

# A Design Vision for Sustainable Greater Surrey by 2056

QING XU (North and East Surrey)

LIN JI (South Surrey)

XUE LIU (West Surrey)

Dec. 05, 2005

LARC 504 SUSTAINABLE URBAN DESIGN STUDIO



© 2005 TeleAtlas  
Image © 2005 DigitalGlobe

© 2005 Google

Pointer 49°06'50.57" N 122°49'24.37" W elev 190 ft

Streaming ||||| 100%

Eye alt 16.06 mi

## Greater Surrey: NEW BUILDINGS

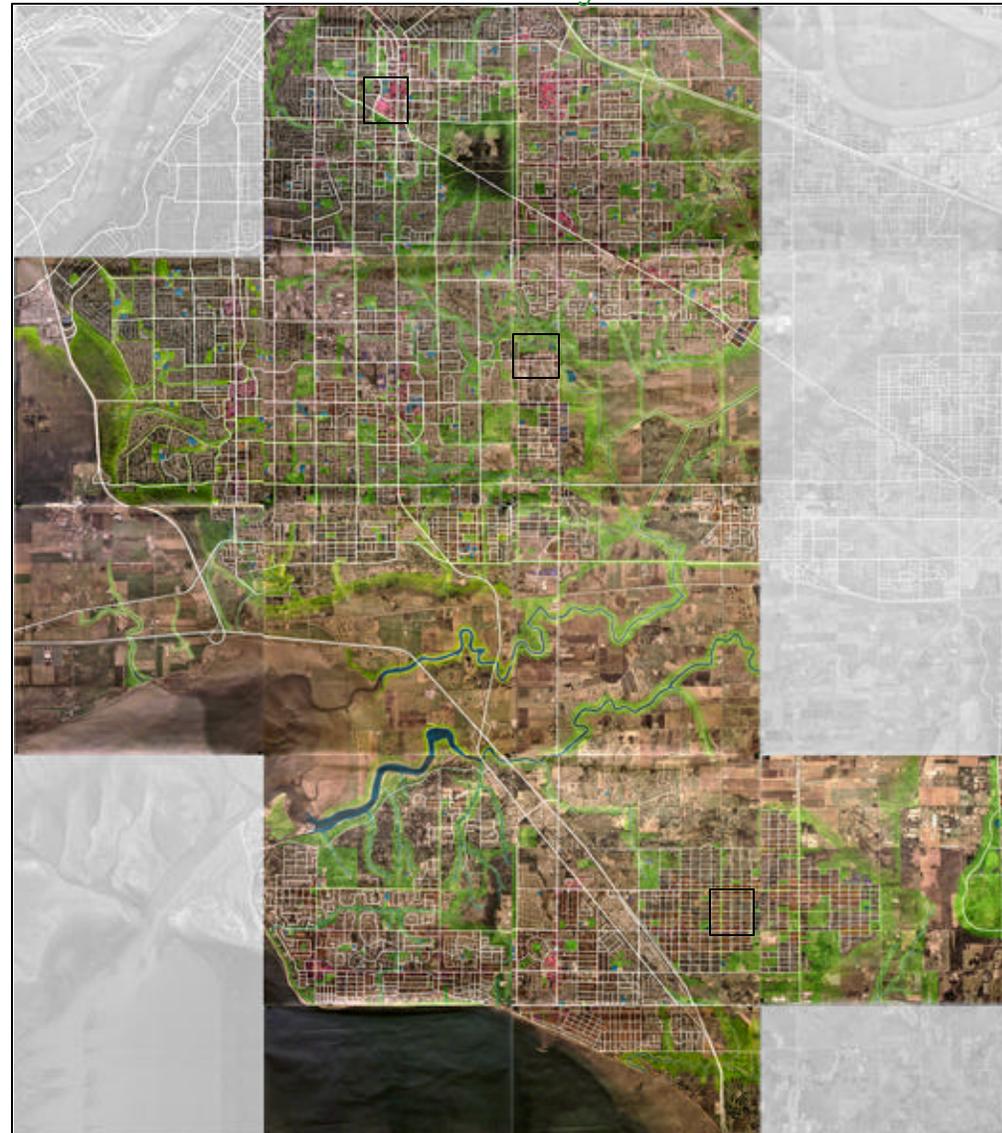
### Summary

New development aims at increasing housing by **120,000** dwelling units in order to integrate **300,000** new people into the area of Greater Surrey by **2056**. In addition, new development will bring approximately **120,000** new jobs to the area.

