

City of Richmond

Report to Committee

To:

Public Works and Transportation Committee

Date:

October 31, 2003

From:

Jeff Day, P. Eng.

File:

6360-07

General Manager, Engineering & Public Works

Re:

Lane Policy

Staff Recommendation

That the report entitled "Lane Policy" from the General Manager, Engineering and Public Works be received for information.

Jeff Day, P. Eng.

General Manager, Engineering & Public Works (4019)

Att. 4

| FOR ORIGINATING DIVISION USE ONLY | | |
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Staff Report

Origin

At the request of Councillor Howard, staff are bringing back a report on the City's Lane Establishment Policy 5038 (Lane Policy) to Public Works and Transportation Committee to provide information on:

- the purpose and necessity of the Lane Policy,
- the impact of the lanes on the environment, and
- capital and operating costs.

A copy of Councillor Howard's memorandum is included in Appendix A of this report.

Background

Council adopted the Lane Policy in June 2000. Appendix B of this report contains a copy of the staff report supported by Council to introduce the Lane Policy. The June 2000 staff report discusses the origin and purpose of the Lane Policy and provides the background information its implementation and resulting impacts. A copy of the Lane Policy is included in Appendix C of this report.

At the request of Planning Committee, staff brought forward the "Recommended Cost Savings for Lane Implementation" report to the February 24, 2003 Council meeting. The purpose of this report was to address the development community's concerns associated with costs and the implementation of lanes. Cost savings were achieved for subdivisions smaller than four lots by eliminating the requirement of public access and allowing developers to pay only for the construction of the rear lane by way of the Neighbourhood Improvement Charge (NIC). Council supported the staff recommendations including the endorsement of the current components of lane construction: the right-of-way width, the paved surface, drainage, lighting, and curbs. Appendix D of this report contains a copy of the "Recommended Cost Savings for Lane Implementation" staff report.

Analysis

Purpose of Lane Policy

The purpose of the lane policy was presented in the June 2000 staff report, which is included in Appendix B. City staff recommended that Council support the development of lanes because:

 Better traffic management was the second most requested improvement by residents in the 1997 OCP Survey. Traffic congestion along major roads continues to be an issue for Richmond residents and will only increase as the population of Richmond grows;

- TransLink has approved a number of Richmond's major arterial roads as part of the regional major road network, upon which it will be important to maintain regional traffic flow. A system of lanes behind the major roads will enhance traffic flow and road capacity; and
- We are seeing a high proportion of development applications along major roads, partly due to the age of the housing stock along major roads. Some of these applications result in the provision of a lane behind a major arterial. However, a Lane Policy would ensure a more consistent and co-ordinated approach in terms of the City's requirements for lane development.

The benefits of lane development include:

- increased safety through reducing conflicting traffic movements;
- improved accommodation of pedestrians, cyclists and transit;
- improved appearance of streets due to a continuous boulevard with street trees along the major roads and the relocation of garages to the rear of the property thereby increasing the front yard green space;
- enhanced traffic flow and road capacity due to the reduction of potential conflicts from cars entering or exiting from driveways to major roads; and
- increased pedestrian and cycling route options.

On this basis Council supported the June 2000 staff report.

The Environmental Considerations and Sustainable Development

Lanes may result in some opportunities for promoting urban forms which respect the principles of sustainable development. However, lanes may also have environmental impacts, including:

- increasing impervious surfaces which results in greater direct run-off of surface water, reduced natural filtration processes, concentrated pollutants, and degraded surface water quality,
- increasing overall resource consumption through supplies for infrastructure development and ongoing energy requirements (e.g. power costs for lights),
- increasing greenhouse gas emissions, through increasing demands for concrete. After water, concrete is the most consumed substance in the world and accounts for 13% of the total CO2 emissions in the GVRD.

Opportunities likely exist to design lanes which minimize these impacts by:

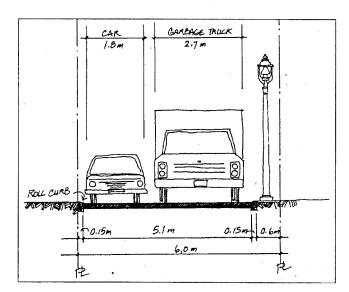
- minimizing impervious surfaces, through reduced areas of application, minimizing paving widths and/or use of more pervious surfaces
- minimizing curbing and maximizing use of naturally-based drainage systems, such as swales or grass areas potentially in concert with overflow piping systems in high risk flooding areas to address high flow conditions
- reducing the amount of concrete through reduced infrastructure development and/or through purchasing of more ecological sustainable products, in accordance with the City's Environmental Purchasing guide.

The decision to promote lanes by the City may also have longer-term indirect environmental implications depending on the urban form that is encouraged. If traffic congestion is significantly reduced, lanes may contribute to environmental benefits by reducing idling and reducing air pollution. Similarly, if lanes encourage re-development and densification in already developed areas, they would serve to help reduce negative environmental impacts by minimizing sprawl and placing less pressure on non-development areas, including environmentally sensitive areas and agricultural land. At the same time, it is important that forms of urban development promote affordable housing, enabling residents to capitalize on the opportunity to live nearby to places of work and areas of concentrated services.

From a broader sustainability perspective, decisions regarding lanes would consider the relative benefits/costs pertaining to all environmental, economic and social objectives of the City and seek to identify strategies which best enhance the quality of life in communities while using fiscal resources wisely and preserving life-dependent ecological processes.

Lane Standards - Capital and Operating Costs

The typical lane configuration found along the rear of the property as endorsed by Council on February 24, 2003 is as follows:



As previously noted, the five components comprising the typical lane are: right-of-way width, the paved surface, drainage, lighting, and curbs.

The following table summarizes the estimated costs to the developer for constructing a typical lane. Note that right-of-way costs are excluded because the land for the lane is acquired during the rezoning process.

| Lane Component | 2003 Rates per Meter | 2003 Cost for 20m Lane |
|---------------------------|----------------------|------------------------|
| Pavement Construction | \$347.75 | \$6955 |
| Storm Drainage | \$252.22 | \$5,044.4 |
| Street Lighting | \$100.00 | \$2000 |
| Rolled over Curb & Gutter | \$137.96 | \$2,759.2 |
| Total | \$838 | \$16,759 |

The foregoing estimated costs are based upon the construction of a 400 metre long lane.

Note that the total cost of the lane is attributed to the lots fronting the arterial road. Because the lots on the opposite side of the lane (interior lots) already exist and front a local road, it is unlikely that they will re-develop and use the lane for access purposes. This is different from typical development projects, which have local roads with lots on either side utilizing the local road for direct access.

Furthermore fences are not a part of Richmond's lane standards. When fences are impacted through a development, the developer is asked to address the privacy concern by either replacing the fence or coming to a mutually acceptable solution with the respective neighbour.

The following sections outline the rationale, and pros and cons for each of the lane's components.

Right-of-Way Width

The typical lane right-of-way width is 6.0 metres. The 6.0 metre width is sufficient for a regular car and garbage truck to pass and is an industry standard, which has also been adopted by the BC Building Code as the minimum width for fire access lanes. Furthermore staff also receive feedback from residents that our lanes are very narrow particularly in areas where there are mature trees and vegetation.

The City acquires lanes through the rezoning process. By providing a lane in the rear portion of the development, the applicant loses the opportunity to incorporate this portion of land into the development. Other than the contribution of land for the lane, there are no other costs associated with the right-of-way.

| Pros | Cons |
|--|---|
| minimum width for truck & car to pass safely | adds pavement to an area that may otherwise have been grass |
| industry standard | |

Based upon the foregoing information staff find the 6.0 metre right-of-way width to be an acceptable minimum standard.

Paved Surface

The typical paved surface width is 5.1 metres. The estimated capital construction cost of \$347 per metre (about 40% of the lane cost) includes a 300 mm thick sand bed, 230 mm thick gravel

road base, and 85 mm of asphalt. The construction standard is typical of any roadway that can expect low truck traffic volumes such as garbage, dump, and moving trucks.

The average annual maintenance cost for the paved surface of a 400 metre long lane meeting the City's current standards is \$185. Without a paved surface, the lane would have a gravel surface, which would require regular maintenance with respect to grading and potholes. Staff estimate the average annual maintenance cost for a 400 metre long gravel lane to be \$1,750.

| Pros | Cons |
|---|---|
| durable low maintenance finish | costs will continue to escalate with oil prices |
| meets public's minimum expectation for an urban environment | adds to the capital construction cost of a lane |
| attractive clean finish | |

Staff recommend paved surfaces continue to be included as a lane standard based upon the above information.

Drainage

The lane drainage system is placed in the centre of the paved surface. The paved surface is sloped towards the centre of the lane to direct drainage to catchbasins spaced at 50 metre intervals. The drainage pipe is 300 mm diameter, which is the minimum acceptable standard to convey stormwater and to minimize clogging of the system. Manholes are also included at 100 metre intervals to allow for maintenance inspections and flushing. The estimated capital construction cost of the drainage system is \$252 per metre (about 30% of the lane cost).

The average annual maintenance cost for the drainage system of a 400 metre long lane meeting the City's current standards is \$1,700.

There are many lanes throughout Richmond's older subdivisions, which do not have drainage systems. Engineering and Public Works staff receive complaints from residents on an on-going basis because of flooded lanes in older subdivisions during the fall and winter seasons.

| Pros | Cons |
|---|---|
| minimizes flooding and property damage | requires regular maintenance |
| reduces maintenance calls to resolve flooding | direct stormwater runoff to drainage system |
| meets public's minimum expectations for urban areas | adds to the capital construction cost of a lane |

It should also be noted that common misconception is that gravel surfaced lanes drain and therefore lane drainage systems are not required. Because the gravel is compacted and the underlying soils are typically clay, gravel surface lanes do not drain adequately. Surface water typically runs off onto adjacent low lying properties or causes localized floods where properties are built up to higher elevations.

Staff recommend that lane drainage systems continue to be included as a lane standard based upon the foregoing information.

Lighting

Lane lights are spaced 40 metres apart on 19 foot high poles. The estimated capital construction cost of the lighting system is \$100 per metre (about 12% of the lane cost).

The average annual maintenance cost for the lighting system of a 400 metre long lane meeting the City's current standards is \$150 and the energy costs to the City are \$320.

It is important to note that lanes in Richmond's older subdivisions do not have lights. Lights were introduced into lanes over the past 10 to 15 years as a result of an increasing number of resident complaints relating to low lighting levels and perceived safety concerns.

| Pros | Cons |
|--|---|
| addresses perceived safety concerns relating to dark lanes | added maintenance and energy costs |
| may reduce City's liability should a motor vehicle accident occur or a pedestrian be struck by a car | adds to the capital construction cost of a lane |
| enhanced streetscape | |

Lane lighting is the only component of the current lane standard that can be deleted without having an added maintenance related impact. Furthermore on-going energy costs to the City will not increase if lane lighting is deleted from the current standard.

Curbs

Roll over curbs were introduced into Richmond's lane standards about 10 years ago. The estimated capital construction cost of the roll over curbs is \$138 per meter (about 15% of the lane cost).

