

# **WCPSS Outsourced Oracle Production Support**

## **Service Level Agreement**

**(Reference WCPSS RFP Bid #251-23-379)**

This Service Level Agreement (SLA) describes the relationship between WCPSS Administrative Services Division including Technology Services, Accounting, Finance, Budget, Purchasing, Human Resources, and Compensation Services Departments hereinafter referred to as WCPSS, and VENDOR in providing outsourced production support for highly customized Oracle business applications.

### **Definitions:**

**Production Support** — The ongoing support and monitoring of the Wake County Public School System's Oracle business application modules within Oracle E-Business Suite, including integrations, processes, reports, forms, and alerts. Support covers mission critical business applications operating in a real-time environment. Support includes file loads, inbound and outbound processes, data interfaces, patches, including issues in test instances, and application upgrades. Developer participation will be required when we implement an archiving strategy. Major application upgrades are included in this SLA, when and as determined by WCPSS.

Production support includes modifying existing custom code and/or processes to comply with required changes from the federal, state, and local government as well as routine modifications to application interfaces/integrations, reports, data feeds, data views, and changes to established business processes. Minor enhancements are also included and may consist of new processes, new reports, new alerts, new data feeds, and new interfaces. Each minor enhancement is intended to require minimal effort and should not exceed 80 total hours of work to complete. This SLA does not include major new development projects such as providing new functionality or complete rebuilding of service provider interfaces. A list of current customizations can be found in Exhibit A. This agreement includes support of new development, and major enhancements completed externally that have been documented, tested, and moved into the production environment.

### **Production Priorities:**

#### **Priority ONE - Urgent and Break/Fix**

Priority One issues are for system failures that have a major impact on business operations with no work around, i.e., the "system is unavailable". The Vendor will immediately begin work on a Priority One call, with the goal of restoring normal operation to the system or a satisfactory work around as quickly as possible.

Certain file loads or policy changes may become a Priority One due to requirements by the WCPSS Board of Education, senior management, State, or Local Government.

#### **Priority TWO - Time Sensitive**

Priority Two issues are for system failures that have an impact on business operations to some degree and do not have a satisfactory work around. The Vendor will respond to the call as stated in Response Schema. In most cases, it is normal for the Vendor to respond in faster times than those stated.



### **Priority THREE - Maintenance**

Priority Three issues are for system faults, but normal business operations are not impacted. This priority of call is the default for all service calls which do not involve a hardware related fault. For software-related issues, this priority allows for work to be scheduled as part of a planned maintenance update.

Note: WCPSS reserves the right to escalate or de-escalate any issue at any time.

**Support Hours** — Production support will be provided during WCPSS regular working hours, 7:30 a.m. to 5:30 p.m. EST Monday through Friday. After-hours support may be required especially during peak load and/or peak demand periods noted on calendar of known events and processes, Exhibit C. It is possible that other events may occur that necessitate after-hours support. After-hours support has typically not exceeded 320 person hours in a given year.

**Technical Environment** — The WCPSS Oracle ERP currently runs on Oracle Applications version 12.1.3, Oracle database version 19c, AIX version 7.1 in an "n tier" environment. The WCPSS Oracle ERP includes the following active modules:

- Accounts Payable Accounts Receivable Budget
- Cash Management Fixed Assets
- General Ledger
- Human Resources, including position control
- Inventory
- Order Management Payroll & Benefits Public Sector Budget Purchasing
- Oracle Time and Labor
- Oracle Advanced Benefits
- Oracle Employee Self Service

All service requests and source code are managed through WCPSS's ticket tracking system. This tool is used to facilitate and manage code moves between the Development, Test, and Production environments. Libraries are managed with SmartSVN. All application development, testing and quality assurance is maintained in a Development, Test, and Production environment.

