs to consider school bus swept path requirements, reducing the effective area of the curb bulb and watering down the intended benefit associated with the installation. The installation of curb extensions at intersections also significantly impacts roadway drainage and access to underground utilities. City operations needs to be on board as well. Damage to curb bulbs as a result of winter maintenance needs to be considered in the design life cycle of the infrastructure.	I appreciate that Edmonton is moving towards building a City within improved infrastructure for vulnerable road users, but I do not believe an everything, everywhere approach will create an environment that is safe for all users without increasing the amount of land required to provide transportation infrastructure. The design processes I've been involved in since the initial adoption of Complete Streets have confirmed that the City does not have buy in for the development of complete streets cross-sections and the incorporation of traffic calming elements across all departments and utility providers and that as a result, the end product can be bastardized to the point of being ineffective for their intended use. Rather than an everything, everywhere approach, I would prefer to see the development of bicycle networks that meet the principles of the Bike Plan through the integration of on and off-street linkages that form a connected network within each community and the implementation of traffic calming measures at context specific locations (e.g. schools, parks, midblock crossings). By focusing on the design of features at key locations, vulnerable users can actually be prioritized over other road users and solutions can be identified to address competing interests from other City departments. Creating new design standards that incorporate traffic calming

						measures in all locations, fully address existing concerns across City departments, and are implementable across the majority of situations will require significant time and effort. It will also require trust between the City and the development community, which has become tenuous. City staff and Developers are City Building partners and the design experience of both sectors should be drawn upon in the upcoming major design guidelines update. Finally, as a winter City, how infrastructure will be maintained through the winter months is a critical part of the design process and understanding the life cycle costs of infrastructure.
Surface Construction	More difficult to construct due to tighter areas. Specialized equipment would also be needed.	Maintenance and rehabilitation would require closure which would impact residents for longer periods of time.	.	Increase in landscaping which is not maintained once the areas are turned over to the City.	Curb extensions are difficult to clear snow around during snow events.	
Utilities	Increased volume of pedestrian traffic could be expected, which would require vehicular traffic control to be via lights and would potentially reduce volume of vehicle traffic flow rates.	I would think safety-wise, this will drastically reduce fatal collisions. It would also allow for traffic to be unimpeded at crossing locations.	Same notes as above, but with limited/reduced visibility at most alley accesses, I would think this would have an even greater safety benefit.	Impact would be increased city maintenance costs, benefit would be beautification of neighborhoods when implemented and maintained. These become an eye-sore when not maintained though. Another impact is (potentially) increased development space requirements. Another benefit would be increased safety buffers in the even of off-road vehicle collisions.	The impacts will be drivers will likely avoid these traffic areas, which may congest other arterial roads. Benefits will all be to beautification, safety, and to facilitate accessibility for public transport as noted.	No concerns, this is a great initiative.
Area Structure Plans, Neighbourhood Structure Plans, Subdivision Planning and Rezoning, Developer	Wider ROW requirements, particularly if there are shared SP on both sides.	Traffic calming, but may create issues during snow clearing. Additional potential claims to City Risk Management as a result of vehicle damage, particularly relating to low cars.	Traffic calming, but may create issues during snow clearing. Additional potential claims to City Risk Management as a result of vehicle damage, particularly relating to low cars.	Opportunity for snow storage in winter but requires maintenance (mowing and cleaning) in summer.	Traffic calming. Creates potential hazards when snow covered/drifted.	Consideration of the additional cost to the City to maintain the redesigned infrastructure. If there is no funding to maintain then is this viable.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Subdivision Planning and Rezoning, Engineering Consultant	1. Will the shared use paths on locals and collectors be part of the City's snow removal program and if so, what level of priority will be given to the entire network of shared use paths within neighbourhoods? Or will clearing be part of the adjacent homeowners responsibility? How will the City ensure adequate snow and ice removal on all of the local and collector shared use paths to ensure they are all-seasons facilities. 2. Implementation of shared use paths along existing locals and	Generally support raised crosswalks for traffic calming and minimizing impact to pedestrians. Consider what would snow maintenance look like at these crossings?	Alleys are generally at the sidewalk grade already with curb drops after the blvd sidewalk so I'm not sure how a raised crosswalk at an alley would work. Maintaining grade for monowalk conditions instead of having the curb drop within the sidewalk makes sense. Could consider roll-faced curb in these instances instead?	Support from a pedestrian/cyclist experience for additional separation from moving vehicles.	Support curb extensions; however, where we've tried to implement them in greenfield development, utilities often don't approve and swept paths of school buses, city buses, and garbage trucks often don't allow for enough of an extension to achieve the points above. There also seems to be a disconnect between the alignment of what can be constructed above-ground and what can be constructed underground (utilities).	

