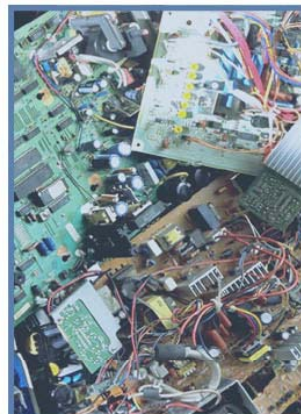
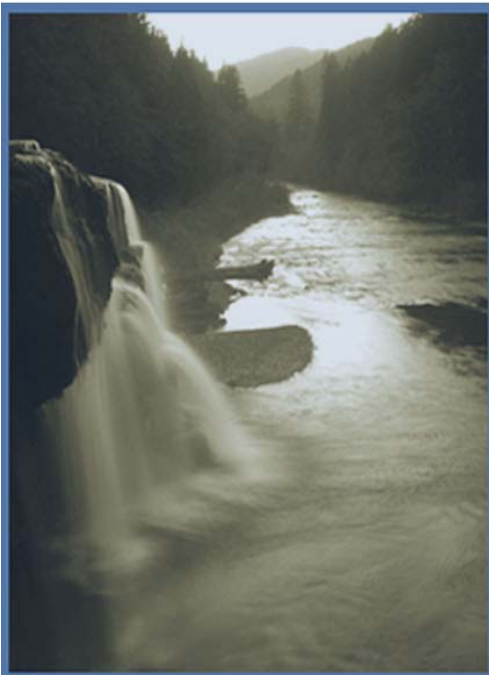


April 2006



CONCEPTUAL BUSINESS PLAN

*For an Electronic Product Stewardship
Third-Party Organization (TPO)*

Developed as a project of the Northwest Product Stewardship Council
and led by a Steering Committee of Electronics Manufacturers



CONCEPTUAL BUSINESS PLAN

For an Electronic Product Stewardship Third-Party Organization (TPO)

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EXECUTIVE SUMMARY

This Third Party Organization (TPO) Business Plan outlines an organizational structure and a mechanism for delivering waste management services for waste electronic products (e-waste) in the states of Oregon and Washington. Project participants hope that these findings could apply in other multi-state situations as well.

To illustrate how a TPO could provide practical value on a business and policy basis, a Steering Committee of electronics manufacturers developed this Conceptual Business Plan based on a set of key assumptions about TPO responsibilities and the broader, legislated electronics recycling system. This Plan was produced as part of the larger Pacific Northwest TPO Project, which explored issues and concerns expressed by Steering Committee members and other stakeholders about TPO concepts and implementation impacts. Certain characteristics of this Business Plan, such as the scope of products covered and the utilization of the local infrastructure, are outlined for modeling purposes but will ultimately be decided by state legislatures. The assumption that legislation is necessary to implement this Business Plan was confirmed by the legal research conducted during the Project. Model legislation was not prepared as part of this Phase One effort.

The guiding principle of this study is that an Electronic Product Stewardship TPO would be an industry-led, not-for-profit corporation dedicated to effectively delivering a system for recycling discarded electronics. The TPO would work within the framework of state legislation and, intending to serve multiple states, it would facilitate convenient, cost-effective and environmentally-sound collection and recycling of specified electronic products. The TPO would also provide a valuable flow of information between participants in the electronics chain of commerce— consumers, retailers, manufacturers, material suppliers, recyclers and government— regarding information on product characteristics and quantities, design ideas, incentives, and the management of electronic products at end-of-life.

Major Business Plan Assumptions

- The TPO engages electronics manufacturers and retailers to help achieve state program objectives by managing and paying for the delivery of collection, transport and processing services.
- The Business Plan assumes the TPO has access to a source of funding provided via an Advance Recycling Fee that is established by legislation and that is adequate to cover the services for which the TPO is responsible.
- The Business Plan assumes, for the states of Oregon and Washington, that 100 percent of eligible sales are captured into the program and that those funds finance the collection, transport and processing of all returned, covered electronic products. These collection and recycling services would be provided without additional charge and be convenient to consumers and other users of covered electronic products.
 - Note that this approach differs from alternative approaches that would have more than one entity each covering only a portion of the returned products with a

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portion of the available funding. These alternative approaches are explored in the Business Plan and in Appendix C to illustrate the impact of less-than-100 percent approaches upon the economic viability of the system. These documents demonstrate that other approaches could inhibit economies of scale and that competing plans, in some cases, may duplicate services and increase administrative costs.

- The product scope assumed in this Business Plan covers desktop and laptop computers, and display devices including monitors and flat panels and televisions.

Major Business Plan Findings

- While there are several legal issues that could limit the function of a regional TPO, any new recycling system will require legislative authorization at the state and/or federal level. Thus, legal restrictions on TPO establishment, operation and financing are limited to a relatively narrow set of constitutional issues discussed in Appendix D (Legal Analyses).
- For the first four years of TPO operations, total costs of the TPO and recycling system covering Oregon and Washington are projected at approximately \$29 million. Following system ramp-up during the first 3 years, total system costs projected for year 4 are as follows:

Total Year 4 Costs (in thousands of U.S. dollars)					
Recycling	Shipping	Collection Payments	TPO Labor	Other Costs	Total Year 4 Need
\$5,400	\$680	\$3,400	\$520	\$1,500	\$11,140

- A base level of service that is “free and convenient” is managed by a regional TPO and could be implemented by charging a fee of fewer than six dollars per new unit sold. Households and small businesses would have free access to convenient drop-off locations, and larger commercial users could utilize TPO-contracted recycling services at no additional cost. The Steering Committee selected financing of these services via an Advance Recycling Fee (ARF) model.

TPO System Costs per New Unit Sold in Washington and Oregon (estimates, rounded to nearest dollar)	
TV unit >19"	\$6
TV unit <19"	\$3
Desktop PC unit	\$2
CRT/large LCD monitor	\$4
LCD monitor unit <22"	\$2
Laptop unit	\$1

- Implementation of this Business Plan would begin upon enactment of electronics recycling legislation generally consistent with this Business Plan in one or more states.

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The schedule in Section 6 details the timeline for system startup, including assumptions about E-Waste Commission startup (e.g., creation in the second or third month) and the TPO (e.g., formation of TPO Board of Directors in Month 3). Initial TPO start-up costs are approximately \$250,000 prior to finalization of a Cooperative Agreement between the TPO and E-Waste Commission in Month 9, and an additional \$1.25 million for Months 9-15 prior to the collection of fee proceeds.

Estimated TPO Start-up Costs		
Prior to Finalization of Cooperative Agreement (Month 9)	Prior to Initiation of Fee Collection (Month 14)	TOTAL TPO STARTUP COSTS
\$250,000	\$1,250,000	\$1,500,000

- Projected collection volumes from household and residential sources over the four-year planning period were estimated as follows:

Projected Collections from Households/Small Businesses – lbs./capita/year			
Year 1	Year 2	Year 3	Year 4
1.35	1.76	2.3	2.6

Major Business Plan Recommendations

- **A hybrid recycling system model** offers the best guarantee of meeting individual state policy directions while achieving the economies of scale that are critical to making the program cost-effective. For each implementing state, the hybrid utilizes two organizations – one that is unique to each state to collect the government-mandated fees and to provide program oversight, and a second that is a private TPO operating on a multi-state basis to manage the collection/recycling system.

