

PC21 Draft Determination NI Water Response

Annex 5.13 – SR Rehabilitation Programme Response

This annex incorporates the following:

5.13.1 SR Rehab Methodology

And

5.13.2 SR Rehab - Analysis

PC21 Draft Determination
NI Water Response

Annex 5.13.1 – SR Rehab Methodology

UR Original Query 68

Section 11 of Appendix 6.10 indicates that the PC21 SR Rehab investment proposal is comparable to PC15 and quotes a figure from the March 2014 PC15 SPBC submission of £15.732m.

We note your development, implementation and refinement of a methodology over the PC15 period which ensures that no speculative refurbishment occurs and that only base maintenance of assets that are considered to have failed or will fail within the 5-year review period is undertaken. We understand that the PC21 submission is based on a continuation of this methodology and the frequency of Major and Minor interventions identified in the assessments undertaken across the various SR size bands at the time of the submission. We understood that the PC15 submission was based on a different methodology. Please confirm whether this was the case and if so when the new methodology was fully developed and adopted within the PC15 period.

Assessment of the Current Actual Projected expenditure submitted in Table 3.3 of the business plan submission indicates that total expenditure on SP07 in PC15 will be £13.733m in 2018-19 Prices. However £3.506m of this is associated with two Service Reservoir Security programmes of work and £1.855m with the sample tap replacement programme. The balance of projected expenditure for SR Rehab work therefore equates to £8.372m over PC15. The proposed expenditure for PC21 for SR Rehab is £16.638m in 2018-19 Prices. Please explain why PC21 investment is expected to be twice that in PC15. Please provide information on the number of interventions and associated costs (split by Major and Minor) for each of the six size categories in PC15 to date by year as part of the response.

NI Water Original Response – 31st July 2020

NI Water have completed a refinement of the inspection and assessments methodology. This was developed in 2015-2016 based on the UKWIR "SR Management Toolkit" Approach. 237 sites have been inspected under this methodology since 2016. Of the 51 Base Maintenance schemes that will be completed in PC15, 13 were carried over from inspections in PC13, 18 were identified from the pre 2016 methodology and 20 were identified from this new 2016 methodology.

Prior to PC15, NI Water completed inspections, separate from the cleaning programme. In order to improve efficiency and process, the cleaning programme and the inspections over the last 3 to 4 years have now been aligned. As a result of this, 237 sites have been inspected post 2016 out of a total number of sites in service of 363. As a result of cleaning and inspection alignment, the remainder of the SR sites will be inspected in PC15 or early in PC21.

In total 149 site rehabilitation schemes were identified for intervention, mostly during PC15 (118No. by new procedure, 18No. by the superseded procedure and 13No. carry over from PC13). Subtracting the 51 to be carried out in PC15 will leave 98 schemes already identified, to be carried over into PC21.

It is anticipated that a further 48 (c50%) interventions will be identified from inspection of the remainder (95) of the 363 sites not yet inspected. This will approximate to 146 (98+48) site interventions during the PC21 period.

In relation to the Capital Maintenance spend, the figures quoted as extracted from Table 3.3 are correct and the projected rehab investment is £8.372m over PC15. However, this is not simply a reflection of the methodology change, which is seeking to complete rehab as efficiently as possible, but is also influenced by the funding available as NI Water sought to remain within PC15 Base Maintenance funding limits. As a result of spend in other areas, there has been delay in the delivery of the PC15 programme. At present 45 rehab projects have been delivered to date, with the expectation that a total of 51 will be completed in PC15 under current projections.

On the basis of the number of interventions required increasing from 51 (PC15) to 146 sites in PC21 NI Water believe the PC21 bid for SR rehab is justified.

UR Follow-up Query

Following a discussion with UR an additional query was raised verbally as the original response did not answer the full query and in particular 'Please provide information on the number of interventions and associated costs (split by Major and Minor) for each of the six size categories in PC15 to date by year as part of the response'

NI Water Updated Response – 10th November 2020

NI Water have completed a refinement of the inspection and assessments methodology for Service Reservoirs during PC15. This methodology was developed and implemented in 2015-2016 based on the UKWIR "SR Management Toolkit" Approach.

237 sites have been inspected under this methodology since 2016. From these inspections a total of 149 sites were identified for investment i.e. 65% of those inspected, ultimately resulted in a planned intervention. The planned interventions have been completed at 20 of these sites to date leaving 129 to be carried over into PC21.

