ABC Project Database

April 29, 2016

Jawad Gull, PhD
Bridge Designer
HDR Inc.
Email: jawad.gull@hdrinc.com
Phone: 305-728-7458

ABC Project Database

ABC-UTC completed research project

Principal Investigator: David Garber

Co-Principal Investigator: Jawad Gull

Research Assistants: Mohammadreza Shafieifar

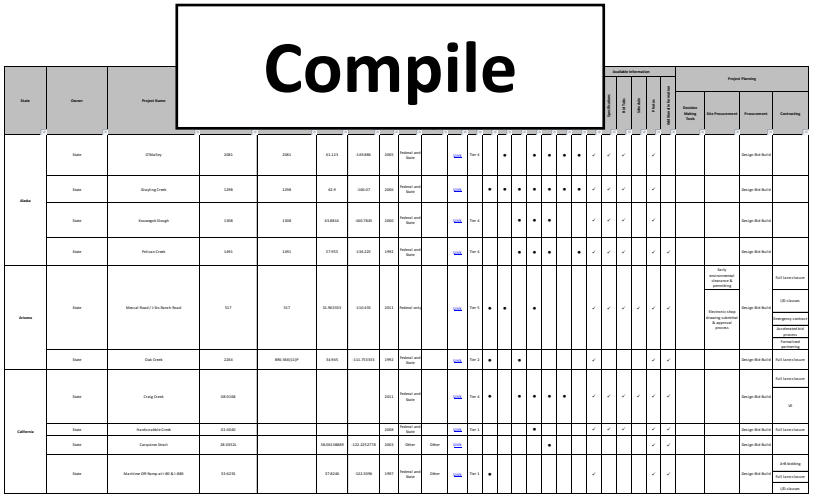
Nazanin Rezaei

Outline

- Objective
- Starting Point
- ABC Project Database

Objective

To compile information on existing accelerated bridge technologies and present the information in a manner useful to designers



ABC Project Database

- Starting point was FHWA National ABC Project Exchange Database

Benjamin Beerman, PE
Senior Bridge Engineer
Federal Highway Administration

Mary Lou Ralls, PE
Principal
Ralls Newman, LLC

Starting Point

FHWA National ABC Project Exchange Database

State	Owner	Project Name	Bridge ID		Coordinates		Year ABC Built	Funding	Incentive Program Support	LINK	Impact Category	Primary Driver(s)							Available Information						Project Planning			
			State No.	NBI No.	Lat	Long						Traffic Impacts	Work Zone Safety	Environment	On-site Construction Time	Site Constructability	Material Quality	Life Cycle Costs	Contract Plans	Specifications	Bid Tabs	Schedule	Photos	Additional Information	Decision Making Tools	Site Procurement	Procurement	Contracting
Alaska	State	O'Malley	2081	2081	61.123	-149.886	2005	Federal and State		Link	Tier 4		●		●	●	●	●	✓	✓	✓		✓				Design-Bid-Build	
	State	Grayling Creek	1298	1298	62.9	-160.07	2006	Federal and State		Link		●	●	●	●	●	●	●	✓	✓	✓		✓				Design-Bid-Build	
	State	Kouwegok Slough	1308	1308	63.8814	-160.7845	2000	Federal and State		Link	Tier 4			●	●	●			✓	✓	✓		✓				Design-Bid-Build	
	State	Pelican Creek						Federal and															✓	✓			Design-Bid-Build	
Arizona	State	Mescal Road / J-Six Ranch Road																				✓	✓	✓		Early environmental clearance & permitting Electronic shop drawing submittal & approval process	Design-Bid-Build	Full lane closure I/D clauses Emergency contract Accelerated bid process Formalized partnering
	State	Oak Creek	2264	BRS-366(11)P	34.945	-111.753333	1992	Federal and State		Link	Tier 2	●		●					✓				✓	✓			Design-Bid-Build	Full lane closure
California	State	Craig Creek	08-0168				2011	Federal and State		Link	Tier 4	●		●	●	●	●		✓	✓	✓	✓	✓	✓			Design-Bid-Build	Full lane closure VE
	State	Hardscrabble Creek	01-0040				2008	Federal and State		Link	Tier 1				●				✓	✓	✓		✓	✓			Design-Bid-Build	Full lane closure
	State	Carquinez Strait	28-0352L		38.06138889	-122.2252778	2003	Other	Other	Link						●							✓	✓			Design-Bid-Build	
	State	Maritime Off-Ramp at I-80 & I-880	33-6235		37.8246	-122.3096	1997	Federal and State	Other	Link	Tier 1	●							✓				✓	✓			Design-Bid-Build	A+B bidding Full lane closure I/D clauses

100 ABC Projects

ABC Database

- Started from FHWA National ABC Project Exchange Database
- Created online database to host the information
- Created website and user interface to:
  - Navigate database
  - Present database entries
  - Allow for user input
- Current website: http://utcdb.fiu.edu

How to access the database through ABC-UTC website:

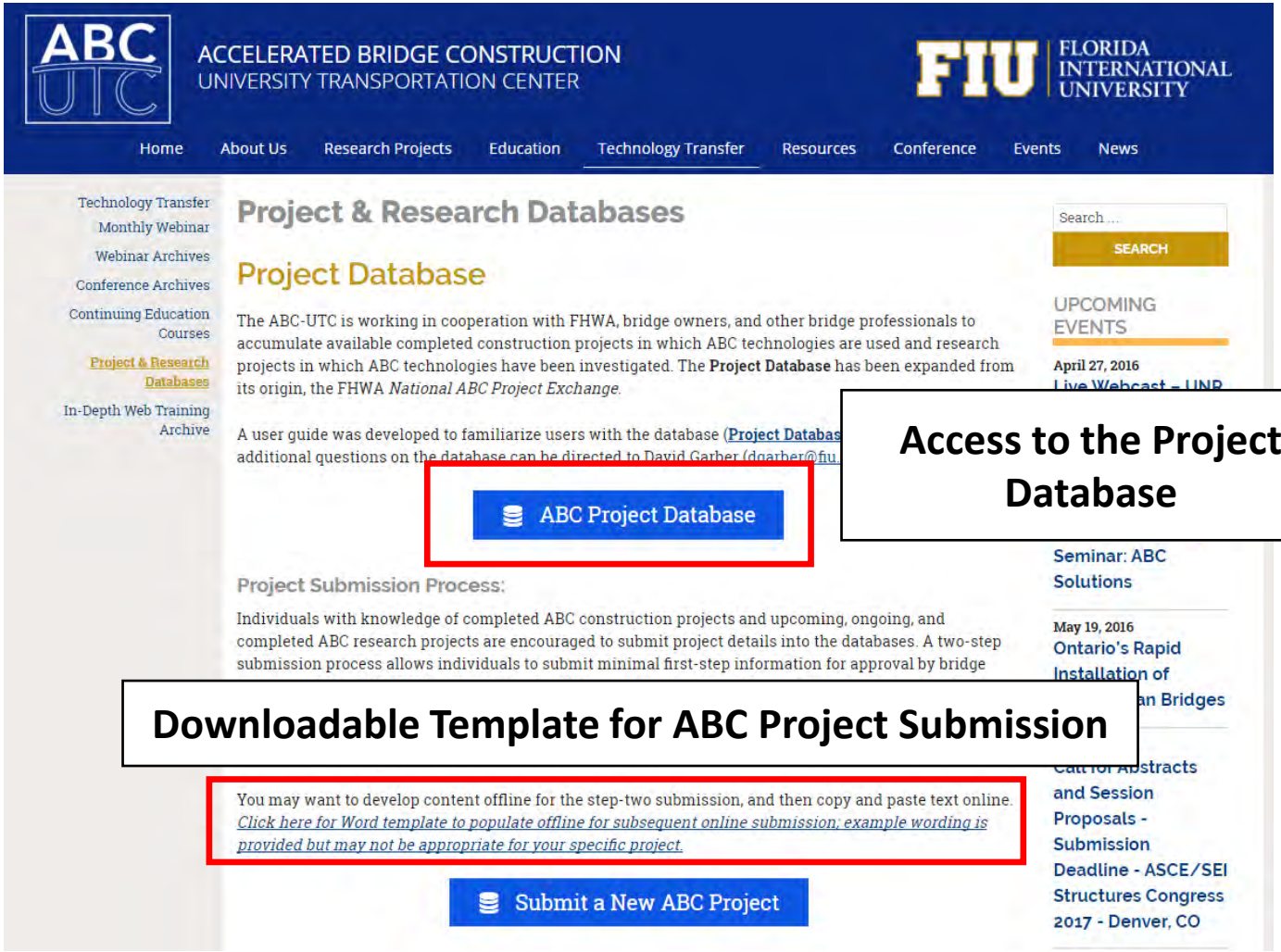
http://abc-utc.fiu.edu/

Directly at:

http://utcdb.fiu.edu/

How to access the database through ABC website:

http://abc-utc.fiu.edu/



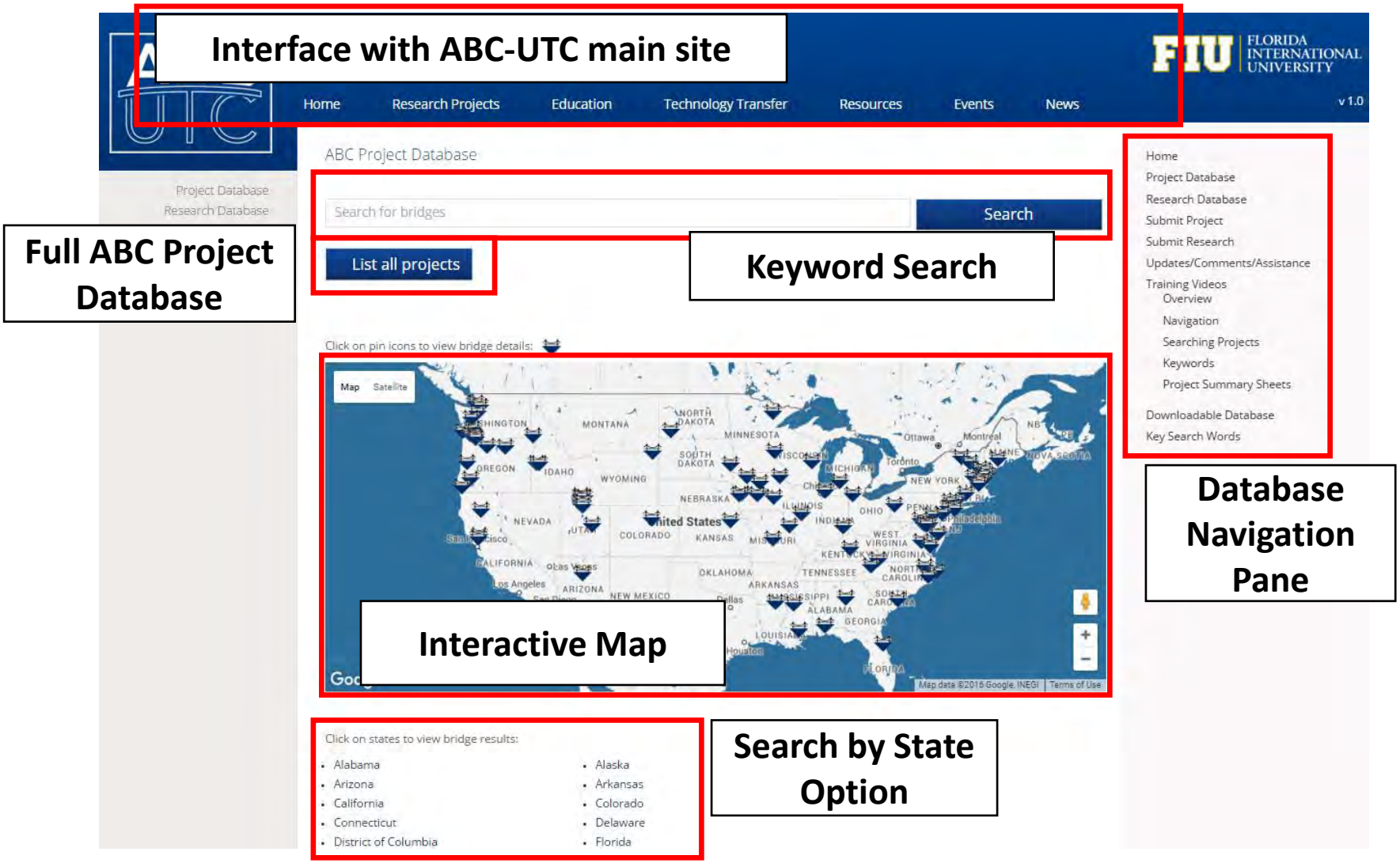
Access to the Project Database

Downloadable Template for ABC Project Submission

Directly at:

