

## Guidelines for Allocation of Riparian Rights

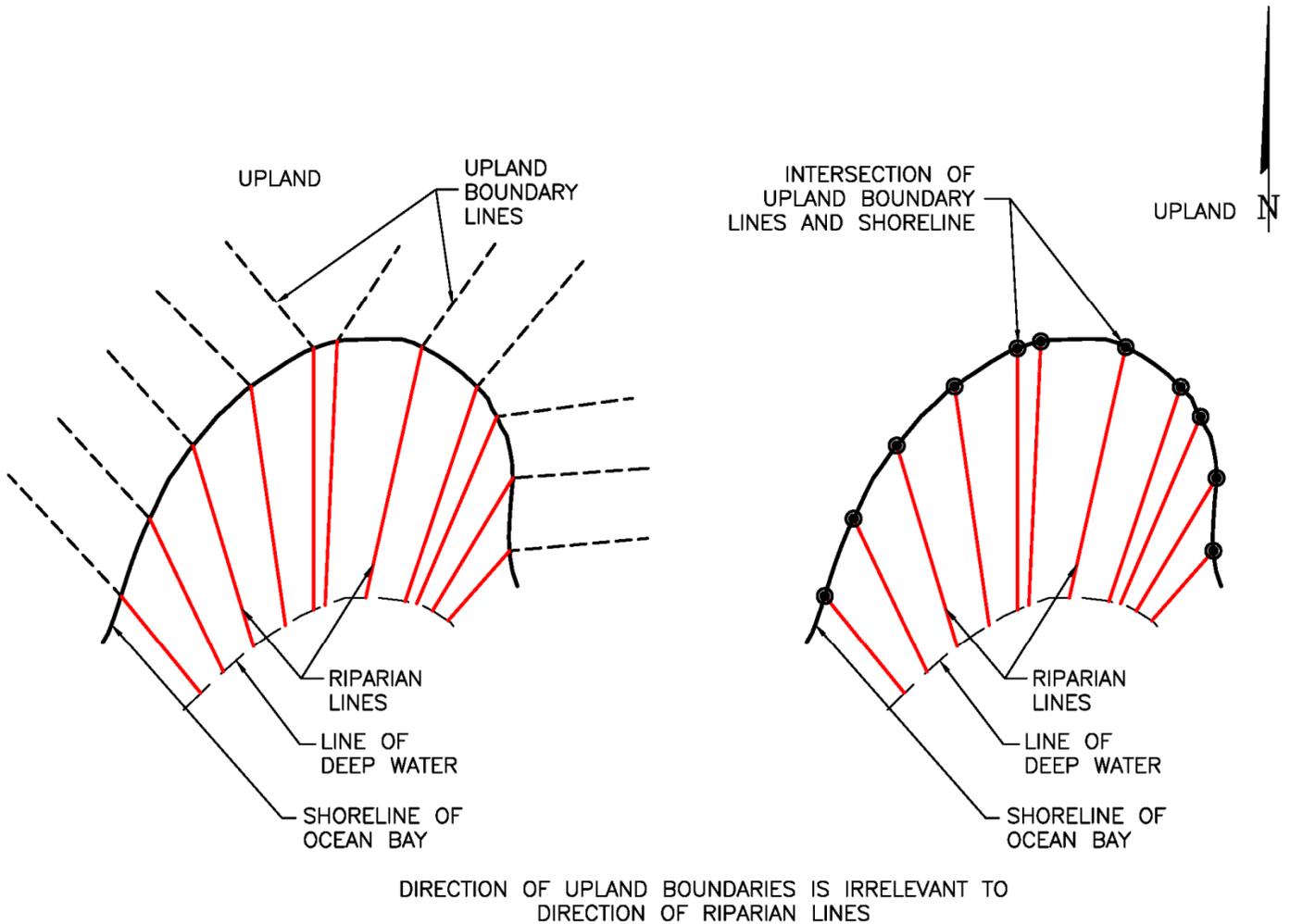
### The 1985 and 2009 Studies

In 1985 and again in 2009, the Bureau of Survey and Mapping sponsored a study of the effect of shoreline and channel geometry on the division of riparian rights. This study was prepared by Dr. David Gibson, Associate Professor at the University of Florida. The research was intended to analyze existing methods for making allocations of riparian rights together with a study of different shoreline configurations. The result was a set of recommended guidelines.

