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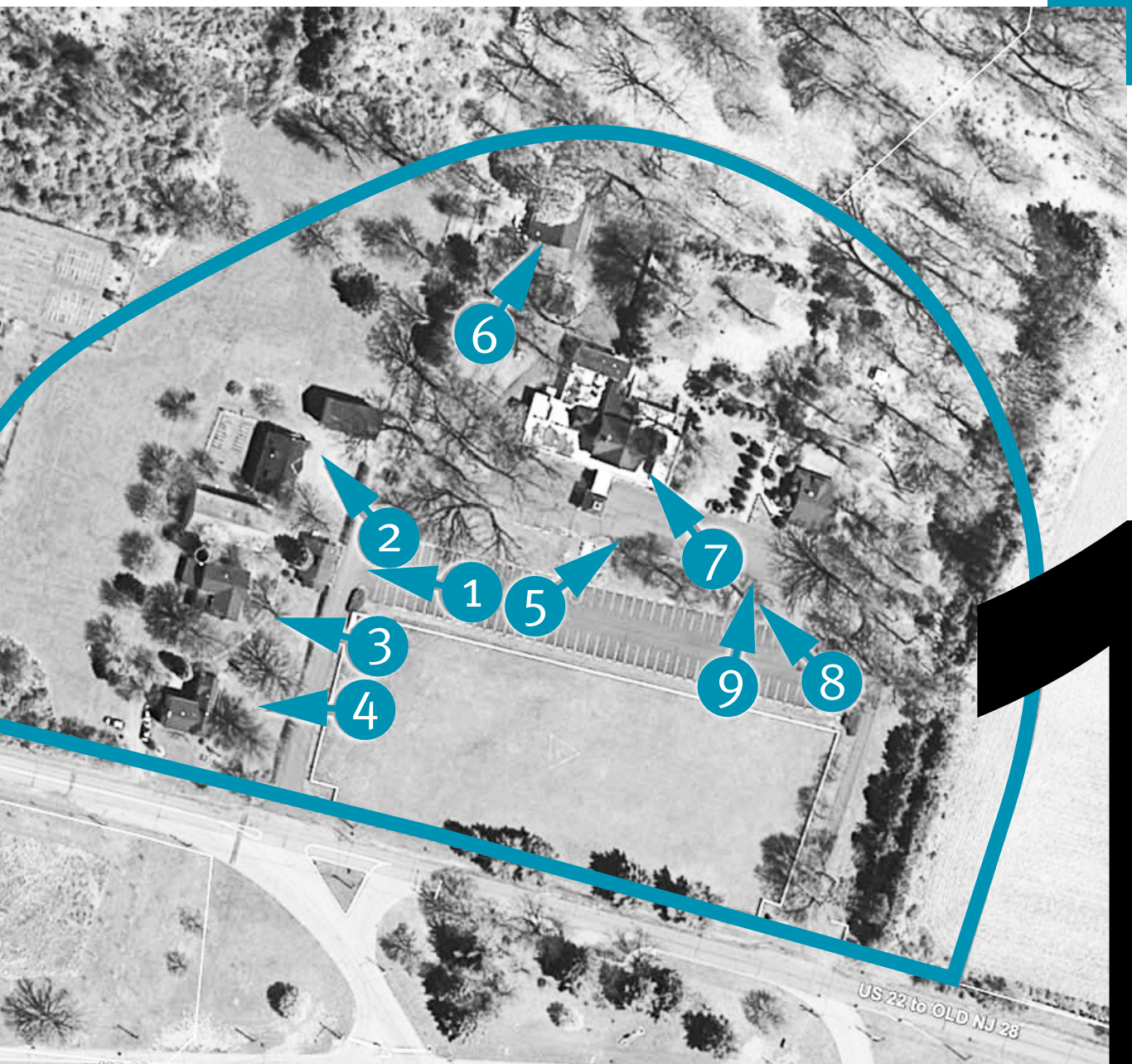
PRACTICE DIGITAL GRAPHICS



Digital Graphics in Staff Reports

By Nicola Mammes and Stuart Meck, FAICP

In the early 1970s, when the older of the two authors (Meck) began working as a planner in a large Southern city for a city/county planning commission, the preparation of staff reports on land-use matters was a complicated and lengthy logistical affair.

