Patient Capital and School Trust Real Estate Programs

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Abstract

This paper examines how school trusts that sell land for urban development may financially benefit by being patient and holding land for the longer term rather than selling it for shorter term gains. Three basic characteristics of the urban land market provide for such benefits including the underlying price path to urban development, real estate cycles, and site rent. In addition, active management and time tranching may be further means by which patience can benefit school trusts in the long run. The results of interviews with land managers are reported, research questions identified, and preliminary management principles suggested. The overall conclusion is that under certain circumstances, patience may be a virtue and may produce greater financial gains for school trusts that are in the process of selling land for urban development.

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Patient Capital and School Trust Real Estate Program

"Patience is a virtue." William Langland, 1377

Introduction

Since 1803, states have received land grants from the federal government to support their school systems and presently 22 states manage 135 million acres of land for this purpose (Sunderman and Spahr, 2006). The states hold these lands as a trust for the school systems following principles by which the trust is managed for the exclusive benefit of the beneficiaries (Souder, Fairfax and Ruth, 1994). Managers may either lease or sell the lands to produce income for the schools. This report examines how "patient capital" might be a useful concept for trust managers who are thinking of selling land for urban development. In particular, it investigates whether state trusts might benefit financially by delaying sales in the short-run in order to obtain higher gains in the long-run.

The analysis is intended to be exploratory and conceptual. It is not designed to produce recommendations for particular properties. Rather, it synthesizes prior theoretical and empirical studies and generates researchable questions and testable management principles.

Whether or not these delays might be beneficial to society as a whole is not the focus of this investigation. The emphasis is on financial considerations. "Generally, the concept of maximum economic benefit has been the guiding principle in carrying out this trust relationship. Obviously, this principle exists at the expense of other potential stakeholders, as well as the public at large" (Sunderman and Spahr, 2006). The reader should understand, however, that in actual practice land managers are concerned with both financial and broader societal issues. This is reflected in the interviews with trust managers which are reported later in this paper. Moreover, there is a stream of research which suggests that it may be socially optimal to delay development. There are two reasons for this conclusion.

The first reason has to do with market externalities. Traditionally, from a private investment perspective, land is converted to urban use when its rent in urban use equals the agricultural rent foregone plus the opportunity cost of the capital needed to convert the land (Capozza and Helsley, 1990). In other words, a rational landowner will develop property when doing so would produce what could be earned from keeping the land in agriculture plus what could be earned from investing the funds required to cover the cost of development. Anderson (1993) points out, however, that in the presence of positive predevelopment open space externalities, such as ecosystem services or other amenities, or in the presence of negative post development externalities, caused by congestion or other adverse environmental impacts, the socially optimal timing decision diverges from the privately optimal one. When these externalities are ignored, land is developed too

quickly for optimal social efficiency. Ideally, state trust land managers would weigh the social costs and benefits of development when deciding what and when to develop.

The second reason that patience might benefit society at large comes from researchers who have looked at the efficiency of urban development patterns; particularly those who've studied the benefits and costs of discontinuous or scattered development, more commonly known as urban sprawl. For example, Ohls and Pines (1975) examined how discontinuous development may not be as inefficient as some have thought for several reasons including imperfect knowledge about the future (citing Boyce, 1963), externalities present in the market (citing Lessinger, 1962), trade-offs between living space and accessibility over time, and "the fact that retail and commercial services near the urban fringe must often await the development of markets large enough to exhaust economies of scale." In their view, it may be more efficient to skip over land and fill it in later with higher-density housing or commercial development. For state trust managers, this means that in some circumstances, as in the case of land that is relatively far from existing jobs or housing, it may be better, for society as a whole, to allow development to skip over the site so it can be filled in later with higher density housing and commercial development, thus producing less sprawl and less commuting in the long run. Also, absent a good system for recovering the costs of infrastructure development from land developers, this could benefit the state trust itself by causing the extension of utilities to parcels it owns even further from the urban center. However, such a strategy may be ill advised on practical grounds. For example, new residents in the area may come to view the passed over land as valued open space and oppose future development, or infrastructure capacity may be fully utilized by preceding developments making it more difficult to obtain development permission. Scholars debate the wisdom of discontinuous development and other aspects of urban sprawl. There is a vast literature on the subject which examines the aesthetic, environmental, fiscal, social, transportation, health, and other consequences of alternative development patterns. For discussions of the field see Frank (2000), Ewing (1997) and Gordon and Richardson (1998).

Patience in Business

Buy low and sell high. It may be the oldest advice there is. To follow it, according to Ward and Aronoff (1991), one must have the ability to recognize when prices are low or high *and have the patience to wait for that time to occur*. However, according to Ward and Aronoff, businesses vary in their capacity for patience. In their view family businesses, in particular, have a competitive advantage when it comes to waiting for opportunities to ripen. They possess more *freedom to make decisions with a long-term vie*w *which, according to Ward and Aronoff, is the essence of patient capital*. This freedom enables them to take advantage of opportunities that take longer to develop or are cyclical in nature (both of which can be present in the land development process). In contrast, non-family firms (e.g., publicly traded companies) have less freedom to be patient. They are pressured by investors to be profitable in the short term and their managers can be eager to make their mark as quickly as possible, sometimes in direct response to compensation packages designed to encourage just that. As a result, they can miss out on opportunities for higher profits that might be had over the longer term. Are

state trust managers more akin to family or publicly owned business managers? Do they have the freedom to patiently wait to get the best price for land, even if it means waiting a long time? In the absence of pressures telling them when to sell and how quickly to raise funds for schools, trust managers may be more like the family business managers, with the freedom to make decisions with a long-term view by waiting for prices to be as high as possible when they do sell land.

Impatience, or "short-termism", is clearly recognized as a problem for corporate managers. For example, Ettorre complains (1996) that "top managers have little time or leeway to execute strategy because all eyes are on quarterly results". Yet investment funds with lower capital turnover rates outperform others, according to preliminary research by Bain and Co. reported by Ettorre (1996). This suggests that managers can do a better job of maximizing value for their investors if their investors are willing to wait for longer term strategies to bear fruit.[1]

In a further discussion of short-termism which sounds particularly relevant to public trusts, White (2006) argues that it conflicts with principles of stewardship, trusteeship, and inter-generational responsibility, all arguably aspects of state trust land management (See Souder, Fairfax and Ruth, 1994). He argues that such values can best be attained by managing for the long-term and laments how capital markets undermine long-term strategic decisions.

All this suggests that in business, patience allows managers to take advantage of long term opportunities while impatience may actually harm results. It does not imply that long term strategies will always beat short-term ones, but it does suggest that sometimes patience is needed to "buy low and sell high" and that pressures for short-term performance can make it difficult for managers to execute longer term strategies. The question, then, is how might patience pay-off for state lands managers when it comes to the sale of land for urban development? That is the subject of what follows.

