January 24, 2021

Mr. Eric Kastelic, E.I.T.
Kimley-Horn and Associates, Inc.
4201 Winfield Road, Suite 600
Warrenville, IL 60555
Eric.Kastelic@kimley-horn.com

ECS Project No. 66:1079

Re: **Town of Lapel Pavement Investigation**
2020 Lapel Pavement Management Plan
Lapel, Indiana

Dear Mr. Kastelic:

Pursuant to the request of the of Kimley-Horn and Associates, Inc., ECS technical representatives (ECS) visited the Town of Lapel, Indiana on both January 13, 2021 and January 14, 2021 to conduct pavement coring and shallow subgrade sampling at various roadways as requested. This engineering report presents our understanding of the project along with the results of the field exploration conducted.

PURPOSE

The purpose of this study was to provide information relative to the existing pavement system at various areas within the Town of Lapel, Indiana to assist Kimley-Horn and Associates, Inc. (Kimley-Horn) in the re-design/rehabilitation of the specific roadways and pavement systems investigated by ECS.

AUTHORIZATION

Our services were provided in accordance with ECS Proposal No. 66:1129-CPr1 dated December 8, 2020 and authorized by Kimley-Horn with Individual Project Order No. 170214001 between Kimley-Horn and ECS dated December 14, 2020.

