City of Langley
"The Place to Be!"

Floodplain Elevation Bylaw

Bylaw No. 2768

WHEREAS lands within the City of Langley are subject to flooding, and the City may enact a floodplain bylaw pursuant to Section 524 ~~910~~ of the *Local Government Act*;

AND WHEREAS the City of Langley considers a floodplain bylaw will help to reduce exposure to risk for new development by reducing the potential for damage to structures and property due to flooding and has considered the provincial guidelines referred to in s. 524(4) ~~910(3)~~(a) of the *Local Government Act*;

NOW THEREFORE, COUNCIL in open meeting enacts as follows:

1.0 DEFINITIONS:

Approving Officer

means the person(s) appointed to that position for the City of Langley under the Land Title Act, or that person's designate.

Building Official

means the Manager of Building and Licensing or that person's designate.

Consulting Engineer

means a Professional Engineer registered with the regulatory body under the "Professional Governance Act", SBC2018, C47.

Designated Flood Level

means the observed or calculated elevation for the Designated Flood and is used in the calculation of the Flood Construction Level.

***Flood Construction Level* (FCL)**

means the Designated Flood Level plus the allowance for freeboard and is used to establish the elevation of the underside of a wooden floor system or the top of a concrete slab for H~~h~~abitable Areas~~buildings~~. It also establishes the minimum crest level of a standard Dike. Flood Construction Level is derived from a 200-–year flood level estimate with the addition of a 0.6 m freeboard and includes climate change effect. Where the Designated Flood Level cannot be determined or where there are overriding factors, an

assessed height above the Natural Boundary of the water body or above the natural ground elevation may be used.

Floodplain

means an area which is susceptible to flooding from a watercourse, lake, or other body of water and which is designated in Section 2 of this bylaw;

Setback

means the withdrawal of a building or landfill from the Natural Boundary or other reference line to maintain a floodway and to allow for potential land erosion.

Floodproofing

means the alteration of land or structures either physically or in use to reduce or eliminate flood damage and includes the use of elevation and/or building setbacks from water bodies to maintain a floodway and to allow for potential erosion.

Habitable Area

means any room or space, with headroom greater than 1.8 meters (5.9ft.) within a building or within a structure which is or can be used for human occupancy, commercial sales, or storage of goods, possessions or equipment (including furnaces) which would be subject to damage if flooded.

Natural Boundary

means the visible high watermark of any lake, river, stream, or other body of water where the presence and action of the water are so common and usual and so long continued in all ordinary years as to mark upon the soil of the bed of the lake, river, stream, or other body of water a character distinct from that of the banks thereof, in respect to vegetation, as well as in respect to the nature of the soil itself and includes the edge of dormant side channels of any lake, river, stream, or other body of water;

Standard Dike

means a Dike built to a minimum crest elevation equal to the relevant Flood Construction Level and meeting standards of design and construction approved by the Ministry of Environment and maintained by a local government body or similar authority;

Watercourse

means any natural or man-made depression with well defined banks and a bed 0.6 metres or more below the surrounding land serving to give direction to a current of water at least six (6) months of the year or having a drainage area of 2 square kilometres or more upstream of the point of consideration.

2.0 FLOODPLAIN DESIGNATION

The following land is designated as Floodplain for the purpose of s. 524 ~~910~~ of the *Local Government Act*:

(a) Lands within the Flood Construction Level Boundary (FCL) on Schedule A – "Designated Floodplain and Flood Construction Levels for the Nicomekl River,

Murray Creek, Logan Creek, and Jeffries Brook", attached hereto and forming part of this bylaw; and

(b) Lands within the Setbacks specified in Section 3(d) ~~b~~.

3.0 FLOOD CONSTRUCTION LEVEL~~PLAIN~~ SPECIFICATIONS

The required FCLs in this bylaw are in meters above Geodetic Survey of Canada datum (Coordinate System: NAD 1983 CSRS UTM ZONE 10N, Vertical Datum: CGVD2013) for a specific parcel within the Floodplain.

Consulting Engineers must obtain Approving Officer's approval of their estimated FCLs prior to proceeding with their design works.

a) Flood Construction Levels for Nicomekl River, Murray Creek, Logan Creek, and Jeffries Brook:

~~The following elevations are specified as Flood Construction Levels for the purpose of s. 910(4)(a) of the *Local Government Act*, and where more than one Flood Construction Level is applicable in respect of a particular parcel of land, the higher elevation is specified as the Flood Construction Level:~~

Floodplain areas and Flood Construction Levels (FCLs) for the purpose of s. 524(6)(a) of the *Local Government Act* are shown in Maps A.1 to A.6 of Schedule A.

