

ANNUAL RETURN VALIDATION PROJECT 2020: WASTE COLLECTION PERMIT AND LOCAL AUTHORITY AUTHORISED WASTE FACILITIES

CONNACHT-ULSTER, EASTERN-MIDLANDS AND SOUTHERN REGIONAL WASTE MANAGEMENT PLANNING OFFICES



eastern - midlands
waste region



connacht-ulster
waste region



southern
waste region

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1. GLOSSARY

AR	Annual Returns
AR Project	Annual Returns Validation Project
C&D	Construction & Demolition
CoR	Certificate of Registration
CUR	Connacht-Ulster Region
EMR	Eastern-Midlands Region
EoW	End of Waste
EPA	Environmental Protection Agency
EU	European Union
LA	Local Authority
NTFSO	National Transfrontier Shipment Office
NWCPO	National Waste Collection Permit Office
RWMPO	Regional Waste Management Planning Office
WCP	Waste Collection Permit
WERLA	Waste Enforcement Regional Lead Authority
WFP	Waste Facility Permit

CAVEAT

The analysis of waste data within this report is based on the National Waste Collection Permit data as of the 30th of October 2020. A reader should note that the National Waste Collection Permit data may have been updated after the publication of this report to facilitate amendments or omissions. Annex IV contains the data sets extracted from the National Waste Collection Permit portal for use within this report.

2. ANNUAL RETURNS OVERVIEW

Accurate national waste data plays a critical role in (i) monitoring Ireland's progress towards EU, national and regional targets¹; (ii) producing national statistics on waste generation, collection, disposal, recycling and recovery rates, and (iii) providing an evidence base to guide policy. National waste statistics and indicators also play an important part in clearly conveying the impacts and opportunities of waste to Ireland's people, its environment and economy.

The preparation and publication of accurate, reliable, and complete waste statistics and indicators comprises of several dimensions i.e. timeliness, accessibility, clarity, comparability and integration. Achieving this level of data quality requires a significant amount of validation at a local, regional, and national level involving a range of stakeholders. At a regional level, the Regional Waste Management Planning Offices (RWMPOs) play a pivotal role in the validation of waste data returned by Waste Collection Permit (WCP), Waste Facility Permit (WFP) and Certificate of Registration (CoR) holders in accordance with conditions set out by their respective permits. The onus is on the permit holder to ensure the data they submit is correct. Data validation of annual returns (AR) submitted by WCP and WFP holders undertaken by the RWMPOs has positively impacted the production of high-quality statistics at a regional and national level.

Prior to 2015, waste operators issued with a WCP, WFP or a CoR were required to report directly to their Local Authority (LA), no later than the 28th of February each year, detailing in that AR the types and quantities of wastes managed under their waste permit in the preceding year. The establishment of the National Waste Collection Permit Office (NWCPO) has allowed for a standardised AR reporting system with all waste permit holders now uploading their AR data through a web-based portal. The NWCPO portal also facilitates AR data access to LAs, the Environmental Protection Agency (EPA), the Waste Enforcement Regional Lead Authorities (WERLAs), the RWMPOs and the National Transfrontier Shipment Office (NTFSO) allowing for cross-referencing and validation of local, regional and national waste data.

LA Waste Enforcement staff remain responsible for ensuring permit holders comply with the conditions set out within a WCP, WFP or a CoR. LAs are also responsible for validating the accuracy of AR data for permit holders located within their functional area except for those permit holders identified for data validation within the RWMPO's AR Validation work. The RWMPOs rely on accurate waste data for the purposes of forecasting and planning and their role in the review of AR data is for validation only. The RWMPO AR Validation teams coordinated each AR validation detailed within this report with the relevant LAs and their respective WERLA representatives to ensure any issues of non-compliance with permit conditions could be addressed by LA's Waste Enforcement staff.

¹ During the lifetime of the current Regional Waste Management Plans (2015-2021)

3. BACKGROUND

PROGRESS TO DATE

The AR Validation Project (AR Project) 2020 was carried out by the Connacht-Ulster, Eastern-Midlands and Southern RWMPOs to ascertain the accuracy of 2019 waste collection, recovery and disposal data submitted to the NWCPO. This was the 2nd year in which the Eastern Midlands RWMPO coordinated the validation work in both the Eastern-Midlands and Connaught-Ulster Regions with the Southern RWMPO coordinating the AR validation within the Southern Region. This is also the 2nd year the three RWMPOs amalgamated their AR validation findings into a single report.

This project focused on a selected group of household and commercial waste collectors, construction, and demolition (C&D) waste collectors, and C&D waste facility operators. This is the fourth year in which the three RWMPOs have undertaken the validation of the country's largest household waste collectors' AR data (and by default the largest commercial waste collectors). This is the 2nd year in which C&D activities were incorporated into the RWMPOs' validation project with the addition of waste operators in the scrap metal business in 2020. This is an important exercise as it allows for improved national waste capacity forecasting as well as identifying waste operators that may merit additional scrutiny and/or enforcement action.

CHANGING WASTE LANDSCAPE

The RWMPOs and the EPA rely on LAs' detailed validation of all AR data provided by waste operators. However, it is not clear how consistent the approach of LAs is to the validation of ARs. The importance of timely and accurate waste data is now a national waste priority and it is anticipated to remain a priority for some time. The RWMPO's AR Validation Project works in conjunction with the relevant LAs and WERLA to get into the detail of individual permit holder's ARs. The NWCPO not only provide guidance to LAs for conducting AR validations, but also provide indicative markers on individual ARs to guide a LA to data that may need further scrutiny. The EPA, NWCPO, NTFSO and the LAs all conduct some degree of waste data validation on data they are respectively responsible for, bringing together all these stakeholders who are doing similar data validation work could only benefit the quality of data available to all.

The continued growth in the construction industry, the significant quantities of C&D wastes produced from that industry and the findings from the RWMPO 2019 AR Validation work warranted the continued detailed analysis of C&D waste collection, recovery and disposal AR data.

The validation of 2019 AR data was conducted between June and September 2020 during the Covid19 pandemic restrictions resulting in a move to remote validation meetings with waste operators. The RWMPOs and WERLAs worked in conjunction with each other to establish a new set of procedures to facilitate a change to virtual validation meeting in 2020 and this report includes a review of these new procedures and learnings that may be applied for use in subsequent years.

4. PROJECT APPROACH

WASTE OPERATOR SELECTION CRITERIA

The selection of waste operators for AR validation by the RWMPOs was expanded this year beyond the top 20 household collectors as in previous years. In addition, to capture a larger AR dataset for validation, waste operators were selected encompassing commercial waste and C&D wastes, including scrap metals. The RWMPOs informed the validation team of the waste operators selected.

With respect to collectors of **household and commercial waste**, the criteria for selection were as follows:

Household: Collectors of household waste who provided households with a kerbside waste collection service. The 22 waste collectors with the largest number of serviced households were selected to provide a greater regional balance.

Commercial: Collectors of commercial waste (LoW 20 03 01 residual) who collected from commercial customers. The 21 waste collectors who reported the largest tonnage were selected to facilitate a regional balance.