1) A state-specific “E-Waste Commission” will collect and disburse funds and provide oversight to assure that state policy directions established by legislation or regulation are achieved. This “Commission” could be a new agency, an assignment to an existing agency, or another legal arrangement deemed appropriate by the state legislature.

The legal analysis in Appendix D (Johnson memo) refers to such an organization as a “special purpose state agency” and states: “The Oregon and Washington legislatures have created or authorized the creation of numerous special purpose state and local commissions, boards, authorities and districts to achieve particular governmental objectives.” (p.2)

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2) A privately-managed, multi-state TPO to contract for and manage recycling services. The TPO would engage the leadership of electronics manufacturers and other key stakeholders that provide valuable experience and perspective.

The TPO could be designed and created by a group of private individuals or an existing entity—referred to as the “Founders” in the Business Plan. It could be established as an independent entity or within another pre-existing organization, and would likely be a not-for-profit organization.

In this hybrid system, the State Commission would likely establish an agreement or contract with the multi-state TPO, thus providing the TPO access to the funds, under defined conditions, in order to manage recycling services. This agreement would assure that individual policy directives of the state are implemented, but it must provide a level of consistency between states in order for the TPO operation to be viable. Funding authority and oversight thus would reside closely within each state, while management of recycling services benefits from regional economies of scale.

The authors of this Business Plan wish to thank the Washington Department of Ecology, U.S. EPA Region X and other members of the Project Support Team who assisted in this exploration of a multi-state electronics recycling system.

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APPENDICES AND ATTACHMENTS

- A. Pacific Northwest Third Party Organization Project Overview
- B. Spreadsheet models with financial details underlying the Business Plan
- C. TPO Viability Analysis, including sensitivity analyses from spreadsheet model
- D. Legal Analyses (*Memos by Weinberg, Memos by Johnson, TPO Model 3*)
- E. Addressing Stakeholder Concerns about an Electronics Recycling TPO
- F. Phase I Steering Committee Charter

1. MISSION AND ORGANIZATIONAL GOALS

1.1 NW TPO Vision

The Electronic Product Stewardship TPO will be an industry-led, not-for-profit corporation dedicated to effectively delivering a system for recycling discarded electronic equipment that meets or exceeds the expectations of stakeholders.

1.2 NW TPO Mission

The TPO will, working within the framework of State legislation and intending to serve multiple states, facilitate convenient, cost-effective and environmentally-sound collection and recycling of specified electronic products. The TPO will provide a valuable flow of information between participants in the electronics chain of commerce, including consumers, retailers, manufacturers, material suppliers, recyclers and government. Information will include data on product characteristics and quantities, design ideas, incentives, and the management of electronic products at end-of-life.

If the TPO Were Limited to a Single State...

...then the burden of TPO staffing, overhead and other administrative costs would rise significantly. These costs represent 15% of total TPO costs for a 2-state TPO; rise to 20% for a Washington-only TPO, and to 30% for Oregon-only. This does not account for potentially higher unit fees charged by recyclers due to lower volumes.

1.3 NW TPO Goals

The overarching goal of the TPO is to meet legislated requirements for e-waste management. Specific program objectives and performance measures that are adopted in state legislation will be incorporated into this Business Plan when it is adapted to meet state-legislated requirements.

The TPO shall seek to fulfill its vision and meet legislated requirements through the following goals, objectives, indicators and targets.¹

GOAL 1 To engage representatives of the electronics industry in the management of end-of-life electronic products through active participation in governance of the Electronic Product Stewardship TPO.

Objective 1.1

Establish and maintain an active TPO governance structure that represents both larger and smaller manufacturers.

¹ **A goal** specifies issues or problems that the organization must successfully address and provides a general direction for addressing them. These goals are derived from the Vision and Mission statements.

An objective provides a yardstick for measuring progress against a goal. Objectives are intended to be measurable, appropriate, realistic and timely.

An indicator is a selected program element that will be used to assess progress against an objective.

A target is a specific, intended accomplishment for that program element that, cumulatively, will contribute to achievement of the goals and objectives. Upon an action to implement a TPO, specific dates should be assigned to these targets.

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Indicator: A fully functioning TPO Board of Directors that includes at least 5 representatives of the top 10 brand owners in terms of market share and at least 5 representatives of other brands.

Target: The TPO Board of Directors has been established and begun meeting.

Target: Board of Directors meetings are held at least quarterly.

Objective 1.2

Establish instruments of TPO governance.

Indicator: Adopted bylaws and other governing documents.

Target: Bylaws have been drafted and approved by the Board of Directors.

GOAL 2 To create and manage, using legislatively authorized funding, a system of vendors providing collection and recycling services that meet performance goals defined by state legislation.

Objective 2.1

Provide collection services for all citizens of the TPO region.

Indicator: Conveniently distributed collection sites or opportunities.

Target: Each county has collection services provided either by ongoing collection sites or periodic events.

Target: One collection site has been established in each county of the state.

Target: At least one collection site that is open for business on a weekly basis has been established in each town with a population over 10,000.

Objective 2.2

Meet or exceed established recovery goals.

Indicator: Pounds per capita collected and processed.

Target: The goals established for each state in the TPO region are met.

GOAL 3 To manage recovered electronic products in a cost-effective manner.

Objective 3.1

Use competitive, low-bid procurement for contract processors.

Indicator: An effective procurement process.

Target: Establish low-cost protocol, based on bids received and experience.

Target: A procurement process has been implemented that secures low bid submittals from contract processors.

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Target: Contracts have been negotiated and secured with contract processors that, in comparison with other programs, are judged to be cost-effective.

Objective 3.2

Continuously improve the cost-effectiveness of contract processing.

Indicator: Methodology for ongoing measurement of program cost-effectiveness.

Target: A measurement system has been established that compares on an ongoing basis the cost and effectiveness of TPO contract processors with comparable other programs.

Indicator: An efficiency best-practices system that monitors and shares amongst contract recyclers new and efficient technologies and processes.

Target: Expertise and up-to-date knowledge of processing technologies is continuously accessed by the TPO.

Target: Efficiency best-practices for e-waste management technologies and processes are defined.

Target: Regular communications are established with contract processors regarding efficiency best-practices and opportunities for improvement.

Indicator: Cost efficiency of processor contracts.

Target: Processor costs shall decline by 3 percent per year for the first 5 years.

GOAL 4 To manage recovered electronic products in an environmentally and socially responsible manner.

Objective 4.1

Assure that all electronics collected under the auspices of the TPO are processed according to environmental best practices.

Indicator: Environmental best practice standards for contract processors.

Target: Environmental best practices standards have been defined for contract processors.

Target: Environmental best practices standards are included in all service contracts.

Indicator: Auditing of processors.

Target: All contractors are audited for environmental best practices each year.

Objective 4.2

Assure that processed materials or components shipped overseas are handled according to health, safety, environmental and fair labor standards at least comparable to those in the U.S.

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Indicator: Health, safety and environmental standards for downstream processors and markets.

Target: Health, safety and environmental standards have been developed for downstream processors and markets.

Target: Health, safety and environmental standards for downstream processors and markets, including requirements to track product downstream, are included in all service contracts.

Indicator: Reporting by contract processors on health, safety and environmental standards for downstream processors and markets.

Target: All contractors track products downstream and report quarterly on the adherence of downstream processors and markets to health, safety and environmental standards.

