



**U.S.ACCESS BOARD**

**REGULATORY ASSESSMENT  
PROPOSED PASSENGER VESSELS ACCESSIBILITY GUIDELINES**

**MAY 2013**

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## EXECUTIVE SUMMARY

“We” and “our” in this document refer to the Architectural and Transportation Barriers Compliance Board (Access Board).

We are required by section 502 of the Rehabilitation Act and section 504 of the Americans with Disabilities Act (ADA) to establish and maintain accessibility guidelines for the construction and alteration of passenger vessels covered by the ADA to ensure that the vessels are readily accessible to and usable by individuals with disabilities. We are issuing proposed accessibility guidelines for the construction and alteration of passenger vessels pursuant to this authority. The U.S. Department of Transportation (DOT) and U.S. Department of Justice (DOJ) are required to issue accessibility standards for the construction and alteration of passenger vessels covered by the ADA that are consistent with our guidelines. Passenger vessel owners and operators would not be required to comply with the guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

We prepared this regulatory assessment to estimate the costs and benefits of the proposed guidelines. We request comment on all aspects of the regulatory assessment to improve our estimates of the costs and benefits of the proposed guidelines. We include questions in the preamble to the notice of proposed rulemaking that request information on specific issues relating to the regulatory assessment.

The proposed guidelines would apply to the construction and alteration of passenger vessels, other than ferries and tenders, permitted to carry more than 150 passengers or more than 49 overnight passengers; ferries permitted to carry more than 99 passengers; and tenders permitted to carry more than 59 passengers. The proposed guidelines would not apply to smaller passenger vessels because providing accessible features on those vessels present greater challenges due to space constraints and other considerations. The proposed guidelines, themselves, would not require existing passenger vessels to be made accessible except where altered.

The proposed guidelines contain proposed scoping and technical provisions. The proposed scoping provisions specify what passenger vessel features would be required to be accessible. Where multiple features of the same type are provided, the proposed scoping provisions specify how many of the features would be required to be accessible. The proposed technical provisions specify the design criteria for accessible features. The passenger vessel features addressed by the proposed scoping and technical provisions include onboard accessible routes connecting passenger decks and passenger amenities within decks; accessible means of escape; doorways and coamings; toilet rooms; wheelchair spaces in assembly areas and transportation seating areas; assistive listening systems; general emergency alarms; guest rooms; and other passenger amenities. The proposed guidelines include proposed technical provisions for accessible passenger boarding systems. However, we defer to DOT and DOJ to address when accessible passenger boarding systems would be required since passenger boarding systems can be provided at landside facilities and involve operational issues between the owner

or operator of the landside facility and the passenger vessel owner or operator that DOT and DOJ are authorized to address.

We estimate the compliance costs separately for: (1) ferries, multi-purpose vessels such as dinner vessels and excursion vessels, and small cruise ships; and (2) large cruise ships operating in U.S. ports. We consider cruise ships permitted to carry between 50 and 299 overnight passengers small cruise ships, and cruise ship permitted to carry 300 or more passengers large cruise ships.

### Ferries, Multi-Purpose Vessels, and Small Cruise Ships

We estimate there were 454 ferries, 346 multi-purpose vessels, and 32 small cruise ships in the size categories covered by the proposed guidelines operating in U.S. ports as of 2010. These 832 vessels are listed in Appendix I, along with the data sources. We estimate 387 of the ferries (85%), 286 of the multi-purpose vessels (83%), and 23 of the small cruise ships (72%) for a total of 696 of the vessels (84%) are expected to reach the end of their service life over 20 years. We assume these vessels would be replaced by new vessels and the new vessels would have the same passenger and vehicle capacity, passenger amenities, and number of passenger decks as the vessels they replace. We also assume the total number of vessels would be stable over 20 years. We conducted case studies of ten vessels to develop estimates of the incremental costs to construct vessels in compliance with the proposed guidelines, and the additional operation and maintenance costs due to the proposed guidelines. We divided the 696 vessels that we assume to be replaced over 20 years into 13 groups by type and size of vessel and extrapolated the compliance costs from the case study vessels to these vessels. We estimate the total compliance costs for the vessels annualized over 20 years are \$16 million discounted at 7 percent and 3 percent.

The proposed provision with the highest estimated cost would require an elevator, or on certain vessels a limited use-limited application elevator (LULA) or platform lift, to connect passenger decks. Ten exceptions are proposed to this provision. For the 696 vessels that we assume to be replaced over 20 years, we estimate 124 of the new vessels (18%) would be required to provide an elevator, LULA, or platform lift to connect decks, and the proposed exceptions would apply to 431 of the new vessels (62%). We estimate 62 vessels (9%) currently provide an elevator, LULA, or platform lift, and assume the new vessels that replace these vessels would also provide an elevator, LULA, or platform lift in the absence of the proposed guidelines. Eleven of these vessels are small cruise ships that would be required to provide larger elevators on the new vessels. We estimate the other 79 vessels (11%) have only one passenger deck, and assume the new vessels that replace these vessels would not need an elevator, LULA, or platform lift. In addition, we estimate 23 small cruise ships would be required to provide a platform lift to connect to a tender boarding platform at the stern of the new vessels.

The proposed provisions for protruding objects; onboard accessible routes to connect passenger amenities within decks; doorways and coamings; accessible means of escape; drinking fountains; toilet rooms; general emergency alarms; assistive listening systems; wheelchair spaces in transportation seating areas; guest rooms; storage; and sales and service counters would also

have a cost impact on ferries, multi-purpose vessels, and small cruise ships. Some of the new vessels would need to be redesigned and lengthened to maintain their passenger and vehicle capacity.

### Large Cruise Ships

We estimate there were 113 large cruise ships operating in U.S. ports as of 2011. These large cruise ships are listed in Appendix II, along with the data sources.

New large cruise ships provide many accessible features that would be required by the proposed guidelines, including elevators to connect passenger decks; guest rooms with mobility features; guest rooms with communication features; wheelchair spaces and assistive listening systems in assembly areas; and pool lifts. We proposed to conduct case studies of new large cruise ships to examine the impact of the proposed guidelines on the vessels. However, we could not find large cruise ship owners and operators to participate in the case studies. Due to the lack of information, we did not estimate the incremental costs to construct large cruise ships in compliance with the proposed guidelines, and the additional operation and maintenance costs due to the proposed guidelines.

The proposed guidelines would require cruise ships to provide a minimum number of guest rooms with mobility features. Guest rooms with mobility features are typically larger than other guest rooms to accommodate passengers who use wheelchairs and scooters. The cruise industry is concerned about the loss of guest rooms and revenue due to the proposed scoping provision for guest rooms with mobility features. According to the cruise industry, two guest rooms with mobility features occupy the same square footage as three guest rooms resulting in the loss of one guest room for every two guest rooms with mobility features. We estimate the 113 large cruise ships operating in U.S. ports as of 2011 contained 123,516 guest rooms, including 2,392 guest rooms with mobility features (1.9% of the total number of guest rooms). We assume 5 percent of the guest rooms in the cruise fleet are replaced annually and the total number of guest rooms increases by 3 percent annually. Based on these assumptions, we estimate 786 guest rooms would be lost over 20 years under the proposed scoping provision against the baseline of the cruise industry practice in the absence of the guidelines. According to the cruise industry, each guest room produced \$140,000 gross revenue in 2005. Adjusting this figure for inflation to \$161,250 in 2011 dollars, we estimate the gross revenue loss annualized over 20 years is \$50 million discounted at 7 percent, and \$58 million discounted at 3 percent. We note, however, that gross revenue loss overstates the cost. The correct measure for estimating the cost of lost guest rooms is net revenue, which is gross revenue less the costs to serve the passengers who would occupy the guest rooms.

### Tenders

We propose minimal provisions for tenders that are used to transport passengers for non-emergency purposes between passenger vessels and shore-side facilities. We do not estimate any compliance costs for tenders because new tenders meet the provisions.

### Alterations to Existing Passenger Vessels

We propose three general exceptions and several specific exceptions for alterations to existing passenger vessels. We requested comment on the frequency and types of alterations to existing passenger vessels when we released an earlier draft of the guidelines. Based on the proposed exceptions and responses received from passenger vessel owners and operators, we expect the proposed guidelines to have little or no impact on alterations to existing passenger vessels.

Primary Estimates of Costs and Benefits

The primary estimates of the costs and benefits of the proposed guidelines are shown in Table 1. We estimate the total compliance costs annualized over 20 years are \$66 million discounted at 7 percent, and \$74 million discounted at 3 percent. We do not quantify the benefits of the proposed guidelines due to the nature of the benefits. The proposed guidelines would address the discriminatory effects of architectural, transportation, and communication barriers encountered by individuals with mobility, hearing, and vision disabilities on passenger vessels. The proposed guidelines would afford these individuals equal opportunity to travel on passenger vessels for employment, transportation, public accommodation, and leisure. The proposed guidelines would enable these individuals to achieve greater participation in society, independent living, and economic self-sufficiency. The benefits are difficult to quantify, but include important national values that are recognized in Executive Order 13563 such as equity, human dignity, and fairness.

<b>Table 1. Primary Estimates of Costs and Benefits of Proposed Guidelines Annualized Over 20 Years (2011 Dollars)</b>		
<b>Costs</b>	<b>7% Discount Rate</b>	<b>3% Discount Rate</b>
		\$66 million
<b>Benefits</b>	The proposed guidelines would address the discriminatory effects of architectural, transportation, and communication barriers encountered by individuals with mobility, hearing, and vision disabilities on passenger vessels. The proposed guidelines would afford these individuals equal opportunity to travel on passenger vessels for employment, transportation, public accommodation, and leisure. The benefits are difficult to quantify, but include important national values that are recognized in Executive Order 13563 such as equity, human dignity, and fairness.	

## CHAPTER 1. BACKGROUND

### 1.1 Introduction

We prepared this regulatory assessment of the proposed accessibility guidelines for passenger vessels in accordance with Executive Order 13563 (Improving Regulation and Regulatory Review) and Executive Order 12866 (Regulatory Planning and Review). Among other things, Executive Order 13563 directs agencies to propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs; tailor the regulation to impose the least burden on society, consistent with obtaining the regulatory objectives; and, in choosing among alternative regulatory approaches, select those approaches that maximize net benefits. Executive Order 13563 recognizes that some benefits are difficult to quantify and provides that, where appropriate and permitted by law, agencies may consider and discuss qualitatively values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts.

### 1.2 Statutory and Regulatory Background

The Americans with Disabilities Act (ADA) is a civil rights law that prohibits discrimination against individuals with disabilities. See 42 U.S.C. 12101 et seq. Title II of the ADA applies to state and local governments and Title III of the ADA applies to places of public accommodation operated by private entities.<sup>1</sup> The ADA covers designated public transportation services provided by state and local governments and specified public transportation services provided by private entities that are primarily engaged in the business of transporting people and whose operations affect commerce.<sup>2</sup> See 42 U.S.C. 12141 to 12147 and 12184. Passenger vessels that provide designated public transportation services or specified public transportation services such as ferries and excursion vessels, and passenger vessels that are places of public accommodation such as vessels that provide dinner or sightseeing cruises are covered by the ADA.

We are required by section 502 of the Rehabilitation Act and section 504 of the ADA to establish and maintain accessibility guidelines for the construction and alteration of passenger vessels covered by the ADA to ensure that the vessels are readily accessible to and usable by individuals with disabilities. See 29 U.S.C. 792 (b) (3) and 42 U.S.C. 12204.

The U.S. Department of Transportation (DOT) is responsible for issuing regulations to implement the transportation provisions of Titles II and III of the ADA. See 42 U.S.C. 12149 and 12186 (a). DOT has issued regulations for passenger vessels used to provide designated public transportation services by state and local governments and specified public transportation

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<sup>1</sup> Title III of the ADA covers twelve categories of places of public accommodation, including places of lodging, establishments serving food or drink, and places of exhibition or entertainment. See 42 U.S.C. 12181 (7).

<sup>2</sup> The definitions of the terms designated public transportation and specified public transportation are similar and mean transportation by bus, rail, or any other conveyance that provides the general public with general or special service, including charter service, on a regular and continuing basis. See 42 U.S.C. 12141 (2) and 12181 (10).



services by private entities that are primarily engaged in the business of transporting people and whose operations affect commerce. See 49 CFR part 39.

The U.S. Department of Justice (DOJ) is responsible for issuing regulations to implement the other provisions of Titles II and III of the ADA. See 42 U.S.C. 12134 and 12186 (b). DOJ has issued regulations for state and local governments and places of public accommodation operated by private entities, including public accommodations provided on passenger vessels such as cruise ships, gaming vessels, and dinner vessels. See 28 CFR parts 35 and 36.

Titles II and III of the ADA require DOT and DOJ to issue accessibility standards for the construction and alteration of passenger vessels covered by the law that are consistent with our guidelines. See 42 U.S.C. 12134 (c), 12149 (b), and 12186 (c). DOT has reserved a subpart in its regulations for accessibility standards for passenger vessels in anticipation of our issuing these guidelines. See 49 CFR part 39, subpart E. Passenger vessel owners and operators would not be required to comply with the guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

### **1.3 Rulemaking History**

We have developed and maintained accessibility guidelines for landside facilities for over 30 years. The guidelines for landside facilities represent the state-of-the-art for accessible design. We worked with passenger vessel owners and operators, the disability community, and other interested parties over the past 15 years to address the unique constraints of the marine environment and adapt the guidelines for landside facilities to passenger vessels.

#### Passenger Vessel Access Advisory Committee

In 1998, we convened a Passenger Vessel Access Advisory Committee comprised of passenger vessel owners and operators, industry trade groups, disability advocacy groups, and state and local government agencies to recommend how to adapt the guidelines for landside facilities to passenger vessels. The advisory committee submitted a report with recommended guidelines in 2000.

#### 2004 Draft Guidelines and ANPRM

Based on the advisory committee's report, we developed draft guidelines for passenger vessels permitted to carry more than 150 passengers or more than 49 overnight passengers. In 2004, we released the draft guidelines for comment and issued an advance notice of proposed rulemaking (ANPRM) on small passenger vessels permitted to carry 150 or fewer passengers, or 49 or fewer overnight passengers. See 69 FR 69244 and 69245, November 26, 2004. The ANPRM requested comment on whether and how to develop accessibility guidelines for small passenger vessels. We held hearings in Washington, DC and Los Angeles on the 2004 draft guidelines and the ANPRM, and received more than 90 comments.

#### 2006 Draft Guidelines

Based on the comments on the 2004 draft guidelines and ANPRM, we revised the draft guidelines in 2006 to include all ferries; other passenger vessels permitted to carry more than 150 passengers or 49 overnight passengers; and tenders permitted to carry more than 59 passengers. We released the 2006 draft guidelines for comment. See 71 FR 38563, July 7, 2006. We received more than 175 comments on the 2006 draft guidelines.

### Case Studies

Between 2005 and 2008, we conducted case studies of ten passenger vessels to identify the impact of the draft guidelines on the vessels. We worked with vessel owners and operators, naval architects, and ship builders to review the original designs of the vessels and to identify design changes that would be needed to meet the draft guidelines. The naval architects and ship builders estimated the cost of the design changes, and considered the impact of the design changes on the passenger vessel's space, fuel consumption, and stability. We prepared reports on the case studies. We updated the case study reports to reflect changes to the proposed guidelines from earlier drafts and to adjust the cost estimates to 2011 dollars.

### Passenger Vessel Emergency Alarms Advisory Committee

Comments on the 2006 draft guidelines raised issues about emergency alarm systems on passenger vessels alerting passengers who are deaf or have a hearing loss. We convened a Passenger Vessel Emergency Alarms Advisory Committee in 2007 comprised of passenger vessel owners and operators, industry trade groups, organizations representing individuals who are deaf or have a hearing loss, and standard setting organizations to address the comments. The advisory committee submitted a report with its recommendations in 2008. The advisory committee recommended that general emergency alarm systems include visible elements to alert passengers who are deaf or have a hearing loss, and recommended safeguards against triggering photosensitive seizures in individuals with epilepsy. The advisory committee recommended that the visible element on U.S. flag ships comply with the NFPA 72 National Fire Alarm Code. The advisory committee recommended that the U.S. Coast Guard work with the International Maritime Organization to develop guidelines for including visible elements in general emergency alarm systems on foreign flag vessels. The International Maritime Organization approved non-mandatory guidelines for including visible elements in general emergency alarm systems in 2012.<sup>3</sup>

### 2008 Draft Guidelines

Based on the comments on the 2006 draft guidelines and the case studies, we revised the draft guidelines in 2008. The 2008 draft guidelines covered ferries permitted to carry more than 99 passengers; other passenger vessels permitted to carry more than 150 passengers or more than 49 overnight passengers; and tenders permitted to carry more than 59 passengers.

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<sup>3</sup> International Maritime Organization, Guidelines for the Design and Installation of a Visible Element to the General Emergency Alarm System on Passenger Ships, MSC.1/Circ.1418, June 13, 2012 at: <http://www.imo.org/OurWork/Circulars/Pages/IMODOCS.aspx>.

The advisory committee reports, ANPRM, earlier drafts of the guidelines, comments on the ANPRM and earlier drafts of the guidelines, updated case study reports, and other background information on the proposed guidelines are available at: <http://www.access-board.gov/pvag/>. We used all this information to develop the proposed guidelines.

#### **1.4 Overview of Proposed Guidelines**

The proposed guidelines would apply to the construction and alteration of passenger vessels, other than ferries and tenders, permitted to carry more than 150 passengers or more than 49 overnight passengers; ferries permitted to carry more than 99 passengers; and tenders permitted to carry more than 59 passengers. The proposed guidelines would not apply to smaller passenger vessels because providing accessible features on those vessels present greater challenges due to space constraints and other considerations. The proposed guidelines, themselves, would not require existing passenger vessels to be made accessible except where altered.

The proposed guidelines contain proposed scoping and technical provisions. The proposed scoping provisions specify what passenger vessel features would be required to be accessible. Where multiple features of the same type are provided, the proposed scoping provisions specify how many of the features would be required to be accessible. The proposed technical provisions specify the design criteria for accessible features. The passenger vessel features addressed by the proposed scoping and technical provisions include onboard accessible routes connecting passenger decks and passenger amenities within decks; accessible means of escape; doorways and coamings; toilet rooms; wheelchair spaces in assembly areas and transportation seating areas; assistive listening systems; general emergency alarms; guest rooms; and other passenger amenities. The proposed guidelines include proposed technical provisions for accessible passenger boarding systems. However, we defer to DOT and DOJ to address when accessible passenger boarding systems would be required since passenger boarding systems can be provided at landside facilities and involve operational issues between the owner or operator of the landside facility and the passenger vessel owner or operator that DOT and DOJ are authorized to address.

## CHAPTER 2. FERRIES, MULTI-PURPOSE VESSELS, AND SMALL CRUISE SHIPS

### 2.1 Introduction

This chapter discusses the impact of the proposed guidelines on ferries permitted to carry more than 99 passengers; multi-purpose vessels such as dinner vessels and excursion vessels permitted to carry more than 150 passengers; and small cruise ships permitted to carry between 49 and 299 overnight passengers that operate in U.S. ports. We estimate there were 454 ferries, 346 multi-purpose vessels, and 32 small cruise ships in the size categories covered by the proposed guidelines operating in U.S. ports as of 2010. Appendix I lists these 832 vessels, along with the data sources. The appendix provides data on each vessel, including vessel name, year constructed, number of passengers, and number of passenger decks. As shown in Table 2, we estimate that about 25 percent of the vessels are owned by state or local governments, and the rest are owned by private entities.

<b>Vessel Type</b>	<b>Number</b>	<b>State or Local Government</b>	<b>Private</b>
Ferry	454	197	257
Multi-Purpose Vessel	346	8	338
Small Cruise Ship	32	0	32
<b>Total</b>	<b>832</b>	<b>205</b>	<b>627</b>

### 2.2 Replacement Vessels

We estimate the compliance costs over 20 years for new vessels that replace the existing vessels. As shown in Table 3, we assume the existing vessels have an expected service life of 25 to 40 years based on the vessel type and size. We estimate 696 of the existing vessels (84%) would reach the end of their expected service life over 20 years beginning in 2012. We assume these vessels would be replaced by new vessels and the new vessels would have the same passenger and vehicle capacity, passenger amenities, and number of passenger decks as the vessels they replace. We also assume the total number of vessels would be stable over 20 years.

<b>Vessel Type &amp; Size</b>	<b>Expected Service Life</b>	<b>Number of Existing Vessels That Reach End of Expected Service Life Over 20 Years</b>
<b>Multi-Hull Ferries</b>		
100-124 passengers only	25 years	4
145-150 passengers only	25 years	41
151-600 passengers only	30 years	32
<b>Mono-Hull Ferries</b>		
100-150 passengers only	30 years	70
100-150 passengers plus vehicles	30 years	67
151-1000 passengers only	30 years	72

<b>Vessel Type &amp; Size</b>	<b>Expected Service Life</b>	<b>Number of Existing Vessels That Reach End of Expected Service Life Over 20 Years</b>
151-1000 passengers plus vehicles	30 years	82
1001 or more passengers plus vehicles	40 years	19
<b>Multi-Hull Multi-Purpose Vessels</b>		
151-600 passengers	30 years	13
<b>Mono-Hull Multi-Purpose Vessels</b>		
151-499 passengers	30 years	181
500-1000 passengers	30 years	86
1001 or more passengers	40 years	6
<b>Small Cruise Ships</b>		
50-299 passengers	40 years	23
<b>Total</b>		<b>696</b>

Table 4 shows the number of new vessels we assume to be constructed each year to replace the existing vessels. About 33% of the existing vessels (275 vessels) would reach or exceed their expected service life in the first year. This results in the estimated compliance costs for the new vessels being higher in the first year than in the other years.

<b>Year<sup>1</sup></b>	<b>Ferries</b>	<b>Multi-Purpose Vessels</b>	<b>Small Cruise Ships</b>	<b>Total</b>
1	163	110	2	275
2	9	9	0	18
3	10	12	0	22
4	9	20	0	29
5	8	14	1	23
6	13	13	0	26
7	13	16	0	29
8	20	15	1	36
9	13	7	1	21
10	10	14	1	25
11	9	4	2	15
12	10	5	2	17
13	13	6	3	22
14	10	7	0	17
15	18	4	0	22
16	13	3	1	17
17	16	9	2	27
18	9	11	3	23
19	6	5	2	13
20	15	2	2	19

<b>Year<sup>1</sup></b>	<b>Ferries</b>	<b>Multi-Purpose Vessels</b>	<b>Small Cruise Ships</b>	<b>Total</b>
<b>Total</b>	<b>387</b>	<b>286</b>	<b>23</b>	<b>696</b>

**Note:**  
1. Year 1 is 2012.

### 2.3 Case Studies

Between 2005 and 2008, we conducted case studies of ten vessels to identify the impact of the draft guidelines on the vessels. We worked with the vessel owners and operators, naval architects, and ship builders to review the original designs of the vessels and to identify design changes that would be needed to meet the draft guidelines. The naval architects and ship builders estimated the cost of the design changes, and considered the impact of the design changes on the passenger vessel’s space, fuel consumption, and stability. We prepared reports on the case studies. We updated the case study reports to reflect changes to the proposed guidelines from earlier drafts and to adjust the cost estimates to 2011 dollars.<sup>4</sup> The updated case study reports are available at: <http://www.access-board.gov/pvag/>. Table 5 lists the case study vessels and abbreviations used to refer to the case study vessels in tables 6 through 8.