Over-lapping of the 'household' list with the 'commercial' list meant that a total of 28 waste collectors emerged from the selection criteria. 15 of the collectors featured in both lists, 7 featured in the 'household' list only and 6 featured in the 'commercial' list only.

With respect to the **C&D waste operators**, the RWMPOs selected 11 waste permit holders based on the following criteria:

- 6 C&D collectors selected based on the greatest tonnages of Chapter 17 LoW, excluding Soil & Stone (17 05 03*, 17 05 04, 17 05 06)
- 5 C&D waste collectors selected based on the greatest tonnages of Chapter 17 LoW Soil & Stone only (17 05 03*, 17 05 04, 17 05 06)

One C&D collector featured in both of the selection criteria above, and therefore the next biggest collector (of soil & stone) was selected, to bring the number up to 11 to ensure a regional balance.

Following the application of the section criteria above one WCP holder featured in all the above criteria, household, commercial and C&D.

A total of 38 WCP holders were selected, as follows:

- 27 collectors for validation of their household and commercial collection data,
- 1 collector for validation of their household, commercial and C&D collection data,
- 10 collectors for validation of their C&D collected data.

For **WFP operators**, the focus remained on those waste operators managing C&D wastes and 10 waste facilities were selected. The criteria for selection were as follows:

- 5 waste facilities were selected based on the greatest tonnages of soil & stone accepted at their facility (LoW Chapter 17 Soil & Stone only - 17 05 03*, 17 05 04, 17 05 06).
- An additional 5 waste facilities were selected based on the greatest tonnages of LoW Chapter 17 accepted at the facility, excluding Soil & Stone (17 05 03*, 17 05 04, 17 05 06).

There was no overlap between permit holders from the selection of WFPs above and this selection represented a regional balance.

CONSISTENCY TO OUR APPROACH

The AR validations undertaken as part of this project were conducted in accordance with the RWMPOs:

- “Data Validation Protocol-for Waste Collection Permit (WCP) and Local Authority Authorised Facility Annual Returns (ARs)”,
- “Validation Process” for collectors of commercial waste, and
- “Remote Data Validation Meeting Procedure” published in response to the public health restrictions implemented due to the Covid 19 pandemic, in conjunction with the communication strategy for “Follow-up Procedures”.

In addition, these AR validations followed the guidance provided by the NWCPO in their June 2020 “Guidance For Local Authorities - Desktop Validation of Waste Collection Permit and Waste Facility / Certificate of Registration Waste Return Data”. Any reference to a “Desktop Validation” within this report should be taken to have the same meaning as the process described within the RWMPOs’ “Data Validation Protocol”. Any reference within this report to the “Remote Data Validation Meeting Procedure” should be taken to have a similar meaning to the “On-Site Validation” process detailed in previous RWMPO AR Validation reports and the same meaning as the “On-Site Validation” process described in their “Data Validation Protocol”.

In addition to the agreed protocols and guidance, the EMR and CUR AR Validation Project Team established and applied a follow-up procedure to ensure each LA would be engaged with through a consistent and timely engagement strategy. To assist with this follow-up procedure, the roles and responsibilities of the AR Validation Project Team and the LA Waste Enforcement Staff participating in this year’s AR Validation process were agreed between the RWMPOs and the WERLAs at the start of this process.

2019 AR VALIDATIONS & VERIFICATIONS

In total, 48 waste operators were identified across the three Regions for validation, 38 WCP holders and 10 WFP holders.

The number of households serviced, and tonnages collected by Starrus Eco Holdings were not available at the time of selection and therefore this waste operator’s 2018 AR data was considered in their selection for the 2019 validation project. The number of households serviced by Key Waste Management Ltd was also not available at the time of selection and therefore an estimated number of serviced households was used for this waste operator in the selection process.

Based on the NWCPO datasets as of the 6th of May 2020 used by the RWMPOs for the selection criteria, the waste operators selected for the 2019 AR Validation Project accounted for:

- **94%** of the 1,292,228 **households** nationally that had a kerbside waste collection (serviced households),
- **93%** of the 613,176 tonnes of **municipal commercial waste** (LoW 20 03 01) collected nationally,
- **42% of all C&D waste** (all LoW 17) collected nationally,
- The C&D WCP holders accounted for **45%** of **Soil & Stone** (LoW 17 05) collected nationally,
- The five C&D WFP holders accounted for **11%** of the national total of WFP holders accepting **soil & stone** (LoW 17 05), excluding EPA Licenced sites, and
- **10%** of the national total of **C&D waste** accepted at waste facilities (all Chapter 17 LoWs excluding soil and stone and waste accepted at EPA Licenced sites).

5. CHALLENGES ENCOUNTERED

The execution of this year's AR Validation Project was overshadowed by Covid-19 public health measures implemented from March 2020 onwards, which necessitated a move from onsite data verifications as in previous years to remote validation procedure as outlined in "*Remote Data Validation Meeting Procedure*". The desk-top validations were conducted as normal this year and the move to remote verification posed some challenges for the Project Team and the waste operators, further detail of these challenges is outline below. A summary of the overall findings by region and type of waste operator are set out in Section 6 below. An analysis of the data is included in Section 7 below.

DESKTOP VALIDATIONS

The first phase of the AR Validation Project was the desktop validation of the household waste collectors, C&D waste collectors and waste facility data.

In all three regions, Eastern-Midlands Region (EMR), Connaught-Ulster Region (CUR) and the South Region (SR) it was found that a number of the waste operators had not submitted their AR data by the start of this project. As a first step, the Project Team engaged with these outstanding permit holders requesting all to submit their AR data. Despite this some permit holders did not submit returns until late September/Early October, far in excess of the deadline submission date of 28th February, while one permit holder made no submission of AR data for 2019.

REMOTE VALIDATIONS

Covid-19 restrictions were found to have a significant impact on how the AR data validation meetings were carried out. The Project Team could not visit the waste operators' places of business resulting in a switch to remote validation of AR data via Microsoft Teams. Despite validation meetings being carried out remotely, there were still some difficulty getting the meetings scheduled. LA staff had been requested to use up 50% of their annual leave entitlements by the end of September. This resulted in many key LA waste enforcement staff being on leave when the project team started scheduling validation meetings. With LA staff working remotely, the response time to requests from the Project Team to establish their availability for validation meetings appeared extended. When the Project Team followed up where LAs had not responded in accordance with the communication strategy, the project team had difficulty contacting the agreed points of contact. As a result, many people who were essential to the validation and verification process were unavailable for a significant period and validation meetings did not commence until-late August 2020

When C&D waste operators were added to the AR Validation Project in 2019 the traditional "Builders' Holidays" at the end of July/start of August delayed validation meetings. However, the traditional holidays were not such a significant issue this year as many C&D waste operators continued to work throughout this period to catch up on time lost when construction sites had been closed at the start of the year through the Covid 19 lockdown restrictions.

