



Corporate Report

NO: R155

COUNCIL DATE: July 28, 2008

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **July 28, 2008**

FROM: **General Manager, Planning and Development** FILE: **6520-20**
General Manager, Engineering (Grandview Heights)

SUBJECT: **Neighbourhood Concept Plan for Area 5A in Grandview Heights**

RECOMMENDATION

It is recommended that Council:

1. Receive this report as information;
2. Authorize staff to proceed with the preparation of a Neighbourhood Concept Plan (NCP) for Grandview Heights Area #5a, based on the Terms of Reference attached to this report as Appendix I.

INTENT

The purpose of this report is to:

- Update Council with regard to the status of environmental work, marketing assessment and information gathering being undertaken for the Neighbourhood Concept Plan (NCP) process related to Grandview Heights neighbourhoods #3, #4, #5 and #5a in tandem with the place making exercise for Grandview Heights; and
- Obtain Council's authorization to proceed with the preparation of a Neighbourhood Concept Plan (NCP) for Grandview Heights Area #5a, which includes the land bounded by 164 Street and 168 Street, and by 24 Avenue and 26 Avenue. Area #5a contains approximately 30 hectares (74 acres) of land and consists of 53 individual properties.

BACKGROUND

In June 2005, Council adopted the Grandview Heights General Land Use Plan as a document to "provide an overall planning framework that will guide the servicing, development and build-out of Grandview Heights as a comprehensively planned

community". The General Land Use Plan identified five neighbourhoods for the development of more detailed NCPs, as shown on the map attached as Attachment "A" of Appendix I to this report. The completion and Council approval of more detailed NCPs for each of these areas is required before servicing and development can proceed.

On July 24, 2006, Council received Corporate Report No. L008, outlining the recommended next steps for the Grandview Heights planning process, specifically the new NCP areas within the Grandview Heights community.

At the time of the development of the Grandview Heights General Land Use Plan, it was anticipated that development would generally proceed from west to east, with the NCPs for Areas #1 (Morgan Heights) and #2 (Sunnyside Heights) being completed before proceeding with other NCPs within Grandview Heights. This phasing reflects the incremental extension of engineering services and responded to the concerns of residents at the western edge of Grandview Heights, most impacted by major commercial and industrial development in the adjacent Highway 99 Corridor Plan area. This development includes Grandview Corners, a commercial development comprising up to 93,000 square metres (1,000,000 square feet) of commercial space and Morgan Crossing, a mixed-use development with 40,000 square metres (430,000 square feet) of commercial space and 457 dwelling units. These developments have been approved and are currently under construction.

The current status of the NCP areas within Grandview Heights is described below.

Plans Completed or Underway

Grandview Heights NCP #1 (Morgan Heights)

Morgan Heights (Grandview Heights NCP #1), was approved by Council in November 2005. Subsequent to approval, development has proceeded at a rapid pace, with approximately 1,340 units approved and/or under construction. In-stream applications at this time include four projects, totaling approximately 146 dwelling units. The total number of units anticipated at build-out is in the range of approximately 2,350 units.

Grandview Heights NCP #2 (Sunnyside Heights)

Planning for NCP #2 began in September 2005 at which time a Citizens' Advisory Committee (CAC) was formed to guide the development of the plan. The CAC has met with the City on an almost monthly basis and has been involved in all aspects of developing the plan. The Stage 1 Plan was approved by Council in July 2007, and anticipates that the build-out could range from 2,700 up to 4,200 units. Currently, staff is working with a consultant, Urban Systems, in completing the NCP #2, Stage 2 studies, with the completed NCP scheduled to be forwarded to Council for consideration by the end of 2008.

Other NCPs in Grandview Heights

Subsequent to the adoption of the Grandview Heights General Land Use Plan, the City received petitions on behalf of landowners in Areas #3, #4 and in a sub-area of Area #5, referred to as area #5a (see map attached as Attachment "A" to Appendix I), all requesting to proceed with NCP processes.

In response to these requests, on July 24, 2006, Council received Corporate Report No. L008 outlining possible directions and options for the timing of future NCPs in Grandview Heights and passed the following resolutions:

"That Council:

2. *Direct staff to bring forward a Terms of Reference for the preparation of an NCP for each of:*

- (a) *Grandview Heights Area #3 (as illustrated on Appendix I); and*

- (b) *Grandview Heights Sub-Area #5(a) (as illustrated on Appendix I);*

with these NCP processes commencing following approval by Council of the completed Stage I component of the Grandview Heights Area #2 NCP;

3. *Direct staff to bring forward a Terms of Reference for the preparation of an NCP for Grandview Heights Area #4, subject to the proponents agreeing to:*

- (a) *pay the costs for construction and maintenance of all interim engineering services required for opening the area to development (such costs are not eligible for DCC rebates);*

- (b) *pay to the City, all costs the City incurs in retaining consultants for studies and plan preparation work in support of preparing the subject NCP;*

- (c) *the NCP planning process commencing when the Stage I component of the NCP for Grandview Heights Area #2 has been completed and approved by Council; and*

- (d) *that condition 3(a) and 3(b) be incorporated in an agreement, prior to the commencement of the NCP process".*

With respect to Area #4, staff met with the proponents of an NCP for this area to discuss the required terms of the memorandum of understanding or agreement that is referenced in the Council resolution documented above.

