The National Academies of
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TRANSPORTATION RESEARCH BOARD

The Evolution of Intellectual Property and Research in the Transportation World

Tuesday, May 21, 2019
1:00-2:30 PM ET

The Transportation Research Board has met the standards and requirements of the Registered Continuing Education Providers Program. Credit earned on completion of this program will be reported to RCEP. A certificate of completion will be issued to participants that have registered and attended the entire session. As such, it does not include content that may be deemed or construed to be an approval or endorsement by RCEP.

RCEP

REGISTERED CONTINUING EDUCATION PROGRAM

Purpose

To discuss current practices for managing intellectual property with regards to transportation research projects.

Learning Objectives

At the end of this webinar, you will be able to:

- Discuss what is intellectual property
- Describe how to manage intellectual property
- Understand how to draft copyright permissions when publishing in peer reviewed journals

ENID WHITE

RESEARCH MANAGER

WYOMING DEPARTMENT OF TRANSPORTATION

Intellectual Property

What is Intellectual Property

Intellectual property (IP) refers to **creations** of the mind.

IP is a category of **property and asset**.

IP gives rights to **creative design**.

https://www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf

What are intellectual property rights

Intellectual Property rights are created in law and enable people to earn recognition or financial benefit from what they invent or create. Intellectual Property Rights are rights given to a person/entity over their creations, ideas, inventions.

Primary and Secondary Authorities for Intellectual Property

NCHRP 799

Copyright Act of 1976, Title 17 USC 101, et seq.

Copyright circulars, https://www.copyright.gov/circs/

Patent laws, Title 35 of the US Code.

Primer on Patentability, Legal Research Digest 73

Trademark Act of 1946, Trademark Laws, 37 CFR Part 2

https://www.uspto.gov/sites/default/files/trademarks/law/Trademark_Statutes.pdf

How is Intellectual Property Vulnerable due to Public Access Plans

Public Access applies to all DOT employees and consultants, and all contractors who perform work for the DOT.

The National Transportation Library is set up in hopes of disseminating reports for creative reuse. It further makes metadata records from reports publicly searchable.

Data Management Plans and data repositories make data publically available. Data should be made available at the most detailed level possible.

Top 10 things to keep in mind for Research Projects

1. Determine your **intellectual property needs** at the planning stages for your research projects.
2. Intellectual property should be looked at on a **case by case basis**.
3. Intellectual property rights should be **reevaluated periodically.**
4. Intellectual property is **not a ones size fits all** process.
5. Keep your **legal staff** informed of all intellectual property rights issues.

Top 10 things to keep in mind (continued)

6. Keep your **enterprise technology or IT staff** informed of all intellectual property rights issues.

7. Know the **differences and similarities** for the varying types of intellectual property.

8. **Know all parties who have claims** to the intellectual property.

9. Your intellectual property rights are protected **as soon as the thought/idea is placed in a fixed medium**.

10. **Do not rely on anyone else to insure your intellectual property rights are covered**.

COPYRIGHTS

Copyright is a form of protection provided to the authors of **original works of authorship** from the time the works are created in **fixed form**.

https://www.copyright.gov/circs/circ01.pdf

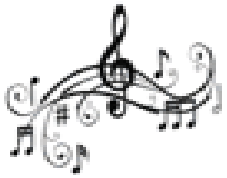
Original Works of Authorship

Works that Can be Copyrighted

Literary

Artistic

Dramatic



Musical

Recording

Source: Quick Company 2018¶

Fixed Requirement
Tangible v. Intangible

Tangible

Physical property

Something you can feel and touch

Paper

Computer Hard drive

Intangible

Non-Physical Items

Thoughts

Ideas in your head

Personality

What cannot be Copyrighted

- Words and short phrases
- Ideas, plans, methods, systems, processes, concepts, principles, or discoveries
- Works not fixed in tangible forms
- Titles, names, short phrases, slogans
- Familiar symbols or designs
- Common property
- Typeface/Fonts/the design of type
- Mere listings of ingredients or contents

https://www.copyright.gov/circs/circ01.pdf

When do rights begin to toll

As soon as an idea is placed in a fixed tangible medium

Works made for hire

Employment

When the work is created by an employee as part of the employee's regular duties/within the scope of their employment.

Independent Contractor/Vendor

When a work is created as a result of an express written agreement between the creator and a party specially ordering or commissioning it.

