**Landover Hills - Integration of Landover Hills Municipal Data into the Maryland Open Data Portal**

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# Abstract (Arafat)

The capstone project supported the Town of Landover Hills in bringing municipal data onto the Maryland Open Data Portal. This initiative supports Maryland's statewide commitment to government transparency and public access to data as set out in the state's Open Data Act. The Town of Landover Hills, a small municipality in Prince George's County, Maryland, identified the need to address the way it collected and managed data at the local level. The town experienced barriers to implementing sound data practices and open data practices, such as unorganized records, very few staff with technical capacity, and uncertainty related to necessary compliance with either local or state requirements.

Upon initiating the project, the team determined to start with data gaps and submission plans, and this commitment to start was continually updated based on meetings with key stakeholders, including Mayor Jeffrey Schomisch and members of the town administration. As engagement progressed, the project scope was enlarged to include: research and best practices of similar, comparable municipalities in Maryland, a best practice for using data cleaning and normalizing, and a prototypical dashboard for public use. The final outputs included a report including the Town's needs for collaboratively compiling a Data Needs Report so local datasets could be aligned with the state needs of those datasets, i.e., budgets and public safety records. The detailed Municipal Data Assessment report included an inventory of what data were publicly available, as well as omissions of notable data. The team produced an Implementation Plan that clearly outlined and facilitated, as accurately as possible, guidelines for public access to the data and a Best Practice Document, based on other jurisdictions, such as Baltimore County.

The primary stakeholders participating in the project included leaders from the Town of Landover Hills. Mayor Schomisch provided executive supervision, and a technical liaison guided reference work and municipal records. The Maryland Open Data Portal team provided technical standards for participation in the project; however, they were available inconsistently, which led to scheduling and the need for coordination. The project consisted of six students, who completed the entire project through teamwork, research, data and gap analysis, and practical tools, including Python scripts for data processing.

# Methods (Avindra)

To address the project objectives and short-term needs, our team applied a structured, multi-phase process aimed at analyzing current data assets, identifying essential gaps, and developing actionable recommendations for the Town of Landover Hills. We began by conducting a comprehensive data inventory and needs assessment, reviewing both structured and unstructured data sources available through the town's website and public records. This analysis discovered that a lot of the data publicly available was not in machine-readable formats, such as PDFs and narrative content on web pages, which limited its application to data analysis and fulfilling the requirements of the Maryland Open Data Portal. We identified primary categories of data that would be beneficial to enhance transparency and public engagement if well-structured, including locations of public safety cameras, business license information, and data regarding community amenities.

Because we valued the importance of stakeholder views, we incorporated feedback from municipal service departments where possible, though formal interviewing was limited by timing. As a complement to this, we analyzed public reports and operational statistics to gain a better understanding of municipal data handling practice and requirements for service provision. At the same time, we conducted a best practices audit by examining the manner in which other Maryland municipalities, including Mount Rainier, the City of Frederick, and Baltimore, successfully make contributions to the state's Open Data Portal. This examination helped us gauge various data upload methods and management strategies that finally led us to recommend that Landover Hills begin its open data initiative with manual file uploads in typical formats like CSV and Excel.

Technical implementation involved developing clear step-by-step guides for making and releasing datasets. We provided suggestions on the correct data formats, metadata documentation, and leveraging tools of the Maryland Open Data Portal to ensure state regulation compliance. The largest difficulty encountered throughout the project was that there were no existing structured datasets and improper technical infrastructure for support of automated pipelines of data. To shatter this, we highlighted low-barrier solutions that the town could realistically implement with current resources. This included giving tangible direction on how to take static PDF files and format them into machine-readable formats in Excel and outlining metadata standards to make future datasets portal compliant. Also, when faced with the low levels of stakeholder engagement, we changed the approach by relying more on readily available public sources and comparative case studies to generate informed, practical recommendations that benefit both the immediate needs and long-term sustainability.

# Descriptions of Deliverables

Data Needs Report: In this report, we list suggestions for different data categories that the Maryland Open Data Portal requests from municipalities. We developed this document through reviewing the Maryland Open Data Portal’s training materials and policy documentation. We also consulted other municipalities to form a realistic and comprehensive list of potential datasets for the town to consider. A key finding from this report is that the administrative category is the most common and easiest for municipalities to upload under. This includes datasets about meeting content, issued permits, program grants, or city code violations. Another key finding included in this report is that the portal considers the dataset’s metadata standards, update frequency, and privacy compliance before allowing the dataset to be uploaded to the portal. This deliverable ensures that Landover Hills proceeds in a way that aligns with the goals of the Maryland Open Data Portal.

Municipal Data Assessment: This report includes an inventory of the town’s existing datasets and identifies key gaps in available data and formatting. We conducted this assessment by looking through the Landover Hills website and talking to the client. Key findings included the lack of proper formatting. The budget data was in PDF format, making it difficult to convert to a structured format, such as CSV or Excel files. We also found some important datasets that might not be formatted, digitized, or accessible at the moment, such as list of schools, demographic census data, and town council meeting information. This assessment establishes a clear starting point for Landover Hills and guides the town in the best direction to build comprehensive data sets.

