



Corporate Report

NO: R178

COUNCIL DATE: September 29, 2008

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **September 25, 2008**
FROM: **General Manager, Engineering** PROJECT FILE: **4806-913**
SUBJECT: **Campbell Heights Phase 1 – Update on Fish Habitat Works**

RECOMMENDATION

The Engineering Department recommends that Council receive this report as information.

INTENT

The purpose of this report is to provide an update to Council on the completion of Phase 1 fish habitat compensation works, which has been based on the advice of an Expert Panel with input from several interest groups and the general public.

BACKGROUND

The Phase 1 component of the Campbell Heights business park development (see the plan attached as Appendix I) required that fish habitat be relocated and reconstructed to allow for the development to proceed. Fisheries and Oceans Canada (DFO) approved the habitat relocation works prior to the original construction activities commencing. Under the DFO Authorization, the City has until September 15, 2009, to complete the habitat construction works and is required to monitor the effectiveness of the constructed habitat until 2014. Local environmental interest groups, the Environmental Advisory Committee (EAC), and the general public have raised concerns regarding the effectiveness of the fish habitat relocation works that were constructed to date as part of the Phase 1 development in Campbell Heights.

To address these concerns while trying to achieve a consensus regarding a sound and balanced approach in relation to completing the replacement habitat works, City staff has undertaken a relatively extensive process of consultation with the community, the EAC and local environmental interest groups that have expressed concerns.

In May 2008, local environmental interest groups, the City's EAC and the general public were invited to provide feedback on the City's plans to complete the Campbell Heights Phase 1 habitat construction, and to suggest improvements or alternatives to the habitat works that have been constructed to date and the works that were planned for construction. The plans and related information were made available to these groups through meetings and emails, and to the general public through posting the information on the City's website. The intention was to provide the various local environmental organizations and streamkeepers, key stakeholders and the general public an opportunity to review and provide comments and recommendations on the plans.

An Expert Panel that included four Registered Professional Biologists with extensive expertise in fisheries and habitat restoration was engaged to provide technical expertise to the process. This Expert Panel has reviewed the input received from the above-referenced groups and has made recommendations with respect to adjusting the City's habitat construction plans that have been prepared to guide the completion of the habitat works in the Campbell Heights Phase 1 development area.

DISCUSSION

Independent Expert Panel Results

The Expert Panel was tasked with reviewing the City's plans for completing the habitat construction works within the Phase 1 area of Campbell Heights and to review the comments and recommendations that were received from the various environmental organizations and streamkeepers, key stakeholders and the general public. The Expert Panel provided the City with consensus-based recommendations as to how to best complete the habitat construction work in the Phase I area. The City's Environmental Coordinator, who is also a Registered Professional Biologist, coordinated the work of the Expert Panel.

City staff has consolidated the Expert Panel's recommendations and priorities into a revised plan to complete the Phase 1 habitat construction works. A description of the works and the timelines to complete the works are documented in Appendices I and II attached to this report. Maps showing the remediation works in the different areas within the Phase 1 development area are attached as Appendix II. In August 2008, this revised plan was reviewed with DFO officials to ensure that the plan still met the requirements of the original DFO Authorization. DFO accepted the revised plan.

Consultation with Interest Groups and the General Public

The revised plan has been forwarded to the local environmental interest groups, the EAC and the general public through hand delivery, by e-mail and by posting the information on the City's website. A group of local environmental interest groups that met with the Mayor at the outset of the review process requested a meeting with staff to review the details of the revised plan. Staff met with representatives of these local environmental interest groups in August 2008. Other local interest groups were given the opportunity to meet with staff if they had any remaining questions or required clarifications regarding

the revised habitat completion plan. Staff has not received any additional requests for such a meeting.

The construction of the works that are illustrated in the revised habitat plan for Phase 1 was commenced at the beginning of September 2008. It is expected that the construction activities will be completed by September 2009 as required by the DFO Authorization. Staff will remain in contact with the local environmental interest groups to ensure that any concerns or issues are addressed in a timely manner.

CONCLUSION

The City has undertaken an extensive process of consultation with the community, the EAC and the local environmental interest groups regarding concerns with the habitat compensation and restoration works in Phase I of the Campbell Heights Business Park. An Expert Panel has reviewed the input received from these various sources and has made consensus-based recommendations to the City regarding revisions to the construction plans for the completion of the habitat works. A revised plan has been created, based on the recommendations from the Expert Panel, and has been approved by DFO. The revised plan has been made available to the community, the EAC and the local environmental interest groups, resulting in generally positive feedback. Construction activities consistent with the revised plan are currently underway with the habitat works scheduled to be fully completed by September 2009 as originally authorized by DFO.

Vincent Lalonde, P.Eng.
General Manager, Engineering

KZ/CAB/RD/SG:brb:kd

Appendix I - Campbell Heights Phase 1 Habitat Construction Revised Plan

Appendix II - Remediation Maps and Timeline

Phase 1 Habitat Construction Revised Plan

1) Complete Remaining Upland Planting Pockets:

- **What:** Finish remaining upland planting pockets as per ECL drawing # 111-271-02 to 111-271-12 (See Map)
- **Where:** Please see map and drawings for locations
- **When:** Fall 2008- Spring 2009

Areas outlined on the “Upland Planting (future)” map provided show the location where the outstanding planting pockets will be installed. The installation will be contracted out to a qualified landscape contractor. The installation is scheduled for fall of 2008 and spring 2009. There are a total of 17 planting pockets remaining to be planted, which will be planted within a 12-inch depth of topsoil and will have 51 pieces of woody debris and 22,704 plants, as described in ECL drawing # 111-271-02 to 111-271-12. The surface will be Teraseeded with Denbow Low-Grow Reclamation Seed Mix. In summary:

- Plant Material: 6422 Douglas fir plugs; 12844 red alder plugs; 2098 cottonwood plugs (same birch plugs); 698 #2 pot oceanspray; 642 #2 pot baldhip rose. Other plant species include #1 & #2 pots indian plum, snowberry, saskatoon & red huckleberry
- Teraseed Low-Grow Reclamation Seed Mix will be applied to the planting pockets
- Woody Debris: 51 pieces. LWD may be used as access control
- Watering during drought periods (May to October) as needed until 2012.

