

**LB 1101 Solid Waste Management Project Study
MEETING MINUTES**

October 10, 2017 – Kearney, NE
Fairfield Inn and Suites

Present:

- Joe Francis – Nebraska Department of Environmental Quality (NDEQ)
- Dave Haldeman - Nebraska Department of Environmental Quality
- Jo Leland – Advisory Committee Member & City Administrator for the City of Imperial
- Kelly Danielson – Advisory Committee Member & District Manager for the Butler Co. Landfill
- Ed Sadler – Advisory Committee Chairman & City Manager for the City of Sidney
- Jim Weber – Advisory Committee Member & President of Sandhills Plastics
- Lash Chaffin – Advisory Committee Member & League of Nebraska Municipalities
- Rebecca Chappelle – Engineering Solutions & Design, Inc.
- Kathy Wahl – Engineering Solutions & Design, Inc.
- Jack Chappelle – Engineering Solutions & Design, Inc.

Not Present:

- Danielle Easdale – Advisory Committee Member & WRRRI Project Manager in Cass County
- George Hoellen – Advisory Committee Member & President T.O. Haas, Lincoln
- Rick Yoder – Advisory Committee Member & Chief Sustainability Officer at the University of Nebraska-Omaha
- Fred Hlava – Advisory Committee Member & Retired, Gordon City Manager

Audience:

- Larissa Binod – Keep Keith County Beautiful
- Carla Felix – Nebraska Department of Environmental Quality

Ed Sadler called the meeting to order at 10:08 am and began by reading the Open Meeting Act.

Joe Francis Comments:

The last committee meeting was held on December 16, 2017. Upon review of the minutes there was one typo and one **other error where "financial insurance"** was used instead of **"financial assurance."** There were no other changes to minutes.

Distributed agenda and public meeting press release, stamped draft, that Brian McManus prepared for the public meetings.

Public meetings will be held on Tuesday, October 17, 2017 in Bridgeport and Thursday, **October 19, 2017 in Lincoln. We will have plenty of Brian's handouts** at the door so if someone **doesn't want to speak, they can provide their written comments. There are also instructions** on the handout on how to access the Nebraska Solid Waste Management Study website: <https://ecmp.nebraska.gov/DEQ-SWMS/> and provide their comments. I encourage members to tout use of the website and attend one of the public meetings, if you get the opportunity.

ES&D will be discussing the draft report. One thing to remember, Jim Macy's 80/20 rule for reports: 80% accuracy, 20% leeway. There will be more meat in the final report about the committee and what you have brought to the table.

Distributed listing of committee members and requested each member verify who you represent on the attendance list and note any corrections.

The timeline for the project is:

- Final comments on draft report are due by October 31, 2017.
- The final report is due by December 1, 2017.
- Then the department will have until December 15, 2017 to come up with their recommendations, which will then be forwarded to the legislature.

Dave Haldeman Comments:

Between May and September, we took the time to meet with landfills, community leaders and HHW sites. We put together a list that identified subject areas. Facilities varied across the state and this is reflected in their comments. **I'd like to share some of the comments we received.**

Some comments were contradictory. For example:

- Food waste is great for landfills – Food waste should be banned and recycled
- Waste has changed since 2009 – **Waste hasn't changed** since 2009

Other comments included:

- Need good information on what goes into the landfill, especially in areas where you have large volumes of waste.
- Reduce the number haulers. They are currently unregulated. They have a lot of information.
- Local siting requirements should be reviewed. Approval process needs to extend out to all communities that would use the facility, not just where the landfill is located.
- Need to make changes to regulations. Some of our landfill bans need to be updated. The big one I heard is about dishwashers. They get banned from the landfill, get sent someplace to be crushed and then returned for disposal in the landfill. They are now made of plastic not metal and should not be considered white good, but plastic, so they can be disposed in the landfill.
- NDEQ needs to look at the requirements for composting and possibly revise and strengthen them. Food waste to yard waste for composting.
- Banning bags was heard a lot. But on the other hand, there is no outlet for this material. **It's a** difficult material to manage.
- Used oil was, at one time, valuable. Now you must pay to get rid of it.
- **Don't ban items with no use.**
- Tires: **Our grants' programs provided funds for** Amnesty Days in communities, where people could bring in their scrap tires for disposal at no cost. The flip side is that people hold onto tires in anticipation of Amnesty Days. There are no great outlets for using scrap tires. There were no suggestions that were silver bullets to the problems we have with tires. One suggestion was to completely lift the ban or allow whole tires.
- Couches and mattresses should be allowed to be disposed of in C&D landfills. They are problematic to manage at the MSW level.

- Sometimes facilities that have both a C&D and MSW facility at their location spend more time on C&D because of what needs to be removed so it can be allowed at C&D landfill. Often workers at a site throw their MSW trash into the C&D container. This must be removed as it is not allowed in the C&D landfill. One landfill purchased heavy duty bags that they provided to haulers to attach to roll-offs so people could dispose of their MSW in the bag and not put it with the C&D waste.
- Grants: Be strategic. Need an individual to work with the recyclers to find brokers for materials outlets.
- Every community where there is a Keep Nebraska Beautiful affiliate, services are provided **that communities can't provide**.
- We heard a lot about how landfill operators should be visiting each other, communicating. Not a lot of information is currently exchanged. **It's** good to go to other facilities to see ideas in practice.
- **There's** still a need for good, but simple, guidance documents.
- Look at the waste-energy system within the waste hierarchy.
- In some parts of the state, crushed concrete can be used for road bed preparation. In other **parts, if there's a lot of sand, all it does is sink** in and it **doesn't make a good** base.

It was a very good trip, we learned a lot.

Ed: Do kilns still use tires for fuel or is it too expensive?

Dave: We only have one cement plant in Nebraska and it **doesn't burn tires**. **At that plant, it's** more an issue that the tires must be clean, and conveyance is a problem. **They can't** use scrap tires from cleanups. There is a statutory ban on granting funds for tire-derived fuels.

Joe F: There are still tires that go to cement kilns. **Ashgrove just decided they weren't going to** pursue that. The amount of metal in tires is problematic for power plants because it creates a slag.

Ed: Discussed the use of tires for fuel in other states, for example, Missouri.

Jack Chappelle Comments:

Jack introduced himself and expressed that he was glad to have the opportunity to be there. He is the president of ES&D and provided a brief overview of the firm. ES&D has been in business since 1995 and has offices in Kansas City and Albuquerque. Jack then provided a presentation on the study.

