

AMENDMENT NO. 4

This Amendment modifies Contract No. 1418-14268, for Software and System Integration Services and Managed Service for Oracle EBS ERP Software by and between the County of Cook, Illinois, herein referred to as "County" and IBM Corporation, authorized to do business in the State of Illinois hereinafter referred to as "Contractor":

RECITALS

Whereas, the County and Contractor have entered into a Contract approved by the County Board on September 9, 2015, (hereinafter referred to as the "Contract"), wherein the Contractor is to provide Software and System Integration Services and Managed Service for Oracle EBS ERP Software (hereinafter referred to as the "Services") from September 15, 2015 through September 14, 2020, in an amount not to exceed \$66,546,900.00, with one (1) five-year renewal option; and

Whereas, Amendment No. 1 was authorized by the County Board on June 28, 2017 for additional scope for expanded HR migration support to EBS, additional Hyperion support and scope, inclusion of Polaris Software for reporting, increased Contractor UAT and technical resources, and increased infrastructure in the amount of \$6,809,520.00, and the Total Contract Amount was revised to \$73,356,420.00; and

Whereas, Amendment No. 2 was authorized by the County Board on July 19, 2017 for additional scope for extended HR deployment support, integrations and functional gap analysis in the amount of \$1,999,782.00, and the Total Contract Amount was revised to \$75,356,202.00; and

Whereas, Amendment No. 3 was authorized by the County Board on June 6, 2018 for additional scope related to Wave 3, HR/Payroll implementation in the amount of \$1,500,000.00, and the Total Contract Amount was revised to \$76,856,202.00; and

Whereas, the Contract will expire on September 14, 2020, and the agreed upon Services are still required; and

Whereas, pursuant to the Master Services Agreement Section 2.2, the County and Contractor desire to renew the Contract for five (5) years beginning on September 15, 2020 through September 14, 2025; and

Whereas, an increase of the Contract amount is required for the continuation of Services; and pursuant to the Master Services Agreement Section 16.18, the County and Contractor desire to increase the Contract in the amount of \$44,161,920.00; and

Whereas, pursuant to the Master Services Agreement Section 16.18, the County and Contractor mutually desire to revise the scope of services to migrate infrastructure hosting from IBM private cloud to Oracle commercial cloud, and have the Contractor provide migration services support

Now therefore, in consideration of mutual covenants contained herein, it is agreed by and between the parties to amend the Contract as follows:

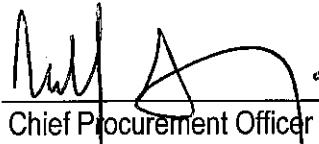
1. The Contract is renewed through September 14, 2025.

2. The Contract is increased by \$44,161,920.00 and the Total Contract Amount is revised to \$121,018,122.00
3. Master Services Agreement, Section 13 Liability, is hereby revised to add the following sub-section:
 - 13.4. Cloud Services.
 - 13.4.1. Notwithstanding anything in this Section 13 or in Section 12, Provider's liability related to the subcontracts for the provision of Cloud Services, regardless of the nature of the claim, shall be limited to one million dollars (\$1,000,000.00) in direct damages. Supplier shall have no liability for Subcontractor's failure to provide cloud services.
4. The Contract is hereby amended to delete Appendix 1-2 – Provider Facilities as of Effective Date, dated September 15, 2015 in its entirety and replace it with the attached Appendix 1-2 – Provider Facilities, dated September 30, 2019 included herein as Attachment A.
5. The Contract is hereby amended to delete Schedule 2A – Statement of Work, dated September 15, 2015 in its entirety and replace it with the attached Schedule 2A – Statement of Work – Application Managed Services(AMS), dated September 26, 2019 and Schedule 2A – Statement of Work – Cloud Hosting Managed Services, dated September 26, 2019 included herein as Attachment B.
6. The Contract is hereby amended to delete Schedule 2B – Additional Services, dated September 15, 2015 in its entirety and replace it with the attached Schedule 2B – Additional Services, dated September 26, 2019 included herein as Attachment C.
7. The Contract is hereby amended to delete Attachment I – Approved Subcontractors, dated September 15, 2015 in its entirety and replace it with the attached Attachment I – Approved Subcontractors, dated September 26, 2019 included herein as Attachment D.
8. The Contract is hereby amended to delete Exhibit 2A-9 – Deliverable Expectation Documents in its entirety and replace it with the attached Exhibit 2A-9 Deliverable Expectation Document (DED) for Cloud Hosting Managed Services (CHMS) included herein as Attachment E.
9. The Contract is hereby amended to delete Appendix 3-4 – Fees (Pricing Tables) in its entirety and replace it with the attached Appendix 3-4 – Fees (Pricing Tables), dated October 3, 2019 included herein as Attachment F. The new Fee Schedule is effective as of December 1, 2019. The fees for AMS support services for December 2019 are included in the current Fees Exhibit and the fees for the CMS hosting for December 2019 are included in this new Fees Exhibit.
10. The attached updated Identification of Sub-Contractors/Suppliers/Sub-Consultants Forms, MBE/WBE Utilization Plan forms, certificate of insurance, and Economic Disclosures Statement under Attachment G are incorporated and made a part of this Contract.
11. All other terms and conditions remain as stated in the Contract.

In witness whereof, and pursuant to County Board approval on November 21, 2019, the County and Contractor have caused this Amendment No. 4 to be executed on the date and year last written below.

County of Cook, Illinois

By:

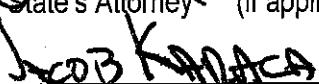

Chief Procurement Officer

Date:

11.26.19

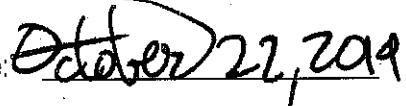
By:


State's Attorney (if applicable)


Jacob Kerasca

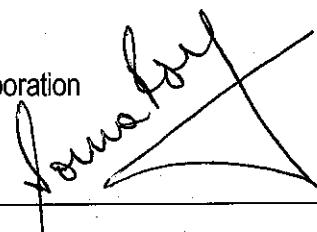
Type or print name (if applicable)

Date:


October 22, 2019

IBM Corporation

Signed

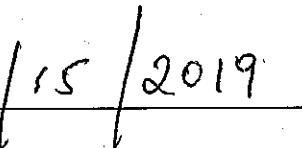

SOMA ROY

Type or print name

ASSOCIATE PARTNER - IBM

Title

Date:


10/15/2019

ATTACHMENT A

APPENDIX 1-2

PROVIDER FACILITIES AS OF THE EFFECTIVE DATE

Execution Copy: September 30, 2019

1. PROVIDER FACILITIES AS OF THE EFFECTIVE DATE

1.1 The following is a list of Provider Facilities, as of the Effective Date, from which the Services shall be provided:

MILLENNIUM CITY INTO SW TECH PARK Plot No. 62 Block DN Sector V BIDH, 1F (Part) and 2-8 Floors, Kolkata, WB 700091. India	IBM Application Development & Innovation Staff location

Additionally, this list does not include addresses of staff augmentation personnel used in support of the Services.

[End of Appendix 1-2]

ATTACHMENT B

SCHEDULE 2A
STATEMENT OF WORK
for Cook County
Cloud Hosting Managed Services
Option 1 (Oracle Cloud Infrastructure)

Execution Copy: September 26, 2019

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1. Executive Summary

This Statement of Work (“SOW”) describes the work to be undertaken by IBM (“Services”) under the Master Services Agreement by and between County of Cook (“County”) and IBM Corporation (“Provider” or “IBM”) dated [REDACTED] (“Agreement”) and the terms and conditions contained herein. Described within this SOW is the project, which consists of the deliverable Materials to be provided by IBM, and the IBM responsibilities and related County Responsibilities to be provided in accordance with the terms of this SOW.

This SOW includes services to migrate current Cook County’s ERP EBS managed services hosted at IBM CMS facilities to Public Cloud Provider – Oracle Infrastructure Services (OCI). The primary objectives for the proposed solution include:

- Improve ERP Stability and Reliability
- Improve Operations Integration with Cook County
- Enhance Cook County capabilities using Public Cloud architectures
 - o Technical refresh for ERP platforms
 - o Improve Resiliency for Platform – enhanced DR (beyond 50%)
 - o Improve Development / Testing Flexibility
 - o Improve Security – adopting public cloud security investments
- Reduce Operating Model Changes/Disruption
- Help Reduce Total Operating Costs, inclusive of transition costs

Changes to this SOW will be processed in accordance with the procedure described in Schedule 1 Relationship Management Section 5.1 SOW Change Control Procedures of the Agreement (“SOW Change Control Procedure”). The implementation of changes may result in modifications to the Estimated Schedule, Fees, and other terms of this SOW and the Agreement.

The following are incorporated in and made part of this SOW:

- a. Attachment 1 – Deliverable Sign-off Sheet
- b. Attachment 2 – Project Change Request Form
- c. Attachment 3 – Deliverable Expectation Documents
- d. Attachment 4 – Information Security Table of Roles and Responsibilities
- e. Attachment 5 – Project Tools
- f. Attachment 6 – MSP Agreements with Oracle
- g. Attachment 7 – Cloud Hosting Managed Services Catalog

To the extent there is a contradiction, inconsistency or ambiguity between the terms of this SOW and the Terms and Conditions, the Terms and Conditions will govern.

1.1. Cloud Hosting Managed Services Scope

The Cloud Hosting Managed Services (CHMS) scope is to provide hosting environment and managed services in Oracle Cloud Infrastructure (OCI) for Cook County's ERP application. The scope of services includes migrating the applications from Cook County's IBM managed datacenter to OCI and providing steady state support on the target environment.

1.2. IBM Project Team Roles and Responsibilities

Table 1.2-1 describes the IBM team member roles and responsibilities.

Role	Responsibilities	Duration
IBM Project Executive (IBM PE)	<ul style="list-style-type: none">▪ Responsible for overall direction and oversight to the IBM project▪ Works with Cook County Project Executive Leadership and Steering Committee▪ Helps develop a future vision for the collaboration▪ Works with County to help resolve contract-related issues throughout the life of the Services.▪ Reviews the overall schedule, scope, and deliverables prior to submission to the County.▪ Maintains open lines of communication with County leadership through regular meetings and communications	Part time for the duration of the project
IBM Migration Program Manager (IBM PM)	<ul style="list-style-type: none">▪ Responsible for IBM CHMS (Cloud Hosting & Managed Services) activities per Project Schedule from project start till production Cutover including liaising between IBM teams.▪ Establishes Project Plan and execution for migration and transitioning to steady state.▪ Serves as the IBM point of contact till production cutover. IBM AMS Service Delivery Manager (an IBM role defined in a separate IBM AMS SOW) will assume the Project Management responsibility for CHMS after production cutover.▪ Aligns Project Schedule and engagement objectives▪ Oversees day-to-day project operations▪ Obtains appropriate resources, as needed, to staff the IBM project per Project Schedule▪ Reports overall project status to Cook County on a weekly basis till Production cutover. Leads project status meeting.▪ Administers the SOW Change Control Procedure	Month 1 to Month 7: Full-time Month 8-Month 12: Part-time

Role	Responsibilities	Duration
IBM Solution Architect	<ul style="list-style-type: none"> ▪ Lead cross-functional IBM project teams ▪ Responsible for target cloud architecture, migration design, implementation and testing. ▪ Leads cutover activities. ▪ Assists in resolving technical issues ▪ Serves as a technical liaison between IBM, Cook County and Oracle. ▪ Responds to project management regarding progress and issues 	1FTE full time for first 3 months, part time for the remaining 4 months of migration
IBM Cloud Migration Technical Specialists	<ul style="list-style-type: none"> ▪ Design and build the public cloud landing zone details; ▪ Design Execute and Test migration of applications to target cloud environment. ▪ Plan and execute Cutover activities per Project Schedule ▪ Plan and execute Operational Readiness per Project Schedule ▪ Transition activities to CHMS steady state personnel per Project Schedule 	Month 1 to Month 7 – As needed
IBM Cloud Hosting Managed Services (CHMS) Lead	<ul style="list-style-type: none"> ▪ Responsible for Operational Readiness and steady state CHMS services defined herein per Project Schedule ▪ Reports to IBM AMS SDM (IBM AMS SDM is an IBM role defined in a separate IBM AMS SOW) ▪ Supports IBM AMS SDM in monthly reporting. 	Part time for the tenure of the contract
IBM Cloud Hosting Managed Services (CHMS) personnel	<ul style="list-style-type: none"> ▪ Support IBM migration team during Migration ▪ Support IBM migration team during Operational Readiness and Cutover activities ▪ Receive transition from IBM migration team ▪ During steady state, perform service management procedures laid out for steady state. 	Month 2 till end of Project – As needed
Cloud Provider SMEs	<ul style="list-style-type: none"> ▪ Provides subject matter expertise on key services on target cloud 	Month 1 to Month 7- As needed

Table 1.2-1: IBM Roles and Responsibilities

Work under this SOW will be performed at the County facility in Chicago, Illinois and IBM's Global Delivery Centers, using OCI Public Cloud Infrastructure. The County acknowledges and agrees that IBM may assign global resources (e.g. nonpermanent residents used locally and personnel in locations worldwide) and/or sub-contractors to provide the Services.

1.3. County Project Team Roles and Responsibilities

Table 1.3-1 describes the County roles and responsibilities necessary for the Project.

Role	Responsibilities	Duration
Steering Committee	<ul style="list-style-type: none"> ▪ Provides resources to project ▪ Makes policy decisions ▪ Acts as final authority on decisions related to project scope, schedule, and budget 	Part-time as needed, for the duration of the contract
Project Sponsors	<ul style="list-style-type: none"> ▪ Oversee progress of the project ▪ Provide guidance and direction to meet defined objectives 	Part-time as needed, for the duration of the contract
County ERP Director	<ul style="list-style-type: none"> • Manage County & 3rd party personnel and responsibilities for this project per Project Schedule • Serve as the single interface between IBM and all County departments and third parties participating in the project • Administer change per SOW Change Control Procedure • Participate in project status meetings • Obtain and provide information, data, and decisions to IBM in a timely manner as agreed, per the project schedule so as not to impact the project. • Help resolve project issues and County deviations from the estimated schedule, and escalate issues within County organization, as necessary • Provide signoff on project deliverables per Deliverable Acceptance Procedure • Approve cutover of environments from CMS to CHMS per the Project Schedule 	Part-time as needed, for the duration of the contract
County ERP Deputy Director	<ul style="list-style-type: none"> ▪ Identify a County support team who will be responsible for providing assistance to the IBM personnel. For example, for severity level 1 Service Incidents, County needs to be immediately available to the IBM personnel until the Service Incident is resolved or a work-around has been identified, and for Service Requests, County needs to provide assistance in defining and clarifying requirements; ▪ Make available subject matter experts; ▪ Maintain overall project schedules to comply with the SOW; ▪ Participate in project status meetings; ▪ Ensure that County user community reports Service Incidents and Service Requests through the tool (s) and processes defined. ▪ Conduct governance meetings (e.g. project steering committee meetings), prioritizing the work efforts in conjunction with the IBM; ▪ Resolve deviations from the SOW in conjunction with the IBM; 	Part-time as needed, for the duration of the contract

Role	Responsibilities	Duration
	<ul style="list-style-type: none">▪ Help to resolve project issues and escalate issues within the County organization, as necessary;▪ Lead User Acceptance Testing.	
County End User	<ul style="list-style-type: none">▪ Report Service Incidents and/or Service Requests▪ Perform User Acceptance Testing and Testing of fixes per the Project schedule.	Part-time as needed, for the duration of the contract
County Technical SMEs	<ul style="list-style-type: none">▪ Participate in discussions related to infrastructure, database and application▪ Validate Architecture and other technical deliverables▪ Integrate IT operational procedures, network, security, monitoring, event/incident/problem/change procedures▪ Validate DR Plan and execution▪ Validate mock cut-over activities▪ Validate Cut-over activities and post cut-over testing▪ Certify security controls used	Part-time as needed, for the duration of the contract

Table 1.3-1: County Roles and Responsibilities

2. Cloud Hosting Managed Services

2.1. Project Scope Summary

The Cloud Hosting Services scope is to provide hosting environment and managed services in OCI for Cook County's ERP application. The scope of services includes migrating the applications from Cook County's IBM hosted data center to OCI, perform migration testing, cutover to target environments and provide steady state managed services.

2.2. OCI (Target Environment) Infrastructure

This section describes the target environment architecture and configurations that were developed by IBM in collaboration with Oracle and approved by Cook County. The Statement of Work for Cloud Hosting Services is based on this infrastructure environment and OCI minimum commitments.

Figure 2.2-1: OCI Deployment Architecture

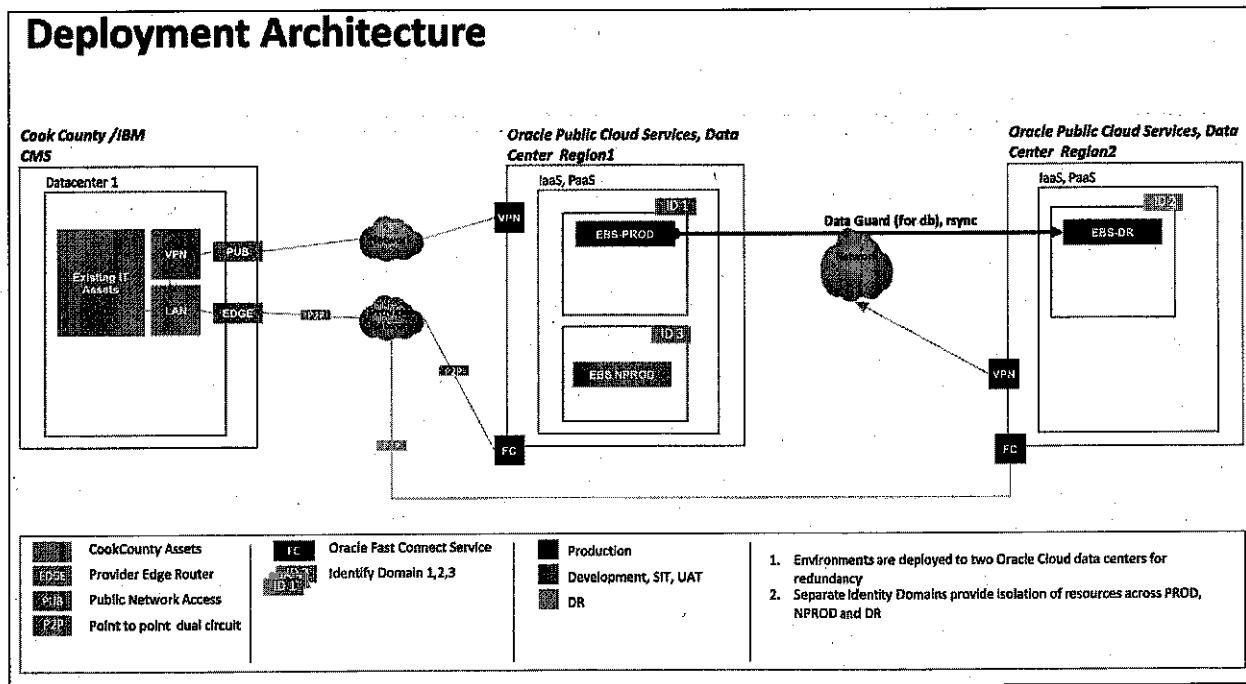


Figure 2.2-2: Deployment Architecture – OCI with Exadata Cloud Service (Prod and DR)

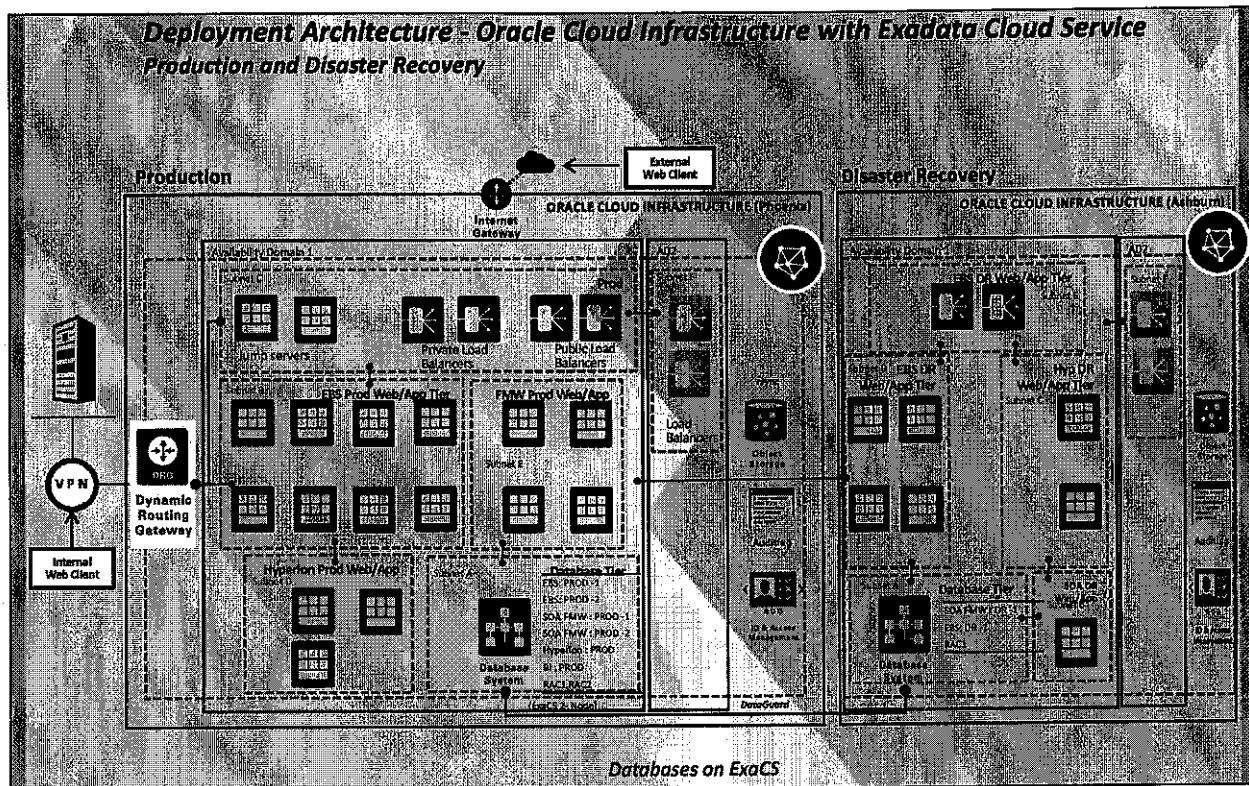


Figure 2.2-3: Deployment Architecture – OCI with Exadata Cloud Service (Non-Prod)

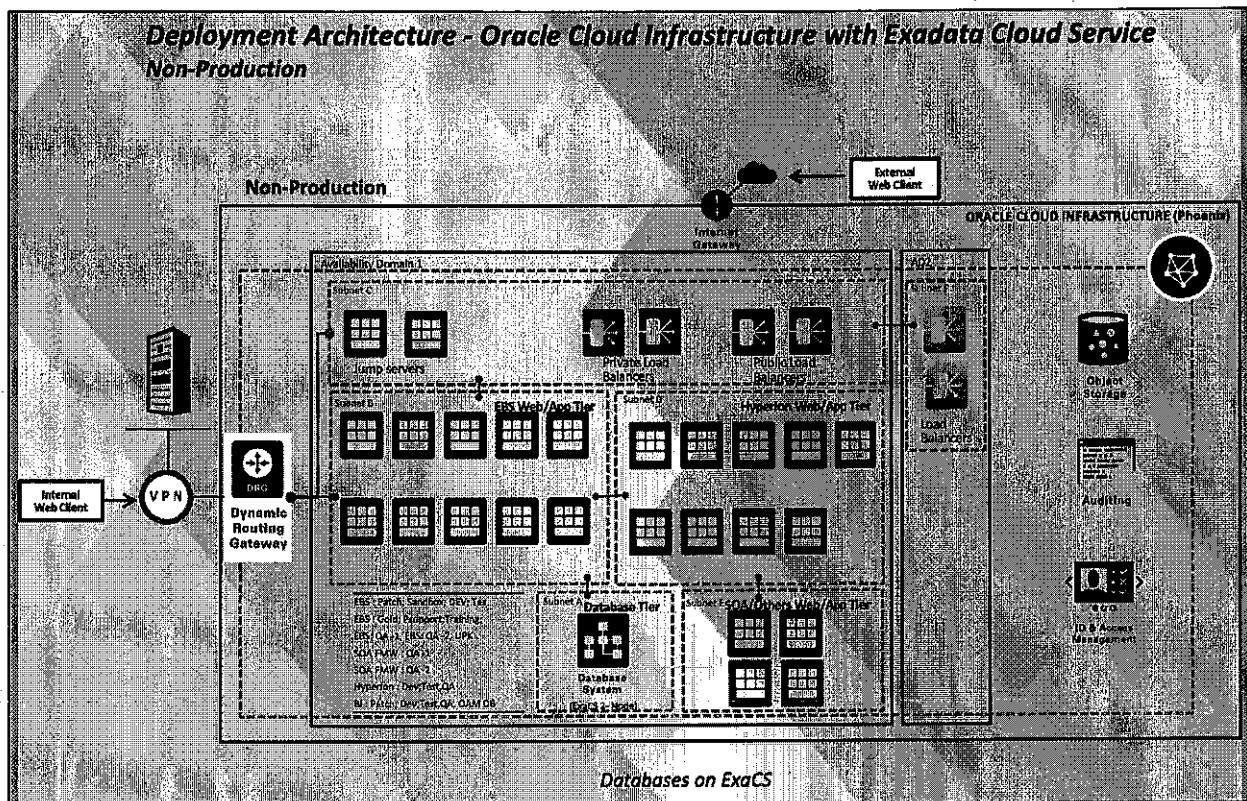


Table 2.2-1: OCI Infrastructure

Infrastructure Component	Description
Network Infrastructure	<ul style="list-style-type: none"> a. Two (2) regions each with one (1) Availability Domain. b. Three (3) VCNs with three (3) subnets each. VCN - 1 for Prod (Phoenix), 1 for non-prod (Ashburn) and 1 for DR (Ashburn) <ul style="list-style-type: none"> • Prod: Phoenix VCN – 3 subnets (Public, private APP, Private DB) • Non-Prod: Ashburn – 3 subnets (Public, private APP, Private DB) • DR: Ashburn VCN – 3 subnets (Public, private APP, Private DB) c. Two (2) dynamic routing gateways with 2 VPN connections to Cook County. One VPN terminating to each region (Phoenix and Ashburn) d. Two (2) internet gateways, one each for a region (Phoenix and Ashburn) e. Three (3) public load balancers, one each for prod, non-prod and DR (Phoenix and Ashburn) f. Six (6) private load balancers, 3 each for Prod (Phoenix) and non-prod (Ashburn). DR will be a single tier architecture. g. Two (2) Service gateways to object storage, one each at Phoenix and Ashburn regions
App Tier Compute Resources	<ul style="list-style-type: none"> a. Production: 130 OCPUs (VM Standard2) b. Non-Prod: 158 OCPUs (VM Standard2) c. DR: 13 OCPUs (VM Standard2)
Storage Needs	<ul style="list-style-type: none"> a. Production: 15 TB Block, 110 TB Object, 150 TB Archive, 1 TB File b. Non-Prod: 25 TB Block, 67 TB Object, 1 TB File c. DR: 10 TB Block, 28.5 TB Object, 1TB File
Database Resources	<ul style="list-style-type: none"> a. Production: $\frac{1}{4}$ rack ExaCS with 24 OCPUs b. Non-Prod: 30 OCPUs (running on $\frac{1}{4}$ rack ExaCS shared with DR) c. DR: 8 OCPUs (running on $\frac{1}{4}$ rack ExaCS shared with Non prod)
Security	OCI provides: Customer Isolation, Data at rest encryption, Security controls for identity and access management, visibility through monitoring, logging, auditing, and a verifiably secure infrastructure via Security operations, compliance certifications/attestations, customer penetration and vulnerability testing.
Disaster Recovery	<ul style="list-style-type: none"> a. Ashburn Region – One Availability Domain (scaled down version of Prod) b. App Tier Compute: 13 OCPUs (VM Standard2) c. Storage: 10 TB Block, 28.5 TB Object, 1TB File d. Database: 8 OCPUs (running on $\frac{1}{4}$ rack ExaCS shared with Non prod)
Management Services	Oracle Management Cloud: Application Performance Monitoring, Infrastructure Monitoring, Orchestration, IT Analytics, Log Analytics

Table 2.2.2 describes the OCI part numbers and quantities that will be provided by OCI for hosting Cook County's ERP application.