New development greatly supports the urban / town centers and neighborhoods in the area of Greater Surrey. Sustainable design strategies are applied to the area in the form of a well integrated and efficient transit network, an interconnected green infrastructure system, and mixed land use in walk-able neighborhoods.

In this way, Greater Surrey will stand as a more sustainable area by **2056**.

<b>Population Growth by 2056</b>	<b>302,498</b>
<b>Job Growth by 2056</b>	<b>116,003</b>
<b>Units Growth by 2056</b>	<b>116,003</b>
<b>Single-family / Duplex</b>	<b>18,305</b>
<b>Townhouse / Low rise row houses</b>	<b>73,101</b>
<b>Apartment / High rise tower</b>	<b>24,247</b>



*Greater Surrey:*

In the image above, what is demonstrated is that the new buildings mostly happens with intensifying the city/town centers and new development is well integrated with interconnected transit network. Mixed used development is carried on as sustainable character in area of new development.

## A Design for 4 Million

# Greater Surrey: NEW BUILDINGS

### Summary

New development aims at increasing housing by **120,000** dwelling units in order to integrate **300,000** new people into the area of Greater Surrey by **2056**. In addition, new development will bring approximately **120,000** new jobs to the area.

New development greatly supports the urban / town centers and neighborhoods in the area of Greater Surrey. Sustainable design strategies are applied to the area in the form of a well integrated and efficient transit network, an interconnected green infrastructure system, and mixed land use in walk-able neighborhoods.

In this way, Greater Surrey will stand as a more sustainable area by **2056**.



<b>Population Growth by 2056</b>	<b>89,959</b>
<b>Job Growth by 2056</b>	<b>35,985</b>
<b>Units Growth by 2056</b>	<b>35,985</b>
<b>Single-family / Duplex</b>	<b>760</b>
<b>Townhouse / Low rise row houses</b>	<b>19,110</b>
<b>Apartment / High rise tower</b>	<b>16,115</b>

*Surrey Center / Whalley / Guildford / Fleetwood :*

In the image above, what is demonstrated is that the new buildings mostly happens with intensifying the city/town centers and new development is well integrated with interconnected transit network. Mixed used development is carried on as sustainable character in area of new development.

## A Design for 4 Million Greater Surrey: NEW BUILDINGS

### Summary

New development aims at increasing housing by **120,000** dwelling units in order to integrate **300,000** new people into the area of Greater Surrey by **2056**. In addition, new development will bring approximately **120,000** new jobs to the area.

New development greatly supports the urban / town centers and neighborhoods in the area of Greater Surrey. Sustainable design strategies are applied to the area in the form of a well integrated and efficient transit network, an interconnected green infrastructure system, and mixed land use in walk-able neighborhoods.

In this way, Greater Surrey will stand as a more sustainable area by **2056**.

<b>Population Growth by 2056</b>	<b>67,539</b>
<b>Jobs Growth by 2056</b>	<b>27,018</b>
<b>Units Growth by 2056</b>	<b>27,018</b>
<b>Single-family/Duplex</b>	<b>2,545</b>
<b>Townhouse/low rise row houses</b>	<b>11,224</b>
<b>Apartment/High rise tower</b>	<b>6,732</b>



*North Delta / Newton / South Newton :*

In the image above, what is demonstrated is that the new buildings mostly happens with intensifying the city/town centers and new development is well integrated with interconnected transit network. Mixed used development is carried on as sustainable character in area of new development.

## A Design for 4 Million Greater Surrey: NEW BUILDINGS

### Summary

New development aims at increasing housing by **120,000** dwelling units in order to integrate **300,000** new people into the area of Greater Surrey by **2056**. In addition, new development will bring approximately **120,000** new jobs to the area.