The average annual maintenance cost for a 400 metre long lane with curbs is \$185. On the exact same lane without curbs, the average annual maintenance cost would be \$1,750 (this is the average cost estimated on a per metre basis over the whole network over a 10 year period). The maintenance cost includes repairs to gravel shoulders, cracked edges, reduced pavement life, weed control, and added difficulties in lane sweeping.

| Pros | Cons |
|---|---|
| protect light standards, fences, trees, etc | adds to the capital construction cost of a lane |
| define the edge of the lane thereby minimizing paving to facilitate access to garages | |
| protect the edge of pavement so that it does not degrade and to prevent the growth of weeds | |

| provide a defined edge to allow efficient | |
|--|--|
| maintenance via street sweepers, rather than | |
| traditional manual clean up. | |

Based upon the foregoing information, curbs continue to serve a purpose in lanes and will result in additional maintenance costs if deleted from the current standard. Staff do not recommend that curbs be deleted.

Potential Cost Saving Options

1. Pay half lane

One option to reduce costs to applicants is to require that they pay only for half of the lane. This would be typical for most developments where future re-development on the opposite side of the road would pay for its respective half of the cost. However, the case with lanes is different than that of a typical development scenario. The interior lots back onto the lane and front a local road. Therefore the lane does not provide direct access to the interior lots and as a result redevelopment is not expected, leaving the City to pay for the remaining half of the lane cost.

Because of the limited availability of capital funding for projects, it would be unlikely that the City would rank a lane sufficiently high to warrant funding. However, the City's capital process provides the mechanism to evaluate capital projects and could be used to implement this potential cost saving option.

The cost to the City would be \$419 per metre of lane constructed.

2. Estimate Each Lane Project

The City uses a flat rate system for establishing lane construction costs. An option to this system is to allow applicants to pay for the estimated construction cost based upon a construction estimate prepared by a Professional Engineer retained by the applicant.

Flat rate versus estimated cost systems vary depending on the municipality. For example, Delta recently adopted a flat rate system to reduce development application processing times, whereas Surrey relies upon estimates from applicant's Professional Engineers to provide accurate and specific construction estimates.

| Flat Rate System | | |
|---|---|--|
| Pros Cons | | |
| can account for cost in proforma for small subdivisions | perception that costs may be high for a particular scenario | |
| simple and quick processing times | limits creativity | |

| applicants for small subdivisions pay the same cost (equity) | |
|--|--|
| established standards allow applicants to retain contractors quickly | |

| Estimated Cost System | |
|--|--|
| Pros | Cons |
| applicants pay the specific cost pertaining to their project | applicant must retain a Professional Engineer (added cost and time) |
| | construction costs for small subdivision may not be well defined |
| | potential for longer application processing time if costs are not accurate |

Based upon the City's efforts to reduce application processing times and minimize the application process itself, staff recommend that the flat rate system be retained.

3. Eliminate Lane Lighting

Of the four components of our current lane standard, lane lighting is the only component that can be deleted without incurring additional on-going maintenance costs. As noted previously, lane lighting was added to the typical lane standard due to an increasing demand for lighting from residents and perceived safety concerns. Furthermore, by deleting lane lighting the City may be liable should a motor vehicle or pedestrian accident occur.

Capital construction cost savings to a developer would be \$100 per metre frontage or about \$2,000 for a 20 metre wide lot. In addition, the City would not incur the additional annual maintenance cost of \$150 for a 400 metre long lane and \$320 in annual energy costs.

Council may choose to alter Richmond's urban lane standards by deleting a component such as lane lighting. However residents will likely continue to request lane lighting after developments are complete and residents have lived in a neighbourhood for some time. In consideration of resident's safety concerns, Council will have the opportunity to consider requests on an annual basis through the capital program. However, funding through the capital program for lane lighting will be from general revenue as opposed to attributing the cost to the respective development that created the lane.

4. Eliminate Curbs

As noted previously, the average annual maintenance cost for a 400 metre long lane with curbs is \$185 where as without curbs the annual maintenance cost would be \$1,750.

By eliminating curbs, the capital construction cost savings to a developer would be \$138 per metre frontage or about \$2,760 for a 20 metre wide lot.

Financial Impact

None at this time. The costs to the City will depend upon which option Council selects.

Conclusion

This report reviewed the purpose of the lane policy, the impact of lanes on the environment, and lane capital and operating costs.

The Lane Establishment Policy was introduced as a tool to promote and protect traffic and goods movement as the primary function of arterial roads for Richmond's future. The lanes have been designed to maximize safety, minimize maintenance costs within the lane, ensure adequate drainage and vehicular movement within the lane.

The potential cost saving options noted in this report do not impact the Lane Policy itself. Should Council choose to alter the current lane standards, staff will modify the respective administrative procedures accordingly.

Gordon Chan, P.Eng. Director, Transportation

roh Chen

Terry Crowe Manager, Policy Planning

(4021)

(4139)

Robert Gonzalez, P.Eng. Manager, Engineering Design & Construction

(4150)

Appendix A

Memorandum from Councillor Howard September 30, 2003



Memorandum

To:

Mayor & Councillors

Date:

September 30, 2003

From:

Rob Howard Councillor File:

6360-00

Re:

Lane Policy

By way of a copy of this memorandum, I am asking Jeff Day to bring back the Lane Policy to an upcoming meeting of the Public Works & Transportation Committee for review. In particular, I would like to have the aspects of the policy relating to the necessity and/or Policy standards for paving, curbing, gutters and lighting, revisited.

The design and construction of a lane is not only time consuming, but also expensive. This puts additional pressure on the price of housing in Richmond. It is also important to take into consideration the following impacts to the City –

- causes increased maintenance and replacement costs, therefore putting an additional burden on the City's capital reserve accounts; and
- causes an additional layer of processing and the resulting uncertainties which can negatively effect the investment climate in Richmond; and
- lays a heavy footprint on the lands and seems to run contrary to recently rediscovered sustainability principles; and
- causes the need for additional infrastructure, such as storm water management systems, that add further costs, and impact our lands and environment negatively (such as concentrated runoff of pollutants); and
- causes ongoing lighting maintenance cost and energy consumption costs.

I would therefore like to review capital, maintenance and operating cost estimates and discuss the impact of the lanes (Policy) on the environment, as balanced against the safety issues that have been identified as a positive outcome of the Lane Policy.

Rob Howard Councillor

pc:

George Duncan, Chief Administrative Officer

Jeff Day, General Manager, Engineering & Public Works



Appendix B

Lane Establishment Policy Staff Report June 2000

CITY OF RICHMOND



REPORT TO COUNCIL

TO:

Richmond City Council

DATE:

May 4th, 2000

FROM:

Councillor Malcolm Brodie, Chair Planning Committee

FILE:

6360-00

RE:

LANE POLICY

The Planning Committee, at its meeting held on Tuesday, May 2nd, 2000, considered the attached report, and recommends as follows:

COMMITTEE RECOMMENDATION

That the Lane Policy (attached to the report dated February 16th, 2000, from the Manager, Land Use), be adopted, and that a copy of the proposed policy be forwarded to the Urban Development Institute for comments, prior to the submission of the policy to Council on June 12th, 2000.

Councillor Malcolm Brodie, Chair Planning Committee

Attach.

VARIANCE

Please note that staff recommended that the Lane Policy be adopted.

STAFF REPORT

ORIGIN

Planning Committee reviewed the following report at their meeting of March 21st, 2000 at which time a number of questions were raised. This report is the same as that which was reviewed on March 21st with additional information inserted into the document. For easy reference, Attachment 6 consolidates the responses to questions raised at Planning Committee.

The purpose of this report is to propose a Lane Policy (Attachment 1) for the City of Richmond. This is an opportune time for Richmond to support the development of lanes because:

- Better traffic management was the second most requested improvement by residents in the 1997 OCP Survey. Traffic congestion along major roads continues to be an issue for Richmond residents and will only increase as the population of Richmond grows;
- TransLink has approved a number of Richmond's major arterial roads as part of the regional major road network, upon which it will be important to maintain regional traffic flow. A system of lanes behind the major roads will enhance traffic flow and road capacity (Attachment 2 shows the major road network approved by TransLink (GVTA) as of June 1999); and
- We are seeing a high proportion of development applications along major roads, partly due to the age of the housing stock along major roads (of all rezoning applications as of September 1999, 70% were along a major road). Some of these applications result in the provision of a lane behind a major arterial. However, a Lane Policy would ensure a more consistent and coordinated approach in terms of the City's requirements for lane development.

FINDINGS OF FACT

A number of lanes were built in Richmond when some of the earlier subdivisions were developed in the 1950's. While these lanes have a 6 m right-of-way, many of them are not built to current City standard as the paved surface is too narrow or there is no lighting and drainage. Since the development of these first lanes, relatively few lanes have been created. Even though there is general agreement that lanes are beneficial, the City of Richmond has not had a policy that specifically supports the creation of lanes.

Earlier initiatives to address the traffic flow and safety issues resulted in an Access Policy (Attachment 3) adopted by Council in 1989. The Access Policy restricts the creation of new access points along major and local arterial roads through the establishment of minimum lot sizes in areas where lane access is not provided. (Attachment 4 shows the major and local arterial roads). However, the Access Policy does not directly support the creation of lanes.

The new Official Community Plan (OCP) supports the creation of lanes. The transportation objective and policy with regard to lanes reads: "Manage traffic flow for efficient and convenient travel while enhancing neighbourhood livability by requiring lanes parallel to major roads rather than driveways which impede traffic flow and create safety hazards for motorists, cyclists and pedestrians". While the OCP supports the creation of lanes, no tools have been introduced yet to implement the policy.

The most direct action which the City of Richmond has taken with respect to lanes has been through development. In the recent past, where subdivision or rezoning has occurred along major roads, the City has generally required that the applicant either provide the land and/or construct and pay for a lane. However, there has not been a consistent or co-ordinated approach in terms of the City's requirements.

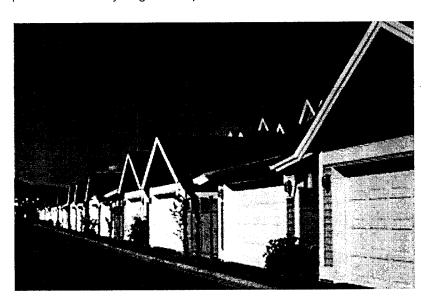




Typical Older Lane

The benefits of lane development include:

- increased safety through reducing conflicting traffic movements;
- improved accommodation of pedestrians, cyclists and transit;
- improved appearance of streets due to a continuous boulevard with street trees along the major roads and the relocation of garages to the rear of the property thereby increasing the front yard green space;
- enhanced traffic flow and road capacity due to the reduction of potential conflicts from cars entering or exiting from driveways to major roads; and
- increased pedestrian and cycling route options.



A New Lane

ANALYSIS

The following section addresses a number of questions with regard to lane development and forms the basis for the policy.

What is a lane?