23 CFR 420.121

The **State DOTs** and their **subrecipients** may copyright any books, publications, or other copyrightable materials developed in the course of the **FHWA planning and research funded project**. The FHWA reserves a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use, and to authorize others to use, the work for Government purposes

Database Compilations and Underlying data

Compilations

Figures

Graphs

Tables

Databases

Flowcharts

Underlying Data

Raw Data

Concealed Data

Basic Data

Copyright and Other Rights

Copyright

All Rights Reserved

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Creative Commons

Some Rights Reserved

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Public Domain

No Rights Reserved

Reproduction, distribution, public performance, broadcasting, translation, and adaption are allowed without permission or license.

Derivative Works

To be copyrightable, a derivative work must incorporate some or all of a preexisting "work" and add new original copyrightable authorship to that work.

Source: PetaPixel

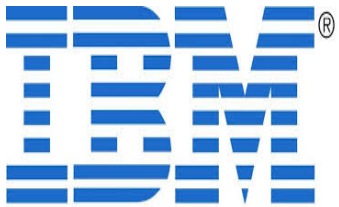
Circular 14, https://www.copyright.gov/circs/circ14.pdf

TRADEMARK

A trademark is a **word, name, symbol, or device** that is used in trade with goods to indicate the source of the goods and to distinguish them from the goods of others. The terms "trademark" and "mark" are commonly used to refer to both trademarks and servicemarks.

http://www.uspto.gov/trademarks/basics/Basic_Facts_Trademarks.jsp

Word Trademarks

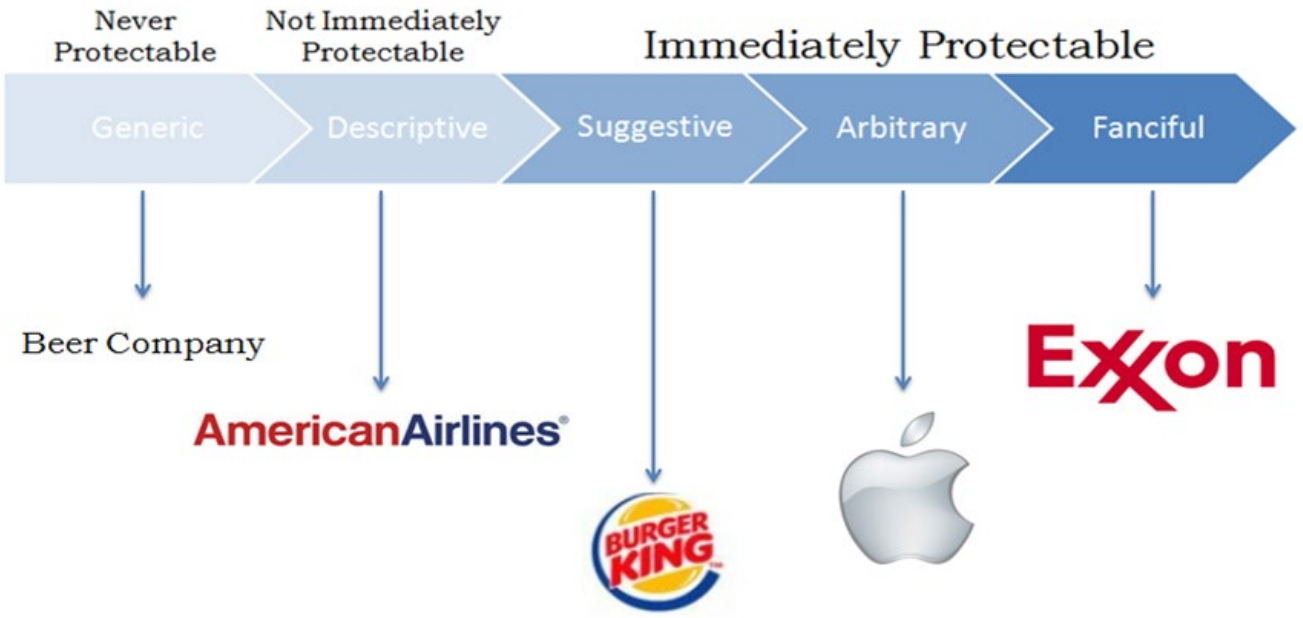


Design Trademarks

- Logos
- Product Designs
- Designer Labels
- Packaging
- Color Schemes

Shape, Sounds, Scents, Colors, and Packaging Trademarks

How to select a good Trademark



Trademark Symbols

TM (Trademark)

SM (Service Mark)

