FIND YOUR AREA

Area 1

- the pole line in this area is over 60 years old & needs to be replaced
- most poles can be easily accessed
- there are a few large trees located far away from distribution lines

Area 2

- the pole line in this area is 20 years old and does not need to be replaced
- some poles can be difficult to access
- there are few large trees in close proximity to distribution lines

Area 3

- some poles in this area are over 60 years old and need to be replaced
- some poles can be difficult to access
- there are few large trees in close proximity to distribution lines

Area 4

- the pole line in this area is over 60 years old & needs to be replaced
- most poles are difficult to access due to fences, trees, gardens and pools
- there are many large trees located in close proximity to distribution lines

Area 5

- some poles in this area are over 60 years old and need to be replaced
- most poles are difficult to access due to fences, trees, gardens and pools
- there are many large trees located in close proximity to distribution lines

Area 6

- most poles in this area are 20 years old and do not need to be replaced
- some poles can be difficult to access
- there are few large trees that might require minor trimming around low voltage lines

Area 7

- this area is already underground
- high voltage infrastructure was upgraded in 1990
- low voltage under ground infrastructure is over 60 years old, and replacement is due because of age and use of non-standard components

THIS IS WHAT WE'VE HEARD:

You love how your neighbourhood looks and feels and you want to preserve this.

We know that there are a number of things that are really important to you:

- Balancing renewal and preservation
- Your trees
- The aesthetic of your streets

How did we learn this?

We heard you at our Town Hall meeting on June 21st and are taking your concerns to heart. Since then we've deepened our understanding of your concerns by:

- Meeting with City of Waterloo staff, Councillor and Mayor to better understand objectives of a successful outcome
- Receiving email in our dedicated project email box
- Corresponding with residents about their concerns and questions
- Conducting focus groups

To begin addressing your concerns we're:

- Making significant changes to our stakeholder engagement process, which include hosting this Open House to get your feedback on available renewal options
- Reviewing all alternative renewal options for your neighbourhood
  - Overhead (OH) designs that have less impact on the tree canopy
  - Underground solutions (UG)
  - Strategic combination of both UG and OH
- Developing alternate design standards that have less impact on the tree canopy
- Preparing budgetary costing of possible renewal options
- Studying the impact of renewal options on other stakeholders
- Conducting power quality investigations

What we're going to do:

- Use the feedback we receive today and from the focus groups to develop a design to discuss with you
- **It will take us 12-24 months to develop the design**

Waterloo North Hydro Inc.

WE'VE LEARNED A LOT.

We have learned a lot from our work on Allen Street. We approached this work as we have done in the past; this was not the right approach for this area.

To avoid this type of situation in the future, we have made the following changes to our process:

- » Advance notice is provided via the "Projects Affecting You" area on our website
- » Customers are notified at the beginning of the design cycle and are given more information and an opportunity to participate
- » Our existing tree impact review process with the municipality and affected home-owners has been strengthened, formalized and documented.
- » Design staff continue to meet with home owners to address particular concerns

The development of Area Plans will include:

- Advance notice provided to residents beyond those abutting the construction areas
- Project specific mail box
- Focus groups and stakeholder involvement
- Open house
- Feedback will shape options
- Communication plans for project outcomes

Waterloo North Hydro Inc.

RECENT WNH PROJECTS UNDERTAKEN IN UPTOWN

Our history of successful projects in the uptown area suggested to us that our stakeholder engagement process was satisfactory.

STREET	YEAR	STREET	YEAR
James Street	2012	Somerset Crescent	2009
Park Street	2010 / 2011	Dick Street	2008
Empire Street	2012	Erb Street	2008
Douglas Street	2012	Avondale Avenue	2008
Stanley Drive	2012	Dietz Avenue	2006
Melbourne Crescent	2009	Alexandra Avenue	2006

This was not the right approach for the Allen Street project. To avoid this type of situation in the future, we have made the following changes to our process:

- Advance notice is provided via the "Projects Affecting You" area on our website
- Customers are notified at the beginning of the design cycle and are given more information and an opportunity to participate
- Our existing tree impact review process with the municipality and affected home-owners has been strengthened, formalized and documented
- Design staff continue to meet with home owners to address particular concerns
- The development of Area Plans will include:
  - Advance notice provided to residents beyond those abutting the construction areas
  - Project specific mail box
  - Focus groups and stakeholder involvement
  - Open house
  - Feedback will shape options
  - Communication plans for project outcomes

Waterloo North Hydro Inc.