Table 2.2-2: OCI Infrastructure

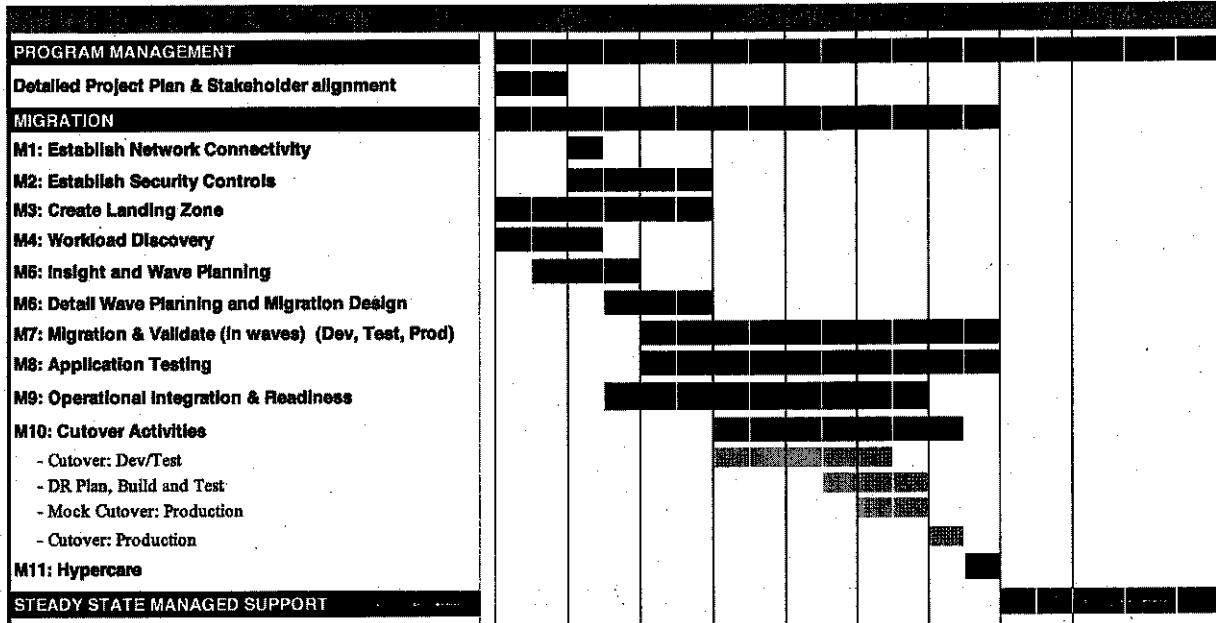
Part #	PROD		Metric	QTY	Hrs/ Month
B88514	VM. Standard2	IaaS	OCPU/hr	130	744
B88322	Block Volume	IaaS	GB/month	15,000	1
B88324	Object Storage - Storage	IaaS	GB/month	110,000	1
B88323	Object Storage - Request	IaaS	10,000 req/month	500	1
B88522	Archive Storage	IaaS	GB/month	150,000	1
B89057	Oracle Cloud Infrastructure - File Storage	IaaS	GB/month	1,000	1
B88320	Load Balancer - 400 Mbps	IaaS	Per LB hour	4	744
B89999	OCI Exa-CS - X7 - Quarter Rack - Base Unit	PaaS	Hosted env/hr	1	744
B88847	Additional OCPU - BYOL	PaaS	OCPU/hr	24	744
B88318	Oracle Cloud Infrastructure - Compute - Windows OS	IaaS	OCPU/hr	8	744
B89162	Oracle Management Cloud - Enterprise Edition	PaaS	100 Entities Per Hour	8	744
B89163	Oracle Management Cloud - Log Analytics Edition	PaaS	300 Gigabytes Per Hour	3	744
Part #	Non-Prod		Metric	QTY	Hrs/ Month
B88514	VM. Standard2	IaaS	OCPU/hr	158	744
B88322	Block Volume	IaaS	GB/month	25,000	1
B88324	Object Storage - Storage	IaaS	GB/month	67,000	1
B88323	Object Storage - Request	IaaS	10,000 req/month	1,000	1
B89057	Oracle Cloud Infrastructure - File Storage	IaaS	GB/month	1,000	1
B88326	Fast Connect - 10 GBPS	IaaS	Port Hour	0	744
B88320	Load Balancer - 400 Mbps	IaaS	Per LB hour	4	744
B88847	Additional OCPU - BYOL	PaaS	OCPU/hr	30	744
B88318	Oracle Cloud Infrastructure - Compute - Windows OS	IaaS	OCPU/hr	16	744
Part #	DR		Metric	QTY	Hrs/ Month
B88514	VM. Standard2	IaaS	OCPU/hr	13	744
B88322	Block Volume	IaaS	GB/month	10,000	1
B88324	Object Storage - Storage	IaaS	GB/month	28,500	1
B88323	Object Storage - Request	IaaS	10,000 req/month	100	1
B89057	Oracle Cloud Infrastructure - File Storage	IaaS	GB/month	1,000	1
B88326	Fast Connect - 10 GBPS	IaaS	Port Hour	0	744
B88320	Load Balancer - 400 Mbps	IaaS	Per LB hour	4	744
B89999	OCI Exa-CS - X7 - Quarter Rack - Base Unit	PaaS	Hosted env/hr	1	744
B88847	Additional OCPU - BYOL	PaaS	OCPU/hr	8	744

Cook County will be able to use this infrastructure capacity per month up to the amounts listed per month for each of the resources/part#s defined above. If Cook County goes below these minimums, Cook County may be able to allocate the remaining capacity to other use (e.g. growth of environments, duplication of environments) up to the resources quantities allocated. Consumption of resources beyond any individual level may result in additional monthly infrastructure and managed service labor charges to setup and manage these resources. The infrastructure services for OCI are governed by CSA (Cloud Service Agreement) & amendments as described in Attachment 6. OCI CSA.

Oracle Cloud Infrastructure reserves the right to update this document and the latest version will be available at <http://oracle.com/contracts>

2.3. Project Schedule

Figure 2.3-1: Project Schedule



Mx activities are described in detail in 'Migration' section
Services provided during 'Steady State Managed Support' are described in detail in 'Steady State Managed Support' section.

Changes to Project Schedule will be administered using SOW Change Control Procedures.

2.4. Project Management

2.4.1. Project Management Description

This provides for governance to see that plans and resources are in place to deliver project per Project Schedule.

Scope of Services

Provide Project Management during Migration and Steady State including Project Planning, Execution and Monitoring.

Deliverable Materials

- DL1 Migration Project Plan
- DL14 Monthly and Weekly Reports

IBM Responsibilities

IBM will:

- a. Conduct Kickoff meeting during the first week of the project start per Project Schedule;
- b. Create and maintain a Project Plan for the Migration, that details Phases, activities and duration, and track it to completion;

- c. Provide Project Plan and changes to Project Plan to Cook County;
- d. Provide project updates through weekly status reports during the Migration and monthly status reports during Steady State;
- e. See that resources adhere to IBM Responsibilities described herein.

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Provide inputs to develop Migration Project Plan
- b. Provide qualified County resources per Project Schedule
- c. Stakeholder alignment within the County
- d. Schedule and secure attendance of County and third-party personnel at meetings and workshops, etc.

Completion Criteria

- This task will be considered complete when the overall SOW Completion Criteria have been met.

2.5. Migration

2.5.1 M1: Establish Network Connectivity

Description

The purpose of this activity is to establish and verify network connectivity between IBM infrastructure and the Cook County environments.

Scope of Services

Establish network connectivity between IBM infrastructure and Cook County environments.

Deliverable Materials

- DL4 Connectivity Setup Checklist

IBM Responsibilities

IBM will:

- a. Work with Cook County to agree on the setup of IPSec VPN or cloud service connectivity;
- b. Provide a firewall service on the cloud hosting side of the VPN/cloud service connection;
- c. Configure network devices on IBM's end and test the connectivity between Cloud provider's infrastructure and Cook County's network via the Internet;
- d. Work with Cook County and other IBM eco-systems in the provisioning of VPNs or shared/dedicated links;
- e. Test network connectivity;

- f. Update Connectivity setup checklist and notify Cook County when network connectivity verification is complete.

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Provide the firewall rules and authorized IP addresses and ports for secure traffic to Cook County's side of the VPN/cloud provider connectivity;
- b. Be responsible for the overall design, architecture and support of Cook County's firewall and network;
- c. Approve to provide an Internet connection to Cook County's firewall with minimal delays and drops (For example, ~<250ms);
- d. Approve to provide a device at Cook County's location that supports static (source and destination) Network Address Translation ("NAT") and perform NAT to the IP addresses provided by IBM, IPSEC VPN, dynamic routing, MPLS and necessary local loops towards ISPs;
- e. Approve to provide necessary IP routing and firewall rules on all devices through which the monitoring and management traffic mentioned in this SOW will traverse;
- f. Ensure that all in-scope devices are configured with SNMP;
- g. Approve to Configure SNMP to send data to IBM's Tools infrastructure and troubleshoot issues directly relating to configuration of the devices in scope;
- h. Be responsible for all costs and solutions associated with providing support for IBM's connectivity to Cook County's system remotely;
- i. Route, translate (source and destination NATed) filter, and re-route back to IBM all IBM network traffic;
- j. Set up circuits (if required) and perform routing and reverse routing to enable IBM traffic required to monitor all in-scope nodes

Completion Criteria

The task will be considered complete upon submission of the deliverables to the Cook County

2.5.2 M2: Establish Security Controls

Description

The purpose of this activity is to review, agree & implement to the in-scope security controls which are addressed in the Customer Security Document (CSD).

Scope of Services

Review, agree & implement security controls which are addressed in the CSD and are in-scope of this SOW.

Deliverable Materials

DL5 Customer Security Document (CSD)

IBM Responsibilities

IBM will:

- a. Provide the CSD template to Cook County and review the applicable security controls and Technical Specifications with Cook County;
- b. Provide the updated Technical Specifications for settings like password policy, user access, logging and system settings with IBM recommended values as default values;
- c. Implement the agreed CSD per Project Schedule;
- d. Conduct CSD policy review every 18 months(approximately) and incorporate agreed to interim and future changes during refresh cycle;
- e. Evaluate items outside the scope of the CSD and notify Cook County for applicable additional charges accordingly.

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County Responsibilities described herein:

- a. Provide Cook County Security Policies and Controls in the IBM provided CSD template
- b. Be responsible for communicating security procedures to Cook County end users (for example, login procedures, password requirements, use of antivirus programs, data and equipment security procedures);
- c. Provide use of additional resources (e.g., cloud service, software or other components, personnel) and perform modifications required to enable IBM to implement the security requirements;
- d. Consult with IBM for additional controls and/or variations that may be required in the CSD;
- e. Agree with IBM on implementation of process and technical controls associated with the CSD;
- f. Be responsible for environment(s) and security controls that are out-of-scope and for end-of-life or end-of-support products for the Services under this SOW;
- g. Review and agree to the CSD per deliverable acceptance;
- h. Acknowledge that the Tools used for monitoring will comply with County's internal security standards and policies

Completion Criteria

The task will be considered complete upon submission of the deliverables to Cook County.

2.5.3 M3: Create Landing Zone

Description

This activity provides for design and implementation of target platform in OCI

Scope of Services

Review Architecture used as inputs for this SOW and develop OCI Cloud Deployment Design to map requirements to capabilities of OCI, and provision resources in the target OCI platform to create a landing zone for migration.

The target platform will be composed of the following:

Components	Description
Network Infrastructure Components	<ul style="list-style-type: none">a. Up to two (2) Regions with one (1) Availability Domain;b. Up to three (3) Virtual Cloud Networks (“VCN”) each with up to three (3) subnets;c. Up to two (2) dynamic routing gateways (“DRG”) each with a Virtual Private Network (“VPN”) to your Customer Premises;d. Up to two (2) internet gateways;e. Up to nine (9) load balancers (“LBaaS”);f. Up to three (3) virtual routers;g. Up to two (2) service gateways to object storage;h. OCI user access control for up to ten (10) users in three (3) groups. (“Network Infrastructure”)i. Database Infrastructure Componentsj. Up to two (2) Exadata Cloud Service X7-2 Quarter Rack in OCI
Database Infrastructure Components	<ul style="list-style-type: none">a. Up to two (2) Exadata Cloud Service X7-2 Quarter Rack in OCI
Compute Infrastructure Components	<ul style="list-style-type: none">a. Up to forty-seven (47) Virtual Machines

Deliverable Materials

- DL2 OCI Cloud Deployment Design
- DL3 OCI Environment Inventory

IBM Responsibilities

IBM will:

- a. Review Architecture:
 - 1) Review Network Infrastructure requirements:
 - Resiliency;
 - Security;
 - Routing;
 - Internet Access,
 - Data center Interconnects;
 - 2) Review Database Infrastructure:
 - Workload isolation requirements due to line of business requirements;
 - System Categorization (Dev, Test, Prod)
 - Business and Technical criticality impacting backup and availability;
 - ExaCS and Oracle Database Patching process,
 - Backup and Recovery.
 - 3) Review Compute Infrastructure:
 - Operating System and patches;
 - Capacity;
 - Resiliency;

- Security;
- Routing;
- Storage.

b. Create OCI Cloud Deployment Design Document that maps Target Platform requirements to capabilities of OCI.

c. Provision and validate, in accordance to the documented Cloud Deployment Design, Cook County's Target Platform:

- 1) Network Infrastructure components:
 - Users and groups;
 - VCNs and subnets;
 - Security lists;
 - Route and Firewall rules;
 - Load Balancers;
 - Gateways;
 - Storage.
- 2) Database Infrastructure components:
 - One VM cluster per ExaCS;
 - Disk Storage Allocation;
 - Up to three (3) Oracle Container Databases per ExaCS.
- 3) Compute Infrastructure:
 - Virtual Machines with operating system and patches.

County Responsibilities

Cook County will, per the project schedule & in addition to general County responsibilities described herein:

- a. Participate in Architecture and Design discussions
- b. Review technical deliverables and provide feedback
- c. Provide clarifications and/or data requested by IBM to perform project tasks

Completion Criteria

The task will be considered complete upon submission of the deliverables to Cook County.

2.5.4. M4: Workload Discovery

Description

The workload discovery activity provides for developing detailed understanding of the application and infrastructure and create an inventory of requirements in scope for migration.

Scope of Services

Document the inventory of the servers, OS images and applications to be migrated from source to target environment, infrastructure metadata and detailed migration requirements.

Deliverable Materials

- DL6 Source Environment Utilization, Disposition & Baseline Report

IBM Responsibilities

IBM will:

- a. Collect infrastructure data to plan migration activities:
 - Install data collection tool after the device is functional and accessible on the County network;
 - Execute and monitor credential inventory data collection and work with customer system administrators for error resolution;
 - Execute and monitor utilization and affinity data collection (recommended for 35 elapsed days) to collect month end transactions and work with Cook County and IBM system administrators for agreed to error resolution;
 - Execute scripts to collect data about environment;
 - Collect an application to server mapping (known as Client Information Baseline Sheet) and all existing documentation on applications and servers.
- b. Review infrastructure data collected during this activity with Cook County.

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Provide approval to start Discovery tasks;
- b. Confirm inventory of source environments/applications and other documents requested by IBM three days prior to start of discovery activities. This inventory will serve as the scope of discovery.
- c. Provide Client Information Baseline Sheet and other documents requested by IBM three days prior to start of Discovery activities;
- d. Provide access to IBM to install data collection software and execute scripts (as required) three days prior to start of Discovery activities;
- e. Provide qualified resources to assist IBM in using Cook County network for data collection;
- f. Participate in identification of data gaps and plan mitigation (either within the hours allotted or by executing the SOW Change Control Procedure);
- g. Review infrastructure data/metadata collected during discovery;
- h. Provide IBM with access to systems in scope for application and infrastructure metadata no later than five (5) business days after project start;
- i. Provide VPN access for IBM team to remotely connect to Cook County datacenter from an approved IBM site, including access to the IBM Business Analytics environments(s) and all Cook County servers in-scope for analysis;
- j. Review and signoff Utilization, Disposition and Baseline Reports (deliverables will be used as inputs in subsequent phases).

Completion Criteria

The task will be considered complete upon submission of the deliverables to Cook County.

2.5.5. M5: Insight & Wave planning

Description

The insight and high-level planning activity provide for analyzing the data collected during discovery to produce a high-level migration wave plan.

Scope of Services

Develop high-level migration wave plan, high-level Test Plan, high-level Migration Workbook and high-level Cut-over workbook (Dev, Test Prod) based on findings and analysis of data collected during Workload discovery.

Deliverable Materials

- DL1 Migration Project Plan (Refined with high-level Wave Plan)
- DL7 Migration Workbook (high level)
- DL9 DR Workbook (high level)
- DL10 Test Plan (high level)
- DL8. Cutover & Mock-Cutover Workbook (high-level)

IBM Responsibilities

IBM will:

- a. With Cook County, analyze environment data collected during Workload Discovery and establish environment profile and cloud virtualization parameters
- b. Develop high-level workbooks and plans for migration

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Participate in discussions on wave planning and provide inputs for scheduling migration waves
- b. Refine and review Application Affinity, including upstream and downstream dependencies;
- c. Refine Migration disposition for applications and infrastructure;
- d. Provide access to IBM to execute additional data collection scripts as needed

Completion Criteria

The task will be considered complete upon submission of the deliverables to Cook County.

2.5.6. M6: Detailed Planning & Migration Design

Description

This activity provides development of detailed wave plans and schedules using the documented outcomes of discovery and high-level planning phases.

Scope of Services

Scope is to develop detailed Wave Plan leveraging plans and workbooks created during the high-level planning phase to develop executable migration design and workbooks.

Deliverable Materials

- DL1 Migration Project Plan (Refined based on Migration Design)
- DL7 Migration Workbook (updated)
- DL9 DR Workbook
- DL10 Test Plan
- DL8. Cutover & Mock-Cutover Workbook

IBM Responsibilities

IBM will:

- a. Develop detailed migration unit designs, plans and schedules.
- b. Perform detailed planning and analysis to determine sets of major activities (Waves) with a set of consistent tasks (Migration Units)
- c. Develop Test Plans per documented specifications
- d. Develop DR workbook based on documented agreed-to DR requirements.
- e. Provide Cook County with a list of resources and support needed from the County for User Acceptance Testing.
- f. Provide Cook County with Change Windows necessary for migration

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Participate in discussions on detailed planning
- b. Validate that the resources needed for migration execution are available
- c. Provide designated Application expert for Target Platform Architecture two (2) days before design phase start

- d. Review Remediation requirements for Application components as defined in the Application Migration Workbook
- e. Provide testing requirements and cases two (2) days before Migration Design start
- f. Provide access to existing Operational Documentation two (2) days before Migration Design start
- g. Defines and agrees to firewall design before Migrate and Validate start.
- h. Validate DR requirements and participate in DR planning discussions
- i. Validate Migration Test requirements and participate in Test Planning discussions
- j. Review Cutover workbook and participate in Cutover planning discussions

Completion criteria

The task will be considered complete upon submission of the deliverables to Cook County.

2.5.7. M7: Migrate and Validate

Description

During this phase, the process of migrating the Cook County's workload to Cloud Images begins. This phase is the actual execution of migration and follows the steps detailed in the Application Migration Workbook. Workload will be migrated using standard deployment method and OCI native techniques. Database workload will be migrated using OCI and database native techniques.

Scope of Services

Migrate application to target cloud environment and perform validation activities per documented plan and design.

Deliverable Materials

- DL7 Migration Workbook (updated)
- DL11 Test Results

IBM Responsibilities

IBM will:

- Perform execution of Migration readiness checks for infrastructure and other migration components
- Perform migration steps including deployment of remediated components, configuration changes and software changes
- Perform Smoke testing to confirm the application configuration
- Confirm cutover approach of live traffic to the newly migrated application
- Confirm post migration tasks are executed to see that source systems are not accidentally re-used.

- Provide Hypercare following migration. IBM will provide two weeks of Hypercare support following production cutover, per the Project Schedule.

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Assist IBM in validating Migration readiness checks for infrastructure and other migration components
- b. Provide access and permissions to IBM for performing migration steps
- c. Review smoke test results
- d. Provide User Acceptance Test Plan to confirm application is working per specifications in the target environment
- e. Participate in problem resolution during migration activities
- f. Approve freeze periods agreed during design

Completion Criteria

The task will be considered complete upon submission of the deliverables to Cook County.

2.5.8. M8: Application Testing

Description

This provides regressing testing of applications in the target cloud environment to confirm application works per documented test plans.

Scope of Services

Execute of end-end regression tests in the target environment, and triage and fix agreed to issues that are detected during testing.

Deliverable Materials

- DL7 Migration Workbook (updated if fixes are needed)
- DL11 Test Results

IBM Responsibilities

IBM will:

- a. Perform testing per agreed wave implementation.
- b. Make adjustments to plans and workbooks.

- c. Validate the migration has been performed per documented design
- d. Provide Wave documentation and validation results to Cook County that details the scope that has been completed for the wave or migration unit(s).
- e. Perform application testing

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Provide required access and permissions on the environments to execute test plans
- b. Participate in defect triage discussions
- c. Review IBM deliverables and provide feedback
- d. Lead and conduct user acceptance testing per documented User Acceptance Test Plans.

Completion Criteria

The task will be considered complete upon submission of the deliverables to Cook County.

2.5.9. M9: Operational Integration & Readiness

Description

This phase is to address how the People, Processes and Tools are proposed to work together in preparation for daily operations, maintenance and managed services of the new OCI cloud environments.

Scope of Services

The scope includes establishing processes, procedures & security controls (leveraging existing processes & procedures where possible) for use in Steady State CHMS.