### **Party Responsibilities**

#### **A . WCPSS Responsibilities:**

1. WCPSS designates the Director of Business Systems as the primary business contact for all service request technical communications. The Senior Director of Development and Planning must be contacted in the event that the primary business contact is unreachable. This information is referenced in the Communications Matrix (Page 7).
2. WCPSS designates the Senior Director of the Development and Planning department to act as a management single point of contact for all service request management level communications with the VENDOR.
3. WCPSS will adhere to the notification processes for opening and communicating production support service requests as outlined in this Agreement and will track all responses received to verify compliance with the SLA.
4. WCPSS will specify a priority for each service request, based on the Response Schema chart starting on Page 5. WCPSS reserves the right to escalate any and all service requests

based on changing circumstances or additional information.

5. WCPSS will be an active participant with Vendor while reported issues are being resolved, ready to review, test, and approve all issues as stated in the Response Schema chart starting on Page 5.
6. WCPSS will provide as much symptomatic information as possible for each service request assigned to VENDOR. This content will include all steps taken up to the point of submission to resolve the issue, screen shots of error messages and/or supportive content, and any possible workarounds.
7. WCPSS will provide VENDOR with approved maintenance and weekly refresh schedules and updates as changes occur.
8. WCPSS will provide a calendar of known events and processes including peak demand periods. WCPSS will make every effort to give advance notice when after hour support may be needed. (Exhibit C)
9. WCPSS's management single point of contact, the Senior Director of Development and Planning, will review ALL production support service requests to monitor and evaluate VENDOR performance and adherence to the Response Schema referenced on Pages 5 – 6 and will note and discuss any concerns with the VENDOR designated management single point of contact as they occur.
10. WCPSS will provide secure access, via Virtual Private Network, to ALL necessary systems.

#### **B . VENDOR Responsibilities:**

1. VENDOR will provide production support during WCPSS's regular business hours, 7:30 a.m. to 5:30 p.m. Eastern Time, Monday through Friday.
2. VENDOR will provide an on call, 24 x 7 technical single point of contact, phone, and email, for all service request technical communications with WCPSS representative (Project Manager), referred to in the RFP, and described in the Communication Matrix (Page 7).
3. VENDOR will provide a management single point of contact, for all service request management level communications with WCPSS representative (Service Manager), referred to in the RFP, and described in the Communication Matrix (Page 7).
4. VENDOR will utilize WCPSS's ticket and tracking system, for all service requests and adhere to incident response schema, code move and versioning protocols.
5. VENDOR will develop, document, and provide corrections or changes for any defects, errors, malfunctions, bug fixes or any customizations in the applications defined in the Software Support Matrix (Page 6). Proper documentation shall include, but not be limited to, commented code to help others understand and possibly manage the code. Documentation may also include separate written documentation if requested.
6. VENDOR is responsible for supporting and maintaining all aspects of the application layer as stated in definitions under Production Support. Complete understanding and knowledge of operating system and system environments is required.

7. VENDOR is responsible for acquiring necessary tools for performing the services in this agreement, including but not limited to, a SQL editor, a secure shell, and basic communication tools for operating in an AIX environment.
8. VENDOR will be required to submit a Monthly Activity Report by the 10<sup>th</sup> day of each month for review and possible discussion. This report will provide detail against all support activities during the previous month. WCPSS will work with Vendor to define the structure and included data of this report.
9. VENDOR will work collaboratively with WCPSS representatives during the planning process for implementing patches and new releases, as needed, at no additional cost to WCPSS.
10. VENDOR will provide support during the annual business continuity and disaster recovery (BC/DR) testing.
11. VENDOR will provide necessary developer resources to assist in archiving Oracle data.
12. VENDOR is responsible for unit testing prior to submission to WCPSS for quality assurance testing.
13. VENDOR will participate collaboratively with WCPSS in business continuity planning and considering what-if scenarios related to the ORACLE ERP, as needed, at no additional cost to WCPSS.
14. VENDOR will provide analysis on new and existing requests. Information should include, but not be limited to, potential hours, number of developers, impact on dependencies, and potential gains, as required.
15. VENDOR will provide instructions for initial testing that include, but are not limited to, the following information: responsibility, request type (single or set), process name, and parameters used during unit testing.
16. VENDOR will follow WCPSS's Coding Standards (Exhibit D).
17. VENDOR will participate in scheduled monthly conference calls occurring the first Monday following the 10<sup>th</sup> of every month at a time determined by WCPSS to evaluate overall performance to date and discuss any upcoming calendar events or needs.
18. At contract termination, VENDOR will participate in a service request turnover process at no additional cost to WCPSS. Additionally, VENDOR will provide complete documentation for all incomplete service requests and a list of those outstanding at that time.
19. VENDOR will send all emails related to production support to [oraclesupport@wcpss.net](mailto:oraclesupport@wcpss.net).
20. VENDOR will follow the communication channels established by WCPSS at all times during the Agreement as stated in the Communication Matrix (Page 7) of this document.

