St Luke's Grammar School

Bus Tracker

User Documentation

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About the Program

The SLGS Bus Tracker is a software solution developed to provide real-time information about the estimated arrival time of school buses. It utilises an API sourced by OpenData NSW, which provides data on bus schedules and locations, to accurately calculate and display the time remaining until the next bus arrives at the school.

The program was primarily designed to be displayed on a TV screen located at the area where students wait for the bus. This visual display ensures that students have access to the most up-to-date information about bus arrivals, allowing them to plan their time effectively and minimise waiting periods.

PHP, a server-side scripting language which handles the backend logic, processing the data from the API and performing necessary calculations. HTML, JavaScript, and CSS are responsible for rendering and styling the information on the TV screen, ensuring a visually appealing and user-friendly display.

The target market for this program is primarily students and school staff who rely on the bus transportation service. By displaying the estimated arrival time of buses, the app helps users plan their schedules more effectively, reducing waiting times and providing a more convenient and organised commuting experience.

The program's design focuses on providing a minimal user interaction. The information is automatically updated and displayed on the TV screen, requiring no input or action from the users. This approach allows for a hassle-free experience, ensuring that students can easily access the bus arrival information without any additional effort or complexity.

Installation Guide

Since SLGS Bus Tracker is a web based application, there is no disk space needed to download the program. It runs on Google Chrome, Safari, and Many Web Browsers. To ensure the best performance, the recommended versions of each browser are below:

Browser	Minimum Version*	How To Check Version
Google Chrome	51	Menu >Settings > About Chrome
Safari	10	Safari > About Safari
Microsoft Edge	79	Menu > Settings > About Microsoft Edge
Opera	38	Menu > About Opera
Firefox	54	Menu > Help > About Firefox

In terms of Hardware requirements, if the device is able to run one of the above mention web browsers, at the latest version, then it should be able to run the program, but the minimum requirements are:

Component	Specification
RAM	4GB (or more)
CPU	Intel Pentium 3rd gen (or faster)
Storage	Minimum storage amount to run a suitable web browser

If the computer is able to run one of the web browsers, then the program can be accessed

Here - http://slgsbuses.000.pe/main.php **OR**
https://slik2.stlukes.nsw.edu.au/bus/main.php

Once on the link, you have arrived at the program, and may start using it.

If you wish to display the Bus Tracker on a TV or external display follow the guide corresponding to which display you have.

1. Smart TV with Built-in Web Browsing:

a) If you have a smart TV with internet connectivity and a built-in web browser, you can directly access websites on the TV without the need for a computer.
b) Connect your smart TV to the internet either via Wi-Fi or an Ethernet cable.
c) Use the TV remote control to navigate to the web browser application or open the pre-installed web browser app on your smart TV.
d) Enter the website URL using the on-screen keyboard or remote control navigation buttons.
e) Press Enter or select Go to load the website on your TV screen.

2. Media Player with Web Browsing:

a) Alternatively, you can use a media player device with web browsing capabilities to display websites on your TV. Media players like Google Chromecast, Roku, or Amazon Fire TV Stick often have web browser apps available.
b) Connect the media player device to your TV using an HDMI port or any other appropriate connection method.
c) Set up the media player device according to the manufacturer's instructions.
d) Install a web browser app on the media player. This can typically be done through the app store or marketplace available on the media player device.
e) Launch the web browser app and enter the website URL using the on-screen keyboard or remote control.
f) Press Enter or select Go to load the website on your TV screen.

