Eilat Municipality Urban Planning Dashboard Design Proposal

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Introduction

The purpose of this website is to house tools and resources helpful to the urban planners of the Eilat Municipality. Our team decided a dashboard layout with a connected database would best accommodate this function. Some of the tools housed on the dashboard already exist and are used by the Municipality while others are in the planning phase. The future for this site is to allow website access to the residents of Eilat. The following designs are recommendations based on the research and findings of the WPI 2020 Mobility Team. These findings can be viewed for reference in our project report "Developing an Urban Transportation Planning Tool."

This report will begin with an overview of the dashboard. Then, four of the webpages will be broken down, with all available detail, in their own section. The report will conclude with considerations and goals for future iterations of the website, followed by a reference to our final project report. This project report will contain further information that could be useful in the development of the dashboard and database.
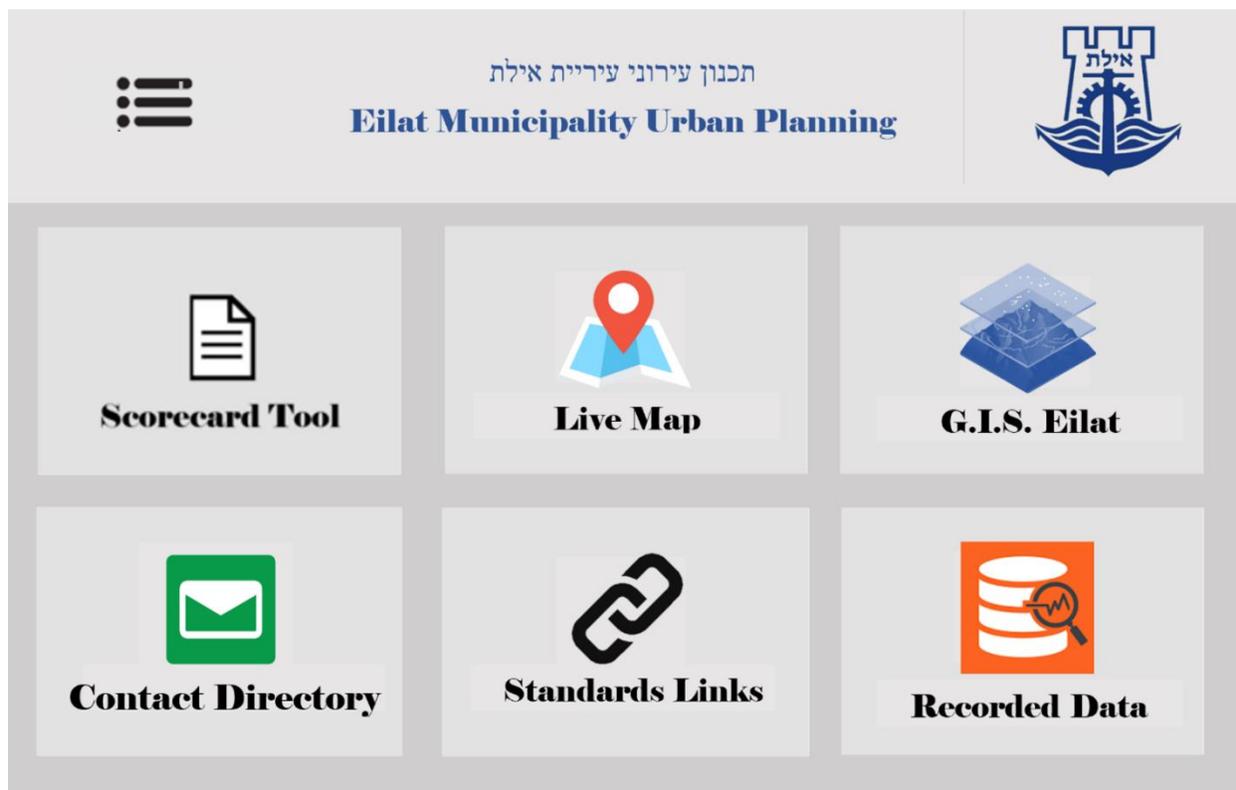
1.0. Overview of Dashboard

Figure 1

The dashboard is our answer to house the tools and resources of the Municipality. A database will be utilized to store website information. Every page of the dashboard has a common feature: the top banner. Referring to Figure 1, this is the light grey bar at the top of the page that says "Eilat Municipality Urban Planning." This bar has a navigation button, or list icon, in the top left corner. This navigation button is a link to the homepage for easy dashboard navigation. No matter what page you are on, you can click on the logo to redirect to the homepage. As seen in Figure 1, the dashboard contains 6 webpages. The webpages are as follows:

- Scorecard Tool: This page houses a web version of an urban planning scorecard developed by our team. A description of the function along with design mockups can be found in Section 2.0.
- Live Map: This page contains a dynamic map of Eilat. It functions like a normal online map with the ability to apply overlays relating to data stored on the dashboard.
- G.I.S. Map: This page ports a G.I.S. model of the city of Eilat that is already in the possession of the Municipality.