This document concentrates on the two riparian right “equities” of dominant interest among waterfront owners: (1) right of ingress/egress to navigable waters – the right to build a dock out to deep water, (2) right of view out to the edge of the main navigational channel (view). The following are conclusions from the studies and examples of riparian rights allocations.

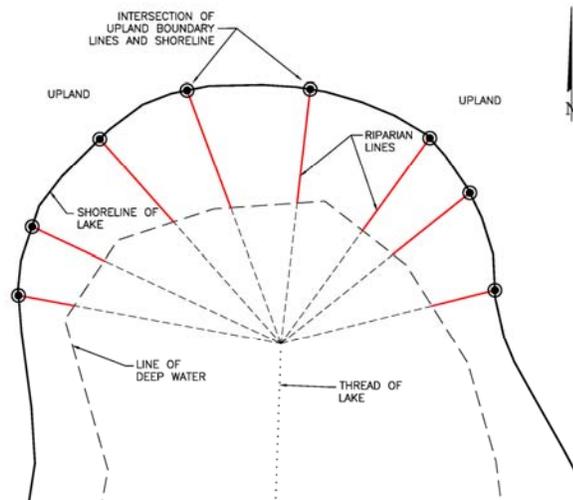
### Conclusions from Literature Study

1. Docking is a near-shore consideration and is limited by the line of deep water (line of navigability or line of navigation). The great weight of research indicates that when docking is the primary issue, courts will usually apportion the space between the shore and the line of navigability.
2. In considering docking when the shore is relatively straight on a large body of water (one without a nearby channel or thread), such as the ocean, a large lake, ocean bay or wide river, the dominant construction makes division lines perpendicular with the general direction of the shore extended to the line of navigable water. The shore’s general direction requires smoothing of smaller indentations and projections, and perpendiculars are constructed with the “smoothed” shore from the place where the side lot line hits the Mean High Water Line or Ordinary High Water Line.
3. Along a river without a marked channel and the opposite bank is in proximity to the area of concern, the dominant technique is to construct riparian lines perpendicular with the stream’s thread (median). The stream’s thread should be found as the median line of the water surface half way between the banks during ordinary stages of water height.
4. Along a river or other water body with a nearby marked navigation channel and a regular shore, most courts construct perpendiculars with the nearest channel edge as opposed to the thread. It appears that the proximity of a channel edge, or any other similarly established outer line, will most likely be used by courts for the apportionment using perpendiculars if the shore is relatively straight.
5. The direction of upland boundaries is largely ignored when apportioning riparian rights. The public’s mistaken belief that riparian lines are on the extension of their side upland lines is the most frequent cause of riparian disputes. Instead, the water body must be **equitably apportioned** as if all waterfront owners were standing on the shore looking out over the water body – see example below.



6. When the shore is irregular in the form of a cove or projection into an ocean, ocean bay, lake or river, most courts apportion the line of deep water to divide riparian rights as opposed to any perpendicular method – see example above.

7. Methods of apportionment designed for the whole water body, such as the center point method in lakes, thread of lakes, perpendiculars to channels or threads, should be used mainly for those riparian rights that require apportionment of the entire water surface. They may also be used to determine direction but not the terminus of near-shore division lines when they give substantially the same apportionment as a near-shore method. This would be true in round lakes with concentric water depth contour lines, along rivers with parallel banks and parallel channel, and along long lakes with consistent water depth contours – see example below.



