Trading Partner Agreements

Analysis and Best Practices

Final Report

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Table of Contents

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Executive Summary

Background

The National Environmental Information Exchange Network (Network) is an innovative approach for the exchange of environmental data between EPA, States and other parties. The objective of the Network is to reduce burden and increase the efficiency of information exchanges. One of the key supporting elements for Network implementation is the Trading Partner Agreement (TPA) which is intended to document and formalize the processes for managing the flow of information across the Network.

Significant progress has been made towards implementing the fundamental Network concepts. States and EPA have already established a number of information flows over the Network and have developed TPAs to support these flows. As the Network implementation has progressed, and understanding of the details of the Network has evolved, new constructs such as the Flow Configuration Documents (FCD) have been developed. In light of this new experience, the Network Steering Board (NSB) directed its staff to conduct an analysis of the current scope and development of the TPA and to prepare recommendations for a future development process and tools.

The original objectives for the TPA as conceptualized in the *Blueprint for a National Environmental Information Exchange Network (Blueprint)* and *Implementation Plan for the National Environmental Information Exchange Network* were reviewed in light of practical experience with Network implementation. This analysis explored the following areas:

- Purpose of the Trading Partner Agreement
- Voluntary versus Regulatory Flows
- Overlap with Flow Configuration Documents
- Unilateral/Bilateral/Multilateral Agreements
- Overlap with Flow Configuration Documents
- Ownership and Use of Data
- Data Content and Quality

Findings

The vision presented by the Network *Blueprint*, was broad, and encompassed many different dimensions of the processes needed to manage information flow. As partners have begun to exchange data, much has been learned about the development of the partner relationships and information flows.

The following conclusions can be drawn from the analysis of this experience:

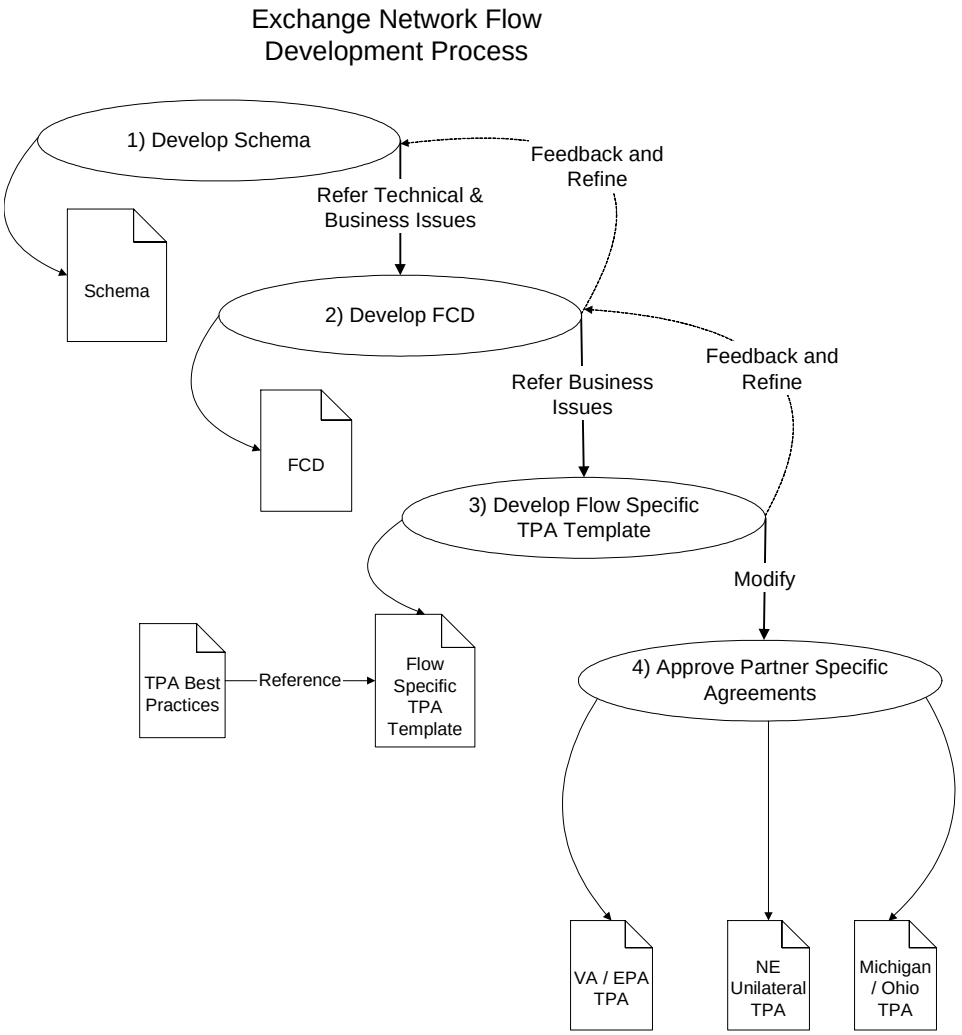
1. The two fundamental objectives of the TPA as described by the *Blueprint* can be confirmed:
   - Establish and characterize a data sharing relationship between two or more parties, and
   - Document the business processes and issues related to the exchange of data for a specific flow.
2. The TPA has a valuable role in managing a Network information flow.
3. The TPA should focus on business and contractual aspects of the information flow and not the more technical aspects which are addressed through the FCD.

4. The paperwork burden associated with TPAs must be minimized. The elements included in the TPA must be simplified to those providing real value. Elements that are already addressed through other Network tools should not be repeated.
5. There is a need for a consistent and coordinated development process for all of the Network flow support components, not just the TPA.

Recommendations

Two main recommendations can be made with respect to the future development of TPAs.

First, the following figure presents a model for a logical and coordinated approach to developing the tools required for the management of a Network information flow. This workflow will deliver a template TPA that is specific to the flow being addressed and meaningful to the parties entering into the agreement. Partners will take this template and customize it for their exchanges. This approach would depend on the appointment of a workgroup of technical and program area experts, to develop the XML schema, the FCD and the TPA in a coordinated process, employing referral and feedback mechanisms to manage issues and refine earlier deliverables. This workflow confirms much of the original expected TPA development process described by the Network *Blueprint* and *Implementation Plan* documents.



Second, the following table presents a set of TPA components that workgroups tasked with developing the flow-specific TPAs should use to direct their work. These components are presented in a flexible model for a TPA that has been refined to eliminate overlap with the FCD and remove any components of the current TPA that experience has shown to be unnecessary.

Required Elements	**Optional Elements**
Purpose and Parties	Background
Definition of Data	Benefit
Legal Framework	Financial Agreements
Dispute Resolution	Exchange Failure
Exchange Mechanism	System Failure and Data Reconciliation
Exchange Schedule	Record Retention
Data Ownership	
Use and Distribution of Data	
Data Elements (Columns)	
Data Content and Coverage (Rows)	
Data Quality	
Data Timeliness	
Period of Agreement / Termination	
Contacts	
Approval Signatures	

When moving forward with these recommendations, it is suggested that these recommendations be piloted on a new Network flow development. This pilot will help refine the methodology and draw upon the experiences of other Network implementers.

Introduction

Background

The National Environmental Information Exchange Network (Network) is an innovative approach for the exchange of environmental data between EPA, States and other parties. The Network will promote access to and exchange of quality environmental data while reducing burden and increasing efficiency of data exchanges. States and EPA expect the Network to become the preferred method for routine inter-governmental transfers of environmental data.

The fundamental Network concepts are documented in two core documents:

- *Blueprint for a National Environmental Information Exchange Network (Blueprint)*, and
- *Implementation Plan for the National Environmental Information Exchange Network (Implementation Plan)*.

These documents introduce the objectives for the Network and describe the generalized architecture. Subsequent design and implementation activities have complemented these basic concepts with additional detailed specifications.

One of the important supporting elements of the Network is the Trading Partner Agreement (TPA). A TPA is a written agreement that defines, for specific data flows, the partners' individual and joint responsibilities in stewardship, security, and other items essential for the effective exchange of information between two or more trading partners on the Network. In short, TPAs document and formalize the processes for managing the flow of information across the Network. They may apply to exchanges initiated by the sender or those initiated at the request of the receiver. Network partners may agree upon a TPA for each information flow.

The early Network planning documents established initial guidelines to be used by Network partners when developing and negotiating TPAs amongst themselves. States and EPA expected that these guidelines would be a dynamic resource for Network partners that would evolve with ongoing Network flow implementation. However, the development of TPAs was not defined as a mandatory step for partners when establishing a flow and the Network Steering Board (NSB) has intentionally not released any formal guidance for TPAs.

Significant progress has been made towards implementing the fundamental Network concepts. States and EPA have already established a number of information flows over the Network. As the implementation has progressed, State partners have developed TPAs with their EPA regional office and with EPA headquarters. Many of these have addressed the need to supply information about regulated facilities from State systems to the EPA Facility Registry System (FRS). These TPAs generally used the initial Network planning document guidelines as well as an early template TPA for the FRS flow prepared by the State of Nebraska. The development of these early agreements has informed our understanding of the role of the TPA in the Network implementation.

Recently, the NSB introduced the concept of a Flow Configuration Documents (FCD) as a means to organize and describe the operational information needed to establish a Network flow. The FCD is intended to be complementary to the TPA with a more technical focus that describes the details of the Network Node services needed to support data exchange, including security, error handling, and service definitions. The FCD, by its nature, includes some elements previously envisioned for coverage by the TPA.

Finally, other required components of the Network have also been implemented, such as the EPA Central Data Exchange (CDX) Node registration process. This again includes some of the elements covered by the early template TPA.

Given the rapid increase in the maturity of the Network, the NSB wishes to more fully assess and define the role of TPAs. Their intent is to maintain the original purpose of TPAs but to minimize the paperwork burden. The NSB has directed its staff to conduct an analysis of the current scope of the TPA, its development process and available tools and to prepare recommendations for a future process and tools.

This document presents the results of this analysis and outlines a recommended process and set of Best Practices for the development of TPAs in the future.

Project Approach

The Network *Blueprint* and *Implementation Plan* were reviewed along with other supporting documentation, such as meeting notes, template TPAs and presentation materials. From this review, the typical components of a TPA were defined. This list was then used to evaluate and compare existing TPAs and FCDs developed by States and EPA. Most of the examples considered addressed the FRS flow but some other examples were also available. The example TPAs and FCDs were compared to the list of typical components to understand how each example had addresses the theoretical requirements. For the FRS flow, many of the TPAs originated from the same template document developed early in the process. In general, partners followed this template closely. A comparison matrix was developed which can be found in **Appendix A**.