All reports had to be typed at least twice, once by the planner and again by a secretary on a correcting IBM Selectric typewriter, with plenty of liquid correction fluid also at hand. Maps of zoning districts and existing land use obtained from site visits and other graphics had to be shrunk on a photocopier and then pasted to blank sheets of paper. Applicants for preliminary and final subdivisions were required to submit some 20 copies of their plans in large cumbersome rolls that smelled of blueprint chemicals. These documents had to be hand-carried to the various city and county departments and mailed to the planning commission.

Finally there was the reproduction of the report itself, always a risky enterprise because the giant Xerox photocopier would often jam at critical times. Large agendas required the planning and secretarial staff members to hand assemble and hand staple elements of the agenda packet with a heavy-duty stapler, a ritual dance that involved circling the planning commission's conference table to pull together the materials which had been laid out in individual piles.

Things have, of course, changed over the past 45-plus years. The computer, word processing programs, portable document formats that can be posted for viewing on websites, and digital graphics have all affected planning practice, but to what degree?

This article focuses on the use of digital graphics in staff reports. When we speak of digital graphics, we are referring to photographs—including aerial photos—from digital cameras, scans, outputs from geographic information systems, satellite imagery from Google Earth, maps from Google Maps, drawings produced on programs like SketchUp, AutoCAD, and CommunityViz, and images downloaded or screen-captured from webpages.

The first part describes our research methodology and a summary of what we found. The second part describes the result of interviews with planners and others who sent in examples of reports. The third part shows the kind of digital graphics that planners are using in staff reports. We conclude with some observations and conclusions from what we found from our survey and interviews.

METHODOLOGY AND WHAT WE FOUND

For the first round of research, the authors drafted a questionnaire. Then American Planning Association (APA) staff translated this questionnaire into an online survey hosted by Survey Monkey and sent the survey link to APA members and *Zoning Practice* subscribers. Responses were voluntary. We asked seven yes-or-no questions (see below) and also asked for the name of the respondent, title, affiliation (i.e., what department or division the respondent was from), city, state, telephone number, and email. In connection with each of the questions, we asked for links to staff reports that showed what issue the question addressed. We received 40 responses from local governments and from three planning consultants. The responses to the questions are shown below.

Where the respondent provided a link to a staff report or planning commission agenda, we looked at the report and identified the reports that we thought were especially high quality, innovative, or illustrative of the issues posed in this article. We then contacted the respondents and interviewed them about the evolution of the use of digital graphics. The results of those interviews appear below.

While the survey did not pick up respondents from all regions of the United States (nor was it intended to do so), the responses

Question	Yes	No
Do your staff reports ever contain pictures of the site?	35	5
Do your staff reports ever contain satellite photography from Google Earth or other sources?	35	5
Do your staff reports ever contain drawings exported from SketchUp, AutoCAD, or other computer-aided design programs?	21	19
Do your staff reports ever contain maps from the local government's geographic information system showing relevant comprehensive plan or zoning designations, existing land use in the vicinity, and utilities (e.g., water lines and sanitary sewer and stormwater lines)?	36	4
Do your staff reports ever contain photographs or video stills from unmanned aerial vehicles (i.e., drones)?	3	37
Do your staff reports ever contain other graphics of information obtained through site visits?	27	13
Do your staff reports ever contain graphics submitted by an applicant (e.g., a preliminary plan or a planned unit development)?	37	3

Results of a survey conducted by the authors through the American Planning Association in August 2015.

are fairly consistent. Clearly the use of drones, which we discuss below, has not yet spread widely into planning practice. We were somewhat surprised that there are places where the reports do not contain graphics of information obtained through site visits, such as field notes on a base map. Similarly, graphic outputs of computer-aided design programs lagged somewhat, although they are certainly being used by consultants in the preparation of subdivisions, planned unit developments, and site plans.

WHAT PLANNERS TOLD US

Our respondents told us the addition of digital graphics to planning reports has been a gradual phenomenon since the 1990s. Common software packages and applications include ArcGIS, SketchUp, Adobe Creative Suite, Pictometry (an oblique aerial image-capture process that produces imagery showing the fronts and sides of buildings and locations on the ground, which can be used to measure the heights of buildings), Adobe Illustrator, Microsoft Word and
PowerPoint (where the graphics in the staff report are reproduced on the PowerPoint slides), and the snipping tool in Windows, which allows the user to clip graphics from the Internet and elsewhere and later insert them into the report. "The snipping tool is the greatest invention," contended Michael Blackford, AICP, deputy director for planning and development for Gahanna, Ohio, "because it can easily grab applicant graphics to include in the staff report."