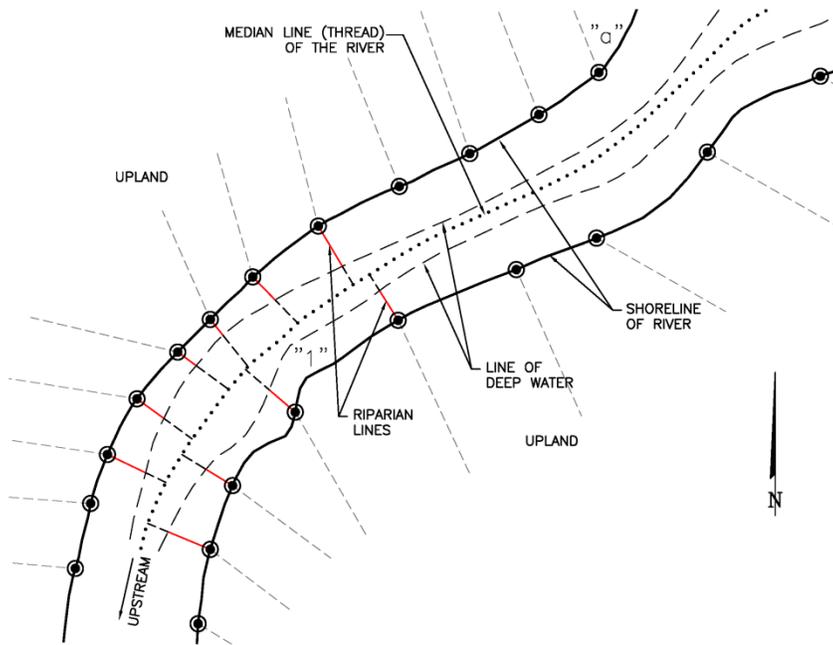
8. The apportionment of the line of deep water is the most universal technique for division of riparian rights that will give the same solution as more traditional techniques in many cases and will follow dominant national case law where the shore is irregular.

### **Recommended Procedures and Water Body Classifications**

In explaining allocation procedures, reference will be made to several sketches which were constructed to show numerous cases of water boundaries. It is presumed that the main considerations are docking, view and access to navigation channels. It should be noted that the upland boundaries of the lots surrounding the water are shown only as very light dashed lines for the reasons stated in no. 5 above.

**River, No Marked Channel, Parallel Banks – Perpendicular with Median Line** In the river example below, the water body would be classified as (1) being a narrow river where the opposite bank is of a consideration and (2) as having generally parallel banks without deep coves and projections.

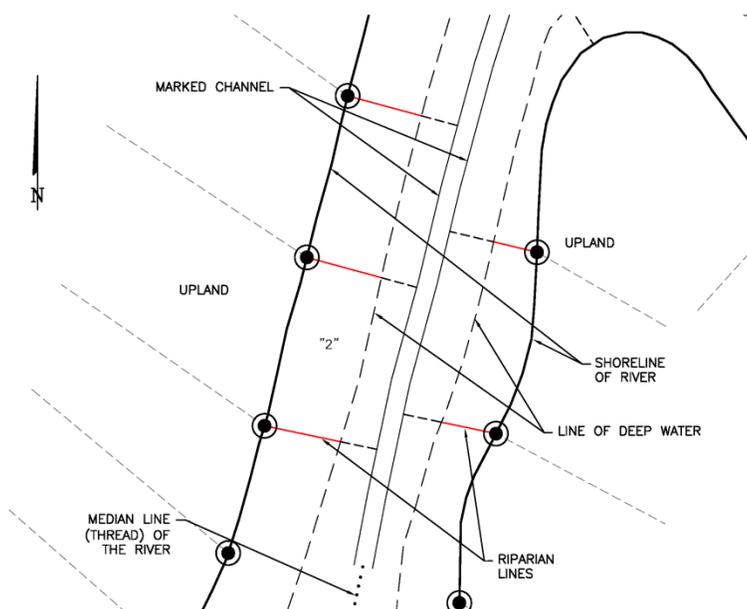
The main technique to be applied here is the “perpendicular with the stream’s thread” method. The banks being the limit of water at its ordinary stage would be determined. A median line would be constructed exactly midway between the banks at their ordinary stage of water. Perpendiculars would be constructed at the thread and produced back to the shore points. Docking and access rights would stop at the line of deep water – see example below.



For example, at area "1", the red riparian line is the "docking" line shown perpendicular with the dotted median line stopping at the line of deep water. The dashed extension of the riparian line is the "view" line out to the median line. These lines are: not on the extension of the upland side line, not perpendicular with the water boundary, or not perpendicular with the line of deep water.

Other docking and view riparian lines are shown in the neighborhood. This same technique would be used on the entire river upstream of point "a". None of the coves are deep and no inequity would result.

