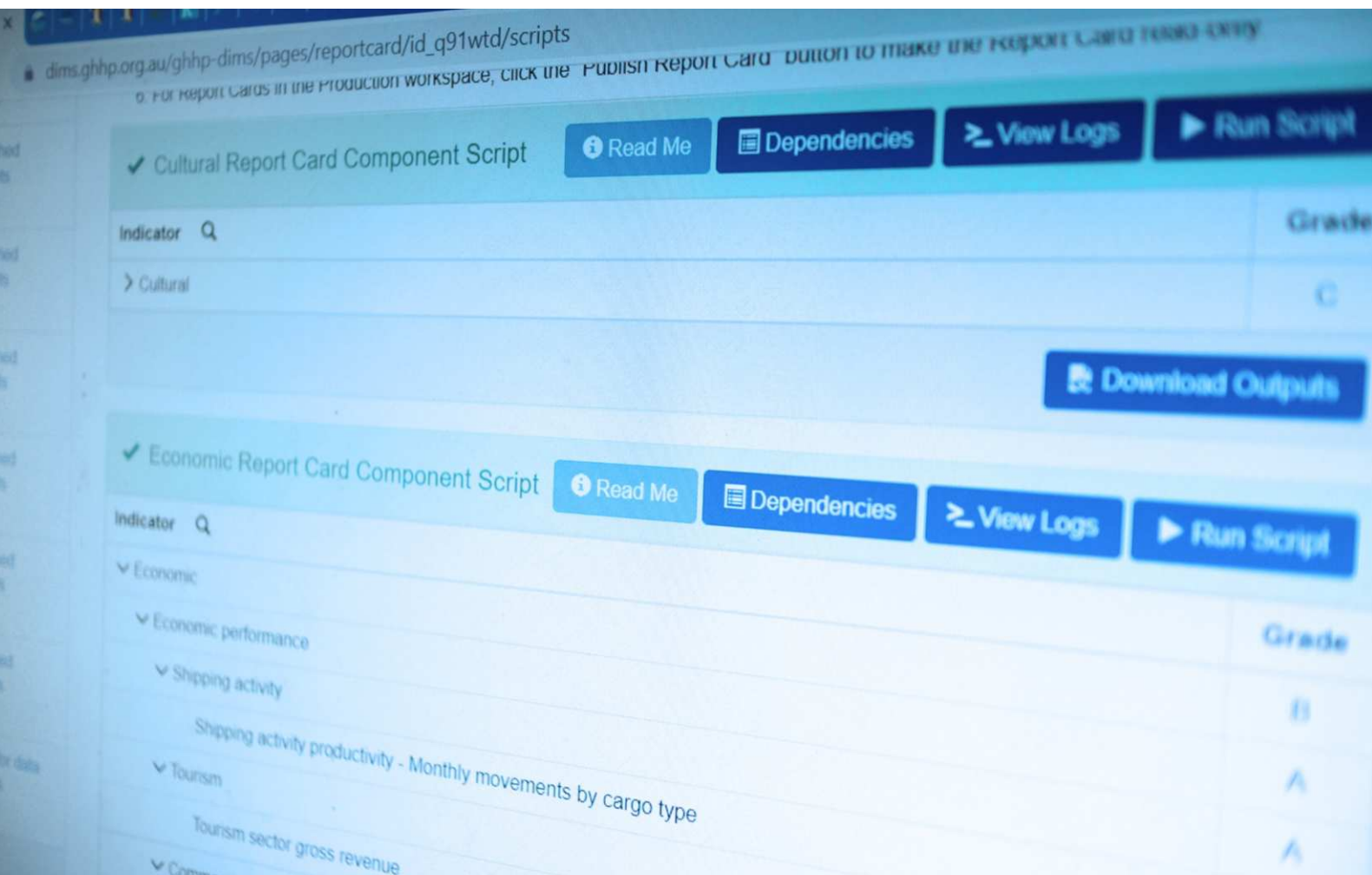


# FINAL REPORT ISP009: 2022–23: PROVISION OF ONGOING TECHNICAL SUPPORT FOR GHHP DATA AND INFORMATION MANAGEMENT SYSTEM (DIMS)

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Final project report prepared for Gladstone Healthy Harbour Partnership.

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Cover photo:

*Screenshot of the GHHP DIMS report card system web interface. Image: E. Lawrey*

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## 1 SUMMARY

The GHHP Data and Information Management System (DIMS) is a web-based system for managing the data and scripts used to generate the Gladstone Harbour Report Card (<https://www.ghhp.org.au/>). The Australian Institute of Marine Science manages the hosting and maintenance of this system, upgrading software components as needed and making enhancements or adjustments to the report card scripts as requested by GHHP. This project covered one-year of the on-going maintenance of this system and provided training for new GHHP staff.

