

Office of the Clerk/Treasurer

W240N3065 Pewaukee Road
Pewaukee, WI 53072
(262) 691-0770 Fax 691-1798

**COMMON COUNCIL
MEETING NOTICE AND AGENDA
Monday, August 15, 2022
6:30 PM**

Common Council Chambers ~ Pewaukee City Hall
W240 N3065 Pewaukee Road ~ Pewaukee, Wisconsin

-
1. Call to Order and Pledge of Allegiance
 2. Public Comment - Please limit your comments to two (2) minutes, if further time for discussion is needed please contact your District Alderperson prior to the meeting.
 3. Consent Agenda
 - 3.1. Approval of the Common Council Meeting Minutes Dated June 20, 2022
 - 3.2. Approval of Accounts Payable Listing Dated August 15, 2022
 - 3.3. Release the Cardinal Meadow Early Grading Financial Guarantee in the Amount of \$100,000.00.
 4. Updated Financial Management Plan Presentation by Ehlers [Jonathan Schatz]
 5. Discussion and Possible Action Related to the Proposed Lindsay Road/Redford Boulevard (CTH F) Intersection Improvements [Fuchs]
 6. Discussion and Possible Action Regarding Woodleaf Reserve Addition 4A to Approve **Resolution 22-08-25** Accepting Public Improvements [Wagner]
 7. Discussion and Possible Action to Approve **Resolution 22-08-26** to Reallocate Excess Borrowed Funds to the Paul Road, Roundy Drive, and Roundy Circle Project [Wagner].
 8. Discussion and Possible Action to Select the 2022 Trick-or-Treat Date [Mayor Bierce]
 9. Discussion and Possible Action Regarding Appointments to Various Board, Committees and Commissions [Mayor Bierce]
 10. Public Comment - Please limit your comments to two (2) minutes, if further time for discussion is needed please contact your district Alderperson prior to the meeting.
 11. Adjournment

Kelly Tarczewski
Clerk/Treasurer

August 10, 2022

NOTICE

It is possible that members of other governmental bodies of the municipality may be in attendance to gather information that may form a quorum. At the above stated meeting, no action will be taken by any governmental body other than the governmental body specifically referred to above in this notice.

Any person who has a qualifying disability under the Americans with Disabilities Act that requires the meeting or materials at the meeting to be in an accessible format must contact the Clerk/Treasurer, Kelly Tarczewski, at (262) 691-0770 three business days prior to the meeting so that arrangements may be made to accommodate your request.

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 3.1.**

DATE: August 15, 2022

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Approval of the Common Council Meeting Minutes Dated June 20, 2022

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

CC Minutes 6.20.2022

In Attendance:

Mayor Steve Bierce, Aldermen C. Brown, I. Clark, B. Dziwulski, R. Reinbold, P. Vetterkind and J. Wamser.

Also in Attendance:

Attorney S. Riffle, Administrator S. Klein, DPW Director M. Wagner, Utility Manager J. Mueller, Fire Chief K. Bierce, Park & Recreation Director N. Phalin, City Planner & Community Development Director N. Fuchs, Chief Engineer-Utility R. Wirtz and Clerk/Treasurer K. Tarczewski.

1. Call to Order and Pledge of Allegiance

Mayor Bierce called the meeting to order at 6:30 p.m. and asked everyone to stand for the Pledge of Allegiance.

2. Public Comment - None.

3. Consent Agenda

3.1. Approval of Common Council Meeting Minutes Dated May 16, 2022

3.2. Approval of Accounts Payable Listing Dated June 20, 2022

Mr. Clark asked that Item 3.1 be removed for discussion.

A motion was made and seconded (J. Wamser, B. Dziwulski) to approve the accounts payable listing dated June 20, 2022. Motion Passed: 6-For, 0-Against.

3.1 Approval of Common Council Meeting Minutes Dated May 16, 2022

Mr. Clark noted that his first initial was incorrect in the attendance listing.

A motion was made and seconded (I. Clark, R. Reinbold) to approve the Common Council meeting minutes after correcting Mr. Clark's initial from C to I. Motion Passed: 6-For, 0-Against.

4. **PUBLIC HEARING**, Discussion and Possible Action Regarding the Liquor Licenses for the 2022-2023 Season and the Appointment of Agents

Ms. Tarczewski stated all applications and fees are in and ready for approval. She noted Common Council did not allow Urban Slopes to have carry outs last year and wanted to verify that will not be allowed this year.

Mayor Bierce opened the public hearing.

Jared Masters (N37W26633 Kopmeier Drive), owner of Urban Slopes, said he does not have an issue not allowing carry outs.

A motion was made and seconded (B. Dziwulski, I. Clark) to approve the liquor licenses for the 2022-2023 season and appoint agents. Motion Passed: 6-For, 0-Against.

5. Discussion and Possible Action Regarding the Request of Mr. Green, Owner of the Green Dragonfly Island, to Detach to the Town of Delafield or Receive Fire Service on the Island [Request of Mr. Green]

Mr. Green was present for this item. He asked if everyone read the letter he sent. He noted that he offered three possible solutions. Mr. Green stated there was a fire on a boat last year and if they would have used his high-pressure pump, they could have put the fire out from a distance. He stated he is offering the City pump and hoses and will allow them practice on the island to make sure it works. He said since the City does not have a boat, he has one that he has removed the seats from, and the City is welcome to use it. He offered to give them a key and said it could be helpful anywhere on the lake. Mr. Green noted he can't get insurance and needs to show that the City can put out a fire. He said the Town of Delafield has a boat and can offer better protection, which is why he is asking for detachment from the City of Pewaukee. He noted the City should purchase a boat and he is open to suggestions.

Mr. Green stated he had a conversation with Chief Bierce. He said there was an issue with the connection between their hoses and his pump and they could not find the part.

Mayor Bierce suggested speaking to the Fire Chief more in depth.

Mr. Vetterkind asked if his buildings were uninsurable at this time. Mr. Green stated yes.

Ms. Brown asked if he closes the house in winter and what would happen if there was a fire during the winter months. He said the house is solar powered with battery backup and the insurance company did not have an issue with winter months since no one lives there.

Chief Bierce stated it is not sustainable or reliable. The response time is questionable, and the liability is not there. Chief Bierce felt the best thing would be a sprinkler system. Mr. Green stated his power would not support a sprinkler system. Chief Bierce stated the island has had buildings there for years and it was never a question before and he did not see a solution. Mr. Green stated insurance has changed a lot.

Mayor Bierce stated Common Council cannot make a decision and noted the Delafield Fire Chief said he could not help Mr. Green. Mr. Green said that would be okay because if he detached from the City of Pewaukee and went to the Town of Delafield his taxes would be much lower and he could afford the items he needs.

No action was taken on this item.

6. Discussion and Possible Action Regarding Jerel Johnson's Interest in the City of Pewaukee Property Located on Oak Street (PWC 0934-021)

Ms. Brown stated Mr. Johnson contacted her about land the City owns on Oak Street. Mr. Johnson stated he purchased a lot in 2012 and currently lives on Woodland Drive. He said he has it for sale because he is downsizing to a ranch. He said he has a pontoon boat and would like to go out onto the lake. He said he made this presentation years ago for the whole lot and is now asking if the City would consider selling. He noted his intent is not to put up a boat launch to make money and would sign a disclaimer stating he would not do that. He said if Pewaukee Sanitary needed to use it for storm protection of their boats they could go in front of the property, as he is just looking for ease of access.

Mr. Reinbold asked if anyone has tried to purchase this lot before. Mr. Klein stated this is road right-of-way and is eroding year after year. He said the City will have to do something to protect the road. Mr. Klein stated the City has received numerous offers on this parcel and the City has no interest in selling it.

Mr. Clark voiced concern regarding the erosion and how residents misuse it during winter. He said he would have to vote no until the City can find a way to restore it or prevent further erosion.

Mr. Wamser noted if the City were to sell the property, the sale should be public and open to everyone. He said he would vote not to sell the property.

Mr. Clark stated other residents would like a lottery system to be able to purchase it if this were to go to sale.

Ms. Brown noted she brought it to Common Council, so Mr. Johnson had an opportunity to speak to Council. Her gut feeling is 50 feet now and then someone else asks for more. She questioned how you say yes to one and no to the next.

Mr. Vetterkind stated he would say no.

No action was taken on this item.

7. Discussion and Possible Action Regarding Conversion of Tennis Courts to Pickleball Courts at Wagner Park

Mr. Phalin stated at budget time he proposed converting one tennis court into four permanent pickleball courts and the other tennis court to have two striped pickleball courts with temporary nets. He said they have seen an explosion in the popularity of pickleball. Mr. Phalin stated there were 102 participants in 2021 and 259 across five open day plays per week in 2022. He said they received the formal bid for 2022 and realized there were opportunities to better serve the participants by converting both tennis courts to eight permanent pickle ball courts. He spoke with the company and was advised they needed 47 more feet of four-foot-high fence. Mr. Phalin said the proposed new rate is \$55,567, which exceeds the budgeted by \$45,000. He recommended spending the additional amount from the Capital tennis court resurfacing budget where there is currently \$75,000. He said although the courts are not in great shape, the City is accommodating through crack filling on an annual or every other year basis. He said he is not ready to do a full resurface on any courts and feels it is the most appropriate use of the funds. He is aware it would completely remove tennis at Wagner Park but feels it is a better way to serve the community.

Ms. Brown felt it was a great idea and said we want people to use the parks. She asked Mr. Phalin if he had ordered temporary nets and what would be done with them. Discussion took place regarding the improvements and conversion. He noted the temporary nets come apart nightly and get stored. Ms. Brown stated she would not suggest pickleball at South Park because the tennis courts are used there. Mr. Phalin noted the City website will list what is at each park,

A motion was made and seconded (P. Vetterkind, B. Dziwulski) to convert the tennis courts into pickleball courts at Wagner Park using the tennis court resurfacing budget. Motion Passed: 6-For, 0-Against.

8. Discussion and Possible Action Regarding Park Security Improvements Including Security Cameras,

Keyless Entry and Timed Locking and Unlocking of Bathroom Doors

Mr. Phalin stated he came to Common Council in March and discussed camera installation at the Sports Complex due to vandalism, and cameras were approved. He said there has been an uptick in vandalism and he is trying to protect the City's assets. He said the proposal is about park security with cameras paired with time locked and unlocked bathrooms. Mr. Phalin also stated the key fob access system will help staff, recreation program instructors and facility rentals. Currently when people come pick up keys for rentals, they are advised on times they can enter the building and rules are not being upheld. With the systems it will provide a safer, more secure, and efficient system, which will also remove the need to have police services lock doors nightly.

Mayor Bierce stated he was in favor of the cameras but not sure about the rest.

Mr. Wamser mentioned putting boulders around the parking areas.

Ms. Brown asked if this would be a onetime expense and what the replacement schedule looks like. She said there are other reasons for cameras, and it is a good way to protect the youth of the community. She noted \$112,000. is a large amount. Ms. Brown asked how police will be notified when things are happening. Mr. Phalin noted camera technology estimates seven to ten years prior to replacement. Operational cost would be the cost of internet, which is \$5 per month per park, and it can also be used by recreational staff for programming. He said staff time would only be to review footage as needed and the goal would be to capture restitution. The goal is not to prevent police officers to come to the parks, but as time permits.

Mayor Bierce again had issue with the value and was not in favor of key card access. Discussion took place regarding the key code and how it can be changed. Mayor Bierce stated he has accepted the cameras and understands why they need to be put up.

Mr. Reinbold asked if the cameras are protected from being vandalized. Mr. Phalin stated the cameras can be smashed with a baseball bat without breaking. Mr. Reinbold also asked if they looked at emergency lighting when the security analysis was done. Mr. Phalin stated the City did not request them to analyze lighting.

Mr. Vetterkind noted a camera doesn't stop vandalism but hopefully can deter it.

Ms. Brown asked if this was same company as the Sports Complex. Mr. Phalin stated it was the same company. He said the City received other bids and this company was significantly less. Mr. Phalin noted one difference between the bids is that one requires monthly licensing fees to access the footage and the other one is recorded to the SD card with storage of 30-60 days. He said this helps keep the cost down since it is not constantly uploading to the cloud. Ms. Brown asked if there were funds available in the budget for this project. Mr. Phalin stated this is an unbudgeted project. Mr. Klein noted funds could come from the undesignated fund balance or we could use the ARPA funds.

Mr. Clark asked if this project could it be budgeted next year or delayed until we know more about the ARPA funds. He also asked if the cameras would be used for people having dogs in the parks. Mr. Klein stated they are not looking to find violations; it is being used for vandalism unless something became an issue. Mr. Phalin stated it is about best use of staff time. Mr. Klein stated it could wait a year and put in the budget. He said it might be difficult to do it that way since the fund balance goes up every year. Mr. Klein said he asked staff to come up with ideas on how to use the Federal funds. He said he will be bringing that back to Common Council shortly.

Mr. Reinbold asked if the security in the parks would allow Parks and Recreation to reduce staff and if insurance costs would be reduced with key codes. Discussion took place regarding insurance cost. Mr. Phalin said it may affect weekend staff time for bathroom unlocks.

A motion was made and seconded (B. Dziwulski, C. Brown) utilizing federal government funds assuming it is an eligible project.

Mayor Bierce reminded the Council that the staff members should be on a level playing field. He voiced his concern that Parks and Recreation jump in front of everyone with this request.

Ms. Brown stated she felt it would be better to have a plan for the funds and not dish it out by whoever asks for it first. She suggested the undesignated funds would be a better option and if the security measure for the parks were determined to be part of that plan the undesignated fund could be reimbursed by the ARPA funds.

Mr. Dziwulski changed his motion to pay for the security measures at the parks with the undesignated fund balance and if the Council decided to use the ARPA funds for this project at a later date, the funds would reimburse the undesignated fund balance. Ms. Brown agreed.

Motion Passed: 6-For, 0-Against.

9. Discussion and Possible Action Regarding **Ordinance 22-14** Regarding Proposed Text Amendments to Section 17.0435e.(7)(c) of the F-1 Floodplain Zoning District of the City of Pewaukee Zoning Ordinance

Mr. Wirtz was present for this item. Mr. Fuchs noted there were questions and concerns from Common Council with the proposal of taking the floodplain mitigation down from 4:1 to 1:1 when this was discussed at the last meeting. He asked staff to provide more information and they put together a report explaining the flood plain, purpose, process and what other communities are doing. Mr. Fuchs felt going down to 2:1 is not going to impact the purpose or intent of the floodplain. He said the process is heavily scrutinized and goes through FEMA. The City reviews it and would have to approve but it doesn't have to allow it. He added the City requires a 75-foot setback from the floodplain and only two other communities require any type of setback. He does not feel the City is going to get inundated with request to fill the floodplain. Mr. Fuchs noted staff is recommending the 2:1 mitigation standard as opposed to the current 4:1.

Mayor Bierce asked if there would be a fee charged for the review. Mr. Fuchs stated it would be part of the fees the City charges now. Attorney Riffle noted the City has a charge back ordinance.

Ms. Brown expressed her appreciation for the detailed report and asked if lake property would have the same floodplain. Mr. Fuchs noted the ordinance does not distinguish between types of uses or zoning districts. Mr. Wirtz stated there will be a setback of 75 feet. He said there are other zoning restrictions and requirements.

Mr. Clark asked if the 75-foot setback is regardless of what is being filled. Discussion took place regarding filling the floodplain.

A motion was made and seconded (B. Dziwulski, J. Wamser) to approve the proposed text amendment to Section 17.0435e.(7)(c) of the F-1 Floodplain Zoning District of the City of

Pewaukee Zoning Ordinance. Motion Passed: 6-For, 0-Against.

10. Discussion and Possible Action to Waive the Second Reading and Approve **Ordinance 22-15** Related to Chapter 5 Traffic specifically Speed Limits on Duplainville Road

Ms. Wagner noted there have been some struggles with the project. She said the road is closed to through traffic but they are experiencing people traveling through and at a high rate of speed. The speed limit is posted at 35 mph and 45 mph as you go to the north. She said there are safety concerns for the workers and the people who must travel that roadway. She is trying to implement different things to control the issue and one tool is to reduce the speed limit through the area so the Sheriff can enforce a lower speed limit during construction. She said it needs to be an ordinance to change to 25mph to be able to enforce. Ms. Wagner asked to temporarily change the ordinance to 25 mph from Marjean Lane to Weyer Road. Once construction is completed, she will do another ordinance to change it back. She noted she will also be coming forward in the future to make changes to an ordinance so she can make temporary speed changes within construction zones, so it doesn't have to be a formal ordinance change back and forth when having issues.

A motion was made and seconded (I. Clark, C. Brown) to approve Ordinance 22-15 related to Chapter 5 traffic specifically speed limits on Duplainville Road. Motion Passed: 6-For, 0-Against.

11. Discussion and Possible Action to Give Employees of the City of Pewaukee Resident Pricing for Plots or Columbarium Purchases

Ms. Tarczewski asked if the Common Council would entertain giving employees "resident pricing" of cemetery plots and niches similar to the Park and Recreation offering staff members discounted prices.

A motion was made and seconded (B. Dziwulski, P. Vetterkind) to approve giving employees of the City of Pewaukee resident pricing for plots or columbarium purchases. Motion Passed: 6-For, 0-Against

12. Discussion and Possible Action to Reduce the Posting of Agendas to City Hall and Wagner Park

Ms. Tarczewski noted that the law changed and instead of two outside postings plus City Halls two postings, it can be reduced to two locations and the City website.

A motion was made and seconded (I. Clark, P. Vetterkind) to reduce the posting of agendas to City Hall and Wagner Park as long as they were posted on the website. Motion Passed: 6-For, 0-Against.

13. Discussion and Possible Action Regarding Appointments to Various Board, Committees and Commissions

Mayor Bierce stated he did not have any recommendations at this time.

14. Public Comment - None.

15. Adjournment

A motion was made and seconded (I. Clark, B. Dziwulski) to adjourn the meeting at 7:59 p.m. Motion Passed: 6-For, 0-Against.

Respectfully Submitted,

Kelly Tarczewski
Clerk/Treasurer

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 3.2.**

DATE: August 15, 2022

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Approval of Accounts Payable Listing Dated August 15, 2022

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

A/P 8/15/2022

Check Date	Check	Vendor Name	Description	Amount
Bank 100 GENERAL FUND CHECKING				
07/28/2022	135350	A. SUMMER ROTTA	P&R PROGRAM REFUND	16.00
07/28/2022	135351	ABSOLUTE CONSTRUCTION	DPW BUILDING	478,137.34
07/28/2022	135352	AIRGAS USA	FD OXYGEN	269.17
07/28/2022	135353	ALEX MLACHNIK	DEER CONTROL	500.00
07/28/2022	135354	ALL-WAYS CONTRACTORS, INC	HWY TOPSOIL	68.00
			HWY TOPSOIL	45.00
				113.00
07/28/2022	135355	AMBER SEMROW	P&R PROGRAM REFUND	16.00
07/28/2022	135356	AMI HURD	CT MILEAGE REIMBURSEMENT	20.63
07/28/2022	135357	AMY BERGHOEFFER	P&R PROGRAM REFUND	16.00
07/28/2022	135358	AMY BRIMMER	P&R PROGRAM REFUND	32.00
07/28/2022	135359	ANDREA FRAHM	P&R PROGRAM REFUND	16.00
07/28/2022	135360	ANGELICA OBERRATH	P&R PROGRAM REFUND	32.00
07/28/2022	135361	ARAMARK	HWY UNIFORM	88.40
			HWY UNIFORM	88.40
				176.80
07/28/2022	135362	ARC DOCUMENT SOLUTIONS LLC	ENG PLOT BOND	29.45
07/28/2022	135363	ARO LOCK & DOOR	CH HANDLE	378.00
07/28/2022	135364	AT&T MOBILITY	PHONES/IPADS	6,026.70
07/28/2022	135365	B&B TRAILERS	P&R REAR RAMP	231.00
07/28/2022	135366	BEN MORANO	P&R PROGRAM REFUND	52.00
07/28/2022	135367	BIELINSKI HOMES	BD Bond Refund	500.00
07/28/2022	135368	BOND TRUST SERVICES CORP	DEBT PYMT	82,075.00
			DEBT PYMT	65,900.00
			DEBT PYMT	464,340.00
				612,315.00
07/28/2022	135369	BRAYDAN KASCHEL	P&R PROGRAM REFUND	24.00
07/28/2022	135370	BUMPER TO BUMPER HARTLAND	HWY OIL FILTER	7.49
			HWY OIL FILTERS	4.12
				11.61
07/28/2022	135371	CARLIN SALES CORPORATION	P&R TORDON BOTTLE	86.13
07/28/2022	135372	CHENGYUE GUO	P&R PROGRAM REFUND	48.00
07/28/2022	135373	CHRISTINE COOK	P&R PROGRAM REFUND	16.00
07/28/2022	135374	CHRISTY MARTINS	P&R PROGRAM REFUND	32.00
07/28/2022	135375	COREY OIL	HWY UNLEADED GASOLINE	1,351.28
			HWY CLEAR DIESEL	1,783.68
			HWY CLEAR DIESEL	2,894.56
				6,029.52
07/28/2022	135376	COUNTY WIDE EXTINGUISHER, INC	CH BUILDING MAINTENANCE	898.26
07/28/2022	135377	COURTNEY JOHNSON	P&R PROGRAM REFUND	16.00
07/28/2022	135378	CRETEX SPECIALTY PRODUCTS	HWY WHITE ADHESIVE	216.00
07/28/2022	135379	CYNTHIA CLARK	P&R PROGRAM REFUND	155.00
07/28/2022	135380	DAVID MATTHIES	P&R PROGRAM REFUND	16.00
07/28/2022	135381	DIVERSIFIED BENEFIT SERVICES, INC.	JULY FLEX	198.00
07/28/2022	135382	ELIZABETH ALDANA	P&R PROGRAM REFUND	32.00
07/28/2022	135383	EMILY ROMEO	P&R PROGRAM REFUND	16.00

Check Date	Check	Vendor Name	Description	Amount
07/28/2022	135384	EMILY SCHEIFE	P&R PROGRAM REFUND	16.00
07/28/2022	135385	ERICA GAERTNER	P&R PROGRAM REFUND	16.00
07/28/2022	135386	ERIN WILSON-XAYAOSA	P&R PROGRAM REFUND	16.00
07/28/2022	135387	FIRE SERVICE INC	FD REPAIRS	1,421.51
			FD REPAIRS	1,459.24
			FD REPAIRS	3,748.87
			FD CREDIT FOR WINDOW ISSUE	(360.00)
				<u>6,269.62</u>
07/28/2022	135388	HEARTLAND BUSINESS SYSTEMS	IT NETWORK MONITORING	92.00
07/28/2022	135389	HEATHER WITT	P&R PROGRAM REFUND	32.00
07/28/2022	135390	HOLCIM - MAMR INC	HWY STONE	81.00
			HWY STONE	108.00
			HWY STONE	27.00
				<u>216.00</u>
07/28/2022	135391	HUMPHREY SERVICE PARTS, INC	HWY RET KITS	136.56
			HWY RETAINER SETS	9.13
			HWY BELT	71.06
			HWY SAFEGRIP GLOVES	21.15
			HWY FUEL FILTER	52.72
			HWY FUEL FILTER	52.72
			HWY CREDIT RET KITS	(136.56)
				<u>206.78</u>
07/28/2022	135392	JENNIFER RANDAZZO	P&R PROGRAM REFUND	16.00
07/28/2022	135393	JOHN KEMNITZER	P&R PROGRAM REFUND	36.00
07/28/2022	135394	JOHN'S DISPOSAL SERVICE	ENG JUNE LANDFILL CHGS	17,778.24
07/28/2022	135395	KATHERINE PREMO	P&R PROGRAM REFUND	32.00
07/28/2022	135396	KATHRYN THOMPSON	P&R PROGRAM REFUND	32.00
07/28/2022	135397	KATIE BURSI	P&R PROGRAM REFUND	42.00
07/28/2022	135398	KMB ELECTRIC	CH ELECTRICAL WORK	1,820.78
			CH ELECTRICAL MAINTENACE	2,362.50
				<u>4,183.28</u>
07/28/2022	135399	KRISTEN KREUSER	P&R PROGRAM REFUND	26.00
07/28/2022	135400	KUJAWA ENTERPRISES INC	P&R BASEBALL FIELD RENO	1,442.97
07/28/2022	135401	KYLE UDOVICH	P&R PROGRAM REFUND	16.00
07/28/2022	135402	LANGE ENTERPRISES, INC	HWY SIGNS	4,881.83
07/28/2022	135403	LANNON STONE PRODUCTS	HWY STONE	167.46
07/28/2022	135404	LIFE-ASSIST INC	FD MEDICAL SUPPLIES	177.30
			FD MASK	112.00
			FD MEDICAL SUPPLIES	84.72
				<u>374.02</u>
07/28/2022	135405	LISA STUTTGEN	P&R PROGRAM REFUND	155.00
07/28/2022	135406	MATRIX TRUST COMPANY	LOAN REPAYMENT PAYDATE 7/1/22	50.00
			LOAN REPAYMENT PAYDATE 7/15/22	50.00
				<u>100.00</u>
07/28/2022	135407	MENARDS	P&R TEFLON TAPE	81.10

Check Date	Check	Vendor Name	Description	Amount
			HWY MORTAR MIX	26.04
			HWY RAID	46.26
			HWY GLOVES	23.55
			FD BIRD FOOD, DUCT TAPE, PAIL	41.99
				218.94
07/28/2022	135408	MIKE HUGHES	BLD 200832 EROSION BOND REFUND	2,000.00
07/28/2022	135409	MUNICIPAL LAW & LITIGATION GROUP S.	LEGAL FEES	7,977.90
07/28/2022	135410	NAPA	FD OIL	142.65
			HWY TOWEL	15.45
				158.10
07/28/2022	135411	NATALIE GARCIA	P&R PROGRAM REFUND	16.00
07/28/2022	135412	NATHALEE ROMEO	P&R PROGRAM REFUND	26.00
07/28/2022	135413	NATHAN BURKE	REISSUE PAYDATE 7/15/22 - RETURNED DEPOS	633.08
07/28/2022	135414	NATIONWIDE RETIREMENT SOLUTIONS	RETIREMENT PAYDATE 7/29/22	2,109.09
07/28/2022	135415	NICKI LIESENER	P&R PROGRAM REFUND	16.00
07/28/2022	135416	ODP BUSINESS SOLUTIONS LLC	BLD OFFICE SUPPLIES	12.14
07/28/2022	135417	PARKITECTURE & PLANNING	P&R PLAYSCAPE AND SPLASHPAD	2,456.00
07/28/2022	135418	PATRICIA KOEHLER LAWN	P&R PROGRAM REFUND	17.50
07/28/2022	135419	PAYNE & DOLAN	HWY ASPHALT	514.60
			HWY ASPHALT	253.40
				768.00
07/28/2022	135420	PERSEPHONE WHELAN	P&R PROGRAM REFUND	16.00
07/28/2022	135421	PREMIUM WATERS, INC	HWY WATER	53.25
07/28/2022	135422	RADHIKA KUMARA PILLAI	P&R PROGRAM REFUND	16.00
07/28/2022	135423	RENEE REED	SW JULY MILEAGE REIMBURSEMENT	12.13
07/28/2022	135424	RENEE REED	SW MILEAGE REIMBURSEMENT JUNE	22.11
07/28/2022	135425	RUEKERT & MIELKE, INC.	ENG WOODLEAF CONSTRUCTION	583.75
			ENG WOODLEAF FEES	7,616.63
			ENG SHADY LANE, SHADY NOOK	172.00
			ENG OAK AND PENINSULA	1,280.00
			ENG LAKEWOOD BAPTIST CONSTRUCTION	1,043.50
			ENG PAUL RD CONSTRUCTION	31,844.27
			ENG NORTHVIEW CONSTRUCTION	2,529.11
			ENG INLET REPAIR	446.00
			ENG SWAN VIEW CONSTRUCTION	2,547.13
			ENG SWAN VIEW CONSTRUCTION REVIEW	1,044.63
			ENG GLEN AT PARKWAY CONSTRUCTION	1,044.75
			ENG JOSEPH RD FEES	6,977.71
			ENG ZIGNEGO CONSTRUCTION OBSERVATION	553.38
			ENG MEADOWBROOK CONSTRUCTION	142.00
			ENG PEWAUKEE SOUTH CONSTRUCTION REVIEW	610.38
			ENG THE WATERS CONSTRUCTION REVIEW	27,707.02
			ENG GREENLAND CONSTRUCTION	844.01
			ENG ROUND CIR CONSTRUCTION	522.38
			ENG CENTURY FENCE CONSTRUCTION	581.88
			ENG MEADOWBROOK DESIGN	8,713.91
			ENG PEWAUKEE STORAGE YRD	986.50
				97,790.94
07/28/2022	135426	RUSS'S MULCH & TOPSOIL	P&R MULCH	136.00
07/28/2022	135427	SENSIT TECHNOLOGIES	FD SENSIT GOLD GAS	69.46
07/28/2022	135428	SITEONE LANDSCAPE SUPPLY LLC	HWY POST EMERGENT LIQUID	224.96
07/28/2022	135429	SOFT WATER, INC.	FD SOLAR SALT	35.70

Check Date	Check	Vendor Name	Description	Amount
07/28/2022	135430	STRAND ASSOCIATES, INC	ENG DUPLAINVILLE ROAD RECONSTRUCTION	94,352.95
07/28/2022	135431	SUMIE ADAMS	P&R PROGRAM REFUND	48.00
07/28/2022	135432	TARA SONNENBERG	P&R PROGRAM REFUND	16.00
07/28/2022	135433	THRIVE ARCHITECTS	DPW BUILDING	0.00
07/28/2022	135434	TRACI LICARI	P&R PROGRAM REFUND	16.00
07/28/2022	135435	TRUCK & AUTO ELEGANCE	HWY DRAW TITE REDUCER BUSHING	26.96
07/28/2022	135436	UNIFIRST CORP	FD MATS	82.92
			FD MATS	51.50
				134.42
07/28/2022	135437	WASTE MANAGEMENT	HWY RECYCLABLES	3,831.91
07/28/2022	135438	WAUKESHA CO TREASURER	PLC COMMUNITY SERVICES	429.68
			PLC 2ND QTR OT	14,179.44
			PLC AUG 2022 POLICE SERVICES	253,459.29
				268,068.41
07/28/2022	135439	WAUKESHA LIME & STONE CO.	HWY STONE	428.15
			HWY STONE	556.48
				984.63
07/28/2022	135440	WESTERN CULVERT & SUPPLY	HWY CMPA	1,100.00
			HWY CMPA	764.40
				1,864.40
07/28/2022	135441	WI DEPT OF JUSTICE-TIME	PLC TIME ACCESS	180.00
07/28/2022	135442	WISCONSIN CONTRACTOR'S SUPPLY	HWY FIBER SHEET	32.00
08/04/2022	135443	AARONIN STEEL SALES, INC.	HWY STEEL	91.00
08/04/2022	135444	AIRGAS USA	FD OXYGEN	49.66
			FD OXYGEN	225.94
			FD OXYGEN	111.44
				387.04
08/04/2022	135445	ALL-WAYS CONTRACTORS, INC	SW TOPSOIL	51.00
			HWY TOPSOIL	68.00
				119.00
08/04/2022	135446	AMERICAN STATE EQUIPMENT CO., INC.	HWY EQUIP REPAIR	447.76
08/04/2022	135447	ARAMARK	HWY UNIFORM	88.40
			HWY UNIFORMS	96.70
				185.10
08/04/2022	135448	BATZNER PEST CONTROL	P&R PEST CONTROL	75.00
			P&R PEST CONTROL	69.00
				144.00
08/04/2022	135449	BIL-BAR FARMS	P&R TRAILER	10,679.19
08/04/2022	135450	CHERRIE LARSON	P&R ADVENTURES WITH CRAFTS	651.20
08/04/2022	135451	CINTAS	HWY SAFETY RESTOCK	64.71
08/04/2022	135452	COMPLEX SECURITY SOLUTIONS INC	P&R SECURITY SYSTEM	30,140.89

Check Date	Check	Vendor Name	Description	Amount
			P&R SECURITY SYSTEM	15,857.12
				<u>45,998.01</u>
08/04/2022	135453	CONLEY MEDIA	LEGAL FEES	814.21
08/04/2022	135454	COREY OIL	HWY UNLEADED GASOLINE	1,069.50
			HWY UNLEADED GASOLINE	1,126.50
			HWY CLEAR DIESEL	1,802.23
				<u>3,998.23</u>
08/04/2022	135455	DEAN MICHAELIS	P&R BOOT REIMBURSEMENT	75.00
08/04/2022	135456	DEB ERDMANN	P&R PROGRAM REFUND	149.00
08/04/2022	135457	DIVERSIFIED BENEFIT SERVICES, INC.	AUGUST HRA FEE	346.71
08/04/2022	135458	EARL & KRISTI KLINE	WAUKESHA REFUND W/S 13470	1,558.11
08/04/2022	135459	ERIN JEFFREY	P&R PROGRAM REFUND	46.00
08/04/2022	135460	FIRE & POLICE SELECTION, INC	FD ANNUAL FEE FOR APTITUDE TEST	500.00
08/04/2022	135461	FIRST STUDENT	P&R BUS RENTAL	550.00
			P&R BUS RENTAL	550.00
			P&R BUS RENTAL	550.00
			P&R BUS RENTAL	550.00
				<u>2,200.00</u>
08/04/2022	135462	HAWKINS, INC.	SW CHEMICALS	5,577.74
08/04/2022	135463	HECKEL DANCE LLC	P&R SHAKE IT UP	768.00
08/04/2022	135464	HOLCIM - MAMR INC	HWY STONE	135.00
			HWY STONE	27.00
				<u>162.00</u>
08/04/2022	135465	HUMPHREY SERVICE PARTS, INC	P&R FILTERS	15.58
			HWY FILTER	14.86
			HWY FILTERS	9.23
				<u>39.67</u>
08/04/2022	135466	JAMES IMAGING SYSTEMS	IT HP PRINTER SECURITY MGMT	65.00
08/04/2022	135467	JAMIE ERNST	P&R PROGRAM REFUND	78.00
08/04/2022	135468	JENNIFER SCHOLTKA	P&R ZUMBA GOLD SESSION 1	216.00
08/04/2022	135469	JENNIFER SMITH-MULTERER	P&R PROGRAM REFUND	46.00
08/04/2022	135470	JINGYI PAN	P&R PROGRAM REFUND	109.00
08/04/2022	135471	JOHN'S DISPOSAL SERVICE	ENG GARBAGE	53,954.30
08/04/2022	135472	JOHNSON'S NURSERY	CH LANDSCAPING	37.50
			CH LANDSCAPING	670.25
				<u>707.75</u>
08/04/2022	135473	KAEREK HOMES INC	BLD 201544 EROSION BOND REFUND	2,000.00
08/04/2022	135474	KARI RIDOLFI	P&R PROGRAM REFUND	99.00
08/04/2022	135475	KATHERINE SCALLON	P&R PROGRAM REFUND	74.00
08/04/2022	135476	KINGS WAY HOMES	BLD 210107 EROSION BOND REFUND	2,000.00
08/04/2022	135477	LANG ETERPRISES, INC	HWY BRACKETS	747.50
08/04/2022	135478	LINCOLN CONTRACTORS	HWY SAW BLADE	29.99
08/04/2022	135479	MATRIX TRUST COMPANY	LOAN REPAYMENT PAYDATE 7/29/22	50.00
08/04/2022	135480	MENARDS	CH LANDSCAPING	234.43
			P&R TOILET VALVE, WINDSHIELD WASH	61.88
			HWY SUPPLIES	160.43
			HWY BLADES AND BOLTS	106.55

Check Date	Check	Vendor Name	Description	Amount
			HWY CONCRETE MIX	335.11
			HWY MORTAR	26.04
				924.44
08/04/2022	135481	MICHAELIS GABBEY	ENG MILEAGE REIMBURSEMENT	107.50
08/04/2022	135482	MOTION & CONTROL ENTERPRISES LLC	HWY CRIMP HOSE	212.13
08/04/2022	135483	NATHAN BURKE	REISSUE PAYDATE 7/29/22	253.35
08/04/2022	135484	NORTHERN LAKE SERVICE, INC	SW WATER TESTING	92.00
			SW WATER TESTING	46.00
			SW WATER TESTING	69.00
			SW WATER TESTING	309.12
			SW WATER TESTING	69.00
			SW WATER TESTING	69.00
			SW WATER TESTING	92.00
			SW WATER TESTING	276.00
			SW WATER TESTING	69.00
				1,091.12
08/04/2022	135485	OCCUPATIONAL HEALTH CENTERS	HR EXAMS	230.00
08/04/2022	135486	OFFICE COPYING EQUIPMENT, LTD	BLD SHARP MX 3071 CONTRACT	88.38
			CRT SHARP MX3571 CONTRACT	14.72
			ENG SHARP MX 4070N CONTRACT	341.83
				444.93
08/04/2022	135487	PARKING LOT MAINTENANCE	HWY PAVING	11,400.00
08/04/2022	135488	PEWAUKEE FOOD PANTRY	JEFF FABER MILEAGE	125.22
08/04/2022	135489	PREMIUM WATERS, INC	CRT WATER	86.24
			P&R WATER	39.99
			HWY WATER	89.25
				215.48
08/04/2022	135490	PUBLIC SERVICE COMMISSION OF WI	SW PSC DIRECT ASSESSMENT	3,164.50
08/04/2022	135491	REINDERS, INC.	P&R SAFETY POLY SCOOP	195.53
			HWY SEED MIX	105.25
				300.78
08/04/2022	135492	RENATA REUTER	P&R PROGRAM REFUND	149.00
08/04/2022	135493	RUEKERT & MIELKE, INC.	SW NORTH AVE PUMP STATION	8,468.86
			SW WELL STATION 5 CONSTRUCTION ADMIN	820.00
			SW BLUEMOUND RD CAD	5,399.00
			SW BLUEMOUND RD WATER MAIN EXT	6,378.06
			SW SCADA	681.93
				21,747.85
08/04/2022	135494	SANDI DEBYL	FD REIMBURSEMENT	51.45
08/04/2022	135495	SCHOOL DISTRICT OF MENOMONEE FALLS	P&R FIELD TRIP	144.00
			P&R KNITTING CLASS	144.00
				288.00
08/04/2022	135496	SHERWIN-WILLIAMS	P&R PAINT	176.68
08/04/2022	135497	STATE OF WI COURT FINES & ASSMTS	CRT STATES SHARE OF COURT COSTS & ASSESS	4,979.32
08/04/2022	135498	STRAND ASSOCIATES, INC	SW WATER MASTER PLAN	39,830.00
08/04/2022	135499	TODD TENNYSON	HWY REIMBURSEMENT SHORTS	82.53

Check Date	Check	Vendor Name	Description	Amount
08/04/2022	135500	TRACY BREHM	P&R PROGRAM REFUND	72.00
08/04/2022	135501	TRINITY HOMES	BLD 200052 EROSION BOND REFUND	2,000.00
08/04/2022	135502	UNDER THE TREE EDUCATIONAL SERVICES	P&R SPANISH INSTRUCTOR	384.00
08/04/2022	135503	VICTORY HOMES	BLD 210140 EROSION BOND REFUND	2,000.00
08/04/2022	135504	VILLAGE OF PEWAUKEE	JULY 2022 SHARED REVENUES	4,146.85
			WI DEPT OF REVENUE REFUND OF OVERPAYMENT	11,678.74
			BLD JULY 2022 PERMITS	5,000.42
				<u>20,826.01</u>
08/04/2022	135505	WASTE MANAGEMENT	HWY RECYCLING	2,339.95
08/04/2022	135506	WATER REMEDIATION TECHNOLOGY	SW 2022 LICENSE FEES	1,250.00
			SW RADIUM	3,812.88
				<u>5,062.88</u>
08/04/2022	135507	WAUKESHA CO TREASURER	CRT COUNTY JAIL ASSESSMENTS	1,532.42
08/04/2022	135508	WI RURAL WATER ASSOCIATION	SW PPE	54.37
08/04/2022	135509	WISCONSIN LEGAL BLANK	BLD STICKERS	167.00
08/04/2022	135510	WOLF CONSTRUCTION COMPANY	ENG JOSEPH RD PMT 6	130,495.24
			ENG JOSEPH RD PMT 7	77,271.97
				<u>207,767.21</u>
08/04/2022	135511	THRIVE ARCHITECTS	DPW BUILDING	19,247.47
08/05/2022	135512	WE ENERGIES	CTH F & LINDSEY RD RECONSTRUCTION	1,476.42
08/10/2022	135513	AIR ONE EQUIPMENT	FD EQUIP REPAIR	112.96
08/10/2022	135514	AT&T CAROL STREAM IL	CH TELEPHONE	110.82
08/10/2022	135515	B&B TRAILERS	FD EQUIP REPAIR	2,754.87
08/10/2022	135516	CHARLIE DWYER	BLD MILEAGE REIMBURSEMENT	127.50
08/10/2022	135517	DEAN EPPLER	BLD MILEAGE REIMBURSEMENT	46.25
08/10/2022	135518	ELLIOTT ACE HARDWARE	P&R PIN	21.16
			FD CHIP BRUSH	40.68
			FD MASK TAPE AND BRUSH	17.77
			FD SILICONE LUBE	17.98
			FD HORNET KILLER	11.98
			FD DAWN SOAP AND ROPE	14.22
			FD TOOLLESS FILLER CAP	13.90
			P&R CYLINDERS AND SOLDERING IRON	59.56
			P&R RECYCLER	499.00
				<u>696.25</u>
08/10/2022	135519	EMERGENCY LIGHTING & ELECTRONICS	FD WEATHERPROOF COVER	80.74
			FD SIREN FOR AMBO	815.61
				<u>896.35</u>
08/10/2022	135520	EQUAL RIGHT DIVISION	P&R WORK PERMITS	52.50
08/10/2022	135521	FIRE & POLICE SELECTION, INC	FD TRAINING	832.25
08/10/2022	135522	FIRE SERVICE INC	FD VEHICLE REPAIRS	585.86
			FD VEHICLE REPAIRS	900.00
			FD VEHICLE REPAIRS	250.00
			FD VEHICLE REPAIRS	250.00
			FD VEHICLE REPAIRS	250.00
			FD VEHICLE REPAIRS	931.75
			FD VEHICLE REPAIRS	850.00
			FD VEHICLE REPAIRS	850.00

Check Date	Check	Vendor Name	Description	Amount
			FD VEHICLE REPAIRS	2,758.97
			FD VEHICLE REPAIRS	550.00
			FD VEHICLE REPAIRS	588.28
			FD VEHICLE REPAIRS	337.20
			FD VEHICLE REPAIRS	824.97
			FD VEHICLE REPAIRS	2,235.77
				<u>12,162.80</u>
08/10/2022	135523	FIRST STUDENT	P&R BUS RENTAL	165.00
			P&R BUS RENTAL	192.50
			P&R BUS RENTAL	192.50
			P&R BUS RENTAL	165.00
				<u>715.00</u>
08/10/2022	135524	HUMPHREY SERVICE PARTS, INC	P&R FILTER	4.79
08/10/2022	135525	IS OUTFITTERS	IT PA WORK	250.00
			P&R PARKS FIREWALL	1,000.00
			P&R PALTO ALTO NETWORKS AND SUPPORT	624.46
				<u>1,874.46</u>
08/10/2022	135526	J&L TIRE AND SERVICE CENTER	FD VEHICLE REPAIRS	2,828.72
08/10/2022	135527	J.F. AHERN COMPANY	FD SPRINKLER INSP	905.00
			FD BUILDING REPAIRS	497.50
				<u>1,402.50</u>
08/10/2022	135528	JAKE ANTCHAK	P&R MILEAGE REIMBURSEMENT	15.61
08/10/2022	135529	JK LAWN SERVICE	FD LAWN SERVICE	84.00
			FD LAWN SERVICE	70.00
				<u>154.00</u>
08/10/2022	135530	KERRY OLSON	P&R PROGRAM REFUND	26.00
08/10/2022	135531	KWIK TRIP INC.	FD FUEL	7,243.68
08/10/2022	135532	LIFE-ASSIST INC	FD SAFETY SUPPLIES	26.40
			FD SAFETY SUPPLIES	69.50
			FD SAFETY SUPPLIES	11.19
			FD SAFETY SUPPLIES	513.04
			FD SAFETY SUPPLIES	370.55
				<u>990.68</u>
08/10/2022	135533	MALECKI GRAPHIC ARTS SERVICES	P&R LAYOUT AND DESIGN FALL ACTIVITY GUID	900.00
08/10/2022	135534	MARGARET KEMPTON	P&R PROGRAM REFUND	17.50
08/10/2022	135535	MEGAN WALLENFANG	P&R CAMP SUPPLIES REIMBURSEMENT	10.86
08/10/2022	135536	MONICA KASKEY	P&R MILEAGE REIMBURSEMENT	133.80
08/10/2022	135537	NAPA	FD OIL	57.06
08/10/2022	135538	NATIONWIDE RETIREMENT SOLUTIONS	RETIREMENT PAY DATE 8-12-22	2,109.09
08/10/2022	135539	NFPA	FD MEMBERSHIP RENEWAL	175.00
08/10/2022	135540	ODP BUSINESS SOLUTIONS LLC	CT OFFICE SUPPLIES	248.56
08/10/2022	135541	OFFICE COPYING EQUIPMENT, LTD	FD SHARP MX3071 CONTRACT	19.39
08/10/2022	135542	PARKITECTURE & PLANNING	P&R PLAYSCAPE CONCEPTS	1,228.00
08/10/2022	135543	PHARMACEUTICAL RETURNS	FD PHARMACEUTICAL RETURNS	295.00
08/10/2022	135544	PRISCILLA GOSH	P&R FITNESS INSTRUCTOR	35.00
08/10/2022	135545	REINDERS, INC.	P&R ADJ FULL STAINLESS	800.88
			P&R POLYPRO COUPLER	13.77

Check Date	Check	Vendor Name	Description	Amount
				814.65
08/10/2022	135546	SOFT WATER, INC.	FD SOLAR SALT	17.00
			FD SOLAR SALT	10.50
				27.50
08/10/2022	135547	STANSEN BUILDING & REMODELING	BLD 191677 EROSION BOND REFUND	2,000.00
08/10/2022	135548	UNIFIRST CORP	FD MATS	82.92
08/10/2022	135549	VERIZON	FD MDC AIRCARDS	21.06
			FD MDC AIR CARDS	252.68
			FD AIR CARDS	151.24
				424.98
08/10/2022	135550	VILLAGE OF PEWAUKEE	LIFEQUEST JULY 2022 COLLECTIONS	24,909.37
08/10/2022	135551	WAUKESHA CO TECHNICAL COLLEGE	FD AHA SITE FEE	500.00
08/10/2022	135552	WAUKESHA CO TREASURER	FD RADIOS	48.71
08/10/2022	135553	WAUKESHA WATER UTILITY	SW SEWER CHARGES	25,740.72
08/10/2022	135554	WI SUPPORT & COLLECTIONS	R&D FEE KID PIN 0007516424	65.00
100 TOTALS:				
(1 Check Voided)				
Total of 204 Disbursements:				2,203,933.12

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 3.3.**

DATE: August 15, 2022

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner

SUBJECT:

Release the Cardinal Meadow Early Grading Financial Guarantee in the Amount of \$100,000.00.

BACKGROUND:

In accordance with the Early Grading Agreement (Item 12) for Cardinal Meadow, upon execution of the Full Developer's Agreement and posting of its Financial Guarantee, the Early Grading Agreement terminates and the financial guarantee is released to the Developer. Since the full Developer's Agreement and letter of credit have been received by the City, the Early Grading Agreement deposit must be returned.

FINANCIAL IMPACT:

None.

RECOMMENDED MOTION:

ATTACHMENTS:

Description
Grading Only Developers Agreement

GRADING AND STOCKPILING OF FILL MATERIAL AGREEMENT

THIS AGREEMENT, made and entered into this 11th day of June, 2021, by and between Bielinski Homes, Inc. hereinafter collectively and individually called the "Developer," and the CITY OF PEWAUKEE, a Wisconsin municipal corporation of the State of Wisconsin, hereinafter called the "City."

WITNESSETH:

WHEREAS, the Developer proposes to develop certain lands located in the City of Pewaukee, Waukesha County, Wisconsin, being particularly described on Exhibit "A" attached hereto and incorporated herein by this reference (the "Property"), commonly referred to as Greenland Subdivision Pewaukee, Wisconsin; and

WHEREAS, the City previously approved the Developer's preliminary plat for the development of single-family lots (the "Subdivision") on the Property; and

WHEREAS, the City has reviewed the Developer's conceptual Grading Plan; and

WHEREAS, one of the requisites for development of the Subdivision is the installation of various private, as well as public, improvements to be implemented pursuant to a development agreement; and

WHEREAS, said development agreement has not yet been prepared and executed; and

WHEREAS, the Developer has requested the City to authorize and permit grading and stockpiling of fill material on the Property at this time; and

WHEREAS, the City recognizes that timing is a factor to be considered and is willing to allow Developer, at its risk, to perform grading and stockpiling as requested upon the condition, however, that the Developer agrees to those certain terms and conditions as more fully hereinafter set forth.

NOW THEREFORE, in consideration of the sum of one dollar (\$1.00) to each in hand paid, the receipt and sufficiency whereof is hereby acknowledged, and in further consideration of the mutual premises and covenants hereinafter set forth, it is hereby agreed by and between the parties hereto as follows:

I. THE CITY AGREES:

1. To permit the Developer to perform all rough grading work on the Property, including, but not limited to, the installation of silt fencing, general grading of the site and the construction of storm water management ponds (collectively the "Grading"), upon the terms and conditions set forth below.

2. To permit the Developer to stockpile appropriate fill materials on the Property, not to exceed the total amount 50,000 cubic yards, in anticipation of using said fill materials in the development of the Property (collectively the "Stockpiling"), upon the terms and conditions set forth below.

II. THE DEVELOPER AGREES:

1. All Grading and Stockpiling shall be done at the Developer's risk.

2. All Grading and Stockpiling shall comply with site grading, drainage and soil erosion plan and related specifications as approved by the City Engineer. All plans for such Grading and Stockpiling have been or will be prepared on behalf of the Developer by a professional engineer licensed by the State of Wisconsin.

3. The City shall be reimbursed by the Developer for all costs incurred by the City in relation to the Grading and Stockpiling. These costs shall include, but not be limited to, plan review, inspection and related overhead costs. Said reimbursement shall be guaranteed by the Developer as set forth and required in Paragraph 9 below.

4. In the event the preparation and/or final review of the Master Grading Plans by the City dictate revisions to the proposed grades, either at the Developer's request or at the direction of the Engineer, such re-grading shall be performed by the Developer without any recourse to the City whatsoever, prior to the commencement of any underground installations in the Subdivision development.

5. The Grading and Stockpiling shall be performed with proper control of soil erosion and with minimum siltation of existing drainage facilities. Any damage to the existing drainage facilities, including siltation removal, shall be immediately repaired by the Developer. As appropriate, by virtue of delay in the development process, vegetative cover shall be re-established by the Developer and/or effective erosion control measures shall be installed and continually maintained by the Developer where vegetation has been removed, covered or destroyed.

6. In the event installation of improvements and/or buildings on the lots does not begin as of 8/31/2021, for any reason whatsoever, all of the graded or disturbed area shall have vegetative cover re-established by the Developer to an extent as to be determined by the City. In the event vegetative cover is not established by 10/1/2021 the City shall arrange for such work to be done, which shall be paid by the Developer.

7. In the event installation of improvements and/or buildings on the lots does not begin as of 8/31/2021, for any reason whatsoever, all of the stockpiled fill material shall be removed and all disturbed area shall have vegetative cover re-established by the Developer to an extent as to be determined by the City. In the event the Stockpiled material is not removed or vegetative cover is not established by 10/1/2021, the City shall arrange for such work to be done, which shall be paid by the Developer.

8. All truck traffic to and from the Property, as part of the operation permitted herein, shall be conducted by the Developer as governed by the applicable codes and regulations of Waukesha County and of the City and as directed by the City Engineer, with respect to method, time and operations and routing, etc. Any public street used for access to the Property shall be kept free of mud, dirt and debris on a daily basis. In the event a clean-up order from the City is not complied with, such work shall be arranged and accomplished by the City and paid for out of the deposit referred to in Paragraph 9 below.

9. To assure compliance with the conditions set forth in this agreement, including, but not limited to, the establishment of positive soil erosion control measures, performance hereunder shall be guaranteed with a deposit by the Developer with the City in the amount of \$100,000.00 cash which shall be paid prior to the commencement of any activity on the Property by the Developer with respect to the Grading and Stockpiling. In the event Developer does not comply with or fully perform this agreement, the City is authorized to stabilize the site or to take other action to correct the Developer's violations hereof by using the cash deposit for such purposes. Upon completion of the performance of this agreement, the deposit, or remaining balance of the deposit, if any, shall be returned to the Developer. In the event said deposit is insufficient in amount to pay all costs related to performance of and compliance with this agreement, the Developer shall remit payment of all owed amounts to the City within ten (10) days of receipt of the City's invoice to the Developer.

10. This Agreement shall be binding upon the heirs, personal representatives, successors and assigns of the parties hereto.

11. Developer is responsible for DNR approval for required culverts in the Subdivision. Further, it is the Developer's responsibility to comply with any and all provisions of DNR approval/denial conditions.

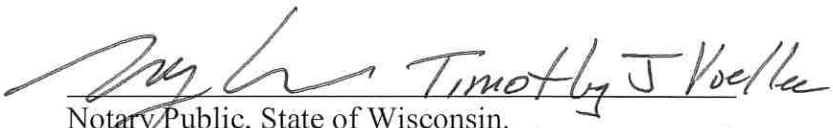
12. Upon execution of a Development Agreement between the City and Developer for the Property, this Agreement shall terminate and any remaining balance of the deposit shall be returned to Developer upon Developer's posting of cash or letter of credit to guaranty the improvements, including the grading of the Property, required under said Development Agreement.

IN WITNESS WHEREOF, the Developer and the City have caused this agreement to be signed individually by the Developer and by the appropriate officers of the City, with its seal to be hereunto affixed the day and year inserted above.

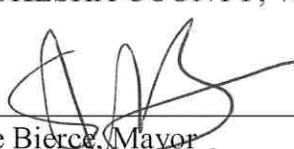

 BIELINSKI HOMES, INC., by Frank Bielinski, President

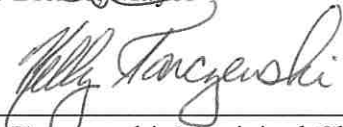
STATE OF WISCONSIN)
) ss.
 WAUKESHA COUNTY)

Personally came before me this 18th day of May, 2021, the above-named Frank Bielinski, as President of Bielinski Homes, Inc. to me known to be the persons who executed the foregoing instrument and who acknowledged the same.


 Notary Public, State of Wisconsin.
 My Commission expires: 15 permanent

CITY OF PEWAUKEE
 WAUKESHA COUNTY, WISCONSIN


 Steve Bierce, Mayor


 Kelly Tarczewski, Municipal Clerk

STATE OF WISCONSIN)
) ss.
 WAUKESHA COUNTY)

Personally came before me this 11th day of June, 2021, the above named Steve Bierce, Mayor, and Kelly Tarczewski, Municipal Clerk, of the above named municipal corporation, to me known to be the persons who executed the foregoing instrument and to me known to be such individual and Municipal Clerk of said municipal corporation and acknowledged that they executed the foregoing instrument as such officers as the deed of said municipal corporation by its authority and pursuant to the authorization by the Governing Body of the City of Pewaukee from their meeting on the ___ day of _____, 20__.




 Notary Public, State of Wisconsin.
 My Commission expires: 1/18/23

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 4.**

DATE: August 15, 2022

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Updated Financial Management Plan Presentation by Ehlers [Jonathan Schatz]

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

Financial Feasibility Memo

Updated Financial Management Plan

MEMORANDUM

TO: Scott Klein, Administrator, City of Pewaukee, WI
FROM: Jonathan Schatz, Municipal Advisor, Ehlers
DATE: July 22nd, 2022
SUBJECT: Financial Feasibility of City's 2022 Borrowing

Dear Scott,

At your request, I am writing this letter to provide analysis on the financial feasibility of the City's planned 2022 borrowings. This memo will provide some background and context drawn from the City's 2022 Financial Management Plan (FMP), a summary of which has been included along with this memo.

Background

On July 18th, the City Common Council approved authorizing resolutions and parameters resolutions for the sale of not to exceed \$11,205,000 G.O. Notes and \$27,745,000 G.O. Bonds in order to finance the planned 2022 and 2023 capital improvement expenditures. The expenditures are mostly street and trail improvements, along with the DPW building, utility improvements and cemetery road construction. At the Council meeting, questions were raised about the financial feasibility and impact of borrowings of that size for the City.

The City conducts an annual update of its Financial Management Plan (FMP) which is financial model that Ehlers compiles to provide a projection of the City's comprehensive financial picture. The 2022 update was not ready for the July 18th meeting but has since been completed. This memo will provide analysis based on the 2022 FMP update and City staff or alders can reference the FMP update for additional information.

Historic User of Debt Financing

The City has historically issued G.O. notes and bonds to finance larger capital projects and has used a capital levy to cash finance smaller projects. Over the past few years, the amount of capital levy has been reduced from over \$1 million down to \$50,000 in 2021 due to increased costs within the City's operating fund (General Fund) and levy limit constraints, this had led to capital projects either being delayed or financed using debt. As of 2022, the City has eliminated the capital levy entirely from the budget.

In 2021, the City financed a portion of a major capital project (DPW building) using debt financing, the remaining construction proceeds for that project represent \$10 million of the proposed 2022A G.O. Notes.

Levy Limits

Like all Wisconsin municipalities, the City of Pewaukee's property tax levy's growth is constrained by statute to grow only by Net New Construction or 0% annually. Though the City has benefited from some larger Net New Construction numbers, it is not consistent nor is it high enough to match the increase in costs due to inflation and expanded City operations. This has led to the need to divert property tax levy from capital projects to operating funds. This is a challenge for all growing Wisconsin communities, as the pressure on growing operations crowds out the levy for capital which often get delayed as a result. Since G.O. debt is exempt from levy limits, many communities have come to rely on larger and more frequent borrowing as a way of keeping up with capital needs.

2022A and 2022B

The amount of the 2022 borrowings is a direct result of difficulty for the City to raise tax levy enough to cash finance projects, timed with the need for a major project (DPW building), and the rising interest rate environment favoring borrowing for 2 years' worth of projects to protect the City from potentially higher interest rates next year.

The 2022 FMP update shows that the City's existing debt levy was scheduled to drop by just over \$500k from 2022 to 2023, a sign that some of the City's existing debt obligations are reaching maturity. This is typically when we would look to layer in new debt to maintain a stable debt levy and allow for needed capital investments. However, due to the larger size of the 2022 borrowings, the debt levy will increase \$593k in 2023, and additional \$663k in 2024. The debt tax rate for the City will increase from \$0.47 per \$1,000 of assessed value up to \$0.76 per \$1,000 of assessed value, or an increase of \$116 on the annual property tax bill of someone with a \$400k home.

The City has benefited from having a historically low debt tax rate due to a high tax base and relatively low outstanding debt. The increase from \$0.47 to \$0.76 is a significant proportionate increase but is still comparatively low in relation to other similarly sized City's in the area. Like all Wisconsin communities, the consideration should center around the balance between acceptable debt levels and the need for capital investment (without other means to pay for it).

FMP Summary Impacts

As you'll see in the FMP presentation summary, the overall tax levy (including debt and operations) is projected to increase by 21% in 2023, 8% in 2024, and 4% in 2025. However, increasing debt service is responsible for only 28% of that 2023 increase – the majority is of the increase is due to operational costs as projected. Our FMP model assumes the "worst case scenario" which means that nearly all non-levy revenues are held flat and we do not consider application of fund balance to reduce levy increases. So, please note when reviewing the FMP, that this is a conservative projection and the reality will most likely be moderated to lessen the tax hit.

Also, as you can see from the Capital Improvements Financing Plan the amount of future road improvements reduces to more historical levels after this year.

Summary

The City's debt is currently rated Aa1 by Moody's, one notch below Aaa, which is important to maintain as it plays an important role in the cost of capital. When looking at the 2022 borrowings, Moody's will consider two metrics foremost when evaluating the issuance:

- 1) Fund Balance: The City benefits from a large fund balance (nearly 40% of revenues) in 2021, which is saved for emergency or discretionary purposes. One alternative to financing all of these projects would be to use some of the reserve fund balance to cash finance a portion of them in order to reduce the total borrowing. However, we must keep an eye on how much cash to use in order to maintain adequate reserve levels for emergencies.
- 2) Debt level: The City's historically low G.O. debt level (currently using 9% of the \$192 million allowable G.O. debt) has been a credit positive. Adding \$38.95 million in new borrowing in one year is notable, however that will still only use up 29% of the allowable limit. The City's Direct Debt Burden would stay below 1.5%, which keeps it in the "Strong" category for the rating agency.

Recognizing this is a major decision, and there are alternatives to consider (phasing the debt/delaying projects, applying reserves) I hope this analysis provides some context for those decisions. The City is in great financial shape, but needs to make some major capital investments, and with properly managed debt and financial planning, the City will be able to take on the new debt and manage back to a level that is more comfortable from a stability and tax sensitivity perspective.

Again, I am including the FMP update presentation along with this letter, I hope this is helpful information and I am happy to answer any questions that you all may have.

Sincerely,

Jonathan Schatz
Ehlers



City of Pewaukee

Financial Management Plan, 2022 Update

Contents

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Operating funds/projection

Debt service

Capital Improvement Plan

Total levy projection

Total levy analysis

Summary

Objectives of the FMP

Determines the overall financial impact to taxpayers to fund operational and capital needs.

Is a tool to provide control and flexibility to meet financial needs by integrating operational and capital budgets.

Examines existing financial strengths and weaknesses of the community.

Establishes consensus and set of priorities to meet the City's financial objectives.

Current Challenges



City's levy for General Fund increased significantly from 2020 to 2021, then decreased in 2022.

Most non-general fund levy has been reduced/eliminated. Levy primarily funding general fund and debt service going forward.

Total Levy increases have been more stable.



City needs to make significant capital improvement investment, which will alter debt profile.

Projection shows large total levy increase from 2022 to 2023 due to ongoing operations and new debt service.

Overall operating levy is constrained for new growth.

Current Strengths

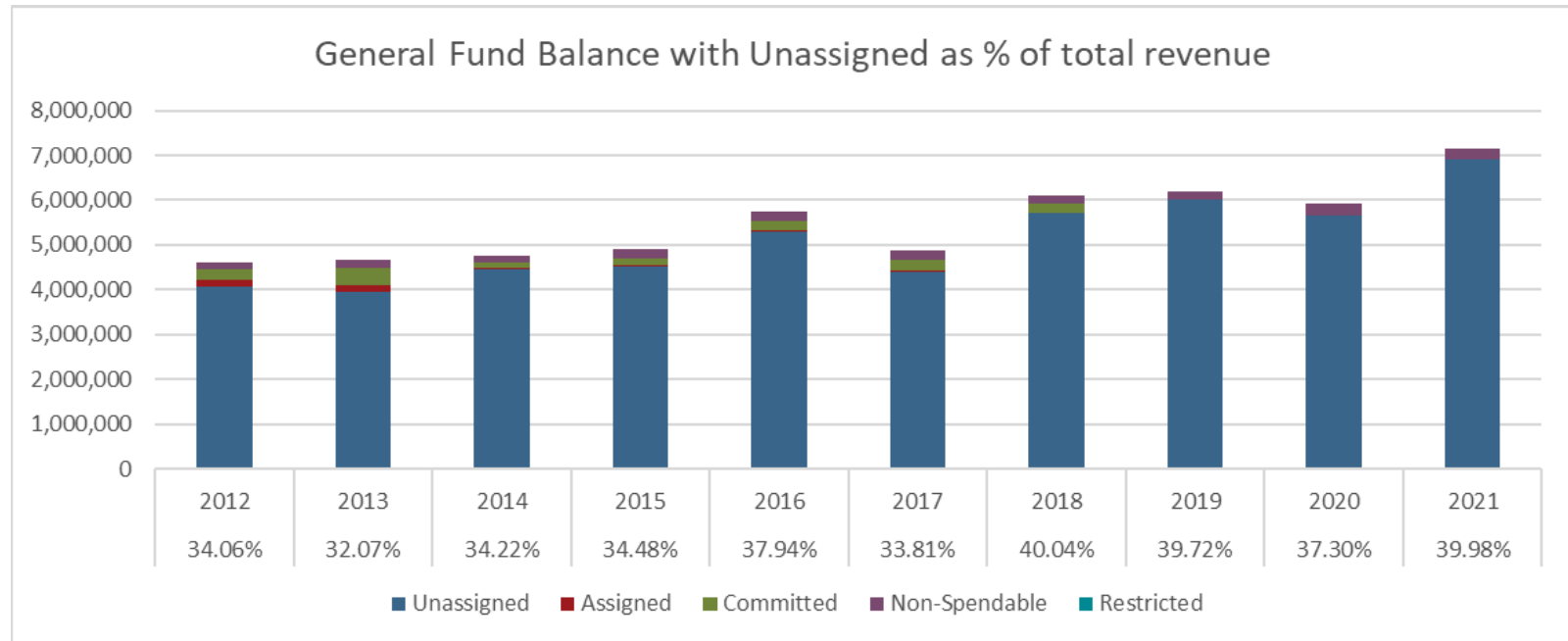
City has an estimated fund balance as of 12/31/2021 in the capital equipment fund over \$5.7 million.

- City has been able to transfer surpluses from General Fund into capital equipment for several years.
- Reduces the need to borrow for smaller capital items.

City has accumulated approximately \$54.7 million of pooled deposit and investments.

- Though not all available liquidity, the City has significant cash flow protection due to large cash holdings.
- This means the City will be able to cover large cash expenses without borrowing.

Fund Balance



The City benefits from

General Fund Forecast

Most non-levy revenue sources held flat at current levels.

- Garbage collection revenue increased 3% per year.
- Fire Dues increasing 2% per year.
- Ambulance revenue increasing 2% per year.
- Cable TV revenue decreasing 2% per year.

General Fund expenditure forecasts driven by codes assigned to each line item based on the type of expenditure.