Priorities: High - planting pockets closest to the watercourse. West side planted before East side to minimize solar radiation on watercourse.

Authorization Amendment

- Original Planting prescription identified 2098 birch plugs. Cottonwood plugs will replace originally prescribed birch plugs.
- #1 & #2 pots indian plum, snowberry, saskatoon & red huckleberry are drought tolerant and will be added for diversity.
- Denbow Teraseed Low Grow Reclamation Seed Mix composition will be altered to reduce fescue seed count and increase clover seed count to facilitate soil Nitrogen fixing. Clover is lower growing than fescue and will compete less with planted vegetation.

2) Channel/Riparian Planting

- **What:** Plant red-osier dogwood and willow immediately adjacent to the wetted channel edge. Plant alder, cottonwood plugs back from channel edge. Alder and cottonwood will be plugs, willow and red osier dogwood may be plugs or stakes
- **Where:** Immediately adjacent to the Channel watercourse
- **When:** Fall/spring planting

Areas immediately adjacent to the 194 St. channel watercourse are to be planted with alder, cottonwood, red-osier dogwood and willow. Red-osier dogwood and willow are to be planted within 1 m of the waterline within the saturation area influenced by the wetted channel at approximately 1m spacing or as required. Alder and cottonwood will be planted behind willow and dogwood outside of the saturation area at approximately 1.5 m spacing or as required. The intentions of these plantings are to; facilitate canopy coverage of the watercourse, provide bank stabilization, shading, and contribute detritus.

Priorities: High - Plant adjacent to the watercourse. Areas devoid of vegetation should be planted first. Plant West side to minimize solar radiation before planting East side.

Authorization Amendment

- Channel bank planting with willow, dogwood, alder and cottonwood along the entire length of the 194 St channel was not addressed in the original Authorization.

3) **Maintain Existing Planting Pockets**

- **What:** Ongoing monitoring, replanting, watering and mulching of previously planted upland planting pockets
- **Where:** See map and drawings for locations
- **When:** Watering during drought periods (May to October) as required until 2012. Replanting/mulching in fall of each year.

Ongoing monitoring of these sites will continue, and maintaining adequate survival through replanting, watering and mulching will also be undertaken until the end of the monitoring period (September 2012). These areas should be functioning as intended at the end of the monitoring period. Watering is as required but typically is 12 waterings per year (1x/wk for 12 week summer drought)

Authorization Amendment

- Planting maintenance was not addressed in the original Authorization.

4) **Infill Planting of Retained Natural Areas**

- **What:** Where existing natural areas were retained during the installation of the new habitat, new plants will be installed as needed to replace mortality. This will ensure maintenance of habitat in retained natural areas.
- **Where:** See map for detailed locations.
- **When:** Fall 2008 / Spring 2009

Some mortality has occurred within the retained natural areas due to the adjacent disturbances. In-fill planting of shrubs and trees will occur as required to ensure that these areas continue to function as habitat. The in-filled planting will also be maintained until they are free-to-grow.

- Upland areas to be fill-planted with #1 & #2 alder, cottonwood at 3-4m density as required.
- Retained Natural Areas immediately adjacent to the 194 St. channel watercourse are to be planted with alder, cottonwood, red-osier dogwood and willow. Red-osier dogwood and willow are to be planted within 1 m of the waterline at approximately 1m spacing or as required. Alder and cottonwood will be planted upland behind willow and dogwood at approximately 3-4 m spacing. The intentions of these plantings are to facilitate canopy coverage of the watercourse and provide bank stabilization, shading, and contribute detritus. These plantings will also enable the continued functioning of the natural areas.
- Established conifers within the Retained Natural Areas will be buffered so as to not under-plant with deciduous
- Planting in sensitive areas adjacent to the channel watercourse to be performed with qualified planters. Less qualified, inexperienced students may perform planting in upland areas.

Priorities: Areas with exposed channel banks first. High priority to establish the tree canopy layer with early successional species. Fill planting conifers is a lower priority. In the future, conifers may be fill-planted if natural conifer succession does not occur.

Authorization Amendment

- Fill planting of retained natural areas was not addressed in the original Authorization.

5) **Manage Natural Regeneration**

- **What:** Encourage natural regeneration of native plants. Manage young alders as they become established
- **Where:** Entire site (See map)
- **When:** Until site is free-to-grow. Estimated selective thinning intervals of 2011 and 2014 to occur in fall or winter to minimize impacts to surrounding plants.

Natural alder regeneration adds many attributes to newly establishing natural areas. Alders tie up soil resources such as water and nutrients discouraging invasive establishment. Alders root in, minimizing soil erosion while adding Nitrogen to the surrounding soil by way of root nodules. Regenerating alders also provide shade for surrounding plants, reducing desiccation and provide leaf litter, which adds organics improving soil quality. Young natural regenerating alders usually establish in thick groups. Manual selective thinning over time allows the remaining alders to thrive and creates space to in-fill native shrubs to enhance overall site plant diversity. Selective thinning of alders will occur at approximately 3-year intervals or as required. E.g. - space alders to 1.5m spacing at year 3 (2011), space alders to 2.5m spacing at year 6 (2014).

Priorities: Managing natural regeneration is a low priority. The management of invasive species is a high priority in these regenerating areas.

Authorization Amendment

- Managing natural regeneration was not addressed in the original Authorization.

6) **General Planting Maintenance**

- **What:** Maintenance of all planted material. Brush, water, mulch, replace as required
- **Where:** Please see items # 1-5 for maintenance plan
- **When:** Please see items # 1-5 for maintenance plan

General planting maintenance of newly planted vegetation until free-to-grow. Manage the retained natural area trees that have recently died to prevent the need for future hazard tree abatement and intrusions into the natural area. Large diameter hazard trees can be abated to create wildlife trees. Excessive dead trees can be utilized for Large Woody Debris within the planting pockets. There may be hazard tree abatement to maintain safe work sites for planting crews (risk management).

Fire protection of these areas is available through local fire hydrants and road access to these sites off of 24 and 22 avenues. All necessary maintenance must be applied to ensure plants reach their free-to-grow status.

Priorities: High - maintain newly planted upland planting pocket areas and in-fill plants. High priority to maintain tree coverage to shade 194 St channel.