The basic definition for a lane is that it provides access at the rear of abutting properties thereby eliminating the need for driveways onto the fronting street. A lane is not considered a "public road" as defined in the Zoning Bylaw because it does not have a minimum width of 9m (29.527 ft.); However, a lane is meant for public use. A lane is also different from a shared access driveway, that runs through the middle of a townhouse development, primarily because a lane is meant for public use whereas a shared driveway is meant for use by residents whose property access the driveway. The following chart shows additional differences between a shared driveway and a lane.

| CHARACTERISTICS | SHARED ACCESS DRIVEWAY | LANE |
|-----------------|-----------------------------|-------------------------------------|
| Who owns it: | Strata Council | Province or City |
| Who is liable: | Strata Council | City |
| Who uses it: | Local residents or visitors | Public |
| Location: | Within site | Rear of property |
| Built to: | Building Code standards | Engineering standards |
| Maintained by: | Strata Council | City |
| Secured by: | Shared Access Agreement | Dedication/Public Rights of Passage |

Can a lane be located mid-way through a site?

Typically, NO. A lane is typically located at the rear of a property for a number of reasons:

- if it is located midway through the site, the City then has control over the middle of the site and it has the effect of splitting an existing site in two separate properties;
- a lane along a major road will likely serve townhouse, two-family dwelling or small lot single family developments. The lane would normally be located at the rear, rather than in the middle, to serve types of developments such as single family that have less flexibility in siting building envelopes; and
- a lane at the rear of the property has the potential to serve the most number of properties should the lots fronting the interior street choose to use the lane.

Should a frontage road be used instead of a lane?

Generally, No. Frontage roads have been used in some areas of Richmond and are preferred by some because they create a larger separation between the home and the busy street and they provide an opportunity for more landscaping and green along the streets. However, they are being phased out and are less desirable than lanes because:

- they cause awkward turning movements between the local road and major road;
- a "sea" of pavement is created when the major road and the frontage road are located next to one another;
- from a pedestrian point of view it is not as appealing because the corridor jogs in for the block length and then must jog back out at the major intersection; and
- they are less attractive and interesting for passing vehicles, cyclists and pedestrians.

Where should the City target lane development?

The primary goal of lane development is to limit individual access points onto major roads. This is an issue where there are many single-family lots with individual access points. For example, a typical block face on an arterial road in west Richmond has 35 parcels/accesses whereas a typical block face on a residentially oriented arterial road in the City Centre has only 10 parcels/accesses.

Therefore, the proposed policy would support lane development along arterial roads in residential areas primarily in West Richmond where there are a number of individual land parcels that directly access major arterial roads. These areas are designated "Neighbourhood Residential" on the Generalized Land Use Map in Richmond's Official Community Plan.

Specifically, the policy would apply to those parcels outside of the City Centre designated Neighbourhood Residential which front:

- a major arterial road;
- a local arterial road that is also a Bike Route (Attachment 5 shows the Bike Network Roads in Richmond); and
- Francis Road between No.1 and No.4 Road.

Francis Road is included because:

- while it is not classified as a major arterial, it has recently been upgraded to four lanes;
- its length contributes to its use as a through road similar in function to other major arterial roads; and
- the types of land uses permitted along Francis Road will be similar to those permitted along other major arterials due to the common "Neighbourhood Residential" land use designation.

The map attached to the Lane Policy (Attachment 1) shows the areas that are designated Neighbourhood Residential and the roads along which the City would require lane development.

Would the lane policy apply in every situation?

NO. There are certain situations where the lane policy would not apply:

- where there is a lane already built to City standards;
- where the property is less than 30m in depth; or
- where there is, or the City approves, an alternative permanent access, such as a frontage road, shared access, or internal road.

Where an alternative to a lane, such as a shared access, may be considered, the main principles used by staff to determine non-lane access suitability are:

- there are to be no additional accesses created to the major arterial road;
- the proposed access will not impede the intended function of the arterial road; and
- the type of access is consistent with the current or anticipated form of development.

After all the exceptions are considered, only about half of all the frontages as shown in Attachment 1 will be required to provide land and pay for new lane construction.

How can the City support lane development?

Consistent with the City's approach to obtaining services through development, where the City approves Rezoning, Development Permit and Subdivision applications for residential properties along major roads, the City can require the applicants to dedicate land at the rear and/or side of the properties for a lane and/or a mid-block lane access and to pay for construction of the lane and/or mid-block lane access to City standards.

Does a Lane Policy mean the City would be encouraging redevelopment along all major roads to facilitate lane development?

NO. The Lane Policy isn't meant to signal that the City is encouraging redevelopment in order to facilitate the provision of lanes. The City would continue to examine each application in terms of meeting OCP objectives, Lot Size Policies and other factors. If, from a land use perspective, it makes sense for a property to redevelop, then a lane would be required subject to the Lane Policy.

Are there population growth implications with the Lane Policy?

An increase in population would be attributable to the OCP, not to the Lane Policy. The OCP does suggest that some redevelopment in the form of smaller lots, two-family dwellings and townhomes along major roads is expected. The 2021 population projection in the OCP accounted for 2,400 additional units along major roads for a total additional population of approximately 5500 people.

Who should pay for the lanes?

The City has not been consistent in requiring applicants to provide land and/or pay for the provision of lanes. A range of standards have been applied including:

- requiring the applicant to dedicate the land and/or construct and/or pay for the lane;
- requiring a Public Rights-of-Passage for the lane but no monetary contribution; or
- requiring nothing from the applicant to facilitate lane development.

The City needs to be clear about its requirements. At this point, the City is only frustrating applicants and obtaining variable provision for lanes. It is not likely that the City would have the funds to pay for lane acquisition and construction in the future due to scarce resources and competing capital works projects. In other development situations, if the City is clear about the need for a capital improvement, such as road widening, the applicant is required to pay. Therefore, it is recommended that the developer provide land and pay for the construction of a lane. In cases where the lane is not immediately constructed, the monies would be collected under the Neighbourhood Improvement Charge (NIC) Program.

What are the costs for building lanes?

The cost for providing a lane is \$600 a meter (including curb, gutter, pavement and lighting). While this cost is significant, the developer of a lot along an arterial road usually does not have to pay for the costs of other service upgrades because they have generally already been undertaken by the City. As a comparison, development along an internal road, that had not already been upgraded, would cost \$953 a meter (including curb, gutter, pavement, lighting, sidewalk, storm sewer, and tree planting). Therefore, even if the City requires the applicants to pay for lane construction, the overall cost for service upgrades are significantly less than if the same development were constructed on a road that had not already been upgraded.

Are some of the smaller forms of redevelopment able to finance the cost of the lane?

While it would seem that this is a reasonable question to ask, it is the kind of question that has the same response whether we are talking about site remediation or a DCC. The costs are factored into the pro-forma for a project. The cost of the lane construction is fixed but the costs for other factors, such as the price of the development site can vary. The development revenues can also vary as the selling price for units adjusts based on demand and supply. Building generally occurs when all these factors result in some positive financial benefit for the investor. Therefore, other factors adjust as another cost is added. Obviously, as there is evidence throughout Richmond, the additional cost for lanes has not impeded smaller forms of redevelopment with lane development.

How do lanes function - how should they be introduced into our existing road system?

The road system is classified by a hierarchy according to function. For example, the primary function of a lane in a residential area is to provide individual accesses for single-family residential lots. The primary function of a major road, on the other hand, is to move high volumes of traffic on an area or regional basis and therefore there is a need for access control.

In terms of safety and supporting traffic flow, cars should not travel directly from a lane to a major road or vice versa but rather enter a local or collector road first. In this way the change in speed is accomplished gradually and the number of potential points of conflict are reduced and focused. *Diagram 1* shows the preferred road hierarchy.



Diagram 1: Preferred Road Hierarchy

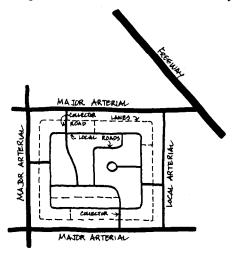
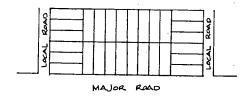
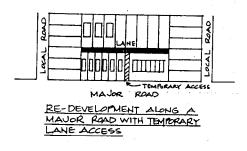
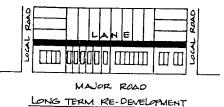


Diagram 2: Lane Development over Time







LONG TERM RE-DEVELOPMENT

However, in older fully developed areas it is not always feasible for a lane to connect to a local road in the short term. At the end of the block it is possible in some cases to extend the lane to the local road but the property lines do not always line up or redevelopment of the properties at the end of the block may not occur for a considerable period of time. Additionally, it is difficult to obtain the land to provide mid-block lane access within the neighbourhood as redevelopment is unlikely on the local roads.

Therefore, every attempt should be made to ensure that the lane does not exit directly onto a major road. Where this is not feasible the following options may be possible:

- a full lane is provided with a permanent mid-block lane access with the new lots accessing their properties from the lane; or
- a full lane is provided with a temporary mid-block lane access with the new lots accessing their properties from the lane; or
- land is dedicated and monies are collected for the future construction of a lane with an interim, temporary single-width, shared access driveway provided for the use of the redeveloped lot(s).

Diagram 2 shows how the preferred lane alignment could be achieved over the long term. While it is not ideal for a lane to connect directly to the major road, the number of individual access points to the major road will be reduced. Both temporary and permanent accesses would be considered part of the lane system and would be required to be constructed to the minimum lane standards.

What happens with lanes at intersections?

In developing configurations for a new lane, care would be taken to minimize opportunities for the new lane to intersect a roadway in close proximity to a major intersection. If the situation required that a lane intersect an arterial road next to an intersection, turn restrictions or other traffic control measures may be required to ensure safe movement of through traffic.



Lane Exiting to a Local Road

In cases where temporary mid-block lane access or a temporary shared access driveway is provided, monies would be collected by the City to pay for the removal of the curb cut at such time that the lane becomes operational. Additionally, the future use of the land should be identified during the rezoning, development permit or subdivision process. These uses could include:

- the land could be landscaped:
- the land could be used as a pedestrian connection; or
- depending on the space available, an additional unit could be constructed.

Will lanes become secondary roads or short-cutting routes?

NO. Lanes are not wide enough to permit cars to move quickly. The design standard and legal speed limit for lanes is 20 km/hr. In terms of possible short-cutting, where possible, the new lanes will not be designed to directly connect major roads at both ends, therefore, they are only convenient for adjacent residents for local access. In some cases, when necessary, it would be possible to implement measures to alleviate specific problems.

Where the rear property lines do not line up, how is a continuous lane ensured?

In cases where rear property lines do not add up, the lane configuration would be adjusted and the City may require additional space from the applicant to accommodate turning.

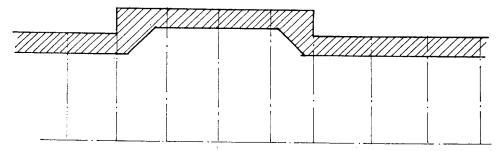


Diagram 3: Lane Schematic Where Rear Property Lines Do Not Line Up

What is the minimum lot depth to support a lane?