The project team found that some waste operators who were not familiar with Microsoft Teams or virtual meetings had issues logging into the validation meetings with a small number of these meetings being conducted over the phone and documentation required to verify AR submissions being sent via e-mail after a

In advance of each validation meeting, permit holders were requested to arrange access to their management systems and allow screen sharing for data verification purposes during the meeting. A high proportion of permit holders' staff were working from home and did not have access to information requested. Depending on the location of the staff, one of the main challenges that was encountered was logistics. Sometimes, network connections were not very reliable for both the Project Team and the permit holders. Remote working also resulted in delays during some validation meeting as permit holders experienced variations in the functionality of their software and/or slow download speeds through remote servers. This was particularly evident when household waste collectors were requested to extract route information for specific dates detailing the number of lifts and weights collected. The Project Team amended the validation process to reduce the time required for all participants by asking the permit holders to have prepared route information in advance and then virtually share this information during the validation meeting to demonstrate how AR data was prepared. Although the extraction of this data from the permit holder's management system was not witnessed by the Project Team, this limitation was mitigated by cross referencing the data for each route with an average weight for each waste type as presented to the NWCPD in the permit holders' AR submission. In addition, due to network issues, interviews and meetings were sometimes interrupted, taking some time to reconnect and solve all the network problems.

Five C&D collectors were found to operate record management systems that were paper based. Therefore, the only "electronic" records these permit holders were able to share during the validation meetings were excel summaries of waste data that the permit holder manually entered from paper records, potentially increasing the probability of errors in their data. It was found that approximately 50% of C&D waste collectors prepared these summary data sheets from records received from the destination sites if a weighbridge was available at that site. The Project Team reported some instances during remote validations of permit holders holding waste collection dockets up to their webcams to try share documents needed to validate an AR. This resulted in many AR validations not being closed off on the day of the validation meetings, the date of close-outs then being extended to allow time for the permit holders to scan and email large volumes of documents separately. The Project Team would then return to these validations at a later date with further engagement with the permit holder for review and approval of the AR data. Due to the difficulties encountered in verification of paper-based waste records, it was necessary for the Project Team to request a smaller sample size of dockets, to expedite the process.

When preparing for these validation meetings, the Project Team sent out emails to each waste operator prior to the validation detailing the purpose of the AR Validations, why they had been selected and what the process would involve on the day. Permit holders who had not been selected in previous years RWMPO's AR Validation Projects expressed some hesitation as to why they had been chosen and what information they could share on screen and a fear that the GDPR could be breached when sharing their screens.

Although the Project Team found that the majority of permit holders engaged fully with the validation process, the remote validation process did limit the opportunity to interrogate specific data sets identified in the on-site validation process and to cross reference with other records that may have been held by the permit holders.

6. PROJECT FINDINGS & ANALYSIS

HOUSEHOLD AND COMMERCIAL WASTE COLLECTION PERMITS

This is the first year that waste operators were selected to be part of the RWMPO's AR Validation Project based on the Commercial waste (LoW 20 01 03 residual) selection criteria. In previous years, this commercial waste data was only verified by the Project Team if a Household waste collector within the AR Validation Project also collected Commercial wastes. This meant a total of 28 Household and/or Commercial waste collector's 2019 AR data were selected for verification nationally.

CONNACHT-ULSTER REGION

- Of the seven household collectors, six were subjected to verification, one permit holder did not make anyone available to facilitate a validation meeting for their AR resulting in an "inconclusive". The Project Team engaged with the LA and the CUR WERLA to progress this AR validation. At the conclusion of this AR Validation Project, this permit holder's 2019 AR remained incomplete and could not be validated within the scope of the project.
- Three of the seven waste collectors had been subjected to validation meetings as part of the RWMPO's AR Validation Project the previous year.
- Of the seven subjected to verification, four were validated and there were marked inconclusive resulting in a **57% validation rate** for the Region.
- The AR data for two other permit holders was deemed inconclusive due to unreliable data.
- In general, waste collection data is captured automatically by in-truck software that is then uploaded to back-office IT systems once the truck returns.
- It was noted that on occasion, due to a technical issue, data was unreliable or lost completely for a waste collection vehicle on an individual route.

EASTERN-MIDLANDS REGION

- Of the nine collectors, eight were subjected to verification as one permit holder did not submit an AR for 2019, nor did the company engage with the Project Team's efforts to draw the waste collector into the AR Validation process.
- Eight of the nine waste collectors had been subjected to verification in previous year's RWMPO AR Validation Projects and were very familiar with the process.
- Of the nine ARs subjected to verification, all but the one AR that was not submitted were validated following some amendments to the originally submitted AR data, resulting in an **89% validation rate** for the Region.
- Seven collectors were able to extract route information as requested and share screens to demonstrate how the data was recorded and extracted from the software systems.
- One permit holder was a small waste operator with one waste collection vehicle primarily servicing bag customers within the narrower streets of Dublin City and South Dublin. Household collections range from regular weekly, fortnightly and monthly. This permit holder works on a Pay As You Go phone & text service responding to the needs and demands of their customers. This permit holder was the only permit holder within the scope of this AR Validation Project who operated on this basis. This permit holder maintains a list of customers serviced and relies on disposal facility records for weights.

- Except for the one small waste operator detailed above, the remaining seven waste collector's data is captured automatically by in-truck software that is then uploaded to back-office IT systems once the truck returns.

SOUTHERN REGION

- Of the 12 waste collectors in the Southern Region selected for this Validation Project, 11 were validated by the project team, **92% validation rate** for the Region.
- One permit holder was included in the 2019 AR Validation Project from the selection criteria. However, following the Project Team's initial desk-top validation, it was established that all data entered in Tab 1 was entered in error and should have been entered into Tab 2. The AR was reversed by the Project Team, amended by the permit holder and the subsequent validation was passed back to the relevant LA as this permit holder no longer fell within the scope of the validation project.
- During the validation meeting it was established with another permit holder that the waste operator had entered their data incorrectly into Tab 1. The AR Validation established that this company only collects wastes from waste facilities and therefore, would not have met any of the selection criteria if their 2019 AR had been completed correctly when originally submitted to the NWCPO.
- Many of the waste collectors were found to have a pay by weight system for commercial as well as household waste collections. However, some of the smaller collectors did not which makes route analysis and commercial waste figures more difficult to validate.
- Eight waste collectors in the Southern Region have met the selection criteria for the AR Validation Project over the last number of years, three of these waste operators consistently produce accurate ARs with a high quality of data to back up the validation. There may not be a need to conduct detailed onsite verification with these waste operators every year, as desk top validation could suffice on alternative years.

C&D WASTE COLLECTION PERMITS

In most validations the Project Team identified differences between tonnages declared by a waste collector in their AR and the corresponding tonnages declared by the receiving waste facility. Another common discrepancy encountered by the Project Team was differences in the LoW recorded by the WCP holders and that recorded by the WFP holders resulting in anomalies and difficulties with "cradle to grave" validations of waste movements.

CONNACHT-ULSTER REGION

- There were just two C&D collectors to be validated in the CUR.
- One of these two C&D collectors was validated while the other was marked inconclusive, resulting in a **50% validation rate**.
- The permit holder whose AR was validated had been subjected to verification the RWMPO's previous year AR Validation Project and was familiar with the process.
- The permit holder that was not validated was given the opportunity to make necessary amendments to the AR, they did make some amendments but only after a month of follow-ups by the Project Team. Ultimately there were still too many inconsistencies across the AR to validate it.