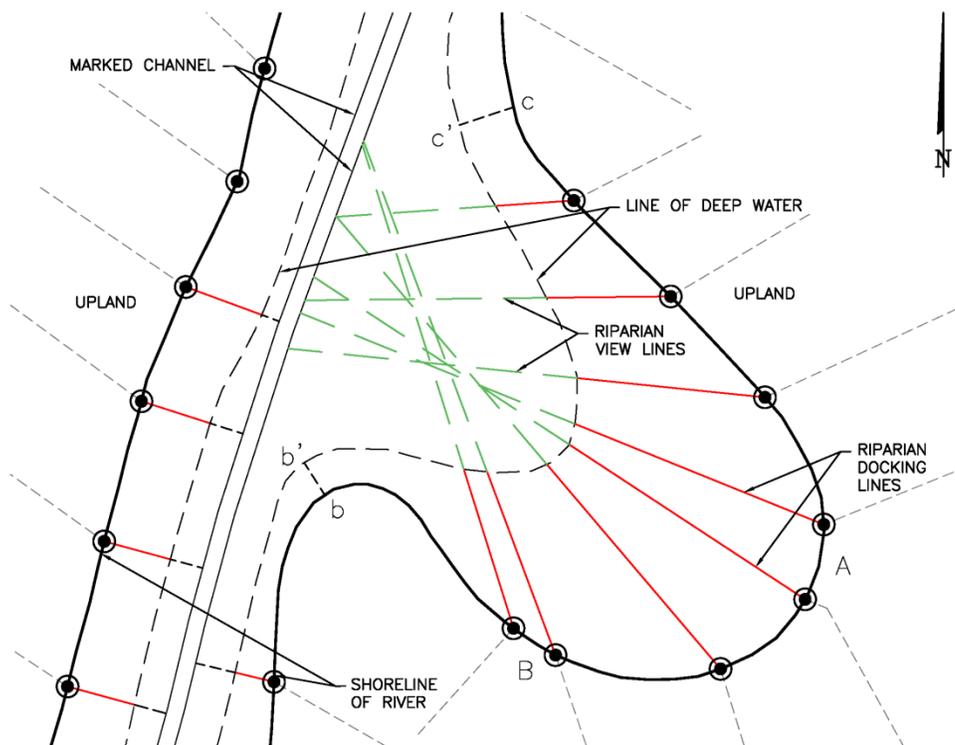
**River, Marked Channel, Parallel Banks – Perpendicular with the Channel Line** Downstream of the above example a maintained and marked channel exists that would take over from the thread for the apportionment base line. The channel probably has an east and west edge, and perpendiculars would be constructed at the nearest edge and run back to shore – see example below.



For example, at area “2” above, perpendiculars are constructed at the nearest channel edge and run back to shore.

**Deep Cove on One Bank – Apportion Line of Navigability** The deep cove on the east bank in the following example requires special treatment. Inequities are obvious; if the typical solution of extending the lot lines is applied, persons “A” and “B” would be entirely cut off from navigable water and the channel. If the previous technique of perpendiculars from the channel were applied, then person “B” would receive nothing. Therefore, the line of navigability should be apportioned.

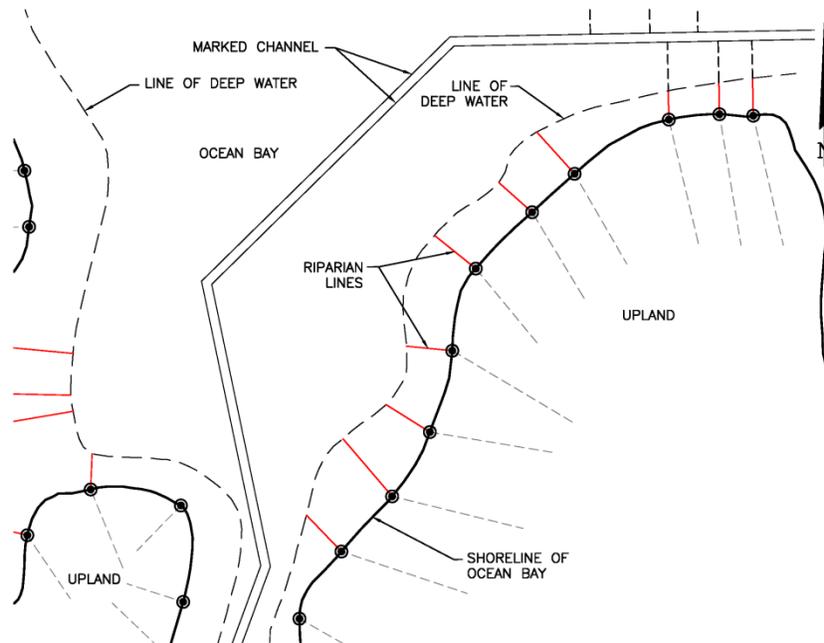
Finding the cove limits (headland points) would be a critical decision. The headlands of the cove would be identified as points “b” and “c” the places where the east river bank departs its generally parallel course and enters the cove. As a general rule the “45 degree method” can be used to find the headlands –where the shore first departs at a 45 degree angle from the general direction of the water body.



