

Integrating Public Participation and GIS Tools Improves Decision Making

Introduction

The Town of Hayden, population 1,643, is located 25 miles west of the resort town of Steamboat Springs, in the Yampa River Valley in Northwest Colorado. Hayden is surrounded by many large working ranches and has a strong agricultural and mining history that continues to be a prominent aspect of our community today.



Like many communities throughout Western Colorado, Hayden is at a crossroads. Hayden has a strong “sense of self” and of its rich heritage, however, it is at risk of becoming a bedroom community for the large economic driver of Steamboat Springs. Mostly overlooked during the tremendous growth in 1990’s Hayden has recently been “discovered” and the pressures of growth are just beginning. Hayden has taken the steps to be pro-active rather than re-active in the face of growth changes and launch a comprehensive planning effort.

With the support of the Gates Family Foundation and the Orton Family Foundation (www.orton.org), Hayden is pursuing a Comprehensive Plan utilizing GIS and the CommunityViz suite of planning software and a Community Video for the visioning process.

November 15 Town Meeting

The Town of Hayden gathered residents on November 15, 2004 for "Visualizing Hayden's Future", a presentation of the draft Comprehensive Plan. This meeting brought together over 120 residents, the core of our community, young and old, in a pro-active, dynamic and interactive approach that allowed the voices of all residents to be equally heard. The meeting integrated keypad polling, dynamic GIS analysis, and real time visualization with traditional master planning presentations.

Many residents felt that it was the first time that so many community members (more than 7% of the town population) had come together to work on a positive, non-confrontational issue and to plan out their future. The purpose of the meeting was to:

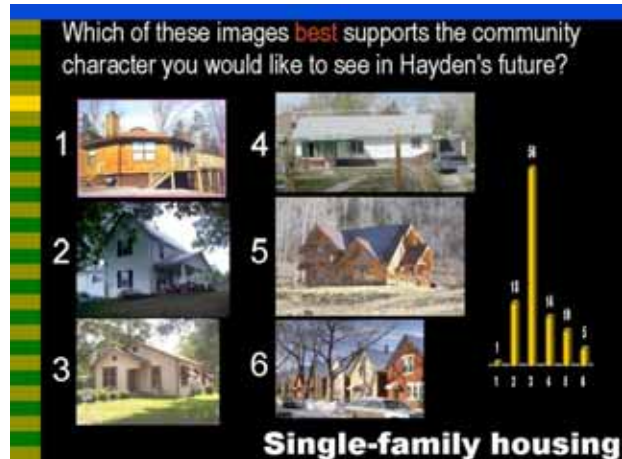
- Provide an overview of Comprehensive Plan Process
- Reaffirm core values and character identified in earlier public forums
- Understand how growth relates to the Town's fiscal health
- Visualize various types of growth and how it might impact Hayden
- Give direction to the Comprehensive Plan about how the Town should guide growth in the future

The meeting was held from 6-9pm with time for a buffet dinner. The room was set up with tables of 8-10 people each, with three large projection screens for the visuals. Daycare was provided. The participant's keypads were laid out at each table.

Keypad polling technology allowed residents to express their viewpoints and to be equally understood without intimidation, power struggles or where only the loudest or boldest are heard. These polling results also provide our community with concrete "data" from polling questions on character, values, fiscal health and more for which our elected officials can base decisions and have the courage to say no when a proposed development does not fit the community's stated priorities. Interestingly enough, we discovered that we are very aligned in our visions for the future of this community. Results from this meeting are posted at <http://www.yampavalley.info/government096086.asp>.



The meeting began with “warm-up” polling questions followed by a presentation by Jeff Winston of an overview of “What is a Comprehensive Plan”, then a review of the Hayden Comp Plan including the 4 key directives of (1) Fiscally Balanced Growth; (2) Compact Growth; (3) Compatible Land Uses; and (4) Community Character. The meeting then returned to interactive polling on community character for different housing and commercial types; street character; sidewalk character and signage.



Participants selected their highest priority in each of the following:

1. Preserving Hayden’s “Town Form/Character”-- Encourage grid streets that extend the existing geometry of the Town (44/106 votes);
2. “Financial Health”-- Improve existing commercial development (upgrade the Downtown, encourage new retail, insist on quality development, assist local stores) (42 votes/107 votes);
3. “Compact Growth”-- Start with development within the existing boundaries of the Town (infill development) and grow outward (60/109 votes) and
4. “Compatible Land Uses”-- Allowing only compatible land uses next to each other (44/110 votes).