Each map shows FCL contour lines in different areas of the City of Langley. These FCL contour lines include:

i. Moderate climate change effect per Metro Vancouver's projection to end of the century (year 2100); and

ii. A freeboard allowance of 0.6 m to account for local variations in the water level and uncertainty in the input data used to develop these maps.

~~[i]~~ The Flood Construction Level ~~in meters above Geodetic Survey of Canada datum~~ for a specific parcel within the Floodplain, shall be determined by interpolation between the two closest flood construction contour line levels shown on Schedule A – "Designated Flood Construction Levels for the Nicomekl River, Murray Creek, Logan Creek and Jeffries Brook". ~~and in Table 3.1 below:~~

~~**Table 3.1**~~

~~**Flood Construction Levels for the Nicomekl River, Murray Creek, and Logan Creek**~~			
~~Watercourse~~	~~Location*~~	~~Designated Flood Level (m)~~	~~Flood Construction Level (m)~~
~~Logan Creek~~	~~City Limit (62 Avenue)~~	~~13.61~~	~~14.21~~

~~Logan Creek~~	~~Langley Bypass (Hwy 10)~~	~~12.87~~	~~13.47~~
~~Logan Creek~~	~~Rail Spur (Upstream)~~	~~12.23~~	~~12.83~~
~~Logan Creek~~	~~Rail Spur (Downstream)~~	~~11.22~~	~~11.82~~
~~Logan Creek~~	~~Rail Crossing~~	~~11.11~~	~~11.71~~
~~Logan Creek~~	~~206 St.~~	~~10.17~~	~~10.77~~
~~Logan Creek~~	~~206A St.~~	~~10.01~~	~~10.61~~
~~Logan Creek~~	~~Glover Rd.~~	~~9.85~~	~~10.45~~
~~Logan Creek~~	~~Langley Bypass (208 St.)~~	~~8.95~~	~~9.55~~
~~Logan Creek~~	~~City Limit~~	~~8.46~~	~~9.06~~
~~Nicomekl River~~	~~City Limit~~	~~8.33~~	~~8.93~~
~~Nicomekl River~~	~~Fraser Highway~~	~~8.25~~	~~8.85~~
~~Nicomekl River~~	~~208 St.~~	~~7.98~~	~~8.58~~
~~Nicomekl River~~	~~207 St.~~	~~7.17~~	~~7.77~~
~~Nicomekl River~~	~~51B Avenue~~	~~6.77~~	~~7.37~~
~~Nicomekl River~~	~~203 St.~~	~~5.63~~	~~6.23~~
~~Nicomekl River~~	~~200 St.~~	~~4.97~~	~~5.57~~
~~Nicomekl River~~	~~City Limit (196 St)~~	~~4.06~~	~~4.66~~
~~Murray Creek~~	~~51B Avenue~~	~~8.85~~	~~9.45~~
~~Murray Creek~~	~~50A Avenue~~	~~9.78~~	~~10.38~~
~~Murray Creek~~	~~49A Avenue~~	~~10.44~~	~~11.04~~
~~Murray Creek~~	~~City Limit (48 Avenue)~~	~~12.40~~	~~13.00~~

b) Flood Construction Levels for Smaller Creeks (Baldi Creek, Brydon Creek, Pleasantdale Creek, Muckle Creek and Langley Creek)

The FCLs at parcels neighbouring smaller creeks in the City of Langley shall be:

(i) 1.5 m above the Natural Boundary of their closest smaller creek per guidelines set in the "Flood Hazard Land Use Management Guidelines, 2018, Ministry of Water, Land, and Air Protection, Province of British Columbia" publication; plus

(ii) An additional 0.3 m to account for climate change effect.

This means FCLs at these neighbouring parcels shall be 1.8 metres above the Natural Boundary of their closest smaller creek.

All parcels in the neighbouring areas with their lot elevations lower than these smaller creeks FCLs shall meet the requirements set in this section of the Bylaw.

~~b)~~c) Flood Construction Levels any other lake, marsh, or pond

The FCLs at the neighbouring parcels shall be 1.5 metres above the Natural Boundary of their neighbouring lake, marsh, or pond, as per the guidelines set in the "Flood Hazard Land Use Management Guidelines, 2018, Ministry of Water, Land, and Air Protection, Province of British Columbia" publication.