	collectors should consider the number of existing vehicle accesses and driveways along the corridor. Does a shared use path with a significant number of vehicle crossing points provide a false sense of security? 3. Implementation of shared use paths along greenfield locals and collectors will not permit residential front drives which requires the construction of an alley; therefore, increasing the road right-of-way requirements overall in a neighbourhood. 3. Shared use paths along locals and collectors within existing right-of-way means a reduction of blvd width or encroachment on back-of-walk. How will trees and green space be preserved over the parking and travel lanes? 4. Sightlines need to be considered so side-street vehicles do not encroach shared use paths to see oncoming vehicles.				
Utilities	We would likely see an increased number of conflicts with aerial power lines and poles and increased restoration costs for underground utility repairs, all of which would need to be funded by customers increasing bills. We would also have less room for transformers and cubicles which would then need to encroach on private land in easements restricting development footprints. This is often not supported by property owners and developers.	As long as access with larger vehicles is not impeded the only impact I can think of is higher restoration costs if the crosswalk needs to be replaced due to a utility dig up. In some cases this may restrict manhole locations due to the lid locations. I am not sure the impact this will have on traffic flow or drainage.	I worry about vehicle access, especially for our larger bucket trucks and diggers that need to access lanes and struggle with tight turns and restricted space now.	Similar to my first answer this will likely push sidewalks back further creating less room for aerial poles, transformers and cubicles. Having a boulevard behind a sidewalk works well for cubicles and transformers ensuring access while minimizing the risk of them being hit by traffic.	Again the only impact I can think of is on our larger aerial trucks, diggers and cranes that already struggle navigating tight residential areas.
Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Developer	unnecessary wider road ROW, unnecessary more infrastructure - greater initial costs, greater maintenance, greater replacement costs			Negative - requires greater road ROW. Positives - does allow for more landscaping / trees, allows for snow storage	great in the summer as per described above. More difficult for snow removal, greater damage to curbs and landscaped areas. We often forget we are a winter city.
Utilities	additional runoff in already low capacity drainage areas - absorbent landscape and LID to manage additional impervious area	each raised crosswalk adds at least 2 and in most cases 4 new catch basins - creating more impervious area and more inlets into the system, more drainage assets, Find the way to slow traffic by integrating green infrastructure or provide additional storage for added impervious areas.	more impact than opportunity - it would be better to find another way to slow traffic - one way roads, narrower roads	opportunity to use absorbent landscape, cut the curbs to bring more runoff into this area.	opportunity if not paved but used to integrate green infrastructure and use this area to create ways/facilities to manage stormwater
Area Structure Plans,	SUPs would considerably reduce the	Acts as a traffic calming measure.	Acts as a traffic calming measure.	Increases urban canopy and helps	Acts as a traffic calming measure

Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant, Planning and Landscape Architecture	overall carriageway width and limit on-street parking. An SUP on local roads should be limited to one side only with a standard sidewalk on the other.			mitigate heat island effects. Increases visual and physical appeal of neighbourhood streets. Aligns with proven biophilic design principles.	and increases pedestrian safety	
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Utilities, EPCOR is involved in the planning process on most City projects in some way	Wider shared used paths, while beneficial for mobility have the negative consequence of increasing impervious surface and the resulting runoff generated. There need to be a consideration for offsetting these impacts to the storm drainage system and the environment.	Raised crosswalks impact the overland drainage routes in the system. Installations so far have dealt with this by adding additional catchbasins on either side of the raised crosswalk which allows a much larger free flow of water into the sewer system. This has the downstream impact of increased basement flooding risk, transfer of contaminants, increased CSOs, and numerous other impacts to the drainage system. There also needs to be an offset to these impacts.	