# METRO LINE
# DELAY FAQ

January 21, 2015

**1. What's happened?**

We're in the home stretch—our signalling system contractor, Thales Rail Signalling Solutions Inc., is making progress, but unfortunately wasn't able to deliver the system as committed by the end of 2014.

Thales provided the City with an updated schedule for the handover of the Metro Line's signalling system this month.

Based on this most recent schedule, Thales must still meet several milestones before turning the signalling system over to us. If Thales is able to stick to their most recent schedule, we expect to receive the Metro Line signalling system with safety certification by March 23, 2015. Following the handover, ETS will need approximately 6 weeks to evaluate the system and complete staff training. Thales has committed to this deadline. We are cautiously optimistic that the Metro Line will open to public service in spring 2015.

We are very concerned with the ongoing delay of the Metro Line and will continue doing everything we can to hold Thales to their new schedule. Our goal remains the same: to open the Metro Line for safe, reliable public service as quickly as possible. Thank you for your patience as we continue working on this essential piece of Edmonton's transportation system.

**2. What if Thales does not meet its new schedule?**

The City's priority is to open the Metro Line to safe and reliable public service. The City is evaluating all its options in this regard. At present, our best option is to continue supporting Thales to deliver the signaling system. Our expectation is that Thales will meet its commitments. The City has strict project oversight to ensure they do so. If they fail to meet a milestone or if testing does not proceed according to schedule, the City will hold Thales to account. We will update Council and Edmontonians as events warrant.

**3. Why has the opening date for the Metro Line changed?**

Although construction is complete and the infrastructure (tracks, stations etc.) is ready, it's taking longer than anticipated for Thales to complete the signalling system.

In September 2013, the latest schedule from Thales had the Metro Line on track for an April 2014 opening date with reduced service. By December 2013, Thales had updated their schedule for a June 2014 opening with reduced service. By spring 2014, it became clear that this timeline wasn't workable and the City adjusted its plans. The City was aiming to open the Metro Line by the end of 2014 with reduced service. Thales then committed to delivering the signalling system so trains could open with reduced service by early 2015. The City did not receive the system by the end of the year but Thales committed to providing an updated schedule in January 2015. Thales has now provided

the City with an updated schedule, which commits to handing over the system by March 23, 2015.

We are doing everything we can to help the contractor complete the signalling system and achieve the earliest possible opening. However, the City's priority is to make sure the CBTC can safely manage the flow of trains and traffic. We won't open the Metro Line until it's safe.

**4. Do you have any more details on the opening date?**

Our goal is to open a safe, reliable system as soon as possible. We'll have a better sense of when we can open the line once Thales hands over the system. They've committed to doing that by March 23, 2015.

Once we've received the system—provided we're confident that it's working properly and can safely manage the flow of trains and traffic—then we can complete our preparations for the opening, which include training our operators and controllers on the actual system. We are cautiously optimistic that the Metro Line will open to public service in spring 2015.

We will update Council and the public as events warrant.

**5. What does a signalling system do?**

It controls train traffic. Signalling systems track train movements to keep trains safe and on schedule.

These systems also manage intersections by triggering traffic signals and crossing warning systems (warning bells, flashing lights and gates) at exactly the right time so that trains, motorists and pedestrians can move through each intersection as quickly and safely as possible.

**6. Why is the City installing a new signalling system?**

As Edmonton grows, so does the need for mass transit like LRT. Signalling systems need to evolve and adapt to safely meet this increase in demand.

The City's current system controls trains using sections of track called blocks. Each block is protected by signals that prevent a train from entering an occupied block. The City is replacing this traditional fixed block system with a modern CBTC (moving block) system.

The CBTC is a cutting-edge signalling system that uses computers on trains that report into a central controller to pinpoint the exact location of each train and constantly adjust the speed, spacing and routing of trains to keep trains safe and on schedule. It safely tightens up the spacing between trains so that Metro Line and Capital Line trains can share the same tracks between Health Sciences/Jubilee Station and Churchill Station. Edmonton Transit currently runs peak-time trains every 5 minutes through downtown, but this will have to be tightened up to every 2.5 minutes when the Metro Line is fully operational.

**7. Why is it taking the contractor longer than expected to complete the CBTC?**

Neither the City nor Thales expected the installation of the CBTC to take as long as it has.

The CBTC has proven to be particularly complex. It's computer-based, so Thales has to upgrade hardware (the 'muscle' of the CBTC) in the tracks and the trains. There have been logistical challenges because any upgrades or testing on the tracks have to happen late at night after LRT service has stopped.

