Lagoon Pond Drawbridge Committee
Minutes of the Meeting Held on April 20, 2005
At the Offices of the Martha's Vineyard Commission

Present: Melinda Loberg, Chair; Steve Berlucchi, Mark London, Tristan Israel, Angela Grant, Derek Cimeno, Dave Grunden, Harriet Barrow, Jay Wilbur

Observers: Bob Ford, Srinivas Sattoor, Bill Veno, Chris Fried, Kerry Scott

Minutes and Communications

- The minutes of the April 4, 2005 meeting were approved as drafted.
- The procedure for adoption of minutes will be as follows.
  - MVC staff will prepare a first draft and send it to the Chair.
  - A revised draft will be sent to Committee members who will be asked to give corrections in advance of the next meeting if possible.
  - The minutes will be adopted at the subsequent meeting and distributed.
- The adopted minutes will be distributed as follows:
  - Committee members;
  - Oak Bluffs and Tisbury Boards of Selectmen;
  - County Commissioners,
  - MV Joint Transportation Committee;
  - Anyone who requests to be put on the mailing list;
  - Posted on the MVC website.

Existing Bridge

- MassHighway made at least three inspections of the existing bridge in 2004. Steve McLaughlin sent a summary of the last inspection report from October 20, 2004 (see appendix). It shows that the condition of the deck is 3, the superstructure is 4 and the substructure is 4. This is the same as in the 2002 inspection. The 2000 inspection had the same ratings for the deck and superstructure, but the substructure had been a 5. According to the Federal Highway Administration's Recording and Coding Guide's system for evaluating the condition of bridges, the ratings are on a scale of 10 with 5 meaning Fair Condition, 4 meaning Poor Condition, and 3 meaning Serious Condition. Inspections are done by MassHighway staff trained by the Federal Highway Administration and using methodology standardized across the nation. Inspections normally take place every two years, but for more critical bridges, the time period is reduced; it would appear that the Lagoon Pond Drawbridge is on a six-month schedule. Steve McLaughlin is clarifying how the full inspection reports could be made available.
- Over the past two weeks, several Committee members have talked to engineers from firms replying to the RFQ for design engineers for the permanent bridge. One said that it was clear that the bridge had shifted in recent years. Another said that settling was common, that there

are other bridges in the State in worse shape, it was clear that there were several problems that they thought could be repaired, they found more problems the longer they looked. The following note from Fred Lapiana summarizes his discussion of the matter with a third firm:

- They affirmed MassHighway's position that the critical loading condition that may cause failure is the sustained load from the weight of the bridge itself, and not the traffic traversing it.
- The rate of consolidation in the soils typically diminishes over time. However, with organic materials such as the peat under the drawbridge, classical consolidation may be accompanied by secondary consolidation as the result of material decomposition. This makes the rate of bridge settlement irregular and extremely difficult to predict.
- To assess the risk of a failure, periodic measurements can be taken to measure settlement/deflections over time. Calculations can be made by a qualified firm to determine an amount of settlement that might safely be sustained while maintaining the bridge in service. Based on the rate of settlement determined from the baseline settlement measurements, a more accurate safe timeline can be established. Due to the irregular and unpredictable nature of the secondary consolidation, continued regular monitoring and adjustments to the safe timeline are recommended throughout the project. It might cost about $5000 to have engineers set up the monitoring and interpret the results, and another $5000 to have a local firm of surveyors to collect the data on a weekly basis for the first 3-4 months, if there is a qualified firm with the necessary equipment. This could possibly be funded by the Towns.
- It is possible to underpin the existing piers. A contingency repair effort should be designed now to minimize potential settlement problems. Underpinning could be accomplished by installing drilled steel casings at either end of the existing bascule pier that would extend through the peat layer to refusal. Using drilled casings would minimize the impact on the existing structure. A heavy steel beam tied to the existing pier would span between the casings. It is felt that the order of magnitude of such an underpinning project might be $500,000 to $1,000,000. Furthermore, the casings might be reused in the final design, thereby recouping part of the expense.
- It is highly doubtful that MassHighway would fund the development of such a contingency plan.