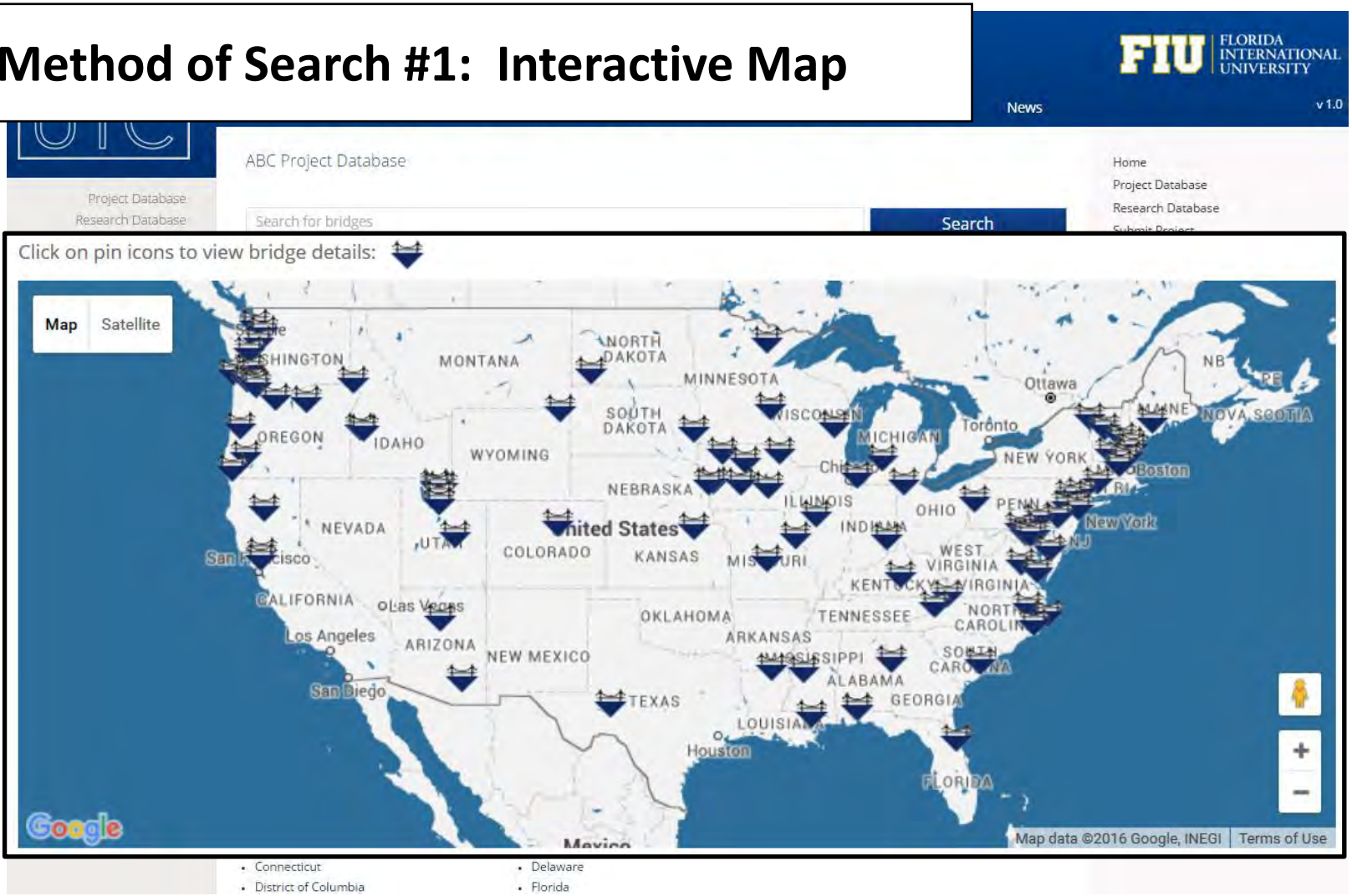
http://utcdb.fiu.edu/

ABC Project Database: http://utcdb.fiu.edu/



ABC Project Database: http://utcdb.fiu.edu/

Method of Search #1: Interactive Map



ABC Project Database: http://utcdb.fiu.edu/

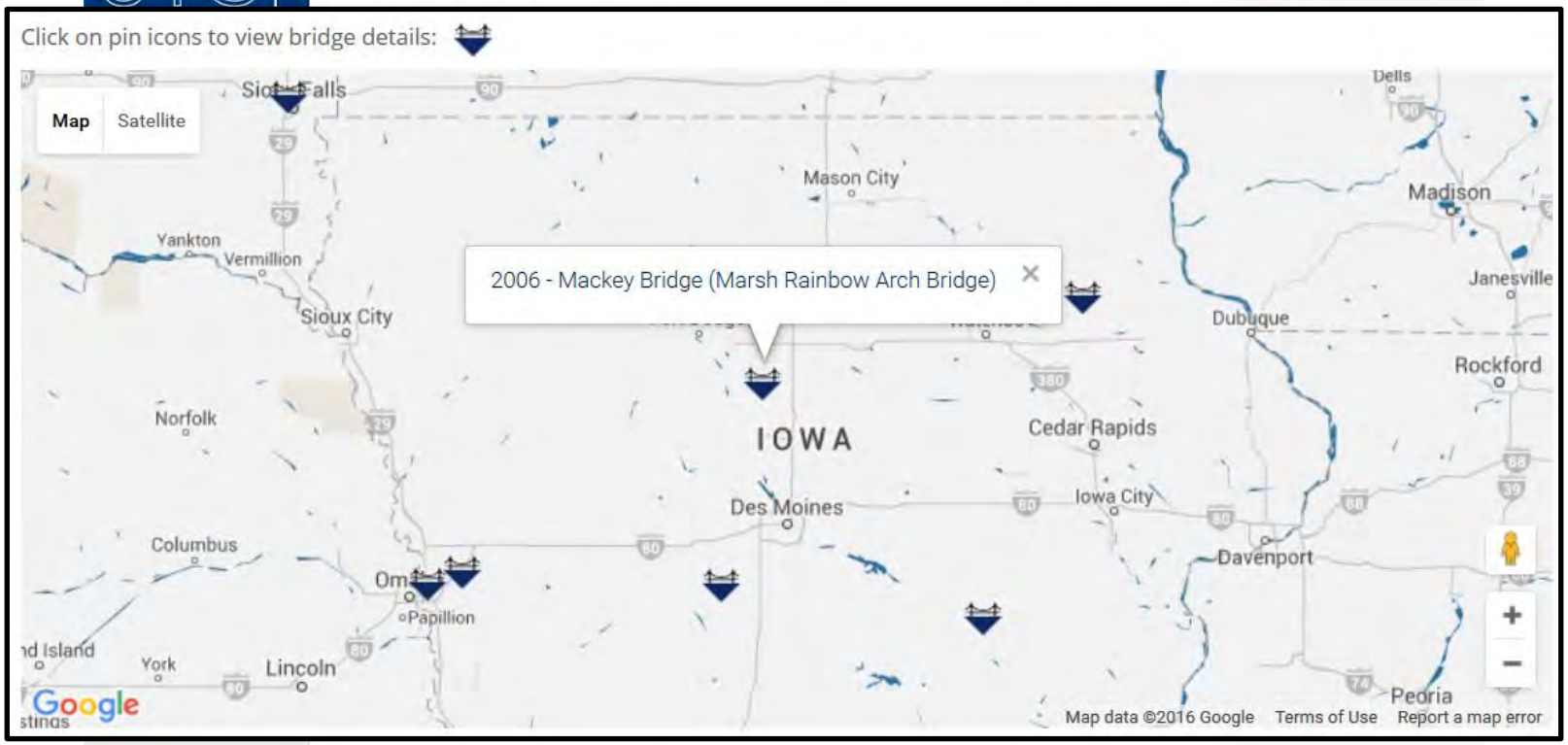
Method of Search #1: Interactive Map

Click on states to view bridge results:

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii

ABC Project Database: http://utcdb.fiu.edu/

Method of Search #1: Interactive Map

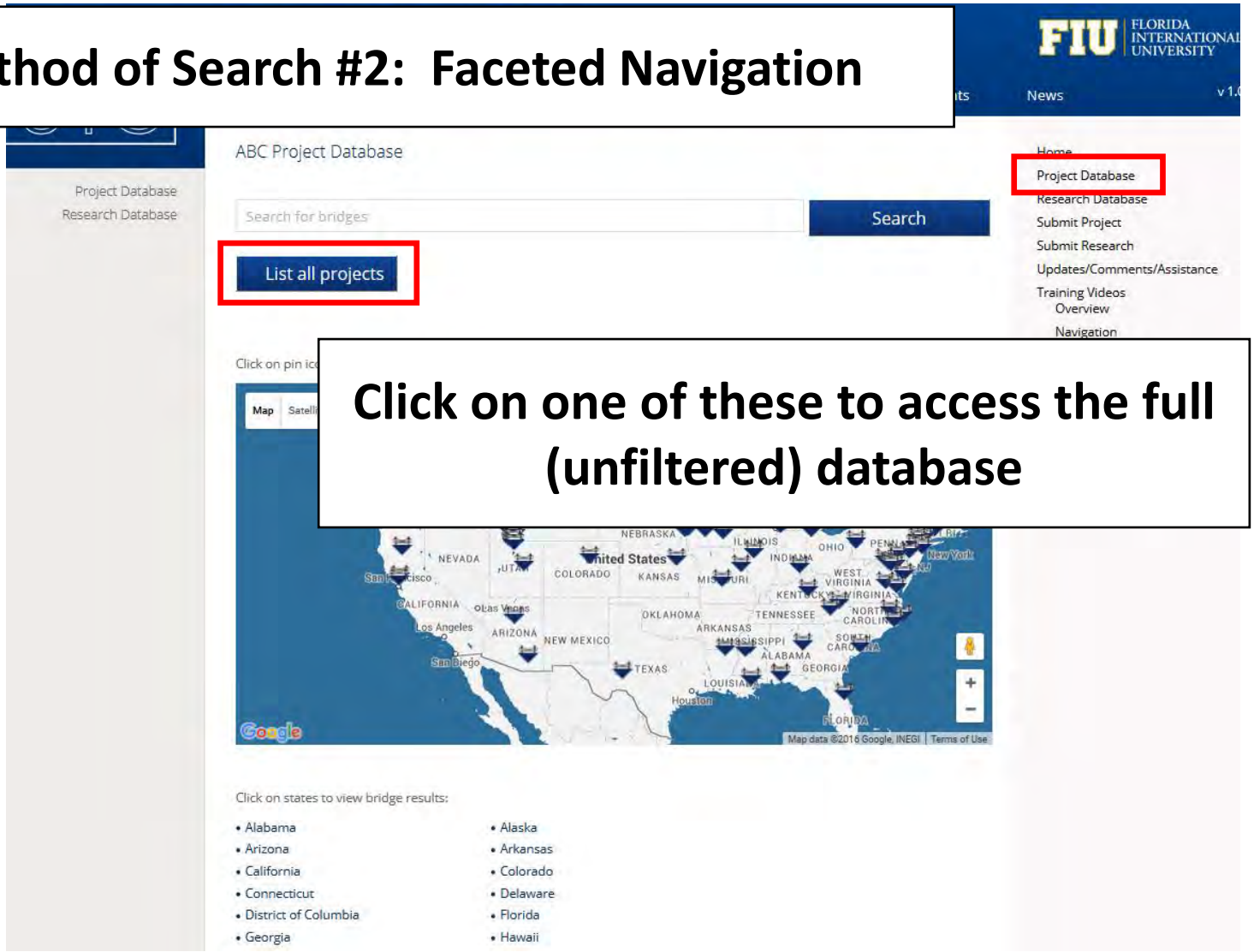


Click on states to view bridge results:

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii

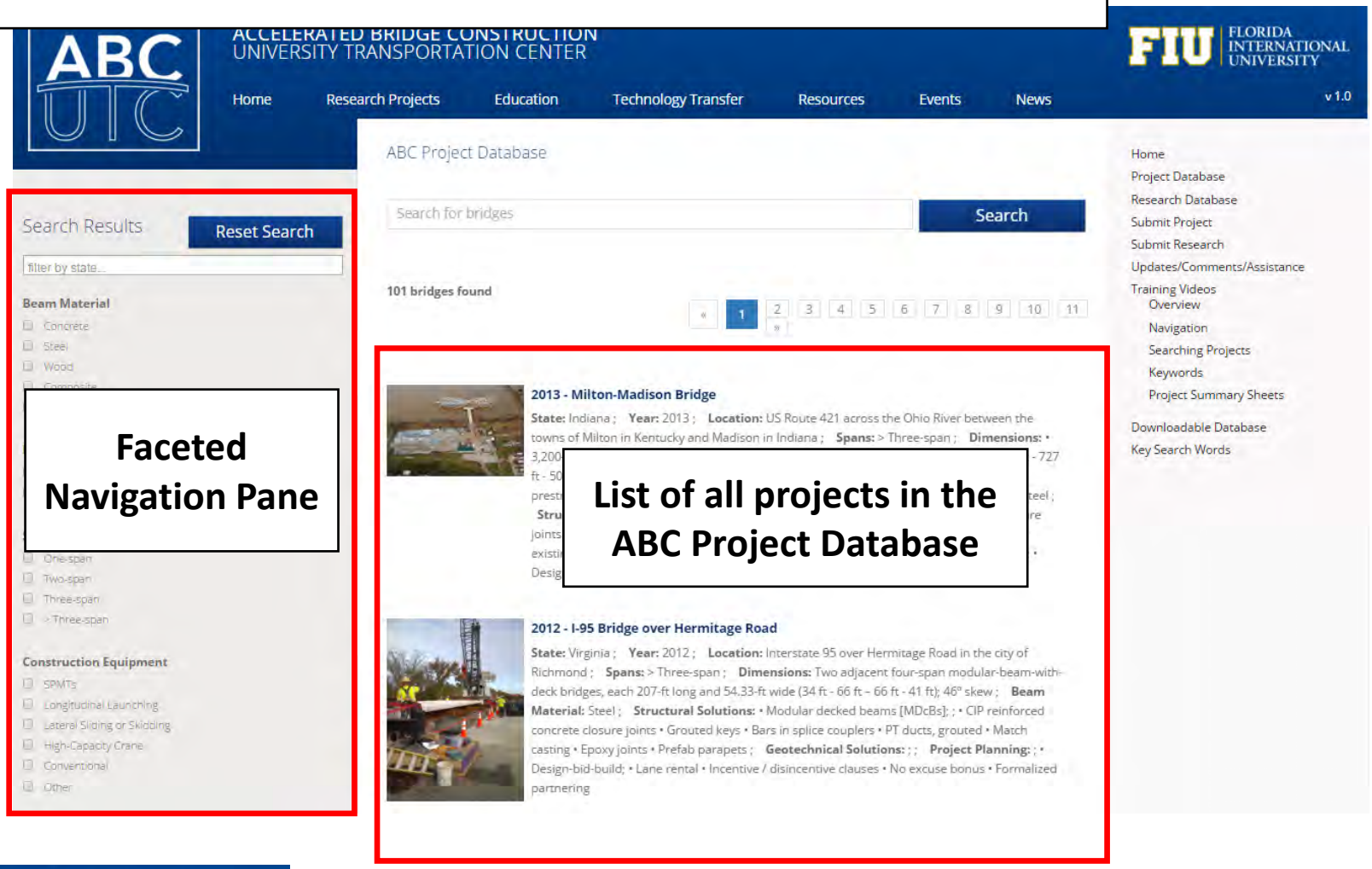
ABC Project Database: http://utcdb.fiu.edu/