EASTERN-MIDLANDS REGION

- All five C&D Waste Collectors selected in this Region submitted ARs and were subjected to verification
- Of the five, two were deemed inconclusive resulting in a **60% validation rate**.
- One permit holder was found to have significant errors across their AR. Tabs 1 & 2 were reversed but the permit holder did not correct their AR and the status on the NWCPO portal remained as 'in progress'.
- It was established that the other unvalidated permit holder was collecting LoW 16 01 03 wastes and using waste facilities that were not listed on the WCP and therefore not reported in the AR.
- During the validation of AR data for a third permit holder it was established that most of the waste declared in this AR was in fact Article 27 by-product material. A total of 31,099t of LoW 17 03 02 was originally declared. Post-verification, just 187t of this material needed to be declared as waste.

SOTHERN REGION

- Three C&D waste collection permit holders were visited as part of the validation process and all were validated resulting in a **100% validation rate**.
- All three companies declared increases in tonnage from 2018. These increases ranged from 9% to 70%.
- The same three collectors were validated this year as last year. One company continues to operate an automated recording system which continues to provide a traceable and accurate AR. One company continues to use a paper-based system and although it is labour intensive, the quality of the AR was of a high standard. The final C&D Collector in the region has made significant improvements from last year and the AR was of a good quality and was validated.
- Some differences were identified between tonnages declared by a waste collector and the corresponding tonnages declared by the receiving waste facility. There were also discrepancies in the LoW recorded by the Collectors and the facility permit holders.
- All three companies brought waste to EPA licenced facilities and exported waste. The data from licenced sites does not form part of the NWCPO Validation Portal and so this data was not cross-checked. The exported waste was cross-checked using the WRMS portal.

C&D WASTE FACILITY PERMITS

CONNACHT-ULSTER REGION

- Only one C&D WFP holder was selected for verification in the CUR and this AR was validated resulting in a **100% validation rate** for this Region.
- This permit holder declared receiving 81,602t in 2019 and 2020 was the first time the facility had been selected for verification as part of the RWMPO's AR Validation Project.
- There is a weighbridge onsite and trucks are all weighed on entering the facility.
- The total quantity of waste-in declared by this facility in 2019 was 81,602t and this data was validated. The WFP conditions only allow for a total of 100,000t over a five-year period. The site has been in operation since 2018. The permit holder has recently applied to increase the waste acceptance level to 200,000t, by the conclusion of this AR Validation Project approval for the increased tonnage had yet to be granted.

EASTERN-MIDLANDS

- A total of six facilities were subjected to verification, five out of the six were validated resulting in an **83% validation rate**.
- In one permit holder's AR it was found that all waste collectors entering the waste facility were declared as 'General Public'. All of these "General Public" entries exceeded 2 tonnes, this AR could not be validated.
- Although the AR data for another permit holder was validated, the Project Team noted that the permit holder had exceeded their 23,300t per year limit. In 2019 the validated waste-in data showed 49,718t coming onto the site.
- Only half of the selected WFP holders operated weighbridges. Those without weighbridges were soil and stone operations basing their tonnage estimations on the size of the vehicles entering the facility.
- The project team routinely identified differences between tonnages declared by a waste collector and the corresponding tonnages declared by the receiving waste facility. These were highlighted prior to the validations and reviewed with the permit holder as part of the remote verification process.

SOUTHERN REGION

- Three waste facility permit holders were selected in SR as part of the validation process. Two were Soil and Stone recovery facilities while one was a metal recovery facility. All three ARs were validated resulting in a **100% validation rate**.
- The quality of the AR data submitted for the two soil & stone WFP holders was found to be of a very high standard.
- One of the soil recovery facilities was recovering concrete and bituminous materials i.e. road planings on site for use off- site. Both processes need to regularise, and End of Waste (EoW) status applied for both waste types.
- Due to the large number of LoW codes accepted at one WFP and the large numbers of WCP holders using the facility, the AR validation was intricate.
- One WFP holder assigns End of Waste status to iron, steel and aluminium in accordance with the criteria set out in Council Regulation (EU) No 333/2011 and this outgoing processed material is no longer considered a waste.

7. DATA ANALYSIS

The Project Team observed significant difference in the quality and accuracy of the data between the household and commercial waste collectors and the waste operators in the C&D sector. One of the primary factors in the AR data quality differences is assumed to be the prevalence of paper-based record management systems in the C&D waste sector. This was the 2nd year that the C&D waste operators were subjected to data verification under the RWMPOs AR Validation Project, whereas this was the 4th year in which the main household and commercial waste operators have undergone this validation process.

HOUSEHOLD AND COMMERCIAL

The Project Team identified errors across all AR data submitted to the NWCPO. The type of errors varied across the different collectors and these were found during both the desktop validation and remote verifications. Post-validation it was established that four of the twenty-eight household & commercial WCP holders' ARs were deemed inconclusive, resulting in an **85.7% validation rate nationally**.

THE MOST COMMON ERRORS IDENTIFIED INCLUDED:

- Household waste data being inputted into Tab 1.
- Households collectors were not completing Tab 2 despite transporting waste between facilities.
- Permit holders recording apartment developments as a single customer for numbers of bins presented. This resulted in significant under-reporting/recording of the number of bins presented, e.g. only the number of commercial 1,100ltr bins would have been recorded for a single apartment development and not the number of individual apartment units within that development.
- Permit holders recording apartment development management companies as a single customer and not the number of apartment units within the development
- Permit holders not recording any data in Tab 3 for apartments as the permit holder treated the management company as a commercial customer and not as a household customer.
- Commercial waste data inputted into Tab 4, and
- Permit holders sub-contracting waste collections to other waste collectors and recording tonnages collected on the main contractors AR and/or both WCP holders
- Permit holders subcontracting waste collections to sub-contractors, the sub-contracted WCP holder accurately declaring the waste collection on their AR and the receiving facility inaccurately declaring the same waste being received from the main contractor as it was booked in under the main contractor's account. This was the reason behind a large number of anomalies between WCP ARs and WFP ARs.

NUMBERS OF HOUSEHOLDS SERVICED

- The 2019 national AR data of the 30th of October 2020 details 1,314,650 households were serviced nationwide by an authorised waste collector. Post validation, the collectors selected for this AR Validation Project covered 1,223,171 households, **93% of total households serviced by an authorised waste collector**.
- The inconclusive ARs for household WCP holders, as part of this validation project accounted for 54,170 households, or 4.1% of the national total.

- Following a validation process, 1,169,001 households, or **88.9% of the national total of household serviced by a waste collection service were verified as part of this validation project**. Any forecasting or planning should take account of this level of accuracy.
- The NWCPO data, as of the 30th of October 2020, detailed 818,204 households nationwide with a 3-bin service. This validation project covered 95.7% of those households, the validated ARs represents 93.3% of this 3-bin service national total.
- The pre-validated number of households serviced by an authorised waste collector increased from 1,214,632 to 1,223,171 households as a direct result of the ARs validation work within this project, an increase of 8,540 households.