Authorization Amendment

- Managing natural regeneration was not addressed in the original Authorization.

7) **Soil Amendment (East Side of Channel Various Locations)**

- **What:** Soil amendment with Teraseed mixture as appropriate.
- **Where:** Open areas within compensation area including the road decommission area, and areas of stream bank between 22 and 24 Avenue that are bare (see map)
- **When:** Fall 2008/ Spring 2009

Areas outlined on the "Soil Amendment Area" map provided show where soil will be amended. Soil will be Teraseeded to minimize invasive species establishment. Identified areas will receive a minimum of 4-inch depth of soil. Soil amendment is proposed for Fall 2008 and Spring 2009, in advance of the final upland planting. Areas of soil amendment will also be coordinated when the road is decommissioned. Soil amendment may be trucked in or blown in depending on access. All topsoil will be Teraseeded. Amended soil within the planting pockets will be Teraseeded with the Low Grow Reclamation Seed mix. All other area outside of the planting pockets will be Teraseeded with cottonwood and alder seed. Augmentation of the site with alder and cottonwood plugs may be needed after one year if the area does not have a successful germination of Teraseeded soil. Scarification of the native substrate will be undertaken to mix the amended and native soils together. To obtain variability in site moisture, the topography

of the ground will be varied. Some suitable soils from the existing mound area may be mixed in to ameliorate the soil. In steep areas next to the creek, where soil is required, techniques such as compost socks, and Denbow Ecoblanket will be utilized to avoid erosion. Soil may be used from the adjacent fill pile if suitable. Amended areas may receive more than 4" depth of topsoil depending on availability of soil.

Priorities: High – Amend all exposed gravel areas within the Habitat Construction Area as identified in the plan.

Authorization Amendment

- Easily accessible areas will have soil trucked in and spread with equipment. Difficult to access area will have soil blown in by Denbow. All amended soil will be Teraseeded. Soil may be sourced from the adjacent fill pile within the pit area if adequate.
- Areas will receive a minimum 4" of soil. There may be a possibility of a greater depth of soil than 4" depending on the source of soil.
- Denbow Teraseed Low-Grow Reclamation Seed Mix used within the planting pockets will be altered to reduce Fescue seed count and increase clover seed count to facilitate soil Nitrogen fixing as well is lower growing and will compete less with planted vegetation.
- A Teraseed mix comprised of alder and cottonwood seeds will be applied to all amended soils areas outside of the planting pockets.
- In the event that alder and cottonwood seed germination is low, alder and cottonwood plugs will be installed as required.

8) Slope Stabilization

- **What:** Stabilization of erosion sites, slumping etc. on steep channel banks as required.
- **Where:** Problem areas between 22 Avenue and 24 Avenue, and other areas as required
- **When:** In-stream works occur during the fish window August 1-September 15.

Minor sites will be stabilized utilizing SHaRP teams using willow and minor rockwork. Larger sites will be stabilized utilizing Denbow products or other stabilization methods and products as required. Trial sites using Denbow products have proven very effective in reducing erosion while providing a medium to plant streamside native vegetation. Denbow Ecoberm will be utilized in select areas upslope of the willow wattles to prevent/minimize bank erosion. Willow (also wattles) and red osier dogwood will be planted adjacent to the waterline, and further up the bank, alder and cottonwood will be planted to enable future bank stability.

Priorities: Areas with exposed banks at current time especially at north end of the site are high priority. Willow stake and plug installation in the fall will be done in high priority areas, and areas needing more intensive stabilization can be addressed later.

Rx Amendment

- Managing slope stability was not addressed in the original Authorization

9) Fence Installation

- **What:** Installation of fence along the East side of habitat compensation area to restrict public access and allow plantings to establish
- **Where:** Along Eastern and Southern boundary of habitat compensation area. Select sites along Northern boundary.
- **When:** After road decommissioning and soil amendment. Fall 2008, Spring 2009

Exclusionary fencing will consist of natural materials (such as stump, logs and wood debris), chain link fence and split rail fencing to limit access by the public while allowing for animal movement. Unsanctioned trails within the habitat construction area will be deactivated and interpretive signage will direct the public to alternate sanctioned trails. Alternative trails around the habitat construction area will be signed and developed as required. Along the Northern boundary adjacent to Latimer Lake Park, in select areas, a split rail fence will be installed, with more aggressive access deterrents (stumps/ natural debris) to be installed where the area is more open. Trails originating along the 22 and 24 Ave North and South road ROW edges will be blocked with debris and fencing as required preventing public access into the habitat construction area from the road culverts. Temporary fencing across the West side of the 22 and 24 avenue roads culverts will be installed with gates and locks to prevent public access while providing for City access. The Eastern Boundary of the habitat construction area will be with a combination of chain link fence and natural debris as required.

Priorities: Restricting public access at the north/northeast section through the use of fencing or LWD is the highest priority. A high priority to restrict public access to the site immediately after the planting have been installed

Authorization Amendment

- Original Authorization identified only chain link fencing to be used to separate the riparian area and private property. Exclusionary fencing is proposed to consist of natural material, split rail, or chain link. A public access trail is to be created along the Eastern edge, outside of the habitat construction area. The East side of the public access trail will be fenced following Crime Prevention Through Environmental Design (CPTED) principles, with low fencing to provide separation from private land while allowing for natural surveillance. Separation of the public trail and the riparian habitat area will comprise of natural materials including stumps, logs, large boulders and 6' chain link fence.

10) Access Road Decommissioning

- **What:** Decommissioning section of gravel City access road that is contained within the compensation area.

- **Where:** Area between 24 to just South of 22 Avenue. (See map for details)
- **When:** August/September/October 2008

Areas outlined on the “Road Decommissioning” map provided identify areas where the existing road will be decommissioned. Decommissioning will involve removing some of the existing roadbed, scarifying the ground, importing soil and mixing native and imported soils together. The general topography of the area will be undulated where possible to allow for variations in site moisture.

Priority: Decommissioning the road is a high priority.

Authorization Amendment

- Road decommissioning was not addressed in the original Authorization

11) Invasive Species Management

- **What:** Manage invasive species by minimizing establishment opportunities and removal following Integrated Pest Management (IPM) principles
- **Where:** Entire site (See map)
- **When:** As required until site estimated as free-to-grow (estimated 2014).