- Fund expenditure increases mostly due to personnel-related expenses/contractual obligations

Forecast Codes

GENERAL CODES			
CODE	DEFINITION		EXPLANATION
Z	Zero		Sets the value in all five years of the forecast period to zero.
L	Last		Sets the value in all five years of the forecast period to the value in the most recent budget or actual column.
SYRAV	Average		Sets the value in all five years of the forecast period to the average of the prior five year's values.
ACTUAL AV	Average		Sets the value in all five years of the forecast period to the average of the prior three year actual results values.
T	Trend		Sets the value to trend year over year

EXPENDITURE CODES			
CODE	DEFINITION	INCREASE	EXPLANATION
C	Commodities	2.00%	Fuel & Mileage, Office Supplies, Operating Supplies, Utilities, Uniforms, Office Furniture & Equipment
E	Employee Insurance	4.00%	Health, Dental & Life Insurance, Post Employment Health Plan, Long Term Disability
I	Insurance	5.00%	Property & Liability
S	Services	2.00%	Advertising & Printing, Communications, Contractual Services, Dues & Memberships, Janitorial Services, Maintenance Agreements, Meetings & Training, Professional Services, Publications & Subscriptions, Repairs & Maintenance
W	Wages	2.50%	Regular & Seasonal Wages, Overtime, Holiday & Misc. Compensation, Longevity, Premium Pay, Social Security, Retirement, Unemployment Compensation

General Fund Summary

	Actual			Budget	Projected				
	2019	2020	2021	2022	2023	2024	2025	2026	2027
GENERAL FUND									
REVENUES									
Property Taxes	7,585,830	7,897,815	9,207,574	8,492,105	8,661,947	8,835,186	9,011,890	9,192,128	9,375,970
Additional Levy to Balance					1,337,451	1,500,260	1,667,587	1,839,572	2,016,362
Other taxes	967,781	762,569	937,573	875,587	875,587	875,587	875,587	875,587	875,587
Special Charges	701,735	758,500	824,376	849,588	875,076	901,328	928,368	956,219	984,905
Intergovernmental	1,531,929	1,562,024	1,533,398	1,473,245	1,475,985	1,478,780	1,481,630	1,484,538	1,487,504
Licenses and Permits	1,015,744	796,531	1,356,385	1,093,950	1,093,950	1,093,950	1,093,950	1,093,950	1,093,950
Fines and Penalties	580,483	308,000	590,473	516,035	516,035	516,035	516,035	516,035	516,035
Public Charges	973,810	942,624	1,244,557	926,550	926,550	926,550	926,550	926,550	926,550
Intergovernmental Charges	1,899,674	1,892,705	1,963,102	1,979,940	1,979,940	1,979,940	1,979,940	1,979,940	1,979,940
Interest	368,283	299,513	(23,388)	44,500	44,500	44,500	44,500	44,500	44,500
Misc	107,903	185,423	305,398	76,140	76,140	76,140	76,140	76,140	76,140
TOTAL REVENUES	15,733,172	15,405,704	17,939,447	16,327,640	17,863,161	18,228,256	18,602,177	18,985,159	19,377,444
EXPENDITURES									
General Government	2,087,093	2,204,435	2,457,392	2,522,512	2,503,852	2,542,527	2,582,163	2,622,784	2,664,418
Public Safety	7,577,612	8,092,309	8,521,533	9,444,598	9,647,489	9,857,271	10,072,074	10,292,030	10,517,277
Public Works	2,726,598	2,779,282	2,928,853	3,176,240	3,270,293	3,331,724	3,394,619	3,459,016	3,524,956
Culture and Recreation	2,045,325	2,126,889	2,187,155	2,388,867	2,441,527	2,496,734	2,553,322	2,611,329	2,670,794
Transfer Out	1,395,257	992,810	632,568	19,152	-	-	-	-	-
TOTAL EXPENDITURES	15,831,885	16,195,725	16,727,501	17,551,369	17,863,161	18,228,256	18,602,177	18,985,159	19,377,444
EXCESS/(DEFICIT) REVENUES TO EXPENDITURES	(98,713.00)	(790,021.00)	1,211,946.14	(1,223,729.00)	-	-	-	-	-
Change in General Fund levy from prior year		4.11%	16.58%	-7.77%	17.75%	3.36%	3.33%	3.30%	3.27%
Beginning Fund Balance (adj to match audit)	6,286,684	6,187,985	5,910,175	7,142,120	5,918,391	5,918,391	5,918,391	5,918,391	5,918,391
Ending Fund Balance	6,187,985	5,910,175	7,142,120	5,918,391	5,918,391	5,918,391	5,918,391	5,918,391	5,918,391

Debt – Base Case

Year Ending	Existing Debt										Year Ending	
	Total G.O. Debt Payments	Less: Water	Less: Sewer	Less: Storm	Less: Interest Income	Less: Premium	Less: Reconcile to Budget	Net Tax Levy	Equalized Value (TID OUT)	Tax Rate Per \$1,000		Annual Taxes
												\$400,000 Home
2022	2,818,265	(636,493)	(122,778)	(200,653)	(150)	(104,550)	883	1,754,524	3,741,123,300	\$0.50	\$199.03	2022
2023	2,317,458	(630,690)	(122,545)	(197,553)	(250)	(125,350)		1,241,070	3,847,789,800	\$0.33	\$132.69	2023
2024	2,189,100	(627,260)	(123,547)	(199,453)	(300)	(57,865)		1,180,676	3,957,497,564	\$0.31	\$122.74	2024
2025	1,994,932	(544,393)	(123,237)	(196,253)	(300)			1,130,749	4,070,333,304	\$0.29	\$114.29	2025
2026	1,985,824	(544,072)	(122,901)	(198,053)	(300)			1,120,499	4,186,386,205	\$0.28	\$110.11	2026
2027	1,985,531	(542,073)	(123,720)	(199,588)	(300)			1,119,850	4,305,747,992	\$0.27	\$107.00	2027
2028	1,757,246	(545,502)	(122,993)	(200,550)	(300)			887,901	4,428,513,011	\$0.21	\$82.49	2028
2029	1,738,137	(543,280)	(122,131)	(196,175)	(300)			876,251	4,554,778,292	\$0.20	\$79.15	2029
2030	1,708,428	(543,288)	(108,490)	(196,800)	(300)			859,550	4,684,643,635	\$0.19	\$75.49	2030
2031	1,675,800	(539,090)	(107,060)	(196,400)	(300)			832,950	4,818,211,684	\$0.18	\$71.12	2031
2032	840,518	(542,092)	(97,576)	(200,850)				0	4,955,588,011	\$0.00	\$0.00	2032
2033	253,040	(253,040)						0	5,096,881,197	\$0.00	\$0.00	2033
2034	256,900	(256,900)						0	5,242,202,919	\$0.00	\$0.00	2034
2035	250,238	(250,238)						0	5,391,668,038	\$0.00	\$0.00	2035
2036	253,575	(253,575)						0	5,545,394,691	\$0.00	\$0.00	2036
2037	96,600	(96,600)						0	5,703,504,381	\$0.00	\$0.00	2037
2038	78,000	(78,000)						0	5,866,122,077	\$0.00	\$0.00	2038
2039								0	6,033,376,311	\$0.00	\$0.00	2039
Total	22,199,591	(7,426,586)	(1,296,978)	(2,182,325)	(2,800)	(287,765)	883	11,004,019				Total

Debt – Capital Improvements Plan (Levy Only)

Projects	Plan Issue	Funding	2022	2023	2024	2025	2026
Major Capital							
DPW Garage	2022 G.O. Notes	G.O. Debt	10,000,000				
City Hall Remodel	2022 G.O. Notes	G.O. Debt		1,000,000			
STREETS							
City Roads							
Joseph Road	2022 G.O. Bonds	G.O. Debt	390,000				
Paul/Roundy's	2022 G.O. Bonds	G.O. Debt	1,900,000				
Duplainville Road	2022 G.O. Bonds	G.O. Debt	4,900,000				
Duplainville Road Bridge	2022 G.O. Bonds	G.O. Debt	175,000				
Busse Road Bridge	2022 G.O. Bonds	G.O. Debt		450,000			
Meadowbrook Road Phase 2	2022 G.O. Bonds	G.O. Debt	546,000				
Meadowbrook Road Phase 3	2022 G.O. Bonds	G.O. Debt		900,000			
Shady Lane/Shady Nook	2022 G.O. Bonds	G.O. Debt		500,000			
Lindsay/Redford Intersection	2022 G.O. Bonds	G.O. Debt		150,000			
Apple Tree/Pear Tree	2022 G.O. Bonds	G.O. Debt		650,000			
Lexington/Takoma (design)	2022 G.O. Bonds	G.O. Debt		150,000			
Rolling Ridge Phase 1 (design)	2022 G.O. Bonds	G.O. Debt		100,000			
Rolling Ridge Phase 1 (construction)	2024 G.O. Bonds	G.O. Debt			625,000		
Rolling Ridge Phase 2 (design)	2024 G.O. Bonds	G.O. Debt			42,000		
Rolling Ridge Phase 2 (construction)	2025 G.O. Bonds	G.O. Debt				600,000	
Sherwood Forest/Busse Rd (design)	2022 G.O. Bonds	G.O. Debt		100,000			
Sherwood Forest/Busse Rd (construction)	2024 G.O. Bonds	G.O. Debt			1,400,000		
Meadowbrook/Spice Creek Phase 4 (design)	2022 G.O. Bonds	G.O. Debt		40,000			
Meadowbrook/Spice Creek Phase 4 (construction)	2024 G.O. Bonds	G.O. Debt			400,000		
Watertown Road (design)	2024 G.O. Bonds	G.O. Debt			100,000		
Watertown Road (construction)	2025 G.O. Bonds	G.O. Debt				2,000,000	
Hickory Grove Estates (design)	2024 G.O. Bonds	G.O. Debt			57,000		
Hickory Grove Estates (construction)	2025 G.O. Bonds	G.O. Debt				700,000	
Greenhill/Yench (design)	2025 G.O. Bonds	G.O. Debt				120,000	
Greenhill/Yench (construction)	2026 G.O. Bonds	G.O. Debt					1,400,000
Wethersfield Phase I (design)	2025 G.O. Bonds	G.O. Debt				15,000	
Wethersfield Phase I (construction)	2026 G.O. Bonds	G.O. Debt					450,000
Glacier Road	2026 G.O. Bonds	G.O. Debt					80,000
Ridgeview Parkway Development	2026 G.O. Bonds	G.O. Debt					20,000
Cemetery Roads							
Pilgrim Rest Cemetery	2022 G.O. Bonds	G.O. Debt		400,000			
City Trails							
Northview Road Sidewalk	2022 G.O. Bonds	G.O. Debt	130,000				
Duplainville Road Trail	2022 G.O. Bonds	G.O. Debt	520,000				
East Fieldhack Dr to Lake Country Trail via Meadowbrook Rd	2022 G.O. Bonds	G.O. Debt		500,000			
Pedestrian Crossing at STH 164	2022 G.O. Bonds	G.O. Debt		60,000			
Recreational Crossing at Nettesheim Park (design)	2022 G.O. Bonds	G.O. Debt		15,000			
Recreational Crossing at Crestview Dr (design)	2022 G.O. Bonds	G.O. Debt		15,000			
Actual CIP Costs			26,658,334	11,625,000	2,624,000	3,435,000	1,950,000
Debt Obligations							
2022 G.O. Notes			10,000,000	1,000,000	0	0	0
2022 G.O. Bonds			16,658,334	10,625,000	0	0	0
2024 G.O. Bonds			0	0	2,624,000	0	0
2025 G.O. Bonds			0	0	0	3,435,000	0
2026 G.O. Bonds			0	0	0	0	1,950,000

Debt – Projected Tax Impact

Year Ending	Projected Debt												Year Ending
	2022 G.O. Notes 11,205,000 Dated: 9/1/2022 Total Principal and Interest	2022 G.O. Bonds 27,745,000 Dated: 9/1/2022 Total Principal and Interest	2024 G.O. Bonds 2,715,000 Dated: 3/1/2024 Total Principal and Interest	2025 G.O. Bonds 3,540,000 Dated: 3/1/2025 Total Principal and Interest	2026 G.O. Bonds 2,035,000 Dated: 3/1/2026 Total Principal and Interest	Abatements			Levy and Tax Rate				
						Less: Water	Less: Sewer	Less: Storm	Total Net Debt Service Levy	Total Tax Rate for Debt Service	Levy Change from Prior Year	Annual Taxes \$400,000 Home	
2022	0	0	0	0	0				1,754,524	\$0.47		\$188	2022
2023	534,960	1,642,095	0	0	0	(345,098)	(220,317)	(504,858)	2,347,853	\$0.61	593,329	\$244	2023
2024	1,211,040	1,706,575	0	0	0	(350,711)	(222,544)	(513,472)	3,011,564	\$0.76	663,711	\$304	2024
2025	1,256,510	1,713,133	253,937	0	0	(350,695)	(224,364)	(516,123)	3,263,147	\$0.80	251,584	\$321	2025
2026	1,264,620	1,718,313	198,030	315,074	0	(350,356)	(225,927)	(518,224)	3,522,029	\$0.84	258,881	\$337	2026
2027	1,260,900	1,712,208	200,119	232,470	412,677	(349,683)	(222,297)	(514,828)	3,851,417	\$0.89	329,388	\$358	2027
2028	1,487,230	1,719,336	211,778	303,522	329,851	(353,488)	(223,405)	(515,776)	3,846,949	\$0.87	(4,468)	\$347	2028
2029	1,488,220	1,724,579	212,987	302,928	328,037	(351,804)	(224,197)	(516,038)	3,840,963	\$0.84	(5,986)	\$337	2029
2030	1,457,143	1,767,361	213,850	301,989	325,846	(349,748)	(224,690)	(515,666)	3,835,636	\$0.82	(5,327)	\$328	2030
2031	1,424,420	1,821,628	214,384	300,620	323,265	(347,309)	(224,877)	(514,638)	3,830,443	\$0.79	(5,193)	\$318	2031
2032	1,901,323	2,171,390	214,605	298,847	320,199	(349,386)	(224,745)	(517,844)	3,814,387	\$0.77	(16,056)	\$308	2032
2033	0	2,613,545	214,504	296,695	316,677	(350,874)	(224,287)	(515,262)	2,351,000	\$0.46	(1,463,388)	\$185	2033
2034	0	2,577,246	214,070	294,157	312,734	(351,506)	(223,335)	(516,503)	2,306,862	\$0.44	(44,138)	\$176	2034
2035	0	2,541,243	213,294	300,988	308,357	(351,318)	(226,814)	(516,526)	2,269,225	\$0.42	(37,638)	\$168	2035
2036	0	2,496,800	212,020	297,174	303,539	(350,459)	(224,819)	(515,551)	2,218,705	\$0.40	(50,520)	\$160	2036
2037	0	2,454,350	210,272	292,738	298,267	(348,984)	(227,382)	(513,657)	2,165,605	\$0.38	(53,100)	\$152	2037
2038	0	2,415,094	208,140	287,714	292,329	(351,978)	(224,625)	(516,019)	2,110,655	\$0.36	(54,950)	\$144	2038
2039	0	2,373,618	205,659	282,233	285,760	(349,395)	(226,521)	(517,465)	2,053,888	\$0.34	(56,767)	\$136	2039
2040	0	2,329,600	202,940	276,339	278,699	(351,187)	(223,038)	(517,921)	1,995,432	\$0.32	(58,456)	\$129	2040
2041	0	2,283,015	199,959	270,183	271,192	(352,238)	(224,171)	(512,485)	1,935,456	\$0.30	(59,977)	\$121	2041
2042	0	2,258,289	196,687	263,731	263,399	(352,538)	(224,807)	(516,034)	1,888,725	\$0.29	(46,730)	\$115	2042
2043	0	0	193,122	256,949	255,283				705,354	\$0.10	(1,183,371)	\$42	2043
2044	0	0	184,383	249,835	246,809				681,027	\$0.10	(24,328)	\$39	2044
2045	0	0	0	261,847	28,282				290,128	\$0.04	(390,898)	\$16	2045
2046	0	0	0	0	62,790				62,790	\$0.01	(227,338)	\$3	2046
	13,286,365	42,039,415	4,174,740	5,686,030	5,563,990	(7,008,751)	(4,487,160)	(10,304,888)					

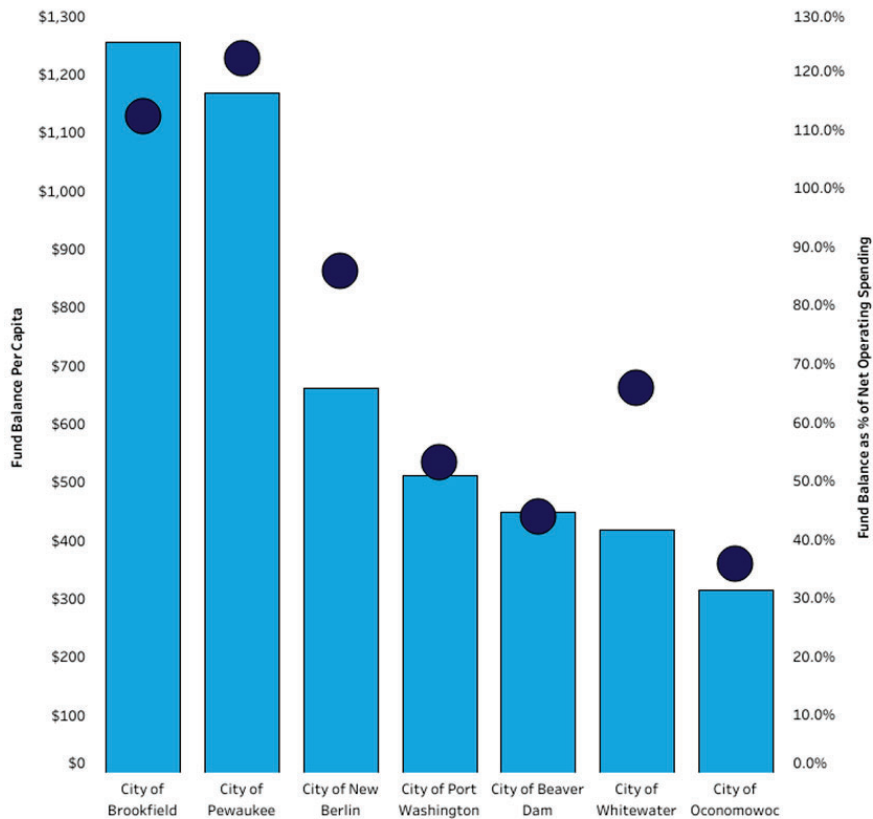
Annual tax levy needed
for debt service

Debt – G.O. Capacity and Rating Analysis

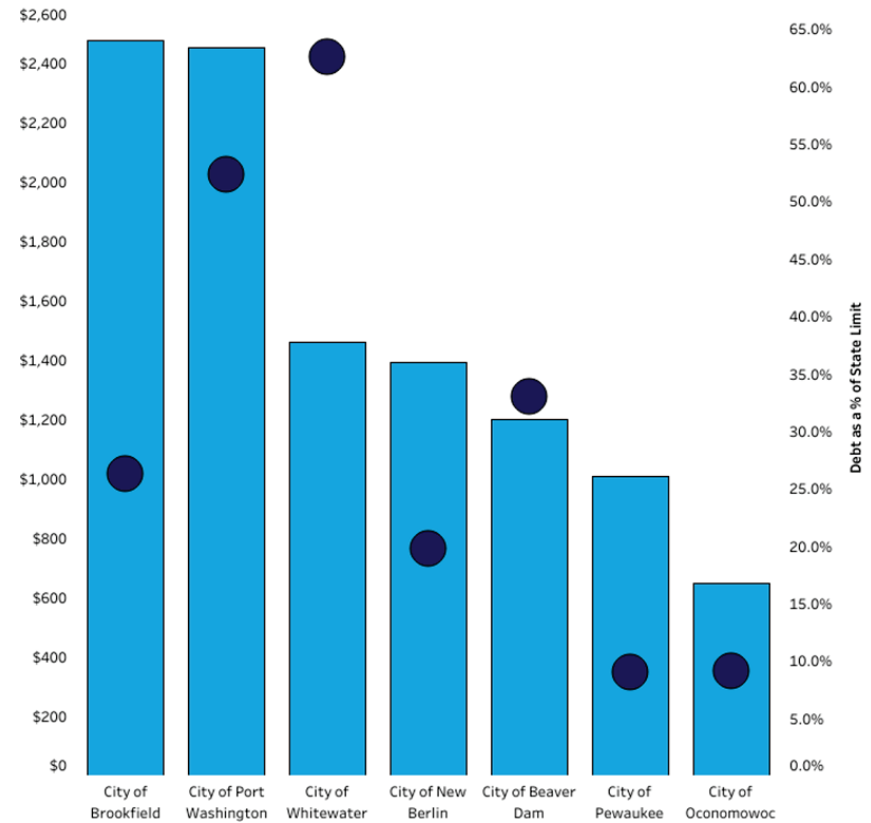
Existing Debt					Proposed Debt											
Year Ending	Projected Equalized Value	Existing Principal Outstanding	% of Limit	2022 G.O. Notes	2022 G.O. Bonds	Proposed 2024 G.O. Bonds	2025 G.O. Bonds	2026 G.O. Bonds	Combined Principal: Existing & Proposed	% of Limit	Direct Debt Burden	Debt Per Capita (1% growth)	Assessment	Residual Capacity	Year Ending	
2022	3,847,789,800	192,389,490	17,137,355	9%	11,205,000	27,745,000			\$56,087,355	29%	1.46%	\$3,518	Strong	\$136,302,135	2022	
2023	3,957,497,564	197,874,878	15,201,055	8%	11,005,000	27,185,000			\$53,391,055	27%	1.35%	\$3,315	Strong	\$144,483,823	2023	
2024	4,070,333,304	203,516,665	13,354,179	7%	10,115,000	26,545,000	2,715,000		\$52,729,179	26%	1.30%	\$3,242	Strong	\$150,787,486	2024	
2025	4,186,386,205	209,319,310	11,661,711	6%	9,155,000	25,880,000	2,635,000	3,540,000	\$52,871,711	25%	1.26%	\$3,218	Strong	\$156,447,599	2025	
2026	4,305,747,992	215,287,400	9,943,635	5%	8,160,000	25,190,000	2,550,000	3,480,000	\$52,863,635	25%	1.23%	\$3,186	Strong	\$162,423,765	2026	
2027	4,428,513,011	221,425,651	8,189,935	4%	7,140,000	24,485,000	2,460,000	3,415,000	\$49,089,935	22%	1.11%	\$2,929	Strong	\$172,335,716	2027	
2028	4,554,778,292	227,738,915	6,625,595	3%	5,860,000	23,750,000	2,355,000	3,275,000	\$45,110,595	20%	0.99%	\$2,665	Strong	\$182,628,320	2028	
2029	4,684,643,635	234,232,182	5,045,596	2%	4,540,000	22,985,000	2,245,000	3,130,000	\$41,030,596	18%	0.88%	\$2,400	Strong	\$193,201,586	2029	
2030	4,818,211,684	240,910,584	3,460,420	1%	3,210,000	22,150,000	2,130,000	2,980,000	\$36,850,420	15%	0.76%	\$2,134	Strong	\$204,060,164	2030	
2031	4,955,588,011	247,779,401	1,870,000	1%	1,870,000	21,230,000	2,010,000	2,825,000	\$32,555,000	13%	0.66%	\$1,867	Very Strong	\$215,224,401	2031	
2032	5,096,881,197	254,844,060	1,085,000	0%	0	19,920,000	1,885,000	2,665,000	\$28,130,000	11%	0.55%	\$1,597	Very Strong	\$226,714,060	2032	
2033	5,242,202,919	262,110,146	865,000	0%	0	18,110,000	1,755,000	2,500,000	\$25,625,000	10%	0.49%	\$1,440	Very Strong	\$236,485,146	2033	
2034	5,391,668,038	269,583,402	635,000	0%	0	16,265,000	1,620,000	2,330,000	\$23,060,000	9%	0.43%	\$1,283	Very Strong	\$246,523,402	2034	
2035	5,545,394,691	277,269,735	405,000	0%		14,380,000	1,480,000	2,145,000	\$20,430,000	7%	0.37%	\$1,126	Very Strong	\$256,839,735	2035	
2036	5,703,504,381	285,175,219	165,000	0%		12,460,000	1,335,000	1,955,000	\$17,740,000	6%	0.31%	\$968	Very Strong	\$267,435,219	2036	
2037	5,866,122,077	293,306,104	75,000	0%		10,500,000	1,185,000	1,760,000	\$15,145,000	5%	0.26%	\$818	Very Strong	\$278,161,104	2037	
2038	6,033,376,311	301,668,816	0	0%		8,495,000	1,030,000	1,560,000	\$12,505,000	4%	0.21%	\$669	Very Strong	\$289,163,816	2038	
2039	6,205,399,280	310,269,964		0%		6,445,000	870,000	1,355,000	\$9,880,000	3%	0.16%	\$523	Very Strong	\$300,389,964	2039	
2040	6,382,326,949	319,116,347		0%		4,350,000	705,000	1,145,000	\$7,195,000	2%	0.11%	\$377	Very Strong	\$311,921,347	2040	
2041	6,564,299,160	328,214,958		0%		2,210,000	535,000	930,000	\$4,450,000	1%	0.07%	\$231	Very Strong	\$323,764,958	2041	
2042	6,751,459,744	337,572,987		0%			360,000	710,000	\$1,620,000	0%	0.02%	\$83	Very Strong	\$335,952,987	2042	
2043	6,943,956,629	347,197,831		0%			180,000	485,000	\$985,000	0%	0.01%	\$50	Very Strong	\$346,212,831	2043	
2044	7,141,941,965	357,097,098		0%			0	255,000	\$340,000	0%	0.00%	\$17	Very Strong	\$356,757,098	2044	
2045	7,345,572,237	367,278,612		0%			0	0	\$61,000	0%	0.00%	\$3	Very Strong	\$367,217,612	2045	

Peer Comparison

Custom Comparison: Fund Balance Per Capita (Bars) vs. as % of Net Operating Spending (Dots)



Custom Comparison: Debt Per Capita (Bars) vs. as % of State Limit (Dots)

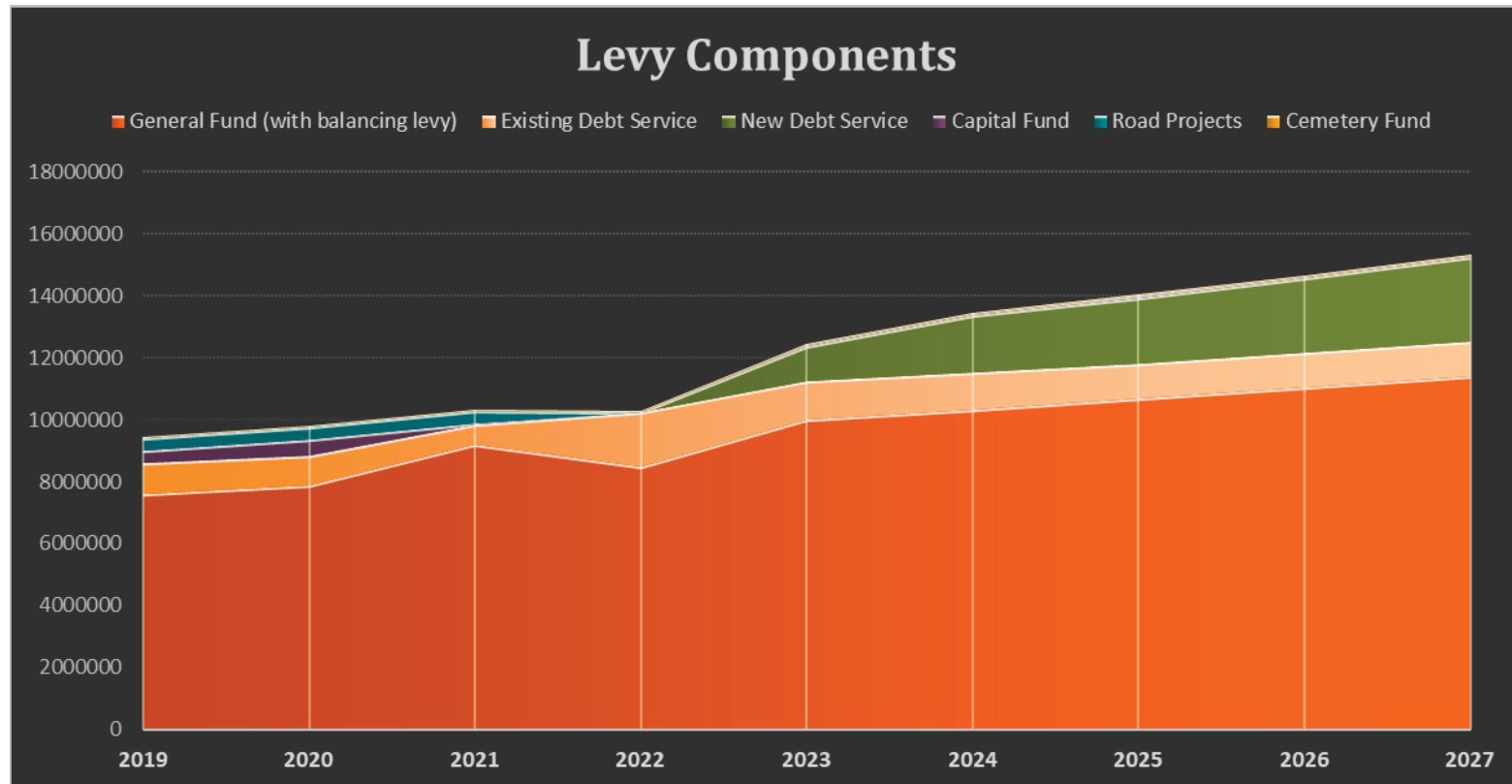


Source: Wisconsin Policy Forum, MuniTool 2021

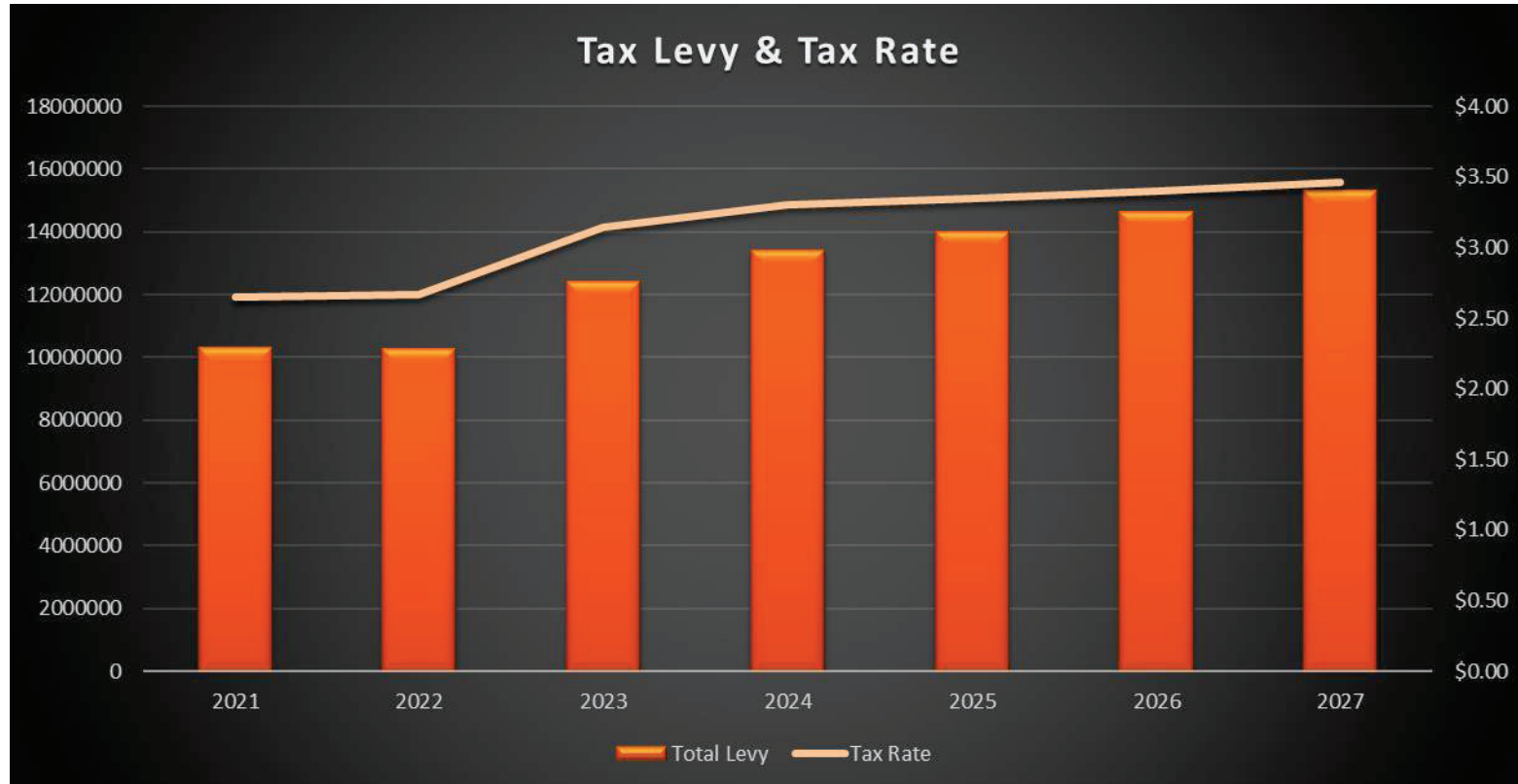
Levy Projection

	Actual			Budget 2022	Projected				
	2019	2020	2021		2023	2024	2025	2026	2027
General Fund (with balancing levy)	7,585,830	7,897,815	9,207,574	8,492,105	9,999,398	10,335,446	10,679,477	11,031,700	11,392,332
Existing Debt Service	1,000,000	930,802	636,269	1,754,524	1,241,070	1,180,676	1,130,749	1,120,499	1,119,850
New Debt Service	-	-	-	-	1,106,783	1,830,888	2,132,398	2,401,529	2,731,567
Capital Fund	425,000	525,000	50,000	-	50,000	50,000	50,000	50,000	50,000
Road Projects	400,000	400,000	-	-	-	-	-	-	-
Cemetery Fund	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
TOTAL PROPERTY TAX LEVY	9,445,830	9,788,617	9,928,843	10,281,629	12,432,251	13,432,010	14,027,624	14,638,729	15,328,749
Change in Levy		4%	1%	4%	21%	8%	4%	4%	5%
City Taxes on \$400000 home	\$ 1,133.51	\$ 1,110.40	\$ 1,061.59	\$ 1,068.83	\$ 1,256.58	\$ 1,319.99	\$ 1,340.31	\$ 1,359.92	\$ 1,384.55
EQUALIZED VALUE (TID OUT)	3,333,311,300	3,526,148,000	3,741,123,300	3,847,789,800	3,957,497,564	4,070,333,304	4,186,386,205	4,305,747,992	4,428,513,011
TAX RATE	\$2.83	\$2.78	\$2.65	\$2.67	\$3.14	\$3.30	\$3.35	\$3.40	\$3.46
TAX RATE - General Fund	\$2.28	\$2.24	\$2.46	\$2.21	\$2.53	\$2.54	\$2.55	\$2.56	\$2.57
TAX RATE - Debt Service	\$0.30	\$0.26	\$0.17	\$0.46	\$0.59	\$0.74	\$0.78	\$0.82	\$0.87

Levy Projection (cont)



Levy Projection (cont)



Levy Limits

Levy Year Calendar/Budget Year	2021 2022	2022 2023	2023 2024	2024 2025	2025 2026	2026 2027
Line	Actual	Projected	Projected	Projected	Projected	Projected
Prior Year's Actual Levy	9,928,842	10,281,629	12,432,251	13,432,010	14,027,624	14,638,729
Prior Year's Personal Property Aid	150,106					
1 Prior Year's Actual Levy plus Personal Property Aid	10,078,948	10,281,629	12,432,251	13,432,010	14,027,624	14,638,729
2 Exclude Prior Year Levy for Unreimbursed Emergency Expenses	0	0	0	0	0	0
3 Exclude Prior Year Levy for G.O. Debt Authorized After July 1, 2005	(1,397,656)	(1,753,641)	(2,347,853)	(3,011,564)	(3,263,147)	(3,522,029)
4 Adjusted Actual Levy	8,681,292	8,527,988	10,084,398	10,420,446	10,764,477	11,116,700
Net New Construction						
Enter Assumed Net New Construction Percentage	0.857%	0.900%	0.900%	0.900%	0.900%	0.900%
Applied to Prior Year Adjusted Actual Levy	74,399	76,752	90,760	93,784	96,880	100,050
Less: Next Year's Personal Property Aid	0	0	0	0	0	150,106
Levy Limit Before Adjustments	8,755,691	8,604,740	10,175,157	10,514,230	10,861,357	11,216,750
A Increase for Unused Prior Year Levy (Carry Over)		51,408	0	0	0	0
Accept Carryover Amount?	No	No	No	No	No	No
E Debt Service for G.O. Debt Authorized After July 1, 2005	1,753,641	2,347,853	3,011,564	3,263,147	3,522,029	3,851,417
Q Total Adjustments	1,753,641	2,347,853	3,011,564	3,263,147	3,522,029	3,851,417
9 Total Adjustments	1,753,641	2,347,853	3,011,564	3,263,147	3,522,029	3,851,417
11 Higher levy approved by Town Electors on a town under 2,000 population Percentage approved	No	No	No	No	No	No
10 Allowable Levy	10,509,332	10,952,593	13,186,721	13,777,377	14,383,386	15,068,167
Actual or Projected levy	10,281,629	12,432,251	13,432,010	14,027,624	14,638,729	15,328,749
Amount Allowable Levy Exceeds Actual Levy	227,703	(1,479,658)	(245,288)	(250,247)	(255,342)	(260,582)
Post July 1, 2005 G.O. Debt		2,347,853	3,011,564	3,263,147	3,522,029	3,851,417

Negative number shows that projected allowable levy exceeds estimated levy needs.

Summary

The General Fund levy has changed drastically over the past 2 years (significant increase in 2021 and decrease in 2022). The City should aim to find stability with the levy to avoid “roller coaster” effect on taxes.

Capital improvement needs have ballooned, and the City will need to invest heavily to meet road and infrastructure improvements. This will have an impact on debt levy and overall debt profile.

Levy limits continue to be a concern, the City has used cash reserves/surplus to offset levy limit pressure in the past, but this is not sustainable. A structural change is recommended in the coming years (increased levy through referendum or decreased expenditures).



Important Disclosures

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**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 5.**

DATE: August 15, 2022

DEPARTMENT: Administration

PROVIDED BY: Nick Fuchs

SUBJECT:

Discussion and Possible Action Related to the Proposed Lindsay Road/Redford Boulevard (CTH F) Intersection Improvements [Fuchs]

BACKGROUND:

Attached are Common Council meeting agenda and minutes where the Lindsay/Redford Intersection was discussed as well as a petition recently submitted to the City listing residents opposed to the R-Cut design.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

Petition against R-Cut
8.19.19 CC Agenda
8.19.2019 CC minutes
3.2.2020 CC Agenda
6.15.2020 CC Agenda
6.15.2020 CC Minutes
8.3.2020 CC Agenda
8.3.2020 CC Minutes
3.15.2021 CC Agenda
3.15.2021 CC Minutes
4.5.2021 CC Agenda
4.5.2021 CC Minutes
6.7.2021 CC Agenda
6.7.2021 CC minutes
3.7.2022 CC Agenda
3.7.2022 CC Minutes

County City Agreement
City Letter of Support for RCUT HSIP Funding
City request for Pedestrian Crossing

RCUT Petition in Favor of an intersection instead of an RCUT at Lindsay Road and Redford Blvd.

#	Vote	First Name	Last Name
1	In Favor of Stoplight, Against RCUT	Jeff	Mierow
2	In Favor of Stoplight, Against RCUT	Phil	Vetterkind
3	In Favor of Stoplight, Against RCUT	Jeff	Hoffman
4	In Favor of Stoplight, Against RCUT	Mark	Newcomer
5	In Favor of Stoplight, Against RCUT	Alexander	Ramsey
6	In Favor of Stoplight, Against RCUT	Brian	Dziwulski
7	In Favor of Stoplight, Against RCUT	Julie	Shannon
8	In Favor of Stoplight, Against RCUT	Michael	Mierow
9	In Favor of Stoplight, Against RCUT	Cara	Petronelli
10	In Favor of Stoplight, Against RCUT	Harrison	Aghjian
11	In Favor of Stoplight, Against RCUT	Frank	DuBois
12	In Favor of Stoplight, Against RCUT	Natalie	Harris
13	In Favor of Stoplight, Against RCUT	Jeff	Bigler
14	In Favor of Stoplight, Against RCUT	Ralph	Druecke
15	In Favor of Stoplight, Against RCUT	James	Scott
16	In Favor of Stoplight, Against RCUT	Bruce	Stops
17	In Favor of Stoplight, Against RCUT	Craig	Bauer
18	In Favor of Stoplight, Against RCUT	Philip	Harris
19	In Favor of Stoplight, Against RCUT	Alex	Urban
20	In Favor of Stoplight, Against RCUT	Chris	Johns
21	In Favor of Stoplight, Against RCUT	Ken	Siedenburg
22	In Favor of Stoplight, Against RCUT	Elijah	Goodman
23	In Favor of Stoplight, Against RCUT	Timothy	Trotier
24	In Favor of Stoplight, Against RCUT	Daniel	Trotier
25	In Favor of Stoplight, Against RCUT	Ella	Bergman
26	In Favor of Stoplight, Against RCUT	Lisa	Reinecke
27	In Favor of Stoplight, Against RCUT	Matt	Siderits
28	In Favor of Stoplight, Against RCUT	Michael	Obrien
29	In Favor of Stoplight, Against RCUT	Atom	Slaby
30	In Favor of Stoplight, Against RCUT	Sean	Coykendall
31	In Favor of Stoplight, Against RCUT	Nikki	Coykendall
32	In Favor of Stoplight, Against RCUT	Terry	Joost
33	In Favor of Stoplight, Against RCUT	Robert	Risch
34	In Favor of Stoplight, Against RCUT	Nageswara R.	Medicherla
35	In Favor of Stoplight, Against RCUT	Rick	Carr
36	In Favor of Stoplight, Against RCUT	Daniel	Turelli
37	In Favor of Stoplight, Against RCUT	Steven	Wyman
38	In Favor of Stoplight, Against RCUT	Laura	Cavaiani

39	In Favor of Stoplight, Against RCUT	Scott	Heyerdahl
40	In Favor of Stoplight, Against RCUT	Jim	Longley
41	In Favor of Stoplight, Against RCUT	Derek	Wienczek
42	In Favor of Stoplight, Against RCUT	Theresa	Zastrow
43	In Favor of Stoplight, Against RCUT	Sean	Sullivan
44	In Favor of Stoplight, Against RCUT	David	Linsmeier
45	In Favor of Stoplight, Against RCUT	Mark	Porter
46	In Favor of Stoplight, Against RCUT	Joanne	Carr
47	In Favor of Stoplight, Against RCUT	Nelson	Williams
48	In Favor of Stoplight, Against RCUT	Dana	Riemer
49	In Favor of Stoplight, Against RCUT	Andi	Bezhani
50	In Favor of Stoplight, Against RCUT	Chris	Wenzler
51	In Favor of Stoplight, Against RCUT	Breann	Mila
52	In Favor of Stoplight, Against RCUT	Domenico	Ferrante
53	In Favor of Stoplight, Against RCUT	Paul	Grzeszczak
54	In Favor of Stoplight, Against RCUT	Melissa	Bansemar
55	In Favor of Stoplight, Against RCUT	Anthony M.	Ash
56	In Favor of Stoplight, Against RCUT	Caitlin	LaJoie
57	In Favor of Stoplight, Against RCUT	Meg	Shad
58	In Favor of Stoplight, Against RCUT	David	Bever
59	In Favor of Stoplight, Against RCUT	Nathan	Kreger
60	In Favor of Stoplight, Against RCUT	Wayne	Slawson
61	In Favor of Stoplight, Against RCUT	Ashley	Schmidt
62	In Favor of Stoplight, Against RCUT	Dena	Laufenberg
63	In Favor of Stoplight, Against RCUT	Joanna	Jaeget
64	In Favor of Stoplight, Against RCUT	Kaitlyn	Pfeiffer
65	In Favor of Stoplight, Against RCUT	Jennifer	Lange
66	In Favor of Stoplight, Against RCUT	Brian	Miller
67	In Favor of Stoplight, Against RCUT	Vashisth	Sharma
68	In Favor of Stoplight, Against RCUT	Monuj	Nath
69	In Favor of Stoplight, Against RCUT	Dawn	Pfeiffer
70	In Favor of Stoplight, Against RCUT	Michael	Johnson
71	In Favor of Stoplight, Against RCUT	Natalie	Carleton
72	In Favor of Stoplight, Against RCUT	Laureen	Hoeft
73	In Favor of Stoplight, Against RCUT	Cliff	Buelow
74	In Favor of Stoplight, Against RCUT	Katy	Williams
75	In Favor of Stoplight, Against RCUT	Stacie	Krueger
76	In Favor of Stoplight, Against RCUT	Tyler	Guetschow
77	In Favor of Stoplight, Against RCUT	Kristine	Sprung
78	In Favor of Stoplight, Against RCUT	Tony	Maglio
79	In Favor of Stoplight, Against RCUT	Steve	Sprung
80	In Favor of Stoplight, Against RCUT	Jennifer	Kuglitsch
81	In Favor of Stoplight, Against RCUT	Kellie	Swearingen

82	In Favor of Stoplight, Against RCUT	Laura	Grebe
83	In Favor of Stoplight, Against RCUT	Susan	Buth
84	In Favor of Stoplight, Against RCUT	Muky	Ozieh
85	In Favor of Stoplight, Against RCUT	Brian	Schwartz
86	In Favor of Stoplight, Against RCUT	Lata	Naidu
87	In Favor of Stoplight, Against RCUT	Bryan	Bremberger
88	In Favor of Stoplight, Against RCUT	Beth	Kissner
89	In Favor of Stoplight, Against RCUT	Meg	Greco
90	In Favor of Stoplight, Against RCUT	Cherri	Hohnke
91	In Favor of Stoplight, Against RCUT	Stephanie	Schrandt
92	In Favor of Stoplight, Against RCUT	Matt	Carleton
93	In Favor of Stoplight, Against RCUT	Juliet	Mock
94	In Favor of Stoplight, Against RCUT	Chris	Plant
95	In Favor of Stoplight, Against RCUT	Sandra	Carlo
96	In Favor of Stoplight, Against RCUT	Sara	Klipstein
97	In Favor of Stoplight, Against RCUT	Brianne	Ortega
98	In Favor of Stoplight, Against RCUT	Katrina	Auton
99	In Favor of Stoplight, Against RCUT	Melanie	Metzler
100	In Favor of Stoplight, Against RCUT	Nadine	Dworian
101	In Favor of Stoplight, Against RCUT	Alaina	Zurawski
102	In Favor of Stoplight, Against RCUT	Jennifer	Weston
103	In Favor of Stoplight, Against RCUT	Irfanullah	Mohammed
104	In Favor of Stoplight, Against RCUT	Matthew	Scallan
105	In Favor of Stoplight, Against RCUT	Priya	Duba
106	In Favor of Stoplight, Against RCUT	Craig	English
107	In Favor of Stoplight, Against RCUT	Katherine	Scallan
108	In Favor of Stoplight, Against RCUT	Brooke	Spitzner
109	In Favor of Stoplight, Against RCUT	Melissa	Buesing
110	In Favor of Stoplight, Against RCUT	Jane E.	Beversdorf
111	In Favor of Stoplight, Against RCUT	Michael	Cianciolo
112	In Favor of Stoplight, Against RCUT	Nancy	Cianciolo
113	In Favor of Stoplight, Against RCUT	Chuck	Swearingen
114	In Favor of Stoplight, Against RCUT	Wendy	Sandberg
115	In Favor of Stoplight, Against RCUT	Lisa	Barnekow
116	In Favor of Stoplight, Against RCUT	Phil	Barnekow
117	In Favor of Stoplight, Against RCUT	Vanessa	Wylar
118	In Favor of Stoplight, Against RCUT	Meena	Srinivasan
119	In Favor of Stoplight, Against RCUT	Angela	Johnson
120	In Favor of Stoplight, Against RCUT	Rich	Beversdorf
121	In Favor of Stoplight, Against RCUT	Kate	English
122	In Favor of Stoplight, Against RCUT	Pavan	J.
123	In Favor of Stoplight, Against RCUT	Ellen	Mueller
124	In Favor of Stoplight, Against RCUT	Craig	Wesemann

125	In Favor of Stoplight, Against RCUT	Val	Ballogh
126	In Favor of Stoplight, Against RCUT	Michael	Byrne
127	In Favor of Stoplight, Against RCUT	Donna	Slawson
128	In Favor of Stoplight, Against RCUT	Christina	Jauregui
129	In Favor of Stoplight, Against RCUT	Dena	Fura
130	In Favor of Stoplight, Against RCUT	Steve	Hasler
131	In Favor of Stoplight, Against RCUT	Frederic	Lindenstruth
132	In Favor of Stoplight, Against RCUT	Scott	Pudwell
133	In Favor of Stoplight, Against RCUT	Carly	Schneider
134	In Favor of Stoplight, Against RCUT	Julie	Fiedler
135	In Favor of Stoplight, Against RCUT	Scott	Mahloch
136	In Favor of Stoplight, Against RCUT	Anthony	Scott
137	In Favor of Stoplight, Against RCUT	Brigitte	Glinski
138	In Favor of Stoplight, Against RCUT	Deborah	Gerlach
139	In Favor of Stoplight, Against RCUT	Deanna	Braman
140	In Favor of Stoplight, Against RCUT	Tricia	Tarwater
141	In Favor of Stoplight, Against RCUT	Cynthia	Dusel
142	In Favor of Stoplight, Against RCUT	Brianne	Haust
143	In Favor of Stoplight, Against RCUT	Jeffrey	Rouse
144	In Favor of Stoplight, Against RCUT	Sarah	Mahloch
145	In Favor of Stoplight, Against RCUT	Athena	Alwan
146	In Favor of Stoplight, Against RCUT	Colin	Fiedler
147	In Favor of Stoplight, Against RCUT	Sarah	kloeffer
148	In Favor of Stoplight, Against RCUT	Scott	Curwick
149	In Favor of Stoplight, Against RCUT	Josh	Deitrich
150	In Favor of Stoplight, Against RCUT	Stephanie	Haen
151	In Favor of Stoplight, Against RCUT	Melinda	Haas
152	In Favor of Stoplight, Against RCUT	Sally	Nordstrom
153	In Favor of Stoplight, Against RCUT	Tom	Gerlach
154	In Favor of Stoplight, Against RCUT	Michael	Ruka
155	In Favor of Stoplight, Against RCUT	Blaise	Janowski
156	In Favor of Stoplight, Against RCUT	Aaron	Sleight
157	In Favor of Stoplight, Against RCUT	Andrea	Bergman
158	In Favor of Stoplight, Against RCUT	Cole	Bergman
159	In Favor of Stoplight, Against RCUT	Sally	Bergman
160	In Favor of Stoplight, Against RCUT	Bethany	Seaver
161	In Favor of Stoplight, Against RCUT	Ayhan	Sinay
162	In Favor of Stoplight, Against RCUT	Jerome	Guidinger
163	In Favor of Stoplight, Against RCUT	Mary	Lippert
164	In Favor of Stoplight, Against RCUT	Carolynn	
165	In Favor of Stoplight, Against RCUT	Terry	Kuske
166	In Favor of Stoplight, Against RCUT	Charles	Lippert
167	In Favor of Stoplight, Against RCUT	Frank	Cimermancic

168	In Favor of Stoplight, Against RCUT	Kim	Turmel
169	In Favor of Stoplight, Against RCUT	Shasta	Newton
170	In Favor of Stoplight, Against RCUT	Jeffrey	Buth
171	In Favor of Stoplight, Against RCUT	Venkata	Chava
172	In Favor of Stoplight, Against RCUT	Jean	Stickles
173	In Favor of Stoplight, Against RCUT	John	Reinders
174	In Favor of Stoplight, Against RCUT	Kathy	Reinders
175	In Favor of Stoplight, Against RCUT	Brian	Latus
176	In Favor of Stoplight, Against RCUT	Jennifer	Olkwitz
177	In Favor of Stoplight, Against RCUT	Michael	Olkwitz
178	In Favor of Stoplight, Against RCUT	David	Newton
179	In Favor of Stoplight, Against RCUT	David	Dercks
180	In Favor of Stoplight, Against RCUT	Norma	Dercks
181	In Favor of Stoplight, Against RCUT	Gordon	Stickles
182	In Favor of Stoplight, Against RCUT	Danae	Zugno
183	In Favor of Stoplight, Against RCUT	Chrissy	Roth
184	In Favor of Stoplight, Against RCUT	Neal	Aitchison
185	In Favor of Stoplight, Against RCUT	Andrew	Johnson
186	In Favor of Stoplight, Against RCUT	Dan	Roth
187	In Favor of Stoplight, Against RCUT	Mike	Glinski
188	In Favor of Stoplight, Against RCUT	Doug	Loretto
189	In Favor of Stoplight, Against RCUT	Kurt	Spitzner
190	In Favor of Stoplight, Against RCUT	Jim	Schweitzer
191	In Favor of Stoplight, Against RCUT	McKenzie	Schweitzer
192	In Favor of Stoplight, Against RCUT	David	Pine
193	In Favor of Stoplight, Against RCUT	Jen	Pine
194	In Favor of Stoplight, Against RCUT	Gwenn	Robinson
195	In Favor of Stoplight, Against RCUT	Robert	Ertl
196	In Favor of Stoplight, Against RCUT	Lindsay	Bremberger
197	In Favor of Stoplight, Against RCUT	Jonathan	Martin
198	In Favor of Stoplight, Against RCUT	Christopher	Heer
199	In Favor of Stoplight, Against RCUT	Cathy	Mierow
200	In Favor of Stoplight, Against RCUT	Jianghong	Ertl
201	In Favor of Stoplight, Against RCUT	Keith E.	Jones
202	In Favor of Stoplight, Against RCUT	Nancy	Jones
203	In Favor of Stoplight, Against RCUT	Jillian	Kissinger
204	In Favor of Stoplight, Against RCUT	Christopher	Sterling
205	In Favor of Stoplight, Against RCUT	Paul J.	Katers
206	In Favor of Stoplight, Against RCUT	Jason	Arbes
207	In Favor of Stoplight, Against RCUT	Leah	Arbes
208	In Favor of Stoplight, Against RCUT	Eric	Metzler
209	In Favor of Stoplight, Against RCUT	Toby	Prestegaard
210	In Favor of Stoplight, Against RCUT	Maria	Tullis

211	In Favor of Stoplight, Against RCUT	Tim	Pinnow
212	In Favor of Stoplight, Against RCUT	Cindy	Pinnow
213	In Favor of Stoplight, Against RCUT	Evah	Pinnow
214	In Favor of Stoplight, Against RCUT	Leah	Pinnow
215	In Favor of Stoplight, Against RCUT	Sandy	Pinnow
216	In Favor of Stoplight, Against RCUT	Dan	Schamerhorn
217	In Favor of Stoplight, Against RCUT	Nancy	Schamerhorn
218	In Favor of Stoplight, Against RCUT	Peter	Doval
219	In Favor of Stoplight, Against RCUT	Deanne	Doval
220	In Favor of Stoplight, Against RCUT	Sarah	Kult
221	In Favor of Stoplight, Against RCUT	Brenda	Miller
222	In Favor of Stoplight, Against RCUT	Michael	Moscicki
223	In Favor of Stoplight, Against RCUT	Kimmy	Moscicki
224	In Favor of Stoplight, Against RCUT	Joel	Weber
225	In Favor of Stoplight, Against RCUT	Kevin	Rogowski
226	In Favor of Stoplight, Against RCUT	Laura	Latus
227	In Favor of Stoplight, Against RCUT	Donald	Hrbacek
228	In Favor of Stoplight, Against RCUT	Loraine	Hrbacek
229	In Favor of Stoplight, Against RCUT	Danielle	Robertson-Rath
230	In Favor of Stoplight, Against RCUT	Kristin	Matter
231	In Favor of Stoplight, Against RCUT	Randy	Felber
232	In Favor of Stoplight, Against RCUT	Kimberly	Hughes
233	In Favor of Stoplight, Against RCUT	Sigal	Fadumiye
234	In Favor of Stoplight, Against RCUT	Davis	Bergman
235	In Favor of Stoplight, Against RCUT	Jeanne	Biever
236	In Favor of Stoplight, Against RCUT	Kurt	Nettesheim
237	In Favor of Stoplight, Against RCUT	Katie	Nettesheim
238	In Favor of Stoplight, Against RCUT	Adam	Angiulli
239	In Favor of Stoplight, Against RCUT	Mia	Rogowski
240	In Favor of Stoplight, Against RCUT	Madison	Barnes
241	In Favor of Stoplight, Against RCUT	Chester	Locke
242	In Favor of Stoplight, Against RCUT	Linda	Locke
243	In Favor of Stoplight, Against RCUT	Tom	Dwyer
244	In Favor of Stoplight, Against RCUT	Julie	Dwyer
245	In Favor of Stoplight, Against RCUT	James	Mantes
246	In Favor of Stoplight, Against RCUT	Jennifer	Graham
247	In Favor of Stoplight, Against RCUT	Kimberly	Forsmo
248	In Favor of Stoplight, Against RCUT	Bill	Graham
249	In Favor of Stoplight, Against RCUT	Abby	Buth
250	In Favor of Stoplight, Against RCUT	Katlyn	
251	In Favor of Stoplight, Against RCUT	Tracy	Rogowski
252	In Favor of Stoplight, Against RCUT	Job	Dittmer
253	In Favor of Stoplight, Against RCUT	Christa	Buth

254	In Favor of Stoplight, Against RCUT	Carol	Pelzman
255	In Favor of Stoplight, Against RCUT	John	Dugger
256	In Favor of Stoplight, Against RCUT	Lindsay	Rybold
257	In Favor of Stoplight, Against RCUT	Amber	Essenmacher
258	In Favor of Stoplight, Against RCUT	Brian	Essenmacher
259	In Favor of Stoplight, Against RCUT	Joe	Greco
260	In Favor of Stoplight, Against RCUT	Karly	Gaulke
261	In Favor of Stoplight, Against RCUT	Richa	Verma
262	In Favor of Stoplight, Against RCUT	Vijay	Kumar
263	In Favor of Stoplight, Against RCUT	Michael	Lecher
264	In Favor of Stoplight, Against RCUT	Eric	Rybold
265	In Favor of Stoplight, Against RCUT	Justin	Kutney
266	In Favor of Stoplight, Against RCUT	Nicholas	Haen
267	In Favor of Stoplight, Against RCUT	Tanya	Dec
268	In Favor of Stoplight, Against RCUT	Rebecca	David
269	In Favor of Stoplight, Against RCUT	Douglas	Nettesheim
270	In Favor of Stoplight, Against RCUT	Sandra L.	Dengel
271	In Favor of Stoplight, Against RCUT	Danielle	Galati
272	In Favor of Stoplight, Against RCUT	Sarah	Fastner
273	In Favor of Stoplight, Against RCUT	Mark	Stirn
274	In Favor of Stoplight, Against RCUT	Tara	Kutney
275	In Favor of Stoplight, Against RCUT	Patricia	Salamone
276	In Favor of Stoplight, Against RCUT	Randall	Schmidt
277	In Favor of Stoplight, Against RCUT	Susan	Schmidt
278	In Favor of Stoplight, Against RCUT	Greg	Stanton
279	In Favor of Stoplight, Against RCUT	Lynn	Stanton
280	In Favor of Stoplight, Against RCUT	Lovie	Jambois
281	In Favor of Stoplight, Against RCUT	Tom	Jambois
282	In Favor of Stoplight, Against RCUT	Katie	Mierow
283	In Favor of Stoplight, Against RCUT	Nick	Stencel
284	In Favor of Stoplight, Against RCUT	Amy	Knzpeter
285	In Favor of Stoplight, Against RCUT	Joseph	McDonell
286	In Favor of Stoplight, Against RCUT	Melissa	McDonell
287	In Favor of Stoplight, Against RCUT	Aubrey	McDonell
288	In Favor of Stoplight, Against RCUT	Gordon	Kalusche
289	In Favor of Stoplight, Against RCUT	Gloria	Kalusche
290	In Favor of Stoplight, Against RCUT	Bridget	Larson
291	In Favor of Stoplight, Against RCUT	Luke	Larson
292	In Favor of Stoplight, Against RCUT	David	Valderrama
293	In Favor of Stoplight, Against RCUT	Danielle	Valderrama
294	In Favor of Stoplight, Against RCUT	Will	Haas
295	In Favor of Stoplight, Against RCUT	Theresa	Benko
296	In Favor of Stoplight, Against RCUT	Amanda	Dekan

297	In Favor of Stoplight, Against RCUT	Chad	Feil
298	In Favor of Stoplight, Against RCUT	Kathryn	Stutzman
299	In Favor of Stoplight, Against RCUT	Rebecca	Lachowin
300	In Favor of Stoplight, Against RCUT	Justin	Lachowin
301	In Favor of Stoplight, Against RCUT	John	Bergman
302	In Favor of Stoplight, Against RCUT	Delila	DuBois
303	In Favor of Stoplight, Against RCUT	Fred	DuBois
304	In Favor of Stoplight, Against RCUT	Denise	Mierow
305	In Favor of Stoplight, Against RCUT	Thomas	Kumerow
306	In Favor of Stoplight, Against RCUT	Robert	Kurtz
307	In Favor of Stoplight, Against RCUT	Maija	Kurtz
308	In Favor of Stoplight, Against RCUT	Tom	Langer
309	In Favor of Stoplight, Against RCUT	Gail	Langer
310	In Favor of Stoplight, Against RCUT	Kristine	Harris
311	In Favor of Stoplight, Against RCUT	Peter	Kissinger
312	In Favor of Stoplight, Against RCUT	Andrew	Czekalski
313	In Favor of Stoplight, Against RCUT	Cheryl	King
314	In Favor of Stoplight, Against RCUT	Vicki	Shiroda
315	In Favor of Stoplight, Against RCUT	Eric Johnson	Johnson
316	In Favor of Stoplight, Against RCUT	Dan	Brown
317	In Favor of Stoplight, Against RCUT	Shelly	Brown
318	In Favor of Stoplight, Against RCUT	William	Bird
319	In Favor of Stoplight, Against RCUT	Rachel	Treep
320	In Favor of Stoplight, Against RCUT	Tom	Kissner
321	In Favor of Stoplight, Against RCUT	Marie	Dittmer
322	In Favor of Stoplight, Against RCUT	Al	Wickland
323	In Favor of Stoplight, Against RCUT	Mike	Stern
324	In Favor of Stoplight, Against RCUT	John	Dehring
325	In Favor of Stoplight, Against RCUT	Sean	Hicks
326	In Favor of Stoplight, Against RCUT	Robin	Hicks
327	In Favor of Stoplight, Against RCUT	Susan	Wickland
328	In Favor of Stoplight, Against RCUT	Richard	Borenitsch
329	In Favor of Stoplight, Against RCUT	Michael	Borenitsch
330	In Favor of Stoplight, Against RCUT	Jennifer	Klein-Lazare
331	In Favor of Stoplight, Against RCUT	Jeff	Turmel
332	In Favor of Stoplight, Against RCUT	Jim	LaTourette
333	In Favor of Stoplight, Against RCUT	Jena	Hicks
334	In Favor of Stoplight, Against RCUT	William	Nordstrom
335	In Favor of Stoplight, Against RCUT	Kari	Stern
336	In Favor of Stoplight, Against RCUT	Justin	Hilgemann
337	In Favor of Stoplight, Against RCUT	Abhijeet	Khangar
338	In Favor of Stoplight, Against RCUT	Mike	Koepp
339	In Favor of Stoplight, Against RCUT	Mike	Bogard

340	In Favor of Stoplight, Against RCUT	Alison	Couch
341	In Favor of Stoplight, Against RCUT	Jill	Purko
342	In Favor of Stoplight, Against RCUT	Justin	Kienast
343	In Favor of Stoplight, Against RCUT	Jared	Aurand
344	In Favor of Stoplight, Against RCUT	Toni	Wagner
345	In Favor of Stoplight, Against RCUT	Aubree	Spitzner
346	In Favor of Stoplight, Against RCUT	Kendall	Spitzner
347	In Favor of Stoplight, Against RCUT	Krystina	Kienast
348	In Favor of Stoplight, Against RCUT	Keaton	White
349	In Favor of Stoplight, Against RCUT	Alex	Janowski
350	In Favor of Stoplight, Against RCUT	Holley	Tolat
351	In Favor of Stoplight, Against RCUT	Jill	Schultz
352	In Favor of Stoplight, Against RCUT	Brian	Schultz
353	In Favor of Stoplight, Against RCUT	Mike	Monfeli
354	In Favor of Stoplight, Against RCUT	Christopher	Hake
355	In Favor of Stoplight, Against RCUT	Shawn	Hake
356	In Favor of Stoplight, Against RCUT	Miranda	Woolf
357	In Favor of Stoplight, Against RCUT	Jerry	Fleming
358	In Favor of Stoplight, Against RCUT	Christopher M. Foley	
359	In Favor of Stoplight, Against RCUT	Cameron	Woolf
360	In Favor of Stoplight, Against RCUT	Carsten	Hink
361	In Favor of Stoplight, Against RCUT	Dan	Rieves
362	In Favor of Stoplight, Against RCUT	Shea	Hughes
363	In Favor of Stoplight, Against RCUT	Robert	Myhre
364	In Favor of Stoplight, Against RCUT	Erin	Cintron

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 7.**

DATE: August 19, 2019

DEPARTMENT: PW - Engineering

PROVIDED BY: Jeffrey Weigel, PE Public Works Director

SUBJECT:

Discussion and Possible Action to Authorize and Pay for the Intersection Safety Study of Lindsay Road and CTH F (Redford Blvd.) as a Part of Their Overall Intersection Safety Study this Year [Weigel]

BACKGROUND:

Over the past several years, citizens and Alderpersons have asked us to investigate installing traffic signals in the CTH F & Lindsay Road intersection. I was recently asked by a representative of the Victoria Station homeowners association how to start the process to get signals in the intersection, and I said it has been discussed over the years but not followed through. I suggested contacting the Alderpersons representing the district as well as the Waukesha County Supervisor for the district, both of whom would be important for support at their respective agencies. County Supervisor Swan contacted Waukesha County DPW, and found that similar safety studies were underway in other County intersections. Administratively, the County could add our request as an addendum to their current study agreement, and I indicated that I thought Pewaukee would be willing to fund this additional study work (\$4,984.00). If the Council were to authorize this funding this year, the work would be completed by the end of fall, 2019.

FINANCIAL IMPACT:

We do not have any account specific to traffic studies in the current budget. The Council could authorize us to "overspend" our Outside Engineering account or approve funding from another source, such as the Contingency account.

The Outside Engineering account is always a guess at budget time, essentially consisting of Engineering Consultant Fees associated with development review (paid by developers) and the rare non-development engineering function not associated with a capital project (bridge inspections). By using the term "Overspending" the account, I am simply saying that in October 2018, I guessed that we would be spending about \$35,000 on Outside Engineering, not including \$5,000 for this intersection study. As of 7/31/19 we have charged only about \$5,000 of the \$35,000 budgeted in this account and it is unknown, even as of August 2019, what developments will get under construction this year--the two major ones are the Swan View Farms Estates and The Glen at Parkway Ridge.

RECOMMENDED MOTION:

Common Council authorizes the City of Pewaukee to have Waukesha County include the safety analysis of the CTH F & Lindsay Road Intersection as part of their 2019 safety analysis at a cost to the City of \$5,000 to be paid out of the Engineering "Outside Engineering" account.

ATTACHMENTS:

Description

AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT is entered into between **Waukesha County** (Client) and **Traffic Analysis & Design, Inc.** (Engineer), based upon Client's intention to conduct a traffic study at the intersection of CTH L & Lindsay Road in Waukesha County, Wisconsin (the Project) and Client's requirement for certain engineering services in connection with the Project (the Services) which Engineer is prepared to provide.

1. Engineer shall provide the Services described in Attachment A, "Scope of Services", according to Attachment A, "Schedule".
2. Client shall pay Engineer in accordance with Attachment A, "Compensation". Invoices shall be due and payable upon receipt. Invoice amounts not paid within 30 days after receipt shall accrue interest at the rate of 1.5% per month (or the maximum rate permitted by law, if less), with payments applied first to accrued interest and then to unpaid principal.
3. The same degree of care, skill, and diligence shall be exercised in the performance of the Services as is ordinarily possessed and exercised by a member of the same profession, currently practicing, under similar circumstances. No other warranty, express or implied, is included in this Agreement or in any drawing, specification, report, opinion, or other instrument of service, in any form or media, produced in connection with the Services.
4. Engineer shall not be liable to Client for any consequential damages resulting in any way from the performance of the Services. To the fullest extent permitted by law, Engineer's liability under this Agreement shall not exceed Engineer's total compensation actually received under this Agreement.
5. Engineer and Client waive all rights against each other for damages covered by property insurance during and after the completion of the Services.
6. Notwithstanding anything to the contrary in any Attachments hereto, Engineer has no responsibility for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project; or (b) the failure of any contractor, subcontractor, vendor, or other Project participant, not under contract to Engineer, to fulfill contractual responsibilities to Client or to comply with federal, state, or local laws, regulations, and codes.

7. Engineer does not guarantee that proposals, bids, or actual Project costs will not vary from Engineer's cost estimates or that actual schedules will not vary from Engineer's projected schedules.

8. This Agreement may be terminated upon written notice at Client's convenience or by either party in the event of substantial failure by the other party to perform in accordance with the terms of this Agreement. Engineer shall terminate performance of Services on a schedule acceptable to Client, and Client shall pay Engineer for all Services performed and reasonable termination expenses. Paragraphs 4 and 5 shall survive any termination or completion of this Agreement.

9. All documents prepared by Engineer pursuant to this Agreement are instruments of service in respect to the Project. Any use except for the specific purpose intended by this Agreement will be at the user's sole risk and without liability or legal exposure to Engineer. Engineer shall retain its ownership in its data bases, computer software, and other proprietary property. Intellectual property developed, utilized, or modified in the performance of the Services shall remain the property of Engineer.

10. The Services provided for in this Agreement are for the sole use and benefit of Client and Engineer. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than Client and Engineer.

11. Any notice required by this Agreement shall be made in writing to the address specified below:

Client: Waukesha County
515 W Moreland Blvd • AC 220
Waukesha WI 53188

Attn:Carolynn Gellings, PE, Engineering
Services Manager

Engineer: Traffic Analysis & Design, Inc.
N36 W7505 Buchanan Street
Cedarburg, WI 53012

Attn: John A. Bieberitz, P.E., PTOE

IN WITNESS WHEREOF, Client and Engineer have executed this Agreement, effective as of August 6, 2019.

Waukesha County (Client)

By: _____

Title: _____

Date: _____

Traffic Analysis & Design, Inc. (Engineer)

By: 
John A. Bieberitz, P.E., PTOE

Date: 8/6/19

ATTACHMENT A

SCOPE OF SERVICES

Engineer will conduct a traffic study at the intersection of County Trunk Highway (CTH) F and Lindsay Road consisting of traffic counts, traffic operations analysis, traffic signal warrant analysis, crash analysis, and a memorandum documenting the findings and recommendations. Each element of the scope is outlined below.

Task 1 – Data Collection

Engineer will collect traffic turning movement counts at the CTH F and Lindsay Road intersection on a typical weekday from 6 AM to 7 PM. The traffic turning movement counts will be conducted to WisDOT standards with cars, trucks, busses, bikes and pedestrians counted separately per movement in 15-minute intervals. Engineer will collect a photo log, intersection geometric data, and turn bay lengths. The Engineer will compile the traffic count data and geometric data for a base map for the traffic analysis.

Task 2 – Traffic Operations Analysis

Engineer will conduct an intersection operational analysis for the weekday AM and PM peak hours for the CTH F and Lindsay Road intersection for the following scenarios:

- Existing (2019) conditions with two-way-stop-control
- Existing (2019) conditions with traffic signal

Engineer will make recommendations such as turn bay length extensions, additional turn lanes, channelization, traffic control modifications and other improvements required to provide LOS 'D' or better for all traffic movements.

Engineer will conduct a traffic signal warrant analysis for the existing conditions and compare that data to the traffic signal warrant thresholds in the Manual of Uniform Traffic Control Devices (MUTCD) and the WisDOT left turn conflict analysis to determine if a traffic signal is warranted. All traffic volume warrants will be evaluated except for the School Crossing Warrant.

Task 3 – Crash Analysis

Engineer will plot the past five years (2014-2018) of crashes at the CTH F and Lindsay Road intersection. Engineer will review the crash patterns identified in the crash plots and identify potential safety improvement options, including changing the traffic control of the intersection from side-stop control to traffic signal control. Engineer will utilize the crash data to determine the

"Economic Loss" at the intersection due to crashes. Engineer will utilize the crash data, economic loss and potential recommended improvements to determine if the CTH F and Lindsay Road would meet the requirements for HSIP funding.

Task 4 – Report

Engineer will prepare a technical memorandum summarizing the findings of the analysis and recommendations for the next steps.

ADDITIONAL WORK

In-person meetings are not included in the scope of work and would require an amendment.

SCHEDULE

Engineer will complete the traffic study within three weeks of authorization, or sooner if possible.

COMPENSATION

Compensation for the services described above, CLIENT shall pay Engineer a lump sum fee of Four Thousand Nine Hundred and Eighty-Four Dollars (\$4,984.00).

All services not cited in Attachment A, Scope of Services, will be conducted as additional services under an Amendment to this Agreement.

5. Discussion and Possible Action to Authorize the Well #5 Radium Filtration Treatment Design, Equipment Replacement, and Building Addition, and to Re-Program Water/Sewer Capital Plan Accordingly

Mr. Weigel stated Well #5 has had radium type issues that were going to be addressed. He said radium levels vary from time to time and the City's well drifted back into compliance. Mr. Weigel reported it is now drifting out of compliance again. He recommended going through the design process to get a treatment plan in place before the orders are issued from the State again. Mr. Weigel stated \$50,000 was placed in the 2019 budget, but he said he received a proposal for this preliminary design, design, and the bidding process in the amount of \$215,000. He said he estimates the actual project would cost \$2 million. He said he was looking for the Council's authorization to allow him to reprogram funds to move forward with the design and bid process. He assured the Council they would have the ability to either approve the actual project or turn it down.

A motion was made and seconded, (J. Kara, B. Dziwulski) to authorize the preliminary design study and design bidding services at the cost \$215,000 and authorize the reprogramming of funds. Motion Passed: 5-For, 0-Against.