~~* Location shall be on the water course at the stated crossing (projected crossing in the case of Murray Creek).~~

~~Or where floodplain mapping is not available the Flood Construction Level shall be,~~

~~[ii] 1.5 metres above the Natural Boundary of any other watercourse;~~

~~[iii] 1.5 metres above the Natural Boundary of any other lake, marsh, or pond.~~

~~c)~~d) Setbacks:

Unless otherwise approved by the Approving Officer, t~~T~~he following distances are specified as Setbacks for the purpose of s. 524(2) ~~910(4)~~(b) of the *Local Government Act*, and where more than one Floodplain Setback is applicable in respect of a particular parcel of land, by this or other City Bylaws, the greater distance is specified as the Setback**:**

(i) 30 metres from the Natural Boundary of the Nicomekl River;

(ii) 15 metres from the Natural Boundary of any other watercourse;

(iii) 7.5 metres from the Natural Boundary of a lake, marsh, or pond;

(iv) 7.5 metres from any Standard Dike right-of-way, or structure providing flood protection or seepage control.

4.0 COVENANT MEASURES

As a condition for approval of subdivision, development, or construction of building applications in flood prone lands, the property owners are required to register a restrictive covenant against the title of their property under section 219 of the Land Title Act. The covenant shall specify:

a) Conditions that would enable the land to be safely used for the use intended; and

b) A "Waiver of Liability" condition, which shall require flood proofing of buildings and a waiver of liability in favour of the City of Langley in the event of any damage caused by flooding or erosion.

5.0 ELEVATION REQUIREMENTS

Pursuant to section 524(6) ~~910 (4)~~ of the Local Government Act,

(a) The underside of any floor system, or the top of any pad supporting any space or room, including a manufactured home, that is used for

(i) Dwelling purposes,

(ii) Business, or

(iii) The storage of goods which are susceptible to damage by floodwater

must be above the applicable flood level specified by this bylaw, and

(b) No person shall install furnaces, ventilation equipment, electrical switchgear, electrical panels, fire protection systems or other fixed building services susceptible to flood damage, below the flood construction level, unless such services are protected from flood damage and accessible for servicing during a flood.

- All elevators must have an automatic shut-off to prevent occupants from inadvertently descending into an inundated area.

~~(b)~~(c) Any landfill required to support the floor system or pad must not extend within any applicable setback specified by this bylaw.

~~(c)~~(d) ~~The Building Inspector, or any person appointed by the Council of the City of Langley to administer this bylaw may require that any building permit applicant provide to the City at their expense a British Columbia Land Surveyor's certificate to verify compliance with the Flood Construction Levels and Floodplain setbacks specified in section 3(a).~~

6.0 ~~OTHER REQUIREMENTS~~ GENERAL EXEMPTIONS

Section 5 shall not apply to:

(i) A renovation of an existing building or structure that does not involve an addition ~~thereto; or an addition~~ to a building or structure that its total cumulative size increase during the last ten years would stay less than 25% of the existing floor area;

~~A renovation of an existing building or structure that does not involve an addition thereto; or an addition to a building or structure that would increase the size of a building or structure by less than 25% of the existing floor area existing at the date of adoption of this bylaw~~.

(ii) A l~~L~~ight or heavy industrial equipment which is required to be floodproofed to the Designated Flood Construction Level;

(iii) On-loading and off-loading facilities associated with water-oriented industry and portable sawmills. In all cases however, their main electrical switchgear shall be placed above the Flood Construction Level.

(iv) A portion of a building or structure designed or intended for residential use that is comprised of essentially non-habitable areas such as carports, garages or accessory buildings;

(v) A non-habitable portion of a building or structure to be used as an entrance to a space not exceeding 12 square meters in floor area.

(vi) Non-residential accessory buildings, and

(vii) Enclosed underground parking and bicycle storage areas below their FCL in multifamily residential or commercial buildings, if an unobstructed non-mechanized means of pedestrian ingress and egress is provided to the areas above the FCL.

- Under this circumstance, visible signs, acceptable to the Building Official, must be posted at all points of entry, notifying users that the parking garage or bicycle storage area is not protected from the risk of flood water damage.

~~6~~7.0 APPLICATION OF FLOODPLAIN SPECIFICATIONS

The Building Official~~Inspector~~, or any other person appointed by the Council of the City of Langley to administer this bylaw may require that any building permit applicant provide to the City at their expense a British Columbia Land Surveyor's certificate to verify compliance with the Flood Construction Levels and Floodplain Setbacks specified in Section~~s~~ 3 ~~(a) and (b)~~.

~~7~~8.0 NO REPRESENTATION

By the enactment, administration or enforcement of this bylaw the City of Langley does not represent to any person that any building or structure, including a manufactured home, located, constructed, sited or used in accordance with the provisions of this bylaw, or in accordance with any advice, information, direction or guidance provided by the City of Langley in the course of the administration of this bylaw, will not be damaged by flooding.

This bylaw may be cited as the “Floodplain Elevation Bylaw, 2009, No. 2768”

READ A FIRST, SECOND AND THIRD TIME this twentieth day of April, 2009.

