City of Richmond

Report to Committee

To:	Planning Committee	**Date:**	January 27, 2003
From:	Steve Ono, P.Eng. Director, Engineering	**File:**	6360-07
	Joe Erceg 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 ..... Y ☑ N ☐	see attached memo
Transportation ..... Y ☑ N ☐	

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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.

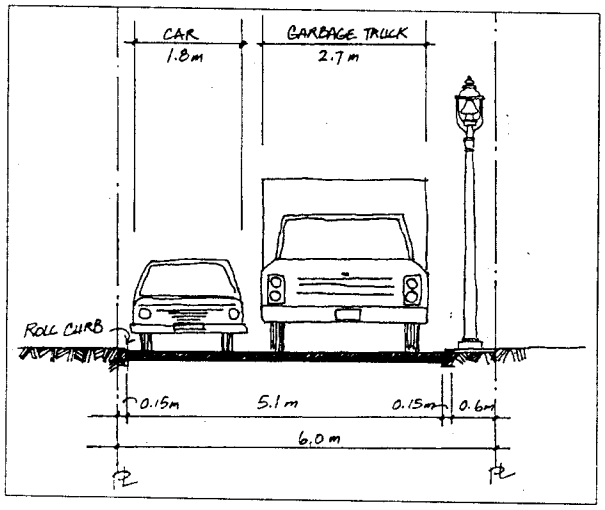

Figure 1: Current Lane

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.

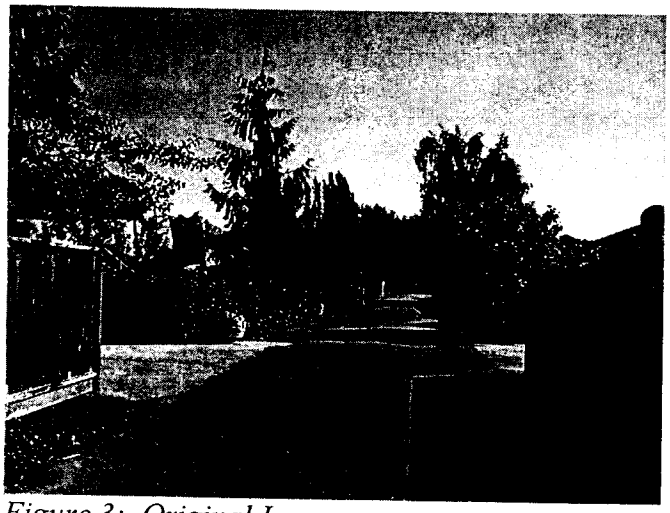

Figure 3: Original Lane

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.

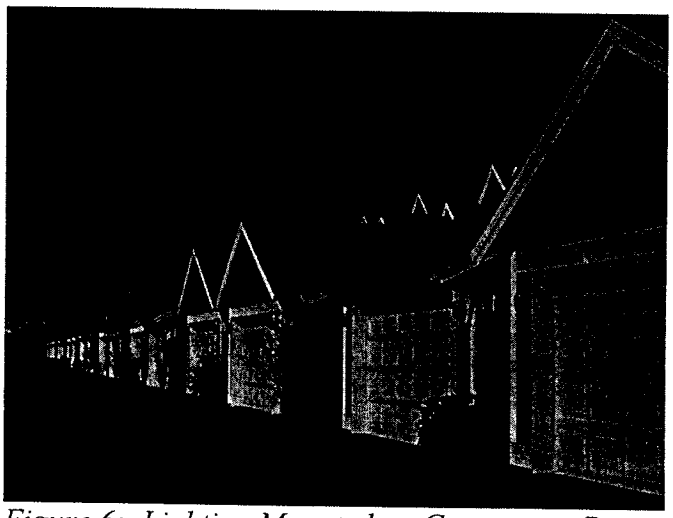

Figure 6: Lighting Mounted on Garages on Private Property

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.

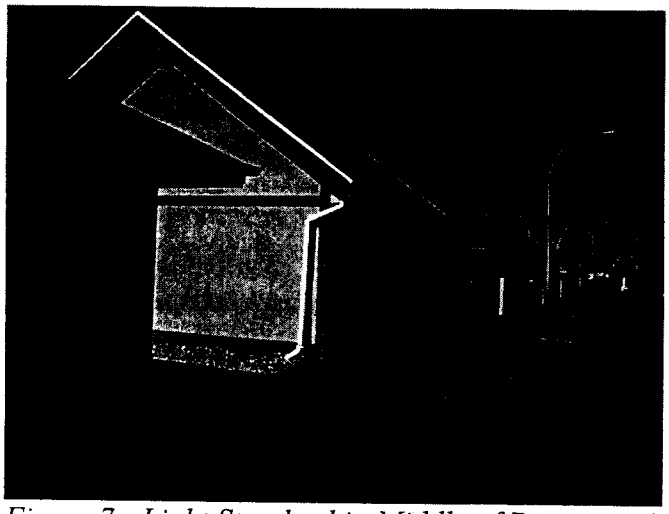

Figure 7: Light Standard in Middle of Pavement (No curbs)

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.

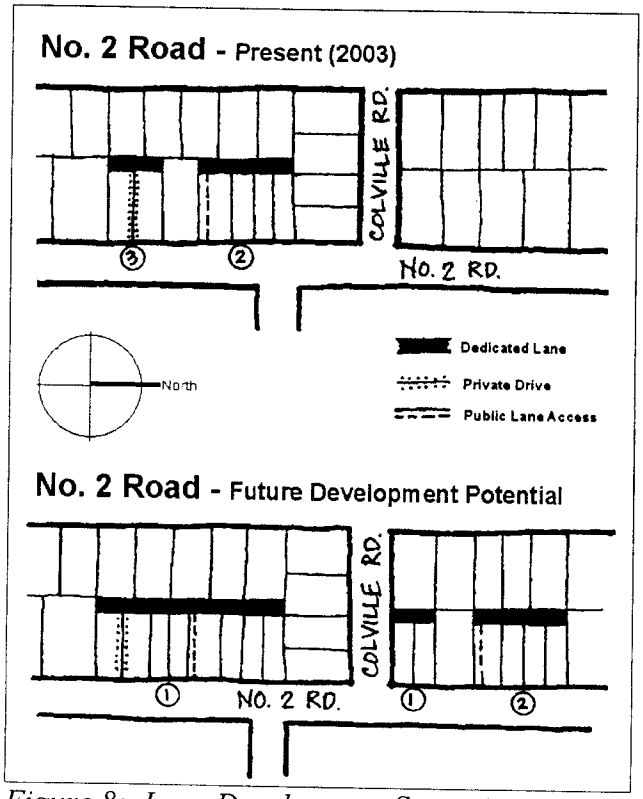

Figure 8: Lane Development Scenarios

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.

Jenny Beran, MCIP
Planner, Urban Development
JMB:jmb

City of Richmond
Urban Development Division

Memorandum

To:	Planning Committee	**Date:**	February 10, 2003
From:	David McLellan General Manager, Urban Development	**File:**	6360-07

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

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RICHMOND
Island City, by Nature