Indicator: Reporting by contract processors on fair labor standards for workforce.

Target: No anti-competitive job displacement of private sector jobs from alternative workforces unless explicitly allowed.

Objective 4.3

Assure that all contracts are certified to national or international financial performance standards that rely on documentation to facilitate auditing. Recycler standards that exceed regulation should be encouraged.

Indicator: Implementation of broadly accepted financial recordkeeping.

Target: Establish a reliable documentation scheme that can be used to reimburse service providers and be used to authenticate records, billing and material balance.

Indicator: Implementation of broadly accepted recycler performance standards.

Target: Monitor and report regularly to the Board on the status of implementation of certification standards for recyclers.

Target: When national or international certification standards for recyclers have been developed, they are reasonably implemented in all processor contracts.

GOAL 5 Provide a reliable flow of information between participants in the electronics chain of commerce, as appropriate, regarding data on product characteristics and quantities, design ideas, incentives, and the management of electronic products at end-of-life.

Objective 5.1

Maintain active communications with the owners of all brands marketed in the TPO region regarding (a) the end-of-life management system and (b) design characteristics of their branded products as they affect recycling efficiency.

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Indicator: A method for a minimum of quarterly communications with all manufacturers that sell in the TPO region regarding the status of the e-waste recycling system.

Target: A quarterly communication system with all manufacturers that sell in the TPO region has been implemented.

Target: Communications with liaison personnel for all manufacturers has been established.

Indicator: Information about elements of product design that affect recycling is provided to manufacturers.

Target: The TPO has implemented a method to obtain from contract recyclers and communicate to manufacturers' information regarding recycling efficiencies or inefficiencies that result from product design.

Objective 5.2

Educate consumers regarding e-waste diversion options and benefits.

Indicator: Implementation of a consumer education program.

Target: A consumer education plan has been developed in cooperation with local and state government.

Target: Targets in the consumer education plan have been successfully met.

Objective 5.3

Constructively engage local governments in assuring that convenient services are provided for their residents and that those residents are informed about recycling opportunities.

Indicator: Cooperative relationships with all local governments in the TPO region.

Target: A working arrangement has been developed with all local governments in the TPO region.

Target: Arrangements have been made for providing information regarding e-waste recycling opportunities through local hotlines, publications and other media throughout the TPO region.

Objective 5.3

Constructively engage states in the development of requirements for e-waste management.

Indicator: The implementation of supportive governmental measures needed for the proper functioning of the TPO.

Target: The TPO has worked closely with appropriate state agencies in the development of measures necessary to implement the e-waste funding legislation.

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Target: The state environmental agency has taken action to adopt and implement a ban on e-waste disposal within a year after recycling opportunities have been implemented statewide.

2. ORGANIZATIONAL GOVERNANCE

The following are two different models for the legal and governance structure of a TPO:

1. **A quasi-governmental TPO:** A legislatively created, quasi-governmental organization in which the governing structure, authorities and responsibilities are defined by state legislation, along with the ability to access funds generated by the fee system.
2. **An independent TPO:** An independent, privately-formed TPO that is enabled by state legislation to provide recycling services under the oversight of a state agency and to access funds generated by the fee system.

In both models, the government is ultimately responsible for the performance of the program. In the first model the governmental responsibility is direct while in the second model it is through an agency's oversight of the TPO.

The first model would come into existence through the adoption of legislation. The second model could be created by its "Founders" at any time, but would begin providing recycling services when funding is provided through legislation.

2.1 Recommended TPO Governance Model

The recommended governance approach adapts these two models into a hybrid. The quasi-governmental TPO becomes an E-Waste Commission, operating separately in each state, but which is more or less "governmental" depending on the terms of the legislation. The independent TPO, as the manager of recycling services, is then free to operate across more than one state.

Recommended Hybrid Governance Approach

Legislation in each state establishes an "E-Waste Commission" to collect and disperse funds and oversee program performance. The Commission establishes an Agreement with an independent, (likely) multi-state TPO to manage recycling services. Funding authority resides closely with the state, while management of recycling services benefits from regional economies of scale².

Members of the E-Waste Commission are appointed by the Governor as specified in the legislation.

Legislation assigns to the Commission responsibility and authority to:

- Establish advance recovery fees for all products covered by the

² Note that, as documented by the spreadsheet model developed for this project, economy of scale in providing processing and recycling services is important to constrain costs of e-scrap management.

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legislation

- Establish payment mechanisms and enforce payment of the ARF
- Authorize retailers or first sellers to retain a portion of the ARF to cover their expenses
- Establish an Agreement with a TPO to provide all collection, recycling and related services
- Limit the use of ARF funds for the purposes specified above plus the cost of operating the Commission

The legislation also defines the criteria for an acceptable TPO. These could include that the TPO be a not-for-profit organization, commit to comply with certain policy objectives (e.g., provide convenient services) and be supported by companies who supply a specified percentage of covered products to the state. The legislation specifically authorizes the Commission to establish an Agreement with a TPO that has served other states.

Note: An alternative approach is that the function that is provided by the E-Waste Commission be assigned by legislation to an existing state agency empowered to establish an agreement with a multi-state TPO.

The Hybrid Governance Approach has several benefits:

- It places major operating responsibilities on product manufacturers, who apply their business expertise and motivation to control costs to e-waste management.
- It provides for segregation of funds from other governmental monies, thus avoiding diversion into other programs.
- It allows for multi-state operation in the management of recycling services.

The following section outlines organizational and governance elements of the two organizations – the E-Waste Commission and the multi-state TPO – and provides excerpts from a legal memorandum referred to as the “Johnson memo”³. Full text of the memo can be found in Appendix D.

³ The legal memorandum was produced by Stephen Johnson of Garvey Schubert and Barer, dated 11/28/05 and titled “Legal Issues Relevant to Structuring an Entity to Manage Collection, Recycling and Disposal of Waste Electronics in Washington and Oregon”.

2.2 E-Waste Commission

Incorporation status

- The organization would be established by legislation and would take the form of a state commission, a public authority or public corporation. Depending on the legislation it could be part of an existing agency, a fully-governmental commission or a quasi-governmental organization with assigned responsibilities and powers.
 - o The Johnson memo, found in Appendix D, refers to such an organization as a “special purpose state agency” and states: “The Oregon and Washington legislatures have created or authorized the creation of numerous special purpose state and local commissions, boards, authorities and districts to achieve particular governmental objectives.” (p.2)
 - o The Johnson memo cites the Washington Apple Commission as a model and states: “The Apple Commission model involves a substantial degree of input and control by the industry sector that funds the agency’s activities. No impediment has been identified under the constitution or laws of Washington or Oregon that would prevent the electronics industry from having a similar relationship with an “E-waste Commission” in one or both of these states and, perhaps, an even greater degree of input and/or control.” (p.5)

Governing Board composition and selection

- The Commission could include participation by electronics manufacturers, retailers, local governments, recyclers and other stakeholders, depending on how specific the developed legislation is.
- The legislation that establishes the Commission would specify a process for selecting the representatives.
 - o The Johnson memo states: “As currently constituted, the Washington Apple Commission consists of the Director of the Washington Department of Agriculture or his designee and thirteen apple growers and dealers ... appointed by the Director. ... The statutory provisions giving the Director of the Department of Agriculture the authority to appoint the members of the Commission and to review and approve the Commission’s activities are new. In 2003 and 2004, the Washington legislature amended the statutes governing the Apple Commission to reinforce and strengthen the Department of Agriculture’s control over the Commission. For the first time, these amendments required the Director of the Department of Agriculture to appoint the members of the Commission and subjected most of the Commission’s activities to review and approval by the Director.” (p.5)
 - o The Johnson memo states that these legislative changes were due to a U.S. District Court decision that restricted the powers of the Commission to levy fees from the industry “to fund speech”. This would not apply to the core activities of an E-waste Commission, though the Commission activities would need to be appropriately limited regarding “speech”. Though not stated in the Johnson

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memo, presumably then, previous law provides the precedent that the Commission members could be appointed by industry as they were under the law before amendment.

