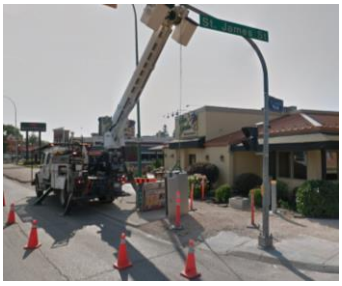
Submissions Re: Signals Investigation Report

I'm writing to voice my suggestion that the EPC committee reject the current recommendation that the Investigation Report be accepted as information and instead order a full audit of the Traffic Signals Branch. The current report has already found problems with lack of documentation and asset management while failing to examine the crux of the complaints levied. For the categories of wasted resources that were examined in the report, crucial details that were provided remain unaddressed. Below is a summary of the different categories of wasteful practices and the addressing of that those issues by the report.

Failure to Analyze Most Categories of Unnecessary Work

None of the issues outlined below were addressed in the audit report. These are only a sampling of some of the 30+ types of wasteful practices originally identified.

1 – Moving Control Cabinets



During street renewals, entire intersections are often rebuilt even if the existing infrastructure is nowhere near its end-of-life. Included in this rebuilding is the moving of control cabinets that are already at an optimum location requiring the rerouting of all of the underground wiring. This is one of the most expensive types of work outlined in the original complaint but was entirely absent in the report.

2 – Overbuilding Temporary Signals

During road construction, temporary signals are sometimes installed only for the duration of the work such as when an intersection is being completely rebuilt and interim signals are needed or when signalization is used to temporarily control detour traffic. The current practice is for the city to install the same signals used for permanent installations which involve cement bases, underground wiring in conduits, and steel standards resembling permanent installations which are both expensive to install and remove. In contrast other jurisdictions will install these types of signals on temporary wooden poles with signals hung from wires or metal brackets with overhead wiring. An even less expensive option is to use temporary signals installed on the back of a trailer which is often done on provincial highways.

3 – Poorly Planning Signal Installations

In many cases, traffic signals are installed in poorly planned locations which then require later removal/moving. For instance, during road widening for bike lanes, signal standards have been installed right in the path of the bike lane that is about to be constructed.

3 – Splitting of Joint-Use Standards

The City of Winnipeg has in the past joined with Manitoba Hydro to preserve resources by installing traffic signals on already existing streetlight standards that are in the optimum place to hold both types of infrastructure. A pattern has been displayed over the last several years where former joint-use standards have been split resulting in up to three separate poles clogging an intersection holding what previously was on one.

4 – Use of Redundant Poles



This type of work is split into subcategories such as avoiding joint-use (putting in a redundant pole when a street-light standard was already in the optimum place) and putting up redundant shaft poles when a davit standard was already nearby. Overall, to summarize this practice, unnecessary poles are being routinely installed during signal construction leading to massive costs both in construction and maintenance of unnecessary bases, poles, and wiring.

5 – Intersection Rebuilding

One of the most egregious examples of the unnecessary work has been the complete rebuilding of traffic signals during street renewals. In many cases, the intersections already contained



newer signal infrastructure that was not showing signs of aging. Sometimes, street repaving has occurred as little as 2-3 years after the construction of a new set of signals or a corridor in which case the department will entirely rebuild this already new intersection. The cost of this is the sum of building a new signalized intersection plus the cost of removal of the already existing infrastructure. This type of work has only increased in recent years with the now common practice being to change/move all poles and associated infrastructure regardless of age.

Failure to Analyze Department's Stated Reasoning

The traffic signals department has given some reasons for the unnecessary work both referring to specific locations and general patterns. The reasons stated do not account for the patterns observed. In most cases, the department's actions contradict themselves. The audit report has failed to discuss, mention, or analyze these stated reasons. Below are some examples of the department's claims.