New development greatly supports the urban / town centers and neighborhoods in the area of Greater Surrey. Sustainable design strategies are applied to the area in the form of a well integrated and efficient transit network, an interconnected green infrastructure system, and mixed land use in walk-able neighborhoods.

In this way, Greater Surrey will stand as a more sustainable area by **2056**.

<b>Population Growth by 2056</b>	<b>145,000</b>
<b>Jobs Growth by 2056</b>	<b>53,000</b>
<b>Units Growth by 2056</b>	<b>53,000</b>
<b>Single-family/Duplex</b>	<b>15,000</b>
<b>Townhouse/low rise houses</b>	<b>36,250</b>
<b>Apartment/High rise tower</b>	<b>1,400</b>



### *White Rock / South Surrey :*

In the image above, what is demonstrated is that the new buildings mostly happens with intensifying the city/town centers and new development is well integrated with interconnected transit network. Mixed used development is carried on as sustainable character in area of new development.

## A Design for 4 Million

# Greater Surrey: NEW BUILDINGS

### Neighbourhood scale solutions

#### Denser in centers

New development, featuring higher density housing and well integrated transit system, brings more opportunities for jobs and social activities into urban cores. The town centers become the most desirable places for Greater Surrey residents to live.

#### Greener at edges

Low density residential development close to green infrastructure brings "green" into urban area, while stopping "urban sprawl" into green system.

#### Green-ism urbanization

New neighborhood developments maintain all levels of sustainability. they contain small work sites, public services, schools and daily commercial centers all within walking distance. They also reserve some areas for future commercial and business development.

#### *New Greater Surrey:*

New Greater Surrey in 2056 will be featured by its active town centers, environmental friendly neighborhoods.



#### *Greener at edges:*

Single-family residential development close to green system form edge of urban and rural areas.

#### *Denser in centers:*

Higher density with mixed use along main streets brings more opportunity for job and social activities.



#### *Green-ism urbanization :*

New neighborhood is characterized by all level of sustainability .

## Greater Surrey: GREEN INFRASTRUCTURE

### District scale overview

35% of farm land are agricultural and over **6,000** acres of passive and active parks are protected in area of Greater Surrey by **2056**.

The Nickomekl and Serpentine Rivers form the arterial body of a regional watershed / stream system, with branches zigzagging into urban areas. As a result, Greater Surrey is characterized by pierced urban blocks and fingers form transitions between agricultural land and urban blocks.

Almost half of the land available for new neighborhood development in area of Greater Surrey lies among the boundary of the protected ALR land. These "build-able" upland areas are very important to the ecology and aquatic productivity of the region.

An interconnected green infrastructure system is well-established to protect collection zones (parks and open spaces) and connection zones (greenways and ecological corridors) for storm water system.

Meanwhile, the green infrastructure is well integrated into the street grid and neighborhoods, providing regional pedestrian ways and recreation spaces and preserving the natural visual character for area of Greater Surrey.



### Greater Surrey:

In the image above, what is demonstrated is that the green infrastructures in area of Greater Surrey are well protected by the interconnected green system. Meanwhile, the ecological and recreational qualities are greatly improved by green system being integrated with street networks and neighborhoods.

## A Design for 4 Million

# Greater Surrey: GREEN INFRASTRUCTURE

### Neighbourhood details

The ecological function of this interconnected green system is explained by the following strategies.

**Buffer zone protection** sets human uses back from the green infrastructure to maintain healthy conditions of stream corridors.

**Greenway/linear open-spaces protection** sets up environmentally sensitive areas where stream flows work with street system, which helps maintain storm-water conveyance and connectivity.

**Collection zone protection** preserves area where stream flows originate in "upland" school / park sites and maximize the health of receiving streams.

**Interconnected green system** layers all green infrastructures as one organic system, which includes neighborhood parks, green ways, parkways, green corridor, regional parks, agricultural lands, regional watershed.