With respect to Area 5a, in May 2006, Aplin & Martin Consultants Ltd. submitted a petition representing 72.2% of the owners and 90.89% of the land in Area #5a, requesting that the City proceed with an NCP planning process for this sub-area of Area #5. The

submission indicates that this area, located between 164 Street and 168 Street and 24 Avenue and 26 Avenue, can be provided with engineering services through connections to the infrastructure being constructed in conjunction with Morgan Heights (NCP #1). Area #5a may accommodate approximately 580 to 860 dwelling units. Owners in the area are currently seeking permission to proceed with an NCP process in tandem with the place-making study and information gathering process for Grandview Heights.

Council Direction of July 2007

In early summer 2007, Council and staff attended several sessions with Fred Kent and staff from Project for Public Spaces (PPS). The importance of community gathering places and "place-making" as integral components of neighbourhood planning was highlighted in these sessions.

In response to the "place-making" workshops, Council passed a further resolution on July 23, 2007, with regard to the timing and the necessary pre-requisites of undertaking work on further NCPs in Grandview Heights, as follows:

"That Council request that staff in consultation with the Projects for Public Spaces consultants (Fred Kent) revisit the Grandview Heights General Land Use Plan and related policies with a view to establishing, at the community level, a community town centre and community gathering place or places and, at the neighbourhood level, centres/gathering places within the Plan that reflect the full application of "place-making" principles at both the neighbourhood and the community level of planning and that appropriate amendments to the General Land Use Plan be brought before Council for consideration prior to commencing the planning of any further NCPs in Grandview Heights; and further

That staff, as part of the Stage 2 planning component for NCP Area #2 in Grandview and in consultation with the Projects for Public Spaces consultants (Fred Kent), establish a series of "place-making" guidelines that are to be applied to each development in that NCP at the Development Permit and/or subdivision stage and to the design of public parks and open spaces and to public facilities in that NCP; and further

That all future planning of NCPs within the City include the full application of "place-making" principles in the development of the land use plan and related urban design guidelines for the NCP area".

On February 11, 2008, Council received Corporate Report No. R017, and passed the following resolutions that Council:

"Direct staff to initiate information gathering for the Neighbourhood Concept Plan (NCP) process related to Grandview Heights neighbourhoods #3, #4, #5 and #5a in tandem with the place making exercise for Grandview Heights that is currently underway.

Endorse the process for the incorporation of place making principles into each of the new NCPs in Grandview Heights, as described in this report.

Direct staff to report back to Council, following the conclusion of the Grandview Heights place making exercise and the information gathering stage, with a recommendation on the phasing of the Stage 1 components for each of NCP areas #3, #4, #5 and #5a respectively".

Actions to Implement Council's Direction

In response to Council's direction, Madrone Environmental Services Ltd. ("Madrone") was retained to conduct an Environmental Review and Tree Evaluation Study of the remaining areas of Grandview Heights that are not yet subject to NCP processes, being Areas #3, #4, #5 and #5a. Coriolis Consulting Ltd. ("Coriolis") was retained to conduct a market assessment to determine the capacity and character of potential neighbourhood centres and commercial areas. Project for Public Spaces ("PPS") was retained to provide input into "place-making guidelines" for Grandview Heights that can be applied to each NCP, and to review and provide input into the Design Guidelines for Sunnyside Heights (NCP #2).

Madrone and Coriolis were both asked to provide preliminary findings on which parts of the study area required further study and which areas could proceed to an NCP in parallel with the information-gathering process, based on environmental conditions and "community centre" potential.

DISCUSSION

The Place-Making Process for the Grandview Heights Community

While the Grandview Heights General Land Use Plan was based on a number of "guiding principles" of good planning, and on the notion of complete neighbourhoods, it had yet to define the location and the function of the main community-level parks and amenity spaces. Also, the influence of the adjacent major commercial development at Grandview Corners had not been fully addressed in the context of the General Land Use Plan. The question of whether this major commercial centre will serve as the commercial and social "heart" of Grandview Heights, or whether a number of smaller centres will provide a focus for community life and a special identity for neighbourhoods in Grandview Heights, has not yet been fully answered.

This is the question, which was posed by Council in directing that staff revisit the Grandview Heights General Land Use Plan with a view to establishing:

- at the community level, a community town centre and community gathering place or places; and
- at the neighbourhood level, centres and gathering places that reflect the full application of "place-making" principles.

Staff intend to undertake this work, in consultation with the City's consultants, area residents and other stakeholders, and to bring back recommendations for amendments to the General Land Use Plan for Council's consideration.