HOW IT WORKS:

There are options for addressing your concerns.

- As you move around the room, you will find a description of these options

- Take some time to read the information presented here and ask WNH staff your questions

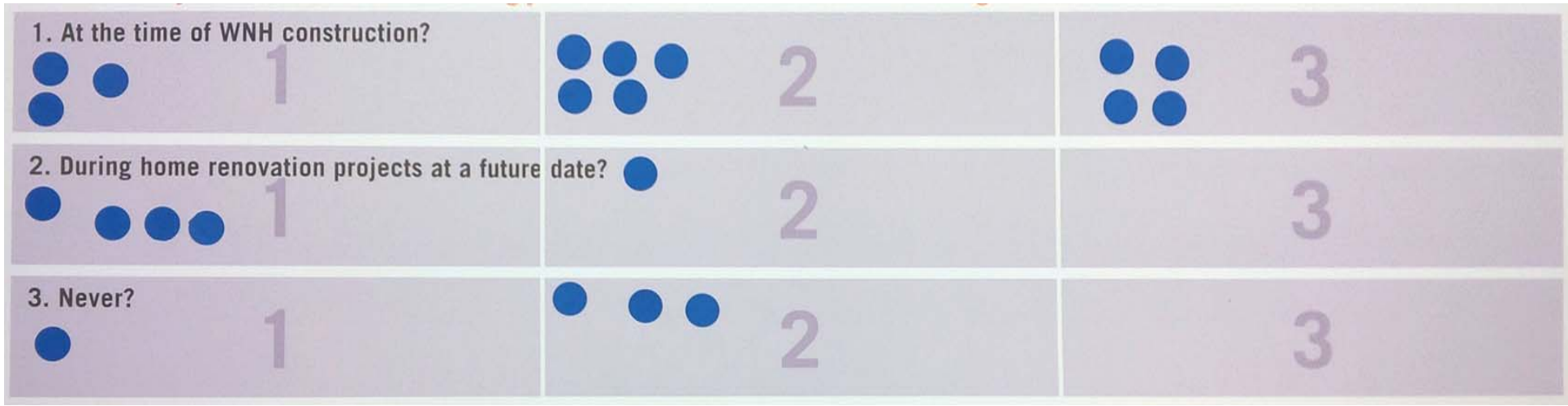
- Then, go to the voting board to indicate your preferences

Waterloo North Hydro Inc.

YOUR INPUT IS NEEDED

Please dot vote for your area in the neighbourhood.

When would you be interested in converting your home service from overhead to underground:



For WNH to be able to consider installing full underground as an option in the near future in this neighborhood all home owners with existing overhead service will need to convert their own service to underground.

Please note, if you selected answer 1 please fill out a contact form before you leave.

Waterloo North Hydro Inc.

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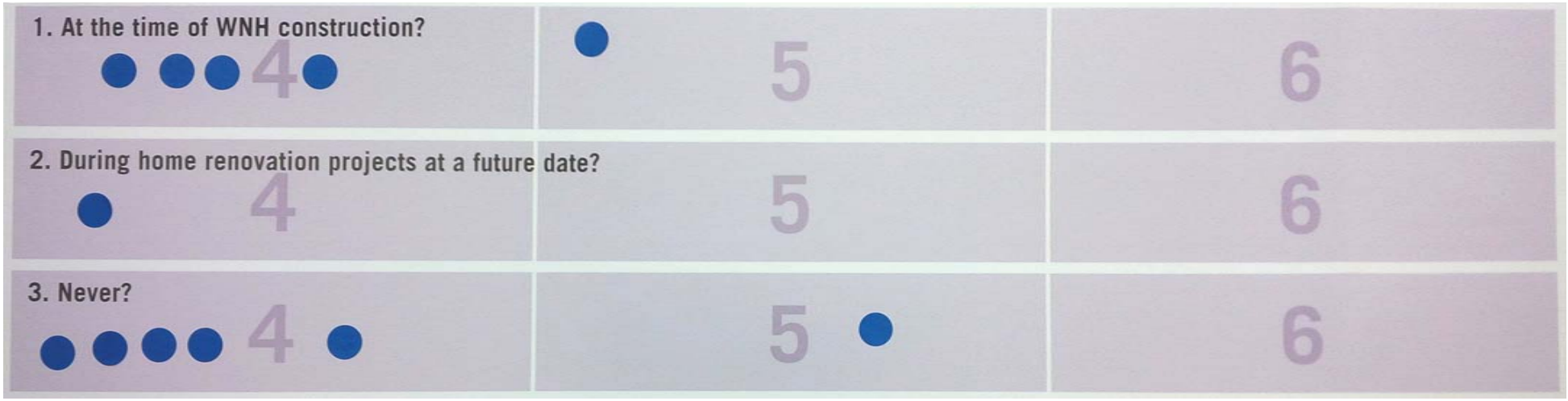