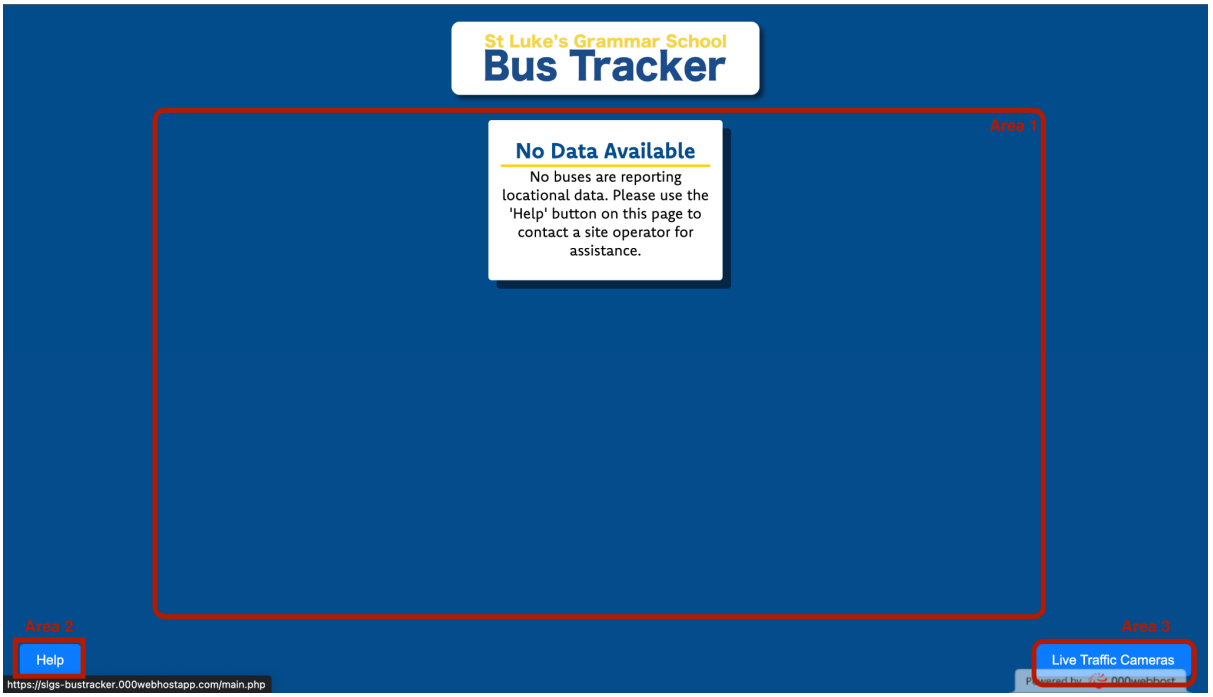
3. Constant Connection using a Computer:
   a) Connect your computer or laptop to the TV using the appropriate cable (HDMI, VGA, or USB) that matches the available ports on both devices.
   b) Ensure that both devices are powered on.
   c) On your computer, open a web browser (e.g., Google Chrome, Opera Firefox, Safari, or Microsoft Edge).
   d) Enter the URL of the website you want to display in the address bar and press Enter.
   e) The web page should now be visible on your TV screen. You can interact with the website using your computer or laptop.

*Please note: *the computer must be constantly connected if wished to display the website**

Using the Program

The Bus Tracking App is a user-friendly software designed to provide real-time information on school bus arrivals. This user manual will guide you through the main functions of the app and how to use them effectively.

Main Page



Within the Home page, there are 3 main areas of interest for the user, referenced on the above Screenshot.

Area 1: Bus Display

The Bus Display Area is where the upcoming buses will be displayed, along with each of the buses' time till arrival and destinations. *(**NB**: 'No Data Available' message is shown due to this User Manual being authored during the school holidays, when bus data for the schools specific bus stop locations are not updated from Transport NSW's OpenData API)*

Area 2: Help Button

The Help button located in the bottom left of the screen directs the user to a separate page, which displays the names and emails of the site operators, a link to the FAQ page, and a link to the User Manual.

Area 3: Live Traffic Cameras

The Live Traffic Camera button directs the user to a separate page where they are able to sort through live traffic cameras in Sydney which update every 2 min.

Help Page

Within the Help page, there are 3 main areas of interest for the user, referenced on the above Screenshot.

X button: Closes the page.

Area 1: Site Operators

Here the user has access to the names and emails of the site operates, users may contact the site operators in regards to any issues or questions with the program.