Under current zoning, the minimum subdivision lot depth for the single-family zone is 24 m (78.74 ft) and for the townhouse zones is 35 m (114.83 ft). However, the townhouse zone presupposes a certain form of development. It would be possible to accommodate some forms of townhouse development, for example a row house form, in the same depth of lot as a single family home. Therefore, the minimum lot depth before dedication of the lane would be 30 m (98.42 ft).

Should the lane be secured through a right-of-way agreement or through dedication?

A previous section explored the difference between a shared access and a lane. A right-of-way or a dedication is just the legal means for securing the lane the same as a Shared Access Agreement is the legal means for securing a shared access. Therefore, both a right-of-way or dedication result in the creation of a lane. However there are some differences between the two legal mechanisms which are detailed in the following chart.

| DEDICATION (PREFERRED) | RIGHT-OF-WAY | | | |
|--|--|--|--|--|
| Applicant loses density under conventional | Applicant does not lose density under | | | |
| zoning | conventional zoning | | | |
| Property lines for lane show up on land use | Property lines for lane do not show up on land | | | |
| maps | use maps | | | |
| It is owned by the Province | It is privately owned | | | |
| It is under the control of the City/the City is liable | It is under the control of the City/the City is liable | | | |
| The City is responsible for maintenance | The City is responsible for maintenance unless | | | |
| | otherwise arranged | | | |
| No terms can be attached to the agreement | Special terms can be attached to the agreement | | | |
| The property lines shift to the inside edge of the | Need to adjust zoning or use covenant to | | | |
| lane therefore no need to adjust existing | ensure appropriate building setbacks from the | | | |
| building setbacks in the zone | lane | | | |

The City prefers dedication because it is more straightforward. Once a lane is dedicated, there can be no argument about the terms. With a right-of-way, it is possible in the future for the property owner to argue about terms. Additionally, the legal conditions attached to each right-of-way can be different so, unlike a lane where one can look at a map and then understand exactly what its' role and function is, it makes it necessary to look up the conditions for each right-of-way.

How does the City ensure that the raising of properties does not limit accessibility from the lane?

Often there is a difference in grade between the arterial roads and the local roads. Generally, when a lane is constructed, it is built at the height of the local road to limit the impact from a possible raising of the water table and to ensure that the internal properties have access to the lane.

However, as properties along arterial roads are generally lower than the arterial road bed, some properties are raised or filled to a higher level and are therefore higher than the lane. Therefore, covenants would be required to ensure that raised sites are accessible by vehicles from the lane.

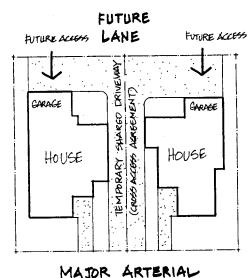
When a new single-family residence is built where a rezoning, development permit or subdivision is not required, can the City require a lane and funding through the building permit process?

NO, the Municipal Act does not permit the City to do this. The City could change the Zoning Bylaw to require building setbacks that would ensure that the building envelope does not restrict future establishment of the lane. However, this approach is not recommended as it is difficult to define a setback for a lane that is not in existence and it would be onerous to expect a property owner to give up development rights when the City is not providing any benefit in return. Therefore, with single-family development when no rezoning or subdivision occurs, the Lane Policy would take longer to achieve.

Once a section of lane is operational, how is it ensured that the lane would be used to access individual properties?

Through the rezoning process the City should ensure that the garages are located at the rear of the property. A covenant would be attached to the property to ensure that when the lane is operational, the access to the road is closed. *Diagram 4* shows one way that a garage can be located for use before and after a lane is made operational.

Diagram 4: Garages Located For Use Before and After Lane Development



Would the proposed Lane Policy affect the Access Policy?

NO. The Lane Policy could result in the following lane configurations:

- a permanent lane exiting at the end of the block to a local road;
- a permanent lane exiting mid-block to a major road;
- a temporary lane exiting mid-block to a major road; and
- a temporary, shared, single-width driveway.

These lane configurations are consistent with the Access Policy as they do not create additional accesses onto major roads or they result in the creation of a lane.

Would the proposed Lane Policy require adjustments to the Single-Family Lot Size Policy?

No. The Lane Policy would only come into affect in areas where redevelopment (e.g. a rezoning from large to smaller single family lots) is permitted. If there is a Lot Size Policy in place that does not permit smaller single family lots, then unless the Lot Size Policy is amended, the proposed development would not be permitted. In cases where a Lot Size Policy permits subdivision with the presence of a lane, then a lane must be constructed as part of the redevelopment. Payment by the developer for the construction of a future lane would not be permitted unless the Lot Size Policy is amended.

Therefore, the Lane Policy takes its lead from a Lot Size Policy, if there is one. There is the potential however for Lot Size Policies to be amended over time. Note that almost half of the areas targeted for lane development are restricted from subdividing through Lot Size Policies and therefore, currently, lane development will not be achievable in these areas.

How would adjacent properties be affected by lane development?

The impact of lane development will be felt by neighbouring property owners in the form of some traffic noise, exhaust fumes and activity (i.e. bicycles, pedestrians). The impact on the properties across the lane at the rear will be limited by the zoning requirement for a 6 m (19.65 ft.) minimum setback of the house from the rear property line for single-family and townhouse zones. In situations where a mid-block lane access is provided, impact on the properties next to the access could be greater as the zoning requires only a 1.2 m (3.94 ft.) minimum setback from a single-family home to the side property line. These factors would be taken in consideration in the siting of any mid-block lane accesses.

Will crime be an issue?

There may be a perception that socially unacceptable behaviour could take place in lanes. Lanes do provide alternative accesses to properties. Staff have made contact with the RCMP who stated that there weren't any statistics to substantiate this perception. However, they did point out that lighting and the design of the fences to permit surveillance were key considerations.

The provision of lighting in lanes is addressed in the servicing agreements for the construction of the lanes. In terms of fencing, the Screening and Landscaping section of the Zoning Bylaw permits a fence height of 2 m (6.5 ft.) along all property lines except the front where it is restricted to 1.2 m (3.9 ft). The Zoning Bylaw could be amended to address the height of fences next to public lanes. However, fence height is difficult to enforce, especially when many existing fences would not meet a new standard. At this time, staff are not proposing to amend the Zoning Bylaw regarding fences.

Will lanes affect privacy?

There are two different schools of thought on this issue. Some feel that a lane removes the privacy that is enjoyed in individual backyards. Others feel that a lane provides alternative bike and pedestrian routes, increases opportunities for neighbours to get to know one another and provides a hard surface area for children to play on. Staff feel that the benefits outweigh any concerns.

What about parking in lanes?

The City's parking regulations stipulate that there is no parking permitted in City lanes. This has proven to be a problem in some areas that have a lack of parking. However, a minimum clearance is required for lanes to function. Currently, the City enforces this bylaw on a complaint basis. Parking, especially for visitors, is arranged for and addressed through the development permit process.

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Will the lane be used for any services?

Of the services that generally access individual properties (ambulance, fire, garbage, mail, water, sewer, power and telephone), garbage, mail, sewer, power and telephone services could potentially relocate to the lane in certain circumstances and over time would be encouraged to do so. Ambulance services may or may not use the lane depending on the configuration of the development and the distance to the front door.

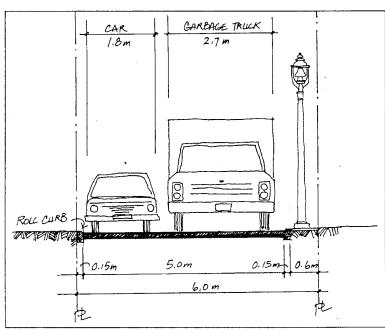
In terms of ease of access and efficiency of service, Engineering and Public Works staff prefer that garbage pick-up be located on major roads rather than on lanes. However, they agree that in terms of promoting the City's vision to be appealing and in terms of the ease for residents to put out garbage for pick-up where there are lanes, garbage pick-up would be better located along lanes than major roads. Nevertheless, there are some issues associated with locating garbage pick-up in lanes:

- Where cars have parked illegally in lanes, it will be difficult for garbage trucks to pass-by. It
 may be necessary to increase enforcement or place signage in the lanes reminding people that
 parking is not permitted;
- It can be difficult for the garbage trucks to manoeuvre, especially where it is necessary for them to back-up or turn around to exit. Therefore, garbage pick-up would only be located in a lane once there are entrance and exit points; and
- lanes can become unsightly with litter and overgrown vegetation. Civic Operations staff have suggested that a curb would make it possible for a street sweeper to effectively remove any litter. A curb also extends the lifespan of the lane by eliminating the break up of pavement that occurs along the edges of lanes, permitting vegetation (blackberry brambles) to grow and become unmanageable.

Therefore, staff recommend that garbage pick-up be phased in on through lanes.

What are the lane design standards?

Standards for lanes outside the City Centre are shown on the following diagram and include the provision of paving, drainage, lighting, curbs and a 6m (19.685 ft) right-of-way:



- A paved lane is provided because it is cheaper to maintain than gravel and makes it easier for baby strollers, bikes and basketball games;
- Drainage is required otherwise storm water will continue to run onto the neighbours property;
- Lighting is provided but at a lower standard than a road (4 lux compared to 9 lux on a major road and 6 lux on a local road);
- Curbs are required because they prevent the breakup of pavement at the edges of the lanes which in turn prevents the growth of brambles that eventually limit the driving width of the lane; and
- a right-of-way width of 6m (19.685 ft) is provided, which, after space is allocated for curb cuts and a street light, permits a driving surface of 5.1m wide (16.73 ft) which allows for a car and truck to pass.

Is it appropriate to develop two lane standards? (page 13)

YES. The basic lane standard in the City owned right-of-way remains the same. In some cases additional lane amenities such as sidewalks and street trees will be provided by developers on properties adjacent to the lanes and incorporated into the designs of the adjacent developments and will result in an enhanced lane standard. These additional amenities would be determined by staff and developers based on factors such as expected densities, façade orientation, visual appeal, traffic/pedestrian volumes and other right-of-way or physical limitations.

What will be the impact on the storm drainage system of the additional lanes?

Storm water drainage is a city wide issue, not specific to the provision of lanes. The addition of storm drainage in lanes will not increase the volume of water collected as much as increase the speed with which the water enters the system. This is because under the current system, water still finds its' way into the storm drains via the drainage on the adjacent properties.

What about upgrading existing lanes?

Many of the existing lanes in Richmond are not built to current standards and are without curbs, lighting and drainage. Where redevelopment occurs next to an existing lane, the applicant will be required to pay for the upgrade of the portion of the lane adjacent to the development. Where there are concerns about the ability of an older lane to adequately serve the increased traffic, temporary access onto the major arterial may be provided until such time as the lane is upgraded.

What are the costs for lane maintenance?

