



3D Cadastre: With or without Subsurface Utility Network?

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Objective

To “**open**” “**again**” one fundamental question :

Registration of underground utilities network (UUN) in relation with surface object registration (3D Cadastre)

❖ Questions

- Do we need to register underground utility networks ?
- Should underground utility networks be registered in the Land Register (3D Cadastre)?



Recommendation 1

YES we all agree:
WE NEED TO REGISTER UNDERGROUND UTILITY NETWORKS



Current systems

- ❖ In most Countries, by laws, infrastructure owners must register their buried pipes and cables
 - Who break the UUN assets is responsible of damage cost
- ❖ Call before digging Services
 - Info-Excavation, Québec
 - Call 811 in USA
 - Dial Before You Dig in Australia

A service (usually national) to prevent damage and related safety and cost affairs

Info-Excavation 2014 www.info-ex.com

❖ 5 damages/day

❖ Costs (annual):

- Direct
- Indirect

❖ Causes

35%

5% in organization

58% errors in the digging process

BUT no central spatial database
Each time, we start over the process of
marking on the ground the location

Electric-Hydro





Service as “Call before digging”

❖ Replicated operations

❖ No central or integrated

❖ T

But people does believe that
a register for ownership of UUN exist!

- Publish ownership right (and make them opposable to tiers)
- Support land lawyers suitably exercise their professional judgment about the state of title to a particular legal unit



Current Register and Laws

- ❖ Register / Laws exist for damage and safety concerns

Responsibility concerns arise when damage occurred !

- ❖ How about :

- Providing guaranteed ownership of all interested parties when installing the assets ?

How do we name this Register ? Land Register?