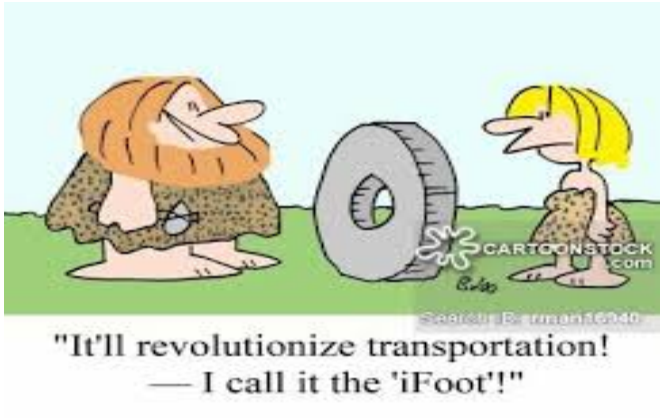
® (Federal Registration Symbol)

PATENTS

A patent is a **document**, issued, upon application, by a government office, which **describes an invention and creates a legal situation** in which the patented invention can normally only be exploited (manufactured, used, sold, imported) with the **authorization of the owner of the patent**.

WIPO Intellectual Property Rights Handbook, Page 17, reprinted 2008

Invention means a solution to a specific problem in the field of technology. An invention may relate to a product or a process.



WIPO Intellectual Property Rights Handbook, Page 17, reprinted 2008

Novelty (New)

The invention cannot be known to the public before the patent application.

The invention cannot already have been printed in a publication before the patent application.

Useful

The invention must have a useful purpose.

Nonobviousness

Cannot be an obvious improvement over a prior work of art.

Patents generated from projects using federal funds in state contracts

1. The Patent rights go to the contractor if the funds come from FHWA Planning and Research monies.

2. The Patent rights go to the contractor if the contract is with the state and not the federal government, unless state law dictates otherwise.

2. State agencies may reserve their rights, in contract and through a license, for use of the invention.

Patent Trolls

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SOFTWARE AND PATENTS OR COPYRIGHTS

Software Patents v. Copyright

Patent

Most powerful way to protect software.

Not all software is entitled to patent protection.

Software must be new, nonobvious, and useful.

Patents are legally and technically complex, and very expensive.

Offer shorter terms of protection.

Protects innovative ideas such as methods, algorithms, functions, and/or systems.

Copyright

Protection is automatic and exists without registration.

Lasts longer than patent protection.

Protects only the expressions of an idea, not the idea itself.

Prevents others from copying all or part of a computer code.

Should be updated for all versions of the software.

Contract Clauses

Federal Contract Language for contracts using FHWA Planning and Research Funds

The contract should include a **non-exclusive, non-transferable, irrevocable, paid up license** to practice or have practiced for or on behalf of the United States any subject invention throughout the world. 35 USC 202(c)(4)(2016).

Legal Research Digest 73, P. 14

WYDOT CONTRACT LANGUAGE

Copyright License and Patent Rights. All rights in works, including but not limited to databases, works of authorship, software (including web viewers), data, and inventions created or developed in the performance of this Agreement, shall be owned by WYDOT, Principle Investigator, and the Contractor. Nothing in this Agreement shall be construed as a grant of rights or license from one party to another party to any background intellectual property of the parties developed, created, conceived, or discovered before or independently of the activities performed under this Agreement. As applicable, copyright stamps on any work derived from this Agreement shall name the Contractor, the State of Wyoming, and WYDOT as copyright owners. Contractor acknowledges that federal grantor, the State of Wyoming, and Agency reserve a royalty-free, nonexclusive, unlimited, and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for federal and state government purposes: (1) the copyright in any work developed under this Agreement; and (2) any rights of copyright to which Contractor purchases ownership using funds awarded under this Agreement. Contractor must consult with WYDOT regarding any patent rights that arise from, or are purchased with, funds awarded under this Agreement.

WYDOT CONTRACT LANGUAGE

Publication. WYDOT, and Contractor shall be allowed to publish the findings from the research performed in this Agreement, if both WYDOT and Contractor agree that no information in the publication is confidential or a trade secret. All published articles that are derived from the research in this project shall name WYDOT as the sponsoring agencies. All graduate students and the Principal Investigator associated with this project shall have the right to use the data from this project when writing and/or defending any masters or doctorate dissertations, any reports or during any presentations. Contractor agrees that any confidential information supplied to it by WYDOT will not be included in any published material without prior written approval by WYDOT. All publications derived from this research project shall have a digital object identifier (DOI), which can be obtained either from the publisher. Contractor shall follow the requirements for Adapted Reports set out in the *Research Development, Technology Transfer, and Data Management Guidelines for the Wyoming Department of Transportation*, Chapter 10, Subsection 10.2, Adapted Reports and Publications Derived from the Research, which is incorporated into this Agreement by this reference.