Two important pieces of work were necessary, prior to proceeding with the final place making exercise. These are:

1. **More detailed information on the Natural Environment and Tree Inventory of Grandview Heights**

An initial environmental overview was undertaken at the time of the initial Grandview Heights General Land Use Plan. However, in order to effectively undertake a place-making exercise for Grandview Heights that will maximize the protection and enhancement of significant trees and natural features, it is important to complete a more detailed assessment.

Madrone is conducting an environmental review and tree evaluation of those parts of the Grandview Heights area not yet subject to an NCP process and has completed an initial, high-level scan, in order to identify which areas require a greater degree of assessment, based on environmental conditions.

2. **A more detailed Market Assessment of the Grandview Heights Area to determine key place-making building blocks – Civic and Commercial Centres**

A number of elements will prove to be crucial building blocks for place-making in Grandview Heights. These are:

- Civic facilities, such as parks, recreation and community centres, libraries, schools and other neighbourhood and community amenities; and
- Retail stores, restaurants, offices and other services that serve as foci for community activities.

Using these public open spaces, amenities, civic facilities and commercial spaces to create neighbourhood centres provides a community with a sense of place, convenient shopping, and a place to meet and socialize, making neighbourhoods more liveable and sustainable.

Coriolis is conducting a market assessment to determine the capacity and character of potential neighbourhood centres and commercial areas, and to provide advice on optimal locations for these centres in Grandview Heights. This work will provide a context for the development of place-making policies and plans. A key consideration is that, due to the large-scale commercial developments adjacent to Grandview Heights, any new commercial centres must be carefully located and designed to maximize their commercial and place-making potential, in conjunction with parks, plazas and other civic facilities.

NCP Planning Process

It is recognized, given the market demands in South Surrey, that there should be a steady flow of new neighbourhoods coming "on-stream" over a period of time.

Based on preliminary environmental findings by Madrone, a preliminary market assessment by Coriolis, and a preliminary "place-making" scan by PPS, it has been determined that Area #5a could proceed to Stage 1 of an NCP process in tandem with the completion of environmental and market assessments and the "place-making" exercise, as set out in the Terms of Reference attached as Appendix I to this report. Staff further recommend that NCPs proceed for Areas #3 and #4 following the conclusion of these studies.

This recommendation is based on the following:

- Madrone's initial scan indicates that Area #5a does not contain Class A or Class B watercourses, riparian areas or other significant habitat complexes, whereas Areas #3 and #4 contain more complex and potentially sensitive ecosystems that require a greater degree of assessment;
- Sufficiently detailed drainage plans have been completed for the watersheds draining Area #5a, whereas this is not the case with Areas #3 and #4;
- Coriolis notes that the proximity of Area #5a to the commercial core of Grandview Corners/Morgan Crossing, and to the neighbourhood plaza and commercial area proposed in Sunnyside Heights (NCP #2), reduces the need for, and viability of, commercial areas in Area #5a, with the possible exception of a neighbourhood centre at 24 Avenue and 168 Street, adjacent to a similar centre in NCP #2;
- Unlike NCP Areas #3 and #4 to the east and south, Area #5a can be readily serviced by extending water and sanitary infrastructure constructed to serve Morgan Heights (NCP #1) and the North Grandview Heights NCP;
- Area #5a is contiguous with Morgan Heights (NCP #1), North Grandview Heights (under development) and Sunnyside Heights (NCP almost complete);
- Staging urban development from west to east in Grandview Heights provides a logical, urban development pattern; and
- Area #5a is a relatively small area with a high level of resident support for proceeding with an NCP.

The NCP Process

The Terms of Reference for the NCP for Area #5a is attached as Appendix I to this report.

Stage 1 of the NCP process for Area #5a will establish and identify, among other things, the location of various land uses, alignment of roads and lanes, development densities, potential subdivision patterns, and the location of neighbourhood parks, walkways and open spaces. The plan will be developed in consultation with a CAC, representing the interests of the local community.

Following Council's approval of the Stage 1 Plan, Stage 2 of the NCP process will commence. Stage 2 will establish:

- design and development guidelines for the public realm and private developments, based upon "place-making" principles;
- guidelines for the interface between this NCP area and adjacent areas, including Morgan Heights (NCP # 1), Sunnyside Heights (NCP # 2), and Area #5;
- detailed storm drainage, sanitary, water and transportation servicing strategies;
- financing strategy, along with the calculation of amenity charges to support public amenities; and
- the potential timing of development within this NCP area given that it is located within a servicing catchment area with no built infrastructure.

Upon Council's approval of the Terms of Reference, the formal public consultation process will commence as staff resources become available. This may not occur until later this summer, and may also involve the engagement of consulting services to assist City staff.

CONCLUSION

It is recommended that Council receive this update on work in Grandview Heights as information and authorize staff to proceed with an NCP planning process for Grandview Heights Area #5a, based on the Terms of Reference attached to this report.

