



September 18, 2023

Martha's Vineyard Commission
P.O. Box 1447
Oak Bluffs, MA 02557

RE: Stuart Bangs, #101 Old Coach Road, West Tisbury, Asr. Pcl. 16-118, VLSE Job #1559

Dear Board Members,

The locus is a ± 26.35 AC which we are proposing to divide into seven lots, labelled Lot 1-6 and Parcel A, which is an affordable housing site. The proposed lots are in the Tashmoo Pond, Lagoon Pond and Sengenkontacket Watersheds and will be subject to the MV Commission's wastewater policy that limits nitrogen/wastewater production. A summary of the land area in each watershed is shown in Table A.

The three main categories of project control outlined in the Commission's policy are wastewater, stormwater runoff from pervious and impervious surfaces and landscaping. We utilized a set of assumptions for each of these categories to tabulate the proposed nitrogen output of the project and determine a baseline loading rate for the project on a lot-by-lot basis. The assumptions utilized are shown in Table B.

The Commission's policy calculates the maximum loading limit for a project based on the land area of the project multiplied by the adjusted nitrogen load limit (kg/acre/year). A total proposed nitrogen output on a watershed-by-watershed basis is shown in Table C.

Our approach demonstrates that the Commission's nitrogen loading limits will be met while allowing flexibility in balancing proposed stormwater management, landscaping, and number of bedrooms for the project as it evolves. We hope that this document will be helpful to the Commission when reviewing this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Reid G. Silva'.

Reid G. Silva, PE PLS

TABLE A: SQUARE FOOTAGE OF LOTS				
	Tashmoo	Lagoon	Senge	Total
Lot 1	0	166762	5517	172279
Lot 2	85117	87425	0	172542
Lot 3	172630	0	0	172630
Lot 4	172280	0	0	172280
Lot 5	43627	128851	0	172478
Lot 6	0	171293	987	172280
Parcel A	0	14090	45614	59704
Lot Totals	473654	568421	52118	1094193
Unpaved Roads	17537	32342	3590	53469
Watershed Totals (SF)	491191	600763	55708	1147662
Watershed Totals (AC)	11.28	13.79	1.28	26.35

TABLE B: PROPOSED USE PER LOT AND WATERSHED

	Tashmoo	Lagoon	Senge
Lot 1			
Bedrooms (each)		6	
Impervious Surfaces (sf)		1250	
Pervious Surfaces (sf)		3581	
Landscaping (sf)		4000	
Lot 2			
Bedrooms (each)	6		
Impervious Surfaces (sf)	1250		
Pervious Surfaces (sf)	1742		
Landscaping (sf)	4000		
Lot 3			
Bedrooms (each)	6		
Impervious Surfaces (sf)	1250		
Pervious Surfaces (sf)	1158		
Landscaping (sf)	4000		
Lot 4			
Bedrooms (each)	6		
Impervious Surfaces (sf)	1250		
Pervious Surfaces (sf)	2779		
Landscaping (sf)	4000		
Lot 5			
Bedrooms (each)		6	
Impervious Surfaces (sf)		1250	
Pervious Surfaces (sf)		1508	
Landscaping (sf)		4000	
Lot 6			
Bedrooms (each)		6	
Impervious Surfaces (sf)		1250	
Pervious Surfaces (sf)		2266	
Landscaping (sf)		4000	
Parcel A			
Bedrooms (each)			3
Impervious Surfaces (sf)			1000
Pervious Surfaces (sf)			1588
Landscaping (sf)			4000
TOTALS			
Bedrooms (each)	18	18	3
Impervious Surfaces (sf)	3750	3750	1000
Pervious Surfaces (sf)	5679	7355	1588
Landscaping (sf)	12000	12000	4000

TABLE C: CONTRIBUTION BY PROJECT WATERSHED

Watershed	LAGOON			LAKE TASHMOO			SENGEKONTACKET		
Total Project Area in Watershed (acre)	13.79			11.27			1.27		
Watershed Load Limit Factor (kg/acre/yr) (1)	1.87			1.60			2.02		
Total Allowable Nitrogen Load Limit (kg) per MVC policy	25.79			18.03			2.57		
PROPOSED SURFACES (SF)	(SF)	Total N(kg)/yr	Contribution	(SF)	Total N(kg)/yr	Contribution	(SF)	Total N(kg)/yr	Contribution
Unpaved Roads and Driveways to Drywell (2)	7,355	0.79	29.60%	5,679	0.61	19.73%	1,588	0.17	11.12%
Roof Surfaces to Drywell (3)	3,750	0.28	1.94%	3,750	0.28	2.21%	1,000	0.07	1.51%
PROPOSED LANDSCAPE AREAS (SF)	(SF)	Total N(kg)/yr	Contribution	(SF)	Total N(kg)/yr	Contribution	(SF)	Total N(kg)/yr	Contribution
Landscaped Areas	12,000	3.27	22.57%	12,000	3.27	25.73%	4,000	1.09	43.32%
PROPOSED WASTEWATER USE	(EACH)	Total N(kg)/yr	Contribution	(SF)	Total N(kg)/yr	Contribution	(SF)	Total N(kg)/yr	Contribution
Bedrooms - each (4)	18	6.64	45.90%	18	6.64	52.33%	3	1.11	44.05%
TOTAL PROPOSED N (kg/yr)	10.98			10.80			2.44		
TOTAL PROPOSED N (kg/yr) as percent of maximum allowable	42.58%			59.90%			95.18%		

(1): Value from Table A "Coastal Ponds Data" from MVC Water Quality Management Policy

(2): Values from Appendix 4 Section 4.C used to calculate N contribution

(3): Values from Appendix 4 Section 4.D used to calculate N contribution

(4): Values from Appendix 4 Section 1 used to calculate N contribution