There are 363 SRs, In Service, with 237 having been inspected, leaving 126 still to be inspected under the new methodology. If, similar to PC15 as detailed above, 65% result in interventions then these inspections will result in an additional 79 further interventions in PC21.

Therefore it is estimated there will be 208 SRs (129 + 79) that will require maintenance interventions in PC21. This is a reduction of 23 in the number of SRs requiring interventions from the 231 used in the PC21 submission. This is due to site progress since the last estimation.

The revised numbers of SRs requiring intervention in PC21 equates to a £1.513m reduction in identified investment from the submission, from £17.203m to **£15.69m**.

A request was received to Please provide information on the number of interventions and associated costs (split by Major and Minor) for each of the six size categories in PC15 to date by year as part of the response'

As indicated above only 20 sites have been completed using the new methodology and these sites including outturn costs can be seen in the PC15 Outturn Costs tab within the '201106 – SR Rehab – Analysis' spreadsheet. It is felt the outputs for these 20 sites is more representative of costs going forward.

Given it is such a small dataset it is hard to derive too many conclusions from it. However of the 20 sites 10 of these are within the 1.0<2.5ML band and some further analysis of these was carried out within the PC21 Costs Calcs tab within the '201106 – SR Rehab – Analysis' spreadsheet. It should be noted the separation into Minor/Major as this was not a consideration when procuring the work and the definition of major/minor for the PC21 submission was a judgement based on the scale rather than the type of interventions. However for the analysis a judgement has been made in relation to the type of rehab.

An output of the analysis can be seen below

| | IPAC Output | | Toolkit Outputs | IPAC Output | Toolkit Outputs |
|---|-------------------|--|----------------------------------|--|--|
| | Rate per SR £k | Rate per ML (Based on Median Size Descriptor) £k | Average Spend per ML £k | Total Average Predicted Cost per MI for SR Rehab - 1<2.5MI | Total Average Predicted Cost per MI for SR Rehab - 1<2.5MI |
| SR Rehab Programme of Works - 1.0<2.5ML (Major Rehab) | £163.2 | £93.2 | £97,408.6 | £37.7 | £69,070.6 |
| SR Rehab Programme of Works - 1.0<2.5ML (Minor Rehab) | £27.9 | £15.9 | £26,563.6 | | |

This highlights the average spend per ML as part of the PC21 submission was £93.2k for major sites and £15.9k for minor sites compared to £97.4 and £26.6k respectively based on outturn costs. In addition an average per MI was calculated combining both major/minor spend and this was £37.7k for the PC21 submission compared to £69k for the outturn. NI Water accepts this analysis is based on a small sample and no definitive conclusions should be drawn from it. However it does at least indicate the PC21 costs would not appear to be overinflated.

Therefore NI Water would propose the PC21 investment for SR Rehab should be **£15.69m**. This investment is a significant increase on the amount invested in PC15 which was £8.372m. The number of SR Refurbishments carried out in PC15 was limited by the funding available as NI Water sought to remain within Base Maintenance funding limits.

In PC15 it is estimated that only 51 sites will be addressed due to these constraints compared to the 208 planned for PC21. It should be noted although there is a proposed 87% increase in investment in PC21 it is estimated over four times the amount of sites will be addressed as part of this increase. This is a reflection of the improved methodology which is seeking to complete SR Base Maintenance as efficiently as possible having changed to the UKWIR Toolkit Methodology which better incorporates an improved risk approach to interventions. Although it is acknowledged that the updated rates are from a limited dataset we believe the revised PC21 submission is a reasonable reflection of the work to be done and despite serviceability indicators indicating stable service without these interventions taking place there is a risk of deterioration in Water Quality and structural integrity.