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General Manager
Planning and Development

Vincent Lalonde, P.Eng.
General Manger, Engineering

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Attachments:

Appendix I Proposed Terms of Reference for the Grandview Heights Neighbourhood #5a –
Neighbourhood Concept Plan

TERMS OF REFERENCE
Planning and Public Consultation Process
Grandview Heights Area #5a Neighbourhood Concept Plan

Introduction

The Official Community Plan (the "OCP") sets out broad objectives and policies to guide growth and development within the City. The General Land Use Plan for Grandview Heights illustrates, in broad terms, the general land use pattern, including residential, commercial, work place, institutional and other land uses at densities appropriate to meet the overall objectives of the City, while taking into account community input. It also illustrates the main transportation routes, highway access points, the general location of parks, schools and major greenways, natural spaces, the community structure and a general approach to providing engineering services in the area. The General Land Use Plan forms the foundation for the preparation of Neighbourhood Concept Plans ("NCPs") for future neighbourhoods in the Grandview Heights area. There are five (5) NCP areas proposed for Grandview Heights. One of these NCP areas has been sub-divided, creating a further neighbourhood labelled Area #5a. This area is the subject of these Terms of Reference (see Appendix II).

NCPs detail more precisely, on a lot-by-lot basis, land uses and densities, the transportation network, as well as requirements for engineering servicing, amenities and a financing strategy, based on the principle of "development pays." NCPs provide the basis for reviewing and approving rezoning and development applications in the area.

Purpose

These Terms of Reference set out the parameters for undertaking a planning and public consultation process for the preparation of an NCP for Area #5a in the Grandview Heights area of Surrey. They set the context, provide guidelines for preparing the NCP, define the study area, outline the content of the NCP (Stage I and Stage II) and set the approximate timeframe for preparing the plan.

The Neighbourhood Concept Plan Area

The plan area, known as Grandview Heights Area #5a, includes approximately 30 hectares (74 acres) of land, as illustrated on the map attached as Appendix IA. The NCP area is a rectangular area generally bounded by the 164 Street to the west, 24 Avenue to the south, 168 Street to the east and 26 Avenue to the north. There are about 53 individual properties in the NCP area.

Some Issues in the NCP Area

This NCP planning exercise will establish, among other things, the land use concept for the area, density of development, design guidelines for public places and private developments and for overall neighbourhood character, alignment of roads and lanes, location of various land uses, environmental or local heritage features to be protected and enhanced, subdivision patterns, and the proposed location of parks, walkways and open spaces.

Through the planning process associated with the General Land Use Plan, several issues were raised regarding interface conditions and densities within this NCP Area. As part of the NCP

process, therefore, the following issues will need to be addressed which may or may not result in some minor amendments to the General Land Use Plan. These issues are:

- The interface between this NCP area and future development in the adjacent North Grandview Heights area to the north, Sunnyside Heights (NCP #2) to the south and the suburban area in Area #5 to the east;
- A detailed engineering servicing and financing strategy, along with the calculation of amenity charges;
- Potential for a neighbourhood commercial centre or gathering place within the neighbourhood;
- The potential for park space and other potential civic amenities in the neighbourhood; and
- The potential timing of development within this NCP area given that it is located within a servicing catchment area with no built infrastructure.

The Official Community Plan

The entire NCP area is designated "Suburban" in Surrey's OCP and is, for the most part, zoned RA One-Acre Residential.

NCP Preparation and Consultation Process

The planning process will commence with the establishment of a Citizens Advisory Committee or other representative committee made up of people from the NCP area. City staff will then conduct a review of the background information, and begin developing sketches and concepts. Depending on City staff resources available, consultants may undertake some of the work associated with the preparation of the NCP.

A number of background studies are underway. An environmental consultant has been retained by the City to provide an Environmental Review and Tree Evaluation of the area. A marketing consultant has been retained to ascertain the market potential for future commercial areas within Grandview Heights, including Area #5a. A "place-making" study to develop strategies to enhance the public amenity of the neighbourhood and to identify key elements to enhance the "sense of place" and character of new neighbourhoods in Grandview Heights is underway. Drainage Plans have been completed for the watersheds which drain Area #5a.

As outlined in the OCP, residential interests and the business community, along with the general public will be consulted in preparing the NCP. In addition, there will be consultation with the Grandview Heights Citizen Advisory Committee and residents/community associations from the neighbouring areas.

At least two land use options will be developed in consultation with City staff. These options will be reviewed with the property owners in the area, as well as with other stakeholders. Public information meeting(s) will be held to discuss the proposed NCP with and to receive input from the public.

Attachment B lists the tasks and steps in the proposed NCP process. Infrastructure and engineering servicing planning, as detailed in Attachment C, will be an integral part of the process, as will extensive public consultation through committees, workshops, meetings, open houses and focus groups. At milestones in the planning process, public meetings will be held and update reports will be provided to City Council.

The NCP process will entail two stages. Specifically, staff will report to Council with a Stage I Report once there is agreement on a general Land Use Concept that can be supported through preliminary planning, engineering, environmental and other work. Once Council is satisfied with the general Land Use Concept as outlined in Stage I, the final detailed engineering and financial strategies can be detailed and finalized in the Stage II report, which is the Final NCP Report.