1 – Moving Joint-Use Standard at Memorial & Osborne & St. Mary

In one of the original news articles discussing the unnecessary work, it was outlined that a joint-use standard at this intersection was unnecessary moved in 2016 and then split in 2019 into two separate poles. With respect to the 2016 moving, the department claimed that the base was too high above the level of the sidewalk so it was deemed "high risk" and required changing. It was stated that if a vehicle hit this pole knocking it down, the top of the base was too high so that it might damage the bottom of the car scraping it as it passed over. Disregarding the fact that this pole was right beside a stone building, the department's reasoning is contradicted by the fact that other poles being installed as part of this same project had bases just as much or higher than was this base. This is one of the few times the department gave a specific answer but it was easily contradicted. The report entirely fails to address or even mention this issue.

2 – Intersection Rebuilding

One of the examples given of wasteful work practices was Fennel/Irene & McGillivray where the intersection had bee newly rebuilt in 2010 but was then rebuilt again in 2018 during a street renewal. The department claimed that the work was necessary to upgrade conduit from 1.5" to 2". The department's own drawings show that the conduit installed in 2010 was already 2" contradicting the claim. This was another issue not at all mentioned in the audit report.

Failure to Draw Out Larger Patterns

Larger patterns demonstrating a theme of waste and mismanagement can be easily drawn from the evidence but was ignored in the report.

1 – Not Acknowledging Circular Practices

The audit report did touch on one of the department's circular practices but failed to acknowledge what had evolved. Overall, the department has been operating over the years in a contradictory fashion where practices will evolve into complete circular repetition. Numerous examples have come to light. Configuration for left turn signals is one example where the department starting using near-side signal heads in 2010, but abandoned the practice in 2011. In 2015, a new practice of using two signal heads began but was abandoned in 2016 with a return to the 2010 practice of using near-side heads. The near-side heads were again abandoned for a short period in 2021 but have returned again for the 2022 work season. Other examples are push-button placements, pole placements, and APS locations. The only circular pattern outlined by the report was the turning of pedestrian displays. It was stated that the heads were turned starting in 2010 because the department wanted to place the heads closer to the crosswalk entrance. The report failed to mention that this practice had little impact on signal head visibility has the crosswalks vary greatly in length and the newer practice is to install poles further from the road. The report then explained that preference reversed to back-of-pole placement in 2018 because of vehicles hitting the heads. What was completely unacknowledged was the poor decision making and circular nature of the practice. The result was widespread changing around the entire city for a 7-year period only to return to the original practice.

Failure to Fully Analyze Chosen Categories

As discussed above, most of the categories of waste were omitted from the report including the most serious. Instead, the report analyzed only a few minor types of wasteful practices. For instance, the report discussed the changing of shaft pole heights, conversion to cantilever standards, and changing of APS position/colour while ignoring the bigger much more expensive problems. For instance, the constant moving of signal poles, rebuilding of already new infrastructure, and use of redundant poles was not discussed. Even for the types of work discussed, the full picture was not explained:

1 – Changing of Shaft Pole Heights

This type of work is minor relative to much more egregious examples such as the moving of poles but was one of the few types of work discussed in the report. Historically, the city used two heights of shaft poles being 10 ft and 18 ft with the latter being commonly used for larger signals that had turning arrows. In the late 1990's to early 2000's, there was a widespread transition to the 18 ft taller poles even for regular signal heads that didn't have turning arrows. This pattern reversed in the early 2000's when the department started a mass conversion to 10 ft poles which have the signal heads sitting on top of the pole rather than strapped to the side. This continued until 2018 when the department began a mass change out to 15 ft poles.

The department's claimed reason for this change to 15 ft poles is that the new polycarbonate (plastic) signal heads are not strong enough to sit on top of a 10 ft pole and instead need the support of being mounted with supports on the top and bottom of the head using a larger signal pole. This reason was stated in the report but key details were omitted which were:

1.) Many of the earlier poles were already taller and changed to the short ones creating the problem that then had to be fixed.
2.) The department began buying polycarbonate heads in 2008 but continued using 10 ft poles up until 2018.
3.) Even if the heads do need top and bottom support and ignored the self imposed nature of the problem, the department has brackets that can hold signal the head in this manner without having to change the pole. An example of this type of installation was provided but left out of the report.