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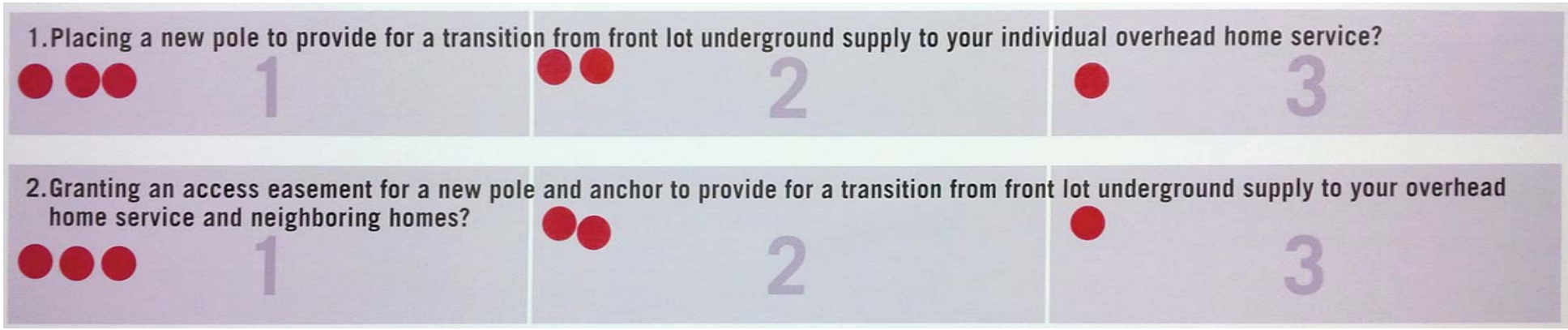
Please note, if you selected answer 1 please fill out a contact form before you leave.

Waterloo North Hydro Inc.

YOUR INPUT IS NEEDED

Please dot vote for your area in the neighbourhood.

In order to install new poles at exact same location as existing, some trees will need to be removed.
To further reduce the impact on trees would you be supportive of:



Please note, if you are supportive of any of these options please fill out a contact form before you leave.

Waterloo North Hydro Inc.

YOUR INPUT IS NEEDED

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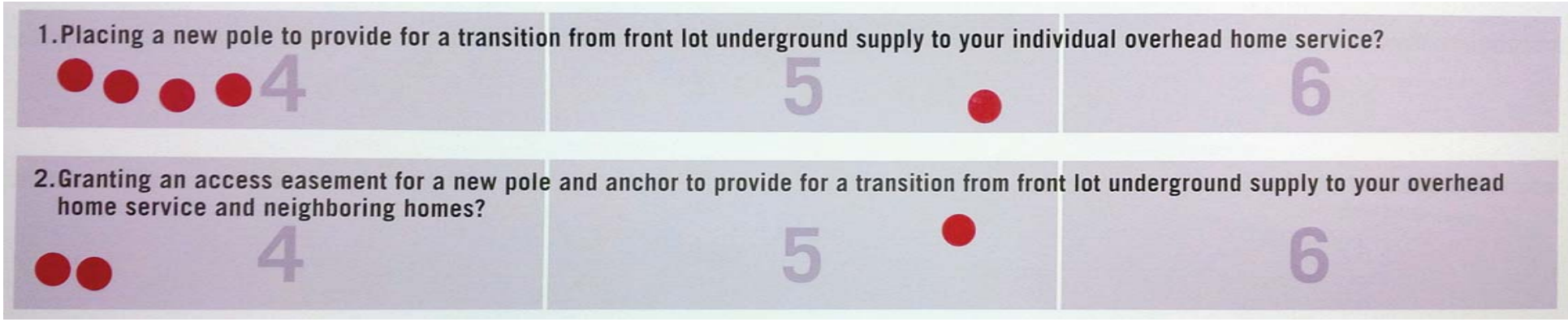

