

**Transportation Report to
SPC on Transportation and Transit
2018 June 07**

**ISC: UNRESTRICTED
TT2018-0629
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Hyperloop Development and Testing in Calgary – Deferral Request

EXECUTIVE SUMMARY

Hyperloop is a proposed mode of freight and passenger transportation that uses a vacuum tube system to propel pods at high speeds (over 1,000 km/h) over long distances. The hyperloop technology serves as a potential future alternative to high speed rail. There are no functioning hyperloops in service, and only two test tracks in the world – the Virgin Hyperloop One 500 m test track in the Nevada Desert and the SpaceX subscale model in Hawthorne, California.

Canadian hyperloop company, Transpod, is looking to set up an office in Calgary and construct a 10 km hyperloop test track in the Calgary-Edmonton high speed rail corridor. They are looking to construct the test track in the corridor so that by 2030 they can build the full line from Calgary to Edmonton. The decision to move forward on the Calgary office, test track and full line will be determined by Transpod's ability to secure funding, land and meet relevant provincial and federal guidelines.

The Government of Alberta is supportive of TransPod's proposed hyperloop test track in principle, and will be requesting more information from TransPod regarding safety implications, infrastructure impacts, location, land requirements and more.

Administration recommends deferring the report until The Government of Alberta has had more time to discuss the proposal and gather information.

ADMINISTRATION RECOMMENDATION:

That the SPC on Transportation and Transit recommend to Council to defer the Hyperloop Development and Testing in Calgary report to no later than the 2018 October meeting of the SPC on Transportation and Transit.

PREVIOUS COUNCIL DIRECTION / POLICY

ADOPT, Moved by Councillor Carra, Seconded by Councillor Pootmans, that Councillor Carra's Motion, NM2017-33 be adopted, after amendment, as follows:

NOW THEREFORE BE IT RESOLVED that Administration, in collaboration with Calgary Economic Development, Innovate Calgary and post secondary institutions and within existing budgets, support the development of a research centre and test track as the first steps in determining the viability of this technology and report on progress to the SPC on Transportation and Transit no later than Q2 2018

BACKGROUND

Hyperloop is a proposed mode of freight and passenger transportation that uses a vacuum tube system to propel pods at high speeds (over 1,000 km/h) over long distances. The hyperloop technology serves as a potential future alternative to high-speed rail (HSR). While the idea of using a vacuum tube to transport people and goods has been around for over a century, hyperloop has recently been made popular by Tesla and SpaceX founder Elon Musk when he announced in 2012 that the hyperloop would be the "fifth mode of transport" (the others being: roadway, water, air and rail). Several hyperloop companies have emerged since Musk's 2012 announcement

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including Virgin Hyperloop One, Hyperloop Transportation Technologies (HTT), DGWHyperloop and Transpod.

Canadian hyperloop company, Transpod, approached The City in 2017 with a plan to build a hyperloop test track between Calgary and Edmonton. They have since updated their proposal to include more details and timelines including: setting up an office in 2019, building a 10 km test track in 2022 and constructing the full line between Calgary and Edmonton in 2030.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

The decision to allow for the construction and operation of a hyperloop outside of Calgary falls outside The City of Calgary's jurisdiction. The Government of Alberta and/or Government of Canada would be largely responsible for hyperloop or other high speed intercity transit technologies.

Role of the Municipal Government

The City of Calgary has a limited role when it comes to the development of hyperloop and/or high-speed rail within the proposed corridor. The City does not own land that can accommodate the development of a 10 km test track within city boundaries. The City is not planning to contribute financially to a hyperloop test track.

City Support

The City will be able to provide transportation data and staff expertise, and can also explore assisting with minor supporting infrastructure improvements (e.g. service roads) within existing budgets. The City would give the same opportunities to other companies and organizations interested in building high speed transportation in the Calgary-Edmonton corridor.

Stakeholder Engagement, Research and Communication

Administration consulted with Calgary Economic Development, Innovate Calgary, University of Calgary, Transpod, Delta Loop, State of Nevada, City of Edmonton and the Provincial and Federal Governments.

Strategic Alignment

The only City document that references the hyperloop technology is the Future of Transportation report. The Calgary Transportation Plan looks at high speed rail connections to Edmonton.

Future of Transportation – The hyperloop technology is identified as a “medium impact” technology that is in the “concept / prototype stage”. It was recommended that regional plans should not be modified for the technology, and The City should monitor developments with the technology.

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Social, Environmental, Economic (External)

There are various social, environmental and economic benefits, risks and trade-offs associated with any hyperloop project. A discussion of these items will part of the full report being brought later this year.

Financial Capacity

Current and Future Operating Budget:

The information contained in this report contains no decisions that would impact operational budgets.

Current and Future Capital Budget:

The information contained in this report contains no decisions that would impact capital budgets.

Risk Assessment

Deferral of the report to no later than 2018 October will not have adverse impacts. The additional time will allow The Government of Alberta to gather information, further discuss the proposal and respond appropriately.

REASON(S) FOR RECOMMENDATION(S):

The Government of Alberta and/or Government of Canada would be largely responsible for hyperloop or other high speed intercity transit technologies. The Government of Alberta is supportive of TransPod's proposed hyperloop test track in principle, and will be requesting more information from TransPod regarding safety implications, infrastructure impacts, location, land requirements and more.

The Government of Alberta needs additional time to discuss the proposal and gather information before a decision is made, and a full report is brought to committee and council.

ATTACHMENT(S)

None.