6. Discussion and Possible Action to Allow the Property Located at N32 W22198 Shady Lane (PWC 0912-053) to Connect to the Sanitary Sewer in Hill 'n Dale Circle South Via Easement Across an Adjacent Parcel

Mr. Weigel stated Shady Lane and Shady Nook do not have sewer and water service. He said he received a request from the Zabel family to connect to the sewer. He said they own two lots, one on Shady Lane where their house is, and a vacant lot on the Hill N Dale Circle where the sewer could be accessed. Mr. Weigel stated there are several costs associated with the connection, some of which are the levied reserved capacity assessment and the Hill N Dale interceptor capacity assessment.

A motion was made and seconded, (B. Dziwulski, C. Brown) to authorize the City Attorney to draft a sewer connection agreement for the Zabels similar to the 1997 Brouwer agreement and authorize the Mayor and Clerk to execute the agreement contingent upon the approval of the final form of the agreement by the City Attorney and City Engineer.

Motion Passed: 5-For, 0-Against.

7. Discussion and Possible Action to Authorize and Pay for the Intersection Safety Study of Lindsay Road and CTH F (Redford Blvd.) as a Part of Their Overall Intersection Safety Study this Year

Mr. Weigel stated a representative from the Victoria Station Home Owners Association contacted him asking him to revisit signals in this area. He said he referred him to his district Alderman and County Supervisor Swan. Mr. Weigel stated Supervisor Swan spoke to the County and said they could do the study in the next month or two for \$5,000. He suggested the funds could either come out of the contingency fund or the outside engineering account.

A motion was made and seconded (J. Wamser, R. Grosch) to authorize the study to be paid for from the outside engineering account. There was additional discussion.

Motion Passed: 5-For, 0-Against.

8. Discussion and Possible Action Regarding **Ordinance 19-21** Rezoning the Property Located at N40 W27535 Glacier Road (PWC 0890-999-002) From Rs-2 Single-Family Residential District To Rs-3 Single-Family Residential District and the Property Bearing Tax Key No. PWC 0890-999-007

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 4.**

DATE: March 2, 2020

DEPARTMENT: Public Works

PROVIDED BY: Magdelene Wagner

SUBJECT:

Presentation of Lindsay Road and Redford Boulevard (CTH F) Intersection Study [Wagner / Traffic Analysis and Design, Inc.]

BACKGROUND:

Previously, the Common Council authorized the City to fund an intersection study of Lindsay Road and Redford Boulevard (CTH F) being completed on our behalf by Waukesha County. The study was completed and a draft report provided to the City in November of 2019. See the study attached. Also in November, the Consultant, along with Waukesha County Staff, presented the Study results to City Staff.

On Monday, February 17, 2020, there was another severe accident at this intersection. Waukesha County, the Sheriff's Department, and the Engineering office received follow up phone calls regarding this accident and the status of the intersection study prompting Staff to bring the presentation to the City Common Council. See the attached Study of the Intersection.

The Consultant, Traffic Analysis and Design Inc., will present the attached Power Point Presentation at the meeting. This is a summary of the study mentioned above and he will be able to answer any questions related to the Study and the warrants for intersection improvements according to Federal and State guidelines.

Within the Study, the Consultant recommended an operation analysis of the intersection to ensure an RCUT intersection would work at this intersection. We requested the cost to complete this analysis from the Consultant which is outlined in the attached Agreement. This will review the current conditions and forecast conditions of this intersection to review the design impacts to the intersection as a two-way stop control (current condition) and as an RCUT intersection (recommended design).

In discussions with Waukesha County, they have been supportive, but lack the funding for this project. In addition, since the warrants are not met for any improvements to this intersection, the CTH F function (conveying a large volume of traffic safely in a north/south direction) is met, and alternative access points are located nearby, funding is not likely to be a high priority for this intersection within the County's budget.

FINANCIAL IMPACT:

There is currently no funds budgeted in 2020 for design or construction improvements for this intersection in the City budget nor in the County budget.

In discussions with Waukesha County, their budget programming typically has a 3-5 year window. In addition, the

project would likely include a substantial partnership with the City to assist in the funding of the project.

If the operation analysis by Traffic Analysis & Design, Inc. is authorized, \$2000 will need to be re-allocated to allow for this study. It is recommended these funds be re-allocated from the Roundy's Industrial Park Road project previously authorized to be delayed to 2021.

RECOMMENDED MOTION:

Authorize the Director of Public Works and City Administrator, if desired, to begin discussions with Waukesha County regarding final design of the intersection improvements and establishing funding or other partnership agreements for the intersection improvements .

Authorize Traffic Analysis & Design, Inc. to complete an operation analysis for a reduced-conflict-u-turn (RCUT) configuration in the amount not to exceed \$2000 with funds re-allocated from the previously delayed Roundy's Industrial Park Road project.

ATTACHMENTS:

Description

Lindsay/Redford Intersection Study

Study presentation

Intersection Analysis Agreement



TRAFFIC AND SAFETY INTERSECTION ANALYSIS CTH F AT LINDSAY ROAD

YEARS 2014 - 2019

DATE SUBMITTED: NOVEMBER 7, 2019

PREPARED FOR:

Carolynn Gellings, P.E.

Engineering Services Manager, Waukesha County

Jeffrey Weigel, P.E.

Public Works Director, City of Pewaukee

PREPARED BY:

Traffic Analysis and Design, Inc. (TADI)

P.O. Box 128

Cedarburg, WI 53012

Authors: John Campbell, P.E., RSP₁

Christian R. Sternke, P.E., RSP₁

Phone: (800) 605-3091



Date: November 7, 2019

Technical Memorandum

To: Carolynn Gellings, P.E., Engineering Services Manager, Waukesha County
Jeffrey Weigel, P.E., Public Works Director, City of Pewaukee

From: John Campbell, P.E., RSP₁
Christian R. Sternke, P.E., RSP₁

CC: Bruce Barnes, P.E., Waukesha County
Magdelene Wagner, P.E., Assistant City Engineer, City of Pewaukee

Subject: Traffic and Safety Intersection Analysis
CTH F at Lindsay Road
City of Pewaukee, Waukesha County, Wisconsin

PART A – INTRODUCTION

At the request of the City of Pewaukee, Waukesha County arranged a safety and operational analysis of the County Trunk Highway (CTH) F intersection with Lindsay Road within the City of Pewaukee, Waukesha County, Wisconsin. The traffic study is being conducted to determine if modifications to the roadway geometry and/or traffic control would improve the safety and operations of the intersection. Currently, the intersection observes delays during peak hours on its side-street approaches and has experienced numerous severe right-angle crashes in recent years.

This technical memorandum has been prepared to analyze the intersection under Year 2019 existing traffic conditions.

PART B – EXISTING CONDITIONS

The CTH F intersection with Lindsay Road is located approximately 1.3 miles north of State Trunk Highway (STH) 190/Capitol Drive in the City of Pewaukee, Wisconsin. An aerial map showing the study area intersection is shown in [Figure B1](#) on the following page.

Figure B1
CTH F and Lindsay Road Aerial



CTH F, also designated as Redford Boulevard, is a four-lane north/south divided highway with a posted speed limit of 55 miles per hour (mph) in this area. The Wisconsin Department of Transportation (WisDOT) Year 2018 average annual daily traffic (AADT) volumes on CTH F were approximately 21,200 vehicles per day (vpd) south of Lindsay Road and 26,700-vpd north of Lindsay Road. WisDOT classifies CTH F as a principal arterial.

Figure B2
CTH F Looking North Approaching Lindsay Road



Lindsay Road is a two-lane east/west undivided roadway with a posted speed limit of 35-mph. The WisDOT Year 2018 AADT volumes on Lindsay Road were approximately 1,600-vpd west of CTH F. East of CTH F, WisDOT lists an AADT from Year 2015 of 960-vpd. WisDOT classifies Lindsay Road as a collector road.

Figure B3
Lindsay Road Looking East Approaching CTH F



Based on the 13-hour traffic turning movement count conducted for this study, the entering AADT of the CTH F intersection with Lindsay Road is estimated to be approximately 23,800-vpd.

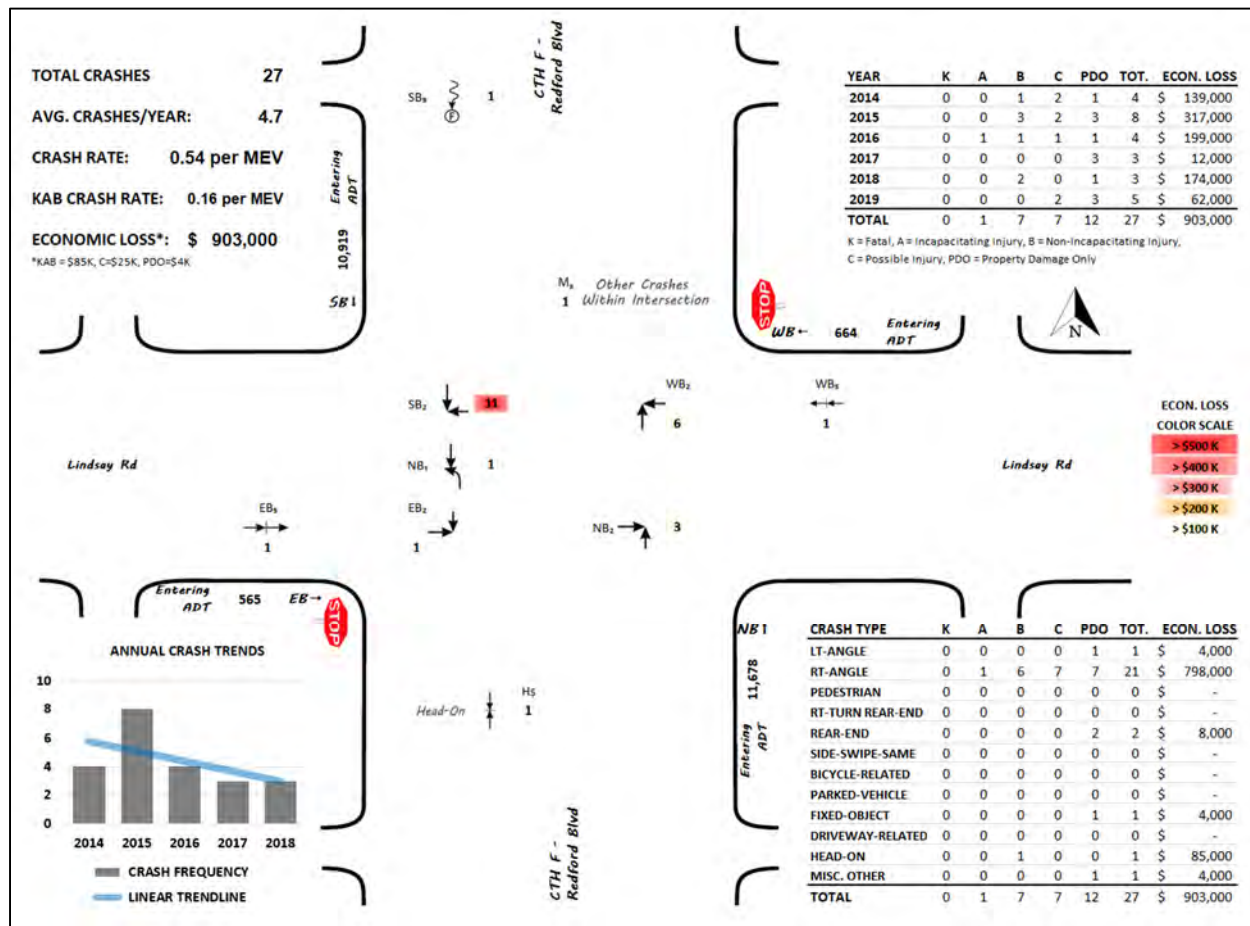
B1. Crash Analysis

A review of the crash records indicated that twenty-seven (27) non-deer crashes occurred at the intersection of CTH F with Lindsay Road between January 2014 and September 2019. The intersection crash rate was calculated to be 0.54 crashes per million entering vehicles (MEV) and the intersection averaged 4.7 crashes per year.

Most concerning at this location is the severity of the crashes observed. Seven (7) crashes resulted in Type C injury, another seven (7) resulted in Type B injury, and one (1) resulted in Type A injury. The remaining crashes (12) resulted in property damage only.

[Figure B4](#) shows the intersection crash plot, while full crash diagram and statistics have been included in the [appendix](#).

Figure B4
Crash Diagram



Seventy eight percent (78%) of the crashes were right-angle crashes. Drivers have difficulty crossing CTH F from Lindsay Road, particularly in the westbound direction where 17 right-angle crashes occurred (11 struck by southbound vehicles and 6 by northbound vehicles). Factors leading to these angle crashes include:

- Lindsay Road drivers misjudging available gaps
- Drivers not seeing oncoming northbound/southbound CTH F vehicles
- The higher speeds of CTH F (55-mph posted speed)

In reviewing the accident report forms, drivers often stated they stopped in the median and did not see the approaching southbound vehicle. Because sight distance is adequate, it is suspected that drivers are overloaded with information navigating this intersection. Furthermore, the high speeds on CTH F increase the likelihood and severity of collisions.

B2. Level of Service Definitions

The study area intersection was analyzed based on the procedures set forth in the *Highway Capacity Manual, 6th Edition* (HCM) using Synchro 10 traffic models. Intersection operation is defined by “level of service”. Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. For the purpose of this study, LOS D has been identified as the acceptable LOS for peak hour operating conditions. It is noted that this threshold is the industry standard for urban areas used by WisDOT and many municipalities. Descriptions of the various levels of service are as follows:

LOS A is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized and unsignalized intersections, average delays are less than 10 seconds.

LOS B represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.

LOS C still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.

LOS D represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.

LOS E represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.

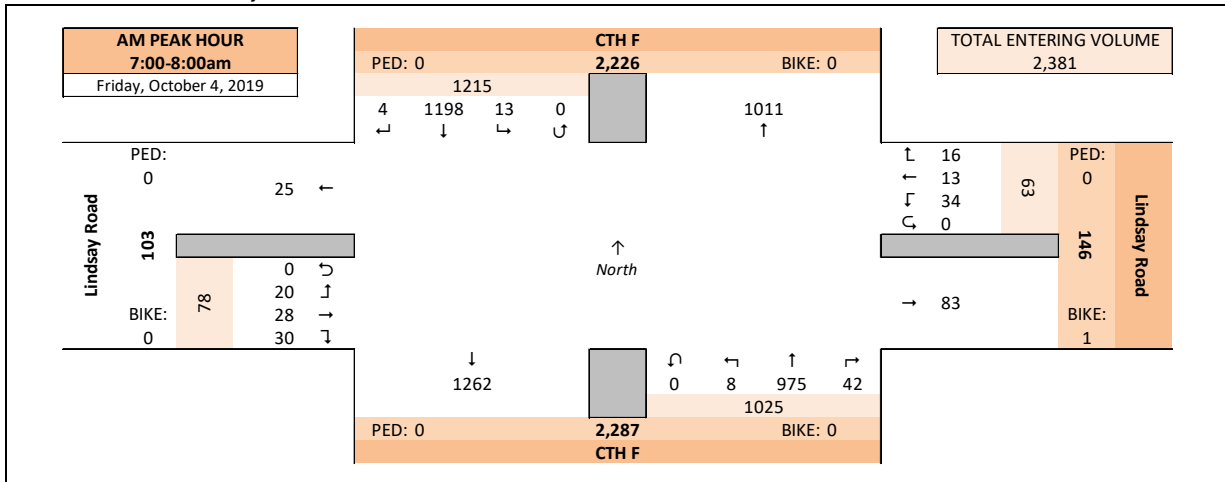
LOS F represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

B3. Year 2019 Existing Traffic Operations – Existing Geometry & Traffic Control

The weekday morning and weekday afternoon peak hours are expected to drive the improvements necessary to adequately accommodate the overall intersection volumes. A thirteen-hour (6:00 am to 7:00 pm) weekday turning movement count was conducted in late-September and early-October of 2019 at the study area intersection. Based on the turning movement counts, the weekday morning and weekday evening peak hours were identified as being 7:00 to 8:00 am and 4:30 to 5:30 pm, respectively. The existing traffic volumes at the study area intersection are shown below for the morning and evening peak hours. The traffic counts used to determine peak hour factors and truck percentages have been included in the [appendix](#) of this study.

Figure B5
Peak Hour Turning Movement Traffic Volumes

AM Peak Hour Summary



PM Peak Hour Summary

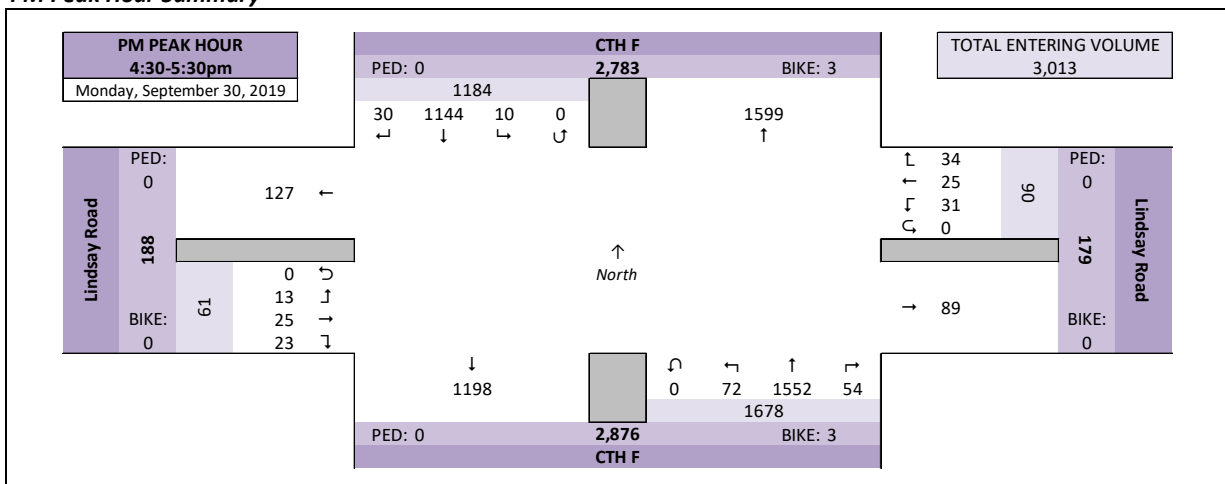


Table B3 shows the results of the Year 2019 existing weekday morning and weekday evening peak hour operational analysis at the study area intersection. The existing intersection geometry and traffic volumes were used for the analysis.

Table B3
Year 2019 Existing Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour		Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
<i>Existing Geometrics with Two-Way Stop Control</i>	AM	LOS	E			D			B	*	*	B	*	*
		Queue	50			40			5	*	*	5	*	*
		Delay	36.4			34.0			12.5	*	*	11.3	*	*
	PM	LOS	F			F			B	*	*	C	*	*
		Queue	95			180			15	*	*	5	*	*
		Delay	96.3			239.0			13.5	*	*	16.7	*	*

(--) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Queue is maximum of the 50th & 95th percentile queue, measured in feet.

Delay is HCM control delay, measured in seconds.

As shown in [Table B3](#), the eastbound shared lane is currently operating at LOS E conditions in the morning peak hour and the eastbound and westbound shared lanes are both operating at LOS F conditions in the evening peak hour. All other movements are operating acceptably at LOS D or better conditions. The existing traffic control analysis outputs are included in the [appendix](#).

PART C – ALTERNATIVE ANALYSIS

Two alternatives were evaluated as part of this study: a traffic signal alternative and a restricted crossing U-turn (RCUT) alternative.

C1. Alternative One – Traffic Signal

Note that traffic signal warrants should be viewed as guidelines to help decide whether a traffic signal may be installed. Meeting traffic signal warrants does not translate to a legal requirement for their installation. Warrant descriptions and completed warrant analysis worksheets are included in the [appendix](#) of this study.

A traffic signal warrant analyses was performed at the CTH F intersection with Lindsay Road as part of this study. Chapter 4C of the 2009 *Manual on Uniform Traffic Control Devices* (MUTCD) outlines the standards for determining the need for traffic signals at a particular location. For a traffic signal to be installed, at least one of the following warrants must be satisfied. The eight signal warrants are listed below:

- Warrant 1, Eight-Hour Vehicular Volume
- Warrant 2, Four-Hour Vehicular Volume
- Warrant 3, Peak Hour
- Warrant 4, Pedestrian Hour
- Warrant 5, School Crossing
- Warrant 6, Coordinated Signal Systems
- Warrant 7, Crash Experience
- Warrant 8, Roadway Network

All warrants except Warrant 5 have been evaluated for this location. The posted speed limit along CTH F is 55-mph at the Lindsay Road intersection, so it was analyzed using the 70-percent minimum vehicular volumes per standard practice since the speed is greater than 40-mph.

The warrant analysis assumes the intersections to include two-lane approaches northbound and southbound on CTH F (major street) and a one-lane approaches eastbound and westbound along Lindsay Road (minor street). Right-turn movements on the Lindsay Road approaches were excluded from the approach volume per the MUTCD.

The traffic signal warrant study was conducted using the existing 13-hour turning movement counts collected at the intersection as part of this study.

Based on the warrant analysis, no warrants are expected to be met under Year 2019 existing traffic volumes. Therefore, traffic signals are not currently warranted at this intersection.

A sensitivity analysis was performed and for Warrant 7 to be met, Lindsay Road traffic would have to increase by at least fifteen percent (15%), and for Warrant 1 to be met, Lindsay Road traffic would have to increase by at least forty-five percent (45%).

Capacity analysis of the traffic signal alternative was performed using a Synchro 10 traffic model. [Table C1](#) shows the results of the Year 2019 weekday morning and weekday evening peak hour operational analysis at the study area intersection under traffic signal control.

Table C1
Year 2019 Existing Traffic Peak Hour Operating Conditions
Traffic Signal Control with Existing Geometrics

Intersection	Peak Hour		Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
<i>Existing Geometrics with Traffic Signal Control</i>	AM	LOS	B			B			B	A	A	B	A	A
		Queue	65			55			5	140	10	10	195	5
		Delay	15.9			15.7			13.0	7.1	4.8	10.3	8.2	4.7
	PM	LOS	C			C			B	B	A	B	A	A
		Queue	55			75			45	325	15	10	190	10
		Delay	20.8			21.3			13.4	10.0	4.2	17.2	6.8	4.1

(--) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Queue is maximum of the 50th & 95th percentile queue, measured in feet.

Delay is HCM control delay, measured in seconds.

As shown in [Table C1](#), under traffic signal control with existing geometrics, all movements are expected to operate at LOS C or better conditions under the Year 2019 existing traffic volumes. Traffic signal control analysis outputs are included in the [appendix](#).

C2. Alternative Two – Restricted Crossing U-Turn (RCUT)

A restricted crossing U-turn (RCUT) intersection design restricts through and left-turn movements from the minor street at the intersection and forces the vehicles desiring those movements to turn right and make a U-turn downstream. [Figure C1](#) shows an aerial of an RCUT intersection located in Plymouth, WI at the intersection of STH 23 and CTH M.

Figure C1

Example RCUT Intersection – STH 23/CTH M in Plymouth, WI



The goal of an RCUT is to reduce conflict points at the intersection to improve overall safety. Compared to a conventional 4-legged intersection, an RCUT intersection drastically decreases the number of angle crashes, due to removing the minor street through and left-turn movements.

The CTH F intersection with Lindsay Road is a candidate for an RCUT because there is a history of angle crashes from the Lindsay Road approaches and it does not meet any traffic signal warrants. An RCUT would not impede the CTH F through movements. STH 23/CTH M intersection in Plymouth, WI is an intersection that had a similar angle crash issue and has similar volumes. After the installation of the RCUT design, crashes drastically decreased at the intersection. In the 12 years prior to the RCUT installation, STH 23/CTH observed two fatal crashes, three A-level (incapacitating injury) crashes, and eight B-level (non-incapacitating injury) crashes, and 15 other crashes. In the five years after installation, only five property damage only crashes were observed.

In order to perform an accurate capacity analysis of the RCUT intersection design at CTH F and Lindsay Road, a microsimulation software, such as VISSIM, would need to be used, but it was outside the scope of this study to perform such analysis.

PART D – ALTERNATIVES COMPARISON

Two alternatives were looked at for the CTH F intersection with Lindsay Road: a traffic signal alternative and an RCUT alternative. Both have advantages and disadvantages, which are summarized in the table below. Both alternatives are expected to have a similar range of costs, between \$300,000 and \$600,000, but the estimates would need to be verified by a detailed cost estimate performed by roadway designers.

TRAFFIC SIGNAL	ADVANTAGES	DISADVANTAGES
Access	Full access maintained. Convenient access from side-street.	
Operations	Acceptable level-of-service traffic operations. Vastly improved level-of-service on side-street approaches.	Reduced level-of-service for northbound and southbound traffic. Previously free-flow through movements, which make approximately 90 percent of traffic at this intersection during the peak hours, would be subjected to delays averaging 8.2 sec/vehicle in peak hours.
Safety	Expected to reduce risk of right-angle crashes.	Expected to increase the likelihood of high-speed rear-end crashes. Right-angle crashes, although less likely than in existing conditions, would still be expected to occur as a result of red-light-running.
Federal Aid		Very unlikely to qualify for Federal Aid due to traffic signal warrants not being met.
RCUT	ADVANTAGES	DISADVANTAGES
Access		Through and left-turn movements from Lindsay Road restricted at intersection and forced to turn right and make U-turn downstream. These movements make up approximately 3.5 percent of the total traffic during the peak hours.
Operations	Expected to operate acceptably, however microsimulation model, such as VISSIM, should be used to verify.	Through and left-turn movements from Lindsay Road restricted at intersection and forced to turn right and make U-turn downstream, which increases travel distance and may increase delay.
Safety	Expected to reduce risk of right-angle crashes as through and left-turn movements from Lindsay Road would be restricted.	
Federal Aid	Good chance for Federal Aid through HSIP program due to the crash reduction benefits of RCUT intersections. Eligibility should be verified with SE Region Safety Engineer.	

PART E – SUMMARY

At the request of the City of Pewaukee, Waukesha County arranged a safety and operational analysis of the CTH F intersection with Lindsay Road. TADI performed capacity analysis of the existing conditions and looked at two alternatives to improve safety and operations at the intersection. Alternative One was to signalize the intersection, while Alternative Two was to install a Restricted Crossing U-Turn (RCUT) intersection design. Both improvements would be expected to reduce the risk of angle crashes, but with the traffic signal alternative, an increase in high-speed rear-end crashes would be expected and a risk for angle crashes caused by red-light-running would still exist. Traffic signal warrants are currently not met, and substantially more traffic Lindsay Road would be needed to meet the 8-hour volume warrant. Because warrants are not met, the traffic signal would not be a likely candidate for Federal Aid through the HSIP program. However, the RCUT intersection design appears to have a good chance of qualifying for Federal Aid (90 percent match through the HSIP program). It is suggested that HSIP eligibility be verified with the WisDOT SE Region safety engineer.

APPENDIX A

CRASH DIAGRAM AND STATISTICS

Intersection Collision Diagram



Location: CTH F & Lindsay Rd
Municipality: Pewaukee
County: Waukesha
Traffic Control: Minor Street Stop

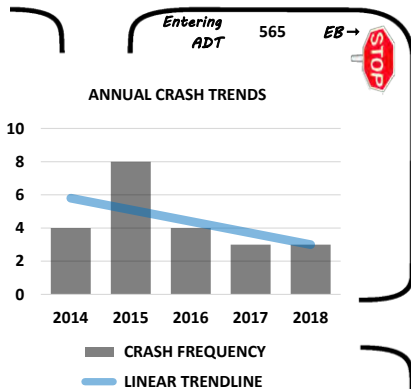
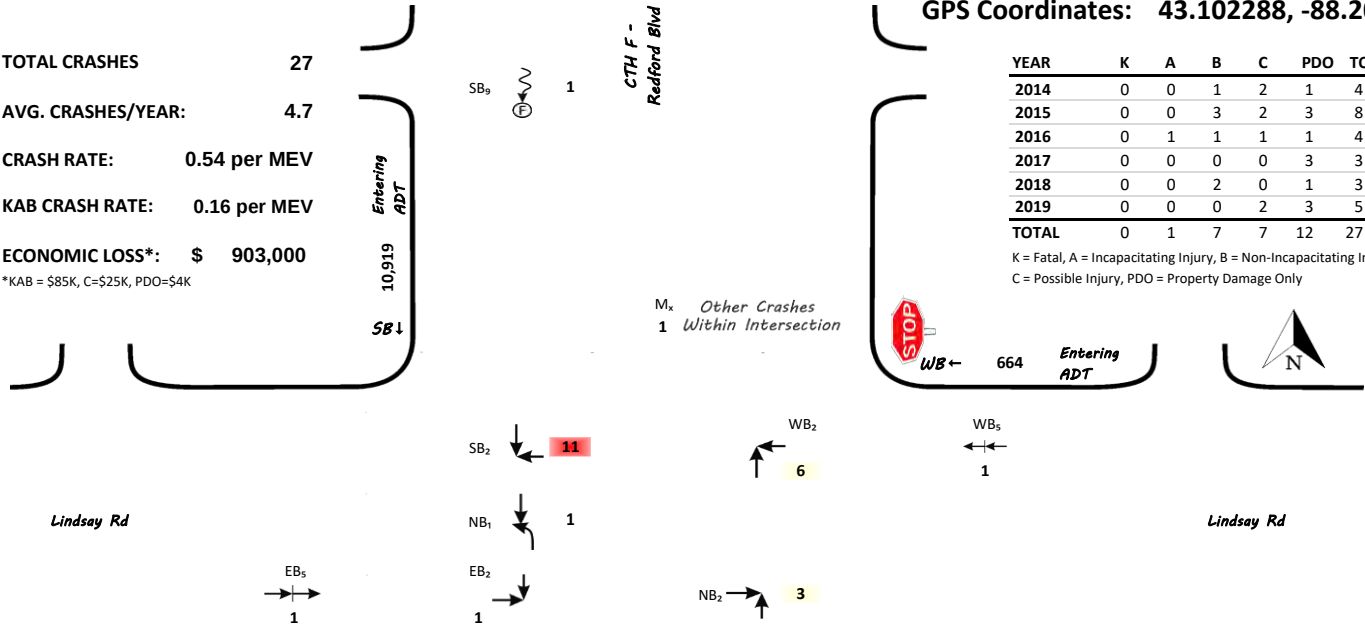
From: 1/1/2014 5 Years
To: 9/17/2019 8 Months
AADT: 23,826
Area Type: Urban
GPS Coordinates: 43.102288, -88.208759

TOTAL CRASHES 27
AVG. CRASHES/YEAR: 4.7
CRASH RATE: 0.54 per MEV
KAB CRASH RATE: 0.16 per MEV
ECONOMIC LOSS*: \$ 903,000

*KAB = \$85K, C=\$25K, PDO=\$4K

YEAR	K	A	B	C	PDO	TOT.	ECON. LOSS
2014	0	0	1	2	1	4	\$ 139,000
2015	0	0	3	2	3	8	\$ 317,000
2016	0	1	1	1	1	4	\$ 199,000
2017	0	0	0	0	3	3	\$ 12,000
2018	0	0	2	0	1	3	\$ 174,000
2019	0	0	0	2	3	5	\$ 62,000
TOTAL	0	1	7	7	12	27	\$ 903,000

K = Fatal, A = Incapacitating Injury, B = Non-Incapacitating Injury, C = Possible Injury, PDO = Property Damage Only



CRASH TYPE	K	A	B	C	PDO	TOT.	ECON. LOSS
LT-ANGLE	0	0	0	0	1	1	\$ 4,000
RT-ANGLE	0	1	6	7	7	21	\$ 798,000
PEDESTRIAN	0	0	0	0	0	0	\$ -
RT-TURN REAR-END	0	0	0	0	0	0	\$ -
REAR-END	0	0	0	0	2	2	\$ 8,000
SIDE-SWIPE-SAME	0	0	0	0	0	0	\$ -
BICYCLE-RELATED	0	0	0	0	0	0	\$ -
PARKED-VEHICLE	0	0	0	0	0	0	\$ -
FIXED-OBJECT	0	0	0	0	1	1	\$ 4,000
DRIVEWAY-RELATED	0	0	0	0	0	0	\$ -
HEAD-ON	0	0	1	0	0	1	\$ 85,000
MISC. OTHER	0	0	0	0	1	1	\$ 4,000
TOTAL	0	1	7	7	12	27	\$ 903,000

ROAD CONDITIONS		
DRY	22	81%
WET	2	7%
SNOW	2	7%
ICE	1	4%
OTH.	0	0%
TOT.	27	

LIGHT CONDITIONS		
DAY	24	89%
DARK	3	11%
TOT.	27	

DRIVER BEHAVIOR		
ALCOHOL	0	0%
DRUGS	0	0%
SPEED	2	7%

SEASON		
SPRING	8	30%
SUMMER	6	22%
FALL	7	26%
WINTER	6	22%
TOT.	27	

FAILURE TO YIELD		
NB	1	4%
SB	0	0%
EB	3	11%
WB	12	44%
TBD	0	0%
TOT.	16	

BLOWN CONTROL		
NB	0	0%
SB	0	0%
EB	0	0%
WB	0	0%
TBD	0	0%
TOT.	0	

VEHICLE DAMAGE		
OTHER/UNK.	0	0%
NONE	2	4%
VERY MINOR	0	0%
MINOR	5	11%
MODERATE	12	26%
SEVERE	26	55%
VERY SEVERE	2	4%
TOTAL VEHICLES	47	

TBD = verification from crash report needed for direction

DAY/TIME TRENDS

	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	UNK		TOT.
MON	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	MON	2
TUE	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	TUE	5
WED	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	WED	5
THU	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	THU	6
FRI	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	2	0	2	0	0	0	0	0	0	0	FRI	7
SAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	SAT	1
SUN	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SUN	1
	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	UNK		TOT.
TOT.	0	0	0	0	0	0	0	1	3	2	4	2	1	0	0	4	0	7	1	1	1	0	0	0	0	TOT.	27

Crash Data

Corresponds to Collision Diagram

Location: CTH F & Lindsay Rd
Municipality: Pewaukee
County: Waukesha
Traffic Control: Minor Street Stop

From: 1/1/2014
To: 9/17/2019
AADT: 23,826
Area Type: Urban



Duration
5 Years
8 Months

Ref #	Label	Doc. #	Date	Crash Type	Time	Severity	Road Cond.	Light Cond.	Alc. Flag	Drug Flag	Speed Flag	Notes
1	EB ₂	3WL0LCTJQQ	10/6/2017	RT-ANGLE	3 PM		WET					
2	EB ₂	3WL0LF2L65	9/17/2019	REAR-END	7 AM							Pulled ahead and stopped
3	WB ₂	DJCLXF9	1/10/2014	RT-ANGLE	5 PM		ICE	DARK				
4	WB ₂	DHZMNHJ	4/10/2015	RT-ANGLE	5 PM	B						
5	WB ₂	DJOG3X2	6/16/2016	RT-ANGLE	7 PM	C						Medical issue, swerved i
6	WB ₂	3WL0LF2L0P	5/17/2018	RT-ANGLE	8 AM							
7	WB ₂	3WL0LCTJXS	6/18/2019	RT-ANGLE	12 PM			DAY				
8	WB ₂	3WL0MLVN1L	7/23/2019	RT-ANGLE	5 PM	C						
9	WB ₂	DHZ272TK	5/1/2015	REAR-END	8 AM							Pulled ahead and backe
10	NB ₂	DHZ272VH	8/5/2015	LT-ANGLE	9 AM							
11	NB ₂	DHZ28KSZ	11/6/2014	RT-ANGLE	10 AM	C						
12	NB ₂	DHZ28K7B	1/21/2015	RT-ANGLE	5 PM	C		DARK				
13	NB ₂	DJ00RSK	1/13/2016	RT-ANGLE	3 PM	B	SNOW			Y		
14	H ₂	3WL0NFKDHN	9/21/2018	HEAD-ON	10 AM	B						Swerved to avoid WB ve
15	SB ₂	DHZ272NG	5/29/2014	RT-ANGLE	8 AM	B						
16	SB ₂	DHZ272R2	12/12/2014	RT-ANGLE	3 PM	C		DAY				
17	SB ₂	DHZ28K72	1/10/2015	RT-ANGLE	3 PM	B	UNKN					
18	SB ₂	DHZ272T7	4/22/2015	RT-ANGLE	5 PM	C						
19	SB ₂	DHZ27236	8/12/2015	RT-ANGLE	5 PM							Missing Report
20	SB ₂	DHZ272L9M	9/29/2015	RT-ANGLE	9 AM	B	WET					
21	SB ₂	DJOG3WX	5/30/2016	RT-ANGLE	11 AM	A						
22	SB ₂	3WL0LCTJNZ	5/4/2017	RT-ANGLE	6 PM			DAY				
23	SB ₂	3WL0MOC3CM	10/27/2017	RT-ANGLE	11 AM							
24	SB ₂	3WL0NFKDGF	7/12/2018	RT-ANGLE	10 AM	B						
25	SB ₂	3WL0NFKDL9	3/3/2019	RT-ANGLE	10 AM	C						
26	SB ₂	DJOG3V4	2/9/2016	FIXED-OBJECT	8 PM		SNOW	DARK		Y		Gust of wind, icy road
27	M ₂	3WL0LVN066	9/9/2019	MISC. OTHER	5 PM			DAY				SSO in median
28												
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APPENDIX B

EXISTING TRAFFIC COUNTS

Intersection Traffic Volume Report

Count Basics		Version 2013.14.1		Page 1 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session	
Total Number of Hours Counted:	13	Non-Holiday	No Special Events	

Base Information, Observed (13) Hour and Estimated (24) Hour Volume Summaries

Intersection of: CTH F and Lindsay Road

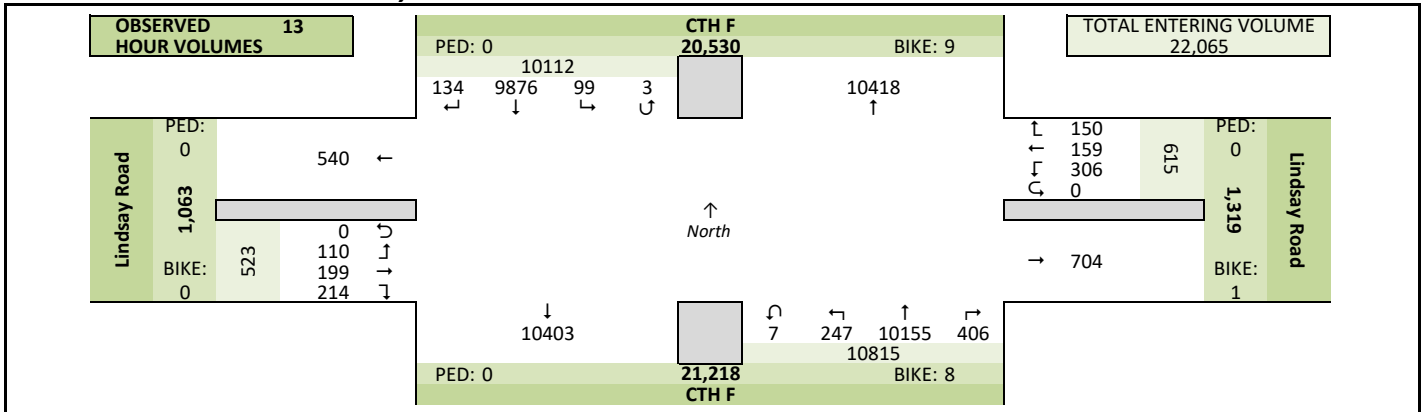
Site Information

Municipality	Pewaukee		
County	Waukesha	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction	↑	
North Leg	CTH F		
East Leg	Lindsay Road		
South Leg	CTH F		
West Leg	Lindsay Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementry school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	

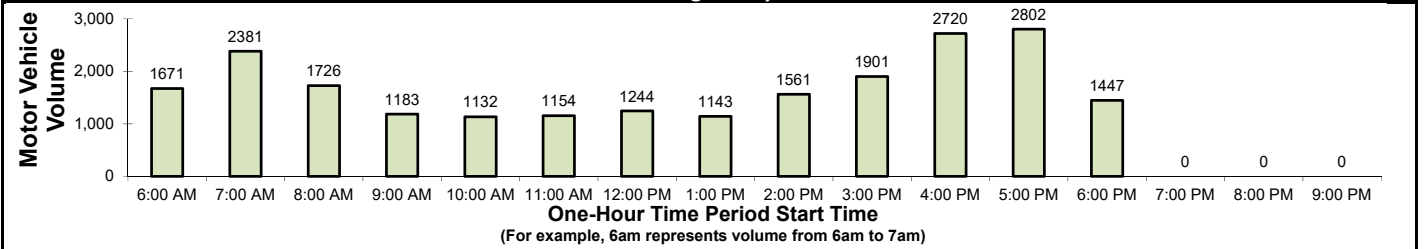
Count Information

Hrs Counted:		6:00 AM-7:00 PM	
1st Day of Count		Monday, September 30, 2019	
AM Peak Period		Friday, October 4, 2019	
Midday Peak Period		Monday, September 30, 2019	
PM Peak Period		Monday, September 30, 2019	
Calculated Peak Hours			
AM	7:00-8:00am	MD	11:30-12:30am
PM	4:30-5:30pm		
Peak Hours Selected for Analysis			
AM	7:00-8:00am	MD	11:30-12:30am
PM	4:30-5:30pm		
Daily/Seasonal Adjustment Group		(4) Rural Arterials & Collectors	
Count Expansion Group		(4) Rural Arterials & Collectors	
Daily/Seasonal Adjustment Factor		0.899	Count Expansion Factor
Company Name		TADI	Manual Adj.
Observers	AM Peak Period	Amy Scheuerlein	
	Midday Peak Period	Ted Atwell	
	PM Peak Period	Wendy Picard	
Comments	2018 DOT Seasonal Factors		

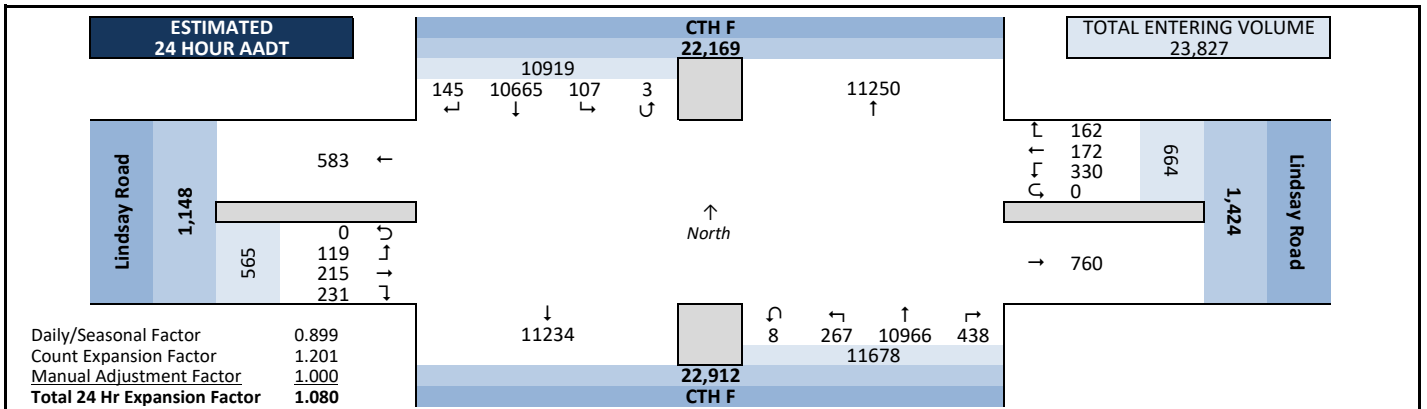
Observed 13 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT



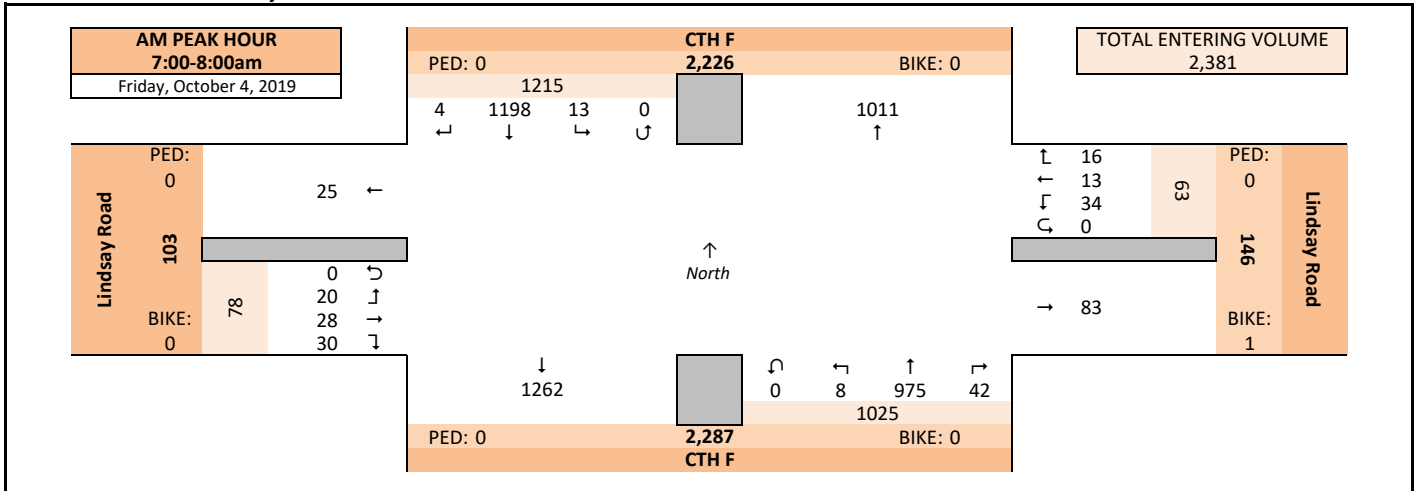
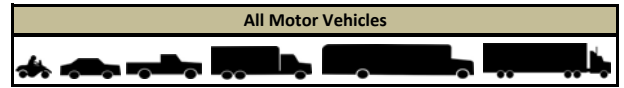
Intersection Traffic Volume Report

Peak Hour Volume Graphical Summary

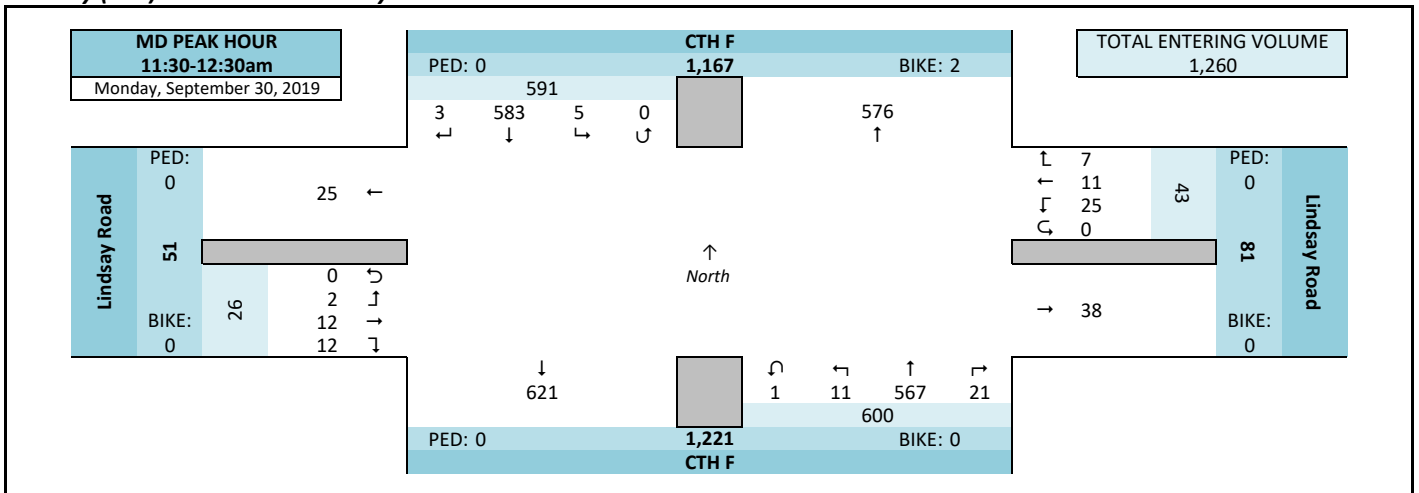
Count Basics		Page 2 of 13	
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

CTH F and Lindsay Road

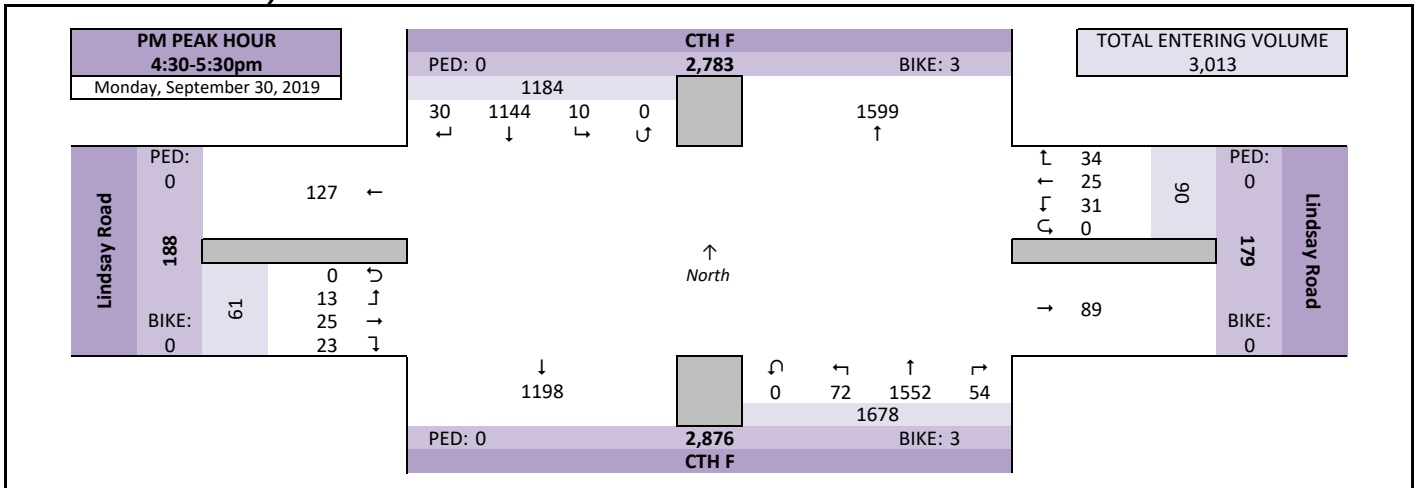
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary



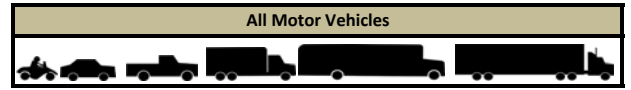
Intersection Traffic Volume Report

Peak Hour Volume Summary

CTH F and Lindsay Road

Peak Hour Volumes, Truck Percentages, and PHFs

Count Basics			Page 3 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events



Friday, October 4, 2019		From North					From East					From South					From West					
		CTH F					Lindsay Road					CTH F					Lindsay Road					
AM Peak Hour	AM Peak Hour																					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	7:00 AM	0	286	2	0	288	3	2	9	0	14	7	182	2	0	191	4	6	3	0	13	506
	7:15 AM	2	299	3	0	304	1	3	7	0	11	11	246	1	0	258	8	6	4	0	18	591
	7:30 AM	0	313	4	0	317	5	4	7	0	16	9	278	3	0	290	8	8	6	0	22	645
	7:45 AM	2	300	4	0	306	7	4	11	0	22	15	269	2	0	286	10	8	7	0	25	639
	Peak Hour Volume	4	1198	13	0	1215	16	13	34	0	63	42	975	8	0	1025	30	28	20	0	78	2381
	Rounded Hourly Volume	5	1200	15	0	1220	15	15	35	0	65	40	975	10	0	1025	30	30	20	0	80	2390
	% Single Unit Trucks	0.0	7.1	7.7	0.0	7.1	12.5	7.7	0.0	0.0	4.8	7.1	5.8	0.0	0.0	5.9	0.0	3.6	0.0	0.0	1.3	6.3
	% Heavy Trucks	0.0	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	2.4	2.5	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	2.0
% Trucks (Total)	0.0	8.9	7.7	0.0	8.9	12.5	7.7	0.0	0.0	4.8	9.5	8.3	0.0	0.0	8.3	0.0	3.6	0.0	0.0	1.3	8.3	
Peak Hour Factor (PHF)	0.50	0.96	0.81	0.00	0.96	0.57	0.81	0.77	0.00	0.72	0.70	0.88	0.67	0.00	0.88	0.75	0.87	0.71	0.00	0.78	0.92	

Monday, September 30, 2019		From North					From East					From South					From West					Totals
Midday (MD) Peak Hour	MD Peak Hour Start Time	CTH F					Lindsay Road					CTH F					Lindsay Road					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	11:30 AM	1	155	1	0	157	1	2	9	0	12	5	124	4	0	133	1	2	0	0	3	305
	11:45 AM	2	127	0	0	129	2	1	5	0	8	6	157	1	0	164	5	4	0	0	9	310
	12:00 PM	0	147	1	0	148	2	6	4	0	12	7	156	5	0	168	1	4	1	0	6	334
	12:15 PM	0	154	3	0	157	2	2	7	0	11	3	130	1	1	135	5	2	1	0	8	311
	Peak Hour Volume	3	583	5	0	591	7	11	25	0	43	21	567	11	1	600	12	12	2	0	26	1260
	Rounded Hourly Volume	5	585	5	0	595	5	10	25	0	40	20	565	10	0	595	10	10	0	0	20	1250
	% Single Unit Trucks	0.0	15.6	20.0	0.0	15.6	42.9	0.0	16.0	0.0	16.3	9.5	16.0	0.0	0.0	15.5	0.0	0.0	0.0	0.0	0.0	15.2
	% Heavy Trucks	0.0	3.6	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	4.0
% Trucks (Total)	0.0	19.2	20.0	0.0	19.1	42.9	0.0	16.0	0.0	16.3	9.5	21.3	0.0	0.0	20.5	0.0	0.0	0.0	0.0	0.0	19.3	
Peak Hour Factor (PHF)	0.37	0.94	0.42	0.00	0.94	0.87	0.46	0.69	0.00	0.90	0.75	0.90	0.55	0.25	0.89	0.60	0.75	0.50	0.00	0.72	0.94	

Monday, September 30, 2019		From North					From East					From South					From West					
PM Peak Hour	PM Peak Hour	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	4:30 PM	4	278	3	0	285	7	6	8	0	21	9	389	15	0	413	2	4	2	0	8	727
	4:45 PM	7	260	1	0	268	7	9	12	0	28	11	348	20	0	379	7	9	4	0	20	695
	5:00 PM	8	287	1	0	296	10	5	7	0	22	15	370	17	0	402	5	5	3	0	13	733
	5:15 PM	11	319	5	0	335	10	5	4	0	19	19	445	20	0	484	9	7	4	0	20	858
	Peak Hour Volume	30	1144	10	0	1184	34	25	31	0	90	54	1552	72	0	1678	23	25	13	0	61	3013
	Rounded Hourly Volume	30	1145	10	0	1185	35	25	30	0	90	55	1550	70	0	1675	25	25	15	0	65	3015
	% Single Unit Trucks	0.0	3.8	0.0	0.0	3.6	2.9	4.0	0.0	0.0	2.2	1.9	3.0	1.4	0.0	2.9	4.3	0.0	7.7	0.0	3.3	3.2
	% Heavy Trucks	0.0	0.9	20.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.8
% Trucks (Total)	0.0	4.6	20.0	0.0	4.6	2.9	4.0	0.0	0.0	2.2	1.9	3.7	1.4	0.0	3.5	4.3	0.0	7.7	0.0	3.3	3.9	
Peak Hour Factor (PHF)	0.68	0.90	0.50	0.00	0.88	0.85	0.69	0.65	0.00	0.80	0.71	0.87	0.90	0.00	0.87	0.64	0.69	0.81	0.00	0.76	0.88	

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		CTH F			Lindsay Road			CTH F			Lindsay Road			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 AM	0	0	0	0	1	1	0	0	0	0	0	1	
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	1	1	0	0	0	0	0	1	
MD	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	2	2	0	0	0	0	0	0	0	0	2	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	2	2	0	0	0	0	0	0	0	0	2	
PM	4:30 PM	0	1	1	0	0	0	0	2	2	0	0	0	3
	4:45 PM	0	1	1	0	0	0	0	1	1	0	0	0	2
	5:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	3	3	0	0	0	0	3	3	0	0	0	6

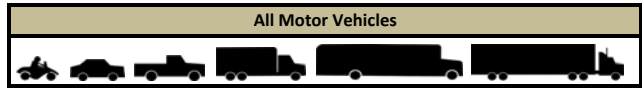
Intersection Traffic Volume Report

Hourly Volume Summary - Motor Vehicle Data

CTH F and Lindsay Road

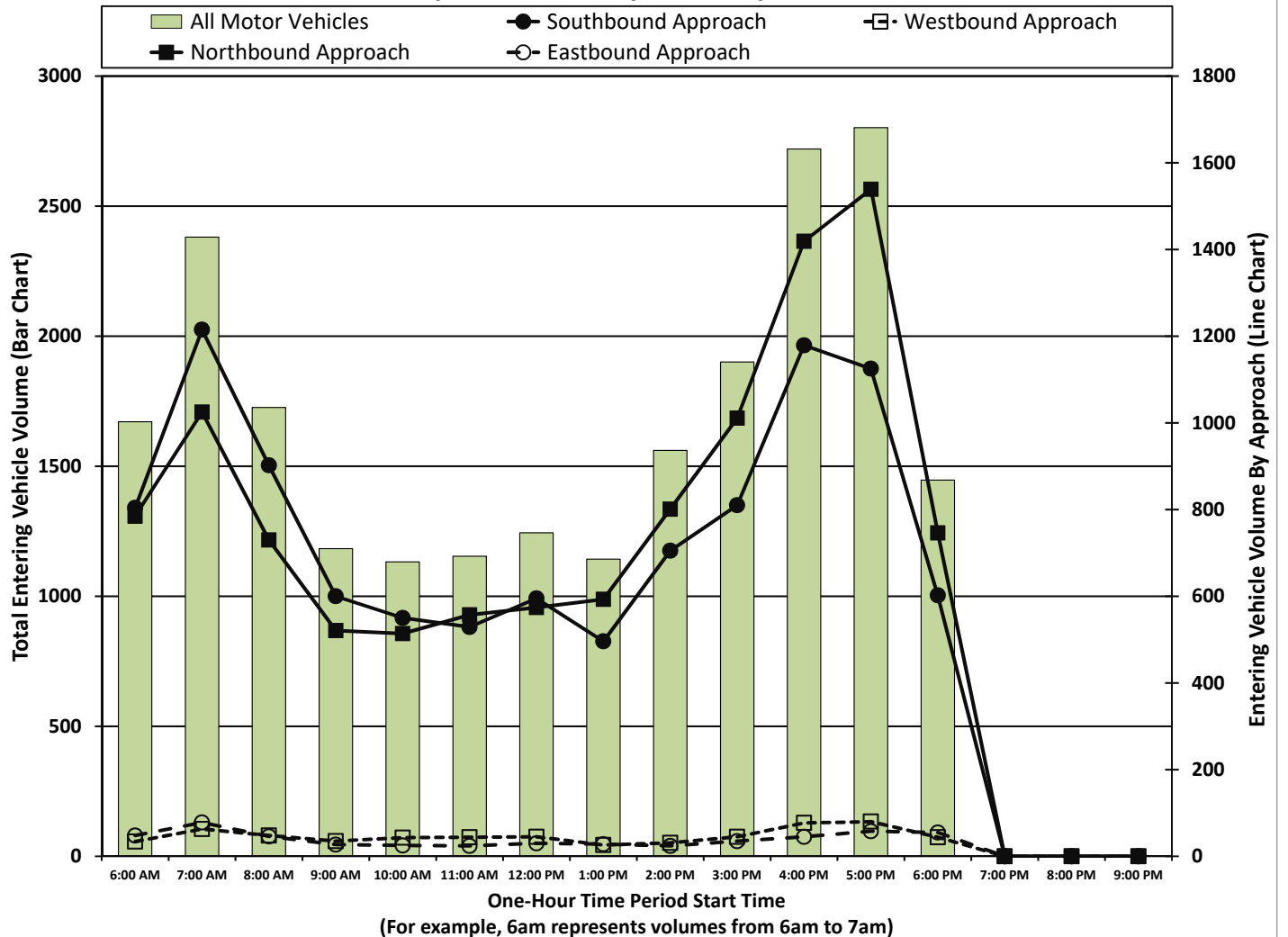
One-Hour Motor Vehicle Data

Count Basics			Page 4 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events



One-Hour Time Period Start Time	From North					From East					From South					From West					Total Vehicle Volume	Directional Volume Totals		
	CTH F					Lindsay Road					CTH F					Lindsay Road								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
AM	6:00 AM	3	794	7	0	804	9	6	19	0	34	52	731	2	0	785	26	11	11	0	48	1671	82	1589
	7:00 AM	4	1198	13	0	1215	16	13	34	0	63	42	975	8	0	1025	30	28	20	0	78	2381	141	2240
	8:00 AM	5	893	4	0	902	11	9	28	0	48	17	707	6	0	730	15	18	13	0	46	1726	94	1632
	9:00 AM	6	589	5	0	600	8	4	23	0	35	21	495	5	0	521	14	8	5	0	27	1183	62	1121
MD	10:00 AM	3	543	3	1	550	5	11	27	0	43	24	481	8	1	514	11	13	1	0	25	1132	68	1064
	11:00 AM	5	520	4	0	529	8	10	26	0	44	23	522	11	1	557	11	11	2	0	24	1154	68	1086
	12:00 PM	6	583	6	0	595	6	21	18	0	45	19	543	10	2	574	11	16	3	0	30	1244	75	1169
	1:00 PM	9	485	2	0	496	5	10	11	0	26	20	553	19	1	593	14	8	6	0	28	1143	54	1089
PM	2:00 PM	15	683	7	0	705	5	9	17	0	31	25	762	13	1	801	6	11	7	0	24	1561	55	1506
	3:00 PM	11	789	8	2	810	13	9	23	0	45	31	953	27	0	1011	14	13	8	0	35	1901	80	1821
	4:00 PM	23	1143	13	0	1179	24	23	30	0	77	40	1328	51	0	1419	17	19	9	0	45	2720	122	2598
	5:00 PM	29	1079	17	0	1125	30	18	32	0	80	60	1414	65	0	1539	28	17	13	0	58	2802	138	2664
	6:00 PM	15	577	10	0	602	10	16	18	0	44	32	691	22	1	746	17	26	12	0	55	1447	99	1348
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		134	9876	99	3	10112	150	159	306	0	615	406	10155	247	7	10815	214	199	110	0	523	22065	1138	20927

Graphical Summary of Hourly Volumes



Count Basics			Page 5 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

All Motor Vehicles

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time		↓					←					↑					→					15-Min Totals	Hourly Sum	PHF
		From North					From East					From South					From West							
		CTH F					Lindsay Road					CTH F					Lindsay Road							
Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total					
AM Peak Period	6:00 AM	0	126	0	0	126	1	1	7	0	9	11	128	1	0	140	4	0	2	0	6	281	1671	0.79
	6:15 AM	0	187	2	0	189	5	2	3	0	10	12	134	1	0	147	5	5	5	0	15	361	1896	0.89
	6:30 AM	2	229	4	0	235	1	0	7	0	8	16	227	0	0	243	9	3	0	0	12	498	2126	0.90
	6:45 AM	1	252	1	0	254	2	3	2	0	7	13	242	0	0	255	8	3	4	0	15	531	2273	0.88
	7:00 AM	0	286	2	0	288	3	2	9	0	14	7	182	2	0	191	4	6	3	0	13	506	2381	0.92
	7:15 AM	2	299	3	0	304	1	3	7	0	11	11	246	1	0	258	8	6	4	0	18	591	2379	0.92
	7:30 AM	0	313	4	0	317	5	4	7	0	16	9	278	3	0	290	8	8	6	0	22	645	2242	0.87
	7:45 AM	2	300	4	0	306	7	4	11	0	22	15	269	2	0	286	10	8	7	0	25	639	1999	0.78
	8:00 AM	3	268	1	0	272	4	3	8	0	15	3	203	1	0	207	4	1	5	0	10	504	1726	0.86
	8:15 AM	1	224	1	0	226	2	4	8	0	14	6	188	4	0	198	6	9	1	0	16	454	1520	0.84
Midday Peak Period	8:30 AM	0	202	1	0	203	3	0	4	0	7	4	173	1	0	178	3	5	6	0	14	402	1354	0.84
	8:45 AM	1	199	1	0	201	2	2	8	0	12	4	143	0	0	147	2	3	1	0	6	366	1235	0.84
	9:00 AM	2	133	3	0	138	2	0	10	0	12	4	137	1	0	142	2	3	1	0	6	298	1183	0.94
	9:15 AM	0	145	1	0	146	1	1	4	0	6	5	127	1	0	133	2	0	1	0	3	288	1173	0.93
	9:30 AM	2	137	1	0	140	3	3	5	0	11	7	117	2	0	126	2	3	1	0	6	283	1156	0.92
	9:45 AM	2	174	0	0	176	2	0	4	0	6	5	114	1	0	120	8	2	2	0	12	314	1175	0.94
	10:00 AM	0	143	0	0	143	1	4	7	0	12	6	122	0	0	128	2	3	0	0	5	288	1132	0.94
	10:15 AM	1	143	2	0	146	0	3	4	0	7	5	104	4	0	113	2	3	0	0	5	271	1113	0.92
	10:30 AM	1	126	1	1	129	4	2	5	0	11	6	146	2	1	155	3	3	1	0	7	302	1112	0.92
	10:45 AM	1	131	0	0	132	0	2	11	0	13	7	109	2	0	118	4	4	0	0	8	271	1115	0.91
PM Peak Period	11:00 AM	0	117	0	0	117	4	4	6	0	14	8	121	4	1	134	1	2	1	0	4	269	1154	0.93
	11:15 AM	2	121	3	0	126	1	3	6	0	10	4	120	2	0	126	4	3	1	0	8	270	1219	0.91
	11:30 AM	1	155	1	0	157	1	2	9	0	12	5	124	4	0	133	1	2	0	0	3	305	1260	0.94
	11:45 AM	2	127	0	0	129	2	1	5	0	8	6	157	1	0	164	5	4	0	0	9	310	1258	0.94
	12:00 PM	0	147	1	0	148	2	6	4	0	12	7	156	5	0	168	1	4	1	0	6	334	1244	0.93
	12:15 PM	0	154	3	0	157	2	2	7	0	11	3	130	1	1	135	5	2	1	0	8	311	1204	0.97
	12:30 PM	3	128	1	0	132	1	8	5	0	14	3	145	1	0	149	2	6	0	0	8	303	1167	0.96
	12:45 PM	3	154	1	0	158	1	5	2	0	8	6	112	3	1	122	3	4	1	0	8	296	1163	0.97
	1:00 PM	1	145	0	0	146	0	2	4	0	6	5	122	3	1	131	6	3	2	0	11	294	1143	0.96
	1:15 PM	4	95	0	0	99	4	4	2	0	10	4	152	6	0	162	1	1	1	0	3	274	1217	0.83
PM Peak Period	1:30 PM	1	133	1	0	135	1	3	4	0	8	5	143	4	0	152	2	1	1	0	4	299	1309	0.89
	1:45 PM	3	112	1	0	116	0	1	1	0	2	6	136	6	0	148	5	3	2	0	10	276	1462	0.81
	2:00 PM	2	171	1	0	174	0	2	2	0	4	6	175	3	0	184	1	5	0	0	6	368	1561	0.86
	2:15 PM	4	153	0	0	157	2	2	8	0	12	5	186	4	0	195	0	1	1	0	2	366	1625	0.90
	2:30 PM	3	202	4	0	209	1	2	3	0	6	8	216	3	1	228	3	2	4	0	9	452	1687	0.93
	2:45 PM	6	157	2	0	165	2	3	4	0	9	6	185	3	0	194	2	3	2	0	7	375	1761	0.84
	3:00 PM	4	200	1	0	205	5	3	5	0	13	9	194	5	0	208	2	2	2	0	6	432	1901	0.90
	3:15 PM	2	166	2	0	170	1	2	4	0	7	9	228	3	0	240	4	4	3	0	11	428	2091	0.84
	3:30 PM	4	237	3	1	245	3	3	8	0	14	6	240	11	0	257	5	4	1	0	10	526	2339	0.87
	3:45 PM	1	186	2	1	190	4	1	6	0	11	7	291	8	0	306	3	3	2	0	8	515	2540	0.87
	4:00 PM	6	292	5	0	303	3	4	3	0	10	7	282	9	0	298	5	4	2	0	11	622	2720	0.94
	4:15 PM	6	313	4	0	323	7	4	7	0	18	13	309	7	0	329	3	2	1	0	6	676	2831	0.97
	4:30 PM	4	278	3	0	285	7	6	8	0	21	9	389	15	0	413	2	4	2	0	8	727	3013	0.88
	4:45 PM	7	260	1	0	268	7	9	12	0	28	11	348	20	0	379	7	9	4	0	20	695	2986	0.87
	5:00 PM	8	287	1	0	296	10	5	7	0	22	15	370	17	0	402	5	5	3	0	13	733	2802	0.82
	5:15 PM	11	319	5	0	335	10	5	4	0	19	19	445	20	0	484	9	7	4	0	20	858	2471	0.72
	5:30 PM	8	282	5	0	295	5	5	10	0	20	15	335	18	0	368	9	3	5	0	17	700	1992	0.71
	5:45 PM	2	191	6	0	199	5	3	11	0	19	11	264	10	0	285	5	2	1	0	8	511	1636	0.80
	6:00 PM	3	184	3	0	190	3	6	5	0	14	8	171	2	0	181	6	8	3	0	17	402	1447	0.90
	6:15 PM	3	150	2	0	155	0	2	3	0	5	6	197	8	0	211	2	5	1	0	8	379		
6:30 PM	6	126	5	0	137	5	4	2	0	11	9	169	6	0	184	5	5	2	0	12	344			
6:45 PM	3	117	0	0	120	2	4	8	0	14	9	154	6	1	170	4	8	6	0	18	322			
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals		134	9876	99	3	10112	150	159	306	0	615	406	10155	247	7	10815	214	199	110	0	523	22065		