#### *Buffer zone protected:*

Stream buffers are protected as environmental sensitive zones.



#### *Connection zone protected:*

Greenways and linear open-spaces where stream flows is carried on are protected as connection zone



#### *Collection zone protected:*

Combined school/park sites where stream flows start are protected as collection zone with social and educational functions.



#### *Interconnected green system:*

Streets and streams work together as an interconnected green system.

## Greater Surrey: JOBS CLOSE TO HOME

### District scale overview

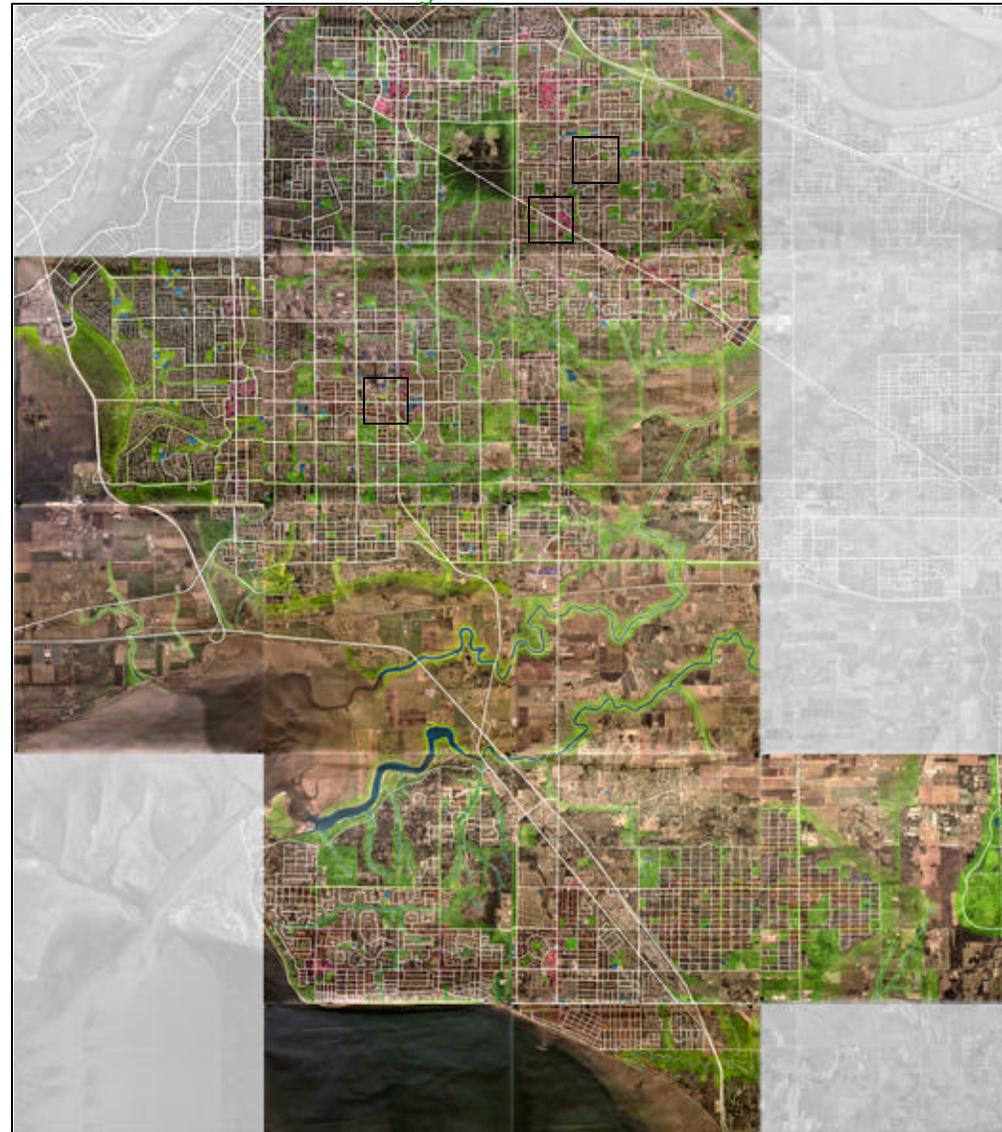
By 2056, 120,000 individuals will join the labor force in the area of Greater Surrey.