Method of Search #2: Faceted Navigation



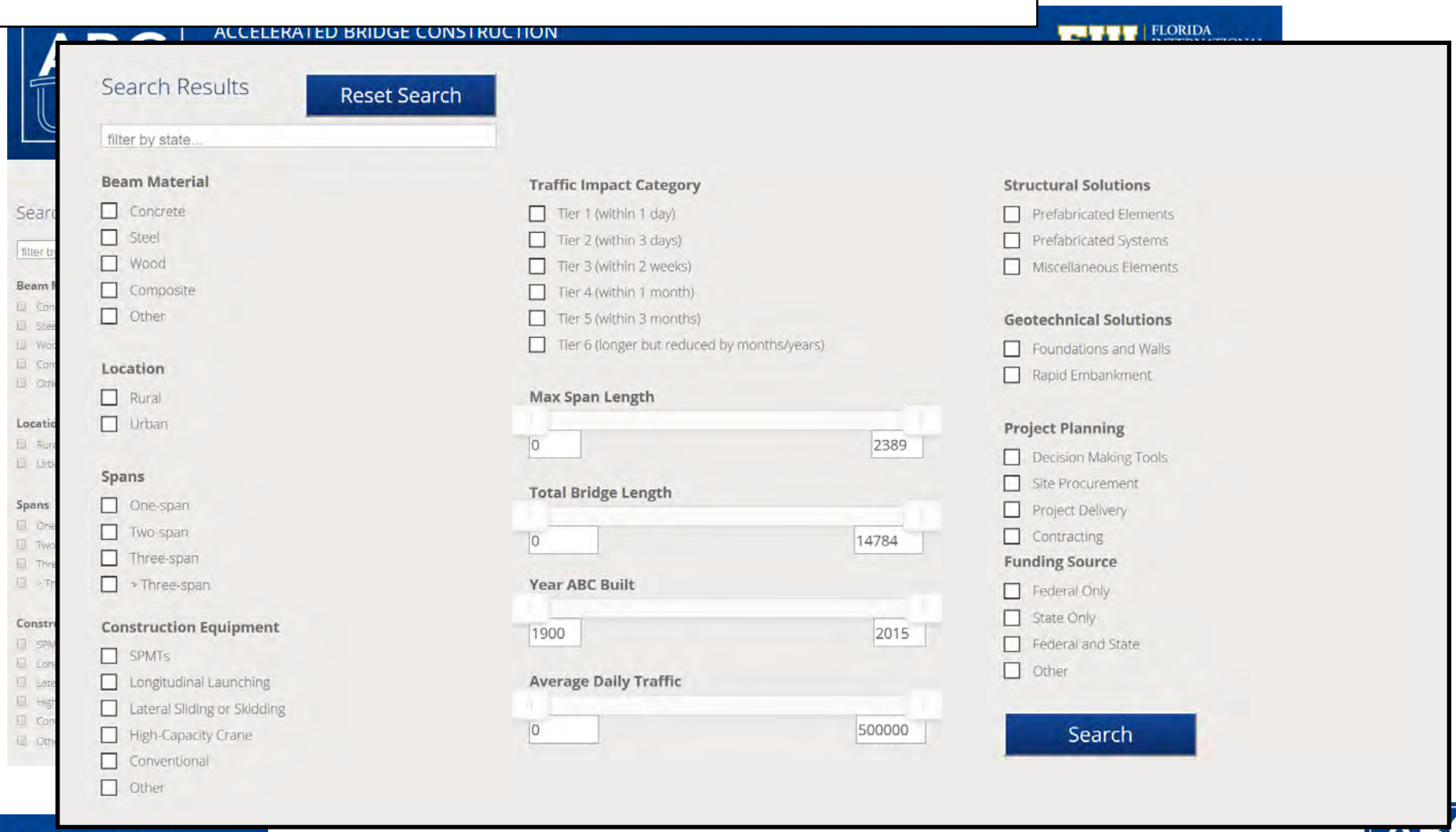
ABC Project Database: http://utcdb.fiu.edu/search

Method of Search #2: Faceted Navigation



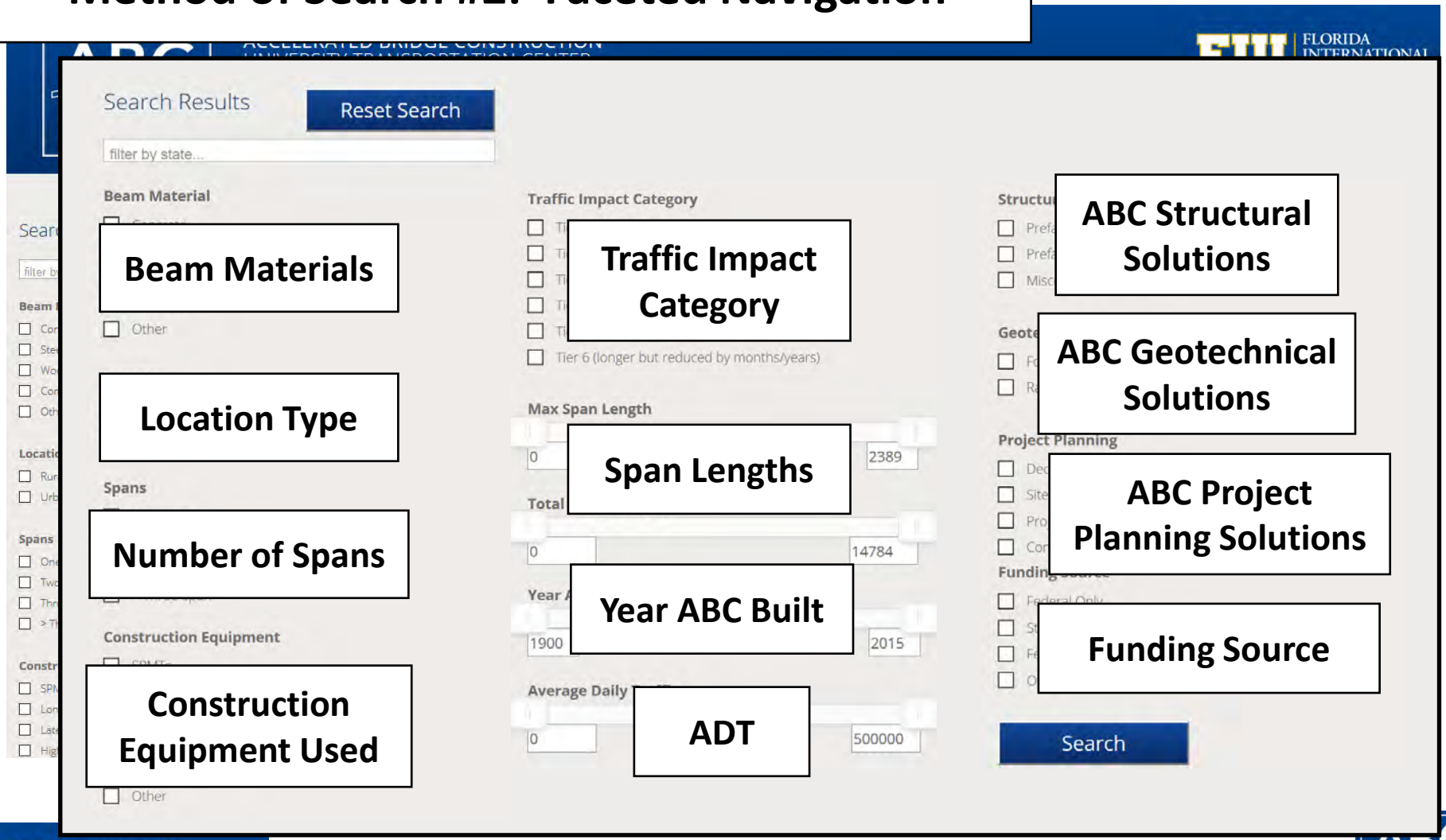
ABC Project Database: http://utcdb.fiu.edu/search

Method of Search #2: Faceted Navigation



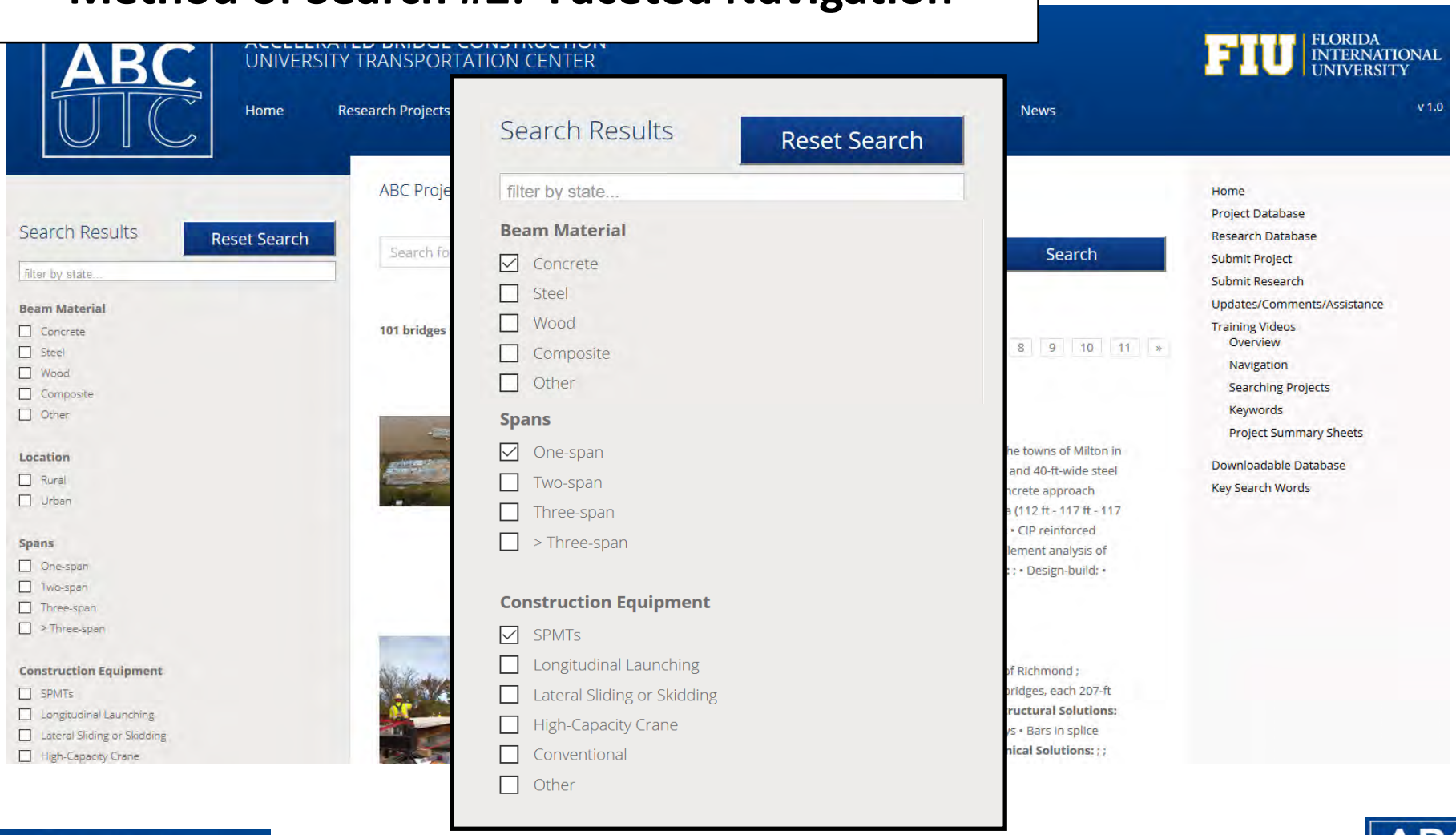
ABC Project Database: http://utcdb.fiu.edu/search

