

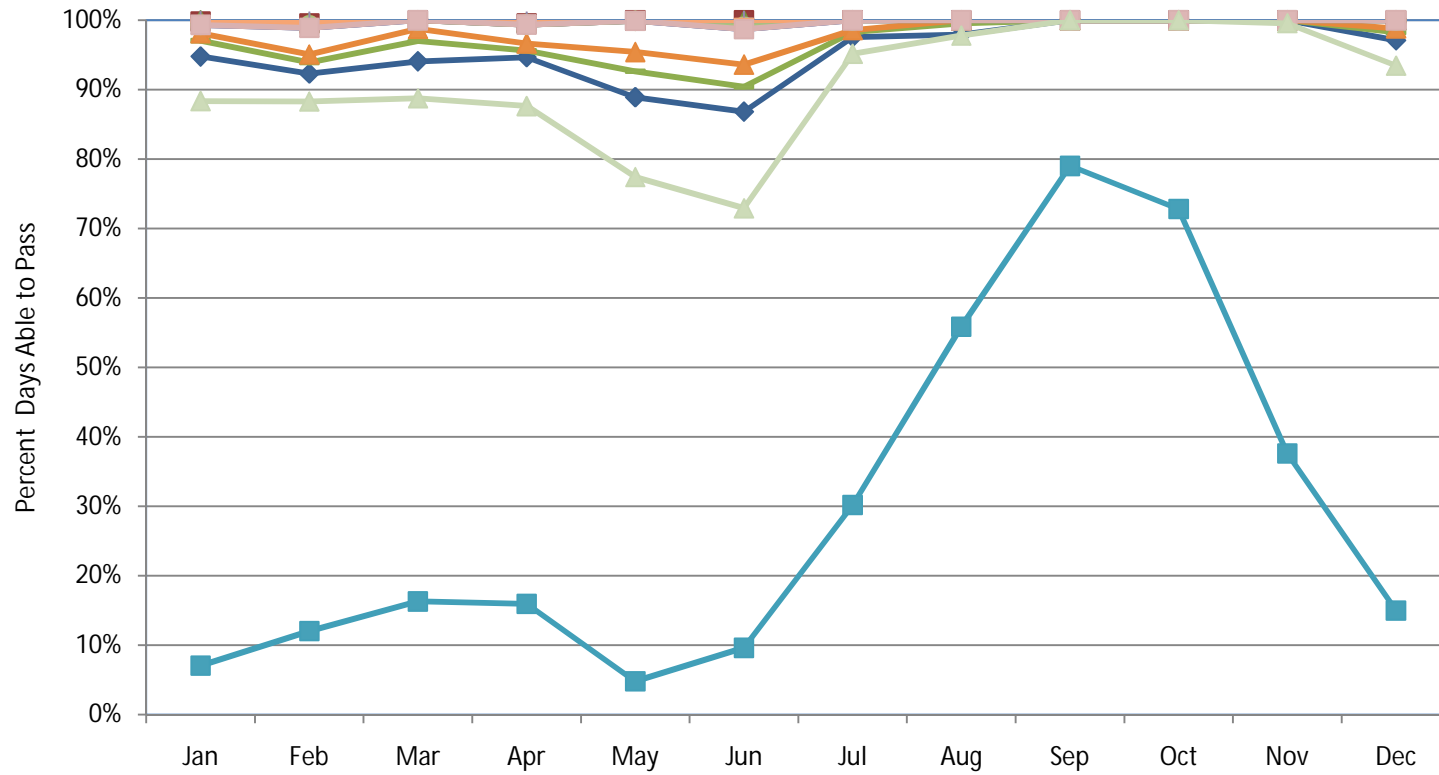
APPENDIX I

Percent of Days per Month that Impacted Vessels Could Pass Under Each Bridge Height, Presented by Bridge Height

Appendix I provides tables and showing the percent of days per month that vessels could pass under each of the mid-level bridge heights (95 to 125 feet) evaluated. The analysis assumes a 10-foot air gap between the highest point of the vessel and lowest part of the bridge. There are separate tables for each bridge height for each vessel class.

The analysis for this appendix is based on daily river level data collected from October 1, 1972 through July 3, 2012. These charts and tables include any vessel that would have been prevented from passing one or more days during that 40-year period. As such, more vessels are included here than are discussed in the impact analysis of the report. The basic impact analysis in the report defined an impact to occur when a vessel, with a ten foot air gap, could not pass under the bridge when the river level is at 16 feet above CRD or higher. River levels have been below 16 feet for more than 98 percent of the days over the past 40 years.

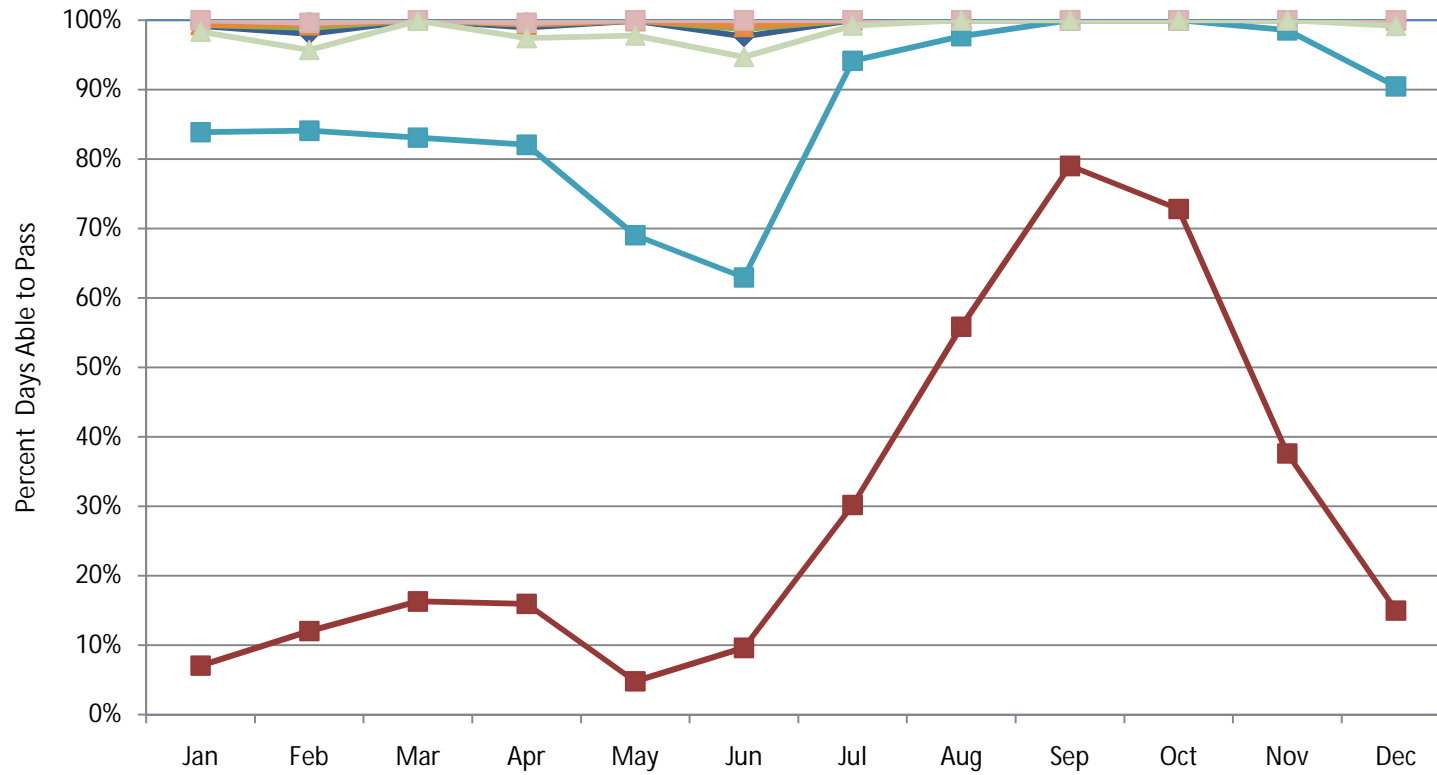
Recreational Sailboats and Powerboats 95 ft bridge, 10 ft air gap



Vessels that cannot pass any month =Make it So, Radiance, Future Schooner Creek Boat Works Sailboat,

- | | | | |
|---------------|-------------|---------------|-------------|
| ◆ Autumn Wind | ■ Camelot | ▲ Galatea | ✕ Halsey |
| ● Luscious | ■ Moondance | ■ Nancy Riley | ■ Rage |
| ▲ Runaway | ✕ Rya | ● Sargasso | ■ Sovereign |
| ■ Sylvia | ■ Tropicale | ■ Wakadui | ▲ Whisper |

Recreational Sailboats and Powerboats 100 ft bridge, 10 ft air gap

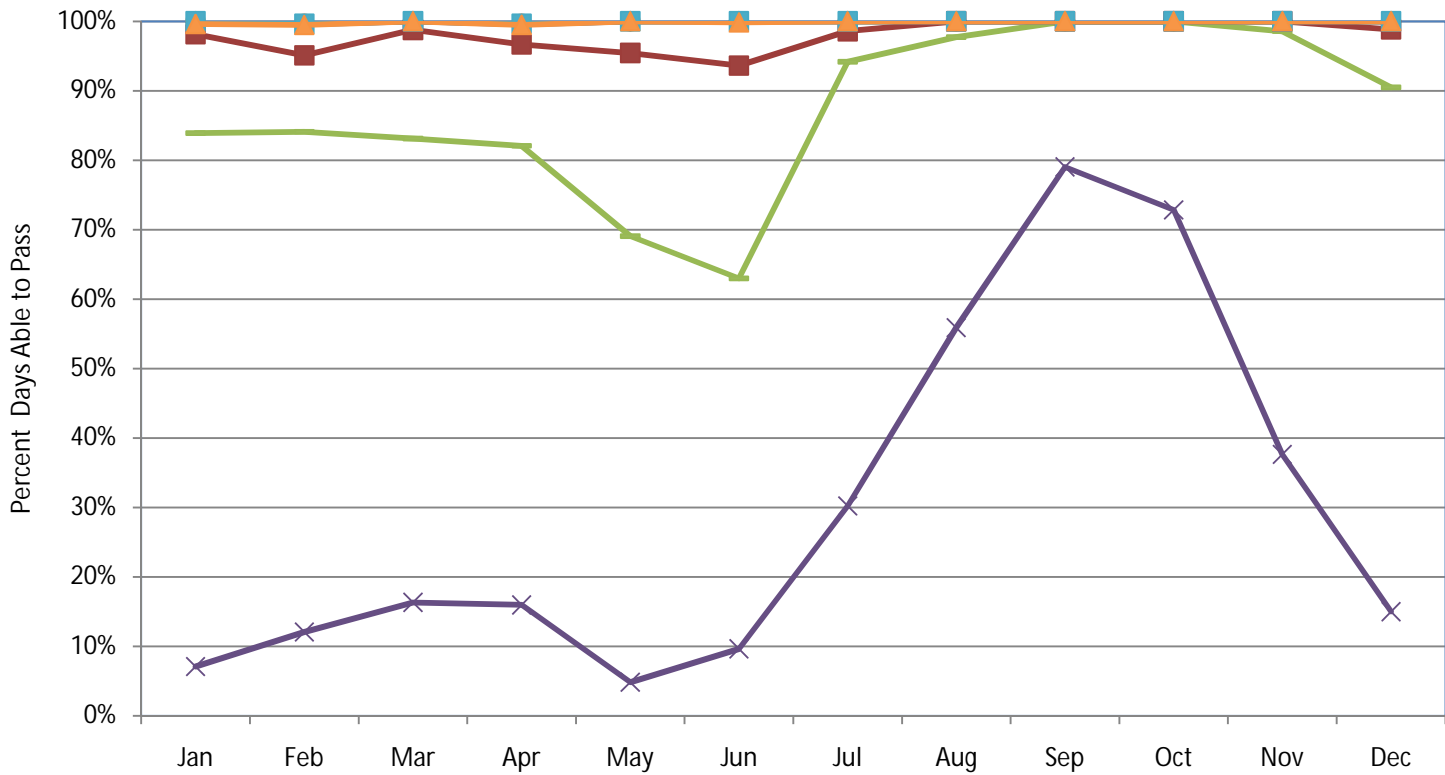


Vessels that can pass all months =Camelot, Galatea, Moondance, Sovereign, Sylvia, Tropicale,

Vessels that cannot pass any month =Make it So, Future Schooner Creek Boat Works Sailboat,



Recreational Sailboats and Powerboats 105 ft bridge, 10 ft air gap

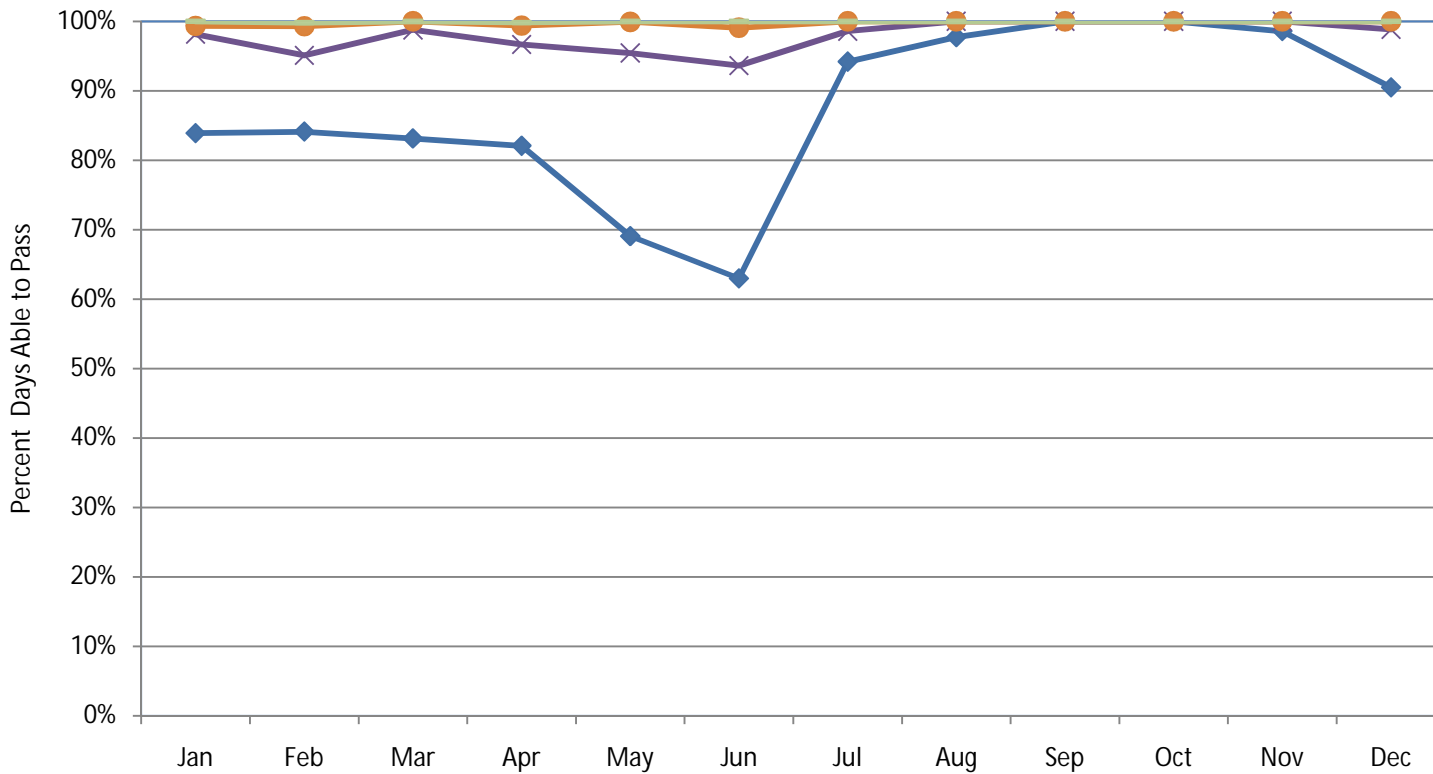


Vessels that can pass all months =Camelot, Galatea, Halsey, Luscious, Moondance, Rya, Sargasso, Sovereign, Sylvia, Tropicale, Wakadui,

Vessels that cannot pass any month =Future Schooner Creek Boat Works Sailboat,

◆ Autumn Wind ✕ Make it So ● Nancy Riley ● Radiance ■ Rage ■ Runaway ▲ Whisper

Recreational Sailboats and Powerboats 110 ft bridge, 10 ft air gap

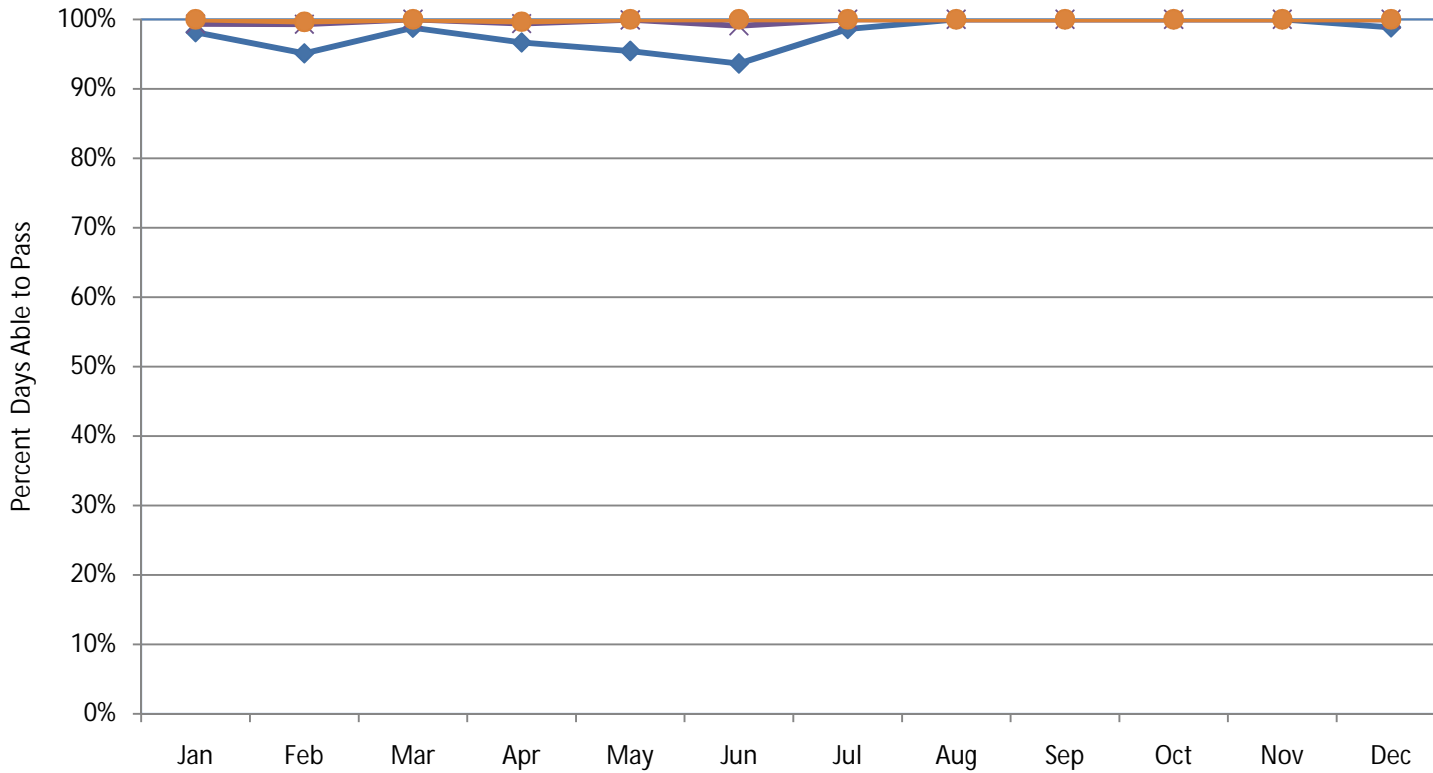


Vessels that can pass all months = Autumn Wind, Camelot, Galatea, Halsey, Luscious, Moondance, Nancy Riley, Runaway, Rya, Sargasso, Sovereign, Sylvia, Tropicale, Wakadui,

Vessels that cannot pass any month = Future Schooner Creek Boat Works Sailboat,

◆ Make it So
 × Radiance
 ● Rage
 ■ Whisper

Recreational Sailboats and Powerboats 115 ft bridge, 10 ft air gap

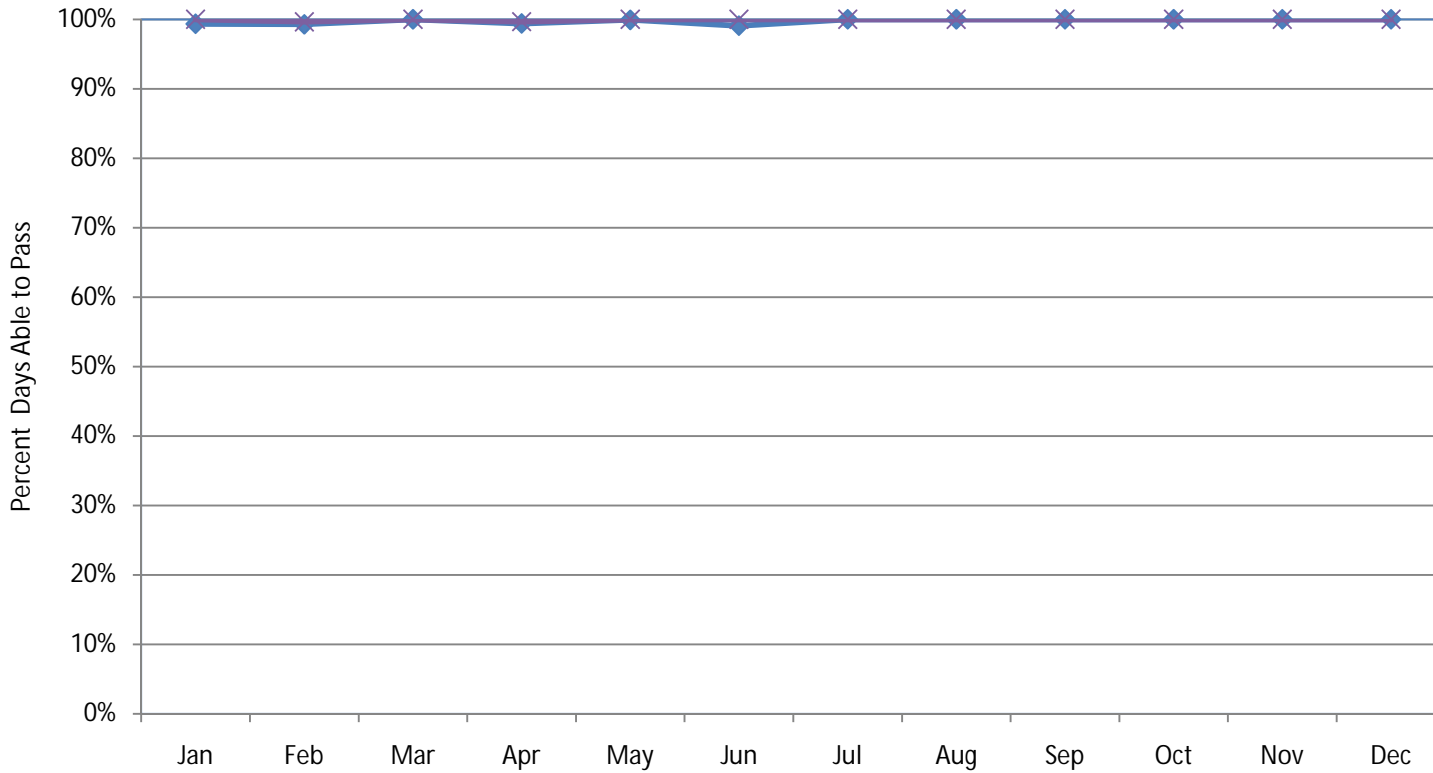


Vessels that can pass all months =Autumn Wind, Camelot, Galatea, Halsey, Luscious, Moondance, Nancy Riley, Runaway, Rya, Sargasso, Sovereign, Sylvia, Tropicale, Wakadui, Whisper,