Raised crosswalks impact the overland drainage routes in the system. Installations so far have dealt with this by adding additional catchbasins on either side of the raised crosswalk which allows a much larger free flow of water into the sewer system. This has the downstream impact of increased basement flooding risk, transfer of contaminants, increased CSOs, and numerous other impacts to the drainage system. There also needs to be an offset to these impacts.	The opportunity with enhance boulevard requirements is to install much needed LID infrastructure more widespread throughout the City to offset some of these other impacts.	My comment here is similar to the impacts of raised crosswalks, though the impacts are less detrimental than the raised crosswalks. The bump out at curb extensions do pose an opportunity to standardize the installation of LID at these locations. Standard designs have been developed by EPCOR for but have not gained traction with the City in terms of installation.	As the development of the Complete Streets updates moves forward, please keep EPCOR (Liliana Malesevic and myself) informed of any working groups.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Developer	It will not fit. Given that most existing COE ROWs were designed to accommodate 1.5m sidewalks plus the other improvements that assemble a ROW, doubling the width to 3.0m means the pathway would encroach into the physical space of other improvements that fill the ROW. So no, a 3.0m shared use path will NOT fit into a ROW where a 1.5m concrete walk was intended. Considering that the currently published complete streets ROW cross sections cannot accommodate the expansion from 1.5m to 1.8m without displacing or encroaching transformers should cease the conversation on a doubling expansion to 3.0m where more than a transformer will not fit. Math matters. More is more. Improvements are 3D real objects, not 2D lines on a page. Properly dimensioned cross sections that considers all required improvements is absolutely essential to planning & engineering. Start flawed, end badly. Impact 1 of adding an extra 1.5m width on the walking path of both boulevards = additional 3.0m width required of ROW width. Impact 2 = unforeseen & unintended mode conflict depending on the built form the ROW services. Front	I appreciate goal of this initiative and support the idea of putting higher priority on safety and accessibility. A physical marker or delineator of transitioning from vehicle priority area (arterial or collector) to a residential use priority area (local) is an interesting concept. However every change comes with consequences. I would anticipate a variety of maintenance services would not support the introduction of elongated speed bumps. Snow clearing damages. Access and ascent issues in winter conditions trying to climb a much steeper slope approaching the speed bump. Potential for long vehicles like buses, garbage trucks, fire trucks and hydrovac trucks to bottom out or get high center stuck on a raised crossing? Thinking about the public and potential claims, what if low clearance vehicles that could incur damage crossing a raised? Switching to constructabilty, are raised crossings intended to be concrete or asphalt? Asphalt is paved continuously when building a road. If asphalt raised crossing, then do you pave the raised crossing at CCC & then overlay both road & crossing at FAC.	I don't even understand this suggestion. Why would you raise anything at an alley entrance used by vehicles? The perpendicular pedestrian use crossing of the alley (trail or sidewalk) is at a consistent grade line & elevation across the alley (as we construct them already). I am not able to visualize the accessibility impairment at a perpendicular alley crossing. If you add a raised crossing at an alley, you would create an accessibility obstacle that never existed previously. I must be missing the intended outcome of this suggestion.	Not appropriate for all adjacent built forms. Not appropriate for all local road applications - again, what is the adjacent built form the ROW services? The statement of "Required for all" is limiting, restrictive and flawed as it is not the best application in all situations. "Encourage local roadway boulevard cross sections where the development context and setting is conducive" would be a better approach & practice. Same applies to cul de sacs. There will always be a need to add a cul de sac in constrained locations with in the plan. In the same way, there will be the need for front attached built form. These are tools in the toolbox. Front attached built form is best paired with local mono-walk, not separate sidewalk, certainly not an asphalt trail.	