

Executive Summary

Content

Paradigm Transportation Solutions Limited (Paradigm) was retained to conduct this combined Transportation Impact Study (TIS) for the proposed Sarah Properties and The Coast Residential Developments located north of Dechert Road and west of Highway 21 in the Town of Goderich, Huron County. Paradigm completed individual TIS for these two properties in September 2021. Paradigm prepared an updated combined TIS for the two properties in March 2023, as requested by Ontario Ministry of Transportation (MTO) staff. MTO staff provided comments on the combined TIS in October 2023 to which Paradigm submitted a response Letter in February 2024. In July 2024, MTO provided additional comments on the response Letter, which include the request of an updated TIS. This TIS Update has been prepared to address and clarify the questions and comments from MTO dated July 2024.

As requested by Ontario Ministry of Transportation (MTO) staff, this study includes analyses of both developments to identify the timing and required improvements.

The full scope of this study includes:

- ▶ documentation of current traffic and site conditions in the vicinity of the development;
- ▶ estimation of the background traffic growth in the area;
- ▶ estimation of development site traffic for the Interim Phases of each development and full build-out of both developments;
- ▶ assignment of the development traffic to the surrounding road network;
- ▶ assessment of the future total traffic within the study area for five horizon years: The Coast Interim Phase completion (2023), Sarah Properties Interim Phase completion (2025), full build-out of both developments (2030), and five (2035) and ten years (2040) after full build-out; and
- ▶ identification of any operational or safety concerns and any mitigation measures that may be required to improve operations.



Development Concept

The proposed subdivisions are located in the southern area of the Town of Goderich, Ontario, bounded by Bethune Crescent to the north, Dechert Road to the south, Highway 21 to the east, and Lake Huron to the west.

The Sarah Properties Development is proposed to consist of 258 single-family detached homes, 153 townhouses, 811 apartment units, and approximately 11,200 square metres (120,000 square feet) of commercial space. An initial phase of 85 detached homes and 65 townhouses are expected to be built by 2025.

The Coast Development is proposed to consist of 243 single-family detached homes, 141 townhouses, a 240-unit affordable housing apartment building, and a 160-unit long-term care home. An initial phase of 107 single-family homes, 32 townhouses, 24 stacked townhouses, and 160 long-term care units is expected to be built by 2023.

Full build-out of both developments is expected by 2030.

Development Trigger

Analysis shows that the amount of development before improvements are warranted include:

- ▶ 192 Single-Family Detached Housing;
- ▶ 97 Single-Family Attached Housing (street townhouses);
- ▶ 24 Multi-Family Housing (Low-Rise); and
- ▶ 160 Nursing Home Units.

18 single-family detached houses or 32 townhouses can be accommodated in addition to the above before improvements are warranted by the initial phase of development.

Conclusions

The main conclusions of this study are as follows:

- ▶ **Existing Traffic Conditions:** All study intersections are operating at acceptable levels of service during the AM, PM, and Saturday peak hours.
- ▶ **Development Generated Traffic:** the sites are expected to generate a total of 1169 AM peak hour trips, 1696 PM peak hour trips, and 1819 Saturday peak hour trips at full build-out.



Adjusting for internal and pass-by trips, 1145 trips are anticipated in the AM peak hour, 1268 trips are anticipated in the PM peak hour, and 1363 trips are anticipated in the Saturday peak hour.