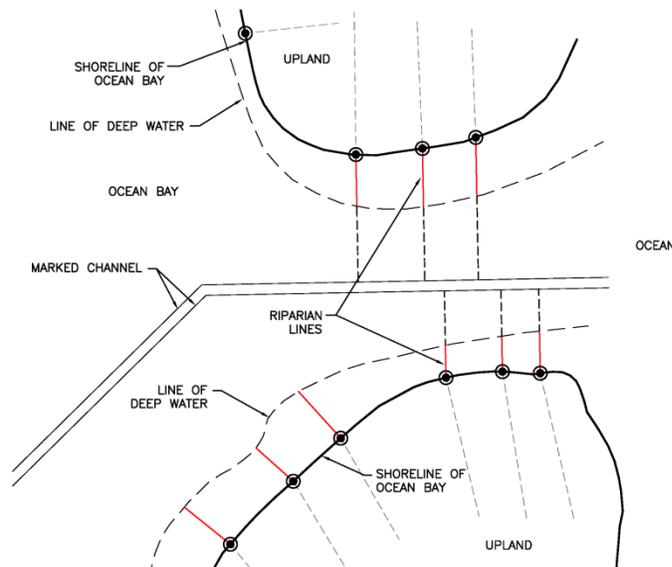
Points b' and c' would be established directly opposite the headland shore points using perpendiculars with the line of navigability. Between b' and c', the line of navigability would be divided in proportion to frontage. For example if the total distance b' to c' on the “outer line” is only 700 ft and the shore frontage from b to c is 1000 ft then each foot of shore frontage only receives 0.70 ft on the outer line – equitable apportionment. Straight lines would run back to shore points. The view zones would be the extension of the docking lines out to the channel line, (however view zones are not exclusive and they may overlap).

**Large Water Body -- Perpendicular with Shore** Northerly of the above example, on the east side of the ocean bay, the shore and the marked channel are diverging from each other. Since docking is a near-shore

consideration, then a near-shore solution is called for. The dominant method is to construct perpendiculars with the generalized shore, projecting these riparian lines out to the line of deep water.



**Inlet Channel – Perpendicular with Channel Line** At the inlet of the ocean bay, the proximity of the channel is now the important consideration, and perpendiculars would be dropped from it as shown.



