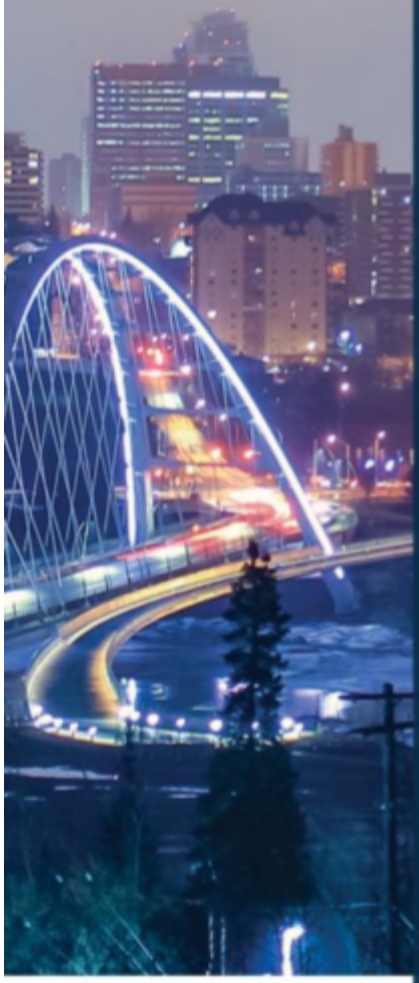

Development Services

Guidelines for Arterial Construction with Subdivision

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This document was developed to establish guidelines for the City of Edmonton's expectations regarding arterial construction required with subdivision.

Care has been taken to confirm the accuracy of the information contained herein. The views expressed herein do not necessarily represent those of any individual contributor. As the design of the assets and systems described herein continually evolves, and practices change and improve over time, so it is necessary to regularly consult relevant technical standards, codes, and other publications rather than relying on this publication exclusively. The City of Edmonton, authors, and members of the review committee, want to convey that this document does not constitute a project specific design. As such, no part of this document alleviates the responsibility of the professionals retained to design and/or construct specific projects from taking full responsibility and authenticating their designs in accordance with APEGA, AALA, AAA, Alberta Building Code, and any other statutory or safety requirements.

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VER	Date	Revision Summary	Author	Checked	Appv'd
01	2023-04-18	Original Issue	Kelly Sizer	Kelly Sizer	Mark Pivovar
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1. Overview

The following represents general direction on how arterial conditions are reviewed/applied at the subdivision stage of development. With each application, engineering experience and judgment is applied, specific site context is reviewed and common sense is used. These guidelines are used as a framework and exceptions may be made with supporting rationale.

2. First Two Arterial Lanes

The construction of the first two lanes of arterials are conditioned with subdivision when required to provide access to a subdivision, such as a subdivision that includes a new collector intersection to an arterial. Extension of the arterial to the new collector intersection, creation of the intersection including turn bays, and signalization of new or existing intersections may be required. The conditions for the full construction of the first two lanes of an arterial will generally include left and right turn bays at each intersection, curb and gutter, lighting, landscaping, and shared use path on both sides. The City's preference is for urban arterials where possible.

An arterial is required to be upgraded from the nearest upgraded portion of arterial to the new collector intersection, as shown in Figure 1a and Figure 1b. Arterial roads are required to be constructed from intersection to intersection, not to the subdivision boundary (unlike collector and local road construction). Upgrades along arterials are staged with subdivision development and the complete arterial construction occurs over time as development occurs and can take several years in practice.

Should there be a rural roadway to be replaced on the future alignment of the arterial road, the rural roadway must be removed and upgraded to an urban roadway standard. New access to a subdivision is not permitted to an un-upgraded roadway. New access or collector roads are only permitted to connect to upgraded arterials, constructed to City Standards, including the turn-bays, appropriate sight lines, and with safe intersection control required to support new neighbourhoods.

Once the neighbourhood subdivision approvals reach projected volumes of 5000 vehicles per day (approximately 500 single family units) with one collector access to an arterial, the need for another collector access is triggered from a traffic volume and from a Fire Rescue Services response

standpoint. This typically requires arterial upgrades to the new collector location, as shown in Figure 2.

For neighbourhoods that have no access along some boundaries, that border a freeway or a ravine, additional access staging considerations are required. In addition to the volumes on each collector, the City also reviews the distance traveled along collectors to reach arterials. Should a neighbourhood pass the geographical halfway mark of development with access only to one side, a road connection to another side will be required, as shown in Figure 3. For example, the neighbourhood is half complete by area but only has access to the east side arterial. Once development passes the midway point, a collector connection to the west side arterial would be required. This would typically require collector and arterial construction and temporary construction will be considered. This guideline is to prevent traffic overloading of the collectors, and encourage proper traffic distribution and use of infrastructure. Traffic counts and supporting traffic studies can be submitted for review to assist with the timing of this construction. Land ownership will also be considered as well as any unique factors of the specific neighbourhood.