84% of the attendees felt the Town of Hayden should follow the comprehensive plan with some to little flexibility and try to follow it as best they can.

ArcGIS based CommunityViz showcased “build-out” of the Hayden valley with 3-D scenarios comparing “suburban development” “compact development” and full suburban buildout with approximately 15,000 residents. Participants characterized the visual fly-throughs of these scenarios as “poignant” “arresting”; and “insightful”.



Another key element demonstrated by CommunityViz was displaying the fiscal impact of growth upon the Town, clearly demonstrating the need for increasing commercial and business as a component of the Town's economy and that residential growth should only occur WITH commercial and business growth, not before. Currently services are greatly subsidized by airport revenues and the CommunityViz model clearly demonstrated the need for commercial growth to occur prior to additional residential growth in order for the community to obtain a fiscal balance.

The Town of Hayden has created a vision of "a community where people choose to live and work—a friendly, small community of neighborhoods, where people recognize each other, share a sense of community and "family type" relationship. It appears that a shift has occurred in the planning process that the community is realizing it can direct incoming growth in a way that obtains a better fiscal health and retains this sense of community vision. 64% of the participants voted they are willing to limit residential development (without an appropriate level of commercial development) to obtain fiscal balance. Of issues concerning the participants, of most concern was retaining open space and agricultural heritage (25%) then a tie with growth (23%) and then economic vitality (23%). Most interesting was 65 percent of participants said they would like to see between 250 and 2,500 new residents in Hayden within the next 20 years (in high contrast to an earlier meeting where voiced input reflected a desire for much higher levels of growth). The majority of participants (84%) expressed a "very high" to "high" likelihood that they would attend another session in the future.

Progress Since November 15th

On April 14th, 2005, the town of Hayden approved the significantly revised Comprehensive Plan. Concurrent with their work on updating the Plan, the Planning Commission has also been working diligently on updating its Zoning Codes to make sure the new Plan has its implementing and enforcement Zoning Codes in place soon after Plan adoption. The town expects to adopt its new Zoning Codes in September of 2005.

The Comprehensive Plan is considered innovative due to its fiscal-based approach to planning the Town's physical growth. That is, the Plan focuses the community's attention on two key concepts that affect the financial sustainability of the Town: Fiscally Balanced Growth, and Compact Growth.

Fiscally Balanced Growth identifies the need for the Town to reduce its dependence on the airport as a major, and limited, revenue source. To accomplish this, the plan provides direction to

- 1) reduce leakage of local expenditures to other communities (create local industry to allow residents to work close-by), and
- 2) to aggressively encourage additional commercial to take advantage of the potential revenue passing by on Highway 40.

Compact Growth identifies the need to grow gradually, incrementally, to avoid the fiscal impacts of added maintenance associated with 'leap frog' development. In this regard, the Plan outlines three "phases" for growth:

- o **Stage One** of the Comp Plan is designed to maintain Hayden as a fiscally balanced community and limit residential growth to the close-in, easy-to-serve areas while the town pursues expanding job and tax producing non-residential uses.
- o **Stage Two** is designed to allow an increased rate and area for residential growth once Hayden becomes more fiscally balanced, while continuing to increase broadening the tax base as described in Stage One.
- o **Stage Three** assumes that the town has broadened its tax base sufficiently to be able to support residential growth at greater distances from the town by allowing annexation of large areas within the Town's three-mile boundary.

One of the significant accomplishments of the Plan is to provide the Town with the resources (data and policy directions) to negotiate effective impact fees with developers who want to develop 'out of sequence' with the Stages identified.

Through conversations with elected officials and town staff, the Town of Hayden's approach to reviving its Comprehensive Plan through an inclusive, "people-driven" process has uniquely and powerfully positioned the town through a change in mind-set of the governing board combined with the ability to monitor growth through fiscal indicators. Under the new Plan, the fiscal burden of growth is placed on the developer and incremental growth is mandated through a required phased approach. The highly inclusive, public process should ensure the vision and goals outlined for the community are followed and fulfilled.

