FEASIBILITY REPORT
OKABENA STREET
TRUNK WATER MAIN EXTENSION

INTRODUCTION

The purpose of this report is to determine the feasibility of improving Okabena Street between the west line of Kragness Avenue and the west line of Boote's Addition by extension of the municipal water distribution system.

Such improvement was petitioned for and the petition was executed by owners of more than 35% of the property abutting on the proposed improvement. This report has been prepared pursuant to Council resolution of June 24, 2013.

The location of the proposed improvement and existing and future conditions are shown on Map A.

PROJECT NEED

The City received a petition for the extension of a water main along Okabena Street from Kragness Avenue to the west line of Boote's Addition from the owners of certain properties abutting the proposed extension. The project, as petitioned for, is intended to provide water service to those properties that currently do not abut a water main.

In addition to the benefit desired by the petitioners, the petitioned water main extension could, if properly sized, serve as a component of recommended trunk water improvements. The City's Water Distribution System Master Plan (Water Plan) identifies the need for a 16" trunk water main connection between the existing 16" main on TH 59/60 and a future 12" water main on 1st Avenue. A water main installed in an extension as petitioned for could be size as a 16" main and complete the first segment of the 1st Avenue to TH 59/60 connection.

The petitioned water main extension could also allow abandonment of a failing segment of 10" water main extending south of Okabena Street. This segment of water main currently provides the connection between the trunk main along TH 59/60 and the existing water main on Okabena Street west of the proposed extension as shown on Map A. This water main is partially located within a wetland making it difficult to repair and maintain.

DESIGN

As previously indicated, the proposed extension should be installed as a 16" main to satisfy the long term goals of the Water Plan. The specific alignment of the proposed water main is controlled by the presence of sanitary sewer and gas mains, wetlands and the need to maintain emergency access to a sanitary sewer lift station. Installation of the water main on the proposed alignment will require the removal of several Cottonwood trees, two Ash trees and a variety of saplings.

Petroleum contaminated soils within the easterly portion of the proposed project will require special consideration during construction and in the selection of pipe materials. An estimated 480 cubic yards of excavated soils will need to be disposed of at a landfill or otherwise processed. Replacement soils will be required for backfilling. The actual quantity of soils that will require special handing will be determined during construction based on screening by a qualified environmental consultant. The costs for special soil processing is eligible for reimbursement from the Minnesota PetroFund through the utility program. Although these costs are eligible for reimbursement up to 100%, the project costs presented in this report include 5% of the estimated costs as a contingency for costs deemed to be ineligible. The pipe should be ductile iron and the gasket material to be specified for use in the pipe joints will need to be petroleum resistant.

A portion of curb and gutter and pavement at the intersection of Kragness Avenue and Okabena Street will need to be removed for connection of the extension to the existing water main in Kragness Avenue. Permanent pavement restoration of the pavement will occur in one to two years following the water main installation.

COSTS AND FINANCING

The total estimated improvement cost, including engineering and contingencies, is $225,000. Of the total cost for a water main project, that portion which would be incurred in constructing a water main of the size adequate only for providing service to abutting properties is to be considered lateral water costs. Such lateral costs are based on the installation of an 8" main. The remaining costs would be defined as trunk costs or those additional costs associated with providing service to an area larger than that which abuts on the project. These costs of the proposed improvement are estimated as follows:

Lateral Costs:	$173,000
Trunk Costs:	$52,000
Total Project:	$225,000

Special assessments for water main projects are levied in two components, trunk assessments and lateral assessments. Trunk assessments are levied on the basis of area benefitted by a water extension and the current trunk assessment rate which is independent of a particular project's

cost. The trunk rate is defined by ordinance and originates from a July 1975 determination of estimated costs for all trunk improvements needed at that time and the total area to be served by those improvements. An adjustment using a construction cost index maintains current value of the trunk rate. A trunk fund receives all trunk assessments and is utilized to retire those debt costs attributable to trunk project costs. The trunk fund may receive more or less assessments than trunk costs for each project undertaken. The trunk water rate estimated to be effective at the time of this project is $2,191 per acre.

Lateral assessments are based on the lateral costs as previously defined and the rate determining frontage or Residential Equivalent Connections (RECs) applicable to the project. The lateral costs divided by the rate determining units establishes the assessment rate. The amount of assessments is equal to the assessment rate multiplied by assessable units. Assessable units may be less than rate determining units when a portion or portions of the project abut property that is not benefitted by the project.