<b>Case Study Vessel</b>	<b>Abbreviation</b>
108 Passenger High-Speed Ferry	108 pax ferry
149 Passenger High-Speed Ferry	149 pax ferry
399 Passenger Traditional Ferry	399 pax ferry
450 Passenger High-Speed Ferry	450 pax ferry
150 Passenger & 20 Vehicle Ferry	20 car ferry
300 Passenger & 40 Vehicle Ferry	40 car ferry
4,400 Passenger & 30 Vehicle Ferry	4400 pax ferry
300 Passenger Tour Vessel	300 pax tour vessel
600 Passenger Dinner Vessel	600 pax dinner vessel
120-passenger Cruise ship	120 pax cruise ship

The proposed provisions identified in the case studies that would have a cost impact are shown in Table 6. The proposed provisions for onboard accessible routes, toilet rooms, and assistive listening systems would have a cost impact on almost every case study vessel. The proposed provisions for protruding objects, accessible means of escape, drinking fountains, general emergency alarms, transportation seating areas, medical care facilities, guest rooms, storage, and sales and service counters would have a cost impact on only some of the case study vessels.

<sup>4</sup> Some of the case study reports discuss provisions in earlier drafts of the guidelines that are modified (e.g., accessible means of escape) or deleted (e.g., stairs) in the proposed guidelines.

**Table 6. Proposed Provisions Identified in Case Studies That Would Have Cost Impact**

<b>Proposed Provision</b>	<b>108 pax ferry</b>	<b>149 pax ferry</b>	<b>399 pax ferry</b>	<b>450 pax ferry</b>	<b>20 car ferry</b>	<b>40 car ferry</b>	<b>4400 pax ferry</b>	<b>300 pax tour vessel</b>	<b>600 pax dinner vessel</b>	<b>120 pax cruise ship</b>
<b>Protruding Objects V204, V307</b>	X	X	X	X	X	X		X		
<b>Onboard Accessible Routes<sup>1</sup> V206, V402 -V409</b>	X	X		X	X	X	X	X	X	X
<b>Accessible Means of Escape V207</b>			X	X			X		X	X
<b>Drinking Fountains V211, V602</b>				X		X				
<b>Toilet Rooms V213, V603-V608</b>	X	X	X	X	X	X		X	X	X
<b>General Emergency Alarms V215, V702</b>						X				X
<b>Assistive Listening Systems V219, V706</b>	X	X	X	X	X	X	X	X	X	X
<b>Transportation Seating Areas V222, V802.1</b>	X	X	X	X	X		X	X		
<b>Medical Care Facilities V223, V805</b>										X
<b>Guest Rooms V224, V806</b>										X
<b>Storage V225, V807</b>	X	X	X		X			X		
<b>Sales and Service Counters V227, V904</b>									X	

**Note:**

1. Onboard accessible routes include proposed provisions for elevators, limited use-limited application elevators (LULA), and platform lifts to connect passenger decks on vessels with more than one deck; onboard accessible routes to connect passenger amenities within decks; and doorways and coamings. Some of these proposed provisions would not have a cost impact on some of the case study vessels.

Incremental Construction Costs

The case study reports estimate the incremental construction costs for the vessels, which is the difference between the cost of constructing the vessel in the absence of the proposed

guidelines (pre-guidelines construction cost) and the cost of constructing the vessel in compliance with the guidelines (post-guidelines construction cost). The case study reports estimate the following incremental construction costs:

- Vertical Access Construction Cost. This is the cost of installing an elevator, limited use-limited application elevator (LULA), or platform lift to connect passenger decks on a vessel with more than one deck.
- Other Accessible Feature Costs. This includes the cost to expand toilet rooms; modify doors and thresholds; install automatic doors at doorways with coamings and double ramps; add assistive listening systems; and provide protected waiting areas as part of an accessible means of escape where passengers with disabilities wait for crew assistance during emergencies.
- Lengthening Cost. This is the cost of increasing the length of a new vessel to accommodate the accessible features and maintain the passenger and vehicle capacity, and the passenger amenities such as fixed seating and toilet rooms provided on the existing vessel.
- Redesign Cost. This is the cost for architectural design drawings for a new vessel that differs in design from the existing vessel it replaces. The estimated redesign cost for the case study vessels ranged from 3 percent to 10 percent of incremental construction costs.

Table 7 shows the pre-guidelines construction costs and incremental construction costs for the case study vessels in dollars, and also shows the incremental construction costs as a percent increase in construction costs. The construction costs would increase by less than 1 percent to 12.5 percent for nine of the case study vessels. The construction costs would increase by 24.5 percent for the 108 passenger high-speed ferry because the vessel owner wanted to lengthen the ferry by 10 feet based on the owner's experience with a larger ferry, instead of the 5 feet minimum needed to maintain the vessel's seating and storage capacity. If the replacement ferry is lengthened by 5 feet, instead of 10 feet, the construction costs would increase by 14 percent to 17 percent, instead of 24.5 percent.

#### Additional Operation and Maintenance Costs

The case studies identified the following additional annual operation and maintenance costs due to the proposed guidelines:

- Vertical Access Maintenance Cost. This is the annual cost of maintaining an elevator, LULA, or platform lift to connect passenger decks.
- Automatic Door Maintenance Cost. This is the annual cost of maintaining and replacing automatic doors at doorways with coamings and double ramps.
- Engine Maintenance Cost. This is the annual cost for additional engine maintenance due to added weight from the accessible features and vessel lengthening.



- Fuel Cost. This is the annual cost for additional fuel consumption due to installing an elevator, LULA, or platform lift to connect passenger decks and vessel lengthening.

Table 7 shows the additional operation and maintenance costs for the case study vessels.

**Table 7. Estimated Compliance Costs for Case Study Vessels (Thousands of dollars)**

	<b>108 pax ferry</b>	<b>149 pax ferry</b>	<b>399 pax ferry</b>	<b>450 pax ferry</b>	<b>20 car ferry</b>	<b>40 car ferry</b>	<b>4400 pax ferry</b>	<b>300 pax tour vessel</b>	<b>600 pax dinner vessel</b>	<b>120 pax cruise ship</b>
<b>Pre-Guidelines Construction Costs</b>	\$2,270	\$3,110	\$5,970	\$11,650	\$4,630	\$9,560	\$62,700	\$2,450	\$6,490	\$70,580
<b>Incremental Construction Costs</b>	\$556	\$390	\$134	\$487	\$38	\$289	\$787	\$79	\$642	\$2,242
<b>Percent Increase in Construction Costs</b>	24.5% <sup>1</sup>	12.5%	2.2%	4.2%	< 1% <sup>2</sup>	3.0%	1.3%	3.2% <sup>3</sup>	9.9%	3.2%
<b>Additional Annual Operation and Maintenance Costs</b>	18% increase in fuel consumption	3% to 6.6% increase in fuel consumption	None	10% increase in fuel consumption	Not Significant	Not Significant	\$1,100 to \$1,300 per automatic door	Not Significant	5% to 10% increase in fuel consumption	Not Significant

**Notes:**

1. The owner of the 108 passenger high-speed ferry wanted to lengthen the ferry by 10 feet based on the owner's experience with a larger ferry, instead of the 5 feet minimum needed to maintain the vessel's seating and storage capacity. If the ferry is lengthened by 5 feet, instead of 10 feet, the construction costs would increase by 14% to 17%, instead of 24.5%.
2. The owner of the 150 passenger and 20 vehicle mono-hull ferry wanted to lose a vehicle space instead of lengthening the replacement ferry by 16 feet to maintain its vehicle capacity. This would result in an annual revenue loss of \$51,000 to \$86,000. If the replacement ferry is lengthened by 16 feet, the construction costs would increase by 6.7%, instead of less than 1%.
3. The 300 passenger tour vessel has two entry decks and currently provides an inclined platform lift to connect the two entry decks. The inclined platform lift is included in the pre-guidelines construction cost. If the vessel did not provide an inclined platform lift, the construction costs would increase by 5.3% if an inclined lift is provided, and 8.1% if a vertical platform lift is provided.

## 2.4 Estimated Compliance Costs for Replacement Vessels

We worked with the Volpe National Transportation Systems Center to extrapolate the incremental construction costs and additional annual operation and maintenance costs from the case study vessels to the replacement vessels. As shown in Table 8, we divided the replacement vessels into 13 groups and matched each group by type and size with one or more of the case study vessels. We used the elevator cost from the 600 passenger dinner vessel for replacement vessels that would be required to provide an elevator. We developed cost estimates for the incremental construction costs and additional annual operations and maintenance costs for the replacement vessels in each group based on the case study vessel costs. We erred on the side of overestimating compliance costs when matching the replacement vessels with the case study vessels. All estimates are 2011 dollars.

<b>Table 8. Replacement Vessels Matched to Case Study Vessels</b>		
<b>Vessel Type &amp; Size</b>	<b>Number of Vessels</b>	<b>Case Study Vessel</b>
<b>Multi-Hull Ferries</b>		
100-124 passengers only	4	108 pax ferry
145-150 passengers only	41	149 pax ferry
151-600 passengers only	32	450 pax ferry
<b>Mono-Hull Ferries</b>		
100-150 passengers only	70	149 pax ferry; 399 pax ferry
100-150 passengers plus vehicles	67	20 car ferry
151-1000 passengers only	72	399 pax ferry; 600 pax dinner vessel
151-1000 passengers plus vehicles	82	40 car ferry; 600 pax dinner vessel
1001 or more passengers plus vehicles	19	4,400 pax ferry; 600 pax dinner vessel
<b>Multi-Hull Multi-Purpose Vessels</b>		
151-600 passengers	13	450 pax ferry
<b>Mono-Hull Multi-Purpose Vessels</b>		
151-499 passengers	181	300 pax tour vessel; 600 pax dinner vessel
500-1000 passengers	86	600 pax dinner vessel
1001 or more passengers	6	4,400 pax ferry; 600 pax dinner vessel
<b>Small Cruise Ships</b>		
50-299 passengers	23	120 pax cruise ship; 600 pax dinner vessel
<b>Total</b>	<b>696</b>	

### Vertical Access Cost

The proposed guidelines would require an elevator, limited use-limited application elevator (LULA), or platform lift to connect passenger decks on a vessel with more than one deck. A LULA is a passenger elevator that is limited in use and application by size, capacity, speed, and rise. The maximum rise of a LULA is 25 feet and it can be used to connect three or

fewer passenger decks.<sup>5</sup> The maximum rise for a platform lift is 14 feet and it can be used to connect two passenger decks.<sup>6</sup>

Ten exceptions are proposed. Exceptions 1, 2, and 3 would reduce the compliance costs for small passenger vessels. Exception 1 would not require an onboard accessible route to connect the decks on passenger vessels that have only two passenger decks unless both decks are entry decks. Exception 2 would not require an onboard accessible route to connect decks that are not entry decks where each passenger deck is less than 3,000 square feet. Exception 3 would not require an onboard accessible route to connect decks where a passenger vessel that is otherwise eligible to use Exceptions 1 or 2 has more than one entry deck and at least one designated entry deck: (1) serves each stop used for embarking and disembarking passengers; and (2) contains drinking fountains, toilet rooms, transportation seating areas, and guest rooms with mobility features, where such amenities are provided on the vessel.

Exceptions 4 and 5 would reduce the compliance costs for high-speed passenger vessels that cannot use Exceptions 1, 2, or 3. Exception 4 would not require an onboard accessible route to connect decks on high-speed passenger vessels that have only three passenger decks and do not transport vehicles or overnight passengers provided that at least one designated entry deck: (1) serves each stop used for embarking and disembarking passengers; (2) contains drinking fountains, toilet rooms, transportation seating areas, and guest rooms with mobility features, where such amenities are provided on the vessel; and (3) contains at least one exterior passenger area that is not covered by other decks, where an uncovered exterior passenger area is provided on the vessel. Exception 5 would not require an onboard accessible route to connect to the sun deck on a high-speed passenger vessel that does not transport overnight passengers where the sun deck has no enclosed passenger spaces and is not an entry deck provided that at least one exterior passenger area that is not covered by other decks is provided on an entry deck or a deck connected to an entry deck by an onboard accessible route.

Exceptions 6 and 7 would reduce the compliance costs for vehicle ferries that are designed to accommodate vehicles with high clearances. Where a passenger deck, other than an entry deck, is divided into two separate segments and no horizontal circulation path is provided between the two segments, Exception 6 would require an onboard accessible route to connect to only one segment of the divided deck. Where decks containing vehicle parking lanes are designed to be raised and lowered and do not provide any other passenger amenities, Exception 7 would not require an onboard accessible route to connect to such decks.

Exception 8 would not require an onboard accessible route to connect to decks, other than entry decks, that are less than 300 square feet. Exception 9 would not require an onboard accessible route to connect to decks below the bulkhead deck. Exception 10 would apply to alterations to qualified historic passenger vessels and would not require an onboard accessible route to connect the decks on such vessels where the State Historic Preservation Officer or

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<sup>5</sup> ASME 17.1-2010 Safety Code for Elevators and Escalators, section 5.2.1.16.5.

<sup>6</sup> ASME 18.1-2011 Safety Standard for Platform Lifts and Stairway Chairlifts, section 2.7.1.

Advisory Council on Historic Preservation determines that it would threaten or destroy the historic significance of a qualified historic passenger vessel.

We make the following assumptions to determine whether the replacement vessels that have more than one deck would need an elevator, LULA, or platform lift:

- A deck is assumed to be a passenger deck unless information is available indicating the deck is used only by crew.
- A vessel is assumed to have only one entry deck unless information is available indicating there is more than one entry deck.
- If information on the vessel width is unavailable, we assume all the decks are less than 3,000 square feet when the vessel length is less than 100 feet.
- If an existing vessel provides an elevator, LULA, or platform lift, we assume the replacement vessel would provide an elevator, LULA, or platform lift in the absence of the proposed guidelines.
- Where an exception would not apply, we assume a two deck vessel with two entry decks would provide a platform lift at a cost of \$108,700; a three deck vessel would provide a LULA at a cost of \$297,400; and a vessel with four or more decks would provide an elevator at a cost of \$371,700. The costs are average unit costs based on the case studies.<sup>7</sup>
- All small cruise ships would need to provide a platform lift at a cost of \$27,100 to connect to a tender boarding platform at the stern of the vessel based on the matched case study vessel.

Based on the above assumptions, we estimate 124 of the replacement vessels (18%) would be required to provide an elevator, LULA, or platform lift to connect decks, and the proposed exceptions would apply to 431 of the replacement vessels (62%). We estimate 62 vessels (9%) currently provide an elevator, LULA, or platform lift, and assume the replacement vessels would provide an elevator, LULA, or platform lift in the absence of the proposed guidelines. Eleven of these vessels are small cruise ships that would be required to provide larger elevators on the replacement vessels. We estimate the other 79 vessels (11%) have only one passenger deck, and assume the replacement vessels would not need an elevator, LULA, or platform lift.

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<sup>7</sup> Nine two deck vehicle ferries that were matched with the 300 passenger and 40 vehicle ferry case study needed to provide a means of vertical access from the entry deck to the transportation seating areas on another deck since space was not available on the entry deck for a transportation seating area. The 300 passenger and 40 vehicle ferry case study used an exterior vertical platform lift with additional deck surface at an estimated cost of \$209,000 to provide a means of vertical access between the decks. To simplify the assessment and to err on the side of overestimating compliance costs, we used a LULA at a cost of \$297,400 for the nine ferries.

<b>Table 9. Estimated Number of Replacement Vessels That Would Be Required to Provide Elevator, LULA, or Platform Lift</b>				
<b>Vessel Type &amp; Size</b>	<b>Number of Vessels</b>	<b>Vessels Affected</b>	<b>Cost per Vessel (thousands of dollars)</b>	<b>Assumptions &amp; Explanations</b>
<b>Multi-Hull Ferries</b>				
100-124 passengers only	4	0	0	2 have one deck Exception 1 applies to the other vessels
145-150 passengers only	41	0	0	7 have one deck Exception 1 or 2 applies to the other vessels
151-600 passengers only	32	2	\$109	2 with two entry decks need a platform lift Exception 1, 2, or 4 applies to the other vessels
<b>Mono-Hull Ferries</b>				
100-150 passengers only	70	0	0	9 have one deck Exception 1 or 2 applies to the other vessels
100-150 passengers plus vehicles	67	0	0	33 have one deck Exception 1 applies to the other vessels
151-1000 passengers only	72	7	\$297	7 need a LULA 3 currently provide an elevator, LULA, or platform lift 6 have one deck Exception 1 or 2 applies to the other vessels
151-1000 passengers plus vehicles	82	19	\$297	19 need a LULA 9 need an elevator
		9	\$372	19 currently provide an elevator, LULA, or platform lift 8 have one deck Exception 1 applies to the other vessels
1001 or more passengers plus vehicles	19	0	0	17 currently provide an elevator, LULA, or platform lift Exception 1 applies to the other vessels
<b>Multi-Hull Multi-Purpose Vessels</b>				
151-600 passengers	13	0	0	Exception 1 or 4 applies to all vessels
<b>Mono-Hull Multi-Purpose Vessels</b>				
151-499 passengers	181	18	\$297	18 need a LULA 3 need an elevator
		3	\$372	3 currently provide an elevator, LULA, or platform lift 12 have one deck Exception 1 or 2 applies to the other vessels

<b>Table 9. Estimated Number of Replacement Vessels That Would Be Required to Provide Elevator, LULA, or Platform Lift</b>				
<b>Vessel Type &amp; Size</b>	<b>Number of Vessels</b>	<b>Vessels Affected</b>	<b>Cost per Vessel (thousands of dollars)</b>	<b>Assumptions &amp; Explanations</b>
500-1000 passengers	86	30	\$297	30 need a LULA 20 need an elevator 7 currently an provide elevator, LULA, or platform lift 2 have one deck Exception 1 or 2 applies to the other vessels
		20	\$372	
1001 or more passengers	6	2	\$297	2 need a LULA 2 need an elevator 2 are currently provide an elevator, LULA, or platform lift
		2	\$372	
<b>Small Cruise Ships</b>				
50-299 passengers	23	1	\$27	1 needs a stern platform lift only 11 need to enlarge existing elevators plus a stern platform lift 7 need a LULA plus a stern platform lift 4 need an elevator plus a stern platform lift
		11	\$30	
		7	\$325	
		4	\$399	
<b>Total</b>	<b>696</b>	<b>135</b>		

## Other Accessible Features Costs

The proposed guidelines would require the replacement vessels to provide other accessible features that have incremental construction costs, including expanding toilet rooms; modifying doors and thresholds; installing automatic doors at doorways with coamings and double ramps; adding assistive listening systems; and providing protected waiting areas as part of an accessible means of escape.<sup>8</sup>

The owner of the 450 passenger high-speed ferry in the case study noted that the engine system would need to be upgraded due to the accessible features and vessel lengthening. The incremental cost to upgrade the engine system is included in the other accessible features costs for the multi-hull ferries and multi-purpose vessels permitted to carry 151 to 600 passengers matched with the case study of the 450 passenger high-speed ferry. The owners and operators of the other case study vessels did not note a need to upgrade the engine systems.

The naval architect who worked on the 600 passenger dinner vessel in the case study noted that the electric generator system would need to be upgraded due to the addition of an elevator. The incremental cost to upgrade the electric generator system is included in the other accessible features costs for the mono-hull multi-purpose vessels permitted to carry 500 to 1,000 passengers matched with the case study of the 600 passenger dinner vessel. We request comment on whether the electric generator system on other replacement vessels would need to be upgraded in the preamble to the proposed guidelines.

The incremental construction costs to provide the other accessible features on the replacement vessels are shown in Table 10. The costs range from \$19,000 for mono-hull ferries permitted to carry 151 to 1,000 passengers plus vehicles to \$631,000 for mono-hull ferries permitted to carry 1,001 or more passengers plus vehicles and mono-hull and multi-purpose vessels permitted to carry 1,001 or more passengers. The costs are higher for mono-hull ferries permitted to carry 1,001 or more passengers plus vehicles and multi-purpose vessels permitted to carry 1,001 or more passengers because the owner of the 4,400 passenger and 30 vehicle ferry in the case study matched to these vessels wanted to provide automatic sprinkler systems instead of protected waiting areas as part of an accessible means of escape even though the automatic sprinkler systems are more costly. The costs would be lower if protected waiting areas are provided.

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<sup>8</sup> Where the administrative authority requires a passenger vessel to have a means of escape, the proposed guidelines would require an accessible means of escape that provides a substantially equivalent level of protection from hazards as is required by the administrative authority for the means of escape. Where passengers with disabilities have to wait for crew assistance at or near stairways or exit doors with coamings or for elevators or platform lifts to be crew operated during emergencies, the waiting area would need to be sufficiently protected from hazards in order to provide the occupants a level of protection that is substantially equivalent to the level of protection afforded to passengers who can use the means of escape unassisted. A protected waiting area would not be needed where another equivalent method of protection is provided, such as where passenger vessels are protected by automatic sprinkler systems or the area is open to the weather.