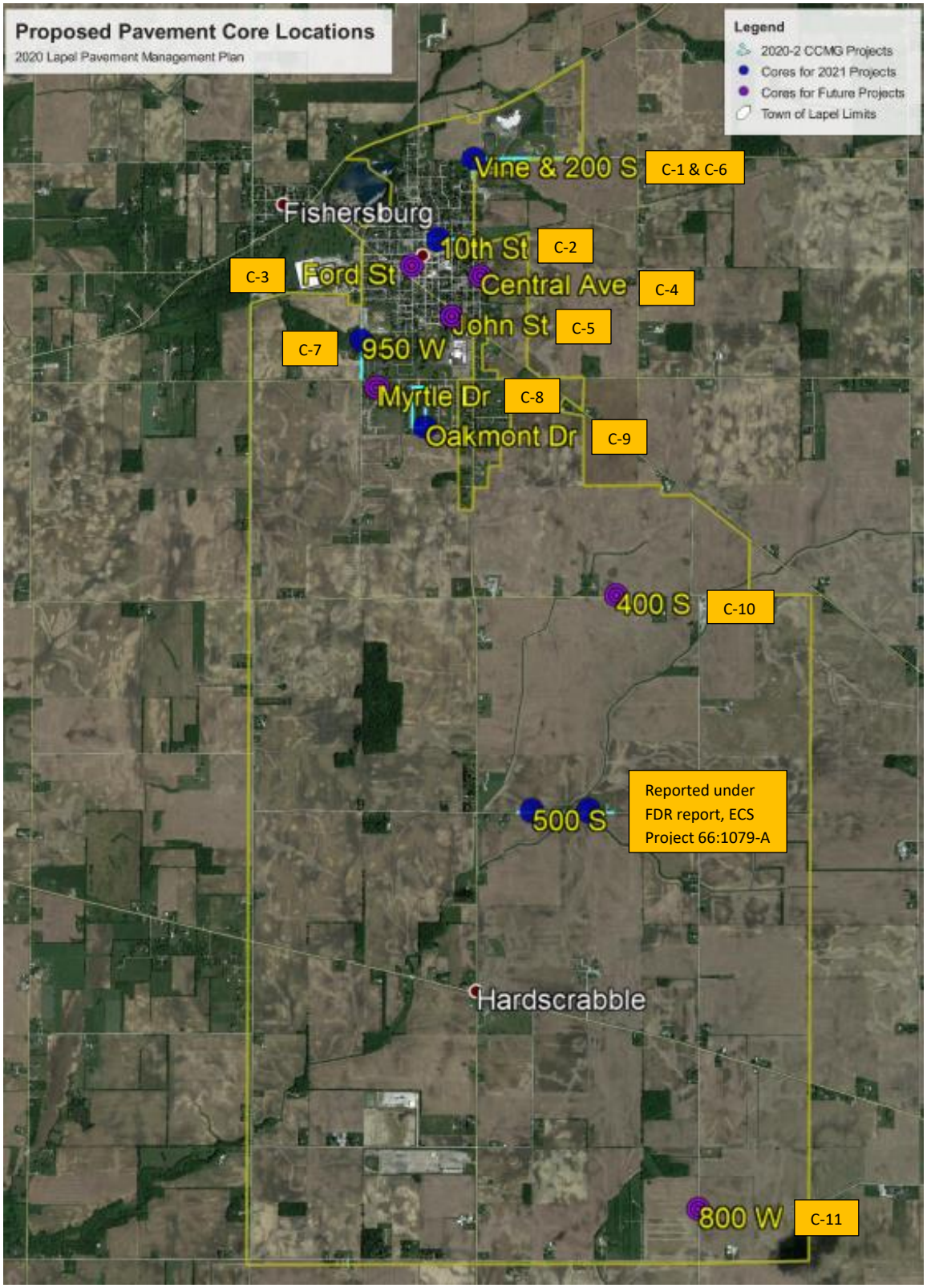
SCOPE OF SERVICES

ECS scope of services for the project consisted of:

1. Obtaining asphalt cores throughout the Town of Lapel in general accordance with the locations as provided by Kimley-Horn.
2. Providing a one-man flagging crew and appropriate work signage for traffic control.
3. Determining the overall asphalt thickness, number of layers, and thickness of each layer within each core sampling location.
4. Determining the aggregate base course type and thickness at each core sampling location.
5. Conducting shallow subgrade sampling (maximum two feet) via hand sampling methods and visually determine subgrade type and condition at each core location.
6. Upon completion of sampling, ECS plugged the sampling hole with bentonite chips and repaired the coring hole with "cold patch" asphalt mix.

CORING/SUBGRADE SAMPLING LOCATIONS

Pavement coring and shallow subgrade sampling operations were conducted within, and near, the Town of Lapel, Indiana as depicted in the "Proposed Pavement Core Locations" in figure 1, below:



FIELD SAMPLING OBSERVATIONS

A compilation of our field sampling observations is available in the attached Table 1. Please note, Vine and 200 S was cored a second time (core C-6) due to encountering concrete underlying the asphalt pavement on the first attempt (core C-1) that we were unable to get through. For core C-6 we moved the coring location a short distance from the first core location (C-1) but still encountered concrete underlying the asphalt pavement. We could not core deeper as we were at the limit of the coring machine depth. After coring, subgrade sampling via hand sampling methods (bucket and screw augers) was conducted to depths of up to twenty-four (24) inches.

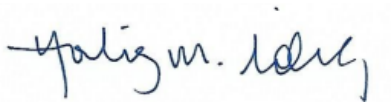
CLOSING

ECS has prepared this report of findings and observations to guide roadway-related design and construction aspects of the project. ECS has performed these services in accordance with the standard of care expected of professionals in the industry performing similar services on projects of like size and complexity at this time in the region. No other representation expressed or implied, and no warranty or guarantee is included or intended in this report.

Field observations and quality assurance testing during roadway re-construction are an extension of, and integral to, quality construction and adherence to plans and specifications. We recommend the Owner retain these quality assurance services and that ECS be involved throughout construction to provide general consultation as issues arise. ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

Should you have any questions concerning the recommendations presented this Report or require additional information, please contact the undersigned at (513) 216-5640.