Deliverable Materials

- a. DL12 Service Management Processes, Procedures & Tools
- b. DL13. Operational Readiness Test Plan & Checklist (Dev/Test/Prod)

IBM Responsibilities

- a. Review OCI Environment Inventory with Cook County to baseline scope of steady state
- b. Install, configure and test that the IBM-provided software agents (IBM Tools, Public Cloud Provider in-scope operations services) are operational and confirm Client Images and connectivity between Cook County's network, systems and IBM service delivery center.
- c. Leverage tools & processes currently being used by IBM Team and define Service Management procedures (for Event, Incident, Problem and Service Requests) to be followed for Steady State support of the target environment.

- d. Document procedures for core management, e.g. Backup/Restore, Start/Stop scripts etc.
- e. Develop Operational Readiness (OR) Test Plans for Development, Test and Production to help verify that the target environment is prepared to be deployed operated and maintained and to help test 'Day-in-the-life' scenarios using DL12 Service Management procedures.

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Provide permission to IBM to install IBM-provided software and software agents on Cook County's images and end-points;
- b. Provide antivirus infrastructure and licenses and see that a valid support contract with the third-party vendor is in place;
- c. Ensure that procurement of Cook County owned licenses. For example, Oracle software licenses;
- d. Make systems available during necessary IBM-specified change windows for implementation and configuration, as specified in the Project Schedule;
- e. Provide contacts for steady state support;
- f. Participate in discussions, review deliverables and provide feedback;
- g. Provide requirements to develop processes and procedures, e.g. Change Window.
- h. Approve OCI Environment Inventory as the baseline scope for steady state

Completion Criteria

The task will be considered complete upon submission of the deliverables to Cook County.

2.5.10. M10: Cutover activities

Description

These include activities to be performed to migrate the business operations to the target environments. Cutover will be executed as per the 'Cutover Plan' workbook, per the Project Schedule - a set of detailed, sequenced tasks to build the new Production system, convert and migrate data, configure the new system and decommission legacy systems

Mock Cutovers are utilized to practice and validate the Cutover Plan prior to Go-Live and make revisions prior to the actual. It is a way of fine-tuning the process and help minimize risks prior to full production cutover.

Scope of Services

Create a comprehensive Cutover Plan and mock Cutover Plan, in conjunction with cutover representatives from the Teams, which will be utilized to execute the Cutover practice and actual cutover activities for environments.

Develop a Disaster Recovery (DR) build-out/ DR technical test for production to be executed in the event of a disaster situation prior to go-live. Execute activities documented in agreed upon cutover workbook.

Deliverable Materials

- DL8 Cutover & Mock-Cutover Workbook (updated)
- DL9 DR Workbook (updated)
- DL7 Migration Workbook (updated)

IBM Responsibilities

IBM will:

- a. Responsible for the overall planning and coordination of the Cutover and mock Cutover Plan and workbook
- b. Coordinate test activities and agreed to defect resolution during Cutover to help facilitate consistent timelines and dependencies.
- c. Oversee the execution of steps in the mock and cutover plans
- d. Validate data integrity before starting test activities within the cutover and mock cutover plans
- e. Work with project leadership to help see that critical issues and barriers are resolved in a timely manner
- f. Assess potential impacts to timeline based on issues that arise
- g. Create Disaster Recovery (DR) Buildout and Technical test based on documented plans:
 - Establish a Disaster Recovery (DR) environment
 - Document the DR process and procedures
 - Validate the replication of production databases and environments are operating per specifications
- h. Execute mock cutover for Prod and cutover tasks for Dev, Test, Prod per documented cutover workbooks, per the Project Schedule.
- i. Execute tasks defined in Cutover workbook.

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Provide access and permissions in Cook County owned environments to perform cutover activities
- b. Facilitate the creation of a comprehensive Cutover Plan
- c. Participate in cutover activities and validations as described in documented cutover plans and workbooks
- d. Recognize issues/errors and assign qualified Cutover support resources to facilitate resolution
- e. Communicate to Cook County stakeholders as required

Completion Criteria

The task will be considered complete upon submission of the deliverables to Cook County.

2.5.11. M11: Hypercare

Description

Hypercare is a time period, per the Project Schedule, during which the Migration team provides CHMS support consisting of production break/fix incidents and service requests. In parallel, the team will be performing transition to Steady State team.

IBM will provide two weeks of Hypercare support, per the Project Schedule, following production cutover to focus on agreed upon high priority incidents and service requests.

Scope of Services

The Scope of Services for Hypercare includes the following for environments in-scope:

- a. Monitor the system performance and respond to system problems
- b. Help diagnose, resolve and/or coordinate the resolution of the incidents and problems or effectively transfer the incidents to the appropriate area of support;
- c. Escalate incident resolution as necessary, involving the application software supplier if required;
- d. Communicate service incident resolutions through defined processes.
- e. Conduct remaining knowledge transition and hand-off to the Steady State team.

Deliverable Materials

- Steady State activities reported via Weekly/Monthly Status Report

IBM Responsibilities

IBM will:

- a. Perform Monitoring & Service Management:
 - Event monitoring
 - Perform Event monitoring and provide problem and incident management support using documented procedures.
 - Help determine cause of problems and incidents
 - Provide agreed to incident resolution
- b. Transition support services to the Steady State Team.
- c. Update 'DL12 Service Management Processes, Procedures and Tools' with new findings/observations during Hypercare.

County Responsibilities

- a. Adhere to processes documented in 'Service Management Processes, Procedures & Tools'
- b. Assign severity levels to tickets

- c. SME support for issue resolution
- d. Perform user acceptance testing after IBM has determined that the issue has been resolved

Completion Criteria

The Hypercare service will be considered complete at the end of the two weeks from the start of Hypercare, per the Project Schedule.

2.5.12. Migration Completion Criteria

IBM will have fulfilled its Migration phase obligations under this SOW when any one of the following first occurs:

- Migration Phase deliverables are submitted; or
- The contract period of performance has ended; or
- Cook County or IBM terminates the delivery of Services in accordance with the provisions of the Terms and Conditions.

2.6. Level 1 Helpdesk

The County will provide the Level 1 Helpdesk. The primary responsibility of the County Level 1 Helpdesk is to provide a single point of contact for the County Oracle Application user community, to gather initial information on the Service Incident and/or Service Request, to resolve Service Incidents which are within their scope of service, and to forward unresolved Service Incidents and/or Service Requests to the appropriate support resource.

The County's Level 1 Helpdesk agents will:

- a. Provide help desk support to the user community;
- b. Attempt to resolve all calls to the best of their ability while on the phone with the user through a combination of knowledge of the applications and scripted solution responses for recurrent or common user issues;
- c. Answer "how-to" questions;
- d. Perform call outs to IBM for severity one issues to appropriate Level 2/3 Support Personnel, document and transfer tickets requiring level 2/3 response, maintain the opening and closing of tickets for tracking purposes and track call response metrics for internal process improvement efforts.
- e. Perform user profile maintenance and password reset.

In addition, the County will:

- Provide IBM with current electronic lists of their designated personnel (e.g., help desks within each functional area, individuals to be notified in situations where escalation is necessary)
- Ensure that all of the County user community adheres to the call flow process
- Log all incidents through the County's Level 1 help desk tool (Cherwell Ticket Management System). Service incidents are related to a single reported problem. Multiple problems grouped

into a single service incident are equivalent to multiple service incidents and are tracked accordingly

Provide IBM access to use of the Cherwell Ticket Management System as required for IBM to provide the Services described in this SOW, including an appropriate means of tracking incidents and generating appropriate incident management statistics to enable service level reporting.

2.7. Steady State Managed Support

Steady State is initiated at the end of Hypercare per the Project Schedule. This section defines the activities in-scope of Steady State Managed Support.

2.7.1. Service Management

Description

This provides the standard service management for various activities performed by IBM using agreed documented procedures and processes.

Scope of Services

The scope of service management is to provide

- Event Monitoring;
- Event, Incident and Problem management and
- Service Request Management

Deliverable Materials

None

IBM Responsibilities

IBM will:

- a. Provide Event Monitoring services:
 - Provide access to Cloud Management Tools (Oracle Management Cloud - OMC) for infrastructure and application level monitoring including Health Dashboard, Concurrent Manager Dashboard, Log Management and IT analytics for Database/Exadata
 - Provide Incident and problem communication for Incident, Problem and Changes;
 - Provide monthly incident volume reports;
 - Provide service management support to help address monitoring tool issues or configuration changes;
- b. Provide Incident Management services:
 - Perform Incident Management services based on established processes and procedures
 - Work with IBM and 3rd party providers to help resolve incidents;
 - Act as focal point for agreed to in-scope Critical and Severity 1 Incidents;
 - Alert and escalate to both IBM and Cook County during a Critical/Severity 1 Incidents;
 - Perform root cause analysis (“RCA”) for agreed to Critical and Severity 1 Incidents
- c. Provide Problem Management services:
 - Perform Problem Management services based on documented processes and procedures;
 - Perform RCA and RCA action item tracking on Critical and Severity 1 Incidents;
 - Log and track agreed to known errors;

- Identify and recommend service improvement opportunity.

d. Provide Service Request Management services:

- Perform Service Request (e.g. changes to configuration of the existing system) Management service based on documented processes and procedures;
- Create and record change associated to problem determination;
- Categorize, accept, reject, authorize, or schedule changes based on documented processes and procedures;
- Coordinate with technical teams for change implementation;
- Post implementation Service Request review and close the Service Request accordingly.

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Provide the qualified technical resources (if required) to assist with resolving incidents and problems;
- b. Assist IBM in the investigation of problems related to the Services, including to the extent such investigation involves Cook County subcontractors' responsibilities;
- c. Provide information regarding changes affecting the server environment so IBM can suspend monitoring as appropriate;
- d. Adhere to the documented processes and procedures;
- e. Authorize and approve platform-level user IDs for IBM and Cook County personnel, as required, for infrastructure systems and devices;
- f. Validate Cook County user ID inventory information as requested to assist IBM in performing verifications and revalidations;
- g. Approve non-expiring passwords and policy exception requests, as appropriate.

Completion Criteria

This task will be considered complete when the completion criteria outlined in Steady State Completion Criteria described herein has been achieved.

2.7.2. Backup and Restore

Description

The purpose of this activity is to provide backup and restore services in scope applications using agreed documented processes and procedures.

Scope of Services

Provide Backup & Restore services including monitoring health of backup and restore procedures.

Deliverable Materials

None.

IBM Responsibilities

IBM will:

- a. Monitor Backup and Restore jobs using cloud provider tools and methods. IBM will monitor:
 - Scheduled snapshot backup – i) Failed backup ii) Missed backup iii) Success backup;
 - Backlog logs;
 - Health of backup services to perform agreed backup activities;
 - Space availability for storage pool/disk safe/disk pool
- b. Provide Backup and Restore services:
 - Investigate and help resolve missed/failed backups;
 - Restore data on server from the backup data sets;
 - Schedule backups via the backup server;
 - Configure full instance recovery;
 - Assist with Restore of full instance recovery;
 - Add and remove client/virtual instance per existing baseline;
 - Support database data / logs and application / logs backup;
 - Create and delete IDs on backup servers per requirements of the service;
 - Configure and maintain reports for scheduled backups;
 - Maintain backup policies;
 - Provide system state, image, clusters and logs backups;
 - Backup files and folders, applications, Image/system and logs;
 - Perform general administration activities in support of backups.
 - Conduct performance tuning on backup services;
 - Conduct testing of the Restore on data sets;
 - Test and install backup and Restore software - backup server;
 - Apply encryption for backups per agreed documented procedures.

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- Execute backup and restore procedures for non-IBM managed general application programs and document and maintain the backup and restore processes, components and software;
- Define requirements for backup and recovery procedures
- Adhere to agreed documented processes and procedures

Completion Criteria

This task will be considered complete when the completion criteria outlined in Steady State Completion Criteria described herein has been achieved.

2.7.3. Cloud Management

Description

The purpose of this activity is to provide management of Cook County's OCI cloud software stack including provisioning and cloud performance components.

Scope of Services

Scope includes managing OCI's cloud software stack.

Deliverable Materials

None

IBM Responsibilities

IBM will provide:

a. Simple Cloud Provisioning

- Provision using VM image or simple pattern;
- Manage end-to-end provisioning workflow;
- Help troubleshoot and resolve provisioning failures and failures of tools installation post provisioning;
- Help troubleshoot and resolve script failures post provisioning used to comply with the CSD

b. Project/Tenant Management

- Manage domains;
- Create, enable, edit, disable, delete a project;
- Create, delete a network for a project;
- Modify the availability zones of a project;
- Modify the quota of a project;
- Modify users in a project;
- Assign a zone to a project;
- Reassign VM instances to a project

c. Identity and Roles Management:

- Create, delete a group;
- Create, delete a user;
- Change, reset a password;
- Modify user assignment for a project;
- Modify the list of domain administrators

d. Virtual Network Management:

- Manage controller and network node configuration;
- Troubleshoot and resolve connectivity to external network;
- Perform DNS and DHCP integration with patterns/orchestrator workflow;
- Manage tenant network configuration.

County Responsibilities

Cook County will, per the Project Schedule & in addition to General County Responsibilities described herein:

- a. Adhere to agreed documented processes and procedures established for OCI's cloud management.

Completion Criteria

This task will be considered complete when the completion criteria outlined in Steady State Completion Criteria described herein has been achieved.

2.7.4. Server Platform Management

Description

As part of managed services IBM will manage server platforms including monitoring servers and managing operating system.

Scope of Services

Scope is to perform Server Platform Management activities using agreed documented processes and procedures.

Deliverable Materials

None.

IBM Responsibilities

IBM will:

- a. Monitor Server Platform
 - Monitor real time disk space, memory, processor utilizations;
 - Monitor device failures through SNMP trap / MIB wherever applicable;
 - Monitor operating system (OS) services and processes;
 - Monitor hypervisor availability;
 - Monitor OS event log;
 - Monitor high availability cluster status, RAG status, and correct problems identified wherever applicable
- b. Manage Operating System
 - Support the in-scope server operating system, system management software and operating system utilities;

- Manage existing platform support toolkits or scripts;
- Perform log file rotation;
- Perform OS restart, start, stop, and check status of processes;
- Manage services, scheduled jobs/cronjobs for OS users, stop and startup sequences;
- Maintain system clock synchronization;
- Change process priorities as appropriate;
- View and analyze OS platform alerts;
- Manage system IDs and domain structure;
- Create and modify system login/logon scripts;
- Assign account, workgroup and print managers;
- Evaluate planned changes to the server environment and advise of requirements to support such changes;
- Modify configuration files;
- Document system configuration;
- Control access to system configuration files;
- Manage (i.e., owning) the incident through service restoration;
- Validate and determine the scope of the agreed-to problem and plan for restoration;
- Provide system health checking which include the following: CPU, memory, disk and Server Red Action List (servers which have gone above defined set thresholds);
- Facilitate and/or make service restoration decisions/recommendations;
- Perform basic problem determination on systems and components managed including system problems, System software problems and Network problems;
- Review changes affecting the server environment;
- Monitor Up/Down and respond to status of system processes, alerts and events;
- Monitor and maintain system error logs per standard retention of seven (7) days;
- Perform System Recycles per defined maintenance schedule;
- Perform reactive performance tuning after a performance Incident;
- Recommend corrective actions to help resolve system performance problems;
- Engage Third-party support wherever applicable.
- Re-install/configure the in-scope server operating system, system management software and operating system utilities;
- Synchronize security information among servers; and configure OS specific security utilities

c. Support Service Documentation

- Maintain platform technical document for in-scope items
-

d. High Availability

- Provide system administration and operational support for high availability clusters

- Setup and configure high availability/clustering, multipath for storage disks, cluster network services;
- Add additional resources to cluster resource groups;
- Provide support to configure application scripts in cluster resources;
- Conduct HA role swap testing/periodic cluster fail-over tests on an annual basis, as agreed;
- Support in system/snapshot Restore in the event of a cluster failure.

e. Support Performance and Capacity Reporting

- Analyze Incidents, Problems and other Service Requests pertaining to performance;
- Analysis of performance service level breaches, alerts, trends and root causes to Restore service;
- Provide on request trend and exception reporting for performance monitoring and tuning to avoid possible service level breaches;
- Recommend changes to help maintain agreed upon system performance levels;
- Analysis of capacity measures and forecasting of physical resource requirements;
- Recommend corrective actions to help resolve performance and capacity problems and prevent possible future incidents;
- Recommend to Cook County system configurations or modifications necessary to enable IBM to maintain acceptable resource utilization

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Be responsible for installing and managing third party software as required;
- b. Be responsible for components and infrastructure changes required to meet capacity and performance expectations;
- c. Allow IBM to test and configure recommended agents, upgrades, scripts to manage OS platform;
- d. Provide IBM with server DR and business continuity plan documents, data backup policy documents and other standard operating procedure documents for server during an event of a DR invoked by Cook County;
- e. In the event of a DR invoked by Cook County, provide the root/administrative access of the server to IBM and agree to relinquish the root/administrative access of the server;
- f. Ensure that systems, managed under this SOW, that reaches the end of its support life during the term of this SOW will be upgraded or replaced;
- g. Allow IBM to perform required services during specified maintenance windows;
- h. Provide the necessary network access, remote access and down time (as required) to allow Endpoints to access the console;
- i. Adhere to agreed documented processes and procedures

For High Availability Images, Cook County will:

- a. Determine what files and objects need to be replicated for the Restore environment;
- b. Maintain software and support contracts between Cook County and the HA software vendor;

Completion Criteria

This task will be considered complete when the completion criteria outlined in Steady State Completion Criteria described herein has been achieved.

2.7.5. Standard Compliance Management

Description

This describes the standard infrastructure compliance management activities that will be performed as a part of Steady State Managed Support.

Scope of Services

Scope is to provide Infrastructure compliance management services per documented agreed processes, procedures and specifications. Regulatory requirements that are not addressed or addressed partially by processes listed below may require application of SOW Change Control Procedure

Deliverable Materials

None.

IBM Responsibilities

IBM will provide:

- a. Health-checking:
 - Once per year, perform periodic health check scan of the in-scope environment as per documented and agreed specifications and notify Cook County with list of deviations;
 - Perform remediation of identified deviations for in-scope parameters once per year during standard change window;
- b. Patch Management
 - Seek agreed/preapproved change windows from Cook County;
 - Apply agreed to OS updates (for example updating from windows 2019 to 2019 SP1), patches and fixes.
 - Install agreed-to high, medium and low patches during pre-approved change window, once every six (6) months (this does not include the version level upgrades/migration). Out of Cycles will be applied if a Service Request is submitted and approved by Cook County.
 - Apply critical patches based on vendor notification or IBM rating
 - Install out of cycle patches via a Services Requests during Cook County-provided security change window. If a Service Request is not submitted, patches will be applied during the next regular patching schedule
 - Major version upgrades are out of scope
- c. ID Management
 - Perform creation, deletion and modification for privileged and non-privileged IDs;
 - Maintain appropriate primary and secondary ID management controls for IBM IDs to See that only authorized personnel have access to Cook County environment;

- Obtain Cook County approvals for management, authentication, authorization and verification of identity and access controls for IBM IDs applicable to in-scope environment;
- Perform management of IBM IDs created to provide the Services. Cook County IDs with privileged access would be created only if stated in the CSD or specifically requested by Cook County (for emergencies);
- Perform IBM privileged ID creation, deletion, and validation for network administrators leveraging Cook County deployed authentication, authorization, and accounting (AAA) infrastructure;
- Maintain audit records for IBM user ID approvals, verifications and revalidations and retain such records in accordance with the CSD;
- Seek Cook County approval, as appropriate, for non-expiring passwords and shared IDs required by IBM via policy exception process requests for IBM IDs

d. Firmware updates for Storage and Network devices

- Perform up to two (2) firmware update (dot version only) annually based on Cook County approvals and downtime;
- Other firmware updates (including IBM-rated/vendor-rated high severity firmware) will be administered via SOW Change Control Procedures. If a Project Change Request is not submitted, Cook County understands that it will be running the outdated version.

e. Log Retention

- Capture system security logs of privileged access and log-on/log-off activities as defined in the CSD;
- Retain system logs up to 90 days provided Cook County enables IBM with relevant storage and network infrastructure to retain logs in the environment. Additional logs can be provided upon Cook County request from archived/backed up data subject to availability

f. Audit Support:

- Provide support for Cook County for security or quality assurance audits limited to responding to data requests only

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Provide necessary downtime approvals to IBM, no later than two (2) months from currency release, for implementing firmware (microcode) and patches;
- b. Provide IBM with a test environment and change windows approvals for testing patches and fixes;
- c. Acknowledge that the deployment of system security patches by IBM on the in-scope infrastructure elements will exclude version level upgrades or migration;
- d. Comply with the CSD and inform IBM of patches to be implemented as per agreed window;
- e. Validate Cook County user ID inventory information as requested to assist IBM in performing verifications and revalidations;
- f. Provide sufficient storage capacity to retain log records for the required retention duration;
- g. Authorize and approve user IDs for IBM, as required, for infrastructure systems and devices;
- h. Manage Cook County-owned IDs

- i. Provide approvals for IDs with non-expiring passwords for running automation and background scripts;
- j. Approve policy exception requests for non-expiring passwords and shared IDs for IBM IDs, as appropriate;
- k. Provide relevant infrastructure to download and test firmware's and to perform Restore check drills (post successful backup).
- l. Submit Service Requests for out-of-cycle patches (if required).

Completion Criteria

This task will be considered complete when the completion criteria outlined in Steady State Completion Criteria described herein has been achieved.

2.7.6. Storage Management

Description

This describes the standard storage management activities that will be performed during Steady State Managed Support

Scope of Services

Scope is to provide Storage Monitoring and Storage Management services using agreed documented processes and procedures.

Deliverable Materials

None

IBM Responsibilities

IBM will:

- a. Storage Monitoring:
 - Monitor storage device availability status;
 - Monitor storage space status;
- b. Storage Management Activities:
 - Perform ALLOCATION and DEALLOCATION with zoning/copy services;
 - Plan/perform changes to Storage;
 - Provide support for copy services (flashcopy, snapshots, snapclone);
 - Perform basic problem determination and resolution;

- Coordinate with third party Cloud provider during break fix situations;
- Provide configuration details for allocated disk;
- Assist in storage expansion;
- Resolve backup recovery issues if related to (existing/current) storage setup; and
- Plan/perform storage tiering;
- Plan/perform complex configuration and problem determination/resolution Storage;
- Evaluate, and implement as required, new storage technology and new software products/functions;
- Perform 2nd level problem analysis and recovery in the storage and software environment;
- Maintain preparedness to help recover environments in case of a disaster;
- Perform/maintain replication (Sync/Async) / storage cluster (stretched /metro/global);
- Assist in storage lifecycle management;

County Responsibilities

Cook County will, per the Project Schedule & in addition to general County responsibilities described herein:

- a. Provide information regarding changes affecting the storage environment so IBM can suspend monitoring as appropriate;
- b. Perform asset management for physical assets within Cook County's storage infrastructure which are not owned and supplied by IBM.
- c. Adhere to agreed documented processes and procedures

Completion Criteria

This task will be considered complete when the completion criteria outlined in Steady State Completion Criteria described herein has been achieved.

2.7.7. Steady State Completion Criteria

IBM will perform the Steady State activities described in this section and report on a monthly basis with the monthly status report. IBM will have fulfilled its Cloud Hosted Managed Services (CHMS) obligations under this SOW for a given month when any one of the following first occurs:

- The calendar month ends; or
- The contract period of performance has ended; or
- The County or IBM terminates the delivery of Services in accordance with the provisions of the Terms and Conditions.

3 Additional County Responsibilities

The successful completion of the proposed scope of work depends on the participation of County management and personnel as set forth herein. The responsibilities listed in this section are in

addition to those responsibilities specified in the Agreement and in this Statement of Work and are to be provided at no charge to IBM. IBM's performance is predicated upon these responsibilities being managed and fulfilled by the County, as scheduled in the IBM Project Schedule. Delays in performance of these responsibilities may result in additional cost and/or delay of the completion of the project and will be managed in accordance with the SOW Change Control Procedure.