THIRD READING REPEALED, AMENDED, AND REREAD this thirty first day of May, 2010.

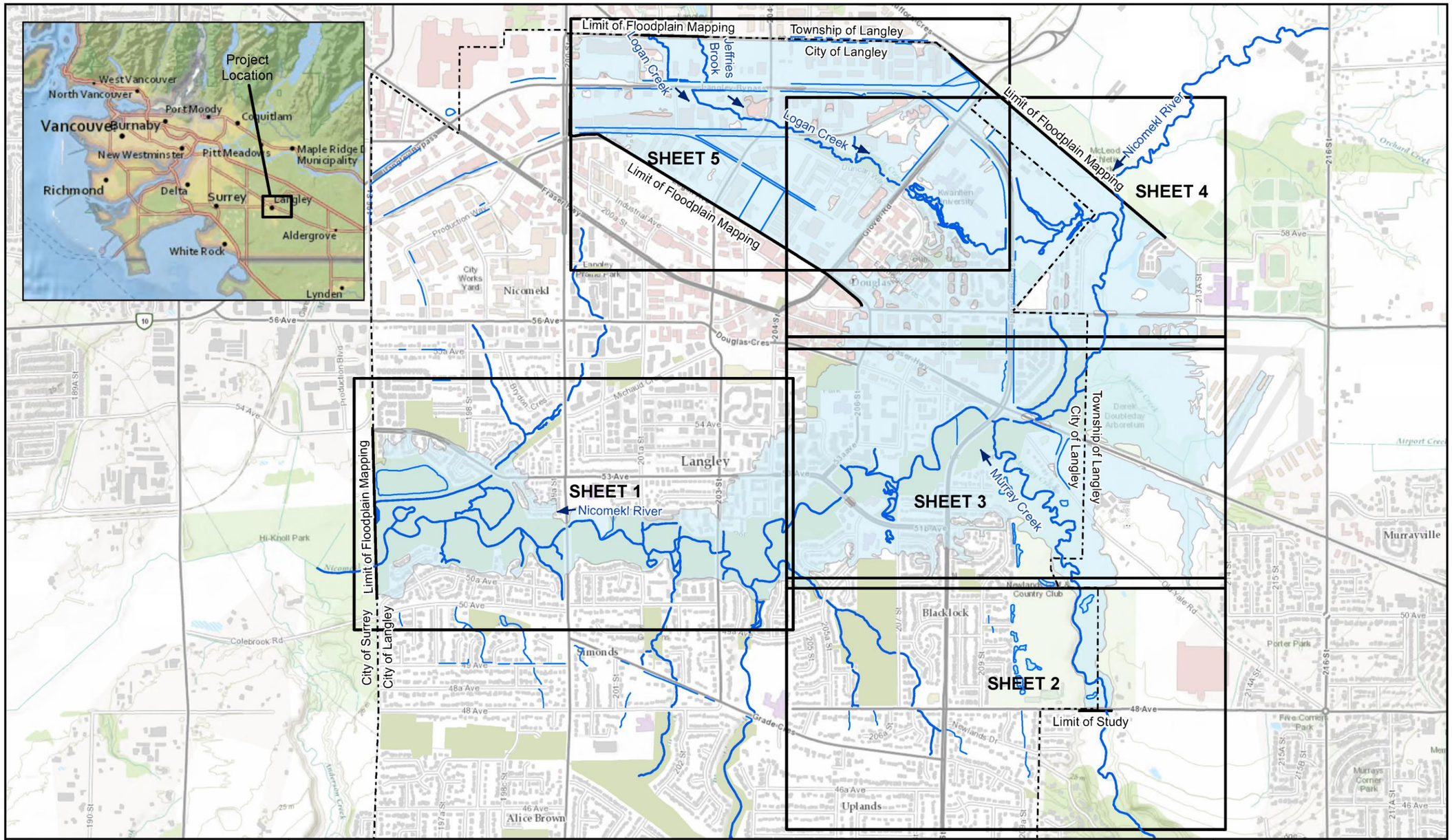
FINALLY ADOPTED this seventh day of June, 2010.