I'd like to give you a background on the data we collected for the study. NDEQ visited all the MSW landfill facilities in the state. ES&D visited 40 entities including recycling facilities, Public Works departments, Solid Waste Agencies, non-profit organizations and Keep America Beautiful affiliates.

ES&D looked at several recycling studies done throughout the country for background. The highest number of personal interviews done in any of the other studies was 10. Most interviews were done online. An advantage of sitting down with **someone is they're very honest with you and you can look at their facility, see who uses their facility.** The entities we interviewed were extremely helpful, proud of what they do, **and think it's the right thing to do.**

Most of the recycling efforts were started at the grass-roots level. This is important because they are vested in it at that level. **It wasn't driven by the state down;** it was being driven from the local community up.

ES&D sent surveys electronically to 21 landfills, 9 responded. This was done as a follow-up to **NDEQ's visits.**

ES&D also attended a series of conferences – Kansas Organization of Recyclers, Missouri Recycling Association, National Recycling Coalition's Resource Recycling Conference. ES&D **attended these conferences to see what's going on in the industry and see how it might relate to Nebraska. This was important because of what's going on in the recycling field, waste reduction arena, and reuse field.** Reuse is very important because in **the state's hierarchy,** the primary target is zero waste.

ES&D reviewed state, regional and local plans, funding programs and state agencies in seven neighboring states – South Dakota, Wyoming, Colorado, Kansas, Iowa, Missouri, plus Minnesota.

Our review of these other states indicates that:

- No state is doing more for solid waste than Nebraska!
- Minnesota has an environmental fund that funds their grants. Grants max out at \$2.5 million per year.
- The max in Nebraska is \$3 million for the two NDEQ grants, with additional funds for NET grants. Nebraska is awarding as much as \$1 million more than any of the other surrounding states.

- South Dakota has a 75-cent-per-ton fee on all solid waste disposed at municipal solid waste landfills, **which funds their grant program. This doesn't result in** a large amount of money because of the smaller population. Their grant funding is less than \$1 million.
- Wyoming has no organized grants.
- **Colorado's** grants max out at \$1.5 million per year.
- Kansas **hasn't awarded grants in 14 years** and just announced \$100,000 available for 2018.
- Missouri uses the scrap-tire fee and funds \$2 to \$2.5 million per year.
- Iowa has no grants, they use loans – forgivable, 0% and 3% loans. **That's how they** provide support for recycling, waste reduction, and landfills.
- In most states, funding for landfill is limited. It is assumed that the fee they are charging to use their facility covers all their costs for operations, expansion, and closure.
- Colorado just did an update to their solid waste management plan and there are 24 very detailed recommendations in the plan. The problem in Colorado is they **don't have** the authority to implement them at the state level. Everything is centralized down to the community. **The state doesn't have authority to provide grants or direct people** regarding waste and recycling. Hence, the number one recommendation is to get authority.
- Bottom line: Nebraska is doing a great job in relationship to the surrounding states.

From Nebraska, the major information we used for our analysis included:

- Annual reports to the Nebraska legislature
- 2015 recycling study
- 2009 waste characterization study
- 2000 **assessment of Nebraska's Grant Programs**
- Legislation and statutes
- NDEQ grants programs
- NET grant programs

We also prepared issue papers on the following topics:

- Recycling and composting
- Materials management
- Information
- Grant programs
- Landfill bans

Where the state of Nebraska is lacking is in full and consistent information. **It's the ability** to identify and have information: how much material is being collected; how much is being disposed in the landfills; how much material is collected for recycling. The biggest issue we discovered when preparing the issue paper and this report is the lack of data available. A stronger base of information is needed to know where things are now and for future planning.

Jim: Are you aware of a study done here in Kearney 25 years ago? Two professors, Marv Glasser and Bill Wood (Physics Department at UNK) wanted a MRF in Kearney. They did a waste sort. This information might be beneficial to review.

Jack: We can look at that study and compare it to the 2009 statewide waste characterization study. **It's good** to have information, because waste stream changes over time.

Recommendation #1: Combine the Litter Reduction and Recycling Grant (LRRG) Program and the Waste Reduction and Recycling Incentive Grant (WRRG) Program

Jack: Implementing this recommendation would streamline the application process. The process would be more efficient, smoother, and could allow for more applicants. It could result in a broader aspect of grantees because there would be a larger pool of dollars for grants and it would move the process along more quickly. It simplifies the process for NDEQ because there is only one application process instead of two. It could result in more applicants and more creative ideas could be considered.

Dave: Currently there is confusion to know which grant to apply for.

Kelly: Previously those grant programs had a specific emphasis. LRRG was for litter reduction, information, and advertising. WRRG was for waste reduction, equipment, and that kind of thing. Is that still the case?

Dave: Previously we used the same rating system for both grants, then one was revised and **improved. It's a lengthy process to revise the rating system. LRRG was for** recycling, education and cleanup. WRRG has education and recycling components. LRRG does a lot of the same things as the WRRG.

The litter percentage allocation must go before Environmental Quality Council for approval, and then NDEQ has to work within those confines.

For example, tires are not a separate program, it's part of WRRG. There is a tire fee - \$1 per tire sold at retail and it is legislated that \$1.5 million per year of this fund will be used for tire-type projects.

Kelly: Even if programs are combined, what happens to the legislated tire funds?

Dave: That would be part of the review process. There are 3 fees for LRRG and 3 fees for WRRG.

Kelly: What are those fees and what are the dollar amounts?

Dave: The WRRRI fees include:

- A business fee on the sales of tangible personal property.
- The \$1 per tire fee assessed on the sale of new tires at retail.
- 50% of the \$1.25 per ton disposal fee for waste that is disposed in MSW landfills.

The LRRG fees include:

- Annual fees assessed to: (1) manufacturers; (2) wholesalers, and (3) retailers.
- For manufacturers, the annual fee is \$175 for each \$1 million of project manufactured.
- For wholesalers, the fee is \$175 for each \$1 million of sales made in the state.
- For retailers, the fee is \$175 for every \$100,000 of sales of products that commonly contribute to litter.