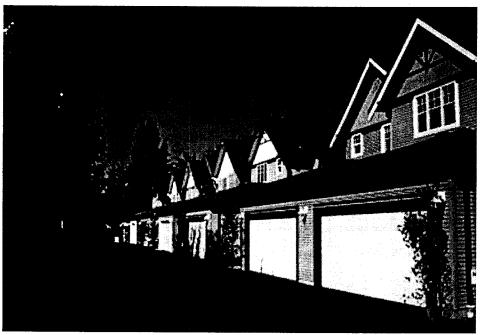
After the lanes become operational, the City will be responsible for their maintenance. As with other City lanes, this would include street sweeping and cleaning catch basins. Occasionally it would involve pruning and cleaning growth. Street sweeping for ½ mile of lane costs approximately \$300 a year. Cleaning catch basins for a ½ mile of lane costs approximately \$150 for a year. Overall, the maintenance cost for the additional lanes is expected to be minimal.

How long would it take before the results can be seen?

Lane creation is to be viewed as a long term endeavour. Lane development is relatively easy in large undeveloped areas; however, it is considerably more time consuming in existing built up areas. The rate of lane development would be dependent on the rate of redevelopment. There are some blocks for which redevelopment and lane creation will occur soon and others where it may be decades before redevelopment and lane creation occurs. The age of existing housing is a factor. As much of the housing along the major roads is getting older, there is a high potential for lane creation over the next decade as the second generation of housing is built. This opportunity should be used to establish lanes.

How would the lanes actually get built?

When an application is received, staff must first determine whether a lane is required. As part of the application process, the City would determine the short and long term lane alignment. The developer would then either provide the land and build the lane, or they would provide the land and the money for future construction. The lane would only be constructed once it has an access/egress point. This access/egress point may be a long term temporary access to a major road. A servicing agreement would be made with the developer to actually construct the lane. Another option would be that the City would construct the lane when enough money had been collected from the individual developments on that street. Both options would be followed.



Typical Upgraded Lane

Is it desirable to focus on an area to test the policy?

NO. One possibility would be to focus the Lane Policy on an area such as No. 2 Road across from Blundell Shopping Centre where we would expect some redevelopment in the near future. In this way, the policy could be tested and the City could gauge the effect it will have. However, the City would lose many opportunities and in the interim we would still be treating applications outside this area differently. Implementing the policy more widely should not be an issue because proposed applications have to meet land use objectives first. In this regard it is not likely that there will be a rush of new applications resulting from this policy and any potential problems could be ironed out with the first few applications.

Should there be a public consultation process when a new lane is built?

Yes. Currently, when a lane is constructed as part of a development application the neighbouring property owners have the opportunity to comment through the application processes. The City does not directly consult with neighbouring property owners regarding the construction of the lane. This approach works. Problems can occur are when a neighbouring property owner has not followed the application process and is not aware that a lane is being constructed as part of a development, or when in the process of construction, it is determined that a fence is encroaching on the laneway and has to be relocated.

Options for further consultation could be to include information about the lane on the development sign or to mail out written notification to all owners adjacent to the project. However, as the existing system works, it is not recommended that any additional consultation be conducted at this time.

Options

- Adopt the Lane Policy (Recommended)
 The benefits of maximizing the efficiency of the arterial road system by having a consistent Lane Policy are significant.
- Satus Quo
 With this option traffic congestion on arterial roads will become worse and the City will not have a consistent policy to deal with lanes.

FINANCIAL IMPACT

After the lanes become operational, the City will be responsible for their maintenance. As with other City lanes, this would include maintenance of the driving surface, flushing of the storm sewer lines, street sweeping and cleaning of the catch basins. On a yearly basis, the maintenance is expected to cost \$. There would also be additional costs for garbage pick-up based on the added time required for drivers to access from the lanes rather than more directly from the main road.

CONCLUSION

Consistent with the Corporate Strategic Plan and the Official Community Plan, a Lane Policy is proposed to support the creation of lanes along major roads in conjunction with development activity.

Jenny Beran, MCIP Planner 1

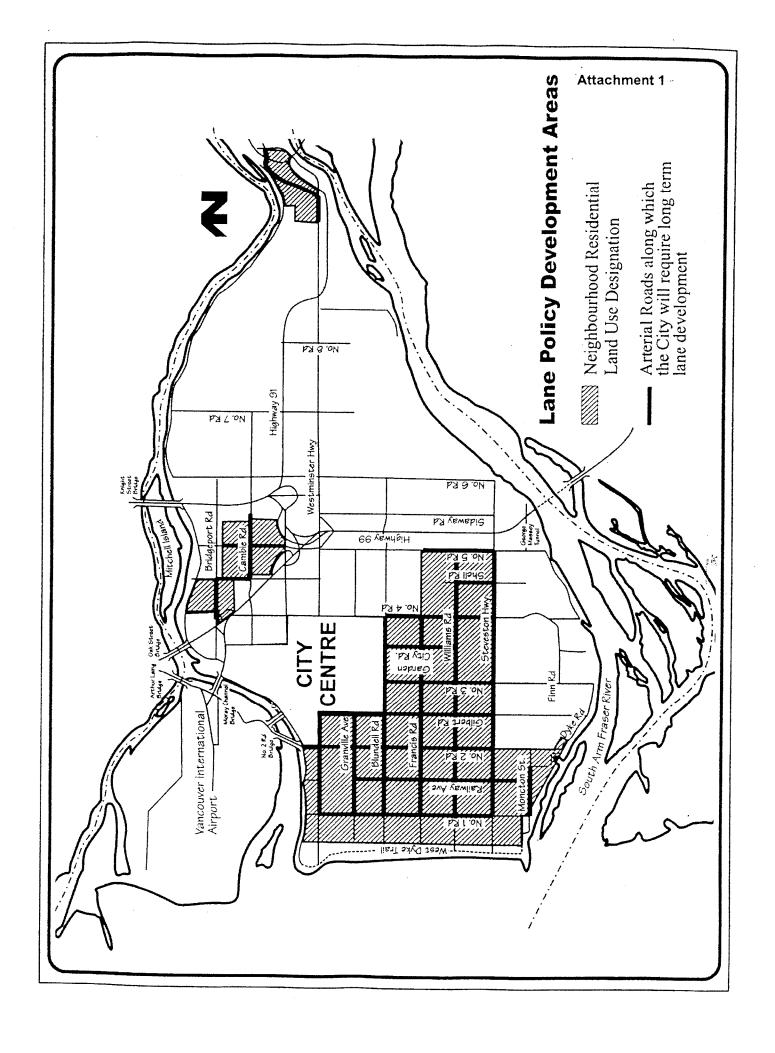
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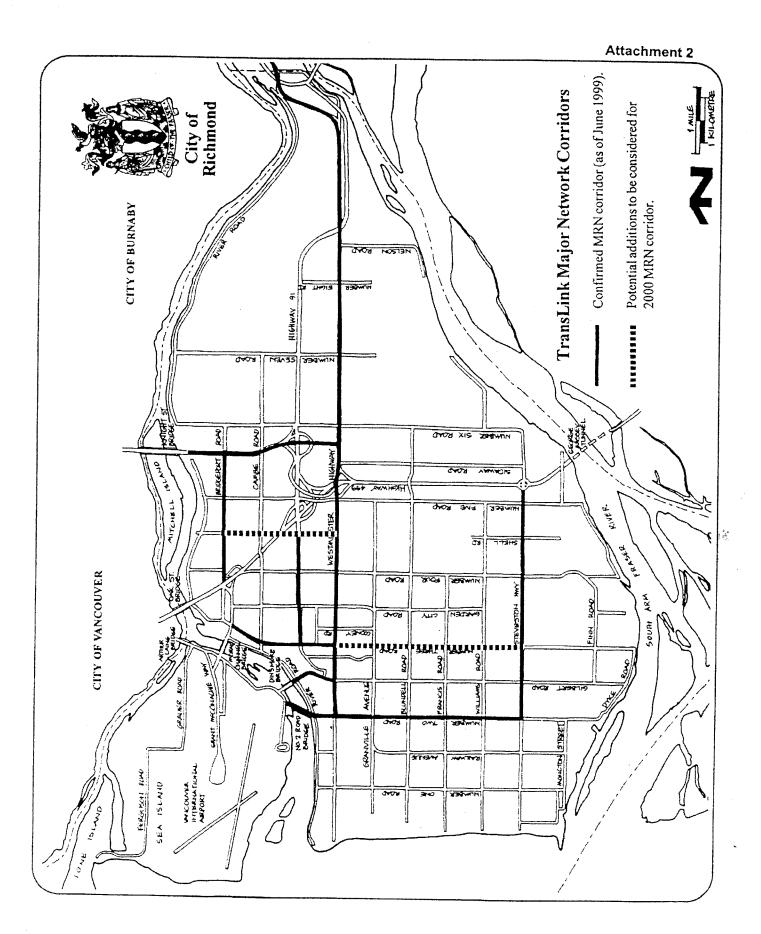
LANE POLICY

The purpose of the Lane Policy is to support the creation of lanes along major roads in conjunction with development activity.

It is Council policy that:

- 1. Where the City approves Rezoning, Development Permit and/or Subdivision applications for properties which:
 - a) are outside the City Centre;
 - b) are designated by the Official Community Plan as "Neighbourhood Residential";
 - c) front a major arterial road, or a local arterial road that is part of the Bike Network; and
 - d) are illustrated generally on the attached map, "Lane Policy Development Areas"; the City requires the applicant to:
 - e) dedicate land at the rear and/or side of the properties for a lane and/or mid-block lane access; and
 - f) pay for construction, to City standards, of such lane and/or mid-block lane access.
- 2. A lane required under Section 1 must not exit directly onto a major arterial road, unless:
 - a) a permanent mid-block vehicular access is provided from the lane to the major arterial road; or
 - b) a temporary mid-block vehicular access, constructed to City standards, is provided from the lane to the major arterial road; or
 - c) land is dedicated and funding provided for the future construction of a lane and in the interim a temporary, single-width, shared access driveway is provided for use by vehicles accessing only those parcels located directly adjacent to the driveway on the understanding that any garage(s) is to be located at the rear of such property, to ensure that the access to the arterial road can be closed when the lane is operational.
- 3. In order to implement the provisions of Section 1, restrictive covenants may be required as part of a rezoning application in order to:
 - a) increase rear-yard setbacks;
 - b) ensure that where fill is added to raise the property, vehicular access to the lane is maintained:
 - c) ensure that garages, if any, are located at the rear of the property in question; and/or
 - d) ensure that when the lane is operational, access to the major road is closed.
- 4. Exceptions to the policy which would be determined with each application include where:
 - a) there is a lane already built to City standards;
 - d) the property is less than 30m in depth; or
 - a) there is, or the City approves, an alternative permanent access, such as a frontage road, shared access, or internal road.
- 5. The main principles used by staff to determine the suitability of an alternative permanent access referred to in clause c) of section 4 are that:
 - (i) there are to be no additional accesses created to the major arterial road;
 - (ii) the proposed access will not impede the intended function of the arterial road; and
 - (iii) the type of access is consistent with the existing and/or anticipated form of development.
- 6. Notwithstanding the provisions of this policy, the City will continue to examine development applications in terms of meeting OCP objectives, Lot Size Policies, the Access Policy and other requirements, standards and factors.





