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LPA Pavement Data Collection



Objective

- Work with LPAs and planning agencies to develop a way to continue to meet the needs for local pavement data collection while reducing the impact on the DOT budget
- Determine a process to implement any changes

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LPA Pavement Data Collection

What Data?

- Pavement Condition
 - Smoothness (IRI)
 - Rutting (for Asphalt)
 - Faulting (for Concrete)
 - Cracking – type and severity
- Videolog and pavement imagery
 - Other roadway features
- Collected by a vendor selected through Iowa DOT procurement process

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LPA Pavement Data Collection

What Data?

- Collected on a two year cycle
- All paved roads
 - based on surface type data reported to Iowa DOT
- Provided to LPAs and planning agencies via IPMP (Iowa Pavement Management Program) at ISU/InTrans

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LPA Pavement Data Collection

History

- Automated distress collected since late 1990's
 - Prior to 2013, LPAs had the option to purchase data collection via IPMP
- Starting in 2013, the DOT elected to collect all paved roads
 - Interest in overall pavement condition
 - Support of asset management initiatives

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LPA Pavement Data Collection

History

- IPMP has been supporting local agency pavement management for over 20 years
- Since 2013, the number of agencies using pavement data from IPMP has tripled
 - 42 to 135 LPA, including 55% of all city miles
 - All 9 MPOs have requested data, as have 14 of the 18 RPAs
 - Supports pavement management research, including the ICEA-led IPAT tool

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LPA Pavement Data Collection

Cost

- Current data collection vendor, Pathway Services, was selected via Iowa DOT competitive procurement
- **Current** per-mile costs for collected data:

Facility Type	Cost per mile
Interstate	\$ 55.60
Non-Interstate NHS	\$ 56.29
Rural local	\$ 98.10
Rural collectors	\$ 92.00
Urban locals	\$ 95.61
Urban collectors	\$ 97.90

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LPA Pavement Data Collection

Cost

- At present, the collection costs are borne entirely by Iowa DOT
- Over a two-year collection cycle, the estimated* cost of collection is over \$4.1M

	Cycle Miles	Estimated 2-year Cost
State	13,968.7	\$924,747
County	19,064.1	\$1,765,674
City	14,237.2	\$1,368,087
Other	537.1	\$52,179
	47,807.0	\$4,110,687

* Estimated because the actual data collection fluctuates depending on many factors, including: construction activity, network data accuracy, and weather

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LPA Pavement Data Collection

Decision Process

- This cost of nearly \$2.1M/year has become unsustainable in the face of many competing priorities
- DOT management targeted savings/offset at least \$750,000 per year
- The following assumptions were made
 - No changes to collection requirements from FHWA
 - Continue to collect all paved roads
 - Use the Federal Functional Classification (FFC) system to prioritize the system

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LPA Pavement Data Collection

Decision Process

- Assembled a stakeholder team to provide input
 - IPMP Users Group
 - Iowa County Engineers Association
 - Association of Public Works Administrators
 - MPOs and RPAs
 - DOT staff
- Group met twice over the summer of 2019 to discuss alternatives and issues

Options

- The stakeholder group focused on two alternatives
 1. Take an off-the-top portion of the STBG allocation to continue the current data collection cycle/process
 - An estimate of impact was created by DOT staff
 - ICEA indicated that their membership was not likely to be supportive
 2. Look at reduced data collection frequency, with option for local agencies to "opt-in" using local funds
 - Analysis led to the selected alternative

