

ENVIRONMENTAL IMPACT STATEMENT

6.0 Introduction

This Environmental Impact Statement (EIS) will demonstrate that the proposed development will have no negative impact on the values or ecological functions for the Rideau River corridor. The report has been prepared in accordance with the City of Ottawa EIS Guidelines, and has received the professional input from several specialized consultants.

In addition to fulfilling the EIS requirements, the documentation also serves to satisfy the requirements of the Official Plan policy and the Rideau Valley Conservation Authority with respect to establishing a reduced setback from the water's edge.

Section 4.7.3 (Erosion Prevention and Protection of Surface Water) of the Official Plan establishes minimum setbacks for development from the water's edge, top of embankment and high floodplain contour. It also states that where an exception to these setbacks is requested, the City in consultation with the Conservation Authority will consider alternate setbacks where development is proposed:

- On existing lots where, due to historical development in the area, it is unreasonable to demand or impossible to achieve minimum setback distances because of the size or location of the lot, approved or existing use on the lot, or other physical constraint.

The Policies further state that a request for alternate setbacks must be supported by a study that addresses the following:

- a. Slope of the bank and geotechnical considerations related to unstable slopes, as addressed in Council's Slope Stability Guidelines for Development Applications in the City of Ottawa 2004;
- b. Natural vegetation and the ecological function of the setback area;
- c. The nature of the abutting water body, including the presence of a floodplain;
- d. The need to demonstrate that there will be no negative impacts on adjacent fish habitat.

This study will demonstrate that a reduced setback is appropriate for the subject site.

6.1 Property Identification

6.1.1 Property Owner Name:

Claridge Residential Inc. (referred to herein as Claridge Homes)

6.1.2 Municipal Address of Property:

101 Wurtemberg Street, Ottawa, Ontario

6.1.3 Lot, Concession and Township:

Part of Lot 6, Plan 43586 and Part of Clarence Street (Closed Bylaw 149-55)

6.1.4 Property Identifier Number (PIN):

042360362

6.1.5 Mailing Address:

210 Gladstone Avenue, Ottawa, Ontario K2P 0Y6 Phone 613-233-6030

6.1.6 Land Use Designation in Official Plan:

General Urban Area

6.1.7 Zoning:

R5C [926] F(2.5)

6.1.8 Existing Use:

Single dwelling, unoccupied, ready for demolition

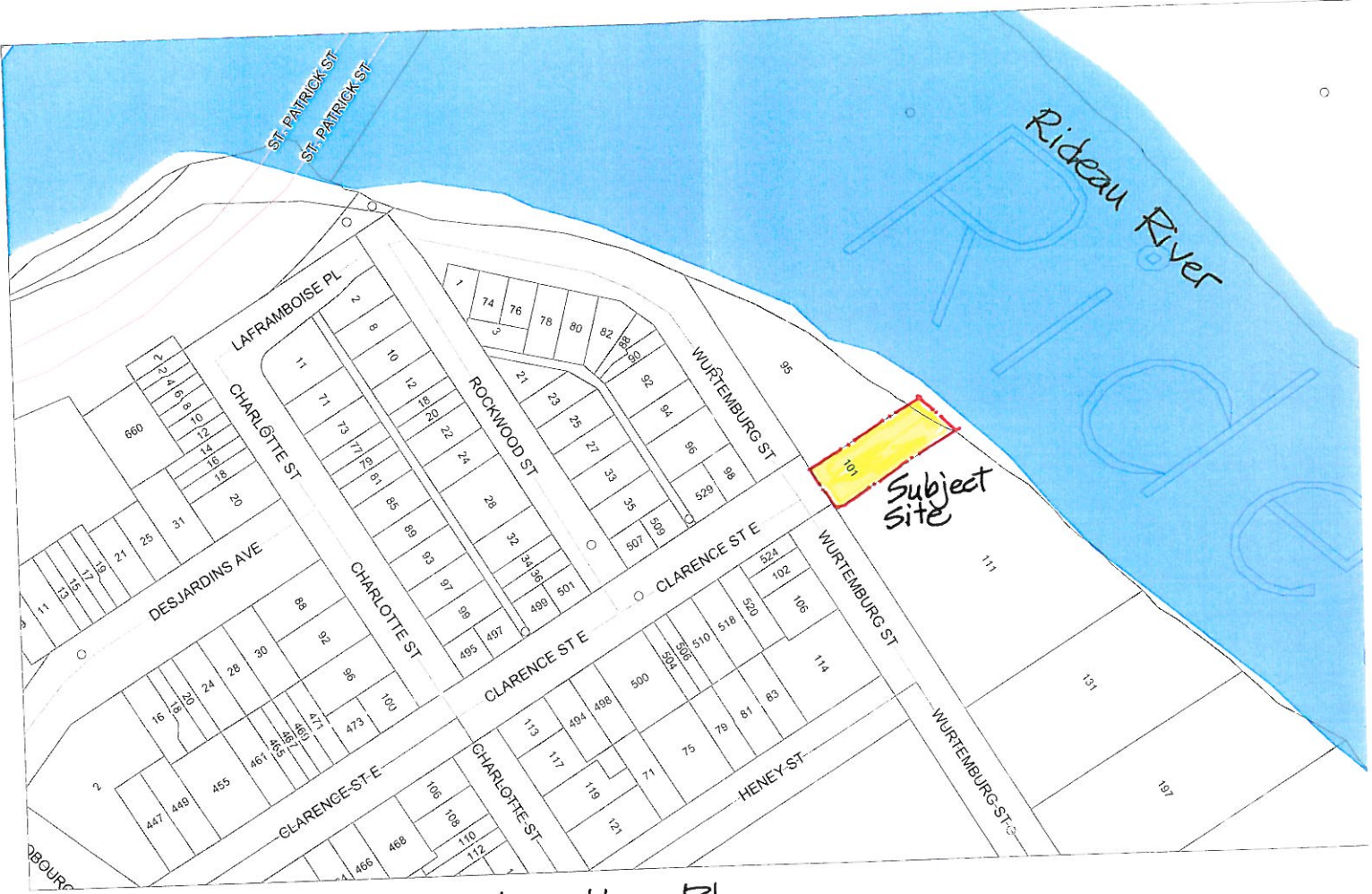
6.1.9 History of Development Applications:

In 1990, Site Plan Approval for a 13 storey apartment building with rear terrace and pool – not constructed due to market conditions.

In 1998, Committee of Adjustment Approval for reduced side yard setbacks and minimum lot width relief for 13 storey apartment building – not constructed due to market conditions.

Current applications for Site Plan Control and Zoning Amendment

Ottawa



Location Plan

SCALE 1 : 1,507



6.2 Description of Site and the Natural Environment

6.2.1 General Map of the Natural Environment

The subject property is located on the east side of Wurtemberg Street, at the intersection of Clarence and Wurtemberg Streets in Ottawa. The site is 16.6 metres in width and approximately 46 metres deep, and backs onto the Rideau River.

The front section of the property is occupied by the abandoned residence and driveway which are very close to the street (i.e. only 1.5 metre front setback). The grade falls from the south to the north, following the gradient of Wurtemberg Street (photo 1). At the rear of the building is a flat section of yard, where a former swimming pool has been filled in (photo 2), before the property drops steeply toward the Rideau River. At the top of the slope is a chain link fence that prevents access onto the slope. Access is possible, however, from the property to the south where there is no fence at the crest of the slope (photo 5). The slope is vegetated with very low quality trees, while the ground is mostly bare clay with evidence of mixed-in fill. The slope is very steep and treacherous to walk on, as the soil is easily displaced (photo 3).

The property is an existing lot in an established urban setting, with a very large 12 storey apartment building immediately adjacent on the south side (setback 0.3 metres south of the property line), and a 3 storey embassy building on the north side. Both adjacent buildings have rear yard walkout conditions. To the south of the subject site the height of the embankment is about 1.2 metres lower than the subject site, and to the north, the height of the embankment is about 6 metres lower than the subject site.

The surrounding area has likely been urbanized for almost a century.

6.2.2 Landforms, Soils and Geology

The predominant landform feature of the property is the steep slope that rises steeply from the shore of the river, with a gradient of about forty-five degrees to the horizontal. Golder Associates Ltd. (Golder) was retained by Claridge Homes to carry out a slope stability assessment for the property and to provide geotechnical information and advice for the proposed redevelopment of the site. The Golder report "Slope Stability Assessment – 101 Wurtemberg Street" is attached as Appendix 1, and forms part of this report.

Golder summarizes the subsurface conditions for the property as follows:

The subsurface conditions encountered in the borehole put down for the previous Golder investigation and in the relevant boreholes put down for the previous McRostie investigations are shown on the borehole records in Appendix A.

In general, the subsurface conditions on this site consist of (in sequence):

- *Up to about 3 metres of fill material (but likely less than 1 metre in the table land area closest to the slope).*
- *About 7 to 10 metres of silty clay, of which the upper portion has been weathered to a stiff crust. About the bottom 6 metres are unweathered and have a firm to stiff consistency.*
- *About 2 to 5 metres of compact to dense fine sand (fine and silty sand).*
- *Glacial till extending to about 28 metres depth (but likely thickening from south to north).*
- *Shale bedrock*

The groundwater level in the sand layer has been measured at about river level, such that the sand layer appears to be under-draining the overlying clay layer which forms most of the slope.