PC21 Draft Determination
NI Water Response
Annex 5.13.2 SR Rehab - Analysis

| | | | | SR Rehab Original Submission | | | | | | | | | | | | | | | | |
|---------|--|--------------|------------------------------------|---|---|---|---|---|--|----------|------------------|-------------------|--|----------------------------------|---|---|-----------------|------------------|-----------------------------------|------|
| Proj ID | Project Name | PC21 Prog | Median Size Descriptor MI | Current Actual or Projected CAPEX 2021-22 £m | Current Actual or Projected CAPEX 2022-23 £m | Current Actual or Projected CAPEX 2023-24 £m | Current Actual or Projected CAPEX 2024-25 £m | Current Actual or Projected CAPEX 2025-26 £m | Current Actual or Projected CAPEX 2026-27 £m | TOTAL £M | Number of SRs | | | IPAC Output | Toolkit Outputs | IPAC Output | Toolkit Outputs | Number of SRs | Predicted Updated IPAC Cost | |
| 1098 | SR Rehab Programme of Works - 0.0<1.0ML (Major Rehab) | 07a | 0.5 | 0.426 | 0.418 | 0.405 | 0.392 | 0.383 | 0.374 | 2.400 | 27 | | | IPAC Output | | Toolkit Outputs | IPAC Output | Toolkit Outputs | 24 | 2.13 |
| 1099 | SR Rehab Programme of Works - 0.0<1.0ML (Minor Rehab) | 07a | 0.5 | 0.272 | 0.267 | 0.258 | 0.250 | 0.244 | 0.239 | 1.530 | 71 | Rate per SR £k | Rate per ML (Based on Median Size Descriptor) £k | Average Spend per MI £k | Total Average Predicted Cost per MI for SR Rehab - 1<2.5MI | Total Average Predicted Cost per MI for SR Rehab - 1<2.5MI | 64 | 1.38 | | |
| 1100 | SR Rehab Programme of Works - 1.0<2.5ML (Major Rehab) | 07a | 1.75 | 0.521 | 0.512 | 0.496 | 0.480 | 0.469 | 0.458 | 2.937 | 18 | £163.2 | £93.2 | £97,408.6 | £37.7 | £69,070.6 | 16 | 2.61 | | |
| 1101 | SR Rehab Programme of Works - 1.0<2.5ML (Minor Rehab) | 07a | 1.75 | 0.228 | 0.224 | 0.217 | 0.210 | 0.205 | 0.200 | 1.284 | 46 | £27.9 | £15.9 | £26,563.6 | | | 41 | 1.14 | | |
| 1102 | SR Rehab Programme of Works - 2.5<5.0ML (Major Rehab) | 07a | 3.75 | 0.395 | 0.388 | 0.376 | 0.364 | 0.356 | 0.347 | 2.226 | 10 | | | | | | | 10 | 2.23 | |
| 1103 | SR Rehab Programme of Works - 2.5<5.0ML (Minor Rehab) | 07a | 3.75 | 0.189 | 0.186 | 0.180 | 0.174 | 0.170 | 0.166 | 1.066 | 27 | | | | | | | 24 | 0.95 | |
| 1104 | SR Rehab Programme of Works - 5.0<10.0ML (Major Rehab) | 07a | 7.5 | 0.370 | 0.363 | 0.352 | 0.341 | 0.333 | 0.325 | 2.082 | 6 | | | | | | | 5 | 1.74 | |
| 1105 | SR Rehab Programme of Works - 5.0<10.0ML (Minor Rehab) | 07a | 7.5 | 0.216 | 0.212 | 0.205 | 0.199 | 0.194 | 0.190 | 1.215 | 16 | | | | | | | 15 | 1.14 | |
| 1106 | SR Rehab Programme of Works - 10.0<20.0ML (Major Rehab) | 07a | 15 | 0.195 | 0.192 | 0.185 | 0.180 | 0.175 | 0.171 | 1.099 | 2 | | | | | | | 2 | 1.10 | |
| 1107 | SR Rehab Programme of Works - 10.0<20.0ML (Minor Rehab) | 07a | 15 | 0.078 | 0.077 | 0.075 | 0.072 | 0.071 | 0.069 | 0.442 | 5 | | | | | | | 4 | 0.35 | |
| 1108 | SR Rehab Programme of Works - >20.0ML (Major Rehab) | 07a | 20 | 0.117 | 0.114 | 0.111 | 0.107 | 0.105 | 0.102 | 0.656 | 1 | | | | | | | 1 | 0.66 | |
| 1109 | SR Rehab Programme of Works - >20.0ML (Minor Rehab) | 07a | 20 | 0.047 | 0.047 | 0.045 | 0.044 | 0.043 | 0.042 | 0.267 | 2 | | | | | | | 2 | 0.27 | |
| | | | | 3.054 | 2.999 | 2.904 | 2.813 | 2.748 | 2.684 | 17.203 | 231 | | | | | | | 208 | 15.69 | |