Vessels that cannot pass any month =Future Schooner Creek Boat Works Sailboat,

◆ Make it So ✕ Radiance ● Rage

Recreational Sailboats and Powerboats 120 ft bridge, 10 ft air gap



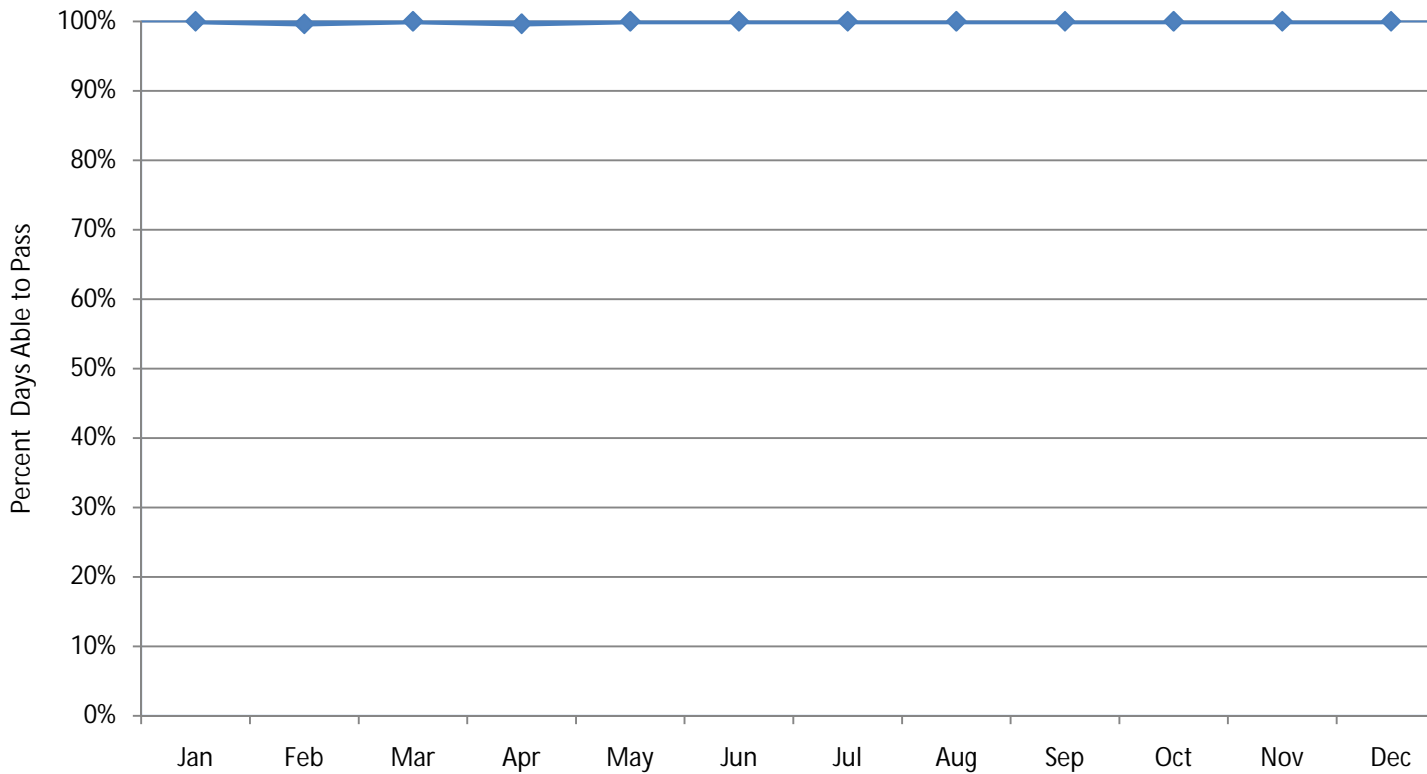
Vessels that can pass all months =Autumn Wind, Camelot, Galatea, Halsey, Luscious, Moondance,
Nancy Riley, Rage, Runaway, Rya, Sargasso, Sovereign, Sylvia, Tropicale, Wakadui, Whisper,

Vessels that cannot pass any month =Future Schooner Creek Boat Works Sailboat,

—◆— Make it So

—x— Radiance

Recreational Sailboats and Powerboats 125 ft bridge, 10 ft air gap

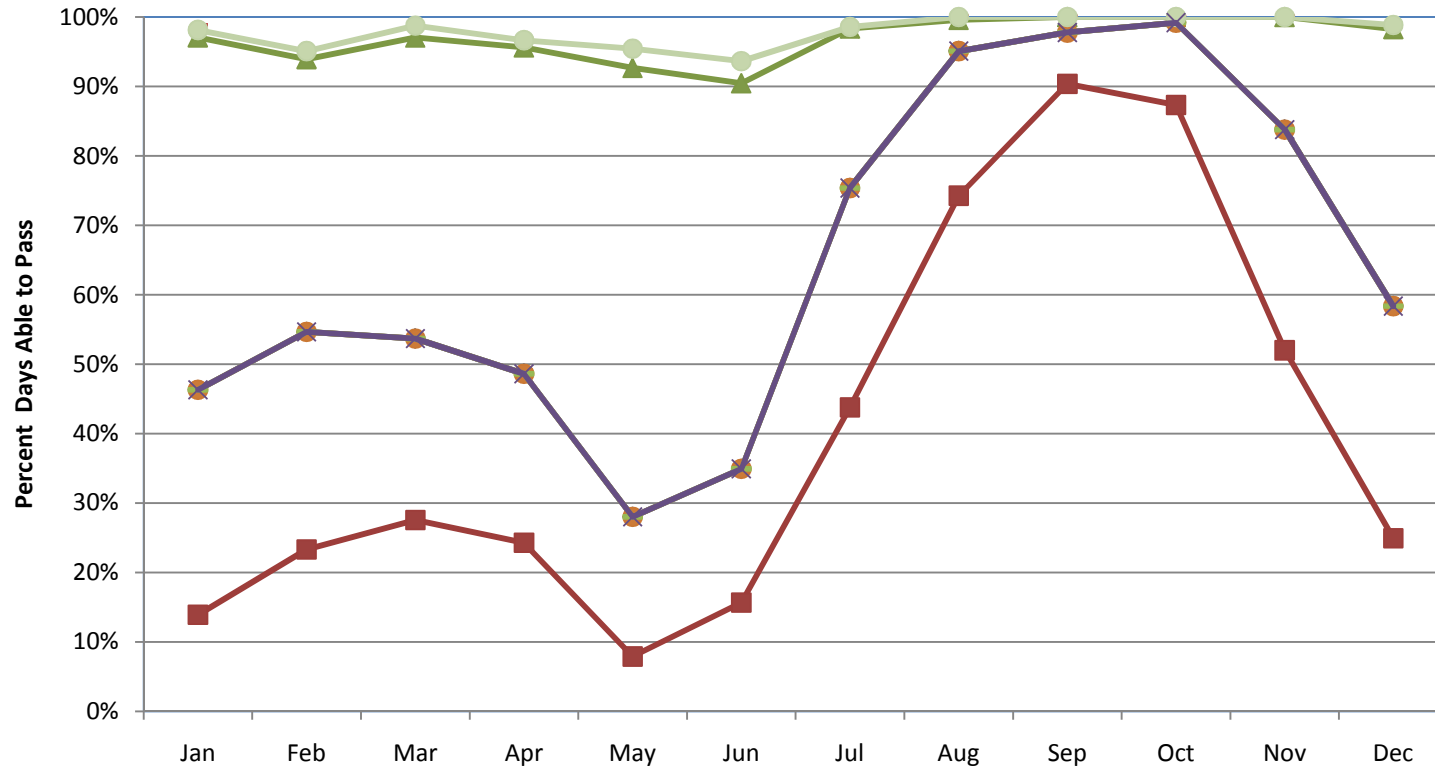


Vessels that can pass all months =Autumn Wind, Camelot, Galatea, Halsey, Luscious, Moondance, Nancy Riley, Radiance, Rage, Runaway, Rya, Sargasso, Sovereign, Sylvia, Tropicale, Wakadui, Whisper,

Vessels that cannot pass any month =Future Schooner Creek Boat Works Sailboat,

—◆— Make it So

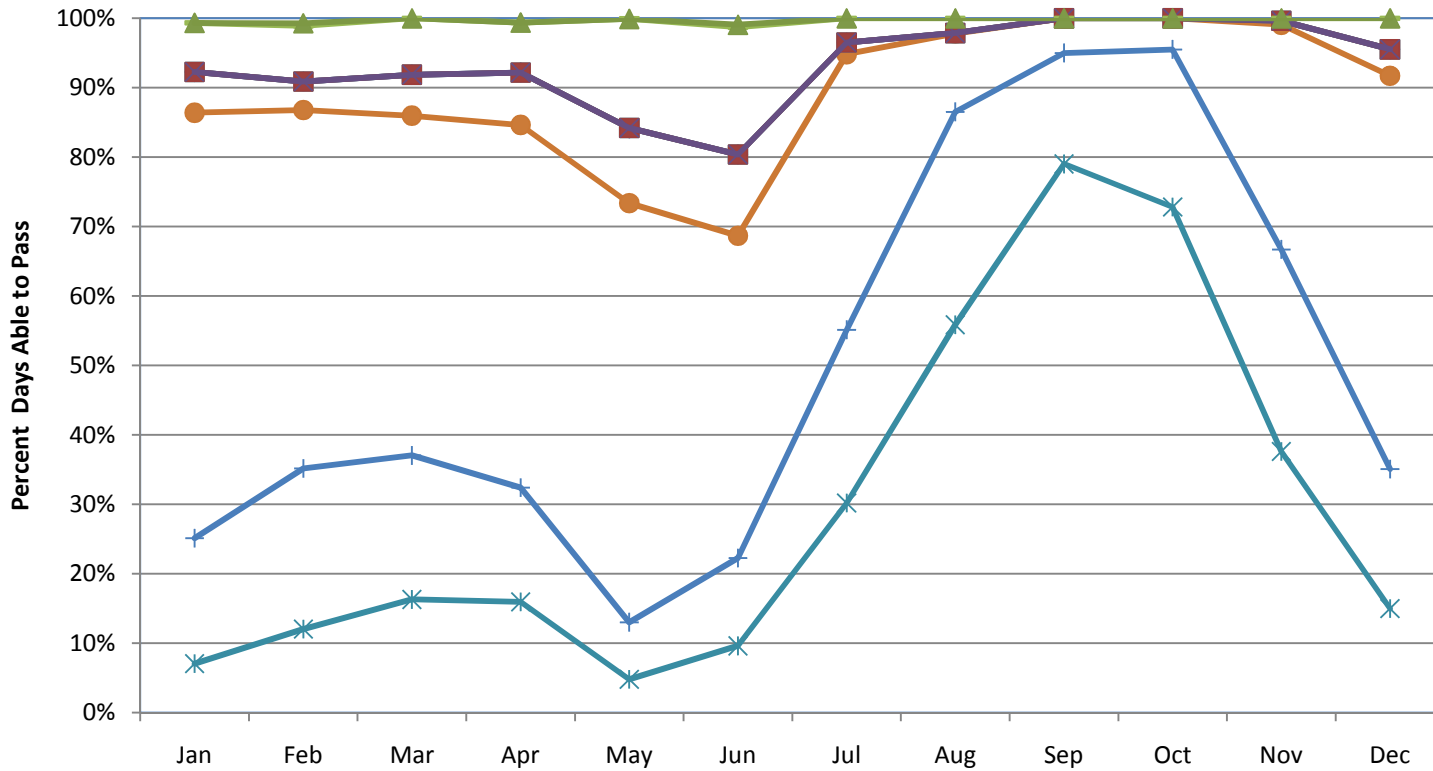
Marine Contractors 1 95 ft bridge, 10 ft air gap



Vessels that cannot pass any month = DB 4100, DB Freedom, DB Lucy, DB Vulcan, DMI 60,

◆ DB 125
 ■ DB 4000
 ▲ DB 4041
 ● Paul Bunyan
 ■ Carr Barge
 ● Sectional Barge
 × BMC 44

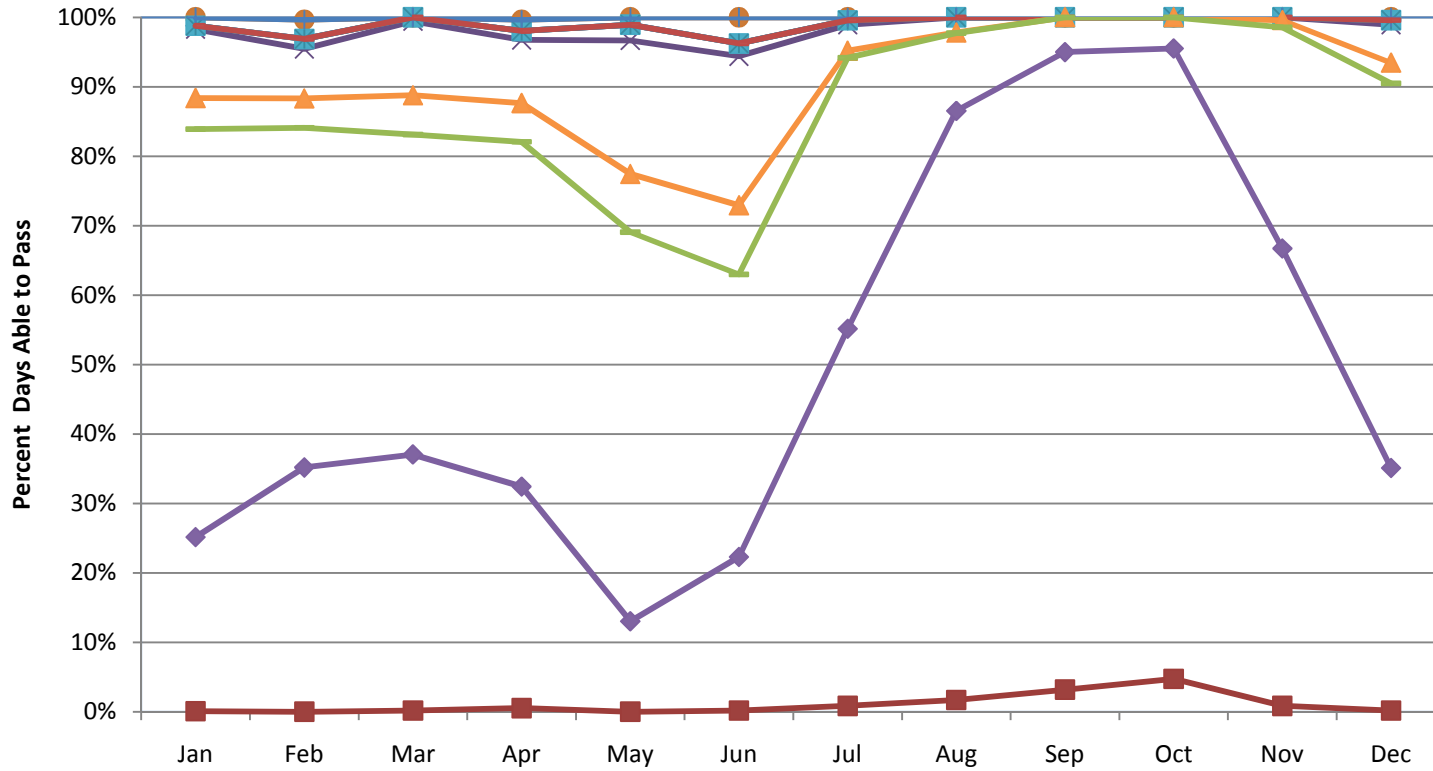
Marine Contractors 1 100 ft bridge, 10 ft air gap



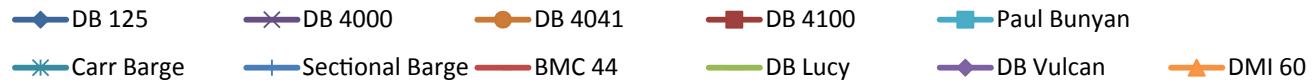
Vessels that cannot pass any month = DB 4100, DB Freedom, DB Vulcan,



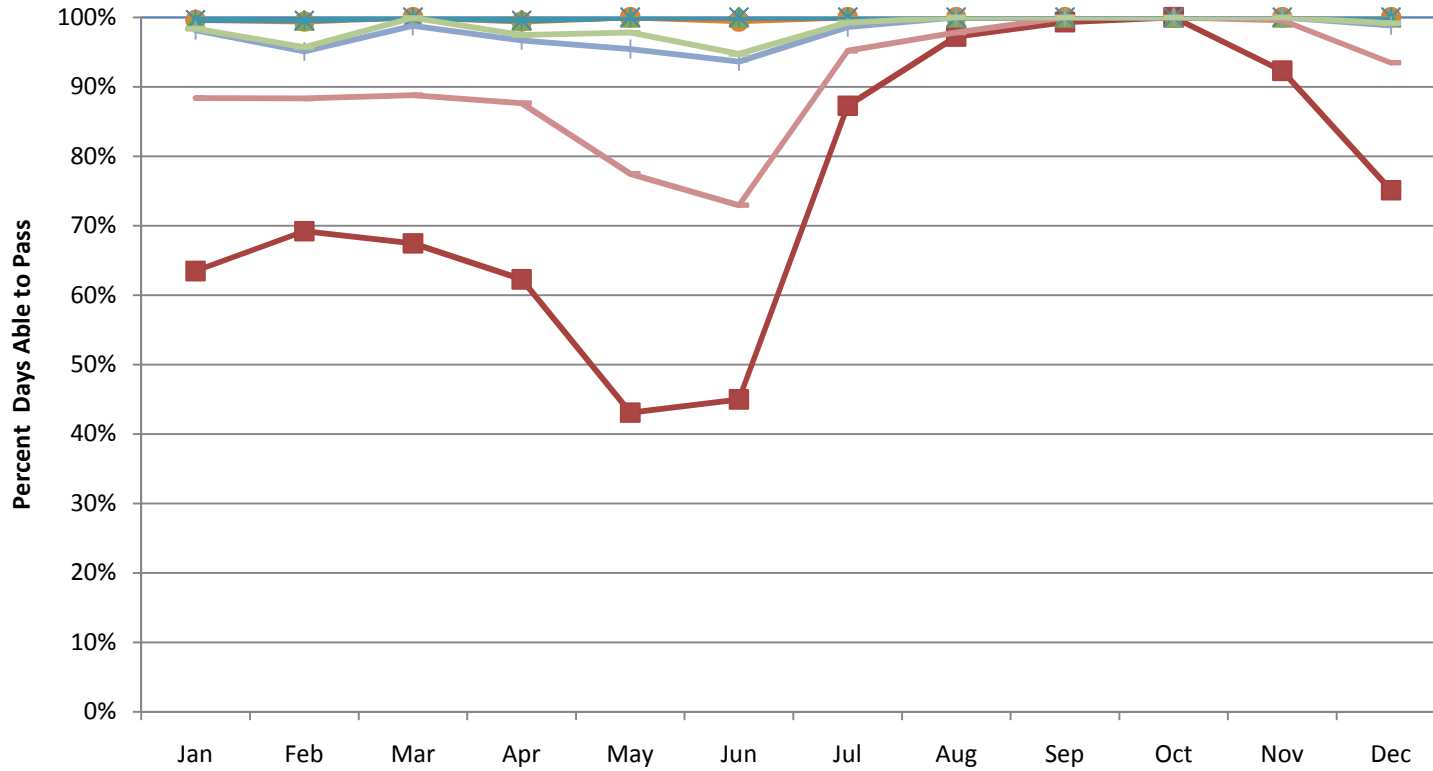
Marine Contractors 1 105 ft bridge, 10 ft air gap



Vessels that cannot pass any month =DB Freedom,



Marine Contractors 1 110 ft bridge, 10 ft air gap

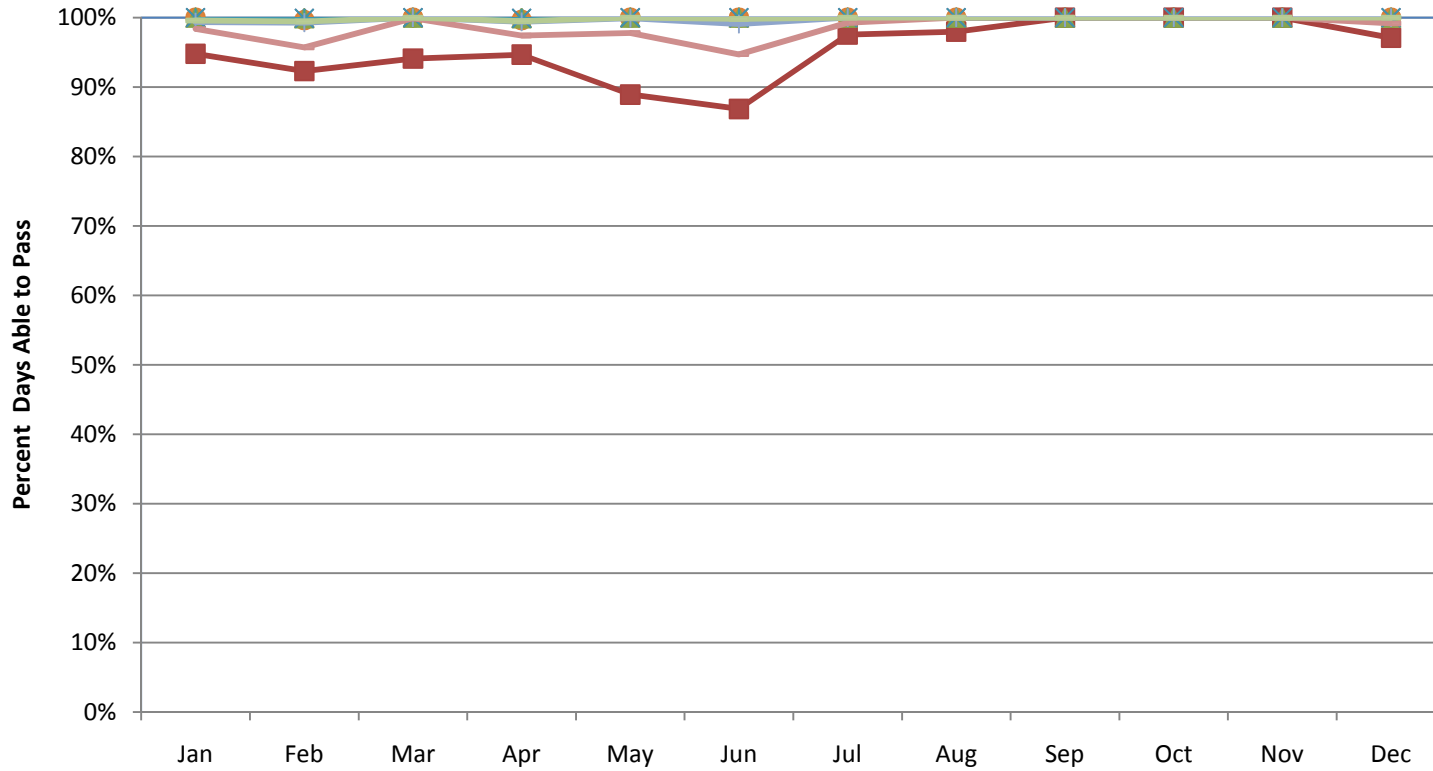


Vessels that can pass all months =DB 4041, Sectional Barge,

Vessels that cannot pass any month =DB Freedom,

- ◆ DB 125
- DB 4000
- DB 4100
- ▲ Paul Bunyan
- ✕ Carr Barge
- ✱ BMC 44
- + DB Lucy
- DB Vulcan
- DMI 60

