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ROGER MORGAN  
DAVE BULKOWSKI  
RICHARD VANDER MOLEN

DARWIN BAAS  
Director



## Board of Public Works

### AGENDA

April 2, 2015  
8:30 AM

Earl G. Woodworth Building  
Meeting Room Chambers  
1500 Scribner Avenue NW  
Grand Rapids, Michigan 49504

- I. Call to Order
- II. Public Comment
- III. Consent Agenda
  - A. Review and Approval of Minutes
  - B. Covanta-SWANA Travel Request
- IV. Solid Waste Operations
  - A. South Kent Landfill
    - i. Jakems Appraisal
    - ii. Concrete Crushing
  - B. North Kent Transfer Station
    - i. Compactor Rebuild
- V. Accounting & Finance
  - A. 2016 CIP
- VI. Approval of Monetary Outlays
- VII. Director's Report
  - A. Solid Waste Management Ordinance
  - B. Energy Policy
  - C. MDEQ - Solid Waste and Sustainability Advisory Panel
- VIII. Miscellaneous
- IX. Adjournment





**KENT COUNTY BOARD OF PUBLIC WORKS**

**March 5, 2015  
8:30 AM**

**Earl G. Woodworth Building  
Meeting Room Chambers  
1500 Scribner Avenue NW  
Grand Rapids, Michigan 49504**

**MEMBERS PRESENT:** Commissioners VanderMolen, Morgan, Shroll, Byl, Bulkowski

**MEMBERS ABSENT:** Commissioners Vonk, Groenleer

**OTHERS PRESENT:** Darwin Baas, Director; Elissa Soto, Office Manager; Molly Sherwood, Environmental Compliance Manager; Kristen Wieland, Resource Recovery & Recycling Manager; Chris Robinson, WTE Operations Manager; Kimberly Williams, Finance Division Director; Dan Rose, Solid Waste Operations Manager; Joni Laming, Purchasing Division;

- I. Call to Order**
- II. Public Comment**
- III. Consent Agenda**
  - A. Review and Approval of Minutes
  - B. SWANA Conference Attendance - Action Request

**MOTION**

It was moved by Commissioner Byl and supported by Commissioner Shroll to approve the consent agenda.

Motion carried unanimously.

- IV. Administration**
  - A. GBB Efficiency Study - Action Request

Staff presented a request for the review and approval to authorize the Director to sign a professional services agreement with Gershman, Brickner & Bratton, Inc. (GBB) to conduct an efficiency review of the Kent County Integrated Solid Waste Management System at a cost not to exceed \$65,000.

The Kent County Department of Public Works operates an integrated solid waste management system with an annual budget of \$35 million for 2015. An efficiency study

is recommended given change in leadership, retirement of department directors, a revised mission and assimilation into a new organizational structure. Division Director recruitment will be deferred pending review findings.

Deliverables include identifying changes necessary to drive efficiency, increase revenue, reduce costs and also achieve higher levels of waste diversion in Kent County. This comprehensive review includes organizational structure, training, equipment, contracts, permits, compaction ratios at the landfill, maintenance, direct costs, overhead, capital budget expenditures, and closed facilities maintenance.

Stakeholder interviews will be conducted to measure how the department is perceived by our customers and whether we are priced right in the market. The review will include a substantive look at WTE operations to ensure that Covanta, the County's operating partner, is running the facility in an efficient manner. Finance division will benefit with findings and tools plan future financial needs and implementing full cost accounting.

GBB brings a depth of national expertise in the solid waste industry, both nationally along with over 30 years of experience particularly with Waste-To- Energy operations and financial management.

Commissioners asked who would present the study's findings. Commissioners commented on the fact that there was no bid for the service. Staff responded that once the study is concluded Department staff accompanied by GBB staff would present the findings. Mr. Baas added that he has met with other agencies but very few had experience with WTE operations and were not as capable of understanding the industry as GBB. They are familiar with the Department's operations and were also instrumental in the implementation of the WTE.

Commissioner Shroll asked about the timeframe of the study. Mr. Baas responded that pending approval the study will begin the latter part of March with expected completion in early June.

#### **MOTION**

It was moved by Commissioner Byl and seconded by Commissioner Shroll to approve and authorize the Director to sign a professional services agreement with Gershman, Brickner & Bratton, Inc. (GBB) to conduct an efficiency review of the Kent County Integrated Solid Waste Management System at a cost not to exceed \$65,000.

Motion carried unanimously.

#### **B. Karoub Associates - Action Request**

Staff requested the review, approve and authorization for the Director to sign an Agreement with Karoub Associates to represent the Department of Public Works on energy, solid waste and other policy areas before the Michigan Legislature and State governmental agencies for 2015 at a cost of \$3,500 per month.

The Governor and key state legislators have indicated that energy policy will receive

significant legislative attention in 2015 - including clean energy standards, selling direct, net metering, renewable portfolio standards, choice, and base load generation. Legislative action affecting energy policy can affect the Waste-To-Energy Facility including negotiation of future power purchase agreements. The MDEQ has convened the Solid Waste and Sustainability Advisory Panel evaluating PA 451 Part 115.

Kent County retains the services of Public Affairs Associates (PAA) to represent the policy interests of the County in Lansing. PAA also represents Consumers Energy and Waste Management, Inc. creating a potential conflict of interest on certain legislative issues including energy and solid waste.

The Director interviewed three alternative firms: Karoub Associates, Governmental Services Consulting, Inc. (GSCI) and Midwest Strategy Group and is recommending Karoub Associates based on knowledge of energy issues, their knowledge of Kent County WTE operations, and representation of Covanta, the DPW's WTE operating partner, on similar energy related matters.

County Administration has been informed on the Department's plans to utilize an alternate advocacy firm to represent its legislative and policy interests in Lansing.

Commissioner Shroll asked whether the Department had utilized PAA in the past regardless of the conflict of interest. Director Baas responded that it has, but there were times where potential conflict of interests arose.

Commissioner Bulkowski asked whether the funds were available in the Department's budget or if the budget would need to be amended to include this expense. Mr. Baas believes there are sufficient funds in the department's budget for cover the expense.

Commissioner Byl believes that it will be beneficial for the Department to have representation without any conflict of interests in Lansing due to the number of amendments being brought that target incineration and renewable energy, and the Department needs representation.

## **MOTION**

It was moved by Commissioner Byl and supported by Commissioner Shroll to approve and authorize the Director to sign an Agreement with Karoub Associates to represent the Department of Public Works in on energy, solid waste and other policy areas before the Michigan Legislature and State governmental agencies starting in April 2015 at a cost of \$3,500 per month for 2015.

Motion carried unanimously.

### **C. Waste Regulation Specialist – Action Request**

Staff asked for the review and recommendation to the Kent County Board of Commissioners the conversion of a part time Waste Regulation Specialist UAW 21 to full time and eliminate a part time Waste Regulation Specialist UAW 21 and a part time Resource Recovery Specialist UAW 21.

As part of the Department reorganization and implementation of the new organizational plan, the Waste-To-Energy Division Director was reclassified to that of WTE Operations Manager and the full time Waste Regulation Specialist UAW 21 position was divided into two (2) part time, 28 hour per week positions. The Resource Recovery Program also has a part time, 28 hour per week, Resource Recovery Specialist UAW 21 position. Both the part time Resource Recovery Specialist and a part time Waste Regulation Specialist position were vacated last month. Employees in these positions desire a fulltime career in the environmental field.

Although overall employee hours are reduced by about half, program continuity will improve and overall costs reduced by converting one (1) Waste Regulation Specialist position to fulltime while eliminating one (1) part time Waste Regulation Specialist and one (1) part time Resource Recovery Specialist position and reduce turnover experienced in these part time positions by employees desiring a fulltime career in the environmental field. The position will be shared between program areas.

The cost savings is calculated at  $\$64,944 - \$78,129 = (\$13,185)$ .

Commissioner Shroll asked whether the Department should wait until the efficiency study is over to determine any staffing changes. Director Baas stated that there is currently a definite need in the Department. There is more of a risk when part-time staffers are hired due to the overwhelming desire for full-time employment. Within in the last six months, two of the Department's part-time workers have left the Department for pursue full-time employment.