Area 2: FAQ Button

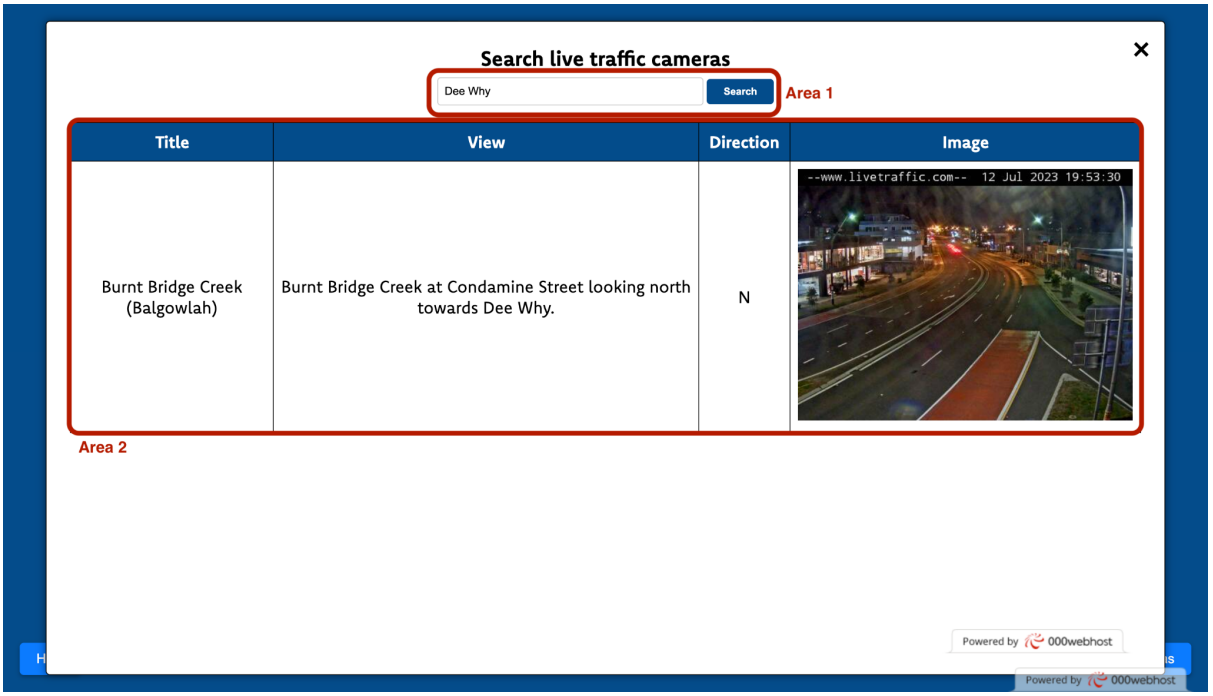
The FAQ page includes questions which we thought to be commonly asked.

As shown the page consists of questions and answers revealed by the drop down text.

Area 3: User Manual Button

The user manual button directs the user to this google document. (As a viewer)

Live Traffic Cameras



Within the Live Traffic Camera page, there are 2 main areas of interest for the user, referenced on the above Screenshot.

X button: Closes the page.

Area 1: Search Bar
The search bar allows the user to search traffic cameras by suburb and/or street.

Area 2: Live Traffic Cam DIsplay
Shows the available live traffic cameras spending depending on the users search, separated by Title, View, Direction and Image.

Tutorial

Since the program requires minimal user interaction, a tutorial is not essential, however, if the user wishes to display the program onto a TV or Monitor please refer to the “Installation Guide” above, where a tutorial on how to display a webpage on different types of TV’s is provided.

- Smart TV with Built-in Web Browsing
- Media Player with Web Browsing
- Constant Connection using a Computer

Troubleshooting Guide

Below is a list of common errors that may appear within the program. Most commonly, these issues can be resolved through refreshing the webpage, or rebooting your computer. Options to contact the site operations, and access to the 'Help' section of this program are available on the main page (under the 'Help' button window).

