## **Strategic Model Design Goals for Power BI**

### **Data Model Simplification & Optimization**

* **Reduce Model Complexity**: Eliminate unnecessary relationships and avoid surrogate keys where possible to streamline data linkage.
* **Leverage Aggregations**: Implement an aggregation strategy to improve performance and reduce query load on Databricks.
* **Minimize Cardinality Issues**: Optimize relationships and avoid high-cardinality columns in the import model.

### **Performance Optimization**

* **Enhance Direct Query Performance**: Optimize query execution in Databricks, including support for trending queries and efficient query folding.
* **Improve MRV Performance**: Ensure efficient execution, particularly for queries running in Databricks.
* **Optimize Data Storage**: Utilize efficient storage strategies in import (in-memory) tables. Storage should be equal or less to current model.

### **Scalability & Maintainability**

* **Ensure Efficient Schema Evolution**: Design the model to support schema changes without major disruptions.
* **Facilitate Incremental Refresh**: Implement an incremental data refresh strategy to enhance efficiency in large datasets.
* **Enable Seamless Attribute Updates**: Ensure easy updates to attributes like highway classifications without requiring full model data load.

### **Integration with Databricks**

* **Optimize Delta Tables for Reporting**: Ensure that Databricks Delta tables are structured to support efficient querying in Power BI.
* **Enable Query Folding**: Design queries and transformations to allow query folding whenever possible, minimizing data movement.
* **Use Partitioning and Clustering:** Implement partitioning strategies in Databricks to optimize performance for Direct Query models.