_____
MAYOR

_____
CORPORATE OFFICER

Schedule A

Designated
Flood Construction Levels
for
Nicomekl River, Murray Creek, Logan Creek, and Jeffries Brook



Langley City
THE PLACE TO BE

Legend

- STREAMS
- CITY OF LANGLEY BOUNDARY
- FLOOD CONSTRUCTION LEVEL (FCL) EXTENT AREA

SCALE - 1:15,000

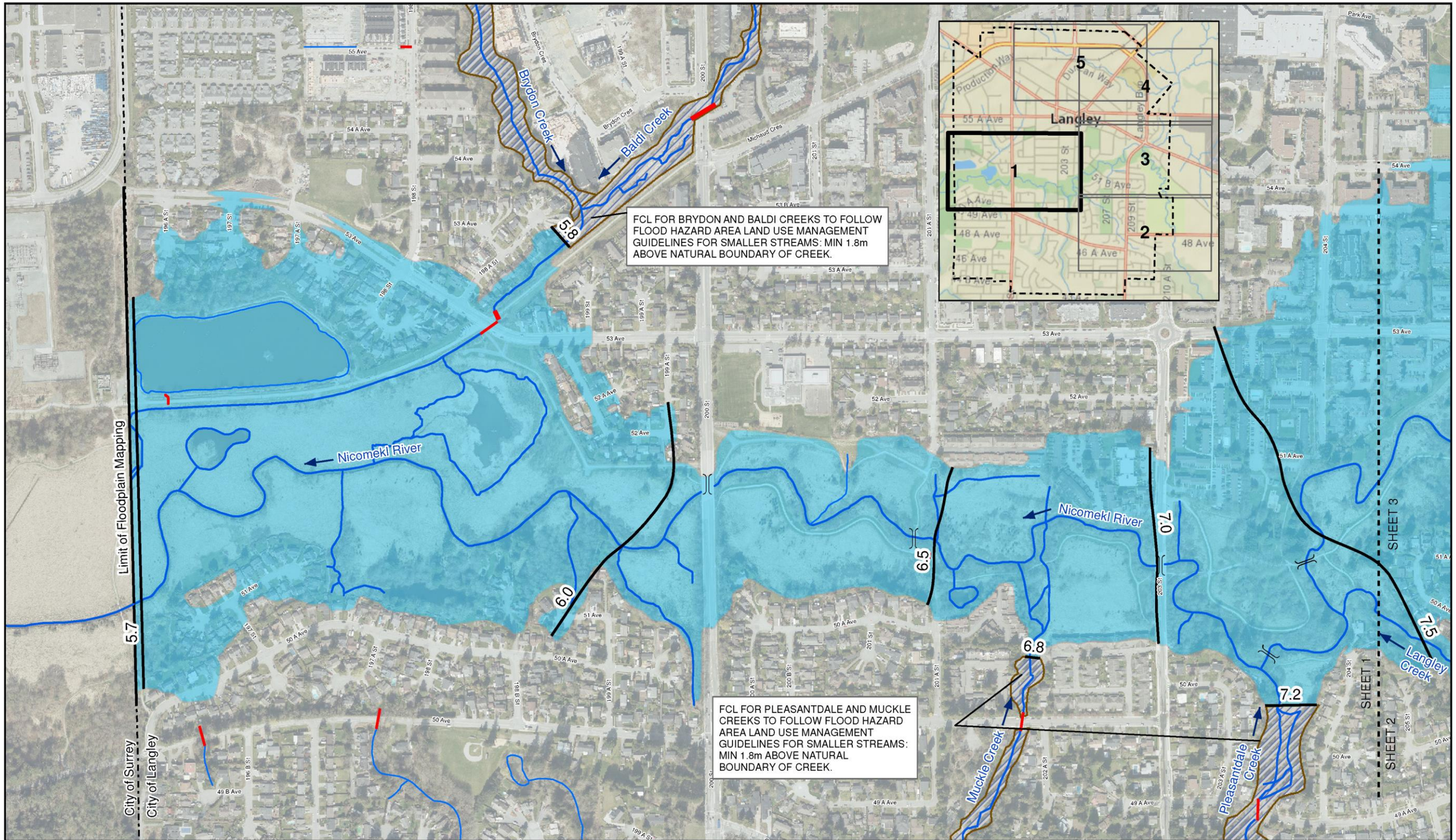
0 200 400 600 Meters

N

Coordinate System: NAD 1983 CSRS UTM Zone 10N
Units: Meters

FLOODPLAIN EXTENT MAP

MAP A-1



Langley City
THE PLACE TO BE

- BRIDGES
- FCL CONTOUR LINES (EL. m)
- CULVERTS
- STREAMS
- FCL EXTENT AREA
- CITY OF LANGLEY BOUNDARY

SCALE - 1:5,000

0 60 120 180 Meters

N

Coordinate System: NAD 1983 CSRS UTM Zone 10N; CGVD2013 Units: Meters

FLOOD CONSTRUCTION LEVEL (FCL) MAP PAGE 1 OF 5

MAP A-2

FCL FOR LANGLEY CREEK TO FOLLOW FLOOD HAZARD AREA LAND USE MANAGEMENT GUIDELINES FOR SMALLER STREAMS: MIN. 1.8m ABOVE NATURAL BOUNDARY OF CREEK.