## **MOTION**

It was moved by Commissioner Bulkowski and supported by Commissioner Byl to recommend to the Kent County Board of Commissioners to approve the conversion of a part time Waste Regulation Specialist UAW 21 to full time and eliminate a part time Waste Regulation Specialist UAW 21 and a part time Resource Recovery Specialist UAW 21.

Motion carried unanimously

### **V. Solid Waste Operations**

#### **A. Unmanned Aerial Vehicle System – Action Request**

A requested was presented for the review and approval for the purchase of a 3DRobotics 3DR X8-M Unmanned Aerial Vehicle System (UAVS) and Pix4Dmapper Pro software for the purpose of aerial survey at DPW managed sites.

The DPW contracts for aerial survey of DPW managed sites to calculate remaining airspace at South Kent Landfill and for assessing topographical changes due to settling at closed facilities for repair and maintenance needs. A one-time flyover of the five sites by an aerial LiDAR and orthophoto mapping service vendor costs \$34,345 (2015 quote). Flyover assessments should be conducted in four year intervals but is cost prohibitive. Future development of SKL requires biennial flyovers.

With advancements in UAVS and processing software the DPW can economically purchase and operate a system at a significant cost savings and be able to utilize the equipment 2-3 times a month. UAVS functionality will allow full site survey, airspace usage calculations, cell construction documentation, and soil excavation and placement

surveys to verify billing submitted by our earthwork contractor.

Additionally the Parks, Equalization and the Sheriff Department were consulted to ensure that system feature specifications can meet other County department needs including real time video viewing, disaster assessment, survey and surveillance.

Application for aircraft registration numbers and a certificate of authorization (COA) from the FAA will be completed by staff as part of the purchase process.

Commissioner Groenleer asked whether this purchase was in the budget. Mr. Baas responded that the funds for aerial surveying are in the budget and that purchasing the UAV will help the Department realize a cost savings as it would have had to outsource the surveying and a much higher cost.

Commissioner Groenleer asked whether Department staff would be the ones trained to fly the UAV. Ron Mills, Civil Engineering Aid responded that UAV operators must be certified by the FAA. This will be required of any operator of SUAS (Small Unmanned Aerial System). This is an FAA requirement. This test covers the theory of flight and also covers the understanding of the complex airspace system governed by the FAA. (Class A-G Airspace) and the requirements to operate in each designation. It also covers decision making skills and emergency mitigation skills.

Staff anticipates that other Departments within the County would utilize the UAV, operated by Department staff.

Commissioner Bulkowski wanted to make sure that the Department got the best value and will not need to purchase a more advanced UAV later because technology has advanced. Staff stated that staff did an extensive amount of research on the different types of UAV. Some of the UAVs required a larger landing path than our sites provided. Staff determined that this model was the best option for the Department because of the price, the software included and its capabilities.

Commissioner Vonk proposed that staff develop a policy for extending the use of the UAV to other departments of the County. He recommended that use of the UAV be strictly for Department use until staff has completed training and then return to the Board to approve expanding use of the UAV to other departments in the County. All Board members agreed.

## **MOTION**

It was moved by Commissioner Byl and seconded by Commissioner Shroll to approve the purchase of a 3DRobotics 3DR X8-M Unmanned Aerial Vehicle System (UAVS) and Pix4Dmapper Pro software for the purpose of aerial survey at DPW managed sites at a cost of \$11,250.

Motion carried unanimously.

### **B. Scalehouse Attendant - Action Request**

Staff requested the review and recommendation to the Kent County Board of Commissioners approve the addition of a part time Scalehouse Attendant (UAW 15) position to provide necessary staff coverage for scalehouse operations.

Scalehouse operations at the South Kent Landfill, North Kent Transfer Station and Waste-To-Energy Facility combined require 9,802 hours of coverage annually. Presently,

the DPW has four (4) full time and two (2) part time Scalehouse Attendant positions providing 8,533 hours of coverage resulting in a deficit of coverage of 1,269 hours. Deficit hours are currently covered by Finance Division staff, Scalehouse Attendant overtime and by other field staff. Prior to 2014, a retiree rehire also provided coverage.

Improved coverage and a net savings/reallocation of approximately \$3,482 will be realized by adding one (1) part time, 20 hours per week, position that provides 1060 additional hours. Staff will also provide light cleaning at the scale houses in lieu of using an outside cleaning service:

• 2014 Expenses:	Scale house attendant overtime	\$14,273
	Finance Division coverage	6,698
	Cleaning Service	<u>1,864</u>
		<b>\$22,835</b>
• <u>New Position:</u>	<u>Scalehouse Attendant UAW 15</u>	<u><b>\$19,353</b></u>
Difference:		<b>(\$ 3,482)</b>

**MOTION**

It was moved by Commissioner Byl and supported by Commissioner Groenleer to recommend that the Kent County Board of Commissioners approve the addition of a part time Scalehouse Attendant (UAW15) position to provide necessary staffing coverage for scalehouse operations.

Motion carried unanimously.

**VI. Resource Recovery and Recycling Operations**

A. MRF Loader Purchase – Action Request

Staff requested the review and approval of the purchase of a new rubber tire loader for the Recycling & Education Center. Bids for a new rubber tire loader and Guaranteed Maintenance Contract were solicited on February 6, 2015 by the Purchasing Department. Six bids were received and evaluated.

The Department has an approved 2015 Capital Improvement Project budget for the purchase of this loader for use at the Recycling & Education Center. It will replace the existing 2003 JCB 411B loader that has exceeded its useful life.

Staff is recommending the low bid (price of machine, guaranteed maintenance and guaranteed buyback amount) submitted by Alta Equipment Company from Byron Center for a 2015 Volvo L45GS in the amount of \$252,770.00 which includes Alternate A, the addition of a extended reach boom. Enclosed in your mailing is the bid tabulation.

**MOTION**

It was moved by Commissioner Byl and supported by Commissioner Shroll to award the purchase of a rubber tire loader to Alta Equipment Company of Byron Center in the amount of \$252,770.00 and authorize the Director to execute the contract for Guaranteed Maintenance.

Motion carried unanimously.

## B. Secondary Front End Loader

Review and approval to purchase a used Volvo L35B front end loader and attachments with extended warranty as the secondary front end loader at the Recycling & Education Center at a cost of \$64,825.50.

For the past four years, the DPW has used a primary and secondary front end loader at the Recycling & Education Center (REC). The primary loader is used on the tipping floor to load recyclables into the feed hopper and to stage recyclables after trucks have tipped. The secondary loader is used inside the plant to load glass trucks, push materials onto conveyor belts, and clean the floor of the facility and the grounds and as a backup when the primary loader is serviced.

With increased tonnage received at the REC the secondary loader run time is at 15,000 hours and needs significant repairs. Replacement was originally projected for 2018.

- Repairs are not recommended since cost estimates exceed \$18,000 and the loader has high operating hours and at the end of its service life.
- Both new and used machines were evaluated and determined that the recommended machine will meet REC's needs due to its compact size, low hours and used pricing. Purchase price includes scheduled preventative maintenance for the first 1 year or 1000 hours, whichever comes first.
- As provided for in Kent County Purchasing Fiscal Policy, the requirements for competitive sealed bids set forth in the policy may be exempted by the Board of Public Works. The Kent County Purchasing Division has reviewed this request and recommends approval.

Staff recommends waiving Purchasing Fiscal Policy and purchasing a used Volvo L35 to be used as the secondary front end loader.

Commissioners asked why staff feels the need to purchase the machine before 2018 when it was initially projected to be purchased. Staff explained that the equipment is being funded out of cost savings and CIP dollars. Additionally the need arose to replace the existing machine because the added shifts at the Recycle Center has pushed the machine to the end of its useful life. The secondary loader has very low hours and will only be used as a backup.

### **MOTION**

It was moved by Commissioner Byl and supported by Commissioner Shroll to exempt County requirements for a sealed competitive bid for the acquisition of a used front end loader and purchase a Volvo L35B front end loader and attachments from Alta Equipment Company in the amount of \$64,825.50.

Motion carried unanimously.

## **VII. Approval of Monetary Outlays**

### **MOTION**

It was moved by Commissioner Byl and supported by Commissioner Bulkowski to approve the monetary outlays for the March 2015.

Motion carried unanimously.

## **VIII. Director's Report**

### **A. Solid Waste Management Ordinance Update – Dar**

The Director continues to meet with solid waste industry representatives to receive input on how to best implement the ordinance and surcharge. Corporate Counsel has been working to draft changes based on the industries recommendations.

