AASHTOWare Bridge Management
TRT Task Updates

2013 User Group Meeting

Portland, Oregon

September 18th, 2013

What is the TRT?

- TRT = Technical Review Team
- A Technical Review Team was formed to assist the Task Force in working with the Contractor …to provide recommendations to the BTF throughout software development.
- Kick off meeting held in New Orleans (last User Group Meeting)

Tasks, Leaders & Speaking Order

1. Review the Use Cases for Bridge Analysis Groups
   - Thomas Martin (Task 2)

2. Default Actions and Costs
   - Paul Cooley (Task 1A)

3. Elements Impacted by Each Action
   - Craig Nazareth (Task 1C)

4. Work Accomplishments
   - Craig Nazareth (Task 7)

Tasks, Leaders & Speaking Order

5. Element Category, Type & Material for NBE's (Actions, Types, Categories)
   - Todd Thompson (Task 5)

6. Parameters for Utility Curve Value Functions
   - Basak Aldemir-Bektas (Task 1B)

7. Deterioration Modeling
   - Basak Aldemir-Bektas (Task 6)

Tasks, Leaders & Speaking Order

8. Training & Deployment Plan
   - Karen Riemer (Task 3)

9. Reports
   - Todd Thompson (Task 4)

10. Project Tracking
    - Allen Marshall (Task 8)

Task 2: Review the Use Cases for Bridge Analysis Groups

- Name Functions
  - Bridge Analysis Group
- Review Use Case of Corridor Function
  - Create Bridge Analysis Group via Route / Measure
  - Create B.A.G. via Area (i.e. District, Region, etc…)
  - Create / Modify B.A.G. by union or intersect funct.
  - Export / Import B.A.G. in common format for use with further Spatial Analysis

Task 4: Reports

- Team Members
  - Basak Aldemir Bektaş, Iowa
  - Eric Christie, Alabama
  - Curt Evoy, Illinois
  - Thomas Martin, Minnesota
  - Travis McDaniel, Wisconsin
  - Karen Reimer, Connecticut
  - Todd Thompson, South Dakota

Task 4: Reports or Presentation

- Surveyed all agencies on use of existing reports
- Summary – most reports are used by most agencies and majority have customized the standard reports
- Will provide similar basic reports, knowing they will likely be customized
- Working on new SI&A Report

Task 4: New SI&A Report

- Collected agency SI&A Reports
- Voted on the best for presentation
- Took some of the best “practices” and have recommended a new SI&A report

Task 4: New Presentations / Reports

- As new features are added, new reports or presentations will be added to the products

- Example - Risk

Task 5: Element Category, Type & Material for NBE's

- Team Members
  - Steve Birdsley, Wyoming
  - Richard Kerr, Florida
  - Craig Nazareth, Rhode Island
  - Bruce Novakovich, Oregon
  - Todd Thompson, South Dakota

Task 5: Element Category, Type & Material for NBE's

- Pontis 5.1.X - Re-used CORE element tables
- TRT has recommended new tables for the new AASHTO Elements
  - Will be added as part of new AASHTO Elements

Task 1B: Utility Curves

Group Members:

- Basak Aldemir Bektas
- Eric Christie
- Rebecca Curtis
- Prasad Lakshmi
- Richard Kerr
- Todd Thompson

