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Nunalingni Kavamatkunillu Pivikhaqautikkut
Department of Community and Government Services,
Ministère des Services communautaires et gouvernementaux
Kitikmeot Region □□□□□□□

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Kitikmeot Region
Cambridge Bay, NU, X0B 0C0

February 20 & March 11, 2005
& May 27 Commentary

Resolute Bay Utilidor Study
Project No. 03-4302

Lloyd Mandeville
AD Williams Engineering
Yellowknife, NWT

Dear Lloyd,

After various discussions with Keith Adams in Resolute and others in CGS, I have the following comments to make regarding the course your work with the Utilidor system should be taking over the next month, in preparation of the RFT (and possible RFP) to be ready by late March **(the red and blue fonts are what we should be addressing as part of the RFT and subsequent RFP. Note that blue font has been added on revised list, March 11).**

The RFP will be broken down into three aspects (to be bid on separately, but, if funding is in place, to be contracted as one):

1. All repair, upgrade, testing, schematic drawing, of the existing Utilidor system for Phase 1 and Phase 2 in Resolute
2. All work on the Water Treatment Plant & Char Lake Intake Pumphouse that's needed.
3. All work on Phase 3 of the Utilidor system (new parts of the system for Phase 3 lots)

List of issues:

1. We will need a list of all the pipe and other components that were supposed to have been replaced by the GN as a result of the contract with Aziz. Shane feels that this has not yet been done. According to the 1.1.4 (p. 2 of Section 01010 of Contract CT03-2017 (April, 2000), all pipe materials for the laterals and new valve for AV-3 "will be supplied by the GN from materials that are being supplied on this years sealift. These materials are pipe and insulation conduit only." Keith is doing an inventory of what is in stock there now. (There was new pipe sent in, but Keith thinks it was for the utilidor expansion. This may be the stock "pilfered from" last year that Shane is talking about, and that will need replacement…)
2. We need a list of components to have in stock for regular O&M replacement (valves, pumps, etc). Keith will work on this with us.

3. Continuing to add needed information to the plan you are working on:
    a. We must see which buildings are connected by laterals, and the location of these laterals.
    b. Note: although we are connecting many things up by CGS, we are really only responsible for our own assets and the main lines. These should be identified on the plan.
    c. We also need to know which of these laterals are connected by Keith's plywood "curb boxes". The curb boxes should be shown and numbered on the new plan. We will need to insure that check-valves (sewer anti-back-up valves) are installed at each curb boxes to avoid sewer back-up, such as occurred at great expense to the GN last year.
    d. We will need to know the exact lateral distances for the laterals being done this year, so this can go into the RFT.
    e. I have worked with Keith to identify Phases 1 and 2 on the plan (because in case of a major freeze, Phase 1 can be isolated). Phase 1 consists of: AV 22 (now disconnected), 20,19,18,17,16,15,14,13,23,25,21,and 3. Phase 2 is all the rest. A note should be included in the plan to that effect.
    f. AV 21 is the HUB for Phase 1 and Phase 2. A back-up hub is AV 13 to AV 12. Theoretically, we could also feed Phase 2 off of AV 3. All of this, too, needs to be noted on the plan.
    g. We will need to mark the location on the plan of all bleeder valves, and what flow rate Keith is using to avoid freezing
    h. AV 22 is still disconnected from the Health Centre. Instead, the HC is serviced by AV 20 as shown on the plan attached. Dotted lines show disconnected utilidor.
    i. The Rec Hall, Hamlet Gym/Office, Health Centre, Hamlet Garage, School, South Camp Inn, and ALL other buildings serviced by utilidor must be shown on the plan. Please coordinate with Keith on this.
    j. The location the macerator must be shown on the plan
    k. See the October 1998 Dillon plan (attached, which I just got from Keith Adams via Fax), which shows a table of pipes numbered A through P. We will need to up-date this information
    l. We must change the block numbering system. Keep Blocks 1, 3,4,5, and 6 as shown on the original plan. Keep Block 2 where the School is. Re-number all other Blocks as shown on attached plan. We will continue adding Block numbers as community expands into Phase 3
    m. 90 degree elbows that should be replaced with two 45 degree elbows, separated by approx. one or two feet of straight pipe (this makes it possible to steam the pipe in case of a freeze – something otherwise extremely difficult at best, because the steamer hose gets stuck on the sharp bend). Work with Keith to identify which of these should be done. A partial list is as follows:
        - AV 13: water OK
        - AV 12 water OK
        - AV 23: water OK
        - AV 21: valve that shuts down the town (Loop 1) needs replacement. Keith will get you the specs.
        - AV 20: water OK
        - AV 3: needs a cap with a clean-out T (instead of two 45s)