Corner lots served by an existing water main are not assessed for the frontage of an improvement along an additional side. Large corner tracts are, by practice based on the provisions of 94.20(B)(3) of City Code, assessed additional frontage beyond 200 feet of the side abutting an existing improvement. The two parcels abutting both Okabena Street and Kragness Avenue are currently able to be served from the existing main along Kragness Avenue. As shown on Map B, it is not proposed to assess these two parcels, however, their frontage along Okabena Street is used in the calculation of the lateral assessment rate. Wetlands are not able to be developed unless certain mitigation measures are taken (wetland replacement). Due to these restrictions, property within a wetland receive limited benefit from public improvements such as water main extensions and it is recommended that they not be immediately assessed. Additional assessments may levied for the benefits of the improvements should the owners take the measures required to develop the property in the future.

The selection of REC or frontage units tends to be based on the status of the abutting property. Frontage is generally, but not always, used when assessments are to be levied to undeveloped property. The use of frontage units yields a uniformly distributed rate which is beneficial in equitably reapportioning assessments at the time development occurs. REC units are typically used where the number of individual connections or lots is able to be identified at the time the project is undertaken. In the case of this project, the majority of the frontage is undeveloped and therefore it is proposed to utilize frontage units.

The lateral assessment rate would be calculated as the $173,000 in lateral costs divided by the 1,695.3 feet of rate determining frontage or $102.05/ foot. Due to the unusually high assessments that would result from strict use of the City's Assessment Ordinance, it is believed that these assessments would exceed the benefit derived from the project as defined by the intent of Minnesota Statutes. It is therefore recommended that the lateral assessment be based on the current value of the previous water lateral assessments used in similar situations, which is estimated to be $36.10 per foot at the time the project is undertaken. Final lateral assessments will be determined at the time of project financing.

Estimated assessments, trunk fund obligations, and "City Share" costs of the project are as follows:

	LATERAL	TRUNK	TOTAL	
Assessments	$20,136.58	$5,433.68	$25,570.26	(11.4%)
Trunk Fund (due from)		$46,566.32	$46,566.32	(20.7%)
City Share	$152,863.42	0.00	$152,863.42	(67.9%)
TOTAL	$173,000.00	$52,000.00	$225,000.00	

Provided that this project is combined with other assessable improvement projects as a single improvement project having more than 20% of its costs assessed, initial financing of the project costs should be through issuance of a PIR general obligation bond with possible use of 401 construction fund reserves until such a bond is issued. The bond debt would be recovered by special assessments and by special tax levy for the remaining costs not to be assessed.

Should no other assessable water improvements be ordered for 2014 that result in 20% of the costs of a combined improvement project being assessed, it will be necessary for the city share of the lateral costs of the improvement to be permanently funded from 401 Construction Fund reserves. The assessable lateral costs would be initially financed from the 401 Construction Fund and ultimately financed by the lateral special assessments received. Trunk water fund will be used to finance the trunk costs of the improvement. The Trunk Fund will receive all trunk assessments for the project.