Marine Contractors 1 115 ft bridge, 10 ft air gap

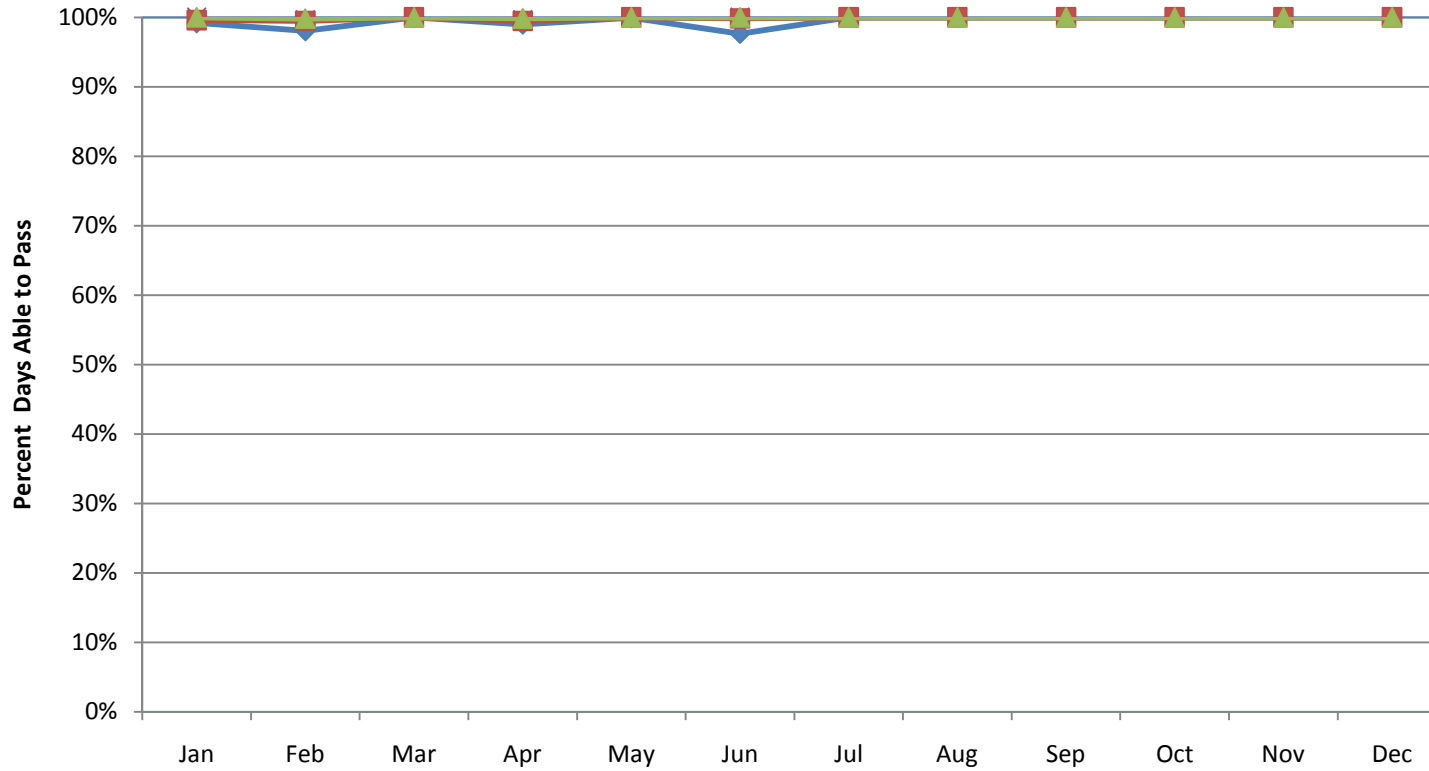


Vessels that can pass all months =DB 4041, Sectional Barge,

Vessels that cannot pass any month =DB Freedom,

- ◆ DB 125
- DB 4000
- DB 4100
- ▲ Paul Bunyan
- × Carr Barge
- ✱ BMC 44
- + DB Lucy
- DB Vulcan
- DMI 60

Marine Contractors 1 120 ft bridge, 10 ft air gap

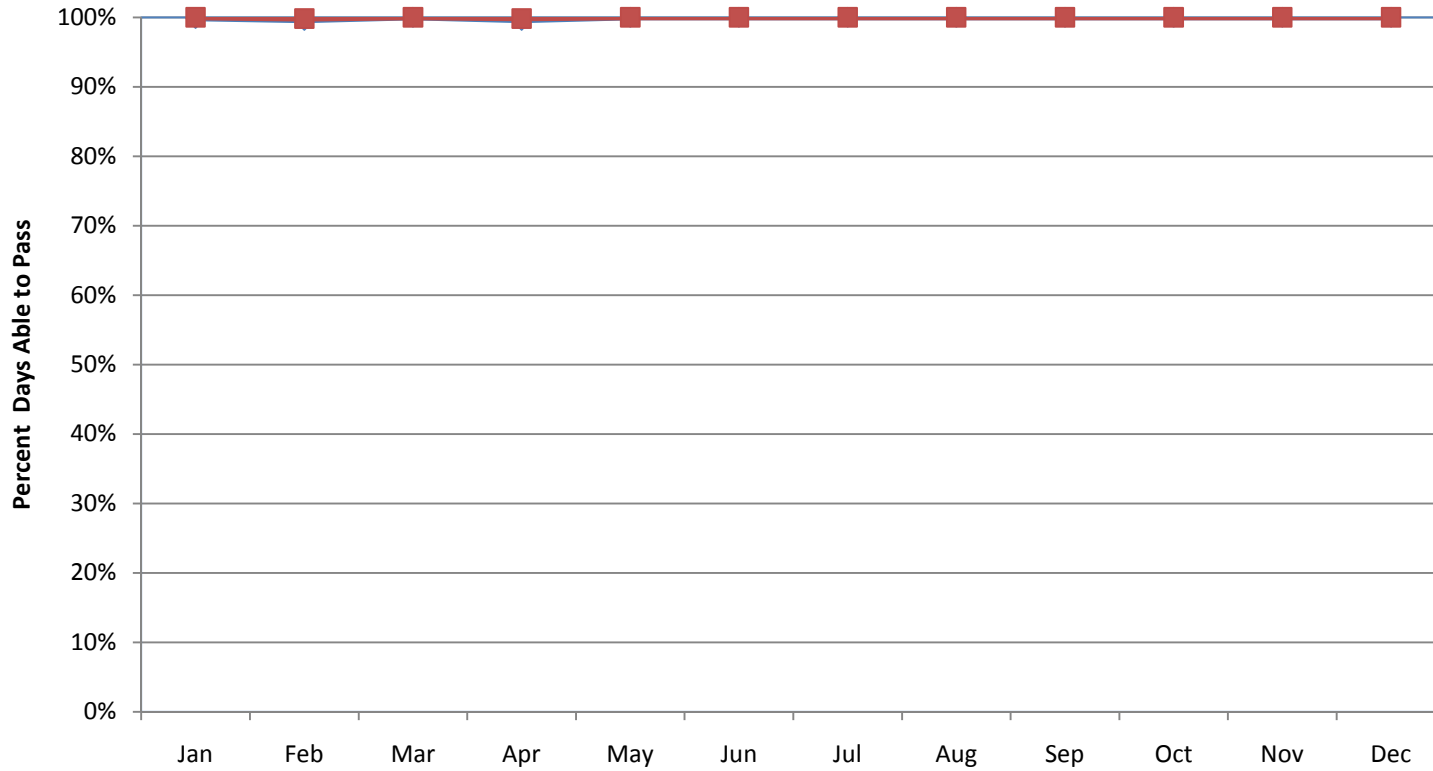


Vessels that can pass all months =DB 125, DB 4000, DB 4041, Paul Bunyan, Carr Barge,
Sectional Barge, BMC 44,

Vessels that cannot pass any month =DB Freedom,

—◆— DB 4100 —×— DB Lucy —■— DB Vulcan —▲— DMI 60

Marine Contractors 1 125 ft bridge, 10 ft air gap

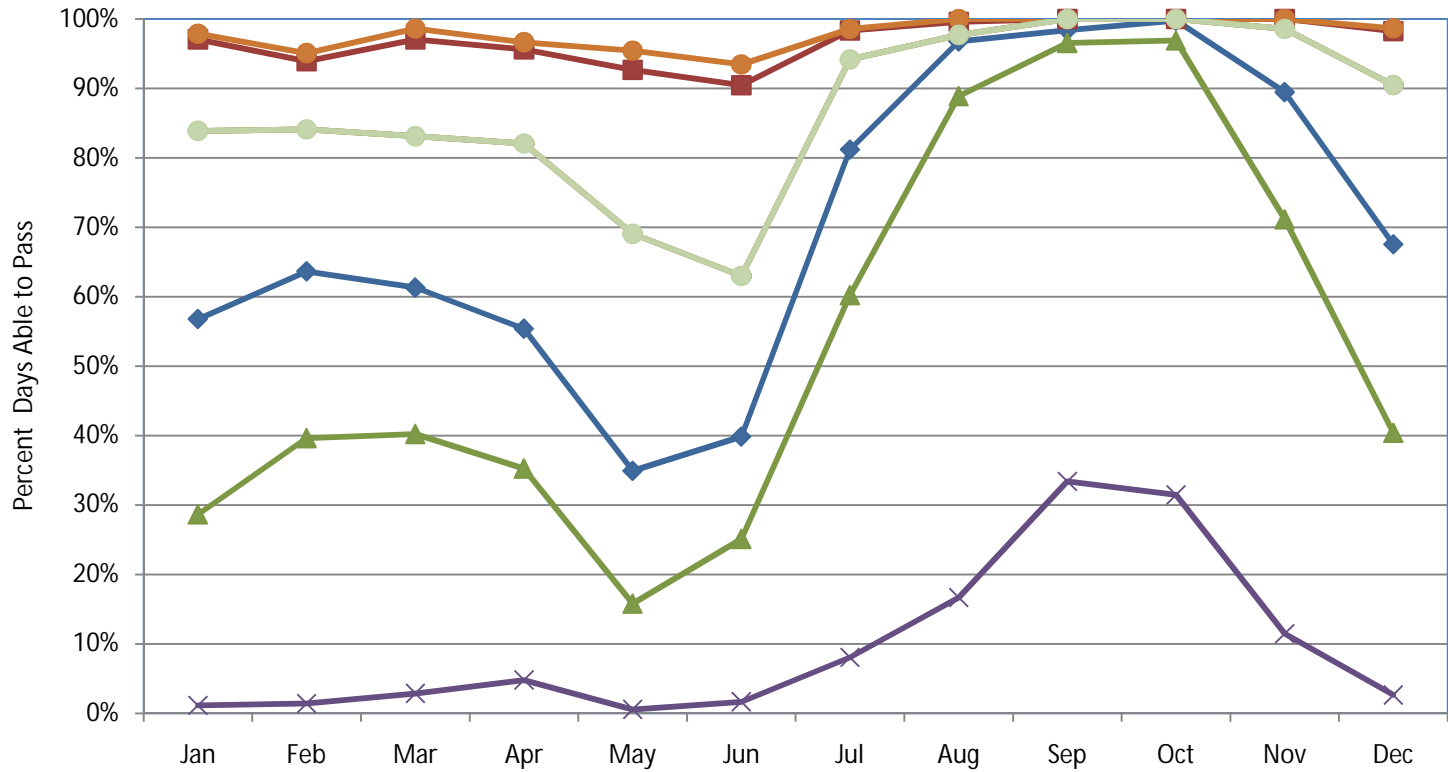


Vessels that can pass all months =DB 125, DB 4000, DB 4041, Paul Bunyan, Carr Barge,
Sectional Barge, BMC 44, DB Lucy, DMI 60,

Vessels that cannot pass any month =DB Freedom,

—◆— DB 4100 —■— DB Vulcan

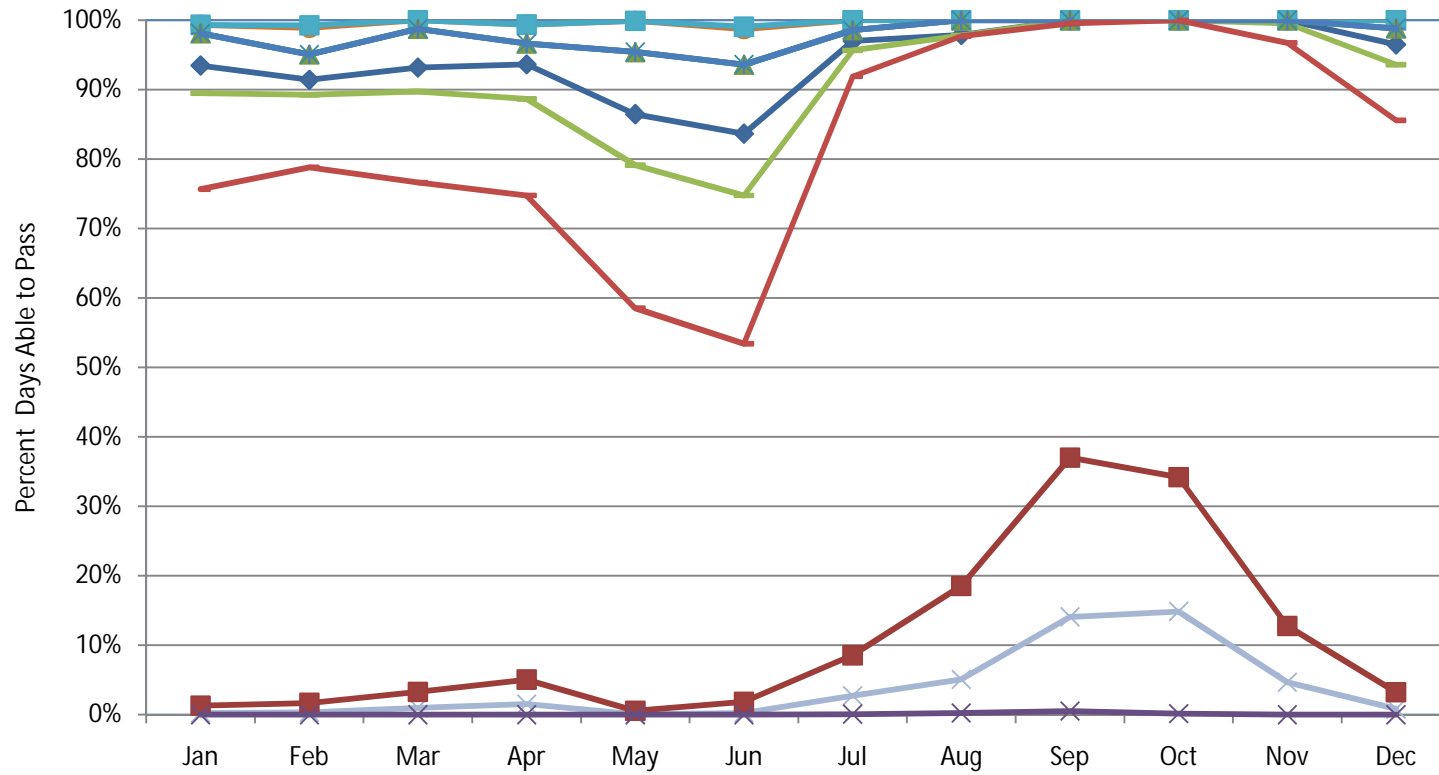
Marine Contractors 2 95 ft bridge, 10 ft air gap



Vessels that cannot pass any month =D.B. General, D.B. Pacific, D.B. Seattle, Sea Horse, SDS Lumber Company,

- | | | | |
|---|---|---|--|
| ◆ Paula Lee | ■ D.B. Alameda | ▲ D.B. Oakland | ● D.B. Olympia |
| — Sea Hawk | — Sea Lion | ● Sea Vulture | × Heidi Renee |

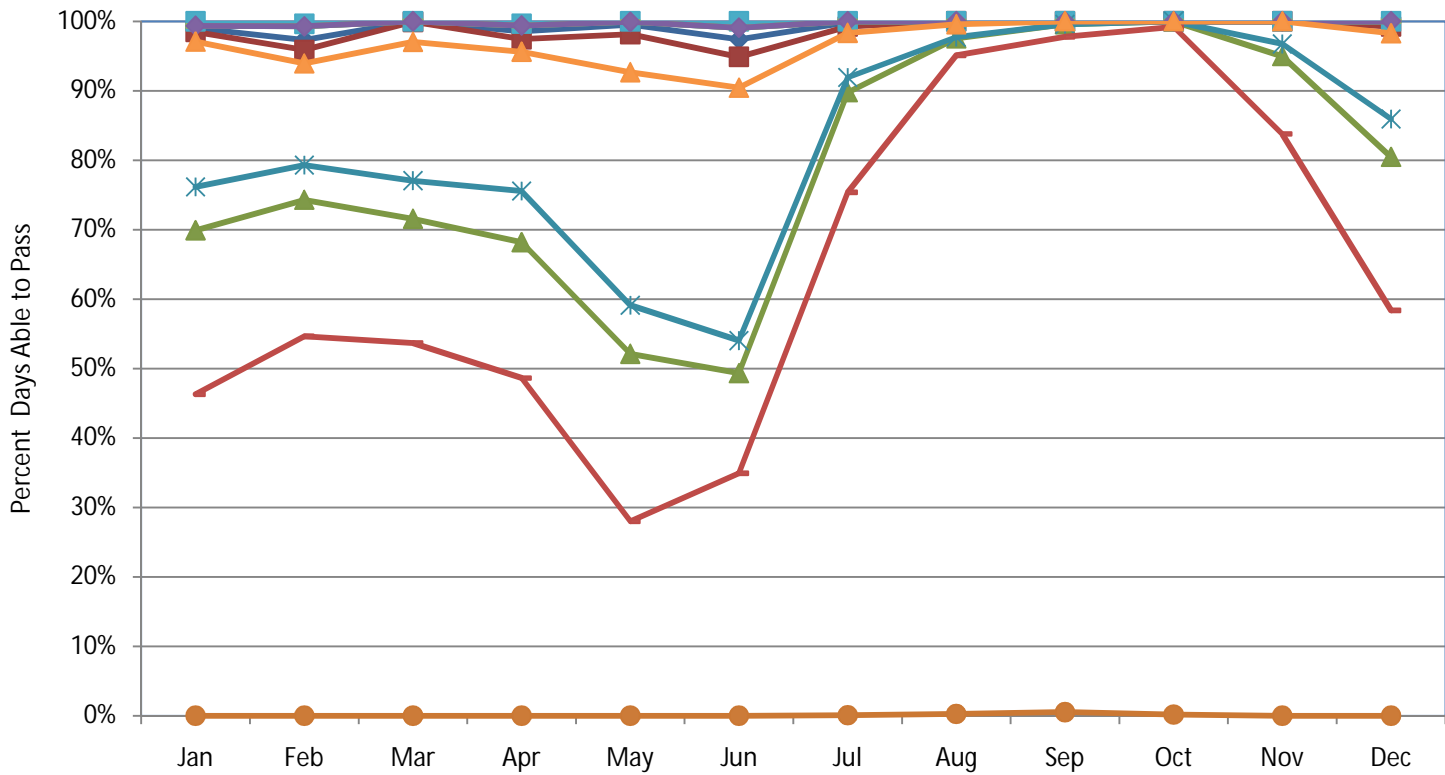
Marine Contractors 2 100 ft bridge, 10 ft air gap



Vessels that cannot pass any month =D.B. General, SDS Lumber Company,

- ◆ Paula Lee
- D.B. Alameda
- ▲ D.B. Oakland
- D.B. Olympia
- × D.B. Pacific
- D.B. Seattle
- ▲ Sea Hawk
- × Sea Horse
- * Sea Lion
- + Sea Vulture
- Heidi Renee

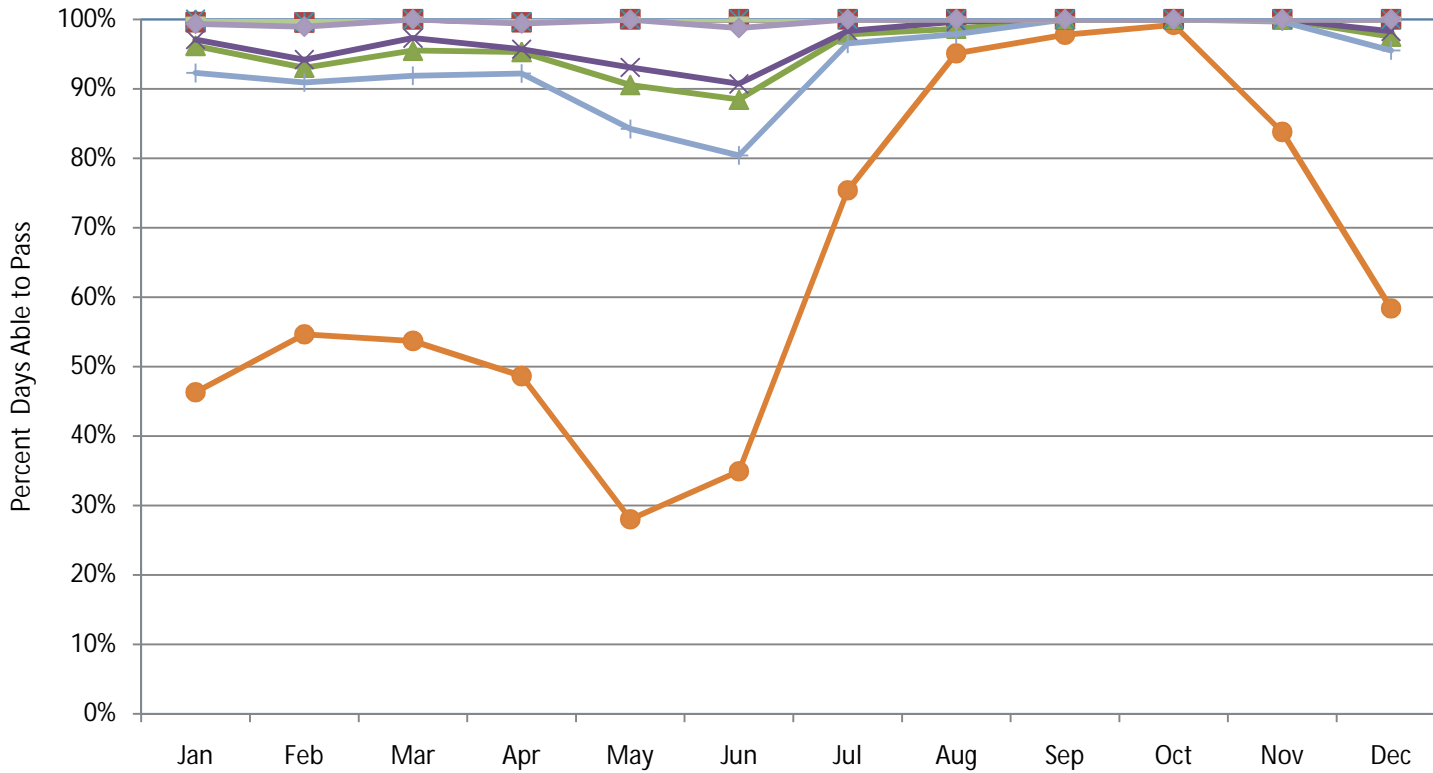
Marine Contractors 2 105 ft bridge, 10 ft air gap



Vessels that cannot pass any month = SDS Lumber Company,

- ◆ Paula Lee
- ✕ D.B. Alameda
- D.B. General
- D.B. Oakland
- D.B. Olympia
- ▲ D.B. Pacific
- ✱ D.B. Seattle
- + Sea Hawk
- Sea Horse
- Sea Lion
- ◆ Sea Vulture
- ▲ Heidi Renee