I'm glad that it is not "all" intersections. I support curb extensions, where appropriate and if designed well. I like that they get the attention of the driver = make the driver pay attention. I like that it makes pedestrians more obvious about their intention to cross.. my reservations lie with excessive snow clearing damages as machines "find" the curbs during the winter, at night by using their blades. The other is larger vehicles and turning movement requirements. No developer would support a larger ROW to support curb extensions if turning movements demanded more room to maneuver around curb bump outs. Again, were appropriate and well designed. Reoccurring considerations are drainage and constructability (outlined in raised crossings comments)	Create and confirm ROW cross sections that are dimensioned properly and spatially accurate = all (real world and 3D) improvements actually fit when constructed. Proper cross sections and defined ROW width is the core foundation of planning (step 1). A ROW width cannot be altered/expanded at the detailed engineering stage (step 2) to compensate for an oversight in accuracy back at the outset of step 1. There is no opportunity to correct at construction (step 3) construction. It's built now, live with it

	attached garage & driveway built from adjacent to a 3m asphalt that invites & services cyclist creates difficult sight lines and risk of conflict + contact. Public associates concrete walks with walking & asphalt trails for multiple mode uses (at speeds higher than walking). Classes Local = there is no place or space for asphalt trails on local road ROWs. Collector = I support one sided asphalt trail application to create an active mode collector WHERE it is planned properly to provide continuous connection through a neighborhood & community. NOT all collectors need to be enhanced to active mode collectors - view in the context of continuous connectivity. Have a purpose for an active mode collector designation. CONSIDER making the active mode collector network (not every collector) part of shared neighborhood infrastructure & levy rate (like arterial roads & ARA payment). The active mode collector requires more land & more infrastructure cost to build when compared to standard collector & provides a broader benefit than 1 stage or 1 quarter section.	If concrete raised crossing, then concrete would have to be poured to final elevation at CCC and have the same edge of concrete exposed as a curb gutter - that perpendicular to traffic & snow clearing exposed concrete edge will be absolutely damaged & destroyed by the time FAC comes = R & R. If concrete, then paving approach changes from 1 paving operation to 2 paving operations as they both have to work outwards from the raised concrete crossing. Result = more time to construct, more expensive to construct, more expensive to R&R at FAC. Is there a potential concern of rear ending incidents on the main arterial/collector as traffic entering a local road would be much slower exiting main traffic to cross an elongated speed bump with altered driver patterns? The other important element is roadway drainage. Cannot just plop in a gutter drainage blockage like a raised crosswalk without considering where the water goes. Raised crossings = drainage divide. Need to be prepared for this and design to accommodate this. Likely to introduce more catch basins required in the presence of a raised crosswalk than without = more construction time, more construction cost, more infrastructure to maintain & ultimately more infrastructure to replace. More is more.			
Developer	The cost to construct these would be significantly higher than typical sidewalks; would potentially require wider right of ways (using more land un-necessarily), and the wider paths will require homeowners to maintain much more infrastructure (i.e snow clearing) as the City will not be able to snow clear all paths within current budget constraints without increasing taxes. Finally, there would not be enough room in the standard road right of ways to accommodate 3m paths on both sides of the road, in addition to the other infrastructure (telecom	I believe this is positive and could potentially enhance safety at key intersections. However, it is not something that I would support at every intersection as it could be costly to construct and may be challenging to maintain (i.e. snow clearing operations) and is possibly difficult to design to support safe and functional drainage off the roads (i.e. more catchbasins and storm sewers/manholes).	I am not sure I fully understand how this will look and/or function. Again, maintenance such as snow clearing and drainage consideration may be biggest concerns.	Conceptually this makes sense, however it potentially creates additional infrastructure because a rear lane would now needed for all homes (increasing costs and drainage infrastructure), and will reduce housing choice for those who want front drive homes. I also foresee maintenance issues as homeowners may not maintain the grassed boulevards and they would look unpleasant.	Conceptually feel these could be positive additions to communities. However, design considerations such as turning radii for cars, trucks and buses and drainage would need to be looked at since the roads become narrower at these points, and vehicles could need to turn into oncoming travel lanes. Also see these adding additional costs and needing potentially more right of way.

	pedestals, power transformes, streetlights, gas mains, trees, etc).					