NCP Content

The final NCP will contain the elements specified in Part 5: Secondary Plans of the OCP (see below). The NCP will include a physical plan for land uses, known as the Land Use Concept Plan and facilities, amenities, engineering servicing and financing strategies for the provision of services to and for the neighbourhood.

The NCP will be undertaken in two stages. The content and level of detail required for the Stage I and Stage II reports is set out in the following table:

ITEM	LEVEL OF DETAIL FOR STAGE I:	LEVEL OF DETAIL FOR STAGE II
Land Use Concept – Map and draft policies	Distribution of uses and densities, projected population/commercial and other land area, reflecting items listed below	Finalized concept and population analysis
Location of Schools, Parks, Walkways and Greenways	Recommended sites for schools and parks to satisfaction of School District and Parks planning staff	Confirmation of sites, design details for walkways, greenways, implementation strategy
Design Guidelines	Preliminary design and place-making concepts	Detailed design and place-making guidelines.
Transportation	Proposed road layout, hierarchy of roads, preliminary indication of impact on transportation system to satisfaction of Engineering staff	Finalized transportation plan and impact assessment
Stormwater Management	Proposed Stormwater Management Plan within watershed context (or existing Master Drainage Plans) and corresponding impact mitigation strategies to the satisfaction of Engineering staff	Conceptual sizing of neighbourhood stormwater management facilities (including ponds, trunks, etc.) and associated financial analysis, coordinated with environmental analysis
Water, sewer	Confirmation of connectivity to Surrey System, preliminary servicing strategy and indication of capacity and impact on surrounding area to satisfaction of Engineering staff	Completed design of water and sewer water systems, including Financials.

ITEM	LEVEL OF DETAIL FOR STAGE I:	LEVEL OF DETAIL FOR STAGE II
Environmental analysis	Site assessment, assessment of environmentally sensitive areas, coded streams, significant stands of trees	Review of plan by EAC and ERC if necessary. Integration of environmental concept into finalized plan and policies.
Heritage assessment	Overview assessment of area heritage resources	Recommendations for incorporation of heritage resources into plan
Other studies as necessary related to specific features of the NCP area or impact on adjacent areas	Completion of market evaluation	
Amenity charges		Calculation of amenity fees

The final NCP will contain the following components:

- (a) Maps and statistics describing the plan area and sub-areas;
- (b) A statement outlining the overall development concept;
- (c) Policies for the development and provision of services, amenities and facilities;
- (d) Policies and strategies reflecting requirements of the OCP policy directions;
- (e) A land use concept plan showing:
 - Proposed Land uses on each lot;
 - Park, open space and recreational uses, including greenway connections with adjacent areas;
 - The potential location of a neighbourhood school/park site;
 - Buffers, landscaped areas and edge conditions, specifically in relation to adjacent future commercial development; and
 - Other land uses supporting business activity, including day care, employee amenities, utility and communication facilities, etc.;
- (f) A transportation and circulation concept plan that provides for balanced transportation modes, including walking, bicycling, transit and automobiles;
- (g) Guidelines relating to character and urban design, CPTED, nuisance control, edge conditions, screening and buffering, environmental protection and tree protection;
- (h) An environmental impact analysis with recommendations for protection of treed areas, watercourses and areas of fisheries and wildlife habitat;
- (i) Buffering and landscaping standards to achieve appropriate interfaces and adequate separation, where applicable;
- (j) Plans and strategies for access to/from arterial roads and regional highways; and
 - A servicing and financing strategy, as set out in Appendix IC to these Terms of Reference – Engineering Terms of Reference Summary, based on the principle of "development pays" that contains:
 - A comprehensive servicing plan that includes the location, staging and standards of services, including sanitary sewer, water, drainage, roads and other utilities and methods of implementation through rezoning, subdivision and other mechanisms; and
 - A financial analysis that will demonstrate how the servicing plan will be implemented.

NCP Timeline

It is anticipated that the preparation of NCP #5a will take approximately 9 months, with expected completion in the Spring of 2009.