## **Response Schema and Expected Actions**

VENDOR will utilize WCPSS's ticket and tracking system for all service requests and adhere to incident response schema, code move and versioning protocols. It is the expectation of WCPSS



that all trouble tickets will be documented completely within one (1) hour of closing the call. Documentation must include all work activities performed to resolve the issue. Verbal responses will not constitute resolution documentation.

Response Schema	Expected Action
<p><b>Priority ONE (P1): Urgent and Break/Fix</b> Priority One issues are for system failures that have a major impact on business operations with no work around, i.e., the “system is unavailable”. The Vendor will immediately begin work on a Priority One call, with the goal of restoring normal operation to the system or a satisfactory work-around as quickly as possible.</p> <p>Certain file loads or policy changes may become a Priority One due to requirements by the WCPSS Board of Education, senior management, State, or Local Government.</p>	<p><b>After IMMEDIATE acknowledgment via email (within 15 minutes),</b> VENDOR provides email status updates every hour to <a href="mailto:oracle-support@wcpss.net">oracle-support@wcpss.net</a> until the issue is resolved. Status update reporting can change if noted specifically on trouble ticket. Complete documentation describing problem and fix will be provided by Vendor. Automated email acknowledgement is unacceptable.</p> <p>WCPSS will be responsible for testing upon notice of completion for approval and to resume normal business operations as soon as possible.</p>
<p><b>Priority TWO (P2): Time Sensitive</b> Priority Two issues are for system failures that have an impact on business operations to some degree and do not have a satisfactory work around. The Vendor will respond to the call as stated in Response Schema. In most cases, it is normal for the Vendor to respond in faster times than those stated.</p>	<p><b>After acknowledgment via email (within one business day),</b> VENDOR provides weekly status on the first business day of each week to <a href="mailto:oracle-support@wcpss.net">oracle-support@wcpss.net</a>. Documentation describing the problem and solution will be provided for each item as completed by Vendor.</p> <p>WCPSS will be responsible for testing upon notice of completion for approval and to resume normal business operations as soon as possible.</p>

<p><b>Priority THREE (P3): Maintenance</b>  Priority Three issues are for system faults, but normal business operations are not impacted. This priority of call is the default for all service calls which do not involve a hardware related fault. For software related issues, this priority allows for work to be scheduled as part of a planned maintenance update.</p>	<p><b>After acknowledgment via email (within one business week),</b> VENDOR provides monthly status summary report on the first business day of each month to <a href="mailto:oracle-support@wcpss.net">oracle-support@wcpss.net</a>. Documentation describing the problem and fix will be provided for each item as completed by Vendor.</p> <p>WCPSS will be responsible for testing upon notice of completion for approval of solution.</p>
<p><b>Enhancements</b>  Enhancements are used when a request is made for a minor modification to System Software.</p>	<p>Vendor will work with the Director of Business Systems and/or Business Analyst to gather the requirements to prepare a scope of work and plan for completion and delivery.</p> <p>WCPSS will be responsible for prioritizing all enhancements.</p>