For the 2016-2017 fiscal year, for the WRRRI:

- Business fees collected \$464,085
- Disposal fees – 50% of the \$1.25 charged per ton of solid waste disposed in only MSW landfills – collected \$1,410,573
- The \$1 fee on the sale of new tires, of which it is legislated that \$1.5 million must be spent on scrap tire projects, collected \$2,252,787

We have a roadside cleanup program which totals 5% of the total \$1.25 annual disposal fee funds. There was \$146,903 available and \$75,000 plus was refunded.

We also have a disposal fee rebate program that is also funded by the \$1.25 per ton fee. If a community adopts a policy of purchasing recycled materials, it can get 10 cents of the \$1.25 back when it submits receipts for reimbursement. The total amount for this fund was \$105,207 and only four entities applied for a rebate. The smallest amount submitted for reimbursement was \$105.

Kelly: Could the \$1.25 per ton disposal fee be collected on waste disposed in C&D landfills?

Dave: That would require legislated action because as it now stands, the \$1.25 per ton fee can only be collected on waste disposed in MSW landfills.

Jo L.: Can you combine the roadside dump cleanup and the 10-cent recycling rebate?

Dave: Yes, we could possibly combine these funds. Language that allows the roadside cleanup fund is in the Integrated Solid Waste Management Act.

Kelly: There is some thought that the county where the landfill is located should be the one to get the disposal fee rebate funds.

Jo L: Along with combining the grant programs, is it the plan to offer grants more frequently than once a year?

Jack: No

Jim: **Businesses need grants available more frequently than once a year because they're trying to react to equipment suppliers and doesn't** give the flexibility that businesses need. Particularly grants for equipment.

Kelly: Reiterated that there needs to be more flexibility and frequency of grant awards more than once a year.

Jo L: Reiterated that businesses need more frequency for funds to purchase equipment.

Ed: Indicated at the **municipal level it's difficult to tie the budget to** annual grant cycles.

Dave: **Frequency for tire grants isn't** so critical. People are accustomed to getting grants once a year.

Lash: There is a lot of overlap in the programs, but each program also has its own unique elements. Is the plan to go back and erase some of those specific requirements in each fund, or is the plan to keep all those elements in the combined grant program?

Dave: **There's** not a plan at this time. We would **need to review what's unique about each grant. If it's combined, it should be a completely new program that takes the elements of both programs and puts it into one. At this point we're not getting into the nitty-gritty of how each recommendation would be implemented.**

Larissa: Provides perspective as a grant writer. She has written grants for NDEQ. The waste reduction component includes many aspects. The recycling program is managed differently. If the programs are combined, yes, **we can write for larger grants, but then it's how we're** going to manage that throughout the year. She would prefer the grants are divided out for specific purposes.

Dave: Do you want the programs combined or left separate?

Larissa: Either way works. However, I like it divided. I have a concern about larger communities asking for a variety of things, while smaller communities could be pushed out. Bottom line, NDEQ gives out grants, so they need to clearly communicate how to apply and what will be funded. In the end it should be whatever is best for NDEQ to administer.

Recommendation #2: Remove the Disposal Fee Split

Jack: The disposal fee is \$1.25 per ton of solid waste disposed in MSW landfills. Now 50% of the collected fee goes to grants and the other 50% goes to NDEQ to fund its solid waste program operations. The concept of this recommendation is to allow NDEQ more flexibility in how it works with this money. The 50% NDEQ part could be redistributed so more funds go to grants. This allows NDEQ more flexibility.

Ed: **Feels if it's combined, that 100% of the fund instead of just 50% can be re-appropriated to the general fund. He's not trusting that the state government will leave the funds alone.**

Lash: How much has total revenue from the \$1.25 dropped over the last 20 years, or has it dropped?

Dave: As population increases, revenue goes up; but, there are fluctuations.

Lash: Has recycling and the increased use of C&D landfills reduced the total \$1.25 per ton fees collected?

Dave: **It's flattened out**, but overall the trend is still up.

Jack: In the period from 2011-2016, the \$1.25 fund continued to rise. Overall revenue has flattened out. It is impacted more by business and industries than by the general population.

Kelly: **It's now a 50/50 split, in the future will NDEQ decide the split?**

Jack: **It's ES&D's** understanding that the focus would be to generate more funds available for grants and give NDEQ flexibility.

Kelly: Has there been a surplus in the grant funds over the last few years?

Dave: No, not necessarily. The way we manage it, we take out the dollars to administer the programs as the programs are being administered. Regarding the 50/50 split, there was a long time where there were more funds for NDEQ than utilized, and the fund built up to about \$5 million.

Jim: Could the administration dollars be limited?

Dave: Yes, it could. However, there is a certain amount of money needed to administer the solid waste programs.

Lash: Would a loss of grant money be more palatable if NDEQ had staff dedicated to market identification? If NDEQ became more hands on to make the system across Nebraska more cohesive and assist with brokering, etc.?

Ed: Yes, we need assistance to facilitate **our actions, because Nebraska's population density is** very diverse. There are things that NDEQ could do to make it easier for us.

Jim: **The way it's set up now, if dollars are left over on the administrative side, what happens to** those funds?

Dave: They sit.

Jim: How big is the fund right now?

Dave: **Right now, it's stable. Here's** a short history on the administrative side:

- The fund got up to \$5 million.
- Staffing and inflation went up and we still had \$5 million.
- Legislature took a big chunk away
- They didn't **account for** that money earning interest, which stabilized and paid for changes in salaries, etc.
- When they took that away, the fund tanked and then the recession hit.
- During the recession we had to come up with \$500,000.
- Now **it's** getting to a point where the fund is stabilizing

Jim: **Why couldn't you leave the fund the way it is? If that fund grows, put a stipulation** in there that you can draw it down to a certain level and put the funds into grants and review it over time. In addition, put in a stipulation that the administrative side could only be robbed for grants.

Dave: You can do anything if the legislature approves it, but **right now it's 50/50.**

Ed: Recommend leaving the fund where it is and review costs as they continue to rise.

Lash: **Doesn't** want to make it easy for the **legislature to divert funds to TMDL's or something** unrelated. Very concerned that removing the split will allow the legislature to divert the money.

Recommendation #3: Assess NDEQ Expertise

Jack: There is the need to determine where **NDEQ's** current expertise is with the staff they now have. Where can it be expanded? Assess the need to have additional staff, have a broader spectrum of knowledge relating to solid waste.

Joe F: For example, do we need additional expertise for brokering, etc. as has been discussed?