Marine Contractors 2 110 ft bridge, 10 ft air gap

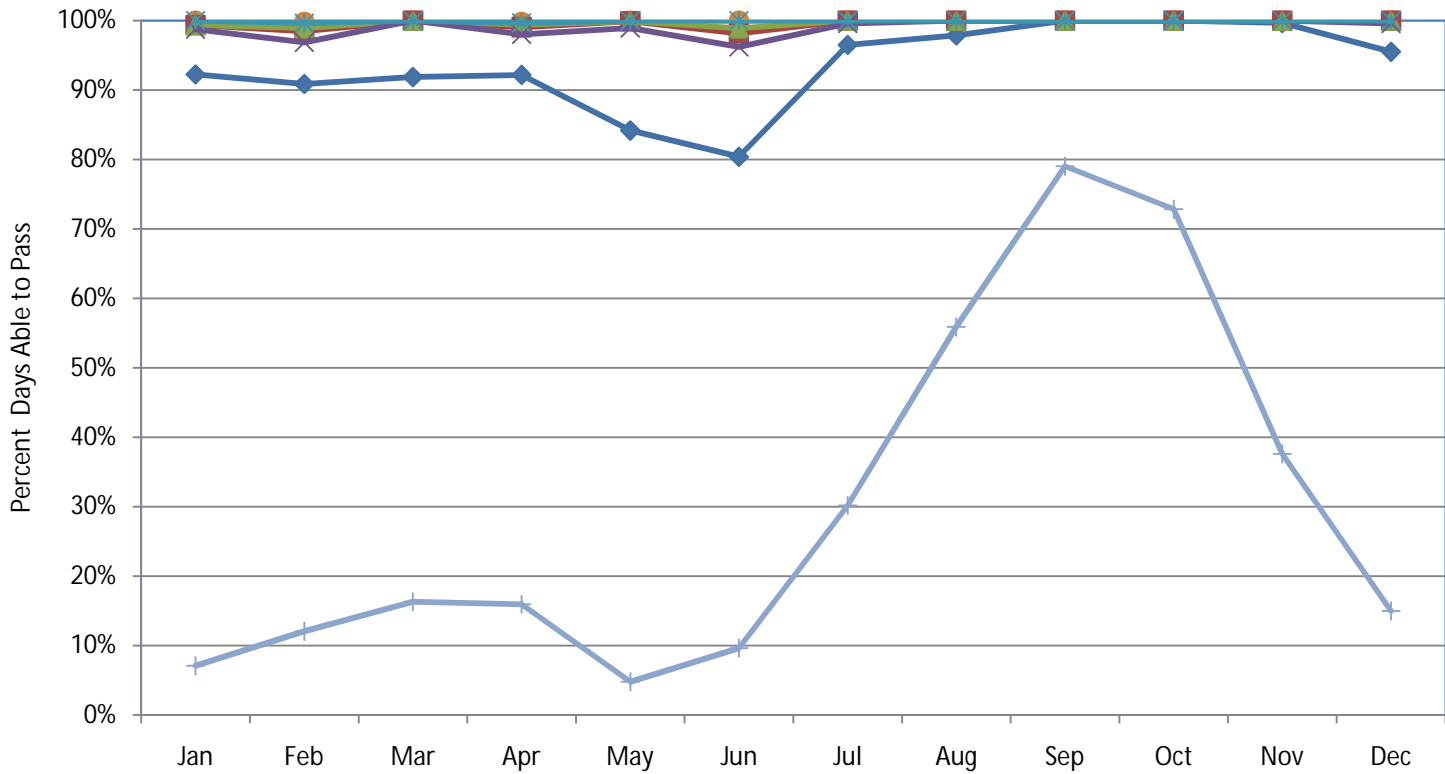


Vessels that can pass all months =D.B. Alameda, D.B. Olympia,

Vessels that cannot pass any month =SDS Lumber Company,

- ◆ Paula Lee
- D.B. General
- D.B. Oakland
- ▲ D.B. Pacific
- ✕ D.B. Seattle
- ✱ Sea Hawk
- + Sea Horse
- Sea Lion
- Sea Vulture
- ◆ Heidi Renee

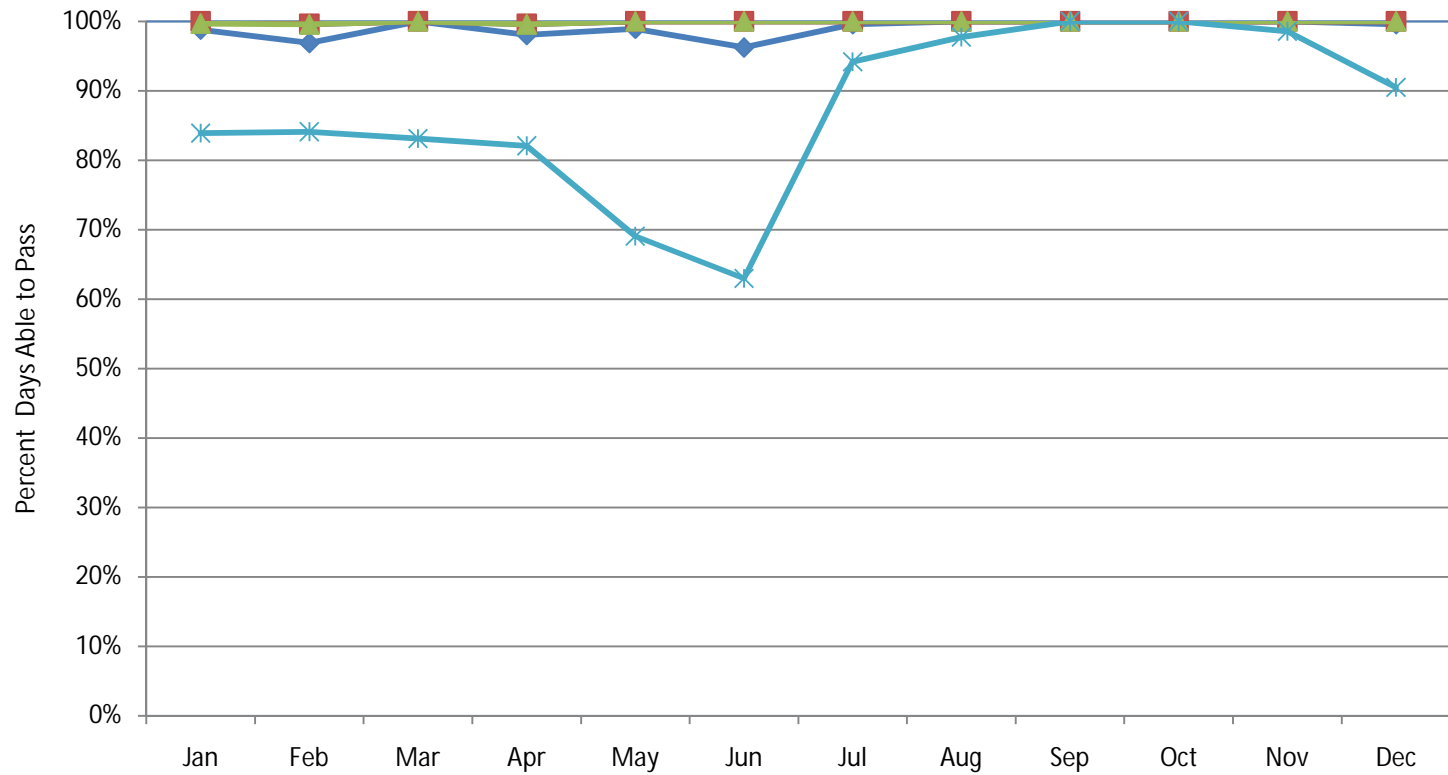
Marine Contractors 2 115 ft bridge, 10 ft air gap



Vessels that can pass all months = Paula Lee, D.B. Alameda, D.B. Olympia, Sea Hawk, Sea Lion, Sea Vulture,

- ◆ D.B. General
- D.B. Oakland
- D.B. Pacific
- ▲ D.B. Seattle
- ✕ Sea Horse
- ✱ Heidi Renee
- + SDS Lumber Company

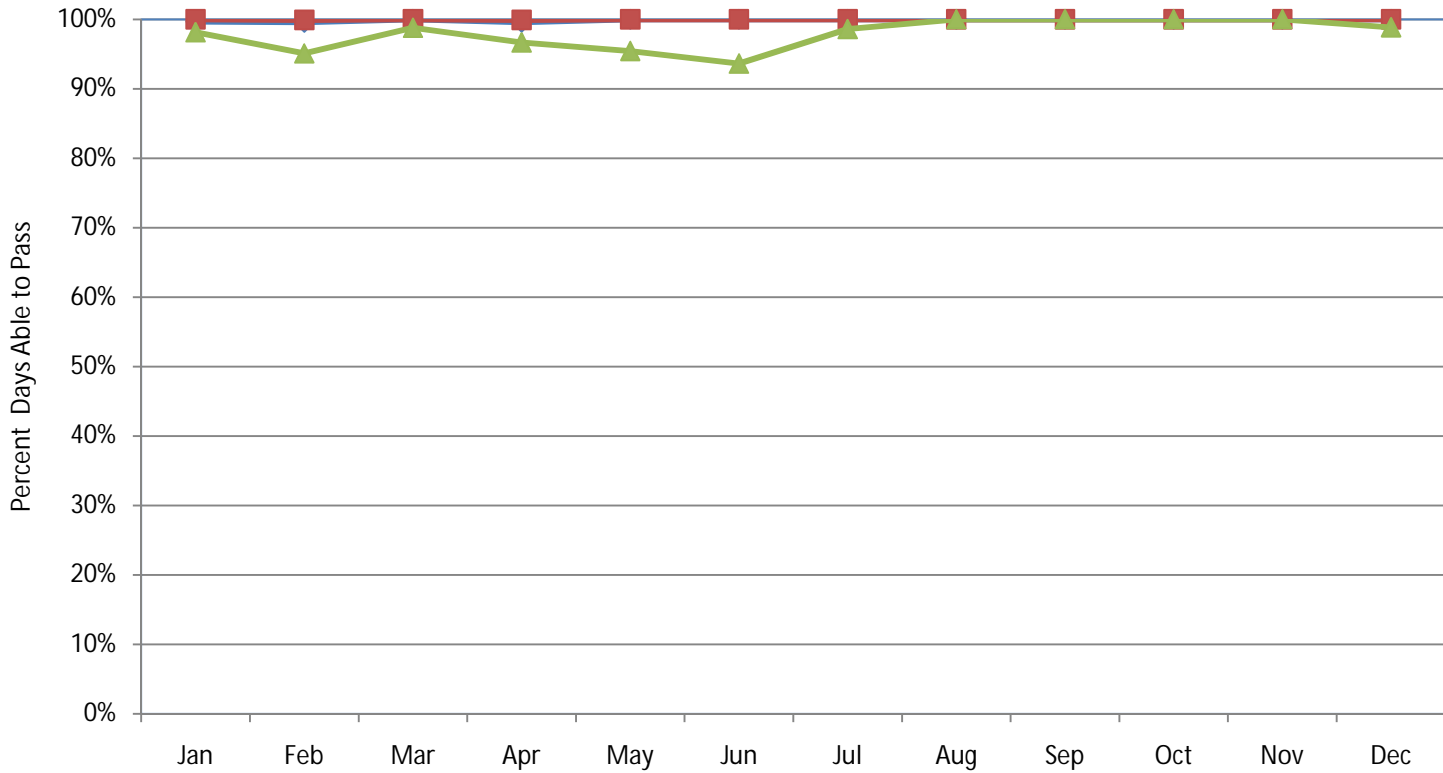
Marine Contractors 2 120 ft bridge, 10 ft air gap



Vessels that can pass all months = Paula Lee, D.B. Alameda, D.B. Oakland, D.B. Olympia, Sea Hawk, Sea Lion, Sea Vulture, Heidi Renee,

◆ D.B. General ✕ D.B. Pacific ■ D.B. Seattle ▲ Sea Horse * SDS Lumber Company

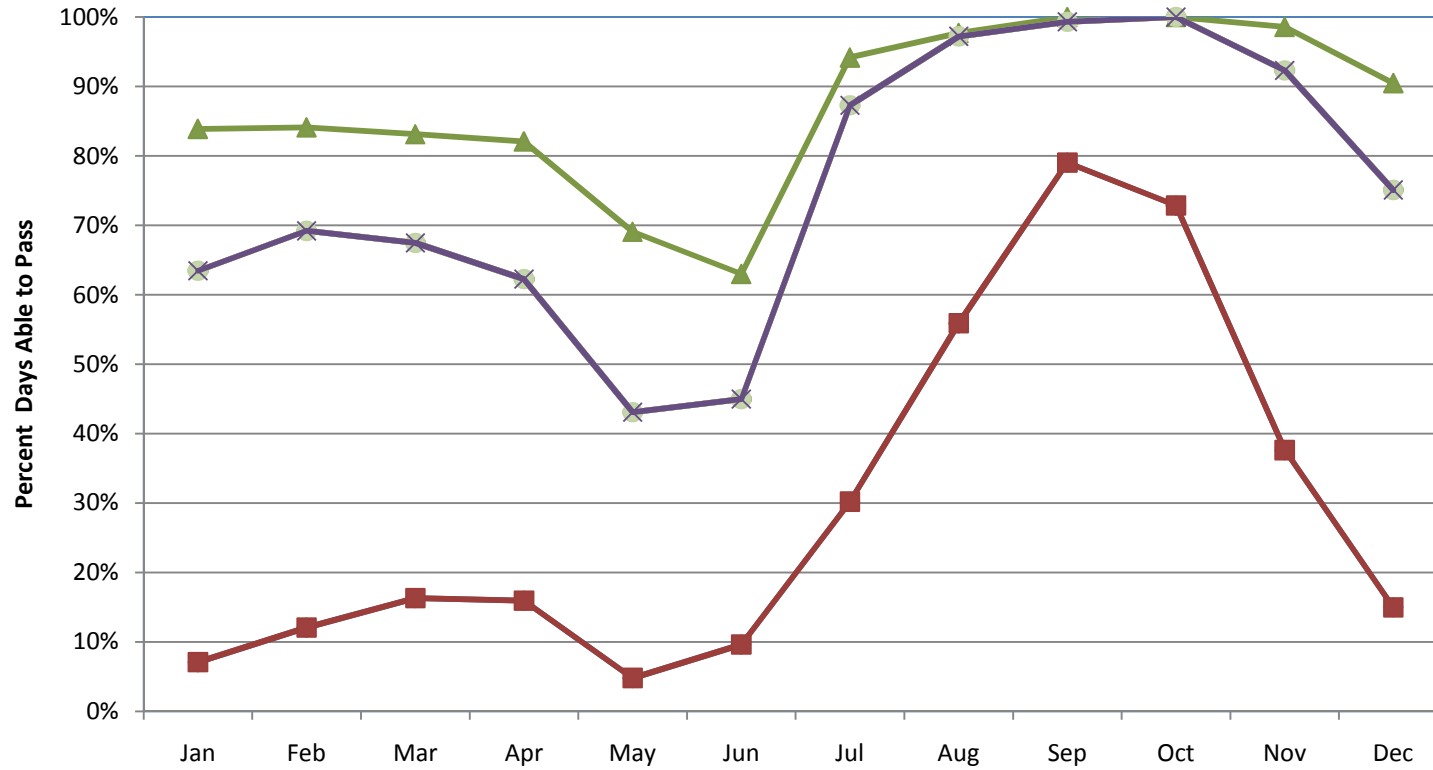
Marine Contractors 2 125 ft bridge, 10 ft air gap



Vessels that can pass all months = Paula Lee, D.B. Alameda, D.B. Oakland, D.B. Olympia, D.B. Pacific, D.B. Seattle, Sea Hawk, Sea Lion, Sea Vulture, Heidi Renee,

◆ D.B. General ■ Sea Horse ▲ SDS Lumber Company

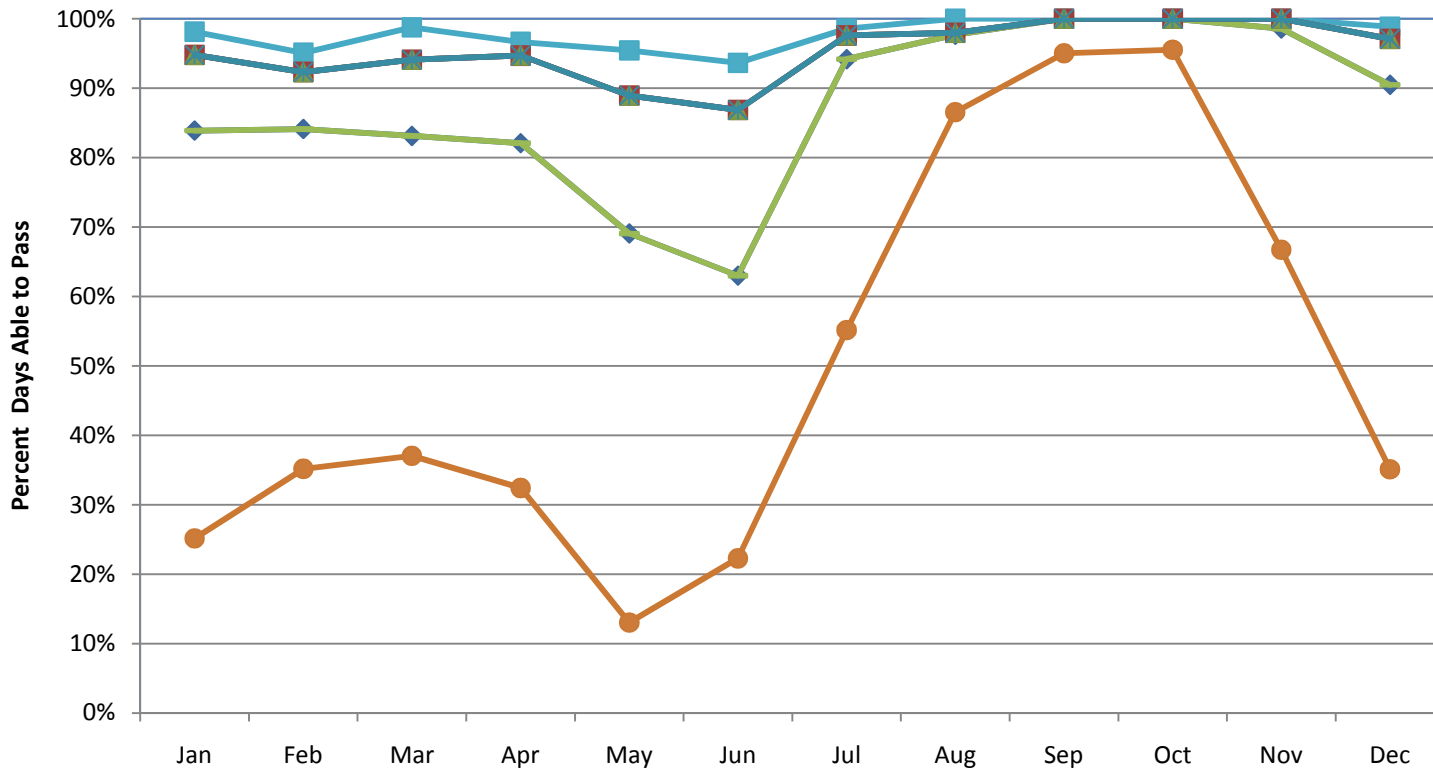
Marine Contractors 3 95 ft bridge, 10 ft air gap



Vessels that cannot pass any month = DB Taylor, Derrick No. 24, Haakon, Dredge Oregon,



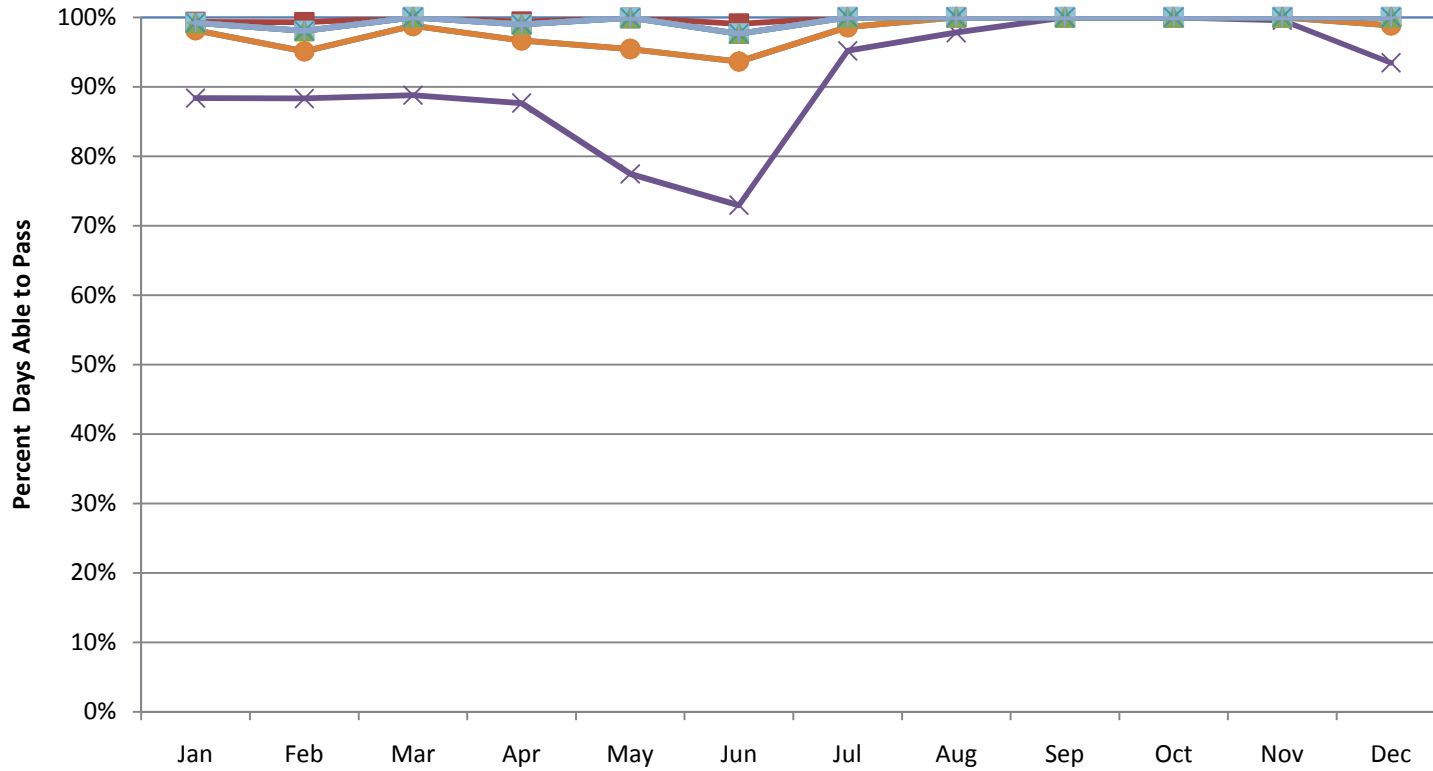
Marine Contractors 3 100 ft bridge, 10 ft air gap



Vessels that cannot pass any month = DB Taylor, Derrick No. 24, Dredge Oregon,

- DB Astoria
 Haakon
 Barge #7
 DB Camas
- RI Dredge no.6
 RI Dredge no.7
 RI Dredge no.8
 RI Dredge no.9