SHEET 1

SHEET 2

SHEET 3

Langley Creek

Murray Creek

7.5

7.6

9.6

10.0

10.5

11.0

11.5

12.5

13.0

Limit of Study

City of Langley

Township of Langley

Langley

1

2

3

4

5

BRIDGES

FCL CONTOUR LINES (EL. m)

CULVERTS

STREAMS

FCL EXTENT AREA

CITY OF LANGLEY BOUNDARY

SCALE - 1:5,000

0 60 120 180 Meters

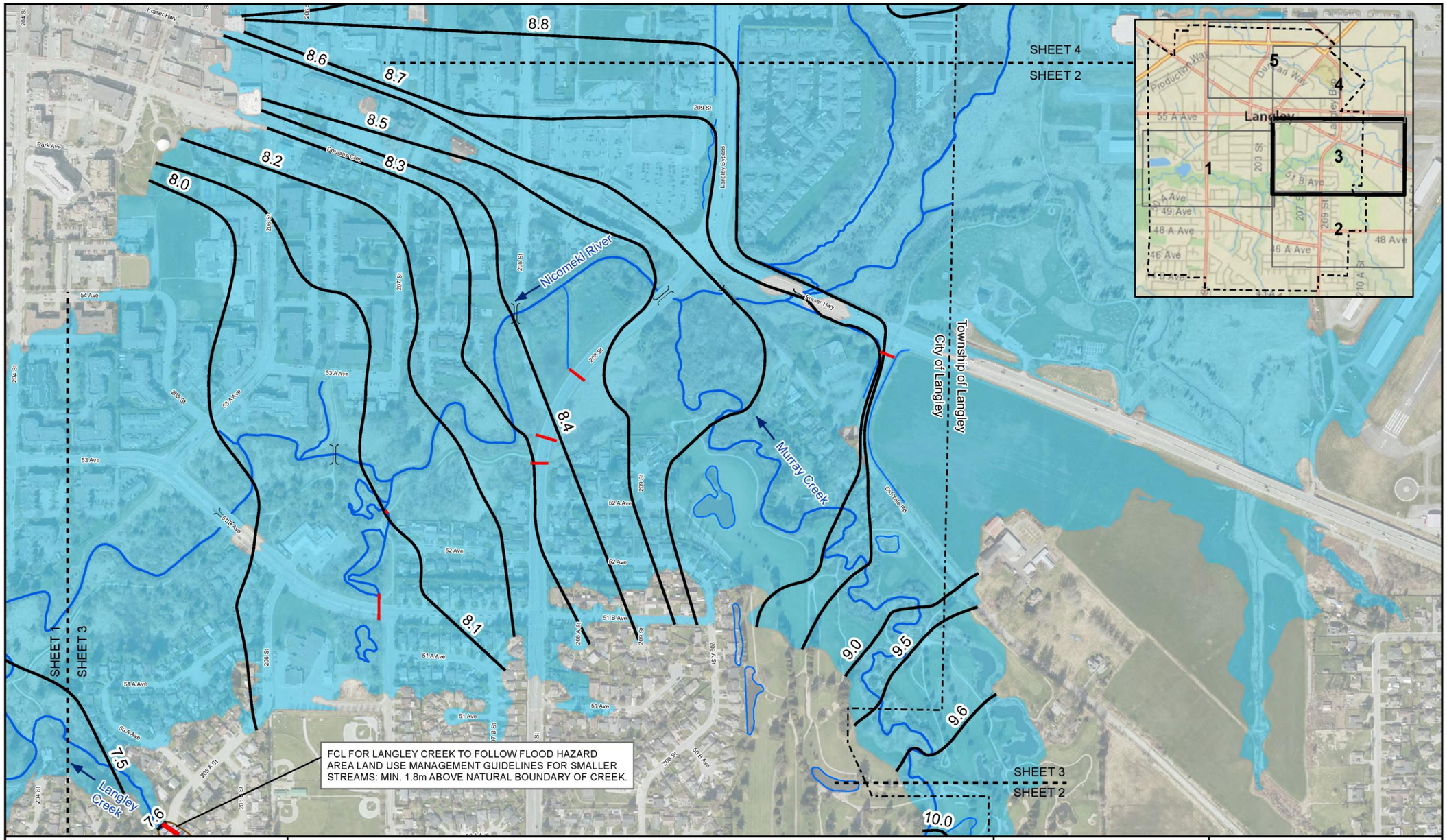
N

Coordinate System: NAD 1983 CSRS UTM Zone 10N; CGVD2013 Units: Meters

FLOOD CONSTRUCTION LEVEL (FCL) MAP

PAGE 2 OF 5