Jack: Presented two examples of needing more communication among peers and a point of reference at NDEQ where communities, etc. can get information that applies to their specific circumstances, and a source that is reliable and consistent. What NDEQ is looking at in this recommendation is that you can go to NDEQ and they can give you some guidance. The perspective of the recommendation is the need to assess NDEQ's expertise and their accessibility.

Ed: **There's plenty of information in** this report that more information would be beneficial for all of us.

Jack: The other thing that there needs to be is a system for sharing ideas with your peers. It could be beneficial for NDEQ to set up a quasi-clearinghouse for ideas and information. Communication among communities and recyclers could reveal more efficient ways of handling materials and could enable better collaboration among the groups. In the interviews, it appeared that recyclers were not communicating much with each other.

Ed: I get a lot of communication from towns, usually with less than 20,000 population on a wide variety of subjects. Communication avenues are out there. **There's not a problem** talking with other communities/recyclers other than our own issues (i.e., time and more pressing priorities).

Joe F: **To clarify, Ed's comments are about all sorts of things, but not necessarily** about specific recycling strategies.

Lash: What inhibits communication is that recycling is a lower priority. For example, other more immediate, pressing needs and people run out of time. They have too many other facets and are too busy.

Jo L: City Clerks have a Yahoo Group that people can join that goes out to all clerks. You can **only join if you're a City Clerk.** She suggests **NDEQ set up a** similar recycling group. Recycling group participants could post questions that go to the whole group or could seek advice from other group members. Would this be viewed as detrimental for competition?

- Jim: No, I already talk to other businesses in my business, and I quiz them about what they do. You must be careful not to release proprietary information, but people are still open about sharing information. Information is out there for established markets. For example, I pay for a service to get information on recyclables because they are a commodity.
- Jack: **It's always helpful to have another resource, share information.** One of the biggest issues is time and how to prioritize your time. The idea of this recommendation is to have another resource communities/recyclers could go to for guidance and ideas specific to their situation.
- Kelly: The biggest problems are always transportation and volume. If there was a clearinghouse for recyclable materials, **you'd probably have buyers looking at it for materials.**
- Ed: NDEQ could be helpful by providing this information.
- Lash: If NDEQ set up the clearinghouse, a centralized system would be able to weed out some of the erroneous information that is out there.
- Clarissa: NDEQ just funded Western Nebraska Resource Group in Ogallala, which is addressing the issue of how you bring together materials on a regional level. This is something NDEQ **funded and Sidney doesn't necessarily know about it.** Collaboration is happening in Nebraska, but how does NDEQ get the word out there so other communities can use it?
- Joe F: There is the need to stay proactive, ahead of the game. The last sentence in the recommendation is important: "Staying ahead of the growth curve will allow NDEQ to expand recycling and waste reduction in Nebraska instead of being in a position of reaction **and catch up.**" This proactive nature is something to keep in mind.

Recommendation #4: Expand Public Education Programs and NDEQ Outreach Programs.

- Jack: Recommendation 4 is a continuation of what we just talked about. There needs to be a consistency and continuity in public education and outreach programs. Public education is a continual process, so it needs to be updated and focused on what is going on today. The concept is to expand everything so there is more information out there and more ways to access it, and most importantly, ways it can be presented that are useful.
- Ed: Recycling is not part of the core curriculum and it should be, at least for K-12. Unless it becomes part of the core curriculum, this will not be addressed in school. Should work with Department of Education to make it part of the core curriculum.
- Joe F: A big part of this recommendation **is that it's aimed at the industry** itself, not necessarily K-12. For example, **some people don't know** how to set up a recycling system, and that could be addressed through our education and outreach programs.
- Ed: Understood, but we still need to start educating our children about solid waste.

Jack: There does need to be guidance, direction and information on how recycling centers work, **what are some of the things that are working now, what doesn't work anymore.** SWANA has training programs, but **it's** inconsistent at the chapter level. Suggest making better use of SWANA to provide better information on solid waste at the school level and at the local level.

Dave: In many situations related to grants, people **don't know enough about what could be done** or what to ask for grant wise.

Recommendation #5: Assess Information

Jack: A better ability to capture all information possible is needed. **Greater info and what's** going on in all elements of solid waste. How much waste is being disposed of in landfills? How much material is being recovered? How much material is being recycled? Need to get **a firm fix on what's going on;** because without that you **don't have a sense, for example, what your recycling rate is.** You **don't have a sense of how much material you're** collecting every year. You **don't have a sense of all the various aspects of the** solid waste system in the state.

Ed: At one point in the report you mention secure information. What does that imply?

Jack: There is sometimes a case, particularly in the private sector, of not sharing proprietary information. What is proprietary varies from processor to processor and from recycler to recycler.

Lash: **It was one of the barriers of the university's recycling study** completed two years ago. Some people **just didn't want to share information.**

Jack: What is needed is data. **It's very important to have a complete picture of what's going on,** solid waste wise, in the state of Nebraska.

Jim: Do you have details on what kind of information is needed to assess?

Jack: For example, how much plastic is recovered every year, how much glass, how much paper? How much MSW goes into landfills in Nebraska? It has nothing to do with what a specific firm or community does, **it's more a case of** how is the state of Nebraska doing overall? **When it comes to grants or anything else, it's going to be an obvious question** from the legislature or from the public. How are we doing, what are we capturing? For example, are we capturing as much cardboard as we can, how much more is potentially out there, how much is going into the landfills? The WCS done in 2009 in Nebraska only sampled **residential and commercial loads.** Since 2009, **one of the areas we're really concentrating** on is the amount of cardboard in roll offs. In a roll-off study we did in Johnson County, Kansas, 6 of 44 roll offs we sampled contained all cardboard.

Lash: The flip side is, I completely agree with this, suppose Nebraska was intercepting as much glass as they possibly could, why waste money giving grants for glass processing facilities?

But the information is just not there. We need more information, so we can be more focused.

Jack: **That's a very good point.** For example, we did a waste characterization study in Ohio in 2003. I was reading a report that quoted that study. **What's going on in Ohio today, is not the same as what was going on in 2003. So that's why information is so important.** A company may come in, look at whatever data there is, and they get a completely different read on reality. If NDEQ had more information, and if a business went to NDEQ, and were to ask where are we at and what's going on, NDEQ could provide them a clearer picture.

Jo L.: **I'm curious,** do you have an example of what would be proprietary information from a recycler or a landfill? Or is it more that providing the information is a pain in the neck and they don't want to do it?