This comparison raised a number of questions regarding the applicability and utility of a number of the TPA components. To explore these questions further, a number of interviews were conducted with key individuals involved in the implementation of the Network at a national level who have practical experience with the development of one or more TPAs. These interviews offered valuable insights to the practical application of the TPA concept.

Based on the comparison and interviews, a number of key observations can be made. These are documented in the next section of this report.

Finally, based on this analysis, it is possible to identify a set of Best Practices that should be used when developing a Network TPA, together with an ideal process or workflow that should be used for future Network flow definitions. From these Best Practices, one or more tools may be developed to assist trading partners in the development of Network flow and Network Node specific TPAs.

Key Findings

This section summarizes a number of key findings or observations related to early experiences with the development and use of the TPA to document Network information flows.

Purpose of the Trading Partner Agreement

During early planning for the Network, the concept of the TPA was introduced to support a number of functions, including:

- Providing a mechanism for two parties to enter into and formalize a Network information sharing relationship,
- Documenting the required technology and approach needed to establish the information flow,
- Describing system flow, processing and failure management, and
- Stating data stewardship, use and quality expectations.

As the implementation of the Network has progressed, practical experience with the development and use of TPAs has sharpened Network participants' focus on the function of the TPA.

There is general consensus that the TPA can play a vital role in documenting, and in some cases, establishing, an information sharing relationship. It allows the parties to declare that they have a vested interest and commitment to making the relationship and the exchange work and provides a vehicle to define the points of contact within their organizations with responsibility for managing a successful information flow.

The purpose of the TPA has been somewhat confused by the inter-relationship with pre-existing regulatory oversight agreements, although the TPA is in no way legally binding. Since there is widespread agreement that the development of TPAs should not represent a paperwork burden, it follows that the TPA must be streamlined to focus only on those issues not already the subject of another agreement between the partners.

Additionally, the original expectation that the TPA would describe the technical aspects of the flow has to a large extent been superseded in favor of newer tools such as the FCDs. An evaluation of TPA components against the FCDs developed to date, demonstrates that the FCD is better able to fill this more technical role. Most Network experts now believe that the TPA should focus on specific business issues concerning the information flow.

As the implementation of the Network continues, the use and purpose of TPAs will continue to be refined. For example, many of the TPAs developed to date have been oriented to support a generalized "push" approach to information flows, where data is submitted to a requesting entity to meet regulatory requirements. As the Network is implemented more broadly, more of an on-demand "pull" approach will be established for information flows. This will change the emphasis of future TPAs to data content, quality and usage.

In summary, Network experts characterized the purpose of the TPA as the means to:

1. Establish and characterize an information sharing relationship between two or more parties.
2. Document the business processes and issues related to a particular information flow.

Voluntary versus Regulatory Flows

Two types of Network information flows can be characterized, those that facilitate required transfers of data, typically between partners who share some regulatory oversight responsibility or interest, and those that facilitate the voluntary exchange of data between partners, for mutual benefit. The type of information flow being addressed will greatly influence the structure and content of the relevant TPAs.

Regulatory information flows are those exchanges between two partners in support of the implementation of environmental regulations. Regulatory information flows are typically governed by authorities outside of the Network. In this type of exchange there is typically a governing party with compelling authority over the second party. An example of a regulatory information flow is the submission of hazardous waste program inspection or permitting data by a State to the national RCRAInfo system. The obligation for a State to report is often found in Performance Partnership Agreements (PPAs) and grant agreements.

In contrast, voluntary[1] flows are those where two or more entities enter into a mutually beneficial information sharing relationship. The relationship is entered into voluntarily and has no mechanisms with which to compel actions or behavior. An example of such a flow would be two or more neighboring States agreeing to exchange hazardous waste manifest data, or surface water quality information for shared watersheds.

During interviews with Network implementation experts, there was general agreement on the distinction between the two types of relationships. Interviewees also agreed that the depth and detail required for a voluntary data flow may be greater than that required for a regulatory flow since the rules for the latter have typically already been established through program approval and oversight mechanisms. Conversely, voluntary information flows may require only a minimal summary of the conditions under which information is being made available.

Some interviewees questioned whether the TPA is even necessary for regulatory flows in general, given the other mechanisms that exist to manage the details of the processing and mechanisms for data submission, such as Memoranda of Understanding, Work Plans, national system specifications, and so on. For example, a Performance Partnership Agreement (PPA) might adequately define the data reporting responsibilities that a State might have for a given program as an agreed grant commitment. Other interviewees expressed the opposite viewpoint, indicating that the TPA can be useful for regulatory flows where aspects of the information flow are poorly documented, for example, where parties are sharing information beyond the basic requirements documented by a State-EPA agreement or other specifications. Another example might be where a State is willing to enhance the timeliness of required information by making it available in "real-time." A State may wish to formally document aspects of an enhanced information sharing arrangement in order to ensure appropriate uses. For certain regulatory flows such as RCRAInfo, the TPA might document selected data transfer options where more than one approach might be available but the selection is not covered in the other agreements between the State and EPA.

The structure and language used in many of the example TPAs that were reviewed during this assessment may, to some readers, seem excessively detailed and possibly redundant when applied to regulatory flows due to the duplication with other mechanisms. This is contrary to the general desire to reduce the paperwork burden associated with the implementation of Network flows.

As the Network matures, and information flows move from a "push" or submission-based approach to a more open or "pull" approach, there may be less variation in the definition of voluntary and regulatory flows.

[1] For the purposes of this document, the term "voluntary" has been used to describe any information flow where there is no mechanism to compel action between the two parties.

Overlap with other Partner Agreements

There is a clear overlap between the intended purpose of a TPA for a regulatory data flow and the scope of other agreements that are in place to manage data exchange in support of regulatory program implementation. States that are responsible for implementing portions of regulatory programs such as RCRA have reporting requirements outlined in agreements that they enter into with EPA. Typically these agreements will detail the elements of the program and the associated data, for which the State has responsibility, and in some cases, those for which EPA has responsibility. These agreements may also directly address aspects of a typical TPA, for example, submission timing and data reconciliation processes. These agreements may also outline anticipated actions and commitments by the State with regards to data management. For example a Work Plan might direct the State to develop routines and processes to electronically submit data to a national system (e.g., RCRAInfo)

The agreements are typically used by EPA to evaluate program effectiveness and partner commitments, often related to grant funding, as well as possible compliance assessments. The agreements cover all aspects of the relevant program implementation, and not just data management issues. As such they are an important directing influence for the State-EPA relationship.

By contrast, the conceptual TPA does not involve any authority of one partner over another. Rather the TPA simply describes the mutual information flow obligations between those partners.

Many of the components envisioned for a typical TPA are addressed to a greater or lesser extent by these other agreements. At one extreme, this might suggest that the key elements needed to support Network exchanges should only be included in the State-EPA agreements[2] with no need for a TPA for regulatory flows. This would potentially limit the need for partners to support changes to the exchange between agreement cycles, with modifications being added to the subsequent year's agreement together with associated process and funding negotiations. However, due to the broader significance of these other agreements and the effort involved to develop and update them, some interviewees suggested that the TPA should be used to manage any gaps not covered by the State-EPA agreements.

In conclusion, it is clear that the TPA should only concern itself with those components that are not adequately defined by other preexisting agreements. If those existing agreements are able to satisfy the minimum set of components envisioned for the TPA for the information flow, then a separate, stand-alone TPA document might not be required. Alternatively an "umbrella" TPA could be implemented to identify and aggregate the other controlling documents and terms, under a single reference source.

This is consistent with the NSB goal to minimize the administrative burden associated with TPA development and aligns with the original direction offered by the Network *Implementation Plan*, which offered three general options for documenting the necessary data exchange agreement:

1. The information flow is not covered by any existing partner agreements. A new TPA is created including a comprehensive set of the expected TPA components.
2. The information flow is already fully documented by an existing agreement between the partners (e.g., PPA, SEA, MOU, etc.). The TPA is therefore unnecessary.
3. The information flow is partly described by an existing agreement between the partners. A hybrid approach should be used where a TPA is developed to cover those components that are not in the parent agreement. This might include specific information on the data exchange between the parties, such as data elements, exchange format and protocol, timing and frequency, stewardship, and contact information.

[2] Throughout this document the term "State-EPA agreement" has been used to generically describe the various agreements that EPA and States enter into for program management, such as a Performance Partnership Agreement (PPA), Memorandum of Understanding (MOU), State-EPA Agreement (SEA), or State Work plan.

Determining which of these options is appropriate for the given information flow will depend on the nature of the flow, and the parties involved. As Network implementation continues, it is anticipated that the nature of the relationship the TPA has with other agreements could potentially change. It is possible that the TPA may be used in the future to address many aspects of oversight of information flow between parties, perhaps even eliminating the overlap between these State-EPA agreements.

Unilateral/Bilateral/Multilateral Agreements

The Exchange Blueprint identifies bilateral flows as the primary mechanism that trading partners would use to exchange information. This would include both regulatory flows between States and EPA, as well as other types of routine bilateral flows among States and EPA. All example TPAs evaluated during this assessment described bilateral flows, although in most cases information flow was unidirectional, flowing to EPA only. For bilateral flows, the TPA will describe conditions for the exchange that are specific to the relationship between the parties.

The Exchange Blueprint also describes ad hoc or interactive flows which might be established by a trading partner to serve information requests from their Nodes. These types of information flow may be considered as being unilateral[3], with one partner simply serving up information, or as multilateral, with one or more partners serving up the same information with shared objectives in mind. An example of this might be the Pacific Northwest Water Quality Data Exchange where partners will make data available in a commonly agreed format to other partners involved in the project. Depending on the point of view, this might be regarded as either a unilateral or multilateral information flow.

While most of the information flows described to date in TPAs are bilateral in nature, as Network implementation progresses, the types of information flow will change and extend. Trading partners will increase their emphasis on multi-partner flows involving the sharing of information not just with EPA, but also with other partner states as well as private entities.

This shift will pose challenges for developing and managing the TPAs. Conceptually each node could make many flows available, each with their own set of trading partners and terms and conditions. Clearly, simple bilateral TPAs will not be a practical solution in these circumstances given the potential administrative overhead associated with managing the agreements that would be needed. If the TPA is to be treated as a meaningful tool, it must be actively maintained. The use of large numbers of bilateral TPAs will make this more difficult and time consuming.

One solution would be the development of unilateral agreements, where a Network partner simply makes information available to any interested parties via their Node. The partner would develop a unilateral TPA that would make declarations concerning the conditions, use, and quality of the data being made available. A partner retrieving information from this source would agree to the terms and conditions set out in this TPA, either explicitly by accepting the terms before a query is allowed, similar to a software licensing agreement, or implicitly where the conditions are simply stated, similar to a disclaimer on a Web site. The unilateral TPA would only provide limited control over the information flow but would require only limited administration.