**Table 10. Estimated Compliance Costs to Provide Other Accessible Features Costs on Replacement Vessels**

Vessel Type & Size	Number of Vessels	Vessels Affected	Cost Per Vessel (thousands of dollars)	Assumptions & Explanations
<b>Multi-Hull Ferries</b>				
100-124 passengers only	4	4	\$25	Modifying doors and thresholds Expanding toilet room Adding accessible lockers and assistive listening system
145-150 passengers only	41	41	\$38	Increasing ceiling height Modifying doors Adding assistive listening system Adjusting overhead grab rails
151-600 passengers only	32	32	\$153	Expanding vertical clearances at doors Adding drinking fountain and assistive listening system Providing protected waiting areas for accessible means of escape Upgrading engine system
<b>Mono-Hull Ferries</b>				
100-150 passengers only	70	70	\$39	Modifying doors and thresholds Adding accessible lockers and assistive listening system
100-150 passengers plus vehicles	67	34	\$54	Lengthening seating cabin Adding accessible lockers and assistive listening system
151-1000 passengers only	72	72	\$116	Adding assistive listening system Providing automatic sprinkler system instead of protected waiting areas for accessible means of escape Providing visible alarms
151-1000 passengers plus vehicles	82	82	\$19	Expanding toilet room Adding guardrails under stairway, drinking fountain, and assistive listening system
1001 or more passengers plus vehicles	19	19	\$631 <sup>1</sup>	Installing automatic doors and door drainage systems at doorways with coamings Adding assistive listening system Providing automatic sprinkler system instead of protected waiting areas for accessible means of escape
<b>Multi-Hull Multi-Purpose Vessels</b>				
151-600 passengers	13	13	\$153	Expanding vertical clearances at doors Adding drinking fountain and assistive listening system Providing protected waiting areas for accessible means of escape Upgrading engine system

**Table 10. Estimated Compliance Costs to Provide Other Accessible Features Costs on Replacement Vessels**

<b>Vessel Type &amp; Size</b>	<b>Number of Vessels</b>	<b>Vessels Affected</b>	<b>Cost Per Vessel (thousands of dollars)</b>	<b>Assumptions &amp; Explanations</b>
<b>Mono-Hull Multi-Purpose Vessels</b>				
151-499 passengers	181	181	\$78	Expanding toilet rooms Adding assistive listening system
500-1000 passengers	86	36	\$112	Modifying doors and thresholds Adding assistive listening system Providing protected waiting areas for accessible means of escape
		50	\$125	Modifying doors and thresholds, and service counter Adding assistive listening system Providing protected waiting areas for accessible means of escape Upgrading electric generator system
1001 or more passengers	6	2	\$222 <sup>1</sup>	Installing automatic doors at doorways with coamings Adding assistive listening system
		4	\$631 <sup>1</sup>	Installing automatic doors at doorways with coamings Adding assistive listening system Providing automatic sprinkler system instead of protected waiting areas for accessible means of escape
<b>Small Cruise Ships</b>				
50-299 passengers	23	23	\$95	Modifying doors, thresholds, and medical care facilities Adding accessible guest rooms, ramps, visible alarms, and assistive listening system
<b>Total</b>	<b>696</b>	<b>663<sup>2</sup></b>		

**Notes:**  
 1. The cost shown is the average total cost for vessels in the group since vessels in the group had some variation in the other accessible feature costs.  
 2. Thirty-three (33) of the existing mono-hull ferries carrying 100 to 150 passengers plus vehicles currently provide the other accessible features. We assume that the replacement vessels for these 33 ferries would be the same design and would not incur any compliance costs for the other accessible features.

## Lengthening Cost

Some of the case study vessels needed to be lengthened to accommodate the accessible features and to maintain passenger and vehicle capacity. The larger vessels in the case studies could accommodate the accessible features, and maintain passenger and vehicle capacity without being lengthened. It is more costly to lengthen multi-hull vessels than mono-hull vessels.

We make the following assumptions to determine how many feet to lengthen the replacement vessels that needed to be lengthened:

- Multi-hull ferries permitted to carry 100 to 124 passengers would be lengthened by 5 feet since the owner of the matched case study vessel (108 passenger high-speed ferry) wanted to lengthen the replacement vessel by more than 5 feet for reasons unrelated to the accessible features.
- Mono-hull ferries permitted to carry 100 to 150 passengers plus vehicles that have two decks would be lengthened by 16 feet to maintain vehicle capacity. The owner of the matched case study vessel (150 passenger and 20 vehicle mono-hull ferry) wanted to lose a vehicle space instead of lengthening the replacement vessel by 16 feet to maintain its vehicle capacity. We assume other ferry owners would lengthen the vessel to maintain the vehicle capacity.
- 11 of the small cruise ships are smaller than the matched case study vessel (120 passenger cruise ship) and the lengthening cost is adjusted proportionally to the vessel size.

Based on the above assumptions, we estimate 267 of the replacement vessels (38 percent) would need to be lengthened as shown in Table 11. The lengthening cost would range from \$60,000 for mono-hull ferries permitted to carry 100 to 150 passengers to \$2,117,000 for some small cruise ships. We assume lengthening the vessels would not impact their use of docking areas. We request comment on this issue in the preamble to the notice of proposed rulemaking.

<b>Table 11. Estimated Lengthening Cost for Replacement Vessels</b>				
<b>Vessel Type &amp; Size</b>	<b>Number of Vessels</b>	<b>Vessels Affected</b>	<b>Cost Per Vessel (thousands of dollars)</b>	<b>Assumptions &amp; Explanations</b>
<b>Multi-Hull Ferries</b>				
100-124 passengers only	4	4	\$261	Lengthen 5 feet (modified from case study)
145-150 passengers only	41	41	\$90	Lengthen 3 feet (same as case study)
151-600 passengers only	32	32	\$217	Lengthen 4 feet (same as case study)
<b>Mono-Hull Ferries</b>				
100-150 passengers only	70	70	\$60	Lengthen 3 feet (same as case study)

<b>Table 11. Estimated Lengthening Cost for Replacement Vessels</b>				
<b>Vessel Type &amp; Size</b>	<b>Number of Vessels</b>	<b>Vessels Affected</b>	<b>Cost Per Vessel (thousands of dollars)</b>	<b>Assumptions &amp; Explanations</b>
100-150 passengers plus vehicles	67	34	\$270	Lengthen 16 feet for 34 vessels with two decks; no lengthening for the rest of vessels with only one deck
151-1000 passengers only	72	0	0	None (same as case study)
151-1000 passengers plus vehicles	82	0	0	
1001 or more passengers plus vehicles	19	0	0	
<b>Multi-Hull Multi-Purpose Vessels</b>				
151-600 passengers	13	13	\$217	Lengthen 4 feet (same as case study)
<b>Mono-Hull Multi-Purpose Vessels</b>				
151-499 passengers	181	0	0	None (same as case study)
500-1000 passengers	86	50	\$205	Lengthen 4 feet for 50 vessels that need vertical access (same as case study)
1001 or more passengers	6	0	0	None (same as case study)
<b>Small Cruise Ships</b>				
50-299 passengers	23	11	\$974	Length adjusted proportionally to vessel size
		12	\$2,117	Lengthen 8 feet (same as case study)
<b>Total</b>	<b>696</b>	<b>267</b>		

### Redesign Cost

Some of the case study vessels needed architectural design drawings for the replacement vessel where it differed in design from the existing vessel. Vessels that are nearly identical in design under the same owner's fleet are considered sister ships. We assume the redesign cost would be incurred only for the first vessel of each new design and there would be no redesign cost for sister ships. Based on this assumption, we estimate 575 of the 696 replacement vessels (83 percent) would incur redesign costs as shown in Table 12. We estimate the redesign cost is 10 percent of the incremental construction costs, and would range from \$2,000 for some mono-hull ferries permitted to carry 151 to 1000 passengers plus vehicles to \$261,100 for some small cruise ships.

**Table 12. Redesign Cost for Replacement Vessels**

Vessel Type & Size	Number of Vessels	Vessels Affected	Cost Per Vessel (thousands of dollars)	Assumptions & Explanations
<b>Multi-Hull Ferries</b>				
100-124 passengers only	4	4	\$29	10% of incremental construction costs
145-150 passengers only	41	26	\$13	
151-600 passengers only	32	2	\$48	
		25	\$37	
<b>Mono-Hull Ferries</b>				
100-150 passengers only	70	64	\$10	10 % of incremental construction costs
100-150 passengers plus vehicles	67	27	\$32	
151-1000 passengers only	72	6	\$41	
		51	\$12	
151-1000 passengers plus vehicles	82	8	\$39	
		12	\$32	
		50	\$2	
1001 or more passengers plus vehicles	19	8	\$63 <sup>1</sup>	
<b>Multi-Hull Multi-Purpose Vessels</b>				
151-600 passengers	13	13	\$37	10% of incremental construction costs
<b>Mono-Hull Multi-Purpose Vessels</b>				
151-499 passengers	181	3	\$45	10% of incremental construction costs
		18	\$38	
		156	\$8	
500-1000 passengers	86	17	\$70	
		26	\$63	
		34	\$11	
1001 or more passengers	6	4	\$87 <sup>1</sup>	
		2	\$41 <sup>1</sup>	
<b>Small Cruise Ships</b>				
50-299 passengers	23	10	\$135 <sup>1</sup>	10% of incremental construction costs
		9	\$232 <sup>1</sup>	
<b>Total</b>	<b>696</b>	<b>575</b>		
<b>Note:</b>				
1. The average of total redesign costs is shown for all vessels in the group.				

## Additional Operation and Maintenance Costs

We estimate the additional annual operational and maintenance costs for the replacement vessels based on the case study vessels, additional information provided by vessel owners and operators, and input from the Volpe National Transportation Systems Center. We estimate the following additional operation and maintenance costs for the replacement vessels in Tables 13 and 14:

- The annual maintenance cost for a platform lift is \$2,800, and for a LULA or elevator is \$5,500.
- The annual maintenance cost for an automatic door is \$1,100.
- The annual cost for additional engine maintenance due to added weight from the accessible features or vessel lengthening is \$22,000 per vessel for multi-hull ferries carrying 150 or fewer passengers. For mono-hull vessels and small cruise ships that operate at slower speeds than multi-hull vessels, and larger multi-hull vessels carrying more than 150 passengers, we assume there is no additional engine maintenance cost.
- The additional fuel consumption varies based on the vessel characteristics and ranges from none for mono-hull ferries permitted to carry more than 150 passengers plus vehicles and mono-hull multi-purpose vessels permitted to carry more than 1,000 passengers to 10 percent for some multi-hull vessels carrying passengers only. Future diesel price estimates are based on the U.S. Energy Information Administration Annual Energy Outlook 2010 with Projections to 2035.<sup>9</sup> Fuel is estimated to be \$3.89 per gallon, the price forecasted for 2031 at the end of the 20 year period.

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<sup>9</sup> U.S. Energy Information Administration, Annual Energy Outlook 2010 with Projections to 2035 (April 2010) at: [http://www.eia.gov/oiaf/aeo/pdf/0383\(2010\).pdf](http://www.eia.gov/oiaf/aeo/pdf/0383(2010).pdf).

**Table 13. Estimated Vertical Access Maintenance Cost & Automatic Door Maintenance Cost for Replacement Vessels**

		Vertical Access Maintenance Cost			Automatic Door Maintenance Cost		
Vessel Type & Size	Number of Vessels	Vessels Affected	Annual Cost Per Vessel (thousands of dollars)	Assumptions & Explanations	Vessels Affected	Annual Cost Per Vessel (thousands of dollars)	Assumptions & Explanations
<b>Multi-Hull Ferries</b>							
100-124 passengers only	4	0	0	None	0	0	None
145-150 passengers only	41	0	0		0	0	
151-600 passengers only	32	2	\$3	Vessels with platform lift	0	0	
<b>Mono-Hull Ferries</b>							
100-150 passengers only	70	0	0	None	0	0	None
100-150 passengers plus vehicles	67	0	0		0	0	
151-1000 passengers only	72	7	\$6	Vessels with LULA or elevator	0	0	
151-1000 passengers plus vehicles	82	28	\$6		0	0	
1001 or more passengers plus vehicles	19	0	0	None	3	\$4	Four new doors per vessel
					16	\$6	Six new doors per vessel
<b>Multi-Hull Multi-Purpose Vessels</b>							
151-600 passengers	13	0	0	None	0	0	None
<b>Mono-Hull Multi-Purpose Vessels</b>							
151-499 passengers	181	21	\$6	Vessels with LULA or elevator	0	0	None
500-1000 passengers	86	50	\$6		86	\$1	One new door per vessel (same as in the case study)
1001 or more passengers	6	4	\$6		6	\$6	Six new doors per vessel
<b>Small Cruise Ships</b>							
50-299 passengers	23	12	\$3	Vessels with platform lift only	0	0	None
		11	\$8	Vessels with platform lift plus LULA or elevator			
<b>Total</b>	<b>696</b>	<b>135</b>			<b>111</b>		

**Table 14. Estimated Engine Maintenance Cost & Fuel Cost for Replacement Vessels**

Vessel Type & Size	Number of Vessels	Engine Maintenance Cost			Fuel Cost		
		Vessels Affected	Annual Cost Per Vessel (thousands of dollars)	Assumptions & Explanations	Vessels Affected	Annual Cost Per Vessel (thousands of dollars)	Assumptions & Explanations
<b>Multi-Hull Ferries</b>							
100-124 passengers only	4	4	\$22	Due to lengthening without engine upgrade (estimate based on the case study vessel)	4	\$37	9% increase in fuel consumption (modified from case study vessel)
145-150 passengers only	41	41	\$22		41	\$13	4.8% increase in fuel consumption (same as case study vessel)
151-600 passengers only	32	0	0		32	\$214	10% increase in fuel consumption (same as case study vessel)
<b>Mono-Hull Ferries</b>							
100-150 passengers only	70	0	0	None assumed for slow-speed vessels; lengthening has no or little effect on engine maintenance in a slow-speed vessel	70	\$5	1.5% increase in fuel consumption due to lengthening and added weight related to vertical access and other accessibility features
100-150 passengers plus vehicles	67	0	0		34	\$5	
151-1000 passengers only	72	0	0		7	\$6	
151-1000 passengers plus vehicles	82	0	0		0	0	No increase in fuel consumption given the current size of vessel
1001 or more passengers plus vehicles	19	0	0		0	0	
<b>Multi-Hull Multi-Purpose Vessels</b>							
151-600 passengers	13	0	0	None	13	\$214	10% increase in fuel consumption (same as case study vessel)
<b>Mono-Hull Multi-Purpose Vessels</b>							
151-499 passengers	181	0	0	None assumed for slow-speed vessels;	21	\$6	1.5% increase in fuel consumption due to lengthening



**Table 14. Estimated Engine Maintenance Cost & Fuel Cost for Replacement Vessels**

Vessel Type & Size	Number of Vessels	Engine Maintenance Cost			Fuel Cost		
		Vessels Affected	Annual Cost Per Vessel (thousands of dollars)	Assumptions & Explanations	Vessels Affected	Annual Cost Per Vessel (thousands of dollars)	Assumptions & Explanations
500-1000 passengers	86	0	0	lengthening has no or little effect on engine maintenance in a slow-speed vessel	50	\$5	and added weight related to vertical access and other accessible features
1001 or more passengers	6	0	0		0	0	No increase in fuel consumption given current size of vessel
<b>Small Cruise Ships</b>							
50-299 passengers	23	0	0	None assumed; lengthening has no or little effect on engine maintenance.	11	\$7	2.75% increase in fuel consumption due to lengthening
					12	\$16	1% increase in fuel consumption due to lengthening
<b>Total</b>	<b>696</b>	<b>45</b>			<b>295</b>		

We estimate the total compliance costs for the replacement vessels annualized over 20 years are 16 million dollars discounted at 7 percent and 3 percent as shown in Table 15. The total estimated compliance costs are higher in the first year because about 33% of the existing vessels (275 vessels) would reach or exceed their expected service life in the first year, and we assume these vessels are replaced by new vessels in the first year. See Table 4.

Year <sup>1</sup>	Incremental Construction Costs	Additional Operation & Maintenance Costs	Total Costs		
			Not Discounted	7% Discount Rate	3% Discount Rate
1	\$47	\$1	\$48	\$45	\$46
2	\$4	\$1	\$5	\$4	\$4
3	\$5	\$1	\$7	\$6	\$6
4	\$8	\$2	\$11	\$8	\$9
5	\$7	\$3	\$10	\$7	\$9
6	\$5	\$3	\$8	\$5	\$7
7	\$7	\$4	\$11	\$7	\$9
8	\$10	\$5	\$15	\$9	\$12
9	\$7	\$5	\$13	\$7	\$10
10	\$11	\$6	\$16	\$8	\$12
11	\$8	\$6	\$14	\$7	\$10
12	\$7	\$6	\$14	\$6	\$10
13	\$11	\$7	\$18	\$7	\$12
14	\$3	\$7	\$10	\$4	\$7
15	\$5	\$8	\$13	\$5	\$8
16	\$6	\$9	\$15	\$5	\$10
17	\$11	\$10	\$22	\$7	\$13
18	\$12	\$12	\$24	\$7	\$14
19	\$8	\$12	\$20	\$6	\$12
20	\$9	\$13	\$22	\$6	\$12
<b>Annualized Over 20 Years</b>			<b>\$16</b>	<b>\$16</b>	<b>\$16</b>
<b>Note:</b>					
1. Year 1 is 2012. Estimates are 2011 dollars.					

## CHAPTER 3. LARGE CRUISE SHIPS

### 3.1 Introduction

This chapter discusses the impact of the proposed guidelines on large cruise ships permitted to carry 300 or more overnight passengers that operate in U.S. ports.<sup>10</sup> We estimate there were 113 large cruise ships operating in U.S. ports as of 2011. Appendix II lists these large cruise ships, along with the data sources. The appendix provides data on each cruise ship, including vessel name, year constructed, total guest rooms, and guest rooms with mobility features.

New large cruise ships provide many accessible features that would be required by the proposed guidelines, including elevators to connect passenger decks; guest rooms with mobility features; guest rooms with communication features; wheelchair spaces and assistive listening systems in assembly areas; and pool lifts. We proposed to conduct case studies of new large cruise ships to examine the impact of the proposed guidelines on the vessels.<sup>11</sup> However, we did not conduct case studies of large cruise ships because we could not find cruise ship owners and operators to participate in the case studies. Due to the lack of information, we did not estimate the incremental costs to construct large cruise ships in compliance with the proposed guidelines, and the additional operation and maintenance costs due to the proposed guidelines.

The cruise industry is concerned that the proposed scoping provision for guest rooms with mobility features would result in a loss of guest rooms and revenue. This chapter discusses the impact of the proposed scoping provision for guest rooms with mobility features on large cruise ships.

### 3.2 Proposed Scoping Provision for Guest Rooms with Mobility Features

The proposed scoping provision for guest rooms with mobility features is based on the scoping provision for hotels in the guidelines for landside facilities and would require cruise ships to provide a minimum number of guest rooms with mobility features based on the total number of guest rooms in accordance with Table V224.2 set out below. For instance, a cruise ship with 501 to 1,000 guest rooms would be required to provide a minimum of 3 percent of guest rooms with mobility features. A cruise ship with more than 1,000 guest rooms would be required to provide a minimum of 30 guest rooms with mobility features for the first 1,000 guest rooms (3%), plus 2 guest rooms with mobility features for each additional 100 guest rooms or fraction thereof over 1,000 (2%). The proposed scoping provision would require a portion of the guest rooms with mobility features to provide a roll-in shower. The proposed scoping provision

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<sup>10</sup> Large cruise ships operating in U.S. ports usually are registered in other countries and are referred to as foreign flag vessels. The DOT regulations, which eventually will include accessibility standards for passenger vessels covered by the ADA based on the proposed guidelines, apply to foreign flag vessels that pick up passengers in the United States, its territories, possessions, or commonwealths. See 49 CFR 39.5 (b).

<sup>11</sup> 2004 Draft Plan for Regulatory Assessment and 2006 Draft Guidelines, Passenger Vessel Case Studies at: <http://www.access-board.gov/pvag/>.

would also require guest rooms with mobility features to be dispersed among the various classes of guest rooms.

**Table V224.2. Proposed Scoping Provision for Guest Rooms with Mobility Features**

<b>Total Number of Guest Rooms Provided</b>	<b>Minimum Required Number of Rooms With Tubs or Showers</b>	<b>Minimum Number of Required Rooms With Roll-In Showers</b>	<b>Total Number of Required Rooms</b>
1 to 25	1	0	1
26 to 50	2	0	2
51 to 75	3	1	4
76 to 100	4	1	5
101 to 150	5	2	7
151 to 200	6	2	8
201 to 300	7	3	10
301 to 400	8	4	12
401 to 500	9	4	13
501 to 1000	2 percent of total	1 percent of total	3 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000	10, plus 1 for each 100, or fraction thereof, over 1000	30, plus 2 for each 100, or fraction thereof, over 1000

Guest rooms with mobility features are typically larger than other guest rooms to accommodate passengers who use wheelchairs or scooters. The proposed technical provisions for guest rooms with mobility features would require wider doorways; turning space within the guest room; clear deck space on both sides of a bed or between two beds and at the closet; turning space within the bathroom and clear deck space at the bathtub or shower, lavatory or sink, and toilet (the turning space and clear deck spaces can overlap); and grab bars at the toilet and at the bathtub or shower.

### 3.3 Mobility Device Use Among U.S. Population

The Survey of Income and Program Participation (SIPP) sponsored by the U.S. Census Bureau has asked questions about use of mobility devices, including wheelchairs, scooters, canes, crutches, and walkers, by persons aged 15 and older since 1990. The SIPP provides stability in measuring disability over a long period with a large sample that is representative of the U.S. population. We had a report prepared that converted the SIPP data on individuals who used mobility devices to households that have a member who used a mobility device because families typically go on cruises for vacation and leisure travel.<sup>12</sup> This report is referred to as the household report.

<sup>12</sup> Mitch P. LaPlante and H. Stephen Kaye, Mobility Device Use and Hearing Impairments Among Individuals and Households: 1990 – 2010 (February 15, 2013) at: <http://www.access-board.gov/pvag/>.

The household report shows households with a member who used a wheelchair or scooter doubled from 1.5 percent in 1990 to 3 percent in 2010. If past trends continue, a linear extrapolation to 2025 projects about 4 percent of households will have a member who uses a wheelchair or scooter. We assume households with a member who uses a wheelchair or scooter would need a guest room with mobility features.

The household report also shows households with a member who used a cane, crutches, or walker grew from 4.5 percent in 1990 to 7 percent in 2010. If past trends continue, a linear extrapolation to 2025 projects about 9 percent of households will have a member who uses a cane, crutches, or walker. Households with a member who uses a cane, crutches, or walker may rent a wheelchair or scooter for distance travel on a cruise ship and for shore excursions.<sup>13</sup> We assume these households may need a guest room with mobility features. We assume households with a member who uses a cane, crutches, or walker may also need features such as grab bars at toilets and at bathtubs or showers that are provided in guest rooms with mobility features, regardless of whether they rent a wheelchair or scooter for distance travel on a cruise ship and for shore excursions.