Once the report is prepared, planning staffs convert it from Word into a PDF, and it is posted on the local government's website where it can be viewed and downloaded. (Authors' note: One difficulty with Word is that PDF files must first be converted to image files like JPEGs and then imported into the Word document.) Planners commonly employ Google Earth to show the site under consideration, although some respondents pointed out that there is a delay between the time the satellite imagery is taken—up to two years—and the time it is incorporated into Google Earth.

All of this has dramatically sped up the process by which staff reports are prepared. "Under the old predigital period," said Harry Rado, the supervising drafter and GIS analyst for Fairfax County, Virginia, "we would make far fewer graphics, and they were much more expensive to make. What we used to do in three weeks now takes only three hours or so."

There are certain graphics that are common to staff reports, including location maps, excerpts of zoning maps, site plans, photographs, and preliminary and final subdivisions. Depending on the nature of the land-use decision, said Melanie Tylke, a land-use and environmental planner for San Diego County, California, other graphics may be incorporated. "If a project might have environmental consequences, the staff will generate maps showing environmentally sensitive areas," she said. "If there are aesthetic impacts, the staff will require that the applicant submit a simulation of the building and the site." (Authors' note: This could take the form of a static image in the staff report, although it could take also be an interactive "fly-through" simulation as part of a presentation).

Jan Yeckes, the planning division manager for Arapahoe County, Colorado, said that the county is now requiring applicants to submit electronic copies of their applications, "unless there is some reason the applicant can't do so." In that case, the planning staff works with the applicants "to make these documents electronically available if possible. This makes it easier for the staff to pull from the application and to consolidate the information presented to the elected officials."

A champion of the use of drones is Ric Stephens, principal for Stephens Planning & Design in Beaverton, Oregon, who teaches a course in drones at Portland State University. Stephens used a drone in 2014 to assist the city's planning commission in preparing a community plan. Beaverton wanted to find sites that "were ideal spots to locate a commercial intersection" and would be zoned as such. The use of the drone and its camera allowed Stephens to photograph an intersection at a low altitude for a potential commercial site only a few hours before the planning commission meeting (Figure 9).

Stephens believes that drones have many advantages over aerial or satellite photography. "Drones only cost around $1,200 and can be used over and over. You will pay between $600 to $1,200 for aerial photography. With a drone, you get low altitude and high-resolution images."

Brian Slaugh, AICP, a principal with Clarke Caton Hintz in Trenton, New Jersey, and his colleagues produce staff reports for municipal clients that identify, typically on site plans and subdivisions, missing or inconsistent information from the applicant. (Site plan review is a major activity of planning boards in the state.) "Sometimes you get applications that are so incomplete that you have to make a point of that." Slaugh and others in his firm write directly on the site plan so that the planning board can see graphically where the problems are or where improvements can be made (see below).

City councils, planning commissions, and boards of zoning appeals profit from these new technologies. Our respondents told us that digital graphics focused the attention of elected and appointed officials on the land-use decision itself. "Time is better used during [planning commission] meetings because the reports are available before the meeting. They have time to review the graphics, which explain the text more, and so they spend less time asking questions and more time discussing the decision that has to be made," said Jan Yeckes.

EXAMPLES OF DIGITAL GRAPHICS IN STAFF REPORTS

The following are examples of digital graphics in staff reports. These reports were prepared by consulting planners at Clarke Caton Hintz, an architecture, planning, and landscape architecture firm based in Trenton, New Jersey. We selected them because of their clear and innovative use of graphics. All graphics date from reports written in 2014.

A common technique is to superimpose site boundaries over aerial and satellite photos.

Figure 1 is part of a review of a preliminary site plan to convert an existing warehouse space in Branchburg, New Jersey, into office space and expand the parking area. The report was prepared by Michael Sullivan, AICP, and Kendra Lelie, AICP.

Figures 2–5 are a series of photos and graphics related to a site plan review of the Ryland Inn located in Readington Township, New Jersey, where the applicant is proposing to expand the existing building to accommodate three new banquet rooms and restaurant space. In addition, a new hotel is planned.

The planners' review was critical of the site plan because it was missing a significant amount of information, including major discrepancies between the planting plan and the site plan, building footprints not matching, and differences in the location of fences and walls. Consequently, to make their point clear, they produced a "Map of Discrepancies" (Figure 5) that was keyed to a numbered narrative that indicated the precise nature of the problems.