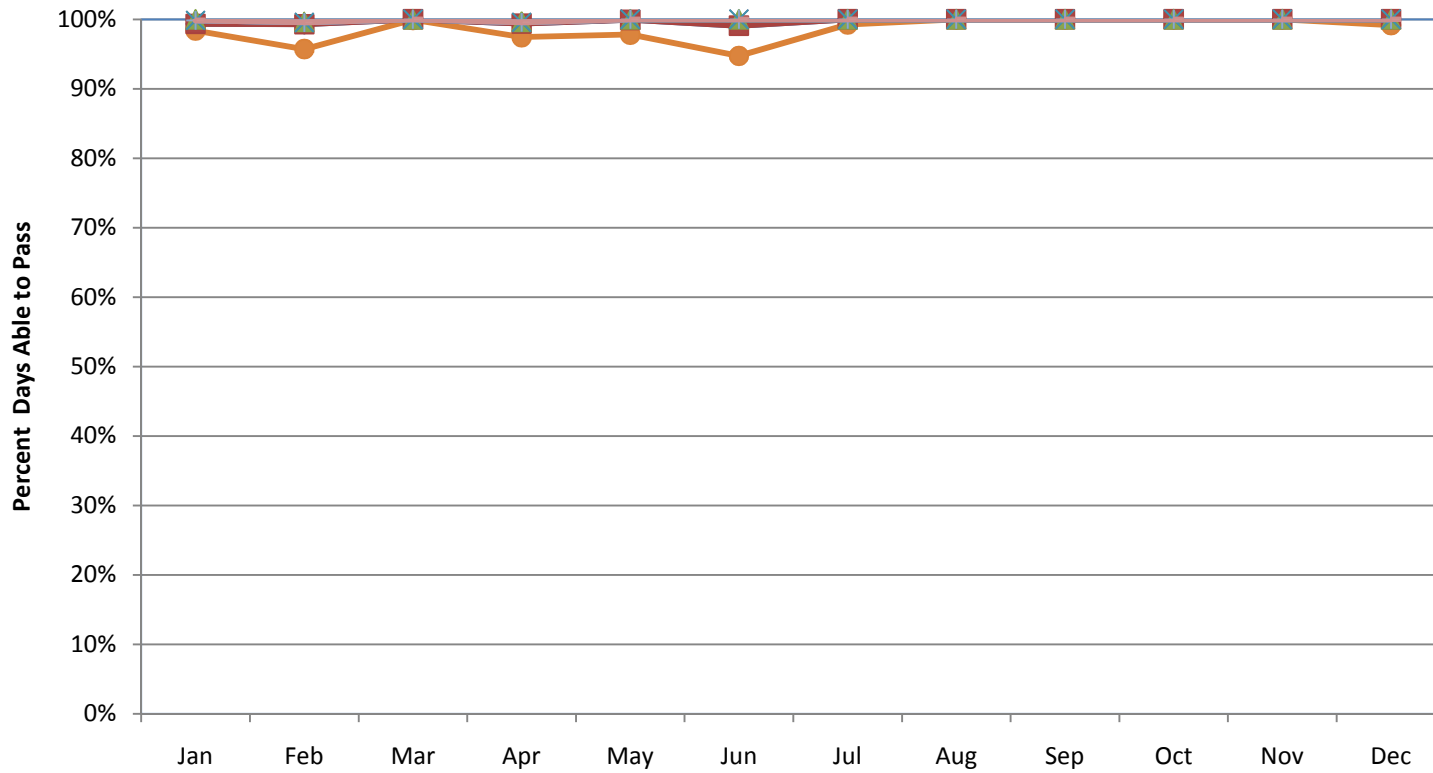
Marine Contractors 3 105 ft bridge, 10 ft air gap



Vessels that cannot pass any month =DB Taylor, Derrick No. 24, Dredge Oregon,

- ◆ DB Astoria
- ✕ Haakon
- Barge #7
- DB Camas
- RI Dredge no.6
- ▲ RI Dredge no.7
- ✱ RI Dredge no.8
- ✚ RI Dredge no.9

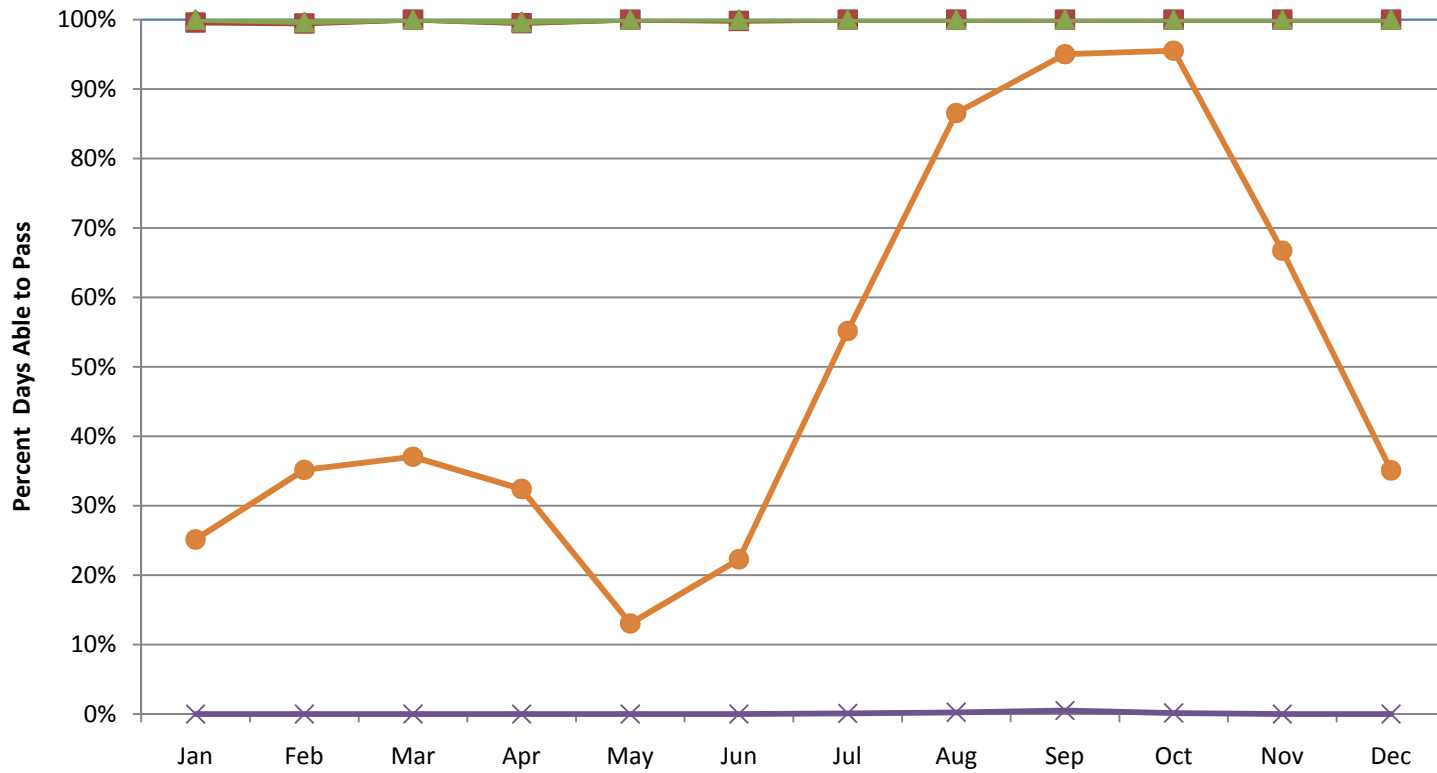
Marine Contractors 3 110 ft bridge, 10 ft air gap



Vessels that cannot pass any month =DB Taylor, Derrick No. 24, Dredge Oregon,

- DB Astoria
- Haakon
- Barge #7
- DB Camas
- RI Dredge no.6
- RI Dredge no.7
- RI Dredge no.8
- RI Dredge no.9

Marine Contractors 3 115 ft bridge, 10 ft air gap

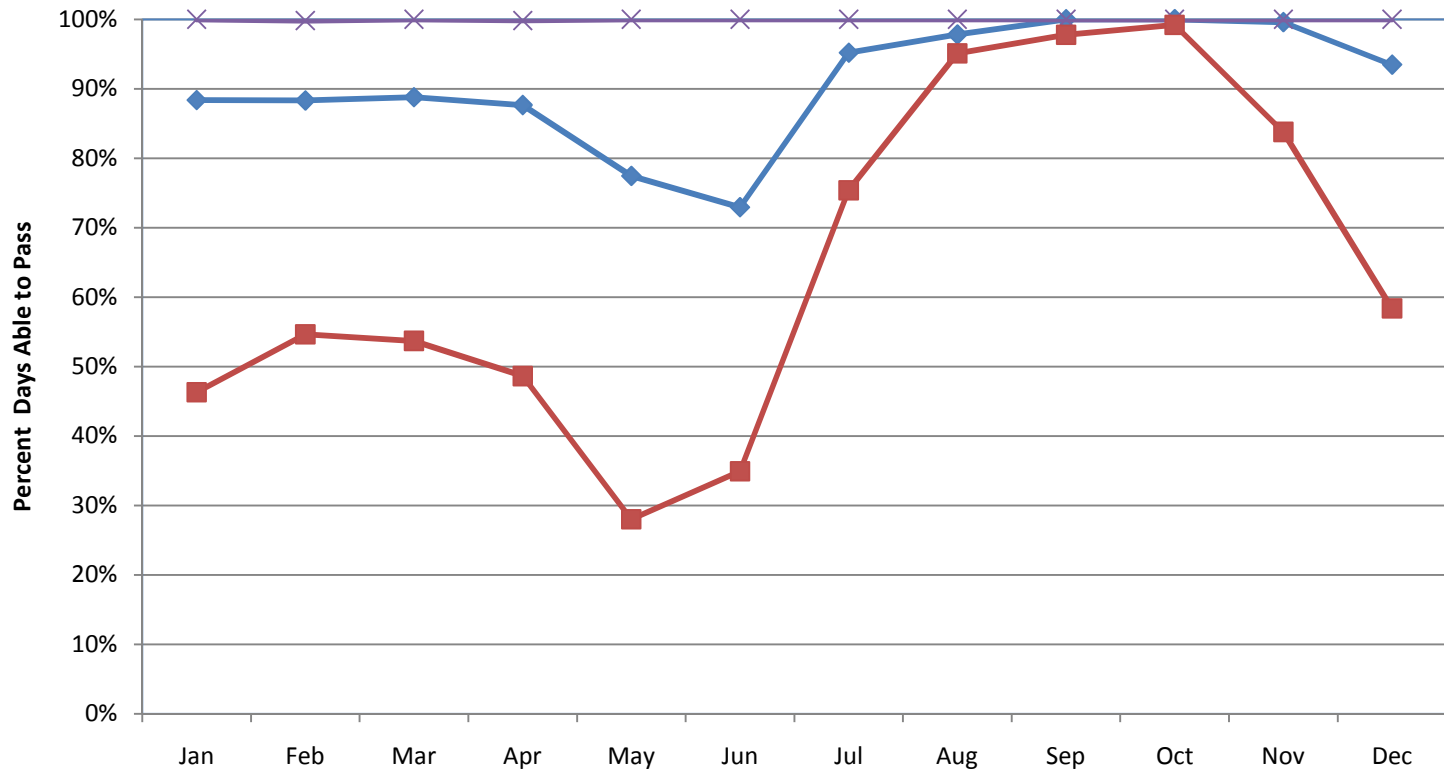


Vessels that can pass all months =DB Camas, RI Dredge no.6, RI Dredge no.7, RI Dredge no.8, RI Dredge no.9,

Vessels that cannot pass any month =DB Taylor,

◆ DB Astoria
 ● Derrick No. 24
 ■ Haakon
 ▲ Barge #7
 × Dredge Oregon

Marine Contractors 3 120 ft bridge, 10 ft air gap

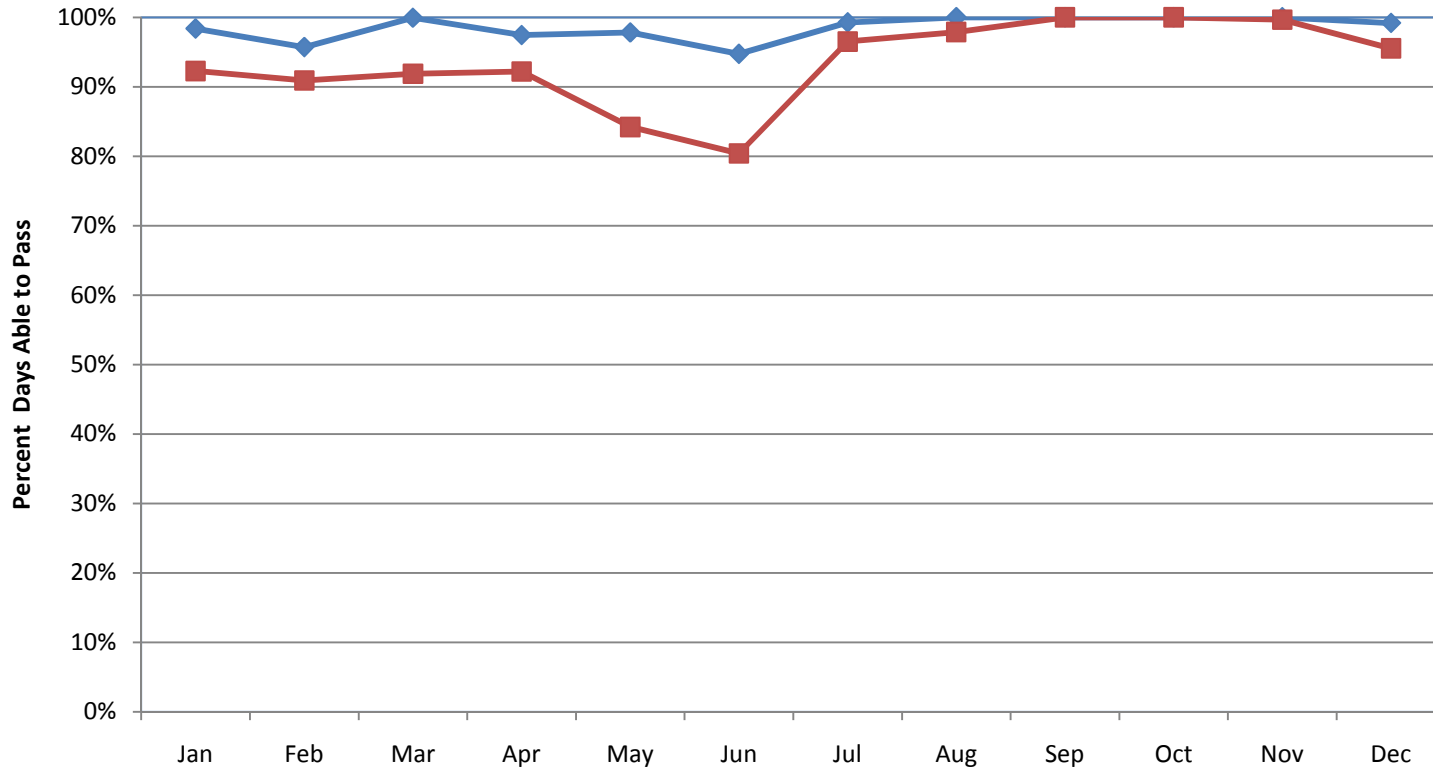


Vessels that can pass all months =DB Astoria, Barge #7, DB Camas, RI Dredge no.6,
RI Dredge no.7, RI Dredge no.8, RI Dredge no.9,

Vessels that cannot pass any month =DB Taylor,

◆ Derrick No. 24 ✕ Haakon ■ Dredge Oregon

Marine Contractors 3 125 ft bridge, 10 ft air gap



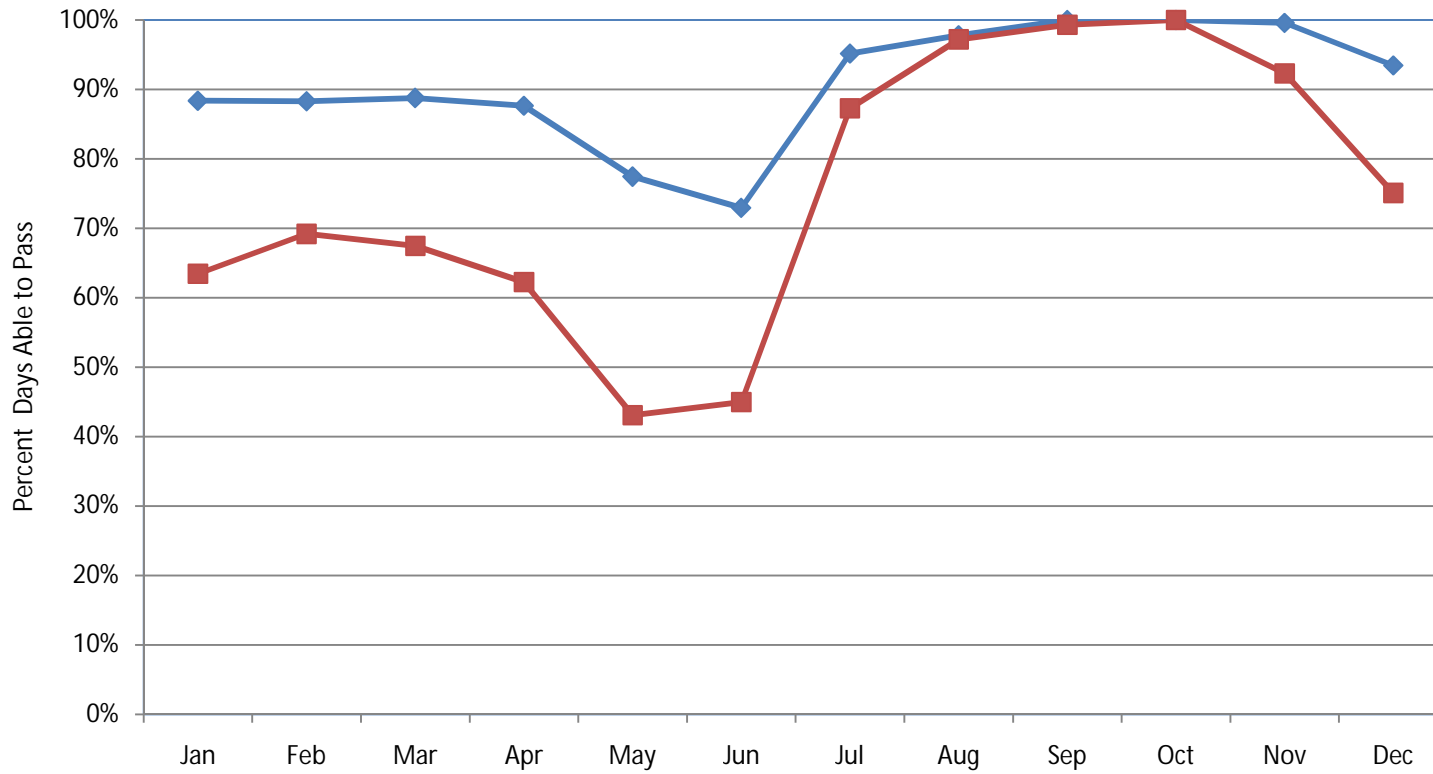
Vessels that can pass all months =DB Astoria, Haakon, Barge #7, DB Camas, RI Dredge no.6,
RI Dredge no.7, RI Dredge no.8, RI Dredge no.9,

Vessels that cannot pass any month =DB Taylor,

◆ Derrick No. 24

■ Dredge Oregon

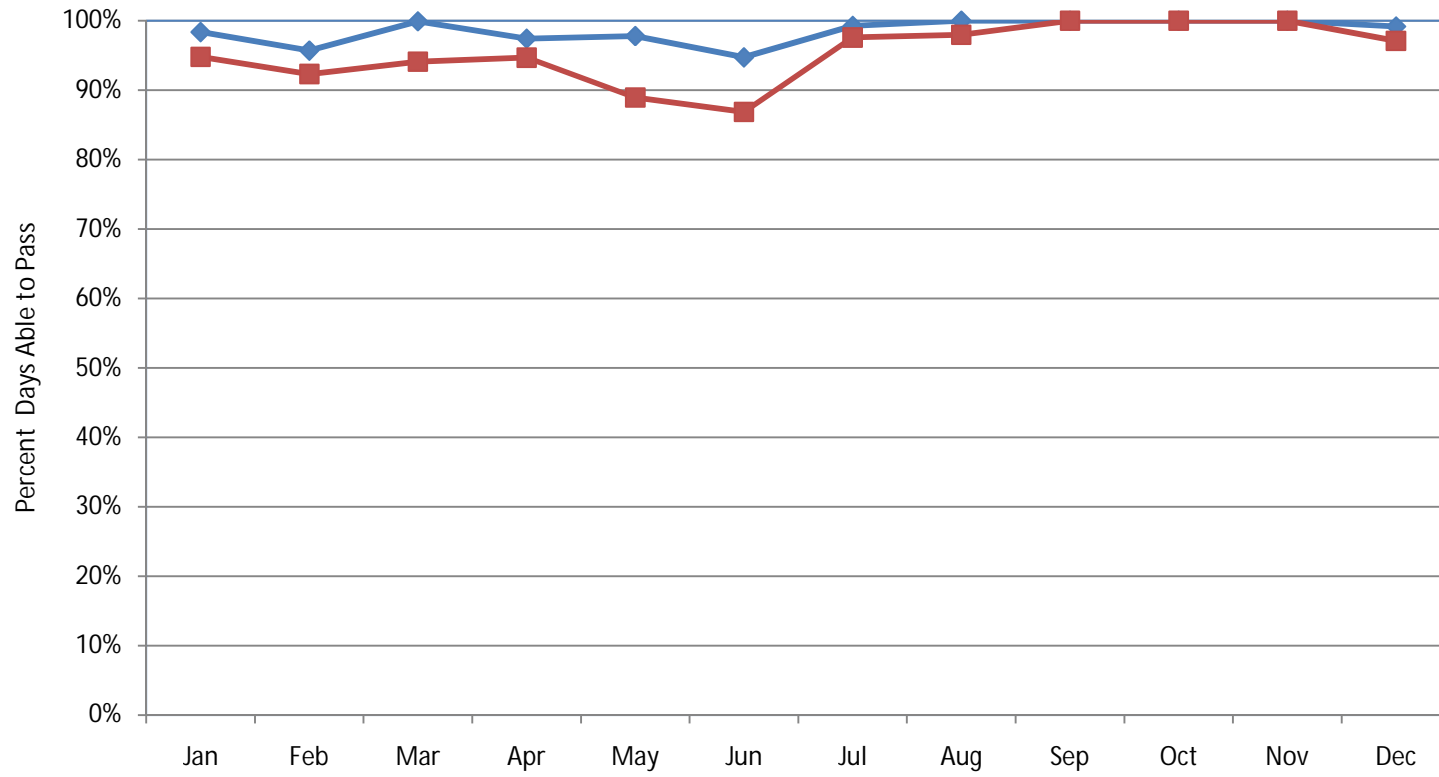
Federal Government 95 ft bridge, 10 ft air gap