- The State Governor would have authority to remove any Commission member.

Organizational roles and responsibilities

- The Commission is accountable to the state through financial and performance audits using independent auditors. Additionally, an ongoing oversight role of Commission operations may be provided by an existing state agency or agency official.
 - The Johnson memo states: “While a substantial degree of input and control by the electronics industry seems possible, some oversight by elected state officials and their appointees will be necessary.” (p.6)
- Within the limits established by the legislature (e.g. a “cap” or “ceiling” on fees), the Commission will have the authority to collect, set and modify fees.
 - The Johnson memo states: “if it is desirable for the agency to control the level of the assessment, Washington and Oregon courts have long recognized that the authority to impose a fee to defray the cost of a governmental service may also be justified as compensation for the burden imposed by the payer’s activities. This rationale would seem to support the assessment of a fee on manufacturers and distributors of e-products to defray e-waste management costs made necessary by the environmental burdens imposed by such products. A special-purpose state agency could probably be authorized to assess a fee against manufacturers, distributors or consumers to fund e-waste management costs incurred by the agency, so long as adequate guidelines and/or procedural protections are provided to guide the agency’s actions.” (p.4)
- Enforcement of fee collection could be done by the Commission.
- The Commission would be delegated at least the following powers and authorities:
 - To enter into contracts for goods and services
 - To hire staff and consultants
 - To borrow funds
 - To apply for and receive public and private grants.

Principles and procedures for anti-trust, confidentiality, conflict of interest, remuneration, etc.

- Would follow existing state government requirements.

Multi-State Authorities and Operations

- Such an organization would likely be established under one state’s legislation that would not be applicable to other states.

2.3 The Independent, Multi-State TPO

Incorporation status

- The TPO would be designed and created by a group of private individuals or an entity – the Founders.
- It could be an organization within another pre-existing organization.
- It would likely be a not-for-profit organization.

Governing Board composition and selection

- The Founders would likely comprise the core of the initial Governing Board.
- The Governing Board would preferably be controlled by electronics manufacturers.
- Other stakeholder directors would be included, including retailers, governmental representatives, etc.
- The founders would decide on a selection process for additional members.

Organizational roles and responsibilities

- The TPO Board is the ultimate governing body.
- The Board governs with the objective to establish and fulfill the requirements of the Commission via an Agreement.
- The TPO would be required to develop and execute a Business Plan, to be approved by the Commission that is capable of meeting the goals adopted in the legislation.
- The Commission or the TPO Board could terminate the relationship.
- The Board holds responsibility for financial support of the TPO within terms of the agreement established between the TPO and the E-waste Commission.
- The Johnson memo states: “If a government agency assesses and collects fees and funds the activities of this entity by means of contracts or grants, the... payment to the NGO of the funds generated by the fee would be governed by a contract between the agency and the NGO.” (p. 9)

Principles and procedures for anti-trust, confidentiality, conflict of interest, remuneration, etc.

- Would follow existing state government requirements.

Multi-State Authorities and Operations

- Operations could easily be multi-state, but the state requirements that provide funding would need to be compatible in essential regards. The multi-state TPO

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could adapt to some differences in TPO requirements as long as they are not in conflict.

- o The Johnson memo states: “A private NGO could operate in Oregon, Washington and other states, so long as the state statutes authorizing the program, the rules adopted by state regulators and the contractual requirements in each state are consistent.” (p. 11)

3. THE TPO BUSINESS MODEL AND PLANNING SCENARIO

This Section establishes the basis for an assumed e-waste management scenario developed to write this Business Plan. This assumed scenario will be referred to as the “Planning Scenario” and will serve two purposes:

- Describe the key functions of a TPO in the Pacific Northwest that drive the associated costs and required revenue.
- Provide a Business Plan that is adaptable to different contexts that may be created through enabling legislation.

3.1 Key Variables in Modeling the Business

This Section describes the key services that will be delivered, the assumed methods of service delivery, and other major drivers that are taken into account to estimate TPO fixed and variable costs.

The biggest driver of TPO costs overall is the volume of returned electronic products from households and small businesses to be recycled. In developing this Business Plan, the authors recognize that the volumes of product to be managed will vary substantially depending on the several key program characteristics that may be established differently by participating states, including:

- Scope of covered products
- Geographic area and population to be serviced
- The required services to be provided

In addition, a few other important variables in projecting return volumes were identified, analyzed and ultimately incorporated into the Planning Scenario assumed for purposes of this Business Plan. Most notable is the rate of public participation represented by low, medium and high estimates developed from available data on public participation in existing electronics recycling programs (the medium estimate is ultimately used in the Planning Scenario).

These variables have been analyzed and aggregated into the Planning Scenario and are described below.

3.1.1 Types of Products to be Managed

The product scope assumed in this Business Plan is:

- Desktop and laptop computers
- Display devices including monitors and flat panels
- Televisions

Alternative Product Scope A

If the scope of products covered only CRT devices, overall TPO costs would be 12-18% less during the first 3 years. TPO costs would probably decline significantly in future years due to a proportionate decline of CRT returns relative to flat panels.

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3.1.2 Geographic Area and Population Served

The Planning Scenario utilized in this Business Plan assumes that the programs of Washington and Oregon will be generally compatible for regional implementation via a unified TPO in order to achieve greatest efficiency and greatest economy of scale. The Planning Scenario also assumes the need to allow different inputs from the states of Oregon and Washington in anticipation of some variation in program characteristics from one state to the other.

Population: The volume of product from households and small businesses to be managed by the TPO is projected in Section 3.2 by a formula of pounds-per-capita-per-year multiplied by the population. The population projections for 2005 based on the 2000 U.S. census are:

- Washington: 6,204,632
- Oregon: 3,596,083

Product from residential and commercial sectors:

This Business Plan assumes all residents, businesses and institutions will be serviced by the TPO-funded system; that is, products will be received from them and the costs of recycling will be covered.

The Planning Scenario assumes that products that come from large businesses and institutions will be collected outside of collection channels created under TPO oversight for households and small businesses. Large business and institutional users will have access to bulk pick-up and recycling services under contract with the TPO at no additional cost to those institutions. The Planning Scenario assumes that the combination of economies of scale provided by the TPO recycling contracts and the inherent reuse value in covered products disposed by these larger users will result in no additional costs to the TPO for recovering these products.

The Planning Scenario acknowledges that some unknown fraction of products sold to these large business and institutional users will be transferred to households and reused via employee sales programs, resale by commercial brokers and charitable donation to households. This reused product will ultimately be available for recycling as residential e-waste, and, as such, is considered within the product scope assumed by the Planning Scenario. There is not an attempt to “filter out” product returned by households previously used by large businesses and institutions.