### **B. Solid Waste and Sustainability Advisory Panel evaluating Part 115 – Dar**

The MDEQ is convening a workgroup to review possible changes to PA 451 Part 115 regulating solid waste operations in Michigan.

### **C. 2014 MDEQ Report of Solid Waste Landfilled in Michigan – Dar**

The Director informed the Board that the 2014 annual report was issued by the MDEQ and in 2014, Kent County businesses, residents and agencies generated and landfilled nearly 1.7 million cubic yards of solid waste.

### **D. Grand Rapids Business Journal WTE Article 02.09.2015 - Dar**

The WTE Facility was featured in the Grand Rapids Business Journal.

### **E. Proposed Air Quality Fee Increases by MDEQ – Dar**

The MDEQ is proposing increases in Air Quality Fees. The DPW completed analysis of the impact and estimated that fees for the department would increase \$12,000 annually under the proposal.

### **F. WM Sustainable Business Forum Waste Characterization Partnership – Kristen**

The Recycling Manager provided an overview of the waste characterization study that will be completed at DPW disposal facilities later this spring.

### **G. Go Pro Video Presentation – Nic**

A draft 5 minute video presentation developed by staff providing an overview of DPW operations was shown.

H. Christmas Light Recycling – Nic

Nic VanderVinne, Resource Recovery Specialist, reported that the DPW Resource Recovery Program collected Christmas Lights at three locations throughout the County in the winter of 2014-2015. This program collected 2,379 pounds of lights and diverted them from the landfill and recycling center. At the MRF these lights create a problem when they get tangled in the sorting equipment, resulting in a timely shutdown to free the blockage. This program prevented damage to our equipment at the MRF and kept 2,379 pounds of Christmas Light from spending an eternity in the landfill. The collected lights were transported and sold to Pandos at .29 cents a pound for a total revenue of \$689.91

**IX. Miscellaneous**

A. Solid Waste Plan Committee

Commissioner Shroll shared that there is a vacancy on the Committee because of the retirement of one of the members. The Board of Commissioners is in the process of approving applications and expect to have a replacement soon.

**X. Adjournment**

The meeting was adjourned at 9:46 a.m.

MEETING DATE: **April 2, 2015**

AGENDA ITEM#: III – B



**BOARD OF  
PUBLIC WORKS  
ACTION REQUEST**

**SUBJECT:** SWANA Conference

**DIVISION:** WTE Facility

**PREPARED BY:** Darwin Baas, DPW Director

**ACTION REQUESTED:**

Review and approval for Dar Baas, DPW Director, and Chris Robinson, WTE Operations Manager, to attend the 2015 Covanta Partners Conference and 2015 SWANA NAWTEC Conference, April 27 – May 1, 2015 in Tampa Bay, Florida.

**SUMMARY OF REQUEST:**

Approval is being requested for Dar Baas and Chris Robinson to attend 2015 Covanta Partners Conference and SWANA 2015 NAWTEC Conference, April 27 – May 1, 2015 in Tampa Bay, Florida at a total cost of \$4,710.

The SWANA North American Waste-to-Energy Conference (NAWTEC) is the industry technical conference and trade show focusing on municipal waste-to-energy operational issues, technology and research. Additionally, Covanta holds its annual Partners Conference in conjunction with the NAWTEC conference.

**SUGGESTED MOTION:**

It was moved by \_\_\_\_\_ and seconded by \_\_\_\_\_ to approve Dar Baas, DPW Director, and Chris Robinson, WTE Operations Manager, to attend the 2015 Covanta Partners Conference and SWANA 2015 NAWTEC Conference, April 27 – May 1, 2015 in Tampa Bay, Florida at a cost of \$4,710.

**ATTACHMENTS:**

Travel Request Form  
2015 Covanta Partners Agenda  
NAWTEC Agenda

**GOVERNING/ADVISORY BOARD APPROVAL DATE:** April 2, 2015

**DEPARTMENT DIRECTOR:** \_\_\_\_\_



COUNTY OF KENT  
DEPARTMENT OF PUBLIC WORKS  
CONFERENCE TRAVEL REQUEST

**Employee Name:** Dar Baas **Date:** 3/24/2015

**Name of Conference:** Covanta Partners & SWANA NAWTEC

**Conference Location:** Tampa, FL

**Conference Date(s):** from 4/27/2015 to 5/1/2015

**Departure Date:** 4/26/2015 **Return Date:** 5/2/2015

	<b>Requested</b>	<b>Actual</b>
<b>Transportation (tax exempt)</b>	<u>\$227.00</u>	\$_____
<input checked="" type="checkbox"/> Plane <input type="checkbox"/> Own Car <input type="checkbox"/> County Car		
Housing Cost	<u>\$1014.00</u>	\$_____
Meals	<u>\$200.00</u>	\$_____
Registration	<u>\$884.00</u>	\$_____
Taxi/Bus/Shuttle/Car Rental	<u>\$30.00</u>	\$_____
Miscellaneous (tips, tolls, parking, etc.)	\$_____	\$_____
<b>Total Expense</b>	<u>\$2355</u>	\$_____
<b>Less Prepaid Expense(s)</b>	\$_____	\$_____
<b>Total Reimbursement</b>	\$_____	\$_____

**Account Distribution:** 862 517 443

# 2015 Partners Conference Agenda Hyatt, Tampa Bay, FL

**Monday, April 27, 2015**

6:00 - 7:00 PM	<b>Welcome -Gathering</b> Paul Stauder	Oystercatchers' Hammock Deck - Hyatt
7:00 PM – 9:00 PM	Group Dinner	

**Tuesday, April 28, 2015**

7:00 AM – 8:00 AM	<b>Breakfast Buffet</b>	<b>Wilson's Plover - Hyatt</b>
8:00 AM – 9:00 AM	<b>CEO Introduction/ Corporate Overview and Outlook</b> Steve Jones	
9:00 AM – 10:15 AM	<b>Plant Operations &amp; Reliability Optimization</b> Seth Myones & Ted Hoefler	
10:15 AM – 10:30 AM	<b>Break</b>	Snowy Egret
10:30 AM – 11:30 AM	<b>Sustainable Solutions Review and Update, Client Survey</b> Derek Veenhof & Paul Stauder	
11:30 AM – 12:00 PM	<b>Durham York Energy Centre</b> Joey Neuhoff & Durham Client	

**12:00 PM – 1:00 PM Lunch** **Cormorant**

1:15 PM – 2:00 PM	<b>Ash Reuse &amp; Road Bed Solutions</b> Pasco Client	
2:00 PM – 2:30 PM	<b>Metals Recovery &amp; Ash Recycling</b> Steve Bossotti	
2:00 PM – 3:00 PM	<b>MACT and EPA 111D Status</b> Paul Gilman & Ted Michaels	Snowy Egret
3:00 PM – 3:15 PM	<b>Break</b>	
3:15 PM – 3:45 PM	<b>H-Power Sludge Disposal System</b> Chris Baker & H-Power Client	
3:45 PM – 4:30 PM	<b>Plant Refurbishments</b> Client Panel Discussion with Covanta moderator	
4:30 PM	<b>Closing Remarks and Q&amp;A</b>	



Events Membership Awards Education Certification Research Advocacy Exhibit News Products Resources

### Conference Program

Wednesday, April 29, 2015	
1:00 p.m. - 3:45 p.m.	<b>Optional WTE Facility Tour:</b> Wheelabrator McKay Bay, Inc., Waste-to-Energy Facility
Afternoon:	<b>Exhibitor Move-In</b>  <b>Bonus Session:</b> Washington, DC, Policy Update (Ted Michaels, ERC and Scott M. DuBoff, Garvey Schubert Barer)
Evening:	<b>Meet &amp; Greet</b> , sponsored by Energy Recovery Council
Thursday, April 30, 2015	
7:30 a.m. - 7:30 p.m.	<b>Exhibit Hall Open</b>
8:30 a.m. - 10:15 a.m.	<p><b>Opening Plenary</b></p> <p>Overview: "Extracting Maximum Value from Waste in a Circular Economy"                      The circular economy is a concept that is gaining attention and presents a unique view of resource conservation and recovery that may offer a more comprehensive perspective than solid waste hierarchies and zero waste policies. After extensive debate in Europe, the concept of a circular economy may start to influence thinking in North America. During the opening plenary, keynote speakers will discuss the principles and practicality of the circular economy model, the politics associated with it, and how waste-to-energy can ensure that materials and energy recovery are viable options to close loops in a circular economy.</p> <p><b>Welcome:</b> Ted Michaels, President, Energy Recovery Council  <b>Keynote Speaker:</b> Stephen J. Jones, President and CEO, Covanta</p>
10:15 a.m. - 10:45 a.m.	<b>Break</b>
10:45 a.m. - 11:30 a.m.	<p><b>Waste-to-Energy Lightning Round</b>                      Speakers have one slide and two minutes to provide a succinct presentation about their work. This session highlights innovation, thought leadership and success in a fast-paced, informative format that will engage and entertain participants.</p> <p><i>Rudi Karpf, Professor, ete-a Ingenieurgesellschaft für Energie- und Umweltengineering &amp; Beratung mbH, Germany</i>  <i>Bradley Nowak, Partner, Morris, Manning and Martin, LLP</i></p>