Method of Search #2: Faceted Navigation



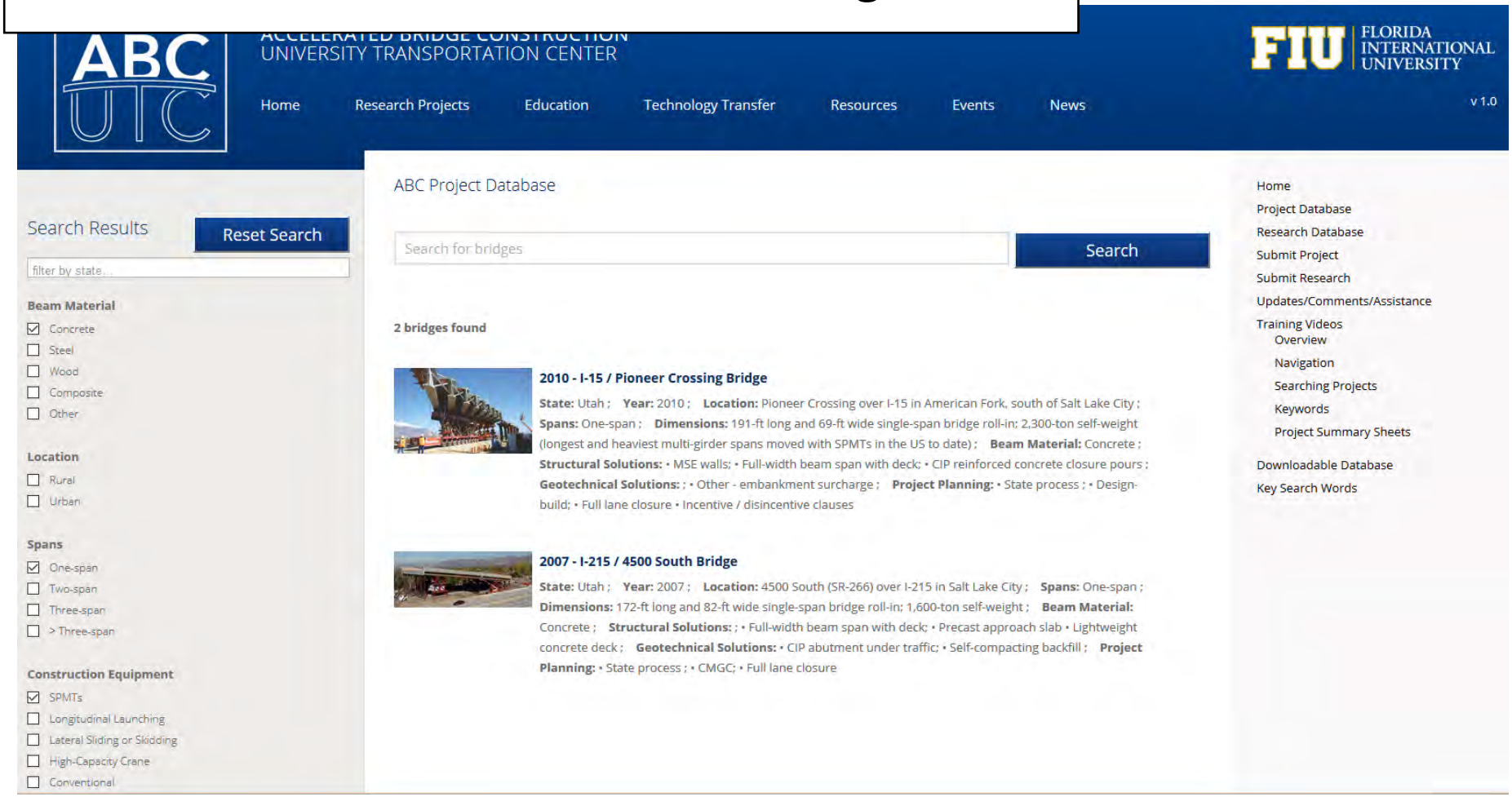
ABC Project Database: http://utcdb.fiu.edu/search

Method of Search #2: Faceted Navigation



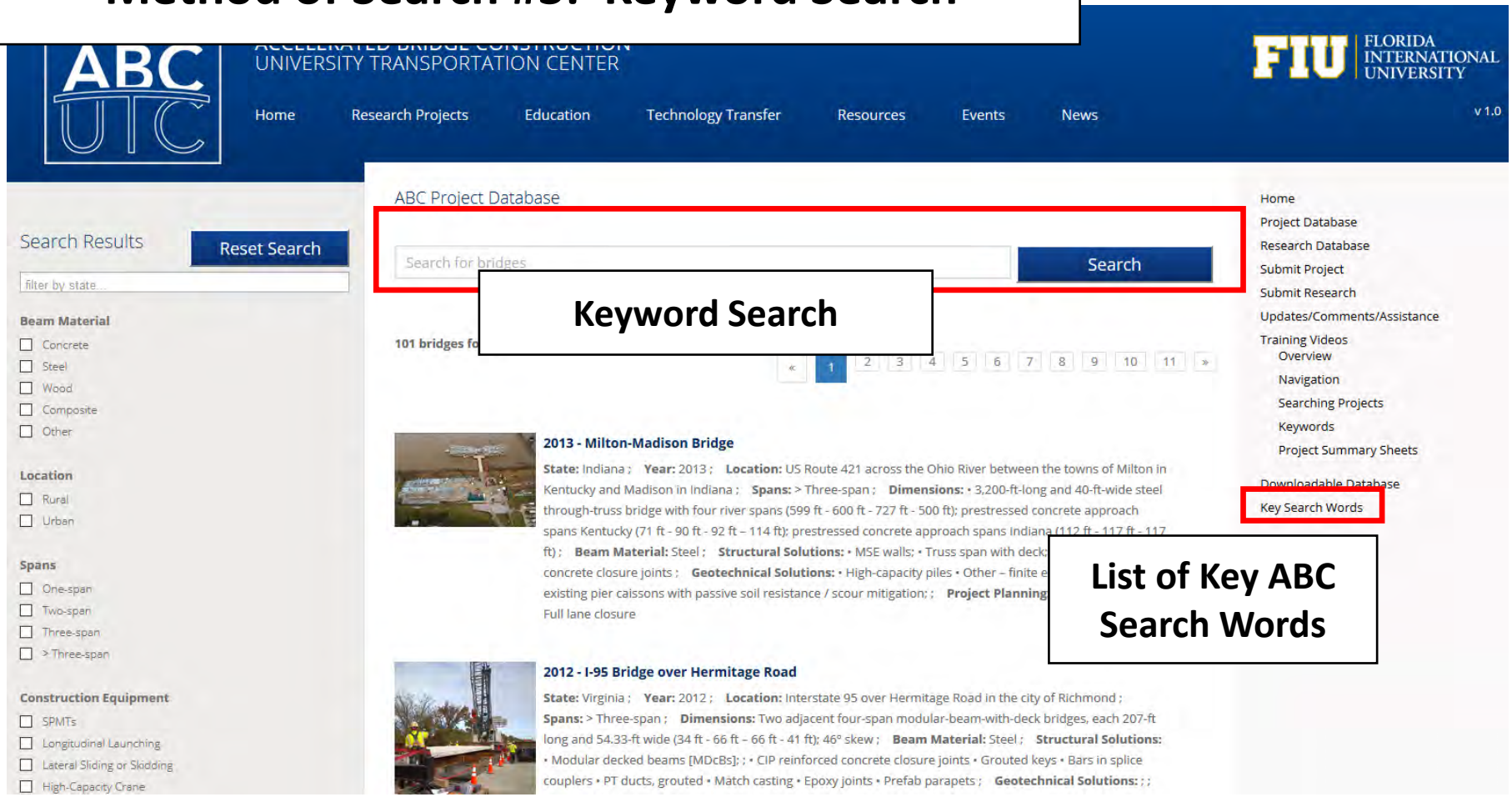
ABC Project Database: http://utcdb.fiu.edu/search

Method of Search #2: Faceted Navigation



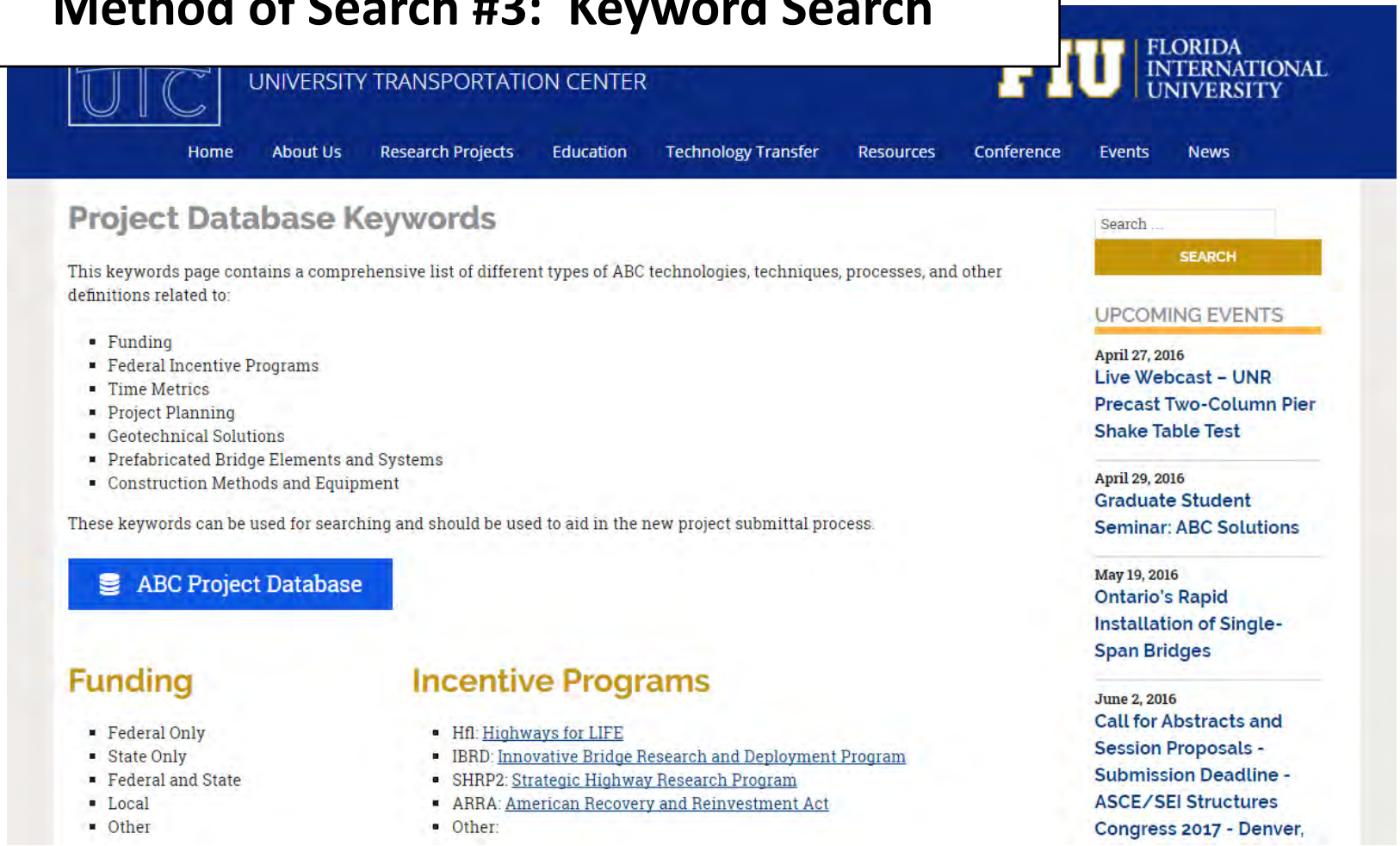
ABC Project Database: http://utcdb.fiu.edu/search

Method of Search #3: Keyword Search



ABC Project Database: http://utcdb.fiu.edu/keywords

Method of Search #3: Keyword Search



ABC Project Database: http://utcdb.fiu.edu/keywords

Method of Search #3: Keyword Search

Prefabricated Elements:

Deck Elements

- Partial-Depth Precast Deck Panels
- Full-Depth Precast Deck w/PT
- Full-Depth Precast Deck w/o PT
- Exodermic Deck
- Steel Grid (open))
- Steel Grid (concrete filled)
- Aluminum
- Orthotropic Deck
- UHPC Waffle Deck
- Other