- There was a discussion of whether there would be useful results from the ongoing monitoring of settlement/deflections after only 3-4 months. More useful would be analyzing survey data from the past 10 years, if this information is available and is accurate enough. This data is probably not in the inspection reports, but should be in old surveyors' books.
- It was suggested that the underpinning could be done only if it is determined that the bridge is in danger of imminent collapse. This would allow deciding to continue using the existing bridge until a permanent bridge was built since it provides a contingency solution should the bridge start to fail. The possible underpinning of the existing piers as suggested above would probably involve closing the bridge to boat traffic, and would not deal with the deck, presently in the worst condition.
- The construction of the temporary bridge might dislodge the underlying peat and provoke a shifting in the soil that leads to a closure of the existing bridge.

- The decision whether to take the risk of continuing to use the existing bridge until a permanent bridge is in place affects not only Oak Bluffs and Tisbury but the whole Island.

Temporary Bridge

- Senator O'Leary's office has drafted a letter to the new Secretary of Transportation asking him or her to take a fresh look at the overall situation before moving ahead with the temporary bridge.

Permanent Bridge

- Deferred until the next meeting.

Actions

- The Committee will request the following information from MassHighway:
  - Criteria for prioritizing bridge repairs and whether they include the functional category of the road (Beach Road is a rural minor arterial) and the presence of a temporary bridge;
  - Raw survey settlement/deflection data for the past 10 years;
  - When it is anticipated that permits will be received and the RFP issued for the temporary bridge (i.e. the deadline for taking a second look at this approach);
  - Clarification as to the risk that the construction of the temporary bridge might lead to an immediate closure of the existing bridge.
- The Committee will recommend to the Oak Bluffs and Tisbury Boards of Selectmen that they get one or more independent engineers to review the inspection reports, to look at the bridge, and to look at the historical settlement/deflection data, if available, in order to comment on the expected life of the bridge and the likelihood of imminent failure. It is important that these engineers be objective and not come in with pre-conceptions. If historical settlement/deflection survey data are not available, the Committee might also suggest setting up a monitoring system. We will finalize the recommendation at the next meeting.

Next Meeting:

Wednesday, May 4, 8:30 a.m., MVC

Topics:

1) Design of permanent bridge
2) Contingency plans in case of closure of existing bridge
3) Availability of information on existing bridge and recommendation to Boards of Selectmen

Minutes prepared Mark London, MVC.

Adopted by the Committee on May 4, 2005.

Report Date: April 20, 2005 KOREAN & VIETNAM VET MEMORIAL

State Information

BDEPT#= 001001=T04001 Agency Br.No.
Town= Oak Bluffs=Tisbury
B.I.N= 4A3 AASHTO= 024.9
FHWA Select List= Y

Identification

(8) Structure Number	0010014A3MHDNBI
(5) Inventory Route	1810000000
(2) State Highway Department District	05
(3) County Code 007 (4) Place code	50380
(6) Features Intersected	WATER LAGOON POND
(7) Facility Carried	HWY BEACH RD
(9) Location	AT TISBURY OAK BLUFF TL
(11) Kilometerpoint	0001.416
(12) Base Highway Network	Y
(13) LRS Inventory Route & Subroute	000000000000
(16) Latitude	41 DEG 27 MIN 29.99 SEC
(17) Longitude	70 DEG 35 MIN 11.72 SEC
(98) Border Bridge State Code	Share %
(99) Border Bridge Structure No. #	T04001

Structure Type and Material

(43) Structure Type Main:	Steel	Code	316
Movable - Bascule	Jointless bridge type	Not applicable	
(44) Structure Type Appr:			
Slab		Code	201
(45) Number of spans in main unit			002
(46) Number of approach spans			0019
(107) Deck Structure Type -	Concrete Cast-in-Place	Code	1
(108) Wearing Surface / Protective System:			
A) Type of wearing surface -	Bituminous	Code	6
B) Type of membrane -	Built-up	Code	1
C) Type of deck protection -	None	Code	0