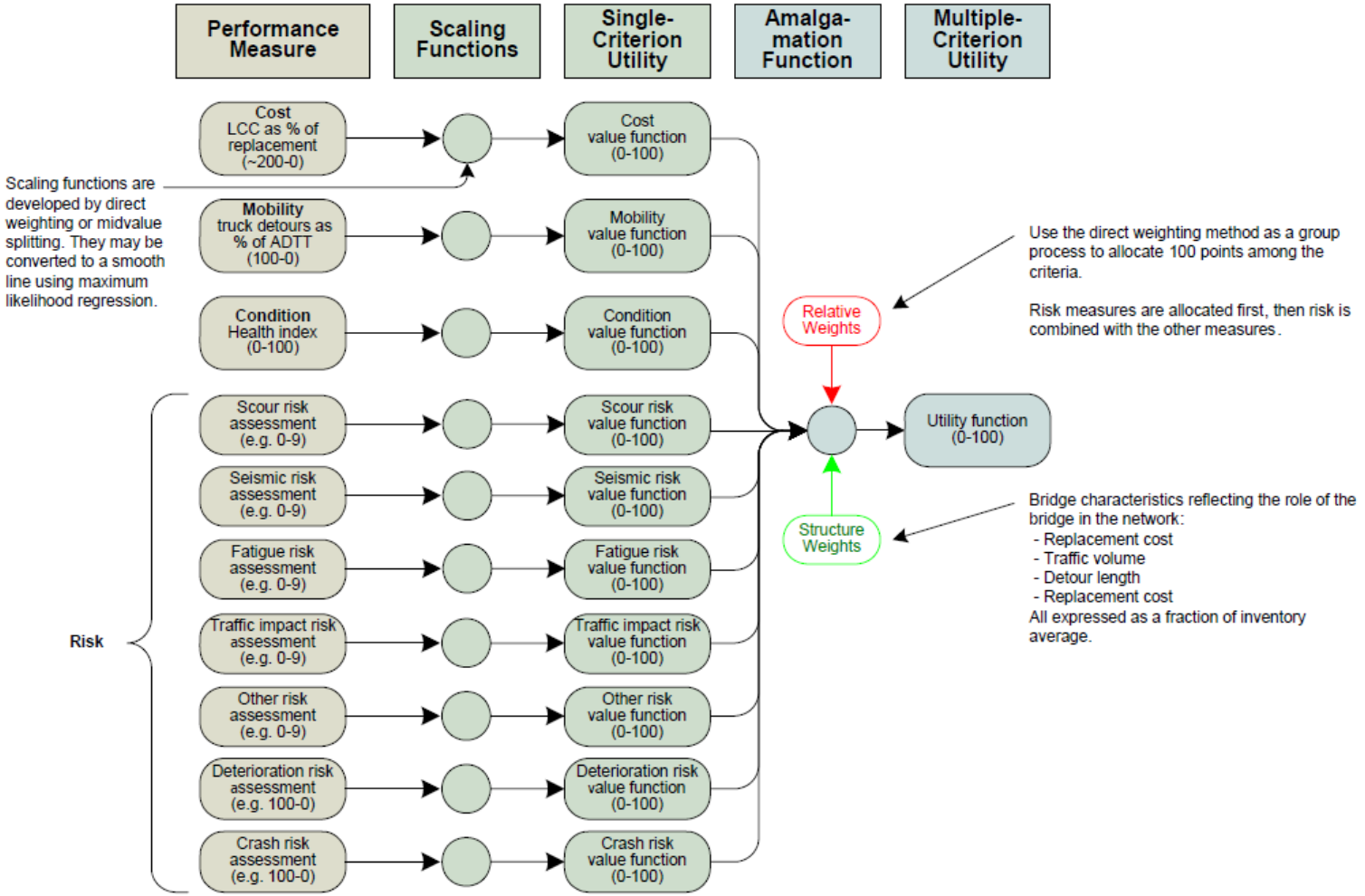
Task 1B: Deliverables

- Data item listing necessary for value functions
- Utility function development procedure

Task 1B: Resources

- NCHRP Report 590, Multi-Objective Optimization for Bridge Management Systems
  - Mini Studies

Task 1B: Utility Framework



Task 1B: Work

- Literature review
- 4 online meetings & email communication

Performance measures

Scaling (value functions)

Expert elicitations for utility weights (utility functions)

Task 1B: Deliverables

- Value Functions for:
  - Mobility
  - Health Index (Condition)
  - NBI Condition Ratings (Condition)
  - Scour Risk
  - LCC*
  - Risk of Advanced Deterioration*