COMMERCIAL WASTE (LOW 20 03 01 RESIDUAL)

- The WCP holders selected for this validation project captured 572,158t of LoW 20 03 01 residual waste from pre-validated Tab 1 data accounting for 93% of the national total.
- The validation process removed 44,976t of LoW 20 03 01 residual waste from Tab 1 into Tab 2, stemming from three of the commercial waste collectors selected.
- The validation project also resulted in an additional 3,451t of LoW 20 03 01 residual waste being added to Tab 1 of the AR data.
- Post validation, the work of the Project Team resulted in an overall variation of 48,427t in Tab 1 LoW 20 03 01 data, an 8.5% change.

ORGANIC WASTE

- Post validation, 782,994 of the households serviced by WCP holders verified in this project were supplied with an organic waste bin accounting for 64% of the total 1,223,171 households captured within this project, i.e. "Brown Bin Roll-out".
- The households serviced by WCP holders whose AR was found to be inconclusive as part of this validation project, accounted to 18,893 households, which accounts for 2.4% of the total number of households serviced nationally with a brown bin. Therefore, following the validation process for this project, 93.3% of the national household organic waste collection data for 2019 has been validated.
- The NWCPO's 2019 AR data details 159,385t of organic household waste was collected nationally, 155,684t of which was captured in this validation project, 98%.
- The ARs that were deemed inconclusive as part of this project amounted to 2,172t of organic waste (1.47%) of the 159,385t organic household waste collected nationally in 2019. Therefore, **97.7% of the organic waste collected nationally in 2019 has been validated as accurate**.
- Overall, it was found that people living in urban areas were less likely to acquire an organic bin or present it on a regular basis. Of the 764,101 households provided with an organic waste bin by a WCP holder that was validated within this project, 546,458 of these organic bins were presented for collection (71.5%), summarised by region below.

Region	No. of households with a 3 Bin Service	No. of organic "Brown" bin presented	%
CUR	58,927	32,651	55.4%
EMR	507,314	393,237	77.5%
SR	216,753	120,570	55.6%

CONSTRUCTION & DEMOLITION WASTE

As of the 30th of October 2020, the 2019 national AR data details a total of 8,785,820t of C&D waste (All Chapter 17) collected nationwide. The absence of electronic records for many C&D waste operators and the remote validation process resulted in smaller sample size of dockets being requested to verify AR data, owing to the need for the documentation to be scanned by the permit holder and emailed to the Project Team after the remote validation meeting. This additional work for the permit holders may have had an impact on their willingness and/or timely engagement with the close out of AR validations. Routinely, the records requested would be sent to the Project Team via email sometime after the remote validation meeting requiring the Project Team to review the details of that AR to ensure all requested documents were received, all data was accurate and review of the AR to establish if it could be marked “conclusive”.

C&D WASTE COLLECTORS

Of the seven C&D collectors validated across CUR and EMR only one did not need to make any amendments to the AR data originally submitted to the NWCPO. The remaining six had anomalies identified during the desktop validation phase. The collectors were requested to make amendments before the validation meeting. All anomalies were discussed with the permit holders in detail during the remote verification phase.

- The ten WCP C&D ARs validated in this project accounted for 3,288,647t, 37.4% of all LoW 17 waste codes collected nationally, including soil and stone.
- Post validation, three of the ten WCP C&D ARs were deemed inconclusive. Two of these were in EMR and one was in CUR. The “inconclusive” ARs accounted for 436,565t or 5% of the national C&D total figure for all LoW 17 codes. Therefore, following the validation process, **32.5% of the national C&D waste data was validated within this project.**
- The reliability of the remaining 63.5% of national C&D data is unknown.
- A key error identified by the Project Team was the recording of Article 27 material as waste. One WCP holder had declared the collection of 30,912t of LoW 17 03 02 and LoW 17 01 02, when all but 187t were established to be Article 27 material.
- Seven of the ten WCPs were found to be collecting soil & stone, LoW 17 05.
- As of the 30th of October 2020, the 2019 national AR data details that 7,485,240t of LoW 17 05 04 (Soil and Stone excluding excavated soil from contaminated sites) was collected nationwide. Prior to validation, the WCP holders selected for this project accounted for 2,973,037t of soil and stone, 39.7% of the national figure. Post validation, the WCP holders selected for this project accounted for 3,024,826t of soil and stone, 40.4% of the national total.
- Nationally, post-validation, there was 60,441t of contaminated soil and stone waste (LoW 17 05 03*) recorded on the NWCPO portal. A total of 51,789t was captured within this project accounting for 85.7% of the national total.
- The AR for each WCP holder collecting LoW 17 05 03* within this project was validated indicating a high degree of accuracy for the data on this waste type.

C&D WASTE FACILITIES

The ten ARs for C&D WFP holders validated in this project accounted for 422,871t of all LoW 17 waste codes (including soil and stone). This accounts for **5% of the national C&D tonnages recorded** on the NWCPO portal for 2019.

- A total of 276,161t of soil and stone passed through the facilities that were subjected to verification. That accounts for 4% of the national figure of 7,484,808t. No LoW 17 05 03* is captured in this data as these WFPs do not manage hazardous soils.
- Only C&D WFP AR could not be validated by the Project Team. No LoW 17 05 wastes were managed at this WFP.
- Five of the ten facilities subjected to verification had weighbridges. The WFPs that were found not to have weighbridges installed obtained tonnages for the AR from averaged weights based on the size of the vehicles entering the facility. This method of recording waste data led to discrepancies between the WCP's and WFP's AR data. No set of standardised vehicle averages were found between the WFP holders.
- The Project Team in the CUR & EMR reviewed WFP's waste onsite opening balance declared on the 2019 ARs. Five of the seven WFP holders in these regions were observed to have made errors in their "waste onsite" date for 2019 ARs. These errors were found to be a combination of WFP holders either declaring 'nil' for their opening balance of "waste on-site" despite operating in preceding years and no waste leaving the WFP in 2019, and/or WFP holders manually calculating their closing balance of waste on site for the end of 2019 by adding their opening balance to the tonnage of waste received during the year. The NWCPO portal automatically calculates a closing figure for "waste on-site" from data entered by the permit holder. This results in a doubling of "waste on-site" data compounded year on year if the error is repeated within each year's AR.

TREND ANALYSIS

In 2020, eight household/commercial collectors were subjected to RWMPO's verification for the first time. The trend in the numbers of ARs that could be validated after this process shows a continuous improvement from **70% in 2016, 74% in 2017, 78% in 2018 and 86% in 2019 of AR's that could be validated** by the RWMPO Project Team. This improving trend also demonstrates the importance of the RWMPO AR Validation Project as it clearly benefits the reliability of the waste data and the reliability of any forecasting based on this data.