Jack: **It's a combination of both. Sometimes businesses just don't like to share. I don't know of anything in the recycling sector that I would say is proprietary as far as the material is concerned.** It could be if you have a special sorting technique **or you're** using optics a little differently, things like that. That could be proprietary because who needs to know that? **We just need to know the end results, it's not necessary to know how they got there. It doesn't matter how they operate.**

Kelly: Pricing and maybe costing information could be considered proprietary.

Jim: **In recycling, not even pricing is proprietary because it's a commodity.** You can get those prices on the internet. **What's proprietary to me is whatever I do in my business that gives me an advantage over my competitor in that same product line.**

Ed: **Quantities always seem to be proprietary. If you know that I'm doing 20 billion tons of plastic,** you may think that you can get into that and steal some of my business.

Jim: **But the quantity you do doesn't have any effect on the market.**

Ed: **Understood, but it's just a question of if you're a big enough business, can I move in and steal some of it?**

Kelly: **If you're First Star Fiber, do you want to share that information?**

Jo L: You raise a good point, though. Why would they care?

Kelly: **Just exactly what Ed said. If I'm a recycler processing 10 million pounds a month of material and that information is out there, his competitor might come in and say that's enough to make it worthwhile to start my business.**

Jack: **It's more a competition issue, but that's not proprietary.**

Jim: **Exactly, but that's why they don't want to share it.**

Lash: They don't want the competition.

Kelly: They have a market share, they have a revenue stream and they're reluctant to share.

Jo L: So would that be information NDEQ would need to keep secure? Why?

Kelly: If you know how much material I'm processing, you can figure out how much money I'm making.

Jack: But that's still something you can keep secure. It's just a number, it can easily be secured.

Lash: Provided an example related to trash disposal and haulers. Private haulers don't want the competition to know exactly how many customers they serve, what their routes are.

Jim: Landfills don't want anyone to know that information because they make money on how much money goes into their landfill. They don't want the recycler to take the recyclables out of that trash. They want it all to go into the landfill.

Jack: Yes, however if you look at cardboard. It's not the easiest thing to compact in certain conditions. If this material was not disposed in the landfill, it could be beneficial to the landfill as well.

Kelly: It all comes back to volume and transportation. People throw away their recyclables every day because it's cheaper to throw it away than it is to recycle and transport them. It's a problem in rural Nebraska, in rural America, it's difficult to recycle. It comes down to what is the cheapest option for a community or a private citizen or hauler to handle a material? In most cases the consumer doesn't want to pay the true cost to recycle. That's often why recyclable materials go to a landfill. And then, we're different too because NDEQ can request all our information and we're required to give it to them, so there's nothing proprietary from a volume standpoint from landfills. It comes back to recyclers, there's not a regulatory requirement that they provide that information.

Joe F: As was pointed out in the report, in Table 3.1, the capacity in our landfills indicates we do not have a shortage of landfill space in Nebraska. But that's not to say, that we don't want to extend the life of those landfills, because we obviously do.

Recommendation #6: Assess Opportunities for State Agency Collaboration

Jack: More collaboration between the agencies and how they work together is needed to make sure that waste reduction, illegal dumping, and all the different aspects of solid waste are being addressed. Also, it's important that all the other departments within the state understand the impact they have on NDEQ, solid waste, and recycling and vice versa. It's a matter of trying to be more aggressive to get these state agencies to work together.

Joe F: If I could point out Jim's 80/20 Rule. If you add the Department of Education into the list of agencies in this recommendation, that's the 20% we're missing.

Ed: **Reiterating that waste reduction and recycling isn't even on Department of Education's radar.** Right now, the Department of Education is at a dairy conference. I bet they have never gone to a recycling conference to see if they could attract recyclers or **manufacturers that use recyclable materials to the state.** So, if you're serious about collaborating with other state agencies, we need to get the Department of Education on the list. **Because if it isn't on their radar it's going to be very difficult for me or any of the other towns in NE to make headway with a group that big.**

The Department of Education going to these conference does bear fruit. My most recent acquisition came from them **going to the dairy show last year.** So, if you're serious about that, we need to talk to the Department of Education. Make them aware and see if we can get them to go to recycling conferences. I would really like them to see if they can find someone to use the recycled materials and manufacture something out of them.

Kelly: Our company was looking at developing a processing plant in Nebraska because **we're** hauling our recyclables to Wichita, Kansas. Nobody is spending a dime on recycling now because the Chinese are not buying **anything anymore, so everything has been cut.** I'm **afraid that's what we're up against.** There are no markets if you can't get it from the Midwest to the coast anymore, then **we're in trouble for a while.**

Ed: **If that's the case, then let's take it off the table.** Let's not fool ourselves that this is a good avenue if it isn't.

Kelly: **Short term, I think it's going to affect what we're doing big time.**

Jo L: Does that mean we should pursue markets internally instead of relying on China to buy our stuff? Make something out of it right here.

Ed: **I'd rather have the users than the collectors.**

Jo L: Me, too.

Lash: Home-grown market development would be a better solution in the long run.

Jim: **One of the biggest state agencies we have isn't an agency, it's the University system.** I'd like to see them get **involved in some research on product ideas.** I don't know how to do that.

Ed: If you never ask, you never know.

Jim: Seriously, if cardboard can be composted, and utilized somehow, is the agricultural college doing any research on that kind of thing? Or if you add food waste to it, and you start **doing some other things, I think there's research opportunities** out there for a big ag state.

Jack: From a plastics perspective, polymers are becoming a much more attractive area, **depending on what kind of plastics you have, and how you can break them down, that's** one of the areas the university might one to jump on. Another is if you want to use different fibers with the cardboard, for example. Another area could be how to effectively and efficiently handle tires. Tires are a big problem. More options need to be identified. Perhaps this is something the university could jump on and come up with some unique ways to use them. You might have a potential new market. But you need to start with the basics. This is the material, what can I do with it? I think if you look at the larger portions of the waste stream and identified those things that we would have a big **pile of, that's the kind of thing you want to attack. Because if you have a big quantity of** something you can turn into something else, there are a lot of business people that will take you up on **that, because that's their biggest issue. Do you have enough material for me to use so that I can manufacture my product?**

Kelly: I would kind of disagree with you that tires are a problem. I think the problem with tires is the reliance on the Amnesty Program. Have we created kind of a monster with the Amnesty Program where people hold onto them? But the amnesties have gotten smaller and smaller. Five years ago, we were shredding tons and tons of tires. There are about three or four processors in Nebraska, of which we are one, and we have an established customer base. Most tire companies are properly disposing their tires **and we're shredding** them. I would never argue **that we're a good end use for those tires. It would be good if someone could come along with a better purpose than alternative cover. I don't think tires** are the problem they used to be.