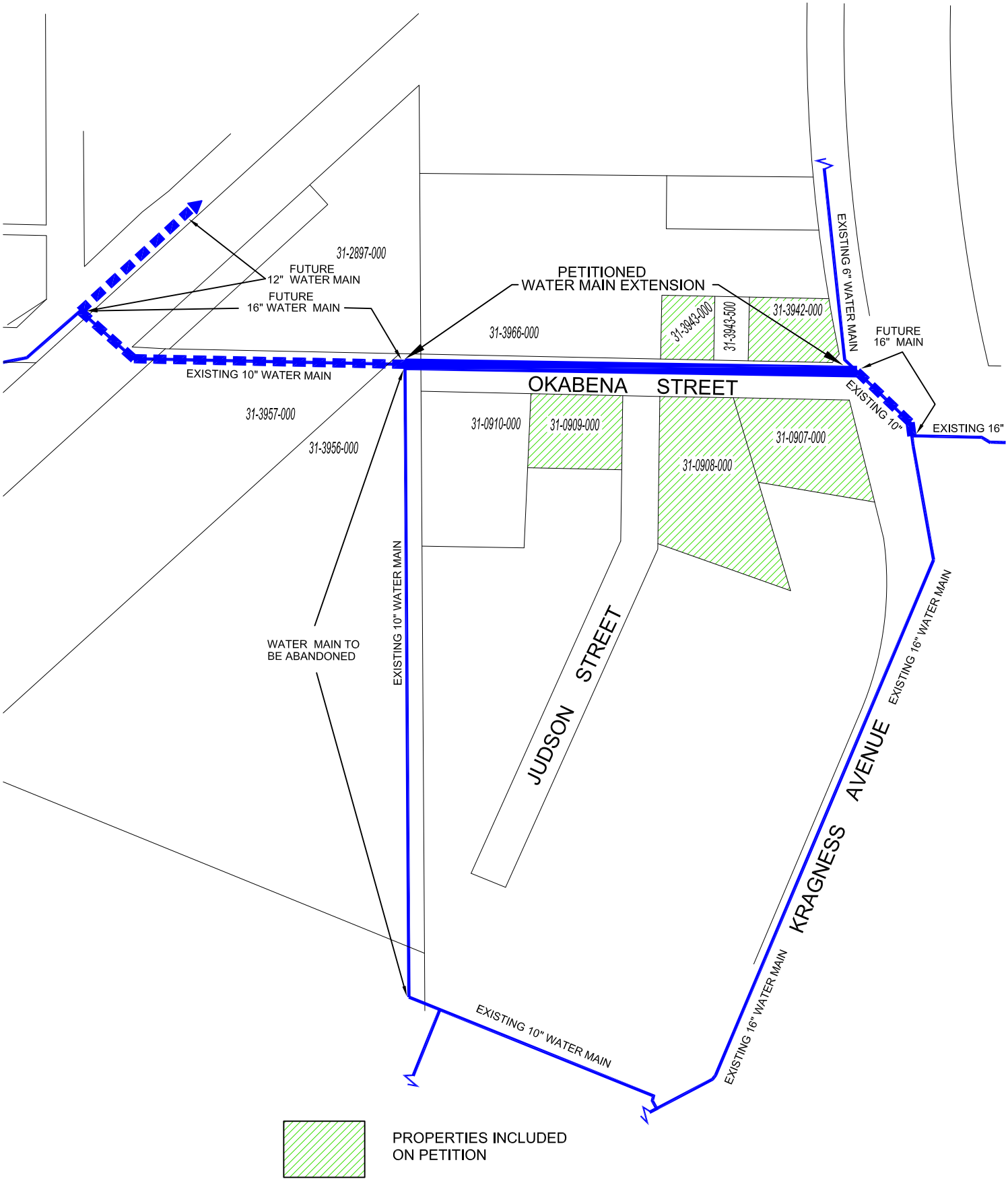
COMBINATION WITH OTHER PROJECTS

The proposed improvement should be combined with any sanitary sewer, storm sewer and water main extension projects ordered to be completed in 2014.