REPORT TO COUNCIL

DATE:

October 4, 1989

TO:

Mayor and Aldermen

Richmond Municipal Council

FROM:

Ron Mann, Director of Planning

Harvey Gibault, Municipal Engineer

RE:

ACCESS POLICY FOR SINGLE-FAMILY RESIDENTIAL REDEVELOPMENTS

FILE:

5001

(261)

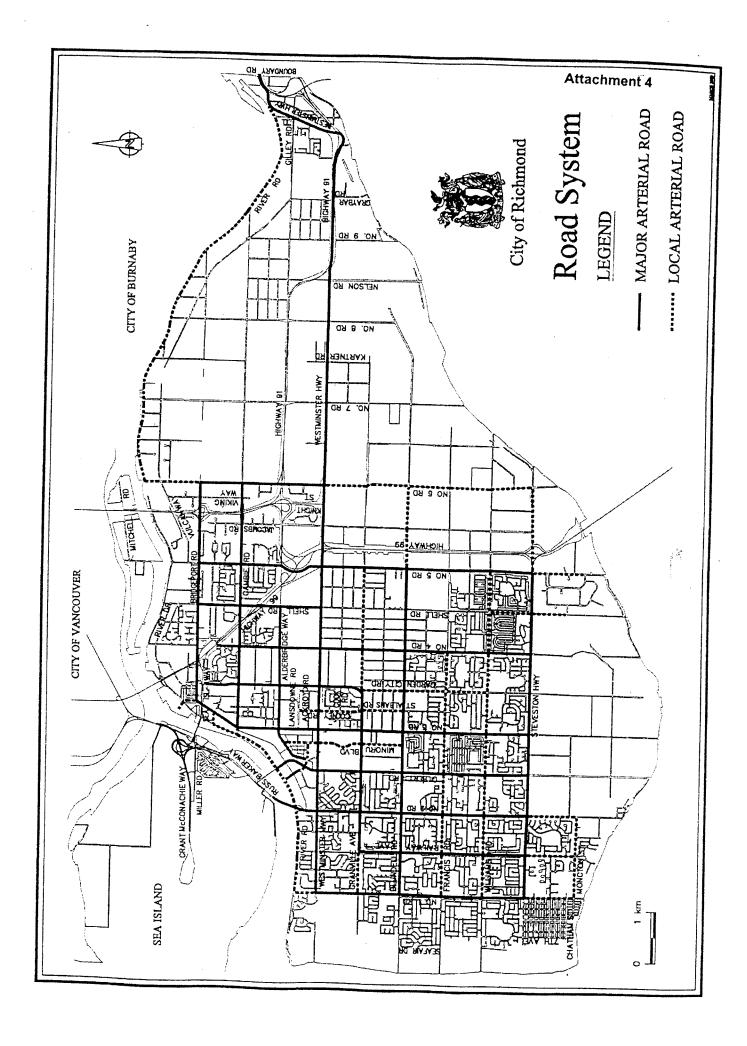
STAFF RECOMMENDATION

That the following policy be established:

That zoning, subdivision and development approvals for single-family residential use be consistent with the access guidelines along arterial and collector roads and access be restricted along these roads in accordance with the map and table attached as Schedule A to the report dated October 4, 1989 from the Director of Planning and Municipal Engineer.

TABLE A - ACCESS ON ROAD CLASSIFICATION

| CLASSIFICATION | PRIORITY | ACCESS | ZONE | MINIMUM FRONTAGE WIOTH (m) |
|----------------|----------|--------|--------------------------------------|------------------------------------|
| Major Arterial | 1 | lane | R1/A R1/8 R1/0 | 6 6 7.5 ° |
| <i>'</i> . | 2 | direct | R1/E R1/F R1/G | 18 18 20 |
| ocal Arterial | 1 | lane | R1/A R1/B R1/O | 6 6 7.5 |
| | 2 . | direct | R1/C R1/O R1/E R1/F R1/G | 13.5 15 18 18 18 20 |



Attachment 6 – Responses to March 21st Planning Committee

The following information responds to the questions that were raised at the Planning Committee meeting of March 21st, 1999. This information has been incorporated into the body of the report, replacing or updating previous information.

Where should the City target lane development? (page 4)

The primary goal of lane development is to limit individual access points onto major roads. This is an issue where there are many single-family lots with individual access points. For example, a typical block face on an arterial road in west Richmond has 35 parcels/accesses whereas a typical block face on a residentially oriented arterial road in the City Centre has only 10 parcels/accesses.

Therefore, the proposed policy would support lane development along arterial roads in residential areas primarily in West Richmond where there are a number of individual land parcels that directly access major arterial roads. These areas are designated "Neighbourhood Residential" on the Generalized Land Use Map in Richmond's Official Community Plan.

Specifically, the policy would apply to those parcels outside of the City Centre designated Neighbourhood Residential which front:

- a major arterial road;
- a local arterial road that is also a Bike Route (Attachment 5 shows the Bike Network Roads in Richmond); and
- Francis Road between No.1 and No.4 Road.

Francis Road is included because:

- while it is not classified as a major arterial, it has recently been upgraded to four lanes;
- its length contributes to its use as a through road similar in function to other major arterial roads; and
- the types of land uses permitted along Francis Road will be similar to those permitted along other major arterials due to the common "Neighbourhood Residential" land use designation.

The map attached to the Lane Policy (Attachment 1) shows the areas that are designated Neighbourhood Residential and the roads along which the City would require lane development.

Does a Lane Policy mean the City would be encouraging redevelopment along all major roads to facilitate lane development? (page 5)

NO. The Lane Policy isn't meant to signal that the City is encouraging redevelopment in order to facilitate the provision of lanes. The City would continue to examine each application in terms of meeting OCP objectives, Lot Size Policies and other factors. If, from a land use perspective, it makes sense for a property to redevelop, then a lane would be required subject to the Lane Policy.

Are there population growth implications with the Lane Policy? (page 5)

An increase in population would be attributable to the OCP, not to the Lane Policy. The OCP does suggest that some redevelopment in the form of smaller lots, two-family dwellings and townhomes along major roads is expected. The 2021 population projection in the OCP accounted for 2,400 additional units along major roads for a total additional population of approximately 5500 people.

What are the costs for building lanes? (page 6)

The cost for providing a lane is \$600 a meter (including curb, gutter, pavement and lighting). While this cost is significant, the developer of a lot along an arterial road usually does not have to pay for the costs of other service upgrades because they have generally already been undertaken by the City. As a comparison, development along an internal road, that had not already been upgraded, would cost \$953 a meter (including curb, gutter, pavement, lighting, sidewalk, storm sewer, and tree planting). Therefore, even if the City requires the applicants to pay for lane construction, the overall cost for service upgrades are significantly less than if the same development were constructed on a road that had not already been upgraded.

What are the costs for lane maintenance? (page 13)

After the lanes become operational, the City will be responsible for their maintenance. As with other City lanes, this would include street sweeping and cleaning catch basins. Occasionally it would involve pruning and clearing growth. Street sweeping for ½ mile of lane costs approximately \$300 a year. Cleaning catch basins for a ½ mile of lane costs approximately \$150 for a year. Overall, the maintenance cost for the additional lanes is expected to be minimal.

What happens with lanes at intersections? (page 7)

In developing configurations for a new lane, care would be taken to minimize opportunities for the new lane to intersect a roadway in close proximity to a major intersection. If the situation required that a lane intersect an arterial road next to an intersection, turn restrictions or other traffic control measures may be required to ensure safe movement of through traffic.

Will lanes become secondary roads or short-cutting routes? (page 8)

NO. Lanes are not wide enough to permit cars to move quickly. The design standard and legal speed limit for lanes is 20 km/hr. In terms of possible short-cutting, where possible, the new lanes will not be designed to directly connect major roads at both ends, therefore, they are only convenient for adjacent residents for local access. In some cases, when necessary, it would be possible to implement measures to alleviate specific problems.

What about parking in lanes? (page 11)

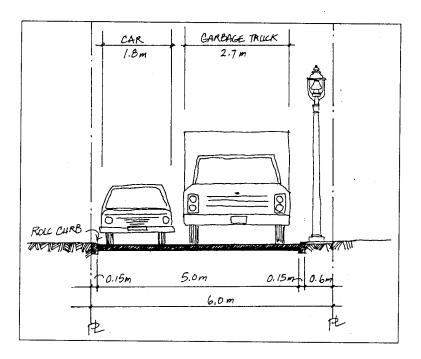
The City's parking regulations stipulate that there is no parking permitted in City lanes. This has proven to be a problem in some areas that have a lack of parking. However, a minimum clearance is required for lanes to function. Currently, the City enforces this bylaw on a complaint basis. Parking, especially for visitors, is arranged for and addressed through the development permit process.

What are the lane design standards? (page 12)

Standards for lanes outside the City Centre are shown on the following diagram and include the provision of paving, drainage, lighting, curbs and a 6m (19.685 ft) right-of-way:

- A paved lane is provided because it is cheaper to maintain than gravel and makes it easier for baby strollers, bikes and basketball games;
- Drainage is required otherwise storm water will continue to run onto the neighbours property;
- Lighting is provided but at a lower standard than a road (4 lux compared to 9 lux on a major road and 6 lux on a local road);
- Curbs are required because they prevent the breakup of pavement at the edges of the lanes which in turn prevents the growth of brambles that eventually limit the driving width of the lane; and

a right-of-way width of 6m (19.685 ft) is provided, which, after space is allocated for curb cuts and a street light, permits a driving surface of 5.1m wide (16.73 ft) which allows for a car and truck to pass.



Is it appropriate to develop two lane standards? (page 13)

YES. The basic lane standard in the City owned right-of-way remains the same. In some cases additional lane amenities such as sidewalks and street trees will be provided by developers on properties adjacent to the lanes and incorporated into the designs of the adjacent developments and will result in an enhanced lane standard. These additional amenities would be determined by staff and developers based on factors such as expected densities, façade orientation, visual appeal, traffic/pedestrian volumes and other right-of-way or physical limitations.

What will be the impact on the storm drainage system of the additional lanes? (page 13) Storm water drainage is a city wide issue, not specific to the provision of lanes. The addition of storm drainage in lanes will not increase the volume of water collected as much as increase the speed with which the water enters the system. This is because under the current system, water still finds its' way into the storm drains via the drainage on the adjacent properties.

