

**Problem Statement:**

UW–Madison Transportation Services struggles to identify comparable historical days due to the lack of a unified, easy-to-maintain date-tag dataset. Key external factors—academic schedules, construction closures, major events, weather, and transit changes—are tracked separately, creating inefficiencies. A consolidated dataset is needed to improve analysis, forecasting, and decision-making.

**Solution Statement:**

This project will create a visual calendar interface and a consolidated date-tagged dataset for UW–Madison Transportation Services to streamline the identification of comparable historical days and enhance forecasting. Staff will be able to drag, drop, and apply recurring tags for academic schedules, closures, events, weather, and transit changes without coding. Deliverables include the interactive interface, initial dataset, MySQL/Tableau integration guidance, job aids, and a workflow diagram showing data flow and use cases.

**Completed Tasks (Last 2 Weeks):**

- Acquired new datasets and successfully integrated them with existing data sources.
- Defined key fields and established relationships across datasets to support schema development.
- Outlined the end-to-end dataflow from cleaned datasets to the unified tagging system.

**Tasks for the Next Project Report:**

- Begin developing SQL scripts and queries based on the drafted ER diagram.
- Create initial Tableau visualizations for individual datasets to explore data patterns and insights.

**Questions I have or Issues I'm running into:**

- How should we structure and apply the tagging schema across datasets to maintain consistency?
- What criteria should determine which tags recur automatically versus those that remain one-time events?
- Is the proposed interface design aligned with user needs and system workflow expectations?
- Should the database be optimized for future API integration or remain focused on internal Tableau use?

## **Methodology Paragraph Summary:**

Our methodology involves a systematic, phased approach to build the centralized date-tagging system. First, we gather and validate relevant data from internal Transportation Services sources and public datasets, then define a flexible tag structure that can capture recurring and one-off events. We will develop a MySQL database to store tagged dates and build a user-friendly calendar interface enabling drag-and-drop and recurrence functionality. The system will be integrated with Tableau for reporting, and its effectiveness will be evaluated by verifying tag coverage, data accuracy, and usability for non-technical staff, ensuring it meets the problem statement of enabling efficient analysis and forecasting.

## **References:**

<https://www.cityofmadison.com/projects/completed>  
<https://meteostat.net/en/place/us/madison?s=72641&t=2025-09-07/2025-09-07>  
[https://uwmadison.account.box.com/login?redirect\\_url=https%3A%2F%2Fuwmadison.app.box.com%2Fs%2F9b2qlx-tsuxfc20vou-vuksey1nv7ufgzq](https://uwmadison.account.box.com/login?redirect_url=https%3A%2F%2Fuwmadison.app.box.com%2Fs%2F9b2qlx-tsuxfc20vou-vuksey1nv7ufgzq)  
[https://data-cityofmadison.opendata.arcgis.com/datasets/912f842a975542978e4dc5ffa216ebc8\\_14/explore?location=43.093702%2C-89.409250%2C11.92](https://data-cityofmadison.opendata.arcgis.com/datasets/912f842a975542978e4dc5ffa216ebc8_14/explore?location=43.093702%2C-89.409250%2C11.92)  
[https://secfac.wisc.edu/wp-content/uploads/sites/50/2025/03/PrintVersion\\_AcademicCalendar\\_2025-2030.pdf](https://secfac.wisc.edu/wp-content/uploads/sites/50/2025/03/PrintVersion_AcademicCalendar_2025-2030.pdf)  
[https://www.wiaawi.org/Sports/Winter/Boys-Basketball/State-Results-Archive?utm\\_source=chatgpt.com#42241447-2019-tournament-results](https://www.wiaawi.org/Sports/Winter/Boys-Basketball/State-Results-Archive?utm_source=chatgpt.com#42241447-2019-tournament-results)  
[https://www.opm.gov/policy-data-oversight/pay-leave/federal-holidays/?utm\\_source=chatgpt.com#url=Historical-Data](https://www.opm.gov/policy-data-oversight/pay-leave/federal-holidays/?utm_source=chatgpt.com#url=Historical-Data)

## **Appendix**

### **A. Datasets Used**

1. UW–Madison Academic Calendar (2025–2030)
2. City of Madison Construction and Road Closure Data
3. Madison Weather Data (Meteostat)
4. UW Event Schedules (Athletics and Academic)
5. Federal and State Holiday Data
6. Madison Transit Schedule Data