Respectfully submitted,
ECS Midwest, LLC



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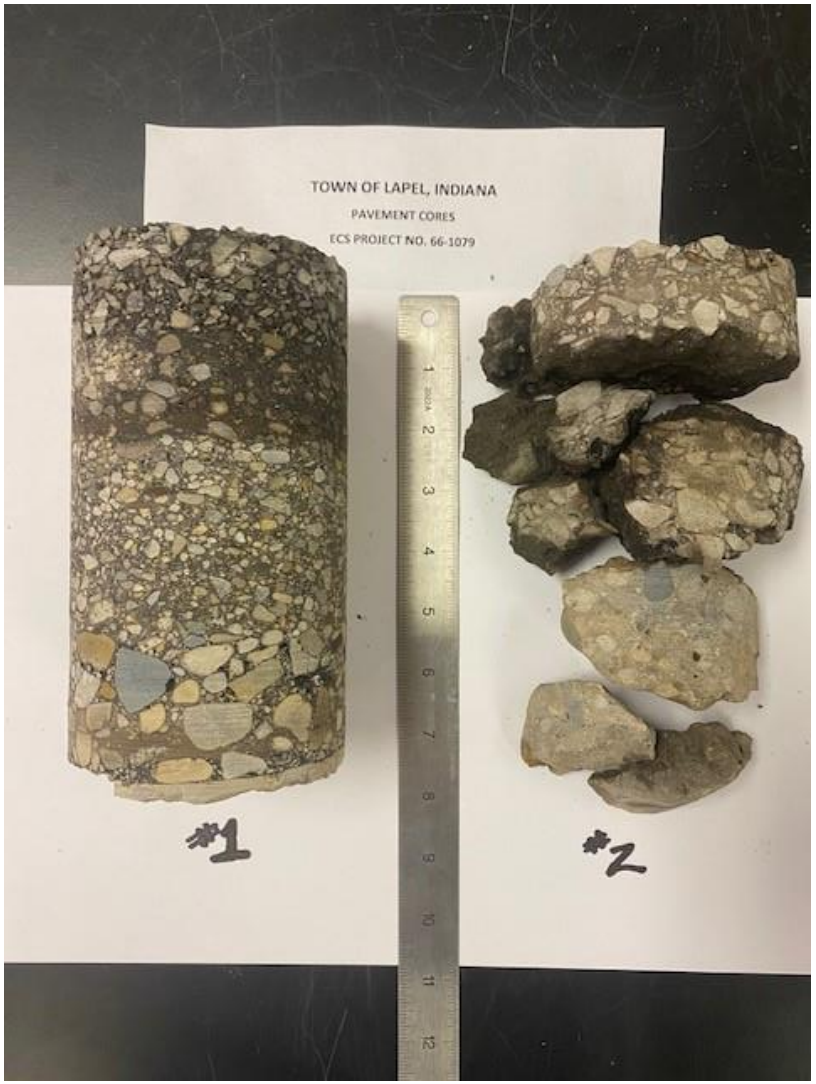
Attachments:
Table 1: Field Investigation Results
Photos

Town of Lapel, Indiana Pavement Investigation

Table 1: Coring and Subgrade Sampling Observations

Core No.	Location	Pavement Thickness	Layer and Thickness	Base Type and Thickness	Subgrade Type and condition
C-1	Vine and 200 S (First Attempt)	6-3/4”	5” Asphalt Surface (3 layers) 1-3/4” Asphalt Base	Concrete underlying asphalt	N/A—did not get below concrete
C-2	10th Street (between Ford and Main)	8-1/2”	1-1/2” Asphalt Surface 2-1/2” Asphalt Base 4-1/2” Concrete Base	2” Bank run sand	Dark brown sandy CLAY with some gravel, soft to firm
C-3	Ford Street	7-3/4”	5” Asphalt Surface (3 layers) 2-3/4” Asphalt Base	8” Bank run sand	Dark brown sandy CLAY with some gravel, firm to stiff
C-4	Central Avenue	4-1/2”	1-1/2” Asphalt Surface 3” Asphalt Base	4” Bank run sand	Dark brown sandy CLAY with some gravel, soft to stiff
C-5	John Street	6-1/2”	1-1/2” Asphalt Surface 5” Asphalt Base	4” Bank run sand	Dark brown sandy CLAY with some gravel, medium stiff to stiff
C-6	Vine and 200 S (Second attempt)	10”	4” Asphalt Surface (2 layers) 1-1/2” Asphalt Base	4-1/2” Concrete Base	N/A--Unable to core beyond 10” and still in concrete
C-7	950 W	5”	2-1/2” Asphalt Surface 2-1/2” Asphalt Base	2” Bank run sand	Medium brown sandy CLAY with gravel to clayey sand with gravel
C-8	Myrtle Drive	4-1/4”	1-3/4” Asphalt Surface 2-1/2” Asphalt Base	4-1/2” Crushed aggregate base	Brown silty clay with trace sand, firm to stiff
C-9	Oakmont Drive	4”	1-1/2” Asphalt Surface 2-1/2” Asphalt Base	6-3/4” Crushed aggregate base	Brown to dark brown silty CLAY, firm to stiff
C-10	400 S	3”	1-1/2” Asphalt Surface 1-1/2” Asphalt Base	2” Bank run sand	Dark brown sandy CLAY to brown silty Clay, firm to stiff
C-11	800 W	3”	3/4” Asphalt Surface 2-1/4” Asphalt Base	2” Bank run sand	Dark brown sandy CLAY with some gravel, soft to firm