Full-Depth Precast w/o PT

Beam Elements

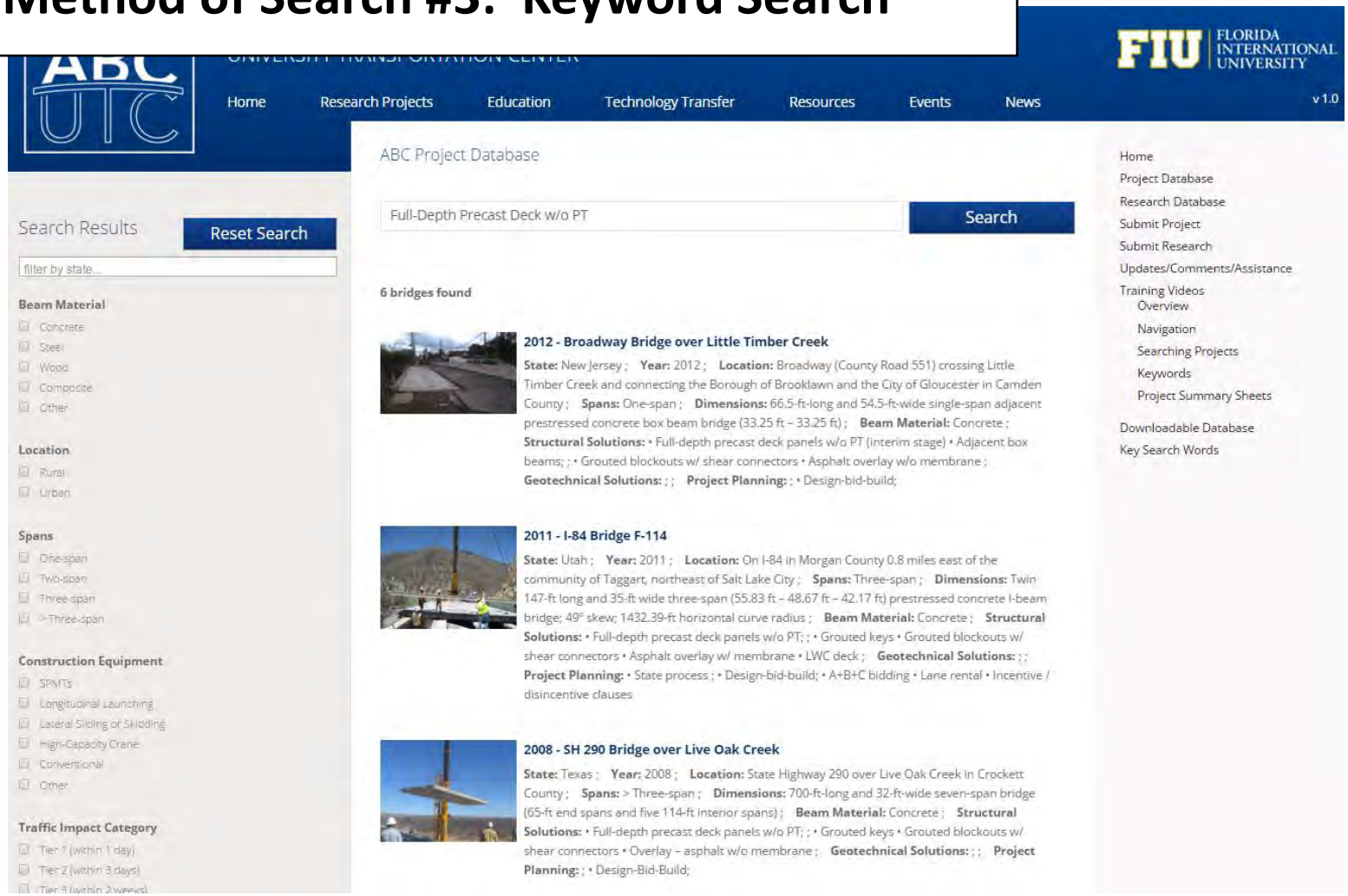
- Adjacent Deck Bulb-T Beams
- nt Tee Beams
- nt Inverted-T Beams
- Adjacent Box Beams
- Adjacent Slab Beams
- Adjacent Slab Beams w/ Backwalls
- Modular Decked Beams (MDcBs)
- PT Concrete Through-Girder
- Other

Full-Width

- Truss Span Without Deck
- Arch Span Without Deck
- Precast Segmental
- Steel Segmental
- Other Full-Width Beam w/o Deck

ABC Project Database: http://utcdb.fiu.edu/search

Method of Search #3: Keyword Search



ABC Project Database: http://utcdb.fiu.edu/bridgeitem?id=206

Project Summary Sheets

ACCELERATED BRIDGE CONSTRUCTION
UNIVERSITY TRANSPORTATION CENTER

FIU FLORIDA INTERNATIONAL UNIVERSITY

Home | Research Projects | Education | Technology Transfer | Resources | Events | News | v 1.0

Project Database
Research Database

Bridge Summary Sheet

2011 - Salem Street Bridge Eastbound (93Fast14)

Year ABC Built: 2011
State: Massachusetts
Owner: State
Location: Urban
Spans: Three-span
Beam Material: Concrete
Max Span Length: 78.00
Total Bridge Length: 160.00
Construction Equipment: Other
State ID #: M-12-027-3B6DOTNBI
NBI #: BRI-093(534) & STP-093-1(524)
Coordinates: **Latitude:** 42.418873, **Longitude:** -71.104507

Bridge Description

Project Location: Interstate 93 Southbound over Salem Street / Route 60 Eastbound in the city of Medford in Middlesex County, approximately five miles north of Boston

Mobility Impact Time: ABC: One weekend closure per superstructure (55 hrs); 10 weeks for all 14 bridges ; Conventional: 4 years for all 14 bridges

Impact Category: Tier 2 (within 3 days)

Primary Drivers: • Reduced traffic impacts • Reduced onsite construction time • Improved site constructability

Home
Project Database
Research Database
Submit Project
Submit Research
Updates/Comments/Assistance
Training Videos
Overview
Navigation
Searching Projects
Keywords
Project Summary Sheets
Downloadable Database
Key Search Words

ABC Project Database: http://utcdb.fiu.edu/bridgeitem?id=206

Project Summary Sheets

million = 13.40% higher than the
vings in delay-related user costs.

Funding Source: Federal and State

Incentive Program: Highways for Life: $1 million (for 93Fast14)

Additional Information

Other Notes: (none)

Downloadable Resources

Contract Plans:
View M-12-027 BRIDGE PLANS I-93 -SalemEB
View M-12-027 HWY-BRIDGE PLANS I-93_SalemEB

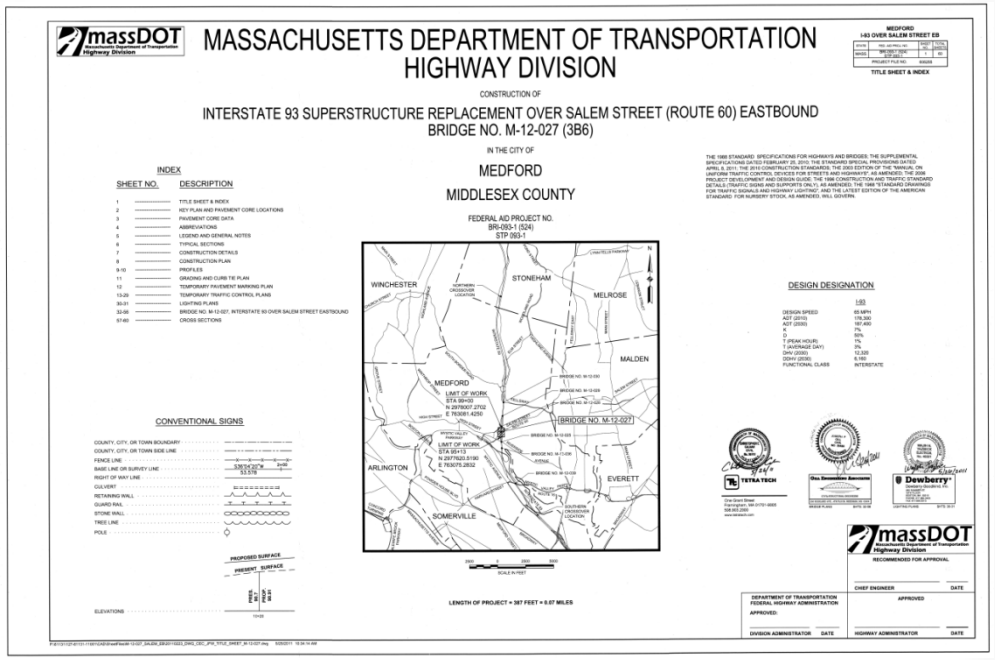
Specifications:
View Inc-Disinc_SpProv93FF
View Sp Prov ITEM 992-1

Bid Tabs:
View Bid_Tabs_for_Fast Fourteen

Construction Schedule:
View 2010_10_11_Const Schedule-EngineersCME

Other Related Information:
View MassDOT ABC Decision Chart_2009

http://youtu.be/dx9egqLURTE



Downloadable Resources

ABC Project Database: http://utcdb.fiu.edu/bridgeitem?id=206

Project Summary Sheets

Contacts

Owner: Thomas P. Donald, P.E.
Director of Bridge Project Management
Massachusetts Department of Transportation
thomas.donald@state.ma.us
857-368-9311

Designer: Joseph P. Gill, P.E.,
Gill Engineering
jgill@gill-eng.com
781-355-7100

Fabricators: ,

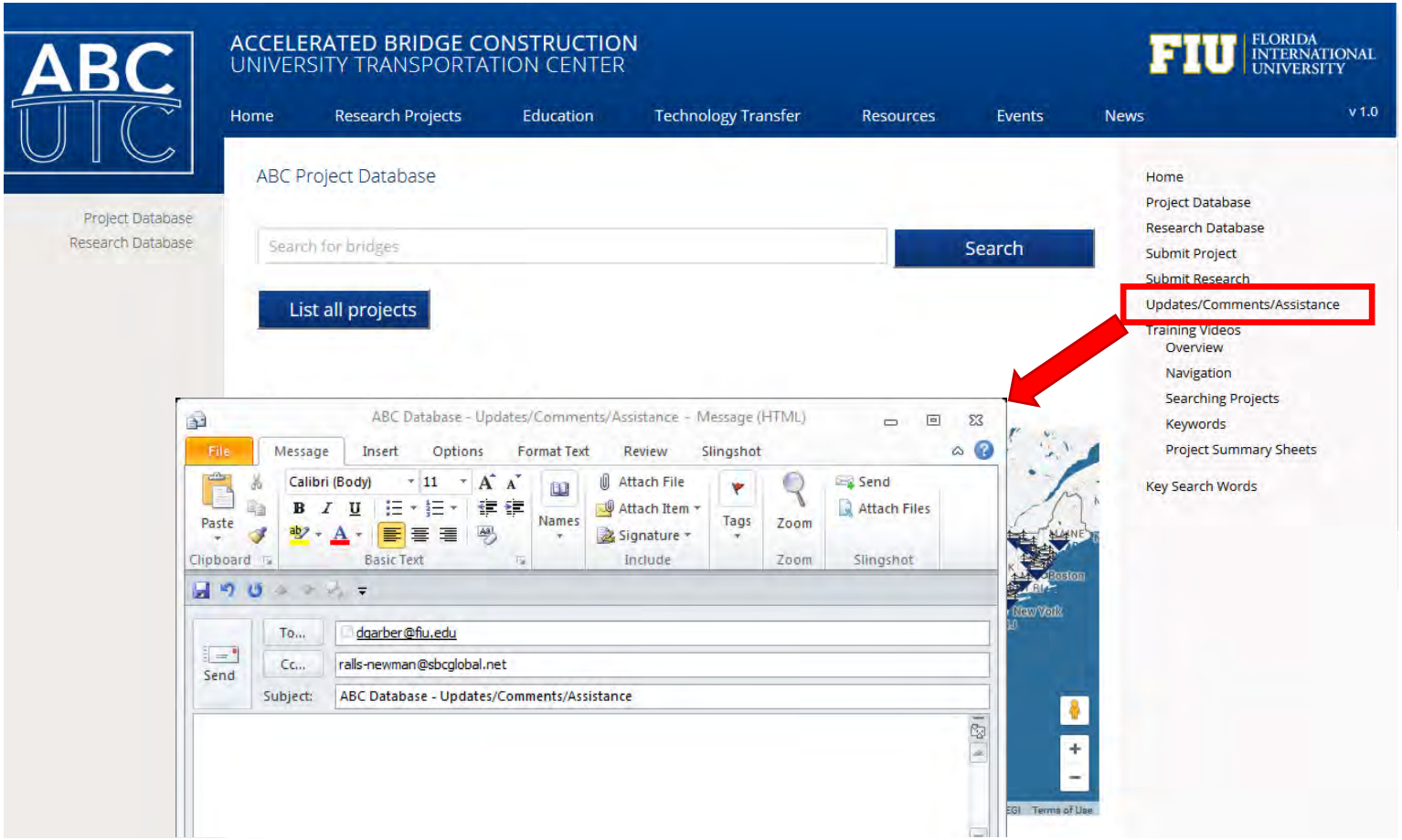
Suppliers: ,

Submitter: Mary Lou Ralls, P.E.,
Principal
Ralls Newman, LLC
ralls-newman@sbcglobal.net
512-422-9080

Contractor: Kevin B. Lampron, Jr.,
J.F. White Contracting Company
klampron@jfwhite.com
617-558-0425