Upgrading the trains has also taken longer than expected because Edmonton has a mixed fleet that was not designed for a CBTC. Some of the trains are more than 30 years old and have been upgraded many times already, while other trains are new, so the contractor has to treat each train as an individual case. In spite of these complexities, the hardware upgrades are on track. Thales has upgraded enough trains with new signalling system hardware to support the operation of the Metro Line.

The critical piece that has pushed the Metro Line opening is the software (the 'brains' of the CBTC). The software hadn't been performing as expected in simulation tests. Since then, Thales has started to run tests on the trains and tracks in Edmonton. The majority of these tests have taken place outside of service hours. In an effort to expedite the process, the City has taken the unprecedented step of shutting down the LRT several times to provide Thales with longer windows of time for testing.

**8. Who is the signalling contractor, and why were they selected?**

Thales Rail Signalling Solutions Inc. is a multi-national contractor with expertise in train control. They have completed systems in many cities including Vancouver (Canada Line). They're also currently working on Ottawa's LRT.

Thales was selected as the best team by an evaluation committee of City of Edmonton staff and signals experts through a competitive RFP process which included evaluation of the proponents, the project teams, the proposed solution and the price.

**9. What exactly are you doing to help Thales to deliver the signalling system?**

We have increased our oversight over the project. We are tracking milestones on a daily basis in an effort to keep Thales moving forward. We streamlined our review and approval processes. We are helping the contractor in scheduling their work and in co-ordinating their subcontractors, particularly with train upgrades.

We have increased our resources on the project. We provided additional ETS and consulting staff support. We provided more work space for train retrofits and more track shutdowns for testing. We have also taken the unprecedented step of shutting down the LRT several times to provide Thales with longer windows of time for testing.

We're working diligently to help Thales deliver the signalling system by March 23, 2015. However, our priority is to make sure our signalling system is working properly so we can safely manage the flow of trains and traffic. We won't open the Metro Line until it's safe.

We look forward to opening the Metro Line soon. It's going to take longer than initially planned, but the Metro Line will soon be up and running, and supporting Edmonton's growing transit needs for decades to come.

**10. Can you use people to manage train movements until the signalling system is ready?**

We've certainly explored that option, but it doesn't meet our requirements for cost, safety, reliability or efficiency. We would need flag people installed at any rail crossover where the Metro Line and Capital Line will overlap (between Health Sciences/Jubilee Station and Churchill Station), and at each intersection on the Metro Line (including 105 Street/105 Avenue, 105 Street/106 Avenue, 105 Street/107 Avenue, 104 Street/Kingsway, 106 Street/111 Avenue, 106 Street/Princess Elizabeth Avenue, and all pedestrian crossings). It would be resource-intensive and there would be higher risk of incidents due to human error.

**11. Can you use the old fixed block signalling system to manage train movements until the new CBTC system is ready?**

No. The City has installed the new CBTC signalling system hardware between Churchill Station and NAIT Station. This is new infrastructure, so there is no old system to fall back on between those stations. We would have to install new fixed block signalling system hardware between Churchill Station and NAIT Station in order to use the old signalling system to manage Metro Line train movements. It would take time and money to design, install and test the new fixed block signalling system, so wouldn't help us to open the line sooner.

**12. Will the delay affect the project's budget?**

No. The Metro Line is actually $90 million under its $755-million budget. These savings are being applied to the Valley Line project ($81 million), with $9 million remaining in a reserve fund for LRT projects.

**13. What happens to ETS service?**

Edmonton Transit (ETS) will continue to serve northwest Edmonton with buses. Current bus service will be maintained until the Metro Line is fully operational.

In order to open as soon as possible, Metro Line trains will initially run between Century Park Station and NAIT Station at a reduced frequency. Capital Line trains will continue to run between Century Park Station and Clareview Station, but their frequency will initially be impacted by the Metro Line opening. Further details will be available closer to the opening of the new line.

In the longer term, Metro Line trains will run between Health Sciences/Jubilee Station and NAIT Station. This longer-term plan best addresses network ridership needs.

There have been periodic service disruptions on the Capital Line to accommodate signalling system tests. These disruptions will continue as our contractor works to complete the signalling system. If there are any major disruptions, we will notify the public and provide extra ETS service (i.e. bus bridges).

**14. Are you feeling badly about the delay, City of Edmonton?**

Everyone involved with the Metro Line project regrets the delay of this exciting transportation project. We ask for your patience and hope you'll continue to bear with us as we work towards bringing the Metro Line into service in spring 2015.