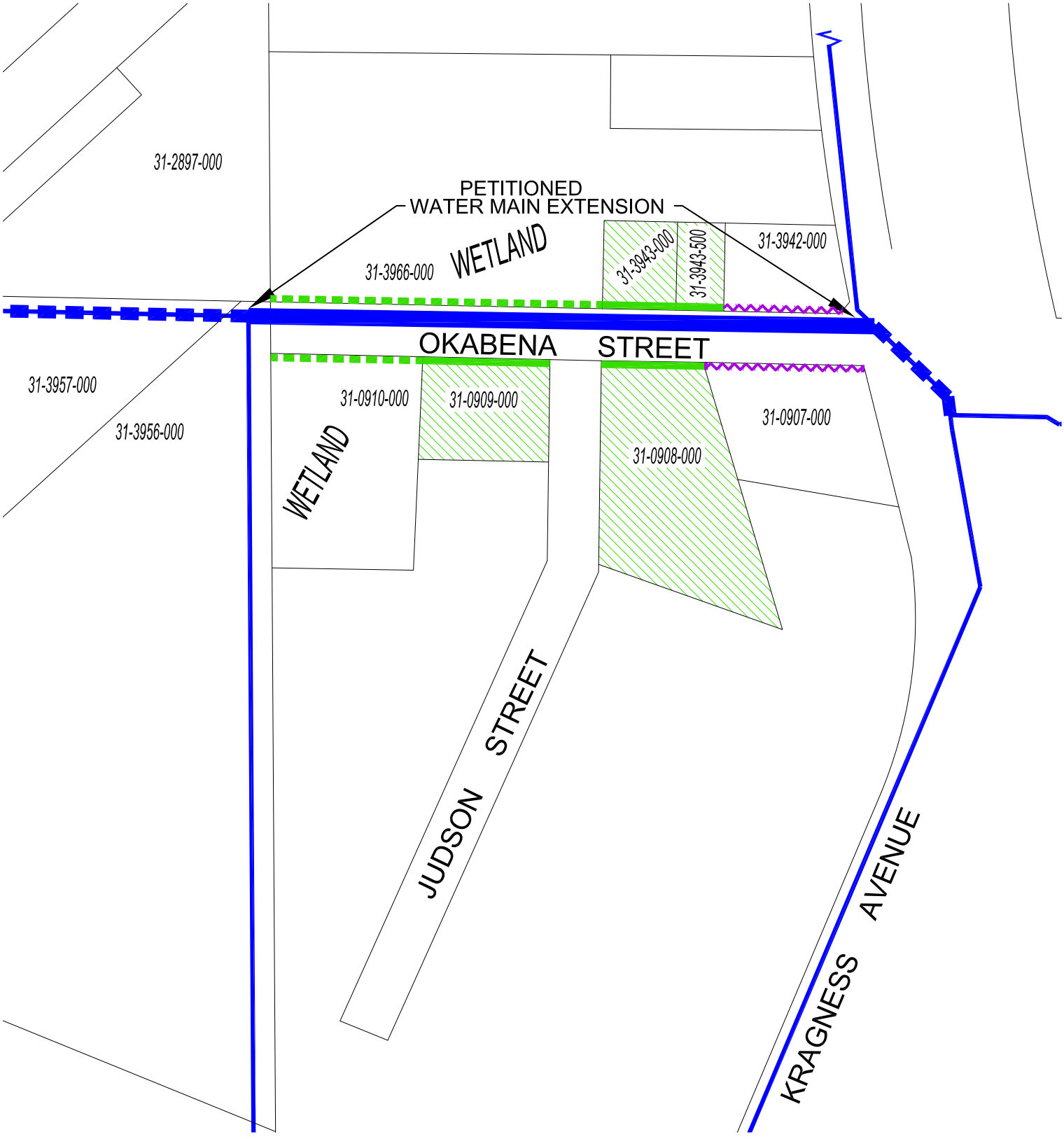
CONCLUSION

The proposed project will provide service access to unserved properties on Okabena Street west of Kragness Avenue. Whereas the project is ultimately needed as part of a larger trunk water main improvement it is also a feasible and cost effective way to provide such water service.

Unserved properties abutting the improvement are those proposed to be assessed for the improvement. Those properties that are unable to be developed under their current wetland status would not be assessed at this time but may be subject to additional assessments should they be developed in the future.


31-2897-000
FUTURE
12" WATER MAIN
FUTURE
16" WATER MAIN
PETITIONED
WATER MAIN EXTENSION
31-3966-000
31-3943-000
31-3943-500
31-3942-000
EXISTING 6" WATER MAIN
FUTURE
16" MAIN
EXISTING 10" WATER MAIN
OKABENA STREET
EXISTING 10"
EXISTING 16"
31-3957-000
31-3956-000
31-0910-000
31-0909-000
31-0907-000
31-0908-000
EXISTING 10" WATER MAIN
WATER MAIN TO
BE ABANDONED
JUDSON STREET
KRAGNESS AVENUE
EXISTING 16" WATER MAIN
EXISTING 16" WATER MAIN
EXISTING 10" WATER MAIN
PROPERTIES INCLUDED
ON PETITION

Map A


31-2897-000
PETITIONED
WATER MAIN EXTENSION
WETLAND
31-3966-000
31-3943-000
31-3943-500
31-3942-000
OKABENA STREET
31-3957-000
31-3956-000
31-0910-000
31-0909-000
31-0907-000
31-0908-000
WETLAND
JUDSON STREET
KRAGNESS AVENUE
Frontage to be Assessed
Not to be Assessed, Corner Lot
Not Initially Assessed - Subject to Additional Assessment, Wetlands
Properties to be Assessed Trunk Benefit

Map B