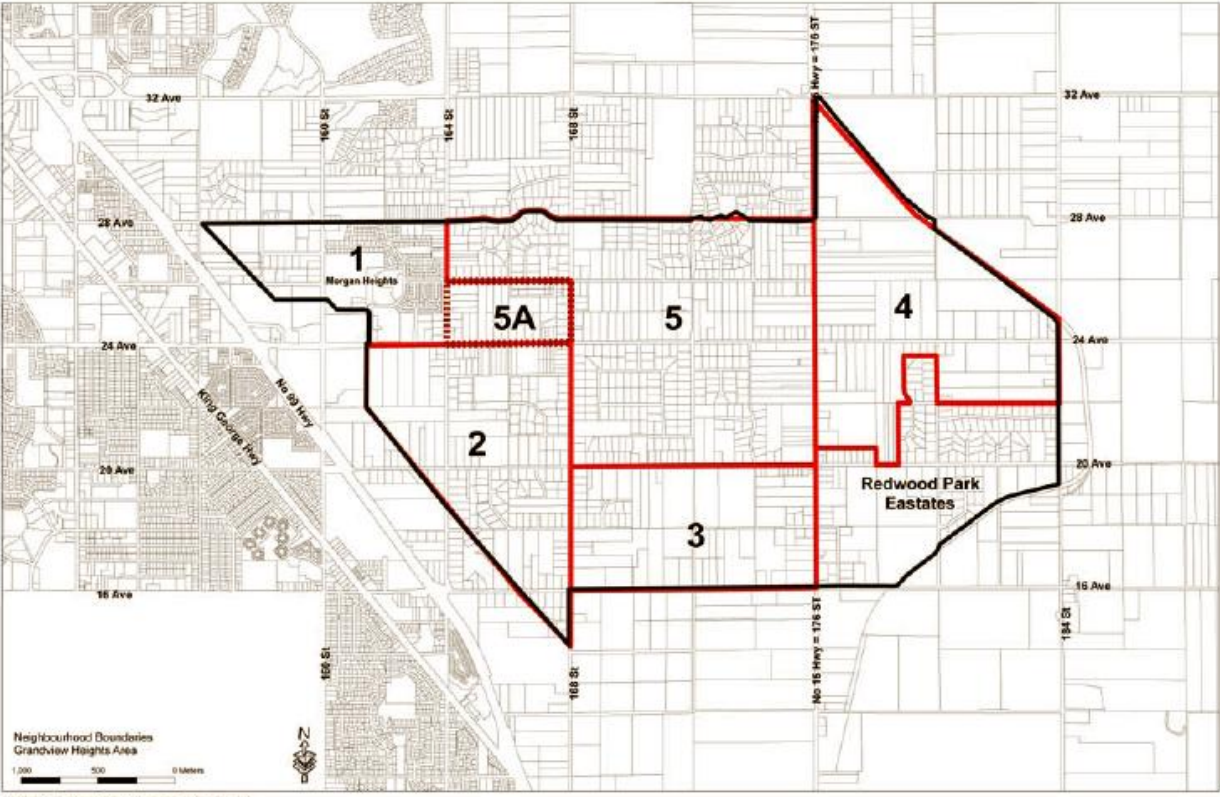
Attachments:

A - Map of the NCP Areas in Grandview Heights

B - Proposed Tasks/Steps in the Process

C - Engineering Terms of Reference Summary – Grandview Heights NCP – Area #5a

Map of NCP Areas in Grandview Heights



Proposed Tasks
NCP - Area #5a Grandview Heights

Activity/Task
1) Initiate formal planning process <ul style="list-style-type: none"> - Confirm Citizens' Advisory Committee - Collect background materials and information
2) Prepare land use concept options (at least 2 options will be reviewed) and related general servicing
3) Review land use concept options with stakeholders and public <ul style="list-style-type: none"> - Technical review - Meet with stakeholders and hold a public information meeting
4) Develop preferred land use concept <ul style="list-style-type: none"> - Review with stakeholders - Hold a public information meeting
5) Refine the preferred land use concept, based on stakeholder and public input
6) Seek Council approval for the preferred land use and development concept (Stage I Plan)
7) Prepare and finalize servicing/infrastructure, phasing and funding strategies
8) Hold a final public information meeting
9) Forward the final NCP to Council for approval

**Engineering Terms of Reference Summary
Grandview Heights Neighbourhood Concept Plan #5a**

GENERAL REQUIREMENTS

The Consultant must demonstrate how the NCP will conform to the policies and guidelines of the overall Grandview Heights General Land Use Plan, and provide details related to a general approach in providing engineering services for the area with layout, sizes and costs, sequencing, and funding strategy for the major infrastructure.

A. TRANSPORTATION

Stage 1

Most of the transportation planning and traffic review work will be undertaken in Stage 1 as the Consultant explores opportunities and constraints related to topography, land use, environment, and the interface between the NCP area and adjoining communities. The Consultant will also review and test several proposed road network options developed by the Citizens' Advisory Committee and City staff. Based on transportation modelling for these road network options and the approved Grandview Heights General Land Use Plan and Road Network Plan, the Consultant will identify the requirements for a transportation system that will support newly generated trips, transit, and the needs of pedestrians and cyclists.

The scope of the study shall include, but not be limited to:

1. Documentation of current land use and transportation plans with reference to:
 - the Grandview Heights General Land Use Plan,
 - the R-91 Road Classification map,
 - the Surrey Transportation Plan,
 - the Bicycle Plan,
 - the 10-Year Servicing Plan improvements,
 - Ministry of Transportation (MoT) Plans, and
 - TransLink Plans.
2. Analysis of the existing transportation system including road network, intersection channelization, traffic controls, traffic volumes, intersection performance (from 7:00AM to 9:00AM and 3:30PM to 6:30 PM weekdays), transit services, and pedestrian facilities.
3. Assessment of the impact of traffic generated by the commercial development at the intersection of 160 Street and 24 Avenue.
4. Forecast of future conditions for the given planning horizon based on:
 - South Surrey Sub-Area Model;
 - Population and employment projections;
 - Proposed area road network changes;