Invasive species such as Scotch Broom (*Cytisus scoparius*), Evergreen Blackberry (*Rubus discolor*) and Himalayan Blackberry (*Rubus laciniatus*) and Japanese Knotweed (*Fallopia sp. / Polygonum sp.*) capitalize on disturbed soils and often take over a newly constructed site if they are not managed adequately. To reduce invasive seed establishment, bare mineralized soil will be covered with soil that is pre-seeded with either Low Grow Reclamation Seed Mix or an alder and cottonwood seed mix. Establishing invasives will be removed following IPM principles.

Scotch Broom – Manual removal in May-June when the plant is flowering before going to seed. Plants will be cut rather than pulled to minimize soil disturbance and reduce Scotch Broom seed germination. Cut stems may have herbicide applied using a selective application technique (dabbing/wicking) that is compliant with Provincial IPM Act regulations and specific product labels.

Blackberry – Manual removal in May through September by cutting the stem close to the ground. Pulling the Blackberry bulbs will only occur if the area can be mulched over easily or are within the pesticide free zones surrounding water bodies. Pulling of bulbs must be cognizant of minimizing soil disturbance to reduce the seed germination of other invasive species. Any regrowth of cut stems may have herbicide applied using a selective application technique (backpack sprayer) that is compliant with Provincial IPM Act regulations and specific product labels.

Japanese knotweed – Manual removal is proven to not be very effective due to the ability of the plant to reproduce from small root fragments. Stem injection with Glyphosate is the most effective way to treat Japanese Knotweed. Japanese Knotweed is listed on the

Provincial List of invasive species, as such, Glyphosate may be selectively applied to Japanese Knotweed within the Pesticide Free Zone surrounding water bodies according to the Provincial Integrated Pest Management Act. Stem Injection qualifies as a selective applicator method. Herbicide treatments are best applied in late summer when stem diameter is maximized and the plant is beginning to transport sugars to the roots in preparation of winter dormancy.

Priority: Scotch broom and Japanese knotweed removal is high priority, Blackberry being lower priority.

Authorization Amendment

- Managing invasive species was not addressed in the original Authorization

12) **Beaver Management**

- **What:** Beaver Dam Management
- **Where:** As needed, wherever beaver dams are determined to degrade stream banks, fish passage, or water quality.
- **When:** As required.

Current dam management activities will continue with increased monitoring in the fall salmon spawning times to ensure adequate fish passage. As part of the long term monitoring of the Campbell Heights area, minnow trapping will occur upstream of the beaver dams to ensure fish passage. Mature trees will be protected where required with beaver exclusion fencing. Ninebark, hawthorn, and crabapple may be planted in the area to help discourage beaver browsing. Beaver exclusion fencing will be employed as required if browsing becomes excessive. An adaptive management will be utilized as required.

Priority: Medium - as required

Authorization Amendment

- Managing for beaver activity is consistent with the original Authorization

13) **Public Access**

- **What:** Restricting public access to protect fragile areas through fencing, and working with law enforcement.
- **Where:** Fencing between habitat construction area and private land.
- **When:** Fall 2008

Natural materials will be used to limit access by the public where possible. Removing access to the north/northeast section through the use of fencing or LWD is the highest priority. Trail deactivation and signage will also be used. A split rail fence along the northern boundary will be installed, with more aggressive access deterrents installed

where the area is more open. Alternative trails for the public will be supplied when a trail is cut off. Block north and south edges of 22 and 24 Ave to prevent public water access. Extend the existing western chain link fence across 22 and 24 avenue with gates and locks for access. No access for the public will be provided at 22 or 24 avenue.

Authorization Amendment

- Fencing will consist of a combination of chain link and natural materials interfacing the habitat construction area and the public access trails. Public access trail will be located outside of the habitat construction area. Fencing areas that interface the public access trails and abut private property may be a low wooden fence consistent with CPTED Principles.

14) Aquatic Vegetation Management

- **What:** Removal of invasive aquatic vegetation (e.g. Watercress, filamentous algae) to help maintain proper flow, water quality, and fish passage.
- **Where:** In-stream, wherever is necessary
- **When:** August via the SHaRP team.

Various techniques will be implemented, on a trial basis with the goal of reducing, or eliminating invasive aquatic vegetation and increasing DO. Techniques may include increasing localized flow by boulder placements, shading areas of the creek, etc. Placement of boulders in the channel South of 22 Ave to better define a low flow channel may be implemented. Issues involving flow and fish spawning/ fish access will be investigated, including fish passage through the flow control structure, and over beaver dams. Recommendations of the Piteau report will be researched, and potentially merged with the need for water control for the North channel retention, in order to achieve a more stable water pattern, and remain fish accessible

Authorization Amendment

- Managing Aquatic Vegetation was not addressed in the original Authorization

CHERP Priorities:

High

- Reestablish vegetation right along stream bank – work from the creek outwards
- Work from the North to the South and West to East
- Investigate increasing velocities from control structure to 22 Ave.
- Investigate control structure passability for fish access
- Restrict Public access - LWD/fencing – Create alternate routes for public bypass area
- Decommission the road
- Complete outstanding plantings
- Control Japanese knotweed and broom before it is established
- Maintenance of new planting materials

Medium

- Slope stabilization as required
- Assess the influence of beaver dams on spawning habitat
- Aquatic vegetation management
- Infill planting of the natural areas
- Monitor and manage beaver dams & beaver foraging (beaver exclusion fencing)
- Boulder placement near 22 Ave crossing to increase channel velocities at strategic points
- Look for opportunities in 20 Ave channel for fish enhancement