- Utility Weights for Above

Task 1B: Examples

Exponential scaling function, reverse direction

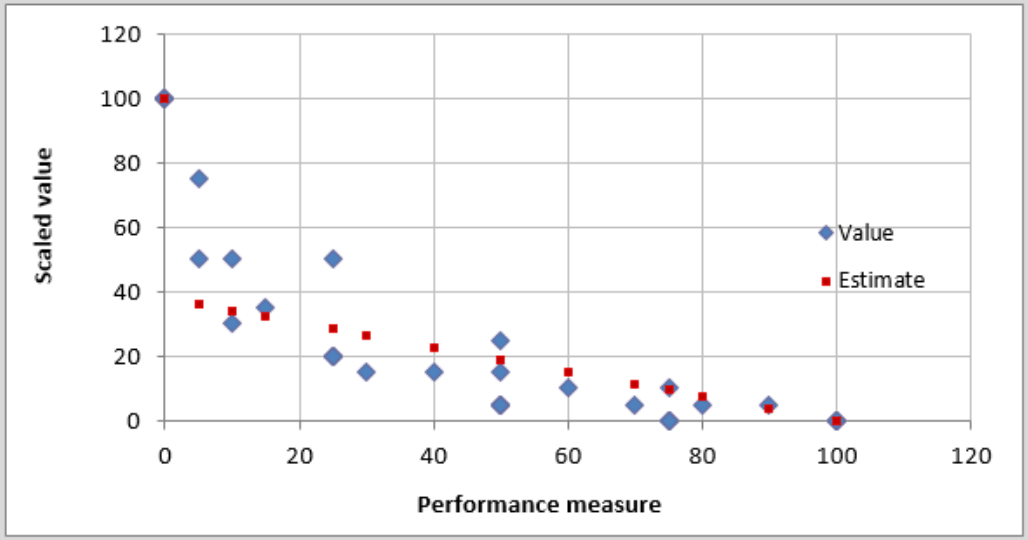
Elicitation data

	Perf	Value	Estimate	Log LF
	0	100	100	-3.28502796
	100	0	0	-3.28502796
User 1	100	0	0	-3.28502796
User 1	75	0	9.498658659	-3.68234337
User 1	50	5	18.99731732	-4.14780873
User 1	25	20	28.49597598	-3.60288907
User 1	0	100	100	-3.28502796
group	75	0	9.498658659	-3.68234337
group	50	5	18.99731732	-4.14780873
group	25	20	28.49597598	-3.60288907
group	15	35	32.29543944	-3.31723897
group	10	50	34.19517117	-4.38502225
group	5	75	36.0949029	-9.95039155
User 2	100	0	0	-3.28502796
User 2	75	10	9.498658659	-3.28613479
User 2	50	25	18.99731732	-3.44370044
User 2	25	50	28.49597598	-5.32136805
User 2	0	100	100	-3.28502796
User 3	90	5	3.799463464	-3.29137486
User 3	80	5	7.598926927	-3.31477194
User 3	70	5	11.39839039	-3.46530994
User 3	60	10	15.19785385	-3.40400385
User 3	50	15	18.99731732	-3.35539157
User 3	40	15	22.79678078	-3.55272372
User 3	30	15	26.59624425	-3.8771968
User 3	10	30	34.19517117	-3.36252948
User 3	5	50	36.0949029	-4.13647745
User 4	100	0	0	-3.28502796
User 4	75	0	9.498658659	-3.68234337
User 4	50	5	18.99731732	-4.14780873
User 4	25	20	28.49597598	-3.60288907
User 4	0	100	100	-3.28502796
Usr 5	100	0	0	-3.28502796
Usr 5	75	0	9.498658659	-3.68234337

Model specification

Coeff	Value
a	0.379946346
b	62.00536536
c	-2.430764574
g	-20.04191938
h	3.239015072
Std Dev	10.65564107
Sum Log LF	-140.04608

$$v = 100 - \left(ax + b + ce^{(gx+h)}\right)$$



Performance measure: % of trucks detoured

Truck detours are expressed as a percent of ADTT, considering both weight and height restrictions. This fraction comes directly from truck weight and height histograms, implemented as formulas in Pontis. Either the original Pontis model or the Florida model can be used. It is recommended that the Florida model [Sobanjo and Thompson, 2006] be provided as a default since it is more up-to-date and provides the only rigorous set of measurements of truck height available.

Since truck detours cannot exceed total truck volume, this performance measure is bounded by 0 and

Exponential scaling function, forward direction

This model is appropriate for health index.