Dave: Part of the problem with the Amnesty Program is **people don't want to pay the \$12.00 it** costs them when they buy a new set. Lincoln and Lancaster County did get a grant for a tire amnesty program, **because when they don't get those grants, they see a rise in the** illegal dumping of tires in ditches. People will only hold onto those tires for so long.

Kelly: Going back to the education **recommendation, that would be something to focus on. Let's** try to get rid of the amnesties and encourage proper disposal. I benefit from the amnesties. However, from a personal perspective, I think it would be better if we got people to handle tire disposal at the point of purchase and then those tire companies find the best ways to dispose of the tires.

Dave: Using tires for alternative daily cover is great. High end uses of tires are tire-derived fuels, crumb rubber, and processing them into other **products that don't look like tires.** We have grant dollars to do that, we have just not had any interest from people coming into the **state to do it. We'd like to see some processing, close to the source, of tires into crumb** rubber and using them to bring down the cost of roads and the manufacturing of other products.

Ed: Where do most of the tires in Nebraska end up?

Kelly: We process about a million of them a year. Probably another million goes to (inaudible). Another half million goes to River City; another half million to Resource Management in northwest Kansas, which is a tire monofill.

Omaha does maybe 400,000 - 500,000. They process some tires into a size that can be used to replace gravel. Most of the tires in Nebraska are used for alternative daily cover or sent to monofills in Kansas, one in northwest Kansas and one in Emporia.

Dave: A monofill is a landfill specifically for tires.

Jim: Do we have enough product uses for old tires to eat up the supply? Is the supply growing?

Kelly: The supply of truck tires is probably growing.

Jack: Yes, and they are a much bigger problem than auto tires.

Joe F: NUCOR and Ashgrove are the only two potential places that could use scrap tires now.

Ed: The Department of Transportation **isn't making roads out of them?**

Joe F: The reason the Department of Transportation is on the agency collaboration list is for that exact reason. To talk to them about whether rubber modified asphalt is something we should be pursuing?

Dave: Crumb rubber produced in Nebraska is going to be less expensive than crumb rubber they would use that is made elsewhere. In effect, they are shipping tires out, making them into crumb rubber and then shipping them back for use.

Ed: Any other comments? From NDEQ, what would you like us to come out of this with? These are the priorities we set, as a committee, **before the study was done. They've come back and addressed those for us. They're still looking for comments from us specifically on this draft report.** From both the committee and NDEQ, are there other things you would like from us today?

Kelly: I would like to add the university system to Recommendation 6.

Ed: Should we go so far as to give suggestions as to **what we're expecting from them?** For example, studies from DOT for using rubber on their roads? **I'd like to at least give some ideas on what we'd like them to collaborate about. Is that reasonable?**

Jim: It takes a professor at the university level, willing to write for a grant that he can get his students involved in. You can always go out and recruit someone like that in the Engineering Department, maybe the Ag Department.

Joe F: **I think there's a lot going on at the university that falls into this stuff, but it's the tech transfer thing that we're missing. How do you take information that's produced there and use it in the real world? Sometimes that's the step we miss, and I don't know how to do that. Other than to sit down and talk to them and find out what they've got going.**

Jim: A lot of people, when you say university, think Lincoln. But Kearney has a real active Engineering Program, and a Physics Department. They might get involved in something like this.

Joe F: **That's a good point. It's the university system we're looking at, not just Lincoln.**

Lash: **What's the highest priority** they should be working on, product ideas in general?

Jim: I think it should be end uses for recycled materials. Because what I see is most of the ideas for end uses for recycled materials come from the private sector, **and I don't see anything in the bigger way. So, if someone has an idea what to do with broken glass, and it is usually a tile or decorative thing, it's more crafty than it is business oriented. Tires it's a whole new ball game. End uses don't seem to come from a lot of research being done.**

Ed: **They're not using glass in road ways here either?**

Joe F: They use some. Lance Headquist built a bike path out of recycled glass. Gravel from a gravel pit is probably a lot cheaper than taking glass, crushing it up and using it.

Jo L: Many years ago I read a report done by a university, where using glass as the aggregate in concrete did not hold up as well as gravel.

Jim: I can see that, where the engineering characteristics of glass and concrete are not as good as gravel. When you have a gravel pit in Nebraska, you have to do materials testing and **get it certified before it's usable in concrete.**

Dave: If we partner with Games and Parks on something, we can make them aware of grant funding opportunities that they can apply for a grant through the competitive process. For example, they use compost, they have food venues. There is a lot of opportunity there where we can partner. What is always difficult is going to an entity and suggesting that they apply for a grant for a specific use because this is a competitive process. Suggesting they apply for a grant for a specific project could imply some favoritism toward their project. So, in terms of working with the university system, for us to fund with them or come up with ideas, what would you see as a way to partner with them and collaborate **without taking away someone else's grant money?**

Kelly: **Maybe you need to take away someone else's grant money. Are we providing money for more processing equipment for stuff we can't sell?** If you took 10%, or 20% and put that toward research for product uses that would then would ultimately drive the price up.

Ed: Does the legislature here not set some of those priorities for these agencies?

Jim: **I don't think so for the university system.**

Ed: I mean DED, etc. They just told NDEQ to do a landfill study.

Jo L: **Do you have the latitude to say we're going to give priority to product development?**

Dave: Yes. We would need to go through a public process to get stakeholder input. So, if most stakeholders said put your money here, then we would give more points for that. But that **doesn't often happen. But yes, we can set up a priority system.**

Jim: When you think about it, if you used the university system to do some research in some of **these areas, it's research that wouldn't get done by, for example, the City of Kearney at their MRF. They don't have the time, the resources, or the desire to do that.** So, if you can convince the university to get something started, it will be easier to sell it at those other levels.

Joe F: **You asked what we need from the committee, recommendations for prioritization, that's** one of the questions I have. What did we miss? **We'll take minutes from** this meeting and consider them for inclusion in the final report. We encourage you to use the website or give us a call if you have any comments/questions after this meeting. Any comments you have are certainly appreciated.