Associated with regional development strategies, economic activity and flexibility is increased to meet the 1:1 ratio of households to jobs, resulting in a variety of jobs and job locations.

New business centers are created plus existing commercial/industrial spaces are expanded so that new job sites may be located in any of these designations.

The design idea of Live/Work is to layer the work spaces close to or combined with homes in order to minimize traffic flows.

Transit oriented development layers new developments along the major transit lines and centers, thus bringing most opportunities for "**Job close to Home**" by making workplaces accessible, compatible and well-integrated into surrounding towns and neighborhoods.



Greater Surrey:

In the image above, what is demonstrated is that the transit oriented development with mixed land use and higher density helps the local commercial to be set up and enlarged with most opportunities in Live/Work. As byproduct of healthy economy cycle, more job opportunity attracts more people to live within or near the area.

## A Design for 4 Million

# Greater Surrey: JOBS CLOSE TO HOME

### Job Sites

New job sites arrangements in area of Greater Surrey adhere to the following strategies for most possibilities of Jobs Close To Home. **Job spaces combined with homes** form Live/Work units (mostly as home based offices) are commonly seen in the new development where mixed use of residential, commercial and business lands is highly supported by efficient transit system.

**Job sites within 5 minutes walking distance** to homes make trips between them convenient.

Pedestrian-oriented job sites happen in new regional commercial centers, neighborhood corner stores, schools, and community centers.

**Job sites within 5 minutes walking distance to transit system** allow minimum traffic flows between work and home, thus bringing jobs closer to people. Jobs on industrial land especially require such support from public transit system.

### Work patterns

Greater Surrey's healthy economic development is featured by the variety in its applied work patterns.



### Job sites within 5 minutes walking distance to home

Neighborhood job sites are located within walk-able areas and easy to access.

### Job sites within 5 minutes walking distance to transit system

Job sites in regional commercial / town centers always are associated with regional transit centers.



### Live/Work within neighborhoods

Housing variety and mixed land use provide most opportunities for Live/work.