Hourly Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Hourly Volume	PHF
	CTH F					Lindsay Road					CTH F					Lindsay Road						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:00 AM	4	1198	13	0	1215	16	13	34	0	63	42	975	8	0	1025	30	28	20	0	78	2381	0.92
MD 11:30 AM	3	583	5	0	591	7	11	25	0	43	21	567	11	1	600	12	12	2	0	26	1260	0.94
PM 4:30 PM	30	1144	10	0	1184	34	25	31	0	90	54	1552	72	0	1678	23	25	13	0	61	3013	0.88

Intersection Traffic Volume Report

Count Basics			Page 6 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

15-Minute Automobile Data

CTH F and Lindsay Road

Automobiles (Cars, Light Trucks, & Motorcycles)		
		

15-Minute Automobile Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	CTH F					Lindsay Road					CTH F					Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	110	0	0	110	1	1	7	0	9	11	112	1	0	124	4	0	2	0	6	249	1490
	6:15 AM	0	164	2	0	166	3	2	3	0	8	11	119	1	0	131	5	5	5	0	15	320	1702
	6:30 AM	2	207	3	0	212	1	0	4	0	5	15	203	0	0	218	9	3	0	0	12	447	1925
	6:45 AM	1	228	1	0	230	1	3	1	0	5	13	211	0	0	224	8	3	4	0	15	474	2075
	7:00 AM	0	256	2	0	258	1	2	9	0	12	7	169	2	0	178	4	6	3	0	13	461	2184
	7:15 AM	2	269	3	0	274	1	3	7	0	11	11	228	1	0	240	8	6	4	0	18	543	2170
	7:30 AM	0	294	3	0	297	5	4	7	0	16	7	252	3	0	262	8	8	6	0	22	597	2018
	7:45 AM	2	272	4	0	278	7	3	11	0	21	13	245	2	0	260	10	7	7	0	24	583	1757
	8:00 AM	3	250	1	0	254	3	3	7	0	13	3	166	1	0	170	4	1	5	0	10	447	1483
	8:15 AM	0	192	1	0	193	2	4	7	0	13	5	160	4	0	169	6	9	1	0	16	391	1282
	8:30 AM	0	185	1	0	186	2	0	3	0	5	3	127	1	0	131	3	5	6	0	14	336	1142
	8:45 AM	1	164	1	0	166	1	2	8	0	11	4	124	0	0	128	1	2	1	0	4	309	1035
	9:00 AM	1	117	3	0	121	2	0	10	0	12	2	104	1	0	107	2	3	1	0	6	246	992
	9:15 AM	0	126	0	0	126	1	1	4	0	6	5	110	1	0	116	2	0	1	0	3	251	963
	9:30 AM	2	111	1	0	114	3	3	5	0	11	6	90	2	0	98	2	3	1	0	6	229	906
	9:45 AM	2	153	0	0	155	1	0	3	0	4	5	90	1	0	96	7	2	2	0	11	266	915
Midday Peak Period	10:00 AM	0	112	0	0	112	1	3	5	0	9	4	87	0	0	91	2	3	0	0	5	217	857
	10:15 AM	1	104	2	0	107	0	3	4	0	7	5	68	3	0	76	2	2	0	0	4	194	853
	10:30 AM	1	103	1	1	106	4	1	4	0	9	5	108	2	1	116	3	3	1	0	7	238	880
	10:45 AM	1	95	0	0	96	0	2	11	0	13	5	84	2	0	91	4	4	0	0	8	208	898
	11:00 AM	0	87	0	0	87	4	3	5	0	12	7	98	4	1	110	1	2	1	0	4	213	934
	11:15 AM	2	99	3	0	104	0	3	5	0	8	2	97	2	0	101	4	3	1	0	8	221	991
	11:30 AM	1	130	1	0	132	1	2	8	0	11	4	102	4	0	110	1	2	0	0	3	256	1017
	11:45 AM	2	102	0	0	104	0	1	5	0	6	6	118	1	0	125	5	4	0	0	9	244	1006
	12:00 PM	0	122	1	0	123	2	6	3	0	11	7	118	5	0	130	1	4	1	0	6	270	982
	12:15 PM	0	117	2	0	119	1	2	5	0	8	2	108	1	1	112	5	2	1	0	8	247	948
	12:30 PM	3	104	1	0	108	1	8	5	0	14	2	114	1	0	117	2	4	0	0	6	245	927
	12:45 PM	3	111	1	0	115	0	4	2	0	6	6	81	3	1	91	3	4	1	0	8	220	929
	1:00 PM	1	114	0	0	115	0	2	3	0	5	3	98	3	1	105	6	3	2	0	11	236	933
	1:15 PM	4	87	0	0	91	4	4	1	0	9	3	114	6	0	123	1	1	1	0	3	226	989
	1:30 PM	1	103	1	0	105	1	3	4	0	8	5	121	4	0	130	2	1	1	0	4	247	1060
	1:45 PM	3	90	1	0	94	0	1	1	0	2	6	106	6	0	118	5	3	2	0	10	224	1216
PM Peak Period	2:00 PM	2	135	0	0	137	0	2	2	0	4	5	137	3	0	145	1	5	0	0	6	292	1315
	2:15 PM	4	119	0	0	123	2	2	5	0	9	4	156	4	0	164	0	0	1	0	1	297	1409
	2:30 PM	3	179	3	0	185	1	2	3	0	6	8	191	3	1	203	3	2	4	0	9	403	1498
	2:45 PM	6	135	1	0	142	1	3	4	0	8	6	158	3	0	167	2	2	2	0	6	323	1580
	3:00 PM	4	178	1	0	183	5	2	5	0	12	8	173	5	0	186	2	2	1	0	5	386	1734
	3:15 PM	1	150	1	0	152	1	2	3	0	6	7	208	2	0	217	4	4	3	0	11	386	1920
	3:30 PM	4	215	3	1	223	3	3	7	0	13	5	224	11	0	240	5	3	1	0	9	485	2162
	3:45 PM	1	171	2	1	175	4	1	6	0	11	4	271	8	0	283	3	3	2	0	8	477	2370
	4:00 PM	6	270	5	0	281	3	3	2	0	8	7	257	9	0	273	5	3	2	0	10	572	2564
	4:15 PM	6	291	3	0	300	7	3	7	0	17	10	288	7	0	305	3	2	1	0	6	628	2707
	4:30 PM	4	261	2	0	267	7	6	8	0	21	9	374	15	0	398	2	4	1	0	7	693	2895
	4:45 PM	7	251	0	0	258	7	8	12	0	27	11	336	19	0	366	7	9	4	0	20	671	2878
	5:00 PM	8	280	1	0	289	10	5	7	0	22	15	359	17	0	391	5	5	3	0	13	715	2688
	5:15 PM	11	299	5	0	315	9	5	4	0	18	18	426	20	0	464	8	7	4	0	19	816	2354
	5:30 PM	8	272	4	0	284	4	5	10	0	19	14	324	18	0	356	9	3	5	0	17	676	1902
	5:45 PM	2	176	6	0	184	5	3	11	0	19	9	252	10	0	271	5	1	1	0	7	481	1559
	6:00 PM	2	177	2	0	181	3	6	5	0	14	8	160	2	0	170	5	8	3	0	16	381	1389
	6:15 PM	3	145	2	0	150	0	2	3	0	5	6	187	8	0	201	2	5	1	0	8	364	
	6:30 PM	6	120	5	0	131	5	4	2	0	11	8	165	6	0	179	5	5	2	0	12	333	
	6:45 PM	3	115	0	0	118	2	4	8	0	14	8	146	6	1	161	4	8	6	0	18	311	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		130	8717	86	3	8936	133	150	281	0	564	363	8924	244	7	9538	210	189	108	0	507	19545	

Peak Hour Automobile Volume Summary

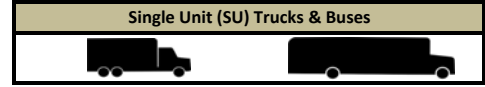
Hourly Time Period	Start Time	From North				From East				From South	
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Intersection Traffic Volume Report

15-Minute Single Unit (SU) Truck & Bus Data

Count Basics			Page 7 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

CTH F and Lindsay Road



15-Minute Single Unit (SU) Truck & Bus Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	CTH F					Lindsay Road					CTH F					Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	13	0	0	13	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	21	136
	6:15 AM	0	16	0	0	16	2	0	0	0	2	1	10	0	0	11	0	0	0	0	0	29	152
	6:30 AM	0	16	1	0	17	0	0	3	0	3	1	16	0	0	17	0	0	0	0	0	37	164
	6:45 AM	0	17	0	0	17	1	0	1	0	2	0	30	0	0	30	0	0	0	0	0	49	163
	7:00 AM	0	25	0	0	25	2	0	0	0	2	0	10	0	0	10	0	0	0	0	0	37	150
	7:15 AM	0	27	0	0	27	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	41	156
	7:30 AM	0	16	1	0	17	0	0	0	0	0	2	17	0	0	19	0	0	0	0	0	36	163
	7:45 AM	0	17	0	0	17	0	1	0	0	1	1	16	0	0	17	0	1	0	0	1	36	177
	8:00 AM	0	12	0	0	12	1	0	0	0	1	0	30	0	0	30	0	0	0	0	0	43	190
	8:15 AM	1	27	0	0	28	0	0	1	0	1	1	18	0	0	19	0	0	0	0	0	48	184
	8:30 AM	0	10	0	0	10	1	0	1	0	2	1	37	0	0	38	0	0	0	0	0	50	167
	8:45 AM	0	30	0	0	30	1	0	0	0	1	0	16	0	0	16	1	1	0	0	2	49	155
	9:00 AM	1	11	0	0	12	0	0	0	0	0	1	24	0	0	25	0	0	0	0	0	37	140
	9:15 AM	0	15	1	0	16	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	31	153
	9:30 AM	0	19	0	0	19	0	0	0	0	0	1	18	0	0	19	0	0	0	0	0	38	180
9:45 AM	0	17	0	0	17	1	0	1	0	2	0	14	0	0	14	1	0	0	0	1	34	192	
Midday Peak Period	10:00 AM	0	23	0	0	23	0	1	2	0	3	2	22	0	0	24	0	0	0	0	0	50	207
	10:15 AM	0	32	0	0	32	0	0	0	0	0	0	24	1	0	25	0	1	0	0	1	58	202
	10:30 AM	0	21	0	0	21	0	1	1	0	2	1	26	0	0	27	0	0	0	0	0	50	187
	10:45 AM	0	29	0	0	29	0	0	0	0	0	1	19	0	0	20	0	0	0	0	0	49	177
	11:00 AM	0	23	0	0	23	0	1	1	0	2	1	19	0	0	20	0	0	0	0	0	45	176
	11:15 AM	0	20	0	0	20	1	0	1	0	2	2	19	0	0	21	0	0	0	0	0	43	185
	11:30 AM	0	22	0	0	22	0	0	1	0	1	1	16	0	0	17	0	0	0	0	0	40	192
	11:45 AM	0	19	0	0	19	2	0	0	0	2	0	27	0	0	27	0	0	0	0	0	48	206
	12:00 PM	0	22	0	0	22	0	0	1	0	1	0	31	0	0	31	0	0	0	0	0	54	224
	12:15 PM	0	28	1	0	29	1	0	2	0	3	1	17	0	0	18	0	0	0	0	0	50	223
	12:30 PM	0	23	0	0	23	0	0	0	0	0	1	28	0	0	29	0	2	0	0	2	54	213
	12:45 PM	0	38	0	0	38	1	1	0	0	2	0	26	0	0	26	0	0	0	0	0	66	203
	1:00 PM	0	29	0	0	29	0	0	1	0	1	2	21	0	0	23	0	0	0	0	0	53	182
	1:15 PM	0	8	0	0	8	0	0	1	0	1	1	30	0	0	31	0	0	0	0	0	40	186
	1:30 PM	0	24	0	0	24	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	44	205
1:45 PM	0	17	0	0	17	0	0	0	0	0	0	28	0	0	28	0	0	0	0	0	45	202	
PM Peak Period	2:00 PM	0	28	1	0	29	0	0	0	0	0	1	27	0	0	28	0	0	0	0	0	57	201
	2:15 PM	0	29	0	0	29	0	0	3	0	3	1	25	0	0	26	0	1	0	0	1	59	179
	2:30 PM	0	22	1	0	23	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	41	156
	2:45 PM	0	18	1	0	19	1	0	0	0	1	0	23	0	0	23	0	1	0	0	1	44	149
	3:00 PM	0	17	0	0	17	0	1	0	0	1	1	15	0	0	16	0	0	1	0	1	35	132
	3:15 PM	1	15	1	0	17	0	0	1	0	1	2	15	1	0	18	0	0	0	0	0	36	129
	3:30 PM	0	21	0	0	21	0	0	1	0	1	1	10	0	0	11	0	1	0	0	1	34	128
	3:45 PM	0	14	0	0	14	0	0	0	0	0	2	11	0	0	13	0	0	0	0	0	27	121
	4:00 PM	0	12	0	0	12	0	1	0	0	1	0	18	0	0	18	0	1	0	0	1	32	111
	4:15 PM	0	16	1	0	17	0	1	0	0	1	3	14	0	0	17	0	0	0	0	0	35	92
	4:30 PM	0	13	0	0	13	0	0	0	0	0	0	13	0	0	13	0	0	1	0	1	27	95
	4:45 PM	0	8	0	0	8	0	1	0	0	1	0	7	1	0	8	0	0	0	0	0	17	87
	5:00 PM	0	4	0	0	4	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	13	88
	5:15 PM	0	18	0	0	18	1	0	0	0	1	1	17	0	0	18	1	0	0	0	1	38	92
	5:30 PM	0	7	1	0	8	1	0	0	0	1	1	9	0	0	10	0	0	0	0	0	19	65
	5:45 PM	0	10	0	0	10	0	0	0	0	0	2	5	0	0	7	0	1	0	0	1	18	54
	6:00 PM	1	7	1	0	9	0	0	0	0	0	0	7	0	0	7	1	0	0	0	1	17	42
	6:15 PM	0	4	0	0	4	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	11	
	6:30 PM	0	4	0	0	4	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	8	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	6	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	4	933	11	0	948	17	9	23	0	49	39	924	3	0	966	4	10	2	0	16	1979		

Peak Hour Single Unit (SU) Truck & Buses Volume Summary

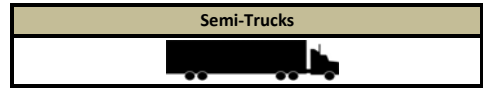
Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	85	1	0	86	2	1	0	0	3	3	57	0	0	60	0	1	0	0	1	150
MD 11:30 AM	0	91	1	0	92	3	0	4	0	7	2	91	0	0	93	0	0	0	0	0	192
PM 4:30 PM	0	43	0	0	43	1	1	0	0	2	1	46	1	0	48	1	0	1	0	2	99

Intersection Traffic Volume Report

Count Basics			Page 8 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

15-Minute Semi-Truck Data

CTH F and Lindsay Road



15-Minute Semi-Truck Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	CTH F					Lindsay Road					CTH F					Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	11	45
	6:15 AM	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	12	42
	6:30 AM	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14	37
	6:45 AM	0	7	0	0	7	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	8	35
	7:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8	47
	7:15 AM	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7	53
	7:30 AM	0	3	0	0	3	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	12	61
	7:45 AM	0	11	0	0	11	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	20	65
	8:00 AM	0	6	0	0	6	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	14	53
	8:15 AM	0	5	0	0	5	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	15	54
	8:30 AM	0	7	0	0	7	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	16	45
	8:45 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8	45
	9:00 AM	0	5	0	0	5	0	0	0	0	0	1	9	0	0	10	0	0	0	0	0	15	51
	9:15 AM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6	57
	9:30 AM	0	7	0	0	7	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	16	70
	9:45 AM	0	4	0	0	4	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	14	68
Midday Peak Period	10:00 AM	0	8	0	0	8	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	21	68
	10:15 AM	0	7	0	0	7	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	19	58
	10:30 AM	0	2	0	0	2	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	14	45
	10:45 AM	0	7	0	0	7	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	14	40
	11:00 AM	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	11	44
	11:15 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6	43
	11:30 AM	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	9	51
	11:45 AM	0	6	0	0	6	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	18	46
	12:00 PM	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	10	38
	12:15 PM	0	9	0	0	9	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	14	33
	12:30 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4	27
	12:45 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10	31
	1:00 PM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5	28
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	8	42
	1:30 PM	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	8	44
	1:45 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7	44
PM Peak Period	2:00 PM	0	8	0	0	8	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	19	45
	2:15 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10	37
	2:30 PM	0	1	0	0	1	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	8	33
	2:45 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8	32
	3:00 PM	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11	35
	3:15 PM	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	6	42
	3:30 PM	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	7	49
	3:45 PM	0	1	0	0	1	0	0	0	0	0	1	9	0	0	10	0	0	0	0	0	11	49
	4:00 PM	0	10	0	0	10	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	18	45
	4:15 PM	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	13	32
	4:30 PM	0	4	1	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7	23
	4:45 PM	0	1	1	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7	21
	5:00 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5	26
	5:15 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4	25
	5:30 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5	25
	5:45 PM	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	12	23
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	4	16
	6:15 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4	
	6:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	
	6:45 PM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		0	226	2	0	228	0	0	2	0	2	4	307	0	0	311	0	0	0	0	0	541	

Peak Hour Semi-Truck Volume Summary

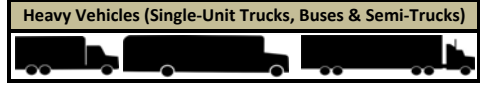
Hourly Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Hourly Volume
	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	25	0	0	25	0	0	1	0	1	1	34	0	0	35	0	0	0	0	0	61
MD 11:30 AM	0	17	0	0	17	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	33
PM 4:30 PM	0	21	1	0	22	0	0	1	0	1	1	25	0	0	26	0	0	0	0	0	49

Intersection Traffic Volume Report

Count Basics			Page 9 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

15-Minute Heavy Vehicle Data

CTH F and Lindsay Road



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	CTH F					Lindsay Road					CTH F					Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	16	0	0	16	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	32	181
	6:15 AM	0	23	0	0	23	2	0	0	0	2	1	15	0	0	16	0	0	0	0	0	41	194
	6:30 AM	0	22	1	0	23	0	0	3	0	3	1	24	0	0	25	0	0	0	0	0	51	201
	6:45 AM	0	24	0	0	24	1	0	1	0	2	0	31	0	0	31	0	0	0	0	0	57	198
	7:00 AM	0	30	0	0	30	2	0	0	0	2	0	13	0	0	13	0	0	0	0	0	45	197
	7:15 AM	0	30	0	0	30	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	48	209
	7:30 AM	0	19	1	0	20	0	0	0	0	0	2	26	0	0	28	0	0	0	0	0	48	224
	7:45 AM	0	28	0	0	28	0	1	0	0	1	2	24	0	0	26	0	1	0	0	1	56	242
	8:00 AM	0	18	0	0	18	1	0	1	0	2	0	37	0	0	37	0	0	0	0	0	57	243
	8:15 AM	1	32	0	0	33	0	0	1	0	1	1	28	0	0	29	0	0	0	0	0	63	238
	8:30 AM	0	17	0	0	17	1	0	1	0	2	1	46	0	0	47	0	0	0	0	0	66	212
	8:45 AM	0	35	0	0	35	1	0	0	0	1	0	19	0	0	19	1	1	0	0	2	57	200
Midday Peak Period	9:00 AM	1	16	0	0	17	0	0	0	0	0	2	33	0	0	35	0	0	0	0	0	52	191
	9:15 AM	0	19	1	0	20	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	37	210
	9:30 AM	0	26	0	0	26	0	0	0	0	0	1	27	0	0	28	0	0	0	0	0	54	250
	9:45 AM	0	21	0	0	21	1	0	1	0	2	0	24	0	0	24	1	0	0	0	1	48	260
	10:00 AM	0	31	0	0	31	0	1	2	0	3	2	35	0	0	37	0	0	0	0	0	71	275
	10:15 AM	0	39	0	0	39	0	0	0	0	0	0	36	1	0	37	0	1	0	0	1	77	260
	10:30 AM	0	23	0	0	23	0	1	1	0	2	1	38	0	0	39	0	0	0	0	0	64	232
	10:45 AM	0	36	0	0	36	0	0	0	0	0	2	25	0	0	27	0	0	0	0	0	63	217
	11:00 AM	0	30	0	0	30	0	1	1	0	2	1	23	0	0	24	0	0	0	0	0	56	220
	11:15 AM	0	22	0	0	22	1	0	1	0	2	2	23	0	0	25	0	0	0	0	0	49	228
	11:30 AM	0	25	0	0	25	0	0	1	0	1	1	22	0	0	23	0	0	0	0	0	49	243
	11:45 AM	0	25	0	0	25	2	0	0	0	2	0	39	0	0	39	0	0	0	0	0	66	252
PM Peak Period	12:00 PM	0	25	0	0	25	0	0	1	0	1	0	38	0	0	38	0	0	0	0	0	64	262
	12:15 PM	0	37	1	0	38	1	0	2	0	3	1	22	0	0	23	0	0	0	0	0	64	256
	12:30 PM	0	24	0	0	24	0	0	0	0	0	1	31	0	0	32	0	2	0	0	2	58	240
	12:45 PM	0	43	0	0	43	1	1	0	0	2	0	31	0	0	31	0	0	0	0	0	76	234
	1:00 PM	0	31	0	0	31	0	0	1	0	1	2	24	0	0	26	0	0	0	0	0	58	210
	1:15 PM	0	8	0	0	8	0	0	1	0	1	1	38	0	0	39	0	0	0	0	0	48	228
	1:30 PM	0	30	0	0	30	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	52	249
	1:45 PM	0	22	0	0	22	0	0	0	0	0	0	30	0	0	30	0	0	0	0	0	52	246
	2:00 PM	0	36	1	0	37	0	0	0	0	0	1	38	0	0	39	0	0	0	0	0	76	246
	2:15 PM	0	34	0	0	34	0	0	3	0	3	1	30	0	0	31	0	1	0	0	1	69	216
	2:30 PM	0	23	1	0	24	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	49	189
	2:45 PM	0	22	1	0	23	1	0	0	0	1	0	27	0	0	27	0	1	0	0	1	52	181
3:00 PM	0	22	0	0	22	0	1	0	0	1	1	21	0	0	22	0	0	1	0	1	46	167	
3:15 PM	1	16	1	0	18	0	0	1	0	1	2	20	1	0	23	0	0	0	0	0	42	171	
3:30 PM	0	22	0	0	22	0	0	1	0	1	1	16	0	0	17	0	1	0	0	1	41	177	
3:45 PM	0	15	0	0	15	0	0	0	0	0	3	20	0	0	23	0	0	0	0	0	38	170	
4:00 PM	0	22	0	0	22	0	1	1	0	2	0	25	0	0	25	0	1	0	0	1	50	156	
4:15 PM	0	22	1	0	23	0	1	0	0	1	3	21	0	0	24	0	0	0	0	0	48	124	
4:30 PM	0	17	1	0	18	0	0	0	0	0	0	15	0	0	15	0	0	1	0	1	34	118	
4:45 PM	0	9	1	0	10	0	1	0	0	1	0	12	1	0	13	0	0	0	0	0	24	108	
5:00 PM	0	7	0	0	7	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	18	114	
5:15 PM	0	20	0	0	20	1	0	0	0	1	1	19	0	0	20	1	0	0	0	1	42	117	
5:30 PM	0	10	1	0	11	1	0	0	0	1	1	11	0	0	12	0	0	0	0	0	24	90	
5:45 PM	0	15	0	0	15	0	0	0	0	0	2	12	0	0	14	0	1	0	0	1	30	77	
6:00 PM	1	7	1	0	9	0	0	0	0	0	0	11	0	0	11	1	0	0	0	1	21	58	
6:15 PM	0	5	0	0	5	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	15		
6:30 PM	0	6	0	0	6	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	11		
6:45 PM	0	2	0	0	2	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	11		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		4	1159	13	0	1176	17	9	25	0	51	43	1231	3	0	1277	4	10	2	0	16	2520	

Peak Hour Heavy Vehicle Volume Summary

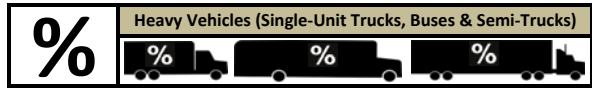
Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	107	1	0	108	2	1	0	0	3	4	81	0	0	85	0	1	0	0	1	197
MD 11:30 AM	0	112	1	0	113	3	0	4	0	7	2	121	0	0	123	0	0	0	0	0	243
PM 4:30 PM	0	53	2	0	55	1	1	0	0	2	1	57	1	0	59	1	0	1	0	2	118

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Percentages

CTH F and Lindsay Road

Count Basics			Page 10 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Percentages

15-Minute Time Period Start Time	From North					From East					From South					From West					Total Heavy Vehicle Percent	Hourly Heavy Vehicle Percent	
	CTH F					Lindsay Road					CTH F					Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0.0	12.7	0.0	0.0	12.7	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	11.4	0.0	0.0	0.0	0.0	0.0	11.4	10.8
	6:15 AM	0.0	12.3	0.0	0.0	12.2	40.0	0.0	0.0	0.0	20.0	8.3	11.2	0.0	0.0	10.9	0.0	0.0	0.0	0.0	0.0	11.4	10.2
	6:30 AM	0.0	9.6	25.0	0.0	9.8	0.0	0.0	42.9	0.0	37.5	6.2	10.6	0.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0	10.2	9.5
	6:45 AM	0.0	9.5	0.0	0.0	9.4	50.0	0.0	50.0	0.0	28.6	0.0	12.8	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	10.7	8.7
	7:00 AM	0.0	10.5	0.0	0.0	10.4	66.7	0.0	0.0	0.0	14.3	0.0	7.1	0.0	0.0	6.8	0.0	0.0	0.0	0.0	0.0	8.9	8.3
	7:15 AM	0.0	10.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	8.1	8.8
	7:30 AM	0.0	6.1	25.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	22.2	9.4	0.0	0.0	9.7	0.0	0.0	0.0	0.0	0.0	7.4	10.0
	7:45 AM	0.0	9.3	0.0	0.0	9.2	0.0	25.0	0.0	0.0	4.5	13.3	8.9	0.0	0.0	9.1	0.0	12.5	0.0	0.0	4.0	8.8	12.1
	8:00 AM	0.0	6.7	0.0	0.0	6.6	25.0	0.0	12.5	0.0	13.3	0.0	18.2	0.0	0.0	17.9	0.0	0.0	0.0	0.0	0.0	11.3	14.1
	8:15 AM	100.0	14.3	0.0	0.0	14.6	0.0	0.0	12.5	0.0	7.1	16.7	14.9	0.0	0.0	14.6	0.0	0.0	0.0	0.0	0.0	13.9	15.7
	8:30 AM	0.0	8.4	0.0	0.0	8.4	33.3	0.0	25.0	0.0	28.6	25.0	26.6	0.0	0.0	26.4	0.0	0.0	0.0	0.0	0.0	16.4	15.7
	8:45 AM	0.0	17.6	0.0	0.0	17.4	50.0	0.0	0.0	0.0	8.3	0.0	13.3	0.0	0.0	12.9	50.0	33.3	0.0	0.0	33.3	15.6	16.2
	9:00 AM	50.0	12.0	0.0	0.0	12.3	0.0	0.0	0.0	0.0	0.0	50.0	24.1	0.0	0.0	24.6	0.0	0.0	0.0	0.0	0.0	17.4	16.1
	9:15 AM	0.0	13.1	100.0	0.0	13.7	0.0	0.0	0.0	0.0	0.0	0.0	13.4	0.0	0.0	12.8	0.0	0.0	0.0	0.0	0.0	12.8	17.9
	9:30 AM	0.0	19.0	0.0	0.0	18.6	0.0	0.0	0.0	0.0	0.0	14.3	23.1	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	19.1	21.6
	9:45 AM	0.0	12.1	0.0	0.0	11.9	50.0	0.0	25.0	0.0	33.3	0.0	21.1	0.0	0.0	20.0	12.5	0.0	0.0	0.0	8.3	15.3	22.1
Midday Peak Period	10:00 AM	0.0	21.7	0.0	0.0	21.7	0.0	25.0	28.6	0.0	25.0	33.3	28.7	0.0	0.0	28.9	0.0	0.0	0.0	0.0	0.0	24.7	24.3
	10:15 AM	0.0	27.3	0.0	0.0	26.7	0.0	0.0	0.0	0.0	0.0	0.0	34.6	25.0	0.0	32.7	0.0	33.3	0.0	0.0	20.0	28.4	23.4
	10:30 AM	0.0	18.3	0.0	0.0	17.8	0.0	50.0	20.0	0.0	18.2	16.7	26.0	0.0	0.0	25.2	0.0	0.0	0.0	0.0	0.0	21.2	20.9
	10:45 AM	0.0	27.5	0.0	0.0	27.3	0.0	0.0	0.0	0.0	0.0	28.6	22.9	0.0	0.0	22.9	0.0	0.0	0.0	0.0	0.0	23.2	19.5
	11:00 AM	0.0	25.6	0.0	0.0	25.6	0.0	25.0	16.7	0.0	14.3	12.5	19.0	0.0	0.0	17.9	0.0	0.0	0.0	0.0	0.0	20.8	19.1
	11:15 AM	0.0	18.2	0.0	0.0	17.5	100.0	0.0	16.7	0.0	20.0	50.0	19.2	0.0	0.0	19.8	0.0	0.0	0.0	0.0	0.0	18.1	18.7
	11:30 AM	0.0	16.1	0.0	0.0	15.9	0.0	0.0	11.1	0.0	8.3	20.0	17.7	0.0	0.0	17.3	0.0	0.0	0.0	0.0	0.0	16.1	19.3
	11:45 AM	0.0	19.7	0.0	0.0	19.4	100.0	0.0	0.0	0.0	25.0	0.0	24.8	0.0	0.0	23.8	0.0	0.0	0.0	0.0	0.0	21.3	20.0
	12:00 PM	0.0	17.0	0.0	0.0	16.9	0.0	0.0	25.0	0.0	8.3	0.0	24.4	0.0	0.0	22.6	0.0	0.0	0.0	0.0	0.0	19.2	21.1
	12:15 PM	0.0	24.0	33.3	0.0	24.2	50.0	0.0	28.6	0.0	27.3	33.3	16.9	0.0	0.0	17.0	0.0	0.0	0.0	0.0	0.0	20.6	21.3
	12:30 PM	0.0	18.7	0.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	33.3	21.4	0.0	0.0	21.5	0.0	33.3	0.0	0.0	25.0	19.1	20.6
	12:45 PM	0.0	27.9	0.0	0.0	27.2	100.0	20.0	0.0	0.0	25.0	0.0	27.7	0.0	0.0	25.4	0.0	0.0	0.0	0.0	0.0	25.7	20.1
	1:00 PM	0.0	21.4	0.0	0.0	21.2	0.0	0.0	25.0	0.0	16.7	40.0	19.7	0.0	0.0	19.8	0.0	0.0	0.0	0.0	0.0	19.7	18.4
	1:15 PM	0.0	8.4	0.0	0.0	8.1	0.0	0.0	50.0	0.0	10.0	25.0	25.0	0.0	0.0	24.1	0.0	0.0	0.0	0.0	0.0	17.5	18.7
	1:30 PM	0.0	22.6	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	15.4	0.0	0.0	14.5	0.0	0.0	0.0	0.0	0.0	17.4	19.0
	1:45 PM	0.0	19.6	0.0	0.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1	0.0	0.0	20.3	0.0	0.0	0.0	0.0	0.0	18.8	16.8
PM Peak Period	2:00 PM	0.0	21.1	100.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	16.7	21.7	0.0	0.0	21.2	0.0	0.0	0.0	0.0	0.0	20.7	15.8
	2:15 PM	0.0	22.2	0.0	0.0	21.7	0.0	0.0	37.5	0.0	25.0	20.0	16.1	0.0	0.0	15.9	0.0	100.0	0.0	0.0	50.0	18.9	13.3
	2:30 PM	0.0	11.4	25.0	0.0	11.5	0.0	0.0	0.0	0.0	0.0	0.0	11.6	0.0	0.0	11.0	0.0	0.0	0.0	0.0	0.0	10.8	11.2
	2:45 PM	0.0	14.0	50.0	0.0	13.9	50.0	0.0	0.0	0.0	11.1	0.0	14.6	0.0	0.0	13.9	0.0	33.3	0.0	0.0	14.3	13.9	10.3
	3:00 PM	0.0	11.0	0.0	0.0	10.7	0.0	33.3	0.0	0.0	7.7	11.1	10.8	0.0	0.0	10.6	0.0	0.0	50.0	0.0	16.7	10.6	8.8
	3:15 PM	50.0	9.6	50.0	0.0	10.6	0.0	0.0	25.0	0.0	14.3	22.2	8.8	33.3	0.0	9.6	0.0	0.0	0.0	0.0	0.0	9.8	8.2
	3:30 PM	0.0	9.3	0.0	0.0	9.0	0.0	0.0	12.5	0.0	7.1	16.7	6.7	0.0	0.0	6.6	0.0	25.0	0.0	0.0	10.0	7.8	7.6
	3:45 PM	0.0	8.1	0.0	0.0	7.9	0.0	0.0	0.0	0.0	0.0	42.9	6.9	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	7.4	6.7
	4:00 PM	0.0	7.5	0.0	0.0	7.3	0.0	25.0	33.3	0.0	20.0	0.0	8.9	0.0	0.0	8.4	0.0	25.0	0.0	0.0	9.1	8.0	5.7
	4:15 PM	0.0	7.0	25.0	0.0	7.1	0.0	25.0	0.0	0.0	5.6	23.1	6.8	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	7.1	4.4
	4:30 PM	0.0	6.1	33.3	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	3.6	0.0	0.0	50.0	0.0	12.5	4.7	3.9
	4:45 PM	0.0	3.5	100.0	0.0	3.7	0.0	11.1	0.0	0.0	3.6	0.0	3.4	5.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	3.5	3.6
	5:00 PM	0.0	2.4	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	2.5	4.1
	5:15 PM	0.0	6.3	0.0	0.0	6.0	10.0	0.0	0.0	0.0	5.3	5.3	4.3	0.0	0.0	4.1	11.1	0.0	0.0	0.0	5.0	4.9	4.7
	5:30 PM	0.0	3.5	20.0	0.0	3.7	20.0	0.0	0.0	0.0	5.0	6.7	3.3	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	3.4	4.5
	5:45 PM	0.0	7.9	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	18.2	4.5	0.0	0.0	4.9	0.0	50.0	0.0	0.0	12.5	5.9	4.7
	6:00 PM	33.3	3.8	33.3	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	6.1	16.7	0.0	0.0	0.0	5.9	5.2	4.0
	6:15 PM	0.0	3.3	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	4.0	
	6:30 PM	0.0	4.8	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	11.1	2.4	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	3.2	
	6:45 PM	0.0	1.7	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	11.1	5.2	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	3.4	
	7:00 PM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	7:15 PM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	7:30 PM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
7:45 PM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
8:00 PM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.									

Intersection Traffic Volume Report

15-Minute Pedestrian and Bicyclist Data

Count Basics			Page 11 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

CTH F and Lindsay Road



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
		CTH F			Lindsay Road			CTH F			Lindsay Road				
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	1	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	9:15 AM	0	1	1	0	0	0	0	0	0	0	0	0	1	1
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	10:45 AM	0	1	1	0	0	0	0	0	0	0	0	0	1	2
	11:00 AM	0	0	0	0	0	0	0	1	1	0	0	0	1	3
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	11:45 AM	0	2	2	0	0	0	0	0	0	0	0	0	2	2
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	12:45 PM	0	0	0	0	0	0	0	1	1	0	0	0	1	2
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:30 PM	0	0	0	0	0	0	0	1	1	0	0	0	1	2	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	2:15 PM	0	0	0	0	0	0	0	1	1	0	0	0	1	1
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6
	4:15 PM	0	0	0	0	0	0	0	1	1	0	0	0	1	7
	4:30 PM	0	1	1	0	0	0	0	2	2	0	0	0	3	6
	4:45 PM	0	1	1	0	0	0	0	1	1	0	0	0	2	3
	5:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	1	3
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	5:45 PM	0	2	2	0	0	0	0	0	0	0	0	0	2	2
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		0	9	9	0	1	1	0	8	8	0	0	0	18	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

APPENDIX C

EXISTING TRAFFIC CONTROL ANALYSIS OUTPUTS

Lanes, Volumes, Timings
3: CTH F & Lindsay Road

2019 Exist TWSC - AM.syn
10/09/2019

	↖	→	↗	↖	←	↖	↖	↖	↖	↖	↖	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	20	30	30	35	15	15	10	975	40	15	1200	5
Future Volume (vph)	20	30	30	35	15	15	10	975	40	15	1200	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0	0	0	0	250	225	250	225	225	225
Storage Lanes	0	0	0	0	0	0	1	1	1	1	1	1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.949			0.969				0.850			0.850
Flt Protected		0.988			0.974		0.950			0.950		
Satd. Flow (prot)	0	1764	0	0	1708	0	1671	3343	1495	1656	3312	1482
Flt Permitted		0.988			0.974		0.950			0.950		
Satd. Flow (perm)	0	1764	0	0	1708	0	1671	3343	1495	1656	3312	1482
Link Speed (mph)		35			35			55			55	
Link Distance (ft)		616			668			801			747	
Travel Time (s)		12.0			13.0			9.9			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	8%	8%	8%	9%	9%	9%
Adj. Flow (vph)	22	33	33	38	16	16	11	1060	43	16	1304	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	70	0	11	1060	43	16	1304	5
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

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Synchro 10 Report

HCM 6th TWSC
3: CTH F & Lindsay Road

2019 Exist TWSC - AM.syn
10/09/2019

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	20	30	30	35	15	15	10	975	40	15	1200	5
Future Vol, veh/h	20	30	30	35	15	15	10	975	40	15	1200	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	225	250	-	225
Veh in Median Storage, #	-	2	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	5	5	5	8	8	8	9	9	9
Mvmt Flow	22	33	33	38	16	16	11	1060	43	16	1304	5

Major/Minor	Minor2	Minor1	Major1	Major2								
Conflicting Flow All	1896	2461	652	1783	2423	530	1309	0	0	1103	0	0
Stage 1	1336	1336	-	1082	1082	-	-	-	-	-	-	-
Stage 2	560	1125	-	701	1341	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.6	6.6	7	4.26	-	-	4.28	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.6	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.6	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.55	4.05	3.35	2.28	-	-	2.29	-	-
Pot Cap-1 Maneuver	43	~ 31	413	50	31	486	494	-	-	589	-	-
Stage 1	163	222	-	227	286	-	-	-	-	-	-	-
Stage 2	483	281	-	389	214	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	37	~ 30	413	~ 37	30	486	494	-	-	589	-	-
Mov Cap-2 Maneuver	143	158	-	168	154	-	-	-	-	-	-	-
Stage 1	159	216	-	222	280	-	-	-	-	-	-	-
Stage 2	430	275	-	296	208	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.4	34	0.1	0.1
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	494	-	-	199	193	589	-	-
HCM Lane V/C Ratio	0.022	-	-	0.437	0.366	0.028	-	-
HCM Control Delay (s)	12.5	-	-	36.4	34	11.3	-	-
HCM Lane LOS	B	-	-	E	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2	1.6	0.1	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

TADI
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Synchro 10 Report

Lanes, Volumes, Timings
3: CTH F & Lindsay Road

2019 Exist TWSC - PM.syn
10/09/2019

	↖	→	↗	↘	↙	↘	↙	↘	↙	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	15	25	25	30	25	35	70	1550	55	10	1145	30
Future Volume (vph)	15	25	25	30	25	35	70	1550	55	10	1145	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0	0	0	0	250	225	250	225	225	225
Storage Lanes	0	0	0	0	0	0	1	1	1	1	1	1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.948			0.947				0.850			0.850
Flt Protected		0.988			0.984		0.950			0.950		
Satd. Flow (prot)	0	1728	0	0	1736	0	1736	3471	1553	1719	3438	1538
Flt Permitted		0.988			0.984		0.950			0.950		
Satd. Flow (perm)	0	1728	0	0	1736	0	1736	3471	1553	1719	3438	1538
Link Speed (mph)		35			35			55			55	
Link Distance (ft)		616			668			801			747	
Travel Time (s)		12.0			13.0			9.9			9.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	5%	5%	5%
Adj. Flow (vph)	17	28	28	34	28	40	80	1761	63	11	1301	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	102	0	80	1761	63	11	1301	34
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
3: CTH F & Lindsay Road

2019 Exist TWSC - PM.syn
10/09/2019

Intersection												
Int Delay, s/veh	9.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	15	25	25	30	25	35	70	1550	55	10	1145	30
Future Vol, veh/h	15	25	25	30	25	35	70	1550	55	10	1145	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	225	250	-	225
Veh in Median Storage, #	-	2	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	2	2	2	4	4	4	5	5	5
Mvmt Flow	17	28	28	34	28	40	80	1761	63	11	1301	34

Major/Minor	Minor2		Minor1		Major1		Major2			
Conflicting Flow All	2378	3307	651	2608	3278	881	1335	0	0	1824
Stage 1	1323	1323	-	1921	1921	-	-	-	-	-
Stage 2	1055	1984	-	687	1357	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.54	6.54	6.94	4.18	-	-	4.2
Critical Hdwy Stg 1	6.56	5.56	-	6.54	5.54	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.54	5.54	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.52	4.02	3.32	2.24	-	-	2.25
Pot Cap-1 Maneuver	18	~ 8	409	~ 12	~ 9	290	502	-	-	319
Stage 1	163	222	-	69	113	-	-	-	-	-
Stage 2	239	104	-	403	215	-	-	-	-	-
Platoon blocked, %								-	-	-
Mov Cap-1 Maneuver	~ 9	~ 6	409	~ 6	~ 7	290	502	-	-	319
Mov Cap-2 Maneuver	80	67	-	53	71	-	-	-	-	-
Stage 1	137	214	-	58	95	-	-	-	-	-
Stage 2	122	87	-	314	208	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	96.3	239	0.6	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	502	-	-	105	87	319	-	-
HCM Lane V/C Ratio	0.158	-	-	0.703	1.176	0.036	-	-
HCM Control Delay (s)	13.5	-	-	96.3	239	16.7	-	-
HCM Lane LOS	B	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0.6	-	-	3.7	7.2	0.1	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

APPENDIX D

TRAFFIC SIGNAL WARRANT DESCRIPTIONS

Traffic Signal Warrant Descriptions

Warrant 1, Eight Hour Vehicular Volume states that a traffic signal may be considered if one of the following conditions exists for at least eight hours of an average day:

- A. The vehicles per hour given on the major street meet or exceed 500 and the vehicles per hour on the minor street meet or exceed 150; or
- B. The vehicles per hour given on the major street meet or exceed 750 and the vehicles per hour on the minor street meet or exceed 75.

Or if the following two conditions exist for eight hours of an average day:

- A. The vehicles per hour on the major street and minor street meet or exceed 80% of the values stated in A (400 major, 120 minor); and
- B. The vehicles per hour on the major street and minor street meet or exceed 80% of the values stated in B (600 major, 60 minor).

Warrant 2, Four Hour Volume is satisfied if during any four hours of an average day the major street and minor street volumes fall above the 100 percent four-hour curves shown on the graph in the Appendix of this report.

Warrant 3, Peak Hour Volume is satisfied if during any hour of an average day the major street and minor street volumes fall above the 100 percent peak hour curves shown on the graph in the Appendix of this report. Note that this signal warrant is typically applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

Warrant 4, Pedestrian Volume states that a traffic signal may be considered at an intersection or midblock crossing if one of the following conditions exists for an average day:

- A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in the Appendix of this report; or
- B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in the Appendix of this report.

Warrant 5, School Crossing is satisfied if during any hour of an average day there are inadequate gaps in the traffic stream on the major street as related to the number and size of groups of school crossing children that the number of gaps during the duration when the children are crossing is less than the number of minutes in the same period and there are a minimum of 20 students during the highest crossing hour.

Warrant 6, Coordinated Signal System is satisfied if the adjacent traffic signals are so far apart that they do not provide adequate vehicle platooning (one-way or two-way streets), and the existing and proposed traffic signals would collectively provide a progressive operation (two-way streets). This warrant shall not be applied at locations where the nearest traffic signal on the major street is less than 300 feet.

Warrant 7, Crash Experience states that a traffic signal may be considered if an engineering study finds that all of the following criteria are met:

- A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and
- B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and
- C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Warrant 1 Condition A, or the vph in both of the 80 percent columns of Warrant 1 Condition B exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection.

Warrant 8, Roadway Network is satisfied if the common intersection of two or more major routes meets one or both of the following criteria:

- A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or
- B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).

A major route as used in this signal warrant shall have at least one of the following characteristics:

- A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow.
- B. It includes rural or suburban highways outside, entering, or traversing a city.
- C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant 9, Intersection Near a Grade Crossing is satisfied if none of the previous eight warrants are met, but the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

APPENDIX E

TRAFFIC SIGNAL CONTROL ANALYSIS OUTPUTS

Lanes, Volumes, Timings
3: CTH F & Lindsay Road

2019 Exist Signal - AM.syn
10/09/2019

	↖	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔	
Traffic Volume (vph)	20	30	30	35	15	15	10	975	40	15	1200	5	
Future Volume (vph)	20	30	30	35	15	15	10	975	40	15	1200	5	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	250		225	250		225	
Storage Lanes	0		0	0		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		0.949				0.969				0.850			0.850
Flt Protected		0.988				0.974		0.950		0.950			
Satd. Flow (prot)	0	1764	0	0	1708	0	1671	3343	1495	1656	3312	1482	
Flt Permitted		0.892				0.783		0.169		0.245			
Satd. Flow (perm)	0	1592	0	0	1373	0	297	3343	1495	427	3312	1482	
Right Turn on Red			No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		35			35			55			55		
Link Distance (ft)		616			668			801			747		
Travel Time (s)		12.0			13.0			9.9			9.3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	62%	
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	8%	8%	8%	9%	9%	9%	
Adj. Flow (vph)	22	33	33	38	16	16	11	1060	27	16	1304	3	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	88	0	0	70	0	11	1060	27	16	1304	3	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases		4			8			2		6		6	
Permitted Phases	4			8			2		2	6		6	
Detector Phase	4	4		8	8		2	2	2	6	6	6	
Switch Phase													
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0	15.0	15.0	15.0	15.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	36.0	36.0		36.0	36.0		46.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)	43.9%	43.9%		43.9%	43.9%		56.1%	56.1%	56.1%	56.1%	56.1%	56.1%	
Maximum Green (s)	30.0	30.0		30.0	30.0		40.0	40.0	40.0	40.0	40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag													
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min	
v/c Ratio		0.26			0.24		0.06	0.48	0.03	0.06	0.60	0.00	
Control Delay		21.3			21.5		5.7	7.2	4.9	5.5	8.5	4.7	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		21.3			21.5		5.7	7.2	4.9	5.5	8.5	4.7	
90th %ile Green (s)	11.6	11.6		11.6	11.6		38.2	38.2	38.2	38.2	38.2	38.2	
90th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold	Hold	Gap	Gap	Gap	
70th %ile Green (s)	10.0	10.0		10.0	10.0		30.1	30.1	30.1	30.1	30.1	30.1	

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
70th %ile Term Code	Min	Min		Min	Min		Hold	Hold	Hold	Gap	Gap	Gap	
50th %ile Green (s)	10.0	10.0		10.0	10.0		26.4	26.4	26.4	26.4	26.4	26.4	
50th %ile Term Code	Min	Min		Min	Min		Hold	Hold	Hold	Gap	Gap	Gap	
30th %ile Green (s)	10.0	10.0		10.0	10.0		25.9	25.9	25.9	25.9	25.9	25.9	
30th %ile Term Code	Min	Min		Hold	Hold		Dwell	Dwell	Dwell	Dwell	Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0	30.0	30.0	30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell	Dwell	Dwell	Dwell	Dwell	
Queue Length 50th (ft)		21			17		1	91	3	2	125	0	
Queue Length 95th (ft)		64			55		7	141	11	8	195	3	
Internal Link Dist (ft)		536			588			721			667		
Turn Bay Length (ft)							250		225	250		225	
Base Capacity (vph)		1053			908		242	2725	1218	348	2700	1208	
Starvation Cap Reductn	0			0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0			0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0			0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.08			0.08		0.05	0.39	0.02	0.05	0.48	0.00	

Intersection Summary												
Area Type:	Other											
Cycle Length:	82											
Actuated Cycle Length:	49.2											
Natural Cycle:	60											
Control Type:	Actuated-Uncoordinated											
90th %ile Actuated Cycle:	61.8											
70th %ile Actuated Cycle:	52.1											
50th %ile Actuated Cycle:	48.4											
30th %ile Actuated Cycle:	47.9											
10th %ile Actuated Cycle:	36											

Splits and Phases: 3: CTH F & Lindsay Road



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	30	30	35	15	15	10	975	40	15	1200	5
Future Volume (veh/h)	20	30	30	35	15	15	10	975	40	15	1200	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1826	1826	1826	1781	1781	1781	1767	1767	1767
Adj Flow Rate, veh/h	22	33	33	38	16	16	11	1060	27	16	1304	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	5	5	5	8	8	8	9	9	9
Cap, veh/h	142	158	121	245	100	66	262	1847	824	324	1832	817
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	224	833	634	645	527	347	401	3385	1510	490	3357	1497
Grp Volume(v), veh/h	88	0	0	70	0	0	11	1060	27	16	1304	3
Grp Sat Flow(s),veh/h/ln	1691	0	0	1519	0	0	401	1692	1510	490	1678	1497
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.0	9.4	0.4	1.0	13.1	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.0	1.5	0.0	0.0	14.1	9.4	0.4	10.4	13.1	0.0
Prop In Lane	0.25		0.37	0.54		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	421	0	0	411	0	0	262	1847	824	324	1832	817
V/C Ratio(X)	0.21	0.00	0.00	0.17	0.00	0.00	0.04	0.57	0.03	0.05	0.71	0.00
Avail Cap(c_a), veh/h	1187	0	0	1093	0	0	396	2980	1329	489	2956	1318
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	0.0	15.5	0.0	0.0	12.9	6.8	4.8	10.3	7.7	4.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.2	0.0	0.0	0.1	0.3	0.0	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.5	0.0	0.0	0.1	1.4	0.1	0.1	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	0.0	15.7	0.0	0.0	13.0	7.1	4.8	10.3	8.2	4.7
LnGrp LOS	B	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h	88			70			1098			1323		
Approach Delay, s/veh	15.9			15.7			7.1			8.2		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	30.8			14.6			30.8			14.6		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	40.0			30.0			40.0			30.0		
Max Q Clear Time (g_c+I1), s	16.1			3.9			15.1			3.5		
Green Ext Time (p_c), s	7.4			0.4			9.7			0.3		
Intersection Summary												
HCM 6th Ctrl Delay	8.2											
HCM 6th LOS	A											

Lanes, Volumes, Timings
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	15	25	25	30	25	35	70	1550	55	10	1145	30
Future Volume (vph)	15	25	25	30	25	35	70	1550	55	10	1145	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		225	250		225
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.948				0.947			0.850			0.850
Flt Protected		0.988				0.984		0.950		0.950		
Satd. Flow (prot)	0	1728	0	0	1736	0	1736	3471	1553	1719	3438	1538
Flt Permitted		0.911			0.860		0.179		0.093			
Satd. Flow (perm)	0	1593	0	0	1517	0	327	3471	1553	168	3438	1538
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			55			55	
Link Distance (ft)		616			668			801			747	
Travel Time (s)		12.0			13.0			9.9			9.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	62%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	5%	5%	5%
Adj. Flow (vph)	17	28	28	34	28	40	80	1761	39	11	1301	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	102	0	80	1761	39	11	1301	21
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2		6		6
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0	15.0	15.0	15.0	15.0
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	36.0	36.0		36.0	36.0		46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	43.9%	43.9%		43.9%	43.9%		56.1%	56.1%	56.1%	56.1%	56.1%	56.1%
Maximum Green (s)	30.0	30.0		30.0	30.0		40.0	40.0	40.0	40.0	40.0	40.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
v/c Ratio		0.27			0.40		0.35	0.72	0.04	0.09	0.53	0.02
Control Delay		25.4			28.1		11.3	9.9	4.6	7.1	7.0	4.6
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.4			28.1		11.3	9.9	4.6	7.1	7.0	4.6
90th %ile Green (s)	12.8	12.8		12.8	12.8		40.0	40.0	40.0	40.0	40.0	40.0
90th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max	Max	Hold	Hold	Hold
70th %ile Green (s)	10.6	10.6		10.6	10.6		40.0	40.0	40.0	40.0	40.0	40.0

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
70th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max	Max	Hold	Hold	Hold
50th %ile Green (s)	10.0	10.0		10.0	10.0		40.0	40.0	40.0	40.0	40.0	40.0
50th %ile Term Code	Min	Min		Min	Min		Max	Max	Max	Hold	Hold	Hold
30th %ile Green (s)	10.0	10.0		10.0	10.0		40.0	40.0	40.0	40.0	40.0	40.0
30th %ile Term Code	Hold	Hold		Min	Min		Max	Max	Max	Hold	Hold	Hold
10th %ile Green (s)	0.0	0.0		0.0	0.0		55.0	55.0	55.0	55.0	55.0	55.0
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell	Dwell	Dwell	Dwell	Dwell
Queue Length 50th (ft)		24			35		12	209	4	1	122	2
Queue Length 95th (ft)		56			73		45	326	14	8	190	9
Internal Link Dist (ft)		536			588			721			667	
Turn Bay Length (ft)							250		225	250		225
Base Capacity (vph)		765			728		231	2462	1101	119	2438	1091
Starvation Cap Reductn		0			0		0	0	0	0	0	0
Spillback Cap Reductn		0			0		0	0	0	0	0	0
Storage Cap Reductn		0			0		0	0	0	0	0	0
Reduced v/c Ratio		0.10			0.14		0.35	0.72	0.04	0.09	0.53	0.02

Intersection Summary												
Area Type:	Other											
Cycle Length:	82											
Actuated Cycle Length:	62.5											
Natural Cycle:	65											
Control Type:	Actuated-Uncoordinated											
90th %ile Actuated Cycle:	64.8											
70th %ile Actuated Cycle:	62.6											
50th %ile Actuated Cycle:	62											
30th %ile Actuated Cycle:	62											
10th %ile Actuated Cycle:	61											

Splits and Phases: 3: CTH F & Lindsay Road



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	25	25	30	25	35	70	1550	55	10	1145	30
Future Volume (veh/h)	15	25	25	30	25	35	70	1550	55	10	1145	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	17	28	28	34	28	40	80	1761	39	11	1301	21
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	2	2	2	4	4	4	5	5	5
Cap, veh/h	111	137	106	141	107	105	289	2175	970	188	2158	962
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	196	829	637	340	648	637	408	3497	1560	256	3469	1547
Grp Volume(v), veh/h	73	0	0	102	0	0	80	1761	39	11	1301	21
Grp Sat Flow(s),veh/h/ln	1662	0	0	1624	0	0	408	1749	1560	256	1735	1547
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	8.3	21.7	0.5	1.9	12.8	0.3
Cycle Q Clear(g_c), s	2.1	0.0	0.0	2.9	0.0	0.0	21.1	21.7	0.5	23.6	12.8	0.3
Prop In Lane	0.23		0.38	0.33		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	0	0	354	0	0	289	2175	970	188	2158	962
V/C Ratio(X)	0.21	0.00	0.00	0.29	0.00	0.00	0.28	0.81	0.04	0.06	0.60	0.02
Avail Cap(c_a), veh/h	937	0	0	923	0	0	324	2476	1104	210	2456	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	0.0	20.9	0.0	0.0	12.9	8.1	4.1	17.1	6.5	4.1
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.5	1.9	0.0	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	1.1	0.0	0.0	0.6	4.0	0.1	0.1	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	0.0	0.0	21.3	0.0	0.0	13.4	10.0	4.2	17.2	6.8	4.1
LnGrp LOS	C	A	A	C	A	A	B	B	A	B	A	A
Approach Vol, veh/h	73			102			1880			1333		
Approach Delay, s/veh	20.8			21.3			10.0			6.8		
Approach LOS	C			C			B			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	41.1			15.4			41.1			15.4		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	40.0			30.0			40.0			30.0		
Max Q Clear Time (g_c+I1), s	23.7			4.1			25.6			4.9		
Green Ext Time (p_c), s	11.5			0.3			7.4			0.5		
Intersection Summary												
HCM 6th Ctrl Delay	9.3											
HCM 6th LOS	A											

TADI

C:\Egnyte\Shared\WI\2419 CTH F with Lindsay Road (Wauk County)\Capacity Analysis\2019 Exist Signal - PM.syn

Synchro 10 Report



www.tadi-us.com

John Campbell, P.E., RSP₂
414-350-3256

jcampbell@tadi-us.com

Christian R. Sternke, P.E., RSP₁
csternke@tadi-us.com

CTH F & Lindsay Road Traffic Operations & Safety Intersection Analysis

March 2, 2020

**Pewaukee City Hall
W240 N3065 Pewaukee Rd
Pewaukee, WI 53072**

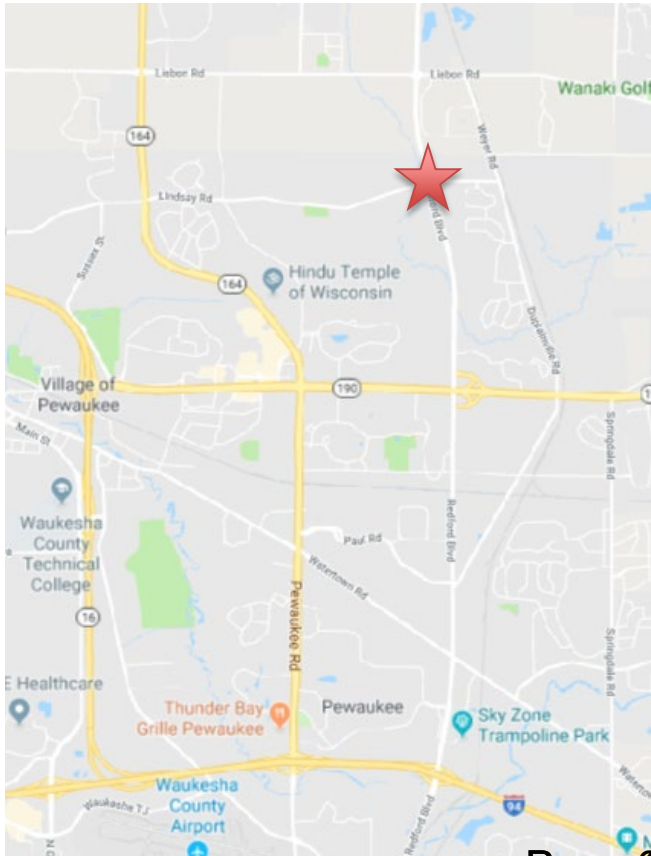


Today's Agenda

- *Introductions*
- *Study Purpose*
- *Intersection Operations*
- *Improvement Discussion*
 - *Traffic Signal Alternative*
 - *RCUT Alternative*
 - *Full Access Restriction*

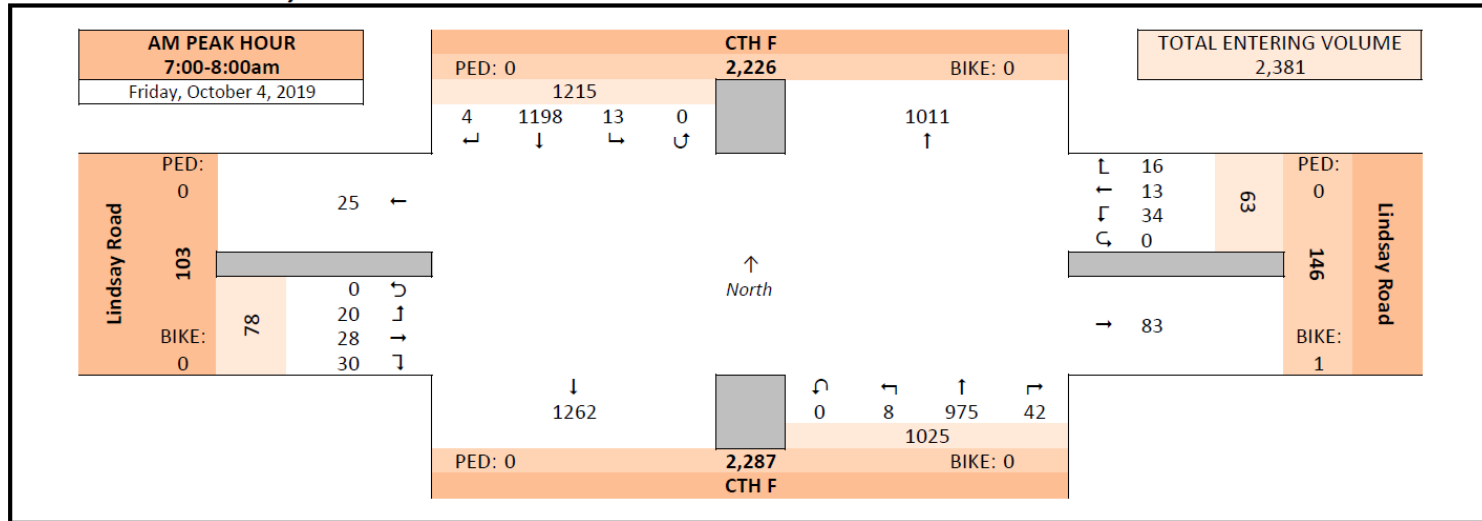
Study Purpose

- *Safety and operational analysis of CTH F intersection with Lindsay Road*

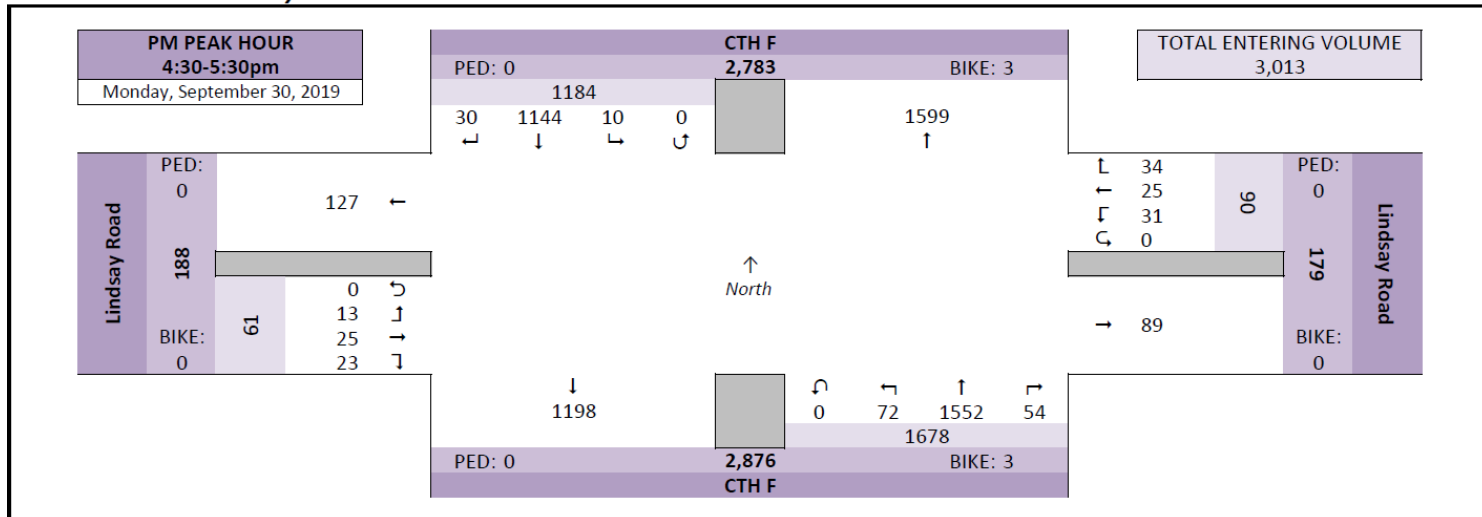


Traffic Counts

AM Peak Hour Summary



PM Peak Hour Summary



Existing Operations

- Operates Level-of-Service E/F on Lindsay Road Approaches*

Year 2019 Existing Traffic Operations & Queues
CTH F & Lindsay Road

Intersection	Peak Hour		Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
<i>Existing Geometrics with Two-Way Stop Control</i>	AM	LOS	E			D			B	*	*	B	*	*
		Queue	50			40			5	*	*	5	*	*
		Delay	36.4			34.0			12.5	*	*	11.3	*	*
	PM	LOS	F			F			B	*	*	C	*	*
		Queue	95			180			15	*	*	5	*	*
		Delay	96.3			239.0			13.5	*	*	16.7	*	*

(--) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

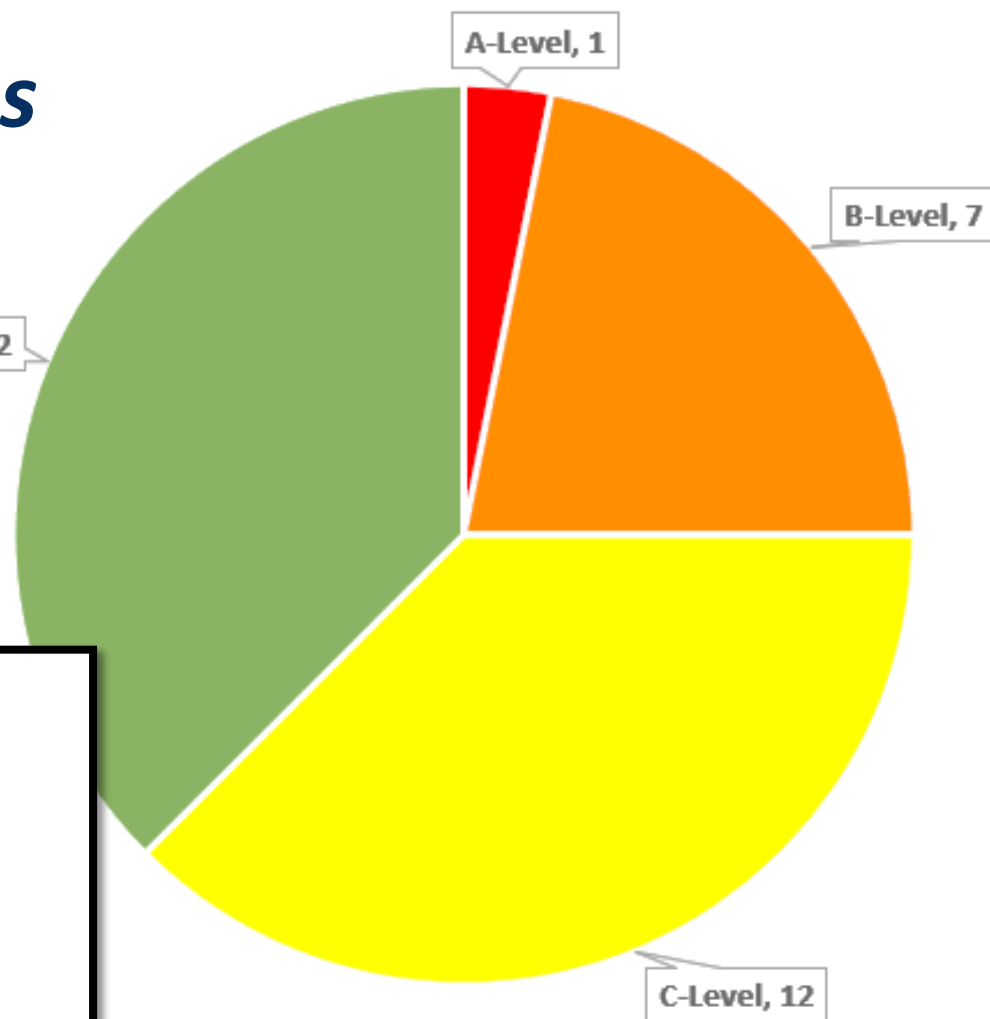
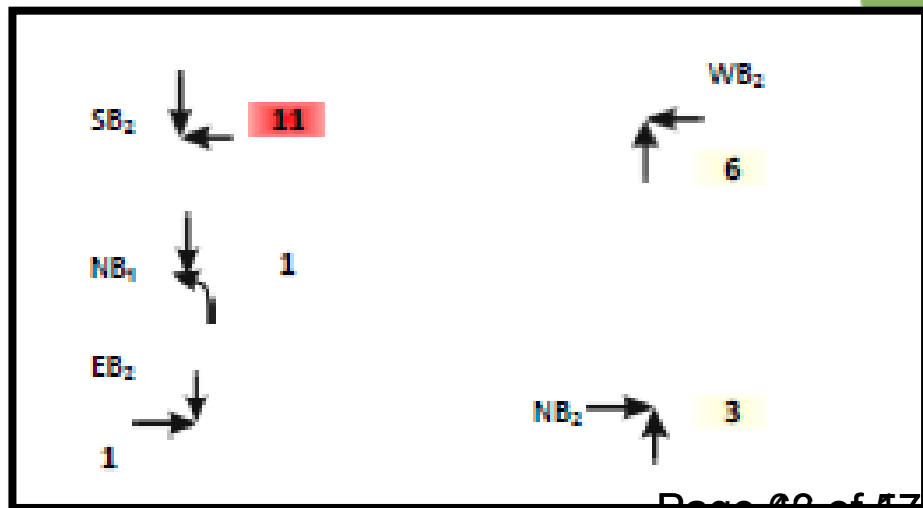
Queue is maximum of the 50th & 95th percentile queue, measured in feet.

Delay is HCM control delay, measured in seconds.