3.1 General County Responsibilities

- a. Ensure that the County staff and subject matter experts and third party are available to provide such assistance as IBM reasonably requires and that IBM is given reasonable access to the County senior management, as well as members of its staff to enable IBM to provide the Services. The County resources will remain available for the project as required for the duration of the project, to the extent these resources remain County employees.
- b. Provide all information and materials reasonably required to enable IBM to provide the Services. IBM is not responsible to the extent that inaccurate or incomplete information provided by the County causes delays or inhibits IBM's ability to perform.
- c. Be responsible for the review and evaluation of the IBM recommendations as well as all final decisions and implementations relating to, or resulting from, the IBM recommendations contained in the deliverable Materials.
- d. The County is responsible for the management and performance of County employees or its sub-contractors. It is County's responsibility to see that these resources perform all the work expected of them in a manner that will not adversely affect the estimated schedule.
- e. Responsible for the interpretation of laws and regulations to extent they impact scope.
- f. Perform the County's roles and responsibilities as indicated in Attachment 4: Information Security Roles and Responsibilities.
- g. Provide IBM with Third party IDs and access as needed to provide the Services.
- h. Responsible for the accuracy of data/meta-data provided to IBM in connection with the Services
- i. Provide information, data, and decisions within three (3) working days of IBM's request unless Cook County, and IBM agree in writing to a different response time;
- j. Acknowledge that during Migration phase, IBM will use preexisting IBM proprietary tools to perform certain IBM responsibilities. The IBM Tools and associated documentation: 1) are not provided to Cook County under the terms of this SOW, 2) are not needed for Cook County to receive the benefit of the Services described in this SOW, and 3) remain the property of IBM. If any IBM Tools are installed at Cook Co location, IBM will remove the IBM Tools upon completion of the project.
- k. Acknowledge that Migration of File/NAS storage, Migration of existing DR, Configuration of any replication of storage and/or images for DR or continuity usage in OCI environment is not in scope of migration.
- l. Provide access to IBM personnel for County owned systems within three (3) business days of request

3.2 County Responsibilities Regarding Managed Services Staffing

- a. The County will attempt to provide notification via the SOW Change Control Procedure at least thirty (30) days in advance of events that may result in an increase in Service Incidents and/or support requirements. The County will ensure that an appropriate training plan is in place to minimize the potential increase of Service Incidents and/or support requirements that may result from such change. By mutual agreement, Cook County and IBM may agree to relax the Service Level requirements or provide other relief as appropriate for the areas affected by the changes.

- b. Provide minimum 60 days' notice to ramp up US-based or remote global delivery resources. Staffing changes and associated scope or support requirement changes will be made using the SOW Change Control Procedure. By mutual agreement, the County and IBM may agree to relax the minimum notice requirements or provide other relief as appropriate for the areas affected by the key County staff changes.
- c. Provide 30 days notice to ramp down resources. Staffing changes and associated scope or support requirements changes will be made using the SOW Change Control Procedure.

4 Deliverables Acceptance Process

4.1 Deliverable Acceptance Process

IBM prepares deliverables in accordance with the Project Schedule and submits them to the County for review and acceptance. Formal acceptance by the County of project deliverables indicates that the deliverables have been completed in accordance with this SOW. Each deliverable will be subject to the following deliverable review and acceptance process, with the exception of Status Reports:

1. The IBM will submit the draft deliverable and a deliverable acceptance form (Attachment 1 – Deliverable Sign-Off Sheet) for each completed deliverable to the County.
2. The County will accept or reject the deliverable within five (5) Business Days, or such other period of time as may be agreed by the Parties or is otherwise appropriate under the circumstances, from the receipt of the IBM's notification of completion.
3. If the County does not accept or reject the deliverable within the period set forth above and does not communicate another timeframe upon mutual agreement in which a decision will be made, the deliverable will be considered accepted.
 - a. Work will progress to maintain the established project schedule, with the understanding that change to an accepted deliverable constitutes a change in scope.
 - b. A Project Change Request (administered using SOW Change Control procedure) may result if modifications to the accepted deliverable are required and those modifications affect accepted or in-progress project work.
4. If the County rejects a deliverable, the cause for rejection and defects to be addressed will be documented by the County and provided to IBM with a single, complete set of defects for each deliverable to correct or revise. If revisions are required, IBM will address the County's request for revisions, within the context of the DED, and resubmit the deliverable to the County within five (5) business days. A resubmitted deliverable will be subject to a maximum of one further review in accordance with the acceptance process set forth above. Further County concerns regarding the deliverable may be addressed through the SOW Change Control Procedures and/or Issue Escalation Process defined with the Agreement.
5. Status report deliverables will be considered accepted upon submission.

Attachment 1 – Deliverable Sign-Off Sheet

Description	Comment
Deliverable Name	
DED Number	
Deliverable Point of Contact	
Draft file name	
Draft file directory	
Approved file name	
Approved file directory	

Revision	Date	Description

The Comment column to be completed for each deliverable when submitted in draft and final form.

Deliverable Sign-off		
Date	Name, Title, Organization	Signature
	SIGNATURE County	
	SIGNATURE [INSERT VENDOR NAME]	

Attachment 2 – Project Change Request Form

Change Request Number:

Requester Name	Date				
Office					
Comments	None	Priority	Normal	Phone	Fax

Change Request Definition - (Fill in this section before Change Control Team requests an evaluation)	
Description - Describe the proposed change.	
Justification - Justify why the proposed changes should be implemented.	
Impact of Not Implementing - Explain the impact if the proposed change is not implemented.	

Change Request Evaluation Analysis (Fill in this section after Change Control Team conducts evaluation if needed)	
Check each that apply	
<input type="checkbox"/> Project Schedule	<input type="checkbox"/> Configuration Item
<input type="checkbox"/> Project Costs	<input type="checkbox"/> Product Deliverables affected
<input type="checkbox"/> Project Scope	
Impact Description - Describe the impact for each of the items checked. List all deliverables affected by change request.	
Alternatives - If applicable, provide one or more alternatives that could be implemented instead of the proposed change.	

Change Control Team Recommendations			
Review Date	Team Member	Notes	Recommendation
			<input type="checkbox"/> Evaluate <input type="checkbox"/> Approve <input type="checkbox"/> Reject <input type="checkbox"/> Defer Until: [DATE]
			<input type="checkbox"/> Approve <input type="checkbox"/> Reject <input type="checkbox"/> Defer Until: [DATE]
Rationale for Recommendation – State the rationale for recommendation			

Change Request Final Management Approval			
Final Approval Date	Name	Title	Recommendation
			<input type="checkbox"/> Approve <input type="checkbox"/> Reject
Special Instructions – Provide additional information regarding the final recommendation			

Alternative Selected and Implemented – Provide a brief description of the alternative selected			

Attachment 3 – DED

The Deliverable Expectation Documents (DEDs) are provided in Exhibit 2A-9 for CHMS. English will be the official language of the project. All development, configuration, documentation, deliverables, project materials workshops, training and other project activities will be in English.

- Project documentation will be completed in Microsoft Office or Adobe PDF format.

Attachment 4 – Information Security Roles and Responsibilities

For purposes of performance of this SOW, IBM and the County will perform, per the mutually agreed upon IBM Project Schedule, the following responsibilities as indicated in the Information Security Table of Roles and Responsibilities in this Attachment.

To the extent the Terms and Conditions or Attachment D of the Agreement contradict or conflict with the roles and responsibilities in this Attachment, the Terms and Conditions and Attachment D of the Agreement will prevail.

Attachment 4a – Information Security Table of Roles and Responsibilities

Information Security Policy			
a	Determine appropriate information security policy requirements based on business objectives, assessment of risk, and interpretation of legal, regulatory and contractual obligations <ul style="list-style-type: none">• Validate that the workstation and application security controls meet County requirements driven by security policy and risk acceptance• Identify security requirements for new applications• Request exceptions to the base Roles and Responsibilities as defined in this Information Security Table of Roles and Responsibilities, as needed		R
b	Notify IBM if County information security requirements change through SOW Change Control Procedure, as defined by the Statement of Work so that parties may assess if and how to implement, including impact to cost, scope or schedule		R
C	Review the Roles and Responsibilities as defined by this Information Security Table of Roles and Responsibilities periodically but at least every 18 months		R
D	Review the Roles and Responsibilities as defined by this Information Security Table of Roles and Responsibilities with County, periodically but at least every 18 months	R	
E	Provide County with this Information Security Table of Roles and Responsibilities which communicates County and IBM responsibilities for County's application development and maintenance services and the handling of County data.	R	
F	Respond to exception or Change Requests from County and determine if such requests result in additional or modified Services or changes to information security Roles and Responsibilities, all of which will be administered using the SOW Change Control Procedure.	R	
Organization of Information Security			
A	Designate a knowledgeable County focal point for information security related activities		R
B	Provide contact information for the primary contact and for an authorized secondary contact		R
C	Coordinate all information security activities with third parties other than those contracted by IBM		R
D	Designate a knowledgeable IBM focal point for information security related activities including the following: <ul style="list-style-type: none">• Interfacing with the County focal point on security requirements• Implementation of security requirements for which IBM is responsible in accordance with the negotiated and agreed to Roles and Responsibilities (as defined by this Information Security Table of Roles and Responsibilities)	R	
E	Provide contact information for the primary contact and for an authorized secondary contact	R	

1			
f	Coordinate security activities with third parties contracted by IBM (as defined by this Information Security Table of Roles and Responsibilities)	R	
2			
3	Asset Management		
A	Be responsible for its information assets, including software, physical assets, and services		R
B	Identify and communicate to IBM any County data designated as confidential, business sensitive information (BSI), personal information (PI), and sensitive personal information (SPI) that IBM will have access to. Provide data for testing that does not contain PI/SPI/BSI		R
C	Be responsible for identifying, providing and funding the appropriate information security controls and communicating relevant requirements to IBM for: <ul style="list-style-type: none"> • Data transmitted via public telecommunications facilities or services. • Transport of confidential information, personal information, sensitive personal information and business sensitive information (e.g. encryption, transport over secure lines); and • Storing of confidential information, personal information, sensitive personal information and business sensitive information (e.g. encryption of data on portable media or other special handling or treatment) • Printing of County information • Data discard or destruction requirements 		R
E	Follow approved Change Order Procedure for security related changes	R	
F	Handle information identified by the County as confidential, business sensitive, personal and sensitive personal in accordance with the following controls: <ul style="list-style-type: none"> • On applications, protect County data by access controls as specified under IBM Responsibilities, in Area 6, 'Access Control' • Store portable storage media containing County data as defined in this Information Security Roles and Responsibilities Table or some other specifically named document. • When information is printed at IBM locations, keep printed information identified by County as confidential, business sensitive, personal and sensitive personal in a locked container or physically controlled area 	R	
4			
Human Resources Security			
A	Address information security in the hiring, termination and personnel management processes for County personnel		R
B	Provide security awareness training to County personnel and other network or system users authorized by County		R
C	Identify and provide to IBM any County -specific personnel requirements such as background checks or others applicable by law		R
D	Identify and provide to IBM any County -specific security training required for IBM personnel		R
E	Take appropriate management action if there is a misuse of authority by any County personnel		R
F	Address County security requirements in joining and leaving the project, and in personnel management processes for IBM personnel	R	
G	Provide the current IBM security education package to IBM personnel joining the project	R	
H	Address agreed-to personnel requirements as described in this SOW	R	
I	Take appropriate management action if there is a misuse of an IBM employee's granted authorizations.	R	
5			
Physical and Environmental Security			
A	Secure work areas and restrict access from general public at County sites where IBM personnel will work from		R

B	Identify and provide to IBM any County -specific information security requirements for printing, storing and transmitting County information		R
C	Define where IBM personnel will work: <ul style="list-style-type: none">• IBM locations or County sites• Define remote or work at home options		R
D	Supply and manage secure workstation image(s) including anti-virus software, firewall protection, and whole-disk encryption for workstations provided by County to IBM personnel		R
E	Respond to virus attacks and initiate corrective action on workstations provided by County to IBM personnel		R
F	Define requirements for return of assets and removal of access rights to County physical assets upon IBM personnel termination or change of employment		R
G	Provide and manage physical security of IBM owned workstations	R	
H	Perform workplace security inspections of IBM personnel at IBM sites and County sites (related to execution of this SOW) where IBM personnel will work from	R	
I	Provide security for work areas and restrict access from general public at IBM sites	R	
J	Supply and install IBM anti-virus software and upgrades for IBM supplied workstations	R	
K	Respond to virus attacks and initiate corrective action on IBM supplied workstations	R	
L	Install whole-disk encryption on IBM-supplied workstations	R	
6. Access Control			
A	Authorize, administer and manage user IDs and passwords for County managed applications, systems and subsystems		R
B	Provide unique login IDs and passwords to IBM personnel for County managed applications, systems and subsystems		R
C	Define access control requirements and process and administer logical access for network infrastructure systems and devices under County management		R
D	Define access control requirements for County applications, databases and other County software on systems across all environments (development, test, production)		R
E	Define what constitutes privileged access and access control requirements for users with privileged access to County applications, databases and other County software on systems across all environments (development, test, production)		R
F	Administer revocation of access for County managed applications, systems and subsystems as appropriate, based on validation activities and when requested by IBM		R
G	Define revocation requirements for County applications, databases and other County software on systems across all environments (development, test, production)		R
H	Be responsible for revalidating the employment status and business need for access to County applications and systems for County personnel		R
I	Be responsible for revalidating the business need for IBM personnel access to County managed applications, systems and subsystems, periodically but at least every 12 months		R
J	Be responsible for implementing access changes to County managed applications, systems and subsystems based on input from IBM employment validation activities for IBM personnel		R
K	Revalidate the list of privileges associated with User ID's assigned to IBM personnel with access to County managed applications, systems and subsystems, periodically but at least every 12 months,		R
L	Revalidate shared ID's assigned to IBM with access to County applications, databases and other County software on systems across all		R

Information Security			
	environments (development, test, production), periodically but at least every 12 months		
M	Validate User ID baseline inventory and share results of updates made to User IDs used by IBM personnel ● Retain evidence of completion for two revalidation cycles		R
n	Define data protection technique requirements to be used to access County applications, databases and other County software on systems across all environments (development, test, production), such as data masking and encryption, and supply tools to meet requirements		R
O	Define requirements for secure disposal of County information from workstations or storage media		R
P	Define criteria for IBM personnel termination of access rights to County's logical assets upon conclusion of assignment or change of employment		R
Q	Log and monitor activities of IBM privileged users with access to County managed applications and systems; provide the monitoring results to IBM		R
R	Provide initial (one time) acknowledgement for shared ID's that will be used by IBM personnel		R
S	Submit request to revoke access to County systems, applications, databases and other County software when IBM personnel no longer require access	R	
T	Respond to revalidation of employment status, business need and access privileges to County systems, applications, databases, other County software assigned to IBM personnel ● Retain evidence of completion for two revalidation cycles ● Submit or notify County of access changes needed as a result of revalidation activities	R	
U	Respond to revalidation of shared ID's to County systems, applications, databases, other County software assigned to IBM personnel Retain evidence of completion for two revalidation cycles Submit or notify of access changes needed as a result of revalidation activities	R	
V	Where IBM has the ability to establish password configuration settings on County applications, verify that passwords for IBM personnel working on County applications conform to the IBM standards unless County requirements are more stringent, at the discretion of IBM	R	
W	Perform a baseline inventory of User ID's to County systems, applications, databases, other County software assigned to IBM personnel and communicate User ID baseline inventory to County for validation	R	
X	Adhere to County data protection technique requirements using tools provided by County	R	
Y	Provide follow-up for issues identified via monitoring of IBM privileged User IDs when alerted by County	R	
Z	Dispose County data in all forms within IBM's control based on County's classification and direction. If County has not provided any data disposal direction, then data will be disposed of in a manner consistent with IBM internal practices for IBM confidential information	R	
7	Information Security Incident Management		
A	Provide a 24/7 contact plan for reporting security incidents ● Inform IBM of any application and information security incidents involving IBM personnel ● Provide a County security incident coordinator ● Make decisions on actions to resolve security incidents involving County network, systems, personnel or data, including, if appropriate, collection of evidence		R

Compliance			
	• Interface, as needed, with external entities such as law enforcement, legal or regulatory agencies		
B	Assist County in initial security incident evaluation for security incidents involving IBM personnel that are reported by County as part of security incident management	R	
Separation of Duties			
A	Identify and interpret legal, regulatory or contractual security requirements that are applicable to its business and inform IBM of any additional or changed requirements (for example data export or transfer restrictions and privacy laws)		R
B	Review periodic security reporting provided by IBM		R
C	Provide support for application assessments including County audit activities, issue management services and closure of issues after audit (Closure of issues impacting cost, schedule, quality may require that the SOW Change Control Procedure be followed)	R	
D	Provide periodic, basic security reporting as defined by IBM	R	
Separation of Duties			
A	Perform application separation of duties analysis and conflict resolution		R
B	Implement change management on separation of duties analysis		R
C	Perform annual review of separation of duties analysis		R
D	Authorize code promotions, data changes and database changes to production		R
E	Inform County of any role, responsibility, or access changes of IBM personnel	R	

Attachment 4b – GDPR (Global Data Protection Regulation)

General Data Protection Regulation (GDPR). Cook County warrants that the European General Data Protection Regulation (EU/2016/679 (GDPR) does not apply to the Content it will provide IBM. If IBM determines that Content provided by Cook County contains GDPR data, IBM will immediately delete/destroy such data and will notify Cook County. IBM will not be responsible for data breach related to that data.

Attachment 5 – Project Tools

Table A5-1 lists the tools that will be used by IBM for this project.

Table A5-1: Project Tools

Proposed Project Tools	Functions	Proposed Usage
IBM Program Work Center (IPWC)	Project Management, Risks, Issues, Tasks and Milestones, Document and Knowledge Management	Hosted solution for use by ERP Project Team (IBM and County)
IBM Cardinal Discovery Manager	Collect system inventory, Operating system, configuration like cores, memory, disk, network details. Middleware and manages the process of automated metadata collection from end points.	A Discovery Management Tool for use by IBM Project Team during discovery.
IBM SCOPE+	Analytics Engine and Information repository, includes features like rules driven prioritization, estimate generator, wave plan generator, run book generation for Migration patterns, data source audit, dashboards and tracking.	A tool for use by IBM Project Team during migration planning
IBM CMAT	CMAT uses Python analytical packages to derive insights based on industry defined set of rules.	A tool for use by IBM Project Team to produce 'Application Blueprint' report which outlines the Migration path for a given application and does source to target mapping

IBM will be using these preexisting and IBM proprietary tools during this engagement to perform the IBM responsibilities. These tools and associated documentation are not provided to County under the terms of this SOW and the Agreement and remain the property of IBM.

Attachment 6 – Oracle CSA – [Removed from this version of the SOW]

Attachment 7 – Cloud Hosting Managed Services: Service Catalog

The service catalogue describes the various activities that IBM will perform as part of the type of service tier that Client has selected.

Service Catalogue by Activity

Activity	Detailed Description
Monitoring	Monitor standard services
	Customize thresholds for the standard KPIs
	Monitor through Dynamic Thresholding and Anomaly Detection
	Additional Metrics to be monitored
	Additional Services to be monitored

Activity	Detailed Description
Alerting	Events directed to IMI SNOW
	Events directed to IMI Slack

Activity	Detailed Description
Service Desk	provide English language IT help desk to log incidents and problems
	receive and log service requests during normal business hours and support window
	provide caller with ticket number for reference

Activity	Detailed Description
Image Lifecycle Management	Create an Image library of hardened images
	Add new hardened images
	Patch the Image libraries
	Review and clean up Image Library

Activity	Detailed Description
Provisioning and Automation	Provisioning environments from approved images
	Provisioning environments on ad-hoc requests
	Create automation scripts using the native services like cloudformation
	Maintain existing and new automation scripts for feature enhancements or new services inclusions
	Takeover existing automation templates (CFT and ARM only) for maintenance
	Deploy native automation features for operational efficiency

Activity	Detailed Description
Native Backup Management	Configure native backups for the VMs
	Configure native backups for the other cloud services (where applicable)
	Configure the backup retention policy
	Monitor the backups
	Restore the backups
	Backup Archival (using native archival services)

Activity	Detailed Description
Incident Management	Provide Critical/Major Incident management support until it is resolved, or its severity lowered
	Work with IBM and non-IBM resolver teams to see that incidents are resolved
	Act as single point of contact during a Critical/Major Incident
	Perform the post incident review
	Alert and escalate to both IBM and Client account management and senior executives during a Critical/Major Incident
	Provide Incident volume trend, mean time to resolution, SLA reports

	Assist the problem management team during root cause analysis ("RCA")
--	---

Activity		Detailed Description
Problem Management		Establish and implement problem management process Perform RCA on Severity 1 Incidents only Host and lead discussions to identify root cause and action items with various teams as necessary Track and close action items related to each RCA Log and track known errors Support Incident team with known errors/ work around Identify and recommend service improvement opportunity Provide reports related to problem ticket volume, RCA actions due

Activity		Detailed Description
Change Management		create and record change if the same is part of problem determination; categorize, accept, reject, authorize, or schedule changes based on the Problem and Change Procedures; review change documentation quality; host or participate in change board meetings to assess change readiness; authorize and schedule change; coordinate with technical teams for change implementation; post implementation change review and close accordingly; and provide reports related to change success, failure reasons, volume trends.

Activity		Detailed Description
Service Management		Provide a Service Delivery Manager to oversee the service delivery operations Monitor and Track Service Management SLA's Provide service management reports around incident, problem, change management and SLAs Liaison with Client's technical and operations team, to handle any operational queries
Reporting		Managed Landscape inventory report Provide service management reports around incident, problem and change management and SLAs Backup reports Cost recommendation reports

Activity		Detailed Description
Cost Optimization Recommendations		Provide recommendations to right size environments based on utilizations Develop startup and shutdown scripts to See that environments are up only when required Recommend instances strategy changes based on utilization of instances
DR Support		Provide infrastructure support during DR test drills Provide infrastructure support during actual DR scenarios

Service Catalogue by Public Cloud Service

Resource Unit		Detailed Description
Compute (including attached storage and native backup)		Provision and Deprovision Provision a new VM from an existing hardened image, deprovision and terminate existing VMs. Administration and Configuration
OCI		Change and update VM sizing, autoscaling and security configurations

(VM.Standard2, Block Volume, File Storage)	<p>Create, add, update and delete users and groups on the VMs</p> <p>Health Check and Patch Management</p> <p>Patch the existing images based on Client service request</p> <p>Patch the existing VMs based on the IBM recommended guidelines</p> <p>Run and report periodic health checks on the running VMs</p> <p>Backup Management</p> <p>Configure native backup and setup backup policies (frequency and retention) for the VMs</p> <p>Monitor the backup for failures, and retry</p> <p>Restore from backups as requested</p> <p>Troubleshoot Issues</p> <p>Troubleshoot VM level issues</p> <p>Coordinate with cloud provider for any VM level issues at the cloud provider level</p> <p>Troubleshoot and resolve OS related issues</p> <p>Coordinate with application teams for any application issues</p> <p>Monitoring</p> <p>Configure the KPIs for VM and OS metrics</p> <p>Configure additional KPIs mutually agreed upon with Client</p> <p>Deployment Automation</p> <p>Create, Update and Enhance native deployment automation scripts for provisioning and de provisioning</p> <p>Create, update and manage the startup and shut down scripts for periodic startup and shutdowns</p>
---	---

Resource Unit	Detailed Description
Virtual Network (including DNS Service, direct link, VPN gateways)	<p>Provision and Deprovision</p> <p>Create and delete virtual network components (VCN, subnets, routes, DNS service)</p> <p>Create and delete gateways (VPN, internet gateways, NAT gateways)</p> <p>Administration and Configuration</p>
OCI (VCN, Dynamic Routing Gateway)	<p>Create, update, and delete peering with other virtual networks (VCN)</p> <p>Update configuration for network components (subnets, routes, network gateways, NSG, ACLs, DNS)</p> <p>Troubleshoot Issues</p> <p>Coordinate with cloud provider/Client for network service level issues (where applicable)</p> <p>Monitoring</p> <p>Configure the KPIs for the various network services (<i>where applicable</i>)</p> <p>Configure additional KPIs mutually agreed upon with Client (<i>where applicable</i>)</p>

Resource Unit	Detailed Description
Storage (including Object Storage Service and Archival Storage)	<p>Provision and Deprovision</p> <p>Create and delete the native storage services (Object Storage, Archive Storage)</p> <p>Administration and Configuration</p> <p>Apply user level access policies to the storage services</p>
OCI (Object Storage, Archive Storage)	<p>Update the security and access permissions for the storage services</p>

Resource Unit	Detailed Description
PaaS – Database as a Service - RDBMS	<p>Provision and Deprovision</p> <p>Create and delete the database services (Oracle on ExaCS)</p> <p>Administration and Configuration</p>
OCI (Exadata Cloud Service)	<p>Update the database service instance configuration, parameter and option groups</p> <p>Create and update on demand backups, perform point in time recovery</p> <p>Update and manage the user access policies to the database services</p> <p>Troubleshoot Issues</p> <p>Coordinate with cloud provider/Client for database service issues (where applicable)</p>

	Monitoring
	Configure the KPIs for the database services (<i>where applicable</i>)
	Configure additional KPIs mutually agreed upon with Client (<i>where applicable</i>)

Resource Unit	Detailed Description
IaaS – Load Balancers	Provision and Deprovision Create and delete the native load balancer services (private and public)
OCI (Load Balancer)	Administration and Configuration
	Update the configuration details for the load balancer and gateways
	Add, update, delete endpoints to the load balancer, modify the load balancer rules
	Troubleshoot Issues
	Coordinate with cloud provider/Client for native load balancer service level issues (<i>where applicable</i>)
	Monitoring
	Configure the KPIs for the various native load balancer services (<i>where applicable</i>)
	Configure additional KPIs mutually agreed upon with Client (<i>where applicable</i>)

Resource Unit	Detailed Description
PaaS – Platform management	Provision and Deprovision <i>Create and delete Oracle Management Cloud (OMC) instances</i>
OCI (Oracle Management Cloud – EE, Log Analytics)	Administration and Configuration <i>Update the configuration OMC (including entities to be monitored)</i>
	Troubleshoot Issues <i>Coordinate with cloud provider/Client for OMC service level issues (<i>where applicable</i>)</i>
	Monitoring <i>Configure the KPIs and dashboards for OMC (<i>where applicable</i>)</i>
	Configure additional KPIs mutually agreed upon with Client (<i>where applicable</i>)