An alternative would involve the development of a multilateral agreement that could include several trading partners collectively "signing on" to a TPA. The group would set up the flow and agree to a set of terms and conditions. The parties might agree to a particular set of data elements, schemas, flow conditions and exchange rules. General language would describe the conditions to which all parties

[3] Throughout this document the term "unilateral" has been used to describe the terms and conditions of use and quality of the information that might be declared by a party that wishes to make that information generally available to any partner. This conceptual term originates from early planning work for the Network. An alternative that has been proposed for these situations might be the term Trading Partner Statement.

agree. Addendums might be attached as necessary where individual partners might add special conditions for the availability of their data. This approach would clearly entail an administrative overhead for the parties in terms of management and oversight of the agreement amongst what could become a large group.

All three approaches will require that the involved parties adapt TPA structure and content to meet specific circumstances. For example, in a bilateral agreement, frequency of submission might be a TPA condition. However in a unilateral TPA submission frequency would not be of concern as data access is open and frequency is on an "on-demand" basis. Therefore the language and structure employed in the TPA must be flexible enough to allow partners or single data providers to customize the document to meet the needs of their individual approach.

Overlap with Flow Configuration Documents

When the TPA was initially conceptualized for use in the Network, it was assumed that the document would be used to detail both the mutual agreements between two parties, as well as some of the technical components of the information flow. When developing early Network flows such as FRS, implementing partners realized they needed to address and agree to many technical issues in order to proceed with flow development. To describe these technical or operational aspects of the flow, the NSB introduced the Flow Configuration Document (FCD).

The FCD will specify the technical details of an information flow. This will include all of the operational information not already covered by the latest version of the *Network Exchange Protocol*, *Network Node Functional Specification*, or *Network Security Guidelines*, that a partner would need to know in order to configure and execute a Network service request for that flow.

The FCD concept is relatively new and those developed so far vary somewhat in depth and scope of coverage. The NSB is sponsoring the development of guidance for the use and content of FCDs and a parallel project is ongoing to develop an FCD for the FRS information flow. This will fully detail all of the relevant issues for the FRS flow and will serve as a good example of the types of issues and details that the FCD should address.

However, it is clear from work conducted so far on FCDs, that some of the components overlap significantly with the original conceptual vision for the contents of the TPA. Network implementation experts generally agreed that the definition and scope of the TPA should change accordingly to eliminate the overlap with the FCD. The specific components of the theoretical TPA that are addressed more completely by the FCD include:

Security

The FCD explicitly details the type and level of Network security to be used. It includes the specific parameters such as certificates used for authentication, non-repudiation and digital envelope, and other security issues.

Data Definition

The FCD includes specific references to the XML schema that are to be used to support the flow, together with the reference URL for the schema. The XML schema itself then defines the data elements to be exchanged in much greater detail. Issues of data completeness and quality remain unexplored by the FCD however, and interviewees agreed that these issues should be covered by the TPA. This is discussed further later in this document.

Technology

The FCD describes the technical and operational aspects of the information flow in sufficient detail to enable the development of Network service requests.

Communication

Again, the FCD specifies the transport protocols and electronic addresses of the parties.

Message Exchanges

The FCD includes comprehensive discussion of the rules for submitting and responding to requests for data and the timing of data exchanges. This will include descriptions of the service requests that parties can issue to each other.

In summary, Network experts agreed that while the TPA should continue to address the business or contractual aspects of the flow, the FCD should address all of the technical and operational aspects of the flow. It should be noted that for some components, the TPA and the FCD are not mutually exclusive in their coverage. For example with respect to *Exchange Failure* handling, the FCD might be developed to include the messaging and roll back processes, while the TPA would address the process for communication, parallel processes (e.g. paper trail), and resubmission.

Ownership and Use of Data

Current Network information flows typically parallel existing data sharing relationships between States and EPA. For example the submission of hazardous waste generator compliance data to EPA is a function of existing agreements, grants, and laws, and this process does not change whether data is submitted to RCRAInfo through Network Nodes or directly using the Web or, if the state is a translator, using the current flat file mechanism. The change in the mechanics of the submission does not involve a change in the use and ownership practices for the data, and these have not been identified as key issues in the current flow implementations.

However, as the Network expands in its scope and usage, data ownership and use will become an increasingly important concern for trading partners. As relationships expand, data originators may increasingly seek to set conditions for how trading partners are using and distributing their data. New, voluntary state-to-state exchanges of regulatory information, involving several trading partners, will increase the complexity of management of the use and dissemination of the data. For example, each state may have slightly different or even conflicting laws concerning release of information to the public. However, in the case of the Network flow, once the information leaves the providing Node, ownership and control are lost. While trading partners may agree that sharing certain information is mutually beneficial, some partners may not want that information to be made available outside the trading partnership.

This example can be extended to Confidential Business Information (CBI) or even compliance sensitive information. Currently the RCRA program allows industries to declare certain information to be CBI, yet this information is collected by the State and periodically reported to EPA. This data flow is governed by existing agreements between the State and EPA. By contrast a state-to-state exchange of similar information might present some concerns. In such a case, the TPA may specify that the only information to be shared will be that which is publicly releasable by the original owner or provider.

Similar concerns relate to the use of the information available through the Network. Some partners may be concerned that the information that they share freely may be used to inaccurately assess that partner's program performance. The Network will enhance the ability to obtain timelier and even potentially real-time access to information. However, this same information may not have been subject to normal quality assurance checks and may therefore present an incorrect picture. This will be of concern to the provider who will be unable to directly manage the use of their information.

It is clear that partners will need to assess and document the specific issues surrounding the ownership and use of information on a flow-by-flow basis, engaging the expertise of business area experts.

Data Content and Quality

The primary objective of the Exchange Network is to facilitate information flow amongst trading partners. Network experts agreed that the need to clearly define the information being exchanged goes beyond developing a schema and referencing it in the TPA/FCD. Data originators will need to add context to the information being offered for exchange, to define the content and coverage, the quality of the data and the timeliness of the data.

The example TPAs that were reviewed during this assessment demonstrated a variety of approaches to addressing this issue. Some TPAs include the appropriate XML schema as an attachment. While this describes all of the data elements, it does not provide context to the information flow in terms of what the data elements will contain. This is also not a very readable presentation. Other TPAs provided a list of the data elements from the schema with their definition, in a readable format, and then further indicated the level of support they would provide for each data element. As discussed earlier, yet another approach would be to manage this additional data context information through existing programmatic State-EPA vehicles such as PPAs.

Data Content

The RCRA program provides an example of the need for partners to clearly document the content for their data, in order to facilitate accurate interpretation and comparisons. Using the RCRA program, we can assume that State X makes available RCRA generator information for exchange. State Y may request a list of all generators from the State X node. State Y might assume that they have the entire universe of generators for State X. However in reality, State X has opted to release only Large Quantity Generators, even though their internal systems may capture information on all generators. Another potential complication is that states often have different waste generation thresholds for their generator classifications. In this example, in order to properly interpret the data retrieved, State Y must understand the content and context of State X's data flow. This becomes especially important in the RCRA program where State programs may employ regulations that are broader in scope or more stringent than the federal RCRA program. Without clear definition of the context of data that they retrieve, partners may unknowingly misinterpret that data.

In addition to describing the coverage and meaning of the information being shared, the TPA must also address which elements in the appropriate XML schema are and are not being supported. In most data standards there are optional data elements that parties may choose to support. Referencing the schema will not necessarily enable parties to understand the breadth of the data being offered for exchange. The TPA must describe the specific coverage and completeness of the data elements. For the FRS flow, NAICS codes are an optional attribute of the facility record. In this case, it would be helpful to understand that only a portion of the facilities in the dataset actually have the NAICS code elements populated, when interpreting the results of a query for a specific NAICS code.

Data Quality

For some types of flows it may be necessary to fully define the quality of the information. For example, when exchanging environmental monitoring data it is useful to understand the quality of the data as function of its source. Data collected by volunteer groups would have a lower perceived data quality when compared to data collected by professional sampling crews.

It is also important to understand the level of quality assurance applied to an available set of information. For example, data may be collected and made available in real time without the application of normal quality assurance procedures that might otherwise have identified inaccurate data.

Data Timeliness

For some flows it may also be necessary to express the timeliness of the information, in other words how the date of collection relates to the date of retrieval. For example, where facility information is being

exchanged, it will be important to understand how long ago mailing address and contact information was collected since this will provide a reasonable assessment of its likely accuracy. Another example might include exchanging hazardous waste manifest data amongst partners. There may be a significant delay between the originator's receipt of data and its availability through the Node due to data entry and quality assurance checks. When this happens it will be important for the Network partner to be aware of this limitation when constructing data requests.

Recommendations

The *Blueprint for a National Environmental Information Exchange Network* presented a vision for trading partner agreements as a formal mechanism for partners exchanging data to manage their relationships and information flows. The vision presented by the *Blueprint*, was broad, and encompassed many different dimensions of the processes needed to manage information flow. As partners have begun to exchange data, much has been learned about the development of the partner relationships and information flows.

This assessment drew upon these experiences through an evaluation of examples of TPAs and FCDs, and interviews conducted with experienced data exchange implementers. The following conclusions can be drawn from the key findings presented in this assessment:

1. The two fundamental objectives of the TPA as described by the *Blueprint* can be confirmed:
   - Establish and characterize a data sharing relationship between two or more parties, and
   - Document the business processes and issues related to the exchange of data for a specific flow.
2. The TPA has a valuable role in managing a Network information flow.
3. The TPA should focus on business and contractual aspects of the information flow and not the more technical aspects which are addressed through the FCD.
4. The paperwork burden associated with TPAs must be minimized. The elements included in the TPA must be simplified to those providing real value. Elements that are already addressed through other Network tools should not be repeated.
5. There is a need for a consistent and coordinated development process for all of the Network flow support components, not just the TPA.

Based on these conclusions, two main recommendations can be made with respect to the TPA development process.

First, this assessment presents a model workflow that describes a logical and iterative approach to developing the tools required for the management of a data flow. One objective of this workflow is to deliver a template TPA that is specific to the flow being addressed and meaningful to the parties entering into the agreement. Partners will take this template and customize it for their exchanges. This workflow confirms much of the original expected TPA development process described by the Network *Blueprint* and *Implementation Plan* documents.