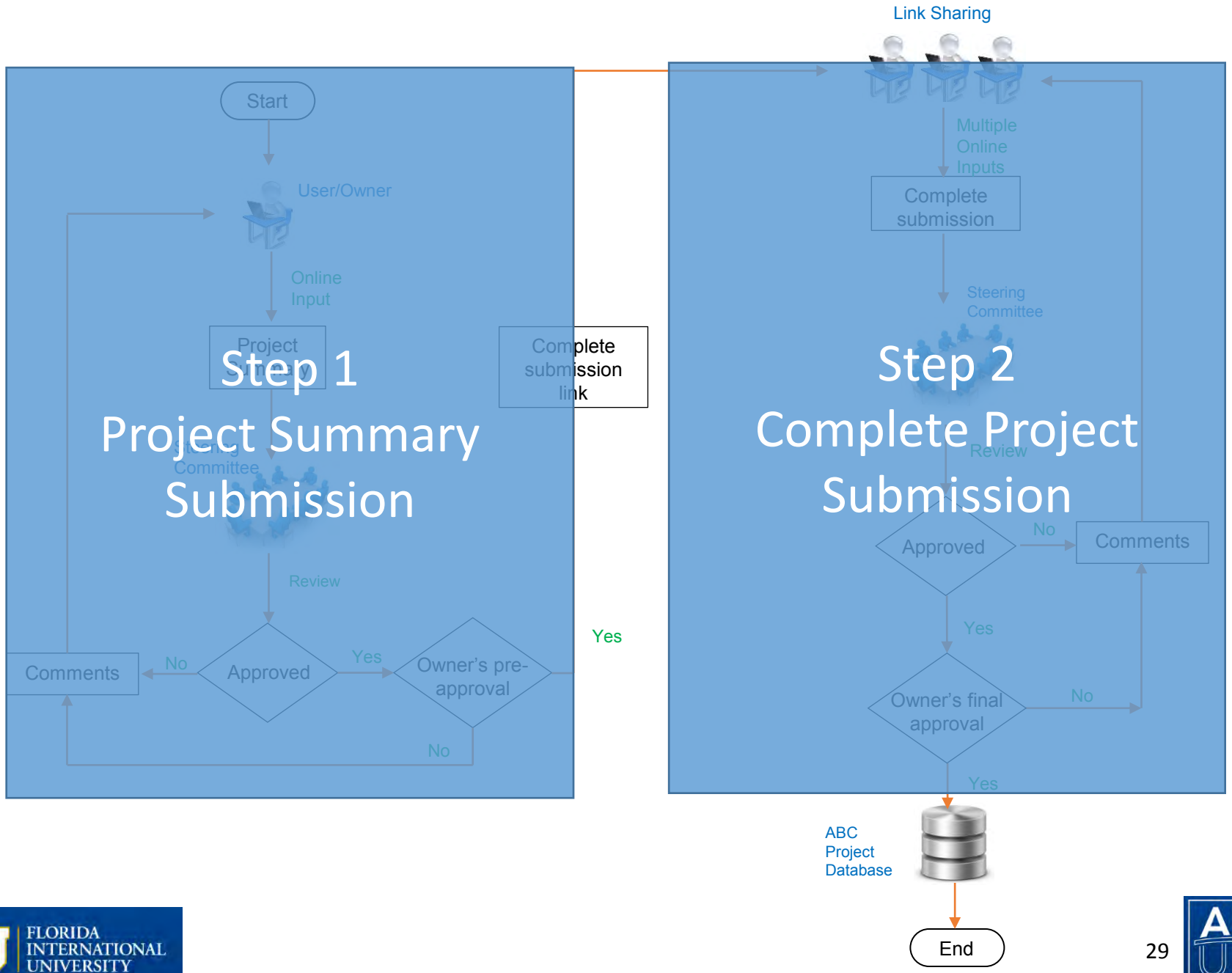
Subcontractors: ,

Contact Us

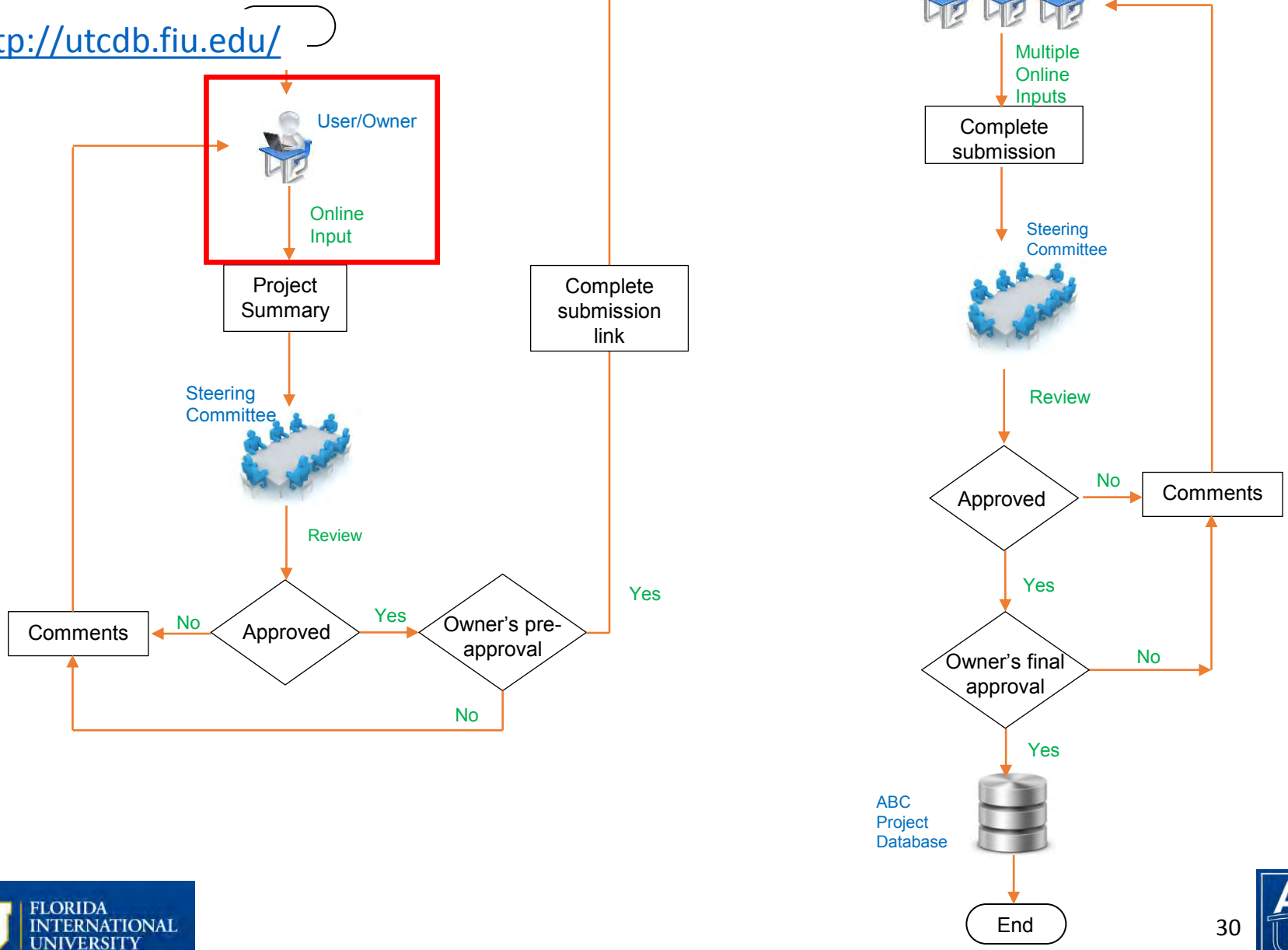

ACCELERATED BRIDGE CONSTRUCTION
UNIVERSITY TRANSPORTATION CENTER
FIU FLORIDA INTERNATIONAL UNIVERSITY
Home
Research Projects
Education
Technology Transfer
Resources
Events
News
v 1.0
ABC Project Database
Search for bridges
Search
List all projects
Project Database
Research Database
Home
Project Database
Research Database
Submit Project
Submit Research
Updates/Comments/Assistance
Training Videos
Overview
Navigation
Searching Projects
Keywords
Project Summary Sheets
Key Search Words
ABC Database - Updates/Comments/Assistance - Message (HTML)
File
Message
Insert
Options
Format Text
Review
Slingshot
Paste
Clipboard
Calibri (Body)
11
Basic Text
Names
Attach File
Attach Item
Signature
Include
Tags
Zoom
Send
Attach Files
Slingshot
Send
To...
dgarber@fiu.edu
Cc...
ralls-newman@sbcglobal.net
Subject:
ABC Database - Updates/Comments/Assistance

Project Submission

- Website also provides means for a project submittal


Link Sharing
Start
User/Owner
Online Input
Project Summary
Steering Committee
Review
Comments
No
Approved
Yes
Owner's pre-approval
No
Yes
Complete submission link
Step 1
Project Summary Submission
Multiple Online Inputs
Complete submission
Steering Committee
Review
Approved
No
Comments
Yes
Owner's final approval
No
Yes
ABC Project Database
End
Step 2
Complete Project Submission

http://utcdb.fiu.edu/



Link Sharing

http://utcdb

- Home
- Project Database
- Research Database
- Submit Project
- Subm earch
- Upda mments/Assistanc
- Traini deos
  - Ov w
  - Na on
  - Se
  - Keywords
  - Project Summary Sheets
- Key Search Words

Stage 1 Submission

Recommend a Project

Complete the Following Steps: 1

The information that will be required for full submission can be found in the below MS Word Template. The majority of this information will be gathered in the second stage of the submission process, but this Template can be used to aid in the submission process.

MS Word Template for Submission

Submitters Information:

First Name | Last Name

Title

Position: | Organization

Email: | Phone

Your Relationship to ABC Project:

e.g. Bridge Owner, Bridge Designer, etc.

Project Information

Project Name

Year ABC Completed: 2015 | County: | State: Alabama | Country: USA

State ID # | NBI #

Location Description:

e.g. road designation, name of river crossing, near by tow or city, etc.

Coordinates: Latitude | Longitude

Brief Project Summary:

In 500 words or less, describe why this project should be added to the database

I agree that the information provided above is accurate to the best of my knowledge. By submitting this information I give the ABC-UTC the rights to publish the data online and in the ABC-UTC database. The ABC-UTC reserves the right to alter information prior to publication.