Slope Stability Assessment

Golder's report states:

The slope down to the Rideau River at 101 Wurtemberg Street is approximately 12 metres high and is inclined at just slightly flatter than 1H:1V (horizontal:vertical). Limit equilibrium slope stability analyses were carried out to assess the stability of the existing slope.

For static loading conditions, the results of the stability analyses indicate that the existing slope generally has a factor of safety of about 1.0 and is therefore unstable. It is considered that the slope has maintained its current steep geometry as a product of the advantageous effects of the under-drainage from the sand layer and the reinforcing effects of the vegetation.

These results indicate that the slope itself and about 15 metres of the rear yard area could be at risk of being affected by a slope movement.

For seismic (earthquake) loading ... these analyses indicated a factor of safety of about 0.8, which is less than the desired value of 1.1. However the potential failure surfaces with factors of safety less than 1.1 are all confined to the lower portion of the slope face and would not jeopardize the table land area.

Static loading is therefore considered to be the critical condition, in terms of defining the Limit of Hazardous Lands for this site.

Limit of Hazard Lands

Golder has determined the Limit of Hazard Lands for the subject site in accordance with the guidelines established by the Ministry of Natural Resources and City of Ottawa. Figure 2 of the Golder report illustrates this Limit. It is clear that the Limit extends close to the front of the property near the street, beyond the location of the existing buildings to the north, and the very large apartment building to the south.

6.2.3 Surface Water, Ground Water and Fish Habitat

The site has approximately 17.3 metres of direct frontage onto the Rideau River. Claridge Homes retained G. A. Packman & Associates to review the subject property with regard to fish habitat. The report "Claridge Homes Wurtemberg Street Condominium Development Ottawa, Ontario" dated April 19, 2010 is attached as Appendix 2, and forms part of this report.

The description of the existing condition states that From Photos 12, 13, and 16, it is apparent that the shoreline has a substantial component that is comprised of broken concrete and granular material. Photos 14 and 15 show the shallow littoral zone where the substrate is comprised of silty material. Some submergent aquatic vegetation and a minor amount of large woody debris were present.

With regard to the sensitivity of fish and fish habitat, Packman states The approximately 35 square metres of shoreline and littoral zone fish habitat represents a very small element of fish habitat in comparison to adjacent shoreline habitat and the adjacent full channel of the Rideau River. It was therefore concluded that direct fish species presence and abundance sampling would not likely add to existing knowledge of fish species present in a meaningful way. The Museum of Nature has a website that presents a list of species found in a biodiversity study for the reach extending from Hogs Back to Rideau Falls.

The Packman report also establishes that the species that have been documented in this portion of the Rideau River are common species that are well adapted to a river that exists in an urban context.

6.2.4 Vegetation Cover

The existing property contains a residential dwelling, located close to the street with an asphalt driveway on the south side of the building. Minimal landscaping is present in the front yard. A rear yard area is relatively flat from the house to the top of the embankment, and is vegetated by common grass, including the area over a former in-ground swimming pool .

James B. Lennox & Associates Inc., Landscape Architect, was retained to review the existing ecology of the site. For the sloped embankment, Lennox states:

The existing vegetation is emergent plant material characteristic of fill or a heavy clay soil. The trees are 99% 200 – 400 mm caliper Manitoba Maple/ Acer negundo and erratic Norway Maple/Acer platanoides 25-50 mm in caliper. The ground plane is 99% void of ground cover and is largely exposed clay soil.

See photos 4, 6, 7, 8, 9, and 10 demonstrating general lack of ground cover and presence of small trees, many of which are growing well off of the perpendicular, and leaning toward the river.

6.2.5 Wildlife

During the site visits by the consultants, there were no reports of viewing wildlife, except common black squirrels. Given the site's highly urbanized context and very poor condition of the slope, this is not surprising. Even if the site does not appear to specifically provide habitat for wildlife, one would generally expect to have species that are readily present in the urban environment to cross the site, including migratory and resident birds, small rodents and squirrels.

6.2.6 Habitat for Species at Risk

The site does not appear to support any species at risk. The fish habitat was assessed by Packman and no species at risk were noted adjacent to the site, or in this section of the Rideau River. Lennox reviewed the tree cover and noted that it was almost exclusively Manitoba and Norway Maple, with almost no vegetation on the ground.

Muncaster Environmental Planning concludes in its EIS Species at Risk report (Appendix 4) that the habitat is not present for species at risk or of significant interest.

6.2.7 Photographs of Existing Conditions

The following photographs are provided to illustrate the existing conditions, as discussed above. The photographs were taken during site visits in September and October of 2010 by the author.



Photo 1. View of existing dwelling at 101 Wurtemberg Street (subject property).



Photo 2. View of rear yard; fence along north side, and trees at crest of slope.