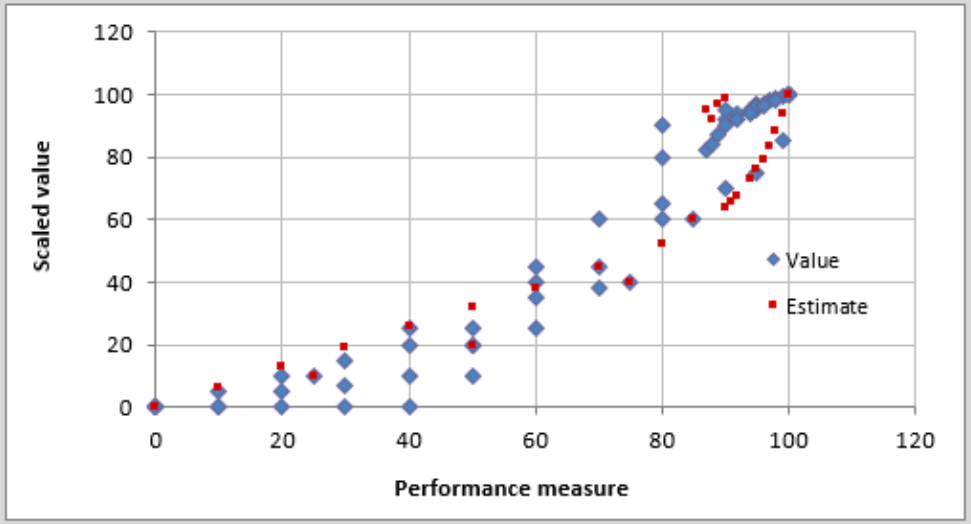
Elicitation data

	Perf	Value	Estimate	Log LF
	0	0	9.5766E-07	-2.3847792
	100	100	99.99990674	-2.3847792
User 1	25	10	9.999967428	-2.3847792
User 1	50	20	20.00002418	-2.3847792
User 1	75	40	39.99995433	-2.3847792
User 1	85	60	59.99991248	-2.3847792
User 1	87	82	94.99997152	-6.8892293
User 1	88	84	91.99990368	-4.09057285
User 1	89	87	96.99998528	-5.05013812
User 1	90	92	98.99993823	-3.69078586
User 1	91	93	65.69447785	-22.2575283
User 1	92	94	67.76341607	-20.7320535
User 1	94	95	72.77046169	-15.5557523
User 1	95	95	75.82229545	-12.1875811
User 1	95	97	75.82229545	-14.3388204
User 1	95	96	75.82229545	-13.2365471
User 1	96	97	79.3338629	-10.7031863
User 1	97	98	83.39277812	-8.07189708
User 1	98	99	88.10335231	-5.5495539
User 1	99	99.5	93.58977583	-3.31581179
User 2	0	0	9.5766E-07	-2.3847792
User 2	10	0	6.394929268	-3.47478415
User 2	20	0	12.78987893	-6.74481289
User 2	30	0	19.18495081	-12.1949904
User 2	40	0	25.58072197	-19.8262286
User 2	50	10	31.98049468	-15.2622894
User 2	60	40	38.40316542	-2.45274287
User 2	70	60	44.95686547	-8.41639482
User 2	80	80	52.26035377	-22.8944559
User 2	90	95	63.85435135	-28.2402076
User 2	100	100	99.99990674	-2.3847792
User 3	0	0	9.5766E-07	-2.3847792
User 3	10	0	6.394929268	-3.47478415
User 3	20	5	12.78987893	-4.00218276
User 3	30	7	19.18495081	-6.34212989
User 3	40	10	25.58072197	-8.85519416
User 3	50	20	31.98049468	-6.21044016
User 3	60	25	38.40316542	-7.17297315
User 3	70	38	44.95686547	-3.6747628

Model specification

Coeff	Value
a	0.639492379
b	0
c	9.5766E-07
g	0.174436987
h	0
Std Dev	4.331182795
Sum Log LF	-488.334026

$$v = ax + b + ce^{(gx+h)}$$



Performance measure is HI

Direct weighting method

Performance measure	Panel members Member 1	Member 2	Member 3	Member 4	Member 5	AVERAGE	WEIGHT	Scaling by Task?
Scour	25	25	20	20	20	22	0.0484	YES
Seismic	5	5	10	5	5	6	0.0132	NO
Fatigue	15	15	20	10	10	14	0.0308	NO
Road vehicle impact	15	15	20	15	15	16	0.0352	NO
Other vulnerability	0	0	0	15	0	3	0.0066	
Advanced deterioration	25	20	20	25	30	24	0.0528	YES
Accident risk	15	20	10	10	20	15	0.033	NO
TOTAL	100	100	100	100	100	100	0.22	
Life cycle cost	30	20	25	25	25	25	0.25	YES
Mobility	20	20	30	20	20	22	0.22	YES
Condition	30	30	30	35	30	31	0.31	YES
Risk	20	30	15	20	25	22	0.22	SOME
TOTAL	100	100	100	100	100	100	1	

		Structure weight		Value function			Utility			Normalized utility		
Performance measure	Relative Weight	Method	Value	Do nothing	Heavy Maint	Replace	Do nothing	Heavy Maint	Replace	Do nothing	Heavy Maint	Replace
Scour	0.048	Replace cost (ADT, detour length)	3.5	50	100	100	8.47	16.94	16.94	2.28	4.56	4.56
Seismic	0.013	Replace cost, ADT	2.4	100	100	100	3.17	3.17	3.17	0.85	0.85	0.85
Fatigue	0.031	Replace cost, ADT	2.4	100	100	100	7.39	7.39	7.39	1.99	1.99	1.99
Road vehicle impact	0.035	Deck area (ADT, detour length)	2.9	100	100	100	10.21	10.21	10.21	2.75	2.75	2.75
Other vulnerability	0.007	Deck area (should vary based on vul	2.9	100	100	100	1.91	1.91	1.91	0.52	0.52	0.52
Advanced deterioration	0.053	Deck area (ADT, detour length)	2.9	25	100	100	3.83	15.31	15.31	1.03	4.12	4.12
Accident risk	0.033	ADT	1.7	85	85	100	4.77	4.77	5.61	1.28	1.28	1.51
Life cycle cost	0.250	Replace cost	7	55	50	60	96.25	87.50	105.00	25.90	23.54	28.25
Mobility	0.220	ADTT, detour length	2.1	100	100	100	46.20	46.20	46.20	12.43	12.43	12.43
Condition	0.310	Deck area (ADT, detour length)	2.9	40	90	100	35.96	80.91	89.90	9.68	21.77	24.19
TOTAL UTILITY							218.16	274.31	301.64	58.70	73.81	81.16

Task 1 B Notes

Risk performance measures and their relative weights depend on agency policies and concerns. The elicitations here represent ideas of individual States, not intended as national averages.