Examples:

- "No Data Available";
- ~ very slow to load ~ -(reason; transportNSW open AI data is offline, or a system error with the hosting service)

FAQ (Frequently Asked Questions)

How accurate is the bus tracker's estimated time of arrival (ETA)?
The bus tracker's ETA is based on real-time data received from GPS devices installed on the school buses. Data is sent through Transport NSW's data centres, and hence, can have a delay of approximately 1-2 seconds from Transport NSW's data output. While we strive to provide the most accurate information possible, please note that unforeseen circumstances such as heavy traffic or road closures can affect the actual arrival time.

Is the bus tracker available on mobile devices?
Yes, our bus tracker is accessible on mobile devices, through our mobile applications for both iPhone and Android. We also have a responsive web interface that adapts to different screen sizes, making it easy to use on smartphones and tablets, allowing you to access the bus tracker website through your device's web browser.

Can parents or guardians track their child's bus in real-time?
Yes, parents or guardians can track their child's bus in real-time using our bus tracker. Through using our service, parents and guardians can access the site through a mobile or desktop device, and can view buses enroute to the school, at any time of the day.

How does the live traffic camera feature work? Where do the images come from?
Our bus tracker website incorporates a live traffic camera feature to provide real-time visual information about the road conditions along the bus routes. The live traffic camera images are sourced from various traffic monitoring authorities and agencies in collaboration with the local transportation department. For 'offline' cameras, please return to the previous page, and use the 'Help' button to contact the site operators, and we will contact the relevant authorities to resolve the issue immediately.

These cameras are strategically placed at key locations throughout the city and capture live footage of the traffic flow, road conditions, and any incidents or congestion that may affect the bus routes. The images are then streamed and displayed on our bus

tracker website, allowing users to view the current traffic situation along their designated bus routes.

By accessing the live traffic camera feature, users can gain valuable insights into the road conditions, make informed decisions about their travel plans, and anticipate any potential delays or detours that may impact the estimated time of arrival (ETA) of the buses.

Please note that the availability and coverage of live traffic camera images may vary depending on the geographical area and the collaboration with local authorities. We strive to provide the most comprehensive and up-to-date traffic information to enhance your experience and ensure a smooth journey. Currently, these images are updated approximately every 2-4 minutes, and do not display a live traffic camera feed, rather display a static image of the current traffic conditions.

Why is there no display on my website?
If you are experiencing a lack of display on your website, it could be due to a public holiday or a school holiday. If the issue persists beyond the holiday period, it is advisable to explore alternative causes or seek assistance from your hosting provider or website administrator.

More help

If you are stuck, or are faced with a problem that is not addressed within the User Documentation, please don't hesitate to contact the below emails for assistance:

- jamesac2024@student.stlukes.nsw.edu.au
- aleksanderc2024@student.stlukes.nsw.edu.au

Glossary

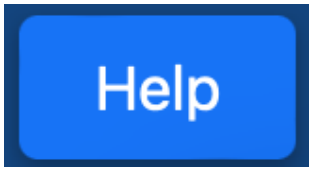
API: Application Programming Interface, is a set of rules and protocols that enables software applications to communicate and interact with each other.

HDMI, VGA, or USB: Standard for simultaneously transmitting digital video and audio from a source, such as a computer or TV cable box, to a computer monitor, TV or projector.

OpenData NSW: The portal to the list of NSW Government datasets available in one searchable website. The NSW Government aims to make data more accessible to the public.

PHP, HTML, JavaScript, and CSS:
PHP, HTML, JavaScript, and CSS are essential technologies for web development. Each has their own strengths but together they combine to create an elegant web design.

Quick Reference Card

Button/Menu option	Description
	The ‘X’ symbol represents a way for the user to exit the current window/modal, and return to the previous window, without the browser going back a page.
	The ‘Help’ button reveals a pop-up window where the user can visit the User Manual, or the FAQ pages. The user can also contact the site operators, via email links.
	The ‘Live Traffic Cameras’ button displays a pop-up window, in which the user can view live traffic cameras within NSW, in a tabulated form. This window also has a search function, allowing for filtered results.