Options

System	Cycle Miles	Current Per Mile	Frequency (every x years)	2-year Cycle Costs	Alternatives (Annual Cost)				
					Status Quo Freq	4 Year cycle Freq for FFC 7	6 year cycle Freq for FFC 7	4 Year for all LPA Routes Freq	4 year and 6 year cycle for LPA Routes Freq
Interstate (annual)	1,942.0	\$ 55.60	1	\$ 216,000	1 \$ 108,000	1 \$ 108,000	1 \$ 108,000	1 \$ 108,000	1 \$ 108,000
Primary NHS	6,044.2	\$ 56.29	2	\$ 340,000	2 \$ 170,000	2 \$ 170,000	2 \$ 170,000	2 \$ 170,000	2 \$ 170,000
Non-Primary NHS	147.0	\$ 56.29	2	\$ 8,000	2 \$ 4,000	2 \$ 4,000	2 \$ 4,000	2 \$ 4,000	2 \$ 4,000
Non NHS Primary									
Urban	354.9	\$ 97.90	2	\$ 35,000	2 \$ 17,500	2 \$ 17,500	2 \$ 17,500	2 \$ 17,500	2 \$ 17,500
Rural	3,588.6	\$ 92.00	2	\$ 326,000	2 \$ 163,000	2 \$ 163,000	2 \$ 163,000	2 \$ 163,000	2 \$ 163,000
				\$ 925,000	\$ 462,500	\$ 462,500	\$ 462,500	\$ 462,500	\$ 462,500
Local System FFC 2-4 (Arterials & Collectors)									
County	17,133.5	\$ 92.00	2	\$ 1,576,000	2 \$ 788,000	2 \$ 788,000	2 \$ 788,000	4 \$ 394,000	4 \$ 394,000
City	3,000.3	\$ 97.90	2	\$ 294,000	2 \$ 147,000	2 \$ 147,000	2 \$ 147,000	4 \$ 73,500	4 \$ 73,500
Other - urban	12.4	\$ 97.90	2	\$ 1,000	2 \$ 500	2 \$ 500	2 \$ 500	4 \$ 250	4 \$ 250
Other - rural	12.4	\$ 92.00	2	\$ 1,000	2 \$ 500	2 \$ 500	2 \$ 500	4 \$ 250	4 \$ 250
				\$ 1,872,000	\$ 936,000	\$ 936,000	\$ 936,000	\$ 468,000	\$ 468,000
Local System FFC 7 (local streets)									
County	1,930.6	\$ 98.10	2	\$ 189,000	2 \$ 94,500	4 \$ 47,250	6 \$ 31,500	4 \$ 47,250	6 \$ 31,500
City	11,236.9	\$ 95.61	2	\$ 1,074,000	2 \$ 537,000	4 \$ 268,500	6 \$ 179,000	4 \$ 268,500	6 \$ 179,000
Other - urban	174.0	\$ 95.61	2	\$ 17,000	2 \$ 8,500	4 \$ 4,250	6 \$ 2,833	4 \$ 4,250	6 \$ 2,833
Other - rural	338.4	\$ 98.10	2	\$ 33,000	2 \$ 16,500	4 \$ 8,250	6 \$ 5,500	4 \$ 8,250	6 \$ 5,500
				\$ 1,313,000	\$ 656,500	\$ 328,250	\$ 218,833	\$ 328,250	\$ 218,833
Total	47,807.0			\$ 4,110,000	\$ 2,055,000	\$ 1,726,750	\$ 1,617,333	\$ 1,258,750	\$ 1,149,333
						\$ (328,250)	\$ (437,667)	\$ (796,250)	\$ (905,667)
Summary by Jurisdiction Type									
State/required	13,969			\$ 925,000	\$ 462,500	\$ 462,500	\$ 462,500	\$ 462,500	\$ 462,500
County	19,064			\$ 1,765,000	\$ 882,500	\$ 835,250	\$ 819,500	\$ 441,250	\$ 425,500
City	14,237			\$ 1,368,000	\$ 684,000	\$ 415,500	\$ 326,000	\$ 342,000	\$ 252,500
Other	537			\$ 52,000	\$ 26,000	\$ 13,500	\$ 9,333	\$ 13,000	\$ 8,833
	47,807			\$ 4,110,000	\$ 2,055,000	\$ 1,726,750	\$ 1,617,333	\$ 1,258,750	\$ 1,149,333

LPA Pavement Data Collection

Options

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Urban	354.9	\$ 97.90	2 \$ 17,500	2 \$ 17,500	2 \$ 17,500	2 \$ 17,500	2 \$ 17,500
Rural	3,538.6	\$ 92.00	2 \$ 163,000	2 \$ 163,000	2 \$ 163,000	2 \$ 163,000	2 \$ 163,000
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Local System FFC 2-6 (Arterials & Collectors)							
County	17,133.5	\$ 92.00	2 \$ 788,000	2 \$ 788,000	2 \$ 788,000	4 \$ 394,000	4 \$ 394,000
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LPA Pavement Data Collection

Outcome

- Moving to 4-year cycle for LPA paved streets/roads
- Planning agencies or local jurisdictions can opt-in to reimburse Iowa DOT for data collected on 2-year cycle