### NAWTEC

- Home
- Pricing
- Conference Program
- Exhibit
- Exhibitor Listing
- 2014 Proceedings
- 2014 Attendee List
- 2014 Media Gallery
- Register Now

### Hotel Info

**Marriott Tampa Waterside**  
 700 South Florida Avenue  
 Tampa, Florida

\$169 Single/Double plus tax.

To make your reservation, contact  
 VIP Meetings & Conventions:

Reserve online by [clicking here](#).

(310) 459-0600  
 (240) 494-2243  
 Email: [reservations@swana.org](mailto:reservations@swana.org)  
**VIP Meetings & Conventions is the  
 Official Housing Partner of SWANA.**

	<p><i>Shawn Worster, Associate Vice President, Senior Professional Associate, HDR</i>  <i>Patrick T. Fitzgerald, Air In-Leakage Reduction Manager, High Temperature Technologies, Inc.</i>  <i>Paul Hauck, Senior Environmental Engineer, CDM Smith</i>  <i>Joseph Botros, Director of Business Development, Konecranes</i></p>
<b>11:30 a.m. – 12:00 p.m.</b>	An Overview of the Resource Recovery Park Concept <i>Kyle Mowitz, CEO and Co-Founder, Infinitus Energy</i>
<b>Mid-day</b>	<b>Lunch</b>
<b>1:30 p.m. – 3:30 p.m.</b>	<p><b>Session 1: Interactive Mega Session</b></p> <p>A Resource Recovery Park as a Circular Economy Incubator — Resource recovery parks can help close economic loops by managing materials in a centralized location with synergistic technologies. Communities and companies are examining and implementing resource recovery parks by bringing together in one location multiple technologies that maximize the value recovered from materials commonly regarded as waste, in addition to entities that will use the recovered energy and materials. This unscripted, interactive session will challenge panelists to develop in real time a workable resource recovery park concept, providing attendees with a better understanding of the challenges and opportunities faced in undertaking such a project.</p> <p><i>Peter Chromec, President, Hitachi Zosen Inova USA</i>  <i>Jim Warner, CEO, Lancaster County Solid Waste Management Authority</i>  <i>Scott Miller, Director of Sustainability &amp; Product Affairs, Knauf Insulation</i>  <i>Jandra Lubovich, Senior Vice President, Project Finance Group, Sterne, Agee &amp; Leach, Inc.</i>  <i>Marco Castaldi, Assistant Professor, Earth &amp; Environmental Engineering, Columbia University</i>  <i>Robert Hyrve, P.E., General Supervisor, Facility Operations, Waste Management Services, City of Edmonton</i>  <i>Timothy J. Cesarek, Senior Vice President-Business Development, Enerkem, Inc.</i></p>
<b>3:30 p.m. – 4:00 p.m.</b>	<b>Break</b>
<b>4:00 p.m. – 5:00 p.m.</b>	<p><b>Session 2:</b></p> <p><b>Ignite the Conversation</b>—Building on the thought-provoking work done in Session 1, this session allows conference participants to add their voice to the conversation on how to remove barriers and maximize the deployment of energy and resource recovery technologies in a circular economy. Participants will have up to two minutes to share their views on how to tackle current challenges, create new opportunities for development and institute a system that focuses on resource management rather than waste management.</p> <p>Topics that participants may wish to address include:</p> <ul style="list-style-type: none"> <li>Reactions to the Resource Recovery Park Incubator (Session 1)</li> <li>Public opinion</li> <li>Permitting</li> <li>Policy</li> <li>Contracts for Waste and Offtake</li> <li>Raising capital</li> </ul>
<b>5:00 p.m. – 5:30 p.m.</b>	SWANA Waste-To-Energy Technical Division Meeting
<b>5:30 p.m. – 7:30 p.m.</b>	<b>Tradeshaw Reception</b>
<b>Friday, May 1, 2015</b>	
<b>7:30 a.m. – 12:00 p.m.</b>	<b>Exhibit Hall Open</b>
<b>8:30 a.m. – 10:00 a.m.</b>	<p><b>Concurrent Sessions 3 and 4</b></p> <p><b>Session 3</b></p> <p><b>How Can Facilities Extract Maximum Value in Offtake Markets?</b>  The circular economy requires materials and energy to re-enter the marketplace which requires markets for commodities to be robust to justify investment in recovery technologies. This panel will provide an overview of various markets for offtake from waste-to-energy facilities, including how to extract maximum value in each market.</p> <p>Market Opportunities and Policy Considerations for Biofuels from Waste  <i>Christopher Hessler, Partner, AJW, Inc</i></p>

	<p>Optimizing Metal Recovery and Revenues  <i>William Lensmyer, Vice President, EMR</i>  Key Considerations in the Biogas Market  <i>Randy Lack, Chief Marketing Officer, Element Markets, LLC</i></p> <p><b>Session 4</b></p> <p><b>Examining the Latest Research and Technology Developments</b>  Speakers will delve into key research and technology issues that will enable the sector to more effectively and efficiently recover energy and resources from waste. Bringing innovation and technological advancement in energy recovery to the marketplace starts with the research that will be examined.</p> <p>Technical Feasibility of Zero Waste for Paper and Plastic  <i>Deepak Kumar Sharma, Graduate Student, Earth Engineering Center — City College of New York</i>  Impact of Non-recycled Plastic Waste on Syngas Quality for a Pilot Gasification Study  <i>Demetra Tsiomis, Research Associate, Earth Engineering Center - City College of New York (EEC-CCNY)</i>  Semi-fluidized Combustion System for Municipal Solid Waste  <i>Masato Nakamura, Assistant Professor, New York City College of Technology</i>  Accounting for Upset Conditions in Estimate Emissions from a Waste-to-Energy Facility  <i>Stephen Zemba, CDM Smith</i>  Theoretical vs Actual Heat and Mass Balance for Micro-Gasification System  <i>Michael Gillespie, Chief Technology Officer, Sustainable Waste Power Systems</i></p>
10:00 a.m. – 10:30 a.m.	Break
10:30 a.m. – 11:00 a.m.	Concurrent Sessions 5 and 6
	<p><b>Session 5</b></p> <p><b>Lessons Learned in Europe.</b>  How can the United States implement a sustainable waste management policy that allows WTE to advance the circular economy?</p> <p>Lessons Learned in Europe  <i>Lenny van Klink, Director, Rebel Group</i></p> <p><b>Session 6</b></p> <p>Waste Fired Power Plant with Flue Gas Condensation: a European Model in Energy Efficiency  <i>Ole Hedegaard Madsen, Director Technology, Babcock &amp; Wilcox Volund</i></p>
11:00 a.m. – 12:00 p.m.	Concurrent Sessions 7 and 8
	<p><b>Session 7</b></p> <p><b>How Can Residual Management Increase Economic Return?</b>  Beneficial reuse of residuals is a key component of a circular economy to ensure that as little material is managed as "waste". Recovering metals and beneficially reusing as outside of landfills is a critical component of closing loops and enhancing the economics of energy recovery. Speakers will present exciting developments in managing waste-to-energy residuals.</p> <p>Beneficial Reuse of WTE Ash  <i>Jeremy O'Brien, Director of Applied Research, Solid Waste Association of North America</i>  Clean Incinerator Ash – Is It Realistic?  <i>Dr. Roland G. Welppert, Managing Director, LAB Geodur Zug, Switzerland</i>  WTE Ash Reuse in Pasco County, Florida  <i>Dr. Timothy G. Townsend Ph.D, P.E., Professor, University of Florida</i></p> <p><b>Session 8</b></p>