Second, the assessment presents Best Practices for a set of TPA components that will direct the workgroups tasked with developing the flow-specific TPAs. The Best Practices are presented for a model TPA that has been refined to eliminate overlap with the FCD. The model clearly states the minimum requirements of a TPA, allowing for optional implementation of other components as the circumstances of the specific flow and partner relationship dictate. The model eliminates a number of the originally expected TPA components that are addressed elsewhere.

Flow Development Process

The development of the Network and supporting tools (e.g., TPA, FCD) has primarily focused on technical aspects of the implementation as would be expected given the stage of Network development. Participants will need to expand the focus of these tools to accommodate the specific business issues related to a given information flow, as Network implementation progresses.

uring this assessment, Network experts clearly expressed the need to make the TPA directly applicable to the particular information flow concerned, customized as required to cover issues such as data quality, content, and coverage. For example, when addressing "data use", the TPA template must explain the issues and options related to data use for the given flow, so that partners may select and describe the appropriate option for their unique circumstances. The concerns and handling options associated with the use of compliance data, for instance, differ in many respects from those associated with the use of facility data. To be effective, the TPA template for each flow must address data use to the appropriate level of specificity

For many of the flows that have been implemented so far, Data Exchange Template/XML Schema development, FCD development, and TPA development has been performed by separate, often unrelated workgroups. This lack of a cohesive approach can result in design issues being missed, dropped or solutions not being optimized. As a result, partners are left to identify and address the issues on their own; which can result in frustration and an inconsistent approach. This problem will only become more challenging as the complexity of the data subject matter increases with broader implementation of the Network.

Figure 1describes an iterative workflow that is designed to facilitate the identification and resolution of the issues associated with an information flow of data when developing the Network tools to support that flow.

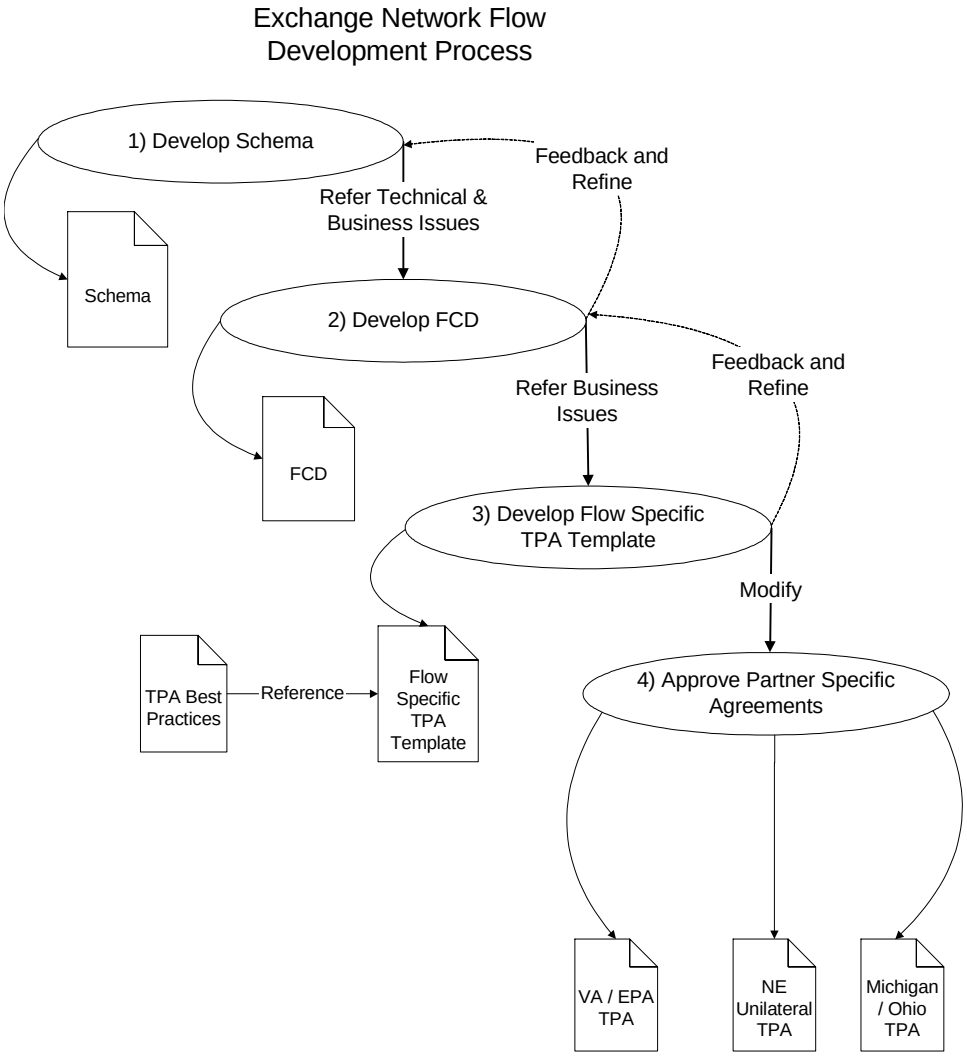


Figure 1

This approach assumes that a workgroup would be appointed and tasked with developing the XML schema, FCD, and a template TPA for a specific information flow. Ideally the workgroup would be made up of both technical and business experts experienced in the exchange and use of data in the business area. The composition of this workgroup is important and should be carefully considered to ensure that the full scope of questions associated with the information flow are fully considered and addressed throughout the process.

A key element of the proposed workflow will be the need for feedback processes to iteratively refine the resulting tools as required. For example, specification of data coverage parameters in the TPA may necessitate that changes be made to the XML schema. As the workflow progresses, workgroup members will better understand problems and their implications for the overall design of the tools. Furthermore, options selected later in the workflow may have impacts on earlier items, requiring that they be revisited. This approach is similar to the widely accepted iterative approaches employed for software analysis and design.

The first step involves the development of the XML schema. This deliverable defines the scope of the exchange and associated business challenges. Besides the XML schema, a key outcome of this step is the identification and referral of technical and business issues that typically are identified through this type of collaborative process.

Ideally, the workgroup will be maintained during the second step for the development of the FCD. Additional technical expertise will probably be brought to bear on certain issues; however, the primary objective is to preserve "institutional knowledge" throughout the process. Besides resolving technical issues and producing the FCD, the workgroup would also identify and refer business issues to the development of the TPA template, as well as referring issues or refinements back to the XML schema, development as they are identified during FCD development.

During the third step, a flow specific TPA template would then be developed by the workgroup based upon the TPA Best Practices described later in this document. These TPA Best Practices identify the mandatory and optional TPA components for a specific flow. It will be the workgroup's responsibility to identify the optional components that will be included in the flow specific TPA template as dictated by the needs of the partners. The TPA Best Practices will provide direction on the types of issues and decisions that the team must address for the specific flow. Business issues referred from the development of the XML schema and FCD will be addressed at this time. The team will develop flow-specific language for the TPA template, providing a list of the possible options for the resolution of issues. Importantly, the team will determine what type of agreement is most appropriate, for example, bilateral, multilateral or a unilateral statement, each of which will have different requirements. Again any issues discovered that are relevant to the XML schema or FCD will be referred back for refinement.

During the fourth step, trading partners will select options presented and potentially modify the flow specific TPA template. Ideally, the trading partners will be able to adopt the TPA template largely in its original form. However, some refinements may be required depending on the complexity of the flow, the unique issues for the flow, and the nature of the relationship between the trading partners. For example a TPA between two states for the exchange of data, may not require customization, in contrast to an agreement between the State and EPA, where needs and requirements may have to be reconciled against other regulatory agreements.

The process as outlined is a general representation of a methodology for developing the mutually dependent exchange tools. There are missing details (e.g., schema review and implementation process) that will require elaboration in order to develop this into a robust methodology. Therefore it is recommended that the process be prototyped on a new information flow. Prior to inception of the development effort, the experiences of other exchange experts should be drawn upon to detail the intermediate steps. For example the FRS FCD development effort could elaborate on the successes and challenges experienced through that development process.

Trading Partner Agreement Best Practices

This section summarizes the key elements that are recommended for inclusion in a TPA based on the results of this assessment. As discussed elsewhere in this document, this listing of core components was derived from an evaluation of the Network *Blueprint*, the Network *Implementation Plan*, and other data sources, and was then refined based on:

- Input from Network experts,
- Assessment of usage by existing TPAs,
- Assessment of overlaps between the FCD and the TPA, and
- General experience on data management practices.

A more complete description of each of the recommended elements can be found in **Appendix B** and an abbreviated checklist to accompany these Best Practices can be found in **Appendix C.**

Partnership Overview

Required Elements	Optional Elements
Purpose and Parties	Background
Definition of Data	Benefit

Definition of Roles and Responsibilities

Required Elements	Optional Elements
Legal Framework	Financial Agreements
Dispute Resolution	Exchange Failure
Exchange Mechanism	System Failure and Data Reconciliation
Exchange Schedule	Record Retention

Data Stewardship

Required Elements	Optional Elements
Data Ownership	
Use and Distribution of Data	
Data Elements (Columns)	
Data Content and Coverage (Rows)	
Data Quality	
Data Timeliness	

Agreement Administration

Required Elements	Optional Elements
Period of Agreement / Termination	
Contacts	
Approval Signatures	

Elements Removed from the Trading Partner Agreement

The following table summarizes a number of elements originally expected to be included in the TPA by the Network *Blueprint* and Network *Implementation Plan*, but which this assessment has identified as being unnecessary. For each element, the reason for removal from the Best Practices has been described.

Element	Reason for Removal
Metadata	The schema development process is based on the EDR standards. Therefore the schema should contain all the data elements (metadata) necessary to support the exchange. Any missing metadata is a function of the schema development process and should not be a function of the TPA. The value of this component is also in question if the additional dimensions of quality coverage and timeliness are adequately addressed in the TPA.
Internal System Components	This component was not addressed by any TPAs, or the FCDs and no clear need has been expressed this component,
Performance and Reliability	This component was not addressed by any TPAs, or the FCDs and no clear need has been expressed for this component. Elements of this component are inherent in many of the FCD components
Parallel Paper Transactions	This component is very specific to regulatory flows, and is addressed through other mechanisms such as record retention laws.
Addenda	The TPA has a section for period of agreement which covers review cycles. In addition the TPA is not legal document, and including language on the terms under which Addenda may be added to the TPA may not be appropriate or meaningful
Security	Better managed by the Flow Configuration Document
Data Definition	Better managed by the Flow Configuration Document
Technology	Better managed by the Flow Configuration Document
Communication	Better managed by the Flow Configuration Document
Message Exchanges	Better managed by the Flow Configuration Document

Appendix A – Evaluation Matrix

Introduction

The matrix on the following pages presents a comparison of the format of a number of example TPAs to the originally expected components of a TPA.