Resource Unit	Detailed Description
Database Engines (Oracle)	Provision and Deprovision create / drop databases
	coordinate activities for installation and migration of database systems software as well as upgrades of the database
	uninstall DBMS products and associated products and tools during decommission process or when requested
	Administration and Configuration
	execute database utilities based on Client specific requirements and negotiated schedules (e.g., backups, reorgs, runstats)
	schedule and perform re-organizations, statistical data collection
	manage job scheduler of DBMS maintenance jobs
	manage DBMS system related maintenance/utility jobs
	provide job status on request for the jobs scheduled on the database
	manage physical DB import/export as, and when, required
	perform database backups per the agreed policy and restore database on request
	analyze, plan and execute database changes
	provide DBMS connectivity support
	manage the logical backup and restore, if used as a backup strategy
	manage high availability/clustering using only native tools

	<p>perform scheduled switch over/switch back of databases</p> <p>provide ad hoc performance and capacity reporting on request only and limited to four (4) reports per year; and</p> <p>document and analyze capacity measures and forecast future capacity requirements.</p>
	<p>provide DBMS consulting assistance and analysis for Client applications</p>
	<p>provide support for Client, or regulatory, or security or quality assurance audits limited to responding to data requests only</p>
	<p>perform data archival and purging per the capacity planning report with assistance from application owners</p>
	<p>perform performance tuning based on performance reports</p>
	<p>provide standard performance and capacity data management – define, collect, summarize and store performance data</p>
	<p>Health Check and Patch Management</p> <p>apply database software patches, hot fixes and service packs as per mutually agreeable frequency</p>
	<p>perform health checking per agreed technical specifications and schedule in the CSD</p>
	<p>perform remediation as agreed in the CSD</p>
	<p>Troubleshoot Issues</p> <p>manage and rectify diagnostic error logs or reports created by the DBMS product, instance or database or tools used by the DBMS Support team</p>
	<p>Co-ordinate with application owners to remediate problems on database when requested with appropriate actions</p>
	<p>Co-ordinate with DBMS software vendors for support on problems with products in scope and perform the appropriate action</p>
	<p>Monitoring</p> <p>Configure the KPIs for the databases</p>
	<p>Troubleshoot any monitoring related issues</p>
	<p>Configure additional KPIs mutually agreed upon with Client (<i>where applicable</i>)</p>

Resource	Function
Middleware Applications Weblogic Application Server, Websphere Application Server, Websphere MQ, Microsoft IIS, Apache Tomcat, IBM Integration Bus, Redhat JBOSS, Apache HTTP Server	<p>Provision and Deprovision</p> <p>perform product installs</p> <p>Administration and Configuration</p> <p>Apply configuration changes to middleware software products as requested by application owner;</p> <p>Assist with recovery activities</p> <p>Identify files/data sources and file systems to be backed up as part of regular operating system/subsystem backups</p> <p>Perform middleware log file rotation, pruning, and archiving</p> <p>Manage middleware component administration for scope in the services baseline (e.g., WAS, WMQ, IBM HTTP)</p> <p>Provide middleware administration support during code deployment</p> <p>Perform restarts, startup and shutdown of the middleware (e.g., WAS, WMQ, IBM HTTP) (this does not include business applications)</p> <p>Provide performance and capacity report of the servers on which the middleware instances are hosted</p> <p>Recommend changes to maintain agreed upon system performance levels at a server level</p> <p>Provide analysis of capacity measures and forecasting of physical resource requirements at a server level</p> <p>Recommend any system configurations or modifications at a server level necessary to enable IBM to maintain acceptable resource utilization</p>

	Recommend corrective actions to resolve capacity problems and prevent possible future incidents
	Health Check and Patch Management
	Apply middleware patches, hot fixes and service packs per agreed frequency
	Provide health check report of the servers on which the middleware instances are hosted
	Conduct security health check activities per agreed security policies and harden the servers in the event of any gaps
	Troubleshoot Issues
	Perform problem determination and resolution. Problems that are determined to be at application level will be owned by the application owner
	Perform root cause analysis of middleware infrastructure outages as in scope of service baseline
	Perform SSL administration and troubleshooting
	Assist with vendor support activities and track resolution
	Monitoring
	Configure the KPIs for the middleware
	Troubleshoot any monitoring related issues
	Configure additional KPIs mutually agreed upon with Client (<i>where applicable</i>)

ATTACHMENT C

SCHEDULE 2B

ADDITIONAL SERVICES STATEMENT OF WORK

Execution Copy: September 26, 2019

This Statement of Work ("SOW") describes the work to be undertaken by IBM ("Services") under the Master Services Agreement by and between County of Cook ("County") and IBM Corporation ("Provider" or "IBM") dated [REDACTED] ("Agreement") and the terms and conditions contained herein. Described within this SOW is the project, which consists of the deliverable Materials to be provided by IBM, and the IBM responsibilities and related County Responsibilities to be provided in accordance with the terms of this SOW.

Changes to this SOW will be processed in accordance with the procedure described in Schedule 1 Relationship Management Section 5.2 SOW Change Control Procedures of the Agreement ("SOW Change Control Procedure"). The implementation of changes may result in modifications to the Estimated Schedule, Fees, and other terms of this SOW and the Agreement.

To the extent there is any contradiction, inconsistency or ambiguity between the terms of this SOW and the Terms and Conditions, the Terms and Conditions will govern.

1.0 Additional Services

While it is the goal of the County and IBM to articulate clearly defined Deliverables, which IBM will provide, it is possible that there will be other tasks the County requires IBM to perform that cannot be expressed in a Deliverable because they are unknown at the time of completion and execution of the Schedule 2A – Statement of Work. This SOW establishes "accounts" that may be used, at the sole discretion of the Director of ERP, to authorize IBM to perform services within the categories described below.

The Director of ERP will identify the work to be performed by initiating a Work Order to IBM relative to the account. IBM will provide an estimate of the cost and schedule. IBM will commence work when the Work Order is approved by the Director of ERP.

1. County Technical Services

The Director of ERP may use the Technical Services Account to direct IBM to assist or replace County technical effort in technical areas such as:

- a. Technical configuring, monitoring, tuning, and troubleshooting the System Environment;
- b. Coordinating activities with network and workstation administrators;
- c. Developing the technical solution for peripheral device connectivity; and
- d. Data conversion assistance.

2. Training Services

The Director of ERP may direct Contractor to conduct training activities not included in the implementation activities, using the Training Services Account. Examples of such activities include but are not limited to:

- a. Orientation of new ERP Project Office or ERP team members;
- b. Development of training materials; and
- c. Training of end users.

3. Oracle Services

The Director of ERP may direct IBM to coordinate additional services from Oracle to address issues outside of the scope of this contract.

4. Development Services

The Director of ERP may direct IBM to provide additional technical development support. The County's intent is to utilize this support to retire/replace additional shadow systems that would result in significant return on investment (ROI) for the County and further automate business processes. Services may include the development or modification of custom objects for:

- a. Reports
- b. Interfaces
- c. Data Conversions
- d. Extensions
- e. Forms
- f. Workflow

2.0 Status Reporting

Status reports will be prepared by IBM and submitted to the County on a monthly basis. The status report will describe progress against Work Orders and associated actuals vs. budgeted hours/costs. The reports will also include a status of the remaining balance of the account.

3.0 Fees

Work Orders will be performed on a Time & Materials (T&M) or Firm Fixed Price (FFP) basis depending on the nature of the work and as mutually agreed. The hourly labor rates provided with Schedule 3 Fees Appendix 3-5 of the Agreement will serve as the basis for the Work Order estimates and fees.

County and IBM have mutually agreed to budget for \$200,000 per year towards these services. Work Orders will be created against this budgeted amount.

[End of Schedule 2B]

ATTACHMENT D

ATTACHMENT I
APPROVED SUBCONTRACTORS

Execution Copy: September 26, 2019

1. APPROVED SUBCONTRACTORS

1.1 The following are Subcontractors that are approved by the County, as of the Effective Date, for use in performing the Services as subcontractors:

Approved Subcontractors		
The William Everett Group	Direct Subcontractor (T&M staff augmentation services)	Yes
Next Generation, Inc.	Direct Subcontractor (T&M staff augmentation services)	Yes

[End of Attachment I]

ATTACHMENT E

Exhibit 2A-9

Deliverable Expectation Document (DED) for CHMS

Exhibit 2A-9
Deliverable Expectation Document (DED)
For
Cloud Hosting Managed Services (CHMS)

Exhibit 2A-9

Deliverable Expectation Document (DED) for CHMS

Templates for IBM deliverables will be provided in the first two weeks of project start per Project Schedule.

Table of Contents

<i>DL1. Migration Project Plan</i>	3
<i>DL2. OCI Cloud Deployment Design</i>	4
<i>DL3. OCI Environment Inventory</i>	4
<i>DL4. Connectivity Setup Checklist</i>	5
<i>DL5. Customer Security Document</i>	6
<i>DL6. Source Environment Utilization, Disposition & Baseline Report</i>	7
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<i>DL9. Disaster Recovery (DR) Workbook</i>	10
<i>DL10. Test Plan</i>	11
<i>DL11. Test Results</i>	12
<i>DL12. Service Management Processes, Procedures & Tools</i>	12
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Exhibit 2A-9
Deliverable Expectation Document (DED) for CHMS

DED Number:	Deliverable Name:	Phase:
1	DL1. Migration Project Plan	Migration (Project Management)
Description/Objective:		
The purpose of the Migration Project Plan is to identify, plan, schedule, track and communicate project activities.		
Scope:		
The Migration Project Plan will include set of activities to be performed by IBM for 'Discovery', 'Insight & Wave Planning', 'Migration Design & Detailed Planning', 'Migrate & Validate', 'Application Testing', 'Operational Readiness' and 'Cutover'. It will include critical County dependencies and touchpoints. Task level details will be maintained and tracked in separate workbooks.		
The project plan will be progressively elaborated as IBM obtains additional details during 'Discovery', 'Insight & Wave Planning' and 'Detailed Planning & Migration Design' phases. Initial set of waves will be identified during 'Insight & Wave Planning'. The wave plan/schedule will be further refined during 'Detailed Planning & Migration Design'.		
Changes to Project Schedule will be administered using SOW Change Control Procedure.		
Format:		
Microsoft Projects		
Outline:		
<ul style="list-style-type: none"> • Waves (will be added after 'Insight & Wave planning' phase) • Activities • Planned Start & Finish Date • Owner • Dependencies • Risks • Status (RAG) 		
Assumptions:		
<ul style="list-style-type: none"> • County will review and approve the Migration Plan (per Deliverable Acceptance criteria). • County will be responsible for addressing dependencies that need County resources 		
Other Comments:		
None		

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS**

DED Number:	Deliverable Name:	Phase:
2	DL2. OCI Cloud Deployment Design	Migration
Description/Objective:		
The objective of the Cloud Deployment Design is to see that cloud hosting requirements are addressed and provide configuration parameters for hosting environment.		
Scope:		
This will include mapping of target platform requirements to OCI capabilities and provide target environment configuration parameters.		
Format:		
Microsoft Word		
Outline:		
<ul style="list-style-type: none"> • Network Infrastructure (Resiliency, Security, Routing, Internet Access, Datacenter interconnects) • Database Infrastructure (System Characterization, Workload Isolation, Backup/Restore, Availability, Oracle database patching) • Compute Infrastructure (Operating System & patches, Capacity, Resilience, Security, Routing, Storage) 		
Assumptions:		
<ul style="list-style-type: none"> • The OCI Cloud Deployment Design will be developed based on requirements provided by Cook County and documented in the SOW. Changes in requirements will be administered via SOW Change Control Procedures. 		
Other Comments:		
None		

DED Number:	Deliverable Name:	Phase:
3	DL3. OCI Environment Inventory	Migration
Description/Objective:		
The purpose of the deliverable is to summarize and document Target Environment details. This will also serve as a baseline scope for Steady State CHMS.		
Scope:		
This corresponds to the OCI BOM that was used as an input to develop the SOW. Any changes to the number or nature of components will be administered via SOW Change Control Procedures.		

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS**

Format:	Microsoft Excel	
Outline:	<ul style="list-style-type: none">• Server Type and Characterization• VM Type and #• OS Version• CPU• RAM• Storage• Network Elements/IP Addresses• Start/End Month• Security Controls	
Assumptions:	<ul style="list-style-type: none">• Cook County will keep IBM notified of environmental changes that may require updates to this document.	
Other Comments:	None	
DED Number:	Deliverable Name:	Phase:

4	DL4. Connectivity Setup Checklist	Migration
Description/Objective:		
The purpose of the Connectivity Setup Checklist is to document steps for establish connectivity between IBM Infrastructure, Source and Target using appropriate security controls.		
Scope:		
The scope of this deliverable is for initial connectivity setup.		
Format:		
Microsoft Excel		
Outline:		
<ul style="list-style-type: none">• Source/Target IP Addresses• Lists of tasks to establish VPN• List of tasks for firewall• List of tests/scripts for testing connectivity between IBM Infrastructure, Source and Target (as required)		

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS****Assumptions:**

- Cook County will approve execution of tasks to establish network connectivity.

Other Comments:

None

DED Number:	Deliverable Name:	Phase:
5	DL5. Customer Security Document	Migration
Description/Objective:		
The purpose of the CSD is to document security policies and controls in scope of IBM CHMS.		
Scope:		
This document will be used to establish security controls during the migration phase and to agree on periodic review of security policies and controls.		
Format:		
Microsoft Word		
Outline:		
Cook County will provide the following information:		
<ul style="list-style-type: none">• Cook County Security Policies• List of associated Security Controls and how they will be met• Risks and Mitigation• Inclusion in CHMS scope? (Y/N)• Security Policy Review frequency (default 18 months)		
Assumptions:		
<ul style="list-style-type: none">• Cook County will inputs for this document and participate in discussions on implementation of relevant controls• Implementation of security controls dependent on OCI provisions.		
Other Comments:		
None		

DED Number:	Deliverable Name:	Phase:
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Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS**

6	DL6. Source Environment Utilization, Disposition & Baseline Report	Migration
Description/Objective:		
The purpose of the Utilization, Disposition and Baseline Report is to summarize and document data collected from various sources of information during discovery. This deliverable will be used as an input for subsequent migration planning and execution activities. This document will also serve as a baseline of source elements to be migrated to target cloud environment.		
Scope:		
A summary of infrastructure data collected during discovery on source environment. Once this deliverable is approved by Cook County (using Deliverable Acceptance criteria), subsequent changes in source environment may result in changes to Project Schedule and will be administered using SOW Change Control Procedures.		
Format:		
Microsoft Excel		
Outline:		
The indicative data points of this report are as follows:		
<ul style="list-style-type: none"> • Server OS platform & version • Server Manufacturer and Model • Server Administrator • IP Address • Host Name (Physical/Virtual) • Utilization (e.g. CPU, Memory, Disk) (Utilization Range, Absolute Utilization Peak, Normalized Utilization Peak) • Virtual (Y/N) • Applications/Databases and characterization • Candidate for Consolidation (Y/N) • Baseline Parameters 		
Assumptions:		
<ul style="list-style-type: none"> • Cook County will participate in reviewing and validating the report. • Cook County will keep IBM notified of environmental changes that may require updates to this report. 		
Other Comments:		
None		

DED Number:	Deliverable Name:	Phase:
7	DL7. Migration Workbook	Migration
Description/Objective:		

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS**

The purpose of this deliverable is to document approach & steps for migrating each application including cutover to the target environment.

Scope:

The scope includes documenting detailed steps for migrating Dev/Test/Prod applications. IBM will document Migration approach during the 'Insight & Wave Planning' phase and refine it during 'Detailed Planning & Migration Design' phase.

Format:

Microsoft Word, Microsoft Excel

Outline:

- Source Environment Classification (Dev/Test/Prod)
- Application ID/Name
- Technology Stack
- Source Environment Parameters (e.g. OS Version, IP Address, Size)
- Migration Disposition
- Migration Pattern
- Migration Priority
- Migration Complexity
- Migration Effort
- Application specific Security Requirements/Controls
- Migration Wave
- Migration Approach (description)
- Target Environment Parameters (e.g. OS Version, IP Address, Size)
- Dependency
- Cook County resources needed for migration
- Migration Tasks:
 - Task ID
 - Description
 - Pre-requisites
 - Relevant automation scripts
 - Task Owner
 - Task Dates
 - Status
 - Comments

Planned Dates for tasks

- Migration Start/Finish date
- Application Testing Start/Finish date
- UAT Start/Finish Date

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS****Assumptions:**

- Cook county will participate in reviewing and validating information regarding source data collected during discovery and IBM's analysis.
- Cook county will participate in reviewing and approving planning parameters including timeline and County resources.

Other Comments:

None

DED Number:	Deliverable Name:	Phase:
8	DL8. Cutover & Mock-Cutover Workbook	Migration
Description/Objective:		
The purpose of this deliverable is to document approach, resources & steps for Cutover to target environment.		
Scope:		
The scope includes documenting detailed steps for Cutover to target environment. IBM will document Cutover approach during the 'Insight & Wave Planning' phase and refine it during 'Detailed Planning & Migration Design' phase.		
Format:		
Microsoft Word, Microsoft Excel		
Outline:		
<ul style="list-style-type: none">• Cutover Approach• Planned Cutover Dates (Dev/Test/Mock/Prod)• Change Windows• Cutover dependencies• Resource requirements (IBM and County)• Cutover tasks for each (Dev/Test/Mock/Prod):<ul style="list-style-type: none">○ Task ID○ Description○ Pre-requisites○ Relevant automation scripts○ Task Owner○ Task Dates○ Status• Emergency Contact Information (IBM and County)• Rollback plan• Additional Comments		

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS****Assumptions:**

- Cook county will approve Change Windows needed
- Cook county will participate in reviewing and approving planning parameters including timeline and County resources.

Other Comments:

None

DED Number:	Deliverable Name:	Phase:
9	DL9. Disaster Recovery (DR) Workbook	Migration
Description/Objective:		
The purpose of the DR Workbook is to document steps for DR buildout and test per disaster recovery plan provided by Cook County. This deliverable will be created before the production cutover.		
Scope:		
IBM will keep the deliverable updated based on changes during the course of the Project till end of Hypercare.		
Format:		
Microsoft Excel		
Outline:		
<ul style="list-style-type: none">• DR buildout tasks for each (Dev/Test/Prod):<ul style="list-style-type: none">◦ Task ID◦ Description◦ Pre-requisites◦ Relevant scripts◦ Task Dates◦ Status• DR Test Steps• Emergency Contact Information (IBM and County)• Next Planned DR Test Date• Actual DR Test Date• Additional Comments		
Assumptions:		
<ul style="list-style-type: none">• IBM will conduct one DR test prior to production cutover and one DR test every year during steady state.• IBM will document DR test results and provide DR test summary report to Cook County.		

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS**

<ul style="list-style-type: none">DR Plan will be owned by Cook County.
Other Comments:
None

DED Number:	Deliverable Name:	Phase:
10	DL10. Test Plan	Migration
Description/Objective:		
<p>The purpose of Test Plan (System Integration Testing) is to verify that the system works as a whole and in a way that is consistent with what the users expect. This deliverable documents the project's approach to testing and identifies test audience, entry/exit criteria between tests, and issue/resolution management.</p>		
Scope:		
<p>This deliverable will be used by migration test team to validate migration activities. It will also be reviewed by Cook County to understand the approach and acceptance criteria prior to cutover.</p>		
Format:		
Microsoft Excel		
Outline:		
<ul style="list-style-type: none">Test Purpose and SummaryTest ScopeTest TypeFeatures to be tested (in-scope and out-of-scope)Pass/Fail CriteriaTest ScheduleTest Resources (Environment and People)Severity definitions and triage processDependencies on Cook CountyRisk Management (Suspension and Resumption criteria)DefectsTest Completion Summary		
Assumptions:		
<ul style="list-style-type: none">Cook County will participate in test planning and review the Test PlanTesting environment(s) will be functional and available during scheduled test activities (Source and Target)Testing resources will have the required access (Source and Target)		
Other Comments:		
None		

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS**

DED Number:	Deliverable Name:	Phase:
11	DL11. Test Results	Migration
Description/Objective:		
<p>The purpose of Test Results deliverable is to document the summary and details of system testing based on Test Plan including Defects, Severity and Resolution and Re-testing results.</p>		
Scope:		
<p>This deliverable will be used by migration test team to validate migration activities. It will also be reviewed by Cook County to understand the approach and acceptance criteria prior to cutover.</p>		
Format:		
Microsoft Excel		
Outline:		
<ul style="list-style-type: none"> • Test Summary <ul style="list-style-type: none"> ◦ Summary of Test cycles and results ◦ Conclusion and Recommendation • Test cycle report <ul style="list-style-type: none"> ◦ Test cycle objective ◦ Test cycle summary ◦ Scenario/Steps ◦ Pass/Fail ◦ Defects, Severity, Status 		
Assumptions:		
<ul style="list-style-type: none"> • Cook County will participate in defect triage and review Test Results 		
Other Comments:		
None		

DED Number:	Deliverable Name:	Phase:
12	DL12. Service Management Processes, Procedures & Tools	Migration
Description/Objective:		
<p>The purpose of this deliverable is to document processes, procedures & tools for providing steady state support.</p>		

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS****Scope:**

Existing processes and procedures used by IBM CMS will be reviewed and assessed for improvements and for changes required to provide CHMS support.

Format:

Microsoft Word

Outline:

- **Service Management Process:**
 - Type (Event/Incident/Problem/Service Requests)
 - Severity Definitions
 - Resolution process and response time
 - Top 10 known incidents & resolution
 - IBM responsibilities and key contacts
 - County responsibilities and key contacts
- **Core Procedures:**
 - Backup/Restore
 - Cloud Management (Cloud Provisioning, Project/Tenant Management, Identity & Roles Management, Virtual Network Management)
 - Server Management (Server Monitoring, Manage Operating System)
 - Compliance Management ((Server Health-check, Patch Management, ID Management, Firmware Updates, Log Retention)
 - Storage Management (Storage Monitoring, Storage allocation/deallocation, Storage lifecycle management)
- **Tools**
 - Tool Name
 - Tool Version
 - Function
 - Purpose
 - Tool access & permissions (role/names/permissions)

Assumptions:

- Cook County will participate in discussions to review existing and new processes
- It is assumed that majority of the CMS processes can be used as-is with some minor changes.

Other Comments:

None

DED Number:	Deliverable Name:	Phase:
13	DL13. Operational Readiness Test Plan & Checklist (Dev/Test/Prod)	Migration
Description/Objective:		

Exhibit 2A-9**Deliverable Expectation Document (DED) for CHMS**

The purpose of this deliverable is to document steps to check if the target environment is prepared to be deployed, operated and maintained including people, processes and tools.

Scope:

This document will be used to test and communicate cutover readiness for Dev/Test and Prod

Format:

Microsoft Word

Outline:

- Environment & Environment Type
- People: Resources for steady state & key contacts
- Top 5-10 incidents and known resolutions
- Sample day-in-the-life scenarios to test procedures laid out in 'Service Management Processes, Procedures & Tools' including SLA restoration.

Assumptions:

- Cook County will participate in operational readiness test planning

Other Comments:

None

DED Number:	Deliverable Name:	Phase:
-12	DL14. Monthly/Weekly Reports	Migration (Project Management)

Description/Objective:

The purpose of the Project Status Report is to provide line-of-business management with an accurate assessment of the current state of the project (presented monthly/weekly). It tracks schedules compliance, project change requests, project accomplishments, and open issues and risks with resolution strategies

Scope:

The report format and reporting schedule will be reviewed with Cook County during the first week of Project. It will be used by IBM and Cook County to monitor progress of project activities and open items.

Exhibit 2A-9

Deliverable Expectation Document (DED) for CHMS

Format:

Microsoft PowerPoint

Outline:

Migration Phase (Weekly Report)

- Project Schedules
 - New changes to schedule (if applicable)
- Project Status
 - Deliverables Achieved or Missed
 - Highlights
- RAG Status
- Project Change Requests
- Issues
- Risks
- Dependencies
- Action Items
- Planned Activities for Next Reporting Period

Steady State Phase (Monthly Report)

- Volume trend reports for Incidents, Problems and Service Requests
- Backup report
- Host availability report
- Performance report (Memory, CPU, Bandwidth, Storage)
- Utilization report to determine additional resource requirement
- Cluster service availability
- Compliance Incidents
- RCA (for agreed issues)
- Planned activities for next reporting period

Assumptions:

- Cook County and IBM will jointly determine the schedule of delivery for the Monthly/Weekly Status reports.