Please note, if you select yes to any of these options please fill out a contact form before you leave.

Waterloo North Hydro Inc.

FIND YOUR AREA

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TO THE RESIDENTS OF WESTMOUNT

Waterloo North Hydro (WNH) is currently examining renewal options for the electrical distribution system in your area. An open house was conducted on Wednesday September 11th to gather resident input. If you missed this session, we would like to invite you to review this slide package which covers the material shared that evening. If you have additional questions or feedback you would like to share, please contact us directly (contact info on last slide).

Waterloo North Hydro Inc.

Dorothy Moryc, P. Eng.
Manager of Distribution Engineering

WATERLOO NORTH HYDRO INC.
PO Box 640
526 Country Squire Rd
Waterloo ON N2J 4A3
Telephone 519-888-5552
Fax 519-886-7049
Email : westmount04-08@wnhdyro.com

October 2, 2013

Dear Waterloo North Hydro Customer,

In spring of 2013, Waterloo North Hydro (WNH) commenced a development of an electrical servicing area plan for your neighbourhood and invited you to tell us about any issues or concerns you may be having with the electrical infrastructure in place today.

On Wednesday, September 11, WNH hosted an Open House at Waterloo Public Library presenting a variety of approaches for renewal work that were developed to address concerns of the residents. During this event, we discussed options for the electrical distribution system in your area and obtained valuable input from the attendees. The information from the Open House can be found on our website by following the link below:

www.wnhydro.com/stayinformed/projectsaffectingyou

Based on the feedback that we received from the residents to date and considering the varied age of WNH distribution poles, (see ***Find your area*** poster by following the link above), we have determined that the best suited approach for renewal of electrical distribution system in your neighbourhood is the Hybrid Service Approach. In this approach, WNH plans to put all high voltage cabling underground within the municipal right-of-way and rebuild existing pole lines where required to accommodate low voltage wires only.

This option allows WNH to upgrade the outdated infrastructure promptly, to implement main and alternate supply points for each street and provides a migration path to front lot underground service. Residents with overhead services can convert to underground on their own schedule; while those who wish to convert their service now, can do so at the time of WNH renewal work. For more information about this option, please see online poster titled ***OPTION 3: Hybrid Service Approach*** by following the link above.

Our next stage will be to proceed to detailed design on a street-by-street basis starting with Area 1. Detailed information will be communicated to the area residents by;

- Delivering pre-design letters to inform you when WNH will be starting design for your street
- providing WNH design contact information specific to the project
- working closely with residents on the particular street
- proceed to construction over the winter 2013/2014

If you did not attend the Open House event on September 11th and wish to convert your overhead service to underground at the time of WNH construction, please send us an email to westmount04-08@wnhydro.com

Waterloo North Hydro encourages the Westmount customers with questions or concerns to contact us either at the dedicated email address (westmount04-08@wnhydro.com) or by phone at (519-888-5552).

We look forward to working with you on this very important project for your community.