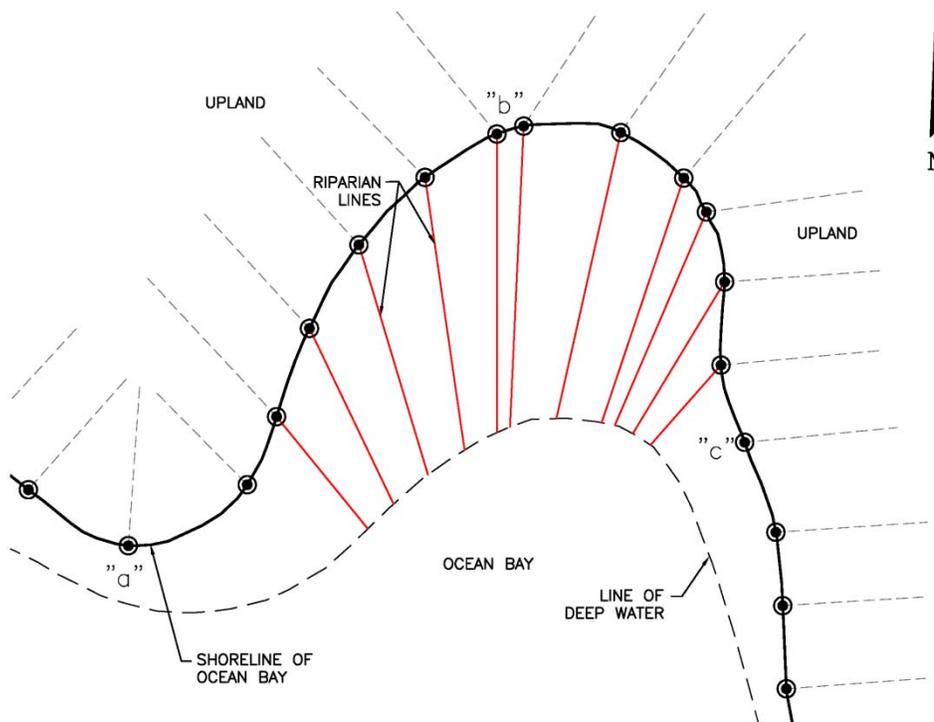
## Coves

**Large Bay Cove – Apportion Line of Navigability** Around the ocean bay, the dominant construction is perpendicular with the generalized shore direction, projecting these out to the line of deep water.

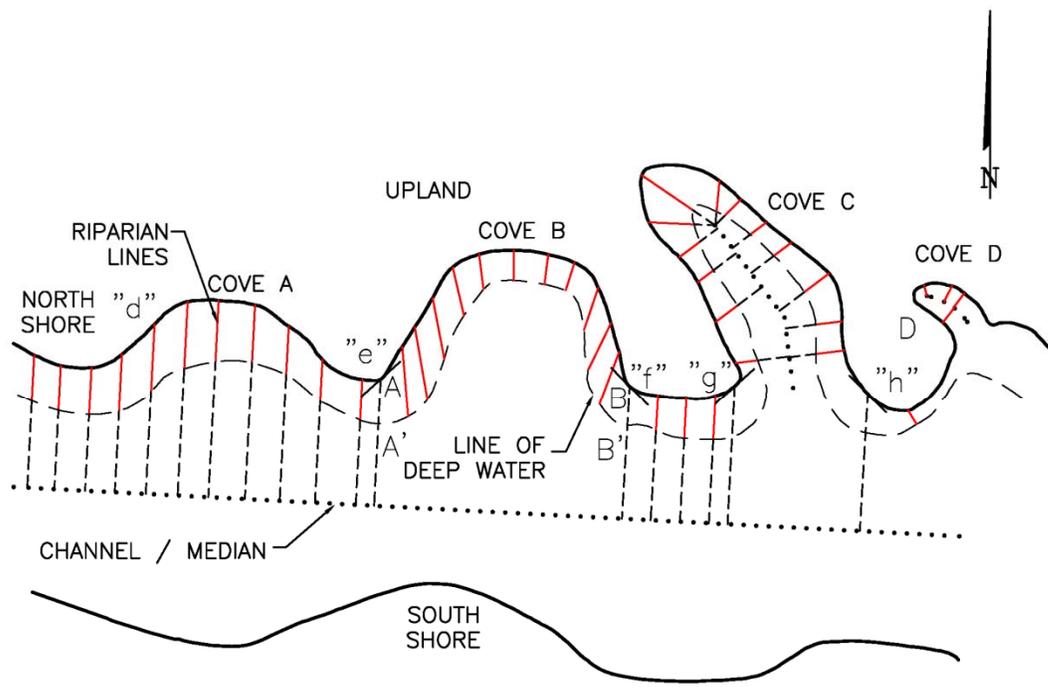
However, the large cove on the north side of the bay calls for apportioning the line of navigability. The main question would be determining the apportionment limits. There is a well-defined headland on the cove's west end at "a," but on the east side the cove's beginning is not so well defined.