The left-most column lists the components of the TPA as envisioned by the Network *Implementation Guide* and the Network *Blueprint*. The general descriptions of each component were derived from these two sources and also from an analysis of other template TPAs and models that have been developed and used by Network partners. This is intended to provide a comprehensive listing of all of the potentially relevant TPA components.

The remaining columns in the table contain the results of a comparison of the TPA or FCD named in the column heading to the list of TPA components. Where appropriate, more detailed footnotes are included to provide additional context to the comparison, for example, where coverage for a given component is incomplete or unusual in some way.

The example TPAs and FCDs that were used during this analysis were obtained from the Network experts interviewed during the assessment. Since a number of the example TPAs that were reviewed were developed using the same template for the FRS flow developed by Nebraska, many of the results are similar between the different examples. However, the matrix serves to highlight areas of overlap between the TPA and the FCD and also indicates the differences in implementation practices between partners

Components	Trading Partner Agreements							Flow Configuration Documents		
	DE RCRAInfo TPA	DE BEACHES TPA	MI eDMR TPA	[4]GA TPA	VA PCS TPA	PA FRS TPA	NE FRS TPA	PNWWQX FCD	MI eDMR FCD	FRS FCD Template
Parties. This section identifies the organizations involved in the TPA and describes the general purpose of the agreement.	X	X	X	X	X	X	X			
Benefit. Definition of the benefits of the exchange *Observation- Many of the example TPAs, used the standards template language defining the benefit. Interviewees indicated that the benefits of an information flow are often clearly understood for existing regulatory relationships.*	X	X	X	X	X	X	X			
Legal Framework - Includes governance, standing and applicability issues that apply to the partners. The TPA should address the effect of the agreement on other inter-party obligations. For example, it needs to address any reporting requirements met by the agreement. The TPA should also address applicability to all levels of participating organizations. *Observation - All example TPAs explicitly stated that the TPA itself does not fulfill any specific reporting requirements or supersede data management or reporting requirements of any grant. Typically, the example TPAs also highlighted overlaps with other State-EPA agreements.*	X[5]	X	X	X	X[6]	X	X			
Purpose and Background - Defines why the exchange is being performed and the purpose of the partnership.	X	X	X	X	X	X	X			

[4] Georgia employs a partly flow independent structure for their TPA. The general components (e.g. Background, Roles and Responsibilities) were generalized for the whole exchange. There was an attached appendix for each specific flow, detailing the data access, standards. Oregon uses a similar approach.

[5] The Delaware RCRA TPA cites the State-EPA Work Plan as the governing authority for reporting requirements. The TPA includes an indication that where agreements are revised during grant negotiations, then both State and EPA are responsible for revising conditions of the TPA as appropriate.

[6] Virginia addressed the overlap between the TPA and other State-EPA reporting responsibilities by stating that participation in the TPA does not supersede, but is intended to complement data management and reporting requirements of State-EPA grants or agreements. For example, the Virginia CEA Section 10 Grant Work Plan is explicitly referenced for PCS reporting requirements.

Components	Trading Partner Agreements							Flow Configuration Documents		
	DE RCRAInfo TPA	DE BEACHES TPA	MI eDMR TPA	[4]GA TPA	VA PCS TPA	PA FRS TPA	NE FRS TPA	PNWWQX FCD	MI eDMR FCD	FRS FCD Template
Observation – Although intended to simply define the relationship and data flow, in the example TPAs, these sections often restated information held elsewhere in the TPA, for example, related to data stewardship and access.										
Security. This section identifies the level of Network security to be used and the specific parameters such as certificates used for authentication, non-repudiation and digital envelope, and other security issues.	X	X	X[7]		X	X	X	X	X	X
Observations – The example TPAs generally included only simple confirmation language indicating that each partner will do their best to ensure security. The example FCDs detail security requirements protocols in much greater detail at an operational level..										
Data Definition - Describes the specific format and structure to be used for exchange and the URL of record for the format.										
Observation - Most TPAs did not include the URL but referred to the Data Exchange Template (DET) located at the "Network Repository". The example FCDs typically referenced the XML schemas to be used for a given flow.		X	X	X	X[8]	X	X	X	X[9]	X
Metadata - Metadata accompanies the data set through its transmission. Guidelines identify the metadata fields that are essential for searching, locating, querying, and retrieving data and Information by the interface, which will give users easier access to information from various partners.	X	X	X	X	X	X	X			
Observation - All the example TPAs included language to the effect that the parties shall provide metadata consistent with the standards listed in the Environmental Data Registry (EDR as appropriate to the given data flow). Interviewers felt that this component had little relevance to the TPA given that such metadata standards should already be included										

[7] The Michigan TPA includes a detailed discussion about the security and the use of electronic signatures. This is due to the nature of the eDMR flow where the agency accepts submissions from the regulated facility and forwards them to EPA.

[8] Virginia specifically states that the State will work with EPA to ensure that any changes in the data standards are replicated to their respective systems and that the approach will be consistent.

[9] Michigan does not explicitly state the location URL. It is specific that they will be using the IDEF format for exchange.

Components	Trading Partner Agreements							Flow Configuration Documents		
	DE RCRAInfo TPA	DE BEACHES TPA	MI eDMR TPA	[4]GA TPA	VA PCS TPA	PA FRS TPA	NE FRS TPA	PNWWQX FCD	MI eDMR FCD	FRS FCD Template
in the appropriate schema definition.										
Technology – The technology that will be used in the exchange of the data										
Observation - The example TPAs generally included notes referring to the use of XML technology, and to a mutual understanding that the partners will work together to resolve any technical issues that arise in the transfer, posting and reconciliation of data. The example FCDs include much more thorough discussions of the technology used to support a flow.	X	X	X	X	X	X	X	X	X[10]	X
Data Access - Define what type of data is addressed through the TPA (e.g. RCRAInfo, FRS, Beach program).	X	X	X	X	X[11]	X	X		X	
Data Access – The schedule or frequency with which data will be exchanged.		X	X[12]	X	X[13]	X		X[14]	X	X

[10] FCDs are intended to specify the operational aspects of the information flow between partners and more specifically describe the technical approach to exchanging data.

[11] Virginia and Michigan explicitly state the types of NPDES data that will be exchanged under their TPAs. This is especially important where partners elect to exchange only a portion of the data potentially available through a flow. For example, Michigan is only planning to flow monthly DMR data, while permitting data will be hand-keyed

[12] The Michigan TPA explicitly states that data will be sent no more than once every half hour.

[13] The Virginia TPA refers to their State-EPA Work Plan for the schedule and timeliness of the data submission for PCS.

[14] The PNWQDX is different from the other flows examined in that it is an entirely voluntary flow where data is distributed among partner nodes which process information requests submitted by partners whenever they are received.

Components	Trading Partner Agreements							Flow Configuration Documents		
	DE RCRAInfo TPA	DE BEACHES TPA	MI eDMR TPA	4GA TPA	VA PCS TPA	PA FRS TPA	NE FRS TPA	PNWWQX FCD	MI eDMR FCD	FRS FCD Template
Data Access- Availability and mechanism of data exchanges (this includes reference to whether data will be "pushed" by one partner or "pulled" by another).										
Observations – Many example TPAs examined during this analysis described the data exchange mechanism as data being "pushed" from the State to EPA. Others left the language to be unspecific by stating partners had the option to either send their data or have the other partner retrieve their data.	X[15]	X	X		X[16]	X	X[17]	X[14]	X	X
Communication - Specifies the transport protocols and electronic addresses of the parties.		X[18]		X[18]				X[19]	X	X
Message Exchanges - Discusses rules for submitting and responding to requests for data and the timing of data exchange. It includes a list describing the requests that parties can issue to each other. These actions are the independent units of work. The action definitions reflect the associated message flows between the invoker and the service provider, responsiveness, failure handling and other attributes. This section should address the expected update cycle for data of record (e.g., the steward agency will enter data within five business days).								X	X	X
Definition of Roles and Responsibilities - Outlines specific roles and requirements of parties related to performance, reliability and use of data.	X	X	X	X	X[20]	X	X			

[15] The Delaware RCRAInfo TPA contains a discussion of the differences between RCRAInfo Version 1, which supports flat file processing, and Version 2 which will accept XML documents.

[16] Both the Virginia and Michigan TPAs are highly specific with respect to the data exchange mechanism, and both include the process of error checking and notification that will be used to validate data submitted to PCS. Both TPAs explicitly state that data will be "pushed" to EPA. For example, Michigan describes the agency as the "Executing agent for the transfer".

[17] The Nebraska TPA is more flexible with respect to the defined data exchange mechanism. The TPA includes language indicating that each partner may have the option to either send data to a partner or have the partner retrieve the data for themselves. This is consistent with Nebraska's intention that data should ideally be "pulled" from its Node.

[18] The Delaware and Georgia TPAs explicitly cited SOAP Version 1.1.

[19] The PNWQDX FCD does not explicitly state the URL locations of the services provided by partners.

[20] The Virginia TPA explicitly states that CDX has the responsibility to archive data at certain steps in the data exchange process.

Components	Trading Partner Agreements							Flow Configuration Documents		
	DE RCRAInfo TPA	DE BEACHES TPA	MI eDMR TPA	[4]GA TPA	VA PCS TPA	PA FRS TPA	NE FRS TPA	PNWWQX FCD	MI eDMR FCD	FRS FCD Template
Internal Systems Requirements- The TPA does not address partners' internal computer systems unless the electronic exchange is predicated on maintenance of specific internal requirements (e.g., EPA's proposed electronic reporting rule). In such cases, they should be specified.										
Performance and Reliability -The expected availability of participating systems is specified here. For high-volume systems, the TPA should also identify system performance expectations (e.g., transfer speed, response times).										
Exchange Failure. Because some exchanges may be mandatory (once voluntarily included in the TPA), the TPA should identify actions required by each party, should the exchange fail.			**X**[21]	**X**	**X** below				**X**[22]	**X**[23]
System Failure - When the exchange is intended to duplicate data locally, the TPA should address initial synchronization of participating databases and recovery following system failure.		24	24	**24**	**X** below	24	24			**X**

[21] The Michigan TPA has very clear language addressing the possibility that the network will be down and the arrangements for communications in that event.

[22] The Michigan FCD includes a detailed approach to resolving rejections and failure for submission to CDX.

[23] The FCD template has a section titled Flow Diagnostics; that could encompass exception handling. In addition a processing report is returned by CDX after a submission that indicates the success of the submission.

[24] The Delaware, Georgia, Pennsylvania and Nebraska FRS flow TPAs all include statements related to agreement between the parties that in certain cases each party will maintain back-up copies of the exchanged data.