The cruise industry submitted a report indicating that about 70 percent of the passengers who used wheelchairs or scooters on 45 cruise ships in 2005 did not occupy a guest room with mobility features.<sup>14</sup> The report suggested that these passengers may have used wheelchairs or scooters for distance travel on the cruise ships and for shore excursions, and may not have needed a guest room with mobility features. The entry doorway to guest rooms is typically 22 to 24 inches wide and is too narrow for a wheelchair or scooter to pass through.<sup>15</sup> The proposed guidelines would require 32 inches minimum clear opening at the entry doorway to guest rooms with mobility features. The report did not consider other possible reasons why a significant percent of passengers who used wheelchairs or scooters did not occupy a guest room with mobility features. Passengers who do not have a disability may have reserved guest rooms with mobility features because they are larger than other guest rooms resulting in the rooms not being available to passengers with disabilities. Some cruise lines had a practice of requesting passengers with disabilities to provide a doctor's note to reserve a guest room with mobility features. This practice may have discouraged passengers with disabilities from reserving guest rooms with mobility features. DOT issued regulations in 2010 that require cruise lines to hold guest rooms with mobility features for passengers with disabilities until all other rooms in the

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<sup>13</sup> Cruise ship passengers can rent wheelchairs and scooters from Special Needs at Seas at: <http://www.specialneedsatsea.com/>.

<sup>14</sup> Cruise Lines International Association, Passenger Vessel Access Guidelines Access Scoping Economic Impact Study (June 23, 2008) at: <http://www.access-board.gov/pvag/>.

<sup>15</sup> A sample of about 500 wheeled mobility devices shows that the minimum clear width needed for a manual wheelchair user ranges from 27 to 31 inches; for a power wheelchair user ranges from 27 to 33 inches; and for a scooter user ranges from 24 to 33 inches. Center for Inclusive Design and Environmental Access, Design Resources DR-15 Clear Floor Area for Wheeled Mobility: Redefining the "common wheelchair" (January 4, 2011) at: <http://udeworld.com/documents/designresources/pdfs/CFA.pdf>.

same class are sold, and ban the practice of requesting passengers with disabilities to provide a doctor's note to reserve a guest room with mobility features. See 49 CFR 39.39 (b) (2) and (f).

### **3.4 Alternative Scoping Provisions**

We consider two alternative scoping provisions along with the proposed scoping provision for guest rooms with mobility features. The first alternative scoping provision was recommended by the cruise industry and would require a minimum of 2 percent of the total number of guest rooms to provide mobility features.<sup>16</sup> The second alternative scoping provision would require a minimum of 4 percent of the total number of guest rooms to provide mobility features. As noted above, a linear extrapolation of data on households with a member who uses a mobility device projects about 4 percent of households will have a member who uses a wheelchair or scooter in 2025, and about 9 percent of households will have a member who uses a cane, crutches, or walker in 2025. The second alternative scoping provision assumes future increases in the percentage of the households with a member who uses a mobility device would result in a need for an increase in the number of guest rooms with mobility features.

### **3.5 Estimated Guest Room Loss**

According to the cruise industry, two guest rooms with mobility features occupy the same square footage as three guest rooms resulting in the loss of one guest room for every two guest rooms with mobility features. This may be valid for interior guest rooms, which tend to be smaller than other guest rooms, but may not be valid for guest rooms with a balcony and suites, which tend to be larger than interior guest rooms.<sup>17</sup> As noted above, the proposed scoping provision would require guest rooms with mobility features to be dispersed among the various classes of guest rooms.

The cruise industry submitted a report estimating the number of guest rooms that would be lost applying various scoping provisions to 192 cruise ships that contained a total of 225,364 guest rooms as of 2005.<sup>18</sup> The cruise industry report did not identify the 192 cruise ships. As shown in Appendix II, we estimate there were 113 large cruise ships operating in U.S. ports as of 2011 that contained a total of 123,516 guest rooms.<sup>19</sup> We estimate the number of guest rooms that would be lost over 20 years applying the proposed scoping provision to the fleet of large

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<sup>16</sup> Letter from T.E.Thompson, Cruise Lines International Association, to Lawrence W. Roffee, Access Board, dated June 23, 2008. The letter was submitted with the cruise industry report referenced in footnote 14.

<sup>17</sup> A deck plan at: <http://www.cruisedeckplans.com/DP/Main/decks.php?ship=Independence%20of%20the%20Seas> for a large cruise ship shows that the guest room sizes vary from 152 square feet for an interior room; 200 square feet for a deluxe balcony room; and 317 square feet for a junior suite. The size of different classes of guest rooms varies by cruise ship.

<sup>18</sup> The cruise industry report is referenced in footnote 14.

<sup>19</sup> The Volpe National Transportation Systems Center reviewed the cruise industry report and identified other problems with the report. See Volpe National Transportation Systems Center, Review of "PVAG Access Scoping Economic Impact Study" (February 18, 2010) at: <http://www.access-board.gov/pvag/>.

cruise ships in Appendix II operating in U.S. ports as of 2011. The proposed scoping provision would apply as the cruise ship fleet is replaced. The cruise industry report noted that cruise ships operating in the U.S. market are replaced after 20 to 25 years. We assume the cruise ship fleet is replaced over 20 years and 5 percent of the guest rooms are replaced annually. Based on this assumption, we estimate 6,176 guest rooms per year would be replaced by new guest rooms as shown in the second column of Table 16. The cruise industry report assumed the total number of guest rooms in the cruise ship fleet would increase by 3 percent annually. Based on this assumption, we estimate 99,568 new guest rooms would be added to the cruise ship fleet over 20 years as shown in the third and fourth columns of Table 16. Assuming a 5 percent annual replacement rate and 3 percent annual growth rate, we estimate the total number of new guest rooms would range from 9,881 in Year 1 to 12,673 in Year 20 for a total of 223,084 new guest rooms over 20 years as shown in the fifth column of Table 16.

We estimate the number of guest rooms that would be lost under the proposed scoping provision against the baseline of the cruise industry practice in the absence of the proposed guidelines. As shown in Appendix II, the average percent of guest rooms with mobility features in the fleet of large cruise ships operating in U.S. ports as of 2011 was 1.9 percent. We assume the cruise industry would continue to provide guest rooms with mobility features at this rate in the absence of the proposed guidelines. Under this baseline, we estimate the cruise industry would provide 4,240 guest rooms with mobility features over 20 years in the absence of the proposed guidelines as shown in the sixth column of Table 16.

We estimate the number of guest rooms with mobility features that would be required under the proposed scoping provision based on the average number of guest rooms on large cruise ships constructed or under contract for construction between 2012 and 2015. As shown in Appendix III, the average number of guest rooms on these cruise ships is 1,700 guest rooms. We assume cruise ships constructed over 20 years would have the same average number of guest rooms. The proposed scoping provision would require a cruise ship with 1,700 guest rooms to provide 44 guest rooms with mobility features (2.6% of guest rooms). See Table V224.2. Applying the proposed scoping provision in this manner, we estimate the cruise industry would be required to provide 5,802 guest rooms with mobility features over 20 years as shown in the seventh column of Table 16. Thus, the proposed scoping provision would require the cruise industry to provide 1,562 (5,802 - 4,240) additional guest rooms with mobility features than it would provide in the absence of the proposed guidelines.

Applying the cruise industry's premise that two guest rooms with mobility features occupy the same square footage as three guest rooms resulting in the loss of one guest room for every two guest rooms with mobility features, we estimate the number of guest rooms that would be lost under the proposed scoping provision based on the additional number of guest rooms with mobility features that would be required under the proposed scoping provision, and divide this number by two. As shown in the eighth and ninth column of Table 16, the number of guest rooms that would be lost under the proposed scoping provision would range from 35 in Year 1 to 45 in Year 20 for a total of 786 guest rooms over 20 years.

**Table 16. Estimated Guest Room Loss Over 20 Years Under Proposed Scoping Provision**

1	2	3	4	5	6	7	8	9
Year <sup>1</sup>	New Guest Rooms Assuming 5% Annual Replacement <sup>1</sup>	New Guest Rooms Assuming 3% Annual Growth		Total New Guest Rooms <sup>3</sup>	Number of Guest Rooms with Mobility Features		Number of Guest Rooms Lost	
		Guest Rooms in Cruise Ship Fleet <sup>1</sup>	New Guest Rooms <sup>2</sup>		Baseline (1.9%) <sup>4</sup>	Proposed Scoping (2.6%) <sup>5</sup>	Annual <sup>6</sup>	Cumulative
0		123,516						
1	6,176	127,221	3,705	9,881	188	257	35	35
2	6,176	131,038	3,817	9,992	190	260	35	70
3	6,176	134,969	3,931	10,107	192	263	36	106
4	6,176	139,018	4,049	10,225	194	266	36	142
5	6,176	143,189	4,171	10,346	197	269	36	178
6	6,176	147,485	4,296	10,471	199	272	37	215
7	6,176	151,909	4,425	10,600	201	276	38	253
8	6,176	156,466	4,557	10,733	204	279	38	291
9	6,176	161,160	4,694	10,870	207	283	38	329
10	6,176	165,995	4,835	11,011	209	286	39	368
11	6,176	170,975	4,980	11,156	212	290	39	407
12	6,176	176,104	5,129	11,305	215	294	40	447
13	6,176	181,387	5,283	11,459	218	298	40	487
14	6,176	186,829	5,442	11,617	221	302	41	528
15	6,176	192,434	5,605	11,781	224	306	41	569
16	6,176	198,207	5,773	11,949	227	311	42	611
17	6,176	204,153	5,946	12,122	230	315	43	654
18	6,176	210,278	6,125	12,300	234	320	43	697
19	6,176	216,586	6,308	12,484	237	325	44	741
20	6,176	223,084	6,498	12,673	241	330	45	786
<b>Total</b>	<b>123,516</b>		<b>99,568</b>	<b>223,084</b>	<b>4,240</b>	<b>5,802</b>	<b>786</b>	

**Notes:**



1. Year 0 is 2011; Year 1 is 2012. We estimate there were 123,516 guest rooms in the cruise ship fleet operating in U.S. ports as of 2011. See Appendix II. We assume the cruise ship fleet is replaced over 20 years and 5 percent of the guest rooms are replaced annually. We further assume the total number of guest rooms in the cruise ship fleet would increase by 3% annually.
2. The number of new guest rooms is calculated by subtracting the number of guest rooms in the cruise ship fleet for the prior year from the given year.
3. The total number of new guest rooms is the sum of columns 2 and 4.
4. The baseline (1.9%) is the average percent of guest rooms with mobility features provided in the cruise ship fleet operating in U.S. ports as of 2011 in the absence of the proposed guidelines. See Appendix II.
5. The proposed scoping (2.6%) is based on the average number of guest rooms (1,700 guest rooms) provided on large cruise ships constructed or under contract for construction between 2012 and 2015. See Appendix III. The proposed scoping in Table V224.2 would require a cruise ship with 1,700 guest rooms to provide 44 guest rooms with mobility features (2.6% of guest rooms).
6. The number of guest rooms lost is based on the cruise industry's premise that two guest rooms with mobility features occupy the same square footage as three guest rooms resulting in the loss of one guest room for every two guest rooms with mobility features. The annual number of guest rooms lost is calculated by subtracting the number of guest rooms with mobility features provided under the baseline (1.9%) from the number of guest rooms with mobility features that would be required under the proposed scoping (2.6%) and dividing the remainder by two.

We estimate the number of guest rooms that would be lost under the alternative scoping provisions the same way as we did for the proposed scoping provision. The cumulative numbers of guest rooms that would be lost over 20 years under the proposed and alternative scoping provisions estimated against the baseline of the cruise industry practice in the absence of the proposed guidelines are shown in Table 17. Under the proposed scoping, we estimate 786 guest rooms would be lost over 20 years. Under the 2 percent alternative scoping, we estimate 114 guest rooms would be lost over 20 years. Under the 4 percent alternative scoping, we estimate 2,346 guest rooms would be lost over 20 years.

<b>Year<sup>1</sup></b>	<b>Proposed Scoping (2.6%)</b>	<b>2% Alternative Scoping</b>	<b>4% Alternative Scoping</b>
1	35	5	104
2	70	10	209
3	106	15	315
4	142	20	423
5	178	25	532
6	215	30	642
7	253	36	754
8	291	42	867
9	329	47	981
10	368	53	1,097
11	407	59	1,214
12	447	65	1,333
13	487	71	1,453
14	528	77	1,575
15	569	83	1,699
16	611	89	1,825
17	654	95	1,953
18	697	101	2,082
19	741	108	2,213
20	786	114	2,346
<b>Note:</b> 1. Year 1 is 2012.			

### **3.6 Estimated Revenue Loss**

According to the cruise industry report, each guest room produced \$400 gross revenue per day for 350 days per year in 2005, or \$140,000 per year.<sup>20</sup> Gross revenue per guest room

<sup>20</sup> The cruise industry report notes that cruise ships rarely travel with empty guest rooms. In 2011, 39 percent of cruise ships with fewer than 2,000 passengers had utilization above 100 percent, and 86 percent of cruise ships with 2,000 or more passengers had utilization above 100 percent according to the U.S. Department of Transportation, Maritime Administration North American Cruise Statistical Snapshot, 2011 at:

includes passenger fares based on double occupancy per room plus expenditures on other goods and services purchased on the cruise ship. The correct measure for estimating revenue loss for lost guest rooms is net revenue per guest room (i.e., gross revenue minus labor, food, and other operating costs), but we lack information to estimate net revenue. We use the cruise industry's figures for gross revenue per guest room (\$140,000 in 2005 dollars) adjusted for inflation (\$161,250 in 2011 dollars) to estimate revenue loss for lost guest rooms.<sup>21</sup> If we were to use net revenue per guest room, and all our other assumptions are unchanged, our estimates of revenue loss for lost guest rooms would be lower.

The estimated gross revenue loss over 20 years for the guest rooms lost under the proposed and alternative scoping provisions is shown in Table 18. Under the proposed scoping, we estimate the gross revenue loss annualized over 20 years is \$50 million discounted at 7 percent, and \$58 million discounted at 3 percent. Under the 2 percent alternative scoping, we estimate the gross revenue loss annualized over 20 years is \$7 million discounted at 7 percent, and \$8 million discounted at 3 percent. Under the 4 percent alternative scoping, we estimate the gross revenue loss annualized over 20 years is \$149 million discounted at 7 percent, and \$172 million discounted at 3 percent.

Cruise lines construct classes of cruise ships or sister vessels based on the same design without major modification. Each new class of cruise ships is generally larger than the previous class. As shown in Appendix II, cruise ships constructed in 2010 and 2011 have over 50 percent more guest rooms than cruise ships constructed in the 1990's. Cruise lines can mitigate the loss of revenue due to providing guest rooms with mobility features by increasing the number of guest rooms when designing new classes of cruise ships.

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[http://www.marad.dot.gov/documents/North\\_American\\_Cruise\\_Statistics\\_Quarterly\\_Snapshot.pdf](http://www.marad.dot.gov/documents/North_American_Cruise_Statistics_Quarterly_Snapshot.pdf). Since some guest rooms can accommodate more than two passengers, utilization can be above 100 percent.

<sup>21</sup> The cruise industry report assumed that gross revenue per guest room would increase by 3 percent per year. The Office of Management and Budget requires federal agencies to use both 7 percent and 3 percent annual discount rates expressed as a present value, as well as annualized, for regulatory analysis. The 7 percent discount rate is an estimate of the average before-tax rate of return to private capital in the U.S. economy. The 3 percent discount rate is appropriate when regulation primarily and directly affects private consumption (e.g., through higher consumer prices for goods and services) and is the rate at which society discounts future consumption flows to their present value. These rates discount costs in constant dollars and exclude the expected rate of future price inflation. See Office of Management and Budget, Circular A-4 Regulatory Analysis (September 17, 2003) at: [http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory\\_matters\\_pdf/a-4.pdf](http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/a-4.pdf).

**Table 18. Estimated Gross Revenue Loss in Millions Over 20 Years Under Proposed and Alternative Scoping Provisions**

Year <sup>1</sup>	Proposed Scoping (2.6%)			2% Alternative Scoping			4% Alternative Scoping		
	Not Discounted	7% Discount Rate	3% Discount Rate	Not Discounted	7% Discount Rate	3% Discount Rate	Not Discounted	7% Discount Rate	3% Discount Rate
1	\$6	\$5	\$5	\$1	\$1	\$1	\$17	\$16	\$16
2	\$11	\$10	\$11	\$2	\$1	\$2	\$34	\$29	\$32
3	\$17	\$14	\$16	\$2	\$2	\$2	\$51	\$41	\$46
4	\$23	\$17	\$20	\$3	\$2	\$3	\$68	\$52	\$61
5	\$29	\$20	\$25	\$4	\$3	\$3	\$86	\$61	\$74
6	\$35	\$23	\$29	\$5	\$3	\$4	\$104	\$69	\$87
7	\$41	\$25	\$33	\$6	\$4	\$5	\$122	\$76	\$99
8	\$47	\$27	\$37	\$7	\$4	\$5	\$140	\$81	\$110
9	\$53	\$29	\$41	\$8	\$4	\$6	\$158	\$86	\$121
10	\$59	\$30	\$44	\$9	\$4	\$6	\$177	\$90	\$132
11	\$66	\$31	\$47	\$10	\$5	\$7	\$196	\$93	\$141
12	\$72	\$32	\$51	\$10	\$5	\$7	\$215	\$95	\$151
13	\$79	\$33	\$53	\$11	\$5	\$8	\$234	\$97	\$160
14	\$85	\$33	\$56	\$12	\$5	\$8	\$254	\$98	\$168
15	\$92	\$33	\$59	\$13	\$5	\$9	\$274	\$99	\$176
16	\$99	\$33	\$61	\$14	\$5	\$9	\$294	\$100	\$183
17	\$105	\$33	\$64	\$15	\$5	\$9	\$315	\$100	\$191
18	\$112	\$33	\$66	\$16	\$5	\$10	\$336	\$99	\$197
19	\$119	\$33	\$68	\$17	\$5	\$10	\$357	\$99	\$204
20	\$127	\$33	\$70	\$18	\$5	\$10	\$378	\$98	\$209
<b>Annualized over 20 years</b>		<b>\$50</b>	<b>\$58</b>		<b>\$7</b>	<b>\$8</b>		<b>\$149</b>	<b>\$172</b>

**Note:**

1. Year 1 is 2012. Estimates are 2011 dollars.

## CHAPTER 4. TOTAL ESTIMATED COMPLIANCE COSTS

The total estimated compliance costs for ferries, multi-purpose vessels, and small cruise ships discussed in Chapter 2, and for large cruise ships discussed in Chapter 3 are shown in Table 19. We estimate the total compliance costs for these passenger vessels annualized over 20 years are \$66 million discounted at 7 percent, and \$74 million discounted at 3 percent.

<b>Table 19. Total Estimated Compliance Costs in Millions Over 20 Years for New Passenger Vessels Covered by Proposed Guidelines</b>			
<b>Year<sup>1</sup></b>	<b>Not Discounted</b>	<b>7% Discount Rate</b>	<b>3% Discount Rate</b>
1	\$54	\$50	\$51
2	\$16	\$14	\$15
3	\$24	\$20	\$22
4	\$34	\$25	\$29
5	\$39	\$27	\$34
6	\$33	\$28	\$36
7	\$52	\$32	\$42
8	\$62	\$36	\$49
9	\$66	\$36	\$51
10	\$75	\$38	\$56
11	\$80	\$38	\$57
12	\$86	\$38	\$61
13	\$97	\$40	\$65
14	\$95	\$37	\$63
15	\$105	\$38	\$67
16	\$114	\$38	\$71
17	\$127	\$40	\$77
18	\$136	\$40	\$80
19	\$139	\$39	\$80
20	\$149	\$39	\$82
<b>Annualized over 20 Years</b>		<b>\$66</b>	<b>\$74</b>
<b>Note:</b>			
1. Year 1 is 2012. Estimates are 2011 dollars.			

## CHAPTER 5. ALTERATIONS TO EXISTING VESSELS

### 5.1 Introduction

When alterations are made to existing passenger vessels, the proposed guidelines would require the alterations to comply with the proposed provisions for new construction. An alteration would be defined as a change to a passenger vessel that affects or could affect the usability of the passenger vessel or portion thereof. Alterations would include, but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historic restoration, changes or rearrangement of the structural parts or elements, and changes or rearrangement in the plan configuration of bulkheads and partitions. The definition would exclude normal maintenance, painting or wallpapering, or changes to propulsion, mechanical, and electrical systems unless they affect the usability of the vessel.

Only the portions of a passenger vessel that are altered would be required to comply with the proposed provisions for new construction. For example, if a toilet room on a passenger vessel is altered, the altered portions of the toilet room would be required to comply with the applicable proposed provisions for new construction. Earlier drafts of the proposed guidelines included a provision that would have required a path of travel to altered areas containing a primary function. This provision is not included in the proposed guidelines because the DOJ regulations require a path of travel to altered areas containing a primary function. See 28 CFR 35.151 (b) and 36.403.

### 5.2 Proposed Exceptions

Three general exceptions are proposed for alterations to existing passenger vessels. Exception 1 would not require an onboard accessible route where elements or spaces are altered but the circulation path to the altered elements or spaces is not altered.

Exception 2 would require alterations to comply with the proposed guidelines to the maximum extent feasible where compliance is technically infeasible. Technically infeasible would be defined with respect to an alteration as something that has little likelihood of being accomplished because existing structural conditions would require removing or altering an essential structural member; or because other existing physical or vessel constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with the guidelines.

Exception 3 would require alterations to provide accessibility to the maximum extent feasible where compliance with the proposed guidelines would result in any of the following:

- An increase in tonnage that changes the passenger vessel's classification from 46 CFR Chapter I, Subchapter T (Small Passenger Vessels (Under 100 Gross Tons)) or 46 CFR Chapter I, Subchapter K (Small Passenger Vessels Carrying More Than 150 Passengers or With Overnight Accommodations For More Than 49 Passengers) to 46 CFR Chapter I, Subchapter H

(Passenger Vessels),<sup>22</sup>

- A violation of the minimum requirements established by the administrative authority for the stability of the vessel;
- A reduction in the structural integrity or fire resistance of a Class A or B bulkhead or deck surface; or
- An increase in power load in excess of the existing power supply.

Specific exceptions are also proposed in certain proposed provisions for alterations to existing passenger vessels, including:

- Platform lifts would be permitted as a component of onboard accessible routes in alterations to existing passenger vessels. V206.7 Exception.
- An accessible means of escape would not be required in alterations to existing passenger vessels. V207.1 Exception 2.
- A unisex toilet room would be permitted in alterations to existing passenger vessels where it is technically infeasible for existing toilet rooms to comply with the proposed guidelines provided the unisex toilet room is located in the same area and on the same deck as the existing non-complying toilet rooms. V213.2 Exception 2.
- Visible alarms in public areas would not be required in alterations to existing passenger vessels unless an existing alarm system is upgraded or replaced, or a new alarm system installed. V215.1 Exception 2.
- Thresholds 3/4 inch high maximum would be permitted at doorways without coamings in alterations to existing passenger vessels provided the thresholds have a beveled edge on each side with a slope not steeper than 1:2. V404.2.5.1 Exception.
- Running slopes not steeper than 1:8 for a maximum rise of 3 inches and not steeper than 1:10 for a maximum rise of 6 inches would be permitted in alterations to existing passenger vessels where necessary due to space limitations. V405.2 Exception.
- Elevator cars in altered elevators would not be required to comply with the proposed provision for car dimensions where the existing elevator car configuration provides a clear deck area 16 square feet minimum; an inside clear depth of 54 inches minimum; and an inside clear depth 36 inches minimum. V407.4.1 Exception.