Orange shading shows elicitations and suggestions of task members

Task 6: Deterioration Team Members

Group Members:

- Basak Aldemir Bektas
- Steven Birdsley
- Rebecca Curtis
- Mike Johnson
- Richard Kerr
- Prasad Lakshmi
- Bruce Novakovich
- Todd Thompson
- Ellen Zinni

Task 6: Deliverables

- Review of literature/studies/design doc
- Default deterioration curves for all NBE's
- Proposal for how to modify default curves

Task 6: Template

CORE	Element Name	# CS	AASHTO	Element Name	# CS	one-to-one conversion?
31	Timber Deck - Bare	4	31	Timber Deck - Wood Deck	4	yes
54	Timber Slab	4	54	Timber Slab - Wood Deck	4	yes
101	Unpainted Steel Closed Web/Box Girder	4	102	Steel Open Closed Web / Box Girder	4	yes
104	P/S Conc Closed Web/Box Girder	4	104	Prestressed Concrete Closed Web / Box Girder	4	yes
105	Reinforced Concrete Closed Webs/Box Girder	4	105	Reinforced Concrete Closed Web / Box Girder	4	yes
106	Unpainted Steel Open Girder/Beam	4	107	Steel Open Girder / Beam	4	yes
109	P/S Conc Open Girder/Beam	4	109	Prestressed Concrete Girder / Beam	4	yes
110	Reinforced Conc Open Girder/Beam	4	110	Reinforced Concrete Girder / Beam	4	yes
111	Timber Open Girder/Beam	4	111	Timber Open Girder	4	yes
112	Unpainted Steel Stringer	4	113	Steel Open Closed Web / Box Girder	4	yes
115	P/S Conc Stringer	4	115	Prestressed Concrete Closed Web / Box Girder	4	yes
116	Reinforced Conc Stringer	4	116	Reinforced Concrete Closed Web / Box Girder	4	yes
117	Timber Stringer	4	117	Timber Stringer	4	yes
120	Unpainted Steel Bottom Chord Thru Truss	4	120	Steel Truss	4	yes
130	Unpainted Steel Deck Truss	4	120	Steel Truss	4	yes
135	Timber Truss/Arch	4	135	Timber Truss	4	yes
140	Unpainted Steel Arch	4	141	Steel Arch	4	yes
143	P/S Conc Arch	4	143	Prestressed Concrete Arch	4	yes
144	Reinforced Conc Arch	4	144	Reinforced Concrete Arch	4	yes
145	Other Arch	4	145	Masonry Arch	4	yes
151	Unpainted Steel Floor Beam	4	152	Steel Floor Beam	4	yes
154	P/S Conc Floor Beam	4	154	Prestressed Floor Beam	4	yes
155	Reinforced Conc Floor Beam	4	155	Reinforced Floor Beam	4	yes
156	Timber Floor Beam	4	156	Timber Floor Beam	4	yes
160	Unpainted Steel Pin and/or Pin and Hanger Assembly	4	161	Steel Pin and/or Pin and Hanger Assembly	4	yes
201	Unpainted Steel Column or Pile Extension	4	202	Steel Column or Pile Extension	4	yes
204	P/S Conc Column or Pile Extension	4	204	Prestressed Concrete Column or Pile Extension	4	yes
205	Reinforced Conc Column or Pile Extension	4	205	Reinforced Concrete Column or Pile Extension	4	yes
206	Timber Column or Pile Extension	4	206	Timber Column or Pile Extension	4	yes
210	Reinforced Conc Pier Wall	4	210	Reinforced Concrete Pier Wall	4	yes
211	Other Material Pier Wall	4	213	Masonry Pier Wall	4	yes
215	Reinforced Conc Abutment	4	215	Reinforced Concrete Abutment	4	yes
216	Timber Abutment	4	216	Timber Abutment	4	yes