	<p><b>What Does it Take to Develop WTE Projects in North America?</b>                  The waste-to-energy sector prides itself in the ability to recover energy from waste in a clean and sustainable manner, yet project development never proceeds as easily as desired. Learn from experts about the most recent successful projects developed in North America, the challenges they faced, and the barriers they overcame.</p> <p>Durham York Energy Centre: Fired Up and Ready for Business  <i>Bruce Howie, HDR</i></p> <p>The Last 10%—An Update on the Palm Beach Renewable Energy Facility  <i>Ray Schauer, Director of Engineering &amp; Public Works, Solid Waste Authority of Palm Beach County</i></p> <p>CR&amp;R Anaerobic Digestion Project in California: Converting Organic Waste to Vehicle Fuel  <i>John McDowell, Sales Engineer, Eisenmann Corporation</i></p>
<p><b>12:00 p.m. – 1:30 p.m.</b></p>	<p><b>Lunch</b></p>
<p><b>1:30 p.m. – 2:30 p.m.</b></p>	<p><b>Session 9</b></p> <p><b>How Does Technology Innovation Help Create Value from Waste?</b>                  Panelists will provide details on emerging and innovative technologies designed to enhance the recovery of energy and materials from waste. Learn how innovators are managing their processes to take maximize economic returns and environmental benefits.</p> <p>Profitable Energy Independence: Converting MSW into Low Cost (Liquid) Fuels  <i>Allison Yeckel, Sales Engineer, Westinghouse Plasma Corporation</i></p> <p>Gasification System Developed to Address Limitations of Conventional Technologies  <i>Daniel Dodd, Vice President, Engineering, Sierra Energy</i></p>

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 1100 Wayne Avenue Suite 650, Silver Spring, MD 20910  
 Phone: 1-800-GO-SWANA (1.800.467.9262) - Fax: 301.589.7068

MEETING DATE: **April 2, 2015**

AGENDA ITEM#: IV – A – i



**BOARD OF  
PUBLIC WORKS  
ACTION REQUEST**

SUBJECT: South Kent Landfill Property Appraisals

DIVISION: Solid Waste Operations

PREPARED BY: Darwin Baas, DPW Director

**ACTION REQUESTED:**

To review and approve Jakems Appraisal Company proposal and authorize the Director to sign to complete preliminary summary appraisals for 10 remaining parcels for future South Kent Landfill expansion located in Allegan County.

**SUMMARY OF REQUEST:**

Periodically, the Department completes property appraisals to purchase properties and ensure sufficient funds are placed in reserve for future landfill expansion needs. Presently, there are 10 parcels remaining in the South Kent Landfill expansion area to be acquired for future use. The summary appraisals would be used to reserve funds necessary for future purchases.

Jakems Appraisal Company has previously provided property appraisal and acquisition services for the DPW for the North Kent Landfill property on 10 mile, South Kent Landfill properties in Kent County and parcels to be included in a South Kent Landfill Expansion in Dorr Township, Allegan County.

**SUGGESTED MOTION:**

It was moved by \_\_\_\_\_ and seconded by \_\_\_\_\_ to approve Jakems Appraisal Company proposal in the amount of \$8400.00 and authorize the Director to sign to complete preliminary summary appraisals for 10 remaining parcels for future South Kent Landfill expansion located in Allegan County.

**ATTACHMENTS:**

Summary Property Appraisal

GOVERNING/ADVISORY BOARD APPROVAL DATE: **April 2, 2015**

DEPARTMENT DIRECTOR: \_\_\_\_\_

# **JAKEMS APPRAISAL COMPANY**

West Grand Professional Building 260 Leonard Street, N.W., Suite #3, Grand Rapids, MI 49504 Phone 616/456-7187

March 23, 2015

Mr. Darwin J. Baas, Director  
Kent County Department of Public Works  
Earl G. Woodworth Building  
1500 Scribner Avenue, N.W.,  
Grand Rapids, Michigan 49504

Dear Mr. Baas:

I respectfully submit the following proposal to provide you with preliminary summary appraisals of the properties identified as:

## **IMPROVED RESIDENTIAL**

- #13: 4701 – 14<sup>th</sup> Street, owned by Evelyn Mohr, 05-001-017-10, \$600.00
- #9: 4795 - 14<sup>th</sup> Street, owned by David & Antoinette Martin, 05-001-015-00, \$ 800.00
- #4: 1362 – 108th Street, owned by Circuit Properties Residential, 05-001-010-10, \$ 600.00
- #10: 1382 – 108th Street, owned by Henry D. and Sharon Bultsma, 05-001-016-00, \$ 800.00

## **VACANT AGRICULTURAL**

- “A” 14<sup>th</sup> Street owned by Consumers Energy, 05-001-019-00, \$ 600.00

## **VACANT RESIDENTIAL**

- “B” 14<sup>th</sup> Street owned by PRADA, 05-001-020-00, \$ 600.00

## **IMPROVED FUTURE INDUSTRIAL**

- “C” 108<sup>th</sup> Street, owned by Circuit Properties, LLC 05-001-010-20, \$ 2,000.00

## **VACANT FUTURE INDUSTRIAL**

- “D” 108<sup>th</sup> Street, owned by West Michigan Developers, Inc. 05-001-010-00, \$ 800.00
- “E” 108<sup>th</sup> Street, owned by West Michigan Developers, Inc. 05-001-004-00, \$ 800.00
- #5: 1243 – 2nd Street, owned by G.R. Area Youth for Christ 05-001-011-00, \$ 800.00

The purpose of these appraisals is to determine an estimate of True Cash Value for potential acquisition purposes. The completed reports will conform to the standards as set forth in Title XI of FIRREA, Regulation 12 CFR, Part 323 of the Federal Reserve System and the Uniform Standards of Professional Appraisal Practice (USPAP). The reports, prepared under this format, will not meet the requirements necessary to be used for litigious purposes or as a determination of value for a Federally related lending transaction.

For the purposes of this quote, the “Highest and Best Use” of these properties is assumed to be as noted in this proposal. Based on the preliminary information, supplied me, I will provide you with two copies of a summary appraisal on each property for a total fee of Eight Thousand Four Hundred Dollars (\$ 8,400.00). It is anticipated that the reports will be completed within approximately ninety days of my receipt of authorization.

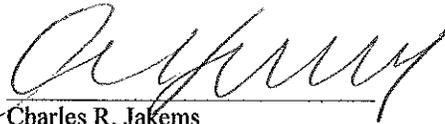
# **JAKEMS APPRAISAL COMPANY**

West Grand Professional Building 260 Leonard Street, N.W., Suite #3, Grand Rapids, MI 49504 Phone 616/456-7187

If you would be so kind as to provide me with any additional data you currently have available, I would appreciate it.

I appreciate the opportunity to provide you with an estimate of fee for this project and look forward to hearing from you.