Alternative Product Scope B

If the scope of products expanded to include the listed product set plus large computer peripherals such as printers, scanners and multi-function devices, overall TPO costs would be 3-7% more during the first 4 years.

If Sales to Large Businesses Were Covered by a Different Financing Mechanism....

...then some fraction of waste product sold to these large business and institutional users would be transferred to households and reused via employee sales programs, resale by commercial brokers and charitable donation to households. Thus, some fraction would be recycled without having paid the fees at sale. Since all sales are covered, there is no attempt to “filter out” products returned by households previously used by large businesses and institutions.

Urban versus rural population distribution: The costs of transportation from collection sites to a consolidation⁴/processing center is one of several substantial cost factors and one that will vary considerably for different communities, in proportion to population density and transportation distances. The Planning Scenario takes this into account by simply using an average transportation cost across all counties in Washington and Oregon.

3.1.3 Services to be provided

Core services: The following services are the drivers of TPO costs:

- Collection from last user
- Transportation
- Processing
- Public education and promotion
- TPO labor and overhead

Collection: Collection includes a base level of free and convenient service as described below:

Collection may be provided by a number of different types of service providers, including local recyclers and waste management companies, municipal facilities, retailers, not-for-profit organizations and charities. This Plan assumes that there is no payment to the public for returned product—the return is free, but there is no buy-back. The convenience of the collection system, and how well it is promoted to the public, are the primary, TPO-controlled factors that will determine the amount of product received from a given population.

One main issue facing the TPO is how to plan for collection from households and small businesses. There are two primary approaches to planning and measuring a collection system:

- o One is based on a measure of convenience—e.g. a collection site per X number of residents.
- o The second is based on achieving a level of collection performance—e.g. pounds of product collected per capita per year.

The Planning Scenario utilized in this Business Plan assumes a hybrid of these two approaches. First, the TPO projects yearly recovery rates from households and small businesses in lbs/capita/year. The numbers are projected for each of the first four years, ramping up over that period using existing comprehensive electronics collection programs as a guide. Second, the TPO will establish metrics to assure that remote areas or areas of low population will be appropriately serviced. For rural-dominated counties, the Planning

⁴ The term “consolidation” causes confusion because it is used in some systems – e.g. Maine and WEEE – to mean the point at which financial responsibility shifts from government to industry. Here it means simply the function of receiving product from many collection sites and preparing a stream of products in bulk form for downstream processing. It is simply the doorway for bulk scale product into the contracted e-waste management system.

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Scenario assumes at least one collection site that is open for business on a weekly basis has been established in each town over 10,000 in population.

The TPO will have flexibility in the methods it uses to achieve those rates through working with local communities, charities and businesses to maximize the efficiency of the collection system.

Collection costs: Costs of collection for households and small businesses – and other sources where product is not already in bulk form – are highly sensitive to the type and density of collection sites. A study conducted by the National Electronic Product Stewardship Initiative (NEPSI) participants, called the Seattle Assessment, examined a range of different densities of collection sites for Snohomish County, WA. The costs ranged from approximately 9 cents/lb to 18 cents/lb. In comparison, the combined reimbursement rate for collection and transportation has been set by the Waste Management Board in California at 20 cents/lb. The Planning Scenario of this Business Plan assumes 15 cents/lb—slightly more than the mid-range of the Seattle Assessment study.

If Collection Costs for Rural Communities Were 2X Urban/Suburban Costs...

...then the overall TPO costs per new unit sold in WA/OR would increase by only 3.3% in Year 4 of TPO operations. Approximately 7% of the Oregon population lives in rural counties as defined in this plan, and 13% of Washington.

This collection cost includes transportation to the centralized processing center. Snohomish County includes a mix of urban and remote rural populations. However, the county is located relatively close to the processing site in Seattle. When transportation costs are calculated for a state as a whole, an additional cost of 3 cents/lb for transportation of products from distant areas is assumed.

Estimation of collection costs: Collection costs are estimated at 15 cents/lb, including transportation to the bulk consolidation center. An additional amount of 3 cents/lb is assumed for bulk product transport from consolidation point to processing center.

Adjusting the density of collection sites via collection costs: In the contracting model described in section 3.3, the payments for collection can be adjusted, providing a greater incentive for local organizations to establish such sites. Increasing the collection payment should increase the density of collection sites, thereby increasing public convenience and collection rates.

Reuse: The reuse of e-scrap has many advantages. It provides a higher retained resource value than recycling, supports local businesses and not-for-profits, addresses the digital divide issue, and reduces the cost of recycling by diverting reusable products, if only for a limited period of time. The best approach to reuse was discussed extensively in the NEPSI process, where it was decided that reuse should not, and need not, be subsidized or paid for by system financing. However, local reuse of appropriate items can be accommodated in the collection infrastructure. For example, economies of scale provided by the TPO recycling contracts and the inherent reuse value in covered products disposed by these

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larger users will result in no additional costs to the TPO for making available recovery, reuse and recycling services to these users.

Sorting for reuse happens best at the point of collection where product can be sorted (or triaged) by local reuse organizations prior to the point when management for material recovery begins. In fact, this process may reduce system costs by diverting 5-15 percent of the post-household material that would otherwise be recycled. This is an assumed option in the Business Plan Planning Scenario for household/small business product collection and consolidation entities.

Transportation: There are two distinct portions of the transportation model:

- Local transportation, sometimes called “milk runs”, from collection sites to a consolidation/processing center. Product will generally be whole and loosely packed. Many, if not most, permanent sites may also be recycling facilities in order to keep these costs at a minimum.
- Long-distance transportation (i.e. bulk shipping) from the consolidation/processing center to downstream processors or markets. This may include partially disassembled products and materials that are efficiently packed.

Estimation of transportation costs: This Business Plan uses the NEPSI Seattle Assessment to estimate local transportation costs. Local collection costs are included in the average collection costs as described above. Long distance transportation/bulk shipping is included as a separate transportation cost and is estimated at 3 cents/lb.

Processing: Processing is an inclusive term that can encompass several different discrete activities that vary from one recycler to another, including:

- Receipt from collection sites, including from large institutional product users
- Consolidation and sorting
- Minimal dismantling for removal of materials requiring special handling
- Manual dismantling for separation of recyclable materials
- Packing and shipping
- Shredding and mechanical separation
- Final processing of materials into industrial feedstock

There are multiple companies in Washington and Oregon providing these services currently. These and/or other TPO-contracted facilities also can perform essential data capture, management and reporting activities.

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To estimate processing costs, numerous sources of data were reviewed, including:

- Processing cost estimates provided by several recyclers operating throughout the United States
- Actual price quotes obtained by various participants in the Pacific Northwest TPO project
- NEPSI surveys
- Prices quoted in the monthly E-Scrap News publication
- California IWMB reimbursements for processing set at 28 cents/lb. Note that this number is thought by many stakeholders as high, and therefore provides a good upper bound of a reasonable cost range.

Estimation of processing costs: Processing services are commonly procured as a package, including transportation to market. Available data on processing costs from the California program, E-Scrap News estimates and other sources will be used to estimate a cost per pound for different categories of product. Using data from these sources, this Business Plan estimates the average processing cost at 24 cents/lb. In order to reduce this cost over time, the TPO will utilize competitive procurement processes and establish personnel policies that reward cost reductions in major contracting costs, such as processing and shipping.

