PC21 Draft Determination
NI Water Response

Annex 3.2 – Move to Cloud

Version 1.0

1.1 BACKGROUND

1.1.1 Use of the cloud is not primarily innovation or the adoption of cutting edge technology, it is a reflection of the change in the ICT Sector's delivery of services. The ICT sector has seen a paradigm shift driven by suppliers to cloud based services. This cloud based provision has resulted in a clear reduction in provision / development for on premise solutions.

1.1.2 It should be noted that 'Cloud' is merely the delivery mechanism by which the ICT Directorate aims to provide ICT services to NI Water stakeholders, both internally and externally. The method of ICT delivery, whether 'cloud' or on premise, should not detract from the requirement for those ICT services.

1.1.3 In this regard, NI Water is cognisant that 'Cloud' services are primarily OPEX based rather than CAPEX.

1.1.4 There has been no new 'On premises' applications deployed recently, they have all been cloud based applications, which Section 1.3 demonstrates.

1.1.5 **Note: All costs quoted in this annex are in current year prices**.

1.2 OUR APPROACH

- Identify business applications already renewed or newly purchased since 2018/19 (Section 1.3).

- Evaluated all remaining larger Business applications for their potential transition to Cloud computing. (Section 1.4). We evaluated the vendor application roadmap and provided an estimated forecast from contract renewal until the end of the PC21 period (both implementation and subscription costs)

- For applications which do not have a cloud based road map – we evaluated a transition to a PaaS, such as Microsoft Azure or Amazon Web Services (Section 1.6).

- Provided a Year by Year Summary for Opex costs for the PC21 period, for both Subscription and Implementation (Section 1.7)

1.3 APPLICATIONS WHICH HAVE ALREADY TRANSITIONED TO CLOUD SINCE 2018/19.

1.3.1 The applications listed in the table below have been either been new applications for NI Water, or they have been transformed from 'On premises' to Cloud solutions at contract renewal. In times gone by these renewals would have attracted Capital Expenditure on upgrading 'on premise' software, purchasing of Perpetual Licensing and implementation costs. However with the transition to 'Cloud' these costs are now landing as Operational Expenditure on Subscription models and implementation.

1.3.2 Some of the 'Contract Renewal' applications had an existing Support & Maintenance fee, which was factored into the baseline 18/19 costs. Only the additional costs for migration to a Cloud SaaS solution are included in the table 1 below.

Table 1 – additional opex costs for applications moved to SaaS since 2018/19

Application	Function	Cloud / On Premises Type	Additional Costs per Annum for Cloud Solutions	New / Renewal	Year
Internal Audit Case Mgt	Internal Audit	SaaS	■	New Application	20/21
Making Tax Digital	Tax	SaaS	■	New Application	20/21
Clear Review	Performance Management	SaaS	■	New Application	19/20
Health and Safety	H&S monitoring	SaaS	■	New Application	19/20
Decision Time	Risk Software	SaaS	■	Replacement System	20/21
Atamis	Commercial Contract Mgt	SaaS	■	New Application	20/21
MS Dynamics	Digital Workflow Platform	SaaS	■	New Application	20/21
MS Teams	Unified Comms & Collaboration	SaaS	■	New Application	19/20
MS Power BI	Corporate Reporting	SaaS	■	New Application	19/20
Temetra	Meter reading	SaaS	■	Contract Renewal	19/20
Lone Worker	Lone Working Monitoring	SaaS	■	Contract Renewal	19/20
Symology (NISRANS)	Streets Works Register	SaaS	■	Contract Renewal	19/20
CSOLS Remote Sampler	Labs	SaaS	■	Contract renewal	19/20
Yearly Total			■	**Per annum**	
PC21 Total			■	**6 Years**	

1.4 APPLICATION CLOUD ROADMAP (A Transition to Software as a Service)

1.4.1 The following business applications are listed on the ICT roadmap for upgrades / renewals across the PC21 period. It is envisaged that these business applications will shift to a 'Software as a Service' cloud based solution.