Sincerely,

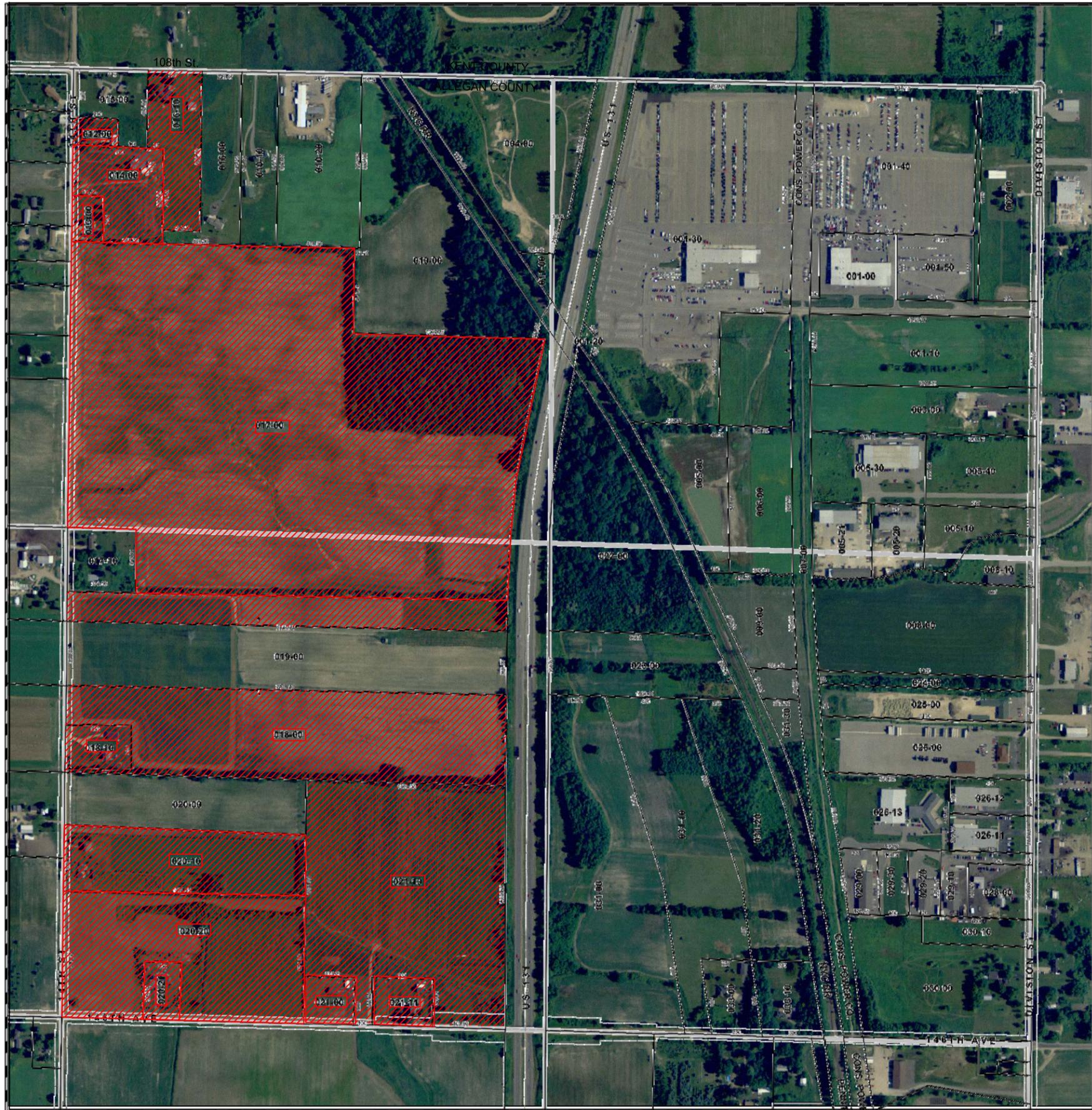


Charles R. Jakems  
State Certified General Appraiser  
#1201002232

Acceptance of the above provisions is hereby granted and you are authorized to proceed with the appraisal of the property as outlined in your proposal.

\_\_\_\_\_  
Darwin J. Baas, Director  
Kent County Department of Public Works

\_\_\_\_\_  
date



Scale: 1" = 300'

This map was compiled for tax administration purposes only. It does not represent a legal property survey.

Taxyear: 2012

Map Printed: 07/30/2012

**Dorr Twp  
T4N R12W**

Gap  
Overlap

Parcel Prefix:  
03-05-001-

6	8	4	3	2	1
7	5	2	03	11	12
10	17	14	13	14	15
19	16	15	12	13	14
28	25	23	27	26	25
01	02	03	04	05	00

**SECTION  
01**

KENT COUNTY OWNED PROPERTIES

\* WE HAVE APPRAISED THESE PROPERTIES

PARCEL *Appraised	ACREAGE	NOTES
004-00	14.32A	West Michigan Developers Inc. - Not Owned
010-00*	19.52A	West Michigan Developers Inc. - Not Owned
010-10	4.32A	Circuit Properties Residential LLC - Not Owned
010-20	10.0A	Circuit Electric Properties LLC - Not Owned
011-00	?.??A	Grand Rapids Area Youth For Christ - Not Owned
012-00	0.68A	Peter & Annalise Schreur - Red Barn - VACANT
013-00	1.00A	David & Viola Eaton - White Barn - VACANT
014-00	4.84A	David & Phyllis Mulder - VACANT (2010)
015-00	3.00A	David & Antoinette Martin - Not Owned
016-00	4.77A	Henry & Sharon Bultsema - Not Owned
016-10	5.00A	Joel & Melissa Bouwmen - Owned
017-00	92.9A	Dwight Gilbert Trust - VACANT - Farmed
017-10	2.89A	Evelyn Mohr
018-00	31.80A	Dennis & Kim Noble - VACANT - Farmed
018-10	2.00A	James & Carol Hagenow - VACANT
019-00	19.69A	Consumer's Energy
020-00*	9.75A	PRDA LLC (AGENT DAN HIBMA)
020-10	10.00A	Keith & Jacqueline LeFebre - White Barn - Hay Rent
020-20	18.00A	Jeffrey & Lori Terpstra
020-21	1.45A	Jeffrey & Lori Terpstra - House Rented
021-00	1.60A	Wayne & Bonnie Lyons - VACANT
021-10*	30.00A	E. Craig Moore (Michael Collins Tree Farm) -
021-11	2.00A	CAROLL & HOLLY BURGESS - OWNED

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- (1-B)
- (10)
- (16)
- (13)

MEETING DATE: **April 2, 2015**

AGENDA ITEM#: IV – A – ii



**BOARD OF  
PUBLIC WORKS  
ACTION REQUEST**

SUBJECT: Concrete Crushing - South Kent Landfill

DIVISION: Solid Waste Operations

PREPARED BY: Dan Rose

**ACTION REQUESTED:**

To review and approve Fisher Sand & Gravel to provide mobile concrete crushing services at South Kent Landfill for interior road building and maintenance needs.

**SUMMARY OF REQUEST:**

South Kent Landfill operations uses a combination of products at the landfill consisting of 1"-3" crushed concrete, 2"-4" crushed concrete (if available) and 21 AA crushed concrete aggregate for interior road building and maintenance. Public Works pays a range of \$9.50/ton to \$14.55/ton delivered to bring aggregate onsite with the average cost of \$12/ton.

An estimated 5000 yards of concrete debris material received at no charge at the landfill is currently stockpiled on site and processed will yield around 7,500 tons of finished product.

Staff recommends the mobile processing of the stockpile for beneficial onsite reuse. Fisher Sand & Gravel charges a \$5,000 equipment mobilization fee and \$5/ton to crush and stockpile the material. This is a savings of about half of what it would cost to have finished material hauled to the site.

Estimated cost for 7500 tons:

- Hauled to Site: 7500 tons at \$12 \$90,000
- Crushed on Site: \$5000 mob + 7500 tons at \$5 \$42,500
- **Savings \$47,500**

**SUGGESTED MOTION:**

It was moved by \_\_\_\_\_ and seconded by \_\_\_\_\_ to approve Fisher Sand & Gravel to provide mobile concrete crushing services at South Kent Landfill for interior road building and maintenance at a cost of \$5000 for mobilization and \$5.00 per processed and stockpiled ton.

**ATTACHMENTS:**

GOVERNING/ADVISORY BOARD APPROVAL DATE: **April 2, 2015**

DEPARTMENT DIRECTOR: \_\_\_\_\_

MEETING DATE: **April 2, 2015**

AGENDA ITEM#: IV – B – i



**BOARD OF  
PUBLIC WORKS  
ACTION REQUEST**

SUBJECT: North Kent Transfer Station Compactor Rebuild

DIVISION: Solid Waste Operations

PREPARED BY: Dan Rose

**ACTION REQUESTED:**

To review and approve Speed-Tech Equipment to rebuild the #2 Compactor at the North Kent Transfer Station at a cost of \$42,715.91

**SUMMARY OF REQUEST:**

The #2 Compactor Unit, manufactured by SP Industries, is scheduled to be rebuilt in 2015 to replace normal wear items. The #2 Compactor was last rebuilt in 2012.

Speed-Tech currently provides preventative maintenance and inspection services for the compactor units at the North Kent Transfer Station.

Speed-Tech is the SP Industries factory certified dealer/installer in the region. Quality of past work and responsiveness have been very good and their understanding and ability to work around our daily operations while on site to get the job done quickly has previously been demonstrated.