Developer	Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards PRIOR to adoption or implementation into any statutory plan. Many cross sections are already challenged with fitting a 1.8m sidewalk, which implies a variance to the width of the SUP is required to maintain existing ROW widths. SUP's create a direct conflict and safety concern for all front attached driveways which are predominant on local roadways and permitted on collectors.	Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards prior to adoption or implementation into any statutory plan. Existing city operations and maintenance damages are a very common concern for roadway infrastructure. Snow removal damages are expected to be extensive on raised crosswalks which will increase lifecycle costs and potentially hinder the developer's ability to ever hand-over the infrastructure. It would be expected that the city has researched and has data comparatives to how raised cross walks function in a winter city to ensure a proper financial analysis has been contemplated prior to rushing into any changes. A copy of this thorough comparable analysis should be included in any report back to council and will be of great interest to the development industry. It appears only the benefits have been reviewed and provided within this survey, the data showing the logical implementation in other winter cities and a copy of the proposed design standards is required to properly assess the value add of this change. To further highlight the importance of the above, proposed design standards are required to properly assess all additional costs.	Has this even been discussed with operations and waste removal? Seems like a lot of problems to encourage crossings at a location that nobody crosses.	Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards prior to adoption or implementation into any statutory plan. Existing city operations and maintenance damages are a very common concern for roadway infrastructure. Snow removal damages are proven to date, which will increase life cycle costs and potentially hinder the developer's ability to ever hand-over the infrastructure City should be mindful of requiring additional right of way in circumstances where a plan is already underway. Will the city actually maintain all the extra trees? Trade off of additional costs and land dedication should be balanced with city's objectives of affordability.	Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards prior to adoption or implementation into any statutory plan. Existing city operations and maintenance damages are a very common concern for roadway infrastructure. Snow removal damages are expected to be extensive on curb extensions which will increase lifecycle costs and potentially hinder the developer's ability to ever hand-over the infrastructure. Repairs and replacement costs are a direct impact to housing affordability. Has operations even accepted the use of curb extensions? Can transit safely use them? It is frustrating to be told that engineering plans need to include them only to have them removed because operations / transit don't want them.	It appears only the benefits have been reviewed and provided within this survey, the data showing the logical implementation in other winter cities and a copy of the proposed design standards is required to properly assess the value add of this change. Any and all text or policy changes should be extensively vetted through a complete engineering review and incorporated into the design standards prior to adoption or implementation into any statutory plan. To further highlight the importance of the above, proposed design standards are required to properly assess all additional costs. Increase the cost to develop = decrease in affordability. Please don't require infrastructure that other departments in the city won't accept.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Developer	Shared use paths could be a good replacement of sidewalks, if, on a neighborhood level, other infrastructure requirements were decreased accordingly. The addition of infrastructure should be met with an equal or greatert infrastrucure efficiency. As in, some local roads would not have side walk or shared use paths, to compensate for the added infrastructure. And the road ROW with the SUP, does not get increased in width. If the SUP was best through MR, there should not be one in paralell in the Road ROW.	In addition to the benefits outlines above, this will create extra ongoing maintainance and replacement costs for the City (tax payers) to take on in the future. The additional cost to the developer and the taxpayer will contribute to an ongoing escalation of the cost of housing overall. Adding this feature should be paired with an equal or greater reduction in infrastructure. Efficiency should be prioritized over straight addition of standards.	In addition to the benefits outlines above, this will create extra ongoing maintainance and replacement costs for the City (tax payers) to take on in the future. The additional cost to the developer and the taxpayer will contribute to an ongoing escalation of the cost of housing overall. Adding this feature should be paired with an equal or greater reduction in infrastructure. Efficiency should be prioritized over straight addition of standards.	This could be considered if, on a neighborhood level, other infrastructure and land requirements were decreased accordingly. The addition of infrastructure should be met with an equal or greatert infrastrucure efficiency. This additional width of the road ROW is a cost to the home buyer, further eroding affordability. It will also be an ongoing cost to maintain and replace, covered by tax payers. If this is deemed a necessary change, an efficiency needs to be	In addition to the benefits outlines above, this will create extra ongoing maintainance and replacement costs for the City (tax payers) to take on in the future. The additional cost to the developer and the taxpayer will contribute to an ongoing escalation of the cost of housing overall. Adding this feature should be paired with an equal or greater reduction in infrastructure. Efficiency should be prioritized over straight addition of standards.	All of the infrastructure identified in this survey outlined safety and accessibility benefits. Further works is needed to address the environemental impacts of the additional concrete and road strcuture required. Similarily to the financial efficiencies outlined in my comments, environmental efficiencies need to be considered as well. Please do not continue to add more requirements without making appropriate reductions as well. In addition to safety, the impact to the environment and

				demonstrated. As in, prove that this change leads to savings (for developers, homebuyers and tax payers) elsewhere that offset this change.		the costs need to be seriously considered.