☐ Agree

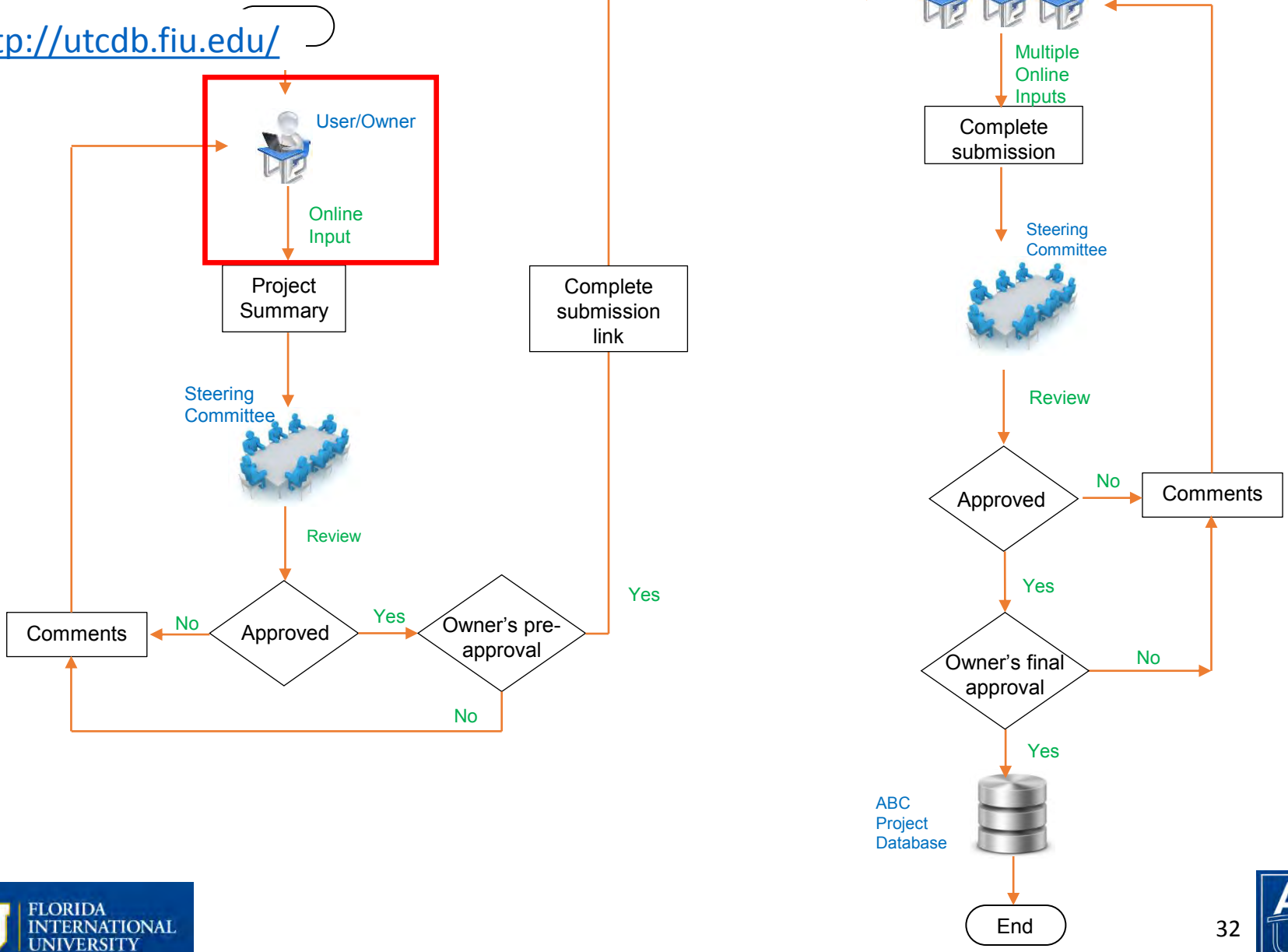
Submit

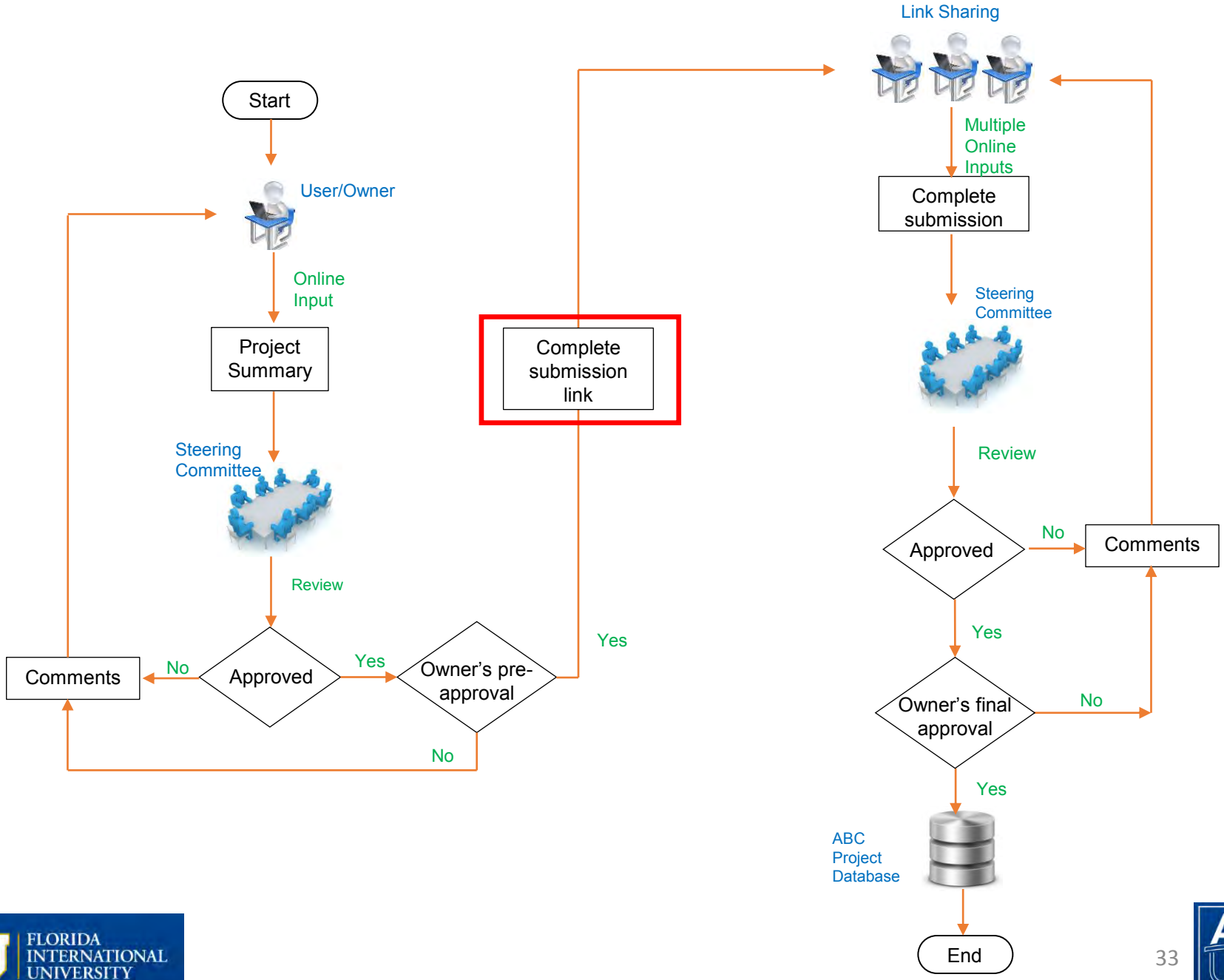
Comments

Project Database

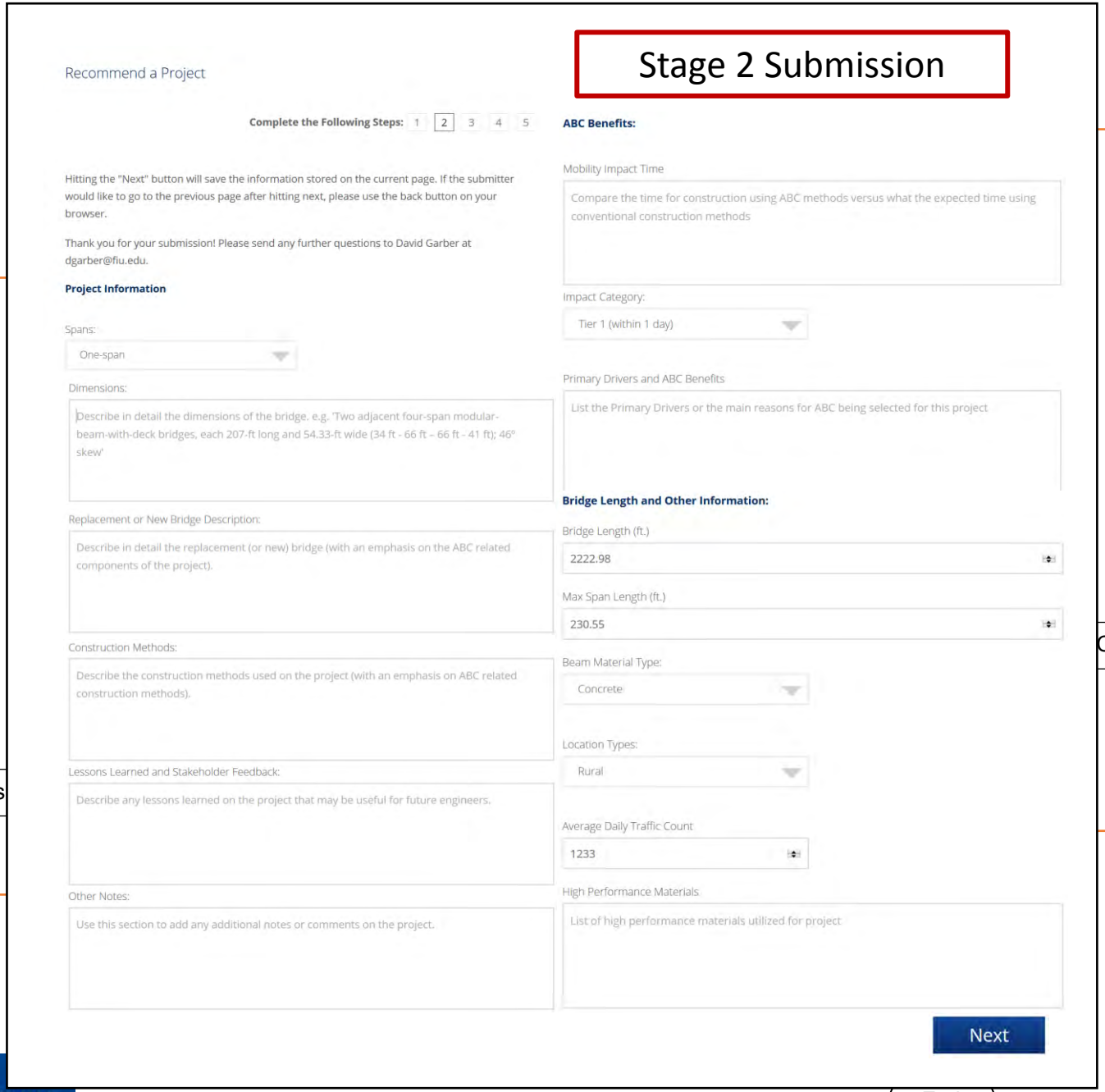
End

http://utcdb.fiu.edu/




Start
User/Owner
Online Input
Project Summary
Steering Committee
Review
Approved
No
Comments
Yes
Owner's pre-approval
No
Yes
Complete submission link
Link Sharing
Multiple Online Inputs
Complete submission
Steering Committee
Review
Approved
No
Comments
Yes
Owner's final approval
No
Yes
ABC Project Database
End

Stage 2 Submission



Recommend a Project

Complete the Following Steps: 1 2 3 4 5

Hitting the "Next" button will save the information stored on the current page. If the submitter would like to go to the previous page after hitting next, please use the back button on your browser.

Thank you for your submission! Please send any further questions to David Garber at dgarber@fiu.edu.

Project Information

Spans:
One-span

Dimensions:
Describe in detail the dimensions of the bridge. e.g. 'Two adjacent four-span modular-beam-with-deck bridges, each 207-ft long and 54.33-ft wide (34 ft - 66 ft – 66 ft - 41 ft); 46° skew'

Replacement or New Bridge Description:
Describe in detail the replacement (or new) bridge (with an emphasis on the ABC related components of the project).

Construction Methods:
Describe the construction methods used on the project (with an emphasis on ABC related construction methods).

Lessons Learned and Stakeholder Feedback:
Describe any lessons learned on the project that may be useful for future engineers.

Other Notes:
Use this section to add any additional notes or comments on the project.

ABC Benefits:

Mobility Impact Time
Compare the time for construction using ABC methods versus what the expected time using conventional construction methods

Impact Category:
Tier 1 (within 1 day)

Primary Drivers and ABC Benefits
List the Primary Drivers or the main reasons for ABC being selected for this project

Bridge Length and Other Information:

Bridge Length (ft.)
2222.98

Max Span Length (ft.)
230.55

Beam Material Type:
Concrete

Location Types:
Rural

Average Daily Traffic Count
1233

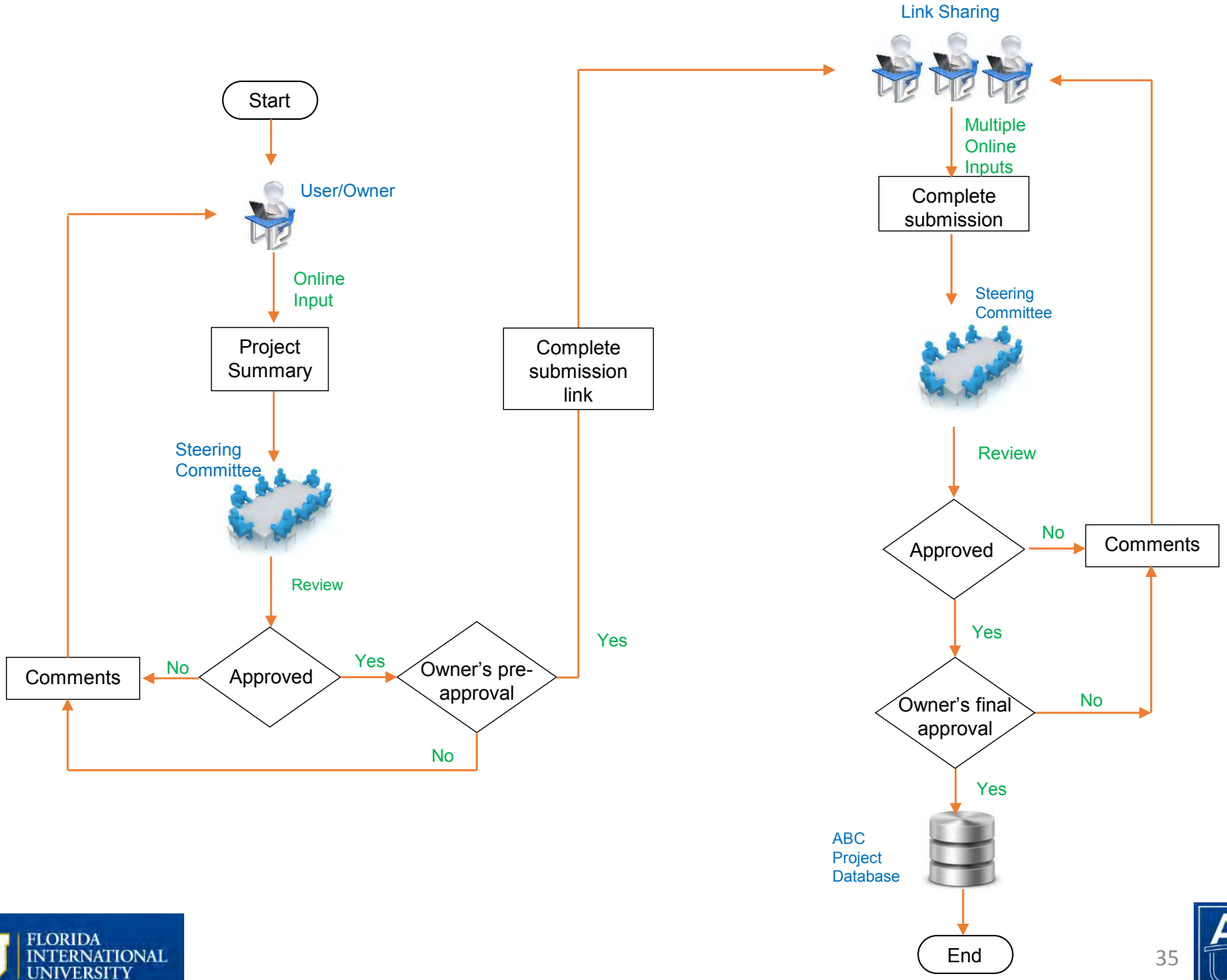
High Performance Materials
List of high performance materials utilized for project