Public education and promotion: This will be a shared responsibility of the TPO and local communities. In general, the TPO will develop system-wide educational materials and provide statewide promotions. Local government will inform citizens regarding locations of collection sites.

Estimation of education costs: This Business Plan projects the TPO share of public education and outreach at \$300,000 per year.

Both industry (represented by the TPO) and government have specific expertise in public outreach, education and advertising that will complement each other.

The TPO could provide advertising/outreach to the general public about the importance of reuse and recycling of electronics products and explain how consumers can take advantage of easy opportunities to reuse and recycle. This could be done as a typical business marketing campaign similar to, or in conjunction with, marketing that is done to sell new products.

Government has experience with providing information to the public and business community about specific reuse and recycling opportunities available to them. Residents and businesses alike are conditioned to use government services and staff to learn about how to recycle the waste that they generate. Government could provide and promote hotlines (1-800 number), websites, bill enclosures and other opportunities to inform the

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public where they can go to reuse and recycle their electronics. This information would be coordinated with outreach services provided by the TPO and would target urban and rural residents and businesses statewide.

TPO Labor: In order to operate the TPO, specialized professional staff will be required as detailed in Section 4 below.

3.2 Projection of Collection Volumes

The single most important variable affecting overall TPO costs is the amount of post-household/small business product managed per population served. There are two distinct approaches to estimating pounds-per-capita collection volumes:

- A projected generation spreadsheet model based on historic sales data, estimated product lifetimes, average product weights, and the likelihood of alternative disposition pathways. This information would be used to estimate the amount of waste product theoretically available for collection/recycling in a given year.
- An examination of existing collection program data. However, there are only a few programs that are representative, meaning that they serve a wide and definable population and have been operating over time.

The first approach requires estimates of average product weight and life span that introduce significant uncertainty into projections, producing an estimate that substantially exceeds what actual programs are collecting. However, the existing programs, even after several years, are often still increasing in volumes. The second approach requires a “judgment call” as to whether existing programs are comparable to the future program being planned. The second approach also needs to be adjusted to account for fluctuations in future collection volumes consistent with historic changes in average product weight, average life span and historic unit sales.

NEPSI studied this question under the topic of setting performance goals for the program. The information gathered is very valuable, and the NEPSI data was summarized in a report⁵ that can be referenced to estimate collection volumes. Recent program experience has shown a steady increase in the volumes collected by the existing programs.

In 2002, the NEPSI analysis concluded that the most valid basis for estimating product that will be collected would use data from existing programs. The NEPSI document arrived at a figure of 1.75 pounds-per-capita-per-year based on the data that was available at that time.

A figure of 2.6 pounds-per-capita is assumed as the Planning Scenario estimate in this Business Plan based on an evaluation of new data from Hennepin County, Minnesota, which included product from primarily residential sources and the product set specified above. Although the demographics of Hennepin County do not exactly match the demographics of the Pacific Northwest region, this program’s rate does provide an

⁵ “Performance Measures Guide” produced in December 2004 for Snohomish County by Wayne Rifer.

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aggressive collection target useful for purposes of this Business Plan, and is in fact described as the “gold standard” by one manufacturer representative.

The Planning Scenario also assumes that collection volumes will ramp-up from smaller to larger volumes over several years. To make this calculation, the first year rate is set at the annualized rate achieved by the California program in its first 7 months of operation (1.35 lbs/capita/year). Consistent with the assumed scope of products, these California numbers have been adjusted to also include desktop computers. The ramp-up rate from year one utilizes the historic rate increases from the Hennepin County program since curbside collection was initiated in Minneapolis in 1997. This achieves the current Hennepin county rate over 3½ years. This is faster than Hennepin achieved that rate, justified by the greater current backlog of obsolete product.

After review and analysis of existing comprehensive collection programs, the Planning Scenario utilized in this Business Plan assumes collection at the following lbs/capita rates for the first 4 years of TPO operation:

Projected Collections from Housholds/Small Businesses (lbs/capita/year)			
Year 1	Year 2	Year 3	Year 4
1.35	1.76	2.3	2.6

3.3 Proposed Approach for Service Contracting

Another important planning assumption is the approach taken to securing collection, transportation and recycling services. This approach drives the administrative structure of the TPO, and the structure for how these services are monetarily-defined in the financial model.

The selected Planning Scenario assumes that all direct services will be competitively contracted by the TPO via an RFP/RFQ process open to existing/developing business in the area and regional/national vendors. The primary considerations in service contracting are to achieve overall cost efficiency, ability to enforce quality and the management of risk to the TPO.

While there are several possible structures for contracting, the approach assumed in this Planning Scenario is most similar to the one specifically designed to minimize overhead costs by the Infrastructure Group of NEPSI.

Under this approach, the largest share of overhead burden will come from contract management—procurement of vendors, contract negotiations, payables management, vendor auditing, data management and reporting.

In order to avoid the expensive management of contracts for a highly-distributed network of collection sites entailing hundreds of contracts, the Planning Scenario assumes the following for product collected from households and small businesses:

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- The TPO will contract with a limited number of consolidation points in each state. Contractors will be secured through a bidding process.
- The TPO will contract for “event services”.
- The contractors will be paid on the basis of their bids for pounds of product managed. This could include a pass-through payment for collection services—the Collection Incentive Payment (CIP)—as well as payment for the net costs of downstream transportation and processing. Under this scenario, the TPO would set a CIP based on typical collection costs per pound. Collectors would be able to offer additional services that exceed the assumed level of service in the CIP (i.e., “value added services”) that might include special curbside pickup or other enhanced services. Collectors offering these services would receive the same CIP as other collectors offering a minimum required level of service.
- Contract consolidators will compete for arrangements with local collection entities of any type. They may also directly provide collection.
- Contractor consolidators, via their service contract terms, are also responsible for assuring conformance with environmentally sound management standards, data reporting requirements, etc.
- The TPO will establish documentation requirements that are auditable and reliable, including items such as incoming weight tickets balanced by outgoing sales of commodities and waste.
- Returned product from large institutional users collected outside of household/small business collection channels will have access to bulk pick-up and recycling services under TPO contracts with recyclers. The Planning Scenario assumes that the combination of economies of scale provided by the TPO recycling contracts and the inherent reuse value in covered products disposed by these larger users will result in no additional costs to the TPO for recovering products from these users.

In this approach, the specific collection providers are not directly the responsibility of the TPO. Rather, they are the responsibility of the consolidators/processors. The TPO is responsible for assuring that a convenient collection network is provided, and the TPO will collaborate with local and state governments to assure that the desired level of convenience is achieved in each community. The TPO can increase (or decrease) the convenience level by adjusting the CIP—the higher the CIP, the more incentive there is for entities to offer collection. In addition, a premium on the CIP may be paid for rural collections.

Thus, the entire network for collection and recycling will be driven by competition managed by the TPO procurement process.