### Software Support Matrix

Name	Description (Current Applications)
<ul style="list-style-type: none"> <li>• Accounts Payable</li> <li>• Accounts Receivable</li> <li>• Budget</li> <li>• Cash Management</li> <li>• Fixed Assets</li> <li>• General Ledger</li> <li>• Human Resources, including position control</li> <li>• Inventory</li> <li>• Order Management</li> <li>• Payroll &amp; Benefits</li> <li>• Public Sector Budget</li> <li>• Purchasing</li> <li>• Time and Labor</li> <li>• Advanced Benefits</li> <li>• Employee Self Service</li> </ul>	<p>Oracle Applications 12.1.3, and future releases.</p> <p>Oracle Discoverer</p> <p>Oracle Self Service</p>

**Communication Matrix**

<b>Business Contacts (in contact order)</b>	<b>Contact Information</b>
<b>Primary Business Contact/Project Manager</b> Director of Business Systems	919-694-0148 (business hours) 919-697-0854 (alternate)
<b>Alternate Contact/Service Manager</b> Senior Director of Development and Planning	919-694-0105 (business hours) 919-291-4129 (alternate)

**Lines of Communication**

Vendor - WCPSS Communication Matrix Business Contact - DBA DBA - WCPSS Communication Matrix Business Contact - Vendor Vendor - WCPSS Communication Matrix Business Contact - Users Users - WCPSS Communication Matrix Business Contact - Vendor
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## **WCPSS SLA Exhibit A - Customizations**

**Note: All modules have custom reports and forms.**

Customizations include, but are not limited to:

### **Human Resources**

1. Custom Position Control
2. Custom Applicant process
3. Several personalization's on HR Screens using CUSTOM pll
4. Several interfaces / alerts (DPI, Provisioning, etc.)
5. Several Custom forms, reports and processes
6. Custom SSHR Apps
7. ESS – Document of Records

### **Payroll**

1. Custom Time Entry
2. Several Custom Fast Formulas
3. Custom Payroll Process
4. Custom Costing Process
5. Custom Online Paystub, Deposit advice and Check Writer
6. Several Custom forms (Balance Adjustment, BEE, etc.)
7. Custom PTO (Paid Time Off) and longevity Process
8. Custom Benefits process
9. Custom costing matrix
10. Several Custom Interfaces and Alerts
11. Multiple Discoverer Reports
12. PARS
13. Custom Advance Benefits Process

**Uniform Education Reporting System (UERS)** – This is a custom reporting module developed for North Carolina that pulls monthly data from Accounts Payable and Payroll.

1. Custom Vouchers
2. Custom Salary refund process
3. Custom code change process
4. 202 Process
5. Prior Year Process
6. 275 Reporting / Interfaces

### **Purchasing**

1. P-card Processing
2. Sales & Use Tax updates for Pcard
3. Text Books
4. NCEP Vendors
5. NCEP PO and Invoices Extracts
6. BackOrder Shipping Processing for WHS\_Stage subinventory
7. Assign New Items to WHS\_Stage Subinventory
8. Custom Forms
9. Custom Reports.
10. Custom Views - e.g. for Audit and Item Catalog
11. Forms Personalizations



## **Exhibit A - Customizations**

### **General Ledger**

1. Custom Funds available and active funds available forms
2. Monthly Finance Report Form and file
3. Discoverer reports

### **Accounts Payables**

1. UERS Reporting
2. Use Tax automation
3. Payroll Interface
4. Employee import
5. Positive Pay files
6. Custom Check format
7. Tax Form
8. P-Card Interface
9. E-procurement Interface
10. Verizon Interface
11. Bank of America Interface

### **Accounts Receivables**

1. Prism Interface

### **Cash Management**

1. State Treasurer and Wachovia Interfaces
2. Payroll interface to Cash Management

### **Fixed Assets**

1. Discoverer Queries

### **Budget & PSB (Public Sector Budget)**

1. Payroll Position Interface
2. Benefit Entries
3. Projection Report & Cross Reference rules form
4. Discoverer reports
5. BAAS