Success and Challenges

We believe the patient introduction of a multi-tool and multi-process approach, held together through the paid efforts of a half time coordinator and the constant, intense focus on citizen involvement and public process produced the needed excitement and engagement that has now set Hayden on a sound, long-term course of guiding its growth. Connecting citizens with a high level of communication and information to better harness their collective ideas and vision for the community has proven essential in helping the town residents in becoming pro-active in the often mundane task of planning their community's land use future. In reviewing the Hayden project, one of the most important components towards building this successful community visioning process has

been the “people factor”. Over the past two-years, the generous and critical funding by the Gates Family Foundation supplemented by financial and tool support by the Orton Family Foundation has allowed for the following intervention efforts:

1. Production of a Community Video;
2. Utilization of CommunityViz to analyze a huge proposed development (4S) and then later to aid the Town in envisioning its future and re-writing its Comprehensive Plan;
3. Application of Key Pad voting;
4. Preparation of the Comprehensive Plan that effectively identified the challenges of growth within the Community and documented a method of managing growth long term, consistent with the Community’s locally generated vision and goals.
5. Facilitation of a critical planning meeting in November 2004;
6. Introduction of an internet-based “virtual town hall” where citizens could access information presented at public meetings and even make their voice heard in a forum section; and
7. Provision of a half-time coordinator responsible for coordinating innovative efforts, promoting participation by residents and generally keeping the project on track.

Each component will be discussed separately below.

1. ***Community Video:*** The production of the Hayden Community Video created a common understanding and baseline awareness of the expectations and mindsets of a community through the participation by and interviews of many residents. The “voice” of the community was amplified through the use of the video, which then “broadcasted” the individual issues, making them comprehensible for the community and creating an initial “community statement”. The successes included:
 - The video clarified what the residents found special and important about their town...in other words, the Video helped the residents articulate and document their values and what they wanted to preserve in the planning process.
 - The one-on-one “interview” aspect of video engaged critical stakeholders and encouraged discussion of issues, concerns and ideas.
 - The video captured a historical timeline of the community and was also discussed as an “anchor” for promotional opportunity on the history of Hayden.
 - The video also fostered community pride and ownership. The successful “premier” (over 150 people attended—was the highest turn out in recent memory.

Challenges include:

- The community premier of the Video on 3/6/04 did not adequately “capture” the audience’s reactions, ideas and concerns in a way that could be translated directly into Goals, Objectives for the Comprehensive Plan. In retrospect, keypad voting would have been effectively used here to gain consensus on the community’s vision and goals and to clarify and prioritize the issues and concerns raised by the Video. Part of the problem was combining the premier

with an initial CommunityViz presentation and discussion—the Comp Plan component should have been held on a different day to allow for adequate celebration, discussion and chronicling of reactions to the Video.

- Producing a Video proved beyond the technical competencies of the team initially overseeing the video's production. Fortunately the town was able to procure the help of a new videographer/producer Hayden resident to help in the editing and production process.

2. **CommunityViz:** (www.communityviz.com and www.placeways.com) This software allowed for the 3D depiction of various development scenarios enabling a more accurate understanding of the visual consequences of alternative land use choices. It also created an understanding of the fiscal and traffic impacts of development and possibilities for mitigation with multiple indicators accomplished through "layering" of information and indicators that portrays a comprehensive picture of the impacts positive and negative towards growth.