Photo 3. Close-up of slope near the crest



Photo 4. View of crest of slope looking north.



Photo 5. Adjacent property to the south, at a level about 1.2 metres lower than subject site



Photo 6. Standing in rear yard of adjacent property, looking north to subject property



Photo 7. Close-up of fill on slope, and lack of vegetation at grade



Photo 8. View towards river from top of slope



Photo 9. View of slope, with low quality trees growing off perpendicular, leaning toward river



Photo 10. View at crest of slope, looking north, with tree having fallen in early October 2010.



Photo 11. View to the north of adjacent building and grade difference between front and rear of lot.



Photo 12. View of shoreline from east side of the Rideau River.



Photo 13. View of rear yard to the north, about 6 metres lower in elevation than subject site.

6.3 Description of Proposed Project

6.3.1 Overall Description

The proposed project consists of a complete redevelopment of the site. The existing house will be demolished, and a new 18 storey residential apartment building will be constructed with multiple basement levels, for the underground parking. There will be a total of 68 new apartments, which will be sold as condominium units. As part of the excavation for the building's basement, the unstable slope will be removed and reconstructed as a reinforced Mechanically Stabilized Earth (MSE) system.

6.3.2 Details of site preparation

The crest of the slope will be lowered from its current level to a new elevation about 6 metres lower, such that the new slope will be about half of its current height. Even with the improved slope geometry, it is necessary to reinforce and stabilize the reconstructed slope to secure the adequate factors of safety. Most of the material from the excavation will be removed from the site, as it is anticipated that the existing fill will be unsuitable for re-use. As the excavation will be the entire width of the lot, the north and south excavation limits will require shoring adjacent to the existing neighboring buildings and yards. The construction of the new stabilized slope will be done in accordance with the details and specifications of the MSE system manufacturer and geotechnical engineer. It is expected that the MSE system will commence about half a metre above the level of the Rideau River, and the slope would be built up with 0.5 metre thick wrapped soil sections with intermediary primary reinforcing geogrid layers. Typically, the primary geogrid layers extend from the face of the slope back to a distance about 80 to 100% of the slope height. The face of the slope would also be wrapped in an erosion blanket, in order to retain the reinforced soil. The outermost layer of soil would consist of topsoil to promote the re-vegetation, while the inner soils would typically be compacted granular backfill. (Golder)

The grade elevation of the Rideau River is normally at 54.7 m ASL and the 100 year floodplain limit is at the 56.42 m ASL contour for this reach of the river. The reconstructed slope will extend from approximately the 55.2 m contour to about 60.5 m to 61.5 m ASL, pending the final design. There is an opportunity to increase the height safely, however the small flat area between the top of the new slope and the basement wall would decrease, and the landscaping materials would be impacted. For example, there is an opportunity to plant larger specimens in the flatter area at the top of the slope (and provide an effective visual buffer for the views from the river), whereas if the steep slope carried up further, the types and sizes of planting would be reduced.

Sediment and erosion controls will be implemented during construction to minimize and avoid the deposit of sediment into the Rideau River. These measures will be inspected regularly and maintained until such time as slope stabilization and re-vegetation are complete. (Packman)

The area affected by the rip-rap along the shore and into the Rideau River will be minimized through the engineering design. (Packman)

Overhanging vegetation will be included in the design and planted during project implementation to provide shade, cover, and a source of allochthonous food supply. (Packman)

The toe of the slope will be designed to provide fish habitat structure and diversity to more than offset any potential loss in fish habitat productive capacity. (Packman)

6.3.3 Construction

The 13 storey apartment building will be a reinforced concrete structure with either deep foundations that extend to the bedrock or a reinforced raft foundation. The construction of the building will utilize conventional construction techniques. Extra care will be taken to ensure that the reconstructed slope is not adversely affected during the construction, either by over-stressing or over-burdening of the reinforcing grid system, or by errant debris and excessive surface runoff.

Landscaping

As indicated above, the face of the reconstructed slope will use topsoil as a medium to support the re-vegetation of the slope, which is desirable for aesthetic, as well as ecological functions. The existing low quality vegetation will be removed as part of the slope excavation. In order to enhance and rehabilitate the ecological buffer, the new slope will be planted with native species of local provenance, in accordance with the Landscape Architect's direction.

6.3.4 Intended use of property

The property will be changed from its current (unoccupied) low density residential use to a high density residential use. Specifically, a standard condominium will be formed with the 68 apartment units.

6.3.5 Permits Required

The regulatory approvals that are required for this development include the zoning amendment and site plan control approval, which includes the infrastructure approval from the City of Ottawa, as well as the Building Permit. Also required will be a permit from the Rideau Valley Conservation Authority for *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*.

6.3.6 Concept, site plan, plans and elevation, section

See Section 2.0 Proposed Development.