WYDOT CONTRACT LANGUAGE

Ownership and Destruction of Documents/Information. Except as specified in Section 7(C) of this Agreement, the State of Wyoming, WYDOT, and Contractor shall jointly own all documents, data compilations, reports, photographs, data and other work provided to or produced by Contractor in the performance of this Agreement. Further, the State of Wyoming, WYDOT, and Contractor jointly own all data that may reside within the Contractor's hosting environment and/or equipment/media, which relate to this project. Contractor shall follow the requirement for ownership and destruction of documents and information that is set out in the *Research Development, Technology Transfer, and Data Management Guidelines for the Wyoming Department of Transportation*, Chapter 12, which is incorporated into this Agreement by this reference.

WYDOT CONTRACT LANGUAGE

Patent or Copyright Protection. Contractor recognizes that certain proprietary matters or techniques may be subject to patent, trademark, copyright, license, or other similar restrictions, and warrants that no work performed by the Contractor or its subcontractors will violate any such restriction.

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AGENCY:

Wyoming Department of Transportation

_____ _____

Keith R. Fulton, P.E. Date

Assistant Chief Engineer for Engineering and Planning

ATTORNEY GENERAL'S OFFICE

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Alysia Goldman, Assistant Attorney General Date

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Implementing Intellectual Property Management Strategies

Lessons from 2018 State Workshops

TRB Webinar:

Evolution of Intellectual Property and Research in the Transportation World

May 2019

Presenter: Jason Bittner, Applied Research Associates

Today's Presentation Provides Highlights and Challenges

I. IP in a State Setting
II. Implementation Workshops
III. What should agencies do?

IP influences all business areas

- ❑ Design
- ❑ Planning
- ❑ Research
- ❑ Public Affairs
- ❑ Legal
- ❑ Business Services
- ❑ Construction
- ❑ Safety

- Anywhere there is production of intellectual capital!

Defining IPM helps us understand the process

Realizing value through strategic and tactical options embedded in intellectual property rights.

Source:

NCHRP Report 799: Management Guide to Intellectual Property for State Departments of Transportation

What makes IP so special in transportation?

In 2008, an international scan of transportation research programs was completed.

IP was a featured measure of effectiveness for transportation research programs.

- Key to national economic growth
- Perceived lack of understanding about how public sector work

What are the benefits, risks, and processes necessary to implement more managed approaches in US practice?

IPM Should Be Important to a State DOT

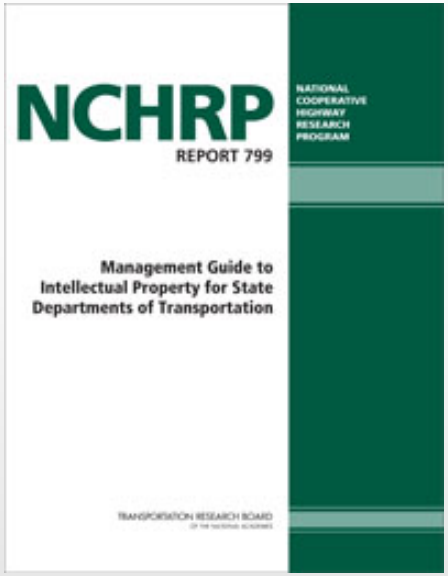
- Risk management.
- Projects and activities create intellectual property.
- Value-creation activities are often outsourced.
- Adhering to guidance for employees, contractors, and consultants on issues of IP management.
  - FHWA policy guidelines for state DOTs regarding IP (http://www.fhwa.dot.gov/programadmin/contracts/011106qa.cfm)
- Maximizing taxpayer value - the return on taxpayer dollars.

What is gained through IPM?