Crash History - 5 Years - (2015-2019)

- **27 Total Crashes**

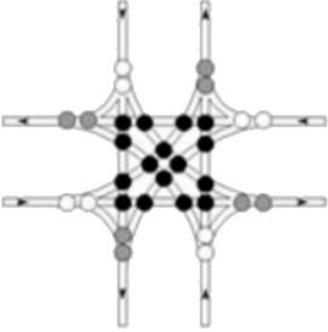
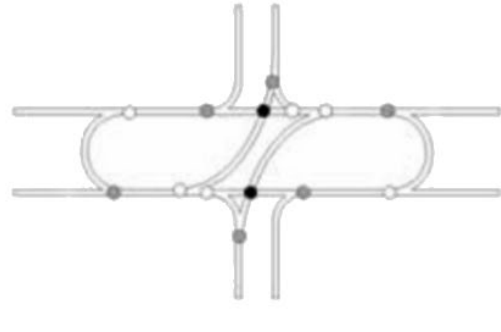
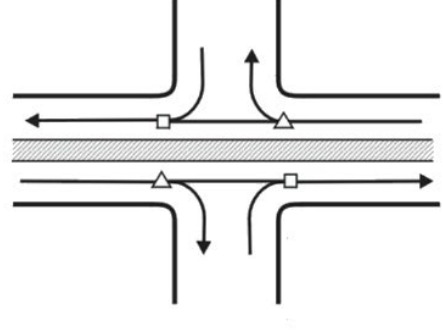
22 Angle Crashes



Improvement Discussion

- *Traffic Signal*
- *RCUT*
- *Full-Access Restriction*

Conflict Points

4-Legged Intersection	RCUT	Median Closure
		
32	14	4

Traffic Signal Alternative

- *Based on 13-hour traffic count, NO traffic signal warrants are currently met*
- *Warrant 1, eight-hour volumes, would be met if Lindsay Road volumes increase by 45%*
- *Warrant 7, crash experience, would be met if Lindsay Road volumes increase by 15%*

Traffic Signal Alternative

- LOS C or better for all movements expected with existing volumes*

Intersection	Peak Hour		Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
<i>Existing Geometrics with Traffic Signal Control</i>	AM	LOS	B			B			B	A	A	B	A	A
		Queue	65			55			5	140	10	10	195	5
		Delay	15.9			15.7			13.0	7.1	4.8	10.3	8.2	4.7
	PM	LOS	C			C			B	B	A	B	A	A
		Queue	55			75			45	325	15	10	190	10
		Delay	20.8			21.3			13.4	10.0	4.2	17.2	6.8	4.1

(--) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Queue is maximum of the 50th & 95th percentile queue, measured in feet.

Delay is HCM control delay, measured in seconds.

RCUT/J-Turn Video



<https://www.youtube.com/watch?v=nPcMeh0gDC0>

RCUT Alternative

- *Example RCUT located at STH 23 & CTH M intersection in Plymouth, WI*



RCUT Alternative

Hi John,

My closest example would likely be STH 23 & CTH M in Sheboygan County. It is located about 2 miles east of the STH 57 interchange. Mainline STH 23 varies between 22,000-25,000. I do not have a count on CTH M, but I would suspect its volume is between 1,000-1,500.

				Year	K	A	B	C	PDO	KABC	Total
Northeast	Sheboygan	WIS 23 & CTH M	2013	2000	1	0	1	1	2	3	5
				2001	0	0	0	0	0	0	0
				2002	0	0	0	0	1	0	1
				2003	0	1	3	1	0	5	5
				2004	0	1	1	1	1	3	4
				2005	1	1	0	0	0	2	2
				2006	0	0	0	0	2	0	2
				2007	0	0	2	0	2	2	4
				2008	0	0	0	1	3	1	4
				2009	0	0	0	0	0	0	0
				2010	0	0	0	0	0	0	0
				2011	0	0	0	0	0	0	0
				2012	0	0	1	0	0	1	1
				Total	2	3	8	4	11	17	28
				2014	0	0	0	0	2	0	2
				2015	0	0	0	0	1	0	1
				2016	0	0	0	0	2	0	2
				2017	0	0	0	0	0	0	0
				2018	0	0	0	0	0	0	0
				Total	0	0	0	0	5	0	5

Scott A. Nelson, P.E.
 WisDOT Traffic Engineer
 Phone: (920) 366-2109

Full Access Restriction

- *Median Closure*
 - *Undesirable impact on traffic patterns/access*



Summary

- ***Improvement Options***
 - ***Traffic Signal***
 - ***RCUT***
 - ***Full Access Restriction***
- ***HSIP Potential***
 - ***90% Federal Aid***
 - ***Next Applications are Due Aug. 15, 2020***



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414-350-3256

jcampbell@tadi-us.com

Christian R. Sternke, P.E., RSP₁

csternke@tadi-us.com

Thank you.



AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT is entered into between the **City of Pewaukee** (Client) and **Traffic Analysis & Design, Inc.** (Engineer), based upon Client's intention to perform operational analysis for a RCUT configuration at the intersection of CTH L & Lindsay Road in The City of Pewaukee, Wisconsin (the Project) and Client's requirement for certain engineering services in connection with the Project (the Services) which Engineer is prepared to provide.

1. Engineer shall provide the Services described in Attachment A, "Scope of Services", according to Attachment A, "Schedule".
2. Client shall pay Engineer in accordance with Attachment A, "Compensation". Invoices shall be due and payable upon receipt. Invoice amounts not paid within 30 days after receipt shall accrue interest at the rate of 1.5% per month (or the maximum rate permitted by law, if less), with payments applied first to accrued interest and then to unpaid principal.
3. The same degree of care, skill, and diligence shall be exercised in the performance of the Services as is ordinarily possessed and exercised by a member of the same profession, currently practicing, under similar circumstances. No other warranty, express or implied, is included in this Agreement or in any drawing, specification, report, opinion, or other instrument of service, in any form or media, produced in connection with the Services.
4. Engineer shall not be liable to Client for any consequential damages resulting in any way from the performance of the Services. To the fullest extent permitted by law, Engineer's liability under this Agreement shall not exceed Engineer's total compensation actually received under this Agreement.
5. Engineer and Client waive all rights against each other for damages covered by property insurance during and after the completion of the Services.
6. Notwithstanding anything to the contrary in any Attachments hereto, Engineer has no responsibility for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project; or (b) the failure of any contractor, subcontractor, vendor, or other Project participant, not under contract to Engineer, to fulfill contractual responsibilities to Client or to comply with federal, state, or local laws, regulations, and codes.
7. Engineer does not guarantee that proposals, bids, or actual Project costs will not vary from Engineer's cost estimates or that actual schedules will not vary from Engineer's projected schedules.
8. This Agreement may be terminated upon written notice at Client's convenience or by either party in the event of substantial failure by the other party to perform in accordance with the terms of this Agreement. Engineer shall terminate performance of Services on a schedule acceptable to Client, and Client shall pay Engineer for all Services performed and reasonable termination expenses. Paragraphs 4 and 5 shall survive any termination or completion of this Agreement.
9. All documents prepared by Engineer pursuant to this Agreement are instruments of service in respect to the Project. Any use except for the specific purpose intended by this Agreement will be at the user's sole risk and without liability or legal exposure to Engineer. Engineer shall retain its ownership in its data bases, computer software, and other proprietary property. Intellectual property developed, utilized, or modified in the performance of the Services shall remain the property of Engineer.
10. The Services provided for in this Agreement are for the sole use and benefit of Client and Engineer. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than Client and Engineer.
11. Any notice required by this Agreement shall be made in writing to the address specified below:

Client: City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072
Attn: Magdelene Wagner, P.E.
Public Works Director

Engineer: Traffic Analysis & Design, Inc.
PO Box 128
Cedarburg, WI 53012
Attn: John A. Bieberitz, P.E., PTOE

IN WITNESS WHEREOF, Client and Engineer have executed this Agreement, effective as of February 24, 2020.

City of Pewaukee (Client)

By: _____

Title: _____

Date: _____

Traffic Analysis & Design, Inc. (Engineer)

By:  _____
John A. Bieberitz, P.E., PTOE

Date: 2/24/20

ATTACHMENT A

SCOPE OF SERVICES

Engineer will conduct operation analysis for a reduced-conflict-u-turn (RCUT) configuration at the intersection of County Trunk Highway (CTH) F and Lindsay Road consisting of a traffic forecast, Highway Capacity Software (HCS7) analysis, a memorandum documenting the findings and recommendations, and presenting the results at a council meeting on March 2, 2020. Each element of the scope is outlined below.

Task 1 – Traffic Forecast

Engineer will utilize TADI's historical traffic database of ADT's on arterials and collectors from WisDOT within the study area from 1976 to present to determine expected growth rates in future traffic. Engineer will use the growth rate to factor the existing traffic turning movement counts to the Design Year 2030 traffic volumes. Engineer will then determine the weekday AM and PM peak hour traffic turning movements for the Year 2019 and Design Year 2030 conditions for the traffic analysis. Engineer will also determine the Year 2019 and Design Year 2030 ADT's on the four legs of the CTH F and Lindsay Road.

Task 2 – Traffic Operations Analysis

Engineer will conduct an intersection operational analysis for the weekday AM and PM peak hours for the CTH F and Lindsay Road intersection for the following scenarios:

- Existing (2019) conditions with RCUT
- Future (2030) existing two-way stop control
- Future (2030) conditions with RCUT

Engineer will make recommendations such as turn bay length extensions, additional turn lanes, channelization, traffic control modifications and other improvements required to provide LOS 'D' or better for all traffic movements.

Task 3 – Report/Presentation

Engineer will prepare a technical memorandum summarizing the findings of the analysis and recommendations for the next steps. The report will be written as an addendum to the original report dated November 7th, 2019 and the results will be presented at the March 2, 2020 council meeting.

ADDITIONAL WORK

In-person meetings (aside from presenting the results at the March 2, 2020 council meeting) are not included in the scope of work and would require an amendment.

SCHEDULE

Engineer will complete the traffic study within one week of authorization.

COMPENSATION

Compensation for the services described above, CLIENT shall pay Engineer a lump sum fee of One Thousand Nine-Hundred and Ninety-Four Dollars and Seventeen Cents (\$1,994.17).

All services not cited in Attachment A, Scope of Services, will be conducted as additional services under an Amendment to this Agreement.

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 8.**

DATE: June 15, 2020

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner

SUBJECT:

Lindsay Road and Redford Boulevard (CTH F) intersection Study [Wagner]

BACKGROUND:

Previously, the Common Council authorized the City to fund an intersection study of Lindsay Road and Redford Boulevard (CTH F) being completed on our behalf by Waukesha County. The study was completed and a draft report provided to the City in November of 2019. See the study attached. Also in November, the Consultant, along with Waukesha County Staff, presented the Study results to City Staff. At the March 2nd Common Council meeting, Traffic Analysis and Design Inc (TADI) presented the study to the Council Members.

On Monday, February 17, 2020, there was another severe accident at this intersection. Waukesha County, the Sheriff's Department, and the Engineering office received follow up phone calls regarding this accident and the status of the intersection study prompting Staff to bring the presentation to the City Common Council on March 2nd. Unfortunately the day after our presentation (Tuesday March 3rd), there was another severe accident at this intersection.

During the discussion regarding the Study, the Common Council requested a proposal for further analysis of the intersection that included traffic projections from future developable lands near the intersection. Staff also asked for a re-evaluation of alternatives for this intersection beyond the Restricted Crossing U-Turn (RCUT). See the attached Proposal and Agreement. The proposal would include all the information necessary to apply for the Highway Safety Improvement Program (HSIP) grant for funding the improvements at this intersection.

FINANCIAL IMPACT:

There is currently no funds budgeted in 2020 for design or construction improvements for this intersection in the City budget nor in the County budget.

In discussions with Waukesha County, their budget programming typically has a 3-5 year window. In addition, the project would likely include a substantial partnership with the City to assist in the funding of the project.

If the amended study by Traffic Analysis & Design, Inc. is authorized, \$15,912 will need to be re-allocated to allow for this study. It is recommended these funds be re-allocated from the Roundy's Industrial Park Road project previously authorized to be delayed to 2021 or from Contingency Funds.

RECOMMENDED MOTION:

Authorize the Director of Public Works and City Administrator, if desired, to begin discussions with Waukesha County regarding final design of the intersection improvements and establishing funding or other partnership agreements for the intersection improvements including applying for the HSIP grant.

Authorize Traffic Analysis & Design, Inc. to complete an amended study in accordance with the Agreement in the amount not to exceed \$15,912 with funds re-allocated from the account of your choice.

ATTACHMENTS:

Description

TADI Agreement

Intersection Study

AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT is entered into between the **City of Pewaukee** (Client) and **Traffic Analysis & Design, Inc.** (Engineer), based upon Client's intention to perform a traffic impact study and intersection control evaluation for the intersection of CTH F & Lindsay Road in The City of Pewaukee, Wisconsin (the Project) and Client's requirement for certain engineering services in connection with the Project (the Services) which Engineer is prepared to provide.

1. Engineer shall provide the Services described in Attachment A, "Scope of Services", according to Attachment A, "Schedule".
2. Client shall pay Engineer in accordance with Attachment A, "Compensation". Invoices shall be due and payable upon receipt. Invoice amounts not paid within 30 days after receipt shall accrue interest at the rate of 1.5% per month (or the maximum rate permitted by law, if less), with payments applied first to accrued interest and then to unpaid principal.
3. The same degree of care, skill, and diligence shall be exercised in the performance of the Services as is ordinarily possessed and exercised by a member of the same profession, currently practicing, under similar circumstances. No other warranty, express or implied, is included in this Agreement or in any drawing, specification, report, opinion, or other instrument of service, in any form or media, produced in connection with the Services.
4. Engineer shall not be liable to Client for any consequential damages resulting in any way from the performance of the Services. To the fullest extent permitted by law, Engineer's liability under this Agreement shall not exceed Engineer's total compensation actually received under this Agreement.
5. Engineer and Client waive all rights against each other for damages covered by property insurance during and after the completion of the Services.
6. Notwithstanding anything to the contrary in any Attachments hereto, Engineer has no responsibility for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project; or (b) the failure of any contractor, subcontractor, vendor, or other Project participant, not under contract to Engineer, to fulfill contractual responsibilities to Client or to comply with federal, state, or local laws, regulations, and codes.
7. Engineer does not guarantee that proposals, bids, or actual Project costs will not vary from Engineer's cost estimates or that actual schedules will not vary from Engineer's projected schedules.
8. This Agreement may be terminated upon written notice at Client's convenience or by either party in the event of substantial failure by the other party to perform in accordance with the terms of this Agreement. Engineer shall terminate performance of Services on a schedule acceptable to Client, and Client shall pay Engineer for all Services performed and reasonable termination expenses. Paragraphs 4 and 5 shall survive any termination or completion of this Agreement.
9. All documents prepared by Engineer pursuant to this Agreement are instruments of service in respect to the Project. Any use except for the specific purpose intended by this Agreement will be at the user's sole risk and without liability or legal exposure to Engineer. Engineer shall retain its ownership in its data bases, computer software, and other proprietary property. Intellectual property developed, utilized, or modified in the performance of the Services shall remain the property of Engineer.
10. The Services provided for in this Agreement are for the sole use and benefit of Client and Engineer. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than Client and Engineer.
11. Any notice required by this Agreement shall be made in writing to the address specified below:

Client: City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072
Attn: Magdelene Wagner, P.E.
Public Works Director

Engineer: Traffic Analysis & Design, Inc.
PO Box 128
Cedarburg, WI 53012
Attn: John A. Bieberitz, P.E., PTOE

IN WITNESS WHEREOF, Client and Engineer have executed this Agreement, effective as of March 6, 2020.

City of Pewaukee (Client)

By: _____

Title: _____

Date: _____

Traffic Analysis & Design, Inc. (Engineer)

By:  _____
John A. Bieberitz, P.E., PTOE

Date: 3/6/20

ATTACHMENT A

SCOPE OF SERVICES

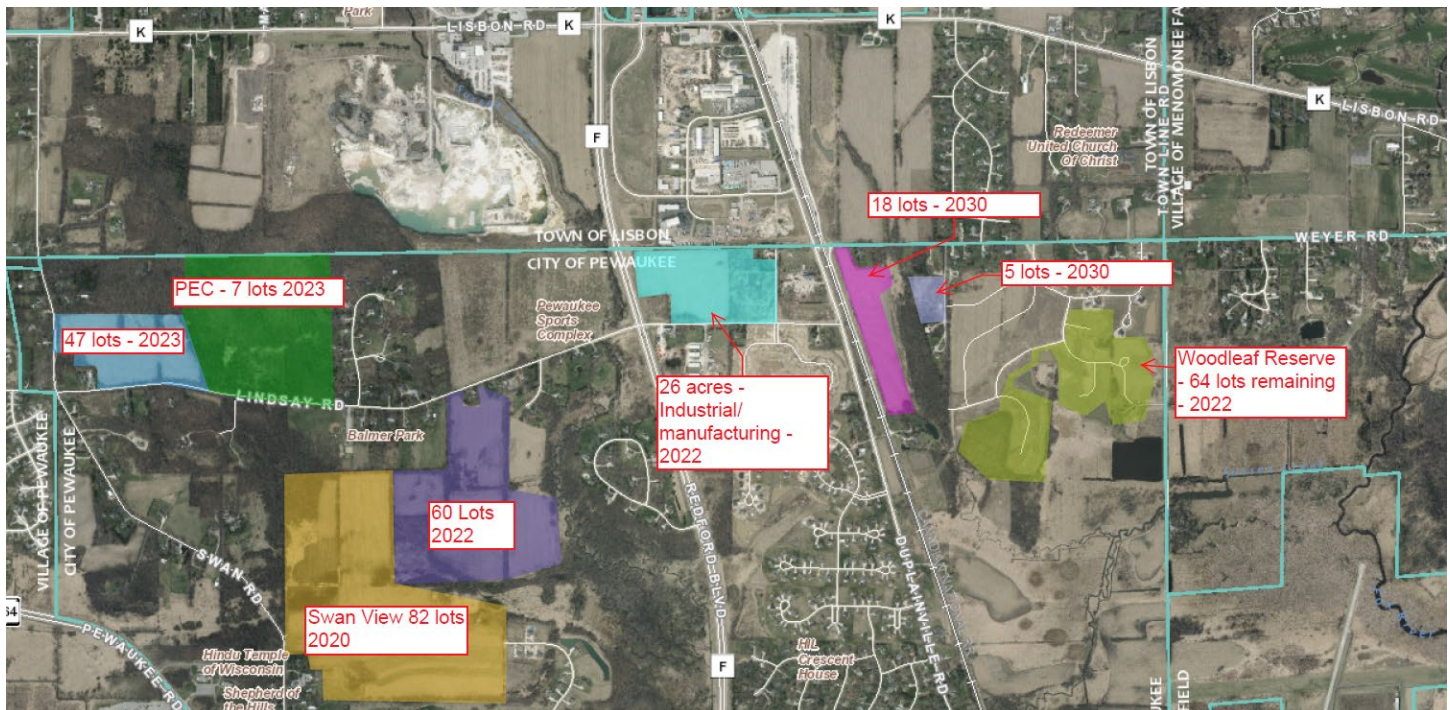
Engineer shall provide the Services described below. As indicated, Tasks 1-6 include activities involved with preparation of a Traffic Impact Analysis (TIA) and intersection control evaluation (ICE) for the intersection of CTH F and Lindsay Road. The TIA and ICE analysis will be completed to Waukesha County standards and that of the Highway Safety Improvement Program, but will not be completed to WisDOT standards as WisDOT will not review the TIA or ICE.

Engineer will prepare the traffic impact study analysis in accordance with the Institute of Transportation Engineers Traffic Impact Analysis (TIA) Guidelines and current Waukesha County TIA Guidelines. The study area will include the intersection of CTH F & Lindsay Road. Surrounding developments and potential developments, as provided by the CLIENT, will be included in the analysis.

The study will analyze the following scenarios:

1. Existing 2020 conditions, which will include:
 - a. Traffic from weekday turning movement count in October 2019
 - b. Traffic projected from the Pewaukee Sports Complex and the Swan View 82 Lot development
2. Future 2030 conditions, which will include:
 - a. Background traffic growth
 - b. Traffic projected from the Pewaukee Sports Complex, the Swan View 82 Lot development, and the other potential developments shown in [Figure 1](#) below

Figure 1 – Potential Future Developments Provided by Client



The TIA submittal will consist of a report with exhibits illustrating the traffic counts, traffic projections, level of service operations, trip generation, trip distribution, site plan, text, analysis procedures, recommendations, conclusions and appendix of all intersection capacity calculations.

Task 1 – Traffic Projections

Engineer will utilize TADI's historical traffic database of ADT's on arterials and collectors from WisDOT within the study area from 1976 to present to determine expected growth rates in future traffic. Engineer will use the growth rate to factor the existing traffic turning movement counts to the Year 2030 background traffic volumes. Engineer will then determine the weekday AM and PM peak hour traffic turning movements for the Year 2030 background conditions for the traffic analysis.

Task 2 – 2020 Traffic Analysis

Trip Generation and Distribution

Engineer will estimate the volume of traffic expected to be generated by Pewaukee Sports Complex and the Swan View 82 Lot development based on the known uses and utilizing the fitted curve equations in the *ITE Trip Generation Manual, 10th Edition*. Traffic will be generated for the weekday daily, weekday AM and PM peak hours. The traffic generated will be distributed to the study area intersections for the total build conditions based on the existing traffic patterns. The traffic assignment will be added to the existing traffic volumes (counted in October 2019) at the study area intersection.

Traffic Operational Analysis

Engineer will analyze the study area intersection as previously described for the typical weekday AM and PM peak hours for Year 2020 build conditions. The following configurations will be analyzed:

1. Two-way stop control
2. Restricted-Crossing-U-Turn (RCUT)
3. Traffic Signal
4. Roundabout

Based on this analysis, Engineer will make recommendations on traffic control, intersection geometrics, turn bay length extensions, channelization, by-pass lanes and other improvements required to provide LOS 'D' or better for all traffic movements at the study area intersections.

Task 3 – 2030 Traffic Analysis

Trip Generation and Distribution

In addition to generating traffic for the Pewaukee Sports Complex and the Swan View 82 Lot development, Engineer will generate traffic for the other potential developments shown previously in [Figure 1](#) based on the known uses and sizes by utilizing the fitted curve equations in the *ITE Trip Generation Manual, 10th Edition*. Traffic will be generated for the weekday daily, weekday AM and PM peak hours. The traffic generated will be distributed and assigned to the study area intersection and added to the projected Year 2030 background traffic volumes to determine the Year 2030 total build conditions traffic volumes.

Traffic Operational Analysis

Engineer will analyze the study area intersection as previously described for the Year 2030 total build conditions for the typical weekday AM and PM peak hours for Year 2030. The following configurations will be analyzed:

1. Two-way stop control

2. Restricted-Crossing-U-Turn (RCUT)
3. Traffic Signal
4. Roundabout

Based on the analysis, Engineer will make recommendations on traffic control, intersection geometrics, turn bay length extensions, channelization, by-pass lanes and other improvements required to provide LOS 'D' or better for all traffic movements at the study area intersections.

Task 4 – ICE Analysis

For each of the traffic control options analyzed in Task 3, Engineer will document the traffic queues, approach delays, and level of service for each of the traffic control scenarios. Intersection improvements will be made for each traffic control option. Engineer will provide recommendations for type of traffic control and intersection geometric recommendations based on this analysis.

Engineer will then prepare a traffic signal warrant/investigation study in accordance with the WisDOT TSDM as part of the intersection control evaluation report document. Traffic signal Warrants: Eight Hour Vehicular Volumes; Four Hour Volumes; Peak Hour Volumes; and Crash Warrant shall be evaluated for both the Year 2020 build and the 2030 total build conditions at the CTH F intersection with Lindsay Road. A left turn conflict check will also be performed, which will determine the need for left turn phasing/lanes.

Engineer will complete the WisDOT ICE analysis table for each scenario, which will be used by the County for review and approval.

Task 5 – Report

Engineer will prepare a traffic analysis ICE DRAFT report detailing the operational analysis and potential impacts utilizing two-way stop, RCUT, traffic signal and roundabout control scenarios. The report will contain text, tables, exhibit mark-ups and appendix documenting the traffic counts, data collection, field observations, traffic projections, traffic generation/assignment, traffic analysis, signal warrant analysis, ICE analysis, results and recommendations. Standards, specifications and reference materials used in the evaluation will be included in the report. The Client shall provide comments to Engineer so Engineer can finalize the report and submit a final electronic copy to the Client and Waukesha County.

Task 6 - Meetings

One meeting with the City is included in the base scope of this contract. If an additional meeting, or meetings, are required with attendance by the Engineer, it will be considered as additional services and will be billed at time and materials (meeting time, travel time, preparation time, mileage and handouts).

SCHEDULE

Engineer will submit a draft TIA report to the Client within three weeks of receiving authorization. The Engineer will finalize the report and submit a final electronic pdf copy to the Client within three days of receiving comments from the Client.

COMPENSATION

For the services described in Tasks 1, 2, 3, 4, 5, & 6: Client shall pay Engineer the lump sum fee of Fifteen Thousand Nine Hundred and Twelve Dollars (\$15,912.00).

All services not cited in the Scope of Services, will be conducted as additional services under an Amendment to this Agreement.



TRAFFIC AND SAFETY INTERSECTION ANALYSIS CTH F AT LINDSAY ROAD

YEARS 2014 - 2019

DATE SUBMITTED: NOVEMBER 7, 2019

PREPARED FOR:

Carolynn Gellings, P.E.

Engineering Services Manager, Waukesha County

Jeffrey Weigel, P.E.

Public Works Director, City of Pewaukee

PREPARED BY:

Traffic Analysis and Design, Inc. (TADI)

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Date: November 7, 2019

Technical Memorandum

To: Carolynn Gellings, P.E., Engineering Services Manager, Waukesha County
Jeffrey Weigel, P.E., Public Works Director, City of Pewaukee

From: John Campbell, P.E., RSP₁
Christian R. Sternke, P.E., RSP₁

CC: Bruce Barnes, P.E., Waukesha County
Magdelene Wagner, P.E., Assistant City Engineer, City of Pewaukee

Subject: Traffic and Safety Intersection Analysis
CTH F at Lindsay Road
City of Pewaukee, Waukesha County, Wisconsin

PART A – INTRODUCTION

At the request of the City of Pewaukee, Waukesha County arranged a safety and operational analysis of the County Trunk Highway (CTH) F intersection with Lindsay Road within the City of Pewaukee, Waukesha County, Wisconsin. The traffic study is being conducted to determine if modifications to the roadway geometry and/or traffic control would improve the safety and operations of the intersection. Currently, the intersection observes delays during peak hours on its side-street approaches and has experienced numerous severe right-angle crashes in recent years.

This technical memorandum has been prepared to analyze the intersection under Year 2019 existing traffic conditions.

PART B – EXISTING CONDITIONS

The CTH F intersection with Lindsay Road is located approximately 1.3 miles north of State Trunk Highway (STH) 190/Capitol Drive in the City of Pewaukee, Wisconsin. An aerial map showing the study area intersection is shown in [Figure B1](#) on the following page.

Figure B1
CTH F and Lindsay Road Aerial



CTH F, also designated as Redford Boulevard, is a four-lane north/south divided highway with a posted speed limit of 55 miles per hour (mph) in this area. The Wisconsin Department of Transportation (WisDOT) Year 2018 average annual daily traffic (AADT) volumes on CTH F were approximately 21,200 vehicles per day (vpd) south of Lindsay Road and 26,700-vpd north of Lindsay Road. WisDOT classifies CTH F as a principal arterial.

Figure B2
CTH F Looking North Approaching Lindsay Road



Lindsay Road is a two-lane east/west undivided roadway with a posted speed limit of 35-mph. The WisDOT Year 2018 AADT volumes on Lindsay Road were approximately 1,600-vpd west of CTH F. East of CTH F, WisDOT lists an AADT from Year 2015 of 960-vpd. WisDOT classifies Lindsay Road as a collector road.

Figure B3
Lindsay Road Looking East Approaching CTH F



Based on the 13-hour traffic turning movement count conducted for this study, the entering AADT of the CTH F intersection with Lindsay Road is estimated to be approximately 23,800-vpd.

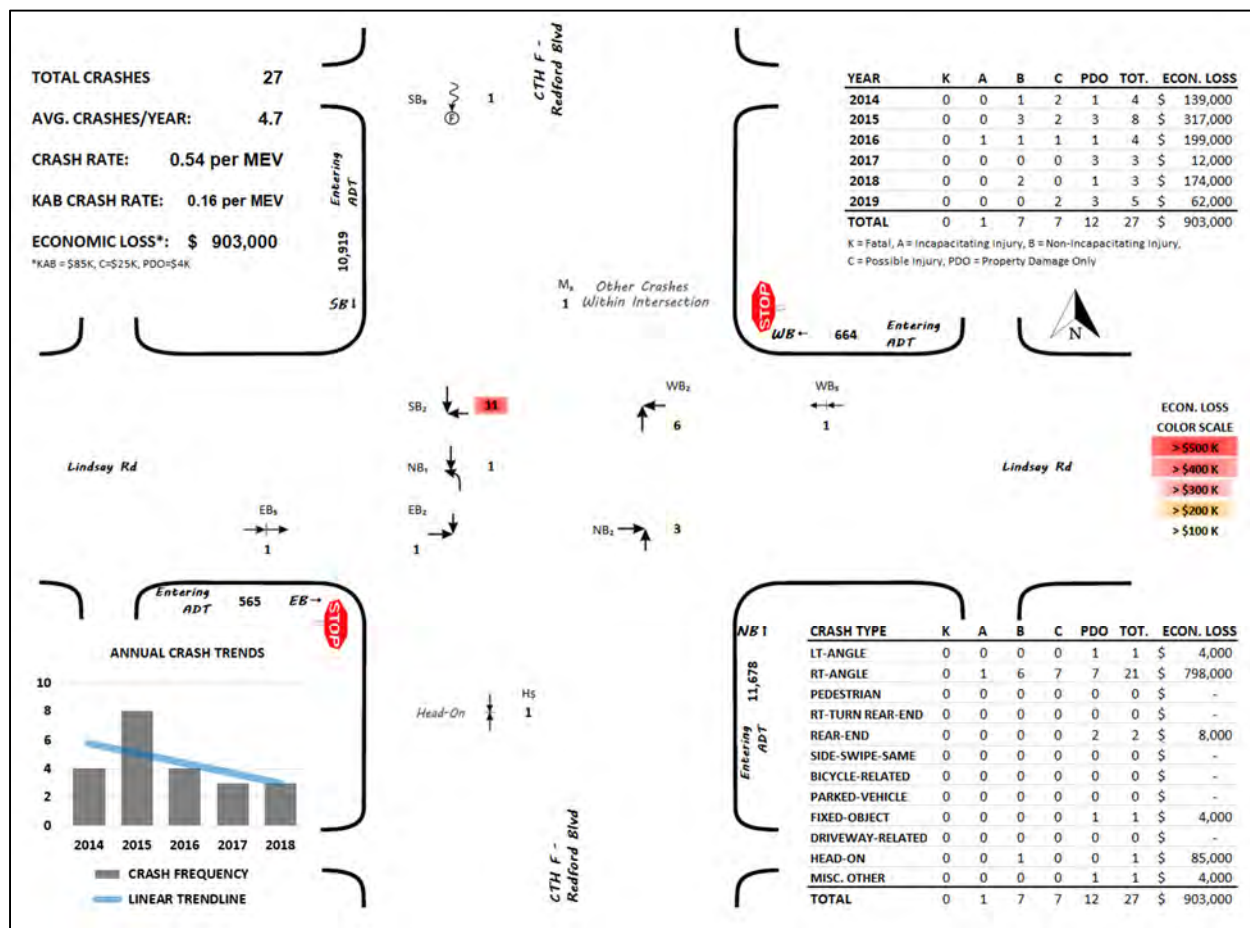
B1. Crash Analysis

A review of the crash records indicated that twenty-seven (27) non-deer crashes occurred at the intersection of CTH F with Lindsay Road between January 2014 and September 2019. The intersection crash rate was calculated to be 0.54 crashes per million entering vehicles (MEV) and the intersection averaged 4.7 crashes per year.

Most concerning at this location is the severity of the crashes observed. Seven (7) crashes resulted in Type C injury, another seven (7) resulted in Type B injury, and one (1) resulted in Type A injury. The remaining crashes (12) resulted in property damage only.

[Figure B4](#) shows the intersection crash plot, while full crash diagram and statistics have been included in the [appendix](#).

Figure B4
Crash Diagram



Seventy eight percent (78%) of the crashes were right-angle crashes. Drivers have difficulty crossing CTH F from Lindsay Road, particularly in the westbound direction where 17 right-angle crashes occurred (11 struck by southbound vehicles and 6 by northbound vehicles). Factors leading to these angle crashes include:

- Lindsay Road drivers misjudging available gaps
- Drivers not seeing oncoming northbound/southbound CTH F vehicles
- The higher speeds of CTH F (55-mph posted speed)

In reviewing the accident report forms, drivers often stated they stopped in the median and did not see the approaching southbound vehicle. Because sight distance is adequate, it is suspected that drivers are overloaded with information navigating this intersection. Furthermore, the high speeds on CTH F increase the likelihood and severity of collisions.

B2. Level of Service Definitions

The study area intersection was analyzed based on the procedures set forth in the *Highway Capacity Manual, 6th Edition* (HCM) using Synchro 10 traffic models. Intersection operation is defined by “level of service”. Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. For the purpose of this study, LOS D has been identified as the acceptable LOS for peak hour operating conditions. It is noted that this threshold is the industry standard for urban areas used by WisDOT and many municipalities. Descriptions of the various levels of service are as follows:

LOS A is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized and unsignalized intersections, average delays are less than 10 seconds.

LOS B represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.

LOS C still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.

LOS D represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.

LOS E represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.

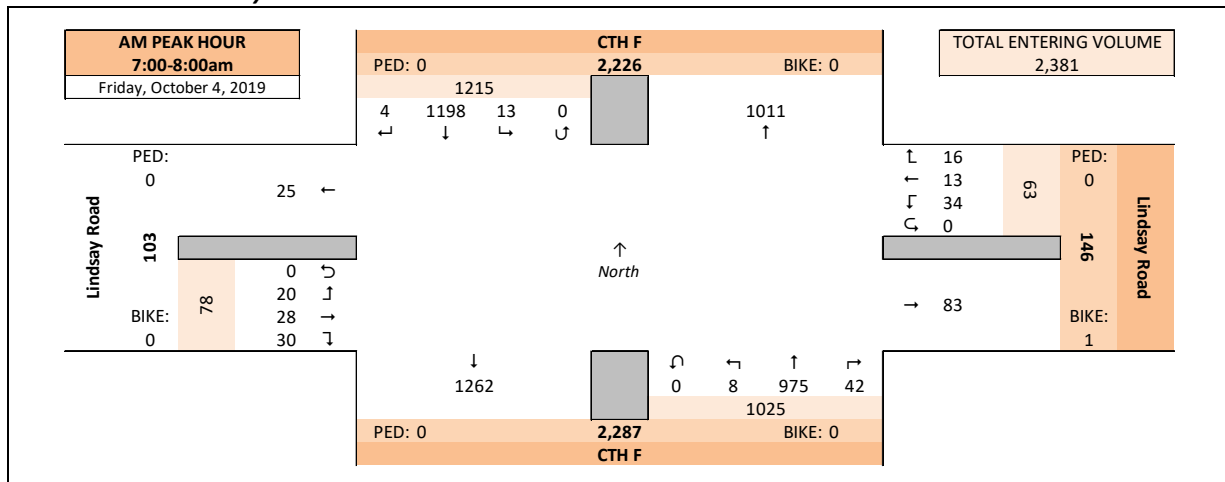
LOS F represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

B3. Year 2019 Existing Traffic Operations – Existing Geometry & Traffic Control

The weekday morning and weekday afternoon peak hours are expected to drive the improvements necessary to adequately accommodate the overall intersection volumes. A thirteen-hour (6:00 am to 7:00 pm) weekday turning movement count was conducted in late-September and early-October of 2019 at the study area intersection. Based on the turning movement counts, the weekday morning and weekday evening peak hours were identified as being 7:00 to 8:00 am and 4:30 to 5:30 pm, respectively. The existing traffic volumes at the study area intersection are shown below for the morning and evening peak hours. The traffic counts used to determine peak hour factors and truck percentages have been included in the [appendix](#) of this study.

Figure B5
Peak Hour Turning Movement Traffic Volumes

AM Peak Hour Summary



PM Peak Hour Summary

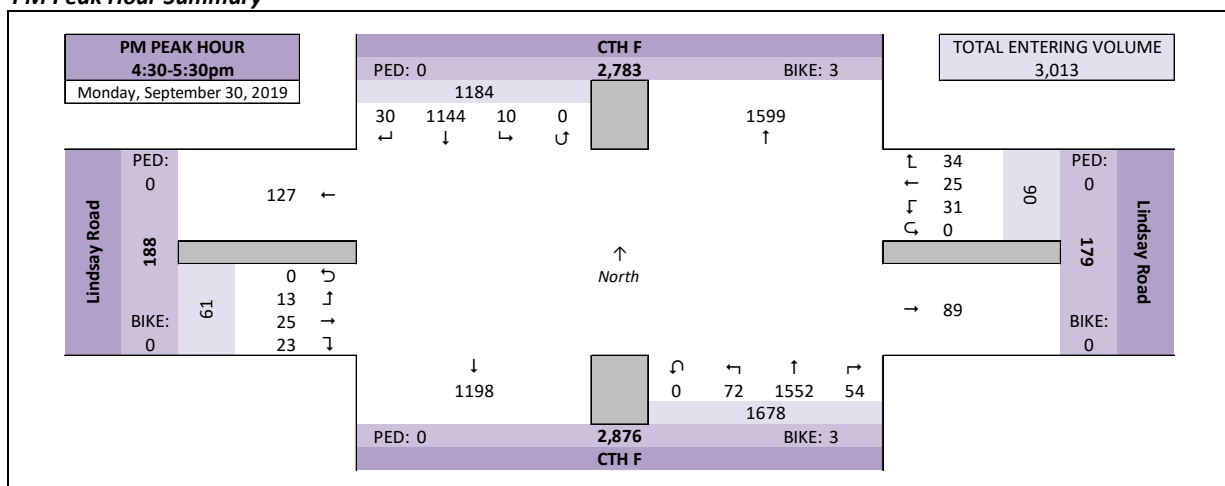


Table B3 shows the results of the Year 2019 existing weekday morning and weekday evening peak hour operational analysis at the study area intersection. The existing intersection geometry and traffic volumes were used for the analysis.

Table B3
Year 2019 Existing Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour		Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
<i>Existing Geometrics with Two-Way Stop Control</i>	AM	LOS	E			D			B	*	*	B	*	*
		Queue	50			40			5	*	*	5	*	*
		Delay	36.4			34.0			12.5	*	*	11.3	*	*
	PM	LOS	F			F			B	*	*	C	*	*
		Queue	95			180			15	*	*	5	*	*
		Delay	96.3			239.0			13.5	*	*	16.7	*	*

(--) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Queue is maximum of the 50th & 95th percentile queue, measured in feet.

Delay is HCM control delay, measured in seconds.

As shown in [Table B3](#), the eastbound shared lane is currently operating at LOS E conditions in the morning peak hour and the eastbound and westbound shared lanes are both operating at LOS F conditions in the evening peak hour. All other movements are operating acceptably at LOS D or better conditions. The existing traffic control analysis outputs are included in the [appendix](#).

PART C – ALTERNATIVE ANALYSIS

Two alternatives were evaluated as part of this study: a traffic signal alternative and a restricted crossing U-turn (RCUT) alternative.

C1. Alternative One – Traffic Signal

Note that traffic signal warrants should be viewed as guidelines to help decide whether a traffic signal may be installed. Meeting traffic signal warrants does not translate to a legal requirement for their installation. Warrant descriptions and completed warrant analysis worksheets are included in the [appendix](#) of this study.

A traffic signal warrant analyses was performed at the CTH F intersection with Lindsay Road as part of this study. Chapter 4C of the 2009 *Manual on Uniform Traffic Control Devices* (MUTCD) outlines the standards for determining the need for traffic signals at a particular location. For a traffic signal to be installed, at least one of the following warrants must be satisfied. The eight signal warrants are listed below:

- Warrant 1, Eight-Hour Vehicular Volume
- Warrant 2, Four-Hour Vehicular Volume
- Warrant 3, Peak Hour
- Warrant 4, Pedestrian Hour
- Warrant 5, School Crossing
- Warrant 6, Coordinated Signal Systems
- Warrant 7, Crash Experience
- Warrant 8, Roadway Network

All warrants except Warrant 5 have been evaluated for this location. The posted speed limit along CTH F is 55-mph at the Lindsay Road intersection, so it was analyzed using the 70-percent minimum vehicular volumes per standard practice since the speed is greater than 40-mph.

The warrant analysis assumes the intersections to include two-lane approaches northbound and southbound on CTH F (major street) and a one-lane approaches eastbound and westbound along Lindsay Road (minor street). Right-turn movements on the Lindsay Road approaches were excluded from the approach volume per the MUTCD.

The traffic signal warrant study was conducted using the existing 13-hour turning movement counts collected at the intersection as part of this study.

Based on the warrant analysis, no warrants are expected to be met under Year 2019 existing traffic volumes. Therefore, traffic signals are not currently warranted at this intersection.

A sensitivity analysis was performed and for Warrant 7 to be met, Lindsay Road traffic would have to increase by at least fifteen percent (15%), and for Warrant 1 to be met, Lindsay Road traffic would have to increase by at least forty-five percent (45%).

Capacity analysis of the traffic signal alternative was performed using a Synchro 10 traffic model. [Table C1](#) shows the results of the Year 2019 weekday morning and weekday evening peak hour operational analysis at the study area intersection under traffic signal control.

Table C1
Year 2019 Existing Traffic Peak Hour Operating Conditions
Traffic Signal Control with Existing Geometrics

Intersection	Peak Hour		Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
<i>Existing Geometrics with Traffic Signal Control</i>	AM	LOS	B			B			B	A	A	B	A	A
		Queue	65			55			5	140	10	10	195	5
		Delay	15.9			15.7			13.0	7.1	4.8	10.3	8.2	4.7
	PM	LOS	C			C			B	B	A	B	A	A
		Queue	55			75			45	325	15	10	190	10
		Delay	20.8			21.3			13.4	10.0	4.2	17.2	6.8	4.1

(--) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Queue is maximum of the 50th & 95th percentile queue, measured in feet.

Delay is HCM control delay, measured in seconds.

As shown in [Table C1](#), under traffic signal control with existing geometrics, all movements are expected to operate at LOS C or better conditions under the Year 2019 existing traffic volumes. Traffic signal control analysis outputs are included in the [appendix](#).

C2. Alternative Two – Restricted Crossing U-Turn (RCUT)

A restricted crossing U-turn (RCUT) intersection design restricts through and left-turn movements from the minor street at the intersection and forces the vehicles desiring those movements to turn right and make a U-turn downstream. [Figure C1](#) shows an aerial of an RCUT intersection located in Plymouth, WI at the intersection of STH 23 and CTH M.

Figure C1

Example RCUT Intersection – STH 23/CTH M in Plymouth, WI



The goal of an RCUT is to reduce conflict points at the intersection to improve overall safety. Compared to a conventional 4-legged intersection, an RCUT intersection drastically decreases the number of angle crashes, due to removing the minor street through and left-turn movements.

The CTH F intersection with Lindsay Road is a candidate for an RCUT because there is a history of angle crashes from the Lindsay Road approaches and it does not meet any traffic signal warrants. An RCUT would not impede the CTH F through movements. STH 23/CTH M intersection in Plymouth, WI is an intersection that had a similar angle crash issue and has similar volumes. After the installation of the RCUT design, crashes drastically decreased at the intersection. In the 12 years prior to the RCUT installation, STH 23/CTH observed two fatal crashes, three A-level (incapacitating injury) crashes, and eight B-level (non-incapacitating injury) crashes, and 15 other crashes. In the five years after installation, only five property damage only crashes were observed.

In order to perform an accurate capacity analysis of the RCUT intersection design at CTH F and Lindsay Road, a microsimulation software, such as VISSIM, would need to be used, but it was outside the scope of this study to perform such analysis.

PART D – ALTERNATIVES COMPARISON

Two alternatives were looked at for the CTH F intersection with Lindsay Road: a traffic signal alternative and an RCUT alternative. Both have advantages and disadvantages, which are summarized in the table below. Both alternatives are expected to have a similar range of costs, between \$300,000 and \$600,000, but the estimates would need to be verified by a detailed cost estimate performed by roadway designers.

TRAFFIC SIGNAL	ADVANTAGES	DISADVANTAGES
Access	Full access maintained. Convenient access from side-street.	
Operations	Acceptable level-of-service traffic operations. Vastly improved level-of-service on side-street approaches.	Reduced level-of-service for northbound and southbound traffic. Previously free-flow through movements, which make approximately 90 percent of traffic at this intersection during the peak hours, would be subjected to delays averaging 8.2 sec/vehicle in peak hours.
Safety	Expected to reduce risk of right-angle crashes.	Expected to increase the likelihood of high-speed rear-end crashes. Right-angle crashes, although less likely than in existing conditions, would still be expected to occur as a result of red-light-running.
Federal Aid		Very unlikely to qualify for Federal Aid due to traffic signal warrants not being met.
RCUT	ADVANTAGES	DISADVANTAGES
Access		Through and left-turn movements from Lindsay Road restricted at intersection and forced to turn right and make U-turn downstream. These movements make up approximately 3.5 percent of the total traffic during the peak hours.
Operations	Expected to operate acceptably, however microsimulation model, such as VISSIM, should be used to verify.	Through and left-turn movements from Lindsay Road restricted at intersection and forced to turn right and make U-turn downstream, which increases travel distance and may increase delay.
Safety	Expected to reduce risk of right-angle crashes as through and left-turn movements from Lindsay Road would be restricted.	
Federal Aid	Good chance for Federal Aid through HSIP program due to the crash reduction benefits of RCUT intersections. Eligibility should be verified with SE Region Safety Engineer.	

PART E – SUMMARY

At the request of the City of Pewaukee, Waukesha County arranged a safety and operational analysis of the CTH F intersection with Lindsay Road. TADI performed capacity analysis of the existing conditions and looked at two alternatives to improve safety and operations at the intersection. Alternative One was to signalize the intersection, while Alternative Two was to install a Restricted Crossing U-Turn (RCUT) intersection design. Both improvements would be expected to reduce the risk of angle crashes, but with the traffic signal alternative, an increase in high-speed rear-end crashes would be expected and a risk for angle crashes caused by red-light-running would still exist. Traffic signal warrants are currently not met, and substantially more traffic Lindsay Road would be needed to meet the 8-hour volume warrant. Because warrants are not met, the traffic signal would not be a likely candidate for Federal Aid through the HSIP program. However, the RCUT intersection design appears to have a good chance of qualifying for Federal Aid (90 percent match through the HSIP program). It is suggested that HSIP eligibility be verified with the WisDOT SE Region safety engineer.

APPENDIX A

CRASH DIAGRAM AND STATISTICS

Intersection Collision Diagram



Location: CTH F & Lindsay Rd
Municipality: Pewaukee
County: Waukesha
Traffic Control: Minor Street Stop

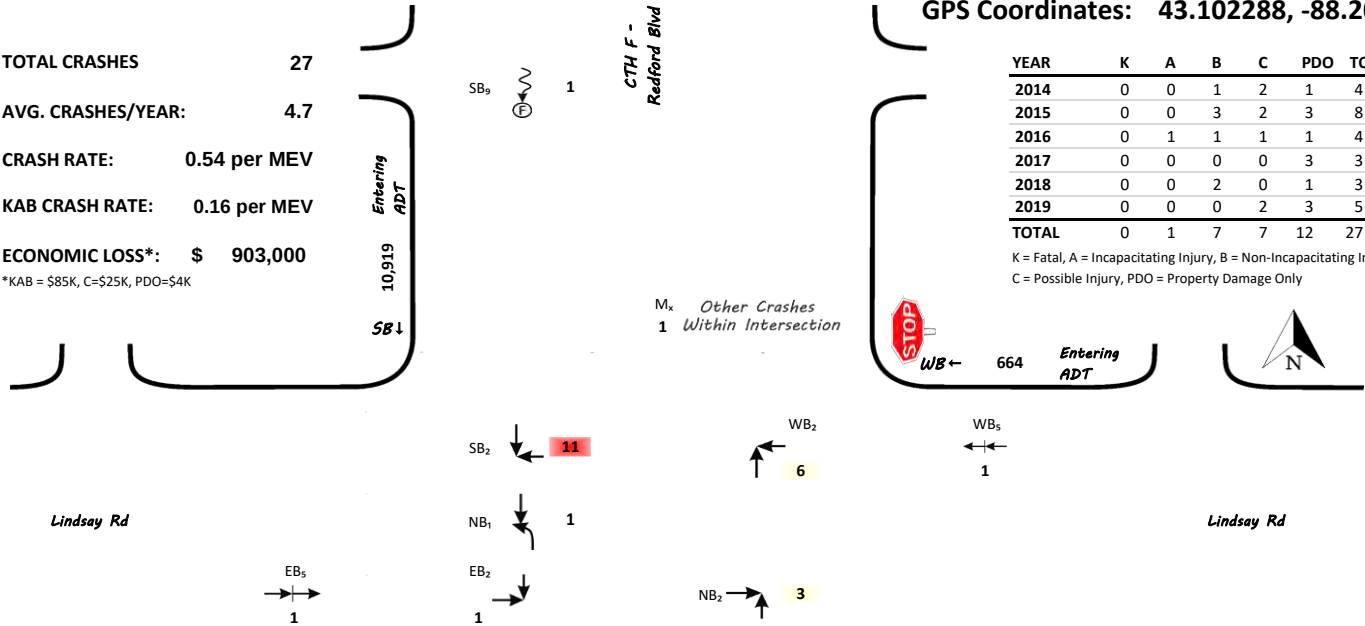
From: 1/1/2014 5 Years
To: 9/17/2019 8 Months
AADT: 23,826
Area Type: Urban
GPS Coordinates: 43.102288, -88.208759

TOTAL CRASHES 27
AVG. CRASHES/YEAR: 4.7
CRASH RATE: 0.54 per MEV
KAB CRASH RATE: 0.16 per MEV
ECONOMIC LOSS*: \$ 903,000

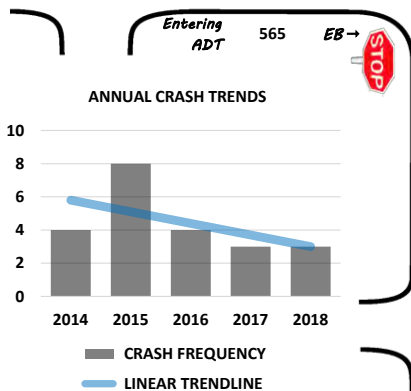
*KAB = \$85K, C=\$25K, PDO=\$4K

YEAR	K	A	B	C	PDO	TOT.	ECON. LOSS
2014	0	0	1	2	1	4	\$ 139,000
2015	0	0	3	2	3	8	\$ 317,000
2016	0	1	1	1	1	4	\$ 199,000
2017	0	0	0	0	3	3	\$ 12,000
2018	0	0	2	0	1	3	\$ 174,000
2019	0	0	0	2	3	5	\$ 62,000
TOTAL	0	1	7	7	12	27	\$ 903,000

K = Fatal, A = Incapacitating Injury, B = Non-Incapacitating Injury, C = Possible Injury, PDO = Property Damage Only



ECON. LOSS
COLOR SCALE
> \$500 K
> \$400 K
> \$300 K
> \$200 K
> \$100 K



CRASH TYPE	K	A	B	C	PDO	TOT.	ECON. LOSS
LT-ANGLE	0	0	0	0	1	1	\$ 4,000
RT-ANGLE	0	1	6	7	7	21	\$ 798,000
PEDESTRIAN	0	0	0	0	0	0	\$ -
RT-TURN REAR-END	0	0	0	0	0	0	\$ -
REAR-END	0	0	0	0	2	2	\$ 8,000
SIDE-SWIPE-SAME	0	0	0	0	0	0	\$ -
BICYCLE-RELATED	0	0	0	0	0	0	\$ -
PARKED-VEHICLE	0	0	0	0	0	0	\$ -
FIXED-OBJECT	0	0	0	0	1	1	\$ 4,000
DRIVEWAY-RELATED	0	0	0	0	0	0	\$ -
HEAD-ON	0	0	1	0	0	1	\$ 85,000
MISC. OTHER	0	0	0	0	1	1	\$ 4,000
TOTAL	0	1	7	7	12	27	\$ 903,000

ROAD CONDITIONS		
DRY	22	81%
WET	2	7%
SNOW	2	7%
ICE	1	4%
OTH.	0	0%
TOT.	27	

LIGHT CONDITIONS		
DAY	24	89%
DARK	3	11%
TOT.	27	

DRIVER BEHAVIOR		
ALCOHOL	0	0%
DRUGS	0	0%
SPEED	2	7%

SEASON		
SPRING	8	30%
SUMMER	6	22%
FALL	7	26%
WINTER	6	22%
TOT.	27	

FAILURE TO YIELD		
NB	1	4%
SB	0	0%
EB	3	11%
WB	12	44%
TBD	0	0%
TOT.	16	

BLOWN CONTROL		
NB	0	0%
SB	0	0%
EB	0	0%
WB	0	0%
TBD	0	0%
TOT.	0	

VEHICLE DAMAGE		
OTHER/UNK.	0	0%
NONE	2	4%
VERY MINOR	0	0%
MINOR	5	11%
MODERATE	12	26%
SEVERE	26	55%
VERY SEVERE	2	4%
TOTAL VEHICLES	47	

TBD = verification from crash report needed for direction

DAY/TIME TRENDS

	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	UNK		TOT.
MON	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	MON	2
TUE	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	TUE	5
WED	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	WED	5
THU	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	THU	6
FRI	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	2	0	2	0	0	0	0	0	0	0	FRI	7
SAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	SAT	1
SUN	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SUN	1
	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	UNK		TOT.
TOT.	0	0	0	0	0	0	0	1	3	2	4	2	1	0	0	4	0	7	1	1	1	0	0	0	0	TOT.	27

Crash Data

Corresponds to Collision Diagram

Location: CTH F & Lindsay Rd
Municipality: Pewaukee
County: Waukesha
Traffic Control: Minor Street Stop

From: 1/1/2014
To: 9/17/2019
AADT: 23,826
Area Type: Urban



Duration
5 Years
8 Months

Ref #	Label	Doc. #	Date	Crash Type	Time	Severity	Road Cond.	Light Cond.	Alc. Flag	Drug Flag	Speed Flag	Notes
1	EB ₂	3WL0LCTJQQ	10/6/2017	RT-ANGLE	3 PM		WET					
2	EB ₂	3WL0LF2L6S	9/17/2019	REAR-END	7 AM							Pulled ahead and stopped
3	WB ₂	DJCLXF9	1/10/2014	RT-ANGLE	5 PM		ICE	DARK				
4	WB ₂	DHZMNHJ	4/10/2015	RT-ANGLE	5 PM	B						
5	WB ₂	DJOG3X2	6/16/2016	RT-ANGLE	7 PM	C						Medical issue, swerved i
6	WB ₂	3WL0LF2L0P	5/17/2018	RT-ANGLE	8 AM							
7	WB ₂	3WL0LCTJXS	6/18/2019	RT-ANGLE	12 PM			DAY				
8	WB ₂	3WL0MLVN1L	7/23/2019	RT-ANGLE	5 PM	C						
9	WB ₂	DHZT2TK	5/1/2015	REAR-END	8 AM							Pulled ahead and backe
10	NB ₂	DHZT2VH	8/5/2015	LT-ANGLE	9 AM							
11	NB ₂	DHZ8KSZ	11/6/2014	RT-ANGLE	10 AM	C						
12	NB ₂	DHZ8K7B	1/21/2015	RT-ANGLE	5 PM	C		DARK				
13	NB ₂	DJ00RSK	1/13/2016	RT-ANGLE	3 PM	B	SNOW			Y		
14	H ₂	3WL0NFKDHN	9/21/2018	HEAD-ON	10 AM	B						Swerved to avoid WB ve
15	SB ₂	DHZT2NG	5/29/2014	RT-ANGLE	8 AM	B						
16	SB ₂	DHZT2R2	12/12/2014	RT-ANGLE	3 PM	C		DAY				
17	SB ₂	DHZ8K72	1/10/2015	RT-ANGLE	3 PM	B	UNKN					
18	SB ₂	DHZT2T7	4/22/2015	RT-ANGLE	5 PM	C						
19	SB ₂	DHZT236	8/12/2015	RT-ANGLE	5 PM							Missing Report
20	SB ₂	DHZT19M	9/29/2015	RT-ANGLE	9 AM	B	WET					
21	SB ₂	DJOG3WX	5/30/2016	RT-ANGLE	11 AM	A						
22	SB ₂	3WL0LCTJNZ	5/4/2017	RT-ANGLE	6 PM			DAY				
23	SB ₂	3WL0MOC3CM	10/27/2017	RT-ANGLE	11 AM							
24	SB ₂	3WL0NFKDGF	7/12/2018	RT-ANGLE	10 AM	B						
25	SB ₂	3WL0NFKDL9	3/3/2019	RT-ANGLE	10 AM	C						
26	SB ₂	DJOG3V4	2/9/2016	FIXED-OBJECT	8 PM		SNOW	DARK		Y		Gust of wind, icy road
27	M ₂	3WL0LVN066	9/9/2019	MISC. OTHER	5 PM			DAY				SSO in median
28												
29												
30												
31												
32												
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APPENDIX B

EXISTING TRAFFIC COUNTS

Intersection Traffic Volume Report

Count Basics		Version 2013.14.1		Page 1 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session	
Total Number of Hours Counted:	13	Non-Holiday	No Special Events	

Base Information, Observed (13) Hour and Estimated (24) Hour Volume Summaries

Intersection of: CTH F and Lindsay Road

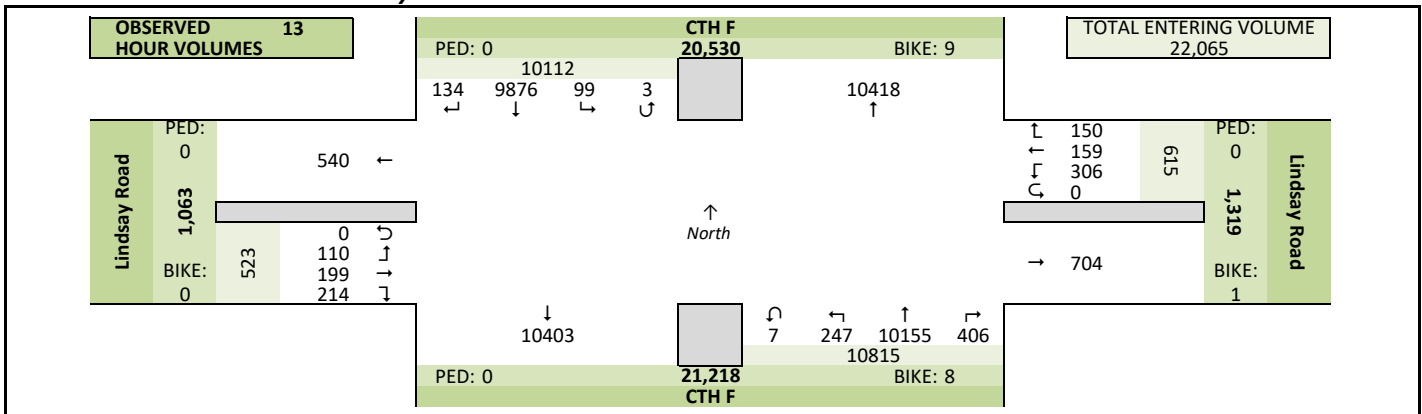
Site Information

Municipality	Pewaukee		
County	Waukesha	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names		North Direction	↑
North Leg	CTH F		
East Leg	Lindsay Road		
South Leg	CTH F		
West Leg	Lindsay Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementry school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	

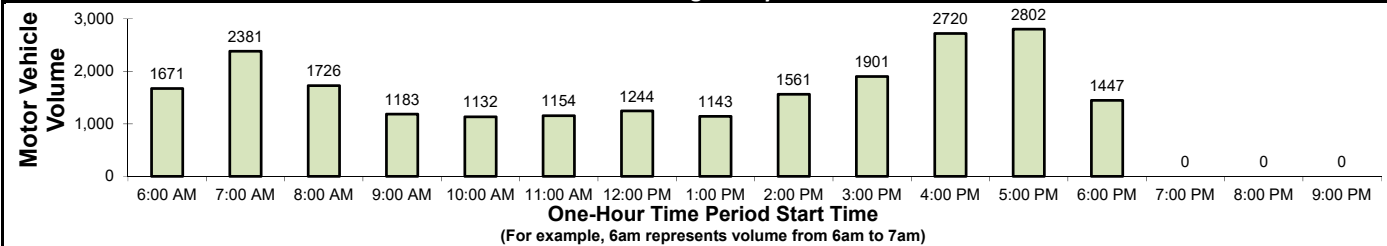
Count Information

Hrs Counted: 6:00 AM-7:00 PM				
1st Day of Count		Monday, September 30, 2019		Weather
AM Peak Period		Friday, October 4, 2019		Clear & Dry
Midday Peak Period		Monday, September 30, 2019		Clear & Dry
PM Peak Period		Monday, September 30, 2019		Clear & Dry
Calculated Peak Hours				
	AM	7:00-8:00am	MD	11:30-12:30am
			PM	4:30-5:30pm
Peak Hours Selected for Analysis				
	AM	7:00-8:00am	MD	11:30-12:30am
			PM	4:30-5:30pm
Daily/Seasonal Adjustment Group			(4) Rural Arterials & Collectors	
Count Expansion Group			(4) Rural Arterials & Collectors	
Daily/Seasonal Adjustment Factor			0.899	Count Expansion Factor 1.201
Company Name TADI			Manual Adj. 1.000	
Observers	AM Peak Period		Amy Scheuerlein	
	Midday Peak Period		Ted Atwell	
	PM Peak Period		Wendy Picard	
Comments	2018 DOT Seasonal Factors			

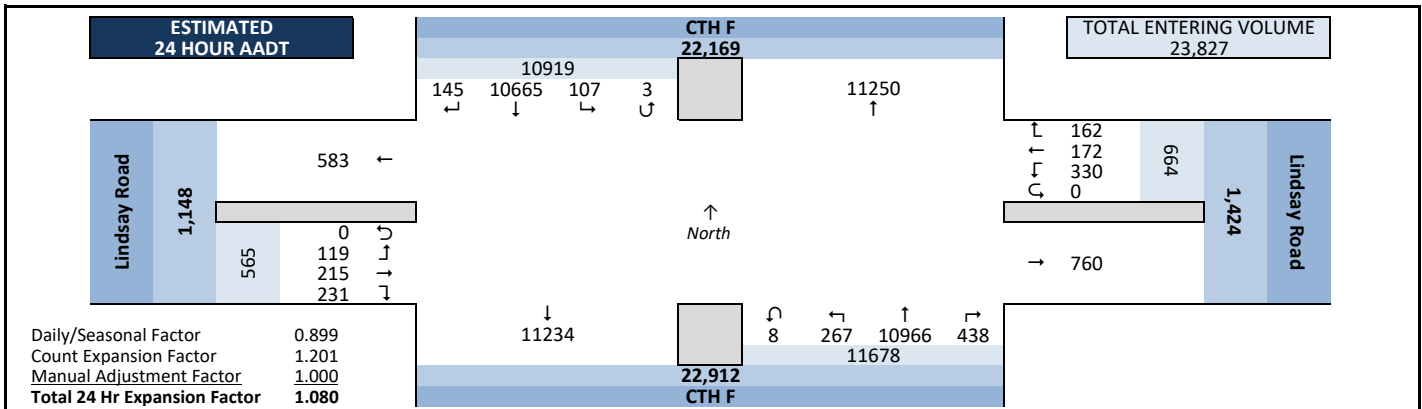
Observed 13 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT



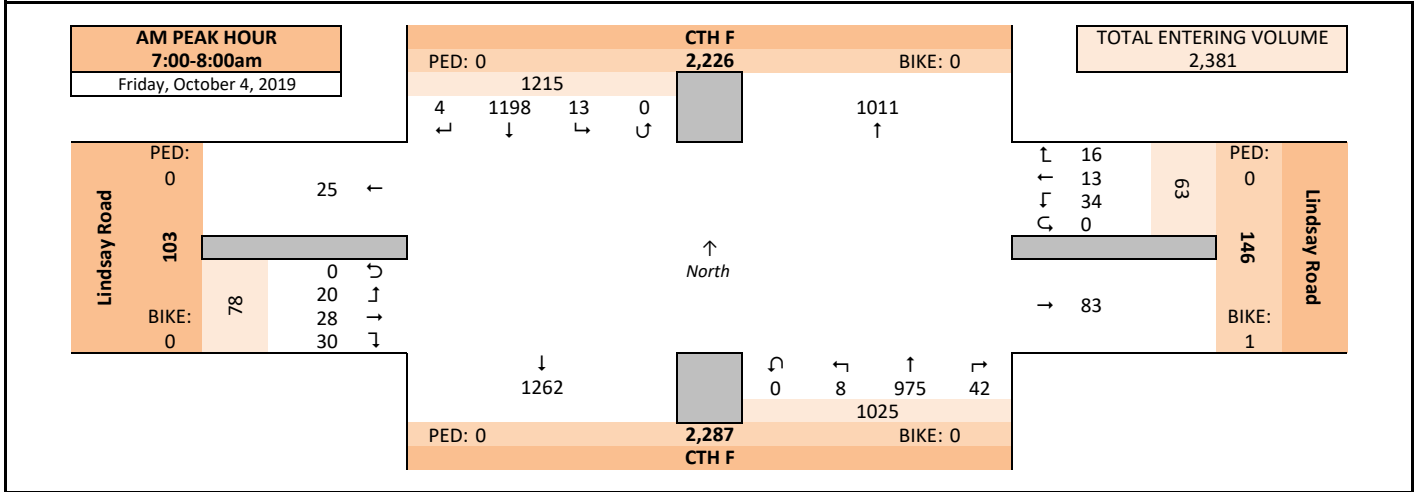
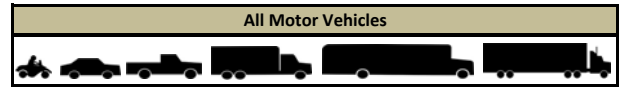
Intersection Traffic Volume Report

Peak Hour Volume Graphical Summary

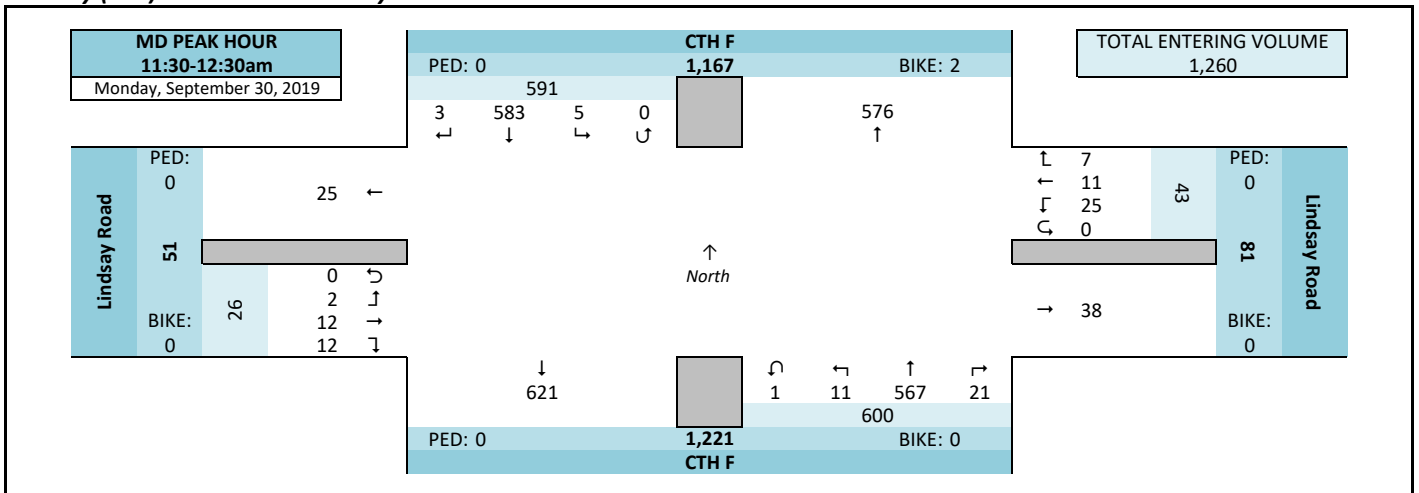
Count Basics		Page 2 of 13	
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

CTH F and Lindsay Road

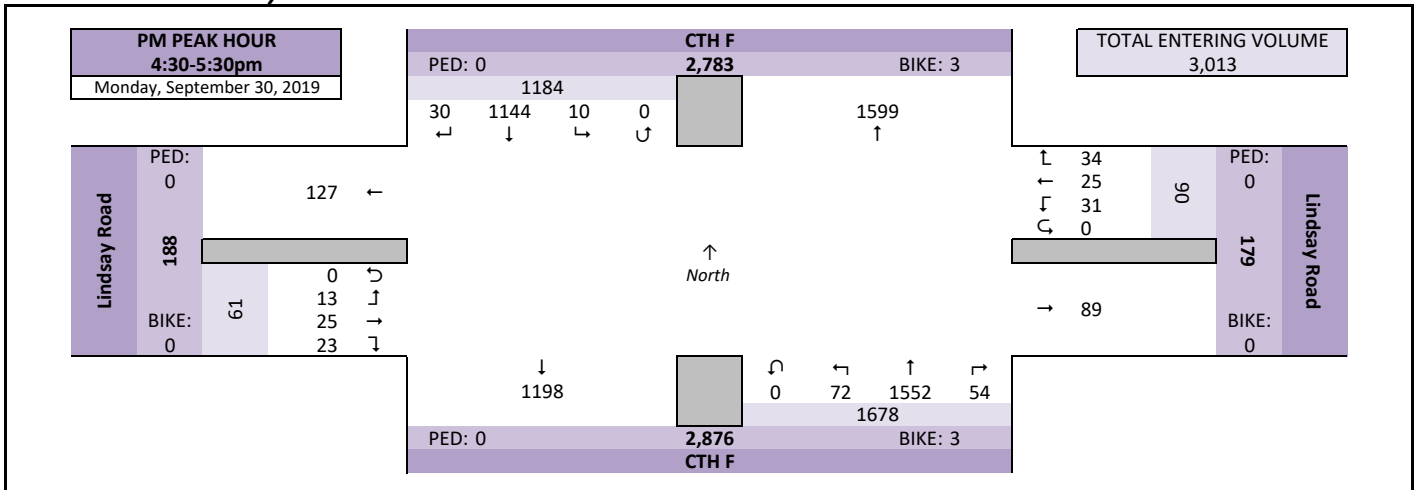
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

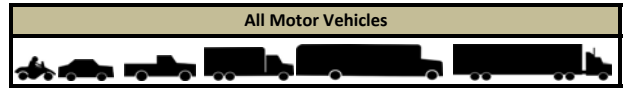


Intersection Traffic Volume Report

Peak Hour Volume Summary

CTH F and Lindsay Road

Count Basics			Page 3 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events