Appendix C

Lane Establishment Policy 5038



City of Richmond

Policy Manual

| Page 1 of 2 | Adopted by Council: Aug.27/01 | POLICY 5038 |
|-------------------|-------------------------------|-------------|
| File Ref: 6360-00 | LANE ESTABLISHMENT | |

POLICY 5038:

It is Council policy that:

- 1. Where the City approves Rezoning, Development Permit and/or Subdivision applications for properties which:
 - a) are outside the City Centre;
 - b) are designated by the Official Community Plan as "Neighbourhood Residential";
 - c) front a major arterial road, or local arterial road that is part of the Bike Network or Francis Road between No.1 and No.4 Roads; and
 - d) are illustrated generally on the attached map, "Lane Establishment Policy Development Areas";

the City requires the applicant to:

- e) provide land (eg, dedicate) at the rear and/or side of the properties for a lane and/or mid-block lane access; and
- f) pay for construction, to City standards, of such lane and/or mid-block lane access.
- 2. A lane required under Section 1 must not exit directly onto a major arterial road, unless:
 - a) a mid-block vehicular access is approved by the City and constructed to current standards; or
 - land is dedicated and funding provided for the future construction of a lane and in the interim a temporary, single-width, shared access driveway is provided for use by vehicles accessing only those parcels located directly adjacent to the driveway on the understanding that any garage(s) is to be located at the rear of such property, to ensure that the access to the arterial road can be closed when the lane is operational.
- 3. In order to implement the provisions of Section 1, restrictive covenants may be required as part of a rezoning application in order to:
 - a) increase rear-yard setbacks;
 - b) ensure that where fill is added to raise the property, vehicular access to the lane is maintained;
 - ensure that garages, if any, are located at the rear of the property in question;
 and/or
 - d) ensure that when the lane is operational, access to the arterial road is closed.
- 4. Exceptions to the policy, which would be determined with each application, include where:
 - a) there is a lane already built to City standards;
 - b) the property is less than 30m in depth;
 - c) there is, or the City approves, an alternate access, such as a frontage road, shared access, or internal road;
 - d) Council authorizes an exemption through the rezoning or development permit process; or
 - e) the Subdivision Approving Officer authorizes an exemption through the subdivision process.

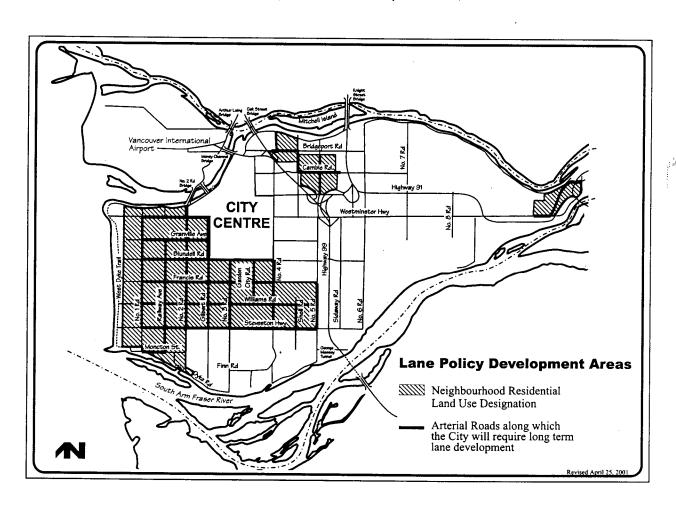


City of Richmond

Policy Manual

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|-------------------|-------------------------------|-------------|
| File Ref: 6360-00 | LANE ESTABLISHMENT | |

- 5. The main principles used by staff to determine the suitability of an alternate access referred to in clause c) of section 4 are that:
 - (i) there are to be no additional accesses created to residential lots along arterial roads;
 - the proposed access will not impede the intended function of the arterial road; and
 - (iii) the type of access is consistent with the existing and/or anticipated form of development.
- 6. Notwithstanding the provisions of this policy, the City will continue to examine development applications in terms of meeting OCP objectives, Lot Size Policies, the Residential Lot Vehicular Access Regulation Bylaw and other requirements, standards and factors.



Appendix D

"Recommended Cost Savings for Lane Implementation"
Staff Report
January 30, 2003



City of Richmond

Report to Committee

6360-07

January 27. 2003

Date:

File:

To:

Planning Committee

From:

Steve Ono, P.Eng.

Director, Engineering

Joe Ercea

Manager, Development Applications

Re:

Recommended Cost Savings for Lane Implementation

Staff Recommendation

- 1. That Council endorse the current components of lane construction, as outlined in the report from the Director of Engineering and Manager of Development Applications, dated January 27, 2003;
- 2. That Council direct staff, in the implementation of the Lane Establishment Policy, to:
 - i) accept the payment of a Neighbourhood Improvement Charge (NIC) as an alternative to the construction of a lane, in development situations where no public access is constructed or where there is no means to connect a lot to an existing lane or road; and
 - ii) require public lane access with subdivisions of four or more lots or townhouses.

Joe Erceg

Manager, Development Applications

Steve Ono, P.Eng.

Director, Engineering

Att.

| FOR ORIGINATING DIVISION USE ONLY | | | | |
|--|-------------|--------------------------------|--|--|
| ROUTED TO: | CONCURRENCE | CONCURRENCE OF GENERAL MANAGER | | |
| Roads & Construction Transportation | Y 🗹 N 🗆 | See attacked memo | | |

Staff Report

Origin

Council adopted the Lane Policy in June of 2000, supporting the creation of lanes along major roads in conjunction with development activity by eliminating private driveways accessing Richmond's arterial roads in order to:

- increase traffic safety through reducing conflicting traffic movements;
- increase traffic flow and road capacity due to the reduction of slowly moving traffic entering or exiting private driveways;
- improve appearance of streets due to a continuous boulevard with no curb cuts and increased green space in the front yard without the garage; and
- increase pedestrian safety through a continuous sidewalk with no curb cuts.

Now that the Lane Policy has been in place for a number of years, and has resulted in the creation of a number of pieces of lanes, it has become evident that there are some areas, specifically relating to lane implementation, that may be adjusted to save developer's costs.

The development community has expressed some of their concerns to staff and Council in terms of the costs associated with implementation of lanes. Planning Committee, at their meeting of January 7, 2003, referred a rezoning application along Bridgeport Road back to staff to await a report from staff with information on unused lane allowances, potential cost savings associated with lane construction and the option for payment of Neighbourhood Improvement Charges (NIC) in lieu of immediate lane construction.

Therefore, the purpose of this report is to:

- respond to Council's inquiry regarding unused lane allowances;
- examine the components of lanes with a view to potential cost savings; and
- recommend cost saving measures in terms of lane implementation, or connecting lanes to the existing road network.

It should be noted that another report, suggesting that some additional roads be added to the Lane Policy is being presented along with a rezoning application along No.2 Road. This report focuses on where lanes should be required rather than the issues addressed in this report pertaining to the standard to which they are built and the process of integrating them into the existing road network.

Finally, a third report, suggesting amendments to the Arterial Road Redevelopment Policy, is also proposing changes to respond to the development communities concerns. If supported, these changes could mean an opportunity for townhouses to be permitted outside the areas of the neighbourhood centres and could result in an increase in permitted density for single family residential along arterial roads. Both of these changes can help to offset the costs of lanes by permitting more built area.

Findings of Facts

Unused Lane Allowances

A question was raised at Planning Committee regarding the ability of a property owner to obtain title to a piece of lane if it is unused. This would be a concern as we implement the Lane Policy as there will be sections of lanes that may in fact be unused until full implementation.

There is a provision in the Land Titles Act for a property owner to apply to the Province (the registrar of Land Titles) to close and raise title to a piece of road (lane) under certain circumstances including the fact that it is unused. Previously this decision did not necessarily require the consent of the City, however, this is required now. Therefore, as long as the City is interested in retaining a piece of road (lane), the registrar cannot give permission to a property owner to obtain ownership of an unused piece of lane.

Analysis

This section discusses the potential cost savings associated with the lane components and lane implementation.

LANE COMPONENTS

The are five components of a lane: the right-of-way width, the paved surface, drainage, lighting and curbs with the associated dimensions shown in the following diagram (Figure 1). Each of these components is analyzed in detail below in order to provide information on the cost of each component, past practice, current practice and in the case of lighting and curbs, provide information on potential cost savings. The 6m wide lane right-of-way is not explored as this dimension has always been the standard (outside of the City Centre) and is satisfactory.

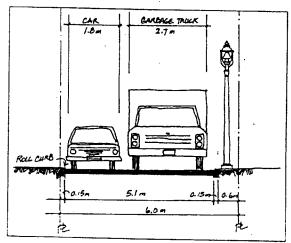


Figure 1: Current Lane

Cost

The following chart (Figure 2) provides the estimated costs to the developer for constructing each of the four components of lanes along the rear of the property. It should be noted that the City's rates would only be relevant in a case where payment of NIC is an option (which has only

occurred for one application to date but will likely become more common in the future) as the actual work of constructing the lanes is completed by the applicant at the time of construction and may be able to be completed in a more cost effective manner than what is estimated by staff.

Therefore, these figures are provided to illustrate the general cost of the various lane components. These estimates are also broken into per metre costs and the total cost for an average 20m wide lot. In the one case where NIC was charged to date, the rates were based on 1999 figures which did not take into account the total lane construction costs.

Figure 2: Cost of Rear Lanes

| Lane Component | 2003 Rates per Meter | 2003 Cost for 20m Lane | |
|---------------------------|----------------------|------------------------|--|
| Pavement Construction | \$347.75 | \$6955 | |
| Storm Drainage | \$252.22 | \$5,044.4 | |
| Street Lighting | \$100.00 | \$2000 | |
| Rolled over Curb & Gutter | \$137.96 | \$2,759.2 | |
| Total | \$838 | \$16,759 | |

Paving

Past Practice

From an historical perspective, the earlier Richmond lanes paved only 4m of the 6m lane right-of-way, with grass swales at the edges for drainage (see Figure 3). An intermediate practice was to pave the full 6m of lane surface, providing a slope to the centre where drainage was located (see Figure 4).

Current Practice

The current practice is to pave 5.1m of surface to allow for curbs on both edges and the base of a light standard (see Figure 1 & 5). The estimated cost for paving is \$347 a meter or almost \$7000 for an average lot or about 40% of the total lane construction cost. As it is considered an essential lane component, no cost saving options are presented.



Figure 3: Original Lane



Figure 4: Intermediate Lane

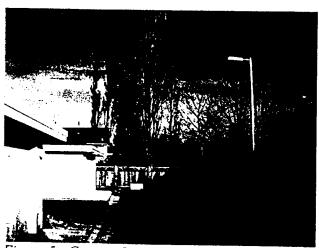


Figure 5: Current Lane

Drainage

Past Practice

From an historical perspective, the 4m wide paved surface used to slope to the edges where grass swales were located for drainage. Once the pavement width widened, the slope ran to the middle of the lane to the catch basins connected to 6" drainage pipe.

Current Practice

The current practice continues to be to slope the pavement to the centre of the lane where the catch basins are located. The estimated cost is \$252 a meter or approximately \$5,000 for an average lot or about 30% of the total lane construction costs. Drainage is considered essential and therefore, no cost savings are presented for this lane component.

Lighting

Past Practice

Historically, there were no lights located in lanes (Figure 3), however, for the past 10-15 years it has been the City's practice to require lighting in lanes (Figure 4 & 5). Where there are lanes with no lighting, the Engineering department receives complaints about the low lighting levels.

Current Practice

Lighting is currently provided in lanes with light fixtures spaced at approximately 40m intervals in order to achieve a certain lighting standard recommended in the Engineering guidebook (IS Manual). The cost for providing lighting is estimated at \$100 a meter or \$2000 a lot. In either case, at about 10% of the total cost, this is the cheapest of the lane components.