- AV 4: needs replacement with two 45s and straight between
- AV 6: needs a cap with a clean-out T (instead of two 45s)
- AV 29: needs two 45 degree elbows separated with a straight run
- AV 30: needs two 45 degree elbows separated with a straight run
- AV 8: needs a cap with a clean-out T (replace the elbow with a T)
- AV 10: needs replacement with two 45s and straight between
- AV 11: OK
- AV 12: needs a cap with a clean-out T (instead of two 45s)
- AV 23: needs a cap with a clean-out T (instead of two 45s)

n. This need for two 45 degree elbows may apply to sewer lines as well. Note that the sewer line at AV 16 is a 90, but is not a problem because there is a sewer clean-out (Keith calls them "sewer pots"). We should identify all sewer pots on the plan.

o. We will need a series of complete details of the valves and pipes in each AV (this is already begun with the circle details on the plan, but will need some more info – perhaps in larger detailed schematic drawings along the same lines)

p. We will need to know what sections of utilidor still need either replacement, testing, or repairs. Keith has given me a list of sections that have been looked at as part of Aziz's completed contract: Please note this (if not already) on the plan, along with the date changed or tested
- AV 5-6 was changed (replaced) in 2003
- AV 9-10 was changed in 2003
- AV27-28 was changed with two 45 deg. Elbows in 2003
- AV 29-30 was changed in 2003
- AV 8-9 was tested in 2003, found OK, and was not changed

4. What materials do we have on site to do this work? (see no. 1 above)
5. The entire utilidor between AV 10 and AV 12 must be replaced
6. All valves in the system should be tested as part of the RFT. The by-pass valve in AV 3 was supposed to have been fixed by Aziz as part of his contract last year, but was not. Now, Narwhal is going to replace it, and the money come out of Aziz's hold-back. If this is not done by the time the contract is tendering, we will add it as an addendum.
7. All hydrants (now identified in your plan) are always freezing up. What should we be doing about this as part of the RFT?
8. Heated Access Vaults: None of the vaults is heated now. They used to be, but this was discontinued in the early 90s. Also, in the past, all sewer and water were heat-traced. What Keith wants is to have a way of heating the Access Vaults that have hydrants. There should be a waterproof switching that shuts them off if the sewer backs up. At present, since there are no check-valves, it is necessary to leave the tops of the sewer pots open so there is some way for the backing-up sewage to go, and this is Keith's early-warning system (sewage on the surface). Thus we need 4" check-valves.
9. Plans for Phase 3 expansion: it is imperative that we provide some new areas for new housing this year (see Oct 1998 plan by Dillon, attached also). AV 16 and AV 13 are apparently designed with Ts to facilitate expansion. AV 16 in particular has a valve installed already for this. This valve must be tested and replaced if necessary. The water lines could come from either AV 16, AV 14, or AV 13. But the return is either from Av 14 (which is the designated return) or AV 13. AV 16 has the theoretical ability to run sewer into Phase 3, but Keith thinks that a better (higher) point would be AV 17. This

must be investigated. Part of the RFT is to provide enough new serviced areas to meet the community's needs for the next 10 years. This can be phased, but we will require two new connections in Phase 3 this year. If we take water off at AV 16, we will need two 45 degree elbows and short length between.

10. Note that the new sewer lines, unlike the water lines, can be stand-alone (there is no need to tie the Phase 3 sewer lines into the old sewer line system)
11. Water Treatment Plant (WTP)and intake pumphouse (IPH) :
    a. We need specs on the tank level switches, transmitter flow switches, etc. for the existing plant and IPH
    b. Recommendation for any emergency repairs to get the system through the next several years until the new WTP and IPH can be designed and built
12. New recirculation pumps at the WTP1 should be installed in order to provide sufficient pressure for the new parts of the utilidor Phase 3. Or, a stand-alone pumping booster station vault can be built in the Phase 3 area itself.
13. Once the heated bleed water (used to keep the temporary above-ground laterals from freezing) is reduced when the laterals are buried, a heat load analysis should be undertaken for the system heating needs. Note that the boilers being used presently are approximately 30 years old, and were scheduled to be replaced over ten years ago. We will need x number of new, efficient boilers. These boilers would be used (transferred to) in the new WTP when that is built.
14. Similarly, the boilers in Char Lake Pump House should be replaced (or assessed for useful remaining life)
15. New WTP, IPH, sewage treatment system (there is at present only a macerator on the sewer line before the effluent goes into the ocean), hazmat dump (if needed)
    a. Preparation of an RFP for engineering services to design new systems
    b. Note that the blue building next to the macerator was apparently designed to house a package sewage treatment system, but was never used for this purpose. This should be an option that is explored. The building is just an unheated storage warehouse now.

I will be in Resolute Bay this coming week – in particular, from Wednesday to Friday morning. I believe I will be staying at the Grise Fiord Lodge on Monday and Tuesday nights (980-9135 or 9913), and at the Tudjaat Coop Hotel in Resolute on Wednesday and Thursday nights (252-3900). Keith Adams' contact info is: 867-252-3655 Fax: 252-3622 pwsresolute@polarland.com

I know that you are gone as of Thursday this coming week, so perhaps we should set up a time when you and I, Keith, and perhaps Brian George should discuss these matters.

Regards, Tom

1 Ones there at this point are old: EBARA Centrifugal Volute pumps, Model "S" by Ebara of Tokyo