Peak Hour Volumes, Truck Percentages, and PHFs

Friday, October 4, 2019		From North					From East					From South					From West					
AM Peak Hour	AM Peak Hour	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	7:00 AM	0	286	2	0	288	3	2	9	0	14	7	182	2	0	191	4	6	3	0	13	506
	7:15 AM	2	299	3	0	304	1	3	7	0	11	11	246	1	0	258	8	6	4	0	18	591
	7:30 AM	0	313	4	0	317	5	4	7	0	16	9	278	3	0	290	8	8	6	0	22	645
	7:45 AM	2	300	4	0	306	7	4	11	0	22	15	269	2	0	286	10	8	7	0	25	639
	Peak Hour Volume	4	1198	13	0	1215	16	13	34	0	63	42	975	8	0	1025	30	28	20	0	78	2381
	Rounded Hourly Volume	5	1200	15	0	1220	15	15	35	0	65	40	975	10	0	1025	30	30	20	0	80	2390
	% Single Unit Trucks	0.0	7.1	7.7	0.0	7.1	12.5	7.7	0.0	0.0	4.8	7.1	5.8	0.0	0.0	5.9	0.0	3.6	0.0	0.0	1.3	6.3
	% Heavy Trucks	0.0	1.8	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	2.4	2.5	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	2.0
% Trucks (Total)	0.0	8.9	7.7	0.0	8.9	12.5	7.7	0.0	0.0	4.8	9.5	8.3	0.0	0.0	8.3	0.0	3.6	0.0	0.0	1.3	8.3	
Peak Hour Factor (PHF)	0.50	0.96	0.81	0.00	0.96	0.57	0.81	0.77	0.00	0.72	0.70	0.88	0.67	0.00	0.88	0.75	0.87	0.71	0.00	0.78	0.92	

Monday, September 30, 2019		From North					From East					From South					From West					
Midday (MD) Peak Hour	MD Peak Hour	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	11:30 AM	1	155	1	0	157	1	2	9	0	12	5	124	4	0	133	1	2	0	0	3	305
	11:45 AM	2	127	0	0	129	2	1	5	0	8	6	157	1	0	164	5	4	0	0	9	310
	12:00 PM	0	147	1	0	148	2	6	4	0	12	7	156	5	0	168	1	4	1	0	6	334
	12:15 PM	0	154	3	0	157	2	2	7	0	11	3	130	1	1	135	5	2	1	0	8	311
	Peak Hour Volume	3	583	5	0	591	7	11	25	0	43	21	567	11	1	600	12	12	2	0	26	1260
	Rounded Hourly Volume	5	585	5	0	595	5	10	25	0	40	20	565	10	0	595	10	10	0	0	20	1250
	% Single Unit Trucks	0.0	15.6	20.0	0.0	15.6	42.9	0.0	16.0	0.0	16.3	9.5	16.0	0.0	0.0	15.5	0.0	0.0	0.0	0.0	0.0	15.2
	% Heavy Trucks	0.0	3.6	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	4.0
% Trucks (Total)	0.0	19.2	20.0	0.0	19.1	42.9	0.0	16.0	0.0	16.3	9.5	21.3	0.0	0.0	20.5	0.0	0.0	0.0	0.0	0.0	19.3	
Peak Hour Factor (PHF)	0.37	0.94	0.42	0.00	0.94	0.87	0.46	0.69	0.00	0.90	0.75	0.90	0.55	0.25	0.89	0.60	0.75	0.50	0.00	0.72	0.94	

Monday, September 30, 2019		From North					From East					From South					From West					Totals
PM Peak Hour	PM Peak Hour	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	4:30 PM	4	278	3	0	285	7	6	8	0	21	9	389	15	0	413	2	4	2	0	8	
	4:45 PM	7	260	1	0	268	7	9	12	0	28	11	348	20	0	379	7	9	4	0	20	
	5:00 PM	8	287	1	0	296	10	5	7	0	22	15	370	17	0	402	5	5	3	0	13	
	5:15 PM	11	319	5	0	335	10	5	4	0	19	19	445	20	0	484	9	7	4	0	20	
	Peak Hour Volume	30	1144	10	0	1184	34	25	31	0	90	54	1552	72	0	1678	23	25	13	0	61	
	Rounded Hourly Volume	30	1145	10	0	1185	35	25	30	0	90	55	1550	70	0	1675	25	25	15	0	65	
	% Single Unit Trucks	0.0	3.8	0.0	0.0	3.6	2.9	4.0	0.0	0.0	2.2	1.9	3.0	1.4	0.0	2.9	4.3	0.0	7.7	0.0	3.3	
	% Heavy Trucks	0.0	0.9	20.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	
	% Trucks (Total)	0.0	4.6	20.0	0.0	4.6	2.9	4.0	0.0	0.0	2.2	1.9	3.7	1.4	0.0	3.5	4.3	0.0	7.7	0.0	3.3	
	Peak Hour Factor (PHF)	0.68	0.90	0.50	0.00	0.88	0.85	0.69	0.65	0.00	0.80	0.71	0.87	0.90	0.00	0.87	0.64	0.69	0.81	0.00	0.76	

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		CTH F			Lindsay Road			CTH F			Lindsay Road			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 AM	0	0	0	0	1	1	0	0	0	0	0	1	
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	1	1	0	0	0	0	0	1	
MD	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	2	2	0	0	0	0	0	0	0	0	2	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	2	2	0	0	0	0	0	0	0	0	2	
PM	4:30 PM	0	1	1	0	0	0	0	2	2	0	0	3	
	4:45 PM	0	1	1	0	0	0	0	1	1	0	0	2	
	5:00 PM	0	1	1	0	0	0	0	0	0	0	0	1	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	3	3	0	0	0	0	3	3	0	0	6	

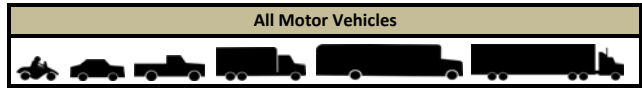
Intersection Traffic Volume Report

Hourly Volume Summary - Motor Vehicle Data

CTH F and Lindsay Road

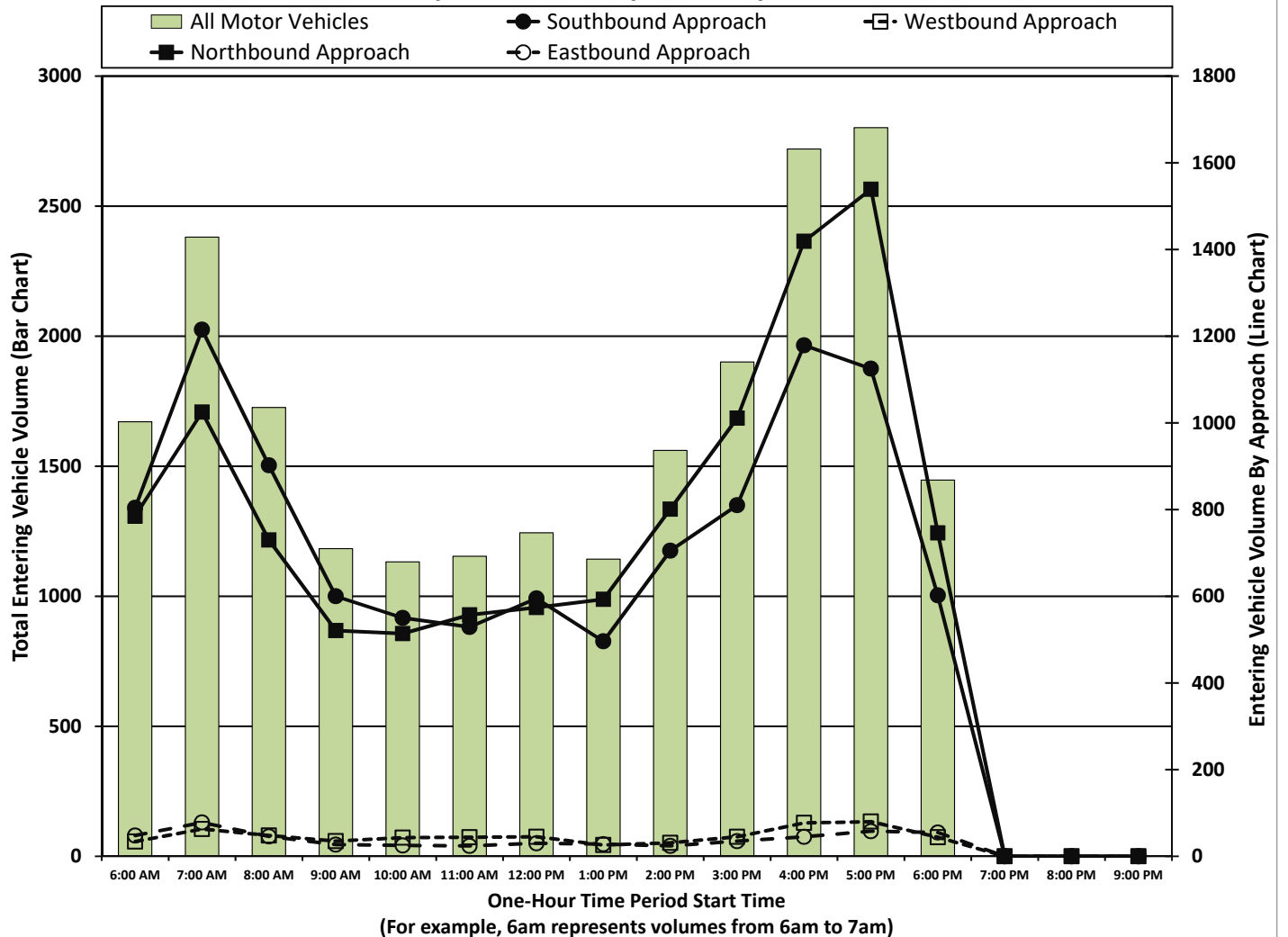
One-Hour Motor Vehicle Data

Count Basics			Page 4 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events



One-Hour Time Period Start Time	From North					From East					From South					From West					Total Vehicle Volume	Directional Volume Totals		
	CTH F					Lindsay Road					CTH F					Lindsay Road								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
AM	6:00 AM	3	794	7	0	804	9	6	19	0	34	52	731	2	0	785	26	11	11	0	48	1671	82	1589
	7:00 AM	4	1198	13	0	1215	16	13	34	0	63	42	975	8	0	1025	30	28	20	0	78	2381	141	2240
	8:00 AM	5	893	4	0	902	11	9	28	0	48	17	707	6	0	730	15	18	13	0	46	1726	94	1632
	9:00 AM	6	589	5	0	600	8	4	23	0	35	21	495	5	0	521	14	8	5	0	27	1183	62	1121
MD	10:00 AM	3	543	3	1	550	5	11	27	0	43	24	481	8	1	514	11	13	1	0	25	1132	68	1064
	11:00 AM	5	520	4	0	529	8	10	26	0	44	23	522	11	1	557	11	11	2	0	24	1154	68	1086
	12:00 PM	6	583	6	0	595	6	21	18	0	45	19	543	10	2	574	11	16	3	0	30	1244	75	1169
	1:00 PM	9	485	2	0	496	5	10	11	0	26	20	553	19	1	593	14	8	6	0	28	1143	54	1089
PM	2:00 PM	15	683	7	0	705	5	9	17	0	31	25	762	13	1	801	6	11	7	0	24	1561	55	1506
	3:00 PM	11	789	8	2	810	13	9	23	0	45	31	953	27	0	1011	14	13	8	0	35	1901	80	1821
	4:00 PM	23	1143	13	0	1179	24	23	30	0	77	40	1328	51	0	1419	17	19	9	0	45	2720	122	2598
	5:00 PM	29	1079	17	0	1125	30	18	32	0	80	60	1414	65	0	1539	28	17	13	0	58	2802	138	2664
	6:00 PM	15	577	10	0	602	10	16	18	0	44	32	691	22	1	746	17	26	12	0	55	1447	99	1348
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		134	9876	99	3	10112	150	159	306	0	615	406	10155	247	7	10815	214	199	110	0	523	22065	1138	20927

Graphical Summary of Hourly Volumes



Count Basics			Page 5 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

All Motor Vehicles

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time		↓					←					↑					→					15-Min Totals	Hourly Sum	PHF
		From North					From East					From South					From West							
		CTH F					Lindsay Road					CTH F					Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM Peak Period	6:00 AM	0	126	0	0	126	1	1	7	0	9	11	128	1	0	140	4	0	2	0	6	281	1671	0.79
	6:15 AM	0	187	2	0	189	5	2	3	0	10	12	134	1	0	147	5	5	5	0	15	361	1896	0.89
	6:30 AM	2	229	4	0	235	1	0	7	0	8	16	227	0	0	243	9	3	0	0	12	498	2126	0.90
	6:45 AM	1	252	1	0	254	2	3	2	0	7	13	242	0	0	255	8	3	4	0	15	531	2273	0.88
	7:00 AM	0	286	2	0	288	3	2	9	0	14	7	182	2	0	191	4	6	3	0	13	506	2381	0.92
	7:15 AM	2	299	3	0	304	1	3	7	0	11	11	246	1	0	258	8	6	4	0	18	591	2379	0.92
	7:30 AM	0	313	4	0	317	5	4	7	0	16	9	278	3	0	290	8	8	6	0	22	645	2242	0.87
	7:45 AM	2	300	4	0	306	7	4	11	0	22	15	269	2	0	286	10	8	7	0	25	639	1999	0.78
	8:00 AM	3	268	1	0	272	4	3	8	0	15	3	203	1	0	207	4	1	5	0	10	504	1726	0.86
	8:15 AM	1	224	1	0	226	2	4	8	0	14	6	188	4	0	198	6	9	1	0	16	454	1520	0.84
Midday Peak Period	8:30 AM	0	202	1	0	203	3	0	4	0	7	4	173	1	0	178	3	5	6	0	14	402	1354	0.84
	8:45 AM	1	199	1	0	201	2	2	8	0	12	4	143	0	0	147	2	3	1	0	6	366	1235	0.84
	9:00 AM	2	133	3	0	138	2	0	10	0	12	4	137	1	0	142	2	3	1	0	6	298	1183	0.94
	9:15 AM	0	145	1	0	146	1	1	4	0	6	5	127	1	0	133	2	0	1	0	3	288	1173	0.93
	9:30 AM	2	137	1	0	140	3	3	5	0	11	7	117	2	0	126	2	3	1	0	6	283	1156	0.92
	9:45 AM	2	174	0	0	176	2	0	4	0	6	5	114	1	0	120	8	2	2	0	12	314	1175	0.94
	10:00 AM	0	143	0	0	143	1	4	7	0	12	6	122	0	0	128	2	3	0	0	5	288	1132	0.94
	10:15 AM	1	143	2	0	146	0	3	4	0	7	5	104	4	0	113	2	3	0	0	5	271	1113	0.92
	10:30 AM	1	126	1	1	129	4	2	5	0	11	6	146	2	1	155	3	3	1	0	7	302	1112	0.92
	10:45 AM	1	131	0	0	132	0	2	11	0	13	7	109	2	0	118	4	4	0	0	8	271	1115	0.91
PM Peak Period	11:00 AM	0	117	0	0	117	4	4	6	0	14	8	121	4	1	134	1	2	1	0	4	269	1154	0.93
	11:15 AM	2	121	3	0	126	1	3	6	0	10	4	120	2	0	126	4	3	1	0	8	270	1219	0.91
	11:30 AM	1	155	1	0	157	1	2	9	0	12	5	124	4	0	133	1	2	0	0	3	305	1260	0.94
	11:45 AM	2	127	0	0	129	2	1	5	0	8	6	157	1	0	164	5	4	0	0	9	310	1258	0.94
	12:00 PM	0	147	1	0	148	2	6	4	0	12	7	156	5	0	168	1	4	1	0	6	334	1244	0.93
	12:15 PM	0	154	3	0	157	2	2	7	0	11	3	130	1	1	135	5	2	1	0	8	311	1204	0.97
	12:30 PM	3	128	1	0	132	1	8	5	0	14	3	145	1	0	149	2	6	0	0	8	303	1167	0.96
	12:45 PM	3	154	1	0	158	1	5	2	0	8	6	112	3	1	122	3	4	1	0	8	296	1163	0.97
	1:00 PM	1	145	0	0	146	0	2	4	0	6	5	122	3	1	131	6	3	2	0	11	294	1143	0.96
	1:15 PM	4	95	0	0	99	4	4	2	0	10	4	152	6	0	162	1	1	1	0	3	274	1217	0.83
PM Peak Period	1:30 PM	1	133	1	0	135	1	3	4	0	8	5	143	4	0	152	2	1	1	0	4	299	1309	0.89
	1:45 PM	3	112	1	0	116	0	1	1	0	2	6	136	6	0	148	5	3	2	0	10	276	1462	0.81
	2:00 PM	2	171	1	0	174	0	2	2	0	4	6	175	3	0	184	1	5	0	0	6	368	1561	0.86
	2:15 PM	4	153	0	0	157	2	2	8	0	12	5	186	4	0	195	0	1	1	0	2	366	1625	0.90
	2:30 PM	3	202	4	0	209	1	2	3	0	6	8	216	3	1	228	3	2	4	0	9	452	1687	0.93
	2:45 PM	6	157	2	0	165	2	3	4	0	9	6	185	3	0	194	2	3	2	0	7	375	1761	0.84
	3:00 PM	4	200	1	0	205	5	3	5	0	13	9	194	5	0	208	2	2	2	0	6	432	1901	0.90
	3:15 PM	2	166	2	0	170	1	2	4	0	7	9	228	3	0	240	4	4	3	0	11	428	2091	0.84
	3:30 PM	4	237	3	1	245	3	3	8	0	14	6	240	11	0	257	5	4	1	0	10	526	2339	0.87
	3:45 PM	1	186	2	1	190	4	1	6	0	11	7	291	8	0	306	3	3	2	0	8	515	2540	0.87
	4:00 PM	6	292	5	0	303	3	4	3	0	10	7	282	9	0	298	5	4	2	0	11	622	2720	0.94
	4:15 PM	6	313	4	0	323	7	4	7	0	18	13	309	7	0	329	3	2	1	0	6	676	2831	0.97
	4:30 PM	4	278	3	0	285	7	6	8	0	21	9	389	15	0	413	2	4	2	0	8	727	3013	0.88
	4:45 PM	7	260	1	0	268	7	9	12	0	28	11	348	20	0	379	7	9	4	0	20	695	2986	0.87
	5:00 PM	8	287	1	0	296	10	5	7	0	22	15	370	17	0	402	5	5	3	0	13	733	2802	0.82
	5:15 PM	11	319	5	0	335	10	5	4	0	19	19	445	20	0	484	9	7	4	0	20	858	2471	0.72
	5:30 PM	8	282	5	0	295	5	5	10	0	20	15	335	18	0	368	9	3	5	0	17	700	1992	0.71
	5:45 PM	2	191	6	0	199	5	3	11	0	19	11	264	10	0	285	5	2	1	0	8	511	1636	0.80
	6:00 PM	3	184	3	0	190	3	6	5	0	14	8	171	2	0	181	6	8	3	0	17	402	1447	0.90
	6:15 PM	3	150	2	0	155	0	2	3	0	5	6	197	8	0	211	2	5	1	0	8	379		
6:30 PM	6	126	5	0	137	5	4	2	0	11	9	169	6	0	184	5	5	2	0	12	344			
6:45 PM	3	117	0	0	120	2	4	8	0	14	9	154	6	1	170	4	8	6	0	18	322			
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	134	9876	99	3	10112	150	159	306	0	615	406	10155	247	7	10815	214	199	110	0	523	22065			

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume	PHF
	CTH F					Lindsay Road					CTH F					Lindsay Road						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:00 AM	4	1198	13	0	1215	16	13	34	0	63	42	975	8	0	1025	30	28	20	0	78	2381	0.92
MD 11:30 AM	3	583	5	0	591	7	11	25	0	43	21	567	11	1	600	12	12	2	0	26	1260	0.94
PM 4:30 PM	30	1144	10	0	1184	34	25	31	0	90	54	1552	72	0	1678	23	25	13	0	61	3013	0.88

Intersection Traffic Volume Report

Count Basics			Page 6 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

15-Minute Automobile Data

CTH F and Lindsay Road

Automobiles (Cars, Light Trucks, & Motorcycles)		
		

15-Minute Automobile Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	CTH F					Lindsay Road					CTH F					Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	110	0	0	110	1	1	7	0	9	11	112	1	0	124	4	0	2	0	6	249	1490
	6:15 AM	0	164	2	0	166	3	2	3	0	8	11	119	1	0	131	5	5	5	0	15	320	1702
	6:30 AM	2	207	3	0	212	1	0	4	0	5	15	203	0	0	218	9	3	0	0	12	447	1925
	6:45 AM	1	228	1	0	230	1	3	1	0	5	13	211	0	0	224	8	3	4	0	15	474	2075
	7:00 AM	0	256	2	0	258	1	2	9	0	12	7	169	2	0	178	4	6	3	0	13	461	2184
	7:15 AM	2	269	3	0	274	1	3	7	0	11	11	228	1	0	240	8	6	4	0	18	543	2170
	7:30 AM	0	294	3	0	297	5	4	7	0	16	7	252	3	0	262	8	8	6	0	22	597	2018
	7:45 AM	2	272	4	0	278	7	3	11	0	21	13	245	2	0	260	10	7	7	0	24	583	1757
	8:00 AM	3	250	1	0	254	3	3	7	0	13	3	166	1	0	170	4	1	5	0	10	447	1483
	8:15 AM	0	192	1	0	193	2	4	7	0	13	5	160	4	0	169	6	9	1	0	16	391	1282
	8:30 AM	0	185	1	0	186	2	0	3	0	5	3	127	1	0	131	3	5	6	0	14	336	1142
	8:45 AM	1	164	1	0	166	1	2	8	0	11	4	124	0	0	128	1	2	1	0	4	309	1035
	9:00 AM	1	117	3	0	121	2	0	10	0	12	2	104	1	0	107	2	3	1	0	6	246	992
	9:15 AM	0	126	0	0	126	1	1	4	0	6	5	110	1	0	116	2	0	1	0	3	251	963
	9:30 AM	2	111	1	0	114	3	3	5	0	11	6	90	2	0	98	2	3	1	0	6	229	906
	9:45 AM	2	153	0	0	155	1	0	3	0	4	5	90	1	0	96	7	2	2	0	11	266	915
Midday Peak Period	10:00 AM	0	112	0	0	112	1	3	5	0	9	4	87	0	0	91	2	3	0	0	5	217	857
	10:15 AM	1	104	2	0	107	0	3	4	0	7	5	68	3	0	76	2	2	0	0	4	194	853
	10:30 AM	1	103	1	1	106	4	1	4	0	9	5	108	2	1	116	3	3	1	0	7	238	880
	10:45 AM	1	95	0	0	96	0	2	11	0	13	5	84	2	0	91	4	4	0	0	8	208	898
	11:00 AM	0	87	0	0	87	4	3	5	0	12	7	98	4	1	110	1	2	1	0	4	213	934
	11:15 AM	2	99	3	0	104	0	3	5	0	8	2	97	2	0	101	4	3	1	0	8	221	991
	11:30 AM	1	130	1	0	132	1	2	8	0	11	4	102	4	0	110	1	2	0	0	3	256	1017
	11:45 AM	2	102	0	0	104	0	1	5	0	6	6	118	1	0	125	5	4	0	0	9	244	1006
	12:00 PM	0	122	1	0	123	2	6	3	0	11	7	118	5	0	130	1	4	1	0	6	270	982
	12:15 PM	0	117	2	0	119	1	2	5	0	8	2	108	1	1	112	5	2	1	0	8	247	948
	12:30 PM	3	104	1	0	108	1	8	5	0	14	2	114	1	0	117	2	4	0	0	6	245	927
	12:45 PM	3	111	1	0	115	0	4	2	0	6	6	81	3	1	91	3	4	1	0	8	220	929
	1:00 PM	1	114	0	0	115	0	2	3	0	5	3	98	3	1	105	6	3	2	0	11	236	933
	1:15 PM	4	87	0	0	91	4	4	1	0	9	3	114	6	0	123	1	1	1	0	3	226	989
	1:30 PM	1	103	1	0	105	1	3	4	0	8	5	121	4	0	130	2	1	1	0	4	247	1060
	1:45 PM	3	90	1	0	94	0	1	1	0	2	6	106	6	0	118	5	3	2	0	10	224	1216
PM Peak Period	2:00 PM	2	135	0	0	137	0	2	2	0	4	5	137	3	0	145	1	5	0	0	6	292	1315
	2:15 PM	4	119	0	0	123	2	2	5	0	9	4	156	4	0	164	0	0	1	0	1	297	1409
	2:30 PM	3	179	3	0	185	1	2	3	0	6	8	191	3	1	203	3	2	4	0	9	403	1498
	2:45 PM	6	135	1	0	142	1	3	4	0	8	6	158	3	0	167	2	2	2	0	6	323	1580
	3:00 PM	4	178	1	0	183	5	2	5	0	12	8	173	5	0	186	2	2	1	0	5	386	1734
	3:15 PM	1	150	1	0	152	1	2	3	0	6	7	208	2	0	217	4	4	3	0	11	386	1920
	3:30 PM	4	215	3	1	223	3	3	7	0	13	5	224	11	0	240	5	3	1	0	9	485	2162
	3:45 PM	1	171	2	1	175	4	1	6	0	11	4	271	8	0	283	3	3	2	0	8	477	2370
	4:00 PM	6	270	5	0	281	3	3	2	0	8	7	257	9	0	273	5	3	2	0	10	572	2564
	4:15 PM	6	291	3	0	300	7	3	7	0	17	10	288	7	0	305	3	2	1	0	6	628	2707
	4:30 PM	4	261	2	0	267	7	6	8	0	21	9	374	15	0	398	2	4	1	0	7	693	2895
	4:45 PM	7	251	0	0	258	7	8	12	0	27	11	336	19	0	366	7	9	4	0	20	671	2878
	5:00 PM	8	280	1	0	289	10	5	7	0	22	15	359	17	0	391	5	5	3	0	13	715	2688
	5:15 PM	11	299	5	0	315	9	5	4	0	18	18	426	20	0	464	8	7	4	0	19	816	2354
	5:30 PM	8	272	4	0	284	4	5	10	0	19	14	324	18	0	356	9	3	5	0	17	676	1902
	5:45 PM	2	176	6	0	184	5	3	11	0	19	9	252	10	0	271	5	1	1	0	7	481	1559
	6:00 PM	2	177	2	0	181	3	6	5	0	14	8	160	2	0	170	5	8	3	0	16	381	1389
	6:15 PM	3	145	2	0	150	0	2	3	0	5	6	187	8	0	201	2	5	1	0	8	364	
	6:30 PM	6	120	5	0	131	5	4	2	0	11	8	165	6	0	179	5	5	2	0	12	333	
	6:45 PM	3	115	0	0	118	2	4	8	0	14	8	146	6	1	161	4	8	6	0	18	311	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		130	8717	86	3	8936	133	150	281	0	564	363	8924	244	7	9538	210	189	108	0	507	19545	

Peak Hour Automobile Volume Summary

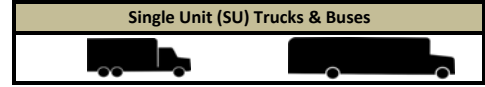
Hourly Time Period Start Time	From North					From East					From South					From West
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Intersection Traffic Volume Report

15-Minute Single Unit (SU) Truck & Bus Data

Count Basics			Page 7 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

CTH F and Lindsay Road



15-Minute Single Unit (SU) Truck & Bus Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	CTH F					Lindsay Road					CTH F					Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	13	0	0	13	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	21	136
	6:15 AM	0	16	0	0	16	2	0	0	0	2	1	10	0	0	11	0	0	0	0	0	29	152
	6:30 AM	0	16	1	0	17	0	0	3	0	3	1	16	0	0	17	0	0	0	0	0	37	164
	6:45 AM	0	17	0	0	17	1	0	1	0	2	0	30	0	0	30	0	0	0	0	0	49	163
	7:00 AM	0	25	0	0	25	2	0	0	0	2	0	10	0	0	10	0	0	0	0	0	37	150
	7:15 AM	0	27	0	0	27	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	41	156
	7:30 AM	0	16	1	0	17	0	0	0	0	0	2	17	0	0	19	0	0	0	0	0	36	163
	7:45 AM	0	17	0	0	17	0	1	0	0	1	1	16	0	0	17	0	1	0	0	1	36	177
	8:00 AM	0	12	0	0	12	1	0	0	0	1	0	30	0	0	30	0	0	0	0	0	43	190
	8:15 AM	1	27	0	0	28	0	0	1	0	1	1	18	0	0	19	0	0	0	0	0	48	184
	8:30 AM	0	10	0	0	10	1	0	1	0	2	1	37	0	0	38	0	0	0	0	0	50	167
	8:45 AM	0	30	0	0	30	1	0	0	0	1	0	16	0	0	16	1	1	0	0	2	49	155
	9:00 AM	1	11	0	0	12	0	0	0	0	0	1	24	0	0	25	0	0	0	0	0	37	140
	9:15 AM	0	15	1	0	16	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	31	153
	9:30 AM	0	19	0	0	19	0	0	0	0	0	1	18	0	0	19	0	0	0	0	0	38	180
9:45 AM	0	17	0	0	17	1	0	1	0	2	0	14	0	0	14	1	0	0	0	1	34	192	
Midday Peak Period	10:00 AM	0	23	0	0	23	0	1	2	0	3	2	22	0	0	24	0	0	0	0	0	50	207
	10:15 AM	0	32	0	0	32	0	0	0	0	0	0	24	1	0	25	0	1	0	0	1	58	202
	10:30 AM	0	21	0	0	21	0	1	1	0	2	1	26	0	0	27	0	0	0	0	0	50	187
	10:45 AM	0	29	0	0	29	0	0	0	0	0	1	19	0	0	20	0	0	0	0	0	49	177
	11:00 AM	0	23	0	0	23	0	1	1	0	2	1	19	0	0	20	0	0	0	0	0	45	176
	11:15 AM	0	20	0	0	20	1	0	1	0	2	2	19	0	0	21	0	0	0	0	0	43	185
	11:30 AM	0	22	0	0	22	0	0	1	0	1	1	16	0	0	17	0	0	0	0	0	40	192
	11:45 AM	0	19	0	0	19	2	0	0	0	2	0	27	0	0	27	0	0	0	0	0	48	206
	12:00 PM	0	22	0	0	22	0	0	1	0	1	0	31	0	0	31	0	0	0	0	0	54	224
	12:15 PM	0	28	1	0	29	1	0	2	0	3	1	17	0	0	18	0	0	0	0	0	50	223
	12:30 PM	0	23	0	0	23	0	0	0	0	0	1	28	0	0	29	0	2	0	0	2	54	213
	12:45 PM	0	38	0	0	38	1	1	0	0	2	0	26	0	0	26	0	0	0	0	0	66	203
	1:00 PM	0	29	0	0	29	0	0	1	0	1	2	21	0	0	23	0	0	0	0	0	53	182
	1:15 PM	0	8	0	0	8	0	0	1	0	1	1	30	0	0	31	0	0	0	0	0	40	186
	1:30 PM	0	24	0	0	24	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	44	205
1:45 PM	0	17	0	0	17	0	0	0	0	0	0	28	0	0	28	0	0	0	0	0	45	202	
PM Peak Period	2:00 PM	0	28	1	0	29	0	0	0	0	0	1	27	0	0	28	0	0	0	0	0	57	201
	2:15 PM	0	29	0	0	29	0	0	3	0	3	1	25	0	0	26	0	1	0	0	1	59	179
	2:30 PM	0	22	1	0	23	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	41	156
	2:45 PM	0	18	1	0	19	1	0	0	0	1	0	23	0	0	23	0	1	0	0	1	44	149
	3:00 PM	0	17	0	0	17	0	1	0	0	1	1	15	0	0	16	0	0	1	0	1	35	132
	3:15 PM	1	15	1	0	17	0	0	1	0	1	2	15	1	0	18	0	0	0	0	0	36	129
	3:30 PM	0	21	0	0	21	0	0	1	0	1	1	10	0	0	11	0	1	0	0	1	34	128
	3:45 PM	0	14	0	0	14	0	0	0	0	0	2	11	0	0	13	0	0	0	0	0	27	121
	4:00 PM	0	12	0	0	12	0	1	0	0	1	0	18	0	0	18	0	1	0	0	1	32	111
	4:15 PM	0	16	1	0	17	0	1	0	0	1	3	14	0	0	17	0	0	0	0	0	35	92
	4:30 PM	0	13	0	0	13	0	0	0	0	0	0	13	0	0	13	0	0	1	0	1	27	95
	4:45 PM	0	8	0	0	8	0	1	0	0	1	0	7	1	0	8	0	0	0	0	0	17	87
	5:00 PM	0	4	0	0	4	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	13	88
	5:15 PM	0	18	0	0	18	1	0	0	0	1	1	17	0	0	18	1	0	0	0	1	38	92
	5:30 PM	0	7	1	0	8	1	0	0	0	1	1	9	0	0	10	0	0	0	0	0	19	65
	5:45 PM	0	10	0	0	10	0	0	0	0	0	2	5	0	0	7	0	1	0	0	1	18	54
	6:00 PM	1	7	1	0	9	0	0	0	0	0	0	7	0	0	7	1	0	0	0	1	17	42
	6:15 PM	0	4	0	0	4	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	11	
	6:30 PM	0	4	0	0	4	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	8	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	6	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	4	933	11	0	948	17	9	23	0	49	39	924	3	0	966	4	10	2	0	16	1979		

Peak Hour Single Unit (SU) Truck & Buses Volume Summary

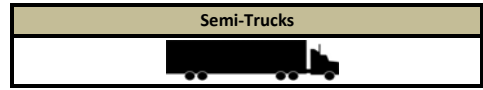
Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	85	1	0	86	2	1	0	0	3	3	57	0	0	60	0	1	0	0	1	150
MD 11:30 AM	0	91	1	0	92	3	0	4	0	7	2	91	0	0	93	0	0	0	0	0	192
PM 4:30 PM	0	43	0	0	43	1	1	0	0	2	1	46	1	0	48	1	0	1	0	2	99

Intersection Traffic Volume Report

Count Basics			Page 8 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

15-Minute Semi-Truck Data

CTH F and Lindsay Road



15-Minute Semi-Truck Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	CTH F					Lindsay Road					CTH F					Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	11	45
	6:15 AM	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	12	42
	6:30 AM	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14	37
	6:45 AM	0	7	0	0	7	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	8	35
	7:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8	47
	7:15 AM	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7	53
	7:30 AM	0	3	0	0	3	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	12	61
	7:45 AM	0	11	0	0	11	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	20	65
	8:00 AM	0	6	0	0	6	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	14	53
	8:15 AM	0	5	0	0	5	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	15	54
	8:30 AM	0	7	0	0	7	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	16	45
	8:45 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8	45
	9:00 AM	0	5	0	0	5	0	0	0	0	0	1	9	0	0	10	0	0	0	0	0	15	51
	9:15 AM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6	57
	9:30 AM	0	7	0	0	7	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	16	70
	9:45 AM	0	4	0	0	4	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	14	68
Midday Peak Period	10:00 AM	0	8	0	0	8	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	21	68
	10:15 AM	0	7	0	0	7	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	19	58
	10:30 AM	0	2	0	0	2	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	14	45
	10:45 AM	0	7	0	0	7	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	14	40
	11:00 AM	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	11	44
	11:15 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6	43
	11:30 AM	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	9	51
	11:45 AM	0	6	0	0	6	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	18	46
	12:00 PM	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	10	38
	12:15 PM	0	9	0	0	9	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	14	33
	12:30 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4	27
	12:45 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10	31
	1:00 PM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5	28
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	8	42
	1:30 PM	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	8	44
	1:45 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7	44
PM Peak Period	2:00 PM	0	8	0	0	8	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	19	45
	2:15 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10	37
	2:30 PM	0	1	0	0	1	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	8	33
	2:45 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8	32
	3:00 PM	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11	35
	3:15 PM	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	6	42
	3:30 PM	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	7	49
	3:45 PM	0	1	0	0	1	0	0	0	0	0	1	9	0	0	10	0	0	0	0	0	11	49
	4:00 PM	0	10	0	0	10	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	18	45
	4:15 PM	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	13	32
	4:30 PM	0	4	1	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7	23
	4:45 PM	0	1	1	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7	21
	5:00 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5	26
	5:15 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4	25
	5:30 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5	25
	5:45 PM	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	12	23
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	4	16
	6:15 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4	
	6:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	
	6:45 PM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	0	226	2	0	228	0	0	2	0	2	4	307	0	0	311	0	0	0	0	0	541		

Peak Hour Semi-Truck Volume Summary

Hourly Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Hourly Volume
	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	25	0	0	25	0	0	1	0	1	1	34	0	0	35	0	0	0	0	0	61
MD 11:30 AM	0	17	0	0	17	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	33
PM 4:30 PM	0	21	1	0	22	0	0	1	0	1	1	25	0	0	26	0	0	0	0	0	49

Intersection Traffic Volume Report

Count Basics			Page 9 of 13
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

15-Minute Heavy Vehicle Data

CTH F and Lindsay Road



15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North						From East						From South						From West						15-Min Totals	Hourly Sum
	CTH F						Lindsay Road						CTH F						Lindsay Road							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total						
AM Peak Period	6:00 AM	0	16	0	0	16	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	32	181			
	6:15 AM	0	23	0	0	23	2	0	0	0	2	1	15	0	0	16	0	0	0	0	0	41	194			
	6:30 AM	0	22	1	0	23	0	0	3	0	3	1	24	0	0	25	0	0	0	0	0	51	201			
	6:45 AM	0	24	0	0	24	1	0	1	0	2	0	31	0	0	31	0	0	0	0	0	57	198			
	7:00 AM	0	30	0	0	30	2	0	0	0	2	0	13	0	0	13	0	0	0	0	0	45	197			
	7:15 AM	0	30	0	0	30	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	48	209			
	7:30 AM	0	19	1	0	20	0	0	0	0	0	2	26	0	0	28	0	0	0	0	0	48	224			
	7:45 AM	0	28	0	0	28	0	1	0	0	1	2	24	0	0	26	0	1	0	0	1	56	242			
	8:00 AM	0	18	0	0	18	1	0	1	0	2	0	37	0	0	37	0	0	0	0	0	57	243			
	8:15 AM	1	32	0	0	33	0	0	1	0	1	1	28	0	0	29	0	0	0	0	0	63	238			
	8:30 AM	0	17	0	0	17	1	0	1	0	2	1	46	0	0	47	0	0	0	0	0	66	212			
	8:45 AM	0	35	0	0	35	1	0	0	0	1	0	19	0	0	19	1	1	0	0	2	57	200			
9:00 AM	1	16	0	0	17	0	0	0	0	0	2	33	0	0	35	0	0	0	0	0	52	191				
9:15 AM	0	19	1	0	20	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	37	210				
9:30 AM	0	26	0	0	26	0	0	0	0	0	1	27	0	0	28	0	0	0	0	0	54	250				
9:45 AM	0	21	0	0	21	1	0	1	0	2	0	24	0	0	24	1	0	0	0	1	48	260				
Midday Peak Period	10:00 AM	0	31	0	0	31	0	1	2	0	3	2	35	0	0	37	0	0	0	0	0	71	275			
	10:15 AM	0	39	0	0	39	0	0	0	0	0	0	36	1	0	37	0	1	0	0	1	77	260			
	10:30 AM	0	23	0	0	23	0	1	1	0	2	1	38	0	0	39	0	0	0	0	0	64	232			
	10:45 AM	0	36	0	0	36	0	0	0	0	0	2	25	0	0	27	0	0	0	0	0	63	217			
	11:00 AM	0	30	0	0	30	0	1	1	0	2	1	23	0	0	24	0	0	0	0	0	56	220			
	11:15 AM	0	22	0	0	22	1	0	1	0	2	2	23	0	0	25	0	0	0	0	0	49	228			
	11:30 AM	0	25	0	0	25	0	0	1	0	1	1	22	0	0	23	0	0	0	0	0	49	243			
	11:45 AM	0	25	0	0	25	2	0	0	0	2	0	39	0	0	39	0	0	0	0	0	66	252			
	12:00 PM	0	25	0	0	25	0	0	1	0	1	0	38	0	0	38	0	0	0	0	0	64	262			
	12:15 PM	0	37	1	0	38	1	0	2	0	3	1	22	0	0	23	0	0	0	0	0	64	256			
	12:30 PM	0	24	0	0	24	0	0	0	0	0	1	31	0	0	32	0	2	0	0	2	58	240			
	12:45 PM	0	43	0	0	43	1	1	0	0	2	0	31	0	0	31	0	0	0	0	0	76	234			
1:00 PM	0	31	0	0	31	0	0	1	0	1	2	24	0	0	26	0	0	0	0	0	58	210				
1:15 PM	0	8	0	0	8	0	0	1	0	1	1	38	0	0	39	0	0	0	0	0	48	228				
1:30 PM	0	30	0	0	30	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	52	249				
1:45 PM	0	22	0	0	22	0	0	0	0	0	0	30	0	0	30	0	0	0	0	0	52	246				
PM Peak Period	2:00 PM	0	36	1	0	37	0	0	0	0	0	1	38	0	0	39	0	0	0	0	0	76	246			
	2:15 PM	0	34	0	0	34	0	0	3	0	3	1	30	0	0	31	0	1	0	0	1	69	216			
	2:30 PM	0	23	1	0	24	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	49	189			
	2:45 PM	0	22	1	0	23	1	0	0	0	1	0	27	0	0	27	0	1	0	0	1	52	181			
	3:00 PM	0	22	0	0	22	0	1	0	0	1	1	21	0	0	22	0	0	1	0	1	46	167			
	3:15 PM	1	16	1	0	18	0	0	1	0	1	2	20	1	0	23	0	0	0	0	0	42	171			
	3:30 PM	0	22	0	0	22	0	0	1	0	1	1	16	0	0	17	0	1	0	0	1	41	177			
	3:45 PM	0	15	0	0	15	0	0	0	0	0	3	20	0	0	23	0	0	0	0	0	38	170			
	4:00 PM	0	22	0	0	22	0	1	1	0	2	0	25	0	0	25	0	1	0	0	1	50	156			
	4:15 PM	0	22	1	0	23	0	1	0	0	1	3	21	0	0	24	0	0	0	0	0	48	124			
	4:30 PM	0	17	1	0	18	0	0	0	0	0	0	15	0	0	15	0	0	1	0	1	34	118			
	4:45 PM	0	9	1	0	10	0	1	0	0	1	0	12	1	0	13	0	0	0	0	0	24	108			
	5:00 PM	0	7	0	0	7	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	18	114			
	5:15 PM	0	20	0	0	20	1	0	0	0	1	1	19	0	0	20	1	0	0	0	1	42	117			
	5:30 PM	0	10	1	0	11	1	0	0	0	1	1	11	0	0	12	0	0	0	0	0	24	90			
	5:45 PM	0	15	0	0	15	0	0	0	0	0	2	12	0	0	14	0	1	0	0	1	30	77			
	6:00 PM	1	7	1	0	9	0	0	0	0	0	0	11	0	0	11	1	0	0	0	1	21	58			
	6:15 PM	0	5	0	0	5	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	15				
	6:30 PM	0	6	0	0	6	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	11				
	6:45 PM	0	2	0	0	2	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	11				
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Totals		4	1159	13	0	1176	17	9	25	0	51	43	1231	3	0	1277	4	10	2	0	16	2520				

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0	107	1	0	108	2	1	0	0	3	4	81	0	0	85	0	1	0	0	1	197
MD 11:30 AM	0	112	1	0	113	3	0	4	0	7	2	121	0	0	123	0	0	0	0	0	243
PM 4:30 PM	0	53	2	0	55	1	1	0	0	2	1	57	1	0	59	1	0	1	0	2	118

15-Minute Heavy Vehicle Percentages

Heavy Vehicles (Single-Unit Trucks, Buses & Semi-Trucks)	
%	  

15-Minute Heavy Vehicle Percentages

Peak Hour Heavy Vehicle Percentages Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Hourly Heavy Vehicle Percent
	CTH F					Lindsay Road					CTH F					Lindsay Road					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:00 AM	0.0	8.9	7.7	0.0	8.9	12.5	7.7	0.0	0.0	4.8	9.5	8.3	0.0	0.0	8.3	0.0	3.6	0.0	0.0	1.3	8.0
MD 11:30 AM	0.0	19.2	20.0	0.0	19.1	42.9	0.0	16.0	0.0	16.3	9.5	21.3	0.0	0.0	20.5	0.0	0.0	0.0	0.0	0.0	19.0
PM 4:30 PM	0.0	4.6	20.0	0.0	4.6	2.9	4.0	0.0	0.0	2.2	1.9	3.7	1.4	0.0	3.5	4.3	0.0	7.7	0.0	3.3	19.0

Intersection Traffic Volume Report

15-Minute Pedestrian and Bicyclist Data

Count Basics		Page 11 of 13	
Start Date:	Monday, September 30, 2019	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

CTH F and Lindsay Road



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
		CTH F			Lindsay Road			CTH F			Lindsay Road				
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	1	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	9:15 AM	0	1	1	0	0	0	0	0	0	0	0	0	1	1
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	10:45 AM	0	1	1	0	0	0	0	0	0	0	0	0	1	2
	11:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	1	3
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	11:45 AM	0	2	2	0	0	0	0	0	0	0	0	0	2	2
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	12:45 PM	0	0	0	0	0	0	1	1	0	0	0	0	1	2
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	1	2
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	2:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	1	1
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6
	4:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	1	7
	4:30 PM	0	1	1	0	0	0	2	2	0	0	0	0	3	6
	4:45 PM	0	1	1	0	0	0	1	1	0	0	0	0	2	3
	5:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	1	3
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	5:45 PM	0	2	2	0	0	0	0	0	0	0	0	0	2	2
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		0	9	9	0	1	1	0	8	8	0	0	0	18	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

APPENDIX C

EXISTING TRAFFIC CONTROL ANALYSIS OUTPUTS

Lanes, Volumes, Timings
3: CTH F & Lindsay Road

2019 Exist TWSC - AM.syn
10/09/2019

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	20	30	30	35	15	15	10	975	40	15	1200	5
Future Volume (vph)	20	30	30	35	15	15	10	975	40	15	1200	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0	0	0	0	250	225	250	225	225	225
Storage Lanes	0	0	0	0	0	0	1	1	1	1	1	1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.949			0.969				0.850			0.850
Flt Protected		0.988			0.974		0.950			0.950		
Satd. Flow (prot)	0	1764	0	0	1708	0	1671	3343	1495	1656	3312	1482
Flt Permitted		0.988			0.974		0.950			0.950		
Satd. Flow (perm)	0	1764	0	0	1708	0	1671	3343	1495	1656	3312	1482
Link Speed (mph)		35			35			55			55	
Link Distance (ft)		616			668			801			747	
Travel Time (s)		12.0			13.0			9.9			9.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	8%	8%	8%	9%	9%	9%
Adj. Flow (vph)	22	33	33	38	16	16	11	1060	43	16	1304	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	70	0	11	1060	43	16	1304	5
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
3: CTH F & Lindsay Road

2019 Exist TWSC - AM.syn
10/09/2019

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	20	30	30	35	15	15	10	975	40	15	1200	5
Future Vol, veh/h	20	30	30	35	15	15	10	975	40	15	1200	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	225	250	-	225
Veh in Median Storage, #	-	2	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	5	5	5	8	8	8	9	9	9
Mvmt Flow	22	33	33	38	16	16	11	1060	43	16	1304	5

Major/Minor	Minor2		Minor1		Major1		Major2			
Conflicting Flow All	1896	2461	652	1783	2423	530	1309	0	0	1103
Stage 1	1336	1336	-	1082	1082	-	-	-	-	-
Stage 2	560	1125	-	701	1341	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.6	6.6	7	4.26	-	-	4.28
Critical Hdwy Stg 1	6.52	5.52	-	6.6	5.6	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.6	5.6	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.55	4.05	3.35	2.28	-	-	2.29
Pot Cap-1 Maneuver	43	~ 31	413	50	31	486	494	-	-	589
Stage 1	163	222	-	227	286	-	-	-	-	-
Stage 2	483	281	-	389	214	-	-	-	-	-
Platoon blocked, %										
Mov Cap-1 Maneuver	37	~ 30	413	~ 37	30	486	494	-	-	589
Mov Cap-2 Maneuver	143	158	-	168	154	-	-	-	-	-
Stage 1	159	216	-	222	280	-	-	-	-	-
Stage 2	430	275	-	296	208	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.4	34	0.1	0.1
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	494	-	-	199	193	589	-	-
HCM Lane V/C Ratio	0.022	-	-	0.437	0.366	0.028	-	-
HCM Control Delay (s)	12.5	-	-	36.4	34	11.3	-	-
HCM Lane LOS	B	-	-	E	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2	1.6	0.1	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
3: CTH F & Lindsay Road

2019 Exist TWSC - PM.syn
10/09/2019

	↗	→	↘	↖	←	↙	↘	↖	↗	↘	↖	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	15	25	25	30	25	35	70	1550	55	10	1145	30
Future Volume (vph)	15	25	25	30	25	35	70	1550	55	10	1145	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0	0	0	0	250	225	250	225	225	225
Storage Lanes	0	0	0	0	0	0	1	1	1	1	1	1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.948			0.947				0.850			0.850
Flt Protected		0.988			0.984		0.950			0.950		
Satd. Flow (prot)	0	1728	0	0	1736	0	1736	3471	1553	1719	3438	1538
Flt Permitted		0.988			0.984		0.950			0.950		
Satd. Flow (perm)	0	1728	0	0	1736	0	1736	3471	1553	1719	3438	1538
Link Speed (mph)		35			35			55			55	
Link Distance (ft)		616			668			801			747	
Travel Time (s)		12.0			13.0			9.9			9.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	5%	5%	5%
Adj. Flow (vph)	17	28	28	34	28	40	80	1761	63	11	1301	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	102	0	80	1761	63	11	1301	34
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
3: CTH F & Lindsay Road

2019 Exist TWSC - PM.syn
10/09/2019

Intersection												
Int Delay, s/veh	9.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	15	25	25	30	25	35	70	1550	55	10	1145	30
Future Vol, veh/h	15	25	25	30	25	35	70	1550	55	10	1145	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	225	250	-	225
Veh in Median Storage, #	-	2	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	2	2	2	4	4	4	5	5	5
Mvmt Flow	17	28	28	34	28	40	80	1761	63	11	1301	34

Major/Minor	Minor2		Minor1		Major1		Major2			
Conflicting Flow All	2378	3307	651	2608	3278	881	1335	0	0	1824
Stage 1	1323	1323	-	1921	1921	-	-	-	-	-
Stage 2	1055	1984	-	687	1357	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.54	6.54	6.94	4.18	-	-	4.2
Critical Hdwy Stg 1	6.56	5.56	-	6.54	5.54	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.54	5.54	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.52	4.02	3.32	2.24	-	-	2.25
Pot Cap-1 Maneuver	18	~ 8	409	~ 12	~ 9	290	502	-	-	319
Stage 1	163	222	-	69	113	-	-	-	-	-
Stage 2	239	104	-	403	215	-	-	-	-	-
Platoon blocked, %								-	-	-
Mov Cap-1 Maneuver	~ 9	~ 6	409	~ 6	~ 7	290	502	-	-	319
Mov Cap-2 Maneuver	80	67	-	53	71	-	-	-	-	-
Stage 1	137	214	-	58	95	-	-	-	-	-
Stage 2	122	87	-	314	208	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	96.3	239	0.6	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	502	-	-	105	87	319	-	-
HCM Lane V/C Ratio	0.158	-	-	0.703	1.176	0.036	-	-
HCM Control Delay (s)	13.5	-	-	96.3	239	16.7	-	-
HCM Lane LOS	B	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0.6	-	-	3.7	7.2	0.1	-	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

APPENDIX D

TRAFFIC SIGNAL WARRANT DESCRIPTIONS

Traffic Signal Warrant Descriptions

Warrant 1, Eight Hour Vehicular Volume states that a traffic signal may be considered if one of the following conditions exists for at least eight hours of an average day:

- A. The vehicles per hour given on the major street meet or exceed 500 and the vehicles per hour on the minor street meet or exceed 150; or
- B. The vehicles per hour given on the major street meet or exceed 750 and the vehicles per hour on the minor street meet or exceed 75.

Or if the following two conditions exist for eight hours of an average day:

- A. The vehicles per hour on the major street and minor street meet or exceed 80% of the values stated in A (400 major, 120 minor); and
- B. The vehicles per hour on the major street and minor street meet or exceed 80% of the values stated in B (600 major, 60 minor).

Warrant 2, Four Hour Volume is satisfied if during any four hours of an average day the major street and minor street volumes fall above the 100 percent four-hour curves shown on the graph in the Appendix of this report.

Warrant 3, Peak Hour Volume is satisfied if during any hour of an average day the major street and minor street volumes fall above the 100 percent peak hour curves shown on the graph in the Appendix of this report. Note that this signal warrant is typically applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

Warrant 4, Pedestrian Volume states that a traffic signal may be considered at an intersection or midblock crossing if one of the following conditions exists for an average day:

- A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in the Appendix of this report; or
- B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in the Appendix of this report.

Warrant 5, School Crossing is satisfied if during any hour of an average day there are inadequate gaps in the traffic stream on the major street as related to the number and size of groups of school crossing children that the number of gaps during the duration when the children are crossing is less than the number of minutes in the same period and there are a minimum of 20 students during the highest crossing hour.

Warrant 6, Coordinated Signal System is satisfied if the adjacent traffic signals are so far apart that they do not provide adequate vehicle platooning (one-way or two-way streets), and the existing and proposed traffic signals would collectively provide a progressive operation (two-way streets). This warrant shall not be applied at locations where the nearest traffic signal on the major street is less than 300 feet.

Warrant 7, Crash Experience states that a traffic signal may be considered if an engineering study finds that all of the following criteria are met:

- A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and
- B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and
- C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Warrant 1 Condition A, or the vph in both of the 80 percent columns of Warrant 1 Condition B exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection.

Warrant 8, Roadway Network is satisfied if the common intersection of two or more major routes meets one or both of the following criteria:

- A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or
- B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).

A major route as used in this signal warrant shall have at least one of the following characteristics:

- A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow.
- B. It includes rural or suburban highways outside, entering, or traversing a city.
- C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant 9, Intersection Near a Grade Crossing is satisfied if none of the previous eight warrants are met, but the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

APPENDIX E

TRAFFIC SIGNAL CONTROL ANALYSIS OUTPUTS

Lanes, Volumes, Timings
3: CTH F & Lindsay Road

2019 Exist Signal - AM.syn
10/09/2019

	↖	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔	
Traffic Volume (vph)	20	30	30	35	15	15	10	975	40	15	1200	5	
Future Volume (vph)	20	30	30	35	15	15	10	975	40	15	1200	5	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	250		225	250		225	
Storage Lanes	0		0	0		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		0.949				0.969				0.850			0.850
Flt Protected		0.988				0.974		0.950		0.950			
Satd. Flow (prot)	0	1764	0	0	1708	0	1671	3343	1495	1656	3312	1482	
Flt Permitted		0.892				0.783		0.169		0.245			
Satd. Flow (perm)	0	1592	0	0	1373	0	297	3343	1495	427	3312	1482	
Right Turn on Red			No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		35			35			55			55		
Link Distance (ft)		616			668			801			747		
Travel Time (s)		12.0			13.0			9.9			9.3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	62%	
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	8%	8%	8%	9%	9%	9%	
Adj. Flow (vph)	22	33	33	38	16	16	11	1060	27	16	1304	3	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	88	0	0	70	0	11	1060	27	16	1304	3	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases		4			8			2		6		6	
Permitted Phases	4			8			2		2	6		6	
Detector Phase	4	4		8	8		2	2	2	6	6	6	
Switch Phase													
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0	15.0	15.0	15.0	15.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	36.0	36.0		36.0	36.0		46.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)	43.9%	43.9%		43.9%	43.9%		56.1%	56.1%	56.1%	56.1%	56.1%	56.1%	
Maximum Green (s)	30.0	30.0		30.0	30.0		40.0	40.0	40.0	40.0	40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag													
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min	
v/c Ratio		0.26			0.24		0.06	0.48	0.03	0.06	0.60	0.00	
Control Delay		21.3			21.5		5.7	7.2	4.9	5.5	8.5	4.7	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		21.3			21.5		5.7	7.2	4.9	5.5	8.5	4.7	
90th %ile Green (s)	11.6	11.6		11.6	11.6		38.2	38.2	38.2	38.2	38.2	38.2	
90th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold	Hold	Gap	Gap	Gap	
70th %ile Green (s)	10.0	10.0		10.0	10.0		30.1	30.1	30.1	30.1	30.1	30.1	

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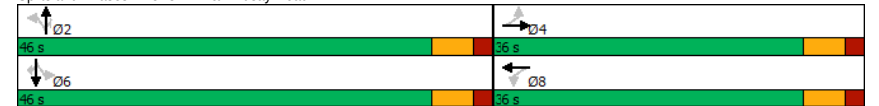
Lanes, Volumes, Timings
3: CTH F & Lindsay Road

2019 Exist Signal - AM.syn
10/09/2019

	↖	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
70th %ile Term Code	Min	Min		Min	Min		Hold	Hold	Hold	Gap	Gap	Gap	
50th %ile Green (s)	10.0	10.0		10.0	10.0		26.4	26.4	26.4	26.4	26.4	26.4	
50th %ile Term Code	Min	Min		Min	Min		Hold	Hold	Hold	Gap	Gap	Gap	
30th %ile Green (s)	10.0	10.0		10.0	10.0		25.9	25.9	25.9	25.9	25.9	25.9	
30th %ile Term Code	Min	Min		Hold	Hold		Dwell	Dwell	Dwell	Dwell	Dwell	Dwell	
10th %ile Green (s)	0.0	0.0		0.0	0.0		30.0	30.0	30.0	30.0	30.0	30.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell	Dwell	Dwell	Dwell	Dwell	
Queue Length 50th (ft)		21			17		1	91	3	2	125	0	
Queue Length 95th (ft)		64			55		7	141	11	8	195	3	
Internal Link Dist (ft)		536			588			721			667		
Turn Bay Length (ft)							250		225	250		225	
Base Capacity (vph)		1053			908		242	2725	1218	348	2700	1208	
Starvation Cap Reductn		0			0		0	0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	0	
Reduced v/c Ratio		0.08			0.08		0.05	0.39	0.02	0.05	0.48	0.00	

Intersection Summary												
Area Type:	Other											
Cycle Length:	82											
Actuated Cycle Length:	49.2											
Natural Cycle:	60											
Control Type:	Actuated-Uncoordinated											
90th %ile Actuated Cycle:	61.8											
70th %ile Actuated Cycle:	52.1											
50th %ile Actuated Cycle:	48.4											
30th %ile Actuated Cycle:	47.9											
10th %ile Actuated Cycle:	36											

Splits and Phases: 3: CTH F & Lindsay Road



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HCM 6th Signalized Intersection Summary
3: CTH F & Lindsay Road

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10/09/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	30	30	35	15	15	10	975	40	15	1200	5
Future Volume (veh/h)	20	30	30	35	15	15	10	975	40	15	1200	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1826	1826	1826	1781	1781	1781	1767	1767	1767
Adj Flow Rate, veh/h	22	33	33	38	16	16	11	1060	27	16	1304	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	5	5	5	8	8	8	9	9	9
Cap, veh/h	142	158	121	245	100	66	262	1847	824	324	1832	817
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	224	833	634	645	527	347	401	3385	1510	490	3357	1497
Grp Volume(v), veh/h	88	0	0	70	0	0	11	1060	27	16	1304	3
Grp Sat Flow(s),veh/h/ln	1691	0	0	1519	0	0	401	1692	1510	490	1678	1497
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.0	9.4	0.4	1.0	13.1	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.0	1.5	0.0	0.0	14.1	9.4	0.4	10.4	13.1	0.0
Prop In Lane	0.25		0.37	0.54		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	421	0	0	411	0	0	262	1847	824	324	1832	817
V/C Ratio(X)	0.21	0.00	0.00	0.17	0.00	0.00	0.04	0.57	0.03	0.05	0.71	0.00
Avail Cap(c_a), veh/h	1187	0	0	1093	0	0	396	2980	1329	489	2956	1318
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	0.0	15.5	0.0	0.0	12.9	6.8	4.8	10.3	7.7	4.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.2	0.0	0.0	0.1	0.3	0.0	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.5	0.0	0.0	0.1	1.4	0.1	0.1	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	0.0	15.7	0.0	0.0	13.0	7.1	4.8	10.3	8.2	4.7
LnGrp LOS	B	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h	88			70			1098			1323		
Approach Delay, s/veh	15.9			15.7			7.1			8.2		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	30.8			14.6			30.8			14.6		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	40.0			30.0			40.0			30.0		
Max Q Clear Time (g_c+I1), s	16.1			3.9			15.1			3.5		
Green Ext Time (p_c), s	7.4			0.4			9.7			0.3		
Intersection Summary												
HCM 6th Ctrl Delay	8.2											
HCM 6th LOS	A											

Lanes, Volumes, Timings
3: CTH F & Lindsay Road

2019 Exist Signal - PM.syn
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	←	→	↖	↗	←	↖	↗	→	↖	↗	→	↖	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔	
Traffic Volume (vph)	15	25	25	30	25	35	70	1550	55	10	1145	30	
Future Volume (vph)	15	25	25	30	25	35	70	1550	55	10	1145	30	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	250		225	250		225	
Storage Lanes	0		0	0		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frt		0.948				0.947				0.850			0.850
Flt Protected		0.988				0.984		0.950		0.950			
Satd. Flow (prot)	0	1728	0	0	1736	0	1736	3471	1553	1719	3438	1538	
Flt Permitted		0.911				0.860		0.179		0.093			
Satd. Flow (perm)	0	1593	0	0	1517	0	327	3471	1553	168	3438	1538	
Right Turn on Red			No			No			No			No	
Satd. Flow (RTOR)													
Link Speed (mph)		35			35			55			55		
Link Distance (ft)		616			668			801			747		
Travel Time (s)		12.0			13.0			9.9			9.3		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	62%	100%	100%	62%	
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	5%	5%	5%	
Adj. Flow (vph)	17	28	28	34	28	40	80	1761	39	11	1301	21	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	73	0	0	102	0	80	1761	39	11	1301	21	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases		4			8			2		6		6	
Permitted Phases	4			8			2		2	6		6	
Detector Phase	4	4		8	8		2	2	2	6	6	6	
Switch Phase													
Minimum Initial (s)	10.0	10.0		10.0	10.0		15.0	15.0	15.0	15.0	15.0	15.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0	24.0	24.0	24.0	24.0	
Total Split (s)	36.0	36.0		36.0	36.0		46.0	46.0	46.0	46.0	46.0	46.0	
Total Split (%)	43.9%	43.9%		43.9%	43.9%		56.1%	56.1%	56.1%	56.1%	56.1%	56.1%	
Maximum Green (s)	30.0	30.0		30.0	30.0		40.0	40.0	40.0	40.0	40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag													
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min	
v/c Ratio		0.27			0.40		0.35	0.72	0.04	0.09	0.53	0.02	
Control Delay		25.4			28.1		11.3	9.9	4.6	7.1	7.0	4.6	
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		25.4			28.1		11.3	9.9	4.6	7.1	7.0	4.6	
90th %ile Green (s)	12.8	12.8		12.8	12.8		40.0	40.0	40.0	40.0	40.0	40.0	
90th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max	Max	Hold	Hold	Hold	
70th %ile Green (s)	10.6	10.6		10.6	10.6		40.0	40.0	40.0	40.0	40.0	40.0	

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Lanes, Volumes, Timings
3: CTH F & Lindsay Road

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
70th %ile Term Code	Hold	Hold		Gap	Gap		Max	Max	Max	Hold	Hold	Hold	
50th %ile Green (s)	10.0	10.0		10.0	10.0		40.0	40.0	40.0	40.0	40.0	40.0	
50th %ile Term Code	Min	Min		Min	Min		Max	Max	Max	Hold	Hold	Hold	
30th %ile Green (s)	10.0	10.0		10.0	10.0		40.0	40.0	40.0	40.0	40.0	40.0	
30th %ile Term Code	Hold	Hold		Min	Min		Max	Max	Max	Hold	Hold	Hold	
10th %ile Green (s)	0.0	0.0		0.0	0.0		55.0	55.0	55.0	55.0	55.0	55.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Dwell	Dwell	Dwell	Dwell	Dwell	Dwell	
Queue Length 50th (ft)		24			35		12	209	4	1	122	2	
Queue Length 95th (ft)		56			73		45	326	14	8	190	9	
Internal Link Dist (ft)		536			588			721			667		
Turn Bay Length (ft)							250		225	250		225	
Base Capacity (vph)		765			728		231	2462	1101	119	2438	1091	
Starvation Cap Reductn		0			0		0	0	0	0	0	0	
Spillback Cap Reductn		0			0		0	0	0	0	0	0	
Storage Cap Reductn		0			0		0	0	0	0	0	0	
Reduced v/c Ratio		0.10			0.14		0.35	0.72	0.04	0.09	0.53	0.02	

Intersection Summary												
Area Type:	Other											
Cycle Length:	82											
Actuated Cycle Length:	62.5											
Natural Cycle:	65											
Control Type:	Actuated-Uncoordinated											
90th %ile Actuated Cycle:	64.8											
70th %ile Actuated Cycle:	62.6											
50th %ile Actuated Cycle:	62											
30th %ile Actuated Cycle:	62											
10th %ile Actuated Cycle:	61											

Splits and Phases: 3: CTH F & Lindsay Road



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Synchro 10 Report

HCM 6th Signalized Intersection Summary
3: CTH F & Lindsay Road

2019 Exist Signal - PM.syn
10/09/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	25	25	30	25	35	70	1550	55	10	1145	30
Future Volume (veh/h)	15	25	25	30	25	35	70	1550	55	10	1145	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	17	28	28	34	28	40	80	1761	39	11	1301	21
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	2	2	2	4	4	4	5	5	5
Cap, veh/h	111	137	106	141	107	105	289	2175	970	188	2158	962
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	196	829	637	340	648	637	408	3497	1560	256	3469	1547
Grp Volume(v), veh/h	73	0	0	102	0	0	80	1761	39	11	1301	21
Grp Sat Flow(s),veh/h/ln	1662	0	0	1624	0	0	408	1749	1560	256	1735	1547
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	8.3	21.7	0.5	1.9	12.8	0.3
Cycle Q Clear(g_c), s	2.1	0.0	0.0	2.9	0.0	0.0	21.1	21.7	0.5	23.6	12.8	0.3
Prop In Lane	0.23		0.38	0.33		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	0	0	354	0	0	289	2175	970	188	2158	962
V/C Ratio(X)	0.21	0.00	0.00	0.29	0.00	0.00	0.28	0.81	0.04	0.06	0.60	0.02
Avail Cap(c_a), veh/h	937	0	0	923	0	0	324	2476	1104	210	2456	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	0.0	20.9	0.0	0.0	12.9	8.1	4.1	17.1	6.5	4.1
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.5	1.9	0.0	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	1.1	0.0	0.0	0.6	4.0	0.1	0.1	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	0.0	0.0	21.3	0.0	0.0	13.4	10.0	4.2	17.2	6.8	4.1
LnGrp LOS	C	A	A	C	A	A	B	B	A	B	A	A
Approach Vol, veh/h	73			102			1880			1333		
Approach Delay, s/veh	20.8			21.3			10.0			6.8		
Approach LOS	C			C			B			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	41.1			15.4			41.1			15.4		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	40.0			30.0			40.0			30.0		
Max Q Clear Time (g_c+I1), s	23.7			4.1			25.6			4.9		
Green Ext Time (p_c), s	11.5			0.3			7.4			0.5		
Intersection Summary												
HCM 6th Ctrl Delay	9.3											
HCM 6th LOS	A											

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Synchro 10 Report

A motion was made and seconded (J. Wamser, B. Dziwulski) to approve the 2020-2021 Class A and Class B Liquor Licenses with the noted contingencies. Motion Passed: 6-For, 0-Against.

6. Lindsay Road and Redford Boulevard (CTH F) intersection Study
 - 6.1 Discussion and Possible Action to Begin Discussions with Waukesha County Regarding Final Design of the Intersection Improvements and Establishing Funding or Other Partnership Agreements for the Intersection Improvements.
 - 6.2 Discussion and Possible Action to Authorize Traffic Analysis & Design, Inc. to Complete an Amended Study in accordance with the Agreement in the amount of \$15,912.

Ms. Wagner stated there was discussion at the last meeting regarding the intersection and improvements, and that an additional study of the intersection be done for possible additional alternatives and traffic counts when we factor in future developments that will occur near the intersection.

Ms. Wagner stated John Campbell from Traffic & Design Incorporated went back and put together a scope of services which included a two way stop control (which is what it is currently), a restricted R cut, restricted crossing u turn, traffic signals, and roundabout. The cost for the study was \$15,912.00, and Ms. Wagner was looking for authorization of the study. Mr. Campbell stated it will look at eight different developments that are a potential in the area, taking into account all potential future traffic so the best solution is identified since it is a safety issue.

Ms. Wagner stated there has been one additional accident since the last conversation and she took the intersection to the Sheriffs Safety Committee but the discussion was tabled. The County was in attendance and they are doing a speed study along the corridor and wanted to see information from the speed study and to see the follow up study that we are completing to look at the consideration. Ms. Wagner stated she felt they were not in support of signals at the intersection and that the County is firm in its stance that their preferred option is the R-cut. August 12 is the next meeting which puts jeopardy on applying for a highway safety improvement grant because it is due in August and timing is restricted. Ms. Wagner stated we can always apply for it in March, since it opens up twice a year.

Ms. Wagner stated she is asking for \$15,912 to be reallocated to complete the study. There currently is nothing in the budget and since a large road project was delayed, we could take from those funds.

Mayor Bierce asked about the R-cut intersection and why the County was so in favor of it. Ms. Wagner stated Redford Blvd. and Hwy F is a major north/south corridor that is conveying the north/south traffic efficiently. There are limited driveways and intersections in this corridor. Ms. Wagner stated they requested to have the speed limit reduced but the County is not supporting that aspect and they feel people are going to go what speed they feel and perceive to be the correct speed. Therefore the County isn't in favor of reducing the speed limit. The County did understand the impact of the Lindsay Road intersection, but it is a low volume roadway and it doesn't justify signals. The study to date doesn't support signals at the intersection and they feel the R-cut is the proper use. It is typically used when you have a high volume roadway going north/south and then a low volume coming into it (east/west) and it allows for traffic to safely make maneuvers and avoid high

impact side crashes. Mayor Bierce asked if this is a state road or a county road. Ms. Wagner stated this is a County road and we have to get the county's approval to do anything. Ms. Wagner stated at this time funding hasn't been discussed and she believes we will have a share in whatever costs are associated with intersection.