Potential Cost Savings

In terms of exploring more cost effective lane construction options, there are two parts, the light fixture (post and light) and the lighting conduit. The conduit is relatively inexpensive. The majority of the cost is associated with the light fixture, therefore one option is to increase the spacing between light fixtures. However, while we might be able to reduce this with a slightly wider spacing (eg, 60m), the savings are minimal, and in terms of the potential reduction in safety and sense of security this is not an area that staff would recommend altering.

As a footnote, in some cases the City explored the use of lights mounted to private garages (Figure 6). While this saves on the cost of the light post, the approach has been problematic in that it is difficult for the City to maintain lights on private property.



Figure 6: Lighting Mounted on Garages on Private Property

Curbs

Past Practice

Curbs were not originally part of lanes (Figure 3), however, for the past decade or more, curbs have been a standard lane component (Figure 4 & 5).

Current Practice

Curbs are currently provided as part of lanes in order to:

- protect the light standard which is set behind the curb (see Figure 7);
- define the edge of the paved area and eliminate cases where the pavement is stretched to the edge of the garages which increases the paved area to over 8m in width. This situation is unattractive and environmentally unfriendly (see Figure 7);
- protect the pavement edges from breaking up, preventing the growth of weeds; and

• provide an edge which allows for a street sweeper to clean up garbage and leaves which is more cost effective than manual cleaning of lanes.

The estimated cost for providing curbs is about \$138 a meter or \$2800 a lot which is about 15% of the total cost of providing lanes.

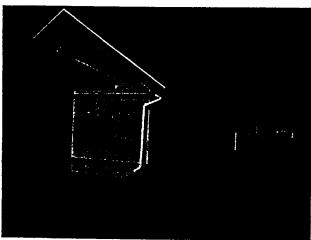


Figure 7: Light Standard in Middle of Pavement (No curbs)

Potential Cost Savings

One option for cost savings would be for the applicants to pay only for curbs on one side of the lane. This option is modelled on typical development practice whereby the future development on the other side would pick up the cost for their frontage improvements. However, in this case, as the interior lots will not be redeveloping, the City would have to pick up the cost for the other side, therefore, this is not recommended given tight municipal budgets.

The other option would be to eliminate the requirement for curbs altogether which would save approximately \$3000. There is no need for curbs to funnel water into the gutter as the drainage is in the middle of the lane. However, there are a number of problems associated with eliminating curbs from lanes:

- curbs protect the light post and limit the amount of paved surface (Figure 7);
- curbs protect the pavement at the edges of the lane from breaking up, and thereby introducing more opportunities for weeds to grow; and
- without curbs it is not possible for a street sweeper to clean up garbage or leaves

Without curbs, it is estimated that there would be an increase in maintenance costs for a 400m long lane from about \$185 a year (generally for cleaning and sweeping) to about \$1750 a year (this is the average cost estimated on a per metre basis over the whole network over a 10 year period). The additional cost is for such items as increased maintenance of gravel shoulders, repair of cracked asphalt edges, reduced pavement life, control of weed intrusion, and added difficulties in sweeping of lanes.

Summary - Lane Components

If there is one area of potential cost savings in terms of removal of one of the components of lanes, curbs would be the most obvious choice. While some savings are possible if curbs are eliminated (\$3000), staff are hesitant to recommend this. These are not quiet county lanes. They receive a lot of traffic and the existing lanes will receive more traffic once more redevelopment occurs. While there would be a one time cost saving to the developer, the City will have more long term costs associated for maintenance.

Instead, staff recommend cost saving measures related to the connection of the lanes to the existing road networks which is discussed in more detail in the following section.

LANE IMPLEMENTATION

Current Practice

There are some potential cost savings associated with the introduction of the lane into an existing street network and block. In order to illustrate this, it is first necessary to understand the current lane development scenarios. The following diagram (Figure 8) shows a portion of No. 2 Road now, and in the future with some pieces of lanes developed. The numbers next to the lots correspond to the three scenarios described as follows (Immediate Lane Connection, Public Lane Access, Private Driveway). Each scenario has different costs associated with it which are detailed on Figure 11.

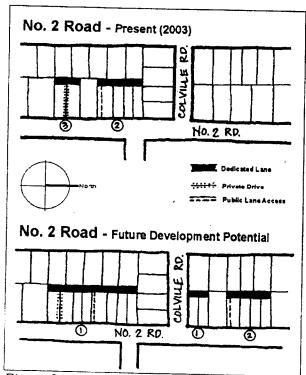


Figure 8: Lane Development Scenarios

Immediate Lane Connection

Scenario 1 (Figure 8) occurs when the subject lot is on a corner or beside an operational piece of lane, providing an immediate connection from the new lane to the existing road network. In this case the developer constructs the lane at the back of the property.

Public Lane Access

In scenario 2 (Figure 8), through the development of the site, there is an opportunity to provide a (temporary or permanent) public connection between the new lane and the existing street in front by providing a public lane access. In this scenario the piece of rear lane is dedicated however, the lane access is provided as a right-of-way. The developer constructs the lane at the back of the property along with the public lane access. Figure 9 illustrates a two lot subdivision that provided a lane access.

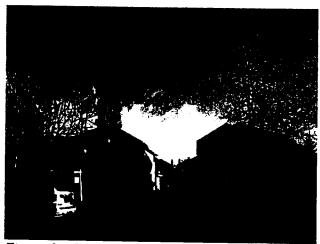


Figure 9: Two Lot Subdivision and Public Lane Access

Private Driveway

Scenario 3 (Figure 8 upper sketch) occurs when the subject lot is mid block with no means to connect to an existing lane nor enough width to provide a public lane access. In this case, the requirement has been for the developer to construct the lane at the back of the property in addition to a temporary driveway used by the two new lots with drainage for the lane running in a right-of-way under the driveway.



Figure 10: Shared Private Driveway Between Two New Homes

Figure 10 shows an example on Acheson Road in the City Centre of a shared private driveway running between the two new homes which leads to the garages which are located in the rear of the property on the future lane.

Cost

The following chart (Figure 11) provides the construction cost associated with each development scenario. The base rate for the rear portion of lane is based on the construction rates in Figure 2 which use an average 20m wide lot for calculations.

Figure 11: Cost of Connecting Rear Lanes to Street Network

| Cost for Public Amenity | Scenario 1: Immediate Connection | Scenario 2: Public Access | Scenario 3: Private Driveway |
|--|--|------------------------------|---------------------------------|
| Rear Portion of Lane | \$16,759 | \$16,759 | \$16,759 |
| Public Access To Lane (paving, drainage, sidewalk) | • | \$35,073 | • |
| Cost to Drain Portion of Lane under Private Driveway | - | - | \$12,940 |
| Total Cost | \$16,759 | \$51,832 | \$29,699 |

Suggested Future Modifications

In comparison to the potential saving for removing curbs from the lanes, there is greater potential to save the developer monies in Scenario 2 & 3 where the cost to connect the lane or driveway to the road network is significant. Therefore, staff make the following suggestion to reduce the costs.

- Scenario 1: Immediate Connection

Immediate connection is the cheapest with only the cost of the lane itself therefore, no modifications are suggested.

- Scenario 2: Public Lane Access

It is recommended that a lane access only be required in situations where a townhouse is being developed or with a subdivision of four or more lots. This would be a change from the current practice, which has proven to be a burden to small development, where a two lot subdivision is currently required to provide the public lane access if the lot has sufficient width (26m or more) (as illustrated in Figure 9).

This would mean that instead of spreading the \$35,073 cost over two lots (as has occurred on Railway Avenue) the costs could be absorbed by four or more lots. Therefore, on per lot basis the cost would be reduced from \$17,500 to \$8,750 (a saving of \$8,750 per lot). The caution with this approach is that staff will have to be careful to ensure that the City doesn't end up with a situation where a block has no lane accesses, or only one lane access for a very long block.

- Scenario 3: Private Driveway

It is recommended that the developer be provided with the option to pay a Neighbourhood Improvement Charge (NIC) for the cost of building the lane at a later date and then, because this piece of lane will not be required to be drained, there is a cost saving for not having to provide associated drainage between the lane and the street, when constructing the driveway. Therefore there is accost saving of \$12,940 which when split between the two lots is a savings of \$6,470 per lot.

If the applicant chooses to pay NIC, a condition of rezoning will be that a covenant be placed on the property stating that the garages have to be located at the rear of the property in such a way that they are able to be utilized from the lane immediately after the lane becomes operational. This covenant is to ensure that future property owners are aware of this access requirement.

The difficulties in permitting NIC, as have been pointed out in previous staff reports are that:

- future property owners may not realize that there is to be a lane at the rear of their property. However, the covenant on title and the City right-of-way would be clearly evident when the property is purchased;
- The NIC fees that are paid are not "earmarked" specifically for the future construction of this lane as the intent of the NIC program is to enable the flexible movement of funds between neighbourhoods in order to permit the construction of infrastructure before full buildout of a neighbourhood. This flexibility is an important element of the NIC program.

Financial Impact

Unless the City opts:

- to pay half the costs of providing curbs; or
- removes the requirement for curbs which would impact the roads maintenance budget; there are no costs associated with the recommendations in this report.

Conclusion

This report has reviewed lane components and lane implementation in order to seek measures for cost savings. While there is an opportunity with lane components to save around \$3000 per lot with the removal of the requirement for curbs, staff are hesitant to recommend changes to the lane construction practices. In addition to problems such as increased runoff from increased pavement, damage to light standards and messier looking lanes, this saving to the development community will only impact the City's maintenance budget.

Instead, staff recommend changes to lane implementation and the process of connecting the lanes to the existing road network, which will lead to greater cost savings as follows:

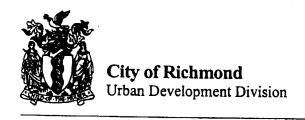
- require public lane access with subdivisions of four or more lots or townhouses resulting in a savings of \$8,750 minimum per lot; and
- accept the payment of a Neighbourhood Improvement Charge (NIC) as an alternative to the construction of a lane, in development situations where there is no means to connect a lot to an existing lane nor enough width to provide a public lane access. This would result in a cost savings of \$6,470 per lot.

Neither of these proposed changes require an amendment to the Lane Establishment Policy but rather to staff's procedures when implementing the policy.

Yenny Beran, MCIP

Planner, Urban Development

JMB:jmb



Memorandum

To:

Planning Committee

Date:

February 10, 2003

From:

David McLellan

File:

6360-07

General Manager, Urban Development

Re:

Recommended Cost Savings for Lane Implementation

Although I have signed the concurrence for the above noted report dated January 27, 2003, I have reservations supporting the third scenario in the staff report. The use of a private driveway without immediate lane construction will be very difficult to implement and will not improve the traffic safety given the increased number of vehicles relying on these access points. It may be preferable to deny the rezoning which facilitates the subdivision of these minor sites as premature and encourage redevelopment with an immediate connection to an existing lane or through larger site assemblies.

David McLellan

General Manager, Urban Development

DJM:djm

Steve Ono, P.Eng., Director, Engineering

Joe Erceg, Manager, Development Applications Jenny Beran, MCIP, Planner, Urban Development