## WCPSS SLA Exhibit B

### Examples of New Development and Production Support

ORBIT Retirement Report	New Development	A retirement report did exist previously, but this new report was a completely different format and contained much more data about each employee.
Personal Leave Changes	Production Support	This was a mandated rule change to the existing PTO for personal leave. Parts of fast formula, time entry form, and nightly process had to be updated.
HR Issues Report	Production Support	A new query was added. The report existed with multiple separate queries already.
Self Service	New Development	A new module of Oracle that was not previously being used was activated. Address change and tax status updating are available first. There were customizations necessary.
Self Service	New Development	We will add an option to allow updating of pay
Checkwriter and Deposit Advice	Production Support	Due to Oracle's new version of checkwriter and deposit advice, our existing customizations to those processes had to be modified.
Paystub	Production Support	A custom online paystub exists. After the recent modification of the custom checkwriter and deposit advice processes, a function of the paystub that shows year-to-date totals for all
BAAS	Budget And Amendment System	

# ORACLE SUPPORT ANNUAL CALENDAR

2023

 Peak Periods—After Hours Support Likely to be Required

**January**  
W-2's  
1099  
Year Begin Patches  
Dental Pre  
Colonial Load  
Flexible Spending Accounts Load  
ID Theft Load  
NCAE  
Wake Ed Partnership Load  
Retro Load for teachers who to Master's pay  
United Way Load  
Textbooks Load

**February**  
W-2 Magnetic Files—Federal  
Extra Duty Pay—Keyed by Schools Benefits Statements  
Assignment Cleanup (Summer School)  
1095-C

**March**  
1099 Tape  
W-2 Magnetic Files—State

**April**

**May**  
Spring Signing Bonus  
Extra Duty Mentor Pay  
Negative Leave Process

**June**  
June part month Bonus  
Summer School  
Fiscal Year End  
Negative Leave Bonus  
Remove Projections on budget summary report  
Load Budget for new fiscal year

**July**  
FY Accruals  
Accrual CarryOver  
Accrual Adjustments  
Fiscal Year End

**August**  
Annual Salary Increases  
Retro Pay to 7/1  
August Part Month  
Grade Steps/Bands

**September**  
Family Pack Patches  
Open Enrollment  
Realign Positions

**October**  
ABC Bonuses  
New Teacher Orientation  
Personnel Load to Budget  
NCAE Dues File Load  
Art Council Dues Load  
Public Sector Budget Load

**November**  
Mentor Pay  
PENC (Professional Educators of NC) Dues Load  
End of Year Patch  
Early Payroll Release Date for November

**December**  
NBPTS Bonus Load  
National Board Pay  
Signing Bonus Load  
Load for new teacher orientation  
End of Year Patch  
Early Payroll Release Date for December  
Calendar Year End Issues