- Contact Directory: This page lists important contacts of urban planners, municipality workers, city leaders, etc. All information on this page will be determined by the urban planners.
- Important Links: This page lists important links to urban planning guidelines from Israel and other resources useful to the urban planners.
- Recorded Data: This page stores all data from scorecard reports and displays

Each of the 6 pages have their own tile which links the homepage to the page. The Contact Directory and Important Links are straightforward, and the data displayed on these webpages must be determined by the urban planners. The Scorecard Tool, Live Map, G.I.S. Map, and Recorded Data pages will each be broken down in the following sections.

2.0. Scorecard Tool Page

Figure 2

The Scorecard page has 3 windows. Figure 2 represents the first window. This window takes in the basic information for the report: what street is being evaluated and who is evaluating. The "Street Name" input box is a search dropdown. You can type in a keyword or phrase to filter through the drop down of street listings. The "Add" button next to the Street Name input box allows the evaluator to add a street to the street database. If the street name is not filled out, an error message will outline the input box with a message saying "Select Street." A similar error message appears around the "Evaluator" input box if it is not filled out. Once both input boxes

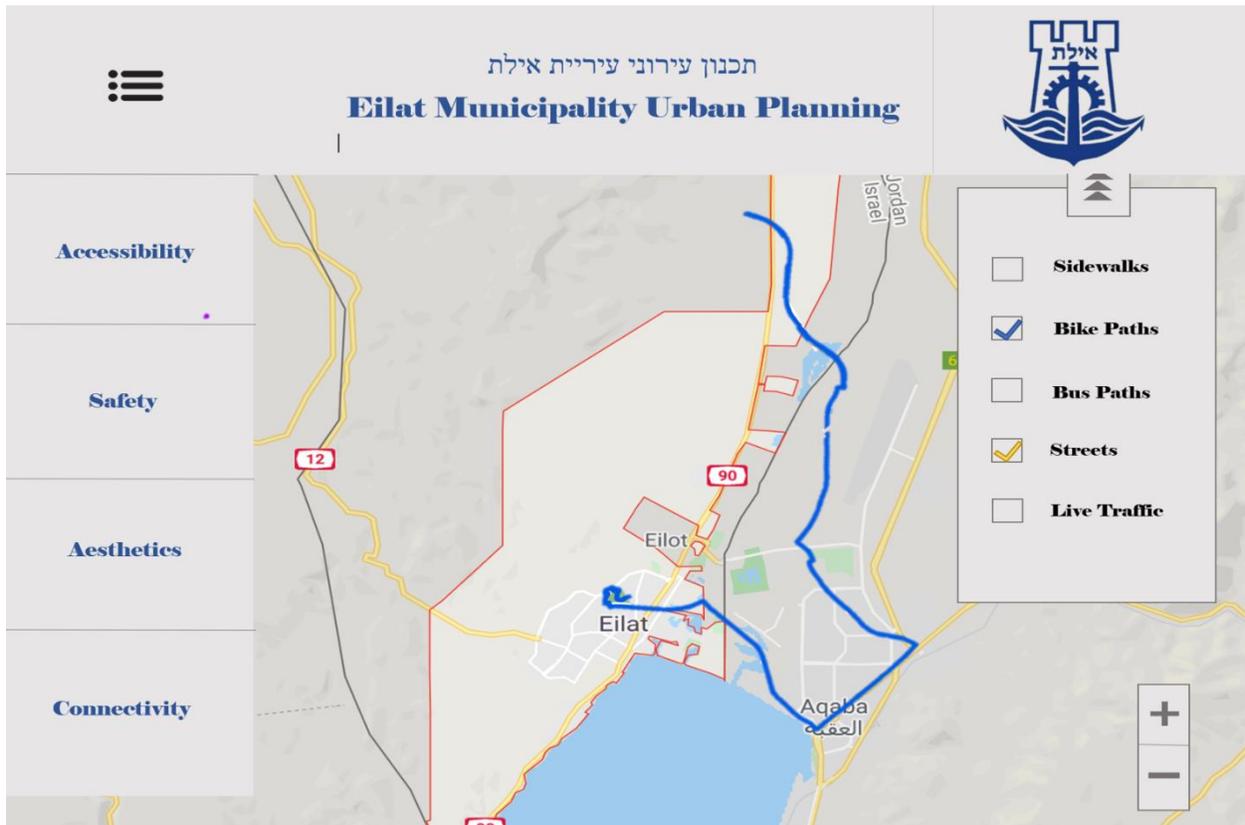are filled out, the user can then click the "Next" arrow button. This will take the user to the second window.