[1] Patient capital is not simply a minor element in business. It is a fundamental issue that can shape the nature of entire market economies. For Culpepper (2005), patient capital, or the ability "to shield company managers from short-term imperatives characteristic of liberal market economies" is a fundamental element of so-called coordinated market systems such as those found in Germany or Japan. Germany, for example, has been able to create a "high-skill equilibrium" in which a large majority of workers have intermediate level skills because employers invest in apprenticeship programs. However, the opening of markets in the 1990s, has led to the growth of stock markets, fund raising through equity markets, and increased dependence by companies on short-term quarterly measures of market performance which could topple the stability of coordinated economies, driving them perhaps toward the more dichotomized society found in more liberal market economies such as the USA.

The Price Path to Development

The first way that patience can increase returns is from the capital gains normally found in the property market. As discussed by Adams et al (1968), in a perfectly functioning market, the price of land reflects the capitalization of the anticipated future flow of net rents. Because of the time value of money, prices are aligned to the expected dates at which land will be developed. That is, for a given anticipated flow, the sooner a property is expected to develop, the higher its value will be. In other words, if two properties are each expected to generated a net income of, say, $50,000 per year after they are developed, then the property that is expected to develop sooner (because, for example, it is closer to the edge of urban growth), will be worth more. Consequently, property appreciates in value as time progresses, because with the passage of time, the time approaches when income will begin being generated, and prices will rise to reflect that fact. In theory, market forces cause this rate of appreciation to equal an appropriate discount rate plus the rate of real estate taxation. The discount rate is presumed to be the net rate of return which can be earned in comparable investments. The result is an expected time path for land prices or expected capital gains.

To illustrate, imagine a property that is ready to develop today. And assume that based on the anticipated income from the expected development, it sells to a developer for $1,000. Now imagine that the market was not expected to support development on the site until one year from now. What would the property sell for today to an investor? Assuming that the investor could earn 8% on other comparable investments and assuming the developer had to pay 2% in property taxes per year, he should be willing to pay $1,000/1.10 or $909. That is because an investment of $909 today that returns $1,000 in one year would produce an 8% return after taxes.

Table 1 illustrates this basic price path for a property that is expected to develop in 10 years and would sell for $1,000 at that time. Again, assuming an 8% discount rate and a 2% property tax rate, it shows how, as one approaches the development date, the property value appreciates at 10% per year. This illustrates the basic price path for property. If the property were a state trust property, then for every year a manager waited to sell it for development, its value would rise by 10%, yielding a 10% return on the asset. Put another way, if the land were sold in Year 1 to a developer who then held the property until Year 10, when it was ready to be developed, the state trust would receive $424 for the property and would forego 9 years of capital appreciation at 10% per year, or an annual compound rate of 15%, compared to waiting and selling the property for $1,000 just before it was ready to be developed. This represents the cost of impatience.

Table 1: Illustrative Basic Price Path

Year	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Price	424	467	513	564	621	683	751	826	909	1,000

Adams et al (1968) looked at 1,111 transactions for vacant land in northeast Philadelphia that occurred from 1945-1962. The basic price path, or expected rate of appreciation or capital gains, was estimated to be 13.2% per year (or 9.7% net of inflation). This is 9.7% higher than the rate of return on a "no-risk" 3-year Treasury bond in 1962. According to the authors, the additional 9.7% represents the rate of return required by investors after accounting for inflation risk, property taxes, and the considerable risk, illiquidity, and transaction costs associated with holding real estate. The Real Estate Center at Texas A&M University provides more recent data that can be analyzed for similar trends (Real Estate Center, 2006). For example, their data shows that for 1966-2005, rural land in the counties surrounding Dallas, Fort Worth, Houston, El Paso and Austin grew at a median annual compound nominal rate of 7%. A plausible explanation for the higher rate found by Adams et al is that more of the properties in their study were in the process of conversion from agricultural to urban uses, increasing their rate of appreciation. More contemporary studies of this rural to urban price path would be useful in order to determine what assumptions should be used by trust managers in their own analyses of this phenomenon. Nonetheless, the main point here is that there is an underlying rate of appreciation which rural to urban transition lands will follow. The associated capital gains can be captured by waiting patiently until almost the time of development. Conversely, then, revenues are lost by selling too soon.

One way to evaluate the financial gain that a state land trust could obtain from this form of appreciation would be to compare the gains that waiting would produce to the gains from investing the sale proceeds in a fund administered by the State Treasurer. Such a comparison is made in Table 2 for a 10 year period, assuming a 7.00% basic price path for raw urban land and a 3.93% return in a state treasury fund (from returns on 3 year federal treasury bonds based on their 2005 yield). As the table shows, a property worth $1000 in Year 0 would be worth $1,967 in Year 10, or 34% more than a $1000 from the sale of the land invested in Year 0 in Federal bonds. Clearly, in this case, it pays to be patient because property values are growing faster than the investments that would be made with the funds gained from selling property. The particular rates used to illustrate the point are not important. As long as the basic price path exceeds the risk adjusted returns that can be earned from how cash proceeds would be invested, it is economically rational to hold onto the property.

Table 2: Returns from the Basic Price Path vs. from Selling and Investing

Year	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
7.00%	1000	1070	1145	1225	1311	1402	1501	1606	1718	1838	1967
3.93%	1000	1039	1080	1123	1167	1213	1260	1310	1361	1414	1470

Of course, if land is sold to raise cash that is needed for school programs, then other considerations come into play. However, even in that case, it would be prudent to compare the financial benefits of the potential capital appreciation from holding the land to the cost of alternative means of financing the school programs. For example, programs might be debt financed at a rate that is lower than the capital gains from property appreciation.

This analysis is sensitive to expected returns from invested cash proceeds. If, for example, the proceeds were invested in 10 year treasury bonds at the median rate over the past 20 years of 6.44%, the capital gains from selling and investing would be nearly as much as the gains from holding property. Moreover, there are risks to be considered and returns from federal bonds are much more certain than returns from land sales. Therefore, given the expected risk adjusted returns, the basic price path alone may be insufficient to justify patience on the part of a state trust land manager. There are, however, additional factors including real estate cycles and site improvements which can lead to greater returns and justify a hold strategy for land managers. We will now turn to a discussion of these considerations.

