

**Exhibit A**  
Scope of Services  
Oracle WAM System and Database Administration

I. System Administration

- A. Integrate the Falcon document management system with WAM.

Rii will interview key stakeholders to ascertain current business process and desired process, as well as desired functionality. Rii will explore options for achieving transition from the current process to the proposed process. As part of this exploration, Rii will document hardware, software, licensing, networking, and training requirements.
- B. Assess performing asset synchronization between GIS and WAM via GeoNexus.

Currently only a limited set of assets are being imported from GIS into WAM. Other assets need to be brought into WAM in order to fully utilize Geonexus and to minimize duplicate entry and ensure consistency. Currently, there is a very long string of code written by Oracle consultants; and the System Administrator in conjunction with the Database Administrator will help the Asset Management Team assess whether this code should be reworked, or a GeoNexus module should be purchased to accomplish this.
- C. Update WAM to version 1.9.1.
  - 1. Install updates to non-production servers (Oracle RDBMS, application server, WAM, RFGEN). The application team will work with the DOT server team to perform the installs.
  - 2. Configure systems, migrating any customizations, including the following:
    - a. SAPI
    - b. Custom reports
    - c. Business rules
    - d. Web configuration
    - e. Default directories
  - 3. Migrate data from production to non-production.
  - 4. Test updated non-production application.
  - 5. Upon successful testing, update production servers.
  - 6. Update client machines' Java Runtime Environment installations from 1.6.0\_38 to 1.7.
  - 7. Cut over to the new production environment.
- D. Process and resolve WAM helpdesk tickets pertaining to system functionality.

Rii will assist the DPU Asset Management Team in prioritizing and solving user issues with WAM. This also includes administrative tasks such as creating new user accounts and resetting forgotten passwords.
- E. Perform routine maintenance and fine-tuning of the WAM installation.

Rii will monitor resource usage on WAM servers, such as disk space, memory, and CPU usage. This includes tasks such as archiving log files that could fill up disk partitions. This also includes setting configuration parameters to minimize unnecessary resource usage (such as extraneous log files). If Rii finds that more resources are necessary, such as for a growing database, Rii will work with all affected parties to determine if the system should be reconfigured or if more resources need to be procured.
- F. Assess and utilize system monitoring and optimization tools in WAM 1.9.

Rii will explore the new product oversight options in WAM 1.9. Rii will also pay attention to patterns of help desk incidents, and if there are certain recurrent problems, Rii will look for opportunities to optimize system performance, be it by software patches, or hardware, software, or operating system configuration. Rii and the Asset Management Team would coordinate efforts

with DoT, as appropriate, in order to assess and implement optimizations.

- G. Conduct user interviews for a subjective perspective on system functionality and performance. As opportunity permits, Rii will discuss day-to-day and sporadic usage of the system with the end users and consumers of its output, in order to identify aspects that can be improved. This information can be used, in turn, to improve the system and system performance for the users. It can also reveal business process improvements that could be made in order to achieve greater efficiency and more optimal use of WAM.
- H. Document system configuration details. As Rii works with the underlying elements of the WAM installation, Rii will create documentation where none exists, and refine and supplement existing documentation in order to facilitate future interactions with those elements, as well as to reduce the future risk of working with them.

## II. Database Administration

- A. Assess and implement a preventive maintenance optimization tool. There is a custom database tool that was provided by the Department's asset management consultant (CH2M Hill) to better view data about assets and preventive maintenance information. The tool is currently populated with a snapshot of data from PWAM that Rii provided to CH2M Hill. If the team decides that it is feasible and desirable, then Rii will tie this tool to production data (refreshed automatically at regular intervals) and make it available for each facility.
- B. Assess performing GIS asset import through GeoNexus. Upon successful resolution of the system administration duties for this task, described in the "System Administration" section above, the Database Administrator will assist in determining if and how to import GIS assets into WAM to make WAM the asset's "system of record".
- C. Re-establish asset synchronization between GIS and WAM such that importing GIS assets into WAM is a sustainable, timely, and reliable process, and the WAM database is kept up-to-date.
- D. Perform data integrity audits. Rii will utilize the documentation already created to start tracking down the source(s) of data integrity concerns with some assets and WAM reports. Rii will further document the system as part of the audits.
- E. Provide Oracle Recovery Manager database exports to DoT for backup, and also utilize them as needed, as nearline backups to recover from any recent-past mishaps.
- F. Process and resolve WAM helpdesk tickets pertaining to database functionality. Rii will resolve database permission and performance issues reported through the helpdesk.
- G. Assess and utilize database monitoring and optimization tools in WAM 1.9. Rii will perform regular checkups in Oracle enterprise manager to monitor and optimize the database. Rii will also pay attention to patterns of help desk incidents, and if there are certain recurrent database problems, Rii will determine if it is possible to resolve them and optimize the performance. Rii will work closely with Oracle Support when necessary.
- H. Document data structures pertaining to the above features and functionality. As Rii works with the underlying elements of the database that backs WAM, Rii will create documentation where none exists, and refine and supplement existing documentation in order to facilitate future interactions with those elements, as well as to reduce future risks.
- I. Create custom reports based on WAM data. As needed, Rii will aid the Asset Management Office in creating advanced reports on assets, their maintenance, and their capital renewal.
- J. Provide support to DoT when DoT is patching servers. On a monthly schedule for non-production servers and a quarterly schedule for production servers, and as needed for security or other concerns, DoT routinely patches all servers. Rii will continue to support this effort by bringing down databases beforehand and bringing them back

up afterwards.