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<sup>22</sup> U.S. Coast Guard regulations in 46 CFR Chapter I, Subchapter H that have different requirements for vessels than the regulations in 46 CFR Chapter I, Subchapters T and K.

- Alternative dimensions are proposed for sales and service counters in alterations to existing passenger vessels where compliance with the proposed provisions would result in a reduction of the number of existing counters at work stations. V904.4 Exception.

### **5.3 Types and Frequency of Alterations**

We requested comment on the types and frequency of alterations to existing passenger vessels when the 2006 draft guidelines were released. The Cruise Lines International Association (formerly International Council of Cruise Lines) responded that when a new deck or mid-section is added to an existing cruise ship, it may not always be feasible for existing circulation paths on the vessel to comply with the proposed provisions for onboard accessible routes. The proposed guidelines would not require existing circulation paths that are not otherwise altered to comply with the proposed provisions for onboard accessible routes when a new deck or mid-section is added to a cruise ship.

Individual passenger vessel owners and operators commented that alterations generally involve installing new motors and pumps; redecorating toilet rooms; and changing chairs and equipment such as the beverage dispenser and dish washing machine on a dinner vessel. These changes would not trigger a need to comply with the proposed guidelines. The Passenger Vessel Association responded that passenger vessels generally do not undergo major alterations if there is no change in ownership because it would trigger a need to comply with subsequently developed U.S. Coast Guard regulations. According to the Passenger Vessels Association, small cosmetic changes are made when a passenger vessel is transferred to a new owner in similar service. Small cosmetic changes generally would not trigger a need to comply with the proposed guidelines. The Passenger Vessel Association noted that if a passenger vessel changes service, more extensive changes may be undertaken. For example, if an excursion vessel changes service to a dinner vessel, a galley would be added, passenger space lay outs would be changed, bulkheads may be moved, and stairways may be added or relocated.

Based on the proposed exceptions and responses received from passenger vessel owners and operators, we expect the proposed guidelines to have little or no impact on alterations to existing passenger vessels.



## CHAPTER 6. BENEFITS

### 6.1 Nature of Benefits

We do not quantify the benefits of the proposed guidelines due to the nature of the benefits. The proposed guidelines would address the discriminatory effects of architectural, transportation, and communication barriers encountered by individuals with mobility, hearing, and vision disabilities on passenger vessels. Accessible passenger boarding systems would enable passengers with mobility disabilities to independently board and disembark from passenger vessels. Wheelchair spaces in seating areas would enable passengers who use wheelchairs or scooters to sit with other passengers. Passengers with mobility disabilities would be able to use toilet rooms and guest rooms on passenger vessels and cruise ships. Assistive listening systems would enable passengers who have difficulty hearing to listen to a narrated tour delivered on the public address system of an excursion vessel. Passengers who have difficulty seeing or are blind would be able to walk around passenger vessels without encountering protruding objects. The proposed guidelines would afford these individuals equal opportunity to travel on passenger vessels for employment, transportation, public accommodation, and leisure. The proposed guidelines would enable these individuals to achieve greater participation in society, independent living, and economic self-sufficiency. The benefits are difficult to quantify, but include important national values that are recognized in Executive Order 13563 such as equity, human dignity, and fairness.

### 6.2 Persons Who Benefit From Proposed Provisions

The Survey of Income and Program Participation (SIPP) sponsored by the U.S. Census Bureau asks questions about whether persons have difficulty performing a specific set of functional activities.<sup>23</sup> The SIPP provides estimates of disability prevalence that are representative of the civilian non-institutionalized population living in the United States. We recognize that not all these individuals are likely to directly benefit from the proposed guidelines because some may not use passenger vessels covered by the proposed guidelines. We do not have information to estimate the number of people with mobility disabilities or their family members who would directly benefit from the proposed guidelines. We provide the data below for illustrative purposes.

#### Persons with Mobility Disabilities

The proposed provisions for accessible passenger boarding systems, onboard accessible routes, accessible means of escape, accessible toilet rooms, wheelchair spaces in assembly areas and transportation seating areas, and guest rooms with mobility features would directly benefit persons with mobility disabilities who use passenger vessels covered by the proposed guidelines. The SIPP data show among persons aged 15 and older 30.6 million (12.6%) had limitations associated with ambulatory activities of the lower body, including difficulty walking, climbing stairs, or using mobility devices. This number includes:

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<sup>23</sup> U.S. Census Bureau, Americans with Disabilities: 2010 at: <http://www.census.gov/prod/2012pubs/p70-131.pdf>.

- 23.9 million (9.9%) had difficulty walking a quarter of a mile;
- 22.3 million (9.2%) had difficulty climbing a flight of stairs;
- 11.6 million (4.8%) used a cane, crutches, or walker to assist with mobility; and
- 3.6 million (1.5%) used a wheelchair or scooter.

#### Persons Who Have Difficulty Hearing or Are Deaf

The proposed provisions for assistive listening systems, general emergency alarms, and guest rooms with communication features would directly benefit persons who have difficulty hearing or are deaf and use passenger vessels covered by the proposed guidelines. The SIPP data show among persons aged 15 and older 7.6 million (3.1%) had difficulty hearing, including 5.6 million (2.3%) used a hearing aid and 1.1 million (0.5%) were deaf.

The SIPP reports fewer persons with hearing impairments compared to the National Health and Nutritional Examination Survey (NHANES). NHANES includes audiometric testing of participants. NHANES data for persons aged 12 and older show 30 million (12.7%) had a bilateral hearing loss and the number increases to 48.1 million (20.3%) when unilateral hearing loss is included.<sup>24</sup>

#### Persons Who Have Difficulty Seeing or Are Blind

The proposed provisions for protruding objects, elevator call buttons and signals, and tactile and visual characters on signs would directly benefit persons who have difficulty seeing or are blind and use passenger vessels covered by the proposed guidelines. The SIPP data show among persons aged 15 and older 8.1 million (3.3%) had difficulty seeing, including 2.0 million (0.8%) were blind.

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<sup>24</sup> Frank R. Lin, John K. Niparko, and Luigi Ferrucci, Hearing Loss Prevalence in the United States, JAMA Internal Medicine (November 14, 2011) at: <http://archinte.jamanetwork.com/article.aspx?articleid=1106004>.

## CHAPTER 7. INITIAL REGULATORY FLEXIBILITY ANALYSIS

We are required by the Regulatory Flexibility Act to consider the impact of regulatory proposals on small entities; analyze alternatives that minimize the impact on small entities; and make the analysis available for comment. We prepared this initial regulatory flexibility analysis to meet the requirements of the Regulatory Flexibility Act.

### Why Are We Issuing the Proposed Guidelines?

We are required by section 502 of the Rehabilitation Act and section 504 of the Americans with Disabilities Act (ADA) to issue accessibility guidelines for the construction and alteration of passenger vessels covered by the ADA. We are issuing the proposed guidelines pursuant to this statutory authority. The U.S. Department of Transportation (DOT) and U.S. Department of Justice (DOJ) are required to issue accessibility standards for the construction and alteration of passenger vessels covered by the ADA that are consistent with our guidelines. Passenger vessel owners and operators would not be required to comply with the proposed guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

### What is the Objective of, and Legal Basis for, the Proposed Guidelines?

The objective of the proposed guidelines is to ensure that newly constructed and altered portions of passenger vessels are readily accessible to and usable by individuals with disabilities. The legal basis for the proposed guidelines is section 502 of the Rehabilitation Act and section 504 of the ADA.

### How Many Small Entities Would Be Affected by Proposed Guidelines?

The proposed guidelines would affect small businesses identified by the North American Industry Classification System (NAICS) codes listed in Table 24 and small governments with a population of 50,000 or less that own or operate passenger vessels, other than ferries or tenders, permitted to carry more than 150 passengers or more than 49 overnight passengers; ferries permitted to carry more than 99 passengers; and tenders permitted to carry more than 59 passengers.

<b>Table 20. Small Business Administration Size Standards</b>		
<b>NAICS Code</b>		<b>Small Business Size</b>
483112	Deep Sea Passenger Transportation	500 or fewer employees
483114	Coastal and Great Lakes Passenger Transportation	500 or fewer employees
483212	Inland Water Passenger Transportation	500 or fewer employees
487110	Scenic and Sightseeing Transportation, Water	\$7 million or less annual receipts
713210	Casinos (except Casino Hotels)	\$7 million or less annual receipts

We estimate small entities own or operate 635 vessels in the size categories covered by the proposed guidelines. This includes 372 small businesses that own or operate 257 ferries, 338

multi-purpose vessels, and 23 small cruise ships permitted to carry 50 to 299 overnight passengers; and 9 small governments that own or operate 16 ferries and 1 multi-purpose vessel.

What Are the Proposed Compliance Requirements?

The proposed guidelines would apply when small entities replace their existing vessels with new vessels or add new vessels to their fleet. The proposed guidelines, themselves, would not require existing vessels to be made accessible except where altered. The proposed guidelines contain proposed scoping and technical provisions. The proposed scoping provisions specify what features would be required to be accessible. Where multiple features of the same type are provided, the proposed scoping provisions specify how many of the features would be required to be accessible. The proposed technical provisions specify the design criteria for accessible features. The passenger vessel features addressed by the proposed scoping and technical provisions include onboard accessible routes connecting passenger decks and passenger amenities within decks; accessible means of escape; doorways and coamings; toilet rooms; wheelchair spaces in assembly areas and transportation seating areas; assistive listening systems; general emergency alarms; guest rooms; and other passenger amenities. The proposed guidelines include proposed technical provisions for accessible passenger boarding systems. However, we defer to DOT and DOJ to address when accessible passenger boarding systems would be required since passenger boarding systems can be provided at landside facilities and involve operational issues between the owner or operator of the landside facility and the passenger vessel owner or operator that DOT and DOJ are authorized to address.

What Are the Compliance Costs for Small Entities

We estimate the compliance costs for small entities that construct new vessels to replace existing vessels. As shown in Table 21, we estimate 533 vessels owned or operated by small entities would reach the end of their expected service life over 20 years beginning in 2011. We assume small entities would construct new vessels to replace these vessels. The estimated compliance costs are based on case studies and are adjusted to 2011 dollars.

<b>Table 21. Small Entity Vessels Replaced by New Vessels</b>		
<b>Vessel</b>	<b>Number</b>	<b>Number Replaced Over 20 Years</b>
Ferries	273	238
Multi-Purpose Vessels	339	279
Small Cruise Ships	23	16
<b>Total</b>	<b>635</b>	<b>533</b>

The compliance costs include the following components:

- Vertical Access Cost. This is the cost of installing an elevator, limited use-limited application elevator (LULA), or platform lift to connect passenger decks on a vessel with more than one deck. When small entities construct new vessels to replace existing vessels, we estimate 65 vessels would be required to provide a LULA at a cost of \$297,000; 29 vessels would be required to provide an elevator at a cost of \$372,000; 5 small cruise ships that currently

provide elevators would be required to provide larger elevators when the vessels are replaced at a cost of \$2,700; and 16 small entity small cruise ships would be required to provide a platform lift to tender boarding platforms at the stern of the vessel at a cost of \$27,700. See Table 22 for the types and sizes of the vessels that would incur compliance costs for an elevator, LULA, or platform lift.

- Other Accessible Feature Costs. This includes the cost to expand toilet rooms; modify doors and thresholds; install automatic doors at doorways with coamings and double ramps; add assistive listening systems; and provide protected waiting areas as part of an accessible means of escape where passengers with disabilities wait for crew assistance during emergencies. When small entities construct new vessels to replace existing vessels, we estimate 516 vessels would incur compliance costs for other accessible features. The costs range from \$19,000 for mono-hull ferries permitted to carry 151 to 1,000 passengers plus vehicles to \$631,000 for mono-hull ferries permitted to carry 1,001 or more passengers plus vehicles. The costs are higher for mono-hull ferries permitted to carry 1,001 or more passengers plus vehicles because the estimate is based on the case study of a 4,400 passenger and 30 vehicle ferry where the owner wanted to provide automatic sprinkler systems instead of protected waiting areas as part of an accessible means of escape even though the automatic sprinkler systems are more costly. The costs would be lower if protected waiting areas are provided. See Table 23 for the types and sizes of the vessels that would incur compliance costs for other accessible features.

- Lengthening Cost. This is the cost of increasing the length of a vessel to accommodate the accessible features and maintain passenger and vehicle capacity. When small entities construct new vessels to replace existing vessels, we estimate 217 vessels would need to be lengthened due to the proposed guidelines. The lengthening cost would range from \$60,000 for mono-hull ferries permitted to carry 100 to 150 passengers to \$2,117,000 for some small cruise ships. See Table 23 for the types and sizes of the vessels that would incur compliance costs to lengthen the vessel.

- Redesign Cost. This is the cost for architectural design drawings for a new vessel that differs in design from the existing vessel it replaces. When small entities construct new vessels to replace existing vessels, we estimate 470 vessels would need to be lengthened due to the proposed guidelines. The redesign cost would range from \$2,000 for some mono-hull ferries permitted to carry 151 to 1000 passengers plus vehicles to \$261,100 for some small cruise ships. See Table 23 for the types and sizes of the vessels that would incur compliance costs to redesign the vessel.

- Additional Fuel Cost. This is the annual cost for additional fuel consumption due to installing an elevator, LULA, or platform lift to connect passenger decks and vessel lengthening. When small entities construct new vessels to replace existing vessels, we estimate 243 vessels would incur additional fuel costs due to the proposed guidelines. The additional fuel costs would range from \$5,000 annually for mono-hull vessels permitted to carry 151 to 1,000 passengers to \$214,000 annually for multi-hull vessels permitted to carry 151 to 600 passengers. See Table 24 for the types and sizes of the vessels that would incur additional fuel costs.

- Vertical Access Maintenance Cost. This is the annual cost of maintaining an elevator, LULA, or platform lift to connect passenger decks. When small entities construct new vessels to replace existing vessels, we estimate 100 vessels would incur these annual maintenance costs. The annual maintenance cost would be \$5,500 for an elevator or LULA, and \$2,800 for a platform lift. See Table 24 for the types and sizes of the vessels that would incur these annual maintenance costs.

- Additional Engine Maintenance Cost. This is the annual cost for additional engine maintenance due to added weight from the accessible features or vessel lengthening. When small entities construct new vessels to replace existing vessels, we estimate 37 vessels would incur these annual maintenance costs. The annual maintenance cost would be \$22,000 multi-hull ferries permitted to carry 100 to 150 passengers. See Table 24 for the types and sizes of the vessels that would incur these annual maintenance costs.

- Automatic Door Maintenance Cost. This is the annual cost of maintaining and replacing the automatic doors at doorways with coamings and double ramps. When small entities construct new vessels to replace existing vessels, we estimate 54 vessels would incur these annual maintenance costs. The annual maintenance cost would range from \$1,000 for mono-hull multi-purpose vessels permitted to carry 500 to 1,000 passengers, to \$6,000 for mono-hull multi-purpose vessels permitted to carry 1,001 or more passengers. See Table 24 for the types and sizes of the vessels that would incur these annual maintenance costs.

<b>Table 22. Vertical Access Cost (thousands of dollars)</b>						
<b>Vessel Type &amp; Size</b>	<b>Number of Vessels</b>	<b>Vessels Affected</b>	<b>LULA Cost</b>	<b>Vessels Affected</b>	<b>Elevator Cost</b>	
<b>Multi-Hull Ferries</b>						
100-124 passengers only	4					
145-150 passengers only	33					
151-600 passengers only	22					
<b>Mono-Hull Ferries</b>						
100-150 passengers only	61					
100-150 passengers plus vehicles	37					
151-1000 passenger only	54	5	\$297			
151-1000 passengers plus vehicles	27	5	\$297	1	\$372	
1001 or more passengers plus vehicles	0					
<b>Multi-Hull Multi-Purpose Vessels</b>						
151-600 passengers only	13					
<b>Mono-Hull Multi-Purpose Vessels</b>						
151-499 passengers	176	18	\$297	3	\$372	

<b>Table 22. Vertical Access Cost (thousands of dollars)</b>						
<b>Vessel Type &amp; Size</b>	<b>Number of Vessels</b>	<b>Vessels Affected</b>	<b>LULA Cost</b>	<b>Vessels Affected</b>	<b>Elevator Cost</b>	
500-1000 passengers	84	28	\$297	20	\$372	
1001 or more passengers	6	2	\$297	2	\$372	
<b>Small Cruise Ships<sup>1</sup></b>						
50-299 passengers	16	7	\$297	3	\$372	
<b>Total</b>	<b>533</b>	<b>65</b>		<b>29</b>		
<b>Note:</b>						
1. The small cruise ships would be required to also provide a platform lift to connect to the tender boarding platform at the stern of the vessel at a cost of \$27,100. Five small cruise ships that currently provide elevators would be required to provide larger elevators at a cost of \$2,700.						

<b>Table 23. Other Accessible Features, Lengthening, and Redesign Costs ( thousands of dollars)</b>								
<b>Vessel Type &amp; Size</b>	<b>Number of Vessels</b>	<b>Affected Vessels</b>	<b>Other Access Feature Costs</b>	<b>Affected Vessels</b>	<b>Length Cost</b>	<b>Affected Vessels</b>	<b>Redesign Cost</b>	
<b>Multi-Hull Ferries</b>								
100-124 passengers only	4	4	\$25	4	\$261	4	\$29	
145-150 passengers only	33	33	\$38	33	\$90	21	\$13	
151-600 passengers only	22	22	\$153	22	\$217	18	\$37	
<b>Mono-Hull Ferries</b>								
100-150 passengers only	61	61	\$39	61	\$60	56	\$10	
100-150 passengers plus vehicles	37	20	\$54	20	\$270	20	\$32	
151-1000 passengers only	54	54	\$116	0	\$0	42	\$12 to \$41	
151-1000 passengers plus vehicles	27	27	\$19	0	\$0	27	\$2 to \$39	
1001 or more passengers plus vehicles	0	0	\$0	0	\$0	0	\$0	
<b>Multi-Hull Multi-Purpose Vessels</b>								
151-600 passengers only	13	13	\$153	13	\$217	13	\$37	
<b>Mono-Hull Multi-Purpose Vessels</b>								
151-499 passengers	176	176	\$78	0	\$0	173	\$8 to \$45	
500-1000 passengers <sup>1</sup>	84	84	\$112 to \$125	48	\$205	75	\$11 to \$70	
1001 or more passengers <sup>2</sup>	6	6	\$222 to \$631	0	\$0	6	\$22 to \$100	
<b>Small Cruise Ships</b>								

**Table 23. Other Accessible Features, Lengthening, and Redesign Costs ( thousands of dollars)**

Vessel Type & Size	Number of Vessels		Affected Vessels	Other Access Feature Costs	Affected Vessels	Length Cost	Affected Vessels	Redesign Cost
50-299 passengers		16	11	\$95	11	\$974	15	\$110 to \$261
			5	\$95	5	\$2,117		
<b>Total</b>		533	516		217		470	

**Notes:**

1. Thirty-six (36) multi-purpose vessels with 500-1000 passengers have other accessible feature costs of \$112,000.
2. Two (2) multi-purpose vessels with 1001 or more passengers have other accessible feature costs of \$222,000.

**Table 24. Additional Operation and Maintenance Costs (thousands of dollars)**

Vessel Type & Size	Number of Vessels		Vessels Affected	Fuel Cost	Vessels Affected	Vert. Access Maint. Cost	Vessels Affected	Engine Maint. Cost	Auto Door Maint. Cost
<b>Multi-Hull Ferries</b>									
100-124 passengers only		4	4	\$37			4	\$22	
145-150 passengers only		33	33	\$13			33	\$22	
151-600 passengers only		22	22	\$214					
<b>Mono-Hull Ferries</b>									
100-150 passengers only		61	61	\$5					
100-150 passengers plus vehicles		37	20	\$5					
151-1000 passengers only		54	5	\$6	5	\$6			
151-1000 passengers plus vehicles		27			6	\$6			
1001 or more passengers plus vehicles		0							
<b>Multi-Hull Multi-Purpose Vessels</b>									
151-600 passengers only		13	13	\$214					
<b>Mono-Hull Multi-Purpose Vessels</b>									
151-499 passengers		176	21	\$6	21	\$6			
500-1000 passengers		84	48	\$5	48	\$6	48		\$1
1001 or more passengers		6			4	\$6	6		\$6



Table 24. Additional Operation and Maintenance Costs (thousands of dollars)										
Vessel Type & Size		Number of Vessels		Vessels Affected	Fuel Cost	Vessels Affected	Vert. Access Maint. Cost	Vessels Affected	Engine Maint. Cost	Auto Door Maint. Cost
<b>Small Cruise Ships</b>										
50-299 passengers		16		11	\$7	9	\$8			
						2	\$3			
				5	\$16	1	\$8			
						4	\$3			
<b>Total</b>		533		243		100		91		

What Significant Alternatives Did We Consider?

We based the proposed guidelines on our accessibility guidelines for landside facilities. Table 25 compares the proposed guidelines for passenger vessels to the guidelines for landside facilities to show the exceptions and alternative provisions that we propose to reduce the impact on passenger vessels owners and operators, including small entities.

Table 25. Exceptions and Alternative Provisions Proposed to Reduce Impact on Passenger Vessel Owners and Operators, Including Small Entities		
Feature	Proposed Passenger Vessel Guidelines	Reduced Impacts
Employee-only areas	Access not required to areas used only by employees.	<u>Landside Facilities</u> Access required in areas used only by employees.  <u>Passenger Vessels</u> Reduces impact by not requiring access in areas used only by employees.
Elevator or limited access-limited application elevator (LULA)	Elevator or LULA not required on vessels with only two passenger decks, unless both decks are entry decks.	<u>Landside Facilities</u> Elevator or LULA not required in certain facilities that are less than 3 stories. Exception does not apply to state and local governments.  <u>Passenger Vessels</u> Reduces impact by applying exception to vessels owned or operated by private entities and state and local governments.
	Elevator or LULA not required to connect decks that are not entry decks where each deck is less than 3,000 square feet.	<u>Landside Facilities</u> Elevator or LULA not required in certain facilities that have less than 3,000 square feet per story. Exception does not apply to state and local governments.