Regards,

DMoryc

Dorothy Moryc. P. Eng,
Manager of Distribution Engineering

OPTION 1: RE-BUILD LINES IN BACK LOTS

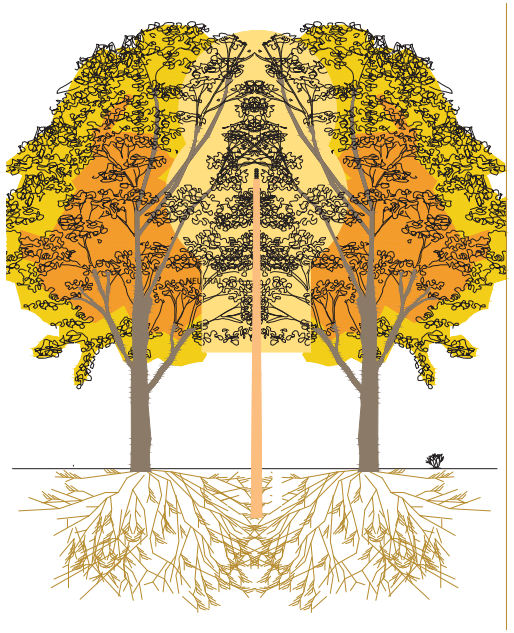
This approach means rebuilding lines in the rear lots (where they are today) to current safety standards. Poles, transformers and high voltage lines would be replaced and remain in rear lots. However, this option does not address the concerns of residents in your neighbourhood.

Pros

- **Your streetscape aesthetics remain unchanged**
- **The hydro service entrance (connection) to each home remains unchanged**

Cons

- **Perpetuates the current problem with access for maintenance and repair and proximity to houses**
  - backyard gardens, decks, pools, recreational and other structures
  - access to hydro lines by crews an inconvenience to home owners
- **Highest negative impact on trees in backyards**
  - tree trimming requirements around high voltage lines are much higher than low voltage
  - 80% of trees in Zone 3 will have to be removed. (See image to right.)
- **No provision for alternate supply to the neighborhood**
  - resulting in longer outages that affect a large group of residents
- **Line Crew Safety**
  - use of non standard equipment and manual work methods (pole climbing, digging, lifting) creates a greater risk of injury executing the work or responding to trouble during poor weather or at night



—High voltage lines tree impact

OPTION 2: FULL UNDERGROUND SERVICE

This approach would only be feasible if all homes already had underground electrical service that can be easily accessed from the front lot. This is not the case for this neighborhood.

This would mean that 97% of home owners supplied by overhead lines would need to convert their service.

What is required to convert my home to be serviced by underground wiring?

- **Your electrician:**
  - Installs a new meter base on the exterior wall near the front of your home
  - Installs conduit from below the new meter base to the property line (either by digging up and burying under driveway, wrapping conduit around the house, or both)
  - Arranges for Electrical Safety Authority (ESA) inspection—any deficiencies identified during inspection must be rectified by an electrician before Waterloo North Hydro proceeds

- **Waterloo North Hydro:**
  - Installs underground secondary conductors from pad mounted transformers to the new meter bases

What are the repair and restoration costs associated with overhead to underground service conversion?

- **Excavation, removal and replacement of:**

- **Asphalt/brick driveway, paving stones, patios, pools, grassed or landscaped areas, etc**

- **Repairing roof and exterior house finishes or landscaped areas after overhead mast and stack is removed**

Best Case Scenario—meter base is located within 10 ft. of the front corner of the house in the grass area.

Most Complicated Case Scenario-meter base is located at the back of the house in obstructed location (pool, concrete or wooden patio, recreational equipment, etc. is in the way). In this case there are 3 service conversion approaches that are available:

(1) Relocate meter base to the front corner of the house; route electrical service wire in the conduit strapped to the outside house wall; the electrical panel location and electrical service entrance to the house remains unchanged.

(2) Relocate meter base to the front corner of the house; route electrical service wire inside the house; install a new disconnect switch; create a new wall penetration for new service entrance; electrical panel location remains unchanged.

(3) Relocate meter base to the front corner of the house; relocate electrical panel; rewire the inside of the house.

OPTION 3: HYBRID SERVICE APPROACH

This approach means combining options 1 and 2 and getting the street ready for full underground.

High voltage power lines: will be converted to front lot underground. Pull vaults will be required as marked on the map.

Poles and low voltage power lines: will be replaced and will remain in the rear lot. Home owners will have the option to convert to front lot underground based on their own schedule.