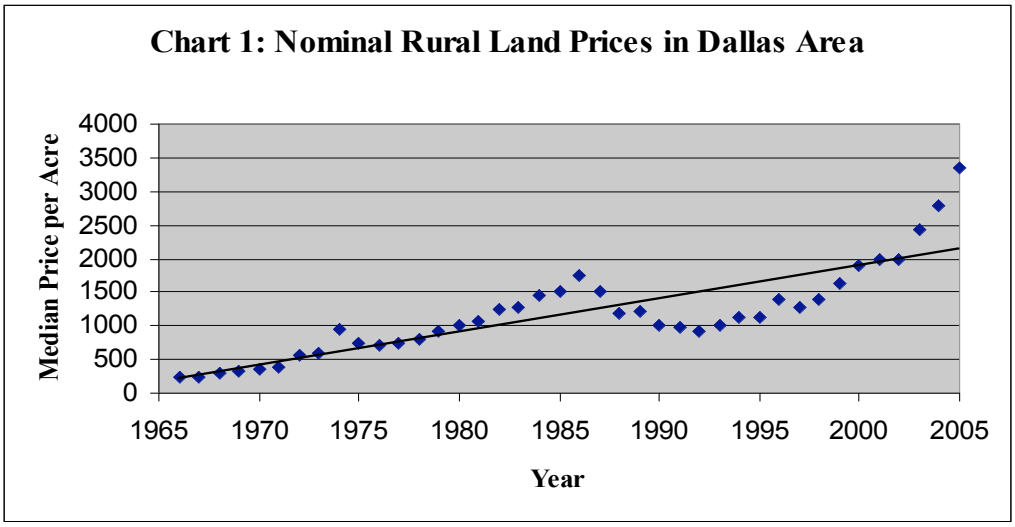
Timing Real Estate Cycles

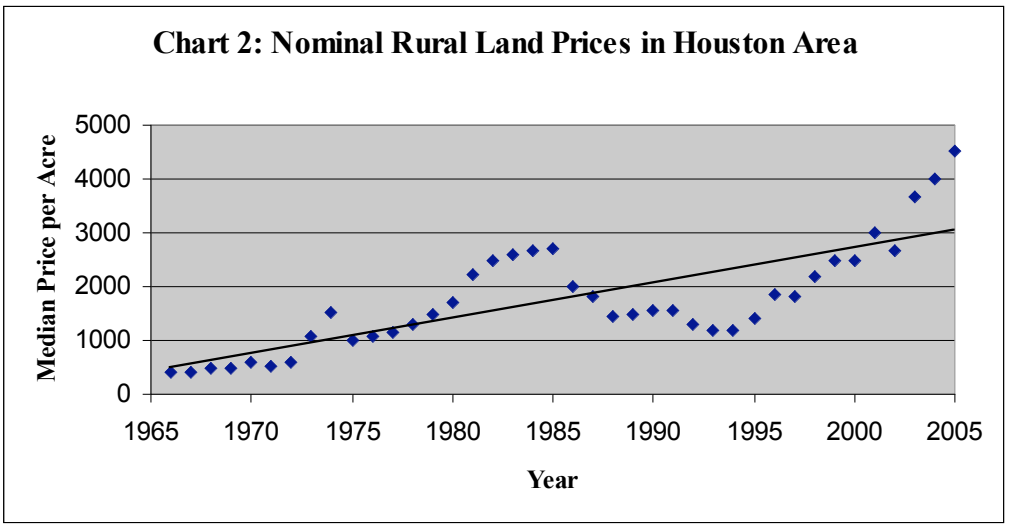
Overlying the basic price path are real estate cycles which cause prices to diverge above or below the underlying path in any given year.

Consider these recent headlines from the Arizona Daily Star: On October 11, 2005 one headline read, “Homebuilders flush with cash are increasing their inventory of lots.” Then, on July 26, 2006, less than 10 months later, another headline declared, “Real Estate takes a breather…Some sectors…such as the land market have gone flat.”

Sometimes land prices are higher than others because real estate is generally affected by a real estate cycle. Therefore, when selling land, state trust managers can gain an additional advantage by understanding this cycle and selling property at peaks or holding it during troughs.

To illustrate this phenomenon, Charts 1 and 2 were produced using rural land price data for the counties surrounding Dallas and Houston (Real Estate Center, 2006). They show how land prices tend to cycle above and below the average trend line. They also show that the cycles in these markets have been running approximately 10-20 years long. If land sales had been timed to take advantage of these cycles, then annual capital gains would have been even greater than the underlying path of 7% for the area which was discussed in the preceding section. For example, Dallas property sold in 1995 near the bottom of a cycle would have produced $1,133 per acre while waiting to sell until 2005 would have produced $3,359 per acre. In financial terms, if the $1,133 were left in the property which was then sold in 2005, it would have earned a 11.5% return per year - significantly more than the 6.25% per year which 3-year treasury bonds were yielding in 1995 and significantly more than the 7% price path of appreciation.



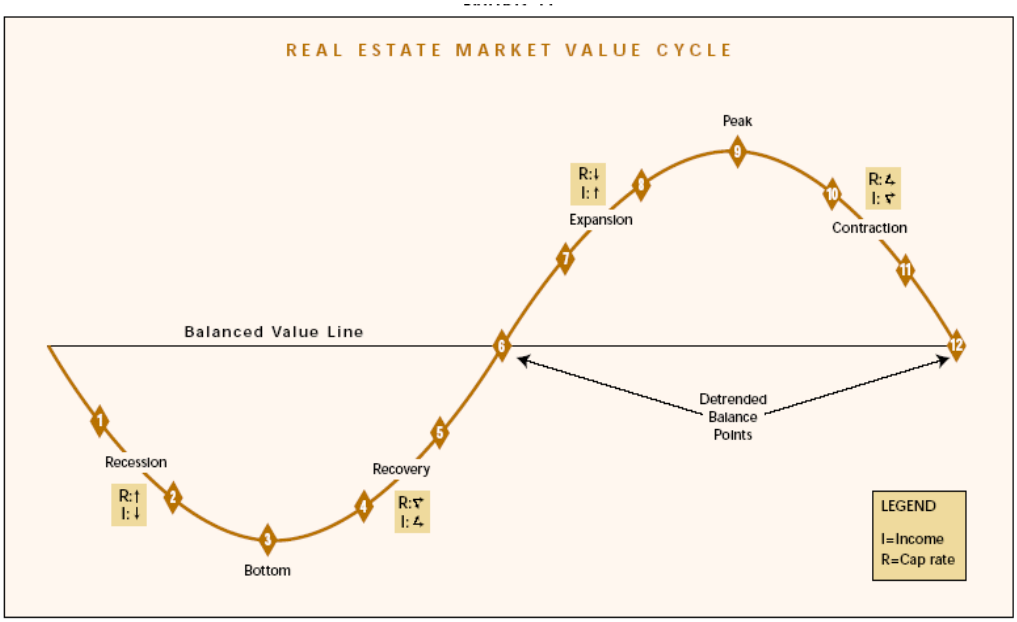


Although real estate cycles have been studied by a number of researchers over the years, few have examined their effects on the price of raw land. However, insofar as raw land, along with labor and materials, is a key element in the production of new residential, industrial, office and retail space, the cycle of demand for such space should produce a similar cycle in the price of raw land. Still, there may be imperfections in this process, such as time lags between housing starts and demand for land created by development company land inventories or market imperfections such as there being few buyers who take time to adjust their expectations to realities in the market (Adams et al, 1968). Therefore our understanding of the raw land real estate cycle could benefit from further research.

