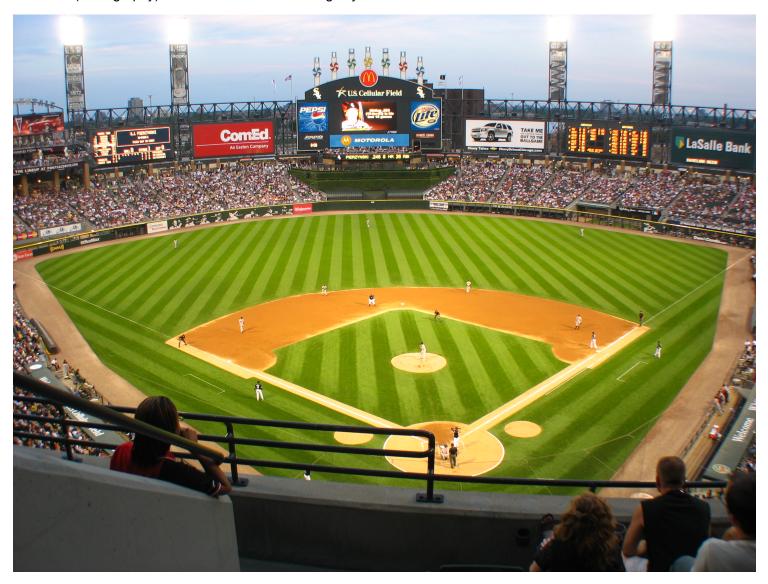# Lab 5: Plane Replacement

Due Oct 5, 2020 by 11:59pm   **Points** 10   **Submitting** a file upload

The task for today is to insert a new image texture into an area of an existing image, such that it is projected correctly. For example, the image below shows a planar area that is covered with a sign for "ComEd". Let's say that we want to replace this sign with a sign for... literally anything else.

Following the methods shown in class, map a new image onto a planar area of an existing image, using a projective transform (homography). You can use whatever images you want.

(Image from: **https://upload.wikimedia.org/wikipedia/commons/d/dd/US_Cellular.jpg)
(https://upload.wikimedia.org/wikipedia/commons/d/dd/US_Cellular.jpg)**

Hints

- You will have to remove (i.e., set to zeros) the region that you want to replace in your input image.
- OpenCV has a useful function named "fillConvexPoly" that draws a filled convex polygon on an image.

Turn in:

- Upload the original image.
- Upload the image that has the replacement texture.
- Upload the combined image, where the planar area is replaced by the other texture.
- Upload your Python program.