**Table 25. Exceptions and Alternative Provisions Proposed to Reduce Impact on Passenger Vessel Owners and Operators, Including Small Entities**

Feature	Proposed Passenger Vessel Guidelines	Reduced Impacts
		<u>Passenger Vessels</u> Reduces impact by applying exception to vessels owned or operated by private entities and state and local governments.
	In vessels otherwise eligible to use the above exceptions, elevator or LULA not required to connect entry decks where at least one designated entry deck serves each stop used for embarking and disembarking passengers and provides the same passenger amenities.	<u>Landside Facilities</u> No comparable exception.  <u>Passenger Vessels</u> Reduces impact by allowing exception where vessels have more than one entry deck and meet certain conditions.
	Elevator or LULA not required in high-speed vessels with 3 decks that meet certain conditions.	<u>Landside Facilities</u> No comparable exception.  <u>Passenger Vessels</u> Reduces impact of additional weight and fuel consumption in high-speed vessels with 3 decks that meet certain conditions.
	Elevator or LULA not required to connect to sundecks on high-speed vessels that meet certain conditions and non-enclosed spaces are available on other accessible decks.	<u>Landside Facilities</u> No comparable exception.  <u>Passenger Vessels</u> Reduces impact of additional weight and fuel consumption in high-speed vessels with sundecks that meet certain conditions.
	Elevator or LULA not required to connect to one segment of decks divided into two segments by vehicle lanes on vehicle ferries.	<u>Landside Facilities</u> No comparable exception.  <u>Passenger Vessels</u> Reduces impact by requiring vertical access to only one deck segment.
	Elevator or LULA not required to connect to decks containing vehicle parking lanes that are designed to be raised and lowered and do not provide any other passenger amenities on vehicle ferries.	<u>Landside Facilities</u> No comparable exception.  <u>Passenger Vessels</u> Reduces impact by not requiring vertical access to certain decks used only for vehicle parking.
	Elevator or LULA not required to connect to decks, other than entry decks, that are less than 300 square	<u>Landside Facilities</u> No comparable exception.

**Table 25. Exceptions and Alternative Provisions Proposed to Reduce Impact on Passenger Vessel Owners and Operators, Including Small Entities**

Feature	Proposed Passenger Vessel Guidelines	Reduced Impacts
	feet.	<u>Passenger Vessels</u> Reduces impact by not requiring access to small decks that are not entry decks.
	Elevator or LULA not required to connect to decks below the bulkhead deck.	<u>Landside Facilities</u> No comparable exception.  <u>Passenger Vessels</u> Reduces impact by not requiring vertical access below the bulkhead deck.
Platform Lifts	Platform lifts permitted to connect decks less than 3,000 square feet, and to tender boarding platforms.	<u>Landside Facilities</u> Platform lifts permitted only in limited situations in new construction.  <u>Passenger Vessels</u> Reduces impact by allowing platform lifts to be used instead of elevator or LULA. Reduces weight and additional fuel consumption impacts in high-speed vessels.
Location of onboard accessible routes	Onboard accessible route not required to coincide with or be located in the same area as general passenger circulation paths on small vessels where largest deck is less than 3,000 square feet.	<u>Landside Facilities</u> No comparable exception.  <u>Passenger Vessels</u> Provides flexibility in designing onboard accessible routes on small vessels.
Single-user toilet rooms in a cluster	On high-speed vessels that do not transport overnight passengers, 5 percent of single user toilet rooms clustered in a single location would be required to be accessible.	<u>Landside Facilities</u> 50 percent of single user toilet rooms clustered in a single location required to be accessible.  <u>Passenger Vessels</u> Reduces impact of additional weight and fuel consumption in high-speed vessels.
Wheelchair spaces in transportation seating areas	Companion seat not required for wheelchair spaces in seating areas on ferries. Reduces number of wheelchair spaces that would be required in seating areas on small ferries with 240 or less fixed seats.	<u>Landside Facilities</u> Companion seat required for each wheelchair space.  <u>Passenger Vessels</u> Reduces impact by not requiring companion seats and reducing the number of wheelchair spaces on small ferries.
Guest rooms with	Vessels with less than 121 guest	<u>Landside Facilities</u>

<b>Table 25. Exceptions and Alternative Provisions Proposed to Reduce Impact on Passenger Vessel Owners and Operators, Including Small Entities</b>		
<b>Feature</b>	<b>Proposed Passenger Vessel Guidelines</b>	<b>Reduced Impacts</b>
mobility features	rooms would be required to provide not more than 5 percent of guest rooms with mobility features.	Facilities with 101 to 121 guest rooms required to provide 7 guest rooms with mobility features.  <u>Passenger Vessels</u> Reduces impact on small vessels.
Vehicle Ferries	Walking surfaces on onboard accessible routes, accessible means of escape, and accessible passenger boarding systems on ferries permitted to overlap vehicle ways. <sup>1</sup>	<u>Landside Facilities</u> No comparable provision.  <u>Passenger Vessels</u> Reduces impact on vehicle ferries.
Doorways with coamings	Alternative provisions proposed for coamings greater than 1/2 inch in height.	<u>Landside Facilities</u> Door thresholds cannot exceed 1/2 inch in height.  <u>Passenger Vessels</u> Resolves conflicts with coaming requirements.
<b>Note:</b> 1. The proposed guidelines do not address vehicle parking on ferries. Ferry operators need effective operational loading plans to identify vehicles needing accessible parking and to position the vehicles on the deck to access passenger amenities.		

Are There Other Relevant Federal Rules?

DOT has issued regulations implementing the ADA for passenger vessels that provide designated public transportation services operated by state and local governments or specified public transportation services operated by private entities that are primarily engaged in the business of transporting people and whose operations affect commerce. DOT has reserved a subpart in the regulations for accessibility standards for the construction and alteration passenger vessels in anticipation of our issuing these guidelines. See 49 CFR part 39, subpart E. DOJ has issued regulations implementing the ADA for state and local governments and public accommodations, including those provided on passenger vessels such as cruise ships, gaming vessels, and dinner vessels. See 28 CFR parts 35 and 36. Passenger vessel owners and operators would not be required to comply with the guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

**APPENDIX I. FERRIES, MULTI-PURPOSE VESSELS, AND  
SMALL CRUISE SHIPS OPERATING IN U.S. PORTS AS OF 2010**

This appendix provides data on ferries permitted to carry more than 99 passengers; multi-purpose vessels such as dinner or excursion vessels permitted to carry more than 150 passengers; and small cruise ships permitted to carry more than 49 but fewer than 300 overnight passengers operating in U.S. ports as of 2010. We compiled the data from the following sources:

1. U.S. Coast Guard Port State Information eXchange (PSIX) System at: <http://cgmix.uscg.mil/psix/>. The PSIX System contains vessel specific information derived from the U.S. Coast Guard's Marine Information and Law Enforcement System.
2. U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, 2008 National Census of Ferry Operators at: [http://www.rita.dot.gov/bts/sites/rita.dot.gov/bts/files/subject\\_areas/ncfo/index.html](http://www.rita.dot.gov/bts/sites/rita.dot.gov/bts/files/subject_areas/ncfo/index.html).
3. Specific vessel websites.

The following symbols are used: (f) indicates foreign flag vessel; (g) indicates gaming vessel; (na) indicates no data available; and (\*) indicates vessel currently provides elevator, limited use-limited access elevator (LULA), or platform lift. The last column in the table shows whether a new vessel that is constructed to replace an existing vessel and has the same number of decks would be required to provide an elevator, LULA, or platform lift to connect the decks. The last column does not show whether the small cruise ships would be required to provide a platform lift to a tender boarding platform.

<b>Vessel Type</b>	<b>Number of Vessels</b>
Multi-Hull Ferry (Passengers Only)	96
Multi-Hull Ferry (Passengers & Vehicles)	3
Mono-Hull Ferry (Passengers Only)	160
Mono-Hull Ferry (Passengers & Vehicles)	195
Multi-Hull Multi-Purpose Passenger Vessel	16
Mono-Hull Multi-Purpose Passenger Vessel	330
Small Cruise or Charter Ship	32
<b>Total</b>	<b>832</b>

<b>Multi-Hull Ferries (Passengers Only)</b>				
<b>Vessel Name</b>	<b>Year Constructed</b>	<b>Passengers</b>	<b>Passenger Decks</b>	<b>Elevator LULA Platform Lift</b>
ENCINAL	1985	388	3	No
CAT EXPRESS	1986	360	2	No
VICTORIA CLIPPER (f)	1986	>150	2	No

ZELINSKY	1986	400	3	No
CATALINA EXPLORER	1987	149	2	No
MACKINAC EXPRESS	1987	346	3	No
ISLAND ROCKET (f)	1988	149	2	No
CATALINA FLYER	1988	600	3	No
ISLAND EXPRESS	1988	380	3	No
MELISSA ANN	1988	199	2	No
BIMINI BREEZE II	1989	124	1	No
AMELIA	1989	149	1	No
COVADONGA	1989	149	1	No
SEAJET I	1989	400	3	No
VIEJO SAN JUAN	1990	149	1	No
JESSICA W	1990	530	3	No
VICTORIA CLIPPER III	1990	511	3	No
VALLEJO	1991	300	3	No
JET EXPRESS II	1992	395	3	No
HARBOR BAY EXPRESS II	1993	149	1	No
VICTORIA CLIPPER IV	1993	330	2	No
BAY BREEZE	1994	250	2	No
CHELSEA LANE TYLER	1995	117	2	No
JET EXPRESS IV	1995	147	2	No
STRAITS EXPRESS	1995	399	3	No
FLYING CLOUD	1996	149	2	No
LIGHTNING	1996	149	1	No
FINEST	1996	349	2	No
LADY MARTHA	1997	145	2	No
MAKANA (f)	1997	149	2	No
DEL NORTE	1997	390	2	Yes – Platform Lift
M/V INTINTOLI	1997	301	2	No
MARE ISLAND	1997	300	2	No
AUTSHUMATO (f)	1998	149	2	No
GOLDEN GATE	1998	350	2	No
NORA VITTORIA	1998	400	3	No
FIORELLO LAGUARDIA	1999	150	3	No
FRANK SINATRA	1999	150	3	No
YANKEE FREEDOM II	1999	149	2	No
YOGI BERRA	1999	150	2	No
AURORA	1999	400	3	No
CATALINA JET	1999	440	3	No
NAPA	1999	350	2	No
STARSHIP EXPRESS	1999	298	2	No
CHRISTOPHER COLUMBUS	2000	150	3	No

SALACIA	2000	600	3	No
FAIRWEATHER EXPRESS II	2001	150	2	No
FLORENCE MARTUS	2001	149	1	No
PEACEMAKER (f)	2001	149	2	No
PETER R WEISS	2001	150	2	No
ATHENA	2001	250	2	No
MENDOCINO	2001	449	3	Yes – Platform Lift
PERALTA	2001	331	2	No
SEASTREAK NEW JERSEY	2001	399	3	No
SEASTREAK NEW YORK	2001	399	3	No
DOWNTOWN	2002	100	1	No
B.V.I. PATRIOT (f)	2002	150	2	No
BROOKLYN	2002	150	2	No
HOBOKEN	2002	150	2	No
JET EXPRESS III	2002	147	2	No
U.S. SENATOR FRANK R LAUTENBERG	2002	150	2	No
ADMIRAL RICHARD E BENNIS	2003	150	1	No
BAYONNE	2003	150	2	No
EXPEDITIONS FOUR	2003	149	2	No
GOVERNOR THOMAS H. KEAN	2003	150	2	No
ISLAND ADVENTURE	2003	149	2	No
JERSEY CITY	2003	150	2	No
OCEAN STATE	2003	149	2	No
PATRIOT	2003	149	2	No
ATLANTICAT	2003	442	3	No
GREY LADY	2003	294	2	No
SEASTREAK WALL STREET	2003	399	3	No
PROVINCETOWN III	2004	149	2	No
SPIRIT OF KINGSTON	2004	149	2	No
WHALING CITY EXPRESS	2004	150	3	No
BIG CAT EXPRESS	2004	377	3	No
SEASTREAK HIGHLANDS	2004	399	3	No
SOLANO	2004	300	2	No
SEYMOUR B. DURST	2005	149	2	No
JET CAT EXPRESS	2005	383	2	No
EXPEDITIONS FIVE	2006	108	2	No
ED ROGOWSKY	2006	149	2	No
MARINA FLYER	2006	149	2	No
RANGER	2006	149	2	No

KEY WEST EXPRESS	2006	199	2	No
MV IYANOUGH	2006	393	2	No
CATALINA ADVENTURE	2007	149	2	No
LITTLE LADY II	2007	149	2	No
MARIAN S HEISKELL	2007	149	2	No
GEMINI	2008	149	2	No
PISCES	2008	149	2	No
KACHEMAK VOYAGER	2009	150	2	No
SCORPIO	2009	199	2	No
RICH PASSAGE 1	2010	118	1	No
YORK	2010	148	2	No
TAURUS	2010	285	3	No
<b>Multi-Hull Ferries (Passengers &amp; Vehicles)</b>				
FAIRWEATHER	2003	250	2	(*)
LAKE EXPRESS	2004	400	3	(*)
M/V CHENEGA	2005	250	2	(*)
<b>Mono-Hull Ferries (Passengers Only)</b>				
CARLISLE II	1917	140	2	No
THOMAS JEFFERSON	1942	794	1	No
BADGER	1953	600	3	Yes - LULA
BIDE-A-WEE	1955	150	2	No
HOLIDAY	1957	150	2	No
HIAWATHA	1959	150	2	No
SACRE BLEU	1959	147	2	No
OTTAWA	1959	600	2	No
WENONAH	1960	144	2	No
BONITA	1961	114	1	No
MICHAEL COSGROVE	1961	149	1	No
CHIPPEWA	1962	598	2	No
MONITOR II	1963	105	2	No
ZEE WHIZ	1964	150	2	No
CABRILLO	1964	303	2	No
FIRE ISLAND DUCHESS	1966	147	1	No
ZEE LION	1966	150	2	No
ST FRANCISVILLE	1967	143	2	No
FAT CAT	1967	300	2	No
NEIL HENLY	1967	380	2	No
QUAIAPEN	1967	248	2	No
MERRIMAC II	1968	107	2	No
MT. MANSFIELD	1969	122	2	No
THE WELCOME	1969	120	2	No
STRAITS OF MACKINAC II	1969	295	2	No



ROYAL STAR	1970	650	3	No
MOLOKAI PRINCESS	1971	149	2	No
ALCATRAZ FLYER	1971	700	3	Yes - LULA
FELICITY	1972	150	2	No
PARADISE CHALLENGER (f)	1972	112	2	No
CAPT PATTERSON	1972	299	2	No
BRANT POINT	1973	603	3	No
CATALINA KING	1973	686	3	Yes - LULA
ISLAND ROMANCE	1973	299	2	No
ALCATRAZ CLIPPER	1974	693	3	Yes - LULA
ISLAND QUEEN	1974	354	2	No
LADY VENTURE	1974	325	1	No
CUMBERLAND QUEEN	1975	146	2	No
VIKING SUPER STAR	1975	149	3	No
ANGEL ISLAND	1975	396	2	No
SAN FRANCISCO	1975	715	3	(*)
SANS SOUCI	1976	149	2	No
TAMALPAIS	1976	120	2	No
THE HOPE	1976	150	2	No
VICTORIA STAR2	1976	142	2	No
BAY MONARCH	1976	414	2	No
FIRE ISLAND MISS	1976	297	2	No
MARIN	1976	624	3	(*)
SONOMA	1976	715	3	(*)
NATIVE SON EXPRESS	1977	149	2	No
VIKING STARSHIP	1977	144	2	No
CAPT. NEVILLE LEVY	1977	999	3	Yes - LULA
PATHFINDER II	1977	249	2	No
STATUE OF LIBERTY V	1977	792	3	Yes - LULA
TRAVELER	1977	297	1	No
CARIBE TIME	1978	145	1	No
SAPELO QUEEN	1978	147	2	No
COL. FRANK X. ARMIGER	1978	402	2	No
MUNNATAWKET	1978	209	2	No
SEN. ALVIN T. STUMPF	1978	999	3	Yes - LULA
MARQUETTE	1979	150	2	No
STERLING (f)	1979	149	2	No
VAGABOND	1979	150	1	No
VICTORIA EXPRESS II	1979	147	2	No
FIRE ISLAND CLIPPER	1979	343	2	No
GOLDEN BEAR	1979	396	2	No
OLD BLUE	1979	336	3	No
OSKI	1979	396	3	No

WYANDOT	1979	265	2	No
VENTURE PRIDE	1980	264	2	No
CHESAPEAKE BREEZE	1981	147	2	No
SPEEDY'S FANTASY (f)	1981	107	2	No
VICTORIA EXPRESS	1981	147	2	No
CAPITOL VENTURE	1981	248	2	No
FIREBALL	1981	297	2	No
FREEDOM	1981	599	2	No
RITA	1982	149	2	No
ANNA	1983	149	2	No
LA SALLE	1983	150	2	No
M/V CUTTYHUNK	1983	146	2	No
KIKI	1983	297	2	No
FIREBIRD	1984	395	2	No
FORT INDEPENDENCE	1984	518	3	No
MCNEIL	1984	260	2	No
ISLANDER	1985	119	2	No
NICOLET	1985	150	2	No
STRANGER	1985	150	1	No
TWO HARBORS	1985	149	2	No
BAY MIST	1985	328	2	No
ELIZABETH RIVER FERRY II	1986	150	2	No
CAPT. SHEPLER	1986	265	1	No
GULF ISLANDER	1986	360	2	No
2TH FERRY	1987	150	1	No
ADVENTURE	1987	149	2	No
FLAMINGO	1987	100	1	No
LA NINA	1987	150	(na)	No
LADY VIRGINIA	1987	307	3	No
PORT IMPERIAL MANHATTAN	1987	492	2	No
BALMY DAYS II	1988	145	2	No
CUMBERLAND LADY	1988	147	2	No
LA PINTA	1988	150	(na)	No
PORT IMPERIAL NEW JERSEY	1988	150	2	No
CARIBE TIDE	1988	284	2	No
RADISSON	1988	350	3	No
GRAND ISLAND	1989	150	2	No
SUPER EXPRESS	1989	149	2	No
WEST NEW YORK	1989	150	2	No
ABRAHAM LINCOLN	1989	399	2	No
ALEXANDER HAMILTON	1989	399	2	No

GEORGE WASHINGTON	1989	399	2	No
KALAMA	1989	250	1	No
SKAGIT	1989	250	1	No
THOMAS JEFFERSON	1989	399	2	No
AVALON EXPRESS	1990	150	2	No
CADILLAC	1990	150	2	No
CUMBERLAND PRINCESS	1990	144	2	No
ELIZABETH RIVER FERRY III	1990	150	2	No
VOYAGER	1990	398	2	No
PIED PIPER	1991	103	2	No
EXPLORER	1991	398	2	No
HENRY HUDSON	1992	305	2	No
ANNEMARIE	1993	150	2	No
JOLIET	1993	150	2	No
EMPIRE STATE	1993	399	2	No
ROBERT FULTON	1993	350	2	No
CATALINA EXPRESS	1994	149	2	No
ISLANDER EXPRESS	1994	149	2	No
GARDEN STATE	1994	399	2	No
ELIZABETH ANN	1995	149	2	No
OUTWARD BOUND	1995	149	2	No
CARIBE CAY	1995	277	2	No
CULEBRA II	1996	523	3	No
FAJARDO II	1996	272	3	No
JOHN STEVENS	1996	399	2	No
SOUTH BAY CLIPPER	1996	412	2	No
VIEQUES II	1996	504	4	No
ADMIRALTY WIND	1998	148	3	No
ATLANTIS	1998	290	(na)	No
BRAVO	2001	107	1	No
ORAL FREEMAN	2001	146	2	No
FIRE ISLAND FLYER	2001	300	2	No
ROYAL EXPRESS III	2001	270	2	No
SUNRISE	2002	149	1	No
WESTIN BREEZE	2002	132	1	No
NORTHERN LIGHTS	2003	149	2	No
POINT O' WOODS VII	2003	150	2	No
SUSIE KING TAYLOR	2003	100	1	No
CARIBENA	2004	272	2	No
FIRE ISLAND EMPRESS	2004	270	2	No
MV MARTHA'S VINEYARD EXPRESS	2005	150	2	No
SAM HOLMES	2005	149	2	No

AUCOCISCO III	2005	399	4	(*)
MARQUETTE II	2005	330	2	No
KATIE UNDERWOOD	2006	149	2	No
YUNQUE PRINCESS	2006	148	2	No
GENE FLATOW	2008	149	1	No
MANHANSETT	2008	149	2	No
SOUTHSIDE	2008	150	1	No
CAYO BLANCO	2009	596	3	Yes - LULA
JERSEY	2010	148	2	No
<b>Mono-Hull Ferries (Passengers &amp; Vehicles)</b>				
ADIRONDACK	1913	219	2	No
CHAMPLAIN	1930	368	2	No
GOLDEN EAGLE FERRY	1934	149	1	No
VIRGINIA	1936	144	1	No
LOUIS B. PORTERIE	1937	794	4	Yes - Elevator
CAPE HENLOPEN	1944	660	4	(*)
NEEBISH ISLANDER II	1946	112	1	No
RHODODENDRON	1947	546	2	No
VALCOUR	1947	219	2	No
SAINT CHARLES	1951	136	2	No
BAYFIELD	1952	149	1	No
GRAND ISLE	1953	149	2	No
EVERGREEN STATE	1954	984	2	No
GOVERNOR	1954	250	2	No
HURON	1955	341	2	No
FELICIANA	1956	143	1	No
LT SAMUEL S. COURSEN	1956	1242	2	No
CAPT VIC	1957	149	2	No
IBERVILLE	1958	143	2	No
KLAHOWYA	1958	800	3	(*)
NORTH HAVEN	1959	124	1	No
COHO	1959	975	1	No
TILLIKUM	1959	1192	2	No
SHELTER ISLAND	1961	150	1	No
NICHEVO II	1962	149	2	No
WHATCOM CHIEF	1962	100	1	No
BEAVER ISLANDER	1962	200	2	No
MALASPINA	1963	499	5	(*)
MATANUSKA	1963	499	6	(*)
TAKU	1963	370	4	(*)
CAMERON NO II	1964	261	1	No
SUSAN ANNE	1964	585	5	(*)