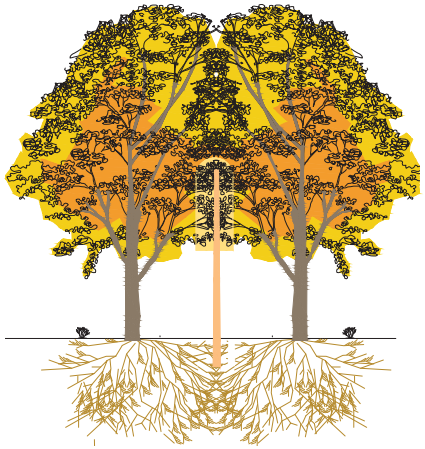
All future customer electrical service upgrades will have to be buried and connected to front lot underground supply. As home electrical upgrades happen, this may allow WNH to remove poles and lines in rear lots no longer required. Pull vault locations will become above grade transformers (green boxes) when the first home conversion happens.

Pros

- **Improved power reliability**
  - Better access to high voltage distribution equipment and alternate power supply means:
  - Less frequent power interruptions, fewer homes affected during an outage, faster restoration times, and improved ability to maintain equipment
- **Improved safety**
  - No high voltage lines or transformers in private backyards
- **Tree Impact is 60% less than Option 1**
  (See image to right)
  - Minor tree trimming will still need to be performed on an ongoing basis (every 2 years)
- **Changes to streetscape aesthetics are minimized**
- **Hydro service entrance (connection) to each home remains unchanged**
- **Slightly lower cost than rebuilding existing infrastructure in place**

Cons

- **Access to low voltage hydro lines on private properties in back lots still required**
  - During construction, and regular maintenance / repair
- **Some trees will still need to be removed in difficult access construction areas (see map and poster: More Ways to Save Trees).**



—Low voltage lines tree impact

MORE WAYS TO SAVE TREES

Here are options to address tree removal requirement for construction purpose. Trees in close proximity to hydro poles create an obstruction during pole replacement.

Re-space Poles:

Installing a new pole in close proximity to an existing pole location may involve complete removal of adjacent trees. 'Re-space Poles' solution means placing new poles at new locations within the existing alignment in the rear lot.

Impacts

- this solution provides smaller tree impact and could potentially eliminate complete tree removal
- placing poles at new locations that are free of tree canopy changes backyard aesthetics (poles and wires are more visible)
- could result in few more poles being added

Transition Poles:

This solution means installing a new pole at a suitable to both parties (WNH and Home Owner) location to provide for a transition from front lot underground supply to your individual overhead home service.

Impacts

- this solution provides smaller tree impact and could potentially eliminate complete tree removal
- placing poles at new locations that are free of tree canopy changes backyard aesthetics (poles and wires are more visible)

Transition Poles & Easements:

This solution means providing a side yard easement and installing a new pole at one of the property corners in the rear lot to provide for a transition from front lot underground supply to your individual overhead home service and neighboring homes

Impacts

- this solution provides smaller tree impact and could potentially eliminate complete tree removal
- placing poles at new locations that are free of tree canopy changes backyard aesthetics (poles and wires are more visible)
- further improves reliability by segregating the low voltage distribution system into smaller subgroups

Waterloo North Hydro Inc.

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HOW WE WORK WITH YOU.

Our consultation process for Area Plan Development and street-by-street distribution renewal projects:

This stage: Area Plan Development

- Advance notice provided to residents
- Project specific mail box created (westmount04-08@wnhydro.com)
- Open house to share information and obtain your input
- Feedback will shape options

Next stage: Street by street distribution renewal

- Advance notice will be provided via the “Projects Affecting You” area on our website
- Customers are notified at the beginning of the design cycle, given more information and an opportunity to participate
- Design staff continue to meet with home owners to address particular concerns
- Customers have an opportunity to provide feedback on preliminary design if it varies significantly from today’s conditions
- As always, customers are notified of the start and expected duration of the construction phase of our project
- Advanced notice will be given for scheduled power outages

Waterloo North Hydro Inc.

WHAT HAPPENS NEXT?

We will notify you prior to beginning detailed design

- » See timing poster for expected timing of work on your street
- » Individual residents **on affected streets only** will be notified at the beginning of the detailed design cycle, given more information and an opportunity to participate
- » Advance notice will also be provided via the **“Projects Affecting You”** area on our website
- » Design staff will continue to meet with home owners to address particular concerns
- » Customers have an opportunity to provide feedback on preliminary design if it varies significantly from today’s conditions
- » As always, customers are notified of the start and expected duration of the construction phase of our project
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Waterloo North Hydro Inc.