Speed-Tech Equipment's quote is attached. Purchasing has reviewed and agrees with selecting Speed Tech for the rebuild.

**SUGGESTED MOTION:**

It was moved by \_\_\_\_\_ and seconded by \_\_\_\_\_ to approve Speed-Tech Equipment to rebuild the #2 Compactor at the North Kent Transfer Station at a cost of \$42,715.91

**ATTACHMENTS:**

Speedtech Quote

GOVERNING/ADVISORY BOARD APPROVAL DATE: **April 2, 2015**

DEPARTMENT DIRECTOR: \_\_\_\_\_

SPEEDWRENCH,INC.  
3364 Quincy Street  
Hudsonville, MI 49426  
Phone (616) 669-2142



Sold To:

**KENT COUNTY DEPT PUBLIC**  
**300 MONROE NW**  
**GRAND RAPIDS, MI 49503**  
**RANDY BLATTNER**

Ship To:

**KENT COUNTY DPW**  
**2908 10 MILE RD NE**  
**ROCKFORD, MI 49341**  
**616-336-2574**

Component: 2001 SP IND/CP8002D COP  
Serial Number: 01056755

Unit#: NORTHKENTT  
License:

Control#: 439506  
PO #:   
Date: 03-24-2015

Qty.	Part Number	Description	Total
------	-------------	-------------	-------

Please review the following quote to rebuild your compactor. Technician made the following notes regarding the compactor needs.

- Both cylinders need to be replaced.
- Needs an oil change.
- Needs all new wearpads.
- Needs the charge chamber rebuilt.
- Needs the ram completely rebuilt.
- Needs a new pump/motor coupler insert.

2	*PART	HCY-51734, 7 X 116 CYLINDER	7,232.16
1	*PART	STEEL REQUIREMENTS	12,000.00
6	*PART	WEARPAD ADJUSTERS	96.24
6	50239	LARGE GUIDE BLOCKS	289.44
1	528X01562	M670H5 HYTREL INSERT	78.17
300	AW32	MACHINE HYDRAULIC FLUID	3,813.00
1	HSG55	SIGHT GAUGE	12.54
24	*PADS	OIL SOAK PADS	36.00
24	*BRCLEAN	PARTS CLEANER	108.00
1	P3011/2100RV3	STRAINER FILTER 1-1/2"	95.41
5	*LIFT	LIFT USAGE- HILO	1,000.00
Labor			16,470.00

**SubTotal 41,230.96**

**RECYCLING SOLUTIONS FOR OUR ENVIRONMENT**

Department	Amount
Labor	16,470.00
Sublet Labor	1,000.00
Parts	23,760.96
Shop Supplies	1,484.95
Discount	0.00
Disposal Fee	0.00
<b>SUB TOTAL</b>	<b>42,715.91</b>
Sales Tax	0.00
Use Tax	0.00
<b>TOTAL</b>	<b>42,715.91</b>
<b>BALANCE</b>	<b>42,715.91</b>

MEETING DATE: **April 2, 2015**

AGENDA ITEM#: V – A



**BOARD OF  
PUBLIC WORKS  
ACTION REQUEST**

SUBJECT: 2016 Capital Improvement Program Budget

DIVISION: Accounting & Finance

PREPARED BY: Kimberly Williams

**ACTION REQUESTED:**

Approval of the 2016 Capital Improvement Program Budget

**SUMMARY OF REQUEST:**

Each year staff prepares a five-year plan for upcoming Capital Improvement Program (CIP) needs of the department. CIP expenditures can include such items as vehicles, on-site rolling stock, stationary equipment and building refurbishment over \$10,000 is cost that are be capitalized and depreciated. 2016 expenditures are presented with 2016 – 2020 provided as a planning tool for future need.

The attached forms provide the requests and explanation summaries for certain items.

Staff will present the CIP at the meeting and answer questions.

**SUGGESTED MOTION:**

It was moved by \_\_\_\_\_ and seconded by \_\_\_\_\_ to approve the 2016 capital Improvement Program Budget for the Department of Public Works and submit to the County Administrator.

**ATTACHMENTS:**

2016 – 2020 Capital Improvement Program Summary, individual operational area summaries and written discussion of equipment conditions and replacement needs.

**GOVERNING/ADVISORY BOARD APPROVAL DATE:** **April 2, 2015**

**DEPARTMENT DIRECTOR:** \_\_\_\_\_

## CIP Review of Equipment

### Solid Waste Operations:

The schedule of Solid Waste Fund additions is based on estimated costs and the years they would be incurred. These expenses are reviewed a minimum of twice a year and once each year during the Budget process. Particular items may be moved up or back depending on condition and whether it requires replacement prior to the next budget cycle. The use of Reserved Funds and planning out five years allows this flexibility. The further an expense is projected out the more likely it maybe adjusted in that particular year.

### MRF (565):

**Vehicle Replacement (snowplow):** The 2011 Ford F350 has 8,880 miles, is in good condition and is planned for replacement in 2017 with an associated cost of \$35,000.

**Forklift Replacement:** The new 2014 Yale forklift has 284 hours on it. The 2011 Mitsubishi Forklift has 3,697 hours and is planned for use thru 2018. Both forklifts are used equally and will be evaluated annually.

**Front End Loader Replacement:** The 2003 JCB Loader has more than 20,000 hours on it (the meter is illegible) and in poor condition. It is being replaced in May 2015 with a Volvo L45.

The 2011 Komatsu WA150 experienced major engine failure and was replaced with a 2005 Volvo L35B with 2,362 hours. It is planned for replacement in 2018 with an associated cost of \$220,000. The L35B will be replaced with a larger machine (WA200 or WA250 size) and be the primary loader on the tipping floor to handle the increase of incoming volume and stage a taller material pile on the tipping floor.

The 1992 Waldon loader has more than 17,000 hours (the meter has rolled over and is illegible) and is in poor condition. We do not anticipate replacing this machine.

**Rolloff Truck Replacement:** The 2010 Freightliner has 224,577 miles, is in good condition and is used primarily on the highway. It is planned for replacement in 2017 at a cost of \$175,000.

**Boom Lift Replacement:** The 2002 Genie Z34 boom lift is in good condition and the 2006 Genie AWP30 is in good condition with both scheduled to be replaced in 2018, if warranted. These lifts can be replaced with refurbished machines for \$20,000 and \$10,000, respectively.

**Additional Baler:** Nalex, Inc. will provide an evaluation of the need/use for a second baler in conjunction with the primary baler to improve efficiency and serve as the backup baler. In fall 2014, the same consultant assessed the feasibility of adding a cardboard screen to the processing line. Due to space constraints, additional staff necessary to presort cardboard and cost, a cardboard screen was not warranted. The cost associated with the baler addition is estimated at \$250,000 dependent on make and model and whether a used or refurbished model is purchased.

### NKT (566):

**Transfer Trailer Replacement:** The Department owns 11 transfer trailers ranging in model year from 2002 to 2014. The oldest is in fair to poor condition and is planned for replacement in 2015. In 2016, the next oldest or most costly trailer in the fleet will be replaced resulting in one (1) replacement annually. Trailer replacement has an associated cost of \$110,000 per unit.

**Front End Loader Replacement:** The 2006 Komatsu WA20 was sold at auction in 2014 and replaced with a 2014 Komatsu WA200-PZ-6 with 2,665 hours; it is in very good condition and is planned for replacement in 2019. The 2010 Kawasaki 60ZV has 10,973 hours and is in fair to poor condition with a planned replacement in 2016 with an associated cost of \$220,000. The Kawasaki is used approximately twice as much as the Komatsu.

**Switch Tractor Replacement:** The 2002 Ottawa Switch Tractor has 12,734 hours, is in fair condition and planned for replacement in 2016 with an associated cost of \$90,000.

**Vehicle Replacement:** The 2003 Chevy 1/2 Ton (#2686) has 88,565 miles, is in poor condition and is planned for replacement in 2016 with an associated cost of \$25,000.

**Trash Compactor Replacement:** Compactor #1 was replaced in 2012 and is planned for rebuild in 2017 with an associated cost of \$32,500. Compactor #2 was rebuilt in 2012 and is planned for rebuild in 2015 with an associated cost of \$43,000.

**Radiation Detector Replacement:** The Bicron Scintillator stationary radiation detector was replaced in 2014 with a Thermo Scientific stationary radiation system and is in like new condition.