Kelly: As you go back to Recommendation 1, combine the two grant funds, there is opportunity there **to prioritize what's important?**

Lash: The six recommendations are tied together. The report reads quite well. If you combine the grants, that potentially leads to reprioritization and enhanced information helps you reprioritize. The six recommendations do set the foundation for a better system.

Ed: **To keep doing the grants you did ten years ago doesn't move us ahead. In order for us to grow, it's** time to take that next big step. Now we need to move on to giving more priority to the next phase of industry.

Jo L: The grants have provided Imperial the opportunity to get equipment, etc. However, at this point, I think the higher priority is moving recycling further in Nebraska. As much as I hate to say it, giving grants to small communities is probably not the best use of those **funds because we don't generate enough material to matter in the market.** I just think the bigger picture is where we need to focus.

Ed: We need to attract those businesses that are coming up with new uses for recycled materials. You could put together a very attractive package if the state would attack it as a whole.

- Jo L: We produce a lot of manure, and put that back through compost instead of using chemical fertilizers would reduce the problem of contamination to water, etc. If we could learn how to compost that feasibly, along with yard waste and food waste, and use it for soil enhancements, it would make much more sense than buying chemical fertilizers. We have lots of land out there we can test it on, if we can just get someone to do that research.
- Joe F: **One other thing when you look at the recommendations, it's important to keep in mind who's going to do the research and carry it through. We need to look at Rick's comments. Materials management is a huge thing.**
- Kelly: **I read through Rick's comments, and most of it comes back to managing or assessing materials before they become waste. Right now, we're really focused on what happens to materials after they become waste. I don't know how you go about it. It could become part of the research and outreach, and public education part of it.**
- Joe F: The issue papers set the stage for the report, and much of what is in the issue papers is **also in the report. Materials management is Rick's major concern. I think Rick may have looked at materials management differently than presented in the issue papers.**
- Jack: I think the **point of a lot of Rick's comments were in the hierarchy, where materials management is the number one priority – no waste, zero waste. What I got from his comments on the issue papers is that he's extremely frustrated. Here's the hierarchy, and there should be a lot more conversation about materials management, about waste reduction, about reuse. That should be the focus. That's what the legislature said when they adopted the pyramid and that's what the ultimate goal is. But the difference is between the issue papers and the final report. When you read about materials management in the report, the way we looked at it was there needs to be a strong education in recognizing exactly what zero waste means, and then begin the process of working toward it. At this point, the vast amount of education has been about recycling and some reuse and waste reduction. It's a matter of changing the focus of education to materials management. In my opinion, I think it's something that will come along, but I don't know if the state is in a position to do it.**
- Ed: I tend to agree with you. **From my perspective, it's way too early to get to that point because I don't know what to take out because I don't know where I can take it so it can be useful. It's a nice goal, but at this point because I do not have enough information, I don't know where to start.**
- Kelly: **For me it's on the manufacturing side. Maybe the recommendation should be that zero waste is the ultimate goal; however, I don't know how we achieve it at this point.**
- Jo L: Is there the political will in the Midwest to make that happen? I see it on both coasts. **For example, in Seattle, if you're a retailer, you cannot use plastic bags.**

Ed: **It's difficult to get backing for zero waste when my landfill won't run out of capacity until 2090.**

Jo L: However, plastic bags are a problem. When I visit the landfill we use, and I see plastic bags all **over the adjacent corn fields, it's pathetic.** But I know plastic bags is just one little piece of the whole picture and we have a lot of land here. I think it would take some sort of legislative action to ban these kinds of activities.

Jack: I think a good example is Washington and Oregon and California. In all of those states **there's some legislation at the state level, but almost all activity is at the local level.** The larger communities are more aggressive about it, but in the rural areas of these states, **they're not doing much more than you're doing. Because it's the same situation, it's the motivation, it's the infrastructure. It's going to be the same here. You have the populated areas that are going to adopt certain things sooner than smaller areas, but it will evolve. That evolution just takes time.**

Joe F: And that leads me to one other thing that has occurred to me through this whole process. I noticed it during my trip to facilities around the state. Nebraska has every conceivable manner possible for handling waste. **It's Jack's point exactly. It is a locally driven thing, which leads me to think back to the 90's and the requirement that each political subdivision file an integrated solid waste management plan.** Would it be a good idea to **have the locals go back to those plans and at least look at them and see if there's other things that can be done.** Jo L, you are one of the few doing that. Do you see any benefits?

Jo L: Do you mean PAYT and that kind of thing? We definitely have a reduction in our waste, but our plan right now is in a huge **mess. Again, we're a small community. We don't have an effect on the market.** I would be delighted if we could do as they are in Scottsbluff, where you can take out certain things, bundle the rest of the recyclables and send them to a MRF for processing. That makes a lot more sense. We need to have a quality of materials statewide. Nebraska is so balanced one way, population is all on the east side. There are pockets of population in the **west but for example, it's still a long way from Imperial.**

Ed: It really surprised me coming from Iowa to here. Iowa had markets because it is closer to Chicago. Everything we had went to Chicago. With Nebraska away from those large population centers, it surprised how starkly different it is here.

Kelly: **In your SWMP's, it's a waste of time and money unless you make those goals requirements. Going through the process of planning, if you're not doing it, and the plan is still where it was when you originally did it and you haven't touched it since, you're just going to open it up, stamp it again and refile it. Unless we make those goals mandates.**

Lash: **I don't think even that's going to work,** because the pyramid is disconnected from rural areas all over the country. **I don't know if anyone realized this in the 1990's,** but free market systems have developed that run counter to a mandated lifestyle change. **The free market system is dictating priorities instead of the pyramid. It's going to be tough to get away from a free market background.**

Ed: Particularly, since we have so much landfill capacity available.

Lash: That is a deciding factor.

Jim: **Going back to Kelly's point, if we make goals mandates, is it going to encourage** illegal disposal? The next step is to have the legislature is to ask the legislature to make them mandates. So, if we ask them to do that, and they chose not to, what do we have to lose?

Ed: When I did hazardous waste, I moved toward making it very expensive to do the wrong thing. The flip side of that is, that it becomes financially advantageous to dispose of things illegally.

Jim: **But we do have a system in place. We don't even know if we have an advocate in the legislature. At least if you do something like this, you'll find out where the legislature stands and whether you're going to have any advocates.**

Joe F: What is your recommendation?