TUSTUMENA	1964	174	3	Yes - LULA
PAMLICO	1965	300	2	Yes - LULA
SILVER LAKE	1965	300	2	Yes - LULA
JOHN F. KENNEDY	1965	3515	3	(*)
ISLAND QUEEN	1966	149	2	No
NORTH CHANNEL	1967	100	1	No
EVERETT LIBBY	1967	174	1	No
HIYU	1967	199	2	No
POINTE A LA HACHE	1967	174	2	No
HYAK	1967	2000	6	(*)
KALEETAN	1967	2000	6	(*)
YAKIMA	1967	2000	6	(*)
GOVERNOR CURTIS	1968	221	1	No
NORTH STAR	1968	300	2	No
ELWHA	1968	2000	6	(*)
ISLANDER	1969	147	1	No
JULIET ALICA	1969	149	2	No
MANITOU	1969	202	2	No
EYRARBAKKI	1970	147	2	No
FT GAINES	1970	149	1	No
KAYLA MARIE	1970	149	1	No
MARISSA MAE NICOLE	1970	149	2	No
ROANOKE	1970	133	2	No
CARIBBEAN FERRY	1971	120	2	No
BOB ELLIS	1972	100	2	No
SPOKANE	1972	2000	5	(*)
LECONTE	1973	247	5	(*)
WALLA WALLA	1973	2000	5	(*)
GREENPORT	1974	132	2	No
COLUMBIA	1974	600	7	(*)
DELAWARE	1974	898	4	Yes - Elevator
NANTUCKET	1974	752	4	(*)
NEW JERSEY	1974	598	3	Yes - LULA
GOV GEORGE D. AIKEN	1975	117	2	No
TWIN CAPES	1975	895	4	(*)
ISLA GRANDE	1976	149	1	No
NEW ROADS	1976	143	1	No
ASCENSION	1977	113	2	No
BOONE NO. 9	1977	138	1	No
AURORA	1977	300	5	(*)
GIBB GILCHRIST	1977	491	1	No
GOVERNOR EDWARD HYDE	1977	300	2	No
ST. JOHN	1977	233	2	No

GUEMES	1979	100	1	No
ROBERT NOBLE	1979	150	2	No
NEW LONDON	1979	295	2	No
SURRY	1979	354	2	No
ISSAQUAH	1979	1200	3	(*)
ACADIA	1980	143	1	No
KITSAP	1980	1200	2	(*)
KITTITAS	1980	1200	2	(*)
GAY HEAD	1981	140	2	No
PELICAN	1981	100	1	No
CAPE HENLOPEN	1981	598	3	Yes - LULA
NELSECO	1981	429	3	Yes - LULA
SANKATY	1981	290	4	Yes - Elevator
ANDREW J. BARBERI	1981	5992	3	(*)
CATHLAMET	1981	1200	2	(*)
CHELAN	1981	1198	3	(*)
KATAMA	1982	143	2	No
SAMUEL I. NEWHOUSE	1982	5997	3	(*)
SEALTH	1982	1200	2	(*)
ISLANDER	1983	443	2	No
MARY ELLEN	1983	660	3	Yes - LULA
WILLIAMSBURG	1983	349	1	No
J B HUNT JR	1984	143	2	No
MADLINE	1984	149	1	No
PLATTSBURGH	1984	146	2	No
CAROL JEAN	1984	797	4	Yes - Elevator
CAPE MAY	1985	895	4	(*)
RACE POINT	1985	245	2	No
PRUDENCE FERRY	1986	149	1	No
PARK CITY	1986	997	3	Yes - LULA
ALICE AUSTEN	1986	1279	2	(*)
JOHN A. NOBLE	1986	1271	2	(*)
B. L. DEBERRY	1987	118	1	No
CARLEE EMILY	1987	150	2	No
J. C. DINGWALL	1987	118	1	No
EAGLE	1987	799	5	(*)
MACHIGONNE II	1987	399	3	Yes - LULA
MARGARET CHASE SMITH	1987	221	1	No
EVANS-WADHAMS- WOLCOTT	1988	146	2	No
FT. MORGAN	1988	149	1	No
CARTERET	1988	300	2	Yes - LULA
CAPE POINT	1989	149	2	No

CHICAMACOMICO	1989	149	2	No
DRUMMOND ISLANDER III	1989	149	2	No
FRISCO	1989	149	2	No
KINNAKEET	1989	149	2	No
MARK G GOODE	1989	118	1	No
WASHINGTON	1989	150	2	No
M. V. JOHN H.	1989	1000	4	(*)
SOUTH BASS	1989	500	2	No
OCRACOKE	1990	149	2	No
SANTA MARIA	1990	149	1	No
SHIRLEY IRENE	1991	149	2	No
ROBERT C LANIER	1991	495	4	Yes - Elevator
CAPTAIN HENRY LEE	1992	221	2	No
GOVERNOR DANIEL RUSSELL	1992	300	2	Yes - LULA
VERMONT	1992	221	2	No
R E STOTZER JR	1993	118	1	No
CAPTAIN CHARLES PHILBROOK	1993	221	2	No
CAPTAIN NEAL BURGESS	1993	221	2	No
WM. MARKET	1993	500	2	No
MARTHA'S VINEYARD	1993	1376	3	(*)
ROANOKE	1994	149	2	No
CEDAR ISLAND	1994	300	2	Yes - LULA
CHRISTINE ANDERSON	1994	250	2	No
DEWITT C. GREER	1994	494	5	Yes - Elevator
MAQUOIT II	1994	399	3	(*)
GENERAL II	1995	149	2	No
SUGAR ISLANDER II	1995	138	1	No
THOMAS A BAUM	1995	149	2	No
CAYO NORTE	1995	205	2	No
POCAHONTAS	1995	444	4	Yes - Elevator
ARNOLD W. OLIVER	1996	118	1	No
MIDDLE CHANNEL	1996	149	1	No
THE HICKMAN	1996	148	1	No
JEAN RIBAUT	1996	199	1	No
RAY STOKER, JR.	1996	495	4	Yes - Elevator
SOUTHPORT	1996	300	2	Yes - LULA
LT JOE THEINERT	1997	150	1	No
BLOCK ISLAND	1997	962	3	Yes - LULA
EMERALD ISLE	1997	293	3	(*)
PUT-IN-BAY	1997	500	2	No
M/V TACOMA	1997	2499	5	(*)

KENNICOTT	1998	499	4	(*)
LADY NAOMI (f)	1998	220	3	Yes - LULA
NEUSE	1998	300	2	Yes - LULA
ROBERT H. DEDMAN	1998	495	4	Yes - Elevator
PUYALLUP	1998	2499	5	(*)
WENATCHEE	1998	2499	5	(*)
WILLIAM G BURNETT	1999	118	1	No
PT BARNUM	1999	988	4	(*)
DRUMMOND ISLANDER IV	2000	149	2	No
CUMBERLAND	2000	203	3	Yes - LULA
FLOYD J. LUPTON	2000	300	2	Yes - LULA
FORT FISHER	2000	300	2	Yes - LULA
CHARLES HALL	2001	147	1	No
PRINCE OF WALES	2001	165	3	(*)
AMERICA	2002	150	1	No
HERON	2002	100	2	No
MASHOMACK	2002	149	1	No
ARNI J. RICHTER	2003	145	2	No
CROATOAN	2003	300	2	Yes - LULA
GRAND REPUBLIC	2003	988	4	(*)
W STANFORD WHITE	2003	300	2	Yes - LULA
GEES BEND	2004	149	1	No
LITUYA	2004	149	2	No
ISLENO	2004	208	2	No
PLAQUEMINES PRIDE	2004	200	1	No
GUY V. MOLINARI	2004	4400	5	(*)
SEN. JOHN J. MARCHI	2004	4400	4	(*)
MENANTIC	2005	149	1	No
SPIRIT OF AMERICA	2005	4400	4	(*)
MISTER B	2006	150	2	No
HATTERAS	2006	300	2	Yes - LULA
STEILACOOM II	2006	324	2	No
STIKINE	2006	195	3	(*)
ISLAND HOME	2007	1200	6	(*)
CAYO LARGO	2008	300	2	No
CHETZEMOKA	2010	750	3	Yes - LULA
RAYMOND C PECOR JR	2010	200	2	No
<b>Multi-Hull Multi-Purpose Passenger Vessels</b>				
FREEDOM	1974	389	2	No
AMERICAN EAGLE	1984	152	2	No
GLACIER EXPRESS	1985	292	3	No
SPIRIT OF ADVENTURE	1985	240	3	No



JET EXPRESS	1989	380	3	No
NAVATEK I	1989	422	2	No
BRAVEST	1996	349	2	No
FRIENDSHIP V	1996	366	3	No
DEACON	1998	250	3	No
MILLENNIUM	1998	367	3	No
KLONDIKE EXPRESS	1999	342	3	No
VOYAGER III	1999	349	2	No
ROYAL MISS BELMAR	2000	300	3	No
BISCAYNE LADY	2002	400	3	No
ZEPHYR	2003	600	3	No
ISLAND DISCOVERY	2005	200	2	No
<b>Mono-Hull Multi-Purpose Passenger Vessels</b>				
BELLE OF LOUISVILLE	1914	999	3	Yes - LULA
CLIPPER WINNEBAGO	1922	300	2	No
INTERNATIONAL	1927	200	2	No
SIGHTSEER XII	1933	600	2	No
CIRCLE LINE XVI	1934	585	2	No
CIRCLE LINE XVII	1934	585	2	No
INDIAN HARBOR	1937	251	2	No
PAN AMERICAN CLIPPER	1937	200	1	No
SILVERGATE	1940	296	2	No
BAHIA BELLE	1942	195	3	No
109	1943	205	1	No
CIRCLE LINE X	1944	492	2	No
NEWPORT PRINCESS	1944	250	2	No
TEMPRESS	1944	700	4	Yes - Elevator
THE ISLANDER	1945	236	1	No
ROMANCE	1946	400	3	No
MAJESTIC	1950	1067	3	Yes - LULA
DISCOVERY II	1953	391	3	No
COEUR D'ALENE	1954	400	2	No
HARBOR QUEEN	1954	444	2	No
PRINCESS WENONAH	1954	249	2	No
MISS LIBERTY	1954	827	2	No
DIAMOND JACK	1955	254	3	No
MEMPHIS QUEEN II	1955	308	2	No
SAMUEL CLEMENS	1955	273	3	No
DIAMOND QUEEN	1956	300	2	No
MARIETTA	1957	269	2	No
DIAMOND BELLE	1958	400	3	No
HARBOR KING	1958	222	3	No

HARBOR PRINCESS	1959	444	2	No
MONHEGAN	1959	190	1	No
BELLE OF HOT SPRINGS	1960	224	3	No
MISS CHRISTIN	1960	210	2	No
SIGHTSEER	1960	250	2	No
BECKY THATCHER	1961	237	2	No
ISLAND BEACH	1961	339	2	No
MARLYN	1961	260	3	No
MARTHA WASHINGTON	1961	209	2	No
LADY ST JOHNS	1962	300	2	No
MOONCHASER	1962	257	2	No
VIRGINIA C II	1962	215	2	No
ROYAL PRINCE	1962	500	3	No
BECKY THATCHER	1963	339	2	No
HALF MOON	1963	230	2	No
JUBILEE II	1963	194	3	No
SENECA LEGACY	1963	265	2	No
SPIRIT OF JEFFERSON	1963	300	3	No
VIKING STARLINER	1963	348	2	No
MARK TWAIN	1964	388	3	No
NEW BOSTON	1964	395	2	No
MISS CIRCLE LINE	1964	1035	3	Yes - LULA
DUCHESS	1965	310	3	No
PADDLEWHEEL QUEEN	1965	408	3	No
TUNICA QUEEN (g)	1965	395	3	No
CARRIE B	1966	300	2	No
TOM SAWYER	1966	362	2	No
FREEDOM	1967	430	2	No
SPIRIT OF SACRAMENTO	1967	344	3	No
SUMMER OF GEORGE	1967	200	3	No
MISH-AN-NOCK	1968	400	2	No
HARBOR EMPEROR	1968	500	2	No
POINT LOMA	1969	400	3	Yes - LULA
CAPE MAY WHALE WATCHER	1970	275	3	No
JONATHAN PADELFOED	1970	200	2	No
AMBASSADOR II (f) (g)	1970	1,600	5	(*)
GENERAL BEAUREGARD	1971	311	2	No
GOODTIME I	1971	347	2	No
ISLAND WANDERER	1971	219	2	No
JUNGLE QUEEN IV	1971	536	3	No
RANGER	1971	514	2	No
DANDY	1972	200	2	No

HARBOR QUEEN	1972	297	2	No
MISS BUFFALO II	1972	226	2	No
SHERYLL PRINCESS	1972	315	2	No
CABANA	1973	366	2	No
MUSETTE	1974	400	2	No
RIVER ROSE	1974	215	1	No
NATCHEZ	1975	1603	4	Yes - Elevator
BENNIE ALICE	1976	195	2	No
GOODTIME II	1976	437	2	No
STAR OF PALM BEACH	1976	429	2	No
UNCLE SAM 7	1976	226	2	No
BAY STATE	1976	549	3	No
ENDEAVOR	1977	350	1	No
HURRICANE II	1977	295	2	No
SPIRIT OF DUBUQUE	1977	375	2	No
MISS FREEDOM	1977	564	2	No
TEXAS STAR CASINO (f) (g)	1977	595	3	Yes - LULA
CORNUCOPIA PRINCESS	1978	400	4	Yes - Elevator
ESCAPADE	1978	440	3	Yes - LULA
GOODTIME III	1978	223	2	No
STAR OF THE NORTHWEST	1978	245	3	Yes - LULA
VISTA KING	1978	255	2	No
CARIBBEAN DREAM II	1979	295	1	No
MEMPHIS QUEEN III	1979	401	2	No
STEVEN THOMAS	1979	195	2	No
MONTE CARLO (f) (g)	1980	315	3	No
PRINCE CHARMING	1980	398	2	No
RIP VAN WINKLE	1980	388	2	No
PROVINCETOWN II	1980	713	3	Yes - LULA
NAUTICA QUEEN	1981	407	3	Yes - LULA
STARLITE MAJESTY	1981	399	3	No
THE HARRIOTT II	1981	400	2	No
AQUASINO	1981	600	5	Yes - Elevator
CAPT CLARK'S FLAGSHIP	1982	364	3	No
MYSTIQUE	1982	350	3	No
PACIFIC HORNBLOWER	1982	271	2	No
THE STAR	1982	305	2	No
JOHN JAMES AUDUBON	1982	600	3	(*)
MISS GATEWAY	1982	500	2	No
CAPITOL HORNBLOWER	1983	223	2	No
CARRIE B	1983	324	2	No
GRAND DUCHESS	1983	350	3	Yes - LULA
ISLAND QUEEN	1983	401	3	No

TAHOE QUEEN	1983	350	3	Yes - LULA
VOYAGEUR	1983	230	1	No
COLUMBIA GORGE	1983	599	2	No
CREOLE QUEEN	1983	955	3	Yes - LULA
FIRST LADY	1983	544	(na)	No
CAPT. ANDERSON III	1984	175	2	No
CHERRY BLOSSOM	1984	408	3	No
HARBOR LIGHTS	1984	400	3	No
M/V INDIAN RIVER QUEEN	1984	261	3	No
MAJESTY	1984	280	3	Yes - LULA
MUSIC CITY QUEEN	1984	338	3	No
PRINCESS	1984	399	3	No
QUEEN OF SEATTLE	1984	275	3	Yes - LULA
ALI'I KAI	1984	838	2	No
AVALON	1984	602	3	Yes - LULA
LORD HORNBLOWER	1984	800	3	Yes - LULA
CAPT. JOHN & SON IV	1985	294	2	No
CELEBRATION LADY	1985	299	3	No
FT. DEARBORN	1985	200	2	No
JEWEL	1985	337	2	No
SPIRIT OF CHARLESTON	1985	422	2	No
TAYLORS FALLS PRINCESS	1985	250	2	No
COLONEL	1985	785	3	Yes - LULA
DIAMOND ROYALE (g)	1985	600	3	Yes - LULA
ENTERTAINER	1985	574	2	No
FREDERICK L NOLAN JR	1985	550	3	No
GEORGIA QUEEN	1985	600	3	No
HENRIETTA III	1985	600	5	Yes - Elevator
INNER HARBOR SPIRIT	1985	574	2	No
OPUS CASINO (f) (g)	1985	800	3	Yes - LULA
RESPECT	1985	499	3	Yes - LULA
SOUTHERN BELLE	1985	507	3	No
SPIRIT OF SAN DIEGO	1985	579	3	Yes - LULA
GENERAL JACKSON	1985	1200	4	(*)
CAPT. PETE	1986	300	2	No
MARINA HORNBLOWER	1986	200	3	No
QUEEN	1986	393	2	No
ROYAL WINNER PRINCESS II	1986	396	3	No
STARLITE PRINCESS	1986	339	3	No
ANNA C	1986	647	4	Yes - Elevator
CELEBRATION BELLE	1986	800	4	(*)
EMPRESS ANDIAMO	1986	500	3	No
ISLANDER	1986	500	3	No

PORTLAND SPIRIT	1986	540	3	Yes - LULA
SPIRIT OF THE LOWCOUNTRY	1986	527	3	(*)
WILLIAM D. EVANS	1986	580	3	(*)
WORLD YACHTS DUCHESS	1986	600	3	Yes - LULA
WORLD YACHTS PRINCESS	1986	600	3	Yes - LULA
BEN FRANKLIN	1987	317	3	No
CAP STREETER	1987	300	2	No
KENAI STAR	1987	195	2	No
SHORELINE II	1987	350	2	No
SPIRIT OF SEATTLE	1987	461	3	No
THOMAS LAIGHTON	1987	346	3	No
VISTA STAR	1987	300	3	No
CAPT. JP	1987	593	4	No
CAPT. JP II	1987	600	3	Yes - LULA
DISCOVERY III	1987	900	4	Yes - Elevator
RIVER QUEEN	1987	500	2	No
SAVANNAH RIVER QUEEN	1987	600	3	No
STATUE OF LIBERTY IV (g)	1987	600	3	Yes - LULA
ALEXANDRIA BELLE	1988	425	3	No
AMERICAN PRINCESS	1988	220	2	No
ANSON NORTHRUP	1988	350	2	No
CAROLINA BELLE	1988	300	2	No
ISLAND DUCHESS	1988	439	3	No
MASSACHUSETTS	1988	346	2	No
QUEEN CITY CLIPPER	1988	208	1	No
SKYLINE PRINCESS	1988	450	3	No
SPIRIT OF PEORIA	1988	428	3	Yes - LULA
THE STAR	1988	300	3	No
ANNABEL LEE	1988	506	2	No
CITY OF CARUTHERSVILLE	1988	800	4	Yes - Elevator
EMPRESS HORNBLOWER	1988	500	3	No
GREAT POINT	1988	804	3	Yes - LULA
SPIRIT OF BALTIMORE	1988	600	4	Yes - Elevator
SPIRIT OF CHICAGO	1988	600	4	Yes - Elevator
AQUA (f)	1989	325	3	No
CALIFORNIA HORNBLOWER	1989	359	3	Yes - LULA
ISLAND GIRL	1989	296	2	No
LADY WINDRIDGE	1989	407	2	No
MAJESTIC PRINCESS	1989	353	2	No
PTARMIGAN	1989	196	2	No
VALLEY GEM	1989	295	2	No
VISTA JUBILEE	1989	428	3	Yes - LULA

CATALINA	1989	600	1	No
NAUTICAL EMPRESS	1989	600	3	(*)
SPIRIT OF NEW JERSEY	1989	579	3	Yes - LULA
SPIRIT OF NEW YORK	1989	600	4	Yes - Elevator
SPIRIT OF PHILADELPHIA	1989	600	4	Yes - Elevator
MISS MARQUETTE (g)	1989	1,200	4	Yes - Elevator
BETSEY NORTHRUP	1990	360	1	No
LAURA	1990	347	2	No
MATTHEW J. HUGHES	1990	347	2	No
THE ANITA DEE II	1990	400	4	No
GOODTIME III	1990	975	4	Yes - Elevator
SPIRIT OF BOSTON	1990	600	4	Yes - Elevator
SPIRIT OF MOUNT VERNON	1990	573	3	Yes - LULA
CATALINA DUCHESS	1991	292	2	No
CHICAGO'S FIRST LADY	1991	225	2	No
DESERT PRINCESS	1991	300	3	No
FUME BLANC COMMODORE	1991	450	3	No
GRAND ROMANCE	1991	350	3	Yes - LULA
PORTUGUESE PRINCESS II	1991	293	2	No
ROYAL PRINCESS	1991	242	3	Yes - LULA
SAN FRANCISCO SPIRIT	1991	355	4	Yes - Elevator
W. L. CALLAHAN	1991	260	2	No
BELLE OF CINCINNATI	1991	1000	3	Yes - LULA
MISS ELLIS ISLAND	1991	799	3	Yes - LULA
MISS NEW JERSEY	1991	799	3	Yes - LULA
MISSISSIPPI QUEEN	1991	840	4	Yes - Elevator
ODYSSEY	1991	800	4	Yes - Elevator
HORIZON STAR (g)	1992	285	4	Yes - Elevator
JAMES J DOHERTY	1992	348	2	No
INSPIRATION HORNBLOWER	1992	1000	4	Yes - Elevator
SPIRIT OF NORFOLK	1992	600	2	No
STAR OF HONOLULU	1992	1500	5	(*)
DISCOVERY	1993	212	2	No
BIG EASY	1993	1,000	4	Yes - Elevator
LADY ANDERSON	1993	500	3	Yes - LULA
MISS NEW YORK	1993	799	3	Yes - LULA
ODYSSEY II	1993	749	4	Yes - Elevator
ALTON BELLE CASINO II (g)	1993	1321	3	(*)
CATFISH BEND RIVERBOAT CASINO II (g)	1993	1,389	4	Yes - Elevator
CORNUCOPIA MAJESTY	1993	1200	4	(*)
DETROIT PRINCESS	1993	1636	5	(*)
SOUTHERN STAR I (g)	1993	1,200	4	Yes - Elevator

STAR CASINO (g)	1993	1,409	3	Yes - LULA
ARKANSAS QUEEN	1994	338	2	No
LADY MARY	1994	300	2	No
TAILS OF THE SEA	1994	293	2	No
ADVENTURE HORNBLOWER	1994	600	3	Yes - LULA
M.S. DIXIE II	1994	570	3	Yes - LULA
PHILADELPHIA BELLE	1994	1000	6	Yes - Elevator
ARGOSY III	1994	1555	3	(*)
CASINO ROUGE (g)	1994	1800	4	(*)
CROWN CASINO (g)	1994	1750	5	(*)
GRAND VICTORIA (g)	1994	1736	2	(*)
GRAND VICTORIA II (g)	1994	2700	6	(*)
HARRAHS NORTH STAR (g)	1994	1800	5	(*)
MARY'S PRIZE (g)	1994	1650	3	(*)
PAR-A-DICE (g)	1994	1654	4	(*)
PRIDE OF LAKE CHARLES (g)	1994	1,660	4	Yes - Elevator
SAN FRANCISCO BELLE	1994	2000	4	(*)
SHREVE STAR (g)	1994	1650	4	(*)
THE MARGARET MARY (g)	1994	2050	4	(*)
TREASURE CHEST CASINO (g)	1994	1725	4	(*)
TREBLE CLEF (g)	1994	1,900	4	Yes - Elevator
AMERICAN PRINCESS II	1995	168	2	No
DOLPHIN VIII	1995	292	2	No
DREAM ON	1995	260	2	No
STARSHIP	1995	343	3	No
ODYSSEY III	1995	600	1	No
SHOWBOAT BRANSON BELLE	1995	750	4	(*)
AMERISTAR II (g)	1995	2,710	2	No
BELLE OF ORLEANS (g)	1995	2450	2	(*)
BETTENDORF CAPRI (g)	1995	2,300	3	Yes - LULA
CITY OF EVANSVILLE (g)	1995	2700	4	(*)
GRAND PALAIS (g)	1995	2000	3	(*)
KANESVILLE QUEEN (g)	1995	2,352	3	Yes - LULA
EMERALD STAR	1996	250	1	No
THE BIG M CASINO	1996	400	3	Yes - LULA
DESTINY	1997	330	4	No
SPIRIT OF ETHAN ALLEN III	1997	424	3	Yes - LULA
LIBERTY BELLE	1997	600	3	Yes - LULA
ARGOSY VI	1997	4000	3	(*)
BLUE CHIP CASINO (g)	1997	3,000	4	Yes - Elevator
KING OF THE RED (g)	1997	2678	4	(*)