In a special report on the real estate cycle, PriceWaterhouseCoopers (1999) provided the following generic illustration (Chart 3). As the chart shows, the cycle is composed of periods of recession, bottoming, and recovery, during which prices are below average,

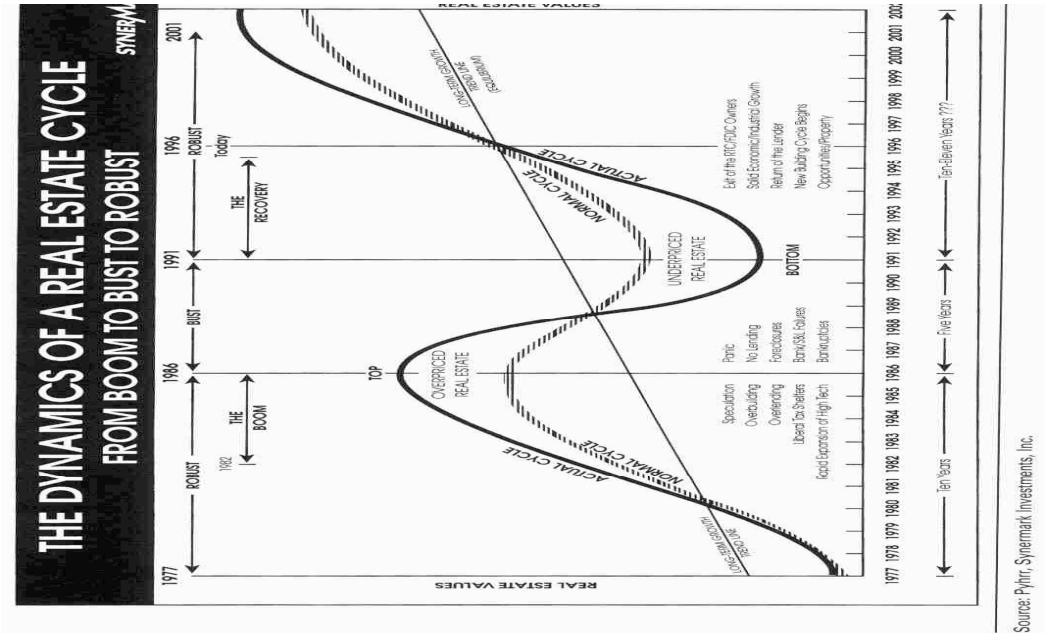
followed by periods of expansion, peaking and contraction, when prices are above average. Unfortunately, the underlying price path of appreciation is not shown, which would be illustrated by a positive slope for the "Balanced Value Line".

Chart 3: Generic Real Estate Market Cycle



In another study of the cycle, Pyhrr et al (1999) documented a composite real estate cycle for all property types in Austin, Texas for the 1977 to 2000 period. They found peaks in 1986 and 2002 and bottoms in 1977 and 1991, similar to the data presented above for Dallas and Houston, and a cycle length of 15-18 years. In an illustration from their work given below (Chart 4), the actual cycle is compared to a normal cycle and shown to be even more pronounced in this case, because of the "excessive optimism, greed and irrationality" that the authors believe began in1982 with implementation of federal laws deregulating thrift institutions and providing liberal shelter benefits for real estate investors. Also notice that in the illustration, the normal long term trend line is shown to have an upward slope, depicting the underlying growth path discussed above. While Pyhrr et al reported a 15 to 18 year cycle, others have found it to be about 18 years long. Foldvary (1997), looking at peaks in construction and land values, reported cycles of roughly 18-years starting as early as 1800. Mogey (1991) reported an 18 year span as well.

Chart 4: Illustration of Austin Real Estate Cycle (from Phyrr et al, 1999)



Of course, as a practical matter, to take full advantage of the peaks, a typical landowner would not need to wait 18 years. That is the time between peaks (or bottoms). The amount of time the cycle lies below the long term trend line is generally half the length of a complete cycle and so, if a trust manager found their land was in a trough below the long term trend line, they would generally need to wait no more than 9 years for the cycle to take prices above the average trend.

Wheaton (1999) observed that real estate cycles may vary according to property type. In his view some types of real estate, including industrial and residential, have swings related to the US economy and are due to alternating economic demand shocks (e.g., recessions). Other types, such as office and retail have much longer swings with almost no relation to broader economic cyclicality. Since raw land cycles have not been closely studied, it's unclear whether they would be longer, like residential cycles, or shorter, like retail cycles. However, insofar as most state land trust sales occur on the urban fringe and for residential uses, it's reasonable to suspect that the relevant raw land cycle would be similar to shorter residential cycles and associated with macroeconomic trends.

According to Grenadier (1995), most efforts to explain the real estate cycle have focused on the supply side. One standard explanation is the long construction lag faced by builders. Developers start new projects during favorable conditions. Then, years later when the projects are done the market has reversed, producing vacancies that continue until the market absorbs the new units. Similarly, during a tight market, it takes new supply years to enter the market. This creates a cycle of overbuilding and under-building, which produces the peaks and valleys in prices. A second explanation focuses on non-recourse lending, which allows developers to build as long as lenders are willing to finance them. Sivitanidou and Sivitanides (1999) also see supply side inefficiencies as

key factors including high transaction and adjustment costs, lengthy institutional decision making processes that prevent investor exit or entry, and informational inefficiencies hampering the buyer-seller matching process. Wheaton (1999), however, attributes real estate cycles to uninformed agents making systematic errors. He believes that such errors should not occur with rational agents and therefore thinks that the explanation for oscillations can be found in unique shocks, such as the investing incentives created by federal law in the 1980s. The implication is that better information and a more rational, professional, organized and securitized market could lessen the magnitude of future oscillations.

A study by Hopkins (2000) looked at whether investors can actually take advantage of cycles by using market timing to improve their success in the real estate market. After all, as already noted an investor must have the ability to recognize when prices are high or low in order to benefit from patience. He examined different types of timing strategies for buying and selling apartment, office, retail and warehouse properties from 1981-2001in 244 U.S. markets in which an analyst would try and trade at the best possible times. He also allowed for various degrees of error on the part of the analyst in choosing the correct time when the market is at its peaks or valleys. The conclusion was that even when timing is assumed to be imperfect because no analyst can truly know when prices are at their highest and lowest, and assuming that the analyst will make errors and trade ahead of or after peaks, "in considerably more markets than not, a reasonable market-timing strategy based on good data and forecasts results in increased returns compared to long term holds".

Adams et al (1968) is perhaps the only systematic study of the price cycle for raw land. It was done as a part of their effort to disentangle the effects on land prices from capitalization of expected returns, changes in the economy at large, and qualitative land characteristics. As reported above, when qualitative characteristics were held constant, the rate of growth in prices for residential land was 9.7% per year in real terms. However, fluctuations around this average were observed in relationship to cyclical macroeconomic variables such as housing starts, interest rates, and industrial capacity utilization. In other words, in addition to the underlying expected path of increase, they observed deviations above and below this return depending on when land was sold in relationship to macroeconomic variables such as changing expectations and interest rates. The price was higher during periods of lower interest rates, higher housing starts, and higher industrial capacity utilization. Notably, however, these were short-term fluctuations that were observed, with peaks separated by 4 to 6 years. Since theirs was a study of land for housing, perhaps their work is a confirmation of the observation made by Wheaton that cycles for housing (and for land which has been suggested here) may be shorter than the 10-20 year cycles found for real estate in general.