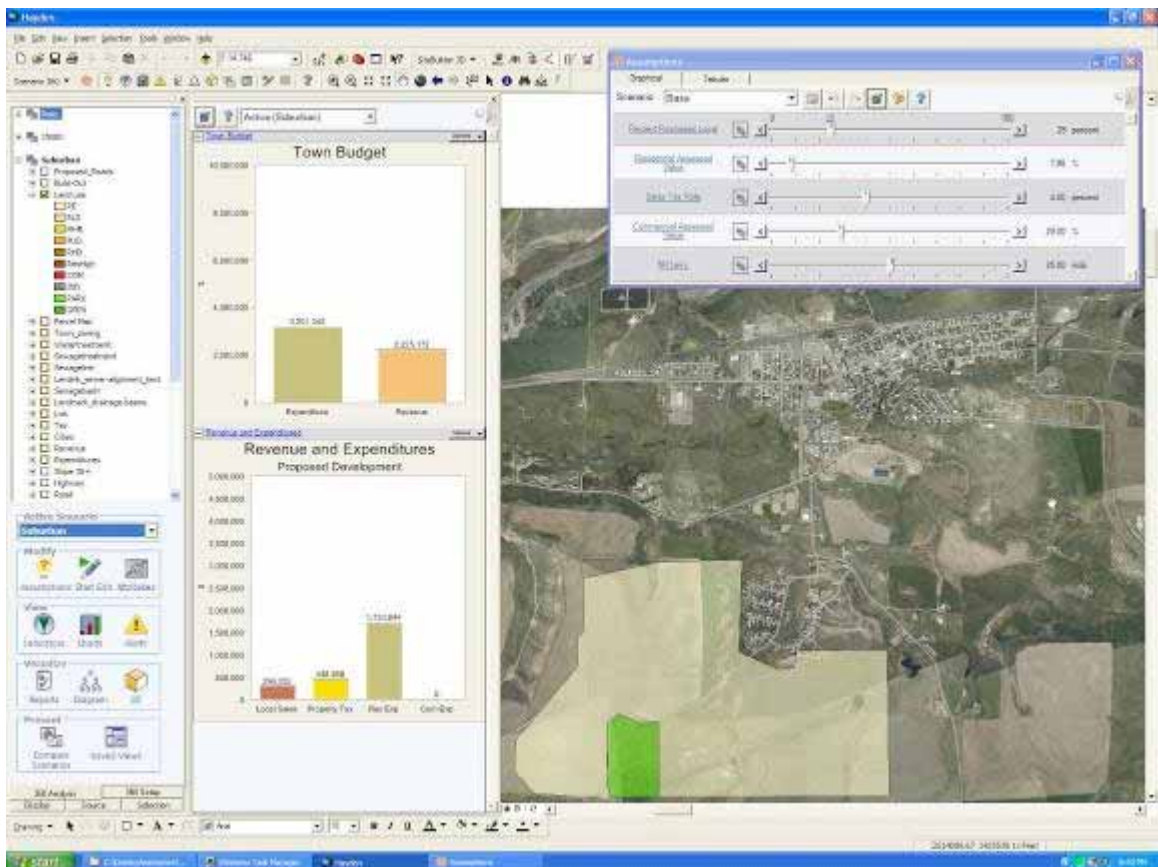
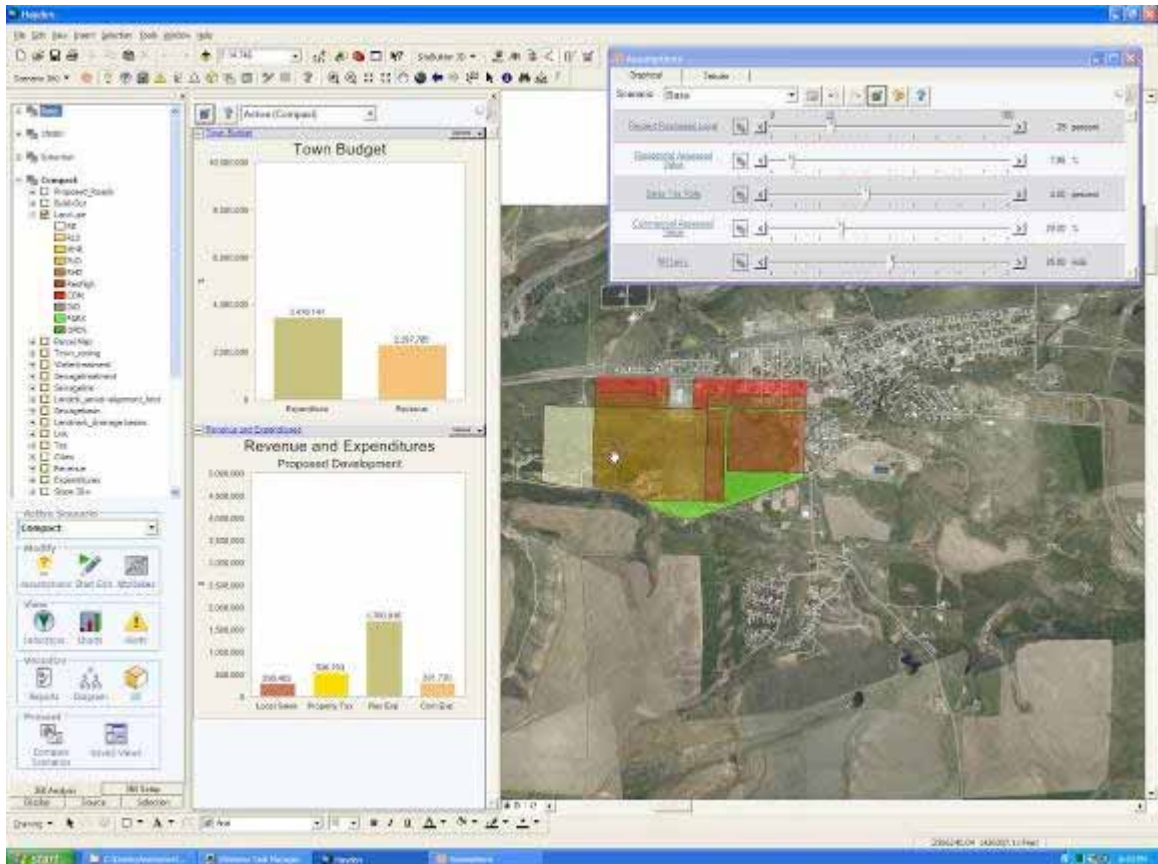
The 3D model uses standard GIS data to create a real time model of existing and proposed development. The model depicts the urbanized area of Hayden in high resolution and 3 mile area in lower resolution using the SiteBuilder component of CommunityViz. The high resolution area shows existing houses, streets and trees using parcel centroids, street centerlines and manually digitized trees. A low resolution aerial and terrain illustrate the surrounding meadows and mountains. Custom building models show the historic downtown area and schools using actual photos to create photo real images. The scenarios convert land use polygons to building points using the CommunityViz Build-out tool. Custom buildings constructed in ModelBuilder (a SiteBuilder module) are associated with the building points. The resulting model is viewed using standard real time navigation tools, by following paths, from software generated movies or screenshots.