Other Comments:

None

ATTACHMENT F

Location	Title
1 Schedule 2A: Appendix 3-4	Application Managed Services
2 Schedule 3 Fees, Appendix 3-5	Personnel Rates - AMS
3 Schedule 2A: Appendix 3-4	Cloud Managed Hosting Services - OCI (CMHS-OCI)
4 Schedule 3 Fees, Appendix 3-1	Summary & Component break up
5 Schedule 3 Fees, Appendix 3-1	Termination Schedule for OCI Cloud
6 Schedule 3 Fees, Appendix 3-1	OCI Cloud & IBM Svcs Rate Card
7 Schedule 3 Fees, Appendix 3-1	Estimated Travel by Year

Application Managed Services Personnel Rates

Functional - Lead		\$142.35	\$146.62	\$151.75	\$157.07	\$162.56	\$168.25	\$174.14	\$180.24	\$186.55	\$193.07
Functional - Senior		\$119.92	\$124.71	\$129.70	\$134.89	\$140.29	\$145.90	\$151.73	\$157.80	\$164.11	\$170.68
Functional - Junior		\$101.26	\$105.31	\$109.52	\$113.90	\$118.46	\$123.20	\$128.13	\$133.25	\$138.58	\$144.13
Technical - Architect		\$119.14	\$122.71	\$127.01	\$131.45	\$136.05	\$140.82	\$145.74	\$150.85	\$156.12	\$161.59
Technical - Senior		\$104.28	\$108.45	\$112.79	\$117.30	\$121.99	\$126.87	\$131.94	\$137.22	\$142.71	\$148.42
Technical - Junior		\$96.32	\$101.18	\$104.18	\$108.35	\$112.68	\$117.19	\$121.88	\$126.75	\$131.83	\$137.10
Project Manager		\$165.57	\$170.53	\$176.50	\$182.68	\$189.07	\$195.69	\$202.54	\$209.63	\$216.97	\$224.56
Offshore Functional Lead		\$37.63	\$39.14	\$40.70	\$42.33	\$44.89	\$46.68	\$48.55	\$50.49	\$52.51	\$54.61
Offshore Functional Consultant - Senior		\$29.46	\$30.64	\$31.87	\$33.14	\$35.14	\$36.55	\$38.01	\$39.53	\$41.11	\$42.75
Offshore Functional Consultant - Junior		\$22.91	\$23.83	\$24.78	\$25.77	\$27.33	\$28.42	\$29.56	\$30.74	\$31.97	\$33.25
Offshore Technical Consultant - Architect		\$25.61	\$26.64	\$27.70	\$28.81	\$30.55	\$31.77	\$33.04	\$34.36	\$35.74	\$37.17
Offshore Technical Consultant - Senior		\$19.91	\$20.70	\$21.53	\$22.39	\$23.75	\$24.70	\$25.68	\$26.71	\$27.78	\$28.89
Offshore Technical Consultant - Junior		\$16.44	\$17.09	\$17.78	\$18.49	\$19.60	\$20.39	\$21.20	\$22.05	\$22.93	\$23.85
Offshore Project Manager		\$49.98	\$51.98	\$54.06	\$56.22	\$59.62	\$62.00	\$64.48	\$67.06	\$69.74	\$72.53

Cloud Managed Hosting Services Monthly Fees - OCI												
Contract Year 0		Contract Year 1		Contract Year 2		Contract Year 3		Contract Year 4		Contract Year 5		
Price	Contract Year 1	Price	Contract Year 2	Price	Contract Year 3	Price	Contract Year 4	Price	Contract Year 5	Price	Contract Year 6	
	Jan-20	\$ 430,160		Jan-21	\$ 90,379		Jan-22	\$ 88,835		Jan-23	\$ 85,241	
	Feb-20	\$ 533,735		Feb-21	\$ 90,379		Feb-22	\$ 88,835		Feb-23	\$ 85,241	
	Mar-20	\$ 466,121		Mar-21	\$ 90,379		Mar-22	\$ 88,835		Mar-23	\$ 85,241	
	Apr-20	\$ 417,223		Apr-21	\$ 90,379		Apr-22	\$ 88,835		Apr-23	\$ 85,241	
	May-20	\$ 427,794		May-21	\$ 90,379		May-22	\$ 88,835		May-23	\$ 85,241	
	Jun-20	\$ 413,930		Jun-21	\$ 90,379		Jun-22	\$ 88,835		Jun-23	\$ 85,241	
	Jul-20	\$ 155,050		Jul-21	\$ 90,379		Jul-22	\$ 88,835		Jul-23	\$ 85,241	
	Aug-20	\$ 155,050		Aug-21	\$ 90,379		Aug-22	\$ 88,835		Aug-23	\$ 85,241	
	Sep-20	\$ 165,050		Sep-21	\$ 90,379		Sep-22	\$ 88,835		Sep-23	\$ 85,241	
	Oct-20	\$ 143,950		Oct-21	\$ 88,835		Oct-22	\$ 85,241		Oct-23	\$ 84,290	
	Nov-20	\$ 143,950		Nov-21	\$ 88,835		Nov-22	\$ 85,241		Nov-23	\$ 84,290	
	Dec-19	\$ 409,711		Dec-20	\$ 143,950		Dec-21	\$ 88,835		Dec-22	\$ 85,241	
											Dec-23	\$ 84,290
											Jul-24	\$ 84,290
											Jul-25	\$ 84,920
											Aug-25	\$ 84,920
											Aug-26	\$ 84,920
											Aug-27	\$ 84,920
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											Dec-32	\$ 84,920
											Jan-33	\$ 84,920
											Feb-33	\$ 84,920

FMS 3.0	
Program Manager and Solution Architect -	
Migration, Transition and Stabilization	\$ 578,624
Migration Services for OCI	\$ 1,903,038
OCI Hosting	\$ 4,305,421
Ongoing IBM Support Services for OCI	\$ 2,165,026
Project FMS 3.0 Migration	\$ 1,903,038
CMS Billing - Dec 2019	\$ 132,409
Hosting and Future Transition Services	\$ 1,000,000
Project FMS 3.0	\$ 1,903,038

Cloud Managed Services Monthly Termination Schedule

Contract Year 0	Price	Contract Year 1	Price	Contract Year 2	Price	Contract Year 3	Price	Contract Year 4	Price	Contract Year 5	Price	Contract Years 5	Price
		Jan-20	\$ 2,231,277	Jan-21	\$ 1,508,469	Jan-22	\$ 754,234	Jan-23	\$ -	Jan-24	\$ 1,319,910	Jan-25	\$ 505,675
		Feb-20	\$ 2,199,850	Feb-21	\$ 1,445,616	Feb-22	\$ 691,382	Feb-23	\$ 2,01,292	Feb-24	\$ 1,257,057	Feb-25	\$ 502,823
		Mar-20	\$ 2,136,997	Mar-21	\$ 1,382,763	Mar-22	\$ 628,529	Mar-23	\$ 1,948,439	Mar-24	\$ 1,194,204	Mar-25	\$ 439,970
		Apr-20	\$ 2,074,145	Apr-21	\$ 1,319,910	Apr-22	\$ 565,566	Apr-23	\$ 1,885,586	Apr-24	\$ 1,131,352	Apr-25	\$ 377,117
		May-20	\$ 2,011,292	May-21	\$ 1,257,057	May-22	\$ 502,873	May-23	\$ 1,822,733	May-24	\$ 1,065,499	May-25	\$ 314,254
		Jun-20	\$ 1,948,439	Jun-21	\$ 1,184,204	Jun-22	\$ 439,970	Jun-23	\$ 1,759,880	Jun-24	\$ 1,005,646	Jun-25	\$ 251,411
		Jul-20	\$ 1,885,586	Jul-21	\$ 1,131,352	Jul-22	\$ 377,117	Jul-23	\$ 1,697,027	Jul-24	\$ 942,793	Jul-25	\$ 188,559
		Aug-20	\$ 1,822,733	Aug-21	\$ 1,065,499	Aug-22	\$ 314,264	Aug-23	\$ 1,634,174	Aug-24	\$ 879,940	Aug-25	\$ 125,706
		Sep-20	\$ 1,759,880	Sep-21	\$ 1,005,646	Sep-22	\$ 251,411	Sep-23	\$ 1,571,322	Sep-24	\$ 817,087	Sep-25	\$ 62,833
		Oct-20	\$ 1,697,027	Oct-21	\$ 942,793	Oct-22	\$ 188,559	Oct-23	\$ 1,508,469	Oct-24	\$ 754,234		
		Nov-20	\$ 1,634,174	Nov-21	\$ 879,940	Nov-22	\$ 125,706	Nov-23	\$ 1,445,616	Nov-24	\$ 691,382		
		Dec-20	\$ 1,571,322	Dec-21	\$ 817,087	Dec-22	\$ 62,833	Dec-23	\$ 1,382,763	Dec-24	\$ 628,529		
		Dec-19	\$ -	Dec-20	\$ 1,571,322	Dec-21	\$ 817,087	Dec-22	\$ 62,833	Dec-23	\$ 1,382,763	Dec-24	\$ 628,529

Oracle Infra Components		Unit	2020	2021	2022	2023	2024	2025
VM Standard2		OCPU/hr	\$ 0.0488	\$ 0.0490	\$ 0.0492	\$ 0.0494	\$ 0.0496	\$ 0.0498
Block Volume		GB/month	\$ 0.0325	\$ 0.0327	\$ 0.0329	\$ 0.0331	\$ 0.0333	\$ 0.0335
Object Storage - Storage		GB/month	\$ 0.0195	\$ 0.0196	\$ 0.0197	\$ 0.0198	\$ 0.0199	\$ 0.0200
Object Storage - Request		10,000 req/month	\$ 0.0026	\$ 0.0026	\$ 0.0026	\$ 0.0026	\$ 0.0026	\$ 0.0026
Archive Storage		GB/month	\$ 0.0020	\$ 0.0020	\$ 0.0020	\$ 0.0020	\$ 0.0020	\$ 0.0020
Oracle Cloud Infrastructure - File Storage		GB/month	\$ 0.2294	\$ 0.2305	\$ 0.2317	\$ 0.2329	\$ 0.2341	\$ 0.2353
Load Balancer - 400 Mbps		Per LB hour	\$ 0.0650	\$ 0.0653	\$ 0.0656	\$ 0.0659	\$ 0.0662	\$ 0.0665
OCI Exa-CS - X7 - Quarter Rack - Base Unit		Hosted env/hr	\$ 20.5566	\$ 20.6594	\$ 20.7627	\$ 20.8665	\$ 20.9708	\$ 21.0757
Additional OCPU - BYOL		OCPU/hr	\$ 0.2467	\$ 0.2479	\$ 0.2491	\$ 0.2503	\$ 0.2516	\$ 0.2529
Oracle Cloud Infrastructure - Compute - Windows OS		OCPU/hr	\$ 0.0156	\$ 0.0157	\$ 0.0158	\$ 0.0159	\$ 0.0160	\$ 0.0161
Oracle Management Cloud - Enterprise Edition		100 Entities Per Hour	\$ 1.2848	\$ 1.2912	\$ 1.2977	\$ 1.3042	\$ 1.3107	\$ 1.3173
Oracle Management Cloud - Log Analytics Edition		300 Gigabytes Per Hour	\$ 1.2848	\$ 1.2912	\$ 1.2977	\$ 1.3042	\$ 1.3107	\$ 1.3173
Managed IBM Services Cost Infra Cost		Unit	2020	2021	2022	2023	2024	2025
For Additional VMs/Storage								
Management Cost Per VM		Per VM Per Month	\$ 74.76	\$ 77.38	\$ 80.09	\$ 82.89	\$ 85.79	\$ 88.79
Build Cost		Per VM	\$ 1,296.00	\$ 1,341.36	\$ 1,388.31	\$ 1,436.90	\$ 1,487.19	\$ 1,539.24
Decommissioning (At the time of decommission)		Per VM	\$ 281.25	\$ 291.09	\$ 301.28	\$ 311.82	\$ 322.73	\$ 334.03
Build Cost		Per 250 GB	\$ 1,296.00	\$ 1,341.36	\$ 1,388.31	\$ 1,436.90	\$ 1,487.19	\$ 1,539.24
Decommissioning (At the time of decommission)		Existing Storage	\$ 281.25	\$ 291.09	\$ 301.28	\$ 311.82	\$ 322.73	\$ 334.03
Management Cost for Storage		100 GB/Month	\$ 1.00	\$ 1.04	\$ 1.08	\$ 1.12	\$ 1.16	\$ 1.20
Management Cost per Load Balancer		LB/Month	\$ 226.00	\$ 233.91	\$ 242.10	\$ 250.57	\$ 259.34	\$ 268.42

Assumption:

The rate card is applicable on top of the committed baselines
The rate card excludes any taxes

Estimated Travel by Contract Year	
AMS Travel	
Contract Year	Amount in \$\$
Contract Year 1 (12 months)	\$120,000
Contract Year 2 (12 months)	\$120,000
Contract Year 3 (12 months)	\$120,000
Contract Year 4 (12 months)	\$120,000
Contract Year 5 (12 months)	\$120,000
Contract Year 6 (9 months)	\$120,000
AMS Total	\$720,000

CHMS Travel	
Contract Year	Amount in \$\$
Contract Year 1	\$100,000
Contract Year 2	\$25,000
Contract Year 3	\$0
Contract Year 4	\$0
Contract Year 5	\$0
Contract Year 6	\$0
CHMS Total	\$125,000

ATTACHMENT G

Cook County
Office of the Chief Procurement Officer
Identification of Subcontractor/Supplier/Subconsultant Form

OCPO ONLY:	
<input type="checkbox"/>	Disqualification
<input checked="" type="checkbox"/>	Check Complete

The Bidder/Proposer/Respondent ("the Contractor") will fully complete and execute and submit an Identification of Subcontractor/Supplier/Subconsultant Form ("ISF") with each Bid, Request for Proposal, and Request for Qualification. **The Contractor must complete the ISF for each Subcontractor, Supplier or Subconsultant which shall be used on the Contract.** In the event that there are any changes in the utilization of Subcontractors, Suppliers or Subconsultants, the Contractor must file an updated ISF.

<i>forw for</i>	1418-14268 Bid/RFP/RFQ No.:	\$121,018,122.10	Date: 09/12/2019
Total Bid or Proposal Amount:		\$12,576,869	Contract Title: ERP Project
Contractor: IBM Corporation		Subcontractor/Supplier/ Subconsultant to be added or substitute: The William Everett Group	
Authorized Contact James L. Northern for Contractor:		Authorized Contact for Ellen Rozelle Turner Subcontractor/Supplier/ Subconsultant:	
Email Address jlnorthe@us.ibm.com (Contractor):		Email Address e.turner@wegrp.com (Subcontractor):	
Company Address 71 S Wacker Drive (Contractor):		35 E. Walker Drive, Suite 3900 (Subcontractor):	
City, State and Zip (Contractor): Chicago, IL 60606		City, State and Zip (Subcontractor): Chicago, IL 60601	
Telephone and Fax (Contractor): (952) 250-9970		Telephone and Fax T:312 564 5680 & F:312 929 4553 (Subcontractor):	
Estimated Start and Completion Dates 01/01/2020 09/30/2025 (Contractor):		Estimated Start and Completion Dates 01/01/2020 09/30/2025 (Subcontractor):	

forw for
Note: Upon request, a copy of all written subcontract agreements must be provided to the OCPO.

<u>Description of Services or Supplies</u>	<u>Total Price of Subcontract for Services or Supplies</u>
Support Consultant	\$12,576,869

The subcontract documents will incorporate all requirements of the Contract awarded to the Contractor as applicable. The subcontract will in no way hinder the Subcontractor/Supplier/Subconsultant from maintaining its progress on any other contract on which it is either a Subcontractor/Supplier/Subconsultant or principal contractor. This disclosure is made with the understanding that the Contractor is not under any circumstances relieved of its abilities and obligations, and is responsible for the organization, performance, and quality of work. This form does not approve any proposed changes, revisions or modifications to the contract approved MBE/WBE Utilization Plan. Any changes to the contract's approved MBE/WBE/Utilization Plan must be submitted to the Office of the Contract Compliance.

IBM Corporation

Contractor
James L. Northern

Name
IBM Client Manager - Cook County, IL

Title
James L. Northern
Prime Contractor Signature

Sep. 26, 2019
Date

Cook County
Office of the Chief Procurement Officer
Identification of Subcontractor/Supplier/Subconsultant Form

OCPO ONLY:	
<input type="checkbox"/>	Disqualification
<input checked="" type="checkbox"/>	Check Complete

The Bidder/Proposer/Respondent ("the Contractor") will fully complete and execute and submit an Identification of Subcontractor/Supplier/Subconsultant Form ("ISF") with each Bid, Request for Proposal, and Request for Qualification. **The Contractor must complete the ISF for each Subcontractor, Supplier or Subconsultant which shall be used on the Contract.** In the event that there are any changes in the utilization of Subcontractors, Suppliers or Subconsultants, the Contractor must file an updated ISF.

Bid/RFP/RFQ No.: 1418-14268	Date: 09/12/2019
Total Bid or Proposal Amount: \$121,018,122.10	Contract Title: ERP Project
Contractor: IBM Corporation	Subcontractor/Supplier/ Subconsultant to be added or substitute: Next Generation Inc. (NGI)
Authorized Contact James L Northern for Contractor:	Authorized Contact for Darrell Higueros Subcontractor/Supplier/ Subconsultant:
Email Address jnorthe@us.ibm.com (Contractor):	Email Address dhigueros@nextgeninc.com (Subcontractor):
Company Address (Contractor): 71 S Wacker Drive,	Company Address (Subcontractor): 444 West Lake Street, Suite 1940
City, State and Zip (Contractor): Chicago, IL 60606	City, State and Zip (Subcontractor): Chicago, IL 60606
Telephone and Fax (Contractor): (952) 250-9970	Telephone and Fax T:312 739 0520 & F:312 275 8300 (Subcontractor):
Estimated Start and Completion Dates 01/01/2020 09/09/2025 (Contractor): 09/14/2025	Estimated Start and Completion Dates 01/01/2020 09/09/2025 (Subcontractor): 09/14/2025

Note: Upon request, a copy of all written subcontract agreements must be provided to the OCPO.

<u>Description of Services or Supplies</u>	<u>Total Price of Subcontract for Services or Supplies</u>
Support Consultant	\$10,386,692

The subcontract documents will incorporate all requirements of the Contract awarded to the Contractor as applicable. The subcontract will in no way hinder the Subcontractor/Supplier/Subconsultant from maintaining its progress on any other contract on which it is either a Subcontractor/Supplier/Subconsultant or principal contractor. This disclosure is made with the understanding that the Contractor is not under any circumstances relieved of its abilities and obligations, and is responsible for the organization, performance, and quality of work. **This form does not approve any proposed changes, revisions or modifications to the contract approved MBE/WBE Utilization Plan. Any changes to the contract's approved MBE/WBE/Utilization Plan must be submitted to the Office of the Contract Compliance.**

IBM Corporation

Contractor
James Northern

Name
IBM Client Manager - Cook County, IL

Title
James L Northern
Prime Contractor Signature

Sep. 26, 2019
Date



OFFICE OF CONTRACT COMPLIANCE
EDWARD H. OLIVIERI
DIRECTOR
118 N. Clark, County Building, Room 1020 • Chicago, Illinois 60602 • (312) 603-5502

TONI PRECKWINKLE

PRESIDENT

Cook County Board
of Commissioners

BRANDON JOHNSON
1st District

DENNIS DEER
2nd District

BILL LOWRY
3rd District

STANLEY MOORE
4th District

DEBORAH SIMS
5th District

DONNA MILLER
6th District

ALMA E. ANYA
7th District

LUIS ARROYO, JR.
8th District

PETER N. SILVESTRI
9th District

BRIDGET GAINER
10th District

JOHN P. DALEY
11th District

BRIDGET DEGNEN
12th District

LARRY SUFFREDIN
13th District

SCOTT R. BRITTON
14th District

KEVIN B. MORRISON
15th District

JEFFREY R. TOBOLSKI
16th District

SEAN M. MORRISON
17th District

October 17, 2019

Mr. Raffi Sarafian
Chief Procurement Officer
County Building-Room 1018
Chicago, IL 60602

Re: Contract No. 1418-14268 (Amendment No. 4)
Software and System Integration Services and Managed Service for Oracle ESB ERP Software
Enterprise Resource Planning

Dear Mr. Sarafian:

The Office of Contract Compliance is in receipt of the above-reference contract amendment and has reviewed it for compliance with the Minority- and Women- owned Business Enterprises (MBE/WBE) Ordinance. After careful review, it has been determined this amendment is responsive to the Ordinance.

Bidder: IBM Corporation

Original Contract Value: \$66,546,900.00

Increased Contract Value: \$6,809,520.00 (Amendment No. 1)

New Contract Value: \$73,356,420.00

Increased Contract Value: \$1,999,782.00 (Amendment No. 2)

New Contract Value: \$75,356,202.00

Increased Contract Value: \$1,500,000.00 (Amendment No. 3)

New Contract Value: \$76,856,202.00

Increased Contract Value: \$44,161,920.00 (Amendment No. 4)

New Contract Value: \$121,018,122.00

Contract Extension: 5 years

New Contract Term: September 15, 2020 through September 14, 2025

Contract Goal: 35% overall MBE/WBE

<u>MBE/WBE</u>	<u>Status</u>	<u>Certifying Agency</u>	<u>Commitment (Direct)*</u>
Clarity Partners, LLC	MBE (8)	City of Chicago	8.22%
Next Generation, Inc.	MBE (9)	Cook County	10.34%
Mind Your Manners dba The Williams Everett Group	MBE (6)	Cook County	12.52%
Level-1 Global Solutions, LLC	MBE (6)	City of Chicago	.89%
		Total	31.97%

*Commitment percentages are based on the total contract value of the professional services in the amount of \$100,432,481.00.

Partial MBE/WBE Granted: Due to the specification and necessary requirement for performing the contract make it impossible or economically infeasible to divide the contract to enable the contractor to utilize MBEs and/or WBEs in accordance with the applicable participation.

Original MBE/WBE forms were used in the determination of the responsiveness of this contract.

Contract No. 1418-14268 Amendment No. 4

Page 2


Sincerely,

Edward H. Olivieri

Contract Compliance Director
EHO/ae

cc: Angela Sanchez, OCPO
 Jim Ruzevick, ERP
 Carlyn Augustave, BOT

MBE/WBE UTILIZATION PLAN - FORM 1

BIDDER/PROPOSER HEREBY STATES that all MBE/WBE firms included in this Plan are certified MBEs/WBEs by at least one of the entities listed in the General Conditions – Section 19.

I. BIDDER/PROPOSER MBE/WBE STATUS: (check the appropriate line)



Bidder/Proposer is a certified MBE or WBE firm. (If so, attach copy of current Letter of Certification)



Bidder/Proposer is a Joint Venture and one or more Joint Venture partners are certified MBEs or WBEs. (If so, attach copies of Letter(s) of Certification, a copy of Joint Venture Agreement clearly describing the role of the MBE/WBE firm(s) and its ownership interest in the Joint Venture and a completed Joint Venture Affidavit – available online at www.cookcountycl.gov/contractcompliance)



Bidder/Proposer is not a certified MBE or WBE firm, nor a Joint Venture with MBE/WBE partners, but will utilize MBE and WBE firms either directly or indirectly in the performance of the Contract. (If so, complete Sections II below and the Letter(s) of Intent – Form 2).

II. Direct Participation of MBE/WBE Firms Indirect Participation of MBE/WBE Firms

NOTE: Where goals have not been achieved through direct participation, Bidder/Proposer shall include documentation outlining efforts to achieve Direct Participation at the time of Bid/Proposal submission. Indirect Participation will only be considered after all efforts to achieve Direct Participation have been exhausted. Only after written documentation of Good Faith Efforts is received will Indirect Participation be considered.

MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

William Everett Group

MBE/WBE Firm: _____

35 E. Walker Drive, Chicago, IL 60601

Address: _____

E-mail: _____

Ellen Rozelle Turner 312 564 5680

Contact Person: _____ Phone: _____

Dollar Amount Participation: \$ 12,576,869.00

Percent Amount of Participation: _____ %

*Letter of Intent attached? Yes _____ No _____

*Current Letter of Certification attached? Yes _____ No _____

MBE/WBE Firm: _____

Address: _____

E-mail: _____

Contact Person: _____ Phone: _____

Dollar Amount Participation: \$ _____

Percent Amount of Participation: _____ %

*Letter of Intent attached? Yes _____ No _____

*Current Letter of Certification attached? Yes _____ No _____

Attach additional sheets as needed.

*** Letter(s) of Intent and current Letters of Certification must be submitted at the time of bid.**

MBE/WBE UTILIZATION PLAN - FORM 1

BIDDER/PROPOSER HEREBY STATES that all MBE/WBE firms included in this Plan are certified MBEs/WBEs by at least one of the entities listed in the General Conditions – Section 19.

I. BIDDER/PROPOSER MBE/WBE STATUS: (check the appropriate line)

Bidder/Proposer is a certified MBE or WBE firm. (If so, attach copy of current Letter of Certification)

Bidder/Proposer is a Joint Venture and one or more Joint Venture partners are certified MBEs or WBEs. (If so, attach copies of Letter(s) of Certification, a copy of Joint Venture Agreement clearly describing the role of the MBE/WBE firm(s) and its ownership interest in the Joint Venture and a completed Joint Venture Affidavit – available online at www.cookcountylil.gov/contractcompliance)

Bidder/Proposer is not a certified MBE or WBE firm, nor a Joint Venture with MBE/WBE partners, but will utilize MBE and WBE firms either directly or indirectly in the performance of the Contract. (If so, complete Sections II below and the Letter(s) of Intent – Form 2).