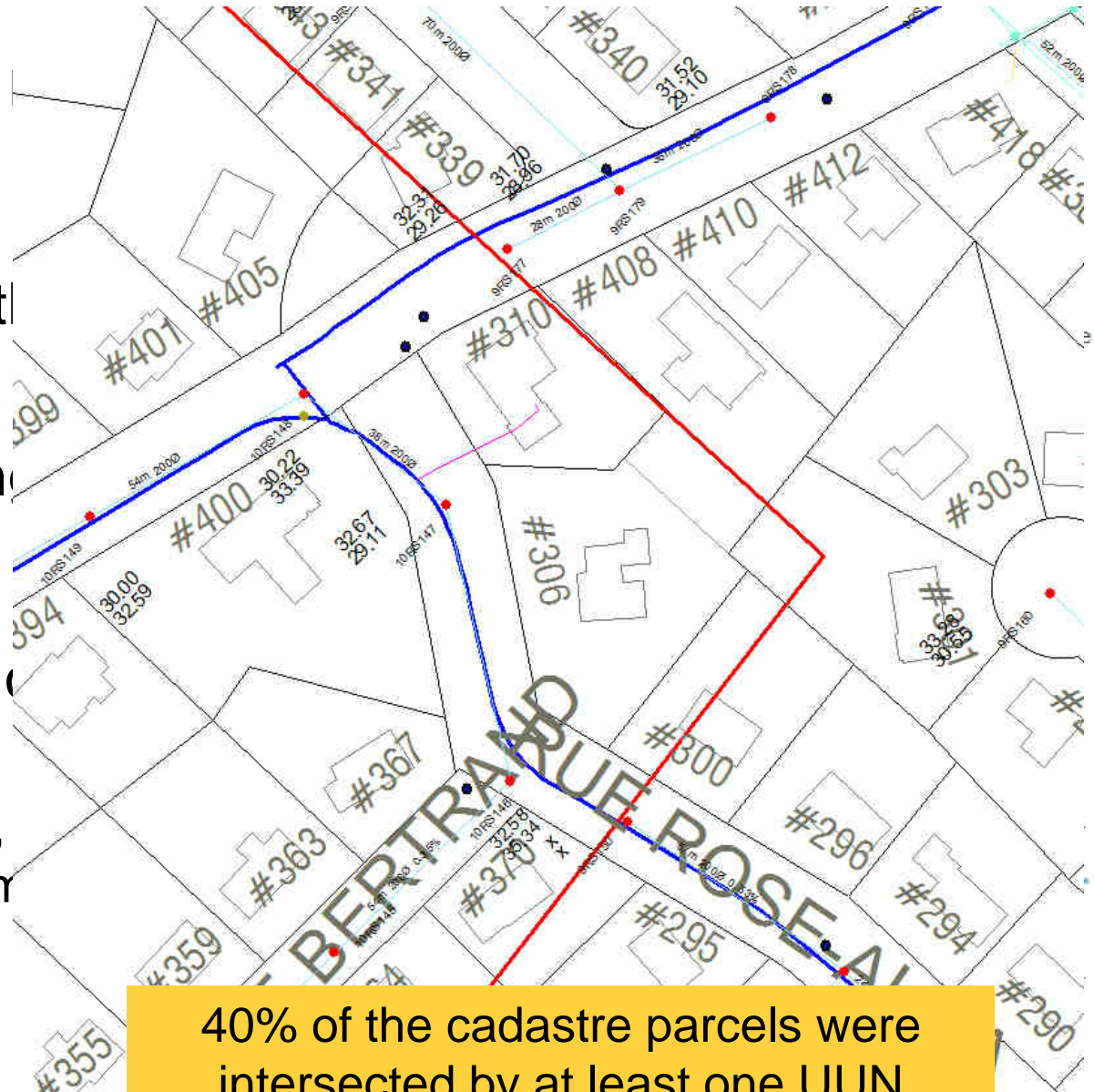


Recommendations 2

- ❖ Should it be linked with Land Register?
 - NOT necessary...
 - YES, would be easier for ownership right registration process
 - BUT regarding mapping process...
 - Very long geometry, not continues space, not or rarely visible
 - If not fully integrated, we need a **STRONG** link
 - E.g. having the list of parcels affected by the presence of a network and on the land file proper easements published

What

- ❖ Not visible
- ❖ Not easy to measure with precision once buried
- ❖ Very long and connecting
- ❖ Cross many parcels
- ❖ Share space with many UUN
 - Electricity, oil, gas, sewer, telecommunications, therm



40% of the cadastre parcels were intersected by at least one UUN

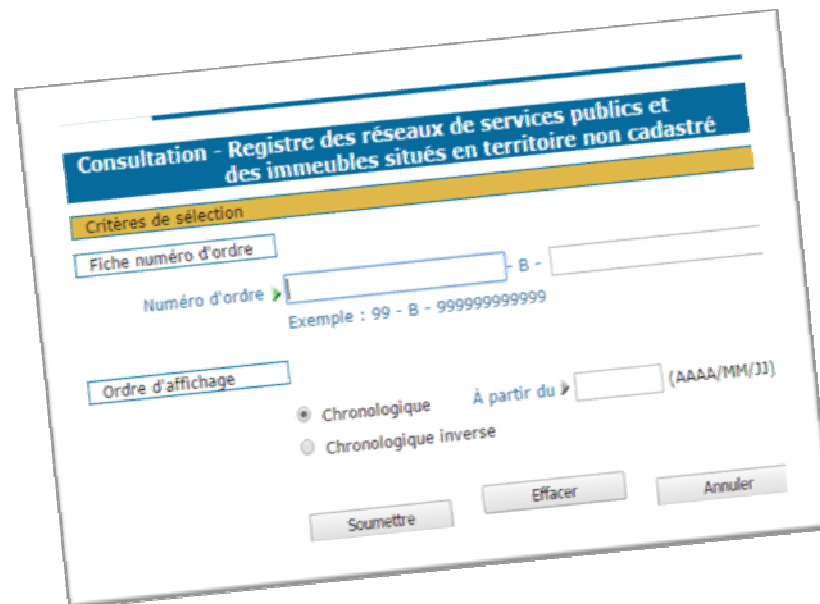
A melting pot of ...



Is UUN registered with Land Register?

- ❖ In Quebec, in Canada, the answer is yes and no!
- ❖ Not mandatory
- ❖ UUN may be registered in a complementary database (not linked... to Land Register)

“the Register of Public Service Networks”



The screenshot shows a web application interface titled "Consultation - Registre des réseaux de services publics et des immeubles situés en territoire non cadastré". The interface includes a search form with the following elements:

- Critères de sélection**: A section header for search criteria.
- Fiche numéro d'ordre**: A label for the search criteria.
- Numéro d'ordre**: A text input field with a dropdown arrow, followed by a "B -" label and another text input field. Below this is an example: "Exemple : 99 - B - 999999999999".
- Ordre d'affichage**: A label for the display order.
- Chronologique**: A radio button option.
- Chronologique inverse**: A radio button option.
- À partir du**: A label for the start date, followed by a date input field and the format "(AAAA/MM/JJ)".
- Buttons**: "Soumettre", "Effacer", and "Annuler" buttons.

Issues

- ✓ No guideline for the description of the network (neither semantic or geometric)
- ✓ No map available
- ✓ Not able to...
- ✓ T...
th...
 - It does not register the ownership of property BUT the owners of UUN and its transactions of network owner or the official authority (notary).
- ✓ Land file opens only when real estate transaction occurs (not when UUN is built)
- ✓ The recordID of UUN is not known, we mainly query the name of the owner of UUN



Applying Easement (Servitude)

- ❖ Right of superficies
- ❖ The Law offers utility network owners “implicit” easements
 - *Civil Code of Quebec* article 1110.

Enforceable without registration
When an easement is registered on a Land File, its concordance
with network location is not guaranteed



Conclusion

- ❖ YES we all agree: WE NEED TO REGISTER UUN
- ❖ The exact role of this register HAVE to be specified (and known)
 - Notification system in case of digging or damage affairs?
 - To protect land and property ownership?
 - To secure real estate transactions?
- ❖ So only ONE REGISTER
or MORE having complementary roles?
 - YES or NO ??
- ❖ Who can have access to this register?
 - A certain category of professional? All professionals? Public?



Acknowledgements

- ❖ Michel Morneau from Foncier Qc,
- ❖ Natural Sciences and Engineering Research Council (NSERC) for funding this research program