80% of the C&D waste operator's AR that were captured in this AR Validation Project were successfully validated at the end of the process. A notable feature within the C&D validation trend is the numbers of ARs that remained in the "In Progress" or "Submitted" status in preceding years. As a result, **only 20% of C&D ARs that are now covered in this Validation Project were validated in 2016, only 50% in 2017 and in 2018 only 47% were validated.**

8. CONCLUSION

The RWMPO's AR validation Project captured 93% of all households serviced by authorised waste collectors and over the last four years there has been a continued improvement in the accuracy of AR data submitted by the household waste collectors. Following the validation of the top 28 household waste collectors for their 2019 data, 87% of the national household waste collection AR data could be validated as accurate and reliable, as part of this validation project. 95% of the national organic waste tonnages were also validated as accurate and reliable within the scope of this project. However, it was noted that there is still uncertainty and/or differences in how permit holders complete the AR data. This is especially evident around Tab 3 for the household data. The RWMPOs may consider limiting their involvement with the validation of household waste collectors AR data to desktop validations with the WERLA & LAs taking on the process of full onsite verifications for these permit holders. The reliability of the "Inconclusive" household data is unknown. However, the Project Team found a reasonable degree of accuracy within this data which can provide some degree of confidence to the RWMPOs when relying on the household AR data for waste capacity forecasting and waste planning.

Commercial wastes (LoW 20 03 01 residual) were included in this year's validation project for the first time. The common errors found by the validation team were the inclusion of household waste within Tab 1 submissions. Most of these errors were identified at the desktop validation stage and were addressed through anomaly queries with the permit holder prior to the remote verifications resulting in an 8% reduction to the tonnages reported in Tab 1 of the AR submissions. The RWMPOs should continue with desktop validations for these waste operators with the WERLA & LAs taking on the process of full onsite verifications.

There was a high level of inconsistency noted in the ARs for the C&D WCP permit holders at the desktop validation stage. Just two of the ten C&D WCP ARs did not require any amendments after the desktop validation. After anomalies were reviewed with the permit holders, seven of the ten C&D WCP subjected to verification could be validated. This AR Validation Project only captured a little over 37% of all C&D waste collected by waste operators nationally and resulted in only 32.5% of national waste data for C&D being validated. However, the high level of accuracy found in the hazardous soil and stone data (85.7% of LoW 17 05 03*) was the exception to the C&D waste data. The inclusions of scrap metal operators in this year's project and the resultant verification results demonstrates a need for the data from this sector be under greater scrutiny in the future. The RWMPOs should extend the scope of subsequent AR Validation Projects to capture a greater proportion of the C&D waste collected nationally.

The C&D WFP ARs covered in this project only accounted for 5% of the national total of chapter 17 LoW wastes entering WFPs. Although just one of the ten facilities subjected to verification in this year's project was deemed "inconclusive", this was after considerable work by the project team in addressing anomalies and errors in the data. Remote verification at these facilities proved challenging as most record management systems were found to be paper based and due to Covid19 restrictions, the RWMPO were unable to visit sites and conduct detailed onsite verifications. Only 50% of the facilities subjected to verification had weighbridges and an IT management system to capture the data for waste coming to site. The RWMPOs should extend the scope of C&D WFP permit holders captured in subsequent AR Validation Projects to broaden the scrutiny of AR data within this sector of the waste industry.

Additional guidance and education are required to ensure the accuracy of AR data. Limited enforcement action taken against permit holders submitting incomplete, inaccurate or no AR data will continue to reduce the reliability of the national waste data. To ensure the accuracy of waste data, particularly in the C&D sector, and with specific household & commercial waste collectors, enforcement should be proportionate and consistent throughout the country, as well as transparent so that the waste operators who do not commit the required resources into managing their waste data are seen to be held to account.

9. RECOMMENDATIONS

The delivery of the AR Validation Project 2020 on behalf of the RWMPOs offers significant opportunities to understand and make recommendations to drive efficiency across the AR Validation process, not only at a national level, but also through the NWCPO and WERLA structures to improve the quality of data for all waste operators. Many of the challenges encountered by the AR Project Teams this year when scheduling the validation meetings were related to the Covid-19 restrictions and the subsequent move to remote verification to replace onsite verification. The potential for ongoing restrictions, or restrictions of a different nature in the future need to be considered by the RWMPOs. Business continuity and contingency planning should form part of the RWMPO's strategic planning into the future. Many of the recommendations outlined below will be specific to the findings from the Project Team's work this year and the impact of the move to remote verification. Other recommendations will be relevant to both remote or onsite procedures and could be implemented in any format of the AR Validation Project.

The sections below outline specific areas for the RWMPO's consideration in terms of general observations, training and support; communication and engagement; waste specific observations and recommendations for follow-up enforcement activities. However, prior to acting on these recommendations, the Project Team suggest that the RWMPOs give some consideration to procedural changes to future AR Validation projects. These recommendations are listed below:

SCHEDULING OF AR VALIDATIONS

Many of the challenges encountered by the AR Project Team when scheduling the validation meeting this year were specific to the public health measures for Covid-19 introduced from March 2020 as outlined in Section 5 of this report. In previous reports the AR Validation Project Team recommended that the project commences at an earlier date in the year. In 2020, as with previous years, the scheduling of validation meetings and desktop validations only started in quarter three.

1. It is recommended that future AR projects begin in the second quarter of a year as soon as the NWCPO make AR data available to the LAs. In most cases waste operators are adhering to the February AR submission deadline so desktop validations should be able to commence by mid-March. This would facilitate timely engagement with waste operators and LAs ensuring that the waste operators selected for validation will be more familiar with their recently submitted AR data, and there is a greater possibility that the waste operators' relevant employees will still be working within the company with similar roles and responsibilities. This is especially relevant for paper-based operators who store documents away after the AR is complete. Earlier identification of data recording errors will also ensure that waste operators have an opportunity to correct these issues at an early stage so that these errors are not repeated in the subsequent year's AR submission.

WASTE OPERATOR SELECTION CRITERIA

The trends identified in Section 7 of this report clearly demonstrate the ongoing consistency in the quality of the household waste collectors' AR data and the lower quality of the C&D waste operators' AR data. Selection Criteria for the 2021 project should consider the trends identified in this report. In quarter one of each year the RWMPOs should agree on the selection criteria based on the findings and trends identified in previous validation reports while considering National Waste Priorities of the reporting year. In doing so, the selection criteria could be established prior to the release of the NWCPO AR data so that waste operators can be identified in March/April for potential inclusion in the Validation Project. Following release of AR data by the NWCPO, a

desktop review of the selected permit holders will allow for the elimination of any waste operators that maybe selected based on erroneous data, these permit holders can then be substituted for another waste operator prior to commencement of the validation process.

2. It is recommended that the RWMPOs develop a risk-based approach to their selection criteria as this will improve the effectiveness and efficiency of the Project Team and remove the burden on waste operators who have put considerable resources into producing consistently high quality and accurate waste data.