Figure 3

Figure 4

Figure 3 represents the second Scorecard Tool window. The page contains a map of Eilat. It is the same map that will be on the "Live Map" webpage. This map has the same basic functionality as Google Maps, such as zooming in and out and navigating the map by dragging your mouse.

On the right, there is a dropdown menu that has five checkboxes: Sidewalks, Bike Paths, Bus Paths, Streets, and Live Traffic. These checkboxes represent different map overlays. By selecting one of checkboxes, a new view will appear on the map. For example, if you select Bike Paths, all bike paths of Eilat will be highlighted on the map in the corresponding color to the check mark (Refer to Figure 3). These overlays are affected by answers to the parameter section (four boxes on the left sidebar) questions. For instance, Streets will appear in a color corresponding to their grading. So, if the Street that was selected has an average grade of 1 according to the database, it will appear as red. Multiple overlays can appear on the map at the same time.

On the left, there is a sidebar with four parameter sections. Clicking on either of the four parameters will open a popup with scorecard questions relating to that section. Figure 4 shows a scenario in which the user selects the "Accessibility" parameter on the left sidebar. Each question will then have a input box to the left of the scale Each question has scale of 1 to 5 next

to it. Each question must be given a score on the scale before the user can click next. In the top right of the pop up is a toggle to enable question weighting. This is a simple yes or no selection. The popup automatically disables question weighting by selecting the "No" option. The user simply has to select the "Yes" option to display a weighting column. Every question will then have an input box for a whole or decimal value. If no value is specified, the weighting will default to 1. After all questions have a scaled score, and any weighting values, the user may click next which will save all parameter section data for the report. This will also close the pop-up menu. After each sections' questions are filled out, a percentage grade will display underneath each parameter name. Completing all questions from all four parameter sections will then allow the user to click the "Next" arrow, taking the user to the third and final window of the webpage.

Figure 5

This third window displays the name of the street that was selected in the first window along with a percentage grading. This will be calculated according to our formula in our project report. There will also be a status bar that fills to the corresponding percentage amount. Underneath there are four options. The "Back" arrow will take the user back to the second window to amend question information or weighting. The "Save" button will save the street name, the evaluator, the question answers, question weightings, and resulting scores in a report in the database. This report can be viewed in the Recorded Data webpage by clicking the "View Full Breakdown"

button. The "Start Over" button allows the user to quickly start from the first window, erasing all inputted data.

3.0. Live Map Page

This webpage functions the same as the map on the second window of the Scorecard Tool page. The only difference is there is not a sidebar on the left for the four parameter sections. You still have the ability to select any combination of the five map overlays. These overlays are affected by data stored on the Recorded Data Page. For a visual reference, look at Figure 3.

4.0. G.I.S. Map Page

This webpage houses a G.I.S. 3D model of the city of Eilat. This model already exists in a program available to the Municipality urban planners. This page would simply port a view of the 3D model from the program on the site. There would be no exterior function to that of the G.I.S. program.

5.0. Recorded Data Page

This webpage is more or less a mapping of database information. It contains two panels on top of each other. The top panel contains a jumbotron that displays the top 5 streets in the database according to their average grading. This jumbotron can be toggled to display the top 5 "Highest" or "Lowest" graded streets in the database. The bottom panel is a scroll down of every report saved from the Scorecard Tool page. There is a filter bar at the top of the scroll down, so the user does not have to go through every report to get to the one he/she wants. The reports can be filtered by street, evaluator name, or score. The reports are displayed by Evaluator Name, Street Name, Grade, Date Submitted, and Full Report. The "Full Report" is a button that will open a pop up. This pop up will contain the scores and weighting to every question along with the average scores for each parameter section.

6.0. Considerations for the Future

The team brainstormed four ideas for future iterations of the website. The first idea is to make the site available on mobile devices. This allows the tools to be more accessible, especially with the implementation of resident access. The second idea was to create a webpage that integrates Eilat city plans and data into a digital workspace. To accomplish this, a future team of developers can inquire what softwares or methods are used by the Eilat Municipality. With this information, the developers can produce a viable platform to develop and simulate future transportation plans. The third idea was to add a sign-in function to create different levels of access to the website. Since the website will contain sensitive information regarding future city plans and personal contacts, Eilat residents cannot have full access to the website. Residents accessing the site with no sign in can use the scorecard tool, live map, and GIS model, allowing them to evaluate streets and gain information about their grade. Urban planners will be given a secure account to sign into the website. By signing into the website, all webpages, tools, and information will become available to the user. The fourth idea was to make the website accessible only through the Eilat city Wi-Fi network. This will prevent people from outside of Eilat from submitting random scorings that could convolute data integrity.