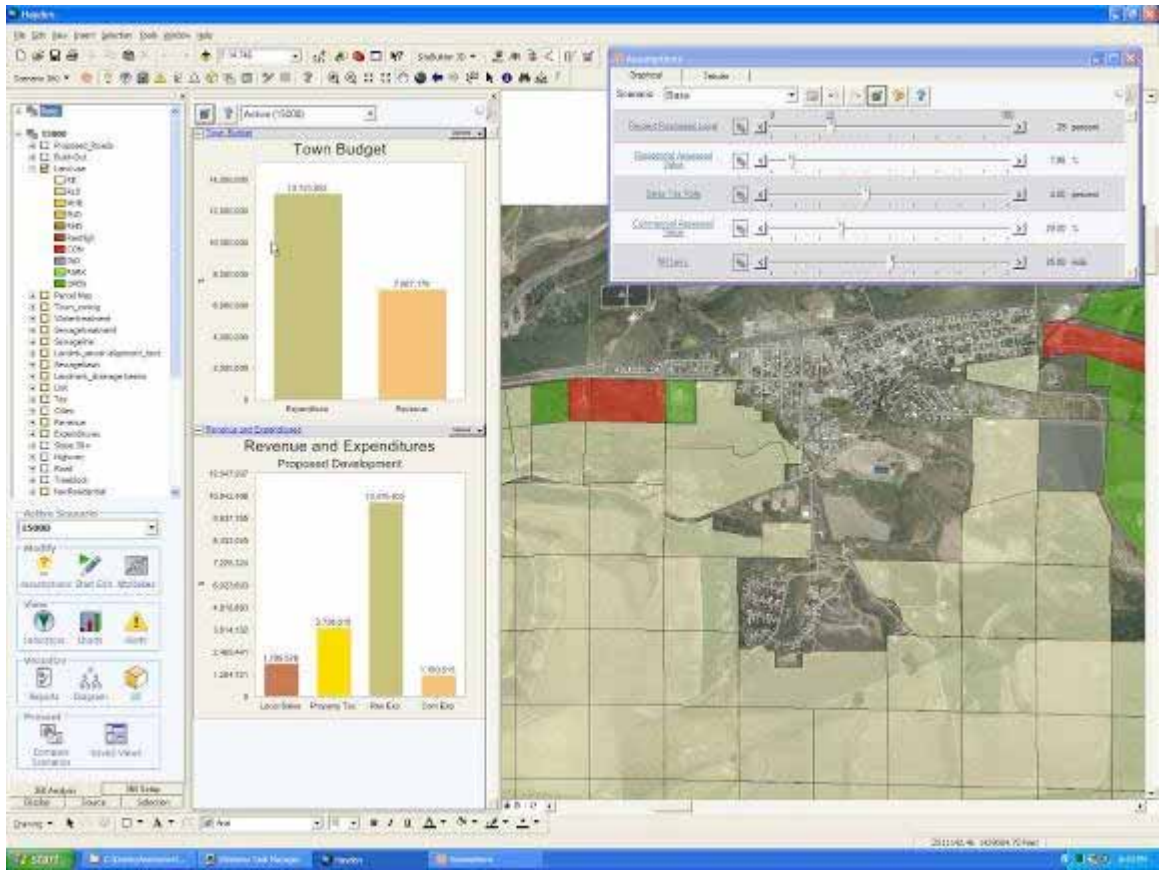


The Hayden impact analysis model is a robust Scenario 360 (CommunityViz component) decision support system that addresses several planning issues related to evaluating local development proposals. More specifically, this CommunityViz decision support model identifies key potential impacts of the 3 scenarios described above. Specific development proposals can be added to the base scenario to assess one time and cumulative impacts, providing an on-going community plan monitoring function for the Town. CommunityViz is an extension of ESRI ArcGIS software. Both ArcGIS and CommunityViz must be installed and licensed before using the Hayden CommunityViz model.

Calculations are made using customized formulas that reference map information as well as information placed in database tables. Decision support topics include:

- **town budget: revenues and expenditures**
- **water: potable water; water rights; treatment capacity and demand**
- **stormwater: drainage basin surface runoff**
- **sewage: collection and treatment**
- **traffic analysis: projected vehicle trips at key locations**





This model identifies potential impacts on the town budget and infrastructure and provides the Town the information to understand the long-term effect. With this information the Town can better request mitigation from impacts of new development and allow balanced growth to occur.

The CommunityViz model provides a tool for “red flagging” infrastructure limitations based on standard planning assumptions. Facilities identified by the model that exceed capacity may warrant further study to verify the limitation and assess mitigation measures. During the creation of this decision support model, attempts to obtain more detailed engineering analysis and/or mitigation measures sometimes failed. Sewer pipe slopes, for example, significantly affect flow. Highly detailed sewer slope data is not available for use with the current version of the Hayden CommunityViz model. Data detailing the onsite survey of sewer pipe elevations would provide more accurate pipe gradients and associated capacity. The model can assess the cumulative impact of multiple proposals and the Town should use this capability as a long term tool for managing growth.

Included with the model is manual that instructs users at a variety of skill levels in how to present, update and revise the model. The presentation mode requires limited GIS skills and allows users to view different scenarios, revise assumptions and visualize the impacts. Updating the model includes creating new scenarios, and input new land use plans and budgets. Typically a town staff can update the

model. Revisions will require strong GIS/CommunityViz and professional skills (e.g. engineering, economic, and planning). Revising the model includes transferring the analysis to another community, and changing the calculations to account changing local conditions or methods of analysis.

On the success side, we found:

- The CommunityViz scenarios clearly demonstrated that the full build-out of the proposed development would seriously and negatively impact the town's ability to improve and maintain the required services and infrastructure.
- Through these demonstrated impacts, CommunityViz produced important negotiations between the Town and Developer.
- The visual understanding gained by CommunityViz contributed to a general interest and logical approach to development of zoning codes—density, height, road direction, etc. and opened up avenues for informed discussion.
- Traditional 2D technology does not give as powerful a feel for density decisions as does CommunityViz—again, this created opportunities for more informed and open discussions.
- Building models were developed that can be applied in other Colorado communities.