- Projected traffic volumes by clearly establishing and documenting the base traffic volumes, development volumes, and the combined traffic volumes at all intersections and major access points identified by City staff;
 - Calculated development trip generation using trip generation rates established by the Institute of Transportation Engineers (ITE) or MoT Trip Generation Manual, subject to City's discretion;
 - Distributed development trips based on the distribution of traffic either by market studies or by other documented methods;
 - Identified percentage mode split for transit, cycling, and walking trips; and
 - Assigned development trips (clearly demonstrate and document the assignment of traffic, using the existing and proposed road network).
5. For congested or complex road networks, computer modelling may be required. If computer modelling is used, the associated software, input parameters, modelling principals and assumptions (including zonal inputs) must be clearly documented.
 6. Analysis of intersection capacity using methods and procedures outlined in the Canadian Capacity Guide or the Highway Capacity Software (HCS). Analysis is to include calculations of volume/capacity ratios and Levels of Service of all intersections and major access points.
 7. Proposed future laning.
 8. Comments on sensitivity to 24 Avenue ramps and 20 Avenue overpass.
 9. Proposed Neighbourhood Road Network Functional Classification, pedestrian and bicycle facilities, and traffic calming.
 10. Evaluation of potential demand for transit and evaluate alternate road standards or "green" streets.

The outcome of the study shall include, but not be limited to, the following:

1. Functional road classifications map incorporating both the surrounding approved road network and a new development road network incorporating sustainable principles which will address:
 - equal traffic distribution through the neighbourhoods;
 - lower gas consumption;
 - shorter travel time;
 - less pollution and noise; and
 - potential for open and connected communities based on shorter distances through the neighbourhood to connect the major road network, options to connect in each travel direction, and safe and open pedestrian connections.
2. Future geometrics, including laning, channelization, and traffic control, of intersections or interchanges. If a new traffic signal is proposed, MoT signal warrant calculations shall be conducted (available from the City if necessary). If traffic signal progression is affected, before and after impacts on the traffic signal progression shall be evaluated using accepted software. If any Level of Service exceeds "D" at intersections designed to

the ultimate configuration, then reassign trips (where reasonable) to obtain a more balanced network. Where not possible, identify alternate improvements necessary to maintain a Level of Service "D". Identify all locations having a volume/capacity ratio exceeding 0.85 or 35 seconds average intersection delay. Identify all individual movements, which have a volume/capacity ratio exceeding 0.90.

3. Pedestrian and bicycle network plans.
 - Transit network including proposed bus routes.
 - Parking and traffic calming plans.
 - Commercial traffic management and control plan.
 - Safety at the major accesses (school zones, commercial areas, parks).

Stage 2

The transportation review in Stage 2 will consist of refining the selected and approved road network option in Stage 1 based on the approved land use concept. At Stage 2, the consultant will work on road cross-sections (if proposed sections are different from those approved for the Morgan Heights, and North Grandview Heights Amendment NCPs, and NCP#2), detailed parking and traffic calming plans, as well as the sidewalks, greenways, and bike network.

B. **DRAINAGE**

The Grandview Heights NCP Area #5A drains north and northwest following the natural ground contours. Most of the flow appears to be overland as there are very few identified watercourses in this small NCP area. This NCP area is within the Old Logging Ditch catchment that is tributary to the Nicomekl River. Both of these receiving watercourses are classified as fish-bearing.

Stage 1

In general, Stage 1 of the servicing study must include all servicing requirements that may have an impact on land use. Requirements such as detention facilities and other surface drainage features are strongly influenced by topography and should be incorporated in to the land use plan as early as possible. The proposed road network can also affect the layout of the proposed drainage network. All drainage and sanitary sewer routes should be chosen such that rear and side yard servicing will not occur and that all properties are to be serviced by gravity wherever possible.

Available background stormwater studies that encompass the NCP #5A area include:

1. Morgan Creek/Old Logging Ditch Master Drainage Plan. New East Consulting Services Ltd., 1996
2. Old Logging Ditch/Morgan Creek Functional Feasibility Study for Lowlands. Dillon Consulting, 2002

3. Grandview Heights #1 (Morgan Heights) Neighbourhood Concept Plan, Engineering Servicing Plan. Aplin & Martin Consultants, 2005
4. North Grandview Heights Neighbourhood Concept Plan, Engineering Servicing Plan. Aplin & Martin Consultants, 2005

Servicing plans for NCP Area #5A will include but may not be limited to:

1. Confirmation of existing and future drainage catchments.
2. Identification of downstream constraints associated with the NCP area.
3. Recommendation of mitigation measures required to deal with downstream constraints and details on how these differ from those presented in the Grandview Heights NCP Area #1 Plan and other previous drainage plans. This includes conveyance upgrades for minor and major flows, detention facilities, and low impact development best management practices.