Vessels that cannot pass any month =Yaquina,

◆ YTT 10 Battle Point ■ M/V Ironwood

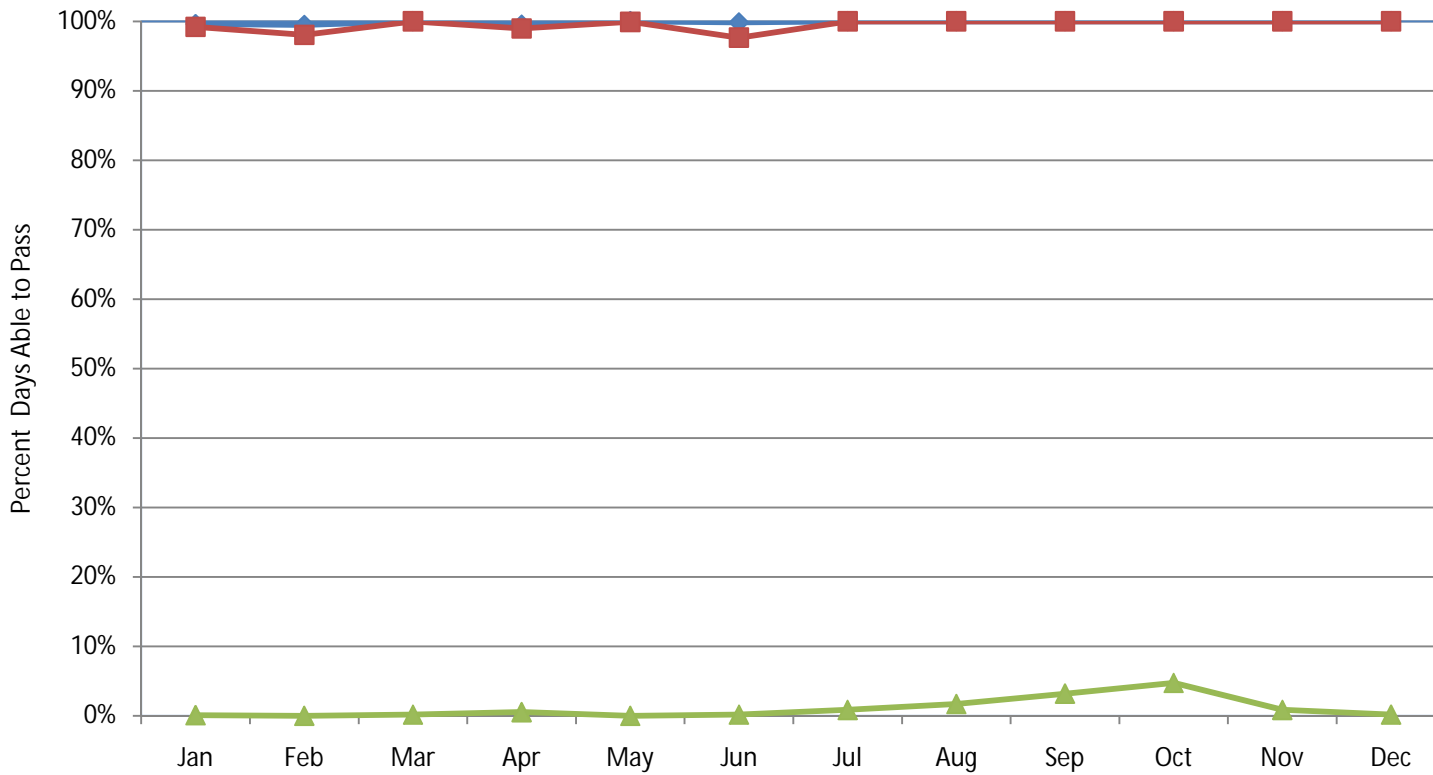
Federal Government 100 ft bridge, 10 ft air gap



Vessels that cannot pass any month =Yaquina,

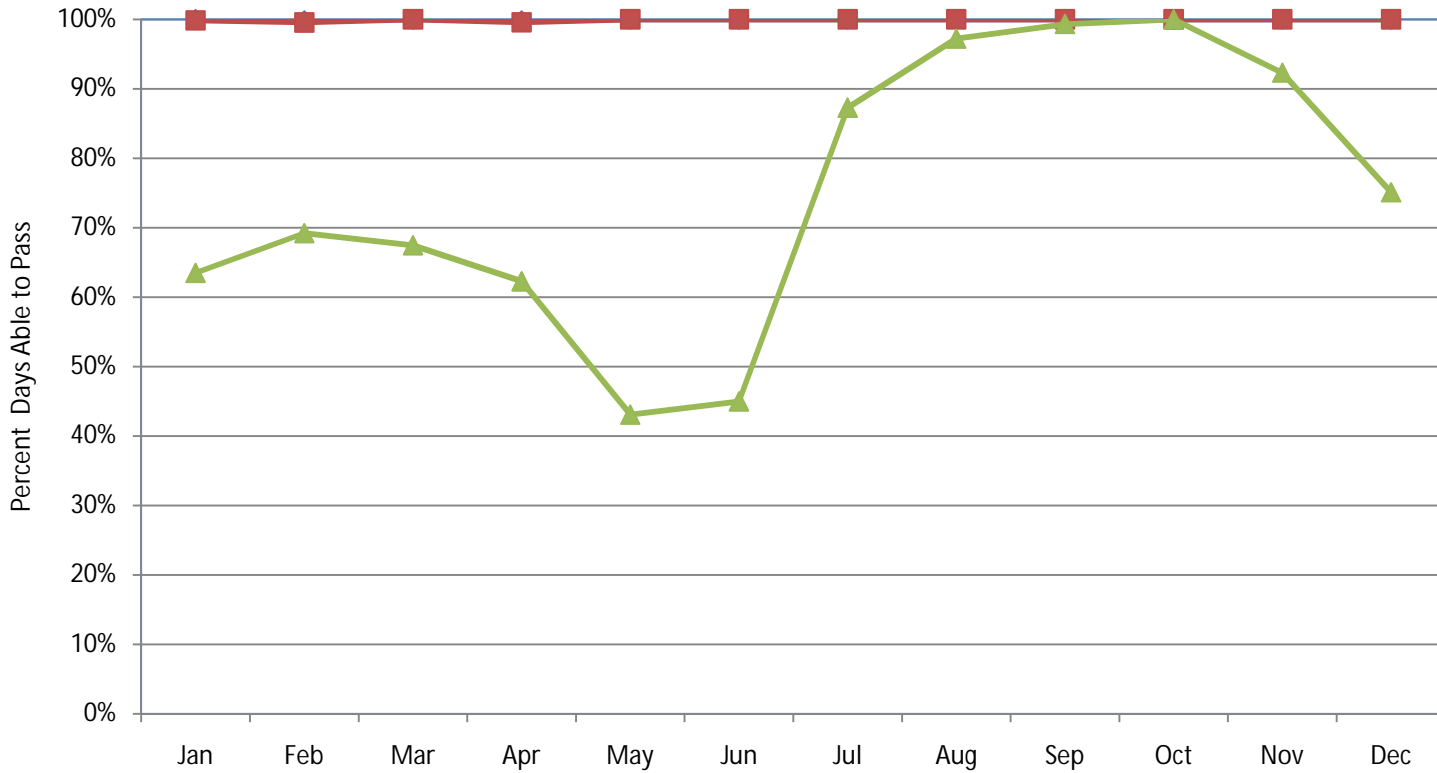
—◆— YTT 10 Battle Point —■— M/V Ironwood

Federal Government 105 ft bridge, 10 ft air gap



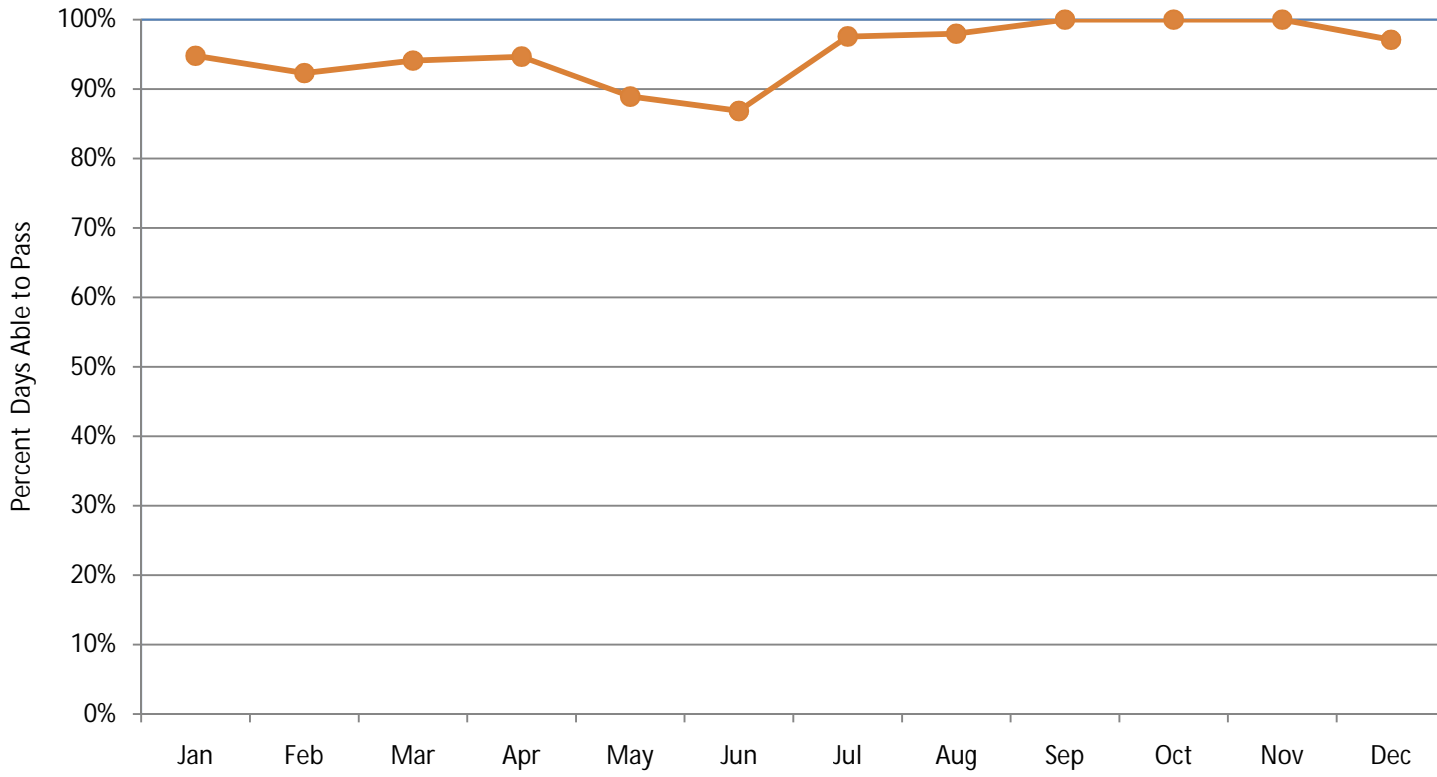
◆ YTT 10 Battle Point ■ M/V Ironwood ▲ Yaquina

Federal Government 110 ft bridge, 10 ft air gap



◆ YTT 10 Battle Point ■ M/V Ironwood ▲ Yaquina

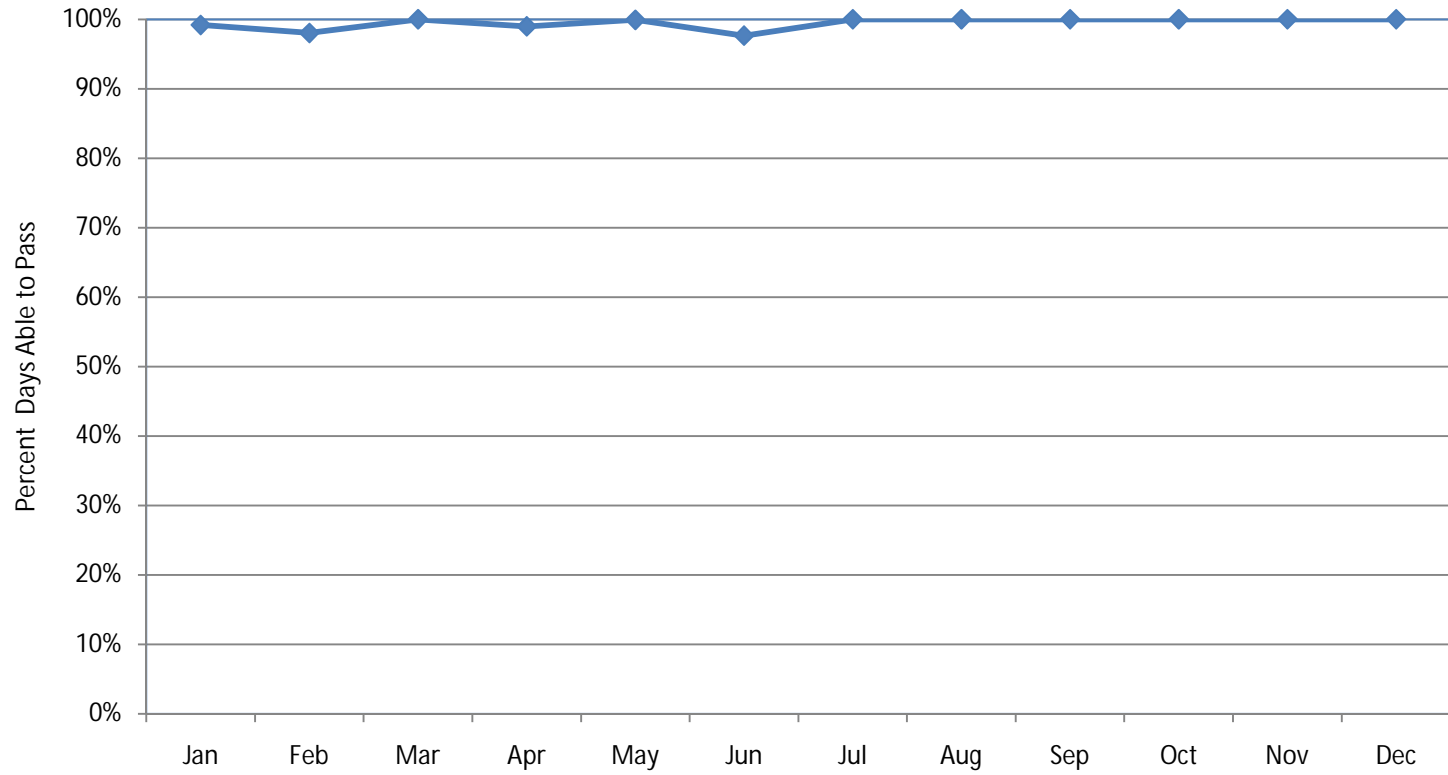
Federal Government 115 ft bridge, 10 ft air gap



Vessels that can pass all months =YTT 10 Battle Point, M/V Ironwood,

—●— Yaquina

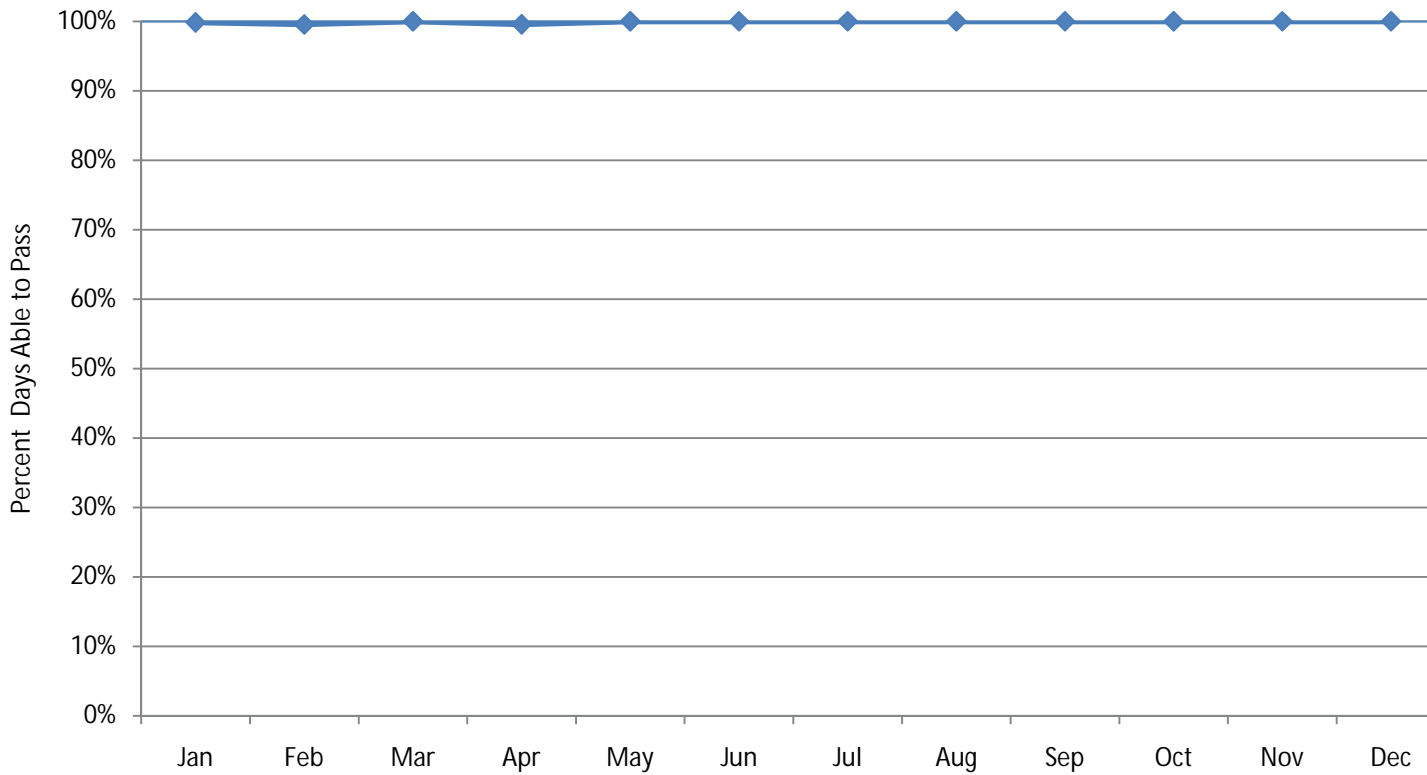
Federal Government 120 ft bridge, 10 ft air gap



Vessels that can pass all months = YTT 10 Battle Point, M/V Ironwood,

—◆— Yaquina

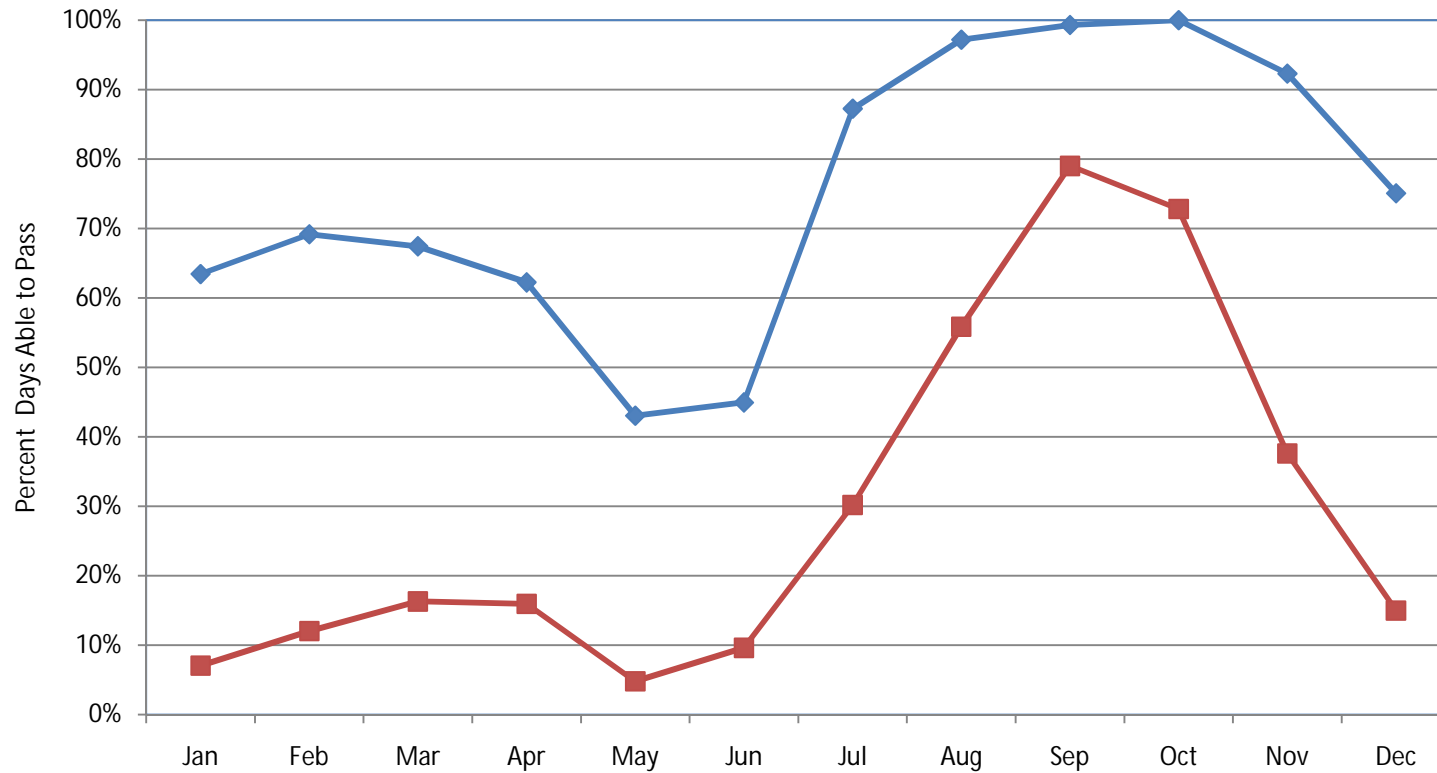
Federal Government 125 ft bridge, 10 ft air gap



Vessels that can pass all months = YTT 10 Battle Point, M/V Ironwood,

—◆— Yaquina

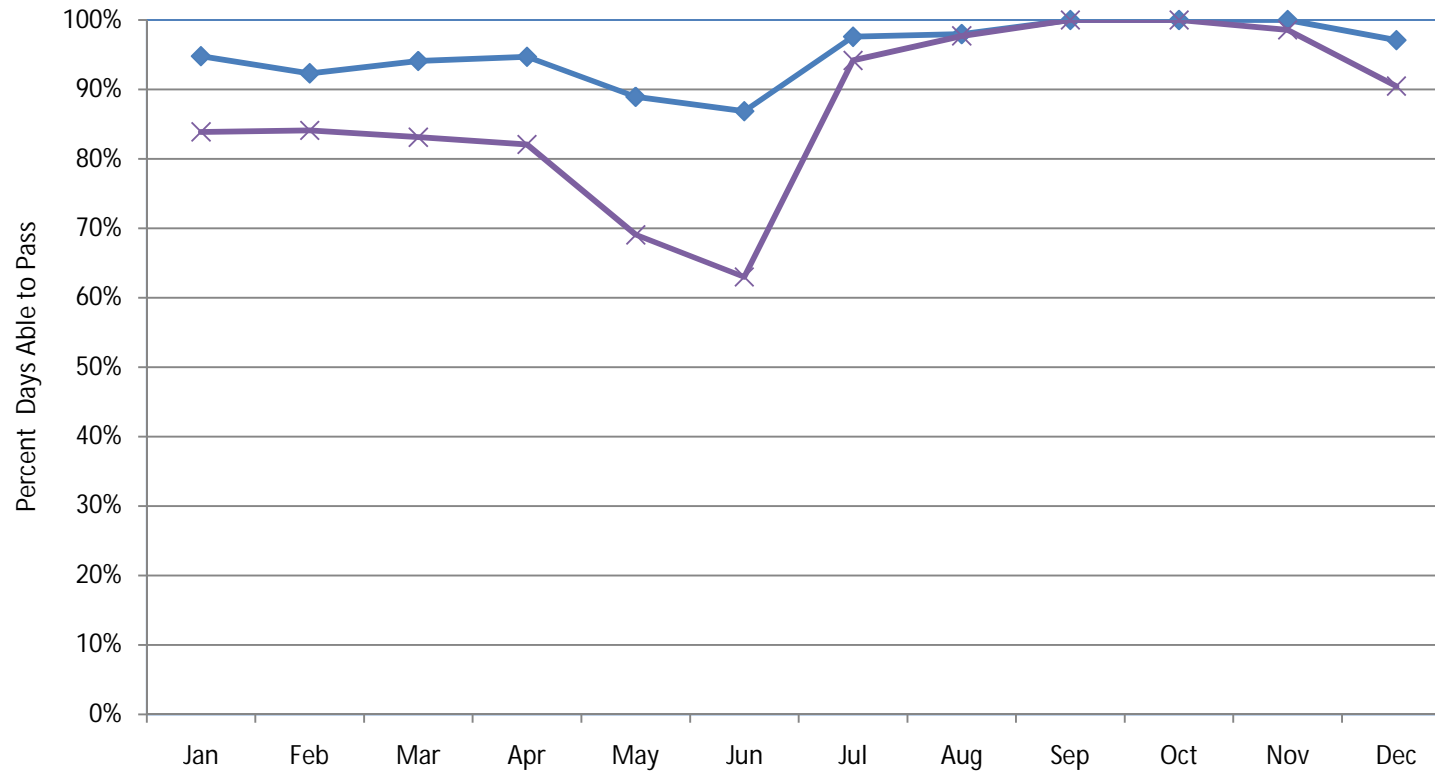
Marine Industries and Fabricators 95 ft bridge, 10 ft air gap