Figures 6 and 7 are an aerial photo and a photo simulation for a proposed indoor sports

center and retail shops in Lawrence Township, New Jersey. The indoor sports center is proposed as an inflatable dome on the western portion of the lot in the center part of the photo and is considered to be the principal use of the property. The zoning district in which the development is to be located has a 35-foot height limit, but the applicant is proposing a dome that would reach 76 feet, necessitating a variance application. Planner Brian Slaugh, AICP, used the photo simulation in his report to demonstrate the visual impact of the dome's height.

In Branchburg, New Jersey, a tractor company requested a minor site plan approval to construct a carport canopy with roof-mounted solar panels over a previously approved, fenced outdoor storage area. In Figure 8, consultants Carl Hintz, AICP; Michael Sullivan, AICP; and Kendra Lelie, AICP, took the proposed site plan, highlighted the carport canopy, and also added commentary on recommended changes.

Drone enthusiast Ric Stephens, principal of Stephens Planning & Design, Beaverton, Oregon, provided the photograph in Figure 9, which the Beaverton Planning Commission used in its evaluation of commercial sites in the city.

Clarke Caton Hintz, PC; map data ©2014 Google

Figure 1. Satellite photo with site boundaries.

Aerial with photo locations

Clarke Caton Hintz, PC; map data ©2014 Google

Figure 3. This index map shows the locations on the Ryland Inn property of the various photos included in the staff report.

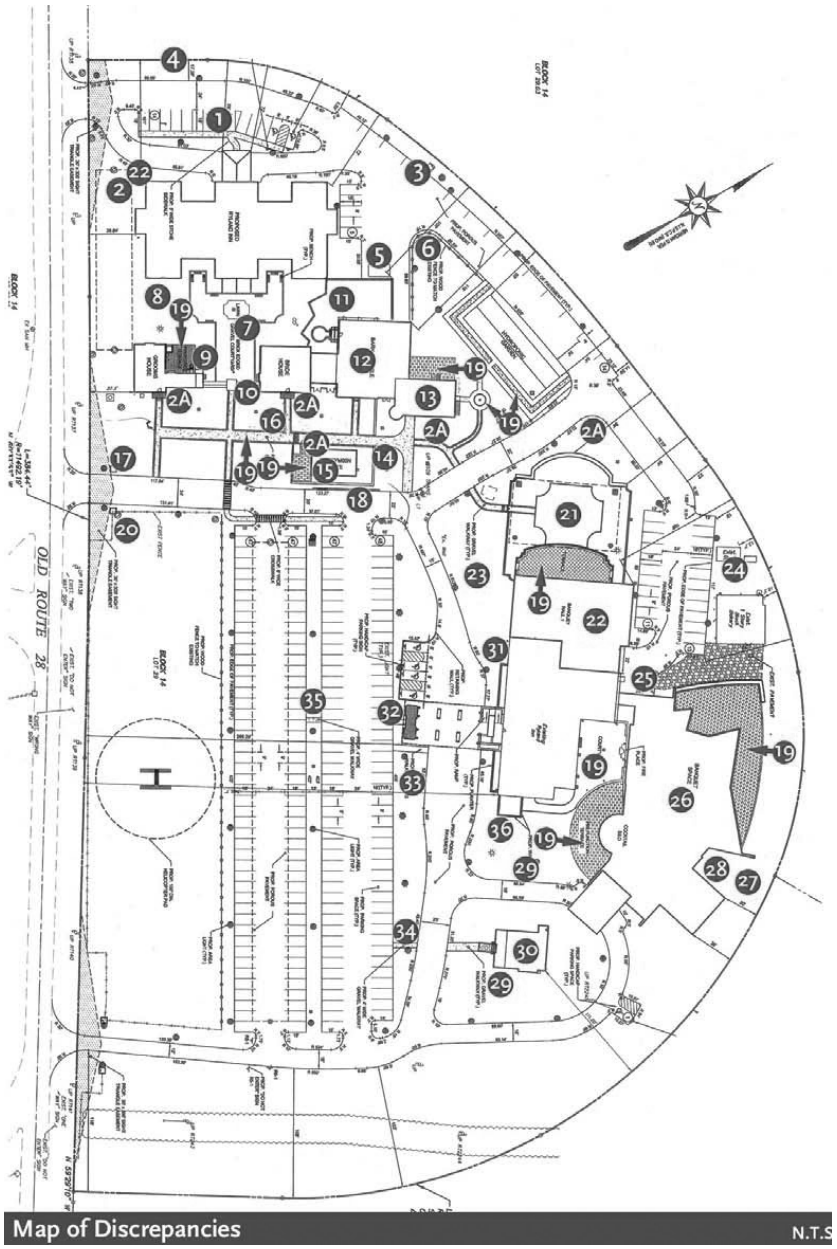
Photo 5

Clarke Caton Hintz, PC

Figure 2. The existing Ryland Inn.