Components	Trading Partner Agreements							Flow Configuration Documents		
	DE RCRAInfo TPA	DE BEACHES TPA	MI eDMR TPA	[4]GA TPA	VA PCS TPA	PA FRS TPA	NE FRS TPA	PNWWQX FCD	MI eDMR FCD	FRS FCD Template
Quality -The TPA should outline expectations regarding timeliness of data entry, error detection and correction, and other conditions upon which acceptability of the data is predicated *Observations – None of the example TPAs included a comprehensive discussion of data quality. This may be due in part to the voluntary nature of the FRS flow on which most examples were focused. All, however, included a basic discussion of data quality which is often a reference to an appropriate data standard, e.g. Facility Data Standards (FITS2).*	X[25]	X[26]	X		X[27]		X[28]			
Stewardship - The TPA should specify the definitive source for shared data.	X[29]	X[30]	X	X	X[31]	X	X[32]			
Use of Data. Intended routine uses of the data are specifically addressed to the extent needed in order to understand the responsibilities of the parties. Generally, the allowable uses of data need not be included in a TPA, as the data would be reported by some means in any case. Once delivered, the receiving party is still bound by such considerations as confidential business information (CBI) or enforcement-sensitive data, as if the data had been exchanged in the traditional manner. The TPA may need to address how such data, if	X	X		X	X	X	X			

[25] The Delaware RCRAInfo TPA states that they will meet the EDSC standards to the extent that the target national RCRAInfo system meets them.

[26] The Delaware TPA specified that the data quality will conform to the overall outline as described in the "Reporting Water Quality Results for Chemical and Microbiological Analytes" EDSC standard. However the timeliness of the data is not detailed.

[27] The Virginia and Michigan TPAs include language related to error checking and notification concerning quality issues, and back-ups to ensure data integrity

[28] The Nebraska TPA cites the use of FITS2 facility and location data standards as a means of ensuring data quality.

[29] The Delaware RCRAInfo TPA specifically references the State-EPA MOU for the data elements and element content which each party is responsible.

[30] The Delaware TPA specified the ownership of the data relative to delegated programs.

[31] The Virginia TPA specifically cites the State-EPA Work Plan as the reference for the data elements for which they will be responsible.

[32] The Nebraska FRS TPA is very specific in the definition of stewardship and data source. The TPA includes an appendix which details the responsibility for data stewardship by environmental interest. Specifically, the TPA indicates that the State shall have complete ownership and responsibility for maintaining all data elements pertaining to each facility where any State environmental interest exists. EPA will have stewardship responsibilities on facilities where the environmental interest is EPA only.

Components	Trading Partner Agreements							Flow Configuration Documents		
	DE RCRAInfo TPA	DE BEACHES TPA	MI eDMR TPA	[4]GA TPA	VA PCS TPA	PA FRS TPA	NE FRS TPA	PNWWQX FCD	MI eDMR FCD	FRS FCD Template
mixed with other data, will be identified. If one party wishes to exclude a specific use that would otherwise be enabled by the exchange, it should be addressed. For example, in providing non-mandatory data, states have indicated in a PPA that EPA may not use the data for program evaluation.										
Dispute Resolution. The agreement describes procedures for settling disputes related to the terms of the agreement.										
Data Reconciliation - Processes to be used reconcile data should errors occur		**X**[33]	**X**	**X**	**X**[16] above, 27 above	**X**	**X**			
Data Elements- Checklists for required data elements for major programs that should be included in agreements Data element checklists for TPAs for major program areas, developed in conjunction with Templates in these areas, would also promote consistency and facilitate TPA development by simplifying the process of determining what data should be covered. These checklists can be easily developed based on lists of national system requirements that already exist.	[34]	[35]				**X**	**X**[36]			
Parallel Paper Transactions - Any expectations for exchange of documents on paper in addition to electronic format for a portion of or the entire duration of the TPA are outlined in this section.										

[33] Reflecting the shared nature of FRS data, the Georgia, Delaware, Pennsylvania and Nebraska FRS TPAs all include standard language that indicates that the primary party will resolve reconciliation issues where only that party has the primary environmental interest, but both parties will work together where they both have a primary interest.

[34] The Delaware RCRAInfo TPA does not explicitly define the data elements to be exchanged but instead references the State-EPA MOU.

[35] The Georgia, Delaware and Virginia TPAs included the inserted the relevant XML schemas as attachments, but did not further describe those elements that would not be supported.

[36] The Nebraska and Pennsylvania FRS TPAs included a detailed chart outlining the data elements to be exchanged and whether or not the data point will be supported by the State. This maximizes the detail available to the information users.

Components	Trading Partner Agreements							Flow Configuration Documents		
	DE RCRAInfo TPA	DE BEACHES TPA	MI eDMR TPA	[4]GA TPA	VA PCS TPA	PA FRS TPA	NE FRS TPA	PNWWQX FCD	MI eDMR FCD	FRS FCD Template
Financial Agreements - Addresses any financial arrangements associated with the exchange of data, e.g., Party A compensates Party B for the cost of the transaction or provides funds necessary to support the collection or exchange of the data.	X[37]	X	X	X	X	X	X			
Observations – Most of the example TPAs used standard language that each party will be responsible for securing the resources to meet the requirements of the agreement.										
Record Retention - Addresses issues surrounding transmission logs and requests for historical data.			X[38]		X[39]					
Period of Agreement / Termination - Specifies conditions for termination of the TPA as a whole, including written notice and the effect of termination on other rights and obligations.	X	X	X	X	X	X	X			
Observations – Most example TPAs stated that the agreement would be revisited periodically although none formally described a review cycle.										
Addenda -Describes if and how addenda may be added to the TPA										
Contacts – Specifies the primary points of contacts between the two agreeing parties for inquiry and resolution of issues.	X	X	X	X	X	X	X			X
Approval Signatures - Identifies the persons agreeing to the conditions set forth in the TPA.	X	X	X	X	X	X	X			

[37] The Delaware RCRAInfo TPA refers to the State's EPA program grant as a source of funding that will support the data exchange described by the TPA.

[38] The Michigan TPA states that the State will preserve submitted eDMR received from regulated facilities data for a minimum of 6 years. This reflects the regulatory nature of the eDMR data submission where regulated facilities submit data to the State, in contrast to the voluntary nature of the FRS flow, where historic traceability is less important than the current snapshot of the facility.

[39] The Virginia TPA included a specific process and schedule for back-up and recovery. This most likely is due to the regulatory nature of the data submission, where data is submitted electronically to meet requirements of their NPDES program. The TPA also addresses the actions necessary to meet reporting requirements should the exchange mechanism become unavailable. The TPA also specifies a record retention policy of 30 years according to Federal law.

Appendix B – Trading Partner Agreement Best Practices

This section provides detailed Best Practices and considerations for the development of a Network information flow specific TPA. The primary objective of the guide is to facilitate the development of flow specific TPA templates that are straightforward and prescriptive.

A definition is provided for each of the component, together with some example language that might be used where appropriate to the components. Additional points are also presented for each element for consideration by the workgroup when developing the TPA.

Partnership Overview

This section provides an overview of the intent of the agreement and provides the context for the relationship between the parties.

Purpose and Parties *(Required)*

This section identifies the organizations entering into the agreement and the general purpose and reason for the partners to enter into the agreement.

Example

This Trading Partner Agreement is between Agency X and Agency Y, to define the terms and condition under which Hazardous Waste Data will be exchanged under the framework implemented in the National Exchange Network.

Points to Consider

This language may be structured differently depending upon the implementation of the agreement. For example a unilateral TPA issued by an agency would not list agreeing parties and might have language indicating that by accessing the data, the user is agreeing to the terms and conditions of the unilateral TPA.

Definition of Data *(Required)*

This section details the type of data that is addressed by the TPA (e.g. RCRAInfo, FRS, BEACHES) and is exchanged through the flow.

Example

The Partners will undertake to facilitate the submission of data into EPA's Resource Conservation and Recovery Act Information System (RCRAInfo) using…..

Points to Consider

- Depending on the nature of the relationship and the type of data, (e.g., regulatory flow to EPA), this information may be more completely covered by other agreements. If this is the case, the other agreement should be referenced at this point with no further detail then being required.
- It is important to elaborate on the types specific data being exchanged. For example a flow may manage several sub-categories of data. However, a party may be unable or unwilling to support the exchange of one or more of the sub-categories. For example, they are not authorized to manage a portion of the program, or their internal information systems are not at a state that would support the exchange of the data. Therefore language should be included to state that the agreement covers the entire scope of the flow; if there are exclusions then the language should be added to detail the

exclusions. For example, if a flow covers monitoring, permitting and compliance data, but the supplying partner is only capable of supplying monitoring data, then this should be stated in the data definition

Background *(Optional)*

This section provides some background into the nature of the relationship between the agreeing parties as well as general context into why the data is important and being managed by the parties. This section might also elaborate on the needs that brought the partners together to agree to exchange data.

Example

The partners represent Federal and State governments whose responsibilities in general are for the protection of the environment… The consistent identification of recreational beaches within each agency and between agencies is key to the proper use of other data collected by regulated programs...

Points to Consider

- Some implementers of TPAs have found the statement of the background to be unnecessary and felt that it complicated the TPA, especially in cases where the relationship is governed by other regulatory agreements and obligations. This section should not simply restate facts that are already acknowledged.
- This component might be useful for TPAs between two partners where a relationship previously did not exist. For example, two adjoining states approaching one another to exchange manifest data. This section could be used to explain the nature of the relationship.
- Inclusion of this component in a flow-specific TPA template will be determined by the responsible workgroup.

Benefit (*Optional)*

This section defines benefits of the exchange for the partners entering into the agreement.

Example

The most direct benefit of the data exchange will be automated data exchange of manifest data to facilitate the cross border oversight of waste from cradle-to-grave…

Points to Consider

- Some implementers of TPAs have found the statement of the benefits to be unnecessary and that it complicated the TPA, especially in cases where the relationship is governed by other regulatory agreements and obligations. Often the benefits are obvious and commonly acknowledged (e.g. elimination of dual data entry).
- This component might be useful for TPAs between two partners where a relationship previously did not exist. For example it might useful for the partners to detail the benefits of exchanging data to add context to the new
- Inclusion of this component in a flow-specific TPA template will be determined by the responsible workgroup.

Definition of Roles and Responsibilities

This section outlines specific roles and requirements of parties related to legal framework, partner interaction, as well as operation and reliability of the exchange mechanisms.

Legal Framework (*Required)*

This section defines the governance, standing and applicability issues that apply to the partners. The TPA should address the effect of the agreement on other inter-party obligations.