1.4.2 For Cloud based implementations, we are assuming that customisations and integration setups can be capitalised. The remaining element of implementation costs are treated as Opex.

Table 2 – Summary of future transitions to SaaS.

App. Name	Function	Change date	Implement Costs	Annual Cost	Notes
Rapid	Customer Relationship Management (CRM) and Customer Billing	2023/24	■	■	Rapid have announced the retirement of this solution and will be proposing their new Cloud based application (Aptamo), based on Sales Force Technology. Echo has provided estimated costs of ■ per month for their basic offering. It is envisaged that additional functionality will be required, therefore an additional ■ has been included to the monthly fees.
Ellipse	Mobile Work Management	2024/5	■	■	Ellipse are already selling and promoting their cloud based application.
Oracle	Financial Management	2021/22	■	■	See section 1.5
Clear SCADA	Telemetry	2025/26	■	■	The vendor has a cloud based offering and it is envisaged that this will be pushed late in the PC21 period.
Connect 2	Plumbing Regulations	2021/22	■	■	ICT have already confirmed that this will be moving to a cloud based application in Q1 2021.
LIMS	Labs Management	2023/24	■	■	The Supplier of the Laboratory Information System already developed a cloud based version on the market. It is envisaged that we will be transitioned to this version in the 2nd half of PC21
ARC Corporate GIS	Corporate GIS	2024/25	■	■	This is partially cloud based already. The Supplier of this application has a cloud based offering and the business application owner sees benefit in moving this to a cloud based offering
Oracle Spatial	Oracle Spatial	2024/25	■	■	The Supplier of this application has a cloud based offering and the business application sees benefit in moving this to a cloud based offering
Service Manager	Service Desk Tool Set	2021/22	■	■	A new Service Desk tool will be implemented in April 2021 and ICT will be mandating a cloud based solution.
E-mail & Office	Change to O365	2021/22	■	■	In 2021, ICT will be shifting Microsoft Office & E-mail applications to Office365 (cloud based, hosted at Microsoft)

MDM	Mobile Device Management	2021/22	████	████	In 2021, ICT will be shifting from the existing Service Manager toolset to a new solution, which is expected to be Cloud Based

1.5 ORACLE ERP UPGRADE

1.5.1 NI Water's business case to migrate to Oracle Cloud has been rejected by the department, solely on the basis that we do not have justification for an Oracle Direct Award Contract as required under section 50 of the Utility Contract Regulations.

1.5.2 In the interim NI Water are progressing the upgrade to its current Oracle on premise platform and this will be completed in 2020/21. This upgrade is to ensure stability and support from Oracle as we progress a procurement programme to put a new ERP & HR contract in place for after the current Oracle contract end date, of Dec-22. This procurement programme will be progressed through open tender and all software and vendor options available will be reviewed and considered with support from this client side partner. NI Water still believe that this procurement programme will lead to a Cloud SaaS contract for the following reasons:

- NI Water have implemented about 14 Cloud SaaS products since 2018. These have been driven by open tenders or renewals and the fact that suppliers are mainly offering Cloud platforms. Details of these have been provided above.

- It is evident when you look at the major suppliers of ERP on premise platforms that they are migrating to Cloud products. Looking at our current Oracle supplier and SAP another major on premise ERP supplier they are only committing to 2031 and 2027 respectively for their current platforms. Their future products and roadmaps are all focused on Cloud technology[1].

- All new ERP products are Cloud based platforms. Examples of these are Microsoft Dynamics, Netsuite, Workday and Infor.

- NI Water did some market engagement and looked at 2 HCM software providers. Workday and MHR iTrent. Workday was solely a Cloud product offering. MHR iTrent were focusing any sales to their cloud products. They stated that this was the focus of the company and that they would be phasing out all on premise platforms.

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[1] Oracle - http://www.oracle.com/us/products/applications/ebs-suite-12-2-announcement-5172019.pdf. SAP - https://www.sap.com/uk/products/enterprise-management-erp.htm

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1.5.3   NI Water have derived their estimated costs for a Cloud ERP implementation and contract, from various sources and have categorised these into 1. Implementation and 2. Cloud Subscriptions.