Developer	lose space for power/street furniture based on the additional width. Would R/W need to increase to make this accommodation? Maintenance cost for replacements based on this over-size version will be expensive.	This is a version of speed bumps and not sure this would result in the desired outcome.	how would this further slow traffic when traffic is already slowing to enter the street from the alley? (Or vice versa) Appears to be of little benefit at this location.	Installing separate walks occurs after power/gas and will push construction longer, in an already short construction season. Hand forming is often required because street funiture in in the way of the gamaco. Again, time constraints. Separate walks on collectors make sense because of the Higher volume of traffic and higher speeds.	Very expensive to build, but then the replacement value will be expensive. Again, time consuming for a short construction season. These can be a hazard for cyclists because of the weaving (where it widens and narrows)	
Subdivision Planning and Rezoning	Shared pathways may introduce conflicts between different user groups, such as pedestrians and cyclists, due to differences in speed, behavior, and maneuverability. These conflicts can pose safety risks for both pedestrians and cyclists, particularly in areas with high volumes of users or complex intersections. Shared pathways may compromise pedestrian safety, especially for older adults, children, and individuals with disabilities who may face difficulties navigating around cyclists or avoiding potential collisions. The lack of clear separation between pedestrians and cyclists can result in a perception of reduced safety and discourage walking as a mode of transportation.		One of the primary concerns with raised crosswalks is the potential disruption to traffic flow, particularly on arterial or collector roads. The sudden elevation changes can cause discomfort for drivers, leading to sudden braking or evasive maneuvers, potentially causing rear-end collisions or conflicts with adjacent lanes. Congestion may occur during peak traffic periods, impacting the efficiency of the road network. Raised crosswalks may pose challenges for individuals with mobility impairments, including those using wheelchairs, walkers, or other mobility aids. The steep slopes on either side of the raised platform can make it difficult for people with mobility limitations to traverse the crosswalk safely. This can hinder accessibility and create barriers for vulnerable populations, contradicting the aim of promoting pedestrian safety. The presence of raised crosswalks can also pose risks to cyclists, particularly if the design does not incorporate appropriate measures to accommodate their needs. Sudden changes in elevation may cause instability, leading to falls or accidents. It is crucial to ensure that raised crosswalks are designed with cyclists in mind, providing dedicated cycling lanes or bypass options to ensure their safety.	While boulevards can enhance traffic flow in certain situations, their implementation on all roads may not necessarily lead to improved traffic conditions. Boulevards often feature medians, additional lanes, and designated turning areas, which require wider roads.	Curb extensions are designed to enhance pedestrian safety, reduce crossing distances, and improve visibility. While curb extensions offer several benefits, they also raise certain concerns like traffic congestions, emergency vehicle access, and accessibility	I want to believe that decision-makers will conscientiously evaluate the advantages and disadvantages before implementing any changes to the new infrastructure.
Area Structure Plans, Neighbourhood Structure Plans, Concept Plans for	Many cross sections are already challenged with fitting a 1.8m sidewalk, it is unclear how a SUP	Any and all text or policy changes should be extensively vetted through a complete engineering	Raised crossings slow the driver when the elevation difference is experienced, slowing down traffic,	Windrow storage and snow removal damage is larger on boulevards, perhaps in a winter	This has been proposed in the past in some subdivisions by developers and was met with a	Active mode transportation for cyclists & pedestrians should be analysed holistically as a

Arterials, Prelim/Detailed Design Drawings, Subdivision Planning and Rezoning, Engineering Consultant	would fit in a boulevard (3m SUP on a 4m BLVD) and not be in conflict with shallow utlities, street furniture. There is a safety concern for all front attached driveways which are predominant on local roadways and on some permitted collectors.	review and incorporated into the design standards prior to adoption or implementation into any statutory plan. Existing city operations and maintenance damages are a very common concern for roadway infrastructure. Snow removal damages are expected to be extensive on raised crosswalks and increase repairs and replacement costs. These costs impact impact housing affordability. Concern over how a raised cross walk would function in a winter city with snow melt (eliminating ramps implies elimination of gutters in x-walk locations) or how major drainage could occur along a roadway, this would not eliminate water but cause ponding abutting the entire x-ing and potentially cause ice build up on the raised walk in freeze thaw conditions. Has a pilot x-walk been built and a comparable analysis performed with respect to runoff? What is the proposed material? Proposed design standards are required to properly assess all additional costs.	