## 2 PROJECT BACKGROUND

The Gladstone Healthy Harbour Partnership (GHHP) Data and Information Management System (DIMS) is a web-based system that helps coordinate the submission and processing of monitoring data associated with the annual GHHP environmental report card for the Gladstone region. This system allows groups performing the monitoring to upload their data into the system. The system performs a range of checks on the monitoring data to ensure consistency and compatibility with the logic of the report card scripts. The algorithms that implement the logic of the report card are implemented as a range of R scripts. The DIMS system allows the GHHP science team to run these scripts on the monitoring data to produce a range of products (trend plots, preview of the report card scores and prepopulated report card templates) that are used to produce the final report card.

The DIMS system was actively developed from 2014 – 2016, with further refinements and additional report card indicators added to the R scripts from 2017 – 2020. This project covers the tasks associated with the maintenance, support, adjustments, and necessary software upgrades of the GHHP Data and Information Management System (DIMS) over the 2022-2023 financial year.

The source code for the DIMS system software and the scripts are stored in private repositories on GitHub at the address: <https://github.com/ghhp-dims>. The server associated with the DIMS is hosted on the Amazon cloud and managed by the Knowledge System team at AIMS.

## 3 PROJECT DELIVERABLES

### 3.1 Task 1: Project inception meeting

*Completed September 2022*

This meeting was conducted on 20 September 2022 with John Rolfe, Hannah Russell, Gael Lafond, and Marc Hammerton.

### 3.2 Task 2: GHHP staff training session

*Completed May 2023*

Attendees: Hannah Russell, Kirsten McMahon, Gael Lafond, Marc Hammerton.

On 9/5/2023 Marc Hammerton and Gael Lafond provided a virtual training session to help familiarise new GHHP staff with the GHHP Data and Information Management System. This training covered steps of cloning a report card, adding data, running scripts and exporting results. It also provided an introduction to the file management system and necessary information about user management.

### **3.3 Task 3: Server Administration**

*Completed June 2023*

This task maintains the on-going robust operation of the DIMS. It includes keeping the services online, assisting and investigating issues with uploading datasets, but also developing bug fixes for issues identified in the report card scripts or the DIMS software. The following is a summary of these activities for the year:

#### **3.3.1 Routine Operating System Patches**

*Completed June 2023*

Routine Operating System security patches were applied to the server on the Monday of each week. These ensure that all the packages on the server are up to date with the latest security patches. The automated backup system of the server (snapshots in Amazon EC2) was tested during the year by starting one of the backup images to ensure that they would run.

#### **3.3.2 DIMS permission issue**

*Completed September 2022*

Mac Hansler and Mark Schulz reported permission issues with the DIMS. Gael Lafond detected a file was corrupted during an update. Redeploying this file fixed the issue and the permission problem was solved.

#### **3.3.3 DNS portal login credentials**

*Completed October 2022*

Mac Hansler asked us to provide the login credentials for the DNS portal to update the DNS record to point to the new website managed by Marketing Mafia. We were able to fulfill this request and the credentials were transferred.

#### **3.3.4 Fix synchronisation issue**

*Completed May 2023*

During the training session we noticed the production report card data was not synchronised with the file management system workspace. Gael Lafond fixed the issue by setting up a regular synchronisation trigger (cron job).

#### **3.3.5 Deactivation of old users**

*Completed May 2023*

Gael Lafond deactivated several users in the GHHP user management system (KeyCloak). These users either left the organisation or their role has changed. Leaving those users active could represent a security risk.

### **3.3.6** Set up new workspace in file management system

*Completed June 2023*

Hannah Russell expressed her wish to use the file management system to manage and share historical and current working documents. For this a new group workspace was set up with access granted to multiple users, including members of the GHHP Management Committee. Furthermore, after convening a short meeting, it was decided to use the share functionality with password protection to share content with GHHP partners.

### **3.3.7** Upgrade operating system

*Completed June 2023*

To provide the best level of security, we upgraded the operating system from Ubuntu 20.04 LTS to Ubuntu 22.04 LTS. Gael Lafond performed all necessary steps to upgrade the operating system and make sure all software is running.

The same upgrade was also attempted for the development server, but issues with the Statamic software prevented the upgrade. As the GHHP website is no longer published with Statamic and maintained by Bitplex, it was decided to shut down the server to avoid security leaks. The server can be restarted if required, but it is strongly recommended to decommission it in the near future.

### **3.3.8** Create new production report card

*Completed June 2023*

Angus Thompson and Cassy Thompson asked for the new production report card (2023) to be set up so that they can upload their data. Marc Hammerton created the new production report card named “2023 – Ready for data”.

### **3.3.9** Update R libraries for validation scripts

*Completed June 2023*

During the upgrade of the operating system R was also automatically updated, but not the R libraries. This led to some libraries not being compatible with the new version of R and resulted in errors when running the data validation scripts. Gael Lafond updated all relevant R libraries which fixed the issue.

## **3.4 Task 4: Updating the training manual and final report**

*Completed June 2022*

There were no significant changes to the DIMS Report Card system during this project and so there were no changes to the existing user and developer guides.

## 4 CONCLUSIONS

The goal of this year's project was to maintain the server and its software systems and to provide training to new GHHP staff. Both goals were achieved successfully without any major issues. For the near future it is highly recommended to decommission the development server as it is not needed anymore and proves difficult to upgrade, leading to an increased security risk.