Vessels that cannot pass any month = Greenberry Future possible shipment, OIW Anticipated project, ARCO/Housing Expansion, Parker Drilling/Rig 245, Powell River Paper CO/Chlorine Dioxide Module, Nordic-Calista/Rig 3, USACE/Lower Granite RSW, USACE/Ice Harbor RSW, BP/Liberty Rig, Parker Drilling/Rig 272, Parker Drilling/Rig 273,

◆ Christensen Future Vessel ■ Doyon Drilling / Rig 25

Marine Industries and Fabricators 100 ft bridge, 10 ft air gap

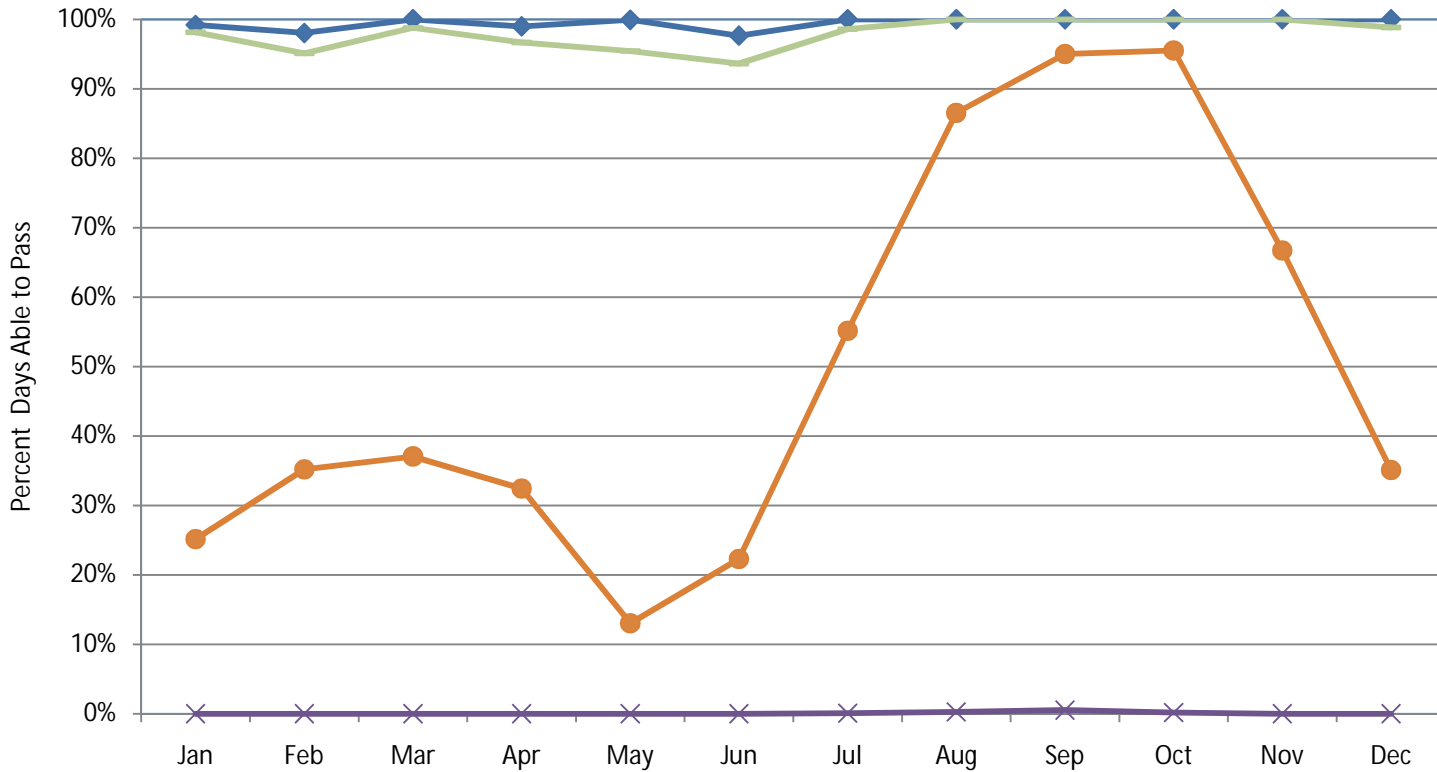


Vessels that cannot pass any month = Greenberry Future possible shipment, OIW Anticipated project, ARCO/Housing Expansion, Parker Drilling/Rig 245, Powell River Paper CO/Chlorine Dioxide Module, Nordic-Calista/Rig 3, USACE/Lower Granite RSW, USACE/Ice Harbor RSW, BP/Liberty Rig, Parker Drilling/Rig 272, Parker Drilling/Rig 273,

◆ Christensen Future Vessel

✕ Doyon Drilling / Rig 25

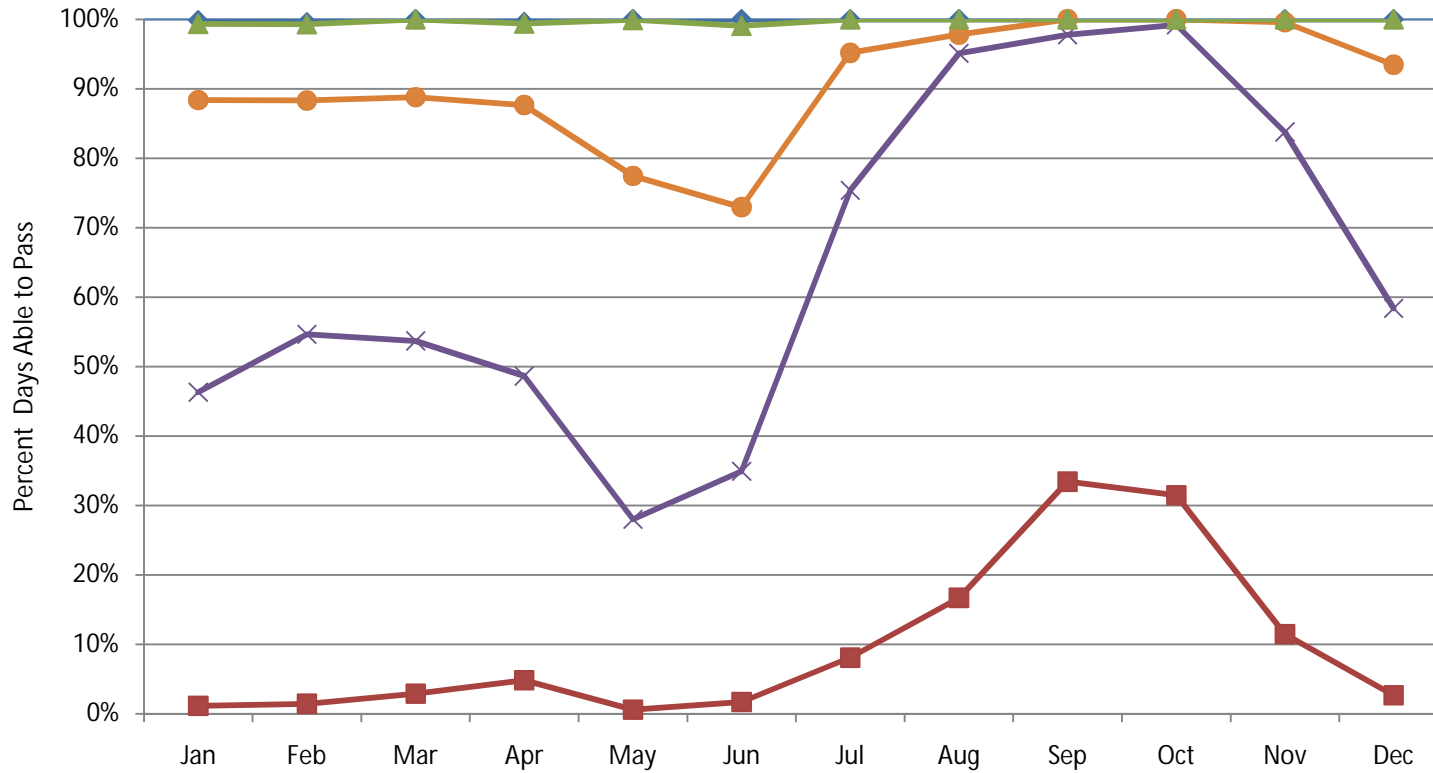
Marine Industries and Fabricators 105 ft bridge, 10 ft air gap



Vessels that cannot pass any month = Greenberry Future possible shipment, OIW Anticipated project, Parker Drilling/Rig 245, Powell River Paper CO/Chlorine Dioxide Module, Nordic-Calista/Rig 3, USACE/Ice Harbor RSW, BP/Liberty Rig, Parker Drilling/Rig 272, Parker Drilling/Rig 273,

◆ Christensen Future Vessel
 × ARCO/Housing Expansion
 ● USACE/Lower Granite RSW
 ■ Doyon Drilling / Rig 25

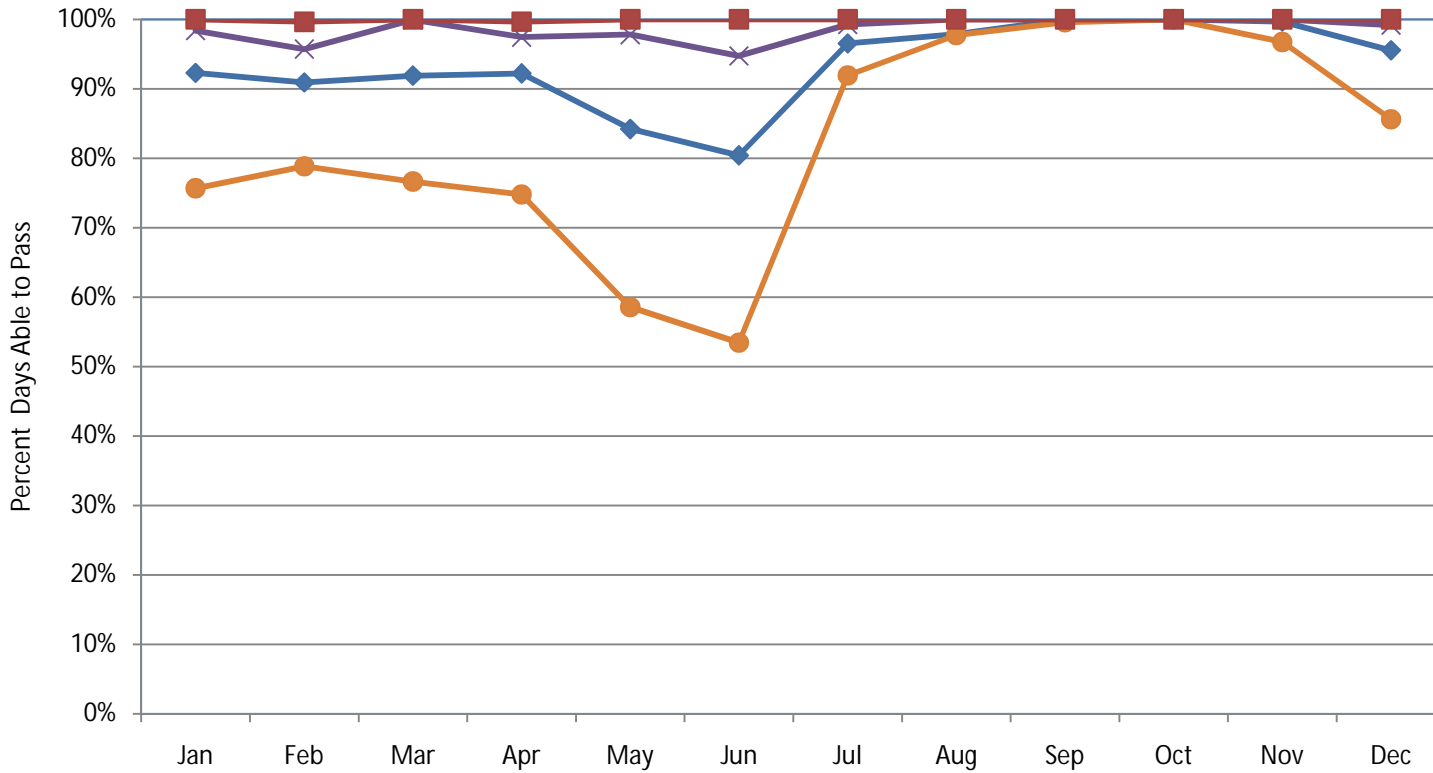
Marine Industries and Fabricators 110 ft bridge, 10 ft air gap



Vessels that cannot pass any month = Greenberry Future possible shipment, OIW Anticipated project, Parker Drilling/Rig 245, Powell River Paper CO/Chlorine Dioxide Module, Nordic-Calista/Rig 3, BP/Liberty Rig, Parker Drilling/Rig 272, Parker Drilling/Rig 273,

- ◆ Christensen Future Vessel
- ✕ ARCO/Housing Expansion
- USACE/Lower Granite RSW
- USACE/Ice Harbor RSW
- ▲ Doyon Drilling / Rig 25

Marine Industries and Fabricators 115 ft bridge, 10 ft air gap

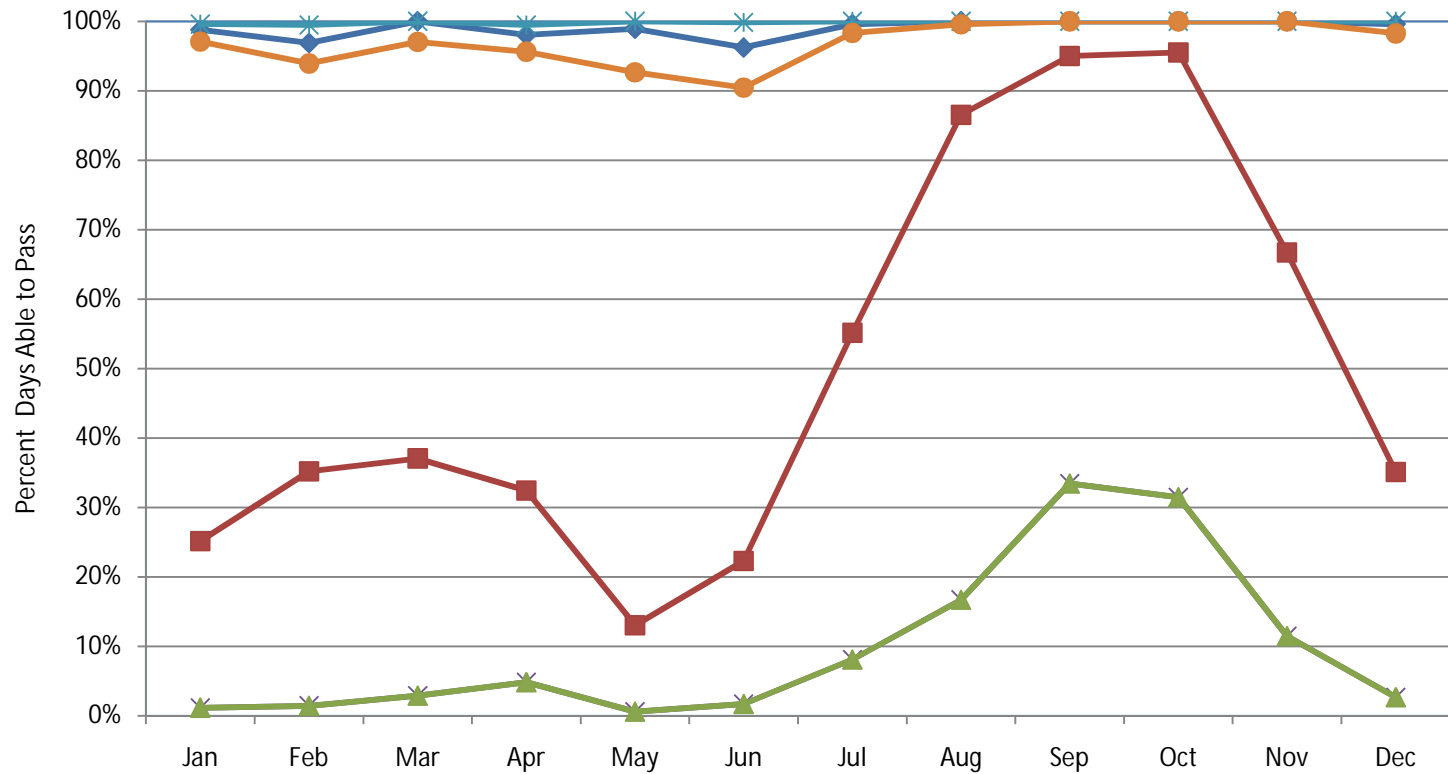


Vessels that can pass all months =Christensen Future Vessel,

Vessels that cannot pass any month =Greenberry Future possible shipment, OIW Anticipated project, Parker Drilling/Rig 245, Powell River Paper CO/Chlorine Dioxide Module, Nordic-Calista/Rig 3, BP/Liberty Rig, Parker Drilling/Rig 272, Parker Drilling/Rig 273,

◆ ARCO/Housing Expansion
 × USACE/Lower Granite RSW
 ● USACE/Ice Harbor RSW
 ■ Doyon Drilling / Rig 25

Marine Industries and Fabricators 120 ft bridge, 10 ft air gap

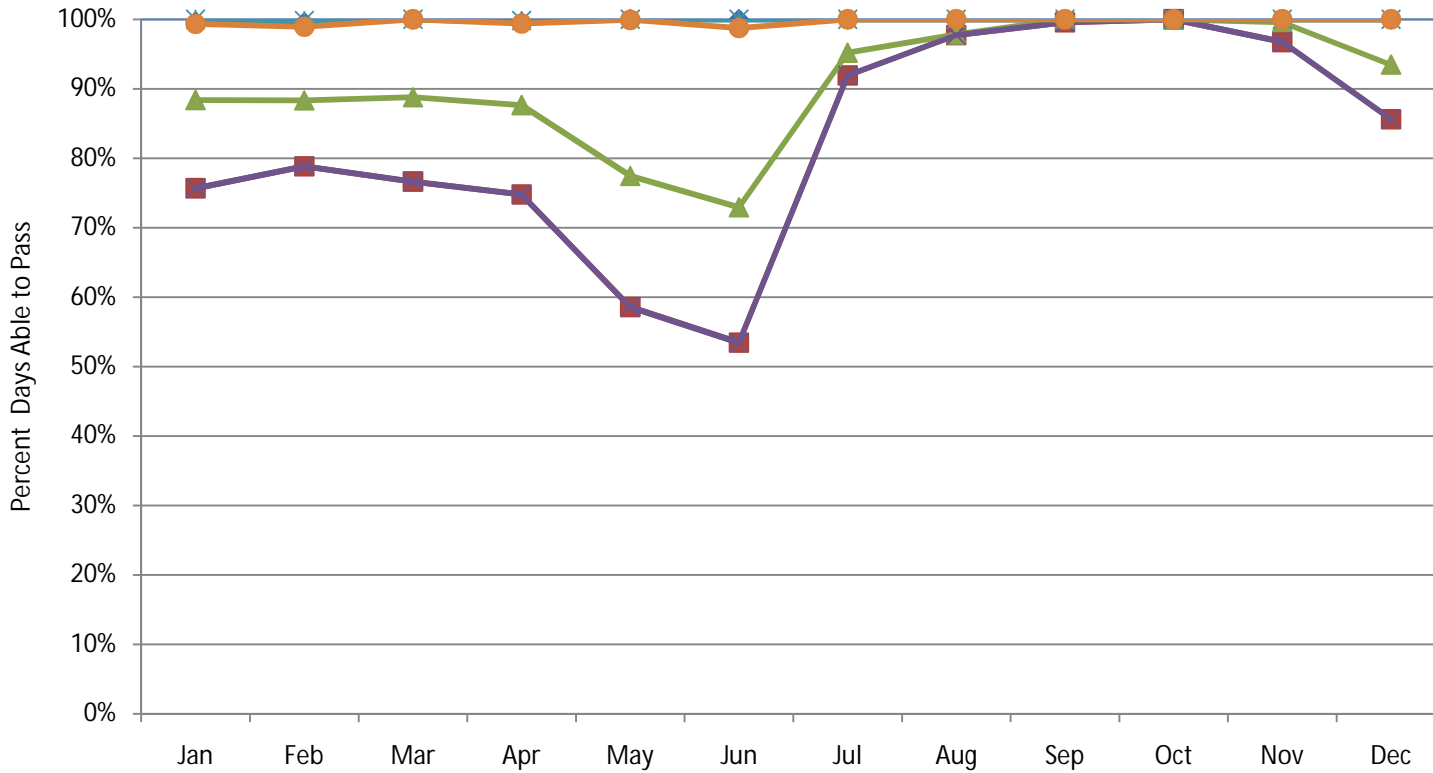


Vessels that can pass all months =Christensen Future Vessel, Doyon Drilling / Rig 25,

Vessels that cannot pass any month =Greenberry Future possible shipment, OIW Anticipated project, BP/Liberty Rig, Parker Drilling/Rig 272, Parker Drilling/Rig 273,

- ◆ ARCO/Housing Expansion
- Powell River Paper CO/Chlorine Dioxide Module
- ✱ USACE/Lower Granite RSW
- ✱ Parker Drilling/Rig 245
- ▲ Nordic-Calista/Rig 3
- USACE/Ice Harbor RSW

Marine Industries and Fabricators 125 ft bridge, 10 ft air gap

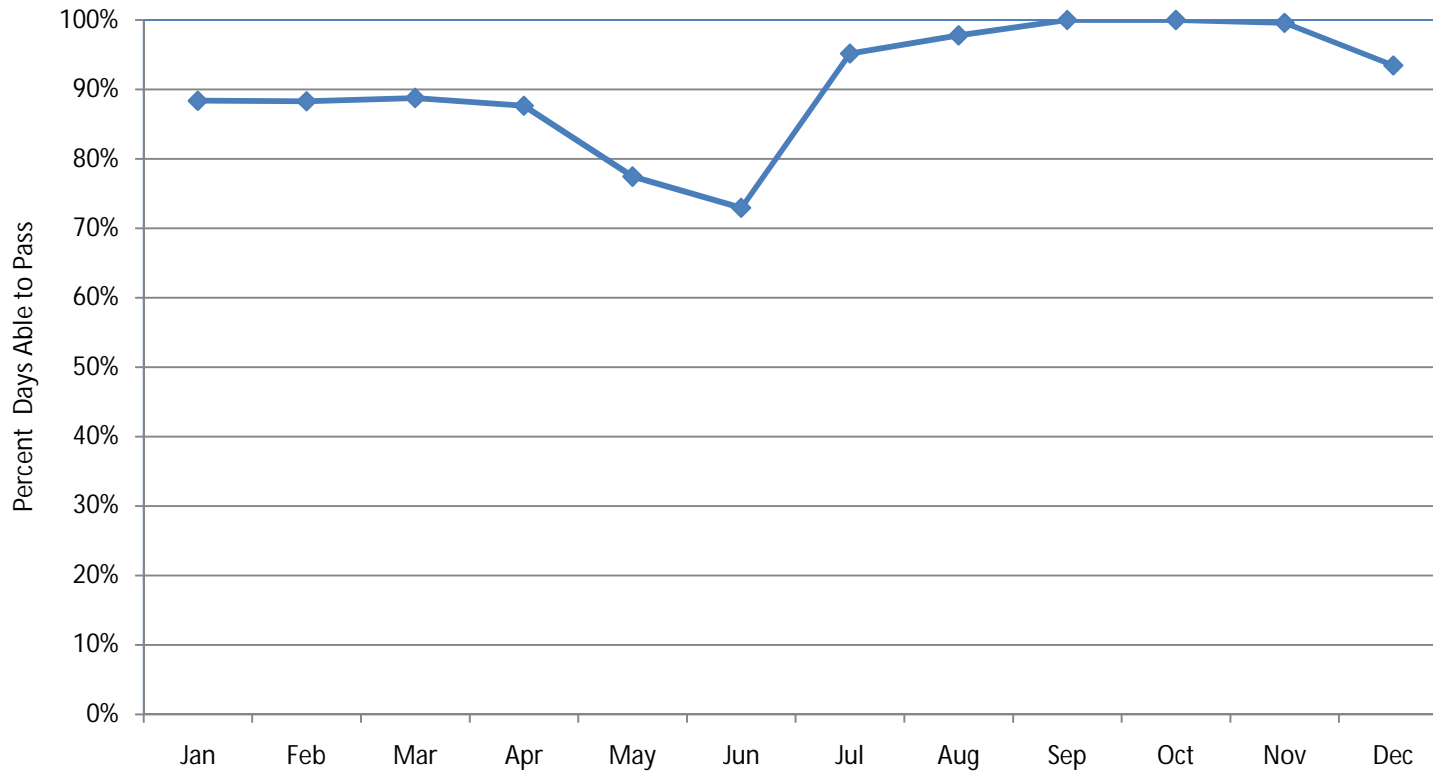


Vessels that can pass all months =Christensen Future Vessel, Doyon Drilling / Rig 25,