Increasing Cost-efficiency: In order to achieve the objective of increasing the cost-efficiency of processor contracts and of the system as a whole, the TPO shall implement mechanisms to drive prices downward over time. This could include the following mechanisms, using cents/pound as a standardized measurement:

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1. Contracts shall be structured to enhance competition among service providers and to encourage development and implementation of innovative business models for collection, shipping and processing.
2. Efficiency “best practices” will be researched by the TPO and shared on a regular basis with the contractor processors.
3. The TPO will monitor processing costs elsewhere in the country and will give incentives to contract processors to meet, or beat, those prices.
4. TPO employees will receive annual bonuses that are tied to successful initiatives to decrease processor contractor costs. These initiatives may include:
 - Notably successful implementation of measures 1-3;
 - Enhancement of the market value of processed materials through identification or development of additional high-value markets;
 - Identification of practices to recover and market high-value components by contract processors;
 - Identification of practices to reduce disposed residues;
 - Reduction or streamlining of TPO paperwork requirements that reduce processor overhead costs while maintaining essential flow of data and information;
 - Identification of organizations, practices and markets that will increase the reuse of whole products and components prior to transportation to the contract processor.

Environmentally Sound Management: Service contracts from the TPO will include standards for Environmentally Sound Management (ESM). Although there is no well-established and widely recognized ESM standard, the Planning Scenario in this Business Plan utilizes the draft EPA Plug-in to eCycling Guidelines⁶ now proceeding through a public consensus process as an American National Standard (ANSI).

4. RESOURCES PLAN

4.1 Financial Needs

4.1.1 Operating Finances

Given guidance on the projected product scope for this plan from the Steering Committee, as shown in the detailed Pacific NW TPO spreadsheet model, following a ramp-up period the TPO financial needs are driven by costs of recycling, collection and transportation. Taken together, these three cost elements represent approximately 81 percent of the operating financial needs of

If multiple TPOs Were Allowed...

...then there would need to be a regulatory system established for fairly allocating responsibility and monitoring compliance across multiple organizations. A TPO Viability Analysis developed with this Business Plan also suggests that multiple TPOs could increase administrative costs and reduce procurement economies of scale.

⁶ “U.S. EPA Plug-In to eCycling Guidelines for Materials Management”, EPA530-K-04-004, (www.epa.gov/osw). This is sometimes referred to as recycler certification or e-waste facility evaluation. Other efforts to develop such standards are being conducted by IAER (www.iaer.org), the OECD and ISRI (not yet available).

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the TPO. The summary chart below specifies the top four financial needs projected for year 3 of TPO operations.

Table 1 – Projected Year 4 Costs (rounded)

Recycling	Shipping	Collection Payments	TPO Labor	Other Costs	Total Year 4 Need
\$5,400,000	\$680,000	\$3,400,000	\$520,000	\$1,500,000	\$11,140,000

The total financial need over the first 4 years of the Pacific Northwest TPO operations is approximately \$29 million.

Costs Per Unit: When viewed on a cost-per-new-unit-sold basis, total TPO costs range from approximately \$1 to \$6 per unit. Table 2 provides costs-per-unit estimates for the system once fully ramped up in Year 4.

TPO System Costs per New Unit Sold in Washington and Oregon (estimates, rounded to nearest dollar)	
TV unit >19"	\$6
TV unit <19"	\$3
Desktop PC unit	\$2
CRT/large LCD monitor	\$4
LCD monitor unit <22"	\$2
Laptop unit	\$1

These estimates were derived using assumptions and data described throughout this Business Plan (e.g., volume of electronics collected, processing costs, etc.). Additional key data and assumptions relevant to unit cost estimates include:

- New unit sales in Washington and Oregon are roughly comparable to national sales data
- Product subcategories for televisions (>19", <19") and monitors (CRT/LCD >22", LCD <22") were developed based on the availability of data on sales, return and average weight. Data sources include product manufacturers, the Consumer Electronics Association (CEA), existing collection pilots and programs (particularly from Hennepin County and Florida), and published and unpublished data from the U.S. EPA and the National Center for Electronics Recycling (NCER)
- Per unit costs were allocated to a product class according to average returned product weight. The following average weights were assumed for each product returned:

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Unit Type	Estimated Average Weight
TV >19"	72
TV <19"	41
Desktop PC	22
CRT/large LCD monitor	45
LCD monitor <22"	19
Laptop	7

- Per-unit cost allocations would be adjusted over time to account for changes in average product weight and that product's share of the total volume of returned electronics.

4.1.2 Financial Risk Management

The two largest costs to be borne by the TPO are for recycling and collection. These two costs are both variable, and are driven by the volume of recyclable products returned by consumers. This volume is difficult to predict in advance. This Plan therefore incorporates two basic strategies for managing this financial risk, both of which affect the resources required to run the TPO.

First, this Business Plan assumes that an E-Waste Commission (see section 2.2) will be authorized by enabling legislation to adjust fees higher or lower within an amount (i.e. a cap or an initial amount) established by legislation, and those funds would be passed along to the TPO. Should the volume of collected product and associated costs exceed budgeted expectations, the E-Waste Commission would have the authority to increase the fees up to the cap amount to fund TPO operations.

Second, during the first year of operations, the TPO will sequence plans for revenue collection from the E-Waste Commission and contractor payments (i.e., cash flow) to minimize the need to borrow and to ensure that adequate funds are available to pay contractors when invoices are received. Thus, the TPO will plan to end year 1 operations with a positive cash flow and a small cash reserve. This reserve grows slightly through the second year, declines through year 3 and is spent in year 4. Adjustments in collected funds and/or TPO expenses over the years will be required to maintain a small reserve for TPO operations. The spreadsheet model developed for this business plan assumes that available cash reserves will never exceed 15 percent of annual TPO income.

Under the second strategy, should the revenue needs exceed the maximum available funds under the cap, the TPO should be authorized to negotiate with the E-Waste Commission to either increase the revenue or curtail the services provided.

4.2 Personnel Needs

The following TPO staff positions are projected to be needed:

- Executive Director. Required to run the TPO and be hired by and responsible to the TPO Board of Directors for all TPO administration.

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- Contract Manager. Required to plan and execute deals with selected contractors.
- Accounts Payables Manager. Required to plan, manage outsourcing contracts, and troubleshoot any outsourced financial functions.
- Communications Director. Required to coordinate complex and visible regional communications efforts.
- Office Manager. Required to administer the TPO office.
- Administrative Support staff. Required to support various TPO office functions.

4.3 Contract services

Section 3.3 describes the method of contracting that the TPO will utilize. In terms of stakeholder credibility, a good process for vendor selection and management, as well as the systems in place for those vendors to manage their downstream collectors and markets, will be critical.

The TPO will develop the following administrative implements for service contracting within the budget included in this Business Plan:

- A model to project the optimal number of consolidators in a geographic region.
- A collection financial model to establish the CIP and any CIP enhancements for rural communities.
- Vendor qualification requirements.
- A two-stage vendor procurement document, including a pre-qualification stage and low-bid selection (RFQ/B).
- A method for verifying that documentation requirements are complete.
- A prospective vendor due-diligence process before contracting.
- An Environmentally Sound Management standard.
- A boilerplate vendor contract.

In addition, ongoing management of vendors will be critical after the contracting efforts, and processes will need to be in place to make sure they are meeting their requirements. These processes will include:

- Vendor reporting requirements
- A periodic vendor auditing process

5. ADMINISTRATION

5.1 Budget authority and accountability

The Pacific Northwest Third Party Organization derives its authority to operate using collected Advance Recovery Fees and is accountable to the E-Waste Commission of one or more states with which it enters into a Cooperative Agreement, or other appropriate legal arrangement, to provide recycling system services, including but not limited to the states of Washington and Oregon. An annual budget will be developed by the TPO Executive Director and presented to the TPO Board of Directors for approval.