Consideration will also be given to completing the first two lane arterial network (concurrently with 4 lane upgrades as needed) as a development area or neighbourhood is close to completion. If the network is close to completion, any subdivision within the corresponding ARA basin may be required to complete the first two lane road network even if the subdivision is not bordering or taking direct access to the arterial road. The completion of the network is important to balance the traffic volumes on surrounding arterials and to provide access options to residents for both vehicular and active modes of transportation. Transit routing options and bike network are also factors in completing a broad network of arterial connectivity. As the area develops, extension of both collector and arterial network should be planned to support introduction and expansion of transit service. Transit Service Policy C539A provides general guidance on phased introduction of transit service based on population, employment and proximity to existing transit service to the new areas. Arterial roads are also part of district connector routes for bikes.

3. Land Dedication

Land dedication is required with the first subdivision of the parent parcel, as shown in Figure 4. The amount of land dedication required is in accordance with an approved Concept Plan for the arterial roadway. The City conditions the dedication required from the entire parent parcel, and not just

within the subdivision boundary. This is due to a constraint of the MGA, which allows for a maximum of 30% dedication of land for municipal purposes. The condition for dedication while the parent parcel is at its largest allows the City to remain within the bounds of the MGA. It also allows for the land to be within City jurisdiction should arterial construction be required in advance of further subdivision. With dedication in place, another developer/landowner (that did not dedicate the land but needs the arterial road to develop) is also able to construct the arterial roadway and proceed with orderly development of their land.

4. Creek Crossings and Wildlife Crossings

Many ARA catchments contain the requirement for new crossing construction. While the crossings may not be immediately adjacent to development, all developers in the catchment are equally responsible for the design, environmental studies, and construction of crossings as required to meet arterial construction requirements. Special studies required for preliminary or detailed design are cost shareable with the ARA catchment as per the Arterial Roads for Development Standard.

5. Two to Four Lane Construction (Developer Responsibility of Four Lanes in the Bylaw)

Widening arterials to four lanes is generally required based on traffic volumes and catchment area needs, rather than a requirement for access. In this respect, widening of an arterial is seen as the responsibility of the area catchment overall. The ARA Bylaw states that "*each Catchment has a boundary that identifies the Subject Lands for which any and all Applicants are responsible to construct or pay for the construction of the Arterial Improvements needed for that particular Catchment*". When traffic volumes on a two lane arterial approach 12,000 - 15,000 vehicles per day in a catchment area, the City starts monitoring the arterial and prioritizing widening in the catchment. Another trigger is a significant upzoning and/or development in the area that cumulatively with the existing approvals is expected to create a higher demand on the network. Conversations are held with area developers that widening is approaching a requirement. Developers are asked to develop a plan for construction of four lanes. As volumes approach 16,000 - 18,000 vehicles per day, widening is deemed warranted and conditions are applied to subdivisions to require widening.

Arterial widening conditions can also be applied to any subdivision in the ARA catchment. The subdivision does not need to be immediately adjacent to the arterial as the entire catchment is

responsible for additional traffic volumes and benefits from the arterials in the catchment. The condition for widening may be applied to multiple subdivisions and various developers until a Servicing Agreement for the work is signed. This works best when developers work together to resolve the construction of the arterial widening, and prevents any development from continuing and further exceeding traffic thresholds for the arterials, and/or avoids giving an advantage/preference to one developer/subdivision over another.

6. Collaboration

Developers are encouraged to prepare five-year arterial construction projections or Traffic Infrastructure Projections Studies (TIPS) for each basin and work with the City to review and confirm these projections. These projections can be updated as the development progresses and needs change in the basins.

A TIPS is supplementary analysis to the Neighbourhood Structure Plan (NSP) Transportation Impact Assessments (TIAs) to address the staging of basin arterial upgrades and confirm requirements with measured and projected traffic data. These are often required when ASPs are partially developed and may face challenges supporting future development, such as roadways that cross non-participating landowners.

7. Exceptions Process

An agreed upon solution can be sought by negotiation with City Administration directly, applicants are requested to provide options and supporting justification when guidelines cannot be met. Exceptions to the guidelines outlined above can also be brought to the ARA Steering Committee for discussion and a decision as required.

8. Appeal

As with any subdivision condition, arterial road construction and/or land dedication for arterial road construction, may be appealed to the Subdivision and Development Appeal Board in accordance with Section 678 of the Municipal Government Act.