Challenges include:

- Technical difficulties made it difficult to use CommunityViz to its highest and best visual capabilities manner in all the public meetings. Difficulties included a combination of switching to a new version of CommunityViz in midstream of the project and having to become conversant in all the aspects of a new version with limited time and budget.
- The potential for CommunityViz was diminished by lack of adequate Town data (condition of water and sewer lines, traffic counts, etc.) in a useable form.
- Using CommunityViz to portray the impacts of growth at the Comp Plan level of analysis turned out to be more complicated than anticipated due to the "shifting baseline" that occurs as the community grows (what it costs to provide a service with Hayden's current expectations and staff is different than would be required as Hayden matures and is required to provide services not now present). This would be a challenge to portray with or without Community Viz.
- Designing specific, finite "benchmark indicators" into the CommunityViz model to better determine when the community is poised to enter into the next "stage" of the Comp Plan still remains a challenge. Future budgets should include flexibility to adapt the CommunityViz model to issues that emerge during the process.
- There is a challenge in outlining and "training" the developers' engineering firms and planning firms to deliver information in a form that can be quickly and easily utilized with CommunityViz. Providing affordable and simple techniques for closing AutoCAD polygons is a major challenge.
- A significant amount of time and expense went to accurately modeling Walnut Street and historic downtown, which was helpful in getting the

community to recognize that the model was customized for Hayden, but not necessarily critical to the overall success or outcome of the project.

- The final challenge is in ensuring the town manager can continue to use CommunityViz to monitor build-out and judge visual or financial impacts of new proposals. It may be unrealistic to expect a town planner or manager to perform these tasks without expert assistance.

3. **Keypad Polling:** This wireless technology provides each person attending a public meeting with a keypad to register votes on questions enabling them to register their comments and choices and preventing a vocal minority from dominating the discussions. In the success category, we found:
 - The community meeting of 11/15/04 utilizing keypad polling was quite engaging for residents of all ages. Not only was the voting engaging but witnessing the sentiments of the audience on the screen almost immediately was quite interesting and kept the high number of residents at the meeting for over 2 _ hours.
 - The polling enabled all in the meeting to see the demographics of the attendees early on and established that the audience represented the town quite well.
 - The instant results helped residents recognize where they stood relative to the attitudes of a majority of the community—some who may have felt their opinions were widely shared may have discovered otherwise. We feel this helped ameliorate the discussion.
 - The keypad developed “retrievable data” regarding development patterns, construction techniques, essential community character aspects, and rate and location of development – the Planning Commission has found it invaluable to be able to call this data up upon request rather than rely on minutes of the meeting.
 - Keypad polling enticed citizens that would not otherwise have attended the a public meeting

Challenges include:

- The single-time cost of application (\$6,000) was steep, but extremely effective.
- Since the keypads only allow voting numbers between 0 and 10, presents some limits to the quality of feedback received.

4. **Planning Process:** Comprehensive planning is done community by community and takes an understanding and research of a community by an experienced planning firm with access to good information and tools. CommunityViz helped to provide the tool to look at the data comprehensively. In this aspect, we believe the Hayden Comprehensive Plan approach was innovative, and a learning process--from a standpoint of how to manage growth using fiscal indicators. Winston Associates used the fiscal indicators as critical parts of the Comprehensive Plan because early data collection and analysis showed the fiscal side of the growth equation as the most important constraint to managed growth

in Hayden. The objective of Winston Associates/CommunityViz approach to the Comprehensive Plan became to guide future growth that is consistent with the community's vision and goals. The fiscal approach creates a foundation upon which the Comprehensive Plan can then identify the physical characteristics of growth that allows the community to achieve their vision and goals for their community. The fiscal analysis of the community's background helped educate the residents about the need for the Town to have a strong local jobs base and a vibrant commercial retail area to reverse the trend of a majority of the Town's population working and shopping outside of Town. This balanced growth approach underlies the Comp Plan and creates an extremely important path towards sustained and sustainable growth in Hayden.

5. **Public Process:** Obtaining and effectively incorporating public input, and determining what weight to give the various inputs, is always a challenge in any planning process. In this project, Orton/Winston/Town staff provided a variety of input venues:
- The Community Video (described above)
 - Community Information Center (described below)
 - Public meetings
 - Hearings with the Planning Commission
 - Key Pad polling meeting (added at the end of the project)

At the November 15th meeting, an independent facilitator was hired to help orchestrate the presentations and public participation. Prior to the November meeting, the meetings were led by the planning firm which focused primarily on the "product" of the Comp Plan. Ideally, an independent facilitator involved in all public meetings can focus solely on ensuring all "voices are heard" in a community, neutrally listening, judging the audience's demeanor and participation, and ensuring "buy-in" or consensus of the content. Facilitation allows the planning firm to focus solely on collection and dissemination of this informational content rather than the process to obtain it.