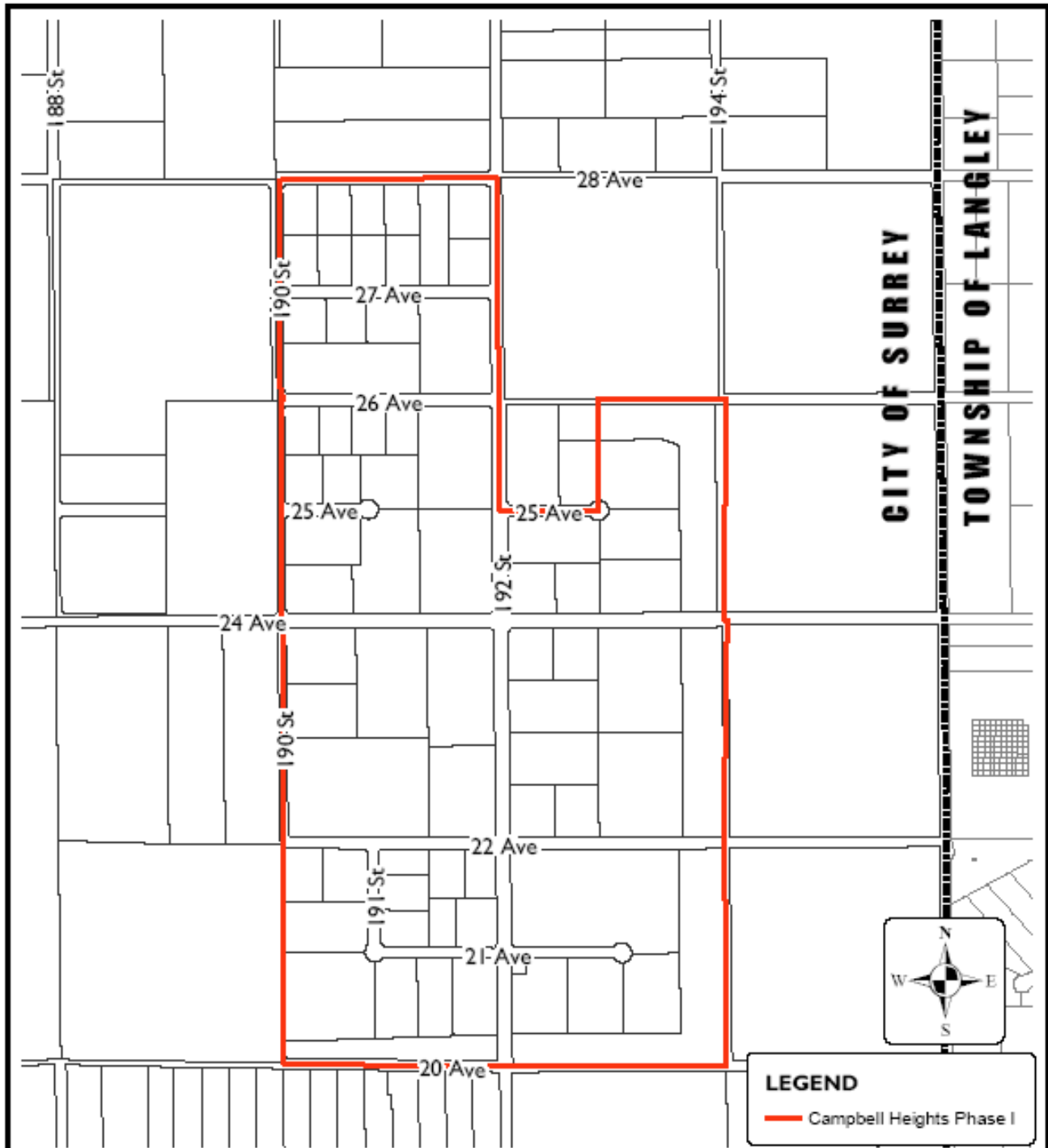
Low

- Management of natural regeneration
- Replanting of Denbow soil augmentation sites with seedlings
- Management of blackberry across the site
- Test site for shading for aquatic vegetation management

Additional Suggestions

- Coordination with groundwater investigations by Piteau re Latimer Lake function and annual groundwater reporting and investigate opportunities for flow augmentation in the 194 St channel.
- Additional minnow trapping to investigate fish passage and usage upstream of beaver dams and the control structure
- Talk to hatchery with regards to the spawning occurrence each year to compare with what is observed in the 194 St and 20 Ave channel
- Maintain communications with hatchery staff with regards to habitat enhancement opportunities

Timeline to Complete Phase 1	2008								2009											
	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Plant remaining Upland Pockets																				
Maintain and Replant existing pockets																				
Road Decommissioning																				
Soil Amendment																				
Terraseeding																				
Infill Planting of Existing Vegetation																				
Remove Instream Vegetation (as required)																				
Slope Stabilization (as required)																				
Remove Invasive Vegetation																				
Managing Nat. Regen. (alder thinning)																				
Fencing of North and East side																				