As a guideline for thought, there is no use apportioning lots in which a more basic method works; therefore, start at the point of greatest inequity, point "b" in this case, and go in each direction until straight-line projections will intersect the line of navigability at nearly right angles well clear of the problem area, such as at "c" in this case. Apportionment between "a" and "c" will give each owner a portion of the line of deep water for constructing a dock.

A problem is noticed for owner "b". Due to small frontage, that lot will receive a very small portion of deep water frontage, perhaps not enough on which to build a dock without conflict with adjoiners. This is a situation for the neighbors or courts to address. The surveyor should not attempt to solve this situation. Instead, the surveyor should rely on geometric construction principles. After the "theoretical" riparian lines are determined, let the owners negotiate a solution (riparian boundary agreement or license) or let the courts decide an equitable solution.



Commercial marina leasing has now made the allocation of the entire water body a consideration. Consider the water body shown in the following figure. It could be a river, a long lake, or intra-coastal waterway and a marked channel is present, therefore, the dominant riparian construction is perpendicular with the channel. The north shore is undulating with three "coves" to investigate: a (A) "shallow cove," not indented enough to require a cove method apportionment, a (B) "deep cove," requiring a cove apportionment, and (C & D) "hidden coves" which departs to form its own geometry. The deep water line, shown as a dashed line, illustrates that cove C contains deep water while cove D does not.



**Shallow Cove A** is called "shallow" because the intersection between the shore and riparian lines are at 45 degrees or less throughout the cove. This "45 degree rule" is presented here for consideration. At a location such as "d" where the shore and riparian line are at 45 degrees, the width of the riparian zone is 0.71 times the frontage distance, but these zone widths still give sufficient width for dock building out to the deep water line (dashed) and leasing/view out to the channel line. In the Florida case *Hayes v Bowman*, this angle was about 55 - 60 degrees which caused a reduced riparian zone width 0.85 times the lot frontage. Therefore, it was recognized that the riparian zone width may be significantly less than the riparian frontage width.

**Deep Cove B** begins at location "e" where the angle exceeds 45 degrees. This is the beginning of a deep cove B calling for a cove apportionment. The beginning points on the cove are A and A'. The end of the cove at point "f" is identified as points B and B', where the channel perpendicular and the shore make an angle of 45 degrees. The deep water line from A' to B' is apportioned according to relative shore frontages between A and B.

**Hidden Cove C** begins at "g" and ends at "h", again using the 45 degree rule. However, since this cove has its own geometry separate from the main water body, each riparian parcel fronts on this cove (not on the main water body). Therefore, perpendiculars are constructed with the cove's median lines. At the north end of the cove, a center point is chosen at the deep water end, and riparian lines are connected with the central point for parcels northwest of that point. This allocates the line of deep water between those riparian owners.

In **Hidden Cove D** apportionment of the line of navigability would give the lot at "D" no deep water frontage. Courts could treat this cove as a separate shallow water body. Since it is shallow, the owners could have the riparian right of ingress/egress only to the shallow waters for small boats, but not to the line of deeper water.

They could also have the right of view to the cove's median line as shown. However, to solve this question, courts would have to address the issues involved and therefore it is outside of the scope of this report.