GUIDANCE DOCUMENTS

It is recommended that any guidance documents prepared to date for the validation of AR data are amalgamated and updated on a more regular and timely basis. Updated guidance covering the latest changes for completing Tabs 1 & 2 are available on the NWCPO but no guidance covering changes to the reporting requirements for Tabs 3 & 4 were available. In general, stakeholders involved in the completion and validation of ARs positively responded to changes made to the AR portal by the NWCPO. It is recommended that any changes made to reporting requirements on the AR portal should be highlighted in updated guidance and communicated to waste operators and LAs at the time changes are made. It is recommended that the RWMPOs engage with the NWCPO on amalgamating and updating these guidance documents.

3. The move to remote verifications also required the development of new procedures to carry out these validation meetings. In addition, a new Communication Strategy for use by the Project Team was developed for this year's project along with a WERLA document detailing the role and responsibilities of the Waste Enforcement Officer in the RWMPO's AR validations. It is recommended that the RWMPO now incorporate these into a single guidance document.

GENERAL

4. Due to Covid-19 restrictions all onsite verification of ARs were conducted remotely online via Microsoft Teams. The RWMPOs had sent out emails in advance detailing how the validation meeting would be carried out and included: a computer from where the permit holder could 'share screens'; have access to the permit holders record management systems; dockets; spreadsheets and any material that was used to input data for their AR.
5. Despite this there were issues with permit holders not having access to appropriate software or were unable to use it for the validation meetings. This was the first year that the validation meetings had to be conducted online and it is recommended that this is included as a contingency plan in the procedure for AR validation of 2020 data validations.
6. Remote verifications can improve the Project Team's efficiency. However, if remote verifications are to be a feature of future AR Validation projects, a more efficient way of receiving documentation from waste operators should be considered where sharing screens is not an option, particularly for the C&D waste operators. It is recommended that the RWMPOs establish a file sharing system to allow waste operators upload documents needed to verify their data. The method utilised for this year's project was a simple e-mail system requiring permit holders to scan and send large files containing the required documents. Efficiencies gained through reduced travel time for onsite verifications were in many cases lost as a considerable amount of time was spent after a remote verification following up with a permit holder to obtain the documents requested at the time of the validation meeting. These documents

were routinely received by the Project Team a number of weeks after the original validation meeting resulting in the Project Team going back to the AR to refresh themselves on their findings and what documents were requested before going through the received documentation to validate an AR.

7. Overall, the feedback on the remote meetings has been positive with few technical issues encountered by waste operators. It is recommended that the RWMPOs consider expanding the use of remote verification for future validations. This method of remote verification is primarily recommended for the household and commercial waste collectors or other waste operators considered to be low risk.
8. To facilitate a full and detailed validation of WCP and WFP ARs the Project Team would benefit from integrated access to the EPA's Annual Environmental Report (AER) data submitted by EPA licenced sites. This would allow for all anomalies between WCPs, WFPs data and licenced waste facilities to be interrogated and a comprehensive cross validation of all waste flows to be conducted. The Project Team understand that engagement between the NWCPO and the EPA to obtain access to the EPA database of AER data is underway and it is recommended that the RWMPOs engage with the NWCPO and the EPA to facilitate this for future AR Validation Projects.
9. It would be of benefit if the NWCPO's AR portal were to automatically highlight anomalies after AR submissions. This would allow for any errors highlighted to be communicated to the permit holder well in advance of their desk-top validation and validation meeting where relevant. It is recommended that the RWMPOs engage with the NWCPO on facilitating automated anomaly identification.
10. At present, the NWCPO's AR portal allows for Tab 1 to be exported to excel format under 'Compare Historical Data'. It would be of benefit if there was an export button for all Tabs to allow for all historical data to be exported into an excel format to facilitate analysis of increase and decrease in tonnages in comparison to previous years' data. It is recommended that the RWMPOs engage with the NWCPO to provide this functionality in the AR portal for historical data.

HOUSEHOLD WASTES

11. The Project Team identified numerous errors in the recording of the number of households, numbers of apartments units and the numbers of bins presented within AR submissions. It is recommended that the RWMPOs engage with the NWCPO and the WERLAs to ensure there is consistency and clarity in how waste operators are requested to report this data and how LAs validate this data.
12. Waste operators indicated that they had no way of knowing how many residents of apartment developments were using the bins provided. An assumption should be made that the number of apartment units within a development is used as the number of bins presented for that development as it could safely be assumed, that each apartment within a development is using the bins provided by their property management company. It is recommended that the RWMPOs engage with the NWCPO to ensure a consistent approach is taken to recording the number of households in apartment developments. It is further recommended that the RWMPOs engage with the NWCPO to ensure clear guidance on recording numbers of apartment units within an apartment development is delivered to all stakeholders.
13. The Project Team established that some waste operators that do not provide a standard "kerbside" collection service to households but do service apartment developments treat these collections as commercial waste. These waste collections from apartments may be conducted on a route collecting from other commercial premises and the collection data specifically relating to the apartments could

not be extracted from the record management system. This waste was routinely misclassified as commercial waste. It is recommended that the RWMPOs engage with the NWCPO and WERLAs to ensure clear guidance is delivered to both a waste operator and the LAs for-validation purposes.

C&D COLLECTORS AND FACILITIES

14. The Project Team reported that facilities currently recovering crushed concrete and road planings material were not always aware of the guidance on End-of-Waste from the EPA. It is recommended that the RWMPOs engage with the “Construction Waste Resource Group” to re-affirm the requirements of Article 27 & Article 28. In addition, it is recommended that the RWMPOs engage with the EPA and the WERLAs to ensure waste operators are aware of the requirements to record this material as waste in the absence of Article 27 notifications or Article 28 status for the materials.
15. For the purposes of tracking waste from “cradle-to-grave”, a method for tracking Article 28 ‘Product’ and Article 27 “By-Product” tonnages within the AR data submissions should be elaborated and communicated to the waste operators and LAs. This would allow for more accurate desktop validation of AR data for the C&D waste operators informing national figures and facilitating more informed waste management planning and capacity forecasting. It is recommended that the RWMPOs engage with the NWCPO to further develop methods of tracking Article 27 & 28 materials through the AR portal.
16. The Project Team noted incidents where waste operators were incorrectly recording ‘Waste Onsite’ data at WFPs. It was noted that waste onsite data did not corresponded with historical records of waste brought to that site. The NWCPO AR portal automatically adds incoming waste within any reporting year to the opening balance of “Waste onsite”, However, the Project Team established that this is not clearly understood by permit holders leading to “waste onsite” errors been compounded year on year. It is recommended that the RWMPOs engage with the NWCPO and the WERLAs to ensure clear guidance is provided to permit holders and that LAs are aware of this potential error when validating ARs.