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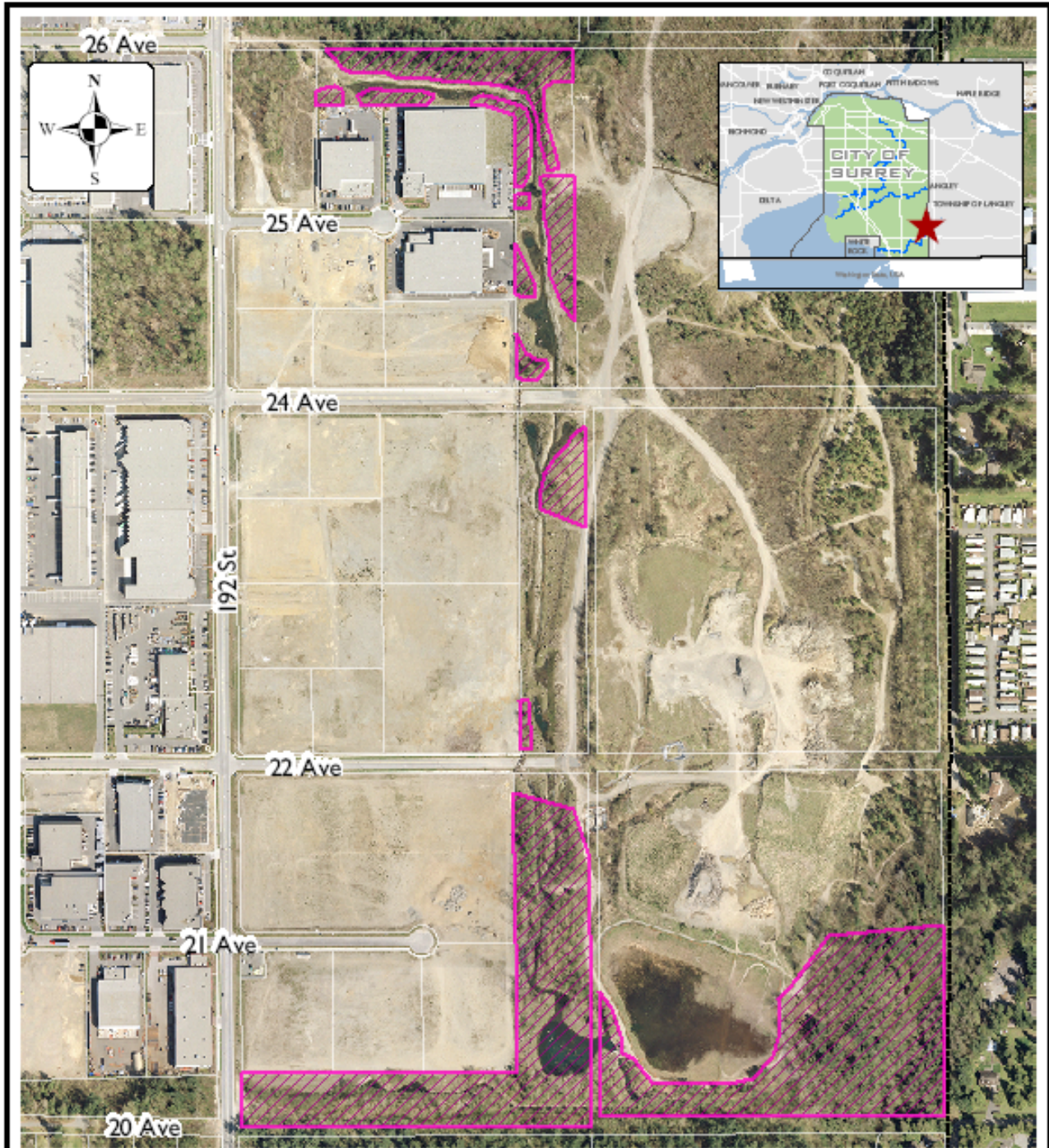


CAMPBELL HEIGHTS PHASE I

ENGINEERING
DEPARTMENT

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This information is provided for information and convenience purposes only.
Lot sizes, Legal descriptions and encumbrances must be confirmed at the Land Title Office.

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Date of Aerial Photography: April 2008



RETAINED NATURAL AREAS - INFILLING

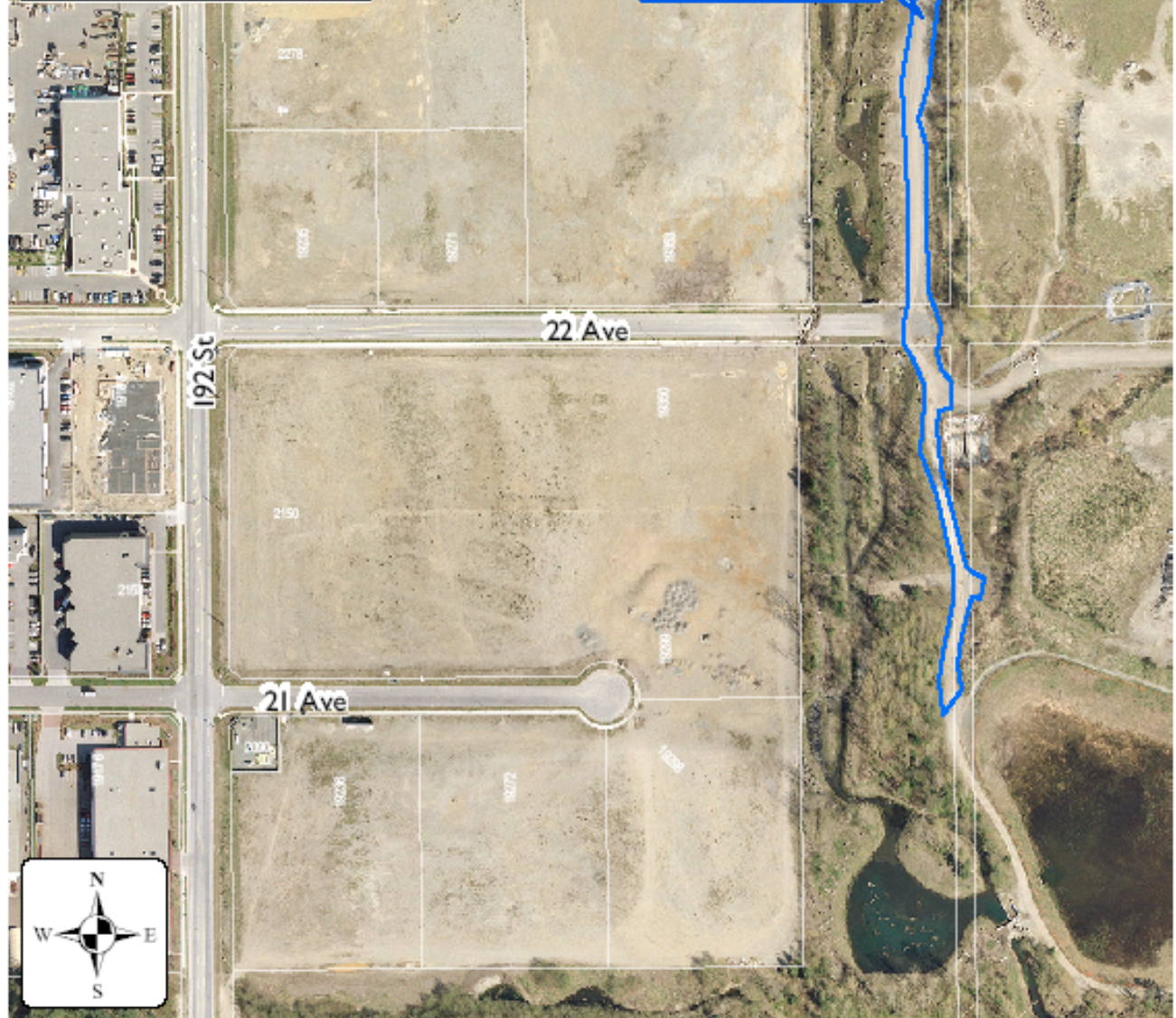
ENGINEERING
DEPARTMENT

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Road Area to be Decommissioned