Age and Service

(27) Year Built			1935
(106) Year Reconstructed			0000
(42) Type of Service: On -	Highway-Ped		
Under - Waterway		Code	55
(28) Lanes: On Structure	02	Under structure	00
(29) Average Daily Traffic			014900
(30) Year of ADT 2004	(109) Truck ADT		03 %
(19) Bypass, detour length			010 KM

Geometric Data

(48) Length of maximum span			0009.1 M
(49) Structure Length			00107.3 M
(50) Curb or sidewalk:	Left 01.8 M	Right	00.0 M
(51) Bridge Roadway Width Curb to Curb			009.4 M
(52) Deck Width Out to Out			012.0 M
(32) Approach Roadway Width (w/shoulders)			009.1 M
(33) Bridge Median - No median		Code	0
(34) Skew 00 DEG	(35) Structure Flared		N
(10) Inventory Route MIN Vert Clear			99.99 M
(47) Inventory Route Total Horiz Clear			09.1 M
(53) Min Vert Clear Over Bridge Rdwy			99.99 M
(54) Min Vert Underclear ref	N		00.00 M
(55) Min Lat Underclear RT ref	N		00.0 M
(56) Min Lat Underclear LT			00.0 M

Navigation Data

(38) Navigation Control -	Navigation control on waterway	Code 1
(111) Pier Protection		Code 2
(39) Navigation Vertical Clearance		004.6 M
(116) Vert-lift Bridge Nav Min Vert Clear		M
(40) Navigation Horizontal Clearance		0009.1 M

Classification

(112) NBIS Bridge Length		Y
(104) Highway System		N
(26) Functional Class -	Rural Minor Arterial	08
(100) Defense Highway		0
(101) Parallel Structure		N
(102) Direction of Traffic -	2-way traffic	2
(103) Temporary Structure		N
(105) Federal Lands Highways		0
(110) Designated National Network		N
(20) Toll -	On free road	3
(21) Maintain -	State Highway Agency	01
(22) Owner -	State Highway Agency	01
(37) Historical Significance	not eligible	N

Condition

(58) Deck	3
(59) Superstructure	4
(60) Substructure	4
(61) Channel & Channel Protection	6
(62) Culverts	N

Load Rating and Posting

(31) Design Load -	Other/Unknown	0
(63) Operating Rating Method -	Load Factor (LF)	1
(64) Operating Rating		19.3
(65) Inventory Rating Method -	Load Factor (LF)	1
(66) Inventory Rating		18.9
(70) Bridge Posting		0
(41) Structure -	Posted for load	P

Appraisal

(67) Structural Evaluation	4
(68) Deck Geometry	4
(69) Underclearances, vert. and horiz.	N
(71) Waterway adequacy	8
(72) Approach Roadway Alignment	7
(36) Traffic Safety Features	0 0 1 1
(113) Scour Critical Bridges	D

Inspections

(90) Inspection Date 10/20/04 (91) Frequency 06 MO

(92) Critical Feature Inspection:				(93) CFI DATE
(A) Fracture Critical Detail	N	00	MO A)	00/00/00
(B) Underwater Inspection	Y	12	MO B)	08/17/04
(C) Other Special Inspection	Y	06	MO C)	10/20/04
(*) Other Inspection ()	N	00	MO *)	00/00/00
(*) Closed Bridge	N	00	MO *)	00/00/00
(*) UW Special Inspection	N	00	MO *)	00/00/00
(*) Damage Inspection			MO *)	06/02/99

Rating Loads

Report Date 11/01/00	H20	Type 3	Type 3S2	Type HS
Operating	12.0	22.0	35.0	22.0
Inventory	11.0	15.0	23.0	16.0

Field Posting

Status POSTED Posting Date 01/24/01

	2 Axle	3 Axle	5 Axle
Actual	12	15	24
Recommended	12	15	24

Misc

Bridge Name KOREAN & VIETNAM VET MEMORIAL

N Anti-missile fence N Arrow Panel N Jointless Bridge

Accessibility (Needed/Used)

N / N	Liftbucket	N / N	Rigging	Inspection
N / N	Ladder	Y / Y	Staging	Hours: 093
Y / Y	Boat	N / N	Traffic Control	
N / N	Wader	N / N	RR Flagperson	
N / N	Inspector 50	N / N	Police	