Implementation

1.5.4   We have based our cost estimates on quotes received by NI Water and benchmarking comparison of other similar ERP cloud implementations:

Quotations received:

- NI Water received a formal proposal from Oracle Consulting for £3.2m

- NI Water received a formal proposal from Fujitsu Services for £2m

Benchmarking against other similar implementations

1.5.5   The below is a sample table of other public sector UK bodies who have implemented similar ERP Cloud platforms since 2018. The difference to these implementations are that they do not include the major operational 'Enterprise Asset Management' module that NI Water have in place to deliver Asset Costing. For this reason we might expect NI Water implementation costs to be greater.

Table 3 – Other comparable implementations

Public Body	Business Case Date	Cost	URL
████	Dec-18	██	████████████
████	Mar-19	██	████████████
████	Oct-20	██	████████████
████	Oct-19	██	████████████
████	Dec-19	██	████████████

1.5.6   Based on the above, we believe a reasonable estimate of implementation costs to be £2m. Based on current capitalisation guidance we have assumed 50% of these implementation costs can be capitalised. The remaining 50%, or £1m, we be treated opex.

Cloud Subscriptions

1.5.7 Oracle e-Business Suite[2] on-premises licence support current cost ████ per annum. These on premises licences have been built up from 1996 when NI Water first introduced Oracle e-business suite. NI Water have been able to negotiate good discounts on these purchases over this period and because of this, licence support costs have remained relatively low. To purchase these licences at today's retail prices would cost a lot more without the discounts applied.

Basis of subscription cost estimate.

- ██████████████ price list -
  ██████████████████████████████████████

- NI Water have received a formal quotation from ████ for HR cloud subscriptions to the region of ████ pa.

- ██████████████████████ subscriptions would equate to ████ pa at retail price and with 70% discounts would equate to ████ ██████████████████████████████

- NI Water had also received an informal quotation from ████ for HR cloud subscriptions to the region of ████ pa.

- NI Water have received an informal quotation from ████ in regard to Finance, Procurement and Maintenance for ████ pa.

- ██████████████████████████████ would equate to ████ pa at retail prices. ██████████████████████ ██████████████

1.5.8 It should be noted: All indications are that ERP cloud subscriptions will be more expensive than their on premise counterparts. It is reasonable to assume that NI Water will potentially pay about 100% + more on cloud subscriptions than it currently does with on premise e-business suite, even with secured discounts of up to 70% of marketed retail prices for all vendors.

Oracle conclusion

1.5.9 NI Water believe that there is a real need to move its ERP & HR application to the

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[2] Comprising Oracle HR, Oracle Finance and procurement, Oracle Enterprise Asset Management, Oracle Reporting and Oracle Technology Stack.

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Cloud over the PC21 period. It is very evident that the market is moving in this direction and that on premise applications are being phased out by vendors. All the latest technology being delivered is being done through cloud products.

Table 4 - Oracle ERP move to cloud - additional Opex Cost profile

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	Total
Implementation		███	███	███	███	███	███
Cloud subscriptions		███	███	███	███	███	███
Total		███	███	███	███	███	███

1.6 APPLICATION CLOUD ROADMAP (A Transition to Cloud – Platform as a Service)

1.6.1 There will be a small number of third party applications – and 'in house' applications which will not migrate to third party cloud offering and will remain "On Premises".

1.6.2 It is NI Water's intention to move these applications to MS Azure over the next 5 year period. We will avail of Microsoft's Platform as a Service (PaaS) offering.

1.6.3 This will result in the majority of NI Water's applications hosted externally and will negate the need for a £1m data centre refresh and the associated management of that hardware.

1.6.4 In 2019, for the Data Centre Refresh business case we included an option to move all c400 virtual servers to ████████████ for which we were quoted ████ per annum. A copy of the quotation is included in Appendix 2. As per section 1.3, we are seeing the majority of applications moving to ████, we do not believe this scale will be required.