2 – Conversion to Cantilever Standards

One of the most serious types of waste has been the changing of davit (curved) style poles to cantilever (straight arm bolted to a straight shaft). This conversion has caused the department to be changing out many poles that are not yet near end-of-life, and to be installing much larger than otherwise necessary bases. The department claimed that the old poles were a problem because the crews had to use sledge hammers to assemble and disassemble them. The report failed to acknowledge that:

1.) If the bolted connection is the problem, the department does not have to buy davits with a taper connection. Davits are available with a bolted connection and are used by the highways department (MI).
2.) Cantilever standards come with a major array of setbacks such as safety and versatility concerns. The audit only acknowledged that they are more expensive but failed to provide any kind of cost-benefit discussion.
3.) If the sledge hammering is hard on the poles and crews, then the department should especially be avoiding removing existing davits that are very new but that has not been the case.
4.) There has been widespread changing of existing davit bases that were very new and in good condition.

3 – Changing of APS Colour/Position

Originally, the department used APS that consisted of small speakers mounted near the pedestrian display. This practice changed to using a grey APS box located a few feet up the pole mounted facing the crosswalk. The practice shifted around the end of 2012 to have the boxes face the crosswalk entrance and the colour changed from grey to yellow in early 2014. Starting in 2013, there was a mass turning of the already installed APS boxes and in 2016-2017, a mass changing of all of the grey boxes to yellow. The report states that this was done based on comments from laypeople and that both methods were perfectly acceptable engineering practice. Details left out or improperly stated were that:

1.) The report claimed that the changing was done during the conversion to countdown displays (PCS). This appears to minimize the waste because it seems that the department did this work while already present at the intersection for other work but this statement is mostly false. For instance, installation of PCS began in 2013 but yellow APS didn't arrive until mid 2014 and the changing of existing locations didn't begin until 2015. This means that the intersections that got PCS in 2013-2015 didn't have the APS boxes changed to yellow so the department had to return again just for this change. Additionally, a massive change was done in 2016-2017 of all remaining grey APS units which was independent of PCS installation (which took until 2021). Only an estimated 25% of intersections had the APS changed with PCS installation while the rest were done as different projects.
2.) The report fails to acknowledge that the moving of the APS units causes accelerated signal pole aging.
3.) There was no acknowledgement that there was also a mass change out and discarding of all of the APS speakers.
4.) Other jurisdictions still use APS systems consisting of speakers which demonstrates that the positioning on the pole of the APS is largely inconsequential.
5.) This mass change out occurred during a time when over 50% of intersections still didn't have any type of APS system.
6.) The colour of the APS system is irrelevant for most locations as there are no push-buttons on those poles anyways. In some cases, APS units are even on a

different pole than the push button further demonstrating the immateriality of the colour.

Final Comments and Conclusions

Overall, the audit report entirely failed to address the main issues of waste and mismanagement such as the widespread changing of already newer infrastructure. Instead, only a few small instances were discussed and even in those cases, were largely whitewashed primarily parroting the department's comments without any further analysis. The bigger picture was completely ignored and this even included the supposed analysis of the intersections. For instance, in the analysis of Corydon & Elm, much of the discussion revolved around the fact that the poles on the north half of the intersection remained as davits even though the work was done in 2016 after the 2014 phasing in of cantilevers began. Completely ignored was the fact that the poles never had to be taken down in the first place or that the bases were torn up and replaced in almost the exact same places even thought the corridor was only 3 years old at the time.

For the above stated reasons, I am requesting that EPC reject this report as grossly inadequate and failing to address the concerns raised. Now that the report has at least found some problems with lack of record keeping and asset management, a full audit should now be ordered. At the least, a much better report should be ordered that addresses the actual crux of the complaint. It is also noteworthy that the current report fails to give any direction as to what next steps are required of the city council.