Vessels that cannot pass any month =Greenberry Future possible shipment, OIW Anticipated project, BP/Liberty Rig, Parker Drilling/Rig 272, Parker Drilling/Rig 273,

- ◆ ARCO/Housing Expansion
 - ▲ Powell River Paper CO/Chlorine Dioxide Module
 - ✱ USACE/Lower Granite RSW
- Parker Drilling/Rig 245
 - Nordic-Calista/Rig 3
 - USACE/Ice Harbor RSW

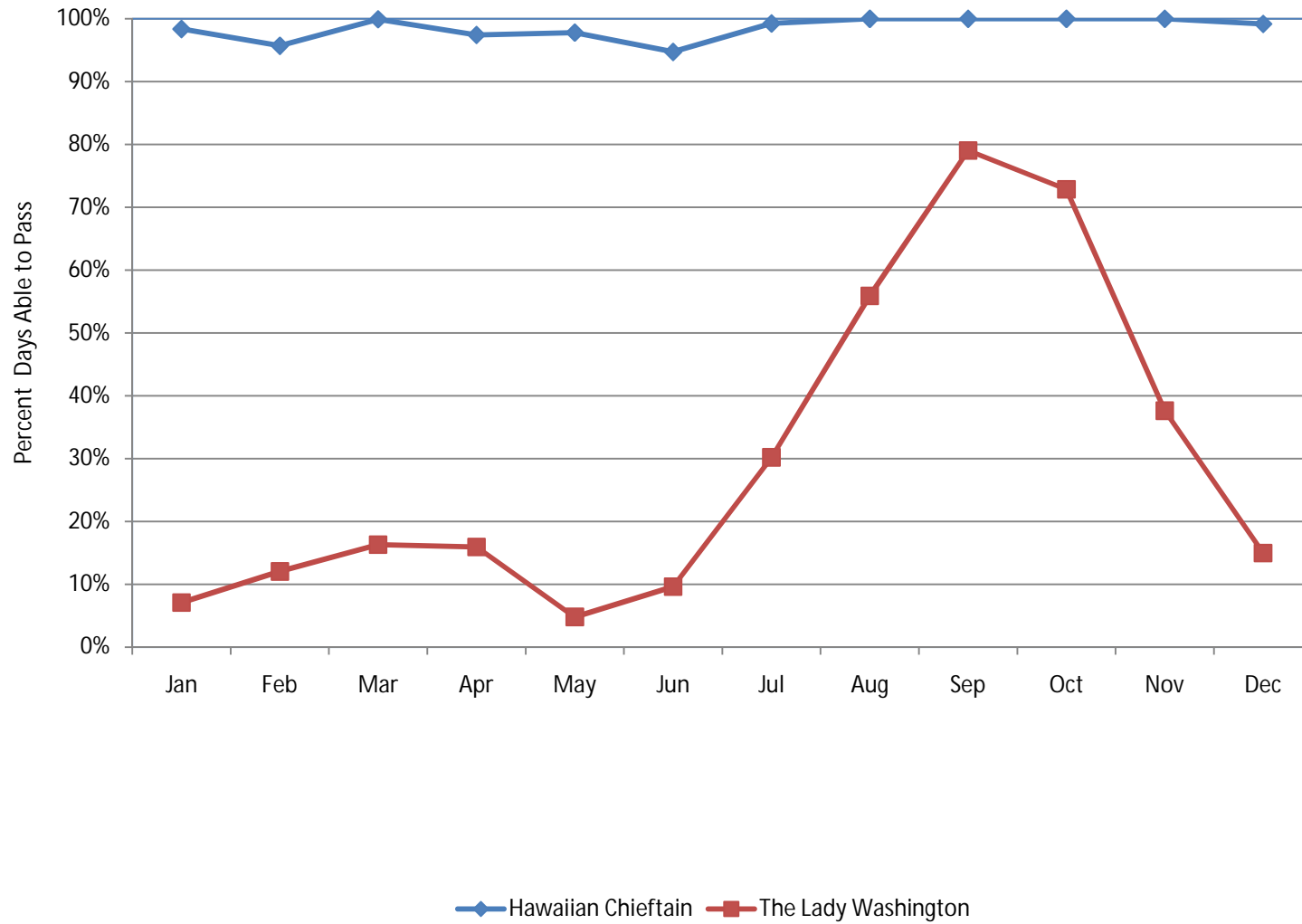
Passenger Cruise 95 ft bridge, 10 ft air gap



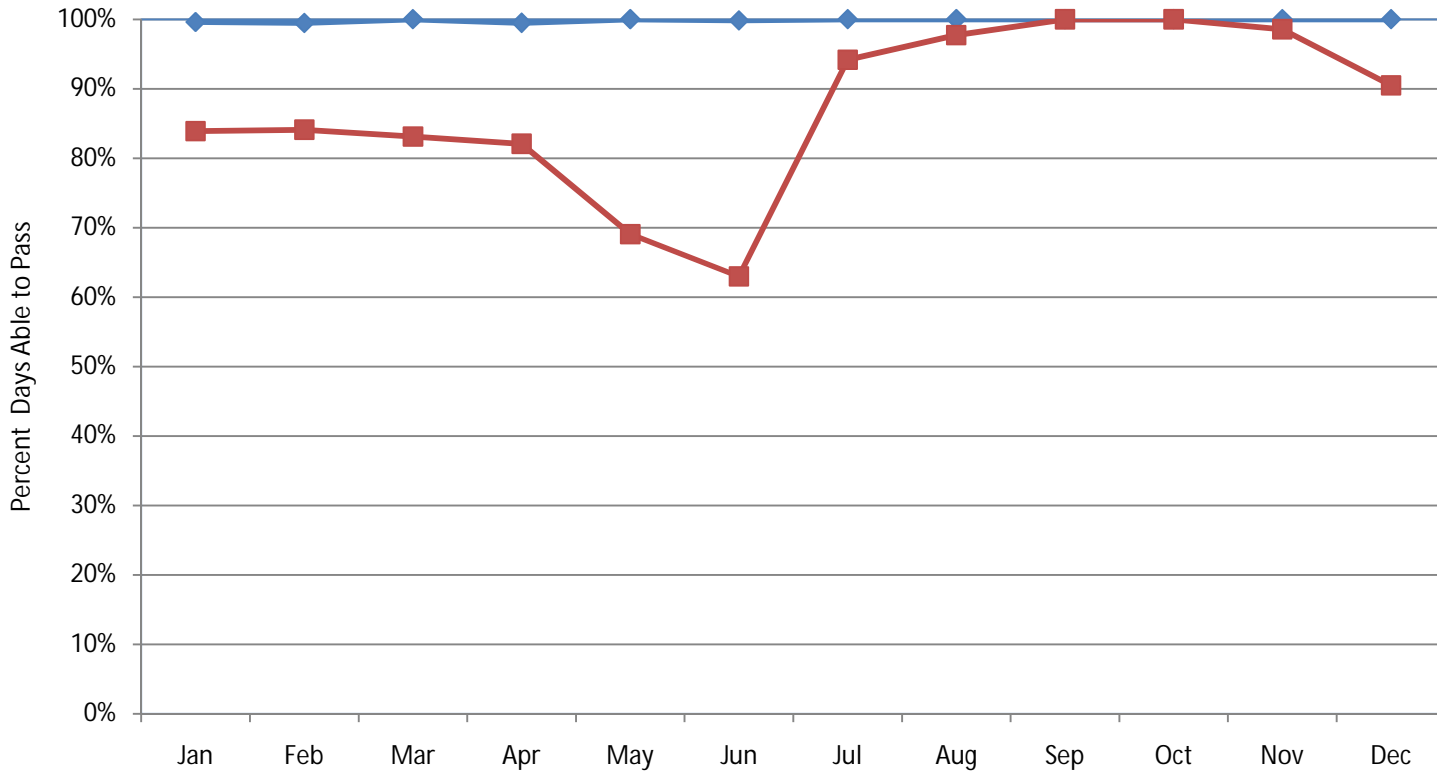
Vessels that cannot pass any month =The Lady Washington,

—◆— Hawaiian Chieftain

Passenger Cruise 100 ft bridge, 10 ft air gap

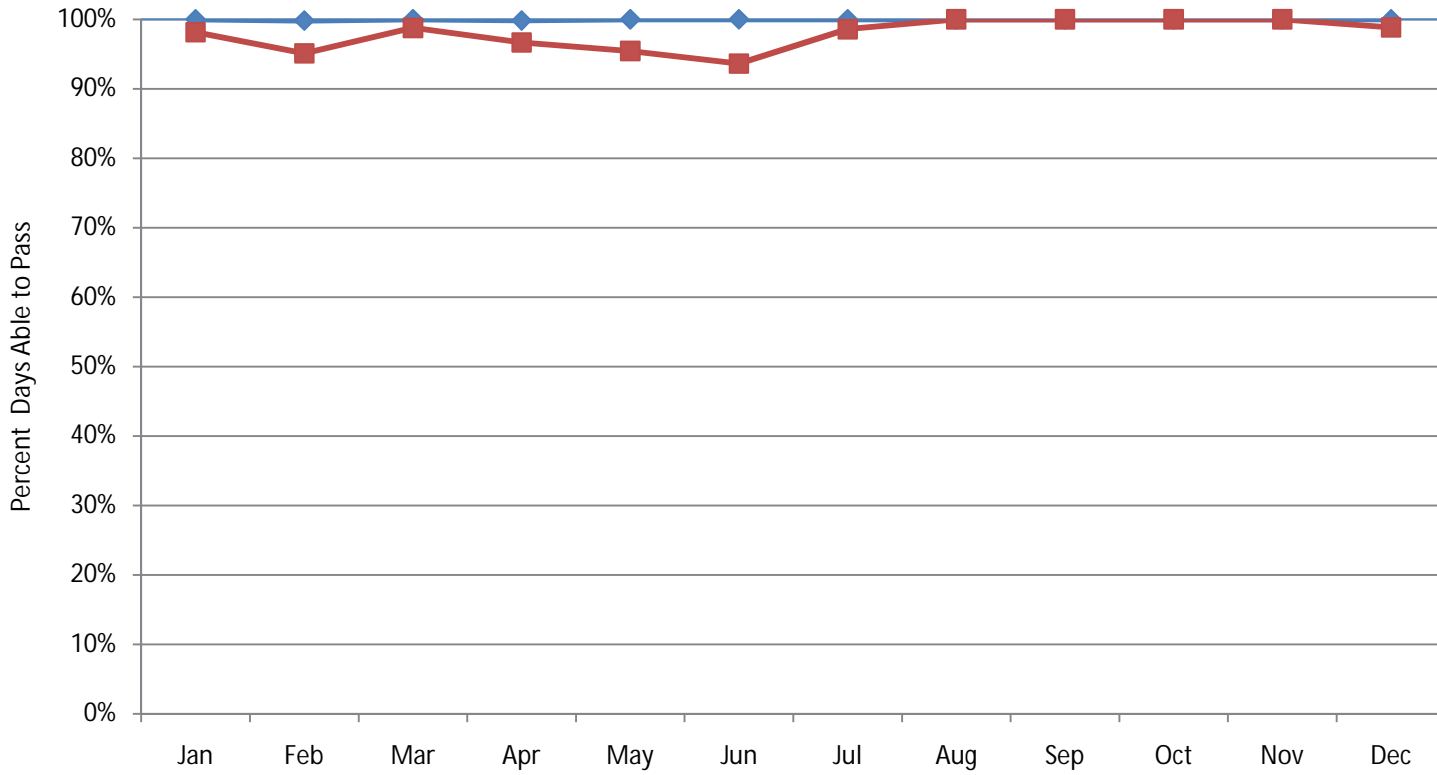


Passenger Cruise 105 ft bridge, 10 ft air gap



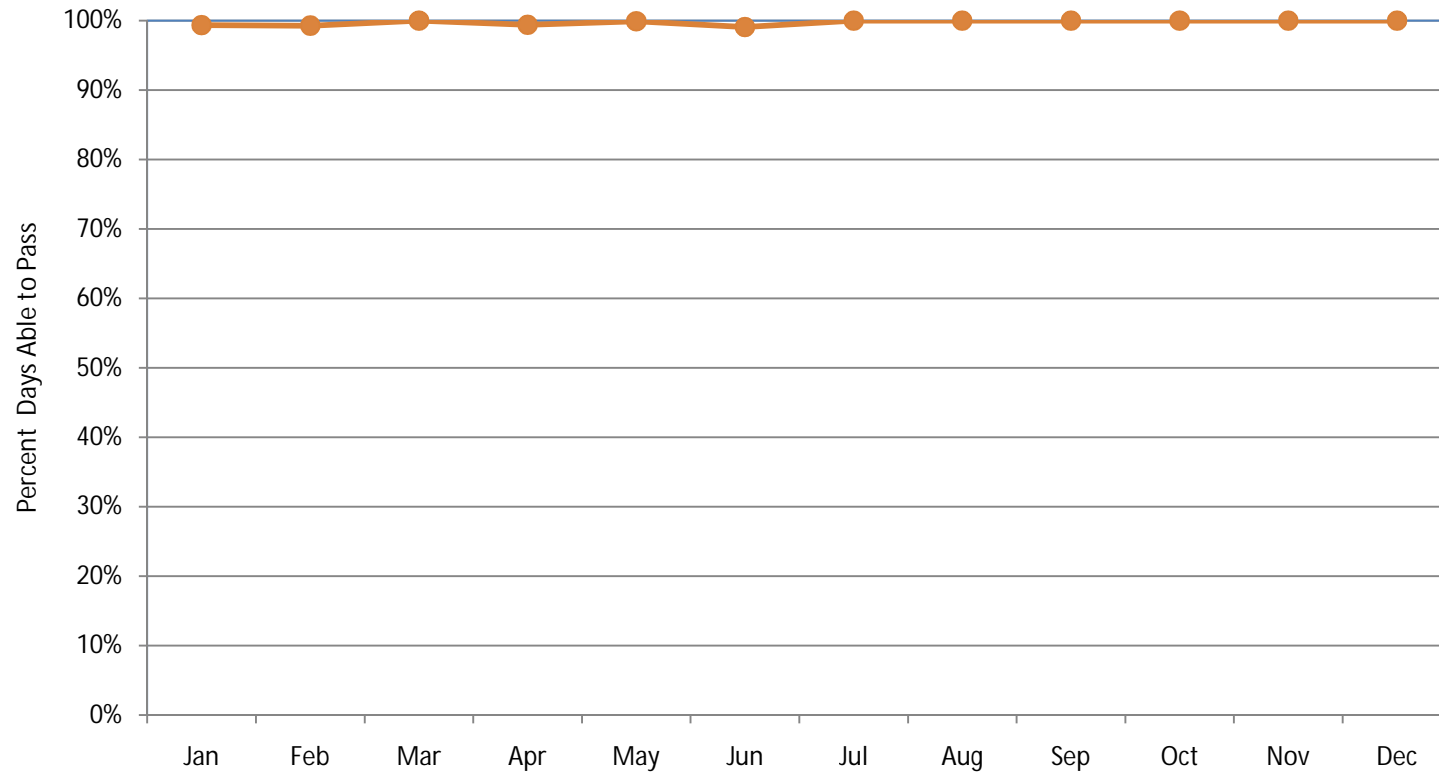
◆ Hawaiian Chieftain ■ The Lady Washington

Passenger Cruise 110 ft bridge, 10 ft air gap



—◆— Hawaiian Chieftain —■— The Lady Washington

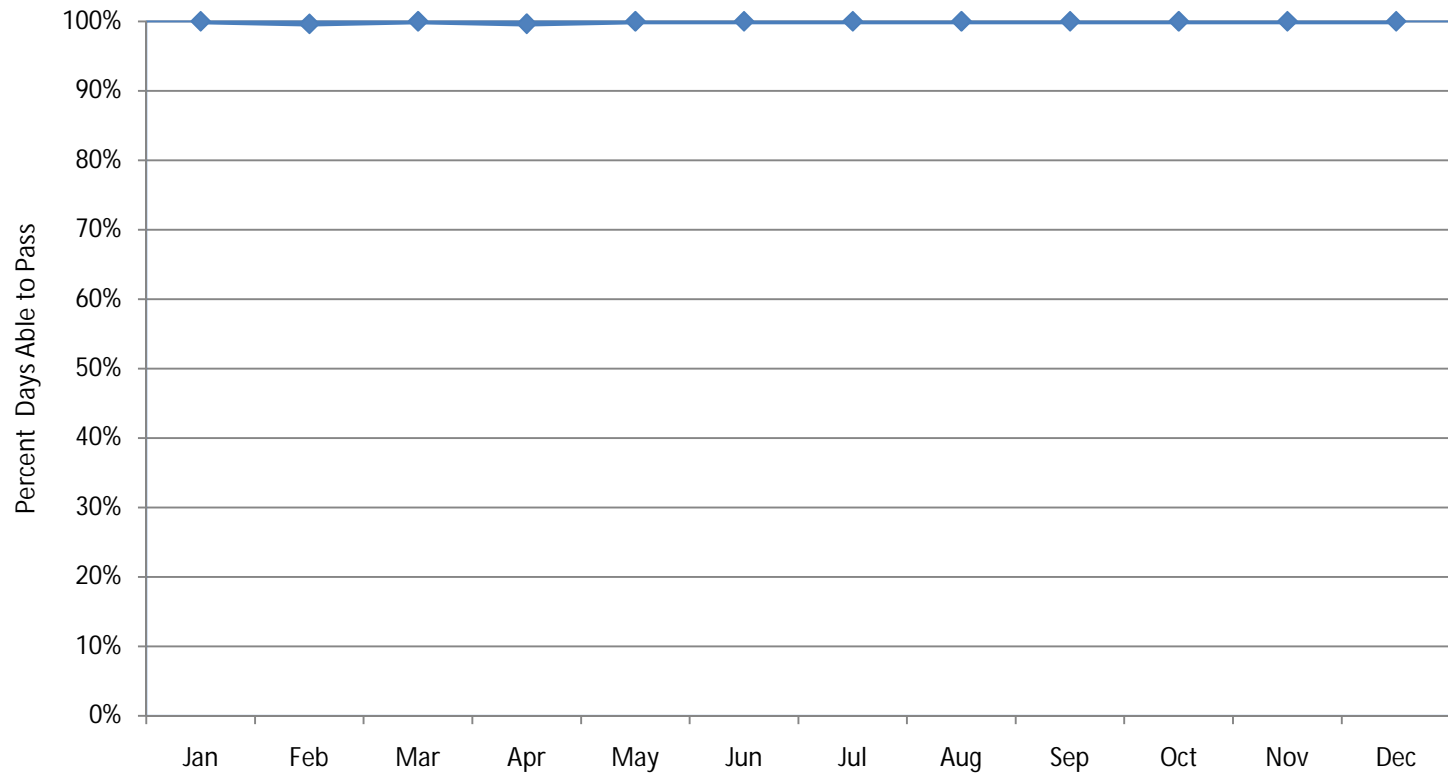
Passenger Cruise 115 ft bridge, 10 ft air gap



Vessels that can pass all months =Hawaiian Chieftain,

—●— The Lady Washington

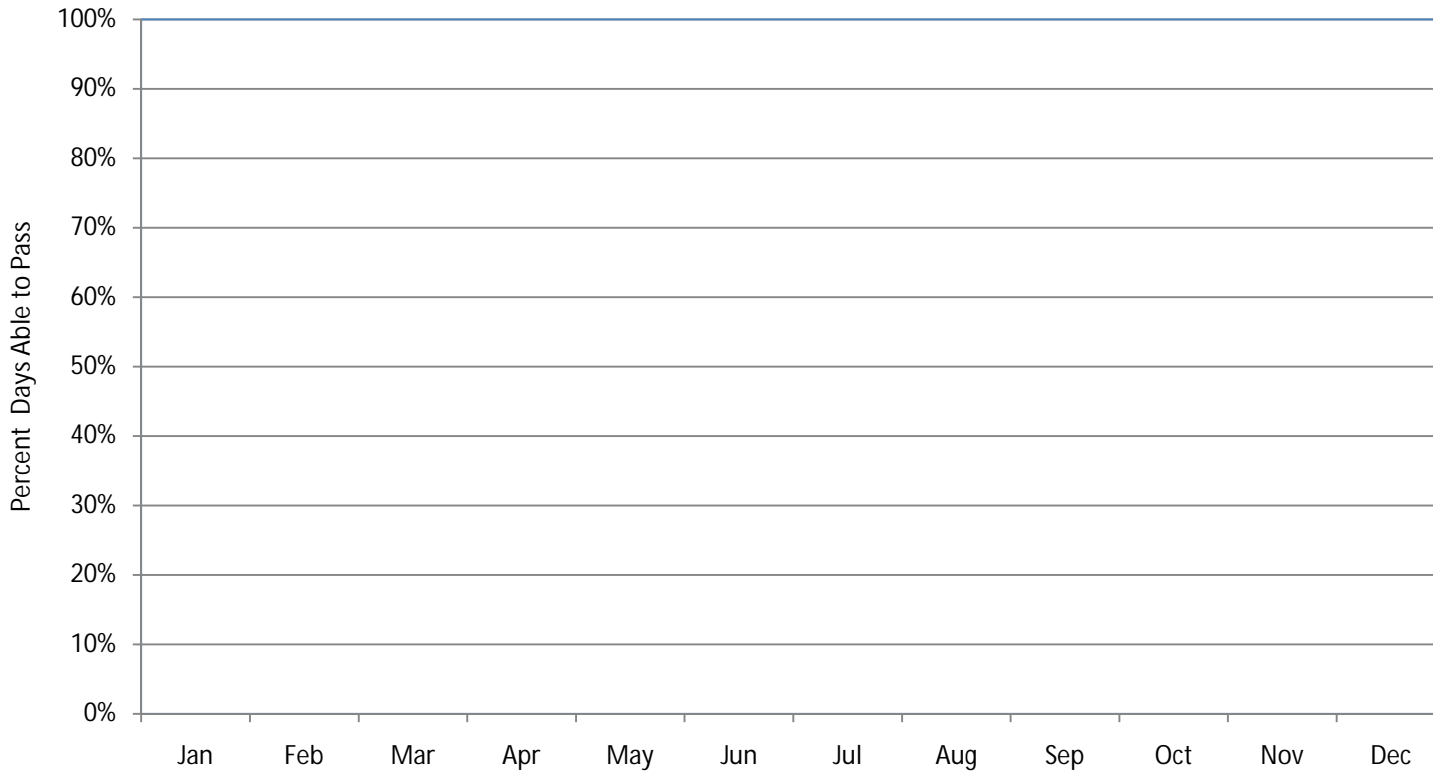
Passenger Cruise 120 ft bridge, 10 ft air gap



Vessels that can pass all months =Hawaiian Chieftain,

—◆— The Lady Washington

Passenger Cruise 125 ft bridge, 10 ft air gap



Vessels that can pass all months =Hawaiian Chieftain, The Lady Washington,