To-Do	elem_key	elem_longname	one-to-one conversion?	rules that were written for migrator to lump some condition states into one
	12	Reinforced Concrete Deck		expert elicitation, states may choose to interpolate
	13	Prestressed Concrete Deck		expert elicitation, states may choose to interpolate
	15	Prestressed Concrete Top Flange		consider using beam deterioration rate in moderate enviros, use deck for harsh environm
	16	Reinforced Concrete Top Flange		consider using beam deterioration rate in moderate enviros, use deck for harsh environm
*	28	Steel Deck With Open Grid		1 to 1, 2&3 to 2, 4 to 3, 5 to 4
*	29	Steel Deck with Concrete Filled Grid		1 to 1, 2&3 to 2, 4 to 3, 5 to 4
*	30	Steel Deck Corrugated / Orthotropic / Etc.		1 to 1, 2&3 to 2, 4 to 3, 5 to 4
	31	Timber Deck - Wood Deck	yes	
	38	Reinforced Concrete Slab		expert elicitation, states may choose to interpolate
	54	Timber Slab - Wood Deck	yes	use 31
	60	Other Deck		use concrete
	65	Other Slab		use concrete
	102	Steel Open Closed Web / Box Girder	yes	
	104	Prestressed Concrete Closed Web / Box Girder	yes	
	105	Reinforced Concrete Closed Web / Box Girder	yes	
	106	Other Closed Web / Box Girder		use 105
	107	Steel Open Girder / Beam	yes	
	109	Prestressed Concrete Girder / Beam	yes	
	110	Reinforced Concrete Girder / Beam	yes	
	111	Timber Open Girder	yes	
	112	Other Beam		use 110
	113	Steel Stringer	yes	
	115	Prestressed Concrete Stringer	yes	
	116	Reinforced Concrete Stringer	yes	
	117	Timber Stringer	yes	
	118	Other Stringer		use 116
	120	Steel Truss	yes	
	135	Timber Truss	yes	
	136	Other Truss		use 120
	141	Steel Arch	yes	

Task 6: Expert Elicitation

CoRe Name	AASHTO elem_longname	envkey	skey	akey	refkey	mdyrs_IA	mdyrs_OR	mdyrs_VA	mdyrs_MI	mdyrs_NY	mdyrs_FL	mdyrs_SD
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	1	1	0	110-1-1-0		3	20	85	13.5	32.34781	NA
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	1	2	0	110-1-2-0		24	20	65	13.5	9.28955	NA
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	1	3	0	110-1-3-0		20.4	20	20	13.5	21.3124	NA
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	1	4	0	110-1-4-0		9.6	20	6.6	13.5	6.503326	NA
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	2	1	0	110-2-1-0		3	20	85	13.5	32.34781	99
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	2	2	0	110-2-2-0		24	20	65	13.5	9.28955	10
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	2	3	0	110-2-3-0		20.4	20	20	13.5	21.3124	10
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	2	4	0	110-2-4-0		9.6	20	6.6	13.5	6.000075	19.1
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	3	1	0	110-3-1-0		2.5	20	50	13.5	32.34781	90
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	3	2	0	110-3-2-0		20	20	35	13.5	9.28955	9
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	3	3	0	110-3-3-0		17	20	15	13.5	21.3124	9
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	3	4	0	110-3-4-0		8	20	6.6	13.5	5.500433	10
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	4	1	0	110-4-1-0		2	20	50	13.5	32.34781	NA
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	4	2	0	110-4-2-0		16	20	35	13.5	9.28955	NA
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	4	3	0	110-4-3-0		13.6	20	15	13.5	21.3124	NA
Reinforced Conc Open Girder/Beam	Reinforced Concrete Girder / Beam	4	4	0	110-4-4-0		6.4	20	6.6	13.5	5.002049	NA

Final							Assessment						
mdyrs_IA	mdyrs_OR	mdyrs_VA	mdyrs_MI	mdyrs_NY	mdyrs_FL	mdyrs_SD	avg_mdyrs	sd_mdyrs	Control Lower Limit	Control Upper Limit	Lower Limit Problem?	Upper Limit Problem?	sd/avg
#N/A	3.00	20.00	#N/A	13.50	32.35	#N/A	17.21	12.28	-1.21	35.64			0.71
#N/A	24.00	20.00	#N/A	13.50	9.29	#N/A	16.70	6.57	6.85	26.55			0.39
#N/A	20.40	20.00	20.00	13.50	21.31	#N/A	19.04	3.14	14.33	23.76	Problem		0.17
#N/A	9.60	20.00	6.60	13.50	6.50	#N/A	11.24	5.67	2.74	19.74		Problem	0.50
#N/A	3.00	20.00	#N/A	13.50	32.35	#N/A	17.21	12.28	-1.21	35.64			0.71
#N/A	24.00	20.00	#N/A	13.50	9.29	10.00	15.36	6.43	5.72	25.00			0.42
#N/A	20.40	20.00	20.00	13.50	21.31	10.00	17.54	4.64	10.57	24.50	Problem		0.26
#N/A	9.60	20.00	6.60	13.50	6.00	19.10	12.47	6.10	3.31	21.62			0.49
#N/A	2.50	20.00	#N/A	13.50	32.35	#N/A	17.09	12.48	-1.63	35.80			0.73
#N/A	20.00	20.00	#N/A	13.50	9.29	9.00	14.36	5.45	6.18	22.53			0.38
#N/A	17.00	20.00	15.00	13.50	21.31	9.00	15.97	4.50	9.21	22.73	Problem		0.28
#N/A	8.00	20.00	6.60	13.50	5.50	10.00	10.60	5.40	2.50	18.70		Problem	0.51
#N/A	2.00	20.00	#N/A	13.50	32.35	#N/A	16.96	12.67	-2.05	35.97			0.75
#N/A	16.00	20.00	#N/A	13.50	9.29	#N/A	14.70	4.49	7.96	21.43			0.31
#N/A	13.60	20.00	15.00	13.50	21.31	#N/A	16.68	3.70	11.13	22.24			0.22
#N/A	6.40	#N/A	6.60	13.50	5.00	#N/A	7.88	3.82	2.15	13.60			0.4