Example

This TPA does not fulfill any specific Federal reporting requirements and participation does not supersede any data or information management and reporting requirement.

Points to Consider

- This component may have a direct overlap with many governing regulatory agreements between the parties (e.g. SEA, MOU, PPA). Some implementers have chosen to specifically cite the authoritative source for legal requirements that the flow is intended to address.
- It is generally agreed that this section should reflect whether or not the exchange meets the reporting obligations of a regulated program.
- Often this section is used to clarify the point that the TPA does not supersede any other agreement and generally is not legally binding.

Dispute Resolution *(Required)*

This section of the agreement describes procedures for settling disputes, and other exceptional conditions related to the terms of the agreement.

Example

Parties shall make a good faith effort to resolve any data exchange issues in a timely fashion.

Points to Consider

- This component may have more applicability in instances where data is being submitted to central systems (e.g., RCRAInfo) and there is mixing of data ownership. Or where the State and EPA share oversight responsibilities for program implementation. In this case, a clear delineation of responsibility and mechanisms for resolving issues will be required.
- As the nature of TPAs change and reporting relationships evolve, where States become data providers and EPA consumers, and joint responsibilities for data decreases, the need for dispute resolution procedures will most likely decrease.
- This component may also be useful in establishing the ground rules under which new relationships are to function, for example, regional data exchanges

Financial Agreements *(Optional)*

This section addresses any financial arrangements associated with the exchange of data, e.g., Party A compensates Party B for the cost of the transaction or provides funds necessary to support the collection or exchange of the data.

Example

Party A agrees to provide funding to Party B to support the collection of data and development of infrastructure to support the exchange of data for the regional air quality monitoring data exchange.

Points to Consider

- Most TPAs have very unspecific language indicating that either party will provide the resources necessary to support their node. This is further complicated by regulatory flows and EPA grants to

authorized programs; where EPA provides funding for the program as a function of the other agreements (e.g., PPA, SEA).

- This component might be used in instances where one party is granting funds to another for the exchange of data where a relationship previously did not exist. An example might include a state grant to a tribal organization to set up the necessary infrastructure for the flow.
- Inclusion of this component in a flow-specific TPA template will be determined by the responsible workgroup.

Exchange Mechanism *(Required)*

This section states how the data will be exchanged between the partners, (e.g., Push or Pull).

Example

Exchange of the data between State X and EPA will occur through their respective nodes. State X will periodically the submit data to EPA's CDX (Push).

Points to Consider

- This component overlaps with the scope of the FCD that also describes the mechanism of exchange. However, it is included here to provide for a clear definition of the responsibilities of the trading partners.
- Many TPAs implemented to date have language stating that the either party may choose to send their data or have the other partner retrieve the data. The language employed should be as descriptive as possible without devolving in to deeper technical issues.
- A clear statement of the exchange mechanism will be important in instances where multiple parties enter into an agreement employing a mixture of mechanisms due to different degrees of node readiness.

Exchange Schedule *(Required)*

This section details the frequency at which the data will be exchanged.

Example

Agency X will submit data to Agency Y's node on monthly basis no later than the 15th day of the month.

Points to Consider

- A voluntary flow that allows partners to pull data would most likely state the minimum frequency of data exchange (e.g., data may be accessed at a minimum of once a month).
- If the flow is a regulatory in nature, requiring data submissions to EPA on a periodic basis then might be included as a component of a TPA.
- The frequency may overlap with other regulatory agreements. In this case citing the agreement may suffice for meeting the need to express exchange schedule.
- It may be necessary to state the maximum frequency of exchange, for example, to minimize performance impacts on the receiving system.

Exchange Failure *(Optional)*

In instances where the exchange of data is mandatory to meet regulatory data submissions, (e.g. DMR to PCS) the TPA template should detail the actions that will be taken to manage and synchronize actions to address the failure.

System Failure and Data Reconciliation *(Optional)*

When the exchange is intended to duplicate data locally, the TPA should address initial synchronization of participating databases and recovery following system failure.

Points to Consider

- These two components have a high degree of overlap with the FCD. The FCD has technical discussions detailing error messaging and system response. If these components are included in a TPA, then the language should be constructed to address the communication procedures and reconciliation practices between the two parties, which may be needed in addition to technical aspects of recovery.
- The inclusion of these components is also dependent upon flow type. It is more applicable to document failure response procedures, for data submissions of regulatory flows where there data is mandatory and where data synchronization is required.
- This is especially applicable in instance where there is cross ownership of data. For example EPA is Implementer of Record for an inspection and associated violation records and the State is the Implementer of Record for the associated enforcement actions. Keeping data records synchronized in this instance is complex and critical.
- In a voluntary, flow where data is not being synchronized between 2 systems, failure and reconciliation procedures are less applicable.
- Inclusion of this component in a flow-specific TPA template will be determined by the responsible workgroup.

Record Retention *(Optional)*

This section addresses issues surrounding transmission logs and requests for historical data.

Points to Consider

- The record retention component is applicable to regulatory data submissions where data retention is required through different legislative/regulatory mandates addressing regulatory reporting.
- This component is also dependent upon the Exchange and System failure components. Record retention policies are important to address, failure and resynchronization of data between two systems.
- This component has less bearing on voluntary flows where data synchronization between two systems is not required.
- Inclusion of this component in a flow-specific TPA template will be determined by the responsible workgroup.

Data Stewardship

This section details the components that outline the responsibility for quality, use and ownership of data exchanged for the specific flow.

Data Ownership *(Required)*

The TPA should specify the definitive source for shared data.

Example

Agency X will be a steward to all data identified as "State Only" records and EPA will be a steward for all data identified as "Federal Only" records.

Points to Consider

- This component is applicable where two parties are submitting to a central data source (e.g., RCRAInfo) where data is combined. It is important to define who has responsibility for data stewardship for the mix of data in the system. This is especially applicable in regulatory flows where a state is submitting data to EPA. It has a higher degree of applicability in bilateral TPAs.
- This component is less applicable in instances of multilateral relationships where several parties exchange data without using a central data repository that is the "official data source". In this scenario where the true "network" approach is used and users query partner nodes periodically to access data; ownerships of data is implied and does not require management through a TPA.
- Given the current status of the node implementations, where data is anticipated to flow to central repositories, this component is required to ensure data integrity. In the future it may become optional, as exchanges move away from the central repository model towards a true "network" model.

Use and Distribution of Data *(Required)*

This section is intended to address routine use and distribution of data amongst trading partners specifically to understand the responsibilities of the parties.

Example

Data may be generally made available to any Network partner with a valid CDX registration and to all parties with whom they are legally required to disclose data.

Points to Consider

- At a minimum this component needs to address how the data will be made available to internal and external entities.
- The breadth of coverage is highly dependent on the content of the flow; for example FRS data has less stringent requirements concerning usage distribution, than compliance data would have. The agreeing parties may want to identify how specific data components of a schema will be treated in instances where data sensitivity is of concern.
- Partners may also want to address unique requirements around usage. For example:
  - An organization may agree to share data with other parties as long as the data is not openly distributed to the general public. The TPA may then need to address how such data, if mixed with other data, will be identified
  - When providing non-mandatory data, a state might want to explicitly exclude the data from use in program evaluation by EPA. Alternatively they may release data that is still 'draft" in nature and still in process, in the spirit of data sharing, and may want to ensure that this data is also not used for program evaluation.

Data Elements *(Required)*

At a minimum, the TPA needs to address which elements in the schema are NOT being supported by the flow.

Points to Consider

- In most data standards there are optional data elements that parties may choose to support. Simply referencing the schema with all its required and optional data elements will not allow exchanging parties to understand the breadth of the data being offered for exchange.
- This component potentially has overlap with the other regulatory agreements that overlap with TPAs. Some State-EPA agreements detail the specific data points that a data provider will support. When developing the TPAs, parties may need to review these other agreements and determine the extent that these agreements specify the data that will be exchanged.
- Some parties may prefer to fully define the set of data elements in the TPA in a readable format, identifying the supported and unsupported elements.

Data Content and Coverage *(Required)*
Data content encapsulates the coverage of the entire dataset, for example, the universe of coverage, as well the completeness of the elements within the dataset.

Points to Consider

- It is important to detail the scope of coverage for a dataset being exchanged. For example if data partners are going to agree to exchange RCRA hazardous waste generator information, then it is important to know the scope of the generator data that will be exchanged.
- It is important that there is an understanding of how each party defines the data. For example if parties agree to exchange large quantity generator data (LQG), and one party defines an LQG more broadly than the federal definition, it is important for both parties to understand this data context, to enable effective and accurate use of the data.
- Content and coverage also applies on a data element basis. For example if parties agree to exchange data for FRS and there is the ability to query on NAICS codes. It would be beneficial to understand that 35% of the facilities in the dataset actually have NAICS codes populated. Otherwise a query for a specific NAICS code could have unexpected results.

Data Quality *(Required)*
This component addresses issues surrounding expression of data quality for some flow types.

Points to Consider

- For environmental monitoring data it will be useful to express the quality of the data as function of its source. For example data collected by volunteer groups would have a lower perceived data quality when compared to data collected by professional sampling crews.
- This quality dimension may also be expressed as a function of the level of quality control that the data has been subjected to. For example data may be collected and released in real-time but have low a low degree of quality assurance, as the data has not undergone review and editing for possible outliers and instrument malfunctions.
- Partners may refer to other Quality Assurance Procedures that have been established for the data.

Data Timeliness *(Required)*
This component addresses issues surrounding timeliness of data provided for exchange amongst partners.

Points to Consider

- When discussing data quality of real-time monitoring data, it may be necessary to understand how often the data is being collected and made available through the node.

- For flow types where there is not a specified lag time (e.g., Quality assuring sampling results), it may be necessary to generalize the statement to a commitment of timely data entry and availability.
- Another example might include exchanging of manifest data amongst partners. If there is a one month lag between receipt and posting to the node, due to data entry and quality assurance, it will be important to know this limitation.

Agreement Administration

This section details the components that manage the overall administration, contacts and approval mechanisms of the TPA.

Period of Agreement / Termination *(Required)*

This component specifies the length of the agreement or review cycle and if needed the conditions for termination of the TPA as a whole, including written notice and the effect of termination on other rights and obligations.

Example

This TPA becomes effective on the date of signatures by both partners and will continue in effect unless modified by mutual consent of both parties. This TPA will be reviewed each year in conjunction with the RCRA work plan / grant negotiations and will be amended or revised as needed if agreeable to both parties.