Of course, beyond the financial issues involved, there are social implications of land supplies and real estate cycles. For example, during cycle peaks, when prices are high, it could benefit housing affordability to have more land in the development pipeline. Fortunately, that is what a trust land manager would do who was seeking to time land sales in relation to land price cycles. However, during troughs in the cycle, when trust

managers might hold land off the market, it may still be good public policy to increase the land supply in order to further mitigate land and housing prices. This is only to suggest that as with any public management decision, there are more than just financial issues to be considered.

To summarize, the real estate cycle seems to be another reason why patience may be a virtue in the management of school trust land sales. Without consideration for timing, sales could occur during troughs. If the market is in a recession or recovery, waiting for the expansion or peaking and contraction periods could produce higher returns. On the other hand, if the cycle is near its peak, waiting could produce lower revenues and it would be in the financial interest of state trusts to sell properties at such times, all else being equal.

In application, the decision to wait for cycle-related benefits would depend on how much more could be made and how long it would take. The benefits of waiting would need to be compared to selling now and investing the proceeds in alternative investments. However, with a better understanding of the raw land cycle, trust land managers could use market timing strategies to wait for those periods when prices were above long term trends. In addition, as the work by Hopkins suggests, an analyst may not need to know exactly when a peak is occurring to take advantage of market timing. Indeed, it may be enough to only know whether prices are above or below the long term trend or price path of appreciation.

Improving Site Quality

A third consideration which shapes land prices derives from the understanding that variations in site qualities, such as location, topography, or zoning, affect their value because site qualities affect productivity or the future flow of earnings that properties can produce. This is known as site rent, which measures the value created by attributes of property. For example, the market will bid up the rent for property in preferred locations because it is more valuable to its users. All kinds of site qualities can influence value; however most can be placed into 4 categories: location, amenities, taxes, and legal or customs-based restrictions (Adams et al, 1968).

For the purposes of the present discussion, what's most important to note is that these land qualities can change over time as a consequence of policy changes, infrastructure development, and urbanization. For example, a site can become more accessible as new transportation facilities are created. Therefore, to the extent that delays in the sale of land allow favorable changes in site qualities to occur, it can increase a parcel's value over and above any increases created by underlying price trends or the real estate cycle.

Seven studies of these qualities were reviewed for this report - all published between 1968 and 1985. While there are other such studies in the literature, those reviewed here focus on raw or agricultural land values at the urban fringe, where most state trust land is presumably located. Their findings which relate to the subject of this report are summarized and compared in the following table. The table represents an effort to display

the qualities of sites which can change over time and which researchers have found can influence property values. For each of these qualities, the table gives the percentage increase in land prices predicted by the studies from the changes described in the list of factors. For example when land is up-zoned from agricultural to residential, commercial, or industrial, the median increase in value is expected to be 68%. Each study looked at data around one or more metropolitan areas during various periods of time. Taken together, they represent a look at the same phenomena in a variety of different markets in a variety of different periods. Five of the nine site qualities were examined in more than one study and the range of results can be observed. The similarities are fairly impressive, suggesting that these findings are rather stable from place to place and time to time.

In general, the studies show that changes in site qualities for land at the urban fringe can increase its value by as much as 68%. Changes in zoning, sewer service, and annexations appear to be events with the single largest effects. However year to year increases in proximity to shopping, highways, urban areas and commercial/industrial development can also add up to double digit increases over just a few years.

Some of these qualities may not be particularly common. For example, new freeways aren't built every day. However, after voters approved new funding in 1985 for the greater Phoenix area, nearly 155 miles of new urban freeways were planned and are mostly now complete. On the other hand, it is common for properties to be up-zoned, for sewer service areas and municipal boundaries to be expanded, for new shopping centers to be built, and for new industry and business to expand into the periphery.

Table 3: Percent Change in Unimproved Land Value from Site Qualities

Factor	Adams et al	Clonts	Hushak	Hushak & Sadr	Chicoine	Hepner	Dunford et al	Median
Up-Zoned			79%		28%	69%		69%
Trunk Sewer Line/Sewer Service	72%						61%	67%
Contiguous to Incorporated Place					34%			34%
Inside Incorporated community			6%					6%
Mile Closer to Major Shopping Center			13%	4%		2%		4%
Property Tax Cut (10% from the mean)			4%					4%
Mile Closer to Highway		1%	1%	4%	2%	9%	3%	3%
Mile Closer to Urban Periphery		3%	1%	4%	3%	5%	6%	3.5%
Commercial/Industrial Land Use Nearby					2%			2%

An important unanswered question is to what extent these processes are already accounted for or capitalized in the basic price path discussed above. The value of land when it is developed is based in part on the available services and neighboring uses that are expected to exist when development occurs. This suggests that at least some of the financial gains from changing site conditions may already be incorporated into the appreciation predicted by the basic price path. However, not everything can be predicted. Indeed, land investors are famous for trying to better normal returns by betting on their ability to foresee or obtain changes in zoning, infrastructure, or other qualities that would benefit their property but are unaccounted for in the market as a whole and thus the basic price trends (and the price they paid for their land). It would be useful to determine the degree to which price paths and changes to cross-sectional qualities are interrelated. Meanwhile, patience in the sale of land could well pay off particularly if the site qualities of a parcel change for the better in a way that was unanticipated by the market and not yet capitalized into the basic capital gains pathway.

Active Management

Much of the above discussion views the state trust land manager as a passive participant in the development market and suggests how he or she can take financial advantage of temporal forces that influence property values. Although there are opportunities to shape this process, particularly by spending resources to obtain rezoning, access to infrastructure or other cross-sectional factors, the discussion so far has more or less taken the view that knowledgeable land managers can learn to respond effectively to events occurring around them. Another view, however, is that land mangers can effectively alter the circumstances around their land in a way that enhances its value for urban development. In the context of this paper, the idea is that taking the time and having the patience to implement such a strategy can have positive financial benefits.

In the report Ten Principles for Creating Value from Local Government Property, Carpenter et al (2006), recommend the kind of strategies that government officials might employ to enhance asset values. This process takes time and as such it is fitting for consideration in this report.

The 10 principles offered by Carpenter et al are as follows:

1) Rock the Boat. Ask bold questions, like what type of organization should the agency become and how can property be used to support that goal? For example, one bold question that could be asked is why is trust land sold to developers? Could a trust create more value by taking on the development role itself?

2) Find your champions. Strong leaders are needed to align and reconcile competing interests, build consensus to place development high on the agenda and keep it there.

3) Capture the vision and define the need. A strategic development response should be created based on seizing opportunities and meeting defined needs. Gaining involvement from key stakeholders, citizens, and business partners is an essential part of the process.