II. Direct Participation of MBE/WBE Firms

Indirect Participation of MBE/WBE Firms

NOTE: Where goals have not been achieved through direct participation, Bidder/Proposer shall include documentation outlining efforts to achieve Direct Participation at the time of Bid/Proposal submission. Indirect Participation will only be considered after all efforts to achieve Direct Participation have been exhausted. Only after written documentation of Good Faith Efforts is received will Indirect Participation be considered.

MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

Next Generation Inc.

MBE/WBE Firm:

444 West Lake Street, Suite 1940, Chicago, IL 60606

Address:

dhigueros@nextgeninc.com

E-mail:

Darrell Higueros 312 739 0520

Contact Person:

Phone:

Dollar Amount Participation: \$ 10,386,692.00

Percent Amount of Participation: %

*Letter of Intent attached? Yes _____ No _____

*Current Letter of Certification attached? Yes _____ No _____

MBE/WBE Firm:

Address:

E-mail:

Contact Person: Phone:

Dollar Amount Participation: \$ _____

Percent Amount of Participation: %

*Letter of Intent attached? Yes _____ No _____

*Current Letter of Certification attached? Yes _____ No _____

Attach additional sheets as needed.

*** Letter(s) of Intent and current Letters of Certification must be submitted at the time of bid.**

MBE/WBE LETTER OF INTENT - FORM 2

MMBWE Firm: Next Generation, Inc.
Contact Person: Darrell Higueros
Address: 444 West Lake Street, Suite 1940
City/State: Chicago, IL Zip: 60606
Phone: 312-739-0520 Fax: 312-275-8300
Email: dhigueros@nxtgeninc.com

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the goods or services of this contract to another firm?

No Yes – Please attach explanation. Proposed Subcontractor(s): _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/ Contract: (If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

Functional Oracle Consulting

Indicate the Dollar Amount, Percentage, and the Terms of Payment for the above-described Commodities/ Services:

5% of total contract value

\$ 10,386,692.00

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement for the above work, conditioned upon (1) the Bidder/Proposer's receipt of a signed contract from the County of Cook; (2) Undersigned Subcontractor remaining compliant with all relevant credentials, codes, ordinances and statutes required by Contractor, Cook County, and the State to participate as a MBE/WBE firm for the above work. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/Supply and Fee/Cost were completed.

Signature (M/WBE)

Darrell Higueros

Print Name

Next Generation, Inc.

Firm Name

9/10/19

Date

Subscribed and sworn before me

this 10 day of September, 2019.

Notary Public Clara A. MEEK

SEAL

CLARA A MEEK
Official Seal
Notary Public - State of Illinois
My Commission Expires March 11, 2023
My M/WBE Letter of Intent- Form 2

Certifying Agency: Cook County

Certification Expiration Date: _____

Ethnicity: Hispanic

Bid/Proposal/Contract #: _____

FEIN #: 36-4419415

"OFFICIAL SEAL"
S. SHAH
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 11/16/2019 Exp: 1/29/14

MBE/WBE LETTER OF INTENT - FORM 2

M/WBE Firm: MYM dba The William Everett Group
Contact Person: Ellen Rozelle Turner
Address: 35 E. Wacker Drive
City/State: Chicago, IL Zip: 60601
Phone: 312-564-5680 Fax: 312-929-4553
Email: e.turner@wegrp.com

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the goods or services of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor(s): _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/ Contract: (If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

MYM dba The William Everett Group will provide staff augmentation/technical resources for the project.

Indicate the Dollar Amount, Percentage, and the Terms of Payment for the above-described Commodities/ Services:

MYM dba The William Everett Group will receive 19% of the total contract amount. TWEG will bill on a time and material basis and submit monthly invoices

to the prime and will be paid 45 days net of invoice.

\$12,576,869.00

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement for the above work, conditioned upon (1) the Bidder/Proposer's receipt of a signed contract from the County of Cook; (2) Undersigned Subcontractor remaining compliant with all relevant credentials, codes, ordinances and statutes required by Contractor, Cook County, and the State to participate as a MBE/WBE firm for the above work. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Signature (M/WBE)

Ellen Rozelle Turner

Print Name

MYM dba The William Everett Group

Firm Name

09/05/2019

Date

Subscribed and sworn before me

this 5th day of September, 20 19.

Notary Public

SEAL
BLAIR C. MCGEE

Official Seal

Notary Public - State of Illinois

My Commission Expires Sep 15, 2020

"OFFICIAL SEAL"

S. SHAH

NOTARY PUBLIC, STATE OF ILLINOIS

MY COMMISSION EXPIRES 11/16/2019

PETITION FOR REDUCTION/WAIVER OF MBE/WBE PARTICIPATION – FORM 3

A. BIDDER/PROPOSER HEREBY REQUESTS:

FULL MBE WAIVER

FULL WBE WAIVER

REDUCTION (PARTIAL MBE and/or WBE PARTICIPATION)

_____ % of Reduction for MBE Participation

_____ % of Reduction for WBE Participation

B. REASON FOR FULL/REDUCTION WAIVER REQUEST

Bidder/Proposer shall check each item applicable to its reason for a waiver request. Additionally, supporting documentation shall be submitted with this request.

(1) Lack of sufficient qualified MBEs and/or WBEs capable of providing the goods or services required by the contract. (Please explain)

(2) The specifications and necessary requirements for performing the contract make it impossible or economically infeasible to divide the contract to enable the contractor to utilize MBEs and/or WBEs in accordance with the applicable participation. (Please explain)

(3) Price(s) quoted by potential MBEs and/or WBEs are above competitive levels and increase cost of doing business and would make acceptance of such MBE and/or WBE bid economically impracticable, taking into consideration the percentage of total contract price represented by such MBE and/or WBE bid. (Please explain)

(4) There are other relevant factors making it impossible or economically infeasible to utilize MBE and/or WBE firms. (Please explain)

C. GOOD FAITH EFFORTS TO OBTAIN MBE/WBE PARTICIPATION

(1) Made timely written solicitation to identified MBEs and WBEs for utilization of goods and/or services; and provided MBEs and WBEs with a timely opportunity to review and obtain relevant specifications, terms and conditions of the proposal to enable MBEs and WBEs to prepare an informed response to solicitation. (Attach of copy written solicitations made)

(2) Used the services and assistance of the Office of Contract Compliance staff. (Please explain)

(3) Timely notified and used the services and assistance of community, minority and women business organizations. (Attach of copy written solicitations made)

(4) Followed up on initial solicitation of MBEs and WBEs to determine if firms are interested in doing business. (Attach supporting documentation)

(5) Engaged MBEs & WBEs for direct/indirect participation. (Please explain)

D. OTHER RELEVANT INFORMATION

Attach any other documentation relative to Good Faith Efforts in complying with MBE/WBE participation.



September 27, 2019

**Edward H. Olivier
Contract Compliance
Cook County Government
118 N Clark, Chicago,
Illinois, 60606**

Dear Mr. Olivier

**Sub : Petition for Reduction/ Waiver of MBE/ WBE Participation.
Ref : Contract Number: 1418-14268, Amendment # 4**

This is an update to IBM's contract with Cook County representing the MBE/WBE participation levels. For the upcoming December 2019 contract renewal IBM is applying for a 5% reduction waiver for the overall contract (reduction of 35% to 30%).

This phase of the project no longer includes any implementations. We have moved completely into a maintenance and support mode. There will only be 5 M/WBE resources on site to support the Oracle ERP environment.

Moreover, \$4,305,421 of Amendment # 4 is Cloud Hosting Services where M/WBE resources cannot be leveraged.

The net impact of the changes defined above is as follows:

Supplier	Committed Amount - Original Contract Plus Amendment 1, 2 & 3	Actual Amount Paid	Committed Amount in Amendment 4
NGI	\$8,216,637.00	\$8,364,561.46	\$2,170,055.00
<i>Clarity Partners (Terminated)</i>	\$8,251,325.00	\$5,455,067.23	-
<i>Level1 (Terminated)</i>	\$894,970.00	\$1,435,229.68	-
WEG	\$4,482,133.00	\$6,195,504.00	\$8,094,736.00
Total	\$21,845,065.00	\$21,450,362.37	\$10,264,791.00
Total M/WBE Commitment			\$32,109,856.00
Total Contract Value for M/WBE percentage calculation			\$100,432,480.93
M/WBE Percentage			31.97%

We have completed work with Clarity Partners. The contract is now terminated. The actual amount paid to Clarity Partners is \$5,455,067.23



71 S Wacker Street
Chicago, IL 60606

Please feel free to contact myself, or James Northern, the IBM Client Manager with any questions.

Soma Roy

IBM – CAI Leader - State & Local

cc: Ammar Rizki – Cook County
Tom F Lynch – Cook County
Aleatha Easley – Cook County
James Northern – IBM
Myles Lynch - IBM

Total Contract Value + Amendments 1, 2 & 3		\$76,886,202.00	Total Contract Value with Amendment 4	\$121,038,122.10
Original	Amendment 4			
	AMWS			
	\$54,451,287.00			
Amendment 1	\$6,809,520.00	Migration + Ops Services	\$33,237,402	
Amendment 2	\$1,999,782.00	Additional Hosting Budget (not considered for M/WBE)	\$4,779,097	
Amendment 3	\$1,500,000.00	Cloud Hosting (not considered for M/WBE)	\$1,008,000	
Travel	\$982,117.00	Travel AH/s (not considered for M/WBE)	\$4,305,421	
Hardware/Software	\$1,367,490.00	Travel AH/s (not considered for M/WBE)	\$720,000	
		Total Amount considered for M/WBE	\$125,000	
		Total Amount considered for M/WBE Calculation under Amendment 4	\$62,420,982.00	
M/WBE Commitment				
NGI	13.15%	13.15% NGI	\$2,170,055	Percentage
Clarity	13.22%	13.22% Clarity	\$0	Actual Amount Paid [to date]
Level 1	1.43%	1.43% Level 1	\$0	Comments
William Everett	7.18%	7.18% William Everett	\$8,094,736	This is covered in Amendment # 3
	35.00%	35.00% William Everett	\$10,264,791	This is covered in Amendment # 3
		Total Including Amendment 4	\$100,432,480.93	
		M/WBE Commitment		
NGI			\$10,386,692.00	
Clarity			\$8,251,315.00	10.34%
Level 1			\$894,970.00	8.22%
William Everett			\$12,576,869.00	0.89%
			\$22,109,836.00	12.22%
				31.17%



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
10/21/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERNS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: PHONE (A/C. No. Ext): +1 (866) 283-7122		FAX (A/C. No): +1 (800) 363-0105
	E-MAIL ADDRESS:		
INSURED	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A: ACE American Insurance Company		22667
	INSURER B: ACE Property & Casualty Insurance Company		20699
	INSURER C: North American Capacity Insurance Co		25038
	INSURER D:		
	INSURER E:		
	INSURER F:		

COVERS

CERTIFICATE NUMBER: 427262

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WWD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	COMMERCIAL GENERAL LIABILITY CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR	X X	HDO G71237606 (USA)	5/21/2019	5/21/2020	EACH OCCURRENCE	\$ 15,000,000	
						DAMAGE TO RENTED PREMISES (ea occurrence)	\$ 10,000,000	
						MED EXP (Any one person)	\$ 25,000	
						PERSONAL & ADV INJURY	\$ 15,000,000	
						GENERAL AGGREGATE	\$ 15,000,000	
						PRODUCTS - COMP/OP AGG	\$ Included	
	GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO- JECT <input type="checkbox"/> LOC OTHER:						\$	
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY	X X	ISA H25275810 (USA)	5/21/2019	5/21/2020	COMBINED SINGLE LIMIT (ea accident)	\$ 5,000,000	
	SCHEDULED AUTOS NON-OWNED AUTOS ONLY					BODILY INJURY (Per person)	\$	
						BODILY INJURY (Per accident)	\$	
						PROPERTY DAMAGE (Per accident)	\$	
							\$	
B	UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE	N/A N/A	G27983212 004 (Global)	5/21/2019	5/21/2020	EACH OCCURRENCE	\$ 10,000,000	
	DED RETENTION \$					AGGREGATE	\$ 10,000,000	
							\$	
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y / N <input checked="" type="checkbox"/>	N/A	See Page 2	See Page 2	X PER STATUTE	OTH-ER	
						E.L. EACH ACCIDENT	\$ 10,000,000	
						E.L. DISEASE - EA EMPLOYEE	\$ 10,000,000	
						E.L. DISEASE - POLICY LIMIT	\$ 10,000,000	
C	Professional Errors & Omissions Liability & Cyber Liability	N/A N/A	5110.1	11/1/2019	11/1/2020	Per Claim Aggregate	\$10,000,000 \$10,000,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Job Description / Project Name / Project Number: Cook County ERP Implementation

Umbrella Liability policy limits are excess over each: Commercial General Liability, Automobile Liability and Employer's Liability insurance.

The policies listed above are not intended to replace locally mandated (statutory) insurance policies in various countries, other than the USA.

Please see next page for any additional language.

CERTIFICATE HOLDER

CANCELLATION

Cook County 118 N Clark St. Chicago, Illinois 60602-1304 United States	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.	
	AUTHORIZED REPRESENTATIVE Authorized Representative: Aon Risk Services Northeast, Inc.	

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ADDITIONAL REMARKS SCHEDULE

AGENCY Aon Risk Services Northeast, Inc. One Liberty Plaza 165 Broadway, Suite 3201 New York, NY 10006	NAMED INSURED International Business Machines Corp., including Merge Healthcare Incorporated, Red Hat, Inc., and any other Subsidiary Corp Owned or Controlled by the Insured One New Orchard Road Armonk, NY 10504 United States
	EFFECTIVE DATE: Various (see prior page)

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: 25 FORM TITLE: Certificate of Liability Insurance

EMPLOYERS LIABILITY/WORKERS COMP POLICIES

Policy Number	Eff. Date	Exp. Date	Company Affording Coverage
WA7-62D-004158-939 (MA)	1/1/2019	1/1/2020	Liberty Insurance Corporation (42404)
EL7-621-004158-929 (Puerto Rico)	1/1/2019	1/1/2020	Liberty Insurance Corporation (42404)
WC5-621-004158-159 (MN,WI)	1/1/2019	1/1/2020	LM Insurance Corporation (33600)
EW5-62N-004158-699 (Excess OH)	1/1/2019	1/1/2020	LM Insurance Corporation (33600)
WA5-62D-004158-449 (AOS) **	1/1/2019	1/1/2020	LM Insurance Corporation (33600)
83-181343 (Guam)	1/1/2019	1/1/2020	National Union Fire Insurance Company of Pittsburgh, PA (19445)
EL6-621-004158-849 (VI)	1/1/2019	1/1/2020	The First Liberty Insurance Corporation (33588)

Cook County is hereby listed as an additional insured on the Commercial General Liability Insurance Policy issued in the USA but only to the extent the interests may appear.

Cook County is hereby listed as an additional insured on the Automobile Liability Insurance Policy issued in the USA but only to the extent the interests may appear.

Waiver of Subrogation is applicable to the Commercial General Liability and Automobile Liability policy listed above.

With respect to Voluntary Compensation and Contingent Employers Liability:

All operations incidental to the conduct of Named Insured's business in the United States of America.

Employer's Liability Additional Wording: The waiver of subrogation does not apply to gross negligence in favor of the County, provided, however, that waiver of subrogation does not apply in instances of gross negligence on the part of the customer, where gross negligence is defined to mean carelessness that is reckless disregard for the safety of others. Waiver of Subrogation is applicable to the Employers' Liability policies listed above.

If there is a question regarding this certificate please contact Brendan Heneghan
(Email: brendan@us.ibm.com Phone:)

**COOK COUNTY
ECONOMIC DISCLOSURE STATEMENT
AND EXECUTION DOCUMENT
INDEX**

Section	Description	Pages
1	Instructions for Completion of EDS	EDS i - ii
2	Certifications	EDS 1-2
3	Economic and Other Disclosures, Affidavit of Child Support Obligations, Disclosure of Ownership Interest and Familial Relationship Disclosure Form	EDS 3 – 12
4	Cook County Affidavit for Wage Theft Ordinance	EDS 13-14
5	Contract and EDS Execution Page	EDS 15
6	Cook County Signature Page	EDS 16

SECTION 1
INSTRUCTIONS FOR COMPLETION OF
ECONOMIC DISCLOSURE STATEMENT AND EXECUTION DOCUMENT

This Economic Disclosure Statement and Execution Document ("EDS") is to be completed and executed by every Bidder on a County contract, every Proposer responding to a Request for Proposals, and every Respondent responding to a Request for Qualifications, and others as required by the Chief Procurement Officer. The execution of the EDS shall serve as the execution of a contract awarded by the County. The Chief Procurement Officer reserves the right to request that the Bidder or Proposer, or Respondent provide an updated EDS on an annual basis.

Definitions. Terms used in this EDS and not otherwise defined herein shall have the meanings given to such terms in the Instructions to Bidders, General Conditions, Request for Proposals, Request for Qualifications, as applicable.

Affiliate means a person that directly or indirectly through one or more intermediaries, Controls is Controlled by, or is under common Control with the Person specified.

Applicant means a person who executes this EDS.

Bidder means any person who submits a Bid.

Code means the Code of Ordinances, Cook County, Illinois available on municode.com.

Contract shall include any written document to make Procurements by or on behalf of Cook County.

Contractor or *Contracting Party* means a person that enters into a Contract with the County.

Control means the unfettered authority to directly or indirectly manage governance, administration, work, and all other aspects of a business.

EDS means this complete Economic Disclosure Statement and Execution Document, including all sections listed in the Index and any attachments.

Joint Venture means an association of two or more Persons proposing to perform a for-profit business enterprise. Joint Ventures must have an agreement in writing specifying the terms and conditions of the relationship between the partners and their relationship and respective responsibility for the Contract

Lobby or *lobbying* means to, for compensation, attempt to influence a County official or County employee with respect to any County matter.

Lobbyist means any person who lobbies.

Person or *Persons* means any individual, corporation, partnership, Joint Venture, trust, association, Limited Liability Company, sole proprietorship or other legal entity.

Prohibited Acts means any of the actions or occurrences which form the basis for disqualification under the Code, or under the Certifications hereinafter set forth.

Proposal means a response to an RFP.

Proposer means a person submitting a Proposal.

Response means response to an RFQ.

Respondent means a person responding to an RFQ.

RFP means a Request for Proposals issued pursuant to this Procurement Code.

RFQ means a Request for Qualifications issued to obtain the qualifications of interested parties.

INSTRUCTIONS FOR COMPLETION OF
ECONOMIC DISCLOSURE STATEMENT AND EXECUTION DOCUMENT

Section 1: Instructions. Section 1 sets forth the instructions for completing and executing this EDS.

Section 2: Certifications. Section 2 sets forth certifications that are required for contracting parties under the Code and other applicable laws. Execution of this EDS constitutes a warranty that all the statements and certifications contained, and all the facts stated, in the Certifications are true, correct and complete as of the date of execution.

Section 3: Economic and Other Disclosures Statement. Section 3 is the County's required Economic and Other Disclosures Statement form. Execution of this EDS constitutes a warranty that all the information provided in the EDS is true, correct and complete as of the date of execution, and binds the Applicant to the warranties, representations, agreements and acknowledgements contained therein.

Required Updates. The Applicant is required to keep all information provided in this EDS current and accurate. In the event of any change in the information provided, including but not limited to any change which would render inaccurate or incomplete any certification or statement made in this EDS, the Applicant shall supplement this EDS up to the time the County takes action, by filing an amended EDS or such other documentation as is required.

Additional Information. The County's Governmental Ethics and Campaign Financing Ordinances impose certain duties and obligations on persons or entities seeking County contracts, work, business, or transactions, and the Applicant is expected to comply fully with these ordinances. For further information please contact the Director of Ethics at (312) 603-4304 (69 W. Washington St. Suite 3040, Chicago, IL 60602) or visit the web-site at cookcountyil.gov/ethics-board-of.

Authorized Signers of Contract and EDS Execution Page. If the Applicant is a corporation, the President and Secretary must execute the EDS. In the event that this EDS is executed by someone other than the President, attach hereto a certified copy of that section of the Corporate By-Laws or other authorization by the Corporation, satisfactory to the County that permits the person to execute EDS for said corporation. If the corporation is not registered in the State of Illinois, a copy of the Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.

If the Applicant is a partnership or joint venture, all partners or joint venturers must execute the EDS, unless one partner or joint venture has been authorized to sign for the partnership or joint venture, in which case, the partnership agreement, resolution or evidence of such authority satisfactory to the Office of the Chief Procurement Officer must be submitted with this Signature Page.

If the Applicant is a member-managed LLC all members must execute the EDS, unless otherwise provided in the operating agreement, resolution or other corporate documents. If the Applicant is a manager-managed LLC, the manager(s) must execute the EDS. The Applicant must attach either a certified copy of the operating agreement, resolution or other authorization, satisfactory to the County, demonstrating such person has the authority to execute the EDS on behalf of the LLC. If the LLC is not registered in the State of Illinois, a copy of a current Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.

If the Applicant is a Sole Proprietorship, the sole proprietor must execute the EDS.

A "Partnership" "Joint Venture" or "Sole Proprietorship" operating under an Assumed Name must be registered with the Illinois county in which it is located, as provided in 805 ILCS 405 (2012), and documentation evidencing registration must be submitted with the EDS.

Effective October 1, 2016 all foreign corporations and LLCs must be registered with the Illinois Secretary of State's Office unless a statutory exemption applies to the applicant. Applicants who are exempt from registering must provide a written statement explaining why they are exempt from registering as a foreign entity with the Illinois Secretary of State's Office.

SECTION 2

CERTIFICATIONS

THE FOLLOWING CERTIFICATIONS ARE MADE PURSUANT TO STATE LAW AND THE CODE. THE APPLICANT IS CAUTIONED TO CAREFULLY READ THESE CERTIFICATIONS PRIOR TO SIGNING THE SIGNATURE PAGE. SIGNING THE SIGNATURE PAGE SHALL CONSTITUTE A WARRANTY BY THE APPLICANT THAT ALL THE STATEMENTS, CERTIFICATIONS AND INFORMATION SET FORTH WITHIN THESE CERTIFICATIONS ARE TRUE, COMPLETE AND CORRECT AS OF THE DATE THE SIGNATURE PAGE IS SIGNED. THE APPLICANT IS NOTIFIED THAT IF THE COUNTY LEARNS THAT ANY OF THE FOLLOWING CERTIFICATIONS WERE FALSELY MADE, THAT ANY CONTRACT ENTERED INTO WITH THE APPLICANT SHALL BE SUBJECT TO TERMINATION.

A. PERSONS AND ENTITIES SUBJECT TO DISQUALIFICATION

No person or business entity shall be awarded a contract or sub-contract, for a period of five (5) years from the date of conviction or entry of a plea or admission of guilt, civil or criminal, if that person or business entity:

- 1) Has been convicted of an act committed, within the State of Illinois, of bribery or attempting to bribe an officer or employee of a unit of state, federal or local government or school district in the State of Illinois in that officer's or employee's official capacity;
- 2) Has been convicted by federal, state or local government of an act of bid-rigging or attempting to rig bids as defined in the Sherman Anti-Trust Act and Clayton Act. 15 U.S.C. Section 1 *et seq.*;
- 3) Has been convicted of bid-rigging or attempting to rig bids under the laws of federal, state or local government;
- 4) Has been convicted of an act committed, within the State, of price-fixing or attempting to fix prices as defined by the Sherman Anti-Trust Act and the Clayton Act. 15 U.S.C. Section 1, *et seq.*;
- 5) Has been convicted of price-fixing or attempting to fix prices under the laws the State;
- 6) Has been convicted of defrauding or attempting to defraud any unit of state or local government or school district within the State of Illinois;
- 7) Has made an admission of guilt of such conduct as set forth in subsections (1) through (6) above which admission is a matter of record, whether or not such person or business entity was subject to prosecution for the offense or offenses admitted to; or
- 8) Has entered a plea of *nolo contendere* to charge of bribery, price-fixing, bid-rigging, or fraud, as set forth in sub-paragraphs (1) through (6) above.

In the case of bribery or attempting to bribe, a business entity may not be awarded a contract if an official, agent or employee of such business entity committed the Prohibited Act on behalf of the business entity and pursuant to the direction or authorization of an officer, director or other responsible official of the business entity, and such Prohibited Act occurred within three years prior to the award of the contract. In addition, a business entity shall be disqualified if an owner, partner or shareholder controlling, directly or indirectly, 20% or more of the business entity, or an officer of the business entity has performed any Prohibited Act within five years prior to the award of the Contract.

THE APPLICANT HEREBY CERTIFIES THAT: The Applicant has read the provisions of Section A, Persons and Entities Subject to Disqualification, that the Applicant has not committed any Prohibited Act set forth in Section A, and that award of the Contract to the Applicant would not violate the provisions of such Section or of the Code.

B. BID-RIGGING OR BID ROTATING

THE APPLICANT HEREBY CERTIFIES THAT: *In accordance with 720 ILCS 5/33 E-11, neither the Applicant nor any Affiliated Entity is barred from award of this Contract as a result of a conviction for the violation of State laws prohibiting bid-rigging or bid rotating.*

C. DRUG FREE WORKPLACE ACT

THE APPLICANT HEREBY CERTIFIES THAT: The Applicant will provide a drug free workplace, as required by (30 ILCS 580/3).