decreasing a driver speed would have to occur before the pedestrian and car meet at the alley intersection, not sure if this would achieve the desired effect.	City grass is not the appropriate material between the walk and the curb. Boulevards are wider than roadways with mono walk, it is unclear if this change is suggesting a wider local carriageway which affects planning which affects neighbourhood density.	high degree of negativity from operations and maintenance as the grading operators run into the bump outs. Cul de sacs were recently deemed to be avoided unless absolutely necessary due to the fact that the snow clearing operation costs were prohibitive for CofE maintenance, the maintenance around bump outs would seem to be equally difficult. Has this been analyzed for continuous longevity and maintenance for snow clearing?	transportation corridor. People would rather walk along a greenway or path rather than along a roadway, if there were central corridors for this with strategic access nodes to move people this would achieve a walkable, safe travel way for people and reduce an excess of SUP's along all roadways. Would SUP's along all roadways require snow clearing? What are the cost implications of this maintenance? A strategic plan for placement of SUP's and inter-connectivity would achieve the goal of active modes of travel without increasing long term costs.
Utilities	We will receive more water ponding complaints as asphalt settles more inconsistently that concrete. The asphalt pathways will also degrade faster than the concrete alternative.	additional catch basins will need to be installed to capture flow cut off by the raised sidewalk. Depending on the material type of the crossing and the location of catch basins it may also increase cost of catch basin repairs if they are in close proximity to the raised sidewalk.	Water will pond in the alley and we will receive complaints. Lanes are already an issue currently as they are the most neglected roadway infrastructure. Many times we are unable to install additional catch basins due to no storm infrastructure or utility congestion. Doing this will significantly increase the number of complaints we receive unless additional catch basins are installed on both sides of the raised crosswalk.	Boulevards have the potential to impact drainage flow paths. This is especially the case in residential neighborhoods where cross lot swales are present. There may need to be additional drainage considerations taken in each circumstance.	Curb extensions have the potential to impact drainage flow paths. If existing catch basins are not relocated or if new catch basins are not installed there will be additional ponding and complaints.	
Owner and Stakeholder	It would depend on the layout and details of the pathways. Would they change the dimension we currently see with sidewalks? Any changes could impact our ability to access and maintain our infrastructure.	These would have a significant affect on drainage paths and would require the installation of additional infrastructure (i.e. catch basins) to convey runoff. This would require additional infrastructure in new areas and expensive/invasive modifications in existing areas. Flooding would result in some areas as well due to blocked flow paths. Additional infrastructure, maintenance costs and capital expenditures also pass	Same as above. These would have a significant affect on drainage paths and would require the installation of additional infrastructure (i.e. catch basins) to convey runoff. This would require additional infrastructure in new areas and expensive/invasive modifications in existing areas. Flooding would result in some areas as well due to blocked flow paths. Additional infrastructure, maintenance costs and capital	Beyond the additional space this would take up it could significantly affect runoff patterns, impacting swale designs, ditch designs, flow paths to catch basins, etc. This would affect maintenance requirements and may impact existing and new infrastructure requirements. if additional trees were to be installed as well this would impact maintenance accessibility, and potentially underground infrastructure	Similar impact as raised cross walks ... These would have a significant affect on drainage paths and would require the installation of additional infrastructure (i.e. catch basins) to convey runoff. This would require additional infrastructure in new areas and expensive/invasive modifications in existing areas. Flooding would result in some areas as well due to blocked flow paths. Additional infrastructure,	I commend the City for thinking outside of the box but I do encourage that there be fulsome consideration of existing City infrastructure and EPCOR infrastructure. All of these installations would have a significant impact on new and existing drainage infrastructure and a potentially negative one in some situations. These impacts should be considered with the roadway/sidewalk users and

		additional costs on to our customers.	expenditures also pass additional costs on to our customers.	placement. Suggestion from our team is to consider LID installation if this is being considered as it would meet the intention of more green space while limiting the impact of additional runoff the drainage network.	maintenance costs and capital expenditures also pass additional costs on to our customers.	home owners in mind due to the resulting increase in flooding and costs.