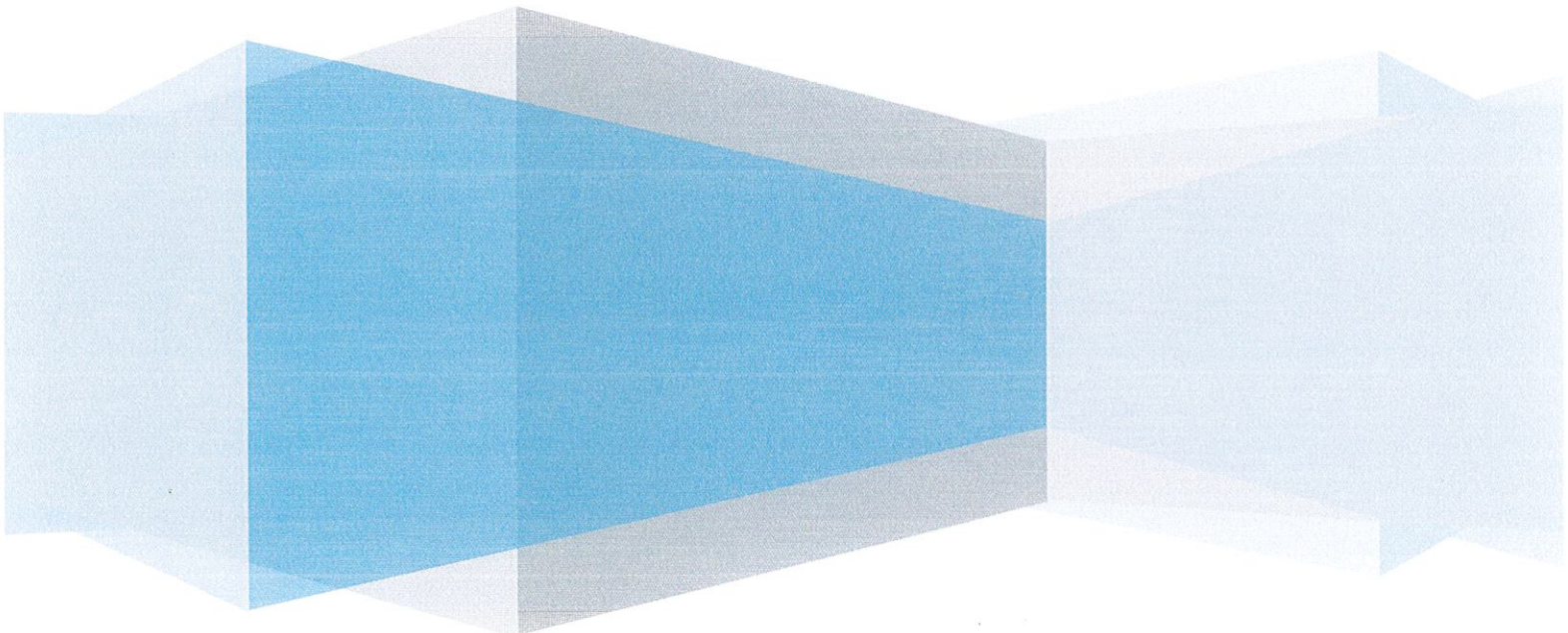
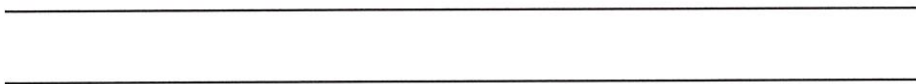
**WAKE COUNTY**  
PUBLIC SCHOOL SYSTEM

# Oracle Business Process Documentation

Wake County Public School System  
Technology Services Division (TSD)

## Exhibit D - Coding Standards

Last Updated: April 2022





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# Introduction

## Purpose

The objective of this document is to provide development standards for Wake County Public School Systems (WCPSS) to generate and maintain source code. Please note that though this document focuses more on development for Oracle Applications, it may be used for custom applications development. By adopting this method, WCPSS will achieve the following:-

- Standardization on source code development within WCPSS
- Ease in maintenance of source code
- Ease in Quality Assurance

# File Naming Standards

## File Names and Extensions

- File name must not exceed 12 characters and the first three letters should be 'WCS\_'.
- The next 3 letters should be the Module Name e.g. APX, ARX, POX, PER, PAY etc.
- The next 5 letters should typically be the first letter of each word in the Name of the Report.
- In the file name wherever English alphabet letters are used they should be in UPPERCASE.
- File Name should not contain any special characters i.e. " ", -, \$, %, #, @, \* and others.
- The Directory for all Custom programs should be \$WCS\_TOP