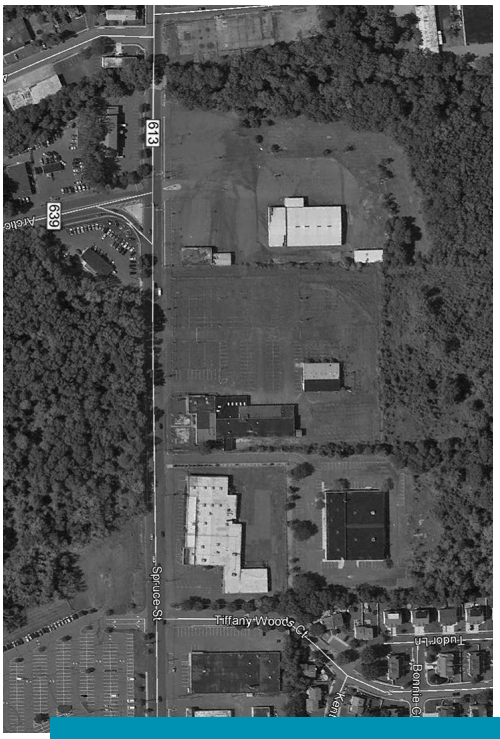
Clarke Caton Hintz, PC

Figure 4. The buildings on the western side of the site are proposed to be renovated.



Clarke Caton Hintz, PC

Figure 5. This map shows the locations of major discrepancies that need to be addressed in the site plan for the Ryland Inn property.



Clarke Caton Hintz, PC; map data ©2014 Google

Figure 6. The site of a proposed indoor sports center and retail shops in Lawrence Township, New Jersey.

TAKEAWAYS AND CONCLUSIONS

While this low-budget survey has only tapped the surface, the increased use of digital graphics has some takeaways for contemporary planning practice.

The expanded use of digital graphics should really start with a conversation with the clients of the staff reports—the planning commission, the board of zoning appeals, and, of course, the legislative body. We recommend that planners ask the members of these bodies what graphics they would like to see routinely included in the reports. Further, it would cut down on paper to invest in laptops that would be located in front of each member with the report on the screen. Still,

there will probably always be a need for paper copies for members of the public.

Planners should standardize the types of graphics to be used in all staff reports and adopt a standardized format (see References below). And, as San Diego County, California, does, there should be a list of optional graphics to be included when special situations arise.

The graphics should ideally be integrated with PowerPoint presentations of the particular case to the decision-making body and the public to orient them to the nature of the proposal in the context of the surrounding area.

We anticipate greater use of visualization tools (see References below) in staff reports. However, we believe it should be the responsibility of the applicant, rather than the planning staff, to develop the images, since it is the applicant who is asking for development permission and is responsible for the accuracy of the images.

When photographs, including aerial and satellite photos, are incorporated, it is important that they be dated, with the name of the person taking them or the source of the imagery, like Google Earth. The reason for doing this is that the photographs and imagery are part of the public hearing record and may be significant if there is litigation.

The real beneficiaries of digital graphics, we conclude, will be the public. No longer is it necessary to trudge up to the local government building to pick up an agenda packet. All that must be done is to go to the local government's website and download the material. This democratizes planning by making planning documents and application material available well in advance of scheduled hearings, hopefully leading to a better informed citizenry who can analyze and challenge or support proposals for land development.