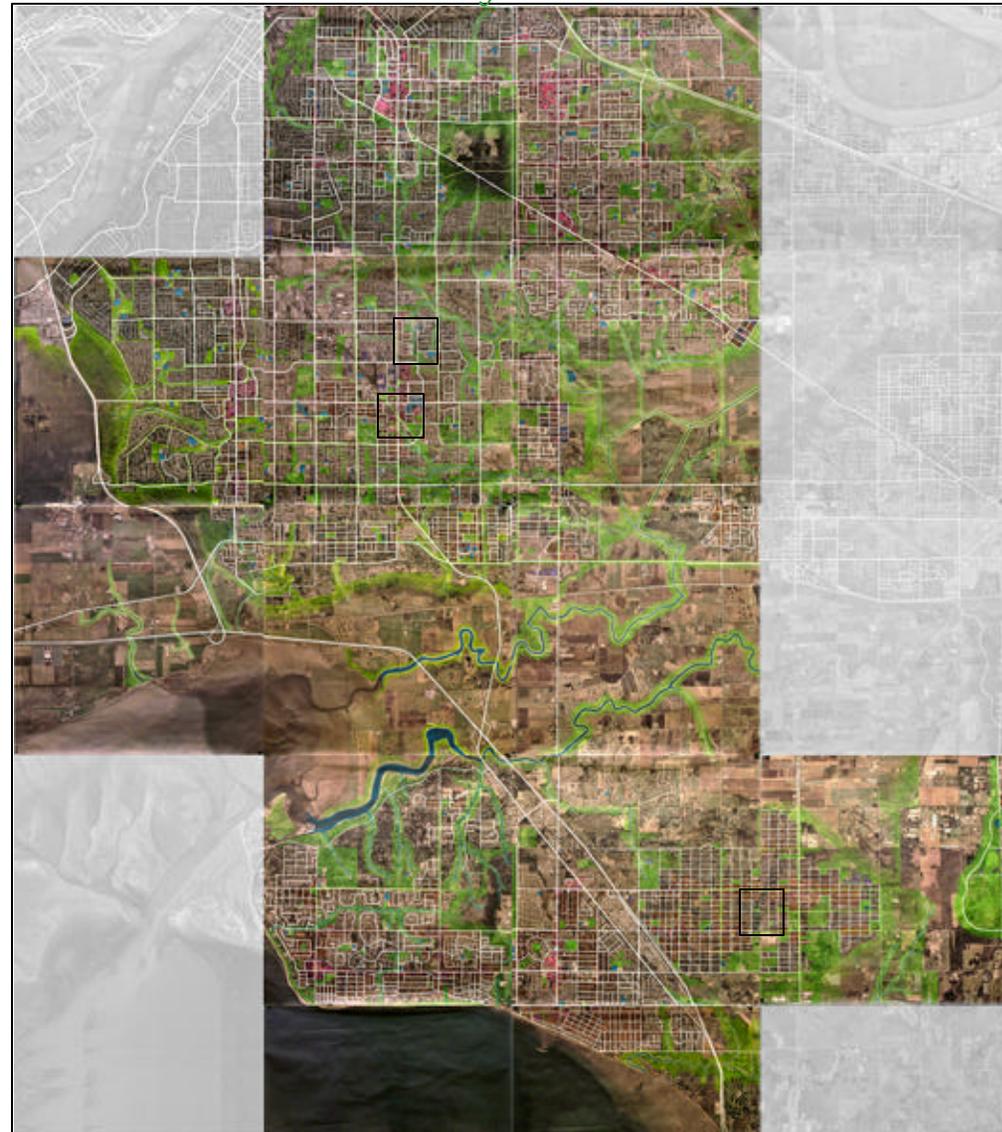
## Greater Surrey: MOVEMENT SYSTEM

### Moving around the district

The potential for sustainable movement system has been kept in area of Greater Surrey as the existing street system is organized as a 800m(half mile) grid network. The green system is integrated into the urban blocks. The transit centers are associated with the existing town centers. Meanwhile Greater Surrey has many opportunities for alternative transit modes such as the sky train, local buses and regional express lines.

The sustainable movement system for Greater Surrey in 2056 is characterized by an interconnected transit network with improved grid street system, interconnected system of green infrastructures and transit oriented development along regional "Main Streets".

By 2056, this well established system will make movement in the region faster and easier. Movement in the neighborhoods will be safer and easier, while movement in natural areas more pleasant and healthy.



### Greater Surrey:

In the image above, what is demonstrated is that the interconnected public transit system is well integrated into a larger movement system with green infrastructure system in order to encourage healthier movement activities such as less driving, more walking, cycling and bus riding.

## A Design for 4 Million

# Greater Surrey: MOVEMENT SYSTEM

### Moving around the neighborhoods

#### Improved grid street system

The existing 800 m grid streets network is broken into 200 m system in area of new development. Thus walk-able urban blocks become tangible, as moving around in the neighborhoods is easier and safer.

#### Improved transit system

The existing east-west transit lines are extended through the whole region to encourage east-west movement and social connections between regional town centers.

#### Transit oriented development

New buildings added to existing and newly created neighborhoods all feature transit-oriented development. The distance between transit lines and neighborhood corner stores in no more than 400 m to ensure a 5 minutes walking distance to transit and commercial service.

#### Sustainable movement system

The movement system layers flows of people, water, and wildlife as one throughout the whole region of Greater Surrey.

#### Interconnected street system:

The existing 800 meters grid streets network provides a well established base for sustainable movement system.



#### Transit oriented development:

"Walk-able" becomes tangible as 5 minutes walking distance is ensured to transit and commercial service from anywhere.

#### Improved transit system and grid street system:

Small blocks are brought into new development while east-west transit activities are extended through the whole region.



#### Sustainable movement system:

Greenways connect transit system, green infrastructures and neighborhood spaces for sustainable movement.