- Maintain access to creations
- Protect IP rights of others, including contractors and employees
- Shield state DOT contractors from IP infringement claims
- Identify contributions to the field by DOTs

IP Management Guide serves as a handbook

- General definitions and background details regarding intellectual property
- Details on what IP looks like in a State DOT
- Framework for intellectual property management
- Process/methodology for establishing the IP management framework



IP takes on many forms, but DOTs focus on three

- Patent
- Copyright
- Trademark

A Sampling of State DOT Intellectual Property

Research	Materials	Legal	Transit	Maintenance	Operations
• Methods of testing (*patent*) • Products or devices (*patent*) • Research reports (*copyright*) • Presentation Materials (copyright)	• Method of testing (*patent*) • Products or devices (*patent*)	• Slogans (*trademark*) • Databases (*copyright*) • Logo (*trademark*)	• Names of products and services (*trademark*) • Plans and Brochures	• Products or devices (*patent*) • Training material (*copyright*)	• Training materials (*copyright*)

Safety	Traffic	Motor Vehicles	Design	Construction
• Cartoon characters (*copyright*) • PSA (*copyright*) • Training materials (*copyright*)	• Databases (*copyright*) • Slogans (*trademark*) • Software titles (*trademark*)	• Software w/ algorithms (*patent*) • Databases (*copyright*)	• Architectural drawings (*copyright*)	• Engineering designs/plans (*copyright*) • Products or devices (*patent*) • Blueprints (*copyright*) • Method of testing (*patent*) • Training materials (*copyright*)

Implementing IP Management

11

Process considerations need to be addressed

- Preliminary scan of existing policies and practices
- Review contract language
- Identify past claims/issues/stories
- Consider institutional willingness to advance a policy

Barriers exist to developing IP Management

- Lack of dedicated funding to address IP institutionally – this also includes a lack of understanding on the costs of providing an IP management strategy versus the potential benefits for the agency
- General awareness of IP issues outside of the research office
- Lack of a champion to move IP Management issues higher on the priority list

Illinois

- 20 attendees from 11 business units and university partners
- Morning Session with small group activities
- Detailed action plans in the afternoon
- Interactive format

Key Observations from the Land of Lincoln

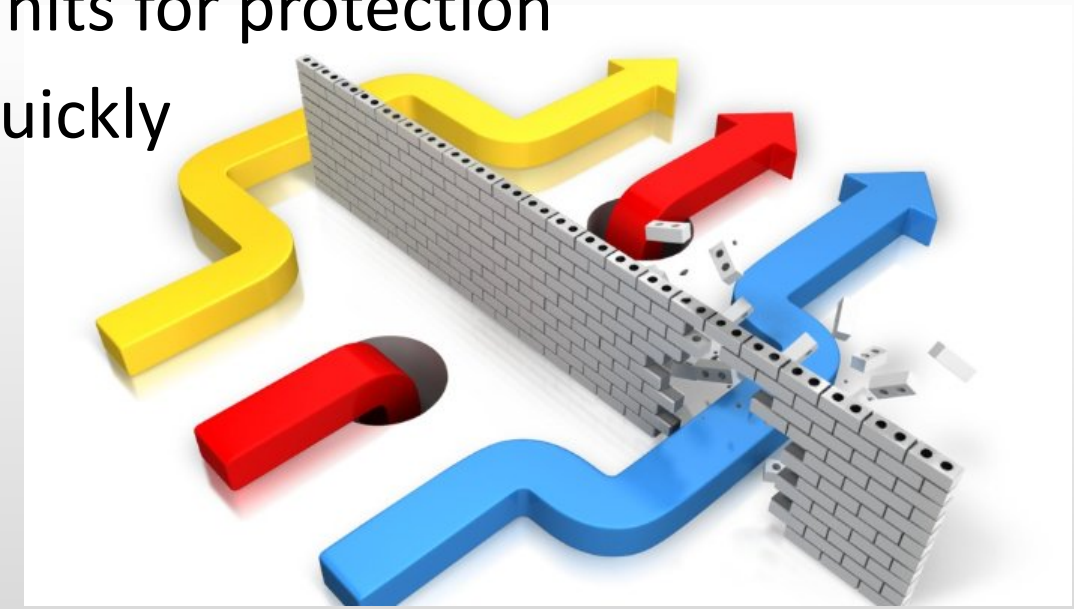
- Raising the awareness of intellectual property issues
  - Including module during employee orientation
- Identifying a process is essential for IDOT
- Current practices likely expose the agency to potential liabilities
- Contract language alone is not enough.
- There is inconsistency of application across the software practices of Illinois DOT
- Need to focus on cost and risk

Key Observations (2)