**SKL (562):**

**Rolloff Truck Replacement:** The 2005 Sterling has 399,000 miles, is in fair condition and used primarily within the landfill. It is planned for replacement in 2016. The 2013 Freightliner has 97,601 miles, is in good condition and used on the highway. It is planned for replacement in 2018. Each truck replacement has an associated cost of \$175,000.

**Front End Loader Replacement:** The 2004 Komatsu 450 was replaced in 2014 with a 2014 Volvo L150H that has 630 hours and is in new, very good condition. The 2009 Komatsu 470 has 11,315 hours and is in fair to poor condition and planned for replacement in 2016 with an associated cost of \$370,000. Both loaders are used equally. Typically, one loader is used on the landfill working face and the other at the throw-off wall. Tentative replacement of the Volvo L150H will occur in 2019 at a cost of \$390,000.

**Landfill Compactor Replacement:** The primary compactor, a 2013 Tana E520 has 3,528 hours and is in good condition. The 2010 CAT 826H was replaced with a 2008 Al-Jon ADV 500 that has somewhat limited usage and is primarily used for a backup compactor. The ADV 500 is in good condition. A new machine will be bid and purchased to replace the Tana with an associated cost of \$800,000 in 2017.

**Vehicle Replacement:** The 2006 Chevy Silverado 2500 fuel truck was sold at auction in 2014. The site truck a 2013 Ford truck (#1949) has 18,302 miles and is in good condition. The Solid Waste Director's 2008 Chevy Impala was transferred to the Waste to Energy facility. The Solid Waste Operations Manager's 2006 Ford F150 (#1965) was transferred to the site. It has 109,705 miles and is scheduled for replacement in 2017 with an associated cost of \$25,000. A 2014 Ford Explorer (#2662) was purchased for the Solid Waste Operations Manager. The site fuel truck, a 2005 Ford F250 (#2685), has 115,123 miles with a projected replacement in 2017 at a cost of \$25,000.

**GPS Compactor:** A GPS computer system for the compactor is being researched to increase compaction efficiency and provide real time compaction results. Estimated cost for this system is \$75,000 and would be purchased in 2016.

**Dozer Replacement:** The 2012 D8T has 7,572 hours and in good condition and is planned to be rebuilt or replaced in 2016. The 1999 CAT D8N-6 was replaced with a CAT D6T in April 2013 and has 2,653 hours of operation. A rebuild is scheduled for 2018 if necessary. The 2012 D8T is the primary dozer for the trash while the D6T will be used for cover operations and as a secondary trash dozer.

**Green Dump Truck/Plow Replacement:** The 1998 International Dump/Plow truck has 183,913 miles and is in fair condition. The 1990 Ford Dump/Plow truck has 208,168 miles and in poor condition. Plans are to replace the 1990 Ford truck in 2015 with a used model. The purchase of this machine will likely be less than \$10,000 and will be expensed.

**Litter Fencing:** Portable litter fencing is needed to contain blowing litter from the active landfill. New fencing is anticipated by 2016 at an estimated cost of \$50,000.

**Radiation Detector Replacement:** The Bicron Scintillator stationary radiation detector was replaced with a Thermo Scientific radiation detector in the summer of 2013 and is in good condition.

**Pit Scale components:** The 80 foot long incoming scale is in good condition with plans for updates including a new suspension and pit wall repair in 2015 with an associated cost of \$10,000 (upgraded in January 2014). The 60 foot long incoming scale is in good condition with plans for minor updates with an associated cost of \$5,000 in 2015. The 80 foot long outbound scale is in good condition with no updates planned.

### **Waste to Energy Operations:**

#### **WTE (564):**

The DPW funds replacement and/or refurbishment of certain equipment and site improvements necessary to ensure continued reliable operation of the Facility through the extended term (2023) of the Service Agreement with Covanta. The 2016 Capital Budget includes \$3,175,790 for capital improvement projects. Projects scheduled for 2016 include replacement of economizer sections in unit #2 at a cost of \$212,400, \$280,000 to replace Moore boiler controls, \$183,310 to replace refuse pit roof, \$1,180,000 to repair circulation water piping takeoffs, \$41,300 for high pressure steam piping survey, \$265,500 to replace 480 volt Telemecanique breakers, \$535,280 to replace 480 volt Federal Pioneer breakers, \$236,000 to replace Motor Control Center for reactor pump house and \$242,000 to replace obsolete 277 and 240 volt Cabinet and Components.

The 2016 Capital Budget also includes \$120,000 for the purchase of one (1) compactor transfer trailer and \$440,000 for the purchase of one (1) Front End Loader.

**Kent County Department of Public Works  
Solid Waste Fund 517  
2016-2020 Capital Improvement Program Summary**

	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
<b>Administrative (443)</b>						
Vehicle Replacement	-	-	-	35,000	-	35,000
<b>Solid Waste Operations:</b>						
<b>Material Recovery Facility 565</b>						
Vehicle Replacement (Rolloff)	-	175,000	-	-	175,000	350,000
Forklift Replacement	-	-	-	45,000	-	45,000
Front-end Loader Replacement	-	-	220,000	-	-	220,000
Boom Lift	-	-	30,000	-	-	30,000
Vehicle Replacement (Snowplow)	-	35,000	-	-	-	35,000
Additional Baler	250,000	-	-	-	-	250,000
<b>Material Recovery Facility Total</b>	<b>250,000</b>	<b>210,000</b>	<b>250,000</b>	<b>45,000</b>	<b>175,000</b>	<b>930,000</b>
<b>North Kent Transfer Station 566</b>						
Transfer Trailer Replacement	110,000	110,000	110,000	110,000	110,000	550,000
Front End Loader Replacement	220,000	-	-	220,000	250,000	690,000
Switch Tractor	90,000	-	-	-	-	90,000
Vehicle Replacement	25,000	-	-	-	-	25,000
Compactor Replacement/Rebuild	-	32,500	-	-	32,500	65,000
<b>North Kent Transfer Station Total</b>	<b>445,000</b>	<b>142,500</b>	<b>110,000</b>	<b>330,000</b>	<b>392,500</b>	<b>1,420,000</b>
<b>South Kent Landfill 562</b>						
Rolloff Truck New/Replacement	175,000	-	175,000	-	175,000	525,000
Front End Loader Replacement	370,000	-	-	390,000	-	760,000
Compactor Replacement	-	800,000	-	-	-	800,000
Vehicle Replacement	-	50,000	-	30,000	-	80,000
Well Expansion	150,000	-	150,000	-	150,000	450,000
Dozer Rebuild in 2016, 2018	620,000	-	240,000	-	275,000	1,135,000
MSW Road Construction	150,000	150,000	150,000	150,000	150,000	750,000
Litter Fencing	50,000	-	-	-	-	50,000
GPS	75,000	-	-	-	-	75,000
MSW Cell Construction	144,274	2,134,621	115,047	115,047	1,415,047	3,924,036
MSE Wall	500,000	1,500,000	-	-	-	2,000,000
<b>South Kent Landfill Total</b>	<b>2,234,274</b>	<b>4,634,621</b>	<b>830,047</b>	<b>685,047</b>	<b>2,165,047</b>	<b>10,549,036</b>
<b>Total Solid Waste Operations</b>	<b>2,929,274</b>	<b>4,987,121</b>	<b>1,190,047</b>	<b>1,060,047</b>	<b>2,732,547</b>	<b>12,899,036</b>
<b>Waste-to-Energy Operations</b>						
<b>Waste-to-Energy Facility 564</b>						
Transfer Trailer Replacement	120,000	120,000	120,000	135,000	135,000	630,000
Battery Pickup Replacement	-	-	-	30,000	-	30,000
Switch Tractor	-	92,000	-	-	-	92,000
Equipment Refurbishment	3,175,790	1,247,280	1,826,382	139,700	-	6,389,152
Front End Loader Replacement	440,000	-	440,000	-	-	880,000
<b>WTE Total</b>	<b>3,735,790</b>	<b>1,459,280</b>	<b>2,386,382</b>	<b>304,700</b>	<b>135,000</b>	<b>8,021,152</b>
<b>Total for Solid Waste Fund</b>	<b>6,665,064</b>	<b>6,446,401</b>	<b>3,576,429</b>	<b>1,399,747</b>	<b>2,867,547</b>	<b>20,955,188</b>