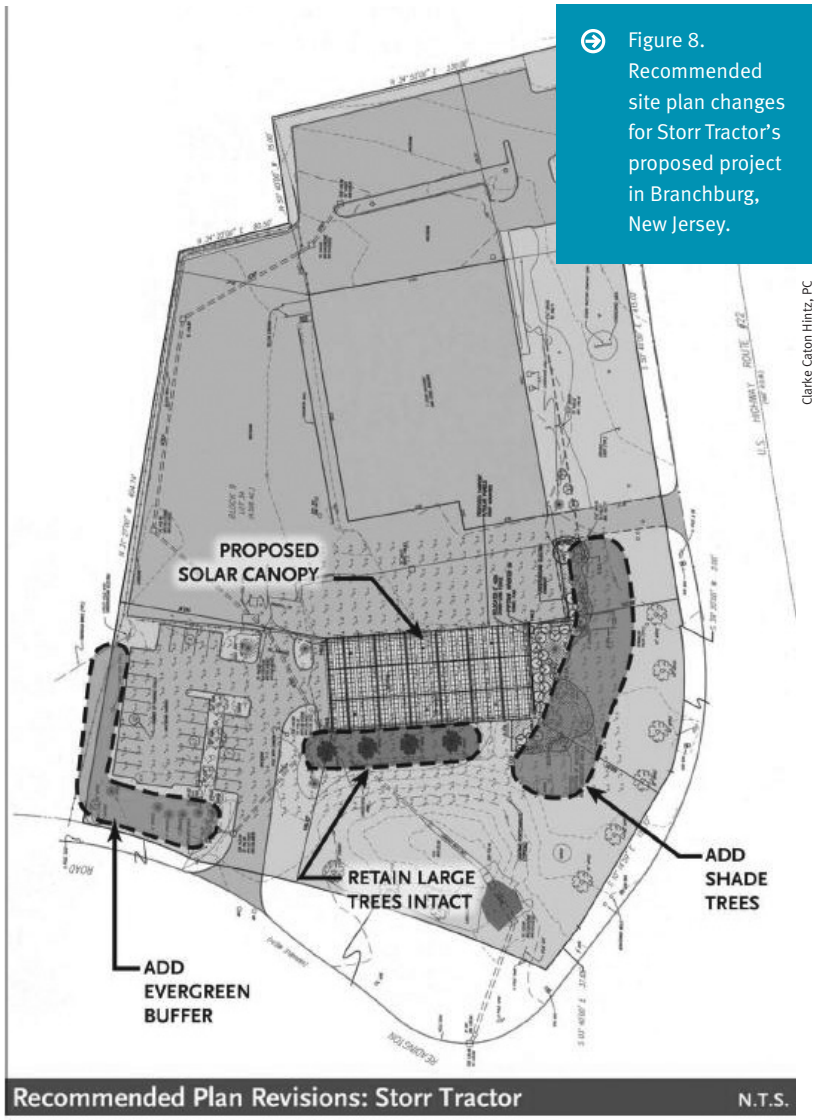
Examples of Staff Reports Using Digital Graphics

Here are some examples of recent staff reports where digital graphics have been incorporated to various degrees.

- Arapahoe (Colorado), County of. 2015. Colorado Planning Commission Meeting, August 4: tinyurl.com/qejzbej.
- Big Bear Lake (California), City of. 2015. Planning Commission Agenda, September 2: tinyurl.com/nanhodb.
- Fairfax (Virginia), County of. 2014. Staff Report, February 19 (this is a *very* long report): tinyurl.com/qggccy6.
- Jefferson (Louisiana), Parish of. 2015. Planning Advisory Board Meeting, November 19: tinyurl.com/qyw6hjk.
- Salem (Oregon) City of. 2014. Staff Report, October 7: tinyurl.com/pk2ewsx.
- San Diego (California), County of. 2015. Planning Commission Meeting, September 11 (click on various agenda items): tinyurl.com/neofj5l.

Clarke Caton Hintz, PC; map data ©2014 Google

Figure 7. A photo simulation of a proposed indoor sports center and retail shops in Lawrence Township, New Jersey.



Clarke Caton Hintz, PC

Figure 8. Recommended site plan changes for Storr Tractor's proposed project in Branchburg, New Jersey.

UAV photography by Ric Stephens

Figure 9. This photograph of an intersection in the South Cooper Mountain area of Beaverton, Oregon, was taken with the assistance of an unmanned aerial vehicle.

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References

Guillot, Craig. 2015. "Drone's Eye View: The Ups and Downs of Using This New Technology," *Planning*, October. Available at planning.org/planning.

Lavigne, Devin. 2012. "New Tools for Zoning and Development Visualization," *Zoning Practice*, March. Available at planning.org/zoningpractice.

Meck, Stuart. 2005. "Better Site Visits," *Zoning Practice*, February. Available at www.planning.org/zoningpractice.

Meck, Stuart, and Marya Morris. 2004. "Formatting and Writing the Staff Report," *Zoning Practice*, November. Available at planning.org/zoningpractice.

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ARE YOU MAKING THE MOST OF DIGITAL IMAGERY IN YOUR STAFF REPORTS?

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