Utilities	Clearances to utility infrastructure. Restoration costs. May require power to run underneath pathway if repairs needed. Wider path may require wider utility right of way. Transformer placement will be more difficult with wider pathway (allowance for ground grid underground and furniture placement on top of ground). Request consultation with utility partners.	Replacement of infrastructure in proximity to raised crosswalk will lead to increased project costs when underground utility needs to be exposed and paving stones are removed/require replacement.	Replacement of infrastructure in proximity to raised crosswalk will lead to increased project costs when underground utility needs to be exposed and paving stones are removed/require replacement.	Trees can be an issue. How wide is the boulevard? Housing utility infrastructure such as transformers and street lights is common on boulevards. Ensuring adequate space is required.	Replacement of infrastructure in proximity to curb extensions will lead to increased project costs when underground utility needs to be exposed and curb extensions are removed/require replacement.	Requesting close collaboration with utility partners prior to any changes.
Utilities	Clearances to utilities - may require power to run underneath pathway. If repairs needed, disruption pathway would be required. Space for above ground utility furniture (transformer) is required. Request further consultation with utility partners.	Replacement of infrastructure in close proximity to raised crosswalk will lead to higher costs. Specifically if cobblestones or paving stones are used. Request cross section of proposed design for detailed review.		Currently boulevards are used to house utility infrastructure such as transformers. Detailed design required for review to ensure adequate spacing.	Low impact	I'd like to request close collaboration with utility partners prior to any major changes being implemented.
Utilities	Clearance to existing above ground infrastructure may cause issues as current boulevard space may not accommodate a wider path. A wider path may also have further impacts to below grade parts of utility infrastructure such as transformer & switching cubicle ground grids.	Raised crossings will lead to higher construction costs when installing or replacing infrastructure that crosses roadways. Request to view proposed cross sections & further consultation.	Raised crossings will lead to higher construction costs when installing or replacing infrastructure that crosses alleyways. Request to view proposed cross sections & further consultation.	Need to ensure that adequate space is provided for utility assets.	Low impact expected for curb extensions.	Collaboration & further consultation should be available to utilities before changes are implemented.
Utilities	Clearances to utility infrastructure and extra costs to protect the infrastructure. Power alignments may need to be within the shared pathway and utility access may need be a concern. Power pad-mounted equipment will also require clearances from this Shared-use path. Asphalt would be the cheaper option than concrete.	Replacement of utility infrastructure will lead higher costs to repair the raised crossed walk due to the material. The utility may need to consider different alignment further clearances.	Replacement of utility infrastructure will lead higher costs to repair the raised crossed walk due to the material. The utility may need to consider different alignment further clearances.	Tree & Landscaping assets on boulevard lead to obstructions to utility pad-mounted equipment and it's alignment infrastructure. Utilities require 24/7 access to this. Please consult the utility for further details.	Low impact.	Please consult EPCOR for further detailed responses.
Utilities	Asphalt repairs might be easier / cheaper for EPCOR to replace asphalt than concrete. Should consult with utility to ensure there is room for transformers AND their ground grids which are 1.0m around the perimeter of the transformer.	Depending on alignment, could be additional costs for working. Will the path go straight (parallel) or setback at the intersections?	THE SAME.	Need to see cross section. How wide is boulevard?	Should be low impact.	Please contact utilities -- <redacted>. A collaborative approach will help to push this forward successfully.
Utilities	Increased conflicts with Electricity Distribution assets requiring relocations, often in areas where space is already limited.	Impacts to manhole lids requiring height adjustments. May require further consideration or work if placement of crosswalk partially intersects manhole lids.	Impacts to manhole lids requiring height adjustments. May require further consideration or work if placement of crosswalk partially intersects manhole lids.	Potential increase in conflicts with existing Electrical Distribution assets requiring relocations often in in spaces that have limited space.	Potential conflicts with manhole lids requiring re-builds or adjustment.	

Utilities	Impact on future utility construction/maintenance activities should be considered.	Construction and maintenance activities may have increased costs and options for placement of equipment may be more limited.	Construction and maintenance activities may have increased costs and options for placement of equipment may be more limited.	Opportunity for utility infrastructure to be placed in this space.	N/A