<i>Program Type</i>	<i>File Type</i>	<i>Module Top</i>	<i>Directory</i>	<i>Extension</i>
PL/SQL	Package specification & Package body	\$WCS_TOP	Install/procedures	Pls
SQL*Plus	SQL script	\$WCS_TOP	Sql	Sql
	Install script	\$WCS_TOP	install/sql	Sql
SQL*Loader	Control file	\$WCS_TOP	bin	Ctl
	Data file	\$WCS_TOP	Data/in	Dat, Txt, Csv *
	Log file	\$WCS_TOP	Log	Log
	Error file	\$WCS_TOP	Data/hold	Err
	Discard file	\$WCS_TOP	Data/hold	Dis
UNIX	Applications Shell Script	\$WCS_TOP	Bin	Prog or no extension
	Shell Script	\$WCS_TOP	Bin	Sh
SQL*Forms 4.5	Binary Source		PVCS	Fmb
	Executable	\$WCS_TOP	Forms/US	Fmx
Oracle Reports 2.0 or 2.5	Binary Source		PVCS	Rdf
	Executable	\$WCS_TOP	Reports	Rdf
Libraries	Binary Source		PVCS	Pll
	Executable	\$AU_TOP	Forms/resource	Plx

\* Can be of a different extension as provided by the 3<sup>rd</sup> party vendor

A database schema can be composed of various objects i.e. tables, indexes, sequences, views, synonyms, procedures, triggers, packages and functions and database links.

Object name can be maximum of 30 characters long. Please reserve the first three characters to identify the application. The naming convention should facilitate in distinguishing the objects. The norm to adopt is as follows:

Object Type	Standard	Meaning	Example
Table	30 characters long		WCS_PO_VENDORS
Index	"Xn"	X=(U)nique or (N)on-Unique n=Index Sequence Number	WCS_PO_VENDORS_U1 WCS_PO_VENDORS_N1
View	"V"	V = View	WCS_PO_VENDORS_V
Sequence	"S"	S = Sequence	WCS_PO_VENDORS_S
Trigger	"XIUD_TRG"	X=(B)efore or (A)fter I=Insert/U=Update/D=Delete TRG=Trigger	WCS_PO_VNDRS_BIU_TRG
Package	"PKG"	PKG=Package Specification & Body	WCS_PO_VNDRS_PKG
Synonym	Same as table		WCS_PO_VENDORS
PL/SQL Variables	viVariable or X_variable	Variable is logical, meaningful concise name. i is n for Number, d for Date, and c for Character data type. Precede variable name with an X when the variable is used in an SQL statement.	X_po_vendor_id
PL/SQL Global Variables	G_variable	Variable is logical, meaningful concise name. Precede variable name with a G to distinguish global variables from local variables.	G_set_of_books_id

- Object name should not contain any special characters i.e. " ", -, \$, %, #, @, \* and others.
- Object name should begin with an alphabetic character and may contain underscore.
- Object name nomenclature should be self explanatory, having a meaningful name that is understandable by the end users and IS groups.



## Table

- The sequential order in which the columns need to be defined are:
  - Primary key columns
  - WHO columns
  - Mandatory columns
- Optional columns
- To be created under the Custom Schema, with necessary grants to "APPS" schema
- The table name should be plural.
- Ensure that the WHO columns (CREATED\_BY, CREATION\_DATE, LAST\_UPDATED\_BY, UPDATE\_DATE, LAST\_UPDATE\_LOGIN, REQUEST\_ID) exists.
- Ensure that a primary key exists.
- Whenever appropriate qualify the column definition to denote its purpose i.e.

*\_FLAG*

*\_TYPE*

*\_DATE*

*\_ID*

## View

- View on a partitioned table needs to be created in the "APPS" schema. Use the WHERE CLAUSE within the view definition to dynamically partition the data on user access.

Please ensure that all the custom objects like Table, Index, Sequence and Grants are stored in Custom Schema in this case WCS and all code objects like Synonyms, Views, Package Procedures/Procedures/Functions, Triggers and Database Links are stored in the APPS schema.