Best Practices Review: This review is a comparative analysis of how other municipalities, like Mount Rainier, Frederick, and Baltimore, contributed to the Maryland Open Data Portal. We gathered information by inspecting data on the portal, conducting interviews with data professionals from the cities, and emailing questions to the city’s IT department. We focused on the categories of data, the update information, the data source, and the upload method used by different municipalities. We found that high-performing municipalities filled out more metadata fields and updated their datasets more frequently. Many municipalities used automation to reduce the workload associated with frequent manual updates. This review gives Landover Hills an example to follow and strategies to borrow during the process of contributing to the portal.

Implementation Plan: This is a step-by-step guide for how Landover Hills should conduct preparing, formatting, and uploading data to the portal. It is designed to be very simple and easy to follow. We included different kinds of data submission formats, such as manual upload or Socrata Gateway. We explain how metadata fields should be filled out. This deliverable allows Landover Hills to act on the information we gathered and presented to the client.

Final Report and Presentation: This report and slide deck contain a summary of our entire timeline. We included the project’s goals, our solutions/findings, and our recommendations for next steps. This document is meant to be used for long-term reference for Landover Hills. This deliverable is a key part of ensuring the continuity of this project’s mission.

# Recommendations

If given more time to work on our project we would further develop our project in numerous ways. The first thing we would do is work with Landover Hills in their sandbox environment for their website, in order to help implement the budget data dashboard onto their website. Working in their sandbox environment would allow us to collaborate with our clients and in real time debug any problems that show up. Also if Landover Hills were to provide us with different types of data other than budget data, we would try to implement this new data in their own respective category with its own visualizations. This would allow us to create an open portal directly for Landover Hills as we would continue to build off the budget data dashboard.

Secondly, we would develop a centralized database that collects and organizes the specific data to Landover Hills. In order to accomplish this we would have to follow a similar format as conducted with the budget data. Each specific type of data must have their own dataset where it can be saved as either a csv or excel template. We have already spoken with Landover Hills and compiled a list of potential categories that would be beneficial for the residents of Landover Hills to know more about. Given this it allows us to establish our data domains, which will be essential in analyzing the data to create effective visualizations. Ultimately, this would be ideal as it allows for Landover Hills to reach the goal of having their own open data portals, however, it would require substantial efforts from Landover Hills in collecting all these different types of data.

Finally, we would try to develop a relationship with the PG County Data Portal. This is because after research we found that a lot of municipalities are working with their countie’s open data portal or constructing a data portal themselves. Working with PG County Open Data Portal would require an established point of contact who would be able to provide us with their workflows, metadata standards, as well many other technical standards. Ultimately, this would allow for specific Landover Hills data to be displayed on a bigger scale.

# Conclusions

Our project successfully laid the groundwork for the Town of Landover Hills to participate in Maryland’s Open Data Portal by delivering a comprehensive set of planning documents, including a data needs report, a municipal data assessment, a best practices review, and a detailed implementation plan. We also got basically one step away from a fully developed functional budget dashboard that visualizes the town’s fiscal data and can be embedded directly into its website. These deliverables reflect the town’s current data capacity and offer realistic, actionable steps to support increased transparency and alignment with statewide goals.

Throughout the project, we gained a deeper understanding of both the potential and the constraints small municipalities face in adopting open data practices. Limited staffing, inconsistent data formatting, and technological barriers posed challenges, but they also informed our tailored recommendations. Our work allows the town to begin organizing its internal data systems, contribute meaningfully to the Maryland Open Data Portal, and prepare for future digital development efforts.

Looking ahead, future work may involve designating a staff member or agency to maintain and update datasets, converting additional unstructured information into machine-readable formats, and continuing the town’s engagement with open data initiatives through future partnerships or university collaborations. Continued progress could also involve establishing relationships with state agencies for technical support and expanding structured datasets into high-impact areas such as education, infrastructure, and public safety.

# Deliverables

Budget Data Dashboard: <https://shishirporeddy.github.io/landover-hills-budget/>

Budget Data Document: [Landover Hills Budget Data](https://docs.google.com/spreadsheets/d/1u9syd7w3RRqsfEp14s0Yf5pUrJED-SImtAmWKWSN_ew/edit?gid=0#gid=0)

Data Needs Report: [Final Document](https://www.canva.com/design/DAGmu9vtLSQ/DLdNBuG9rVcJwR8K4KLOrg/view?utm_content=DAGmu9vtLSQ&utm_campaign=designshare&utm_medium=link2&utm_source=uniquelinks&utlId=h2ac7806742)

Municipal Data Assessment: [Final Document](https://www.canva.com/design/DAGl-QdCpJI/Ezf6X4d-BXAvmSQFBc02Zw/view?utm_content=DAGl-QdCpJI&utm_campaign=designshare&utm_medium=link2&utm_source=uniquelinks&utlId=hf8c53fec7d)