ENGAGEMENT AND COMMUNICATION

17. The Project Team engaged with all selected permit holders at the start of this year’s Validation Project outlining the purpose and process of the validation meetings. The Project Team also outlined the technical requirements of the move to remote verifications. This communication was conducted through e-mail plus in some cases subsequent telephone conversations with the permit holders. Despite this, many waste operators were unprepared, had technical difficulties on the day of the validation meeting or were suspicious of the process querying why they had been selected. It is recommended that the RWMPOs prepare an information pack for the waste operators outlining the purpose, the selection criteria applied and the documentary and technical requirements of the validation meeting process.
18. The Project Team reported throughout the duration of the project that many waste operators expressed difficulties understanding the AR portal system. Issues reported included a lack of knowledge around which “Tabs” to complete and how to edit their submission when a LA reversed either a single Tab or the full AR. This was most notable with the C&D and commercial waste operators as the household waste collectors were found to be more familiar with AR submissions and the AR Validation process. It is acknowledged by the Project Team that guidance to permit holders needs to be amalgamated and updated. However, the existing guidance does provide permit holders with very clear guidance on the main aspects of completing an AR submission. As the AR is a condition of all waste permits, the permit holder has an obligation to make themselves familiar with the data required in their

AR, how this should be recorded, extracted from their waste data management system, and reported in their AR submission, Consideration could be given to the addition of a declaration on the AR portal for permit holders to state that they have read and understood the reporting requirements and the guidance provided by the NWCPO. It is recommended that the RWMPOs engage with the NWCPO to overcome these errors and improve the overall quality of the data submitted prior to validation.

19. In comparison to previous AR Validation Projects, it was noted in this year's project that the WERLAs and LAs were more aware of their roles and responsibilities and engaged in the process. Prior to the scheduling of validation meetings, the AR Validation Project Team were provided with the contact details for the relevant Waste Enforcement Officer (WEO) within the relevant LA. This was a more comprehensive list than in previous years and in general, accurately reflected the relevant person in each LA. It is recommended that the RWMPOs continue providing the Project Team with updated contact lists and engagement with the WERLAs on the roles and responsibilities of all stakeholder's participation in the validation process.
20. During this year's validation process the Project Team were requested to review elements of the AR data that were outside the scope of the data validation process e.g. organic "brown" bin numbers for households in the 2019 data and 2020 data to allow the WERLAs scrutinise compliance with the Household Food Waste Regulations and "brown" bin roll out. This was not included in the original brief for the Project Team from the RWMPOs as the purpose of the AR Validation Project has always been one of verifying the accuracy, establishing the reliability and completeness of the annual return data. It is not a function of the AR Validation Project to review a permit holder's compliance with other conditions of their waste permits. It is recommended that the RWMPOs engage with the WERLAs prior to commencement of any future project to clarify the scope of the AR Validation Project and review the roles and responsibilities of the WERLAs and LAs within the process.

TRAINING AND SUPPORT

21. Neither the AR Validation Project Team, the WERLAs or the LAs have the experience of completing an AR submission from the permit holder's perspective. Allowing those engaged with the validation process to run "test AR submissions" from scratch will better inform them on potential errors a permit holder may make and provide a greater appreciation of any issues that a permit holder may raise within the validation process. It is recommended that the RWMPO's engage with the NWCPO to facilitate test AR submissions by the Project Team, LAs and WERLA personnel.
22. To further eliminate anomalies and discrepancies across all sectors, stakeholders should be engaged in a group setting on how to accurately complete the AR data. This will allow stakeholders to have a full appreciation of the importance of accurate data, what the data is used for and the implications of submitting incorrect/incomplete data. These stakeholder group meetings should allow for guidance from the NWCPO and WERLAs along with open discussion resulting in questions and answers. Any questions that are not resolved during a group meeting should be subsequently communicated to all within that grouping to ensure a consistent response is delivered to all. It is recommended that the RWMPOs engage with the NWCPO and WERLAs on facilitating a number of Webinars for open discussions and dissemination of guidance regularly. It is further recommended that consideration be given to holding such webinars for industry specific stakeholders as the difficulties and misunderstandings of a C&D facility waste operator will differ from those of a kerbside waste collector. This will allow industry specific issues to be discussed and resolved effectively. It is also recommended that the RWMPOs engage with the NWCPO and WERLAs to ensure that any presentations, guidance documents and FAQs from these stakeholder sessions are made available to all. These will provide

ongoing guidance as reference documents and should also be made available for those stakeholders that were not available to join any of the group meetings, i.e. linked to the NWCPO and WERLA websites. These stakeholder sessions will allow attendees and presenters to give, receive and share information with each other, in real time.

ENFORCEMENT

23. Only one AR out of the 38 permit holders selected in this year's AR Validation Project was not available through the NWCPO portal for validation. However, this waste operator has consistently submitted late ARs and their data has not been validated at any time within the last four years of the RWMPO project. A 2nd permit holder who did submit their AR in time for verification has not had their AR data validated at any time within the last four years. Many other permit holders had not submitted a completed AR by the time validations commenced resulting in time and effort from the Project Team engaging with waste operators to complete the required AR. It is strongly recommended that the RWMPOs engage with the WERLAs to ensure appropriate enforcement action is taken by the relevant LA's where incorrect data is submitted, or when no data is submitted.

8. ANNEX IV – NWCPO DATA SET AS OF 30TH OCTOBER 2020

All data is presented in tonnes (t)

HOUSEHOLD WASTE

SERVICED HOUSEHOLDS

2016: 1,259,593
2017: 1,316,832
2018: 1,328,220
2019: 1,314,650

2 BIN SERVICE

2016: 1,257,578
2017: 1,234,195
2018: 1,253,195
2019: 2,306,830

3 BIN SERVICE

2016: 639,386
2017: 670,577
2018: 732,600
2019: 818,204

HOUSEHOLD WASTE COLLECTED

2016: 1,054,425.83
2017: 1,071,938.82
2018: 1,076,039.73
2019: 1,044,972.51

WASTE COLLECTED PER HOUSEHOLD

2016: 0.84
2017: 0.81
2018: 0.81
2019: 0.79

HOUSEHOLD RESIDUAL WASTE

2016: 682,094
2017: 680,841
2018: 682,142
2019: 634,825

RESIDUAL PER HOUSEHOLD

2016: 0.54
2017: 0.52
2018: 0.51
2019: 0.48

MIXED DRY RECYCLABLES

2016: 253,684
2017: 254,221
2018: 249,557
2019: 243,548

RECYCLABLES PER HOUSEHOLD

2016: 0.20
2017: 0.19
2018: 0.19
2019: 0.19

FOOD WASTE COLLECTED

2016: 112,502
2017: 130,861
2018: 137,296
2019: 159,385

FOOD WASTE PER HOUSEHOLD

2016: 0.09
2017: 0.10
2018: 0.10
2019: 0.12

COMMERCIAL MUNICIPAL WASTE

RESIDUAL

Tonnage of residual Commercial waste

2016: 385,574
2017: 532,112.00
2018: 550,947
2019: 522,580

RECYCLABLE

tonnage of recyclable commercial waste

2016: 78,432
2017: 115,572
2018: 138,807
2019: 129,590

FOOD WASTE

2016: 70,292
2017: 78,030
2018: 92,177
2019: 85,596

CONSTRUCTION AND DEMOLITION WASTE

C&D WASTE

2016: 5,350,362
2017: 4,896,187
2018: 6,373,879
2019: 8,786,981

SOIL AND STONE

2016: 4,261,610

2017: 3,865,855

2018: 4,897,981

2019: 7,485,240

CONTAMINATED SOIL AND STONE

2016: 37,664

2017: 62,755

2018: 67,106

2019: 60,441