Mr. Grosch asked what other development would be added to the area or the study. Ms. Wagner stated the rest of Woodleaf Reserve, a five acre development along Duplainville Road, 18 lots where Pro-Bark Mulch and Topsoil is located, the city Sports Complex, Swan View Development on Swan and Lindsay and the additional single family homes on the north side of Lindsay Road east of Swan Road.

Danielle Rath (N45W22858 Charlotte Way) stated she has almost been in several accidents at this intersection and finds it difficult to judge the distance of the cars coming at high speeds. She was very optimistic will all the development going on that it will be high volume in both directions and agrees more data needs to be collected.

George Evert (N45 W24434 Lindsay Road) stated from Redford Blvd. north to the Village of Sussex there is only one piece of land that will be able to be built on the east side of the road, as everything else is quarry land. Mr. Evert stated that when Halquist put high power in the quarry, the electric company dropped trees and left the logs in the river and they have been there for 15 years. If they would be removed there would not be flooding and a roundabout could be put in.

Dave Swan (W239N4050 Swan Road) stated he was disappointed with a round-about and asked why it would be brought forward. Due to the river and the amount of land needed for a roundabout, it would be impossible. He felt the R-cut would be safer. Mr. Swan felt that during busy times people are taking their lives into their own hands.

Brian Miller (W229N4328 Baker Court) stated his son was t-boned a month ago and was rolled over onto the driver's side. The speeds are insane and people drive like they are on I-94. It needs to be slowed down and feels it is a death trap.

Bruce Barnes, Waukesha County Traffic Engineer, stated he wants to reemphasize the perspective the County is coming from. Thus we are in full agreement on the need for safety improvements as the collision data is there. The need for safety is valid and they have done a speed study in the past. The County does concur it is high speed and more so than what is posted, but this issue is not a traffic engineering challenge, it is a police and sheriff function. Traffic signals sounds like a simple solution, but the County is opposed to it due to being a major corridor. A solution the R-cut does offer is you can go a safe distance down to make a U-turn and that process is emphasized by the gaps in traffic that are created by signals upstream or downstream of traffic. Mr. Barnes added that at the safety meeting that the police hold every three months, it was noted by collision records in Madison that several of these have been put in Sheboygan County. People who were opposed to them are now people that use them and love them. Mr. Barnes commented that Waukesha County has no funding allocated for this project now or in the near future.

Mayor Bierce asked why they aren't in favor of reducing the speeds. Mr. Barnes stated they need rigid enforcement and they can't change the posted speed limit in small areas. It has to be

in large segments instead. The previous study that the County had done showed 50-55mph is what 85 percent of people travel and it is not the measure but is a component.

Discussion took place regarding why a roundabout is not recommended. Mr. Barnes stated roundabouts are used when there are similar relative volumes of traffic on cross and main streets and balanced volumes from all four approaches. Mr. Dziwulski stated he is in favor of the R-cut, but feels the speed limit should be lowered to 45 mph. Mr. Campbell suggested they could get the study done quicker so the information could be submitted for the grant by taking out the roundabout analysis and just doing a traffic count at the sport complex driveway. This way they could have accurate information about cars coming out. The study would then be done right away so Mr. Barnes and the Council would have the information they need to make decisions about whether to pursue the HSIP (Highway Safety Improvement Program) funding for an R-cut or traffic signal. Ms. Wagner stated she did not believe the Sports Complex was fully operational right now due to Covid 19, but there may be some use of the facility.

A female resident from Victoria Station asked if Klein Dickert was operational yet because once that opens it will increase traffic. Ms. Wagner stated Klein Dickert was included in the study.

Mr. Bergman suggested laser to sense traffic from the other direction. Ms. Brown stated she didn't think that would be this is the best taxpayer funded study, when it looks like the R-cut is the solution. She would not be in favor to throw more money into an additional study.

Jeff Kara stated he was an advocate in the beginning to get the study done and get updated information so we were making good decisions. He felt the R-cut was probably where it will end up and he felt the study needs to be done quickly to get the funding so we can move on this as it is a public safety issue. Mr. Kara stated the R-cut will be safer than what we have now. Ms. Wagner stated the traffic analysis, operation of the R-cut and future projection need to be done to apply for the HSIP grant.

A motion was made and seconded (J. Kara, J. Wamser) to authorize the Director of Public Works and the City Administrator to begin discussions with Waukesha County regarding the final design of the intersection improvements and establishing funding or other partnership agreements for the intersection improvements and applying for the HSIP grant in August and to authorize Traffic Analysis Design to complete an updated study per the discussion, amending the requirements as requested by the Director of Public Works not to exceed the amount of \$15,912 and reallocating funds from the Roundy's Project.

Ms. Wagner asked the consultant to also include the estimated budgetary numbers for an R cut and he agreed to do so.

The original maker of the motion and seconder revised the motion to include getting estimated budgetary numbers. Motion Passed: 6-For, 0-Against.

7. Discussion and Possible Action Regarding the Clean Water Fund Program (CWFP) for FRWPCC Phosphorus Reduction Project.
 - 7.1 **Resolution 20-06-11** Declaring Official Intent to Reimburse Expenditures for Clean Water Fund Program Update the FWRPCC for Phosphorus Reduction.
 - 7.2 **Resolution 20-06-10** Acknowledging Magdelene Wagner, Director of Public Works, as Authorized Representative for the City of Pewaukee Update of the FRWPCC for Phosphorus

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 7.**

DATE: August 19, 2019

DEPARTMENT: PW - Engineering

PROVIDED BY: Jeffrey Weigel, PE Public Works Director

SUBJECT:

Discussion and Possible Action to Authorize and Pay for the Intersection Safety Study of Lindsay Road and CTH F (Redford Blvd.) as a Part of Their Overall Intersection Safety Study this Year [Weigel]

BACKGROUND:

Over the past several years, citizens and Alderpersons have asked us to investigate installing traffic signals in the CTH F & Lindsay Road intersection. I was recently asked by a representative of the Victoria Station homeowners association how to start the process to get signals in the intersection, and I said it has been discussed over the years but not followed through. I suggested contacting the Alderpersons representing the district as well as the Waukesha County Supervisor for the district, both of whom would be important for support at their respective agencies. County Supervisor Swan contacted Waukesha County DPW, and found that similar safety studies were underway in other County intersections. Administratively, the County could add our request as an addendum to their current study agreement, and I indicated that I thought Pewaukee would be willing to fund this additional study work (\$4,984.00). If the Council were to authorize this funding this year, the work would be completed by the end of fall, 2019.

FINANCIAL IMPACT:

We do not have any account specific to traffic studies in the current budget. The Council could authorize us to "overspend" our Outside Engineering account or approve funding from another source, such as the Contingency account.

The Outside Engineering account is always a guess at budget time, essentially consisting of Engineering Consultant Fees associated with development review (paid by developers) and the rare non-development engineering function not associated with a capital project (bridge inspections). By using the term "Overspending" the account, I am simply saying that in October 2018, I guessed that we would be spending about \$35,000 on Outside Engineering, not including \$5,000 for this intersection study. As of 7/31/19 we have charged only about \$5,000 of the \$35,000 budgeted in this account and it is unknown, even as of August 2019, what developments will get under construction this year--the two major ones are the Swan View Farms Estates and The Glen at Parkway Ridge.

RECOMMENDED MOTION:

Common Council authorizes the City of Pewaukee to have Waukesha County include the safety analysis of the CTH F & Lindsay Road Intersection as part of their 2019 safety analysis at a cost to the City of \$5,000 to be paid out of the Engineering "Outside Engineering" account.

ATTACHMENTS:

Description

AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT is entered into between **Waukesha County** (Client) and **Traffic Analysis & Design, Inc.** (Engineer), based upon Client's intention to conduct a traffic study at the intersection of CTH L & Lindsay Road in Waukesha County, Wisconsin (the Project) and Client's requirement for certain engineering services in connection with the Project (the Services) which Engineer is prepared to provide.

1. Engineer shall provide the Services described in Attachment A, "Scope of Services", according to Attachment A, "Schedule".
2. Client shall pay Engineer in accordance with Attachment A, "Compensation". Invoices shall be due and payable upon receipt. Invoice amounts not paid within 30 days after receipt shall accrue interest at the rate of 1.5% per month (or the maximum rate permitted by law, if less), with payments applied first to accrued interest and then to unpaid principal.
3. The same degree of care, skill, and diligence shall be exercised in the performance of the Services as is ordinarily possessed and exercised by a member of the same profession, currently practicing, under similar circumstances. No other warranty, express or implied, is included in this Agreement or in any drawing, specification, report, opinion, or other instrument of service, in any form or media, produced in connection with the Services.
4. Engineer shall not be liable to Client for any consequential damages resulting in any way from the performance of the Services. To the fullest extent permitted by law, Engineer's liability under this Agreement shall not exceed Engineer's total compensation actually received under this Agreement.
5. Engineer and Client waive all rights against each other for damages covered by property insurance during and after the completion of the Services.
6. Notwithstanding anything to the contrary in any Attachments hereto, Engineer has no responsibility for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project; or (b) the failure of any contractor, subcontractor, vendor, or other Project participant, not under contract to Engineer, to fulfill contractual responsibilities to Client or to comply with federal, state, or local laws, regulations, and codes.

7. Engineer does not guarantee that proposals, bids, or actual Project costs will not vary from Engineer's cost estimates or that actual schedules will not vary from Engineer's projected schedules.

8. This Agreement may be terminated upon written notice at Client's convenience or by either party in the event of substantial failure by the other party to perform in accordance with the terms of this Agreement. Engineer shall terminate performance of Services on a schedule acceptable to Client, and Client shall pay Engineer for all Services performed and reasonable termination expenses. Paragraphs 4 and 5 shall survive any termination or completion of this Agreement.

9. All documents prepared by Engineer pursuant to this Agreement are instruments of service in respect to the Project. Any use except for the specific purpose intended by this Agreement will be at the user's sole risk and without liability or legal exposure to Engineer. Engineer shall retain its ownership in its data bases, computer software, and other proprietary property. Intellectual property developed, utilized, or modified in the performance of the Services shall remain the property of Engineer.

10. The Services provided for in this Agreement are for the sole use and benefit of Client and Engineer. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than Client and Engineer.

11. Any notice required by this Agreement shall be made in writing to the address specified below:

Client: Waukesha County
515 W Moreland Blvd • AC 220
Waukesha WI 53188

Attn:Carolynn Gellings, PE, Engineering
Services Manager

Engineer: Traffic Analysis & Design, Inc.
N36 W7505 Buchanan Street
Cedarburg, WI 53012

Attn: John A. Bieberitz, P.E., PTOE

IN WITNESS WHEREOF, Client and Engineer have executed this Agreement, effective as of August 6, 2019.

Waukesha County (Client)

By: _____

Title: _____

Date: _____

Traffic Analysis & Design, Inc. (Engineer)

By:  _____
John A. Bieberitz, P.E., PTOE

Date: 8/6/19

ATTACHMENT A

SCOPE OF SERVICES

Engineer will conduct a traffic study at the intersection of County Trunk Highway (CTH) F and Lindsay Road consisting of traffic counts, traffic operations analysis, traffic signal warrant analysis, crash analysis, and a memorandum documenting the findings and recommendations. Each element of the scope is outlined below.

Task 1 – Data Collection

Engineer will collect traffic turning movement counts at the CTH F and Lindsay Road intersection on a typical weekday from 6 AM to 7 PM. The traffic turning movement counts will be conducted to WisDOT standards with cars, trucks, busses, bikes and pedestrians counted separately per movement in 15-minute intervals. Engineer will collect a photo log, intersection geometric data, and turn bay lengths. The Engineer will compile the traffic count data and geometric data for a base map for the traffic analysis.

Task 2 – Traffic Operations Analysis

Engineer will conduct an intersection operational analysis for the weekday AM and PM peak hours for the CTH F and Lindsay Road intersection for the following scenarios:

- Existing (2019) conditions with two-way-stop-control
- Existing (2019) conditions with traffic signal

Engineer will make recommendations such as turn bay length extensions, additional turn lanes, channelization, traffic control modifications and other improvements required to provide LOS 'D' or better for all traffic movements.

Engineer will conduct a traffic signal warrant analysis for the existing conditions and compare that data to the traffic signal warrant thresholds in the Manual of Uniform Traffic Control Devices (MUTCD) and the WisDOT left turn conflict analysis to determine if a traffic signal is warranted. All traffic volume warrants will be evaluated except for the School Crossing Warrant.

Task 3 – Crash Analysis

Engineer will plot the past five years (2014-2018) of crashes at the CTH F and Lindsay Road intersection. Engineer will review the crash patterns identified in the crash plots and identify potential safety improvement options, including changing the traffic control of the intersection from side-stop control to traffic signal control. Engineer will utilize the crash data to determine the

"Economic Loss" at the intersection due to crashes. Engineer will utilize the crash data, economic loss and potential recommended improvements to determine if the CTH F and Lindsay Road would meet the requirements for HSIP funding.

Task 4 – Report

Engineer will prepare a technical memorandum summarizing the findings of the analysis and recommendations for the next steps.

ADDITIONAL WORK

In-person meetings are not included in the scope of work and would require an amendment.

SCHEDULE

Engineer will complete the traffic study within three weeks of authorization, or sooner if possible.

COMPENSATION

Compensation for the services described above, CLIENT shall pay Engineer a lump sum fee of Four Thousand Nine Hundred and Eighty-Four Dollars (\$4,984.00).

All services not cited in Attachment A, Scope of Services, will be conducted as additional services under an Amendment to this Agreement.

5. Discussion and Possible Action to Authorize the Well #5 Radium Filtration Treatment Design, Equipment Replacement, and Building Addition, and to Re-Program Water/Sewer Capital Plan Accordingly

Mr. Weigel stated Well #5 has had radium type issues that were going to be addressed. He said radium levels vary from time to time and the City's well drifted back into compliance. Mr. Weigel reported it is now drifting out of compliance again. He recommended going through the design process to get a treatment plan in place before the orders are issued from the State again. Mr. Weigel stated \$50,000 was placed in the 2019 budget, but he said he received a proposal for this preliminary design, design, and the bidding process in the amount of \$215,000. He said he estimates the actual project would cost \$2 million. He said he was looking for the Council's authorization to allow him to reprogram funds to move forward with the design and bid process. He assured the Council they would have the ability to either approve the actual project or turn it down.

A motion was made and seconded, (J. Kara, B. Dziwulski) to authorize the preliminary design study and design bidding services at the cost \$215,000 and authorize the reprogramming of funds. Motion Passed: 5-For, 0-Against.

6. Discussion and Possible Action to Allow the Property Located at N32 W22198 Shady Lane (PWC 0912-053) to Connect to the Sanitary Sewer in Hill 'n Dale Circle South Via Easement Across an Adjacent Parcel

Mr. Weigel stated Shady Lane and Shady Nook do not have sewer and water service. He said he received a request from the Zabel family to connect to the sewer. He said they own two lots, one on Shady Lane where their house is, and a vacant lot on the Hill N Dale Circle where the sewer could be accessed. Mr. Weigel stated there are several costs associated with the connection, some of which are the levied reserved capacity assessment and the Hill N Dale interceptor capacity assessment.

A motion was made and seconded, (B. Dziwulski, C. Brown) to authorize the City Attorney to draft a sewer connection agreement for the Zabels similar to the 1997 Brouwer agreement and authorize the Mayor and Clerk to execute the agreement contingent upon the approval of the final form of the agreement by the City Attorney and City Engineer.

Motion Passed: 5-For, 0-Against.

7. Discussion and Possible Action to Authorize and Pay for the Intersection Safety Study of Lindsay Road and CTH F (Redford Blvd.) as a Part of Their Overall Intersection Safety Study this Year

Mr. Weigel stated a representative from the Victoria Station Home Owners Association contacted him asking him to revisit signals in this area. He said he referred him to his district Alderman and County Supervisor Swan. Mr. Weigel stated Supervisor Swan spoke to the County and said they could do the study in the next month or two for \$5,000. He suggested the funds could either come out of the contingency fund or the outside engineering account.

A motion was made and seconded (J. Wamser, R. Grosch) to authorize the study to be paid for from the outside engineering account. There was additional discussion.

Motion Passed: 5-For, 0-Against.

8. Discussion and Possible Action Regarding **Ordinance 19-21** Rezoning the Property Located at N40 W27535 Glacier Road (PWC 0890-999-002) From Rs-2 Single-Family Residential District To Rs-3 Single-Family Residential District and the Property Bearing Tax Key No. PWC 0890-999-007

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 6.**

DATE: March 15, 2021

DEPARTMENT: Public Works

PROVIDED BY: Magdelene Wagner

SUBJECT:

Discussion and Possible Action Regarding the Intermunicipal Agreement for the Lindsay Road/Redford Boulevard (CTH F) Intersection Improvements [Wagner]

BACKGROUND:

Recall the City of Pewaukee approved working with Waukesha County to apply for a Highway Safety Improvement Program Grant for the Lindsay Road and Redford Boulevard (CTH F) intersection improvement project. The project did receive funding from the HSIP grant for 2023 construction of a Restricted Crossing U-Turn (RCUT) intersection.

With securing the grant, the County is seeking a Two Party Project Agreement for the project and its funding. Please see the attached agreement. Couple of items to note in this agreement. The City is funding all costs outside of the grant funding. The City will responsible for the operation and maintenance of the lighting required for the intersection. I've asked for clarification about pedestrian/bicycle crossings.

FINANCIAL IMPACT:

The 2021 Budget allocated \$20,000 for this project.

RECOMMENDED MOTION:

Common Council approve the intermunicipal agreement contingent on the Director of Public Works and the City Attorney review and approval.

ATTACHMENTS:

Description

Two Party Agreement

TWO-PARTY PROJECT AGREEMENT
Between
WAUKESHA COUNTY by the DEPARTMENT OF PUBLIC WORKS
And
THE CITY OF PEWAUKEE

This Agreement is made and entered into between Waukesha County by the Department of Public Works (hereinafter called the DEPARTMENT) and the City of Pewaukee (hereinafter called the CITY) to designate the responsibilities for design, real estate acquisition, construction, and payment of certain costs associated with roadway safety improvements at the County Trunk Highway F (CTH F, also known as Redford Boulevard) and Lindsay Road intersection. Attachment 1 is a Conceptual Plan of the Intersection Proposed Improvements.

WHEREAS, the DEPARTMENT has obtained Highway Safety Improvement Program (HSIP) federal-funding from the Wisconsin Department of Transportation (WisDOT) to modify the existing CTH F/Lindsay Road full-turn intersection to a 'Restricted Crossing U-Turn Intersection' (RCUT) in the City of Pewaukee.

WHEREAS, the CITY has requested that the DEPARTMENT prioritize safety improvements at the CTH F and Lindsay Road intersection more quickly than other DEPARTMENT projects.

WHEREAS, the CITY agrees to pay the actual costs associated with the local-share for completing the design, real estate acquisition and construction items listed in the cost estimate, attached hereto as Attachment 2, necessary to convert the CTH F/Lindsay Road intersection to a RCUT intersection.

The parties do mutually agree to the responsibilities related to the design, real estate acquisition and construction funding of said items as described below:

RESPONSIBILITIES:

The DEPARTMENT shall:

1. Complete design, real estate acquisition, contract plans, specifications and estimates for modifying the CTH F/Lindsay Road full-turn intersection to a RCUT intersection. Work directly with WisDOT staff as part of preparing construction bid documents.
2. Monitor progress of ongoing field inspection and contract administration performed by WisDOT during construction for HSIP-funded projects. WisDOT would publicly bid said roadway improvement in accordance with all federal and state laws.

3. Make available to the City, with reasonable notice, bidding documents, bid results, notice of award, and copies of all records recommendations of awards, reports, engineer findings, and WisDOT's correspondence regarding said roadway improvements.
4. Review WisDOT's accounts of construction activities, changes in work, construction costs, and any delays or additional work necessary to complete the project. Assess any incremental increases or decreases in quantities or costs.
5. Provide copies of WisDOT's possible work change directives, change orders, or other appropriate documents to the contractor, as contract or construction changes dictate, to expedite the progress of the construction work. Any document that would increase the CITY's costs shall be provided before execution by WisDOT and the DEPARTMENT, via email, to the CITY'S Representative for review, and the CITY'S comments thereon considered if received by the DEPARTMENT within two business days of the time it is emailed to the CITY'S Representative.
6. Furnish to the CITY a detailed breakdown of all actual construction costs including all change orders and work change directives upon completion of the project.
7. Invoice the CITY on a quarterly basis.

The CITY shall:

1. Pay the actual costs of items that are estimated in Attachment 2, beyond the federal funding amount of a HSIP-project to be sought by Waukesha County. Project costs estimated at time this Agreement is signed, are anticipated to include:

	Federal-funded share	County share	City share	<u>TOTAL</u>
Design & WisDOT-design review	\$135,720	\$ 0	\$ 15,080	\$ 150,800
Construction	738,068	0	83,008	821,076
Real estate	<u>0</u>	<u>0</u>	\$34,200	34,200
TOTAL COST DISTRIBUTION	\$873,788	\$ 0	\$132,288	\$1,006,076

Any additional costs that may be incurred in association with these items shall be paid for by the CITY. The CITY shall pay the total **actual costs** for these items when they are invoiced by the DEPARTMENT.

2. Pay the entire actual design/construction/real estate acquisition costs for items which are the responsibility of the CITY within 30 days of receipt of an invoice from the DEPARTMENT.

3. Accept all future cost responsibilities for operating intersection area highway lighting located outside the CTH F pavement, upon completion of project construction.
4. Quit Claim to Waukesha County at no additional costs the adjacent City-owned lands necessary for project construction.
5. Designate a representative to act for the CITY under this Agreement. The representative shall be:

Magdelene Wagner, P.E.
Director of Public Works/City Engineer
City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072
262-691-0804 Office

OTHER TERMS

1. Assignment: The parties agree that there shall be no assignment or transfer of this Agreement nor of any interests, rights or responsibilities contained herein without a written amendment agreed to by both parties.
2. Amendment: The parties, by mutual consent, may amend this Agreement in writing at any time.
3. Severability: If any provision of this Agreement is held invalid under any applicable law, such invalidity shall not affect any other provision of this Agreement that can be given effect without the invalid provision and, to this end, the provisions hereof are severable.
4. Construction is currently anticipated to occur during 2023 as a HSIP-funded project by WisDOT, subject to the terms of this Agreement.
5. If this HSIP-funded project is cancelled by WisDOT, then this two party agreement becomes void between the DEPARTMENT and CITY.

Attachment 1: Conceptual Plan of Intersection Proposed Improvements, CTH F at Lindsay Rd

Attachment 2: Concept Layout Plan Cost Estimate (August 2020)

APPROVAL

This Agreement will be effective on the date of the DEPARTMENT'S signature.

CITY:
City of Pewaukee

DEPARTMENT:
Waukesha County

By: _____ By: _____

Title: _____ Title: Allison Bussler
Director of Public Works

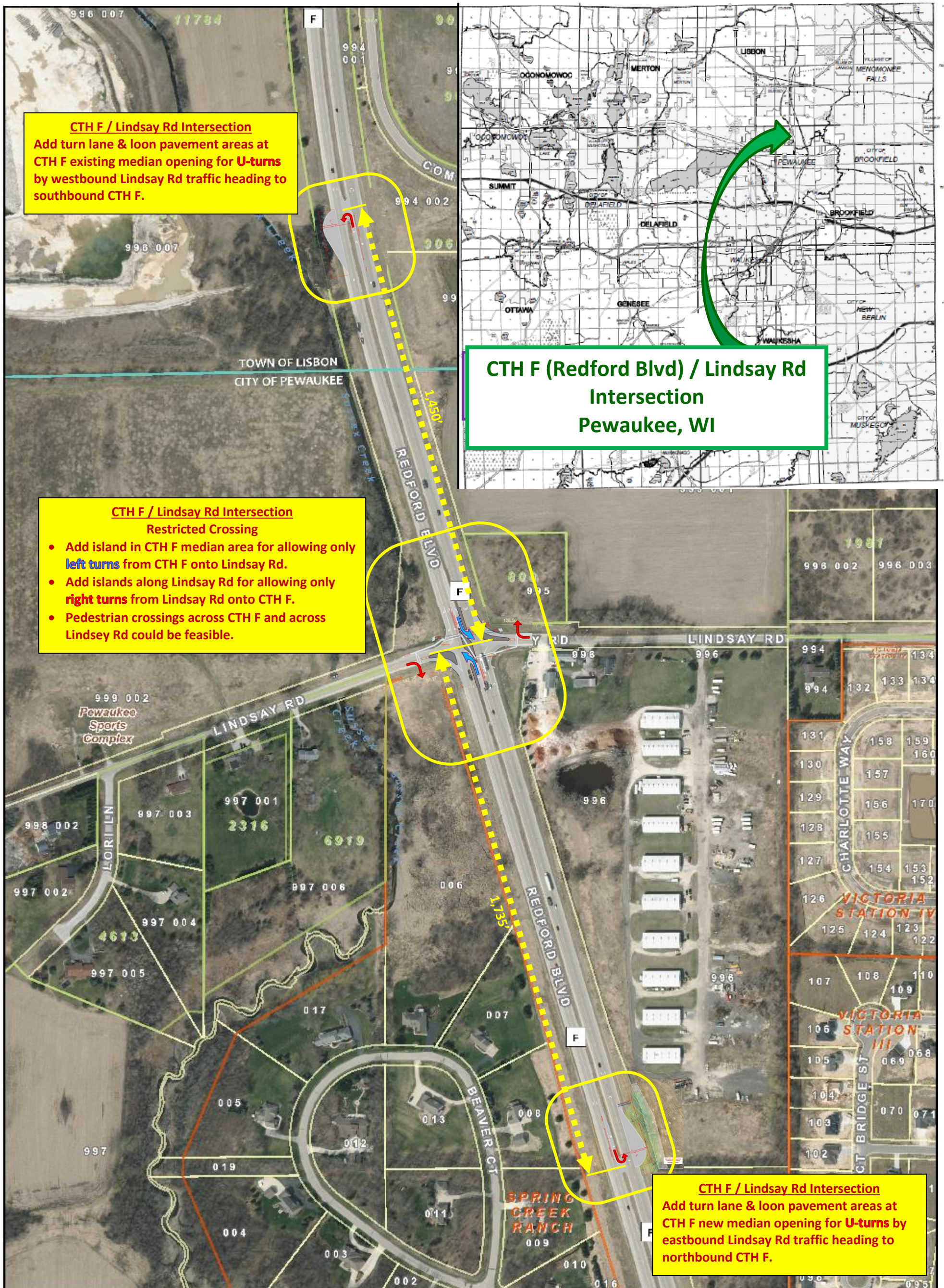
Date: _____ Date: _____

Address for CITY:

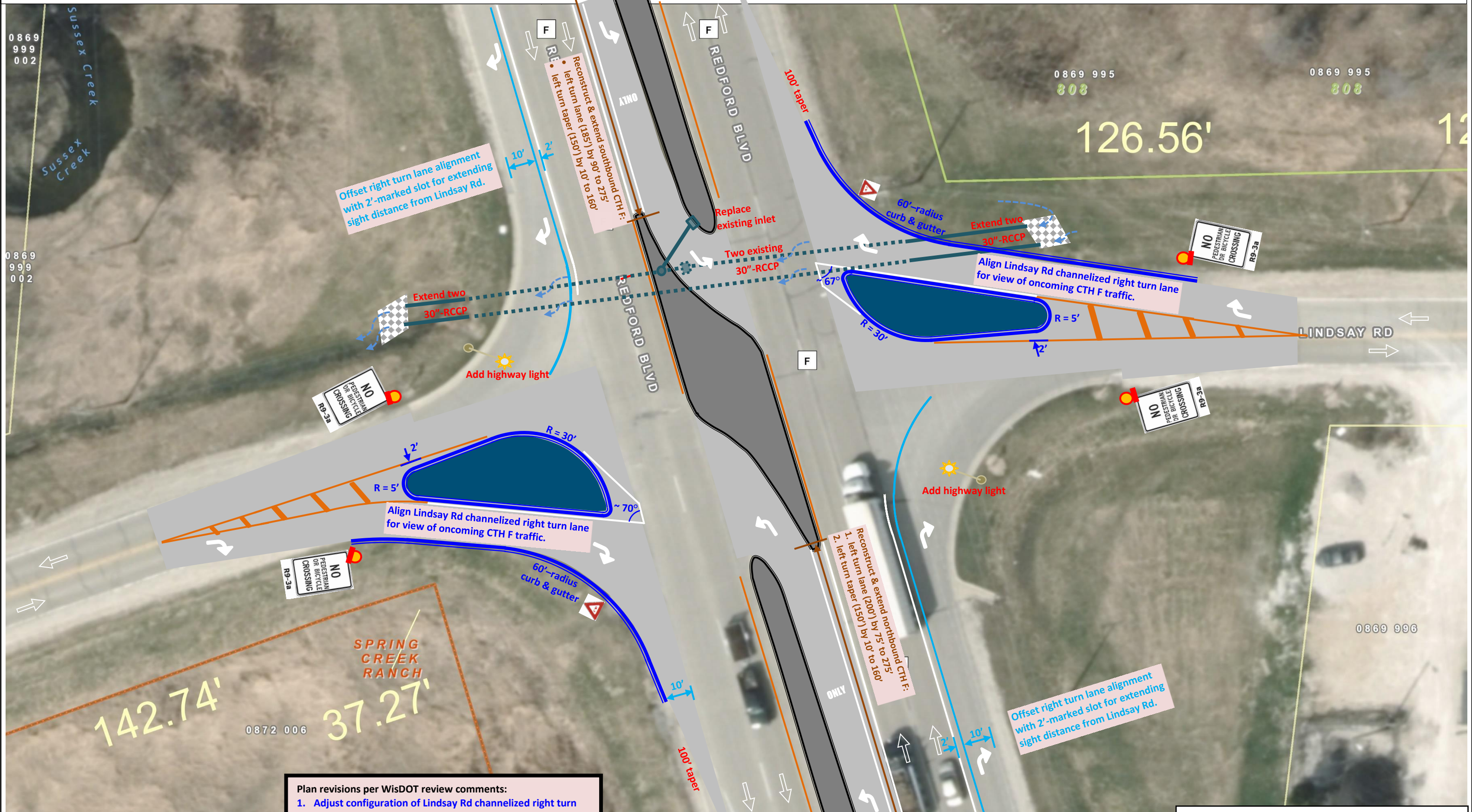
City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072

Address for DEPARTMENT:

Waukesha County Department of
Public Works
515 W. Moreland Blvd., Room AC 210
Waukesha, WI 53188



CTH F (Redford Blvd) - Lindsay Rd: Restricted Crossing U-Turn (RCUT) Intersection



- Plan revisions per WisDOT review comments:
1. Adjust configuration of Lindsay Rd channelized right turn lane islands for drivers' view of oncoming CTH F traffic.
 2. Offset CTH F right turn lanes to Lindsay Rd.
 3. Extend length and taper of CTH F existing non-slotted left turn lanes for compliance with FDM guidance.

0 30.00 Feet

Printed: 01/12/2021

Page 73 of 178

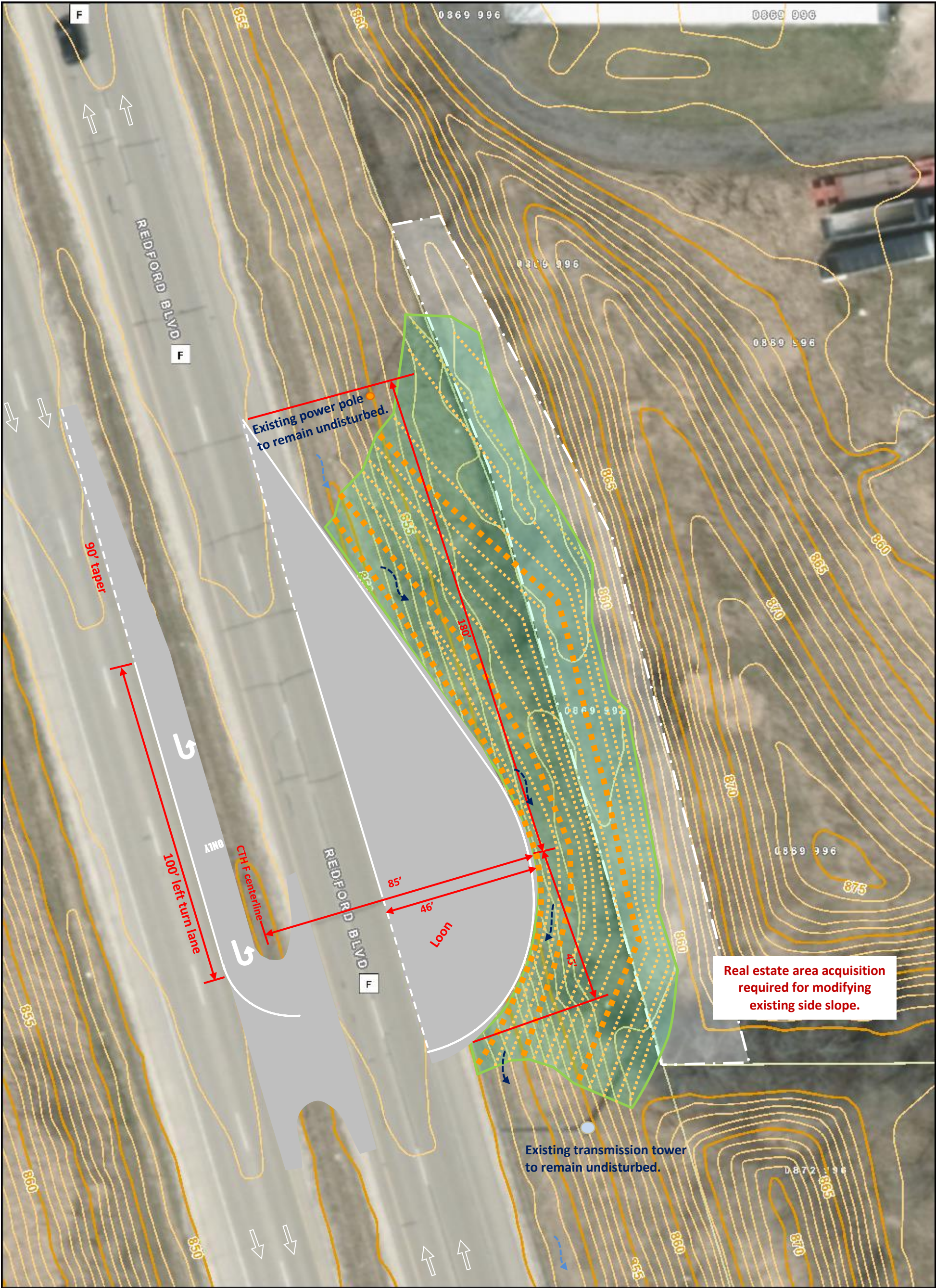


0 30.00 Feet

Printed: 7/8/2020



Exhibit 6C
Intersection Proposed Improvements
CTH F (Redford Blvd) at Lindsay Rd



CONCEPT LAYOUT PLAN COST ESTIMATE (August 2020)

CTH F (Redford Blvd) / Lindsay Rd Intersection

~1400-feet / ~350 feet

Waukesha County Project

Inflated cost

3.5%/year
to Yr 2024

ITEM NO.	Bid Item	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT COST	TOTAL COST
1	201.0105 & 201.0205	CLEARING & GRUBBING	STA	4	\$800.00	\$ 3,200
2	204.0100	REMOVE PAVEMENT	SY	2,300	\$5.00	\$ 11,500
3	204.0150	REMOVE CURB & GUTTER	LF	760	\$4	\$ 3,040
4	205.0100	EXCAVATION COMMON - BORROW	CY	8,800	\$17.00	\$ 149,600
5	305.0110	BASE AGGREGATE DENSE 1-1/4" (10"-section)	TON	2,200	\$18.00	\$ 39,600
6	455.0115	ASPHALTIC MATERIAL PG64-22	TON	65	\$5.00	\$ 325
7	460.1100	HMA PAVEMENT TYPE E-3 (5.5"-section)	TON	1,180	\$65.00	\$ 76,700
8	465.0305	ASPHALTIC SURFACE SAFETY ISLANDS (Rt turns, Median-Lt turns)	TON	220	\$75.00	\$ 16,500
9	465.0315	ASPHALTIC FLUMES	SY	10	\$60.00	\$ 600
10	520.1030	APRON ENDWALLS, 30-IN	EA	4	\$1,100.00	\$ 4,400
11	602.0410	CONCRETE SIDEWALK - 5' (6'-wide sidewalk)	SF	2,300	\$6.50	\$ 14,950
12	608.0430	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV, 30-IN	LF	140	\$120.00	\$ 16,800
13		MANHOLE, 5-FT DIAMETER & COVER	EA	1	\$3,300.00	\$ 3,300
14		INLET 2X3-FT & COVER	EA	1	\$2,050.00	\$ 2,050
15	601.0411	CONCRETE CURB & GUTTER 30-INCH TYPE D	LF	1,910	\$26.00	\$ 49,660
16	619.0000	MOBILIZATION	LS	1	\$35,000.00	\$ 35,000
17	625.0500	SALVAGED TOPSOIL	SY	1,850	\$3.00	\$ 5,550
18	628.1504	SILT FENCE	LF	1,500	\$2.50	\$ 3,750
19	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	2,600	\$2	\$ 5,200
20		REMOVE, RE-INSTALL, ADD SIGNS	LS	1	\$6,000.00	\$ 6,000
21		TRAFFIC CONTROL (Shift CTH F lanes, close Lindsey Rd)	LS	1	\$20,000.00	\$ 20,000
22	642.5201	FIELD OFFICE C	LS	1	\$9,000.00	\$ 9,000
23	646.0106	PAVEMENT MARKINGS EPOXY 4"	LF	3,120	\$1.50	\$ 4,680
24	646.7420	PAVEMENT MARKINGS EPOXY 6" (CROSSWALK)	LF	330	\$8.00	\$ 2,640
25		PAVEMENT MARKINGS WORDS & ARROWS	EA	16	\$300.00	\$ 4,800
26	647.0726	PAVEMENT MARKINGS 12" DIAGONALS	LF	50	\$9.50	\$ 475
27		HYDROSEEDING	SY	1,700	\$2.00	\$ 3,400
28		REMOVE EXISTING HIGHWAY LIGHTING	EA	1	\$700	\$ 700
29		NEW HIGHWAY LIGHTING	EA	2	\$3,000.00	\$ 6,000
30	690.0150	SAWING ASPHALT	LF	3,260	\$2.50	\$ 8,150
					SUBTOTAL	\$ 507,570

ABOVE MAJOR ITEMS REPRESENT 85% OF COSTS OF SIMILAR PROJECTS

0.85

TOTAL CONSTRUCTION COST FOR ALL BID ITEMS

\$ 597,141

15% Allowance for Construction Engineering & Contingencies

\$ 89,571

TOTAL CONSTRUCTION

\$686,712

\$772,900

REAL ESTATE ACQUISITION / EASEMENTS					
ITEM	DESCRIPTION			AREA (SF)	TOTAL COST
1	SE	Parcel 86995996	FEE & TLE	6.25	\$15,000
					Acquisition
					\$6,000
					Land/TLE
					\$6,000
					Misc/Incidental
					\$3,000
					Title Searches (1 parcel)
					\$400
					Utilities & Miscellaneous
					\$0

TOTAL REAL ESTATE

\$30,400

\$34,215

DESIGN CONSULTANT (11.0% of total construction) + **DESIGN REVIEW** (8.5% of total construction)

\$133,909

\$150,716

GRAND TOTAL

\$851,020

\$957,831

Exhibit 7
Cost Estimate
CTH F (Redford Blvd) / Lindsay Rd Intersection

issue because the homes are built in stages. She said the Parade of Homes are hurrying to complete the homes so more traffic is in the area at this time.

5. Discussion and Possible Action to Adopt **Resolution 21-03-08** Government Responsibility Resolution for the Department of Natural Resources (DNR) Storm Water Planning Grant Application

Ms. Wagner stated every two years the DNR offers planning grants for storm water and this year they would like to move forward with an application. She said this has been a long-standing project and the request for proposal is expected to go out this year. The grant would cover the water quality aspect of the project and would be available in 2022. Ms. Wagner stated the resolution would grant her the authorization to sign the applications and sign the paperwork for reimbursements.

A motion was made and seconded (J. Kara, R. Grosch) to approve the government

responsibility resolution, 21-03-08, for the Department of Natural Resources. Motion Passed: 6-For, 0-Against.

6. Discussion and Possible Action Regarding the Intermunicipal Agreement for the Lindsay Road / Redford Boulevard (CTH F) Intersection Improvements

Ms. Wagner stated she received this agreement from Waukesha County for the restricted crossing “U” turn safety improvements for the intersection at Redford Boulevard and Lindsay Road. She said the County secured a grant and would be responsible for 90 percent of the project costs and the City would be responsible for the other 10 percent. Ms. Wagner stated this agreement lays out the costs, as well as who the project lead is and who will do the review. Ms. Wagner made note that there are proposed LED lights at the intersection and the City would be responsible for the long-term maintenance of them. She said the agreement was reviewed by the City Attorney and herself and she had a few questions related to the document. She said there is land acquisition needed, as well as some grading work, but the County was unsure of their needs at this time. Ms. Wagner stated she’d rather grant them an easement, versus giving them the land. She said flood plain changes are needed in that northeast quadrant and the City may have use for that land. The project would not take place until 2023 and as much as the Council would like to see the project expedited, she said the County felt that would not be possible due to funding issues. Ms. Wagner stated the plan doesn’t show pedestrian or bicycle crossing and the County would not consider building the facility because there is nothing currently there and there is high-volume on the roadway. It is not a safe crossing area. Ms. Wagner stated if the Council wants it, they need to put in the walkway or trail prior to the project. Ms. Wagner wanted a provision added to the agreement that the City can reject all bids if they come in too high. Ms. Wagner recommended approving the agreement contingent on final review of the agreement by staff and the City Attorney.

Mr. Bergman asked if a crossing was proposed in the City’s bike and pedestrian plan. Ms. Wagner confirmed that it was. She said there are trails proposed down Lindsay Road, Swan Road and Duplainville Road that would connect to Balmer Park and the Sports Complex.

Mr. Bergman thought if the City had a plan for future development, the County would have to build it to accommodate for that future improvement. Ms. Wagner stated that was correct if they were reconstructing the road. However, this is just an intersection improvement funded by a safety grant.

Mr. Grosch stated he thought the County had a facility for crossing when they originally proposed the improvements to the City. Ms. Wagner said they had a provision showing how it would look, but it was removed.

Mr. Kara stated he was disappointed that this project won't be completed until 2023. This plan will make it useless for bikes and pedestrians. Ms. Wagner stated it was her understanding that this would be a raised intersection. Ms. Wagner stated they would have to "snake" around to cross the intersection to avoid the curb. Mr. Kara asked if the plan created a more dangerous situation for bicycles.

Ms. Brown stated this intersection was already dangerous. She said this improvement came to the Council because it was dangerous for cars.

Mr. Dziwulski voiced his displeasure that the County took out the crossing. He felt it was too dangerous.

Mr. Grosch stated some provision should be made in this area since the City has a plan for trails in the area.

Ms. Wagner read the following comment from the County: "If the City feels strongly regarding the crossing, we would need to meet and not only discuss the impacts and safety of the crossing, but the City's improvements to connect walks and overall." Ms. Wagner continued to say that the County feels this is a minor inconvenience for bicyclists for a major safety gain.

Mr. Bergman agreed with Mr. Kara's safety concerns and thought it should be brought back to Waukesha County for reconsideration to make it safe for bicyclist and pedestrians as well.

Ms. Wagner was directed to go back to the County to voice the City's concerns.

Ms. Wagner stated the County is going to ask when the trails are going in on Lindsay Road to justify the pedestrian crossing. She said the project could be added to the 2022 budget.

Mayor Bierce asked when Duplainville Road and Lindsay Road were projected to be done. Ms. Wagner stated Duplainville Road is proposed for 2022. She said Lindsay Road has been pushed off because they are waiting for utilities to come to that area. She estimated sometime within in the next five years.

Ms. Brown stated she was concerned that this would tie future Councils. She said no costs were given and she didn't agree with this.

Attorney Riffle stated we were not tying future Council hands because no contract is being signed.

Mr. Klein concurred with Attorney Riffle.

Ms. Wagner stated she would come back to the Council requesting a budget amendment for engineering fees.

Mr. Grosch asked if it would be an on-road or off-road plan. Ms. Wagner stated she believes the recommendation is for an on-road trail but feels there are some pretty significant grading issues to do so.

7. Discussion and Possible Action Regarding **Ordinance 21-01** Amending Chapter 5 - Traffic to Add Broken Hill Boulevard, Century Farm Road, and Highfield Road to Section 5.05(3)(b)

Ms. Wagner stated this is in response to the complaints received related to the Swan View Farms construction traffic driving through the Broken Hill subdivision. She indicated even though the developer's agreement prohibits large trucks from using these streets, the vendors are still cutting

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 13.**

DATE: April 5, 2021

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner

SUBJECT:

Discussion and Possible Action to Re-Allocate Funding for the Design of the Lindsay Road Trail [Wagner]

BACKGROUND:

Recall at the Common Council meeting on March 15, 2021, the Common Council requested Staff to review installing a trail in Lindsay Road from Duplainville Road to the Pewaukee Sports Complex as part of the Duplainville Road Reconstruction and Trail project. This was in reference to a pedestrian crossing within the intersection improvements of Lindsay and Redford.

The Bike & Pedestrian Committee met and supported an off road trail along with section of Lindsay Road at their meeting on March 24, 2021.

Strand & Associates prepared a task order which estimated the cost for survey and design to add this section of trail to the Duplainville Road project they are currently working on.

FINANCIAL IMPACT:

As this project was not considered as part of the 2021 budget and in order to remain budget neutral in the Capital Fund for Bike & Pedestrian, we request \$50,000 be re-allocated from the Fieldhack Trail project. The 2021 budget allocated \$150,000 for design of the Fieldhack Trail Connection in which Staff has not spent any of this allocation to date.

RECOMMENDED MOTION:

Common Council re-allocate \$50,000 of the 2021 budget from the Fieldhack Trail project to the Lindsay Road Trail project for design in 2021.

Roundy's Industrial Park Including Roundy Drive, Roundy Circle, and Paul Road Rehabilitation and Water Main Relay Project

Ms. Wagner noted Resolution 12-04-16 is a comfort resolution borrowing to repay funds when they come in. Ms. Wagner stated when going through assessments for the property there was no preliminary resolution for the project. Resolution 21-04-15 authorizes the City to move forward with the project.

A motion was made and seconded (J. Wamser, B. Dziwulski) to approve Resolution 21-04-15 and Resolution 21-04-16. Motion Passed: 5-For, 0-Against.

13. Discussion and Possible Action to Re-Allocate Funding for the Design of the Lindsay Road Trail

Ms. Wagner stated this item comes out of the discussion regarding the agreement with Waukesha County for the intersection improvement, and whether the City would move forward with the Lindsay Road trail to entice discussion with the County to put a pedestrian crossing in the intersection improvement. Ms. Wagner noted this would authorize the transfer of funds from the Fieldhack Trail project to the Lindsay Road project for \$50,000 to start preliminary design and engineering on the trail.

Ms. Wagner stated the Bike and Pedestrian Committee met and supported an off-road trail from Duplainville Road to the park. West of the park would be an on-road trail system.

Discussion took place regarding reallocating the funds and the impact on the Fieldhack project.

Mr. Grosch asked if the consultant would make other recommendations for crossing or a speed limit reduction. Mr. Dziwulski stated the County would not support a reduction in the speed limit.

Ms. Brown stated she thought this was a dangerous intersection and it will be a waste of money. She felt it was a safety issue and felt it makes the City liable. Further discussion took place regarding the safety concerns of pedestrians and bikes crossing.

A motion was made and seconded (B. Dziwulski, R. Grosch) to reallocate \$50,000.00 of the 2021 budget from the Fieldhack Trail project to the Lindsay Road Trail project for design in 2021. Motion Passed: 4-For, 1-Against. (C. Brown)

14. Discussion and Possible Action to Waive the Second Reading and Approve **Ordinance 21-02** to Repeal and Recreate Section 5.05(3)(a) Pertaining to Regulating Heavy Traffic

Ms. Wagner stated the spring weight limits have a condition stating you have to take the shortest route possible to get to a destination. It is not in the current ordinance and Ms. Wagner would like to amend the current ordinance to include it. Ms. Wagner felt adding this language would make it clearer and more enforceable.

Dan Teske (W244 N4512 Swan Road) stated he is confused and frustrated. A year ago when construction started in the Swan Farms subdivision, he was told trucks would go south out of the subdivision. He says a great deal of construction vehicles are turning the wrong way out of the construction site. He has contacted the Sheriff's Department several times. If this is not going to be reinforced, he will stop calling and wasting the Deputy's time. He would like to know what he needs to do or what the City is going to do.

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 12.**

DATE: June 7, 2021

DEPARTMENT: Public Works

PROVIDED BY: Magdelene Wagner

SUBJECT:

Discussion and Possible Action Regarding the Intermunicipal Agreement for the Lindsay Road/Redford Boulevard (CTH F) Intersection Improvements [Wagner]

BACKGROUND:

Recall the City of Pewaukee approved working with Waukesha County to apply for a Highway Safety Improvement Program Grant for the Lindsay Road and Redford Boulevard (CTH F) intersection improvement project. The project did receive funding from the HSIP grant for 2023 construction of a Restricted Crossing U-Turn (RCUT) intersection.

This was previously discussed on March 15, 2021. See attached minutes.

With securing the grant, the County is seeking a Two Party Project Agreement for the project and its funding. Please see the attached revised agreement. Couple of items to note in this agreement. The City is funding all costs outside of the grant funding. The City will responsible for the operation and maintenance of the lighting required for the intersection and any enhancements (other than standard signage and pavement markings) for the pedestrian crossing. The City will also have jurisdiction of the crossing.

FINANCIAL IMPACT:

The 2021 Budget allocated \$20,000 for this project

RECOMMENDED MOTION:

Common Council approve the intermunicipal agreement contingent on the Director of Public Works and the City Attorney review and approval.

ATTACHMENTS:

Description

20210315 CC minutes

Letter to County for Adding Pedestrian Crossing

Revised Two Party Agreement

issue because the homes are built in stages. She said the Parade of Homes are hurrying to complete the homes so more traffic is in the area at this time.

5. Discussion and Possible Action to Adopt **Resolution 21-03-08** Government Responsibility Resolution for the Department of Natural Resources (DNR) Storm Water Planning Grant Application

Ms. Wagner stated every two years the DNR offers planning grants for storm water and this year they would like to move forward with an application. She said this has been a long-standing project and the request for proposal is expected to go out this year. The grant would cover the water quality aspect of the project and would be available in 2022. Ms. Wagner stated the resolution would grant her the authorization to sign the applications and sign the paperwork for reimbursements.

A motion was made and seconded (J. Kara, R. Grosch) to approve the government

responsibility resolution, 21-03-08, for the Department of Natural Resources. Motion Passed: 6-For, 0-Against.

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Attorney Riffle stated we were not tying future Council hands because no contract is being signed.

Mr. Klein concurred with Attorney Riffle.

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7. Discussion and Possible Action Regarding **Ordinance 21-01** Amending Chapter 5 - Traffic to Add Broken Hill Boulevard, Century Farm Road, and Highfield Road to Section 5.05(3)(b)

Ms. Wagner stated this is in response to the complaints received related to the Swan View Farms construction traffic driving through the Broken Hill subdivision. She indicated even though the developer's agreement prohibits large trucks from using these streets, the vendors are still cutting



**Department of Public Works
Engineering Division**

W240N3065 Pewaukee Road • Pewaukee, WI 53072

Phone: (262) 691-0804 • Fax: (262) 691-5729

Email: publicworks@pewaukee.wi.us

May 17, 2021

Allison Bussler
Public Works Director
Waukesha County Department of Public Works
515 West Moreland Boulevard, AC 220
Waukesha, WI 53188

Dear Ms. Bussler:

The City of Pewaukee (City) appreciates all your efforts to address the safety concerns of the City residents at the intersection of Redford Boulevard (CTH F) and Lindsay Road intersection. We were grateful to see the Highway Safety Improvement Program (HSIP) committee agreed with our concerns and approved the grant.

Upon receipt of the Inter Municipal Agreement from the County to support this project, we were surprised to see the pedestrian crossing that was discussed and presented prior to and shown as part of the HSIP application was eliminated.

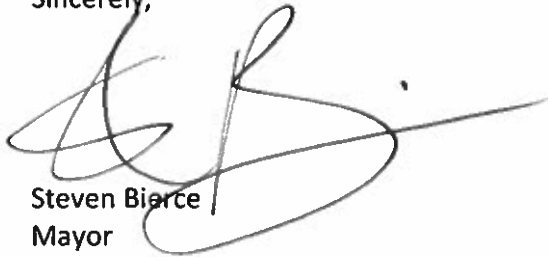
The City has committed and is currently designing a multi-purpose trail along Lindsay Road from Duplainville Road to the Pewaukee Sports Complex, and along Duplainville Road from Weyer Road south to Green Road (see the attached map with its proposed location). The construction of the trails connect two of our City parks, Wagner Park and Pewaukee Sports Complex, as well as connecting numerous subdivisions to the parks. The City anticipates the construction of this trail as part of the Duplainville Road reconstruction project in 2022.

City and County staff discussed having this crossing at an existing signalized intersection. Unfortunately, this would not be a realistic alternative. The closest signalized intersection is Lisbon Road (CTH K), approximately 3,550 feet north, however this intersection is outside of the City's jurisdiction in the Town of Lisbon, and would require additional trail installed along CTH K and Duplainville Road. In addition, traffic along CTH K is uncontrolled at Duplainville Road, has a large volume of traffic, a large volume of truck traffic, and often backs up due to the railroad crossing yielding another dangerous intersection for pedestrians. The next closest controlled intersection is Capital Drive (STH 190) and CTH F, approximately 7,100 feet south, which is less than ideal due to the current configuration of off ramps from Capital Drive to CTH F and the substantial grade difference between STH 190 and CTH F. A trail would need to be installed along CTH F or along STH 190, STH 164, Swan Road, and Lindsay Road to the park - a substantially longer connection.

The Pewaukee Sports Complex is planned to have walking trails within the park. In addition, an inclusive playground/splash pad is planned for this park.

The City is respectfully requesting the pedestrian crossing be added to the intersection improvement project. If you need additional information or would like to discuss this further, please feel free to contact our office at (262) 691-0770.

Sincerely,

A handwritten signature in black ink, appearing to be 'SB', with a long horizontal stroke extending to the right.

Steven Bierce
Mayor

Sincerely,

A handwritten signature in black ink, appearing to be 'g', with a long horizontal stroke extending to the right.

Magdelene Wagner, P.E.
Director of Public Works/City Engineer

Cc: Scott Klein, City Administrator
Karen Braun, Engineering Manager, Waukesha County



Waukesha County GIS Map



0 1,000.00feet

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Printed: 5/17/2021

- Notes:**
- Trail under design - Construction 2022
 - Future Trails
 - Current on road Trail

TWO-PARTY PROJECT AGREEMENT
Between
WAUKESHA COUNTY by the DEPARTMENT OF PUBLIC WORKS
And
THE CITY OF PEWAUKEE

This Agreement is made and entered into between Waukesha County by the Department of Public Works (hereinafter called the DEPARTMENT) and the City of Pewaukee (hereinafter called the CITY) to designate the responsibilities for design, real estate acquisition, construction, and payment of certain costs associated with roadway safety improvements at the County Trunk Highway F (CTH F, also known as Redford Boulevard) and Lindsay Road intersection. Attachment 1 is a Conceptual Plan of the Intersection Proposed Improvements.

WHEREAS, the DEPARTMENT has obtained Highway Safety Improvement Program (HSIP) federal-funding from the Wisconsin Department of Transportation (WisDOT) to modify the existing CTH F/Lindsay Road full-turn intersection to a 'Restricted Crossing U-Turn Intersection' (RCUT) in the City of Pewaukee.

WHEREAS, the CITY has requested that the DEPARTMENT prioritize safety improvements at the CTH F and Lindsay Road intersection more quickly than other DEPARTMENT projects.

WHEREAS, the CITY agrees to pay the actual costs associated with the local-share for completing the design, real estate acquisition and construction items listed in the cost estimate, attached hereto as Attachment 2, necessary to convert the CTH F/Lindsay Road intersection to a RCUT intersection.

The parties do mutually agree to the responsibilities related to the design, real estate acquisition and construction funding of said items as described below:

RESPONSIBILITIES:

The DEPARTMENT shall:

1. Complete design, real estate acquisition, contract plans, specifications and estimates for modifying the CTH F/Lindsay Road full-turn intersection to a RCUT intersection. Work directly with WisDOT staff as part of preparing construction bid documents.
2. At the request of the CITY the DEPARTMENT will include a pedestrian crossing at the intersection as shown in Attachment 1. Standard pedestrian signage and pavement markings will be included a part of this agreement. If the CITY requests specialized pedestrian signage, crossing enhancements and lighting, a separate agreement will be required.

3. Monitor progress of ongoing field inspection and contract administration performed by WisDOT during construction for HSIP-funded projects. WisDOT would publicly bid said roadway improvement in accordance with all federal and state laws.
4. Make available to the City, with reasonable notice, bidding documents, bid results, notice of award, and copies of all records recommendations of awards, reports, engineer findings, and WisDOT's correspondence regarding said roadway improvements.
5. Review WisDOT's accounts of construction activities, changes in work, construction costs, and any delays or additional work necessary to complete the project. Assess any incremental increases or decreases in quantities or costs.
6. Provide copies of WisDOT's possible work change directives, change orders, or other appropriate documents to the contractor, as contract or construction changes dictate, to expedite the progress of the construction work. Any document that would increase the CITY's costs shall be provided before execution by WisDOT and the DEPARTMENT, via email, to the CITY'S Representative for review, and the CITY'S comments thereon considered if received by the DEPARTMENT within two business days of the time it is emailed to the CITY'S Representative.
7. Furnish to the CITY a detailed breakdown of all actual construction costs including all change orders and work change directives upon completion of the project.
8. Invoice the CITY on a quarterly basis.

The CITY shall:

1. Pay the actual costs of items that are estimated in Attachment 2, beyond the federal funding amount of a HSIP-project to be sought by Waukesha County. Project costs estimated at time this Agreement is signed, are anticipated to include:

	Federal-funded share	County share	City share	<u>TOTAL</u>
Design & WisDOT-design review	\$135,720	\$ 0	\$ 15,080	\$ 150,800
Construction	\$738,068	0	\$ 83,008	\$ 821,076
Real estate	<u>0</u>	<u>0</u>	\$34,200	\$ 34,200
TOTAL COST DISTRIBUTION	\$873,788	\$ 0	\$132,288	\$1,006,076

Any additional costs that may be incurred in association with these items shall be paid for by the CITY. The CITY shall pay the total **actual costs** for these items when they are invoiced by the DEPARTMENT.

2. Accept and maintain ownership of the pedestrian crossing and construct the planned multi-purpose trail along Lindsay Road in the vicinity of this intersection prior to the summer 2023 intersection project construction.
3. Pay the entire actual design/construction/real estate acquisition costs for items which are the responsibility of the CITY within 30 days of receipt of an invoice from the DEPARTMENT.
4. Accept all future cost responsibilities for operating intersection area highway lighting located outside the CTH F pavement, upon completion of project construction.
5. Quit Claim to Waukesha County at no additional costs the adjacent City-owned lands necessary for project construction.
5. Designate a representative to act for the CITY under this Agreement. The representative shall be:

Magdelene Wagner, P.E.
Director of Public Works/City Engineer
City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072
262-691-0804 Office

OTHER TERMS

1. Assignment: The parties agree that there shall be no assignment or transfer of this Agreement nor of any interests, rights or responsibilities contained herein without a written amendment agreed to by both parties.
2. Amendment: The parties, by mutual consent, may amend this Agreement in writing at any time.
3. Severability: If any provision of this Agreement is held invalid under any applicable law, such invalidity shall not affect any other provision of this Agreement that can be given effect without the invalid provision and, to this end, the provisions hereof are severable.
4. Construction is currently anticipated to occur during 2023 as a HSIP-funded project by WisDOT, subject to the terms of this Agreement.
5. If this HSIP-funded project is cancelled by WisDOT, then this two party agreement becomes void between the DEPARTMENT and CITY.

Attachment 1: Conceptual Plan of Intersection Proposed Improvements, CTH F at Lindsay Rd

Attachment 2: Concept Layout Plan Cost Estimate (August 2020)

APPROVAL

This Agreement will be effective on the date of the DEPARTMENT'S signature.

CITY:
City of Pewaukee

DEPARTMENT:
Waukesha County

By: _____

By: _____

Title: _____

Title: Allison Bussler
Director of Public Works

Date: _____

Date: _____

Address for CITY:

Address for DEPARTMENT:

City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072

Waukesha County Department of
Public Works
515 W. Moreland Blvd., Room AC 210
Waukesha, WI 53188



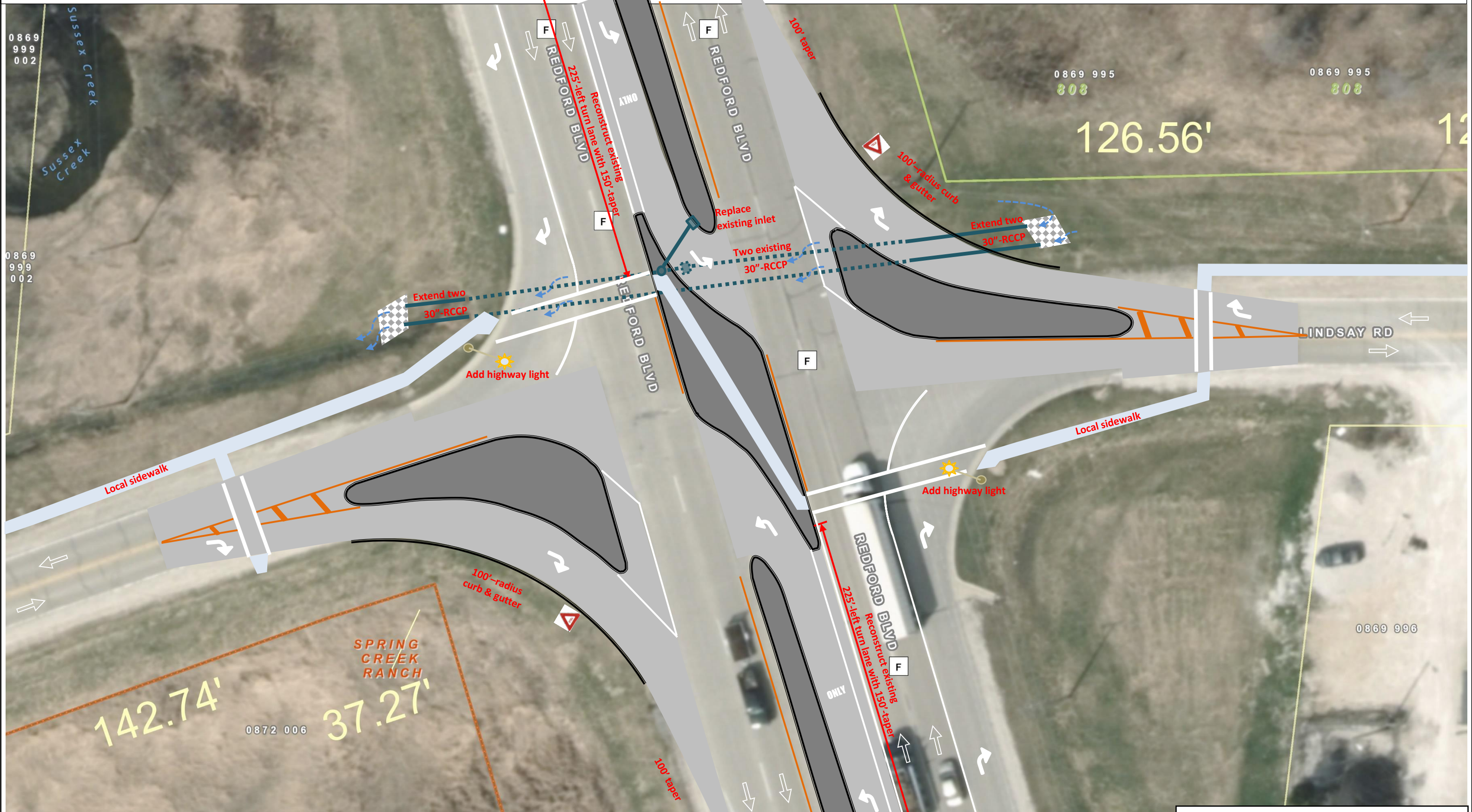
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Printed: 7/8/2020



Exhibit 3A
Intersection Proposed Improvements
CTH F (Redford Blvd) at Lindsay Rd

CTH F (Redford Blvd) - Lindsay Rd: *Restricted Crossing U-Turn (RCUT) Intersection*

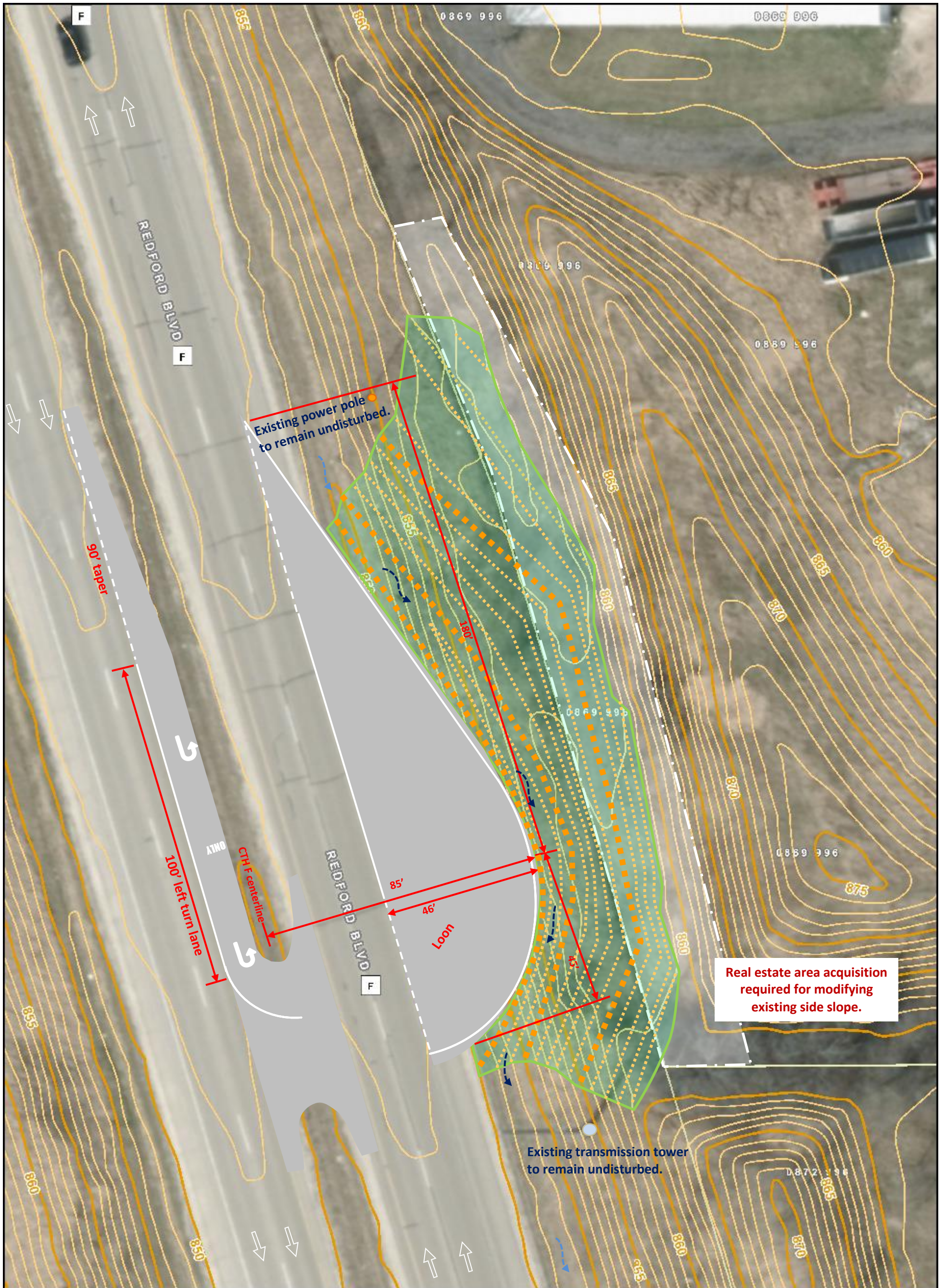




0 30.00 Feet

Printed: 7/8/2020





CONCEPT LAYOUT PLAN COST ESTIMATE (August 2020)

CTH F (Redford Blvd) / Lindsay Rd Intersection

~1400-feet / ~350 feet

Waukesha County Project

Inflated cost

3.5%/year
to Yr 2024

ITEM NO.	Bid Item	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT COST	TOTAL COST
1	201.0105 & 201.0205	CLEARING & GRUBBING	STA	4	\$800.00	\$ 3,200
2	204.0100	REMOVE PAVEMENT	SY	2,300	\$5.00	\$ 11,500
3	204.0150	REMOVE CURB & GUTTER	LF	760	\$4	\$ 3,040
4	205.0100	EXCAVATION COMMON - BORROW	CY	8,800	\$17.00	\$ 149,600
5	305.0110	BASE AGGREGATE DENSE 1-1/4" (10"-section)	TON	2,200	\$18.00	\$ 39,600
6	455.0115	ASPHALTIC MATERIAL PG64-22	TON	65	\$5.00	\$ 325
7	460.1100	HMA PAVEMENT TYPE E-3 (5.5"-section)	TON	1,180	\$65.00	\$ 76,700
8	465.0305	ASPHALTIC SURFACE SAFETY ISLANDS (Rt turns, Median-Lt turns)	TON	220	\$75.00	\$ 16,500
9	465.0315	ASPHALTIC FLUMES	SY	10	\$60.00	\$ 600
10	520.1030	APRON ENDWALLS, 30-IN	EA	4	\$1,100.00	\$ 4,400
11	602.0410	CONCRETE SIDEWALK - 5" (6'-wide sidewalk)	SF	2,300	\$6.50	\$ 14,950
12	608.0430	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV, 30-IN	LF	140	\$120.00	\$ 16,800
13		MANHOLE, 5-FT DIAMETER & COVER	EA	1	\$3,300.00	\$ 3,300
14		INLET 2X3-FT & COVER	EA	1	\$2,050.00	\$ 2,050
15	601.0411	CONCRETE CURB & GUTTER 30-INCH TYPE D	LF	1,910	\$26.00	\$ 49,660
16	619.0000	MOBILIZATION	LS	1	\$35,000.00	\$ 35,000
17	625.0500	SALVAGED TOPSOIL	SY	1,850	\$3.00	\$ 5,550
18	628.1504	SILT FENCE	LF	1,500	\$2.50	\$ 3,750
19	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	2,600	\$2	\$ 5,200
20		REMOVE, RE-INSTALL, ADD SIGNS	LS	1	\$6,000.00	\$ 6,000
21		TRAFFIC CONTROL (Shift CTH F lanes, close Lindsey Rd)	LS	1	\$20,000.00	\$ 20,000
22	642.5201	FIELD OFFICE C	LS	1	\$9,000.00	\$ 9,000
23	646.0106	PAVEMENT MARKINGS EPOXY 4"	LF	3,120	\$1.50	\$ 4,680
24	646.7420	PAVEMENT MARKINGS EPOXY 6" (CROSSWALK)	LF	330	\$8.00	\$ 2,640
25		PAVEMENT MARKINGS WORDS & ARROWS	EA	16	\$300.00	\$ 4,800
26	647.0726	PAVEMENT MARKINGS 12" DIAGONALS	LF	50	\$9.50	\$ 475
27		HYDROSEEDING	SY	1,700	\$2.00	\$ 3,400
28		REMOVE EXISTING HIGHWAY LIGHTING	EA	1	\$700	\$ 700
29		NEW HIGHWAY LIGHTING	EA	2	\$3,000.00	\$ 6,000
30	690.0150	SAWING ASPHALT	LF	3,260	\$2.50	\$ 8,150
					SUBTOTAL	\$ 507,570

ABOVE MAJOR ITEMS REPRESENT 85% OF COSTS OF SIMILAR PROJECTS

0.85

TOTAL CONSTRUCTION COST FOR ALL BID ITEMS

\$ 597,141

15% Allowance for Construction Engineering & Contingencies

\$ 89,571

TOTAL CONSTRUCTION

\$686,712

\$772,900

REAL ESTATE ACQUISITION / EASEMENTS					
ITEM	DESCRIPTION			AREA (SF)	TOTAL COST
1	SE	Parcel 86995996	FEE & TLE	6.25	\$15,000
					Acquisition
					\$6,000
					Land/TLE
					\$6,000
					Misc/Incidental
					\$3,000
					Title Searches (1 parcel)
					\$400
					Utilities & Miscellaneous
					\$0

TOTAL REAL ESTATE

\$30,400

\$34,215

DESIGN CONSULTANT (11.0% of total construction) + **DESIGN REVIEW** (8.5% of total construction)

\$133,909

\$150,716

GRAND TOTAL

\$851,020

\$957,831

Exhibit 7
Cost Estimate
CTH F (Redford Blvd) / Lindsay Rd Intersection

A motion was made and seconded (I. Clark, B. Dziwulski) to approve the release of the 50 foot highway setback for the property located at W274N1490 Riverland Drive. Motion Passed: 5-For, 0-Against.