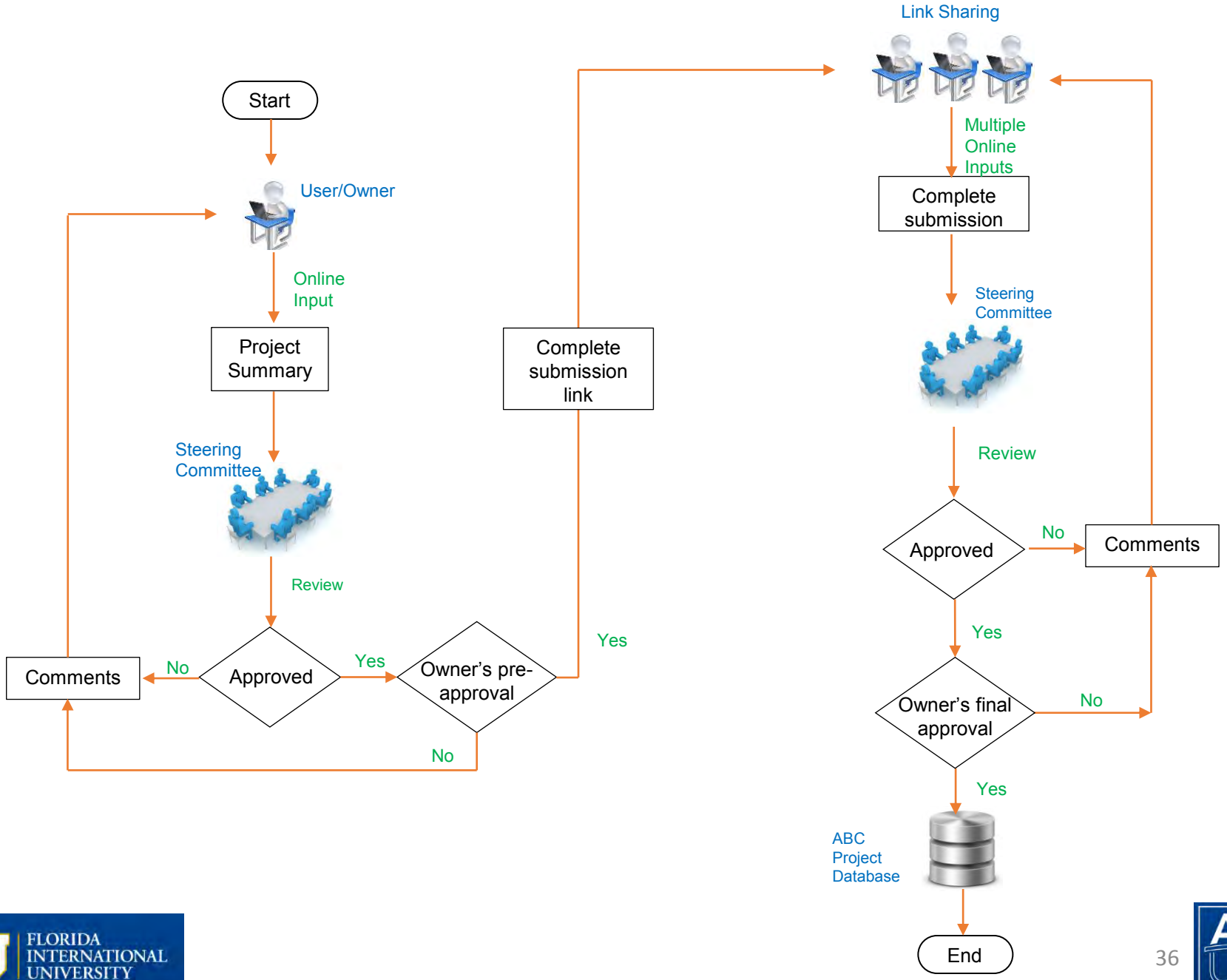
Next

Comments

Comments

End


Start
User/Owner
Online Input
Project Summary
Steering Committee
Review
Approved
No
Comments
Yes
Owner's pre-approval
No
Yes
Complete submission link
Link Sharing
Multiple Online Inputs
Complete submission
Steering Committee
Review
Approved
No
Comments
Yes
Owner's final approval
No
Yes
ABC Project Database
End


Start
User/Owner
Online Input
Project Summary
Steering Committee
Review
Approved
No
Comments
Yes
Owner's pre-approval
No
Yes
Complete submission link
Link Sharing
Multiple Online Inputs
Complete submission
Steering Committee
Review
Approved
No
Comments
Yes
Owner's final approval
No
Yes
ABC Project Database
End

Link Sharing

ABC UTC

ACCELERATED BRIDGE CONSTRUCTION
UNIVERSITY TRANSPORTATION CENTER

FIU FLORIDA INTERNATIONAL UNIVERSITY

Home | Research Projects | Education | Technology Transfer | Resources | Events | News | v 1.0

Project Database
Research Database

Bridge Summary Sheet

Trial Bridge for Presentation

Year ABC Built: 2015

State: Florida

Owner: FIU

Location: Rural

Spans: One-span

Beam Material: Concrete

Max Span Length: 230.55

Total Bridge Length: 2222.98

Construction Equipment: SPMTs

State ID #: 12321

NBI #: 432421

Coordinates: **Latitude:** 24, **Longitude:** 67

Bridge Description

Project Location: ABC National Conference - Miami, FL

Mobility Impact Time:

Impact Category: Tier 1 (within 1 day)

Primary Drivers:

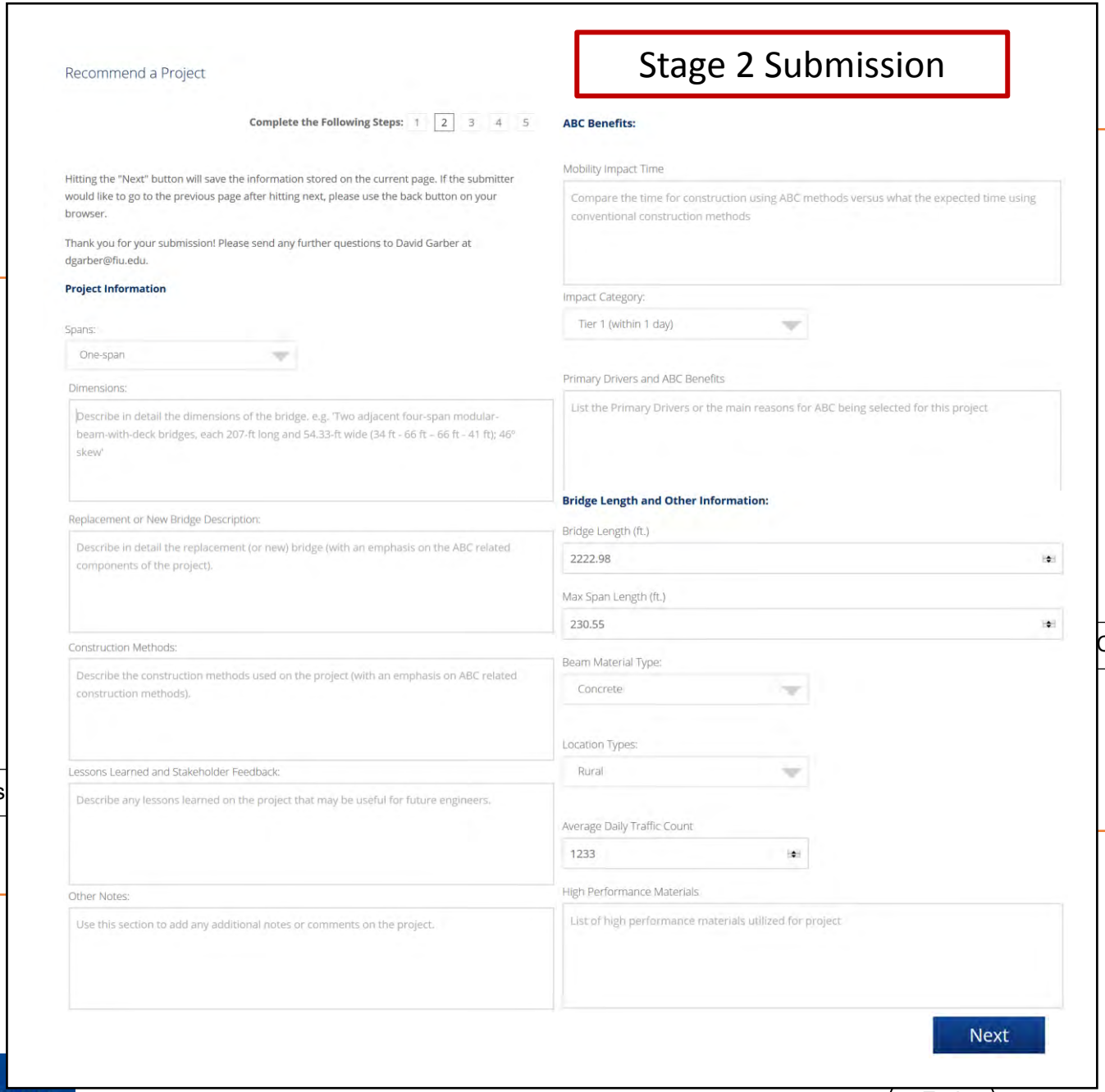
Home
Project Database
Research Database
Submit Project
Submit Research
Updates/Comments/Assistance
Training Videos
Overview
Navigation
Searching Projects
Keywords
Project Summary Sheets
Downloadable Database
Key Search Words

APPROVED!

Database

End

Stage 2 Submission



Recommend a Project

Complete the Following Steps: 1 2 3 4 5

Hitting the "Next" button will save the information stored on the current page. If the submitter would like to go to the previous page after hitting next, please use the back button on your browser.

Thank you for your submission! Please send any further questions to David Garber at dgarber@fiu.edu.

Project Information

Spans:
One-span

Dimensions:
Describe in detail the dimensions of the bridge. e.g. 'Two adjacent four-span modular-beam-with-deck bridges, each 207-ft long and 54.33-ft wide (34 ft - 66 ft – 66 ft - 41 ft); 46° skew'

Replacement or New Bridge Description:
Describe in detail the replacement (or new) bridge (with an emphasis on the ABC related components of the project).

Construction Methods:
Describe the construction methods used on the project (with an emphasis on ABC related construction methods).

Lessons Learned and Stakeholder Feedback:
Describe any lessons learned on the project that may be useful for future engineers.

Other Notes:
Use this section to add any additional notes or comments on the project.

ABC Benefits:

Mobility Impact Time
Compare the time for construction using ABC methods versus what the expected time using conventional construction methods

Impact Category:
Tier 1 (within 1 day)

Primary Drivers and ABC Benefits
List the Primary Drivers or the main reasons for ABC being selected for this project

Bridge Length and Other Information:

Bridge Length (ft.)
2222.98

Max Span Length (ft.)
230.55

Beam Material Type:
Concrete

Location Types:
Rural

Average Daily Traffic Count
1233

High Performance Materials
List of high performance materials utilized for project

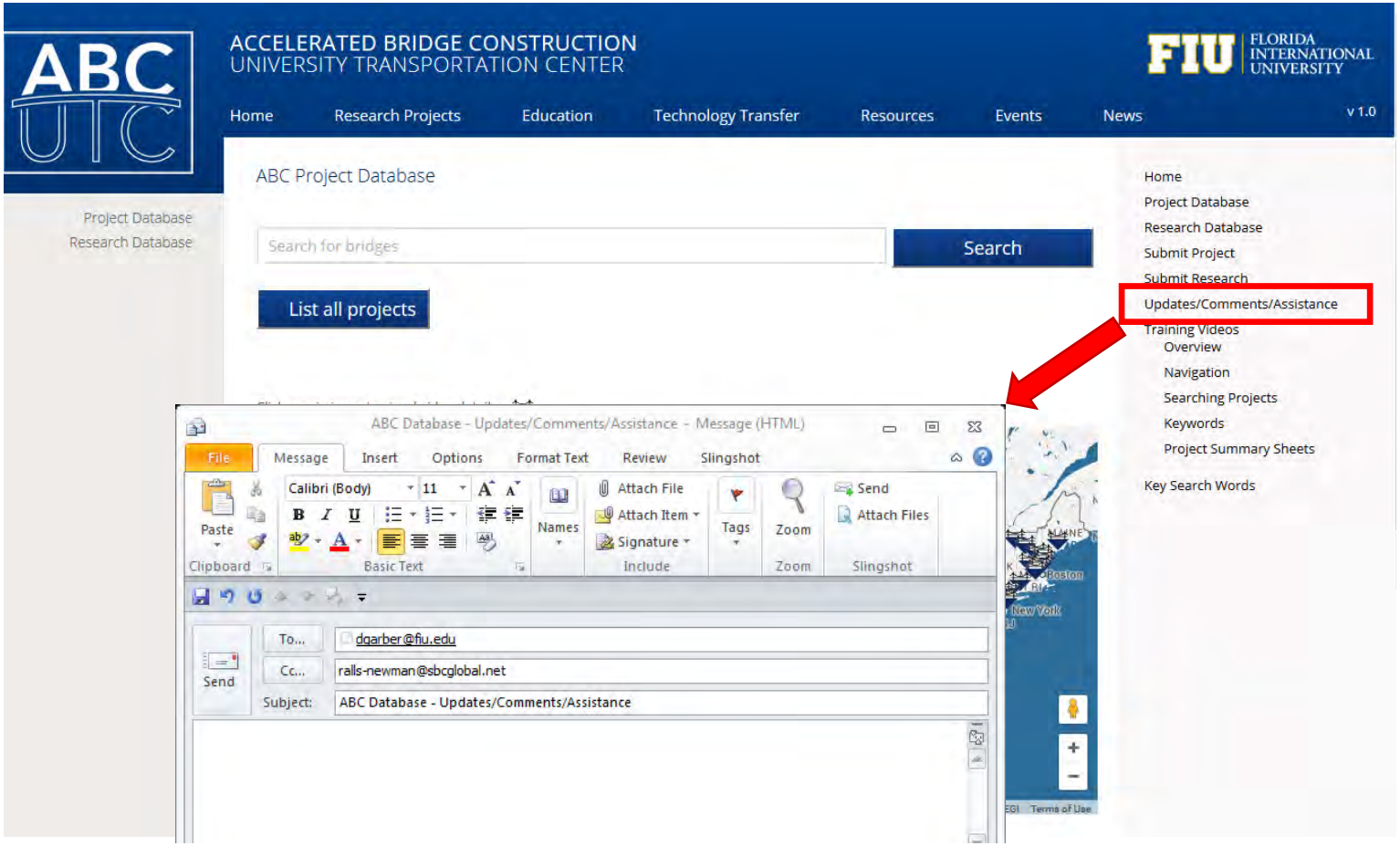
Next

Comments

Comments

End

Further Feedback



Thank You

Jawad Gull, PhD

Jawad.gull@hdrinc.com

Bridge Designer

HDR Inc.