Stage 2

Review the drainage servicing including but not limited to:

1. A preliminary layout with size and profiles of critical sections of the storm sewer to show the extent of the area that will allow construction of homes with basements based on existing and planned storm and sanitary sewer depth.
2. Identification and integration of opportunities for stormwater best management practices (BMPs) to protect the hydrologic regime of the downstream watercourses and minimize the risk of water quality degradation. This will include typical design standards and performance targets.
3. Confirmation that lowland drainage strategies currently proposed would offset all negative impacts from the development schemes proposed in the NCP. The Nicomekl River floodplain starts north of 32 Avenue. There should be no negative impact to floodplain areas due to development in the NCP area.
4. Confirmation that watercourses will not be negatively impacted by proposed land use changes with respect to channel stability and capacity.
5. Confirmation that the proposed mitigation measures can be implemented through the City's existing inspection and process.

C. WATER

The NCP area is located within the existing 142m HGL pressure zone area and can be serviced by the new pump station adjacent to the GVRD reservoir located in the 16700-block of 24 Avenue. The consultant shall provide an overall plan of the water system to service the NCP.

Stage 1

The plan shall include but not be limited to:

1. Review of the North Grandview Heights Amendment Area NCP and the Morgan Heights NCP.
2. Ensure that all water supply to this NCP is derived from the Grandview Pump Station or reservoir.

3. Coordination with land use plan to provide a utility corridor, as needed, so that all water mains are looped.

Stage 2

Review the water supply servicing including but not limited to:

1. Provide layout and size of on-site and off-site feeder mains to service this NCP and adjacent areas:
 - The on-site and off-site water mains shall be looped to provide redundancy.
 - The feeder mains shall be of adequate capacity to provide the required fire flow and domestic demand for the NCP #5A Area and other adjacent areas.
 - The feeder mains shall be designed for the ultimate build-out condition within this NCP and adjacent areas. Refer to Grandview Pump Station pre-design report and consult with City staff.
 - Provide the Maximum Day Demand and Peak Hour Demand of the study area.
2. Provide a network of water mains within the NCP to provide sufficient domestic demand and fire flow (supported with calculations) to the study area for the proposed land uses in accordance to the City's Design Criteria.
3. Provide a cost estimate, funding strategy, and phasing/sequence for this NCP.
4. Recommend, in particular, the funding strategy for the off-site feeder mains, PRVs, and off-site looped connections.
5. Recommend all practical interim supply scenario if development occurs before completion of the feeder mains that are planned in this and other NCPs.

D. SANITARY SEWER

Currently, the NCP #5A area is not serviced by the City's sanitary sewer system. Future sanitary servicing of the NCP area may connect to the neighbouring Grandview Heights NCP Area #1; however, this must be confirmed by the Consultant.

Stage 1

1. Identify downstream constraints for any sewer capacity issues.
2. Review the road layout to meet the following guideline for sewer design:
 - Avoid down-slope cul-de-sac;
 - Avoid sewer flow against ground or road grades;
 - Align servicing corridors (e.g. roads) to follow contours whenever possible;
 - Provide maintenance access for all sewer lines;
 - Provide gravity services to all properties.

Stage 2

1. Review the sanitary sewer servicing including but not limited to:
- 2.
3. Identify downstream constraints for sewer capacity issues, sewer sections having cleansing velocity issues, and any odour issues.
4. Define and depict the sewer collector system for this NCP area and within the Sewer Catchment areas including the profiles for the proposed system. All drainage and

- sanitary sewer routes should be chosen such that rear and side yard servicing will not occur and that all properties are to be serviced by gravity wherever possible.
5. Prepare sewer design calculation sheet showing the actual flow velocities, highlighting constraint sections and proposed upgrade sections. Prepare a corresponding map depicting the sewer sub-catchment areas.
 6. Identify and depict the proposed sewer and facilities upgrades within the NCP and sewer catchment areas and for all downstream constraints.
 7. Prepare preliminary cost estimates for the upgrades that qualify for DCC reimbursement.
 8. Prepare projected Sewer DCC revenue.
 9. Prepare a comprehensive cash flow for the sanitary sewer servicing.
 10. Minimize the number of individual pump connections and area to be serviced by low pressure system or individual pump connections in the whole sewer catchment.

E. **FINANCING AND STAGING**

Stage 2

A funding strategy is required to link the servicing costs with the proposed implementation plan. Preliminary cost estimates will be developed for all identified infrastructure. All Development Cost Charge (DCC) eligible infrastructure will be identified and an assessment of the financial balance sheet for the NCP will be provided. Expected DCC revenues will be estimated based on the proposed land use endorsed in Stage 1.

As is the case for most NCPs within the City of Surrey, the following principles for engineering infrastructure financing will apply:

- The DCCs collected in the NCP must balance or exceed required expenditures for the total build out of the NCP.
- The City will not fund any interim infrastructure or measures through DCCs.

The financial evaluation must take into consideration the staging of the NCP to ensure the required infrastructure can be implemented using logical phasing that will be financially viable with the DCC funding and administrative procedures. This includes DCC credits and front-ender agreements.