10. Discussion and Possible Action Regarding **Ordinance 21-05** Related to Amendments to Sections 4.06, 4.09 and 4.15 of Chapter 4 - Fire Department of the City of Pewaukee Municipal Code

Mr. Fuchs stated the City is continuing to work on the application to become delegated in the State of Wisconsin. This will allow E-Plan Exam to do the reviews which will expedite projects. He noted the State asked the City to update the Ordinance. Mr. Fuchs noted that the Fire Chief has reviewed the revisions and recommended approval.

A motion was made and seconded (J. Wamser, I Clark) to approve the proposed amendment to 4.06, 4.09 and 4.15 of Chapter 4 of the Pewaukee Municipal Code. Motion Passed: 5-For, 0-Against.

11. Discussion and Possible Action Regarding Rocky Point Avenue Generator Easement to Lake Pewaukee Sanitary District

Ms. Wagner stated Lake Pewaukee Sanitary District is putting a generator on their existing lift station at the end of Rocky Point Avenue. When Lake Pewaukee Sanitary District worked with the property owners, they wanted the lift station moved further away from the lake as to not impeded on the view from the homes. Lake Pewaukee Sanitary District is seeking an easement to place the generator, parking slab and associated gas and electric within the right of way of Rocky Point Avenue. Attorney Riffle noted that if it is approved, there will be some minor tweaks, but no substantial changes.

A motion was made and seconded (B. Dziwulski, R. Grosch) to approve the Rocky Point Avenue generator easement contingent upon the final approval by the City Attorney and Engineering staff. Motion Passed: 5-For, 0-Against.

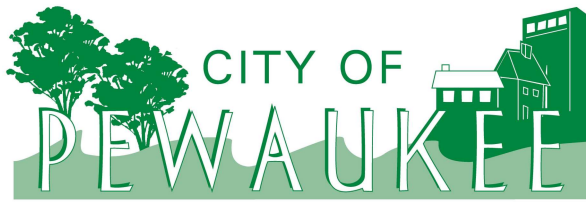
12. Discussion and Possible Action Regarding the Intermunicipal Agreement for the Lindsay Road/Redford Boulevard (CTH F) Intersection Improvements

Ms. Wagner revisited the intermunicipal agreement that was on the March 15th Common Council agenda. Ms. Wagner stated the County has agreed to put the pedestrian crossing back into the design. Ms. Wagner noted the City will be responsible for the maintenance of the crossing and any installation above standard signage that is required for the crossing. She added the City will also be responsible for intersection lighting. Ms. Wagner is asking for approval of the intermunicipal agreement contingent on City Attorney and final Engineer review.

Mr. Grosch asked what the additional cost to the City would be. Ms. Wagner stated the additional markings and concrete would be approximately \$17,000.00, but most of those cost would be reimbursed by the HSIP grant.

A motion was made and seconded (B. Dziwulski, R. Grosch) to approve the intermunicipal agreement between the City and Waukesha County for the Lindsay Road/Redford Boulevard intersection improvements contingent on the final approval by the City Attorney and Engineering staff. Motion Passed: 5-For, 0-Against.

13. Discussion and Possible Action to Move Assigned Balance of \$346,511.00 from the Salt Shed to the Department of Public Works Building/Campus

**Office of the Clerk/Treasurer**

W240N3065 Pewaukee Road
Pewaukee, WI 53072
(262) 691-0770 Fax 691-1798

**COMMON COUNCIL
MEETING NOTICE AND AGENDA**

Monday, March 7, 2022

6:30 PM

Common Council Chambers ~ Pewaukee City Hall
W240 N3065 Pewaukee Road ~ Pewaukee, Wisconsin

[VIDEO](#)

-
1. Call to Order and Pledge of Allegiance
 2. Public Comment - Please limit your comments to two (2) minutes, if further time for discussion is needed please contact your District Alderperson prior to the meeting.
 3. Consent Agenda
 - 3.1. [Approval of the Common Council Meeting Minutes Dated February 21st, 2022](#)
 - 3.2. [Approval of the Accounts Payable Listing Dated March 7th, 2022](#)
 - 3.3. [Approve **Ordinance 22-03** \(Second Reading\) Related to Outdoor Entertainment Permit Revisions](#)
 4. [PUBLIC HEARING, Discussion and Possible Action Regarding the Meadowbrook Farms Phase 2 Road Rehabilitation Project \[Wagner\]](#)
 - 4.1 Accept the preliminary engineering report and special assessments.
 - 4.2 Award the contract to the lowest qualified bidder, Wolf Paving, in the amount of \$934,842.75.
 5. [Discussion and Possible Action Regarding Duplainville Road Acquisition \[Wagner\]](#)
 - 5.1 Accept and Approve Appraisals of Eight (8) Permanent Utility Easements as Detailed in the Summary Appraisal Reports Prepared by Single Source, Inc.
 - 5.2 Authorize the Offering Price for the Acquisition to the Property Owners.
 - 5.3 Approve **Resolution 22-03-09** Pertaining to the Relocation Order for the Duplainville Road Bridge Replacement.
 6. [Discussion and Possible Action to Award Northview Road Sidewalk Construction to the Lowest Qualified Bidder, Wolf Paving Company Inc., in the Amount of \\$100,324.00. \[Wagner\]](#)
 7. [Discussion and Possible Action Regarding Release of the Woodleaf Reserve Phase 5 Grading Only Letter of Credit in the Amount of \\$701,623.68. \[Wagner\]](#)
 8. [Discussion and Possible Action Regarding the Lindsay Road/Redford Boulevard Pedestrian Crossing. \[Klein\]](#)
 9. [Discussion and Possible Action Regarding the Northmound Industrial Development](#)

- 9.1 Termination of the Dynamic Compaction Development Agreement.
- 9.2 Approve the Amendment to the Developer's Agreement.
10. [Discussion and Possible Action to Enact the 2022 Spring Weight Limits.](#)
11. [Discussion and Possible Action to Approve the Special Event Permit for Farmers' Market at Christ Evangelical Lutheran Church Located at W40 N3103 Pewaukee Road on Wednesdays from June 1st through September 28th, 2022 and Consider Waiving Fees \[Tarczewski\]](#)
12. Public Comment - Please limit your comments to two (2) minutes, if further time for discussion is needed please contact your district Alderperson prior to the meeting.
13. Adjournment

Kelly Tarczewski
Clerk/Treasurer

March 4, 2022

NOTICE

It is possible that members of other governmental bodies of the municipality may be in attendance to gather information that may form a quorum. At the above stated meeting, no action will be taken by any governmental body other than the governmental body specifically referred to above in this notice.

Any person who has a qualifying disability under the Americans with Disabilities Act that requires the meeting or materials at the meeting to be in an accessible format must contact the Clerk/Treasurer, Kelly Tarczewski, at (262) 691-0770 three business days prior to the meeting so that arrangements may be made to accommodate your request.

In Attendance:

Mayor Steve Bierce, Aldermen C. Brown, I. Clark, R. Grosch, P. Vetterkind, and J. Wamser. Alderman B. Dziwulski was absent and excused.

Also in Attendance:

Attorney S. Riffle, Administrator S. Klein, DPW Director M. Wagner, City Planner & Community Development Director N. Fuchs, and Clerk/Treasurer K. Tarczewski.

1. Call to Order and Pledge of Allegiance

Mayor Bierce called the meeting to order at 6:30 p.m. and asked everyone to stand for the Pledge of Allegiance.

2. Public Comment - None.

3. Consent Agenda

3.1 Approval of the Common Council Meeting Minutes Dated February 21st, 2022

3.2 Approval of the Accounts Payable Listing Dated March 7th, 2022

3.3 Approve **Ordinance 22-03** (*Second Reading*) Related to Outdoor Entertainment Permit Revisions

A motion was made and seconded (J. Wamser, C. Brown) to approve the items on the consent agenda. Motion Passed: 5-For, 0-Against. Alderman Clark noted he was abstaining from Item 3.1.

4. **PUBLIC HEARING**, Discussion and Possible Action Regarding the Meadowbrook Farms Phase 2 Road Rehabilitation Project

4.1 Accept the preliminary engineering report and special assessments.

4.2 Award the contract to the lowest qualified bidder, Wolf Paving, in the amount of \$934,842.75.

Ms. Wagner noted this is the second of four projects in Meadowbrook Farms Subdivision. Ms. Wagner stated Sawgrass Lane and Cattail Court need repair and the current Paser rating is 4-5. She noted a pavement rating of ten would be a brand-new road. She said this is midpoint and where they like to do repairs and to maintain them economically. Ms. Wagner mentioned as part of the project spot curb repairs, sewer manholes, water valve repairs and storm sewer inlets will be repaired. Ms. Wagner noted there was unusual cracking of the stormwater pipes, which could lead to pipe failure. As part of the project the City is going to line the storm sewer pipes to prevent replacement. She said the total cost of the project is \$1,215,295.58 including engineering, administration, and construction costs. The City's portion is \$545,161.83 for roadway and 50 percent of curb repairs. Storm water utility will be paying \$608,649.60, water utility for spot repairs on the valves is \$8,331.83 and sewer utility is \$53,152.32

Ms. Wagner stated the project was bid in February and four competitive bids were received. She noted the lowest qualified bidder was Wolf Paving in the amount of \$934,842.75. Ms. Wagner also noted all properties within the area are residential and qualify for the paving cap of \$3005.00. She said the road assessment will be done as a unit method and the road assessment for each property is \$9912.03, which is substantially above the paving cap. Ms. Wagner stated there is one

outlot that is co-owned by all the lots within the Meadowbrook Farms plat. She said the assessment was split between the 100 lots for an additional assessment of \$30.05 for each property. Ms. Wagner expects the assessments to be levied in 2023 and may be paid in full or over ten years as a charge on the tax bill. She noted that interest still needs to be determined and the City will be borrowing for the project.

Mayor Bierce opened the public hearing.

Thomas Fischer (W268 N2091 Shooting Star Road) asked about the other two phases of the project and when the other half of Shooting Star Road would be completed. He also asked how the phases were determined because his road is the oldest. Ms. Wagner stated Shooting Star Road is anticipated for bidding next year. She said the projects started north and worked south so there was no construction traffic on newly paved roads. Mr. Fischer asked about the rate of increase and if it would remain the same for the next two phases. Ms. Wagner stated the paving cap increases by a construction cost index and is published by the American City and County who track the construction cost through the industry.

Steve Baudo (W265 N2086 Sawgrass Land) asked if the outlot is the pond and why some owners are only paying the \$30.05. Ms. Wagner stated the pond is the outlot. She said the properties paying the \$30.05 are paying for their share of the outlot because they were in phase 1 or are in phases 3 & 4 and will receive their assessments then. Mr. Baudo asked what happens if a property owner sells. Ms. Wagner stated it could be worked out with the new owner and would have to be paid at the time of sale.

Mayor Bierce closed the public hearing.

A motion was made and seconded (I. Clark, R. Grosch) to approve item 4.1 and accept the preliminary engineering report and special assessment. Motion Passed: 5-For, 0-Against.

A motion was made and seconded (I. Clark, R. Grosch) to approve item 4.2 and award the contract to Wolf Paving in the amount of \$934,842.75. Motion Passed: 5-For, 0-Against.

5. Discussion and Possible Action Regarding Duplainville Road Acquisition
 - 5.1 Accept and Approve Appraisals of Eight (8) Permanent Utility Easements as Detailed in the Summary Appraisal Reports Prepared by Single Source, Inc.
 - 5.2 Authorize the Offering Price for the Acquisition to the Property Owners.
 - 5.3 Approve **Resolution 22-03-09** Pertaining to the Relocation Order for the Duplainville Road Bridge Replacement.

Ms. Wagner stated this resolution was previously approved back in December of 2021. She said she wasn't aware that the Department of Transportation requires it to be filed at the County Clerk's office within 20-days from when it was passed. Ms. Wagner stated this resolution needs to be reaffirmed so that it can be appropriately filed.

Ms. Wagner stated Single Source performed the appraisals on the properties that the City needs easement from.

A motion was made and seconded (R. Grosch, C. Brown) to accept the appraisals from Single Source and authorize them to approach the property owners and offer them an

additional 45% above the appraisal price to acquire the land needed for the utility easements, and affirm and approve Resolution 22-03-09 pertaining to the relocation order for the Duplainville Road bridge replacement. Motion Passed: 5-For, 0-Against.

6. Discussion and Possible Action to Award Northview Road Sidewalk Construction to the Lowest Qualified Bidder, Wolf Paving Company Inc., in the Amount of \$100,324.00.

Ms. Wagner stated the Northview Road project went to bid in 2021 and received no bids. It was then bid as part of Meadowbrook phase II. She said the sidewalk will start at the corner of Northview Road and Meadowbrook Road and will extend to South Park. Ms. Wagner noted the total cost of the project is estimated at \$130,421.20 and \$200,000 was budgeted as part of the 2022 budget. She said the City will use impact fees from bike and pedestrian towards the project. Ms. Wagner asked Common Council to award the contract to the lowest qualified bidder, Wolf Paving Company, in the amount of \$100,324.00

Ms. Brown asked how and where the sidewalk will specifically connect to South Park. Ms. Wagner said it would be adjacent to the parking lot into the center drive aisle. She noted Mr. Phalin needs to determine the exact location. Ms. Brown noted the parking lot is overly crowded during little league and is concerned someone will use it as a parking spot. Ms. Wagner said she will speak with Mr. Phalin about her concern and the connection location.

Discussion took place regarding whose responsibility snow removal is.

A motion was made and seconded (R. Grosch, P. Vetterkind) to award the Northview Road sidewalk construction project to the Wolf Paving Company in the amount of \$100,324.00.

Motion Passed: 5-For, 0-Against.

7. Discussion and Possible Action Regarding Release of the Woodleaf Reserve Phase 5 Grading Only Letter of Credit in the Amount of \$701,623.68.

Ms. Wagner noted Woodleaf phase 5 came in last year for a grading only developer's agreement and letter of credit to fill the subdivision. She said they have received full approval of the development and requested the release of the grading only letter of credit.

A motion was made and seconded (I. Clark, C. Brown) to release the grading letter of credit for Woodleaf Reserve Phase 5 in the amount of \$701,623.68. Moton Passed: 5-For, 0-Against.

8. Discussion and Possible Action Regarding the Lindsay Road/Redford Boulevard Pedestrian Crossing.

Mr. Klein noted with the construction of Lindsay Road and Duplainville Road he has concerns about the bike paths and does not feel the R-cut is safe. He recommended going back to the County to get it signalized or not do the bike path. He noted there are 390 homes in that area with young families and he was concerned about safety.

Mayor Bierce agreed and did not like the idea.

Ms. Brown stated the residents in Victoria Station told the City it was dangerous, and they cannot cross the expressway. It wasn't specifically to go to the park. Ms. Brown stated she was the only one who disagreed with the bike path going across Highway F. She agreed with the R-cut, but not for the bike path. She noted she agrees with a bike path to get to the park but across Highway F is not safe.

Mr. Grosch stated the City got pushed into the R-cut because the County didn't want to put signals in.

Ms. Wagner noted the City does not meet the warrants for the lights. She said there is not enough bicycle or pedestrian traffic to justify it.

Mr. Klein noted what is proposed now is not safe and doesn't feel like the City should go ahead with it.

Ms. Brown noted that in four years there were 27 accidents at that intersection and feels its way too dangerous to promote crossing with or without lights.

Mayor Bierce feels the R-cut is ridiculous and is in favor of opening this up and going back to the County. He feels the safety issue and what the City wants is not being addressed.

Mr. Grosch feels traffic needs to slow down as they approach the intersection.

Ms. Wagner noted all these items were previously discussed. She said the warrants at the intersection were not met and Lindsay Road did not have the same volume of traffic as other lights down that corridor. She noted even if the City offered to pay 100 percent, the County would not do lights. We have asked to have the speed limit reduced and was told no. The R cut is being paid 90 percent through federal funding. She was told if the City does not move forward with the improvements the City would not get another HSIP at the intersection for the safety concerns. If the City does not do the R-cut, the pedestrian crossing could be removed and the City would be responsible for paying back 100 percent of the design cost to the County. Discussion took place regarding the agreement with the County.

Mr. Vetterkind stated if the bike path does not get put in there is no way to cross. Discussion took place regarding placements of the bike paths. Ms. Wagner stated she understands the concerns. She noted there was strong support for the trail on Duplainville Road during public hearings. Ms. Wagner stated the plan shows putting the trail in on Duplainville Road to connect all the subdivisions and bring them to a safe location connecting to the park.

Attorney Riffle noted if the City Engineer felt it was prudent to put in a crossing that would be the direction the City would go unless the City wants to authorize and direct the City Administrator to go back to the County.

Discussion took place regarding the safety grant and a reconstruction project.

Mr. Wamser asked about a tunnel. Ms. Wagner stated you could not do a tunnel due to the creek and flood plain.

Mayor Bierce stated it was worth taking one more shot at it and directed Mr. Klein to go back to the County.

A motion was made and seconded (R. Grosch, J. Wamser) to direct the City Administrator to reach out to Waukesha County to see what could be done with the pedestrian and bike crossing path. Motion Passed: 3-For, 2-Against (C. Brown and I. Clark).

9. Discussion and Possible Action Regarding the Northmound Industrial Development
 - 9.1 Termination of the Dynamic Compaction Development Agreement.
 - 9.2 Approve the Amendment to the Developer's Agreement.

Ms. Wagner stated there was bad fill on the site and a dynamic compaction was done. She noted they would like to terminate the developer agreement and close the details. Ms. Wagner added

they want to amend the current development agreement for the road and storm sewer improvements. She noted the development is in the one-year guarantee window until November of 2022. She said they would like to amend a couple of sections in the agreement which would allow them to sell the property. Ms. Wagner is asking for approval of the amendment contingent on the City Attorney and City Engineer's approval. Attorney Riffle stated there had been concerns about a well near the property due to bedrock and that it could create problems with the foundation. He said they paid for the City to monitor the facilities and it was completed with no impact. Attorney Riffle felt it was fair and reasonable that the City releases them from the agreement.

A motion was made and seconded (I. Clark, R. Grosch) to approve the amendment to the Development agreement and terminate the Dynamic Compaction Development Agreement contingent on City Attorney and City Engineer review and approval. Motion Passed: 5-For, 0-Against.

10. Discussion and Possible Action to Enact the 2022 Spring Weight Limits.

Ms. Wagner stated annual spring weight limits go into effect when the roads start moving and frost comes out of the ground. Weight limits are for no greater than 6 tons. She said it typically last for two weeks depending on ground and weather conditions. Ms. Wagner was originally looking to enforce the weight limits from March 14- March 25, 2022. She said weather conditions have changed and she is looking to push the dates back. Ms. Wagner is asking for the ability to enact weight restriction on the City's behalf as conditions arise.

Attorney Riffle stated State statute allows her that authority already. Although it has been past practice to come to Common Council, she would like get authority, which is already in the law.

A motion was made and seconded (J. Wamser, R. Grosch) to give authority to the DPW Director to enact the 2022 spring weight limits when she deems appropriate. Motion Passed: 5-For, 0-Against.

11. Discussion and Possible Action to Approve the Special Event Permit for Farmers' Market at Christ Evangelical Lutheran Church Located at W40 N3103 Pewaukee Road on Wednesdays from June 1st through September 28th, 2022 and Consider Waiving Fees

Ms. Tarczewski stated this would be the second year for this farmers market event and last year the fees were waived. She noted Chief Bierce and Lieutenant Moonen reviewed the request and had no issues with the event.

A motion was made and seconded (J. Wamser, C. Brown) to approve the special event permit for Christ Evangelical Lutheran Church's Farmers Market and waive all fees. Motion Passed: 5-For, 0-Against.

12. Public Comment

Saad Sirohey (W265 N2224 Sawgrass Lane) said he received a notice that the roads were going to be repaved and felt the sum was quite large. He asked why there was such short notice and why it was excluded to certain property owners.

Attorney Riffle recommended he speak to Ms. Wagner after the meeting.

13. Adjournment

A motion was made and seconded (I. Clark, R. Grosch) to adjourn the meeting at 7:38 p.m.

Motion Passed: 5-For, 0-Against.

Respectfully Submitted,

Kelly Tarczewski
Clerk/Treasurer

TWO-PARTY PROJECT AGREEMENT
Between
WAUKESHA COUNTY by the DEPARTMENT OF PUBLIC WORKS
And
THE CITY OF PEWAUKEE

This Agreement is made and entered into between Waukesha County by the Department of Public Works (hereinafter called the DEPARTMENT) and the City of Pewaukee (hereinafter called the CITY) to designate the responsibilities for design, real estate acquisition, construction, and payment of certain costs associated with roadway safety improvements at the County Trunk Highway F (CTH F, also known as Redford Boulevard) and Lindsay Road intersection. Attachment 1 is a Conceptual Plan of the Intersection Proposed Improvements.

WHEREAS, the DEPARTMENT has obtained Highway Safety Improvement Program (HSIP) federal-funding from the Wisconsin Department of Transportation (WisDOT) to modify the existing CTH F/Lindsay Road full-turn intersection to a 'Restricted Crossing U-Turn Intersection' (RCUT) in the City of Pewaukee.

WHEREAS, the CITY has requested that the DEPARTMENT prioritize safety improvements at the CTH F and Lindsay Road intersection more quickly than other DEPARTMENT projects.

WHEREAS, the CITY agrees to pay the actual costs associated with the local-share for completing the design, real estate acquisition and construction items listed in the cost estimate, attached hereto as Attachment 2, necessary to convert the CTH F/Lindsay Road intersection to a RCUT intersection.

The parties do mutually agree to the responsibilities related to the design, real estate acquisition and construction funding of said items as described below:

RESPONSIBILITIES:

The DEPARTMENT shall:

1. Complete design, real estate acquisition, contract plans, specifications and estimates for modifying the CTH F/Lindsay Road full-turn intersection to a RCUT intersection. Work directly with WisDOT staff as part of preparing construction bid documents.
2. At the request of the CITY the DEPARTMENT will include a pedestrian crossing at the intersection as shown in Attachment 1. Standard pedestrian signage and pavement markings will be included a part of this agreement. If the CITY requests specialized pedestrian signage, crossing enhancements and lighting, a separate agreement will be required.

3. Monitor progress of ongoing field inspection and contract administration performed by WisDOT during construction for HSIP-funded projects. WisDOT would publicly bid said roadway improvement in accordance with all federal and state laws.
4. Make available to the City, with reasonable notice, bidding documents, bid results, notice of award, and copies of all records recommendations of awards, reports, engineer findings, and WisDOT's correspondence regarding said roadway improvements.
5. Review WisDOT's accounts of construction activities, changes in work, construction costs, and any delays or additional work necessary to complete the project. Assess any incremental increases or decreases in quantities or costs.
6. Provide copies of WisDOT's possible work change directives, change orders, or other appropriate documents to the contractor, as contract or construction changes dictate, to expedite the progress of the construction work. Any document that would increase the CITY's costs shall be provided before execution by WisDOT and the DEPARTMENT, via email, to the CITY'S Representative for review, and the CITY'S comments thereon considered if received by the DEPARTMENT within two business days of the time it is emailed to the CITY'S Representative.
7. Furnish to the CITY a detailed breakdown of all actual construction costs including all change orders and work change directives upon completion of the project.
8. Invoice the CITY on a quarterly basis.

The CITY shall:

1. Pay the actual costs of items that are estimated in Attachment 2, beyond the federal funding amount of a HSIP-project to be sought by Waukesha County. Project costs estimated at time this Agreement is signed, are anticipated to include:

	Federal-funded share	County share	City share	<u>TOTAL</u>
Design & WisDOT-design review	\$135,720	\$ 0	\$ 15,080	\$ 150,800
Construction	\$738,068	0	\$ 83,008	\$ 821,076
Real estate	<u>0</u>	<u>0</u>	\$34,200	\$ 34,200
TOTAL COST DISTRIBUTION	\$873,788	\$ 0	\$132,288	\$1,006,076

Any additional costs that may be incurred in association with these items shall be paid for by the CITY. The CITY shall pay the total **actual costs** for these items when they are invoiced by the DEPARTMENT.

2. Accept and maintain ownership of the pedestrian crossing and construct the planned multi-purpose trail along Lindsay Road in the vicinity of this intersection prior to the summer 2023 intersection project construction.
3. Pay the entire actual design/construction/real estate acquisition costs for items which are the responsibility of the CITY within 30 days of receipt of an invoice from the DEPARTMENT.
4. Accept all future cost responsibilities for operating intersection area highway lighting located outside the CTH F pavement, upon completion of project construction.
5. Quit Claim to Waukesha County at no additional costs the adjacent City-owned lands necessary for project construction.
5. Designate a representative to act for the CITY under this Agreement. The representative shall be:

Magdelene Wagner, P.E.
Director of Public Works/City Engineer
City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072
262-691-0804 Office

OTHER TERMS

1. Assignment: The parties agree that there shall be no assignment or transfer of this Agreement nor of any interests, rights or responsibilities contained herein without a written amendment agreed to by both parties.
2. Amendment: The parties, by mutual consent, may amend this Agreement in writing at any time.
3. Severability: If any provision of this Agreement is held invalid under any applicable law, such invalidity shall not affect any other provision of this Agreement that can be given effect without the invalid provision and, to this end, the provisions hereof are severable.
4. Construction is currently anticipated to occur during 2023 as a HSIP-funded project by WisDOT, subject to the terms of this Agreement.
5. If this HSIP-funded project is cancelled by WisDOT, then this two party agreement becomes void between the DEPARTMENT and CITY.

Attachment 1: Conceptual Plan of Intersection Proposed Improvements, CTH F at Lindsay Rd

Attachment 2: Concept Layout Plan Cost Estimate (August 2020)

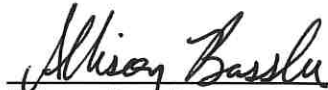
APPROVAL

This Agreement will be effective on the date of the DEPARTMENT'S signature.

CITY:
City of Pewaukee

DEPARTMENT:
Waukesha County

By: 
STEVE BIERCE
Title: MAYOR

By: 
Allison Bussler
Title: Director of Public Works

Date: JUNE 18, 2021

Date: 6-24-21

Address for CITY:

City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072

Address for DEPARTMENT:

Waukesha County Department of
Public Works
515 W. Moreland Blvd., Room AC 210
Waukesha, WI 53188



CTH F (Redford Blvd) - Lindsay Rd: Restricted Crossing U-Turn (RCUT) Intersection



0 300 Feet

Printed: 7/8/2020



Exhibit 3A
Intersection Proposed Improvements
CTH F (Redford Blvd) at Lindsay Rd



LAND INFORMATION SYSTEMS DIVISION

CTH F (Redford Blvd) - Lindsay Rd: Restricted Crossing U-Turn (RCUT) Intersection

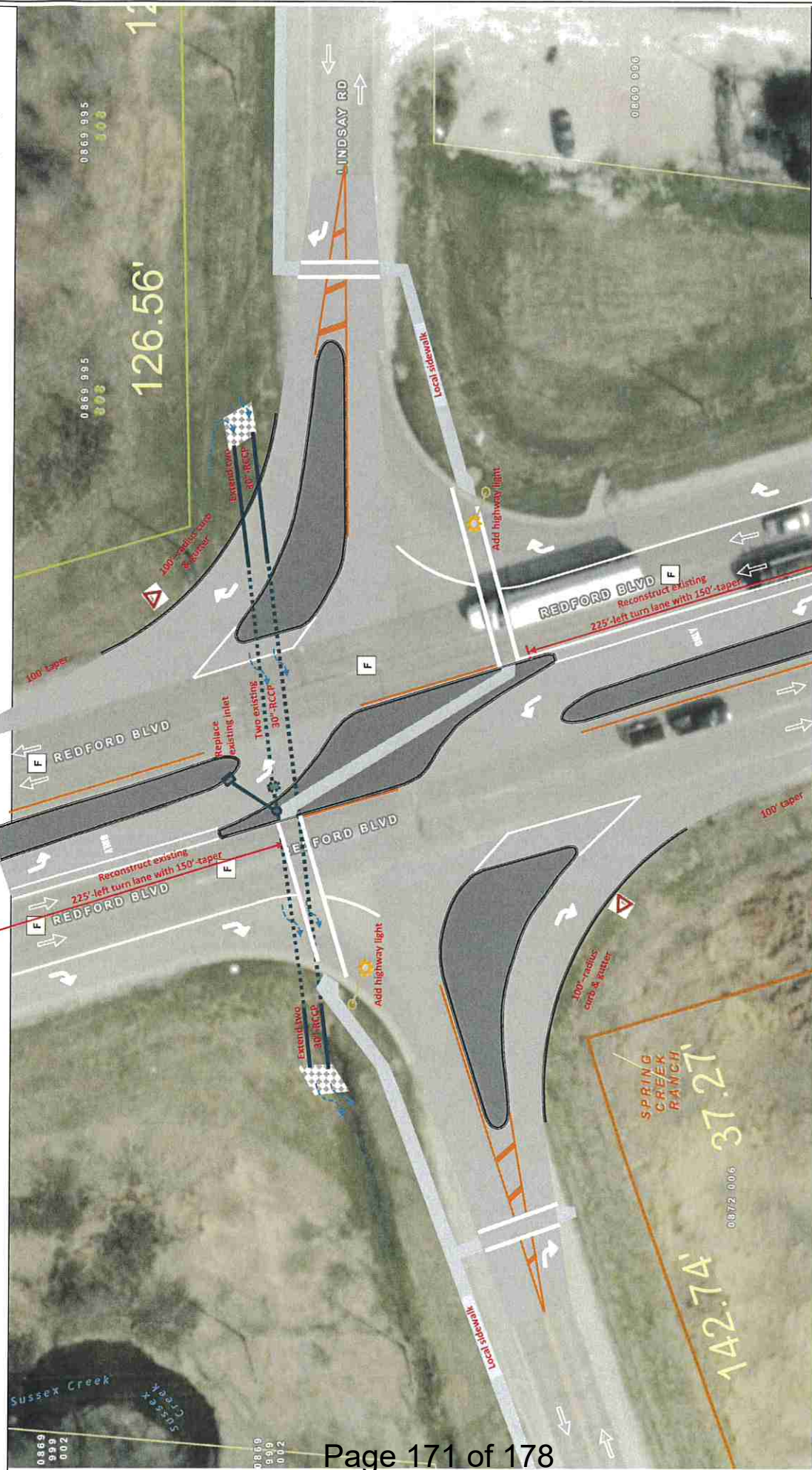
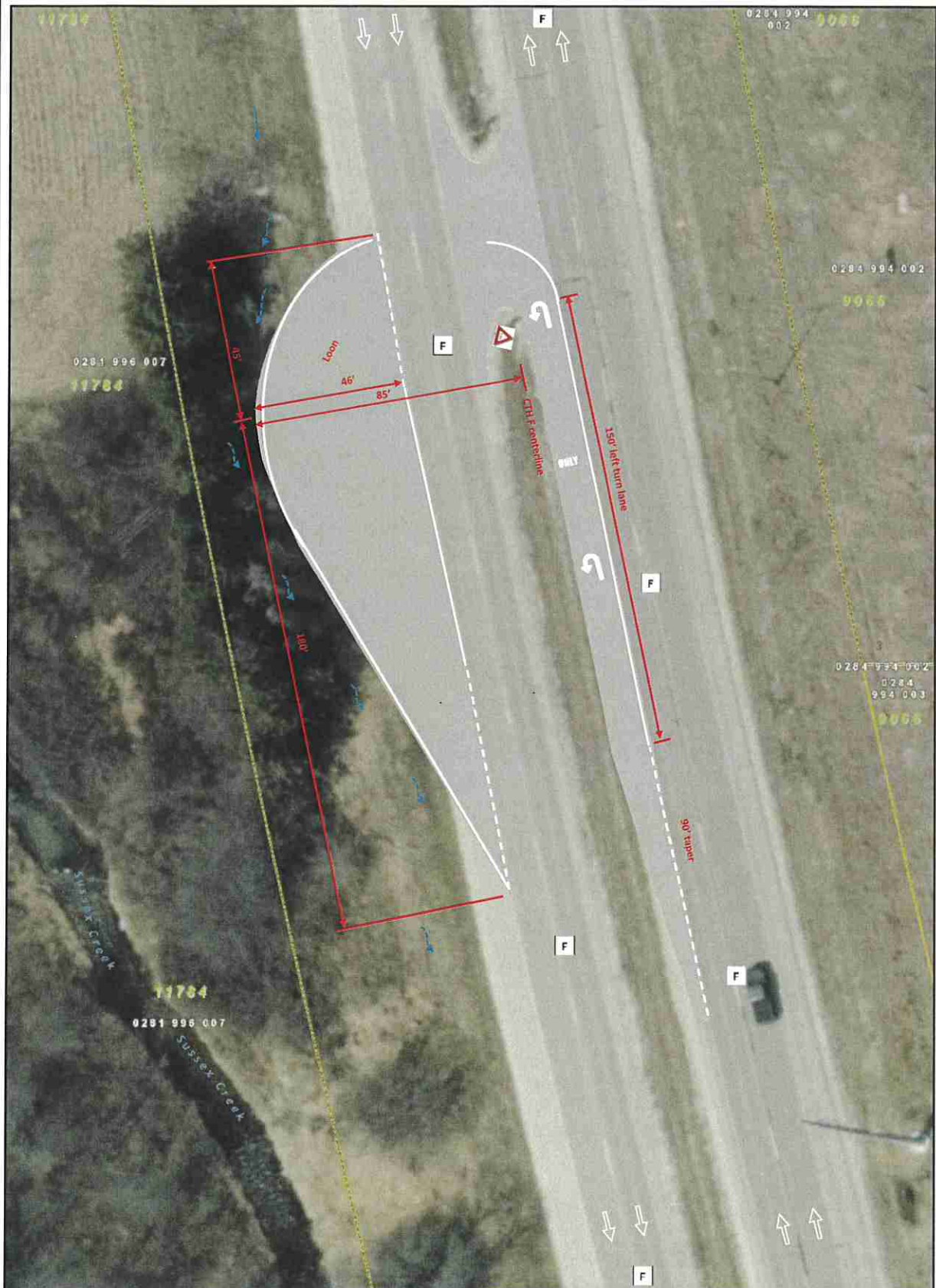


Exhibit 3B
Intersection Proposed Improvements
CTH F (Redford Blvd) at Lindsay Rd



0 30.00 Feet
Printed: 7/8/2020

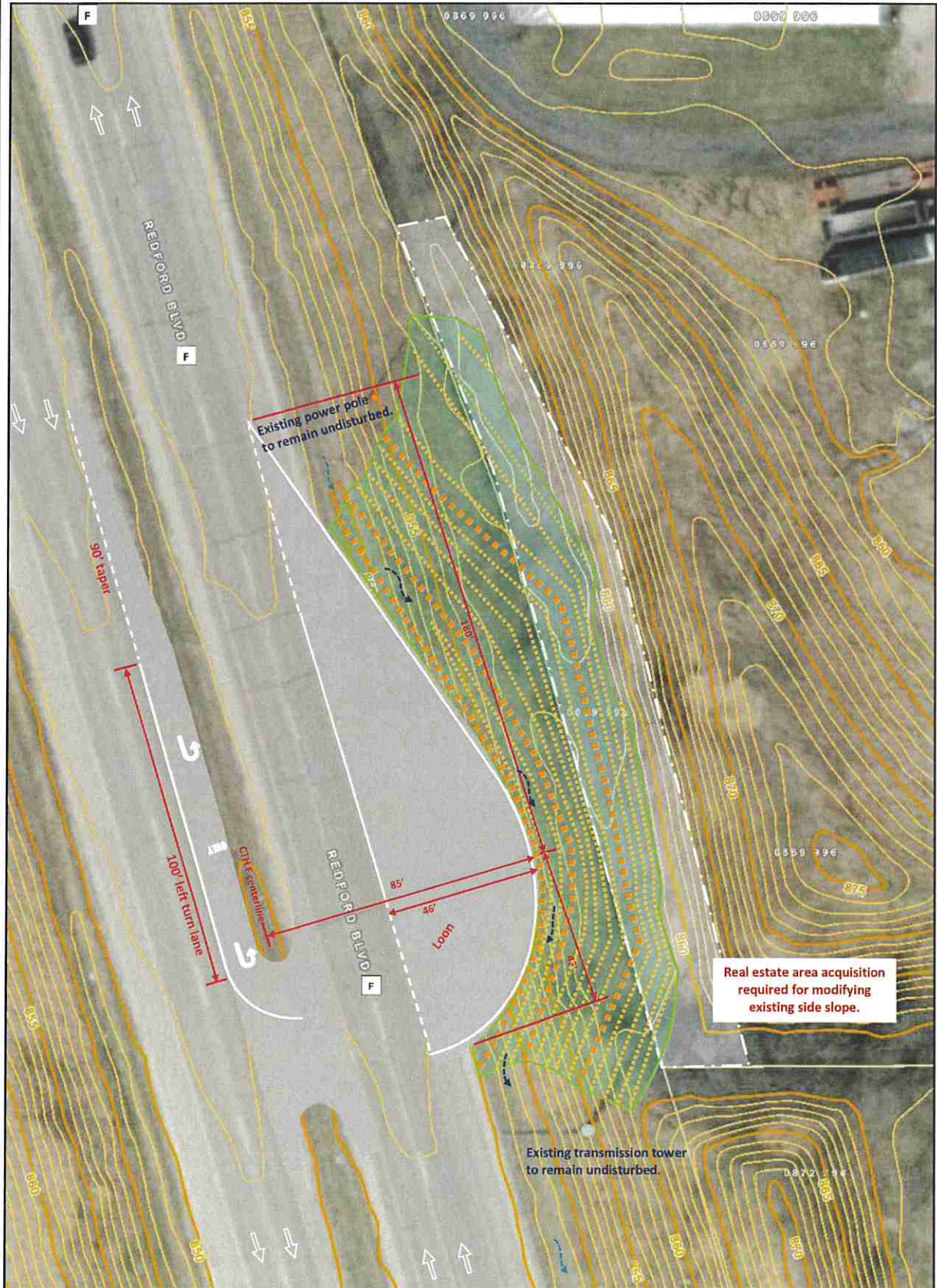


0 30.00 Feet

Printed: 7/8/2020



Exhibit 3C
Intersection Proposed Improvements
CTH F (Redford Blvd) at Lindsay Rd



0 30.00 Feet

Printed: 7/17/2020



Exhibit 3D
Intersection Proposed Improvements
CTH F (Redford Blvd) at Lindsay Rd

CONCEPT LAYOUT PLAN COST ESTIMATE (August 2020)

CTH F (Redford Blvd) / Lindsay Rd Intersection

~1400-feet / ~350 feet

Waukesha County Project

Inflated cost

3.5%/year
to Yr 2024

ITEM NO.	Bid Item	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT COST	TOTAL COST
1	201.0105 & 201.0205	CLEARING & GRUBBING	STA	4	\$800.00	\$ 3,200
2	204.0100	REMOVE PAVEMENT	SY	2,300	\$5.00	\$ 11,500
3	204.0150	REMOVE CURB & GUTTER	LF	760	\$4	\$ 3,040
4	205.0100	EXCAVATION COMMON - BORROW	CY	8,800	\$17.00	\$ 149,600
5	305.0110	BASE AGGREGATE DENSE 1-1/4" (10"-section)	TON	2,200	\$18.00	\$ 39,600
6	455.0115	ASPHALTIC MATERIAL PG64-22	TON	65	\$5.00	\$ 325
7	460.1100	HMA PAVEMENT TYPE E-3 (5.5"-section)	TON	1,180	\$65.00	\$ 76,700
8	465.0305	ASPHALTIC SURFACE SAFETY ISLANDS (Rt turns, Median-Lt turns)	TON	220	\$75.00	\$ 16,500
9	465.0315	ASPHALTIC FLUMES	SY	10	\$60.00	\$ 600
10	520.1030	APRON ENDWALLS, 30-IN	EA	4	\$1,100.00	\$ 4,400
11	602.0410	CONCRETE SIDEWALK - 5" (6"-wide sidewalk)	SF	2,300	\$6.50	\$ 14,950
12	608.0430	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV, 30-IN	LF	140	\$120.00	\$ 16,800
13		MANHOLE, 5-FT DIAMETER & COVER	EA	1	\$3,300.00	\$ 3,300
14		INLET 2X3-FT & COVER	EA	1	\$2,050.00	\$ 2,050
15	601.0411	CONCRETE CURB & GUTTER 30-INCH TYPE D	LF	1,910	\$26.00	\$ 49,660
16	619.0000	MOBILIZATION	LS	1	\$35,000.00	\$ 35,000
17	625.0500	SALVAGED TOPSOIL	SY	1,850	\$3.00	\$ 5,550
18	628.1504	SILT FENCE	LF	1,500	\$2.50	\$ 3,750
19	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	2,600	\$2	\$ 5,200
20		REMOVE, RE-INSTALL, ADD SIGNS	LS	1	\$6,000.00	\$ 6,000
21		TRAFFIC CONTROL (Shift CTH F lanes, close Lindsey Rd)	LS	1	\$20,000.00	\$ 20,000
22	642.5201	FIELD OFFICE C	LS	1	\$9,000.00	\$ 9,000
23	646.0106	PAVEMENT MARKINGS EPOXY 4"	LF	3,120	\$1.50	\$ 4,680
24	646.7420	PAVEMENT MARKINGS EPOXY 6" (CROSSWALK)	LF	330	\$8.00	\$ 2,640
25		PAVEMENT MARKINGS WORDS & ARROWS	EA	16	\$300.00	\$ 4,800
26	647.0726	PAVEMENT MARKINGS 12" DIAGONALS	LF	50	\$9.50	\$ 475
27		HYDROSEEDING	SY	1,700	\$2.00	\$ 3,400
28		REMOVE EXISTING HIGHWAY LIGHTING	EA	1	\$700	\$ 700
29		NEW HIGHWAY LIGHTING	EA	2	\$3,000.00	\$ 6,000
30	690.0150	SAWING ASPHALT	LF	3,260	\$2.50	\$ 8,150
					SUBTOTAL	\$ 507,570

ABOVE MAJOR ITEMS REPRESENT 85% OF COSTS OF SIMILAR PROJECTS

0.85

TOTAL CONSTRUCTION COST FOR ALL BID ITEMS

\$ 597,141

15% Allowance for Construction Engineering & Contingencies

\$ 89,571

TOTAL CONSTRUCTION

\$686,712

\$772,900

REAL ESTATE ACQUISITION / EASEMENTS					
ITEM	SE	DESCRIPTION	FEE & TLE	AREA (SF)	TOTAL COST
1	SE	Parcel 86995996	FEE & TLE	6.25	\$15,000
					Acquisition \$6,000
					Land/TLE \$6,000
					Misc/Incidental \$3,000
					Title Searches (1 parcel) \$400
					Utilities & Miscellaneous \$0

TOTAL REAL ESTATE

\$30,400

\$34,215

DESIGN CONSULTANT (11.0% of total construction) + **DESIGN REVIEW** (8.5% of total construction)

\$133,909

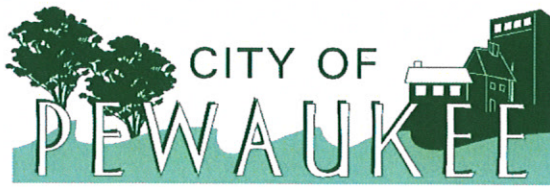
\$150,716

GRAND TOTAL

\$851,020

\$957,831

Exhibit 7
Cost Estimate
CTH F (Redford Blvd) / Lindsay Rd Intersection



Administration Division

W240N3065 Pewaukee Road • Pewaukee, WI 53072

Phone: (262) 691-0770 • Fax: (262) 691-1798

www.cityofpewaukee.us

August 5, 2020

Highway Safety Improvement Program
Wisconsin Department of Transportation

Subject: 2021-2024 Highway Safety Improvement Program
CTH F (Redford Boulevard)/Lindsay Road Intersection – Waukesha County

Dear HSIP Coordinator and Reviewers:

The City of Pewaukee is in support of Waukesha County's Highway Safety Improvement Program (HSIP) project application for the intersection improvements at CTH F (Redford Boulevard) and Lindsay Road. The City funded a review of the intersection due to an increasing number of severe crashes occurring at this intersection. The results of the study indicated safety improvements were warranted at the intersection.

CTH F is a four lane divided highway with a 55 mph speed limit. Lindsay Road is a two lane roadway controlled at the intersection by stop signs. As the County has outlined in the application, the crashes typically occur crossing the second 2 lanes of traffic. The median is narrow enough that motorists do not typically stop at the median. With the increase in traffic on CTH F, and the increase in traffic on Lindsay Road, the intersection crashes have increased over the last year. We have experienced four severe crashes just in the last four months.

The study recommended the restricted crossing U-turn (RCUT) at the intersection. The City of Pewaukee has committed to partnering with Waukesha County on the design and construction of the intersection improvements. The City of Pewaukee has also committed to funding the portions of the intersection improvements beyond the funding provided by this grant, if awarded.

The City of Pewaukee strongly supports and endorses the RCUT intersection improvement project. If at all possible, we would ask this project be awarded funding at your earliest date due to the increase in severe accidents occurring at the intersection.

Thank you for your consideration. If you have any questions or concerns, please feel free to contact our office at (262) 691-0804.

Sincerely,

Scott Klein
City Administrator

Cc: Common Council; Magdelene Wagner, P.E., Director of Public Works/City Engineer
Allison Bussler, Director of Public Works, Waukesha County; Bruce Barnes, P.E., PTOE, Waukesha County



**Department of Public Works
Engineering Division**

W240N3065 Pewaukee Road • Pewaukee, WI 53072

Phone: (262) 691-0804 • Fax: (262) 691-5729

Email: publicworks@pewaukee.wi.us

May 17, 2021

Allison Bussler
Public Works Director
Waukesha County Department of Public Works
515 West Moreland Boulevard, AC 220
Waukesha, WI 53188

Dear Ms. Bussler:

The City of Pewaukee (City) appreciates all your efforts to address the safety concerns of the City residents at the intersection of Redford Boulevard (CTH F) and Lindsay Road intersection. We were grateful to see the Highway Safety Improvement Program (HSIP) committee agreed with our concerns and approved the grant.

Upon receipt of the Inter Municipal Agreement from the County to support this project, we were surprised to see the pedestrian crossing that was discussed and presented prior to and shown as part of the HSIP application was eliminated.

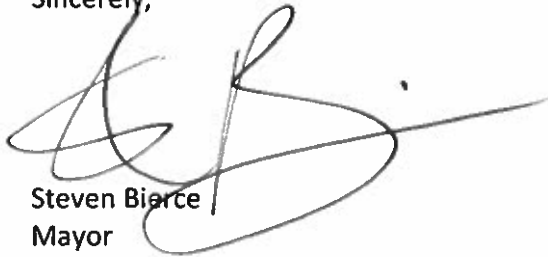
The City has committed and is currently designing a multi-purpose trail along Lindsay Road from Duplainville Road to the Pewaukee Sports Complex, and along Duplainville Road from Weyer Road south to Green Road (see the attached map with its proposed location). The construction of the trails connect two of our City parks, Wagner Park and Pewaukee Sports Complex, as well as connecting numerous subdivisions to the parks. The City anticipates the construction of this trail as part of the Duplainville Road reconstruction project in 2022.

City and County staff discussed having this crossing at an existing signalized intersection. Unfortunately, this would not be a realistic alternative. The closest signalized intersection is Lisbon Road (CTH K), approximately 3,550 feet north, however this intersection is outside of the City's jurisdiction in the Town of Lisbon, and would require additional trail installed along CTH K and Duplainville Road. In addition, traffic along CTH K is uncontrolled at Duplainville Road, has a large volume of traffic, a large volume of truck traffic, and often backs up due to the railroad crossing yielding another dangerous intersection for pedestrians. The next closest controlled intersection is Capital Drive (STH 190) and CTH F, approximately 7,100 feet south, which is less than ideal due to the current configuration of off ramps from Capital Drive to CTH F and the substantial grade difference between STH 190 and CTH F. A trail would need to be installed along CTH F or along STH 190, STH 164, Swan Road, and Lindsay Road to the park - a substantially longer connection.

The Pewaukee Sports Complex is planned to have walking trails within the park. In addition, an inclusive playground/splash pad is planned for this park.

The City is respectfully requesting the pedestrian crossing be added to the intersection improvement project. If you need additional information or would like to discuss this further, please feel free to contact our office at (262) 691-0770.

Sincerely,

A large, stylized handwritten signature in black ink, appearing to be 'SB' with a long horizontal stroke extending to the right.

Steven Bierce
Mayor

Sincerely,

A handwritten signature in black ink, appearing to be 'M. Wagner' with a large, sweeping arch over the last name.

Magdelene Wagner, P.E.
Director of Public Works/City Engineer

Cc: Scott Klein, City Administrator
Karen Braun, Engineering Manager, Waukesha County



Waukesha County GIS Map



0 1,000.00Feet

The information and depictions herein are for informational purposes and Waukesha County specifically disclaims accuracy in this reproduction and specifically admonishes and advises that if specific and precise accuracy is required, the same should be determined by procurement of certified maps, surveys, plats, Flood Insurance Studies, or other official means. Waukesha County will not be responsible for any damages which result from third party use of the information and depictions herein, or for use which ignores this warning.

- Notes:**
- Trail under design - Construction 2022
 - Future Trails
 - Current on road Trail



Printed: 5/17/2021

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 6.**

DATE: August 15, 2022

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner

SUBJECT:

Discussion and Possible Action Regarding Woodleaf Reserve Addition 4A to Approve **Resolution 22-08-25** Accepting Public Improvements [Wagner]

BACKGROUND:

In accordance with the Development Agreement, the accepting resolution accepts the public improvements for the development and establishes the 1 year guarantee period for the improvements.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

Council Approve the Resolution Accepting Public Improvements.

ATTACHMENTS:

Description
Resolution 22-08-25

RESOLUTION NO. 22-08-25

**A RESOLUTION ACCEPTING PUBLIC IMPROVEMENTS
WOODLEAF RESERVE ADDITION 4A DEVELOPMENT**

WHEREAS, Woodleaf Investments, LLC, a partnership, and the City of Pewaukee, entered into a Developer's Agreement dated February 21, 2022 on file in the City Clerk's office, to govern the development of a parcel of real property owned by Woodleaf Investments, LLC, containing approximately 77.91 acres for residential use more particularly described in Exhibit B (Final Plat) on file in the City Clerk's office and incorporated herein, referred to in said Agreement and herein as the "Property;" and

WHEREAS, the Agreement provides that Woodleaf Investments, LLC would construct and install the necessary sanitary sewer facilities, water distribution facilities, public streets, surface and storm water drainage, and street signs and traffic control within the Property; and,

WHEREAS, the public improvements have been completed and dedicated by Woodleaf Investments, LLC to the City for the Woodleaf Reserve Addition 4A; and,

WHEREAS, the public improvements have been inspected by the City Engineer who has approved the same;

NOW THEREFORE IT IS HEREBY RESOLVED that the City of Pewaukee Common Council accepts the public improvements referred to above on behalf of and for the benefit of the public and citizens of the City of Pewaukee.

This resolution shall be effective upon publication or posting as provided by law.

Dated this 15th day of August 2022

City of Pewaukee

Steve Bierce, Mayor

Attest:

Kelly Tarczewski, Clerk

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 7.**

DATE: August 15, 2022

DEPARTMENT: Public Works

PROVIDED BY: Magdelene Wagner

SUBJECT:

Discussion and Possible Action to Approve **Resolution 22-08-26** to Reallocate Excess Borrowed Funds to the Paul Road, Roundy Drive, and Roundy Circle Project [Wagner].

BACKGROUND:

In 2021, the City borrowed \$2,080,000 for two road projects - Oak/Peninsula and Meadowbrook Farms Phase 1. The projects are 99% complete and will not use the entire \$2,080,000. The remaining balance on the borrowing is \$594,629.14. As such, we are requesting the Council authorize the borrowing to be re-allocated to another road project - Paul Road/Roundy's Drive/Roundy's Circle. This project is anticipated to have road expenses up to \$1,886,000. As of December 2021, we have spent approximately \$949,157.52.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

Council authorize the Resolution to re-allocate of the remaining borrowed road funds to the Paul/Roundy's Road Project.

ATTACHMENTS:

Description

Resolution 22-08-26

RESOLUTION NO. 22-08-26

A RESOLUTION AUTHORIZING AMENDMENTS TO THE 2021 BORROWING

WHEREAS, the Common Council of the City of Pewaukee borrowed \$2,080,000 for road projects in 2021; and

WHEREAS, the road projects encompassed Oak St/Peninsula Drive and Meadowbrook Farms Phase 1 paving; and

WHEREAS, the projects incurred \$1,485,370.86 in expenditures; and

WHEREAS, the road projects are not anticipated to incur any further significant costs; and

WHEREAS, the net effect on the road borrowing is a balance of \$594,629.14; and

WHEREAS, the remaining balance can be re-allocated to another road project without penalty; and

WHEREAS, the City previously awarded a road construction project for Paul Road, Roundy Drive, and Roundy Circle; and

WHEREAS, the Paul Road, Roundy Drive, and Roundy Circle have incurred costs \$949,157.52 to date; and

WHEREAS, the City passed a Comfort Resolution 21-04-16 allowing reimbursement of expenditure; and

NOW, THEREFORE, BE IT RESOLVED, that the City of Pewaukee hereby authorizes and directs the remaining balance of the 2021 borrowing be allocated to the Paul Road, Roundy Drive, and Roundy Circle Road Projects.

PASSED and ADOPTED this 15th day of August, 2022

CITY OF PEWAUKEE

Steve Bierce, Mayor

ATTEST:

Kelly Tarczewski, Clerk/Treasurer

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 8.**

DATE: August 15, 2022

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Discussion and Possible Action to Select the 2022 Trick-or-Treat Date [Mayor Bierce]

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

October 2022 Calendar

OCTOBER 2022

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2 Patriots vs Packers 3:25 p.m.	3 Common Council Meeting 6:30 p.m.	4	5	6	7	8
9 Giants vs Packers 8:30 a.m.	10 Budget Workshop 6:00 p.m.	11 Court 7:30 a.m.	12 Joint Park & Recreation Meeting 7:00 p.m.	13	14	15
16 Jets vs Packers 12:00 p.m.	17 Common Council Meeting 6:30 p.m.	18	19 Joint Library Board Meeting 6:30 p.m.	20 Public Works Meeting 4:00 p.m. Plan Commission Meeting 6:00 p.m.	21	22
23 Packers vs Commanders 12:00 p.m.	24	25 Court 7:30 a.m.	26	27	28	29
30 Packers vs Bills 7:20 p.m.	31 Halloween 					

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 9.**

DATE: August 15, 2022

DEPARTMENT: Clerk/Treasurer

PROVIDED BY:

SUBJECT:

Discussion and Possible Action Regarding Appointments to Various Board, Committees and Commissions [Mayor Bierce]

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

Spreadsheet

PLAN COMMISSION	Original Appointment	Current Term	
		From	To
Doug Kiser	6/1/2020	6/1/2020	5/1/2022
Sullivan, Sean (Engineer)	9/4/2007	5/15/2017	5/1/2018
Janka, Ted	5/1/2003	5/4/2015	5/1/2018
Linsmeier, Dave (Park & Recreation Board)	4/3/2006	5/20/2019	5/1/2020
Wunder, Christine	7/1/2004	5/15/2017	5/1/2020
Bierce, Steve - Mayor	6/6/2016	4/17/2017	Indefinitely
Brown, Colleen - Alderman	8/16/2021	8/16/2021	Indefinitely

According to Section 1.03(2) of the Pewaukee Municipal Code the membership should be as follows: consisting of (7) members; the mayor (presiding officer), (1) Alderman, (1) representative from the Joint Park & Recreation Board (selected by the Park & Recreation Board) and (4) citizen members with experience and qualifications related to planning matters (1) of which needs to be a full-time City Engineer. (3) of the citizen members are to serve an alternating 3-year term. **The 4th citizen engineer member, the alderman and Joint Park & Recreation Board representative shall be appointed annually in April.** Citizen members are compensated.

ZONING BOARD OF APPEALS	Original Appointment	Current Term	
		From	To
Marlin, Katie - Chairperson (appointed 1/7/2019)	7/18/2016	8/6/2018	5/1/2021
Thomas Matt	5/7/2012	5/21/2018	5/1/2021
Welcenbach, Robert	6/1/2015	5/15/2017	5/1/2020
Tredwell, Jim	2/15/2016	5/20/2019	5/1/2022
VACANCY			5/1/2022
VACANCY - Alternate			5/1/2023
VACANCY - Alternate			5/1/2022

It consists of (5) regular members. Their terms shall be for a staggered three (3) year period. The Mayor shall appoint the Chairperson. There shall also be (2) alternates for staggered three (3) year term. **The Mayor shall annually designate as 1st and 2nd Alternate.** The 1st alternate will fill any vacancy and complete the regular appointee's term and the 2nd alternate will fill the 1st alternate's term, leaving the 2nd alternate position need to be filled. On 1/2/2007 Ordinance 06-24 was passed revising the membership.

BOARD OF REVIEW	Original Appointment	Current Term	
		From	To
Golombowski, Ann	4/19/2021	4/19/2021	5/1/2022
Jaschke, Jim	5/2/2011	4/5/2021	5/1/2022
Robinson, Gwenn	5/2/2011	4/5/2021	5/1/2023
Christensen, Walter	4/5/2021	4/5/2021	5/1/2023
Figurski, Joshua	8/6/2018	4/5/2021	5/1/2023
VACANCY - Alternate			5/1/2023
VACANCY - Alternate			5/1/2022

An all citizen Board of Review was established by Ordinance #06-02 on 02/06/2006. It requires seven (7) citizen members to serve alternating two (2) year terms. Current compensation is \$20 per meeting per action of the Common Council on 8/18/2003. On August 17th, 2009 Ordinance 09-13 was created, recreating section 1.08(1) of the municipal code. The Board now consists of five (5) citizen members and two (2) alternates.

FIRE COMMISSION	Original Appointment	Current Term	
		From	To
Farley, Thomas	3/2/2020	3/2/2020	5/1/2023
Bergman, Brandon	2/21/2022	2/21/2022	5/1/2025
Novack, Kathleen	9/15/2014	5/20/2019	5/1/2024
Bertram, Lloyd	2/21/2022	2/21/2022	5/1/2026
Elaine Kroening	11/5/2014	5/15/2017	5/1/2022

The Fire Commission was originally part of the Police & Fire Commission that was created by Ordinance 04-10 on 4/19/2004. With the anticipated disbanding of the Police Department on 1/1/2010 ordinance 9.21 was created and passed on 12/21/2009. The membership remains as a five (5) citizen members; each to serve an alternating 5 - year term. Compensation is \$20 per meeting.

PUBLIC WORKS COMMITTEE	Original Appointment	Current Term	
		From	To
Swan, David	8/4/2008	4/5/2021	5/1/2023
Tormey, Jeff	10/5/2015	4/5/2021	5/1/2024
Kreiter, Michael	3/15/2021	3/15/2021	5/1/2022
Bierce, Steve - Mayor	4/17/2017	4/17/2017	Indefinitely
Wamser, Jerry - Alderman	5/7/2012	6/6/2016	Indefinitely

*This Committee was created by Ordinance 99-10 on 4/20/1999. It is to consist of five (5) members; the Mayor, one (1) Common Council member and three (3) citizen members. **The appointments shall be made at the first regular meeting of a newly elected Council** (except for the Mayor's position). No mention of compensation was noted.*

JOINT LIBRARY BOARD	Original Appointment	Current Term	
		From	To
Noll, Dale	5/2/2016	5/21/2018	5/1/2021
Muchowski, Laura (<i>nominated by Pewaukee School District</i>)	2/21/2005	5/15/2017	5/1/2020
Wildman, Karen	7/15/2013	5/20/2019	5/1/2022
Clark, Ian - Alderman	6/7/2021	6/6/2021	Indefinitely
Village Resident			
Village Resident			
Village Trustee			

This Board was created by Ordinance 05-4 on 1/17/2005. The Board consists of (3) members appointed by the Village Board and (3) members appointed by the City Common Council. No more than (1) member from each municipality shall be an elected official. (1) additional member shall be a City of Pewaukee resident and shall be nominated by the Superintendent of the Pewaukee School District and appointed by the Common Council. Members shall serve a staggering 3-year term.

JOINT PARK & RECREATION BOARD	Original Appointment	Current Term	
		From	To
Majeskie, Gary	2/19/2018	5/20/2019	1/1/2022
Kaatz, Del	1/20/2003	7/20/2020	1/1/2023
Linsmeier, Dave	4/3/2006	8/6/2018	1/1/2021
Dziwulski, Brian - Alderman	7/17/2017	7/17/2017	Indefinitely
Village Resident			
Village Resident			
Village Trustee			

This Board was created by Ordinance 96-19 on 11/4/1996. The Board consists of (7) voting members and (2) non-voting ex-officio members. The breakdown of members is as follows: (1) Village Trustee, (2) Village citizens, (1) City Alderman, and (3) City residents. In addition the Administrators from the Village and City may attend meetings and take part in discussions. The terms are 3-years with appointments in January. Although no compensation was listed in the ordinance, citizen members are being paid \$20 for each meeting they attend.

ETHICS BOARD	Original Appointment	Current Term	
		From	To
Farley, Tom	2/7/2008	5/15/2017	4/30/2023
VACANCY			4/30/2022
VACANCY			4/30/2024
VACANCY - Alternate			4/30/2024

The Ethics Board was established by Ordinance 06-16 on 9/5/2006. It consists of (3) regular citizen members and (1) alternate. Once established there will be alternating 3-year terms. There is no compensation for this position

TOURISM COMMISSION	Original Appointment	Current Term	
		From	To
Bierce, Steve - Mayor	1/1/2017	1/1/2017	Indefinitely
Wamser, Jerry - Alderman	9/19/2017	5/20/2019	9/19/2020
Dziwulski, Brian - Alderman	9/13/2021	9/13/2021	9/19/2022
VACANT - Alderman			9/19/2020
Doresey, Frank - Hotel Representative	10/15/18	5/20/2019	9/19/2020

Created by Ordinance 16-22 on September 19, 2016. It is to consist of the Mayor and (3) Alderman and (1) member who shall represent the Wisconsin hotel & motel industry. **Commissioners shall serve for a one-year term**. Among the members they shall elect a chairperson, vice-chairperson and secretary.

FINANCE COMMITTEE	Original Appointment	Current Term	
		From	To
Dziwulski, Brian - Alderman	9/13/2021	9/13/2021	Indefinitely
Brown, Colleen - Alderman	5/6/2013	6/6/2016	Indefinitely
Kara, Jeff - Citizen Member	10/4/2021	10/4/2021	Indefinitely
Klein, Scott - Administrator	1/1/2017	1/1/2017	Indefinitely

Created by Ordinance 09-02 on January 19th, 2009. The Committee shall consist of the following: Two (2) Common Council Members & the City Administrator. The appointments are to be made by the first regular meeting of the newly elected Council. The Mayor shall designate the chairman and secretary of the committee. On November 16th, 2009 it was revised by Ordinance 09-18 to add one (1) resident preferably with a financial background and Administrator as staff representative.

EMPLOYEE SERVICES COMMITTEE	Original Appointment	Current Term	
		From	To
Clark, Ian - Alderman	9/13/2021	9/13/2021	Indefinitely
VACANT - Alderman			Indefinitely
Woldanski, Kelley - Director of People & Culture	1/19/2009	1/19/2009	Indefinitely

The Human Resource Committee was created by Ordinance 09-02 on January 19th, 2009. The Committee shall consist of the following: Two (2) Common Council Members & the Human Resource Director. The appointments are to be made at the first meeting of the newly elected Council. The Mayor shall designate the Chairman and Secretary of the Committee. Revised on November 16th, 2009 by Ordinance 09-18 to name the HR Director as staff representative. On 4/22/2019 via an email received by the Administrator, the Human Resource Director title changed to Director of People & Culture and the HR Department will be known as Employee Services.

PEWAUKEE LAKE PATROL ADVISORY COMMITTEE	Original Appointment	Current Term	
		From	To
Heier, Timothy - Police Chief	5/1/2019		
Twelmeyer, Lucas - Sergeant			
Heyrman, Greg Sergeant			
Clark, Ian - City of Pewaukee - Alderman	6/21/2021	6/21/2021	Indefinitely
Woelfle, J - Town of Delafield - Supervisor			
Hill, Ed - Village of Pewaukee - Trustee			
Koepp, Thomas - Lake Pewaukee Sanitary District	5/2/2011	5/2/2011	Indefinitely

Created upon discussion at the Common Council meeting on 2/2/2009. A termination needs to be made on the make-up of committee members and the purpose of the group. Town of Delafield has different opinion on the appointment of Thomas Koepp and doesn't believe he belongs on the committee. Whereas we wanted someone from the LPSD to serve on the committee for times when the water levels were too high to help determine safety.

BIKE & PEDESTRIAN PATH PLANNING COMMITTEE	Original Appointment	Current Term	
		From	To
VACANT - Alderman			Indefinitely
Blackwood, Jim	9/19/2016	9/19/2016	Indefinitely
Pascucci, Greg	8/6/2018	8/6/2018	Indefinitely
Ford, Ross	9/19/2016	9/19/2016	Indefinitely
Vitale, John	9/19/2016	9/19/2016	Indefinitely
Long, Courtney (Village Resident)			Indefinitely

After safety concerns were voiced from several area parents. The Committee was created at the Common Council meeting dated August 15, 2016. Alderman Bierce volunteered to head the committee.

LAKE MANAGEMENT PLAN ADVISORY COMMITTEE	Original Appointment	Current Term	
		From	To
City of Pewaukee - VACANT - Alderman			Indefinitely
Town of Delafield - Supervisor			Indefinitely
Village of Pewaukee - Trustee			Indefinitely
Koepp, Thomas - Lake Pewaukee Sanitary District			Indefinitely

Created upon discussion at the Common Council meeting on February 4, 2013. The committee shall consist of one (1) elected official from the City of Pewaukee, one (1) from the Village of Pewaukee and one (1) from the Town of Delafield. Also serving is a member of the Lake Pewaukee Sanitary District.

ALCOHOL COMMITTEE	Original Appointment	Current Term	
		From	To
Bierce, Steve - Mayor		6/6/2016	Indefinitely
<i>Origin Unknown</i>			

RESIDENCE BOARD	Original Appointment	Current Term	
		From	To
Wagner, K. Scott - District #1	8/6/2018	5/20/2019	5/1/2024
Tuttle, Debra - District #2	8/6/2018	8/6/2018	5/1/2021
VACANCY - District #3			5/1/2023
<i>Created by Ordinance 18-01 Approved on January 15, 2018. The Board shall consist of three (3) citizens residing in the City one (1) from each Aldermanic District. Members shall serve for a term of five (5) years and shall serve no more than two (2) consecutive terms. The terms for the initial members of the Residence Board shall be staggered with one member serving one (1) year, a second member serving three (3) years and the third member serving five (5) years.</i>			

R&R COMMITTEE	Original Appointment	Current Term	
		From	To
Vacant - Alderman			Indefinitely
Piper, Christine - Citizen Member			
Michaels, Brian - Mental Health Specialist			
Moonen, Marc - Lieutenant			
Fuchs, Nick - Director of Community Development, City Planner			
<i>Created....</i>			