## Program Header

Program header is required for the UNIX scripts, SQL\*PLUS scripts, PL/SQL Packages scripts, Procedures scripts, Function scripts, Database Trigger scripts, SQL\*LOADE scripts and Reports.

```
-- =====
--   Copyright (c) 2001 Wake County Public School Systems Project
--       All rights reserved.
--
-- =====
-- NAME
-- WCS_XXXNNNN.sql
--
-- Design Reference
-- <Document Name>
--
-- PROGRAM TYPE
-- SQL Script
--
-- PURPOSE
-- <Purpose of the SQL Script>
--
-- NOTES
-- <Some quirks about the Program/script>
--
-- HISTORY
-- =====
-- Date           Author      Version   ISRS      Activity
-- =====
-- 12-Nov-2008    SSatineni   1.0       PY27127   Initial Script
-- 20-Dec-2008    SSatineni   1.1       PY28835   Modified WEB_TRANS PROCESS
-- 20-Dec-2008    SSatineni   1.2       PY28835   Modified WEB_TRANS PROCESS
-- 05-Feb-2009    SSatineni   1.3       PY29954   Added delete of subs from archive
-- =====
```

# Programming Standards

## Date Format

- Ensure the NLS\_DATE\_FORMAT is set to "DD-MON-RR"
- Ensure that the input date format conforms to the DD-MON-RR or DD-MON-YYYY format on the forms, reports, PL/SQL packages, SQL, loader scripts etc.

## PL/SQL Programs

- **Please have proper documentation within the CODE !!!**
- The PL/SQL packages or code written in 3GL must be modular and structured.
- Define packages and procedures; anonymous PL/SQL procedure definitions are not acceptable. Keep the package specification and body in the same file with extension "pls".
- Reserved words and key Oracle words to be Capitalized
  - *SELECT*
  - *FROM*
  - *WHERE*
- *Source code* indentation is essential.
- Extensive comments need to be incorporated into the code.
- Initialize the variables prior to use within the source code. INSERT statement needs to specify the fields and values.

*INSERT INTO TABLE*

*table\_name*  
*(field1,*  
*field2,*  
*field3)*

*VALUES*

*(value1, --field1*  
*value2, --field2*  
*value3); --field3*

## Variable declarations

- Variable to have a meaningful name and to be initcap. Variable to be prefixed with 'vi' where 'i' has the value
  - n if the variable is defined as a Number
  - c if the variable is defined as a Character or a Varchar
  - d if the variable is defined as a Date

*vnPOVendorID*  
*vcDescription*  
*vdOrderDate*

## Oracle Reports

- **Please have proper documentation within the CODE !!!**
- Ensure that no logic exists in the AFTER PARAMETER FORM. If the logic exists, then move it to the BEFORE REPORT TRIGGER. The logic should be incorporated after the call to SRWINIT function
- Include the SRWINIT in BEFORE REPORT TRIGGER
- Include SRWEXIT in AFTER REPORT TRIGGER
- Avoid any data manipulation (DML) within the report
- Every Report Title should start with WCS.
- Instead of writing extensive logic within the report, write a PL/SQL Package and call it within the report. The advantage is maintenance becomes simple and the same routine may be used by other programs.
- Every report output should have a standard header:
  - Report name in caps (name on report should be the same as the concurrent request name).
  - Report run date and time.
  - Instance name.
  - Name of user who runs the report.
  - Page numbers (X of XX).
  - Report parameter names and values.

## Registering Concurrent Programs

### Concurrent Executable/Programs

- Same as execution file name in uppercase.

**Example:** WCS\_GLACCACT.

### Define Concurrent Program

- *Name* must have INITCAP i.e. "all words must have the first letter in upper case".
- The Program Name should start with WCS.

**Example:** WCS Account Activity Report

- *Short Name* must be the same as the executable name. If the same executable is being used for more than one concurrent program, then use underscore and number as suffix.

**Example:**   WCS\_GLACCACT\_1  
              WCS\_GLACCACT\_2