Task 6: Remaining Tasks

- Protection Systems
- Wearing Surfaces
- Environments

Task 3: Training

- Methods of Training
  - Webinars: (monthly or as new release becomes available)
  - Video Training: (demonstrate the subject matter)
  - User Manual: (detailed w/ “how-to” screenshots)
  - Technical Manual: (easy to use, clear explanations)
  - Single Sheet Guides
  - User Group Meeting

Task 3: Training Notes

- All methods of training should be stored in one web location.

- Previous User and Tech manuals were a weakness in past editions and need to be improved.

Task 3: Training Modules

- There should be two training modules:
  - Fast Track: Training that covers the changes only from Pontis 5.1. (Designed for those experienced with running scenarios in Pontis).
  - A to Z: Training that covers all aspects of the software. 9Designed for those new to Pontis or for those that only used the Inspection software module in the past).

Task 3: Training Topics

- Elements (NBE)
- Element Migration
- Work Candidates
- Network Corridors
- Risk Assessments and Utility Functions
- Deterioration Models and Elicitation

Each topic above should include the following:

- Screen Overview
- Inputs (How To)
- Outputs (Explanations)
- Adjustments (Provide Insight to Improve Results)

Task 8: Project Tracking & Management

- Objectives
  - Focus on project tracking and management, NOT bridge and project analysis level
  - Define use cases for project tracking and management
    - Align use cases to Task 9 - bridge / project analysis
    - Identify major capabilities
    - Identify business rules
  - Define database requirements
    - Identify consistencies and differences with P4 project planning
  - Define presentation layer (UI)

Task 8: Team Members

- Rebecca Curtis (chair)
- Paul Cooley
- Richard Kerr
- Thomas Martin
- Ellen Zinni
- Bruce Novakovich
- Travis McDaniels
- Craig Nazareth
- Steven Birdsley
- Allen Marshall

Task 8: Use Cases

- Modest progress
- A high level memo/white paper has been prepared summarizing what the tracking product module should be able to do.
- Mockup of UI desktop incorporates menu items reflecting major activities
- Not formalized

Task 8: Workflow

- *The idea is to provide the ability to get to the relevant information either by a project or by a bridge and its projects…*
  - Query any project, see its bridges
    - Query by just about any project attribute
    - Enriched by predefined/ ad hoc project layouts
  - Query any bridge, see its projects
    - Query by just about any bridge attribute (*bridge analysis group, for example*)
    - Will require additional predefined/ ad hoc bridge list layouts
  - Query any program see its projects…

Task 8: Workflow Continued

- Layered access:
  - Open the bridge, see its project work items, status, milestones, etc. or
  - Open the project,
    - see project data
      - drill into the project details
    - see its bridges
      - drill into the bridge details
- All this functionality still in flux

Task 8: Entities

- Projects
  - (Subordinate projects)
  - Project level work items
  - (Bridge analysis groups) (Task 2)
    - Bridges on projects <<<< from bridge analysis
      - Work on bridges <<<< from bridge analysis
- Programs
  - Groups of projects
  - Arbitrary combinations
  - Simple definition

Task 8: Entities Continued

- Funding sources
  - NOT a financial system interface, but may come from external financial system *e.g. funding codes, names, eligibility, year(s).*
  - High level, simple data structure
- Milestones
  - NOT Microsoft Project, but status and schedule points may come from external PM software.
  - Defined for project and its bridges by incorporation
    - Possibly at bridge level as well
  - High level, simple data structure

Task 8: Upgrade Path

- New entities map to old P4 entities
  - Projects, programs, funding sources
- Previous version tracking information can carry forward, needs full review
- Previous version ‘modeling’ information to be discarded or reworked depending on outcome of TRT Task 9
- Entities are intentionally simpler to facilitate data exchange.