4) Optimize commercial leverage. Government exerts real estate buying power as prospective tenants and occupiers and it can use this power to find the best possible partners.

5) Listen, engage, and act. Agencies should promote civic engagement by starting consultation early in order to improve their understanding of public issues and to balance competing imperatives. This helps reduce opposition to change.

6) Make it happen. Land agencies should provide adequate funding and staffing to get the job done.

7) Engage the private sector early. Learn from private industry how to create value, optimize planning, and exploit commercial opportunities.

8) Understand the partner's culture. To get the most from a public/private partnership, each party must appreciate the other party's drivers and constraints.

9) Design for the future. Agencies should design and plan developments to be flexible and responsive to future issues and concerns.

10) Make a big splash. Good design and high quality planning have a catalyzing effect on value.

Following such a model, land trusts could take the time to help create value. For example, they could partner with local governments to create a vision for the development of the land, create appropriate zoning, develop a phasing plan for the development and extension of infrastructure, and plan for how the infrastructure would be paid for including options for having it financed by the project itself. This would be a particularly valuable way for managers to "activate" the value of their properties.

The essential idea here is that an agency can take a more active role in creating value. It need not remain a passive, albeit intelligent, responder to temporal issues in the real property market. It can act affirmatively by creatively asking questions, embracing a vision, leading, engaging, managing, and designing. Such a process, of course, takes time and patience. Here again, patience can be a virtue.

Time Tranching[2]

Christopher Leinberger offers a unique perspective on how patience can have long-term benefits both for investors and the broader society. In his work on Financing Progressive Development (Leinberger, 2001), he discusses the problem facing proponents of new urbanism, smart growth, sustainable development and other innovative projects which he refers to generally as "progressive development". He examines how the lack of a long and successful track record for such projects makes it difficult to finance these projects, frequently resulting in higher cost of capital. In addition, he observes that these projects may perform financially in a fundamentally different way than do conventional developments. The bulk of their financial returns, according to Leinberger, can come in the mid- and long-term. When these returns are discounted to their present value, such projects can appear to have less attractive rates of return compared to conventional projects which generate the bulk of their returns in the short term. For example, conservation oriented master-planned communities, developed with state trust lands that emphasizes open space, eco-efficiency and green building, may generate higher returns in later years as open space, conservation, and sustainability become increasingly valued in the marketplace. However, conventional valuation techniques can make such projects seem less valuable to a short-term oriented investor.

One of Leinberger's examples seems particularly fitting to state trusts. He discusses pedestrian-oriented progressive development and describes two ways to create them. One is to build a "green-field" project from scratch, such as on former grazing land held by a state trust. The other is to revitalize an older urban area. But, as Leinberger states, "To create a pedestrian environment from scratch takes considerable effort and will take time, assuming one does not have the nearly unlimited financial resources, such as Disney Corporation did at Celebration in Florida. There needs to be a certain critical mass, generally at least a couple of completed blocks of housing and approximately 40,000 to 60,000 square feet of retail, which will take a few years—at least three to five—to build, sell or lease, or a huge amount of up front capital. As the development struggles to create the critical mass, it generally requires additional investment and/or generates less cash flow than a conventional development."

Leinberger gives examples of green field or suburban projects, which originated as progressive concepts that were initially difficult to prove but produced tremendous value over time. "…Green field suburban developments, such as Reston Town Center, Valencia Town Center outside Los Angeles, The Avenue in Baltimore and Carillon Point in Seattle, are all testaments to the relatively high value creation potential of pedestrian-oriented development compared to conventional development in the same market area.

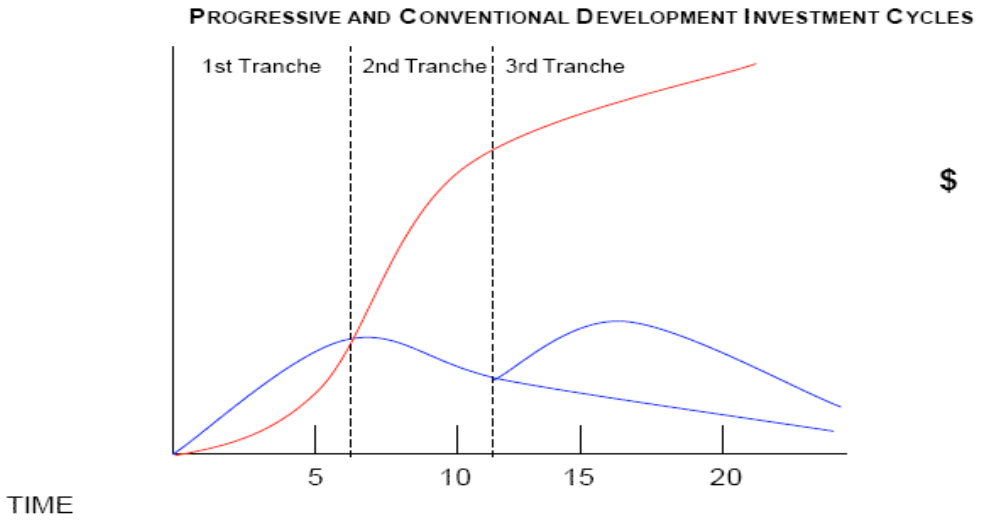
[2] The term "tranche" (French for slice) is typically used in finance to describe a part of an asset that is divided (sliced, hence the term) into smaller pieces. One investor may only be interested in the payments at the longer end of an investment's maturity, while another investor may want only the cash flows due in the near term. A developer can split the original asset into 'tranches' where each investor receives rights to the expected cash payments for particular periods.

High value residential has followed the commercial in each of these cases since a "there there" has emerged."

One particular example he examines is Seaside, Florida, the famous neo-traditional, pedestrian-oriented beach community. He describes it as one of a class of recent projects that "created and sustained value in excess of their competitors, though their short-term performance was sometimes inferior to nearby conventional development." Seaside began selling lots for $15,000 in 1984 and only sold 20 in the first 2 years. However, after a fully developed street was completed and a developer-subsidized human-scaled, walkable retail center was established, buyers could see the potential. Eventually, by 2000, lots were selling for 100 times their price in 1984.

Chart 5, reproduced here from Leinberger (2001), which illustrates the value of different types of projects over time, demonstrates one of the key differences between conventional and progressive projects. It shows how conventional projects may generate steeper returns in the short run and then depreciate rather quickly as their conventional qualities and buildings deteriorate or become outmoded. A second cycle of refurbishment can restore their vitality, but again the cycle repeats over time. He compares this to more progressive projects which are designed to increase in value over the long-run. While they may start off generating lower returns, over time they can outpace conventional projects. These are hypothetical trends offered by Leinberger based on his experience with both types of projects. However, he is quick to point out in his most recent work on the subject that "it is rare for retrospective analysis of the financial performance over the life of a real estate project to be performed" (Leinberger 2006).