Successes included:

- A process in November where extensive audience participation resulted and people felt like they were being heard.
- The presentation was nicely mixed between substantive information, interesting visuals and interactive keypad voting.
- The facilitation enabled the community to take ownership of and responsibility for its plan.

Challenges include:

- It is a challenge to find enough financial support for approximately 4-6 public meetings.
- How to keep the energy, interest and enthusiasm rolling for planning in Hayden. At the November 15 meeting we gathered about 45 postcards of

folks signing up to "volunteer" in community issues/efforts. Only 10 or so of these were on the existing list, so there appears to be lots of new energy. The hope is that the ownership of the town's future has now finally shifted to its residents, and that the community is feeling empowered to say no and clarifying its vision to encourage a yes to projects that match where it wants to go.

6. **Community Information Center (www.yampavalley.info):** This robust website provided an archived compilation of a community project and information on the project's progress fostering effective communication in an easily accessed format.

Successes include:

- Information on the yampavalley.info site was being used and read. Individuals were bringing downloaded reports to the meetings.
- The Project Coordinator was able to send mass emails to the community list to promote meetings, reports and more at no cost.
- Awareness and involvement in community meetings was in part due to use of YVI/Email communication/technology.
- The community was able to comprehensively track progress to date.

Challenges include:

- CIS was less successful in enticing or generating feedback and commentary for those not attending meetings.
- The CIS usage is limited to those with internet access that provided an email address at one of the meetings. Ideally the email list would include the majority of a community.

7. **Project Administration:** The administration of this project was complicated by the departure of the Town manager; however after Russ Martin was hired, he proved instrumental in moving the project forward. Given his many other responsibilities, the addition of Tammie Delaney was essential to the ultimate success of this project. In this role Tammie was able to ensure:
- Substantial public outreach and engagement.
 - Well attended meetings
 - A sensitivity to local issues and a finger on the local pulse.
 - Continued education of and awareness by the general public (and developers) of the need for patience required to effectively prepare a Comprehensive Plan.
 - A project that generally stayed on track and on time.

Challenges include:

- The ability to find someone of Tammie's abilities and dedication in other communities.
- A need to better outline and clarify data collection needs, so that the coordinator can help coordinate the planning team.

- A clearer plan of project components to allow for better tracking and more efficient completion.

Conclusions:

The combination of public process and tools utilized was highly effective in initiating community involvement, creating a solid understanding of the importance of fiscal balance for future growth, addressing a proposed large-scale development, promoting in-depth conversation about the Hayden's values and character, and producing a Comp Plan directed at balanced, long-term, sustainable growth.

Each community will present its own issues and levels of readiness, including data availability. Some may have already gone through a collaborative, high engagement visioning process that could lead straight to a CommunityViz and keypad exercise; others may not know where to start, which is an excellent place to apply the Community Video process.

Without a concrete project it is virtually impossible to accurately estimate the cost of the next project; however, we do believe that application of CommunityViz should be less expensive as the GIS platform upon which CommunityViz is built will not be changed in mid-stream, additional data becomes more available almost every day, and other lessons learned in this project can be applied.

The Orton Family Foundation is quite impressed by what Hayden has achieved, although the cost of this project has not been cheap. When one begins to consider, however, the expense to a community of a controversial, fractured planning process that often descends to legal battles and deep-seated, long term community conflict, the short term expense of a Hayden exercise begins to pale in comparison to the long term costs of controversy and conflict.

Some Anecdotal Quotes:

"Just a note to let you know what a success you are making in this planning program for Hayden. I have been in Hayden for many years (over 30 now) and this is the very best response and community input that I have ever seen in Hayden. You, and your colleagues are proving extremely strong leadership abilities and a true heart for this community.

I want to commend you on a job well done. Your heart and soul certainly are in this project."

"While the GIS visualization technology is fun to see, the real benefit of that meeting was the voting. I never want "polling" to replace elected officials voting, but now Hayden has concrete data on which to base decisions. We learned what those present felt strongly about, and I learned that we are not that diverse in our vision of Hayden. There is also concrete feedback data to use when saying no to the wrong kind of development. The keypads really took the mystery out of extracting comments/feelings/direction from meeting participants."

"Thank you for sending this email to me as I was unable to attend the meeting!!! I did look at the results. It is nice to know that most of the town thinks along the same way I thought that I would and I also found the slides and the info exceptionally helpful."

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