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Date of Aerial Photography: April 2008

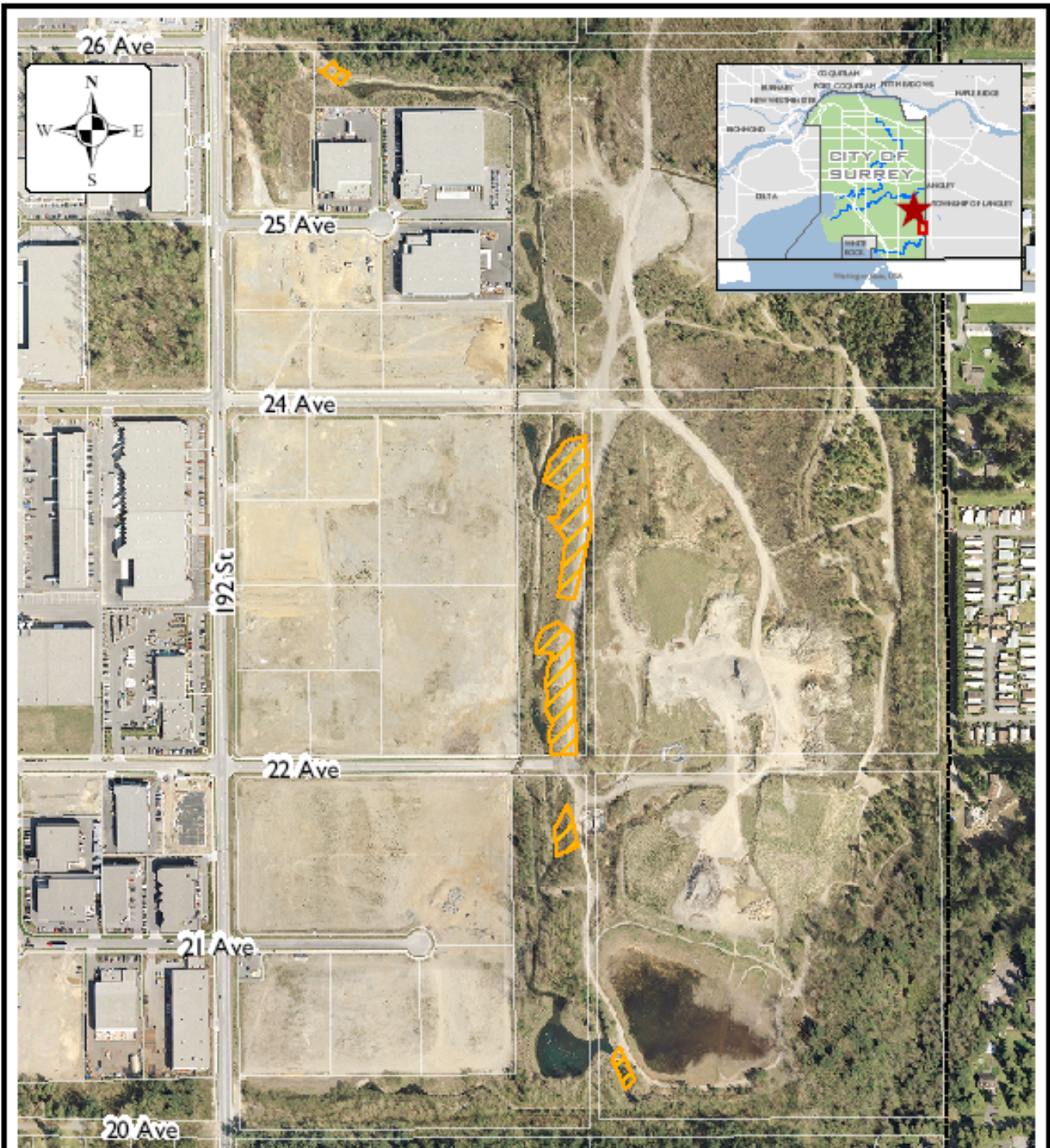


**ENGINEERING ACCESS
ROAD DECOMMISSIONING AREA**

**ENGINEERING
DEPARTMENT**

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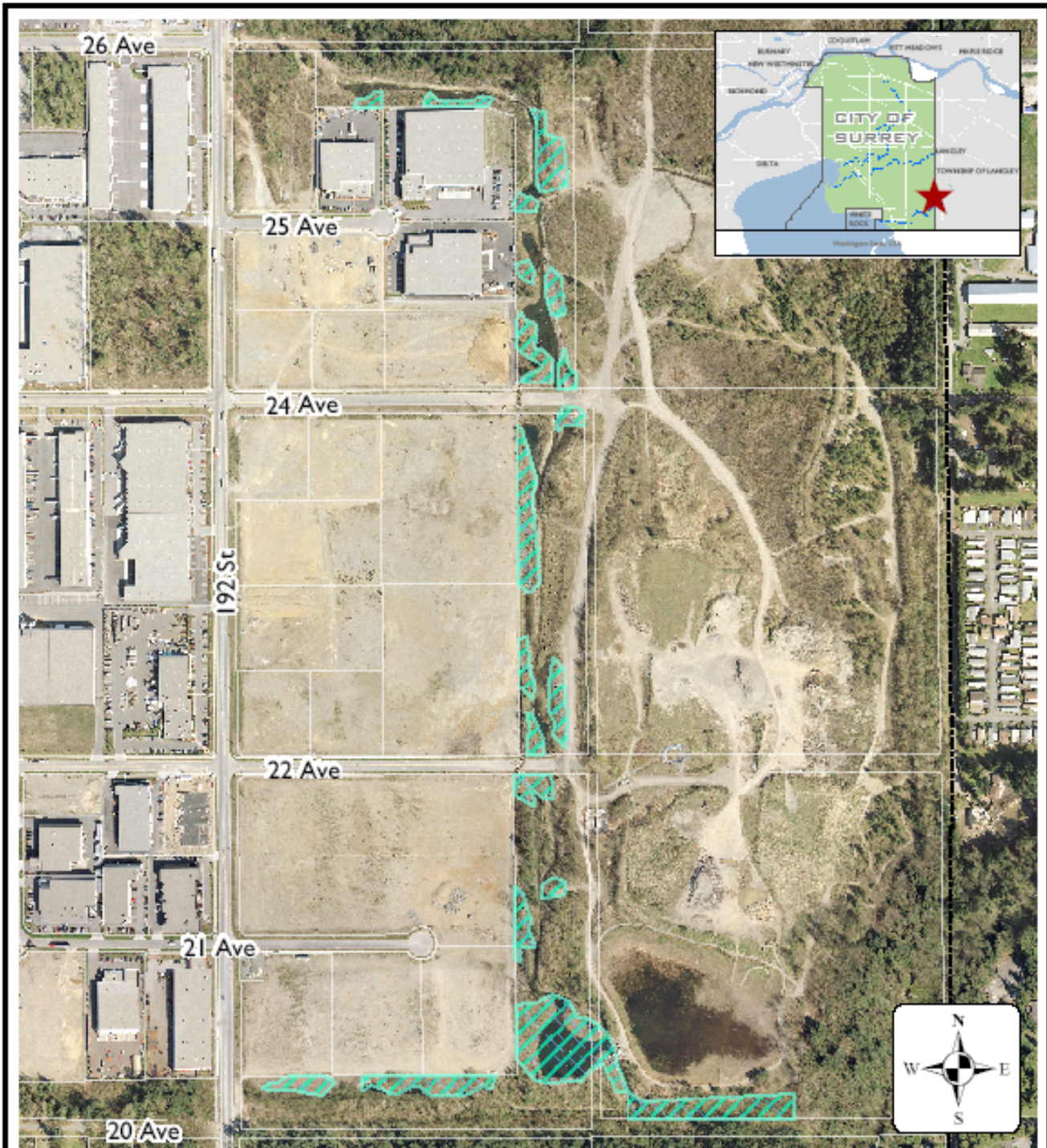


PLANTING POCKETS TO BE INSTALLED