Following approval of the annual TPO budget, the Executive Director will prepare a summary of the TPO plans and budget for the coming year to be submitted to the responsible representative(s) of the state agencies, including the relevant state E-Waste Commission(s) consistent with the specific requirements in that state's Cooperative Agreement with the TPO, and state law.

5.2 Financial management and administrative policies and procedures

Concurrently with the approval process for the annual TPO budget, the Executive Director will prepare and present to the TPO Board of Directors a report on the state of TPO finances and any proposed changes in TPO administrative policies and procedures recommended or adopted during the current fiscal year.

5.3 Personnel policies and procedures

The Executive Director will prepare and submit proposed personnel policies and procedures to the Board of Directors for approval. As a private, not-for-profit entity, the TPO will establish personnel policies and procedures consistent with other private, not-for-profit entities whose mission it is to provide a critical service for the common good.

5.4 Management information system

In the interest of providing high quality services at the lowest cost, the Pacific Northwest TPO will maximize the efficient use of information technology for oversight by the TPO Board of Directors, partner state agencies, sponsoring industry participants, other interested stakeholders and the general public.

Concurrently with the submission of the annual TPO budget to the Board of Directors, the Executive Director will prepare a report on the state of the TPO management information system and recommend any improvements in TPO MIS plans, strategy and/or execution.

With the approval of the Board of Directors, the Executive Director may outsource one or more functions associated with the TPO MIS when it is deemed cost effective to do so. The MIS will also be a primary support tool for collecting the results of audits of service providers.

5.5 Financial and performance audits

The Board of Directors shall constitute an Audit Committee to oversee TPO financial and performance audits. Such audits shall be done periodically as requested by the Board of

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Directors, and auditors will be selected directly by the Board Audit Committee independent of TPO management. The TPO Executive Director will work with the selected auditor(s) and make available any and all financial and other records as requested. All outside audit reports will be made available to the TPO Executive Director for review and comment at least 7 days prior to submission to the Board Audit Committee. All auditor reports shall be directed to the Board Audit Committee.

5.6 Insurance and legal representation

Consistent with the budget and other contracting policies approved by the Board of Directors, the Executive Director will be authorized to enter the TPO into contracts with insurance providers and legal services as needed.

6. OPERATIONS

6.1 TPO Start-up plan

Implementation of this Business Plan will begin upon enactment of electronics recycling legislation generally consistent with this Business Plan in one or more states. The start-up process will unfold as follows:

- Meeting among state officials and the Steering Committee to review specific legislated requirements and next steps.
- Revision of the Business Plan under direction of the Steering Committee to update the schedule and assure compliance with newly legislated requirements.
- Steering Committee hires a TPO Executive Director.
- Formation of TPO organizational structure consistent with legislated requirements.
 - o Selection of manufacturer and other stakeholder representatives as required by legislation, or as needed if not directed in legislation.
- TPO operations begin per schedule in 6.2.

6.2 Schedule

6.2.1 Major tasks and milestones: next 12-18 months

- Enactment of recycling legislation in one or more states: Day 1
- E-Waste Commission appointed/established: Months 2-3
- Formation of TPO organizational structure (i.e. Board of Directors): Month 3
- Hiring of TPO Executive Director: Months 4 and 5
- TPO Initial Board of Directors meeting, office manager hired, initiation of limited business operations: Month 5
- TPO Business Plan revisions completed to comply with legislated requirements: Month 6

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- Identify IT needs: Month 6
- Preparation/submission of TPO proposal to E-Waste Commission: Month 7
- Contracts Manager hired: Month 8
- Finalization of Cooperative Agreement between TPO and E-Waste Commission: Month 9
- Coordination with local communities to identify needs and opportunities for local services: Months 9-10
- Professional support contracts negotiated and secured (legal, financial audit, outreach/education, insurance, IT, telecom): Months 9-10
- RFP/RFQ for recycling/shipping/consolidation service providers issue: Month 10
- Hiring of a TPO Communications Director and Accounts Receivables Manager: Month 12
- First annual TPO Board of Directors meeting: Month 13
- Contract(s) for recycling/shipping/consolidation service provider(s) awarded: Month 14
- TPO fee collection begins by E-Waste Commission: Month 14

6.2.2 Resource requirements

- Prior to completion of Cooperative Agreement with E-Waste Commission (Month 9): \$250,000
- Prior to commencement of fee collection activities (Months 9-15): Approximately \$1,250,000

6.2.3 General contract requirements

Assuming that the TPO would “hire” recyclers through a contractual process, the following qualifications/standards would be included as contract conditions:

- Ongoing compliance with local, state, federal and any relevant international laws and regulations pertaining to health and safety, environmental protection, waste management, transportation, and business licenses and practices.
- Appropriate liability and environmental insurance.
- Certification of destruction related to information potentially contained in computers and other electronic equipment.
- Certification of ultimate disposition of the recycled/processed materials.
- Provide for pre-screening of collected materials for reuse. (This could happen at point of collection, but the recycler should only accept from collectors who do this, otherwise, they will be responsible for doing it themselves.)

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- Assuming that no state or federal laws and regulations have been established that set performance or ESM standards, the primary monitoring would occur through oversight of contract provisions by the TPO. If laws and regulations are established at the state and/or federal level, then government could monitor and enforce against those requirements. Monitoring and enforcement could be done in the following manner:
- Site visits (one or two a year) to the contract recyclers resulting in published information on the findings.
- Annual review of compliance status records with any local, state, federal and international requirements pertaining to the recycler, e.g. OSHA inspection reports, confirming business license status, obtaining a certificate of insurance, etc.
- Through the contract, require specific quarterly or annual reporting, by type and amount, of materials processed. In addition, require information on where the materials came from geographically, and the ultimate disposition of processed material.
- The TPO would cumulate data gathered from the enforcement efforts and would provide and publish system reports against performance standards for each contractor as well as for the entire system by state.

6.2.4 ESM standards

TPO service contracts will utilize the draft EPA Plug-in to eCycling Guidelines and successor guidelines.

6.2.5 Specific services to be contracted – e.g. processing, collection, auditing, publicity and marketing.

- Contractor auditing function to be competitively outsourced.
- Admin and bookkeeping services to be competitively outsourced.
- External auditor to be hired by Board of Directors.
- Leasing costs for office space.
- Information Management System outsourced in order to maximize use of the Internet for major functions: materials tracking, invoicing, contract negotiation, reimbursement of consolidators, audit data reporting, public relations and information. Also includes cost of office PCs and computer network.
- Outreach and education expenses include development of advertising, PSAs, free media exposure, educational materials about the program and response to queries as needed.
- Legal services to assist in draft/negotiation of contracts with recycling/shipping contractors, consolidators, outsourcing vendors and regulation compliance.
- Insurance needs.

CONCEPTUAL BUSINESS PLAN

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6.2.6 Product flow data management

The TPO information architecture will meet the goals listed in Section 1 of this Business Plan. Given the public interest in the TPO mission and activities, this information architecture is the primary mechanism for ensuring that the TPO maintains transparency to external stakeholders. A high-level diagram of information flows within the TPO system is presented below.

TPO INFORMATION FLOW