Core #1:
Vine & 200 S
(S. Bound)

Core #2:
10th Street
between Ford
and Main
(W. Bound)

Core #3:
Ford Street
(S. Bound)

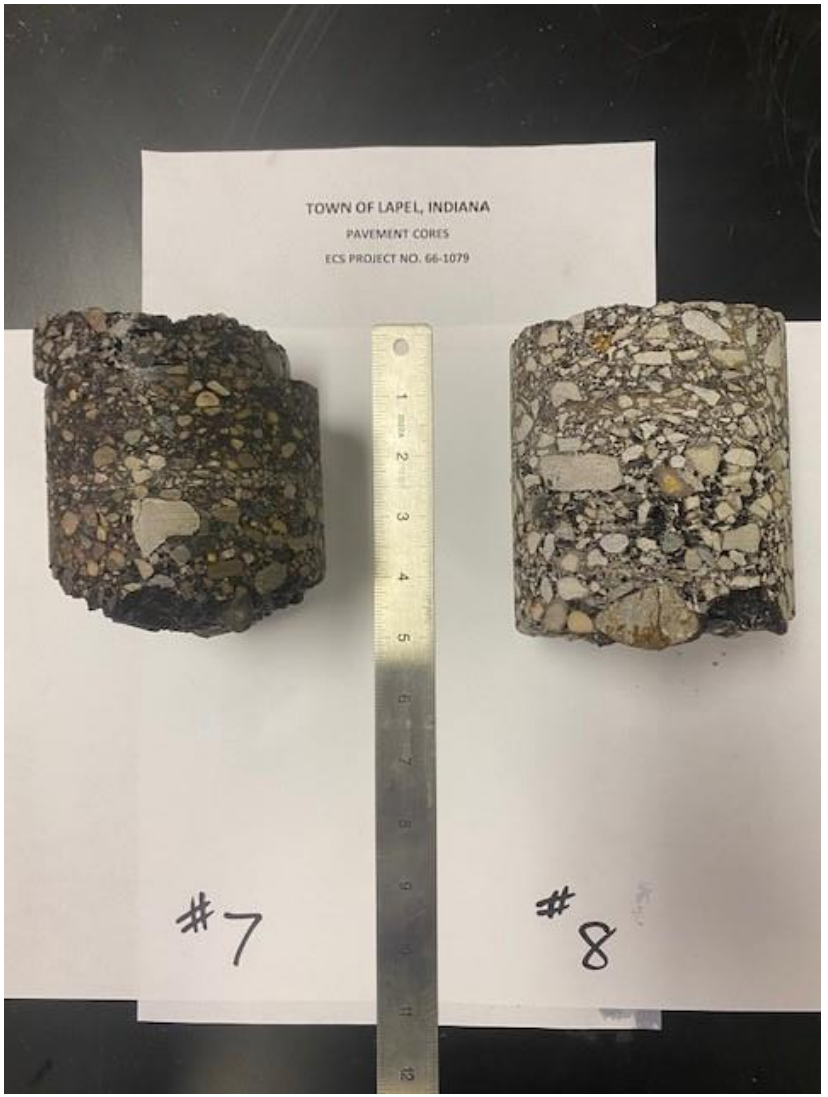
Core #4:
Central Ave.
(E. Bound)

Core #5:
John Street
(S. Bound)

Core #6:
Vine & 200S
(S. Bound)

Core #7:
950 W
(S. Bound)

Core #8:
Myrtle Drive
(W. Bound)



Core #9: **Oakmont Dr.** (N. Bound)

Core #10: **400S** (E. Bound)

Core #11: **800 W** (S. Bound)