1.6.5 For the purposes of this exercise, we have made an assumption that 20% of NI Water's virtual server infrastructure will transition to ████ during the PC21 period. We have therefore taken 20% of the original ███████████ as a reasonable basis for estimating annual operating cost impact. This equates to ████ per annum by the time all servers have transitioned, however we have assumed costs won't reach this level until year 5, based on a realistic transition profile as set out in table 5.

Table 5 - PaaS Annual cost profile

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	Total
PaaS Costs		███	███	███	███	███	███

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1.7 SUMMARY OF OPEX COSTS FOR APPLICATIONS MOVING TO SaaS.

1.7.1 For Cloud based implementations, we are assuming that customisations and integration setup costs can be capitalised. The remaining element of implementation costs are treated as Opex.

Table 6 – Estimated opex profile for applications moving to SaaS.

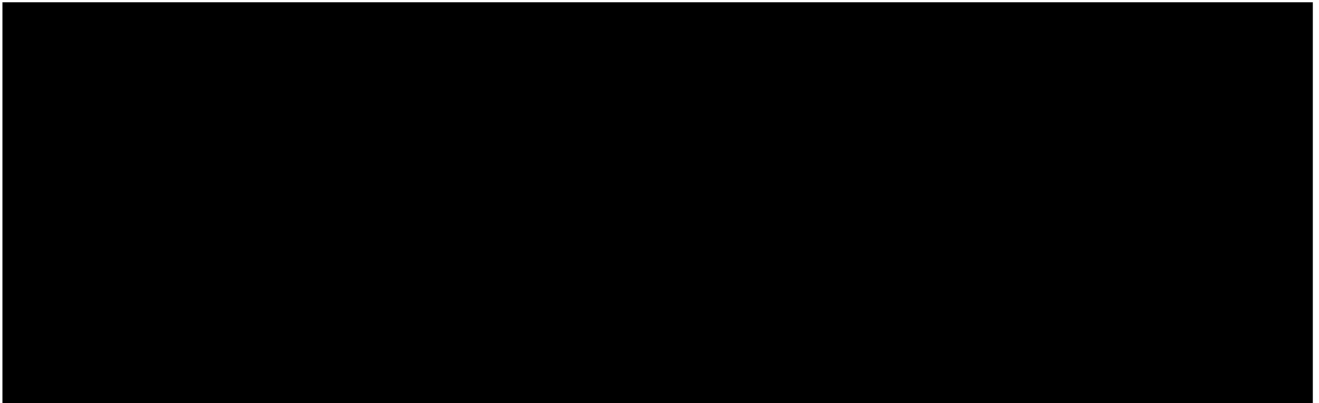| £'k	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	Total
Rapid (ongoing Subscription & Licensing)							
Rapid (Implementation)							
Ellipse (ongoing Subscription & Licensing)							
Ellipse (Implementation)							
Oracle Financials (ongoing subscription & licensing)							
Oracle Financials (Implementation)							
Clear Scada (ongoing subscription & licensing)							
Clear Scada (implementation)							
Connect 2 (Implementation)							
Connect 2 (ongoing subscription & licensing)							
LIMS (ongoing subscription & licensing)							
LIMS (Implementation)							
ARC Corporate GIS (ongoing Subscription & Licensing)							
ARC Corporate GIS (Implementation)							
Oracle Spatial (Ongoing Subscription & Licensing)							
Oracle Spatial (Implementation)							
Service Management (ongoing subscription & Licensing)							
Service Management (Implementation)							
Mobile Device management (ongoing Subscription & Licensing)							
Mobile Device management (Implementation)							
Total							

1.8   PC21 OVERALL OPEX SPEND PROFILE FOR CLOUD SERVICES .

1.8.1   Cumulative Table showing Cloud Opex Spend Profile over the PC21 6 Year period.

Table 7 – Overall summary Opex spend profile all applications

£'k	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	Total
Existing SaaS (Section 1.3)							
Projected SaaS (Section 1.7)							
Projected PaaS (Section 1.6)							
Total							

Appendix 1 – Examples of applications which have moved to cloud, showing change in Opex costs

Appendix 2 -

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