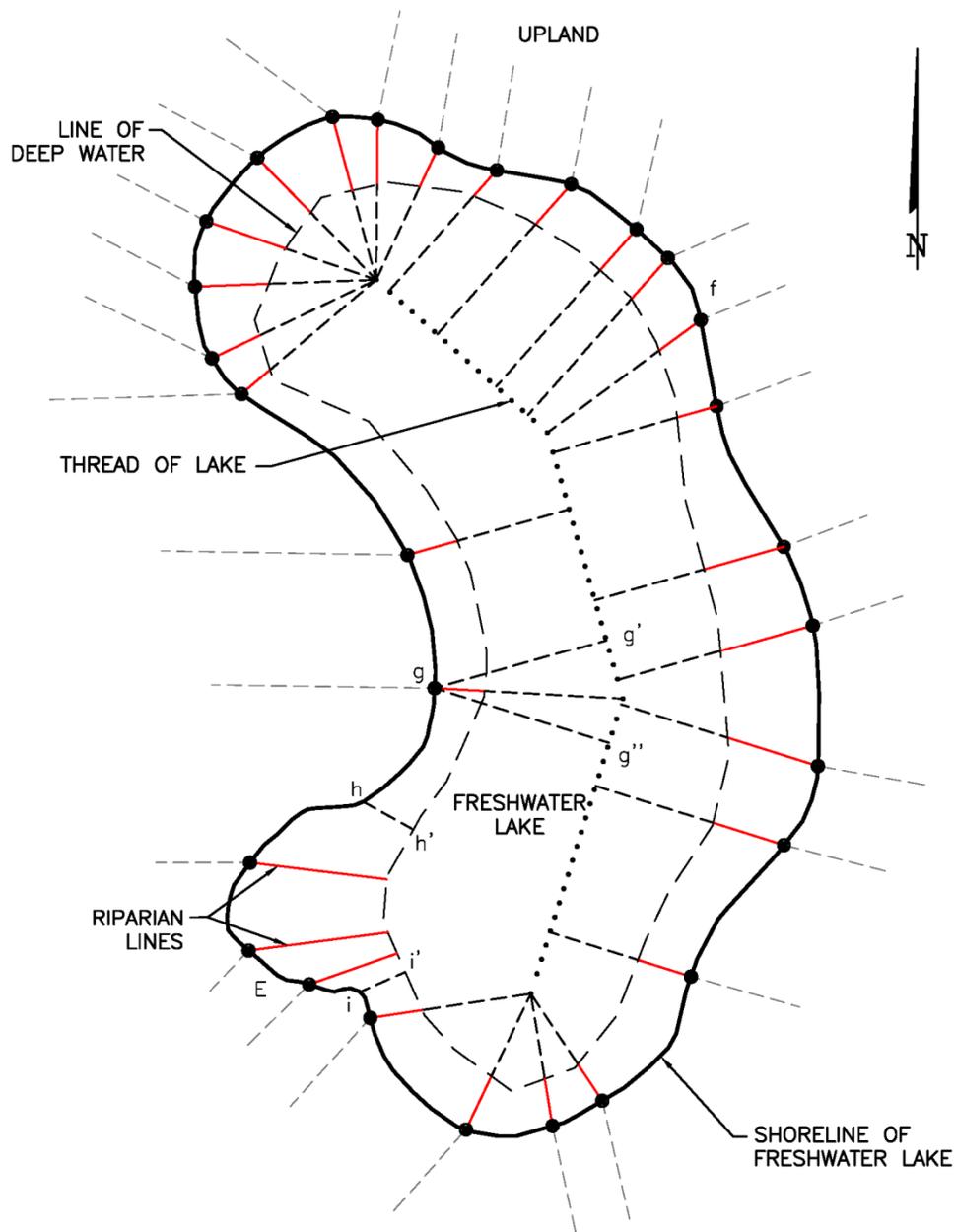
Of course, outside hidden cove D, riparian owners have clear access to deep water as shown.

**Long Fresh Water Lake – Radials to End Center Points – Perpendicular with the Median Line (Thread)** To apportion riparian rights in a "long lake", the traditional approach would establish center points in the semi-circular lake ends together with a thread midway between the banks. Around the lake ends, lines would radiate from center points to shore points, and along the thread, perpendiculars would be constructed and run back to shore points.

However, several geometric problems are encountered. At point "f", it's impossible to drop a perpendicular to either line of the thread. Therefore an equitable approach would be to extend the riparian line to the angle point in the thread as shown.

Similarly, at point "g" on the west shore, two perpendiculars are possible, each dropped to a different line of the thread. Which one? Again an equitable approach would be to draw the riparian line to the angle point in the thread.

At parcel "E" there is a deep cove, and a perpendicular with the thread construction would be inequitable. This should then be apportionment of the line of deep water by the cove method with headlands identified at points "h" and "i."



**SUMMARY STATEMENTS** – Please note that this document presents guidelines for a wide range of riparian situations. However, there are always unique situations that need to be addressed. The courts require that the allocation be “equitable” for the whole neighborhood. The geometric method, if extended up and down the shore, should be equitable for the whole neighborhood of riparian owners. In addition to a survey map of the parcel, it is recommended that a surveyor submit a riparian “report” that depicts the equity when the allocation is applied to the whole neighborhood.

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