Jim: Should we shy away from making mandates because people **won't** go for them, so it gets voted down **in the legislature? Isn't that the next step, making them part of the law? So** at least it would open up the discussion to find out where we stand.

Ed: **If the legislature isn't willing to give a priority to NDEQ to require the university system to conduct research in this area, they're certainly not going to go for mandates. My point is,** we need to start small, get support, then move ahead.

Jim: What do you propose?

Ed: **I'm looking at the legislature to make** mandates within their own realm, government. For example, state agencies and departments, before setting mandates for local governments, businesses, **and consumers. If they're willing to go that far, then** we can see what the measure of support is to move to the next step. If the legislature is not willing to tell the **DOT they're to use a** certain percentage of rubber in their roadways, or the university system needs to spend this much of their time to find beneficial uses for recycled materials, then **they're certainly not willing to set mandates for you and me.**

Kelly: Right now pricing is low, materials are high. There is no end use. So, you need to address that before making policy.

Joe F: **I would like to read one of Rick's comments.** When we were talking about materials management and education, it was very appropriate. The issue papers present the following BMP from another state:

"Create a system that is integrated with the waste hierarchy and waste minimization concept and provides information for educating the public, improving recycling, handling yard waste, addressing other activities."

Rick's comment is:

"I agree with the preference for source reduction (i.e. avoiding waste creation) as described in the hierarchy. There is a large difference between minimal effort "education" programs providing brochures and web page information and those actual environmental outcomes as described in EPA's Environmental Education program. Education does not have to be, nor should it be, solely about end-of-life management. Environmental impact occurs throughout a material's life cycle and raising this understanding, knowledge, and skills needs to occur throughout the entire life cycle."

I think this is pretty reflective of Rick's comments and philosophy. Again, I don't wish to speak for Rick, **but clearly there's a materials management preference, there's a strong educational preference.** We've certainly talked about education, materials management perhaps not as much.

From **here the draft report will be revised based on what we've heard here, what we're going to hear at the two public meetings, and I think it needs to incorporate the discussion we've had in regard to goals. In terms of the recommendations we'll work with Jack to see if there's things we would change. And again, we welcome your comments on those six recommendations.**

Kelly: So some of the comments **we've had today on the recommendations, you'll incorporate those, right?**

Joe F: I encourage you to read the **minutes when you get them, and if there's something we missed, definitely let us know. Or if you haven't made a comment today, please let us know.**

Ed: Are the recommendations presented in any priority?

Jack: **They're all equal. If you want to put them in any order, you need to let us know.**

Joe F: We need to put it somewhere in the report that these recommendations are not prioritized.

Rebecca: Is there any consensus on removing the recommendation for the disposal fee split?

Lash: I would say **don't remove it.**

Ed: Remove the recommendation, or remove the split?

Rebecca: **So I'm going to ask this slightly differently.** Is the consensus to take out the recommendation?

Ed: No, I think it should be left in for comment.

Joe F: The report is one thing. The recommendations the department makes to the legislature is another.

Dave: The recommendation regarding the disposal fee reads:

"The disposal fee is presently split equally between the state's solid waste grant programs and support of NDEQ's waste programs. Because these programs' needs fluctuate from year to year, it is recommended that an annual assessment be conducted to determine how the disposal-fee funds should be divided. This process can be addressed by a small panel of NDEQ staff who do not receive any direct support from the disposal fee."

This is the language the committee would be removing from the report.

Jo L: So does that mean that these monies could be shifted as needed?

Dave: **That's the way I read it.**

Jack: Yes, certain years, more money would go to the grants, other years if there is an issue internally to NDEQ, there could be more money go to them.

Kelly: So are these **NDEQ's** recommendations?

Joe F: When the study is final, the Director is going to make his recommendations to the legislature with regard to what can be done to modernize our solid waste programs. So, it may contain all the recommendations or none of them. **It's up to him.** We would be foolish not to pay close attention to this report.

Lash: **I trust Dave and Joe and Jim in handling the split, I don't trust the legislature.**

Ed: **It doesn't seem that this is a legislature that trusts its local governments or state agencies.**

Jo L: **That's one of the things I see, having more frequent grant application periods would allow NDEQ to use excess funds for grants so the legislature couldn't access the funds.** It seems like from what Jim said, and from our perspective as well, opportunities come up, or your business changes and you could use a grant for implementation. If you have to wait nine or twelve months for the next grant cycle, the opportunity is gone.

Ed: **So, you're talking about grant periods, not the split.**

Jo L: Yes and no. If you have the split, the money would be more flexible. If those grant cycles were more frequent, the money could be utilized on a more timely basis, then there **wouldn't be that pot of money** for the legislature to access.

Ed: My concern is, without the split, the legislature can find uses for all that money, other than grants. Right now, 50% of it has to be used for grants. If there is no restriction, what will stop them from using all of it to fund anything other than grants? It would be legal for them to do it and leave only \$10,000, for example, for grants.

Lash: In previous years, all those check off funds that were dedicated solely for specific uses, the legislature went in and stripped all the funds for use in the general fund.

Ed: **It's naturally what they do when times get tough. I'm afraid they will raid the fund for their own use without the restriction of the split.**

Dave: **It's not really a restriction.** If they want to take the funds, they will.

Ed: **Yes, but it's much more difficult if you** must change the law and then take the funds.

Kelly: So they had to establish special legislation to enact the 50% split?

Dave: Yes.

Carla F: Those grant funds now have language in the statute that says the legislature can go in and transfer funds from these particular grant funds. So, they can go in anytime and take dollars. There are certain funds that they **can't**. Integrated waste is one of them that does not have that language. That language that says the legislature can transfer funds, is not in the Integrated Solid Waste Cash Fund language.

Dave: So they can create special legislation to take dollars. There is no protection.

Carla F: Theoretically no, but they will look first at the availability of funds. Otherwise, they must pass **a budget bill that says we're changing our mind. We're going to transfer this fund in. We're inserting new language, so it's not protected anymore.**

Ed: I think the recommendation should be left in. Our comments and concerns should be reflected in the report for anyone else who reads it.

Are you good with things, knowing you have until the 31st to provide your comments?
There was no response to this question.

Joe F: On behalf of Jim, he **really appreciates the time you've put in, recognizing that it comes with a cost. We can reimburse you for travel, but that's it.** Your thoughts are very valuable. This is an opportunity for us to move the state forward. So, thank you very much.

Ed adjourned the meeting at 1:13 pm.