Chart 5: Progressive and Conventional Development Investment Cycles



Leinberger provides the following table (Table 4) as a quantitative illustration of the problem. The first project offers short term value while the second project creates long term value. While the second example clearly generates more total value over the 15 years, it produces most of this in later years and therefore its internal rate of return (IRR) based on discounted present values, is computed to be lower than the conventional project that produces most of its returns in the short run. Thus, it is possible for progressive development to create both more income over the long term and a lower internal rate of return than conventional development.

Table 4: Cash Flow Returns from Short- and Mid-Term Investments

COMPARING SHORT-TERM AND MID-TERM CASH FLOW RETURNS

	Initial Investment	YEAR															IRR
	(000)s	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Example #1 (short-term Investment)	100	0	8	11	13	14	15	176									**15.1%**
Example #2 (mid-term Investment)	100	-5	-5	0	5	11	13	14	17	20	23	25	27	28	29	330	**13.7%**

The solution Leinberger recommends is called Time Tranching. The idea is to recognize that individual investors differ in their needs for returns. Some, like high net worth individuals, may require or desire short term returns while other investors, such as pension funds, foundations, or state trusts, can be more patient because they have predictable mid- and long-term cash flow needs. The solution, then, is to "connect appropriate investors with the appropriate investment". He does this by offering different investors in a project various pieces of the investment, as illustrated in Table 5. The various cost elements of the project are divided into building development, land development and parking, and land. Each has a different cost and is associated with a different time frame. Short-term investors receive most of the cash flow in the first 5 years and provide debt or equity for construction. Longer-term investors receive most of their cash flow in later years. However, if the project's value follows the progressive investment cycle depicted above, the total cash flow would be much higher in later years, creating a benefit for their patience. Meanwhile, the longer term investors are helping to create a project with long term value and significant social and environmental benefits.

Table 5: Examples of Time Tranches

AN EXAMPLE OF THREE TIME TRANCHES OF INVESTOR RETURN

CASH FLOW DISTRIBUTION

TRANCHE	Cost Components	Years 1-5	Years 6-12	Years 12 +
1ST	Building Development (65%)	90%	20%	10%
2ND	Land Development And Parking (25%)	10%	70%	45%
3RD	Land (10%)	0%	10%	45%

SOURCE: Arcadia Land Company

If a state trust were to participate in a project in this way, then they would need to structure their participation so as to take advantage of the cash flow in later years. Essentially, they would need to find a means of delaying payment for their land. This could be done, for example, through a joint venture agreement in which the trust receives payment in the form of an equity position in the project which would entitle them to a share of later cash flows. The developer could avoid paying for the land up front, making it easier to introduce more progressive elements into the project. In the context of an auction, the bidders would be offered the opportunity to develop in exchange for the payment of a certain share of future revenues. Alternatively, there could be a set price, to be paid in the future. This is not unlike more conventional owner participation in land deals. In either case, the state could expect to receive more for their land than if the payments were required before development occurred.

Delayed Land Payments

Let's further consider the notion of delayed payment for land to help finance progressive development. To illustrate the approach, consider the following project. Assume that the total project costs $10 million in Year 0 and that the land constitutes 10% of the project cost. Also assume that the project generates an income equal to 10% of its value each year and in Year 10 would be sold for 10 times its cash flow level. As Table 6 illustrates, the project would produce a 14% internal rate of return (IRR).

Table 6: Discounted Cash Flow with Upfront Land Payment

IRR	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
14.0%	-10000	1000	1050	1103	1158	1216	1276	1340	1407	1477	15513

Now assume that instead of $1 million being land being paid for in Year 0, the state trust takes the patient capital approach and waits till Year 10 to be paid, but in a higher amount. Now, nothing is paid for the land in Year 0 and $2 million is paid in Year 10. This reduces Year 0 project costs by $1 million and the amount received by the developer in Year 10 by $2 million. Under this scenario, the IRR increases by nearly 1% as shown in Table 7:

Table 7: Discounted Cash Flow with Back-Ended Land Payment

IRR	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
14.9%	-9000	1000	1050	1103	1158	1216	1276	1340	1407	1477	13513

The extra $1 million earned by the state trust in Year 10 is based on how much the trust would earn if they received $1 million in Year 0 and invested it for 10 years at 7%. It would grow to nearly $2 million. In reality, the $1 million would be invested in the project itself at the project's rate of return (14%), so by Year 10 there would be enough earnings from the project to pay the additional $1 million to the trust and return additional income to the other project investors. It is more likely that if the trust received the funds in Year 0, they'd earn closer to 5% in a treasurer's account. So under this scenario, the state trust would earn an additional $371,000.

Another opportunity presented by this approach is the potential to invest additional funds at the start of the project in more progressive elements, such as more advanced environmental management systems. In Table 8, half of the $1 million not spent in Year 0 is spent in Year 0 on other progressive project elements. As before, the trust is paid $2 million for the land in Year 10. Under this scenario, the IRR is the same as for the original project. In other words for the same return to investors, if the trust is willing to be patient with when it is paid for the land, the project is made better, the trust earns more, and the private investors earn the same. Clearly, patience can be a virtue under these circumstances.

Table 8: Back-Ended Land Payment with Front-End Environmental Investment

IRR	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
14.0%	-9450	1000	1050	1103	1158	1216	1276	1340	1407	1477	13513

Interviews

As further background on these issues, three interviews were conducted. Senior officials with two private land development companies (the St. Joe Company and the Irvine Company) and one state trust land department (for the State of Utah) were contacted by phone to discuss the topic of development timing. All interviewees were receptive to exploring the topic and offered detailed explanations of how their organization goes about planning its land for urban development. The following observations were drawn from these conversations:

1) Managers are actively seeking means to increase their land values. As a part of the process, development is timed in relation to other events, particularly development cycles, infrastructure improvements and other uses or investments which may drive up the value of undeveloped parcels.

2) Managers understand that ripeness, real estate cycles, and property qualities can affect property values. For example, they understand that waiting for or creating development near a given parcel is a signal that the parcel is ripe for development and a way to increase its value.

However, timing issues are not managed in a highly sophisticated manner, subjected to quantitative analysis, or treated as a value driver to be carefully manipulated or finely tuned. It is certainly viewed as important and subject to management concern, but there appear to be opportunities to further equip managers with tools to more effectively manage timing issues.

3) Maximizing value is not their only concern. Other considerations include the desire to always have products available to respond to consumer demand and maintain market position, the need to maintain public support by delivering quality projects consistent with public plans and responsive to stakeholder concerns, and the importance of maintaining long-term relationships with developers.

4) Patience can be a virtue when expansions bring better prices but waiting can also produce problems when contractions cause prices to fall and developers to cancel deals. It can also expose landowners to risks such as development moratoria, adverse reactions to development impacts, or the consumption by others of limited resources needed for development, such as water supplies or traffic capacity.