ENGINEERING
DEPARTMENT

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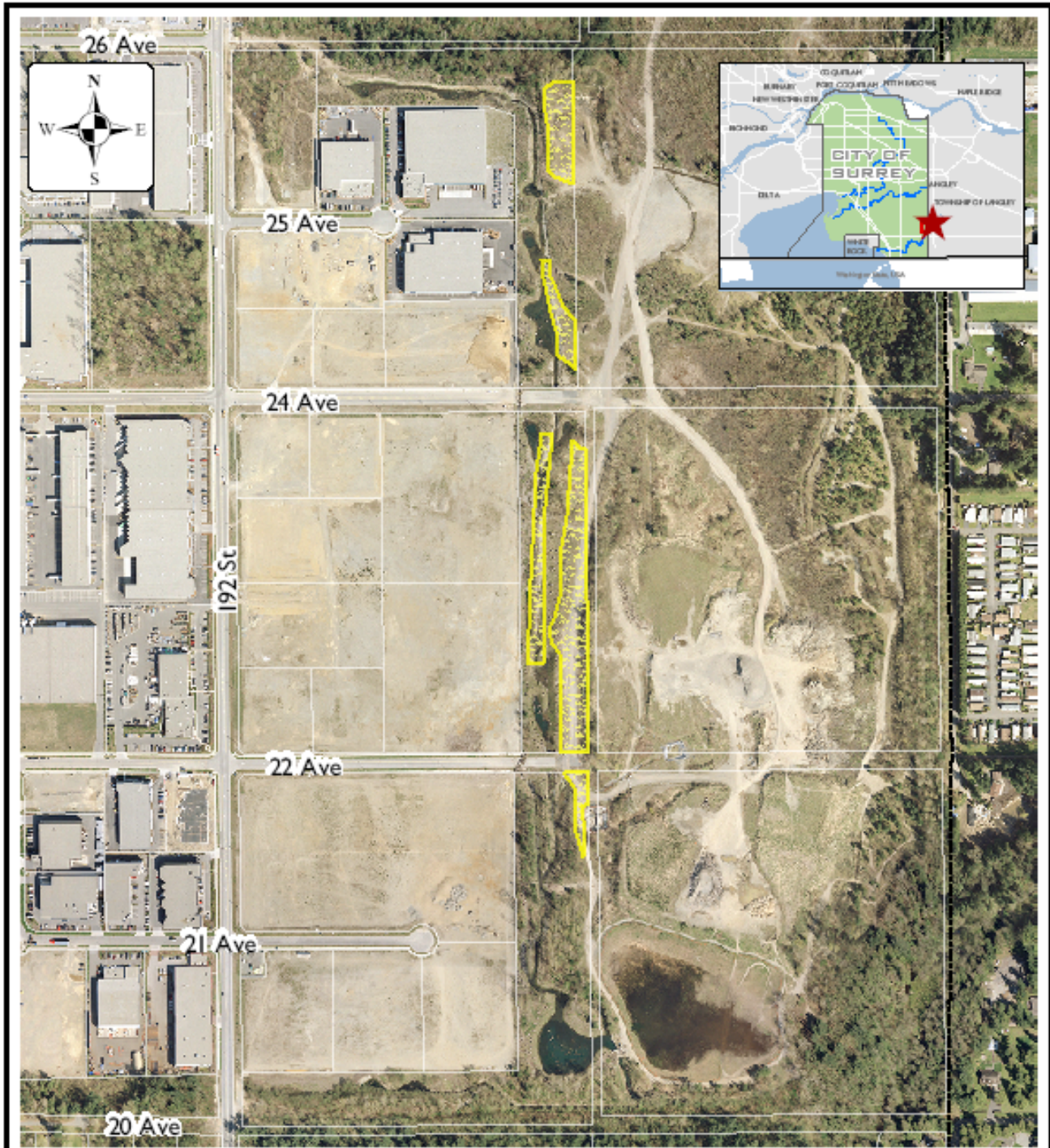


COMPLETED UPLAND PLANTINGS

**ENGINEERING
DEPARTMENT**

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SOIL AMENDMENT & SEEDING AREAS

**ENGINEERING
DEPARTMENT**

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