MAJESTIC STAR (g)	1997	3000	5	(*)
WINSTAR (g)	1997	3750	5	(*)
CELESTIAL	1998	374	1	No
FANTASEA ONE	1998	348	4	(*)
MIDNIGHT GAMBLER II (g)	1998	500	3	Yes - LULA
SPIRIT OF CAROLINA	1998	454	3	No
EMERALD PRINCESS II	1998	600	4	Yes - Elevator
JACKS OR BETTER CASINO (g)	1998	500	3	Yes - LULA
MYSTIC BLUE	1998	492	4	Yes - Elevator
GLORY OF ROME (g)	1998	4557	4	(*)
CAPRICE	1999	284	3	No
CATHERINE MARIE	1999	250	3	No
CORNUCOPIA DESTINY	1999	400	5	No
ETERNITY	1999	343	3	(*)
NINA'S DANDY	1999	286	2	No
ROYAL CASINO I (g)	1999	375	3	Yes - LULA
WHALE WATCHER	1999	393	2	No
STARSHIP	1999	600	3	Yes - LULA
CABERNET SAUVIGNON COMMODORE	2000	400	4	(*)
HORIZON'S EDGE (g)	2000	500	3	Yes - LULA
ROYAL ARGOSY	2000	800	3	Yes - LULA
SPIRIT OF WASHINGTON	2000	600	4	(*)
HOLLYWOOD DREAMS (g)	2000	3100	4	(*)
MISS BELTERRA (g)	2000	2932	3	(*)
EVENING STAR	2001	305	2	No
OUILMETTE	2001	217	2	No
ENDLESS DREAMS	2002	468	3	Yes - LULA
KANAN	2002	400	4	(*)
ATLANTICA	2003	400	3	Yes - LULA
BRIGHT STAR	2003	336	2	No
M/V MAJESTIC	2003	375	3	Yes - LULA
ROYAL EXPRESS IV	2003	300	3	No
ATLANTIS	2004	319	2	No
THE GRAND FLORIDIAN	2004	300	4	(*)
CALIFORNIA SPIRIT	2004	600	3	Yes - LULA
BIG M CASINO (g)	2005	500	3	Yes - LULA
ISLAND EXPEDITION	2005	199	2	No
OVATION	2005	323	3	No
L'AUBERGE DU LAC (g)	2005	3637	2	(*)
SIR WINSTON	2006	400	5	(*)
THE FLORIDIAN PRINCESS	2006	400	4	No



BLUE CHIP 2 (g)	2006	5914	3	(*)
WENDELLA	2007	340	2	No
GRAND LUXE	2007	600	3	(*)
CIRCLE LINE MANHATTAN	2008	600	2	No
CIRCLE LINE BROOKLYN	2009	600	2	No
CIRCLE LINE QUEENS	2009	600	2	No
LINNEA	2010	340	2	No
<b>Small Cruise or Charter Ships (50 to 299 Overnight Passengers)</b>				
LA PESCA	1970	62	1 <sup>1</sup>	No
PACIFIC MONARCH	1971	136	3	Yes - LULA
WILDERNESS EXPLORER (ex-Spirit of Discovery)	1976	95	3	Yes - LULA
ADMIRALTY DREAM (ex-Spirit of Columbia)	1979	80	3	Yes - LULA
SPIRIT OF ALASKA	1980	86	3	Yes - LULA
NAT.GEOGRAPHIC SEA BIRD	1981	92	3	Yes - LULA
NAT.GEOGRAPHIC SEA LION	1982	92	3	Yes - LULA
NAT.GEOGRAPHIC EXPLORER (f)	1982	150	3	(*)
SAFARI ENDEAVOUR (ex-Spirit of Endeavor)	1983	109	5	Yes - Elevator
WILDERNESS ADVENTURER	1983	85	3	Yes - LULA
SAFARI LEGACY (ex-spirit of '98)	1984	101	5	(*)
SEADREAM I (f)	1984	110	5	(*)
SEADREAM II (f)	1985	112	5	(*)
SEABOURN PRIDE (f)	1987	218	6	(*)
YORKTOWN (ex-Spirit of Yorktown)	1988	138	5	Yes - Elevator
WIND SPIRIT (f)	1988	150	4	Yes - Elevator
CLIPPER ODYSSEY (f)	1989	132	4	(*)
SILVER EXPLORER (ex-Prince Albert II) (f)	1989	132	6	(*)
SEABOURN SPIRIT (f)	1989	208	6	(*)
BREMEN (f)	1990	164	6	(*)
SEABOURN LEGEND (f)	1990	212	6	(*)
HANSEATIC (f)	1991	200	6	Yes - Elevator
SPIRIT OF OCEANUS (f)	1991	120	5	(*)
NIAGARA PRINCE	1994	90	3	Yes - LULA
SILVER CLOUD (f)	1994	296	6	(*)
QUEEN OF THE WEST	1995	140	5	(*)
SILVER WIND (f)	1995	296	6	(*)
GRANDE CARIBE	1997	98	4	Yes - Elevator

GRANDE MARINER	1998	100	4	Yes - Elevator
AMERICAN SPIRIT	2005	98	4	(*)
AMERICAN STAR	2007	98	4	(*)
INDEPENDENCE	2010	104	4	(*)

**Note:**

1. Vessel is an overnight deep sea charter fishing vessel.

## APPENDIX II. LARGE CRUISE SHIPS OPERATING IN U.S. PORTS AS OF 2011

This appendix provides data on large cruise ships permitted to carry 300 or more overnight passengers operating in U.S. ports as of 2011.<sup>25</sup> We compiled the data from the following sources:

1. U.S. Department of Transportation, Maritime Administration, Cruise Detail Table at: [http://www.marad.dot.gov/library\\_landing\\_page/data\\_and\\_statistics/Data\\_and\\_Statistics.htm](http://www.marad.dot.gov/library_landing_page/data_and_statistics/Data_and_Statistics.htm). The Cruise Detail Table contains data on cruises, passengers, and departure and destination ports derived from the U.S. Customs and Border Protection Vessel Entrance and Clearance Documents for the period from January 1, 2004 to March 31, 2012.
2. Cruise Lines International Association (CLIA), Cruise Lines & Ships webpage at: <http://www.cruising.org/vacation/cruise-lines-ships>. The CLIA webpage provides data on the year the cruise ships were constructed, the total number of guest rooms, and the number of guest rooms with mobility features.
3. Cruise ship deck plans available on the cruise line websites. The deck plans show the guest rooms on each deck and indicate the guest rooms with mobility features with a symbol. Where the number of guest rooms with mobility features shown on the cruise ship deck plan differs from the number on the CLIA webpage, the number on the cruise ship deck plan is used.

<b>Large Cruise Ships Operating in U.S. Ports as of 2011: Percent Guest Rooms with Mobility Features</b>				
<b>Cruise Line</b>	<b>Large Cruise Ships</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
Carnival	23	29,143	594	2.0%
Celebrity	9	10,819	234	2.2%
Disney	3	3,004	57	1.9%
Holland America	15	11,745	335	2.9%
Norwegian	10	12,002	221	1.8%
Princess	14	16,994	333	2.0%
Royal Caribbean	21	30,260	472	1.6%
Other <sup>1</sup>	18	9,549 <sup>2</sup>	146 <sup>2</sup>	1.5%
<b>Total</b>	<b>113</b>	<b>123,516</b>	<b>2,392</b>	<b>1.9%</b>
<b>Notes:</b>				
1. Other cruise lines include AIDA Cruises, Azamara Club Lines, Costa Cruises, Crystal Cruises, Cunard Lines, MCS Cruises, Oceania Cruises, Regent Seven Sea Cruises, Seabourne Cruises,				

<sup>25</sup> The appendix includes the Legend of the Seas, Grandeur of the Seas, Brilliance of the Seas, Vision of the Seas, and Independence of the Seas, which did not operate in U.S. ports in 2011 but are scheduled to operate in U.S. ports in 2013. The appendix does not include the Celebrity Mercury, which was sold to TUI Cruises in February 2011, and the Royal Princess, which was sold to P&O Cruises in May 2011.

and Silver Sea Cruises.

2. Data on total number of guest rooms and guest rooms with mobility features are not available for the AIDAaura and AIDAAluna.

<b>Carnival Cruise Ships</b>				
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
<b>Fantasy Class</b>				
Carnival Fantasy	1990	1,028	25 <sup>1</sup>	2.4%
Carnival Ecstasy	1991	1,026	25 <sup>1</sup>	2.4%
Carnival Sensation	1993	1,026	25 <sup>1</sup>	2.4%
Carnival Fascination	1994	1,026	24	2.3%
Carnival Imagination	1995	1,026	25 <sup>1</sup>	2.4%
Carnival Inspiration	1996	1,026	25 <sup>1</sup>	2.4%
Carnival Elation	1998	1,026	25 <sup>1</sup>	2.4%
Carnival Paradise	1998	1,026	25 <sup>1</sup>	2.4%
<b>Destiny Class</b>				
Carnival Destiny	1996	1,321	28	2.1%
<b>Triumph Class</b>				
Carnival Triumph	1999	1,379	31 <sup>1</sup>	2.2%
Carnival Victory	2000	1,379	31 <sup>1</sup>	2.2%
<b>Spirit Class</b>				
Carnival Spirit	2001	1,062	17 <sup>1</sup>	1.6%
Carnival Pride	2001	1,062	17 <sup>1</sup>	1.6%
Carnival Legend	2002	1,062	17 <sup>1</sup>	1.6%
Carnival Miracle	2004	1,062	17 <sup>1</sup>	1.6%
<b>Conquest Class</b>				
Carnival Conquest	2002	1,487	26 <sup>1</sup>	1.7%
Carnival Glory	2003	1,487	27 <sup>1</sup>	1.7%
Carnival Valor	2004	1,487	27 <sup>1</sup>	1.8%
Carnival Liberty	2005	1,487	29	2.0%
Carnival Freedom	2007	1,487	29	2.0%
<b>Splendor Class</b>				
Carnival Splendor	2008	1,503	29	2.0%
<b>Dream Class</b>				
Carnival Dream	2009	1,823	35	2.0%
Carnival Magic	2011	1,845	35	1.9%
<b>Total</b>		<b>29,143</b>	<b>594</b>	<b>2.0%</b>
<b>Note:</b>				
1. The number of guest rooms with mobility features is from the cruise ship deck plans.				

<b>Celebrity Cruise Ships</b>				
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
<b>Century Class</b>				
Celebrity Century	1995	907	10	1.1%
<b>Millennium Class</b>				
Celebrity Millennium	2000	1,019	26	2.6%
Celebrity Summit	2001	1,085	26	2.4%
Celebrity Infinity	2001	1,085	26	2.4%
Celebrity Constellation	2002	1,019	26	2.6%
<b>Solstice Class</b>				
Celebrity Solstice	2008	1,426	30	2.1%
Celebrity Equinox	2009	1,426	30	2.1%
Celebrity Eclipse	2010	1,426	30	2.1%
Celebrity Silhouette	2011	1,426	30	2.1%
<b>Total</b>		<b>10,819</b>	<b>234</b>	<b>2.2%</b>

<b>Disney Cruise Ships</b>				
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
Disney Magic	1998	877	16	1.8%
Disney Wonder	1999	877	16	1.8%
Disney Dream	2011	1,250	25	2.0%
<b>Total</b>		<b>3,004</b>	<b>57</b>	<b>1.9%</b>

<b>Holland America Cruise Ships</b>				
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
<b>Other</b>				
ms Prinsendam	1988	419	10	2.4%
<b>Statendam Class</b>				
ms Statendam	1993	630	15	2.4%
ms Maasdam	1993	629	16	2.5%
ms Ryndam	1994	630	15	2.4%
ms Veendam	1996	675	17	2.5%
<b>Rotterdam Class</b>				
ms Rotterdam	1997	702	25	3.6%

Ms Volendam	1999	702	25	3.6%	
ms Zaandam	2000	716	22	3.1%	
ms Amsterdam	2000	690	21 <sup>1</sup>	3.0%	
<b>Vista Class</b>					
ms Zuiderdam	2002	958	28	2.9%	
ms Oosterdam	2003	958	28	2.9%	
ms Westerdam	2004	958	28	2.9%	
ms Noordam	2006	959	28	2.9%	
<b>Signature Class</b>					
ms Eurodam	2008	1,052	30	2.9%	
ms Nieuw Amsterdam	2010	1,053	30	2.9%	
		<b>Total</b>	<b>11,745</b>	<b>335</b>	<b>2.9%</b>
<b>Note:</b>					
1. The number of guest rooms with mobility features is from the cruise ship deck plan.					

<b>Norwegian Cruise Ships</b>					
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>	
<b>Other</b>					
Norwegian Spirit	1999	1,009	5 <sup>1</sup>	0.5%	
<b>Sun Class</b>					
Norwegian Sky	1999	1,004	7 <sup>1</sup>	0.7%	
Norwegian Sun	2001	968	20	2.1%	
<b>Dawn Class</b>					
Norwegian Star	2001	1,146	22 <sup>1</sup>	1.9%	
Norwegian Dawn	2002	1,112	26 <sup>1</sup>	2.3%	
<b>Other</b>					
Norwegian Pride of America	2005	1,069	19	1.8%	
<b>Jewel Class</b>					
Norwegian Jewel	2005	1,188	27 <sup>1</sup>	2.3%	
Norwegian Pearl	2006	1,195	27	2.3%	
Norwegian Gem	2007	1,197	27	2.3%	
<b>Epic Class</b>					
Norwegian Epic	2010	2,114	41 <sup>1</sup>	1.9%	
		<b>Total</b>	<b>12,002</b>	<b>221</b>	<b>1.8%</b>
<b>Note:</b>					
1. The number of guest rooms with mobility features is from the cruise ship deck plans.					

<b>Princess Cruise Ships</b>				
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
<b>Sun Class</b>				
Dawn Princess	1997	975	19	1.9%
Sea Princess	1998	975	18	1.8%
Coral Princess	2003	987	20 <sup>1</sup>	2.0%
Island Princess	2003	987	20	2.0%
<b>R Class</b>				
Pacific Princess	1999	334	5	1.5%
<b>Grand Class</b>				
Grand Princess	1998	1,300	27 <sup>1</sup>	2.0%
Golden Princess	2001	1,300	26 <sup>1</sup>	2.0%
Star Princess	2002	1,301	26 <sup>1</sup>	2.0%
Diamond Princess	2004	1,337	27	2.0%
Sapphire Princess	2004	1,337	27	2.0%
Caribbean Princess	2004	1,557	25	1.6%
<b>Crown Class</b>				
Crown Princess	2006	1,532	31	2.0%
Emerald Princess	2007	1,532	31	2.0%
Ruby Princess	2008	1,540	31	2.0%
<b>Total</b>		<b>16,994</b>	<b>333</b>	<b>2.0%</b>
<b>Note:</b>				
1. The number of guest rooms with mobility features is from the cruise ship deck plans.				

<b>Royal Caribbean Cruise Ships</b>				
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
<b>Sovereign Class</b>				
Monarch of the Seas	1991	1,195	4	0.3%
Majesty of the Seas	1992	1,195 <sup>2</sup>	4	0.3%
<b>Vision Class</b>				
Legend of the Seas <sup>1</sup>	1995	902	17	1.8%
Grandeur of the Seas <sup>1</sup>	1996	975	14	1.4%
Enchantment of the Seas	1997	1,126	19 <sup>3</sup>	1.7%
Rhapsody of the Seas	1997	999	14	1.4%
Vision of the Seas <sup>1</sup>	1998	999	14	1.4%
<b>Radiance Class</b>				
Radiance of the Seas	2001	1,056	15	1.4%
Brilliance of the Seas <sup>1</sup>	2002	1,055	15	1.4%

<b>Royal Caribbean Cruise Ships</b>				
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
Serenade of the Seas	2003	1,055	19	1.8%
Jewel of the Seas	2004	1,055	19	1.8%
<b>Voyager Class</b>				
Voyager of the Seas	1999	1,557	26	1.7%
Explorer of the Seas	2000	1,557	26	1.7%
Adventurer of the Seas	2001	1,557	26	1.7%
Navigator of the Seas	2002	1,557	26	1.7%
Mariner of the Seas	2003	1,557	26	1.7%
<b>Freedom Class</b>				
Freedom of the Seas	2006	1,817	32	1.8%
Liberty of the Seas	2007	1,817	32	1.8%
Independence of the Seas <sup>1</sup>	2008	1,817	32	1.8%
<b>Oasis Class</b>				
Oasis of the Seas	2009	2,706	46	1.7%
Allure of the Seas	2010	2,706	46	1.7%
	<b>Total</b>	<b>30,260</b>	<b>472</b>	<b>1.6%</b>
<b>Notes:</b>				
1. The Legend of the Seas, Grandeur of the Seas, Brilliance of the Seas, Vision of the Seas, and Independence of the Seas did not operate in U.S. ports in 2011, but are scheduled to operate in U.S. ports in 2013.				
2. The CLIA webpage shows the total number of guest rooms as 1829. This appears to be an error.				
3. The number of guest rooms with mobility features is from the cruise ship deck plan.				

<b>Other Cruise Ships</b>				
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
<b>AIDACruises</b>				
AIDAaura	2003	na <sup>1</sup>	na <sup>1</sup>	na <sup>1</sup>
AIDAluna	2009	na <sup>1</sup>	na <sup>1</sup>	na <sup>1</sup>
<b>Azamara Club Cruises</b>				
Azamara Journey	2000	347	6	1.7%
<b>Costa Cruises</b>				
Costa Atlantica	2000	1,057	8	0.8%
<b>Crystal Cruises</b>				
Crystal Symphony	1995	461	4	0.9%
Crystal Serenity	2003	535	8	1.5%



<b>Other Cruise Ships</b>				
<b>Cruise Ship</b>	<b>Year Constructed</b>	<b>Total Guest Rooms</b>	<b>Guest Rooms with Mobility Features</b>	<b>Percent Guest Rooms with Mobility Features</b>
<b>Cunard Lines</b>				
HMS Queen Mary 2	2003	1,296	30 <sup>2</sup>	2.3%
HMS Queen Victoria	2007	1,007	20	2.0%
HMS Queen Elizabeth	2010	1,046	20	1.9%
<b>MCS Cruises</b>				
MCS Poesia	2008	1,275	17	1.3%
<b>Oceania Cruises</b>				
Regatta	1998	342	3	0.9%
Marina	2011	625	6	1.0%
<b>Regent Seven Seas Cruises</b>				
Seven Seas Navigator	1999	245	4	1.6%
Seven Seas Mariner	2001	350	6	1.7%
Seven Seas Voyager	2003	350	4	1.1%
<b>Seabourn Cruise Line</b>				
Seabourn Sojourn	2010	225	6	2.7%
<b>Silver Sea Cruises</b>				
Silver Shadow	2000	194	2	1.0%
Silver Whisper	2001	194	2	1.0%
<b>Total</b>		<b>9,549</b>	<b>146</b>	<b>1.5%</b>
<b>Notes:</b>				
1. Data on total number of guest rooms and guest rooms with mobility features are not available.				
2. The number of guest rooms with mobility features is from the cruise ship deck plan.				

**APPENDIX III. LARGE CRUISE SHIPS CONSTRUCTED  
OR UNDER CONTRACT FOR CONSTRUCTION BETWEEN 2012 & 2015**

<b>Year</b>	<b>Cruise Ship</b>	<b>Guest Rooms</b>	<b>Total Guest Rooms</b>
2012	Carnival Breeze	1,845	8,497
	Celebrity Reflection	1,515	
	Costa Fascinosa <sup>1</sup>	1,506	
	Disney Fantasy	1,250	
	MSC Divina <sup>2</sup>	1,751	
	Oceania Riviera	630	
2013	MSC Preziosa <sup>2</sup>	1,751	5,536
	Norwegian Breakaway	1,985	
	Royal Princess	1,800	
2014	Costa Diadema <sup>1</sup>	1,850	7,685
	Norwegian Getaway	1,985	
	Royal Princess	1,800	
	Royal Caribbean Quantum of the Seas	2,050	
2015	Holland America Unnamed	1,330	5,480
	Norwegian Unnamed	2,100	
	Royal Caribbean Anthem of the Seas	2,050	
<b>Total Number of Guest Rooms</b>		<b>27,198</b>	<b>27,198</b>
<b>Average Number of Guest Rooms</b>		<b>1,700</b>	<b>1,700</b>

**Source:** Cruise Lines International Association, 2013 North American Cruise Industry Update at: <http://www.cruising.org/sites/default/files/pressroom/CruiseIndustryUpdate2013FINAL.pdf>. The number of guest rooms is based on the passenger capacity at two passengers per guest room.

**Notes:**

1. Costa Cruises is based in Italy. There were 14 cruise ships in Costa Cruises' fleet as of 2011. Only one of the cruise ships, the Costa Atlantica, operated in U.S. ports in 2011. The Costa Fascinosa is not scheduled to operate in U.S. ports in 2013. The Costa Diadema will be launched in October 2014. Information is not available on whether the Costa Diadema will operate in U.S. ports.

2. MSC Cruises is based in Italy. There were 11 cruise ships in MSC Cruises' fleet as of 2011. Only one of the cruise ships, the MSC Poesia, operated in U.S. ports in 2011. The MSC Divinia is scheduled to operate in U.S. ports in 2013; the MSC Preziosa is not scheduled to operate in U.S. ports in 2013. The 2013 North American Cruise Industry Update lists the capacity of the MSC Divinia as 3,502 passengers and the MSC Preziosa as 2,502 passengers. The MSC Divinia and MSC Preziosa are the same class cruise ship and have the same capacity of 3,502 passengers.