5) It is very difficult to time projects over the long term. If it takes 10 years to plan a project and obtain entitlements, it's hard to know what the market will be like when the project is finally ready. One strategy is to prepare a variety of different projects up to the point where they're nearly ready to construct and to complete the final steps in response to market demand or political realities at any given time.

6) Some timing scenarios may be unacceptable to cities. In particular, residential development far in advance of retail may have undesirable fiscal consequences.

In general, it appears that both private and public land management executives are aware of timing issues and would welcome a better understanding of how timing might improve their property values. They would likely be receptive to patient development plans if they saw that it could increase property values and increase the acceptability of their projects in the public realm. At the same time, they may be skeptical of our ability to predict real estate cycles and other future events, concerned about maintaining a flow of income and project activity in the short- and long-run, and nervous that delays might allow other problems to arise, such as more difficulties with entitlements as opposition to growth increases over time.

Summary and Conclusion

We have reviewed several ways in which, in theory, it could be financially beneficial to a school land trust to delay land sales or payments from the sales. While there may also be certain social benefits from delay, having to do with externalities and efficient urban development, the analysis here has been narrowly focused on the financial effects on state trusts. In general, this paper has discussed 6 ways that patience may be financially beneficial:

1) The Price Path to Development: As time passes and land gets closer to the time when the market supports its development, it will appreciate in value. Historically, this rate may be higher than the rate at which the proceeds from land sales have been invested. However, whether patience is warranted by this factor alone depends on the risk adjusted returns that are expected from holding land versus investing the proceeds from sales.

2) Timing Real Estate Cycles: Real estate cycles of approximately 10 to 20 years affect the price of raw land. During half the cycle, land values are below their long term average price and it may be financially prudent to wait for prices to recover. On the other hand, at the peak of the cycle or during periods of contraction, it may be prudent to sell before prices decline.

3) Improved Site Quality: Site qualities including location, zoning, and tax rates affect property values. These qualities can change over time as a result of public or private investments by other actors or the landowner. If such changes are anticipated, such as the completion of planned highway improvements or nearby shopping, it may be beneficial to wait for their completion before placing land on the market.

4) Active Management: Land managers can improve the value of their property through active leadership, planning, and collaboration. By taking the time to build a community consensus for a common vision and the partnerships needed to achieve it, trust land managers can increase the overall value of their holdings.

5) Time Tranching: It may be possible to add value to property over the long run by foregoing revenues early in a development project.

6) Delayed Land Payment: Progressive upgrades can be added to a project and state trusts can earn more from land over the long term if they can wait to receive payments for land until developments are completed and stabilized.

This analysis suggests that under various circumstances there may indeed be opportunities for school trust land managers to increase revenues through a strategy of "purposeful patience". However, to fully develop these ideas and make them most useful to practitioners, additional research would be useful:

1) Much of this analysis depends on comparing returns from holding land to returns from selling it and investing the proceeds of land sales. To better understand this tradeoff, it would be useful to know how land sale proceeds are used and invested. Do they get used for school programs soon after they're obtained or are they invested for a long period of time and at what rate of return? In addition, are there pressures on land managers to produce income from sales in the short term or do they have the freedom to exercise patience and long term strategies? This last question begs the further question of just what the financial expectations or policies are that state trust managers are expected to follow. Are they to maximize present value or maximize current cash flow? Patience can help in both cases, but the evaluation criteria for strategies will change depending on which policy is governing. Moreover, it may be possible to strike a more optimal balance between short term cash flow and long term value creation. But at the present time, it is unclear which policy is driving management decisions.

2) What is the basic price path for vacant land near urban areas when controlling for cross-sectional factors and cyclical trends? To what degree has the basic price path outpaced returns on funds invested by treasurers? How much risk is associated with holding land and how should this be accounted for in comparing returns from holding land versus selling and reinvesting the proceeds? A new paper by Sunderman and Spahr (2006) suggests that proceeds in Wyoming from ranching alone do not justify holding the land. However, in states with greater urbanization, the price path of future urban land would probably outpace that found by Sunderman and Spahr for rural ranches.

3) What is the nature of the real estate cycle for raw land? What is its frequency and how far do its peaks and bottoms diverge from the basic price path? Does the cycle for state trust land resemble the shorter residential property cycle and follow macroeconomic trends? How does it vary among markets? Are the deviations large enough to justify waiting for prices to improve in the context of a discounted cash flow analysis?

4) How much do raw land values benefit from changes in site qualities and to what extent is it rational to wait for these changes to occur (or to spend money to cause them to occur, as in the case of a state trust land manager investing state funds in planning, rezoning, and infrastructure)? Does the value of certain state trust lands that is planned for

development benefit significantly from site quality investments while other such land does not? To what extent are these changes capitalized into the basic price path?

5) How do returns from progressive developments compare over time to more conventional projects? Are their returns over the long run good enough in comparison to conventional projects to make time tranches a feasible means of increasing the quality of developments in the short run? For example, how do the financial results of new urbanism in the suburbs or conservation subdivision in the exurbs compare to conventional projects in each location? Are the progressive projects less profitable in the short run but more profitable in the long run? And does the size of the project make a difference? For example, can large scale master planned communities better afford to be patient and thus take fuller advantage of the time dimension in financial planning?

6). How much more can a state trust earn if it delays receiving payment from land sales? In what ways can projects be upgraded from the savings produced? How practical are these ideas when actual projects are considered?

Ultimately, a set of useful management strategies could be developed. The following are a set of hypothetical principles. They are unproven at this stage, but perhaps with further research, they may become of practical use to state land trust managers:

1) When returns from investments in raw land for urban development are greater than returns on proceeds from land sales invested in state treasury accounts and the proceeds are not needed in the short term for school projects, it is best to not sell state trust land to developers until just before the land is ready for development. In other words, a) it may be best to hold land until it reaches its greatest potential value, b) it may be best to not sell or develop lands until they are ripe for development, c) by waiting the state in essence is increasing the value of the portfolio and d) doing anything else may be a waste of the opportunity for capital gains.

2) Plan to sell land 10 to 20 years after the last peak in the land market cycle. Based on history, that is when it will probably be close to its next peak in the real estate cycle.

3) Do not sell land until it has been zoned for urban development, included in an urban service area, had services extended to a nearby location, and been annexed into an incorporated community. Also, where possible, wait for any major road improvements to be completed, for the property to become part of a reasonable distance to a shopping center, and for other urban land uses to develop nearby.

4) Take the time to take an active role in building a vision, consensus, and partnerships for land development of the highest quality such that it attracts other high quality development on nearby private land which in turns improves the value of the state trust properties. Sufficiently staff state trust real estate offices to give them the capacity to provide this level of leadership.

5) Take payment for land from developers after their project is completed in exchange for higher prices based on the rate of return earned by other investors in the project and in exchange for some of the up-front savings to the developer being reinvested in making the project more successful and progressive.

Will each of these principles prove effective? Only further study, discussion, and experience can tell. But based on the ideas examined in this paper, they hold promise as means of both improving the revenues earned and the quality of our built environment.

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