Points to Consider

- Some implementers of TPAs might prefer to not have the TPA expire to avoid the drawn out processes associated with entering into "new' agreements
- In the case of regulatory flows, it may be wise to set the review cycle to coincide with the review of the program and its associated agreements and grants. This will help to ensure that all agreements are providing adequate coverage to meet the needs of the flow. Doing so may also facilitate the extrication of some data management elements from the PPAs, SEAs, MOUs, and centralize this coverage into the TPA.

Contacts *(Required)*

Specifies the primary points of contacts between the two agreeing parties for inquiry and resolution of issues.

Example

Name, Title/Role, Agency, Address, Phone Number, email address

Points to Consider

- Some implementers of TPAs have indicated that this component has been the most useful in their implementation of the node
- As the Exchange Network progresses and the data gains additional scrutiny, it may be wise to expand the coverage of this component to include data steward contacts; to answer questions about context, quality and coverage of the data. To date, the contacts have been typically limited to personnel tasked with implementing the node.

Approval Signatures *(Required)*

This section identifies the persons agreeing to the conditions set forth in the TPA.

Example

Name, Title/Role, Agency, Date

Points to Consider

- Some implementers of TPAs have indicated that it is important to have the proper level (management) of signature for the TPA. Experience has shown that gaining approval too high in the management structure of an organization can result in delays in signing the TPA as well as a decreased sense of accountability.
- As Network implementation progresses, it may be wise to include additional approval from program data stewards. Program accountability and ownership will need to be included in the agreement.

Appendix C – Trading Partner Agreement Checklist

The following key elements should be considered by workgroups when creating flow specific TPAs. This checklist has been developed from the Best Practices described in **Appendix B** and is intended to provide the same level of flexibility for the creation of the flow specific TPA template. The objective should be to ensure that the resulting tool is specific and meaningful for the partners in the customization of their individual agreements.

The following checklist includes a brief definition and a number of key considerations for each of the TPA elements identified in the Best Practices. These elements should be considered in combination with the more detailed discussions included in **Appendix B** and elsewhere in this document.

When designing the flow specific template the workgroup should keep the following items in mind:

1. Keep the language simple and prescriptive, thereby ensuring that the TPA is meaningful to the agreeing parties
2. Carefully consider the issues that a specific flow will encounter and provide clear options for the trading partners to select when customizing the agreement to their individual relationships.
3. The workgroups will hopefully provide the benefit of their expertise, and experience, to the individual partnerships, thereby making their job much easier and the TPA more applicable.

Partnership Overview

Required

Purpose and Parties

This section identifies the organizations entering into the agreement and the general purpose and reason for the partners to enter into the agreement.

1. The workgroup should take account of and document the nature of the information exchange (i.e., Unilateral versus Bilateral)
2. Why are the partners entering into this agreement?

Definition of Data

This section details the type of data that is addressed by the TPA (e.g. RCRAInfo, FRS, BEACHES) and is exchanged through the flow.

1. The specific sub-categories of data being exchanged (e.g., RCRAInfo- Handler, Compliance Permitting, Corrective Action, and Biennial Reporting) should be detailed here.
2. If the TPA addresses the exchange of information that is managed through other State-EPA Agreements, then they should be cited here if they more completely describe the information exchange.

Optional

Background

This section provides some background into the nature of the relationship between the agreeing parties as well as general context into why the data is important and being managed by the parties. This section might also elaborate on the needs that brought the partners together to agree to exchange data.

1. If the TPA is addressing a well established relationship that is governed by State-EPA

agreements, then it may not be necessary to include this element.

2. It the TPA establishing a new information exchange relationship, then the workgroup may find it useful to include this element to establish the overall objective they hope to achieve by entering into the relationship

Benefit

This section defines benefits of the exchange for the partners entering into the agreement.

1. This component might be useful for TPAs establishing new information exchange relationship, where one previously did not exist.
2. Some implementers of TPAs have found the statement of the benefits to be unnecessary and that it complicated the TPA, especially in cases where the relationship is governed by State-EPA agreements.

Definition of Roles and Responsibilities

Required

Legal Framework

This section defines the governance, standing and applicability issues that apply to the partners. The TPA should address the effect of the agreement on other inter-party obligations.

1. This section should reflect whether or not the exchange meets reporting obligations of a regulated program. Often this section is used to clarify the point that the TPA does not supersede any other agreement and generally is not legally binding.
2. The workgroups may find it useful to cite the State-EPA agreements that establish and govern the legal framework of the information exchange.

Exchange Mechanism

This section states how the data will be exchanged between the partners, (e.g., Push or Pull).

1. A clear statement of the exchange mechanism is important in instances where multiple parties enter into an agreement employing a mixture of mechanisms due to different degrees of node readiness.
2. This component overlaps with the scope of the FCD that also describes the mechanism of exchange. The language should be as descriptive as possible without delving into deeper technical issues to provide a clear statement of the responsibilities of the trading partners.

Dispute Resolution

This section of the agreement describes procedures for settling disputes, and other exceptional conditions related to the terms of the agreement.

1. This component may experience a higher degree of applicability in the future should the relationships and associated agreements between States and EPA change; with the TPA being used to manage all aspects of data exchange between the two parties, as opposed to the current scenario with TPA/State-EPA agreement overlaps.
2. This element will be useful in establishing the ground-rules governing new information exchange relationships.

Exchange Schedule

This section details the frequency at which the data will be exchanged.

1. It may be necessary to state the maximum frequency of exchange, for example, to minimize performance impacts on the receiving system.

Optional

Financial Agreements

This section addresses any financial arrangements associated with the exchange of data, e.g., Party A compensates Party B for the cost of the transaction or provides funds necessary to support the collection or exchange of the data.

1. Workgroups are encouraged to include this element in instances where one party is granting financial support to specifically facilitate the information exchange.
2. It is not advisable to include this component in the TPA to restate financial arrangements provided for general program support. For example EPA grants to states for program implementation, which incidentally also includes submission of data to EPA.

Exchange Failure

In instances where the exchange of data is mandatory to meet regulatory data submissions, (e.g. DMR to PCS) the TPA template should detail the actions that will be taken to manage and synchronize actions to address the failure.

System Failure and Data Reconciliation

When the exchange is intended to duplicate data locally, the TPA should address initial synchronization of participating databases and recovery following system failure.

1. These two components have a high degree of overlap with the FCD. If these components are included in the TPA, then the language should be constructed to address the communication procedures and reconciliation practices between the two parties, which may be needed in addition to technical aspects of recovery.
2. The inclusion of these components is dependent upon flow type. It is more applicable to document failure response procedures, for data submissions of regulatory flows where there data is mandatory and where data synchronization is required.

Record Retention

This section addresses issues surrounding transmission logs and requests for historical data.

1. This component has less bearing on voluntary flows where data synchronization between two systems is not required.
2. It is important for the partners to consider record retention needs in instances where data retention is required through different legislative/regulatory mandates addressing regulatory reporting.
3. Record Retention is interdependent with the Exchange and System failure components. Record retention policies are important to address, failure and resynchronization of data between two systems. Workgroups are encouraged to consider these components in combination with one another.

Data Stewardship

Required

Data Ownership

The TPA should specify the definitive source for shared data.

1. Workgroups are encouraged to clearly define who has responsibility for data stewardship when mixed into a centralized system (e.g. RCRAInfo). This is especially applicable in regulatory flows where a state is submitting data to EPA.

Use and Distribution of Data

This section is intended to address routine use and distribution of data amongst trading partners specifically to understand the responsibilities of the parties for making the information available to internal and external entities.

1. Workgroups are encouraged to consider the type of information targeted for exchange. The degree of applicability is highly dependent on the content of the flow; for example FRS data has less stringent requirements concerning usage distribution, than compliance data would have. The workgroups are encouraged to identify how specific data components of a schema will be treated in instances where data sensitivity is of concern.
2. Workgroups may also want to address unique requirements around usage. For example:
    a. An organization may agree to share data with other parties as long as the data is not openly distributed to the general public. The TPA may then need to address how such data, if mixed with other data, will be identified.
    b. When providing non-mandatory data, a state might want to explicitly exclude the data from use in program evaluation by EPA. Alternatively they may release data that is still 'draft" in nature and still in process, in the spirit of data sharing, and may want to ensure that this data is also not used for program evaluation.

Data Elements

At a minimum, the TPA needs to address which elements in the schema are NOT being supported by the flow.

1. Parties are encouraged to review the overlap of this component with State-EPA agreements. If these agreements do not specifically outline the elements that the exchange will support, then it is advised that they be included in the TPA.

Data Content and Coverage

Data content encapsulates the coverage of the entire dataset, for example, the universe of coverage, as well the completeness of the elements within the dataset.

1. It is important to detail the scope of coverage for a dataset being exchanged as well as the partner specific definition of the data.

Data Quality

This component addresses issues surrounding expression of data quality for some flow types.

1. For data such as environmental monitoring data, it will be useful to express the quality of the data as a function of its source.
2. Data Quality may also be expressed as a function of the level of quality control that the data has been subjected to.

Data Timeliness This component addresses issues surrounding timeliness of data provided for exchange amongst partners.

1. It is necessary to express the timeliness of the data to gain an understanding of the frequency at which the data is being collected and made available through the node, for example data collected through real-time monitoring, versus data that has a lag due to submission frequency and data entry constraints.

Agreement Administration

Required

Period of Agreement / Termination

This component specifies the length of the agreement or review cycle and if needed the conditions for termination of the TPA as a whole, including written notice and the effect of termination on other rights and obligations.

1. Experience by past TPA implementers has shown that it is often preferable to place the TPA on a review cycle, without an expiration date; thereby avoiding the drawn out processes associated with entering into "new" agreements at the end of each period
2. In the case of regulatory flows, partners may wish to set the review cycle to coincide with the review of the program and its associated agreements and grants. This will help to ensure that all agreements are providing adequate coverage to meet the needs of the flow. Doing so may also facilitate the extrication of some data management elements from the State-EPA agreements, and centralize this coverage into the TPA.

Contacts

Specifies the primary points of contacts between the two agreeing parties for inquiry and resolution of issues.

1. Workgroups may find it useful to include the technical contacts to facilitate communication when there are issues.
2. Workgroups may find it useful to include data steward contacts; to answer questions about context, quality and coverage of the data.

Approval Signatures

This section identifies the persons agreeing to the conditions set forth in the TPA.

1. Workgroups should encourage the proper level of approval responsibility; as gaining approval too high in the management structure of an organization can result in delays in signing the TPA as well as a decreased sense of accountability.
2. Workgroups may wish to include approval from program data stewards. Program accountability and ownership are often required to ensure that the exchange is supported from not only a technical perspective but also from the programmatic perspective.