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Via Email: h.bitz@drumhellerchamber.com

Attention: Heather Bitz
Executive Director

**Subject: Condition Assessment - Summary
World Largest Dinosaur 2025
Box 999 - 60 Riverside Drive West
Drumheller, Alberta**

1. Purpose and Overview

At the request of the Drumheller and District Chamber of Commerce, Williams Engineering conducted a structural and envelope review of the World's Largest Dinosaur (WLD). As the Chamber prepares for lease renewal through 2029, the goal of this assessment was to evaluate the current health of the structure and building envelope to determine remaining lifespan and identify necessary maintenance to ensure continued use and public safety.

This report comprises a summary of the technical structural and building envelope condition assessment report issued on January 14th, 2026 by Williams Engineering.

2. Our Approach

Our team performed a visual review of the dinosaur on September 5, 2025. No calculations were performed to verify the original design, and all findings were based solely on the visual review. This involved:

- **Exterior Review:** Reviewing the "skin" (exterior envelope) using an aerial lift to see the head, neck, and body up close.
- **Interior Review:** Reviewing the structural steel framework and stairwell inside the dinosaur, including the tail, feet, and neck areas. Review of the interior building envelope components was also completed.
- **Method:** This was a visual assessment based on accessible areas. We did not remove any finishes or perform additional destructive testing (invasive cutting into the skin) to look at concealed components. Reviewing multiple areas of the exterior and interior allowed us to gain a representative impression of the WLD's condition.



3. Key Observations

The Exterior Envelope (“Skin”): The exterior envelope is constructed of fiberglass applied over metal mesh, closed-cell spray-applied polyurethane foam applied over additional metal mesh. The exterior surface is painted and the interior surface has a black coating.

- There are visible surface cracks at the exterior, particularly on the south side which is exposed to the sun. Some panels seams have separated.
- Water pooling and organic growth were observed in areas where water cannot drain easily, such as under the tail, and near the ears and mouth.

The Interior Envelope: The interior envelope components consist of closed-cell spray-applied polyurethane foam insulation applied over polyethylene sheeting and metal mesh. There are deformed steel members that provide the shape of the stairwell walls. The interior was observed to be painted. There is ventilated void space between the interior envelope components and the exterior envelope components.

- Poor ventilation, high humidity, and heat build-up were observed inside the void space, especially at the top of the structure.
- Water staining was observed on the inside painted surface of the stairwell.
 - Water staining indicated ponding water was observed around the tail drain within the structure.

The Foundation: The foundation consists of cast-in-place concrete piles and pile caps underneath the feet and support columns.

- Deterioration was noted in the grout (concrete filler layer) under the front left leg column's baseplate.
- Cracking was observed in the pile cap supporting the column at the belly.

The Primary Structure: This is the main steel frame that supports the dinosaur, consisting of square hollow structural sections (HSS).

- Surface rust was visible on the beams and columns; however, it has not progressed to the level of section loss which would affect the structure's capacity.
- Nuts were observed missing on several exterior columns.

The Secondary Structure: These are the steel angles and plates which make up the upper frame supporting the WLD skin/interior envelope.

- The secondary framing appeared deformed in many areas, potentially contributing to cracking in the skin.
- Localized corrosion was observed, and some members were found to be severed/damaged.

The Miscellaneous Structure: Interior stairwell framing such as steel guardrails, stair stringers and treads, and the exterior guardrails at the retaining wall.

- No significant concerns were identified with the interior stairs or exterior guardrails.



4. Conclusions and Recommendations

The World's Largest Dinosaur remains structurally sound and safe for public use. However, to ensure it lasts through 2029 and potentially beyond, a continued proactive maintenance program is required.

Key Recommendations:

- **Seal the Exterior Envelope:** Routinely seal cracks and open joints in the fiberglass to stop water from getting inside with compatible flexible sealant and/or fiberglass repairs.
- **Manage Moisture:** Improve drainage at the tail and clean/repaint areas affected by organic growth (ears and mouth).
- **Ventilation:** Improve airflow in the void space to improve drying potential, reduce humidity, and regulate temperature. Assess the ventilation within the stairwell as well.
- **Rust Protection:** Clean and paint the steel framework where rust is visible to stop it from progressing.
- **Monitoring:** Continue periodic monitoring of the envelope and structure for deterioration such as cracking and rust.
- **Other:** Minor repair items were noted, such as patching deteriorated baseplate grout pads and replacing missing nuts on anchor bolts.

By following these maintenance steps, the WLD is expected to remain a safe and viable attraction for the duration of the current lease and potentially beyond.

5. Life Expectancy Criteria and Budget

To determine how long the WLD will last, we utilized two main criteria:

1. **Industry Standards:** We looked at the typical lifespan for the materials used (fiberglass, steel, concrete) in this type of construction.
2. **Observed Condition:** We adjusted those estimates based on wear and tear observed during the review (e.g., rust levels, cracking severity).

In addition, the provided lifespans are based on continued proactive maintenance, repairs, and monitoring that adhere to the detailed recommendations made within the referenced report.

Estimated Remaining Service Life (with maintenance):

- **Exterior Envelope:** 8 years before major refinishing or replacement is likely needed.
- **Interior Envelope:** 8-10 years remaining.
- **Foundations:** 50 years remaining.
- **Primary Steel Structure:** 25 years remaining for *interior* main frame steel; 5 years remaining for *exterior* steel (unless painted/maintained).
- **Secondary Steel Structure:** 10 years remaining.
- **Miscellaneous Structure:** 25 years remaining for the interior steel stair framing, and 16 years remaining for the exterior steel guardrails.

These values are estimates only and are subject to many factors. Continued use past these estimates can be realized with proper care and maintenance.



One-time envelope and structural repairs recommended for completion within the next 1-2 years are estimated at \$154,000. Additionally, structural maintenance costs are projected at \$60,000 every 10 years, with a full exterior shell restoration (repairs and repainting) totalling \$310,000 every 5 to 8 years.

These opinions of probable cost were developed in consultation with experienced restoration contractors and are based on 2025 market pricing and standard working hours. The estimates include a contingency allowance to reflect the inherent uncertainty of restoration work but exclude engineering fees, GST, and operational costs (e.g., service disruptions). This pricing is preliminary and intended for budgeting purposes only; further repair requirements and associated costs may be identified during subsequent reviews.



6. Closure

This report has been prepared based upon the information referenced herein. It has been prepared in a manner consistent with good engineering judgement. Should new information come to light, Williams Engineering Canada Inc. requests the opportunity to review this information and our conclusions contained in this report. This report has been prepared for the exclusive use of Drumheller and District Chamber of Commerce, and there are no representations made by Williams Engineering Canada Inc. to any other party. Any use that a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties.

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