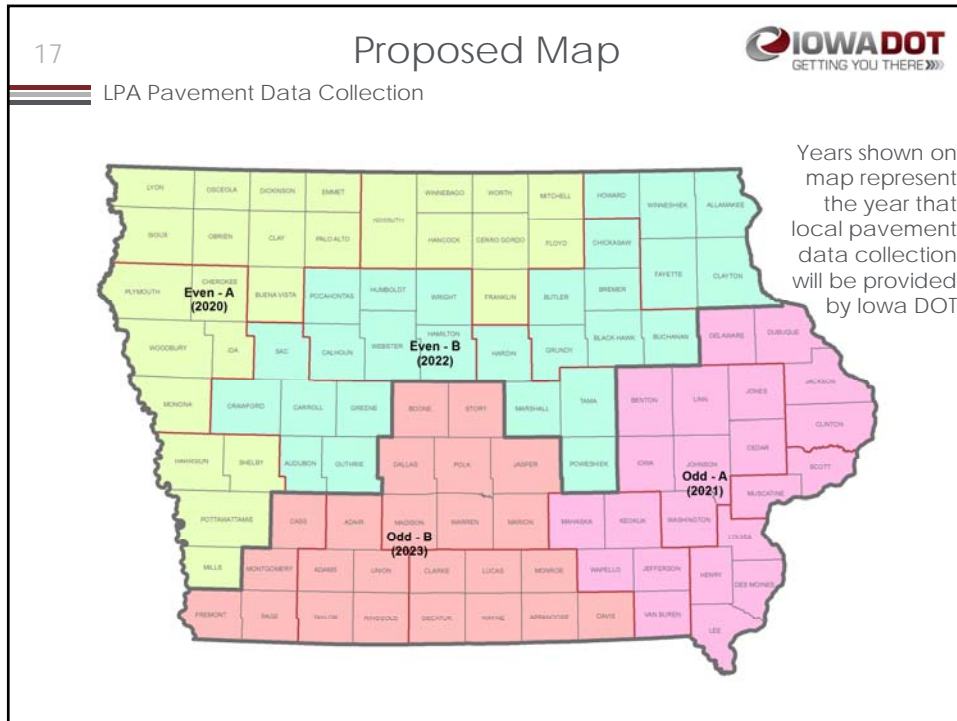
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LPA Pavement Data Collection

New Map

- The decision was made to keep the current grouping of counties to maintain the overall even-year/odd-year cycle.
 - Based on RPA boundaries
 - Decision based on continuity
- Iowa DOT's Analytics group analyzed the RPAs and created A/B sub-cycles of contiguous RPAs with a reasonable balance of rural and urban collection.



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LPA Pavement Data Collection

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Cost Implications

- LPAs **or** planning agencies can choose to "opt-in" for off-cycle data collection
 - MPOs/RPAs can utilize STBG; LPAs would utilize local funds
- The per-mile costs from slide 7 would give a good estimate of the agency cost
- Cost would only be incurred for the year the agency chooses to opt-in
- MPOs/RPAs should consider whether they want to opt-in to their next off-cycle data collection as part of FFY2021-2024 TIP development and, if so, program the funds in the opt-in year

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LPA Pavement Data Collection

Proposed Timeline for LPAs

- In the **fall of each year**, Iowa DOT will request agencies in the following year's "off cycle" areas to indicate their interest in having data collected
 - A "notice of intent" process is being developed
 - Necessary to give the vendor time to plan resource allocation for the following year
- By **mid-January** of the calendar year, a firm commitment will be required
 - Necessary to provide vendor with data collection GIS file
- Iowa DOT will invoice agencies in the winter or early spring following collection. **Agencies will only be billed for the actual miles collected.**

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LPA Pavement Data Collection

Remaining Issues

As of September, 2019

- Specifics of timeline, particularly the "notice of intent" process
- The invoicing and payment process
- Next RFP for data collection
 - late 2020 timeframe

Question or Comments

- Contact:
Matt Haubrich
Transportation Asset Management Administrator
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010
(515) 233-7902
matthew.haubrich@iowadot.us
- Or any other stakeholder group members (next slide)



THANK YOU

Local Agencies
Andrew Collings (DMAMPO)
Kyle Durant (INRCOG)
John Fallis (Charles City)
Zach James (SERIPC)
Brian Moore (ICEA)
Inya Nlenanya (ISU – InTrans - IPMP)
Mark Nahra (Woodbury Co)
Nick Schmuecker (City of Davenport)
Brad Skinner (Appanoose Co)
Sara Thies (City of Des Moines)
Danny Waid (ICEA)

Iowa DOT
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Nicole Moore
Mark Murphy
Andrea White