MAP A-3



Langley City
THE PLACE TO BE

BRIDGES
FCL CONTOUR LINES (EL. m)
CULVERTS
STREAMS
FCL EXTENT AREA
CITY OF LANGLEY BOUNDARY

SCALE - 1:5,000

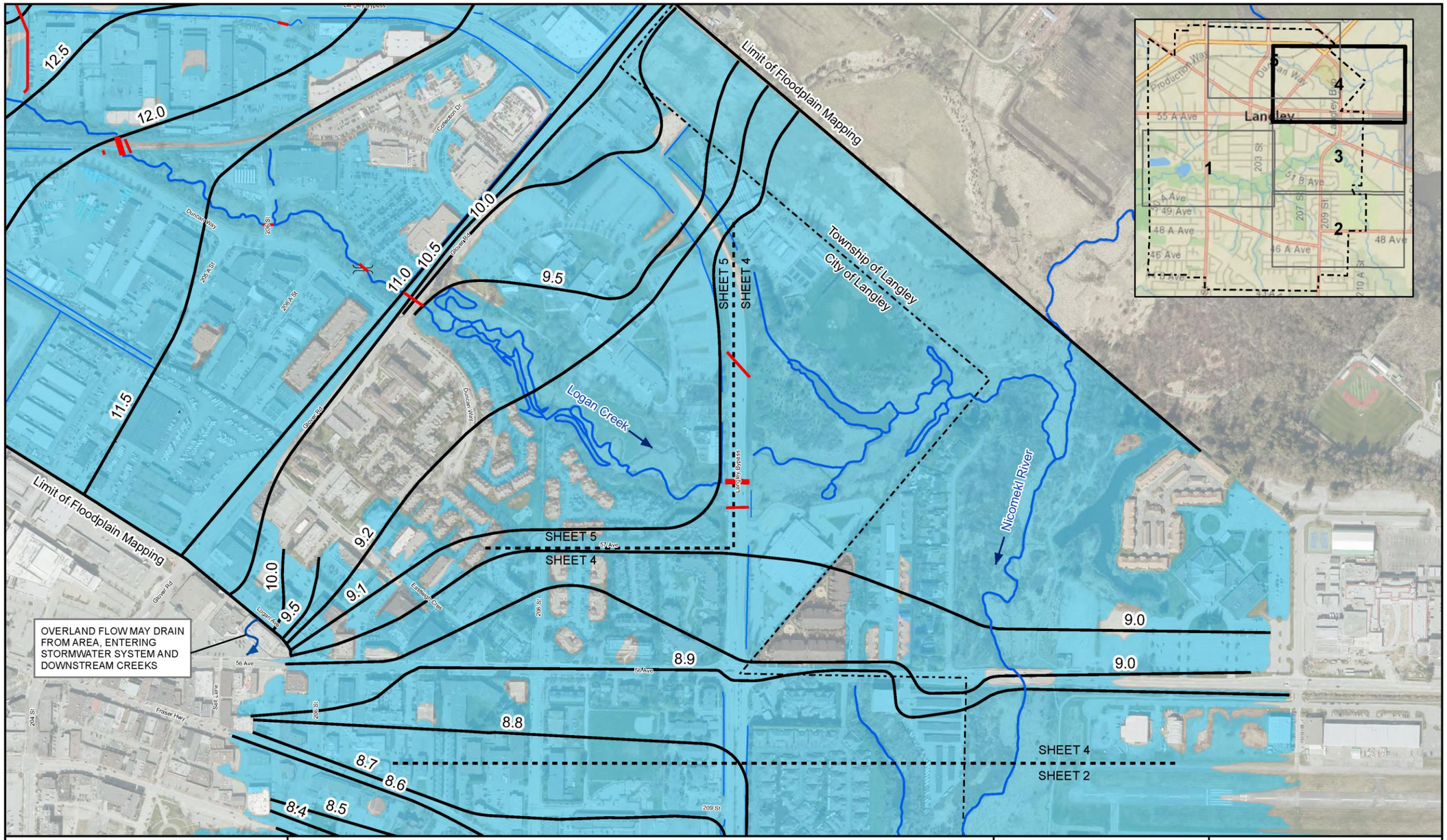
0 60 120 180 Meters

N

Coordinate System: NAD 1983 CSRS UTM Zone 10N; CGVD2013 Units: Meters

FLOOD CONSTRUCTION LEVEL (FCL) MAP
PAGE 3 OF 5

MAP A-4



Langley City
THE PLACE TO BE

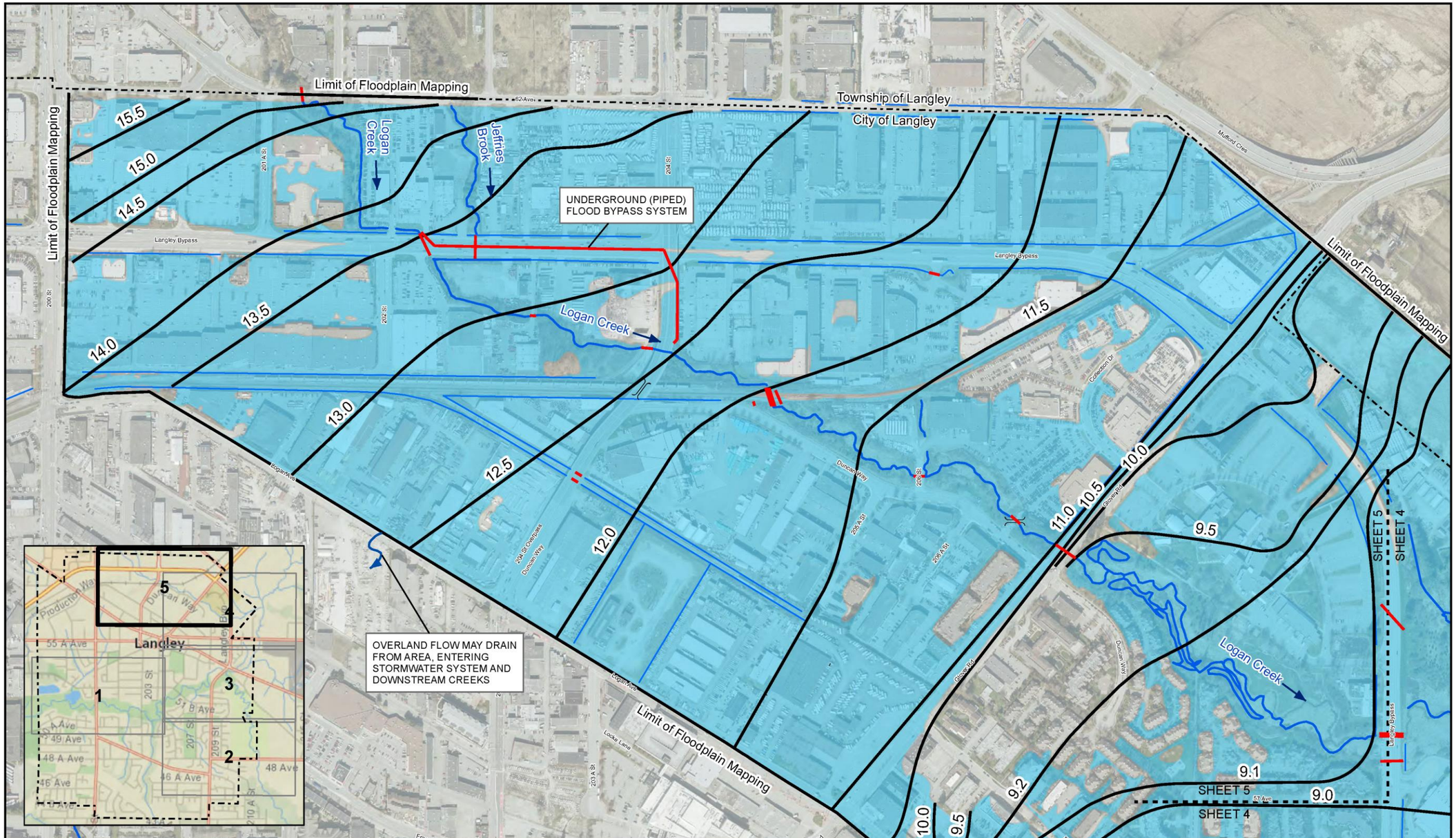
BRIDGES
FCL CONTOUR LINES (EL. m)
CULVERTS
STREAMS
FCL EXTENT AREA
CITY OF LANGLEY BOUNDARY

SCALE - 1:5,000
N
0 60 120 180 Meters

Coordinate System: NAD 1983 CSRS UTM Zone 10N; CGVD2013 Units: Meters

FLOOD CONSTRUCTION LEVEL (FCL) MAP
PAGE 4 OF 5

MAP A-5



Langley City
THE PLACE TO BE

- BRIDGES
- FCL CONTOUR LINES (EL. m)
- CULVERTS
- STREAMS
- FCL EXTENT AREA
- CITY OF LANGLEY BOUNDARY

SCALE - 1:5,000

0 60 120 180 Meters

N

Coordinate System: NAD 1983 CSRS UTM Zone 10N; CGVD2013 Units: Meters

FLOOD CONSTRUCTION LEVEL (FCL) MAP
PAGE 5 OF 5

MAP A-6