Task 8: Integration

- Standard schema for Pontis Program, project, bridge and work items interchange
  - **TBD**
- w/ standard schema for funding sources and milestones interchange
  - **TBD**
- Import xml from agency systems(producers)
- Export xml to agency systems (consumers)

Task 8: Reports

- Program summary listings
- Project summary listings
- Detailed project sheets
- Project desktop layouts (for UI)
- Definitional reports
  - Lookup tables
  - Milestone definitions
  - Funding sources definitions

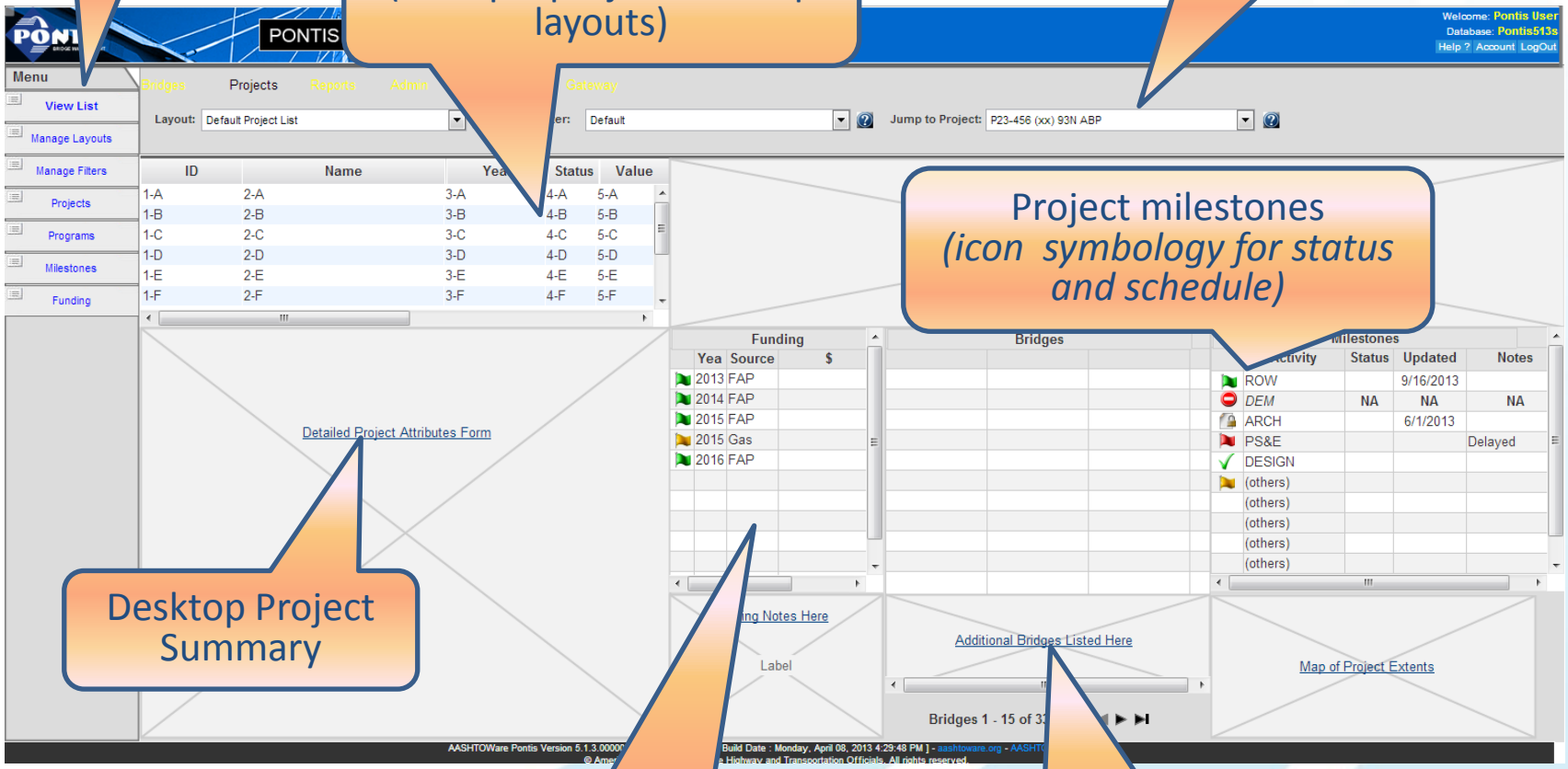
Task 8: Schematic

- http://share.axure.com/T4KFO2/

Standard Left Menu

Project Data List (multiple project desktop layouts)

Project List Header



Project milestones *(icon symbology for status and schedule)*

Desktop Project Summary

Funding Sources

Bridges on project *(uses bridge desktop layouts)*

Questions

- Questions can be submitted to:
  - Mark Faulhaber
    - Mark.faulhaber@ky.gov

    OR

  - User Group Forum
    - http://brmug.com/forum/