- ▶ **2023 Horizon:** All intersections are forecast to operate at acceptable levels of service during the AM, PM, and Saturday peak hours under background and total traffic conditions.
- ▶ **2025 Horizon:** All intersections are forecast to operate at acceptable levels of service during the AM, PM, and Saturday peak hours under background and total traffic conditions.
- ▶ **2030 Horizon:**
 - **Background Conditions:** All intersections are forecast to operate at acceptable levels of service during the AM, PM, and Saturday peak hours.
 - **Total Traffic Conditions:** Operational issues are anticipated at the intersection of Street D / Huckins Street and Highway 21 during the AM, PM, and Saturday peak hours and at the intersection of Dechert Road / Mitchell Street and Highway 21 during the Saturday peak hour.
- ▶ **2035 Horizon:**
 - **Background Conditions:** All intersections are forecast to operate at acceptable levels of service during the AM, PM, and Saturday peak hours.
 - **Total Traffic Conditions:** Operational issues are anticipated at the intersection of Street D / Huckins Street and Highway 21 during the AM, PM, and Saturday peak hours and at the intersection of Dechert Road / Mitchell Street and Highway 21 during the PM and Saturday peak hours.
- ▶ **2040 Horizon:**
 - **Background Conditions:** All intersections are forecast to operate at acceptable levels of service during the AM, PM, and Saturday peak hours.
 - **Total Traffic Conditions:** Operational issues are anticipated at the intersection of Street D / Huckins Street and Highway 21 during the AM, PM, and Saturday peak hours and at the intersection of Dechert Road / Mitchell Street and Highway 21 during the PM and Saturday peak hours.
- ▶ **Remedial Measures:** It is concluded that the following improvements are warranted at the study area intersections:
 - Street D / Huckins Street to Highway 21:



- traffic signals are forecast to be warranted by the 2030 total horizon;
 - northbound left-turn lane with 105-metre storage and 130-metre deceleration length (including taper and parallel lengths);
 - southbound left-turn lane with 90-metre storage and 130-metre deceleration length;
 - southbound right-turn lane with 140-metre storage and 130-metre deceleration length; and
 - eastbound left-turn lane with 120-metre storage and 130-metre deceleration length.
- Dechert Road / Mitchell Street and Highway 21:
 - traffic signals are forecast to be warranted for the 2035 total Saturday conditions;
 - northbound left-turn lane with 180-metre storage and 180-metre deceleration length;
 - southbound left-turn lane with 172.5-metre and 180-metre deceleration length; and
 - southbound right-turn lane with 55-metre storage and 130-metre deceleration length.
 - The southbound lane drop on Highway 21, approximately 200 metres south of Huckins Street, will end before the taper of southbound right-turn lane at Dechert Road begins. Therefore, the proposed turn lanes will be able to be accommodated in the existing geometry.
 - Dechert Road / Mitchell Street and Highway 21, if this intersection remains unsignalized:
 - northbound left-turn lane with 65-metre storage and 130-metre taper; and
 - southbound right-turn lane with at least a 70-metre taper.
 - Bluewater Beach Road and Highway 21:
 - southbound left-turn lane with 25-metre storage and 105-metre taper; and
 - northbound left-turn lane with 15-metre storage and 105-metre taper.
 - The southbound left-turn lane is warranted with 15 metres of storage under background traffic conditions, regardless of whether the subject developments proceed.



- ▶ **Long Range Forecasts:** Caution should be used when dealing with long range forecasts (greater than 10 years), as background growth may not be as high as projected.

Recommendations

Based on the findings of this study, it is recommended that:

- ▶ Provisions be made for traffic control signals at the intersections of Street D / Huckins Street and Highway 21, and Dechert Road / Mitchell Street and Highway 21.
- ▶ To accommodate the forecast traffic volumes contained within this report, the following storage lane and taper lengths are recommended:
 - Street D / Huckins Street and Highway 21
 - installation of traffic control signals;
 - northbound left-turn lane with 105-metre storage and 130-metre deceleration length (including taper and parallel lengths);
 - southbound left-turn lane with 90-metre storage and 130-metre deceleration length;
 - southbound right-turn lane with 140-metre storage and 130-metre deceleration length; and
 - eastbound left-turn lane with 120-metre storage and 130-metre deceleration length.
 - Dechert Road / Mitchell Street and Highway 21, if signalized
 - installation of traffic control signals
 - northbound left-turn lane with 180-metre storage and 180-metre deceleration length;
 - southbound left-turn lane with 172.5-metre storage and 180-metre deceleration length; and
 - southbound right-turn lane with 55-metre storage and 130-metre deceleration length.
 - Dechert Road / Mitchell Street and Highway 21, if unsignalized
 - northbound left-turn lane with 65-metre storage and 130-metre deceleration length; and
 - southbound right-turn lane with at least a 70-metre taper.
 - Bluewater Beach Road and Highway 21:



- southbound left-turn lane with 25-metre storage and 105-metre taper; and
- northbound left-turn lane with 15-metre storage and 105-metre taper.