- Among the attendees, there is an interest in the use of checklists or other tools to approach IP issues
- Strong desire for consistency across the agency
- Leadership on the subject likely needs to come from the Office of Research, however the impacts are recognized agency wide and requires Executive Support.
- Contract language needs attention
- Collaboration with university partners

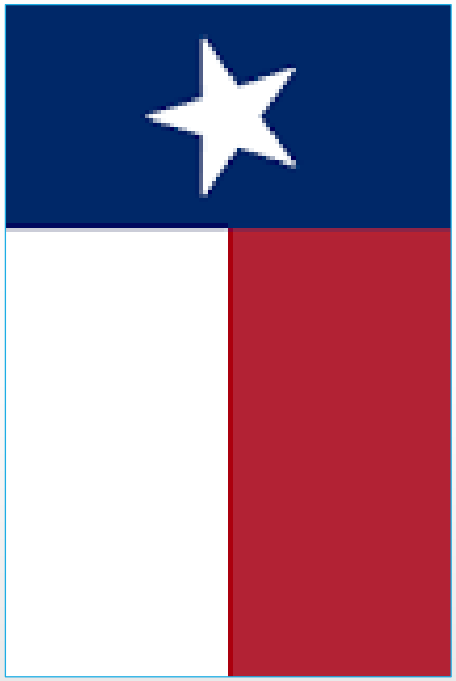
Recognition of barriers to making things happen

- Organizational Culture not “innovation driven”
- Secondary duties
- Reliance on other units for protection
- Pressure to move quickly



Texas

- Hosted by the TxDOT Research and Innovation Unit
- 9 attendees, covering contracts to research managers
- Interactive format – small conference room style; focus on contractual language changes



Key Observations from the Lone Star State

- Participants acknowledged a need to better understand the risks associated with IP conflicts and issues
- Strong desire for a more formalized process for IP Management
- Motivated by the idea of limiting exposure to the Agency

South Dakota

- 22 attendees
- Some DOT professionals are concerned about the potential liability associated with data requests
- Is there any value in copyright or patent if you want to get it out quickly?

Key Observations from the Mount Rushmore State

- Need to establish a working group and identify value propositions
- Identify the range and inventory of IP items that should be catalogued.
- Define improvements to the research process
- Consider outlining different IP types and who would need to be involved and engaged in each.
- Consider a multi-state scan to determine how other states are managing IP issues (especially with respect to publication and dissemination for research activities)

More Lessons from Pierre

- Lack of statewide policy is a problem
- Lack of dedicated funding to address IP institutionally – this also includes a lack of understanding on the costs of providing an IP management strategy versus the potential benefits for the agency
- General awareness of IP issues within operational business units
- History and culture of providing open access to DOT and State activities and records
- Consistent internal controls among many contracts and contracted services

Things I've learned along the way and other stories that I tell myself

- Implementation is hard
- Coordinating schedules is immensely challenging
- This is not a high priority item in the overall context
- Unclear what the business case is
- Maintaining enthusiasm is difficult
- University partners are not as engaged as I initially thought

What steps should we follow?

Read the Guide.

IPM needs to start early

- Establish a team for looking at IP issues in your state
  - Include research customers AND performing organizations
- Find a champion
- Understand what tools and documents should be protected
  - Look closely at Management Systems and legacy reports
  - Consider using software escrow accounts
- Work collaboratively with vendors and consultants
- Monitor the results

There is a need for continuing this discussion

- Research the “value proposition” for IPM
  - Understand your exposure
- Consider a Peer Exchange on this subject
- Engage with the broader university community
- Do not forget procurement personnel

Contact Information

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Today's Speakers

- Tim McDowell, *Wyoming Department of Transportation*, tim.mcdowell@wyo.gov
- Enid White, *Wyoming Department of Transportation*, enid.white1@wyo.gov
- Jason Bittner, *Applied Research Associates*, jbittner@ara.com

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- Getting involved is free!
- Join a Standing Committee (http://bit.ly/2jYRrF6)
- Become a Friend of a Committee (http://bit.ly/TRBcommittees)
  - Networking opportunities
  - May provide a path to become a Standing Committee member
- ***Sponsoring Committee: ABG10***
- For more information: www.mytrb.org
  - Create your account
  - Update your profile

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- Must register as an individual to receive credits (no group credits)
- Credits will be reported two to three business days after the webinar
- You will be able to retrieve your certificate from RCEP within one week of the webinar

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2020
TRB

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- Recognize, honor, and celebrate the TRB community; and
- Highlight 100 years of accomplishments.

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