D. DELINQUENCY IN PAYMENT OF TAXES

THE APPLICANT HEREBY CERTIFIES THAT: The Applicant is not an owner or a party responsible for the payment of any tax or fee administered by Cook County, such as bar award of a contract or subcontract pursuant to the Code, Chapter 34, Section 34-171.

E. HUMAN RIGHTS ORDINANCE

No person who is a party to a contract with Cook County ("County") shall engage in unlawful discrimination or sexual harassment against any individual in the terms or conditions of employment, credit, public accommodations, housing, or provision of County facilities, services or programs (Code Chapter 42, Section 42-30 *et seq.*).

F. ILLINOIS HUMAN RIGHTS ACT

THE APPLICANT HEREBY CERTIFIES THAT: It is in compliance with the Illinois Human Rights Act (775 ILCS 5/2-105), and agrees to abide by the requirements of the Act as part of its contractual obligations.

G. INSPECTOR GENERAL (COOK COUNTY CODE, CHAPTER 34, SECTION 34-174 and Section 34-250)

The Applicant has not willfully failed to cooperate in an investigation by the Cook County Independent Inspector General or to report to the Independent Inspector General any and all information concerning conduct which they know to involve corruption, or other criminal activity, by another county employee or official, which concerns his or her office of employment or County related transaction.

The Applicant has reported directly and without any undue delay any suspected or known fraudulent activity in the County's Procurement process to the Office of the Cook County Inspector General.

H. CAMPAIGN CONTRIBUTIONS (COOK COUNTY CODE, CHAPTER 2, SECTION 2-585)

THE APPLICANT CERTIFIES THAT: It has read and shall comply with the Cook County's Ordinance concerning campaign contributions, which is codified at Chapter 2, Division 2, Subdivision II, Section 585, and can be read in its entirety at www.municode.com.

I. GIFT BAN, (COOK COUNTY CODE, CHAPTER 2, SECTION 2-574)

THE APPLICANT CERTIFIES THAT: It has read and shall comply with the Cook County's Ordinance concerning receiving and soliciting gifts and favors, which is codified at Chapter 2, Division 2, Subdivision II, Section 574, and can be read in its entirety at www.municode.com.

J. LIVING WAGE ORDINANCE PREFERENCE (COOK COUNTY CODE, CHAPTER 34, SECTION 34-160)

Unless expressly waived by the Cook County Board of Commissioners, the Code requires that a living wage must be paid to individuals employed by a Contractor which has a County Contract and by all subcontractors of such Contractor under a County Contract, throughout the duration of such County Contract. The amount of such living wage is annually by the Chief Financial Officer of the County, and shall be posted on the Chief Procurement Officer's website.

The term "Contract" as used in Section 4, I, of this EDS, specifically excludes contracts with the following:

- 1) Not-For Profit Organizations (defined as a corporation having tax exempt status under Section 501(C)(3) of the United State Internal Revenue Code and recognized under the Illinois State not-for -profit law);
- 2) Community Development Block Grants;
- 3) Cook County Works Department;
- 4) Sheriff's Work Alternative Program; and
- 5) Department of Correction inmates.

SECTION 3

REQUIRED DISCLOSURES

1. DISCLOSURE OF LOBBYIST CONTACTS

List all persons that have made lobbying contacts on your behalf with respect to this contract:

Name _____ Address _____

No lobbyist was involved in this pursuit.

2. LOCAL BUSINESS PREFERENCE STATEMENT (CODE, CHAPTER 34, SECTION 34-230)

Local business means a Person, including a foreign corporation authorized to transact business in Illinois, having a bona fide establishment located within the County at which it is transacting business on the date when a Bid is submitted to the County, and which employs the majority of its regular, full-time work force within the County. A Joint Venture shall constitute a Local Business if one or more Persons that qualify as a "Local Business" hold interests totaling over 50 percent in the Joint Venture, even if the Joint Venture does not, at the time of the Bid submittal, have such a bona fide establishment within the County.

a) Is Applicant a "Local Business" as defined above?

Yes: No:

b) If yes, list business addresses within Cook County:

N/A

c) Does Applicant employ the majority of its regular full-time workforce within Cook County?

Yes: No:

3. THE CHILD SUPPORT ENFORCEMENT ORDINANCE (CODE, CHAPTER 34, SECTION 34-172)

Every Applicant for a County Privilege shall be in full compliance with any child support order before such Applicant is entitled to receive or renew a County Privilege. When delinquent child support exists, the County shall not issue or renew any County Privilege, and may revoke any County Privilege.

All Applicants are required to review the Cook County Affidavit of Child Support Obligations attached to this EDS (EDS-5) and complete the Affidavit, based on the instructions in the Affidavit.

4. REAL ESTATE OWNERSHIP DISCLOSURES.

The Applicant must indicate by checking the appropriate provision below and providing all required information that either:

a) The following is a complete list of all real estate owned by the Applicant in Cook County:

PERMANENT INDEX NUMBER(S): _____

(ATTACH SHEET IF NECESSARY TO LIST ADDITIONAL INDEX NUMBERS)

OR:

b) The Applicant owns no real estate in Cook County.

IBM does not own any real estate in Cook County. However, IBM leases the following locations:
•71 S. Wacker Drive, Chicago
•200 W. Madison St., Chicago
•33 W. Monroe Street, Chicago
•20 N. Wacker Drive, Chicago
•1131A W. 175th St., Homewood
•10 N. Martingale Road, Schaumburg

5. EXCEPTIONS TO CERTIFICATIONS OR DISCLOSURES.

If the Applicant is unable to certify to any of the Certifications or any other statements contained in this EDS and not explained elsewhere in this EDS, the Applicant must explain below:

N/A

If the letters, "NA", the word "None" or "No Response" appears above, or if the space is left blank, it will be conclusively presumed that the Applicant certified to all Certifications and other statements contained in this EDS.

COOK COUNTY DISCLOSURE OF OWNERSHIP INTEREST STATEMENT

The Cook County Code of Ordinances (§2-610 *et seq.*) requires that any Applicant for any County Action must disclose information concerning ownership interests in the Applicant. This Disclosure of Ownership Interest Statement must be completed with all information current as of the date this Statement is signed. Furthermore, this Statement must be kept current, by filing an amended Statement, until such time as the County Board or County Agency shall take action on the application. The information contained in this Statement will be maintained in a database and made available for public viewing. **County reserves the right to request additional information to verify veracity of information contained in this statement.**

If you are asked to list names, but there are no applicable names to list, you must state NONE. An incomplete Statement will be returned and any action regarding this contract will be delayed. A failure to fully comply with the ordinance may result in the action taken by the County Board or County Agency being voided.

"*Applicant*" means any Entity or person making an application to the County for any County Action.

"*County Action*" means any action by a County Agency, a County Department, or the County Board regarding an ordinance or ordinance amendment, a County Board approval, or other County agency approval, with respect to contracts, leases, or sale or purchase of real estate.

"*Person*" "*Entity*" or "*Legal Entity*" means a sole proprietorship, corporation, partnership, association, business trust, estate, two or more persons having a joint or common interest, trustee of a land trust, other commercial or legal entity or any beneficiary or beneficiaries thereof.

This Disclosure of Ownership Interest Statement must be submitted by :

1. An Applicant for County Action and
2. A Person that holds stock or a beneficial interest in the Applicant and is listed on the Applicant's Statement (a "Holder") must file a Statement and complete #1 only under **Ownership Interest Declaration**.

Please print or type responses clearly and legibly. Add additional pages if needed, being careful to identify each portion of the form to which each additional page refers.

This Statement is being made by the Applicant or Stock/Beneficial Interest Holder

This Statement is an: Original Statement or Amended Statement

Identifying Information:

Name IBM Corporation

D/B/A: _____ FEIN # Only: 13-0871985

Street Address: 71 South Wacker Drive

City: Chicago State: IL Zip Code: 60606

Phone No.: 952-250-9970 Fax Number: N/A Email: jlnorthe@us.ibm.com

Cook County Business Registration Number: _____
(Sole Proprietor, Joint Venture Partnership)

Corporate File Number (if applicable): _____

Form of Legal Entity:

Sole Proprietor Partnership Corporation Trustee of Land Trust

Business Trust Estate Association Joint Venture

Other (describe) _____

Ownership Interest Declaration:

1. List the name(s), address, and percent ownership of each Person having a legal or beneficial interest (including ownership) of more than five percent (5%) in the Applicant/Holder.

Name	Address	Percentage Interest in Applicant/Holder
Vanguard Group	100, Vanguard Blvd., Malvern, PA	18.11%
Blackrock Inc	1 55 East 52nd Street, NY, NY	16.83%
State Street Corp	1 1 Lincoln St. Boston, MA	16.06%

IBM had requested for Ownership Interest Statements for these companies, attempts to obtain them from a large public company, like IBM, were unsuccessful.

2. If the interest of any Person listed in (1) above is held as an agent or agents, or a nominee or nominees, list the name and address of the principal on whose behalf the interest is held.

Name of Agent/Nominee	Name of Principal	Principal's Address
N/A		

3. Is the Applicant constructively controlled by another person or Legal Entity? [] Yes [] No

If yes, state the name, address and percentage of beneficial interest of such person, and the relationship under which such control is being or may be exercised.

Name	Address	Percentage of Beneficial Interest	Relationship

Corporate Officers, Members and Partners Information:

For all corporations, list the names, addresses, and terms for all corporate officers. For all limited liability companies, list the names, addresses for all members. For all partnerships and joint ventures, list the names, addresses, for each partner or joint venture.

Name	Address	Title (specify title of Office, or whether manager or partner/joint venture)	Term of Office
Virginia Rometty	Chairman, President & CEO		
Michelle H. Browdy	Sr. VP Legal & Regulatory Affairs and General Counsel		
Mark Foster	Sr VP IBM Services & GBS		

Declaration (check the applicable box):

I state under oath that the Applicant has withheld no disclosure as to ownership interest in the Applicant nor reserved any information, data or plan as to the intended use or purpose for which the Applicant seeks County Board or other County Agency action.

I state under oath that the Holder has withheld no disclosure as to ownership interest nor reserved any information required to be disclosed.

COOK COUNTY DISCLOSURE OF OWNERSHIP INTEREST STATEMENT SIGNATURE PAGE

James L. Northern, II

Name of Authorized Applicant/Holder Representative (please print or type)

James L. Northern, II

Signature

northeastus.ibm.com

E-mail address

Subscribed to and sworn before me
this 26 day of Sept 19X

Notary Public Signature

CLIENT MANAGER

Title

Sep 26, 2019

Date

(952) 250-9970

Phone Number

My commission expires: 11-16-2019**"OFFICIAL SEAL"**

Notary S. Shah

NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 11/16/2019



COOK COUNTY BOARD OF ETHICS
69 W. WASHINGTON STREET, SUITE 3040
CHICAGO, ILLINOIS 60602
312/603-4304 Office 312/603-9988 Fax

FAMILIAL RELATIONSHIP DISCLOSURE PROVISION

Nepotism Disclosure Requirement:

Doing a significant amount of business with the County requires that you disclose to the Board of Ethics the existence of any familial relationships with any County employee or any person holding elective office in the State of Illinois, the County, or in any municipality within the County. The Ethics Ordinance defines a significant amount of business for the purpose of this disclosure requirement as more than \$25,000 in aggregate County leases, contracts, purchases or sales in any calendar year.

If you are unsure of whether the business you do with the County or a County agency will cross this threshold, err on the side of caution by completing the attached familial disclosure form because, among other potential penalties, any person found guilty of failing to make a required disclosure or knowingly filing a false, misleading, or incomplete disclosure will be prohibited from doing any business with the County for a period of three years. The required disclosure should be filed with the Board of Ethics by January 1 of each calendar year in which you are doing business with the County and again with each bid/proposal/quotations to do business with Cook County. The Board of Ethics may assess a late filing fee of \$100 per day after an initial 30-day grace period.

The person that is doing business with the County must disclose his or her familial relationships. If the person on the County lease or contract or purchasing from or selling to the County is a business entity, then the business entity must disclose the familial relationships of the individuals who are and, during the year prior to doing business with the County, were:

- its board of directors,
- its officers,
- its employees or independent contractors responsible for the general administration of the entity,
- its agents authorized to execute documents on behalf of the entity, and
- its employees who directly engage or engaged in doing work with the County on behalf of the entity.

Do not hesitate to contact the Board of Ethics at (312) 603-4304 for assistance in determining the scope of any required familial relationship disclosure.

Additional Definitions:

"Familial relationship" means a person who is a spouse, domestic partner or civil union partner of a County employee or State, County or municipal official, or any person who is related to such an employee or official, whether by blood, marriage or adoption, as a:

Parent
 Child
 Brother
 Sister
 Aunt
 Uncle
 Niece
 Nephew

Grandparent
 Grandchild
 Father-in-law
 Mother-in-law
 Son-in-law
 Daughter-in-law
 Brother-in-law
 Sister-in-law

Stepfather
 Stepmother
 Stepson
 Stepdaughter
 Stepbrother
 Stepsister
 Halfbrother
 Halfsister

COOK COUNTY BOARD OF ETHICS
FAMILIAL RELATIONSHIP DISCLOSURE FORM

A. PERSON DOING OR SEEKING TO DO BUSINESS WITH THE COUNTY

Name of Person Doing Business with the County: IBM Corporation - James Northern

Address of Person Doing Business with the County: 71 S. Wacker Street, Chicago, IL

Phone number of Person Doing Business with the County: 952-250-9970

Email address of Person Doing Business with the County: jlnorthe@us.ibm.com

If Person Doing Business with the County is a Business Entity, provide the name, title and contact information for the individual completing this disclosure on behalf of the Person Doing Business with the County:

James Northern, 71 S. Wacker Street, Chicago, IL, Phone - 952-250-9970

B. DESCRIPTION OF BUSINESS WITH THE COUNTY

Append additional pages as needed and for each County lease, contract, purchase or sale sought and/or obtained during the calendar year of this disclosure (or the proceeding calendar year if disclosure is made on January 1), identify:

The lease number, contract number, purchase order number, request for proposal number and/or request for qualification number associated with the business you are doing or seeking to do with the County: _____

RFP 1418-14268_ERP_SI

The aggregate dollar value of the business you are doing or seeking to do with the County: \$ 121,018,122.10

The name, title and contact information for the County official(s) or employee(s) involved in negotiating the business you are doing or seeking to do with the County: Richard Sanchez - Procurement

The name, title and contact information for the County official(s) or employee(s) involved in managing the business you are doing or seeking to do with the County: Derrick D Thomas, Deputy CIO, BoT

C. DISCLOSURE OF FAMILIAL RELATIONSHIPS WITH COUNTY EMPLOYEES OR STATE, COUNTY OR MUNICIPAL ELECTED OFFICIALS

Check the box that applies and provide related information where needed

- The Person Doing Business with the County is an individual and there is no familial relationship between this individual and any Cook County employee or any person holding elective office in the State of Illinois, Cook County, or any municipality within Cook County.
- The Person Doing Business with the County is a business entity and there is no familial relationship between any member of this business entity's board of directors, officers, persons responsible for general administration of the business entity, agents authorized to execute documents on behalf of the business entity or employees directly engaged in contractual work with the County on behalf of the business entity, and any Cook County employee or any person holding elective office in the State of Illinois, Cook County, or any municipality within Cook County.

COOK COUNTY BOARD OF ETHICS
FAMILIAL RELATIONSHIP DISCLOSURE FORM

□ The Person Doing Business with the County is an individual and there is a familial relationship between this individual and at least one Cook County employee and/or a person or persons holding elective office in the State of Illinois, Cook County, and/or any municipality within Cook County. The familial relationships are as follows:

Name of Individual Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
---	--	--	----------------------------------

NA

If more space is needed, attach an additional sheet following the above format.

The Person Doing Business with the County is a business entity and there is a familial relationship between at least one member of this business entity's board of directors, officers, persons responsible for general administration of the business entity, agents authorized to execute documents on behalf of the business entity and/or employees directly engaged in contractual work with the County on behalf of the business entity, on the one hand, and at least one Cook County employee and/or a person holding elective office in the State of Illinois, Cook County, and/or any municipality within Cook County, on the other. The familial relationships are as follows:

Name of Member of Board of Director for Business Entity Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship *
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Name of Officer for Business Entity Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
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Name of Person Responsible for the General Administration of the Business Entity Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
Name of Agent Authorized to Execute Documents for Business Entity Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
Name of Employee of Business Entity Directly Engaged in Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*

If more space is needed, attach an additional sheet following the above format.

VERIFICATION: To the best of my knowledge, the information I have provided on this disclosure form is accurate and complete. I acknowledge that an inaccurate or incomplete disclosure is punishable by law, including but not limited to fines and debarment.

Signature of Recipient

Date

10/11/2019

SUBMIT COMPLETED FORM TO:

Cook County Board of Ethics
 69 West Washington Street, Suite 3040, Chicago, Illinois 60602
 Office (312) 603-4304 – Fax (312) 603-9988
 CookCounty.Ethics@cookcountyl.gov

* Spouse, domestic partner, civil union partner or parent, child, sibling, aunt, uncle, niece, nephew, grandparent or grandchild by blood, marriage (*i.e.* in laws and step relations) or adoption.

SECTION 4

COOK COUNTY AFFIDAVIT FOR WAGE THEFT ORDINANCE

Effective May 1, 2015, every Person, *including Substantial Owners*, seeking a Contract with Cook County must comply with the Cook County Wage Theft Ordinance set forth in Chapter 34, Article IV, Section 179. Any Person/Substantial Owner, who fails to comply with Cook County Wage Theft Ordinance, may request that the Chief Procurement Officer grant a reduction or waiver in accordance with Section 34-179(d).

"Contract" means any written document to make Procurements by or on behalf of Cook County.

"Person" means any individual, corporation, partnership, Joint Venture, trust, association, limited liability company, sole proprietorship or other legal entity.

"Procurement" means obtaining supplies, equipment, goods, or services of any kind.

"Substantial Owner" means any person or persons who own or hold a twenty-five percent (25%) or more percentage of interest in any business entity seeking a County Privilege, including those shareholders, general or limited partners, beneficiaries and principals; except where a business entity is an individual or sole proprietorship, Substantial Owner means that individual or sole proprietor.

All Persons/Substantial Owners are required to complete this affidavit and comply with the Cook County Wage Theft Ordinance before any Contract is awarded. Signature of this form constitutes a certification the information provided below is correct and complete, and that the individual(s) signing this form has/have personal knowledge of such information. County reserves the right to request additional information to verify veracity of information contained in this Affidavit.

I. Contract Information:

Contract Number: 1418 - 14268

County Using Agency (requesting Procurement): _____

II. Person/Substantial Owner Information:

IBM Corporation

Person (Corporate Entity Name): _____

N/A

Substantial Owner Complete Name: _____

13-0871985

FEIN# _____

N/A

Date of Birth: _____

E-mail address: _____

N/A

Street Address: _____

71 S. Wacker

City: _____

Chicago

State: _____

IL

Zip: _____

60606

Home Phone: () _____

N/A

III. Compliance with Wage Laws:

Within the past five years has the Person/Substantial Owner, in any judicial or administrative proceeding, been convicted of, entered a plea, made an admission of guilt or liability, or had an administrative finding made for committing a repeated or willful violation of any of the following laws:

Illinois Wage Payment and Collection Act, 820 ILCS 115/1 et seq., YES or NO NO

Illinois Minimum Wage Act, 820 ILCS 105/1 et seq., YES or NO NO

Illinois Worker Adjustment and Retraining Notification Act, 820 ILCS 65/1 et seq., YES or NO NO

Employee Classification Act, 820 ILCS 185/1 et seq., YES or NO NO

Fair Labor Standards Act of 1938, 29 U.S.C. 201, et seq., YES or NO NO

Any comparable state statute or regulation of any state, which governs the payment of wages YES or NO NO

If the Person/Substantial Owner answered "Yes" to any of the questions above, it is ineligible to enter into a Contract with Cook County, but can request a reduction or waiver under Section IV.

IV. Request for Waiver or Reduction

If Person/Substantial Owner answered "Yes" to any of the questions above, it may request a reduction or waiver in accordance with Section 34-179(d), provided that the request for reduction of waiver is made on the basis of one or more of the following actions that have taken place:

There has been a bona fide change in ownership or Control of the ineligible Person or Substantial Owner
YES or NO No

Disciplinary action has been taken against the individual(s) responsible for the acts giving rise to the violation
YES or NO No

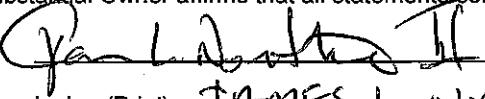
Remedial action has been taken to prevent a recurrence of the acts giving rise to the disqualification or default
YES or NO No

Other factors that the Person or Substantial Owner believe are relevant.
YES or NO No

The Person/Substantial Owner must submit documentation to support the basis of its request for a reduction or waiver. The Chief Procurement Officer reserves the right to make additional inquiries and request additional documentation.

V. Affirmation

The Person/Substantial Owner affirms that all statements contained in the Affidavit are true, accurate and complete.

Signature: 

Date: Sep. 26, 2017

Name of Person signing (Print): JAMES L. NORTHRUP Title: Client Mgr

Subscribed and sworn to before me this 26 day of September, 2019

X

 Notary Public Signature

 Notary Seal

Note: The above information is subject to verification prior to the award of the Contract.



SECTION 5

CONTRACT AND EDS EXECUTION PAGE
PLEASE EXECUTE THREE ORIGINAL PAGES OF EDS

The Applicant hereby certifies and warrants that all of the statements, certifications and representations set forth in this EDS are true, complete and correct; that the Applicant is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Applicant with all the policies and requirements set forth in this EDS; and that all facts and information provided by the Applicant in this EDS are true, complete and correct. The Applicant agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

Execution by Corporation

IBM Corporation

Corporation's Name
 952-250-9970

Telephone

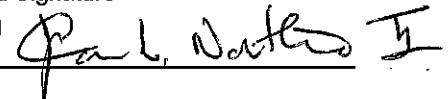
See attached Delegation of Authority letter

Secretary Signature

James Northern, Client Manager, on behalf of Virginia Rometty,
 CEO (per attached Delegation of Authority letter)

President's Printed Name and Signature

jnorthe@us.ibm.com



Email



Date

Execution by LLC

LLC Name

*Member/Manager Printed Name and Signature

Date

Telephone and Email

Execution by Partnership/Joint Venture

Partnership/Joint Venture Name

*Partner/Joint Venturer Printed Name and Signature

Date

Telephone and Email

Execution by Sole Proprietorship

Printed Name Signature

Assumed Name (if applicable)

Date

Telephone and Email

Subscribed and sworn to before me this

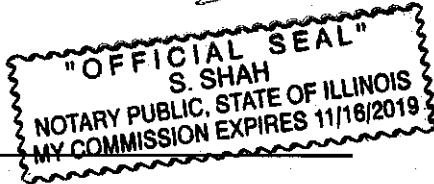
26 day of Sept 20 19

Notary Public Signature

My commission expires:

11.16.2019

Notary Seal



*If the operating agreement, partnership agreement or governing documents requiring execution by multiple members, managers, partners, or joint venturers, please complete and execute additional Contract and EDS Execution Pages.

DELEGATION OF AUTHORITY

I, Scott Ferraiola, Associate General Counsel, IBM Global Markets, North America, do hereby certify that said Vice President, Assistant General Counsel, in accordance with and pursuant to resolutions of the Board of Directors of International Business Machines Corporation ("IBM") duly adopted at a meeting duly held and called on April 25, 1994, and that certain Letter of Authority, dated November 15, 1995, has been duly authorized to execute and deliver in the name of and on behalf of IBM any contract or other document or instrument necessary or appropriate in the ordinary course of IBM's business, including, but not limited, to bid documents for the sale of IBM products and services to federal, state and local governments and agencies, purchase orders and sales agreements, and the like, and to delegate this authorization within the IBM organization in the United States, including Puerto Rico; and that said authorization has not been modified, amended or rescinded and continues in full force and effect. So authorized, I hereby delegate said authority to execute and deliver in the name of and on behalf of IBM any such contract or other document or instrument reasonably related to, or performed in accordance with, the job duties, and/or responsibilities of the persons holding the below listed positions in the IBM organization in the United States, including Puerto Rico:

President
Treasurer
Vice President
General Manager
Partner
Associate Partner

Position titles that include the words:

Attorney
Business Operations Manager
Client Manager
Client Relationship Representative
Client Unit Executive
Contract Administrators
Contracts & Negotiations
Contract Professional
Counsel
Customer Fulfillment Manager
Customer Fulfillment Professional
Director
Executive
Inside Sales Representative
IT Architects
IT Consultants
IT Specialists
Program Manager
Project Manager
RFS Operations Specialist
RFS Portfolio Specialist
Sales Manager
Sales Representative
Sales Specialist
Software Client Leader (SCL)
Service Delivery Executive
Service Delivery Manager
Software Engineer
System Service Representative

IN WITNES WHEREOF, I have hereunto set my hand and affixed the corporate seal of seal of said International Business Machines Corporation

on this 17th day of March, 2017.